2021 IEEE Thesaurus

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**Created by
The Institute of
Electrical and
Electronics
Engineers (IEEE)**

IEEE

*Advancing Technology
for Humanity*

2021 IEEE Thesaurus

The IEEE Thesaurus is a controlled vocabulary of almost 10,900 descriptive engineering, technical and scientific terms, as well as IEEE-specific society terms [referred to as "descriptors" or "preferred terms"] .* Each descriptor included in the thesaurus represents a single concept or unit of thought. The descriptors are considered the preferred terms for use in describing IEEE content. The scope of descriptors is based on the material presented in IEEE journals, conference papers, standards, and/or IEEE organizational material. A controlled vocabulary is a specific terminology used in a consistent and controlled fashion that results in better information searching and retrieval.

Thesaurus construction is based on the ANSI/NISO Z39.19-2005(2010) standard, *Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabulary*. The Thesaurus vocabulary uses American-based spellings with cross references to British variant spellings. The scope and structure of the IEEE Thesaurus reflects the engineering and scientific disciplines that comprise the Societies, Councils, and Communities of the IEEE in addition to the technologies IEEE serves.

IEEE has developed its controlled vocabulary through consultation with subject matter experts (specialists in a particular field) and specialists in information analysis. The IEEE Thesaurus thus provides a controlled vocabulary of subject headings to help people categorize or search for engineering and computing concepts, especially IEEE published content.

The IEEE Thesaurus also provides a conceptual map through the use of semantic relationships such as broader terms (BT), narrower terms (NT), 'used for' relationships (USE/UF), and related terms (RT). These semantic relationships identify theoretical connections between terms. *Italic text denotes Non-preferred terms.* **Bold text is used for preferred headings.**

Abbreviations used in the Thesaurus:

BT - Broader term
NT - Narrower term
RT - Related term
USE- Use preferred term
UF - Used for

*Refer to ANSI/NISO NISO Z39.19-2005 (R2010) Sections 5 through 8 for detailed information on controlled vocabularies, display formats, usage and spelling, and selection criteria for descriptors (**http://www.niso.org/kst/reports/standards**).

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1/f noise
UF: 1f
        Pink noise
BT: Noise

1f
USE: 1/f noise

2-D displays
USE: Two dimensional displays

2-d hole gas
USE: Two dimensional hole gas

2-D photonic crystals
USE: Photonic crystals

21CN
USE: Next generation networking

21st century networks
USE: Next generation networking

2D displays
USE: Two dimensional displays

2d hole gas
USE: Two dimensional hole gas

2D photonic crystals
USE: Photonic crystals

3-D displays
USE: Three-dimensional displays

3-D modeling
USE: Three-dimensional displays

3-D modelling
USE: Three-dimensional displays

3-D reconstruction
USE: Three-dimensional displays

3D accelerators
USE: Hardware acceleration

3D audio
BT: Audio systems
        Augmented reality
RT: Virtual reality

3D displays
USE: Three-dimensional displays

3D integrated circuits
USE: Three-dimensional integrated circuits

3D modeling
USE: Three-dimensional displays

3D modelling
USE: Three-dimensional displays

3D printing
USE: Three-dimensional printing

3D reconstruction
USE: Three-dimensional displays

3G
USE: 3G mobile communication

3G mobile communication
UF: 3G
        3rd generation mobile communication
        IMT-2000
        Third generation mobile communication
        UMTS
        Universal mobile telecommunication service
BT: Cellular technology
        Mobile communication
RT: 4G mobile communication
        Ambient networks
        Cellular radio
        MIMO communication
        Multiaccess communication
        Next generation networking
        OFDM
        Radio access networks
        Spread spectrum communication
        Telecommunication computing
        Time division synchronous code division multiple access

3G partnership project
USE: 3GPP

3GPP
UF: 3G partnership project
        3rd generation partnership project
BT: Standards organizations
RT: New Radio

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3GPP Standards
BT: Standards publications
NT: Long Term Evolution

3rd generation mobile communication
USE: 3G mobile communication

3rd generation partnership project
USE: 3GPP

4G mobile communication
UF: 4th generation mobile communication
BT: Cellular technology
Mobile communication
RT: 3G mobile communication
5G mobile communication
Cellular radio
Enhanced mobile broadband
Long Term Evolution
Next generation networking
Radio access networks
Spread spectrum communication
Telecommunication computing
Time division synchronous code division multiple access

4K UHD
USE: UHDTV

4th generation mobile communication
USE: 4G mobile communication

5G
USE: 5G mobile communication

5G mobile communication
UF: 5G
5th generation mobile systems
5th generation systems
5th generation wireless systems
BT: Cellular technology
Mobile communication
RT: 4G mobile communication
6G mobile communication
Cellular radio
Land mobile radio
Next generation networking
Tactile Internet

Ultra-dense networks
NT: Enhanced mobile broadband
New Radio

5th generation mobile systems
USE: 5G mobile communication

5th generation systems
USE: 5G mobile communication

5th generation wireless systems
USE: 5G mobile communication

6G mobile communication
BT: Mobile communication
RT: 5G mobile communication
Cellular radio

802.11
USE: IEEE 802.11 Standard

802.11ax
USE: IEEE 802.11ax Standard

802.11e
USE: IEEE 802.11e Standard

802.11g
USE: IEEE 802.11g Standard

802.11n
USE: IEEE 802.11n Standard

802.15
USE: IEEE 802.15 Standard

802.16
USE: IEEE 802.16 Standard

802.3
USE: IEEE 802.3 Standard

8K UHD
USE: UHDTV

9/11
USE: Terrorism

9/11 attack
USE: Terrorism

911 attack
USE: Terrorism

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A/D
    USE: Analog-digital conversion

A/D conversion
    USE: Analog-digital conversion

A/D converter
    USE: Analog-digital conversion

AAL
    USE: Ambient assisted living

ABC algorithms
    USE: Artificial bee colony algorithm

Abdomen
    BT: Body regions

Abrasive water jet cutting
    USE: Water jet cutting

Abrasives
    BT: Production materials

Absorption
    BT: Materials science and technology
    RT: Semiconductor detectors

Abstract algebra
    BT: Algebra
    NT: Galois fields
            Modules (abstract algebra)

Abstracts
    BT: Writing
    RT: Information retrieval
            Information services

AC generators
    UF: Alternating current generators
    BT: Generators
    RT: Pulse width modulation
    NT: Induction generators
            Synchronous generators

AC light emitting diode lamps
    USE: LED lamps

AC machines
    UF: Alternating current machines
    BT: Electric machines

    RT: AC-AC converters
            Pulse width modulation
            Sensorless control
            Windings
    NT: AC motors
            Induction machines
            Synchronous machines

AC motors
    UF: Alternating current motors
    BT: AC machines
            Motors
    RT: Pulse width modulation
            Pulse width modulation inverters
            Space vector pulse width modulation
    NT: Hysteresis motors
            Induction motors

AC-AC converters
    UF: AC-AC convertors
            AC-AC power conversion
    BT: Converters
            Power conversion
    RT: AC machines

AC-AC convertors
    USE: AC-AC converters

AC-AC power conversion
    USE: AC-AC converters

AC-DC power converters
    UF: AC-DC power convertors
            AC/DC power converters
            Analog-to-digital converter
            Analog-to-digital convertor
    BT: Power conversion
    RT: Machine vector control
            Pulse width modulation inverters
            Voltage multipliers
            Voltage-source converters
    NT: Rectifying circuits

AC-DC power convertors
    USE: AC-DC power converters

AC-LED lamps
    USE: LED lamps

AC/DC power converters
    USE: AC-DC power converters

Accelerated aging
  BT: Aging
      Materials testing

Accelerated computing
  USE: Hardware acceleration

Accelerated testing
  USE: Life estimation

Acceleration
  BT: Mechanical factors
  RT: Accelerometers
      Gravity

Acceleration measurement
  USE: Accelerometers

Accelerator architectures
  BT: Computer architecture

Accelerator beams
  USE: Particle beams

Accelerator magnets
  BT: Magnetic devices
      Particle accelerators

Accelerometers
  UF: Acceleration measurement
  BT: Measurement
  RT: Acceleration
      Fall detection

Access charges
  BT: Economics
      Multiaccess communication

Access control
  BT: Security
  RT: Biometrics (access control)
      Building services
      Capability-based security
      Communication system
security
      Computer security
      Countermeasures
(computer)
      Identification of persons
      Smart cards
      Trust management
      Whitelists
  NT: Authorization
      Blacklisting
      Multi-factor authentication

      Password

Access point base station
  USE: Femtocell networks

Access protocols
  BT: Protocols
  RT: CAPTCHAs
  NT: Media Access Protocol

Access rights
  USE: Permission

Accident prevention
  BT: Industry applications
  RT: Explosion protection
      Preventive maintenance
      Risk analysis
      Safety devices
  NT: Accidents

Accidents
  BT: Accident prevention
  RT: Domestic safety
      Electric shock
      Emergency services
      Explosions
      Fires
      Hazardous areas
      Occupational health
      Occupational safety
      Oil pollution
      Product safety
      Risk analysis
  NT: Aerospace accidents
      Electrical accidents
      Industrial accidents
      Marine accidents
      Railway accidents
      Road accidents

Accreditation
  BT: Educational programs
  RT: Conformance testing
      Training

Accuracy
  BT: Mathematics

Acoustic applications
  UF: Ultrasonic applications
  BT: Acoustics
  RT: Acoustic measurements
      Biomedical acoustics

NT: Acoustic communication (telecommunication)
        Acoustic imaging
        Acoustic testing

Acoustic arrays
    BT: Acoustic transducers
    RT: Acoustic signal processing
        Array signal processing
        Sonar

Acoustic beams
    BT: Beams

Acoustic communication (telecommunication)
    BT: Acoustic applications
        Telecommunication services
    RT: Mobile communication
        OFDM
        Wireless networks

Acoustic devices
    UF: Ultrasonic devices
    BT: Acoustics
    RT: Piezoelectric devices
    NT: Acoustic waveguides
        Acousto-optical devices
        Acoustoelectric devices
        Bulk acoustic wave devices
        Film bulk acoustic resonators
        Surface acoustic wave devices

Acoustic diffraction
    BT: Acoustic propagation

Acoustic distortion
    BT: Distortion
    RT: Acoustic noise
        Acoustic signal processing
        Loudspeakers
        Nonlinear acoustics

Acoustic distortion measurement
    USE: Distortion measurement

Acoustic emission
    BT: Acoustics
    RT: Acoustic noise
        Acoustic testing
        Nondestructive testing

Acoustic field
    BT: Acoustics

Acoustic imaging
    BT: Acoustic applications
    RT: Acoustic testing
        Oceanographic techniques

Acoustic materials
    UF: Acoustic metamaterials
    BT: Materials
    RT: Piezoelectric materials

Acoustic measurements
    BT: Measurement
    RT: Acoustic applications
        Acoustic testing
        Anechoic chambers
        Biomedical acoustics
        Frequency measurement
        Phase measurement
        Seismic measurements
        Wavelength measurement

Acoustic metamaterials
    USE: Acoustic materials AND Metamaterials

Acoustic noise
    UF: Audible noise
        Audio restoration
    BT: Acoustics
    RT: Acoustic distortion
        Acoustic emission
        Acoustic signal detection
        Environmental factors
        Mechanical factors
        Vibrations
    NT: Background noise
        Noise cancellation
        Noise level
        Noise reduction
        Working environment noise

Acoustic phonetics
    BT: Acoustics
        Phonetics

Acoustic propagation
    BT: Acoustics
    RT: Acoustic pulses
        Waves
    NT: Acoustic diffraction

Acoustic pulses

BT: Acoustics
RT: Acoustic propagation

Acoustic reflection
BT: Reflection
RT: Acoustic scattering

Acoustic refraction
BT: Acoustic waves

Acoustic scattering
BT: Scattering
RT: Acoustic reflection
Waves

Acoustic sensors
BT: Sensors

Acoustic signal detection
BT: Signal detection
RT: Acoustic noise
NT: Sonar detection

Acoustic signal processing
UF: Audio enhancement
BT: Signal processing
RT: Acoustic arrays
Acoustic distortion
Acoustic transducers
NT: Active noise reduction
Speech processing

Acoustic surface waves
USE: Surface acoustic waves

Acoustic testing
BT: Acoustic applications
Materials testing
RT: Acoustic emission
Acoustic imaging
Acoustic measurements
Photoacoustic effects

Acoustic transducers
BT: Transducers
RT: Acoustic signal processing
Array signal processing
NT: Acoustic arrays

Acoustic wave attenuation
USE: Acoustic waves AND
Attenuation

Acoustic waveguides
BT: Acoustic devices

Acoustic waves
UF: Acoustic wave attenuation
BT: Acoustics
RT: Seismic waves
NT: Acoustic refraction
Acoustoelectric effects
Surface acoustic waves

Acoustical engineering
BT: Engineering - general

Acoustics
UF: Ultrasonics
BT: Physics
RT: Acoustoelectric effects
Fourier transforms
Magnetoacoustic effects
Phonons
Resonators
Vibrations
NT: Acoustic applications
Acoustic devices
Acoustic emission
Acoustic field
Acoustic noise
Acoustic phonetics
Acoustic propagation
Acoustic pulses
Acoustic waves
Acoustooptic effects
Biomedical acoustics
Cepstral analysis
Music
Nonlinear acoustics
Psychoacoustics
Reverberation
Spectral shape
Underwater acoustics

Acousto-optic devices
USE: Acousto-optical devices

Acousto-optical devices
UF: Acousto-optic devices
Acoustooptic devices
BT: Acoustic devices
RT: Acoustooptic effects

Acoustoelectric devices
UF: Electroacoustic devices
BT: Acoustic devices
RT: Acoustoelectric effects
Piezoelectric devices

Pulsed electroacoustic methods

Surface acoustic wave devices

Acoustoelectric effects
UF: Electroacoustic effects
BT: Acoustic waves
Electric fields
RT: Acoustics
Acoustoelectric devices
Semiconductor materials
NT: Pulsed electroacoustic methods

Acoustomagnetic effects
USE: Magnetoacoustic effects

Acoustooptic devices
USE: Acousto-optical devices

Acoustooptic effects
BT: Acoustics
RT: Acousto-optical devices
NT: Piezooptic effects

Acquired immune deficiency syndrome
UF: AIDS
Acquired immunodeficiency syndrome
BT: Diseases
RT: Human immunodeficiency virus

Acquired immunodeficiency syndrome
USE: Acquired immune deficiency syndrome

Actinium
BT: Chemical elements

Action potentials
UF: Bioelectric potentials
BT: Physiology
RT: Axons
Membrane potentials
Neurons
White matter

Activated sludge process
USE: Sludge treatment

Activation analysis
BT: Chemical analysis

Active appearance model
BT: Computer vision

Active circuits
BT: Circuits
NT: Active inductors
Gyrators
Operational amplifiers

Active contours
BT: Motion analysis

Active distribution networks
BT: Power distribution networks

Active disturbance rejection control
USE: Robust control

Active filters
BT: Filters
NT: Band-pass filters

Active inductors
BT: Active circuits
Inductors
RT: Gyrators
Integrated circuits
MOSFET circuits

Active matrix addressing
BT: Active matrix technology

Active matrix liquid crystal displays
UF: AMLCDs
Active-matrix liquid-crystal displays
BT: Active matrix technology
Liquid crystal displays

Active matrix organic LEDs
USE: Active matrix organic light emitting diodes

Active matrix organic light emitting diodes
UF: AMOLEDs
Active matrix organic LEDs
Active matrix organic light-emitting diodes
BT: Active matrix technology
Organic light emitting diodes

Active matrix organic light-emitting diodes
USE: Active matrix organic light emitting diodes

Active matrix technology
- UF: Active-matrix
- BT: Displays
- NT: Active matrix addressing
  Active matrix liquid crystal displays
  Active matrix organic light emitting diodes
  Thin film transistors

Active networking
- BT: Network architecture

Active noise reduction
- BT: Acoustic signal processing
  Noise reduction
- NT: Echo cancellers

Active perception
- BT: Psychology
- RT: Cognition
  Control systems
  Sensor fusion

Active pixel sensors
- BT: Image sensors

Active RFID tags
- BT: RFID tags

Active shape model
- BT: Image processing
  Pattern recognition

Active-matrix
- USE: Active matrix technology

Active-matrix liquid-crystal displays
- USE: Active matrix liquid crystal displays

Activities
- USE: IEEE activities

Activity recognition
- BT: Cognition
  Pattern recognition
  Sensor systems
- RT: Computer vision

Actuators
- UF: Dielectric electroactive polymer actuators
  Electroactive polymer actuators
  Electrostrictive polymer actuators
  Ionomeric polymer-metal composite actuators
  Nanoactuators
- BT: Control equipment
- RT: Control systems
  Servomechanisms
  Servosystems
  Shape memory alloys
- NT: Dielectric elastomer actuators
  Electrostatic actuators
  Electrothermal actuators
  Hydraulic actuators
  Intelligent actuators
  Microactuators
  Piezoelectric actuators
  Pneumatic actuators

Ad hoc networks
- BT: Computer networks
- RT: Cross layer design
  Data communication
  Land mobile radio
  Mobile computing
  Multicast communication
  Protocols
  Wireless LAN
  Wireless sensor networks
- NT: AODV
  Mesh networks
  Mobile ad hoc networks
  Vehicular ad hoc networks

Ad hoc On Demand Distance Vector
- USE: AODV

Adaptation models
- BT: Adaptive algorithms

Adaptive algorithms
- BT: Algorithms
- NT: Adaptation models

Adaptive antenna arrays
- USE: Adaptive arrays

Adaptive arrays
- UF: Adaptive antenna arrays
- BT: Antenna arrays
- RT: Adaptive signal detection
  Array signal processing

Radar countermeasures
Radio communication

countermeasures

Adaptive codes
USE: Adaptive coding

Adaptive coding
UF: Adaptive codes
BT: Data compression

Adaptive control
UF: Self-tuning regulators
BT: Adaptive systems
RT: Cognitive systems
Control systems
Disturbance observers
Iterative learning control

Adaptive equalisers
USE: Adaptive equalizers

Adaptive equalizers
UF: Adaptive equalisers
BT: Equalizers

Adaptive estimation
BT: Statistics

Adaptive filters
BT: Adaptive signal processing

Adaptive learning
BT: Education
RT: Distance learning
Human computer

interaction

User interfaces

Adaptive mesh refinement
BT: Numerical analysis

Adaptive optics
BT: Optics

Adaptive scheduling
BT: Scheduling
RT: Adaptive systems
Production control

Adaptive signal detection
BT: Adaptive signal processing
RT: Adaptive arrays
Blind source separation
Source separation

Adaptive signal processing
BT: Signal processing
NT: Adaptive filters
Adaptive signal detection

Adaptive systems
BT: Cybernetics
Systems engineering and

theory

RT: Adaptive scheduling
Learning systems
Neural networks
NT: Adaptive control
Cognitive radar
Line enhancers
Multi-agent systems
Variable structure systems

ADAS
USE: Advanced driver assistance

systems

Add-drop multiplexers
BT: Multiplexing equipment
NT: Optical add-drop

multiplexers

Added delay
BT: Delay systems

Adders
BT: Circuits
RT: Digital integrated circuits
Logic circuits

Additive manufacturing
USE: Three-dimensional printing

Additive metric
USE: Maximum likelihood

detection

Additive noise
BT: Noise
NT: AWGN
Additive white noise

Additive white noise
BT: Additive noise
RT: Gaussian noise

Additives
UF: Fuel additives
BT: Materials

RT: Production materials

Adenoviridae
　　USE: Adenoviruses

Adenoviruses
　　UF: Adenoviridae
　　BT: Microorganisms

Adhesive bonding
　　USE: Adhesives

Adhesive strength
　　BT: Materials testing

Adhesives
　　UF: Adhesive bonding
　　BT: Bonding
　　NT: Conductive adhesives
　　　　Nonconductive adhesives

Adiabatic
　　BT: Power electronics

Adjacent channel interference
　　USE: Interchannel interference

Admission control
　　BT: Quality of service
　　RT: Bandwidth

Admittance
　　UF: Electric admittance
　　BT: Electric variables
　　RT: Admittance measurement
　　　　Impedance

Admittance measurement
　　BT: Electric variables measurement
　　RT: Admittance
　　　　Impedance measurement

Adsorption
　　BT: Surface morphology
　　RT: Interface phenomena
　　　　Molecular sieves
　　　　Surfactants

Advanced driver assistance systems
　　UF: ADAS
　　BT: Vehicle safety
　　RT: Collision avoidance
　　　　Intelligent vehicles
　　　　Vehicle-to-everything

Advanced Research Projects Agency Network
　　USE: ARPANET

Advanced TV
　　USE: HDTV

Advanced video coding
　　USE: Video coding

Adversarial machine learning
　　BT: Machine learning

Advertising
　　BT: Marketing management

Aerial robots
　　USE: Unmanned aerial vehicles

Aerodynamics
　　BT: Dynamics
　　　　Mechanical factors
　　RT: Aerospace control
　　　　Shock waves
　　　　Wind tunnels

Aerosols
　　BT: Electrostatic processes
　　RT: Liquids
　　　　Particle production
　　　　Spraying

Aerospace accidents
　　BT: Accidents
　　RT: Aerospace safety
　　　　Space vehicles
　　NT: Air accidents

Aerospace and electronic systems
　　RT: Auditory displays
　　　　Digital signal processing
　　　　Programming
　　　　Systems engineering and theory
　　NT: Aerospace control
　　　　Aerospace engineering
　　　　Aerospace materials
　　　　Aircraft manufacture
　　　　Aircraft navigation
　　　　Aircraft propulsion
　　　　Command and control systems
　　　　Electronic warfare
　　　　Military equipment
　　　　Radar

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Sensor systems
Sonar
Telemetry

Aerospace biophysics
BT: Aerospace engineering
Biophysics
RT: Human factors

Aerospace components
BT: Aerospace materials

Aerospace control
UF: Aircraft control
Flight control
BT: Aerospace and electronic systems
RT: Aerodynamics
Aerospace simulation
Aircraft
Hardware-in-the-loop simulation
Missiles
Motion control
Space vehicles
Velocity control
NT: Air traffic control
Attitude control
Ground support

Aerospace electronics
UF: Aerospace instrumentation
Aircraft electronics
Aircraft instrumentation
Avionics
Space vehicle electronics
Space vehicle instrumentation
BT: Aerospace engineering
RT: Aircraft
Space vehicles
Total ionizing dose

Aerospace engineering
BT: Aerospace and electronic systems
RT: Aerospace industry
Aerospace materials
Lightweight structures
NT: Aerospace biophysics
Aerospace electronics
Aerospace safety
Aerospace simulation
Aerospace testing
Artificial satellites

Space technology

Aerospace ground equipment
USE: Ground support

Aerospace ground services
USE: Ground support

Aerospace industry
BT: Manufacturing industries
RT: Aerospace engineering
Aerospace materials
Aerospace safety
Aircraft manufacture
Lightweight structures

Aerospace instrumentation
USE: Aerospace electronics

Aerospace materials
UF: Aircraft materials
Spacecraft materials
BT: Aerospace and electronic systems
Production materials
RT: Aerospace engineering
Aerospace industry
Aircraft manufacture
Lightweight structures
Space vehicles
NT: Aerospace components

Aerospace navigation
USE: Aircraft navigation

Aerospace propulsion
BT: Propulsion

Aerospace safety
BT: Aerospace engineering
Safety
RT: Aerospace accidents
Aerospace industry
Ion beam effects
Space shuttles
Space vehicles
NT: Air safety

Aerospace simulation
UF: Flight simulation
BT: Aerospace engineering
RT: Aerospace control
Aerospace testing
Wind tunnels

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Aerospace testing
- BT: Aerospace engineering
- Testing
- RT: Aerospace simulation
- NT: Wind tunnels

Affective computing
- BT: Artificial intelligence
- Human computer interaction
- RT: Behavioral sciences
- Cognitive systems
- Emotion recognition
- Human factors
- Psychology
- User experience

Affordances
- BT: Object recognition
- Optimization methods
- RT: Interactive systems
- User interfaces
- Virtual reality

Africa
- BT: Continents

Afterburners
- USE: Incineration

Ag
- USE: Silver

Age factors
- USE: Aging

Age of information
- USE: Information age

Aged
- USE: Aging

Ageing
- USE: Aging

Agent-based modeling
- BT: Computational modeling
- Software agents
- RT: Multi-agent systems

Aggregates
- BT: Materials
- RT: Building materials

Agile computing
- USE: Agile software development

Agile manufacturing
- BT: Manufacturing systems
- RT: Computer integrated manufacturing
- Flexible manufacturing systems

Agile software development
- UF: Agile computing
- BT: Software development management
- NT: Scrum (Software development)

Aging
- UF: Age factors
- Aged
- Ageing
- BT: Materials science and technology
- RT: Ambient assisted living
- Assisted living
- Cataracts
- Electric breakdown
- Energy storage
- Gerontology
- Insulation life
- Life estimation
- Reliability
- Senior citizens
- NT: Accelerated aging

Agricultural engineering
- BT: Engineering - general
- RT: Agricultural machinery
- Agricultural robots
- Agriculture

Agricultural machinery
- UF: Combine harvesters
- Tractors
- BT: Machinery
- RT: Agricultural engineering
- Agriculture
- Applicators
- Blades
- NT: Agricultural robots

Agricultural products
- BT: Agriculture
- RT: Agricultural robots
- Food products
- Irrigation

NT: Cotton
Crops
Dairy products
Sugar
Wool

Agricultural robots
BT: Agricultural machinery
Robots
RT: Agricultural engineering
Agricultural products
Mobile robots
Unmanned vehicles

Agriculture
UF: Livestock
BT: Industries
RT: Agricultural engineering
Agricultural machinery
Animals
Dairy products
Food waste
Genetic engineering
Pest control
Soil pollution
Vegetation mapping
NT: Agricultural products
Aquaculture
Digital agriculture
Fertilizers
Greenhouses
Irrigation

AI
USE: Artificial intelligence

AI accelerators
UF: AI chips
Arificial intelligence chips
BT: Artificial intelligence
Microprocessor chips
RT: Application specific integrated circuits
Coprocessors
Field programmable gate arrays
Graphics processing units
Learning (artificial intelligence)
Multiprocessing systems
Neural network hardware
Neural networks
Neuromorphic engineering
System-on-chip

AI chips
USE: AI accelerators

AIDS
USE: Acquired immune deficiency syndrome

Aids for the handicapped
USE: Assistive technology

AIEE Standards
BT: IEEE Standards

Air accidents
BT: Aerospace accidents
RT: Air safety
Air traffic control

Air bags
USE: Automotive components

Air cleaners
UF: Air filters
Air purifiers
BT: Machine components
RT: Air pollution
Cleaning
Purification

Air conditioning
BT: Cooling
RT: Building services
Buildings
Compressors
Ducts
Fans
HVAC
Ventilation
Vents
NT: Central air conditioning

Air filters
USE: Air cleaners

Air gaps
UF: Air-gap
BT: Electromagnetic analysis
RT: Electrodes
Spark gaps

Air interface
USE: Communication channels

Air pollutants
USE: Air pollution

Air pollution
UF:	Air pollutants
BT:	Air quality
	Pollution
RT:	Air cleaners
	Ash
	Atmospheric measurements
	Carbon footprint
	Carbon sequestration
	Exhaust gases
	Flue gases
	Fossil fuels
	Global warming
	Incineration
	Industrial pollution
	Meteorology
	Thermal pollution

Air purifiers
USE:	Air cleaners

Air quality
BT:	Atmosphere
RT:	Atmospheric measurements
	Environmental factors
NT:	Air pollution
	Indoor air quality

Air safety
BT:	Aerospace safety
RT:	Air accidents

Air traffic control
BT:	Aerospace control
RT:	Air accidents
	Air transportation
	Control systems
	Radio navigation

Air transportation
BT:	Transportation
RT:	Air traffic control
	Global Positioning System
NT:	Aircraft
	Airports

Air-gap
USE:	Air gaps

Airborne radar
BT:	Radar
RT:	Synthetic aperture radar

Aircraft
BT:	Air transportation
RT:	Aerospace control
	Aerospace electronics
	Aircraft manufacture
	Aircraft navigation
	Aircraft propulsion
	Ground support
	Military aircraft
	Propellers
NT:	Airplanes
	Helicopters

Aircraft control
USE:	Aerospace control

Aircraft electronics
USE:	Aerospace electronics

Aircraft engines
USE:	Aircraft propulsion

Aircraft instrumentation
USE:	Aerospace electronics

Aircraft manufacture
BT:	Aerospace and electronic systems
RT:	Aerospace industry
	Aerospace materials
	Aircraft

Aircraft materials
USE:	Aerospace materials

Aircraft navigation
UF:	Aerospace navigation
	Entry, descent and landing
BT:	Aerospace and electronic systems
	Navigation
RT:	Aircraft
	Course correction

Aircraft propulsion
UF:	Aircraft engines
BT:	Aerospace and electronic systems
	Propulsion
RT:	Aircraft
	Engines
	Jet engines
	Turbines
NT:	Propellers

2021 IEEE Thesaurus

Airfields
USE: Airports

Airfoils
USE: Automotive components

Airplanes
BT: Aircraft

Airports
UF: Airfields
BT: Air transportation

Al
USE: Aluminum

Al2O3
USE: Aluminum oxide

Alarm systems
UF: Warning systems
BT: Security
RT: Fall detection
Monitoring
Motion detection
Safety
Safety devices
NT: Smoke detectors

Alcoholic beverages
BT: Ethanol

Alcoholism
BT: Diseases

Alexa
USE: Virtual assistants

Algae
BT: Organisms

Algebra
BT: Mathematics
RT: Nonlinear equations
NT: Abstract algebra
Boolean algebra
Linear algebra
Set theory

Algorithm design and analysis
BT: Algorithms
NT: Algorithmic efficiency
Generative adversarial
networks

Algorithm design and theory
BT: Algorithms
NT: Backtracking
Consensus algorithm

Algorithmic efficiency
BT: Algorithm design and
analysis
RT: Computational complexity
Software performance
Software quality

Algorithms
UF: Subroutines
BT: Mathematics
RT: Biometrics (access control)
Ciphers
Cyclic redundancy check
Huffman coding
Linear programming
Maximum likelihood
decoding
Model checking
Numerical stability
Random processes
Software
Software libraries
Stability analysis
NT: Adaptive algorithms
Algorithm design and
analysis
Algorithm design and
theory
Approximation algorithms
Artificial bee colony
algorithm
Backpropagation algorithms
Basis algorithms
Change detection
algorithms
Classification algorithms
Clustering algorithms
Compression algorithms
Density estimation robust
algorithm
Detection algorithms
Distributed algorithms
Dynamic programming
Filtering algorithms
Genetic algorithms
Hash functions
Heuristic algorithms
Inference algorithms
MLFMA

Machine learning algorithms

Matching pursuit algorithms

Maximum likelihood detection

Multicast algorithms

Parallel algorithms

Partitioning algorithms

Prediction algorithms

Projection algorithms

Pursuit algorithms

Signal processing algorithms

Software algorithms

Viterbi algorithm

Whale optimization algorithms

All optical networks
    USE: All-optical networks

All-optical networks
    UF: All optical networks
    BT: Optical fiber networks

Allocation
    USE: Resource management

Alloying
    BT: Metals
    RT: Aluminum alloys
            Aluminum compounds
            Barium compounds
            Bismuth compounds
            Calcium
            Cobalt
            Cobalt alloys
            Copper alloys
            Gallium alloys
            Gallium compounds
            Germanium alloys
            Gold alloys
            Hafnium compounds
            Indium compounds
            Iron alloys
            Lithium
            Lithium compounds
            Neodymium alloys
            Nickel alloys
            Niobium alloys
            Platinum alloys
            Silicon alloys
            Strontium compounds
            Tin alloys
            Titanium alloys

            Yttrium compounds
    NT: Intermetallic
            Shape memory alloys

Alloys
    USE: Metals

Alpha particles
    BT: Nuclear physics
    RT: Ions

Alphavoltaic power sources
    USE: Radioactive materials

Alternating current generators
    USE: AC generators

Alternating current machines
    USE: AC machines

Alternating current motors
    USE: AC motors

Alternators
    BT: Electric machines
    RT: Synchronous generators

Altimetry
    BT: Pressure measurement
    RT: Atmospheric measurements

Aluminium
    USE: Aluminum

Aluminium alloys
    USE: Aluminum alloys

Aluminium compounds
    USE: Aluminum compounds

Aluminium industry
    USE: Metals industry

Aluminium oxide
    USE: Aluminum oxide

Aluminum
    UF: Al
            Aluminium
    BT: Chemical elements
            Metals
    NT: Aluminum alloys
            Aluminum compounds

Aluminum alloys
　　　　UF:　　　Aluminium alloys
　　　　BT:　　　Aluminum
　　　　RT:　　　Alloying

Aluminum compounds
　　　　UF:　　　Aluminium compounds
　　　　BT:　　　Aluminum
　　　　RT:　　　Alloying
　　　　NT:　　　Aluminum gallium nitride
　　　　　　　　Aluminum nitride
　　　　　　　　Aluminum oxide

Aluminum gallium nitride
　　　　BT:　　　Aluminum compounds
　　　　　　　　Gallium compounds
　　　　RT:　　　III-V semiconductor materials
　　　　　　　　Transistors

Aluminum industry
　　　　USE:　　　Metals industry

Aluminum nitride
　　　　BT:　　　Aluminum compounds

Aluminum oxide
　　　　UF:　　　Al2O3
　　　　　　　　Aluminium oxide
　　　　BT:　　　Aluminum compounds
　　　　RT:　　　Ceramics

Alzheimer's disease
　　　　BT:　　　Dementia
　　　　RT:　　　Gerontology
　　　　　　　　Hippocampus

Ambient assisted living
　　　　UF:　　　AAL
　　　　BT:　　　Assisted living
　　　　　　　　Information and communication technology
　　　　RT:　　　Aging
　　　　　　　　Assistive devices

Ambient intelligence
　　　　BT:　　　Consumer electronics
　　　　　　　　Telecommunications
　　　　RT:　　　Intelligent systems
　　　　　　　　Internet of Things
　　　　　　　　Ubiquitous computing
　　　　　　　　User interfaces

Ambient networks
　　　　UF:　　　AN Project
　　　　BT:　　　Mobile communication
　　　　RT:　　　3G mobile communication

Amblyopia
　　　　USE:　　　Vision defects

Ambulatory surgery
　　　　BT:　　　Surgery

American Express
　　　　USE:　　　Credit cards

American National Institute of Standads
　　　　USE:　　　ANSI

American Standards Association
　　　　USE:　　　ASA

Americium
　　　　BT:　　　Chemical elements

Amino acids
　　　　BT:　　　Biochemistry

AMLCDs
　　　　USE:　　　Active matrix liquid crystal displays

Ammeters
　　　　BT:　　　Electric variables measurement
　　　　RT:　　　Current measurement

Ammonia
　　　　BT:　　　Nitrogen compounds

Amniocentesis
　　　　BT:　　　Medical tests
　　　　RT:　　　Genetics
　　　　　　　　Ultrasonic imaging
　　　　NT:　　　Amniotic fluid
　　　　　　　　Birth disorders

Amniotic fluid
　　　　BT:　　　Amniocentesis
　　　　　　　　Fluids and secretions

AMOLEDs
　　　　USE:　　　Active matrix organic light emitting diodes

Amorphous magnetic materials
　　　　BT:　　　Magnetic materials

Amorphous materials

BT: Materials
NT: Diamond-like carbon
Glass

Amorphous semiconductors
BT: Semiconductor materials
RT: Silicon
Thin film devices

Amorphous silicon
BT: Silicon

Amperometric sensors
BT: Electrochemical devices
Gas detectors

Amplifiers
BT: Signal processing
RT: Frequency response
Klystrons
Optical fiber amplifiers
Rail to rail amplifiers
Rail to rail operation
NT: Broadband amplifiers
Differential amplifiers
Distributed amplifiers
Low-noise amplifiers
Operational amplifiers
Power amplifiers
Preamplifiers
Pulse amplifiers
Radiofrequency amplifiers
Resonators

Amplify-and-forward cooperative communication
USE: Cooperative communication

Amplitude estimation
BT: Parameter estimation
RT: Reflection coefficient

Amplitude modulation
BT: Modulation
RT: Demodulation
Intensity modulation
NT: Amplitude shift keying
Quadrature amplitude
modulation

Amplitude shift keying
UF: ASK
BT: Amplitude modulation

Amygdala
UF: Amygdalae

Corpus amygdaloideum
BT: Brain

Amygdalae
USE: Amygdala

AN Project
USE: Ambient networks

Anaesthesia
USE: Anesthesia

Analog circuits
BT: Circuits
RT: Microwave circuits
Millimeter wave circuits
Neuromorphics
Submillimeter wave circuits
Switched capacitor
networks
UHF circuits
VHF circuits
NT: Analog integrated circuits
Analog processing circuits

Analog CMOS integrated circuits
USE: CMOS analog integrated
circuits

Analog computers
UF: Analogue computers
BT: Computers
RT: Summing circuits

Analog digital integrated circuits
USE: Analog-digital integrated
circuits

Analog integrated circuits
UF: Analogue integrated circuits
Linear integrated circuits
BT: Analog circuits
Integrated circuits
RT: Analog processing circuits
MMICs
Microwave integrated
circuits
Millimeter wave integrated
circuits
Neural network hardware
Submillimeter wave
integrated circuits
UHF integrated circuits
NT: CMOS analog integrated
circuits

Field programmable analog arrays

Analog memory
BT: Memory
RT: Analog processing circuits

Analog processing circuits
BT: Analog circuits
RT: Analog integrated circuits
Analog memory
Application specific integrated circuits
Mixed analog-digital integrated circuits
Signal processing

Analog to digital conversion
USE: Analog-digital conversion

Analog to digital converter
USE: Analog-digital conversion

Analog TV
UF: Analogue TV
BT: TV

Analog-digital
USE: Analog-digital conversion

Analog-digital conversion
UF: A/D
A/D conversion
A/D converter
Analog to digital conversion
Analog to digital converter
Analog-digital
Analog-to-digital conversion
Analog-to-digital converter
Analogue-digital conversion
Analogue-digital converters
BT: Data conversion
RT: Data acquisition
Quantization (signal)
NT: Delta modulation

Analog-digital integrated circuits
UF: Analog digital integrated circuits
Analogue digital integrated circuits
Analogue-digital integrated circuits
Minimum analog-digital integrated circuits

BT: Integrated circuits
NT: Mixed analog-digital integrated circuits

Analog-to-digital conversion
USE: Analog-digital conversion

Analog-to-digital converter
USE: AC-DC power converters
AND
Analog-digital conversion

Analog-to-digital convertor
USE: AC-DC power converters

Analogue CMOS integrated circuits
USE: CMOS analog integrated circuits

Analogue computers
USE: Analog computers

Analogue digital integrated circuits
USE: Analog-digital integrated circuits

Analogue integrated circuits
USE: Analog integrated circuits

Analogue TV
USE: Analog TV

Analogue-digital conversion
USE: Analog-digital conversion

Analogue-digital converters
USE: Analog-digital conversion

Analogue-digital integrated circuits
USE: Analog-digital integrated circuits

Analysis of variance
UF: ANOVA
BT: Statistical analysis

Analytic hierarchy process
UF: Analytical hierarchy process
BT: Decision making
RT: Management
Strategic planning

Analytical hierarchy process
USE: Analytic hierarchy process

2021 IEEE Thesaurus

Analytical models
BT: Modeling
RT: Neuroinformatics
NT: Common Information Model (computing)

Anatomical structure
BT: Medical diagnostic imaging

Anatomy
BT: Biological systems
NT: Auditory system
Biological tissues
Body regions
Cardiovascular system
Circulatory system
Digestive system
Embryonic structures
Endocrine system
Fluids and secretions
Human anatomy
Immune system
Integumentary system
Lymphatic system
Musculoskeletal system
Nervous system
Neuroanatomy
Respiratory system
Sense organs
Stomatognathic system
Urogenital system

Android (operating system)
USE: Operating systems

Androids
BT: Robots
RT: Human factors
Man-machine systems

Anechoic chambers
BT: Test facilities
RT: Acoustic measurements
Antenna measurements
Electromagnetic measurements
Immunity testing
TEM cells

Anemometers
USE: Fluid flow measurement

Anesthesia
UF: Anaesthesia
BT: Medical treatment
NT: Anesthetic drugs

Anesthesiology
BT: Medical specialties

Anesthetic drugs
BT: Anesthesia

Aneurism
USE: Aneurysm

Aneurysm
UF: Aneurism
BT: Medical conditions

Angiocardiography
BT: Biomedical imaging
RT: Biomedical applications of radiation

Angiography
UF: Arteriography
BT: Biomedical imaging

Angioplasty
BT: Medical treatment

Angular velocity
BT: Mechanical variables measurement
RT: Velocity control
Velocity measurement

Angular velocity control
BT: Velocity control

Animal behavior
BT: Behavioral sciences

Animal structures
BT: Animals
NT: Beak
Feathers
Tail

Animals
BT: Organisms
Zoology
RT: Agriculture
Biological systems
Life sciences
NT: Animal structures
Birds
Bovine

Cats
Dinosaurs
Dogs
Horses
Insects
Marine animals
Mice
Rabbits
Rats
Rodents
Wildlife

Animation
UF: Computer animation
BT: Graphics
RT: Computer graphics
Visual effects
Visualization
NT: Facial animation

Animatronics
BT: Robotics and automation

Anisotropic
BT: Filters

Anisotropic conductive films
BT: Conductive films

Anisotropic diffusion
USE: Anisotropic
magnetoresistance

Anisotropic effects
USE: Anisotropic
magnetoresistance

Anisotropic magnetoresistance
UF: Anisotropic diffusion
Anisotropic effects
Anisotropic
magnetoresistance sensors
Anisotropic material
Anisotropic processing
Anisotropically
Anisotropy
BT: Magnetoresistance

Anisotropic magnetoresistance sensors
USE: Anisotropic
magnetoresistance

Anisotropic material
USE: Anisotropic
magnetoresistance

Anisotropic processing
USE: Anisotropic
magnetoresistance

Anisotropically
USE: Anisotropic
magnetoresistance

Anisotropy
USE: Anisotropic
magnetoresistance

Annealing
UF: Annealing temperature
BT: Heat treatment
Materials processing
RT: Simulated annealing
Softening
Thermal factors
NT: Rapid thermal annealing

Annealing temperature
USE: Annealing

Annotations
BT: Metadata
RT: Text analysis

Announcements
USE: IEEE news

Anodes
BT: Electrodes
RT: Electron tubes

Anomaly detection
UF: Outlier detection
BT: Data mining

ANOVA
USE: Analysis of variance

ANSI
UF: American National Institute
of Standads
BT: Standards organizations
RT: ASA

ANSI Standards
BT: Standards publications
RT: ASA Standards
IEEE Standards
ISO Standards
NT: National Electric Code

2021 IEEE Thesaurus

Ant colony optimization
	BT:	Probability
	RT:	Graph theory

Antarctica
	BT:	Geoscience
	NT:	South Pole

Antenna accessories
	UF:	Antenna components
	BT:	Antennas
	NT:	Radomes

Antenna arrays
	UF:	Distributed antennas
	BT:	Antennas
	RT:	Broadband antennas
		SIMO communication
		SISO communication
	NT:	Adaptive arrays
		Butler matrices
		Linear antenna arrays
		Log periodic antennas
		Microstrip antenna arrays
		Microwave antenna arrays
		Phased arrays
		Planar arrays

Antenna components
	USE:	Antenna accessories

Antenna diversity
	USE:	Spatial diversity

Antenna feeds
	BT:	Feeds
	RT:	Antennas
		Aperture coupled antennas

Antenna measurements
	BT:	Measurement
	RT:	Anechoic chambers
		Antennas
		Electromagnetic measurements

Antenna phased arrays
	USE:	Phased arrays

Antenna radiation patterns
	UF:	Radiation pattern
	BT:	Antennas
	RT:	Antenna theory
	NT:	Near-field radiation pattern

Antenna theory
	BT:	Antennas
	RT:	Antenna radiation patterns
		Current distribution
		Mode matching methods
	NT:	Frequency selective surfaces

Antennas
	BT:	Antennas and propagation
	RT:	Antenna feeds
		Antenna measurements
		Beam steering
		Butler matrices
		Fractals
		IEEE 802.11n Standard
		Microstrip antenna arrays
		Radio communication equipment
		Spatial diversity
		Waveguide theory
	NT:	Antenna accessories
		Antenna arrays
		Antenna radiation patterns
		Antenna theory
		Apertures
		Broadband antennas
		Dielectric resonator antennas
		Dipole antennas
		Directional antennas
		Directive antennas
		Feeds
		Fractal antennas
		Helical antennas
		Horn antennas
		Leaky wave antennas
		Loaded antennas
		Log-periodic dipole antennas
		Microstrip antennas
		Microwave antennas
		Mobile antennas
		Multifrequency antennas
		Omnidirectional antennas
		Patch antennas
		Radar antennas
		Receiving antennas
		Rectennas
		Reflector antennas
		Satellite antennas
		Slot antennas
		Steerable antennas
		Transmission line antennas

Transmitting antennas
UHF antennas
Yagi-Uda antennas

Antennas and propagation
 RT: Communication systems
  Communications technology
  Signal processing
 NT: Antennas
  Electromagnetic propagation
  Radio astronomy

Anthropometry
 BT: Measurement
 RT: Biomechanics
  Biomedical measurement
  Ergonomics
  Human factors

Anthropomorphism
 BT: Human factors

Anti freeze
 USE: Anti-freeze

Anti-bacterial
 USE: Antibacterial activity

Anti-biotics
 USE: Antibiotics

Anti-freeze
 UF: Anti freeze
  Antifreeze
 BT: Chemical compounds
 RT: Methanol

Anti-fungal
 UF: Antifungal
 BT: Antibiotics

Anti-parasitical
 UF: Antiparasitical
 BT: Antibiotics

Anti-reflective coatings
 USE: Antireflection coatings

Anti-virus software
 BT: Software
 RT: Computer viruses
  Countermeasures (computer)

Malware
Security

Antibacterial
 USE: Antibacterial activity

Antibacterial activity
 UF: Anti-bacterial
  Antibacterial
 BT: Antibiotics

Antibiotics
 UF: Anti-biotics
 BT: Drugs
 NT: Anti-fungal
  Anti-parasitical
  Antibacterial activity

Antidepressants
 BT: Drugs

Antiderivatives
 USE: Integral equations

Antiferroelectric materials
 USE: Dielectric materials

Antiferromagnetic materials
 BT: Magnetic materials
 RT: Antiferromagnetic resonance

Antiferromagnetic resonance
 BT: Magnetic resonance
 RT: Antiferromagnetic materials

Antifreeze
 USE: Anti-freeze

Antifreeze materials
 USE: Coolants

Antifungal
 USE: Anti-fungal

Antimony
 BT: Chemical elements

Antiparasitical
 USE: Anti-parasitical

Antireflection coatings
 UF: Anti-reflective coatings
  Antireflective coatings
 BT: Coatings

RT: Optical reflection

Antireflective coatings
 USE: Antireflection coatings

AODV
 UF: Ad hoc On Demand Distance Vector
 BT: Ad hoc networks
   Wireless networks

AOI
 USE: Information age

Apache hadoop
 USE: Cluster computing

Apache spark
 USE: Cluster computing

APCVD
 USE: Atmospheric pressure chemical vapor deposition

APDs
 USE: Avalanche photodiodes

Aperture antennas
 BT: Apertures
 RT: Aperture coupled antennas
   Reflector antennas

Aperture coupled antennas
 BT: Apertures
 RT: Antenna feeds
   Aperture antennas
   Microstrip antenna arrays
   Microstrip antennas

Apertures
 BT: Antennas
 RT: Couplers
 NT: Aperture antennas
   Aperture coupled antennas

Appearance matching
 USE: Image matching

Appliances
 USE: Home appliances

Application programming interfaces
 UF: Mobile application development
 BT: Computer interfaces

RT: Software defined networking
NT: Restful API
   WebRTC

Application security
 BT: Computer security

Application software
 BT: Software

Application specific integrated circuits
 UF: ASIC
   Custom integrated circuits
   Semicustom integrated circuits
 BT: Circuits
   Integrated circuits
 RT: AI accelerators
   Analog processing circuits
   CMOS logic circuits
   Field programmable analog arrays
 NT: System-on-chip

Application specific processors
 BT: Program processors

Application virtualization
 UF: Cross platform virtualization
   Cross-platform virtualization
 BT: Computer applications
 RT: Emulation
   Network function virtualization
   Simulation
 NT: Edge computing

Applicators
 BT: Production equipment
 RT: Agricultural machinery
   Labeling

Appraisal
 BT: Human resource management
 RT: Incentive schemes
   Personnel

Appropriate technology
 BT: Technology
 RT: Microhydro power
   Picohydro power

Approximate computing

BT: Computers and information processing

Approximation algorithms
BT: Algorithms

Approximation error
BT: Approximation methods

Approximation methods
UF: Approximation theory
BT: Numerical analysis
RT: Least squares approximations
Minimization methods
Signal representation
NT: Approximation error
Chebyshev approximation
Curve fitting
Extrapolation
Function approximation
Interpolation
Linear approximation
Mean square error methods
Perturbation methods

Approximation theory
USE: Approximation methods

Aquaculture
UF: Fisheries
BT: Agriculture
RT: Marine animals

Aquatic robots
UF: Swimming robots
BT: Robots

Aquatic vehicles
USE: Underwater vehicles

Ar
USE: Argon

Arc discharges
UF: Arc flash
Arc-flash
BT: Dielectric breakdown
RT: Electrostatic discharges
High intensity discharge lamps
Light sources
Plasmas

Arc flash

USE: Arc discharges

Arc lamps
USE: Lighting

Arc-flash
USE: Arc discharges

Archaea
BT: Organisms

Architectural description languages
USE: Architecture description languages

Architecture
BT: Industries
RT: Building information management
Buildings
Structural engineering

Architecture (computer)
USE: Computer architecture

Architecture description languages
UF: Architectural description languages
BT: Computer languages

Arctic
BT: Geoscience
NT: North Pole

Area measurement
BT: Measurement
RT: Size measurement

Argon
UF: Ar
BT: Gases

Arificial intelligence chips
USE: AI accelerators

Arithmetic
BT: Mathematics
NT: Digital arithmetic
Fixed-point arithmetic
Floating-point arithmetic

Armature
BT: Electromechanical devices

Armpit

USE: Axilla

Arms
BT: Extremities
NT: Wrist

Arms (robotic)
USE: Manipulators

ARPANET
UF: Advanced Research Projects Agency Network
DARPANET
BT: Communication systems
RT: Internet
Packet switching

ARQ
USE: Automatic repeat request

Array
USE: Arrays

Array processing
USE: Arrays AND
Parallel processing

Array signal processing
UF: Beamforming
BT: Signal processing
RT: Acoustic arrays
Acoustic transducers
Adaptive arrays
Blind source separation
Direction-of-arrival estimation
Signal resolution
Source separation
Time of arrival estimation

Arrayed waveguide gratings
UF: AWG device
BT: Optical waveguides
RT: Demultiplexing
Integrated optics
Multiplexing

Arrays
UF: Array
Array processing
BT: Data structures
NT: Sensor arrays

Arresters
BT: Surge protection

RT: Power system protection
Power system transients
Varistors

Arsenic
BT: Chemical elements
NT: Arsenic compounds

Arsenic compounds
UF: Arsenite
Arsine
BT: Arsenic

Arsenite
USE: Arsenic compounds

Arsine
USE: Arsenic compounds

Art
BT: Graphics
RT: Computer graphics
Layout
Photorealism
NT: Digital art
Fractal art

Arterial blood circulation
BT: Arteries

Arterial blood pressure
BT: Arteries

Arterial occlusion
BT: Arteries

Arterial pressure
USE: Blood pressure

Arterial wall structures
USE: Arteries

Arterial walls
USE: Arteries

Arteries
UF: Arterial wall structures
Arterial walls
Artery
BT: Blood vessels
NT: Arterial blood circulation
Arterial blood pressure
Arterial occlusion
Carotid arteries

2021 IEEE Thesaurus

Arteriography
    USE: Angiography

Arteriosclerosis
    BT: Diseases
    NT: Atherosclerosis
             Coronary arteriosclerosis

Artery
    USE: Arteries

Arthritis
    BT: Diseases

Artificial bee colony algorithm
    UF: ABC algorithms
    BT: Algorithms
    RT: Cooperative systems
             Optimization
             Particle swarm optimization
             Search problems

Artificial biological organs
    UF: Artificial organs
    BT: Prosthetics
    RT: Biological systems
    NT: Artificial heart
             Artificial limbs

Artificial fibers
    USE: Synthetic fibers

Artificial fibres
    USE: Synthetic fibers

Artificial heart
    BT: Artificial biological organs

Artificial immune systems
    BT: Immune system

Artificial intelligence
    UF: AI
    BT: Computational and artificial intelligence
    RT: Autonomous automobiles
             Autonomous vehicles
             Computational intelligence
             Data mining
             Feedforward neural networks
             Generative adversarial networks
             Independent component analysis

             Machine ethics
             Minimax techniques
             Natural languages
             Neural networks
             Neurocontrollers
             Pervasive computing
             Posthuman
             Prediction theory
             Radial basis function networks
             Robot learning
             Semantic Web
             Software agents
             Support vector machines
             Synapses
    NT: AI accelerators
             Affective computing
             Autonomous robots
             Bio-inspired computing
             Cognitive systems
             Context awareness
             Cooperative systems
             Decision support systems
             Intelligent systems
             Knowledge based systems
             Knowledge engineering
             Learning (artificial intelligence)
             Learning systems
             Machine learning
             Prediction methods
             Virtual artifact

Artificial limbs
    BT: Artificial biological organs
             Prosthetics

Artificial neural networks
    BT: Neural networks
    RT: Mathematical model
             Neuromorphic engineering
             Synapses
    NT: Convolutional neural networks
             Hebbian theory
             Long short term memory
             Residual neural networks
             Self-organizing feature maps

Artificial organs
    USE: Artificial biological organs

Artificial satellites
    BT: Aerospace engineering

RT: Satellite communication
Satellites
Space technology
Space vehicles
NT: Earth Observing System
Low earth orbit satellites
Military satellites
Space stations

ASA
UF: American Standards Association
BT: Standards organizations
RT: ANSI

ASA Standards
BT: Standards publications
RT: ANSI Standards

Ash
BT: Industrial waste
RT: Air pollution
Exhaust gases
Incineration
Volcanic ash
NT: Fly ash

Asia
BT: Continents

ASIC
USE: Application specific integrated circuits

ASK
USE: Amplitude shift keying

Ask IEEE
BT: Document delivery
Information services

Asphalt
UF: Bitumen
BT: Building materials

Asphyxia
BT: Death

Aspirin
BT: Drugs

ASR
USE: Automatic speech recognition

Assemblers (program)
USE: Program processors

Assembly
BT: Manufacturing
RT: Assembly systems
Manipulators
Manufacturing automation
NT: Fitting
Microassembly
Preforms
Soldering

Assembly robots
USE: Robotic assembly

Assembly systems
BT: Industrial electronics
Manufacturing
Production systems
RT: Assembly
Fitting
Industrial control
Manipulators
Manufacturing automation
Mobile robots
Robots
NT: Flexible electronics
Robotic assembly

Asset management
UF: Asset-management
BT: Management
NT: Public infrastructure

Asset-management
USE: Asset management

Assisted living
BT: Medical services
RT: Aging
Fall detection
Geriatrics
Senior citizens
NT: Ambient assisted living

Assistive devices
BT: Assistive technology
RT: Ambient assisted living

Assistive robotics
USE: Rehabilitation robotics

Assistive technologies
BT: Fall detection

2021 IEEE Thesaurus

Assistive technology
- UF: Aids for the handicapped
  - Handicapped aids
- BT: Biomedical equipment
- RT: Communication aids
  - Gaze tracking
  - Gerontechnology
  - Medical control systems
  - Orthotics
  - Prosthetics
  - Rehabilitation robotics
  - Sensory aids
  - Sign language
  - Wearable robots
- NT: Assistive devices
  - Closed captioning
  - Video description
  - Wheelchairs

Association rules
- BT: Data mining

Associative memory
- UF: Content addressable memory
- BT: Memory
- RT: Neural networks

Associative processing
- BT: Data processing
- RT: Computers and information processing

Astatine
- BT: Chemical elements

Asthma
- USE: Respiratory system

Astrochemistry
- UF: Planetary chemistry
- BT: Chemistry

Astronomy
- BT: Science - general
- RT: Extraterrestrial measurements
  - Gamma-ray detectors
  - Telescopes
- NT: Astrophysics
  - Extrasolar planets
  - Gravitational waves
  - Observatories
  - Radio astronomy

Solar system

Astrophysics
- BT: Astronomy
  - Physics
- RT: Gravity measurement
- NT: Dark matter
  - Orbits
  - Stellar dynamics

Asymptotic stability
- BT: System analysis and design
- RT: Discrete-time systems
  - Eigenvalues and eigenfunctions
  - Stability

Asynchronous circuits
- BT: Circuits

Asynchronous communication
- BT: Data communication
- RT: Web services

Asynchronous transfer mode
- BT: Data communication
  - Protocols
- RT: B-ISDN
  - Broadband communication
  - ISDN
  - Multiprotocol label switching
  - SONET

Atherosclerosis
- BT: Arteriosclerosis

Atmosphere
- BT: Geoscience
- RT: Atmospheric measurements
  - Meteorology
- NT: Air quality
  - Atmospheric modeling
  - Atmospheric waves

Atmospheric measurements
- BT: Measurement
- RT: Air pollution
  - Air quality
  - Altimetry
  - Atmosphere
  - Geophysical measurements
  - Global warming
  - Meteorology

Pressure gauges
Remote sensing
Terrestrial atmosphere

Atmospheric modeling
BT: Atmosphere
        Modeling

Atmospheric pressure chemical vapor deposition
UF: APCVD
BT: Chemical vapor deposition

Atmospheric sintering
USE: Materials preparation

Atmospheric waves
BT: Atmosphere
        Waves

Atmospheric-pressure plasmas
BT: Plasmas

Atom lasers
UF: Single atom lasers
BT: Lasers
RT: Atom optics
        Atomic beams
        Gas lasers

Atom optics
UF: Atomic optics
BT: Particle beam optics
RT: Atom lasers
        Atomic beams

Atomic batteries
UF: Nuclear batteries
        Tritium batteries
BT: Energy conversion
        Nuclear power generation
NT: Radioisotope thermoelectric generators

Atomic beams
BT: Particle beams
RT: Atom lasers
        Atom optics

Atomic clocks
UF: Atomic frequency standards
BT: Clocks
RT: Frequency measurement
        International Atomic Time
        Masers

Atomic energy
USE: Nuclear power generation

Atomic force microscopy
BT: Microscopy
RT: Casimir effect
        Magnetic force microscopy
        Nanotechnology
        Scanning microwave microscopy

Atomic frequency standards
USE: Atomic clocks

Atomic lasers
USE: Gas lasers

Atomic layer deposition
BT: Chemical vapor deposition

Atomic measurements
BT: Measurement
RT: Nuclear measurements
        Radiation detectors
        Spectroscopy

Atomic optics
USE: Atom optics

ATPG
USE: Automatic test pattern generation

Atrial fibrillation
BT: Fibrillation

Atrophy
BT: Medical conditions

Attenuation
UF: Acoustic wave attenuation
        Electromagnetic wave attenuation
        Light attenuation
BT: Propagation
RT: Attenuation measurement
        Attenuators
        Diagnostic radiography
        Insertion loss

Attenuation measurement
BT: Electric variables measurement
RT: Attenuation

Loss measurement

Attenuators
- BT: Signal processing
- RT: Attenuation
- NT: Optical attenuators

Attitude control
- BT: Aerospace control
- RT: Position control

Attitude determination
- USE: Position measurement

ATV
- USE: HDTV

Au
- USE: Gold

Audible noise
- USE: Acoustic noise

Audio coding
- BT: Encoding
  Information theory
- RT: MPEG 7 Standard
  Rate distortion theory
  Speech coding

Audio compression
- BT: Data compression

Audio databases
- BT: Database systems
- RT: File systems
  Multimedia databases

Audio enhancement
- USE: Acoustic signal processing
AND
  Noise reduction

Audio recording
- BT: Recording

Audio restoration
- USE: Acoustic noise

Audio systems
- UF: Phonographs
  Sound systems
  Stereophonic systems
- BT: Consumer electronics
- RT: Digital audio broadcasting

Music
- NT: 3D audio
  Audio tapes
  Audio-visual systems
  Auditory displays
  Headphones
  Immersive audio
  Loudspeakers
  Microphones
  Pitch control (audio)
  Portable media players
  Sonification
  Video description

Audio tapes
- BT: Audio systems

Audio user interfaces
- UF: Auditory icons
- BT: User interfaces
- RT: Multimedia computing

Audio visual systems
- USE: Audio-visual systems

Audio watermarking
- USE: Watermarking

Audio-visual instructional aids
- USE: Educational technology

Audio-visual systems
- UF: Audio visual systems
  Audiovisual systems
- BT: Audio systems
- RT: Educational technology

Audiovisual systems
- USE: Audio-visual systems

Auditory displays
- BT: Audio systems
  Communication equipment
- RT: Aerospace and electronic systems
  Communication aids

Auditory icons
- USE: Audio user interfaces

Auditory implants
- UF: Auditory midbrain implants
- BT: Implants

Auditory midbrain implants

2021 IEEE Thesaurus

USE: Auditory implants

Auditory system
UF: Hearing
BT: Anatomy
RT: Biomedical acoustics
Chatbot
Head
Hearing aids
Psychoacoustics
NT: Psychoacoustic models

Augmented reality
BT: Programming
Virtual reality
RT: Digital representation
Digital transformation
Digital twin
Extended reality
Mixed reality
Network slicing
NT: 3D audio
Immersive audio
Immersive experience
Spatial augmented reality
X reality

Augmented virtuality
BT: Virtual reality

Austenite
UF: Gamma phase iron
BT: Iron alloys
RT: Materials science and technology
Smart materials

Australia
BT: Continents

Authentication
BT: Computer security
RT: Blockchain
CAPTCHAs
Image processing
Interactive systems
Password
Video signal processing
NT: Multi-factor authentication

Authoring systems
UF: Authoring tools
BT: Software tools
RT: Computer aided instruction
Courseware

Multimedia systems
Web design

Authoring tools
USE: Authoring systems

Authorisation
USE: Authorization

Authorization
UF: Authorisation
BT: Access control
RT: Privacy

Autism
BT: Medical conditions

Auto-pilot
USE: Autopilot

Autobiographies
UF: Memoirs
BT: Biographies

Autocorrelation
BT: Correlation
RT: Signal analysis
Time series analysis

Automata
UF: Finite state machines
BT: Robots
RT: Cognitive systems
Cybernetics
Intelligent systems
NT: Turing machines

Automated guided vehicles
USE: Autonomous vehicles

Automated highways
BT: Automation
Intelligent transportation systems
RT: Road safety
Smart transportation

Automated indexing
USE: Machine assisted indexing

Automated meter reading
USE: Automatic meter reading

Automated storage and retrieval systems
USE: Storage automation

Automatic control
BT: Control systems
NT: Power generation control

Automatic frequency control
BT: Frequency control

Automatic gain control
USE: Gain control

Automatic generation control
BT: Automation
Control systems
Power generation

Automatic indexing
USE: Machine assisted indexing

Automatic logic units
BT: Microprocessors

Automatic meter reading
UF: Automated meter reading
BT: Meter reading
RT: Flowmeters
Smart meters

Automatic optical inspection
BT: Inspection
RT: Machine vision
Manufacturing automation
Pattern recognition

Automatic pilot
USE: Autopilot

Automatic programming
UF: Program generators
BT: Programming

Automatic protection switching
USE: Protection switching

Automatic repeat request
UF: ARQ
BT: Feedback communications

Automatic speech recognition
UF: ASR
BT: Speech recognition

Automatic test equipment
BT: Test equipment
RT: Automatic testing

Automatic Test Markup Language
USE: XML

Automatic test pattern generation
UF: ATPG
BT: Automatic testing
RT: Design automation
NT: Test pattern generators

Automatic testing
UF: Self testing
BT: Automation
Testing
RT: Automatic test equipment
Maintenance engineering
NT: Automatic test pattern generation
Ring generators

Automatic voltage control
UF: AVC
BT: Voltage control
RT: Voltage
Voltage measurement

Automation
BT: Robotics and automation
RT: Bagging
Biometrics (access control)
Flash memories
Home automation
Information technology
Substation automation
Zigbee
NT: Automated highways
Automatic generation control
Automatic testing
Building automation
Manufacturing automation
Office automation
Storage automation
Vehicular automation

Automobile engineering
USE: Automotive engineering

Automobile manufacture
BT: Manufacturing systems
RT: Automobiles
Automotive components
Automotive engineering
Automotive materials
Die casting

Engines
Tires
Wheels

Automobile materials
USE: Automotive materials

Automobile parts
USE: Automotive components

Automobiles
UF: Cars
BT: Road vehicles
RT: Automobile manufacture
Automotive components
Automotive engineering
Automotive materials

Automotive
USE: Automotive engineering

Automotive applications
BT: Automotive engineering

Automotive components
UF: Air bags
Airfoils
Automobile parts
Radiators (automotive)
Starter motors (automotive)
Windscreen wipers
Windscreens
Windshield wipers
Windshields
BT: Mechanical products
RT: Automobile manufacture
Automobiles
Automotive engineering
Axles
Belts
Brakes
Camshafts
Gears
Hoses
Internal combustion engines
Shock absorbers
Steering systems
Suspensions (mechanical systems)
Tires
Torque converters
Water pumps
Wheels

Automotive electronics
BT: Automotive engineering

Automotive engineering
UF: Automobile engineering
Automotive
BT: Vehicular and wireless technologies
RT: Automobile manufacture
Automobiles
Automotive components
Diesel engines
Road safety
Wheels
NT: Automotive applications
Automotive electronics
Power steering
Vehicle crash testing
Vehicle detection
Vehicle driving
Vehicle dynamics
Vehicle safety

Automotive materials
UF: Automobile materials
BT: Production materials
RT: Automobile manufacture
Automobiles

Autonomic nervous system
BT: Nervous system
NT: Parasympathetic nervous system
Sympathetic nervous system

Autonomic systems
BT: Network operating systems

Autonomous aerial vehicles
BT: Unmanned autonomous vehicles

Autonomous agents
BT: Software agents

Autonomous automobiles
UF: Autonomous cars
Driver free automobiles
Driver free cars
Driver-free car
Driverless automobiles
Driverless cars
Robot automobiles
Robot cars

Self-driving automobiles
Self-driving car
BT: Intelligent transportation systems
Mobile robots
RT: Artificial intelligence

Autonomous cars
USE: Autonomous automobiles
AND
Autonomous vehicles

Autonomous driving
USE: Autonomous vehicles

Autonomous mental development
BT: Computational and artificial intelligence

Autonomous navigation
USE: Autonomous robots

Autonomous robots
UF: Autonomous navigation
BT: Artificial intelligence
Autonomous systems
Robots
RT: Cognitive robotics
Intelligent robots

Autonomous systems
BT: Intelligent systems
Robotics and automation
NT: Autonomous robots
Autonomous vehicles

Autonomous trucks
USE: Autonomous vehicles

Autonomous underwater vehicles
UF: Underwater autonomous vehicles
BT: Unmanned autonomous vehicles
RT: Marine robots

Autonomous vehicles
UF: Automated guided vehicles
Autonomous cars
Autonomous driving
Autonomous trucks
Unmanned autonomous vehicle
BT: Autonomous systems
Intelligent vehicles

RT: Artificial intelligence
Mechatronics
Multi-agent systems
Vehicular automation
NT: Unmanned autonomous vehicles

Autopilot
UF: Auto-pilot
Automatic pilot
BT: Control systems

Autopsy
BT: Medical diagnosis
RT: Pathology

Autoregressive moving average models
USE: Autoregressive processes

Autoregressive processes
UF: Autoregressive moving average models
Box Jenkins models
BT: Statistics
RT: Noise
Time series analysis

Auxetic materials
UF: Auxetics
BT: Materials

Auxetics
USE: Auxetic materials

Auxiliary transmitters
BT: Transmitters

Availability
UF: System availability
BT: Reliability
RT: Maintenance engineering

Avalanche breakdown
BT: Electric breakdown

Avalanche photodiodes
UF: APDs
BT: Photodiodes
RT: Optical fiber communication
Photomultipliers
NT: Single-photon avalanche diodes

Avatars
BT: Graphical user interfaces

Virtual reality

AVC
USE: Automatic voltage control

Avionics
USE: Aerospace electronics

Awards
BT: IEEE indexing
RT: IEEE Awards activities

AWG device
USE: Arrayed waveguide gratings

AWGN
BT: Additive noise
Gaussian noise
White noise

AWGN channels
BT: Gaussian channels
RT: Intersymbol interference
White noise

Axilla
UF: Armpit
Underarm
BT: Shoulder

Axles
BT: Mechanical products
RT: Automotive components
Wheels

Axons
BT: Nerve fibers
RT: Action potentials
Myelin
White matter

Azimuth
BT: Mathematics
NT: Azimuthal angle
Azimuthal component
Azimuthal current
Azimuthal harmonics
Azimuthal plane

Azimuthal angle
BT: Azimuth

Azimuthal component
BT: Azimuth

Azimuthal current
BT: Azimuth

Azimuthal harmonics
BT: Azimuth

Azimuthal plane
BT: Azimuth

Azobenzene
BT: Polymers
RT: Smart materials

B-ISDN
UF: Broadband ISDN
BT: Broadband communication
ISDN
RT: Asynchronous transfer
mode

Data communication
Frame relay
Image communication
Multimedia communication

B-Spline
USE: Splines (mathematics)

Ba
USE: Barium

Babies
USE: Pediatrics

Baby
USE: Pediatrics

Back
BT: Body regions

Back propagation
USE: Backpropagation

Background noise
BT: Acoustic noise

Backplanes
BT: Data buses

Backpropagation
UF: Back propagation
Backward propagation
Backwards propagation of
errors
BT: Learning systems
RT: Backpropagation algorithms

Neural networks

Backpropagation algorithms
BT: Algorithms
RT: Backpropagation

Backscatter
BT: Reflection
RT: Meteorological radar

Backscattering
USE: Scattering

Backstepping
BT: Control nonlinearities

Backtracking
BT: Algorithm design and theory

Backward propagation
USE: Backpropagation

Backwards propagation of errors
USE: Backpropagation

Bacteria
USE: Microorganisms

Bacterial content
USE: Microorganisms

Bacterial infections
BT: Diseases

Bagging
BT: Packaging
RT: Automation
Packaging machines
Plastic packaging

Baidu
USE: Web and internet services

Ball bearings
BT: Machinery
RT: Mechanical bearings
Metal products
Rolling bearings

Ball grid arrays
USE: Electronics packaging

Ball milling
BT: Production

RT: Milling machines

Ball screws
USE: Mechanical products

Ballasts
USE: Electronic ballasts

Ballistic magnetoresistance
BT: Magnetoresistance

Ballistic transport
BT: Electron emission
NT: Electronic ballasts

Baluns
BT: Electromagnetic devices
Impedance matching
Microwave technology
Transformers
RT: Transmission lines

Bamboo
BT: Natural fibers
Plants (biology)

Band gap
USE: Photonic band gap

Band pass filters
USE: Band-pass filters

Band-gap
USE: Photonic band gap

Band-pass filters
UF: BPF
Band pass filters
Bandpass filters
BT: Active filters
RT: Frequency
Signal processing
NT: Filter banks

Band-stop filters
USE: Notch filters

Bandgap
USE: Photonic band gap

Bandpass filters
USE: Band-pass filters

Bandwidth
BT: Frequency

RT: Admission control
Coherence time
Computer network management
Direct sequence spread spectrum communication
Information theory
Radio communication
Signal processing
Spectral efficiency
Spectroscopy
NT: Narrowband
Wideband

Bandwidth allocation
USE: Channel allocation

Bandwidth efficiency
USE: Spectral efficiency

Bang bang control
USE: Bang-bang control

Bang-bang control
UF: Bang bang control
BT: Optimal control
RT: Time factors

Banking
BT: Financial industry
RT: Finance
NT: Online banking

Bankruptcy
BT: Finance
RT: Business
Commercial law
Economics

Bar codes
UF: QR codes
BT: Optical detectors
Product codes
RT: Internet of Things
Inventory management

Barges
USE: Boats

Barium
UF: Ba
BT: Metals
NT: Barium compounds

Barium compounds

BT: Barium
RT: Alloying
Yttrium barium copper oxide

Baroreceptor reflex
USE: Baroreflex

Baroreflex
UF: Baroreceptor reflex
BT: Cardiovascular system

Bars
BT: Structural shapes
NT: Billets

Basal cell carcinoma
USE: Skin cancer

Basal ganglia
BT: Brain

Base stations
BT: Radio communication equipment
RT: Device-to-device communication
Femtocell networks
NT: Femtocells

Baseball
USE: Sports

Baseband
BT: Digital communication
Radio communication
RT: Passband

Basis algorithms
BT: Algorithms

Batch manufacturing
USE: Batch production systems

Batch processing
USE: Batch production systems

Batch production systems
UF: Batch manufacturing
Batch processing
BT: Manufacturing systems

Bathymetry
BT: Measurement
Sea floor

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Batteries
UF: Flow batteries
Secondary cells
Storage batteries
Storage battery
BT: Electrochemical devices
Energy conversion
Energy storage
RT: Battery charge measurement
Battery chargers
Emergency power supplies
Lithium
Lithium compounds
Power generation
Uninterruptible power systems
NT: Lead acid batteries
Lithium batteries
Lithium-ion batteries
Lithium-sulfur batteries
Nickel cadmium batteries
Solid state batteries

Battery charge measurement
BT: Charge measurement
RT: Batteries
Battery chargers
Battery powered vehicles

Battery chargers
UF: Charging devices
Device chargers
BT: Power supplies
RT: Batteries
Battery charge measurement
Charging stations
NT: Electric vehicle charging
State of charge

Battery management systems
BT: Electrochemical devices

Battery powered vehicles
BT: Electric vehicles
RT: Battery charge measurement
Charging stations
Energy storage
Hybrid electric vehicles
Solar powered vehicles
Traction motors
Vehicle-to-grid

Bayes methods
UF: Bayesian approach
Bayesian belief networks
Bayesian estimation
Bayesian inference
Bayesian learning
Bayesian methods
Bayesian networks
BT: Probability
RT: Belief propagation
Relevance vector machines
NT: Naive Bayes methods
Recursive estimation

Bayesian approach
USE: Bayes methods

Bayesian belief networks
USE: Bayes methods

Bayesian estimation
USE: Bayes methods

Bayesian inference
USE: Bayes methods

Bayesian learning
USE: Bayes methods

Bayesian methods
USE: Bayes methods

Bayesian networks
USE: Bayes methods

BCI
USE: Brain-computer interfaces

Beak
BT: Animal structures
RT: Birds

Beam steering
BT: Microwave technology
RT: Antennas
NT: Steerable antennas

Beamforming
USE: Array signal processing

Beams
UF: Electromagnetic beams
BT: Physics
NT: Acoustic beams

Laser beams
Molecular beams
Optical beams
Particle beams

Bean model
UF: Pry and Bean model
BT: Superconductivity

Bearing estimation
USE: Direction-of-arrival estimation

Behavioral sciences
BT: Social sciences
Systems, man, and cybernetics
RT: Affective computing
Bio-inspired computing
Cyberethics
Digital intelligence
Emotion recognition
Ergonomics
Human factors
Medical services
Mental health
Persuasive systems
Social computing
System dynamics
NT: Animal behavior
Cognition
Consumer behavior
Psychiatry
Psychology
Social intelligence

Belief functions
USE: Evidence theory

Belief propagation
UF: Sum product message passing
BT: Inference mechanisms
RT: Bayes methods
Evidence theory
Graph theory
Iterative methods
Markov processes
Message passing
Probability

Bellows
BT: Mechanical products
RT: Pistons
Pneumatic systems

Pumps
Vacuum systems

Belts
UF: Cambelts
Seat belts
BT: Machine components
Machinery
RT: Automotive components
Camshafts
Fasteners

Bench to bedside
USE: Translational research

Benchmark problems
USE: Benchmark testing

Benchmark tasks
USE: Benchmark testing

Benchmark testing
UF: Benchmark problems
Benchmark tasks
Benchmarking
BT: Testing
RT: Performance evaluation

Benchmarking
USE: Benchmark testing

Bending
BT: Mechanical factors

Benign masses
USE: Benign tumors

Benign tumors
UF: Benign masses
BT: Tumors

BER
USE: Bit error rate

BER analysis
USE: Bit error rate

BER performance
USE: Bit error rate

Berkelium
BT: Chemical elements

Berry phase
BT: Waves

BERT
    USE: Bit error rate

Beryllium
    BT: Chemical elements

Bespoke production
    USE: Job production systems

Best practices
    BT: Management
            Quality assurance
    RT: Business communication
            Enterprise architecture
management

Beta rays
    BT: Nuclear physics
    RT: Electrons

Betavoltaic power sources
    USE: Radioactive materials

Bevel gears
    USE: Gears

Beverage industry
    BT: Industries
    RT: Bottling
            Food industry

Beyond CMOS
    BT: Integrated circuit
technology

BI
    USE: Business intelligence

Bi
    USE: Bismuth

Bi-stable circuits
    USE: Bistable circuits

Bibliographies
    BT: Writing
    RT: Publishing

Bibliometrics
    BT: Publishing
    NT: Citation analysis

BiCMOS integrated circuits
    UF: BiMOS integrated circuits

    BT: Bipolar transistor circuits

Bicycles
    BT: Land vehicles
    RT: Sports equipment

Bidirectional communication
    USE: Bidirectional control

Bidirectional control
    UF: Bidirectional
communication
            Bidirectional reflectance
    BT: Control systems

Bidirectional power flow
    BT: Power system control

Bidirectional reflectance
    USE: Bidirectional control

Bifurcation
    BT: Nonlinear equations
    RT: Chaos

Big Data
    BT: Data collection
    RT: Data handling
            Data mining
            Data storage systems
            Information management
            Information processing
            Information retrieval
            Linked data
            Neuroinformatics
            NoSQL databases
    NT: Big Data applications

Big Data applications
    BT: Big Data
            Computer applications
    RT: Cloud computing
            Data analysis
            Data systems
            Information analysis
            Information systems

Bilinear systems
    USE: Nonlinear systems

Billets
    BT: Bars

Bills of materials
    BT: Inventory management

Materials requirements planning

BIM
USE: Building information management

BiMOS integrated circuits
USE: BiCMOS integrated circuits

Binary codes
BT: Codes
NT: Reflective binary codes

Binary decision diagrams
BT: Data structures

Binary phase shift keying
UF: BPSK
Binary phase-shift keying
BT: Phase shift keying

Binary phase-shift keying
USE: Binary phase shift keying

Binary search trees
BT: Binary trees

Binary sequences
BT: Sequences

Binary trees
BT: Tree data structures
NT: Binary search trees

Bio-computing
USE: Bio-inspired computing

Bio-inspired computing
UF: Bio-computing
Biocomputing
Bioinspired computing
Biologically inspired computing
BT: Artificial intelligence
Bio-inspired engineering
RT: Behavioral sciences
Biology
Machine learning
Mathematics
Neural networks
Social factors

Bio-inspired control
UF: Biologically inspired control

BT: Bio-inspired engineering

Bio-inspired engineering
UF: Biologically inspired engineering
BT: Engineering - general
RT: Biology
Biomimetics
Complex systems
NT: Bio-inspired computing
Bio-inspired control
Bio-inspired robotics

Bio-inspired robotics
UF: bioinspired robotics
BT: Bio-inspired engineering
Robots

Bio-MEMs
USE: Biomedical microelectromechanical systems

Bio-nanotechnology
USE: Bionanotechnology

Bioacoustics
USE: Biomedical acoustics

Bioceramics
BT: Biological materials
Biomedical materials
Ceramics
RT: Ceramics industry
Prosthetics

Biochemical analysis
BT: Biochemistry
RT: Biochips

Biochemistry
UF: Enzymes
Hormones
Metabolic networks
Metabolism
BT: Biology
Chemistry
RT: Biological cells
Bioreactors
Cell signaling
Computational biochemistry
Drugs
Entomology
Molecular biophysics
Pharmaceutical technology
Pharmaceuticals

NT: Amino acids
Biochemical analysis
Peptides
Proteins
Receptor (biochemistry)

Biochips
BT: Molecular biology
RT: Biochemical analysis
Microfluidics
NT: Digital microfluidic biochips

Biocomputing
USE: Bio-inspired computing

Biocontrol
USE: Biological control systems

Biocybernetics
USE: Cybernetics

Biodegradable materials
BT: Biodegradation

Biodegradation
BT: Environmental management
RT: Waste management
NT: Biodegradable materials

Biodiversity
BT: Biology
NT: Biogeography

Bioelectric phenomena
UF: Bioelectronics
Electrobiology
BT: Biology
RT: Brain
Electrical accidents
Electroencephalography
Electromyography
Electrooculography
Nervous system
NT: Electric shock

Bioelectric potentials
USE: Action potentials

Bioelectronics
USE: Bioelectric phenomena

Bioengineering
USE: Biomedical engineering

Biofeedback
USE: Biological control systems

Biofuels
BT: Fuels
RT: Food waste

Biogeography
BT: Biodiversity

Biographies
BT: Writing
RT: Engineering profession
NT: Autobiographies

Biohazards
UF: Germ warfare
BT: Hazards
RT: Chemical hazards
Green products
Medical treatment
Terrorism

Bioimpedance
BT: Biomedical engineering
Current
RT: Blood flow

Bioinformatics
UF: Biomedical informatics
Health informatics
BT: Biomedical computing
Informatics
RT: Biology
Computational biochemistry
Computational biology
Computational biophysics
NT: Neuroinformatics

Bioinspired computing
USE: Bio-inspired computing

bioinspired robotics
USE: Bio-inspired robotics

Biological cells
UF: Cell biology
Chromosomes
BT: Biology
RT: Biochemistry
Biological materials
Biomembranes
DNA
Microorganisms
Self-assembly

NT: Cell signaling
Cells (biology)
Chromosome mapping
Endothelial cells
Fibroblasts
RNA
Stem cells

Biological clocks
USE: Chronobiology

Biological control systems
UF: Biocontrol
Biofeedback
BT: Systems, man, and cybernetics
RT: Immune system
Legged locomotion
Prosthetics
NT: Biomarkers

Biological effects of protons
USE: Proton effects

Biological effects of radiation
UF: Biological radiation effects
BT: Radiation effects
RT: Biomedical applications of radiation
Neutron capture therapy
Occupational health
Proton therapy
Radiation protection

Biological EPR
USE: Electron paramagnetic resonance

Biological information theory
BT: Biology
Information theory
RT: DNA
Genetic communication

Biological interactions
BT: Biological processes

Biological macromolecules
USE: Molecular biophysics

Biological markers
USE: Biomarkers

Biological materials
BT: Materials

RT: Biological cells
Biomedical materials
Fats
Tissue engineering
NT: Bioceramics

Biological membranes
USE: Biomembranes

Biological neural networks
UF: Neuronal networks
BT: Neural networks
Neurophysiology

Biological organs
USE: Biological systems

Biological processes
BT: Biology
NT: Biological interactions
Chronobiology
Circadian rhythm
Coagulation
Molecular biology
Symbiosis

Biological radiation effects
USE: Biological effects of radiation

Biological sensors
USE: Biosensors

Biological system modeling
BT: Biology
RT: Mechanobiology
Synthetic biology

Biological systematics
USE: Systematics

Biological systems
UF: Biological organs
Organs (biological)
BT: Biology
RT: Animals
Artificial biological organs
Biomedical engineering
NT: Anatomy
Molecular communication (telecommunication)
Organisms

Biological techniques
BT: Biomedical engineering

RT: Biomedical equipment

Biological tissue
    USE: Biological tissues

Biological tissues
    UF: Biological tissue
           Tissues
    BT: Anatomy
    NT: Bone tissue
           Breast tissue
           Cardiac tissue
           Connective tissue
           Glands
           Neoplasms

Biologically inspired computing
    USE: Bio-inspired computing

Biologically inspired control
    USE: Bio-inspired control

Biologically inspired engineering
    USE: Bio-inspired engineering

Biology
    BT: Engineering in medicine
and biology
           Science - general
    RT: Bio-inspired computing
           Bio-inspired engineering
           Bioinformatics
           Computational biology
           Immune system
           Life sciences
    NT: Biochemistry
           Biodiversity
           Bioelectric phenomena
           Biological cells
           Biological information
theory
           Biological processes
           Biological system modeling
           Biological systems
           Biology computing
           Biophotonics
           Biophysics
           Cryobiology
           Evolution (biology)
           Genetics
           Homeostasis
           Mechanobiology
           Microbiology
           Microinjection
           Nanobioscience

           Physiology
           Predator prey systems
           Synthetic biology
           Systematics
           Systems biology
           Vegetation
           Zoology

Biology computing
    BT: Biology
    RT: Biomedical computing
           Computers and information
processing

Bioluminescence
    BT: Luminescence

Biomagnetics
    UF: Biomagnetism
    BT: Biophysics
           Magnetics
    RT: Biomedical engineering
           Magnetic fields
           Magnetic materials
           Magnetic particles
    NT: Magnetoencephalography

Biomagnetism
    USE: Biomagnetics

Biomarkers
    UF: Biological markers
           Human disease markers
    BT: Biological control systems
           Biomedical measurement
    NT: Molecular biomarkers

Biomass
    BT: Renewable energy sources

Biomechanics
    BT: Mechanical factors
    RT: Anthropometry
           Cell signaling
           Entomology
           Mechanobiology
           Wearable robots
    NT: Fall detection

Biomechatronics
    BT: Mechatronics

Biomedical acoustics
    UF: Bioacoustics
           Biomedical ultrasonics

BT: Acoustics
RT: Acoustic applications
Acoustic measurements
Auditory system

Biomedical applications of electromagnetic radiation
USE: Biomedical applications of radiation

Biomedical applications of radiation
UF: Biomedical applications of electromagnetic radiation
Radiation therapy
BT: Biomedical engineering
Nuclear and plasma sciences
RT: Angiocardiography
Biological effects of radiation
Biomedical imaging
Cancer
Collimators
Computed tomography
Gamma-ray detectors
Medical treatment
Positron emission tomography
Radiation effects
Radiography
Synchrotron radiation

Biomedical communication
BT: Communication systems
Engineering in medicine and biology
RT: Fall detection
Medical devices
Nanocommunication (telecommunication)
Picture archiving and communication systems
Point of care
NT: Biomedical telemetry
Telemedicine

Biomedical computing
UF: Medical computing
BT: Engineering in medicine and biology
RT: Biology computing
Biomedical signal processing
Computer applications

Picture archiving and communication systems
Signal processing
NT: Bioinformatics
Medical expert systems
Medical information systems

Biomedical electrodes
BT: Biomedical equipment
RT: Biomedical engineering
Biomedical measurement
Electrophysiology

Biomedical electronics
BT: Biomedical engineering
RT: Biomedical equipment

Biomedical engineering
UF: Bioengineering
BT: Engineering in medicine and biology
RT: Biological systems
Biomagnetics
Biomedical electrodes
Biomedical engineering education
Biomedical monitoring
Biomedical optical imaging
Colloidal lithography
Genetic communication
Genetic engineering
Hospitals
Microfluidics
Orthotics
NT: Bioimpedance
Biological techniques
Biomedical applications of radiation
Biomedical electronics
Biomedical signal processing
Biotechnology
Cloning
Drug delivery
Neural engineering
Protein engineering
Tissue engineering
Translational research

Biomedical engineering education
BT: Engineering education
RT: Biomedical engineering

Biomedical equipment

UF: Clinical equipment
Medical equipment
BT: Engineering in medicine and biology
RT: Biological techniques
Biomedical electronics
Biomedical measurement
Biomedical microelectromechanical systems
Collimators
Electrocardiography
Electroencephalography
Endomicroscopy
Insulin pumps
Medical control systems
Medical robotics
Molecular biophysics
Nanosensors
Needles
Orthotics
Prosthetics
Sensory aids
Speech synthesis
Surgery
Zigbee
NT: Assistive technology
Biomedical electrodes
Biomedical telemetry
Biomedical transducers
Catheters
Endoscopes
Gerontechnology
Hypodermic needles
Implants
Intracranial pressure sensors
Lithotriptors
Medical devices
Medical instruments
Pacemakers
Pulse oximeter
Stethoscope
Surgical instruments
Ventilators

Biomedical image processing

UF: Medical image processing
BT: Biomedical signal processing
RT: Biomedical imaging
Biomedical optical imaging
Functional magnetic resonance imaging
Magnetoencephalography
Subtraction techniques

NT: Imaging phantoms
Motion artifacts
Neuroimaging
Radiographic image enhancement
Radiology
Radiomics
Ultrasonography
Whole body imaging

Biomedical imaging

UF: Biomedical X-ray imaging
Medical imaging
Tomosynthesis
BT: Engineering in medicine and biology
Imaging
RT: Biomedical applications of radiation
Biomedical image processing
Data visualization
Isosurfaces
Medical diagnosis
Molecular biophysics
Nanobiophotonics
Picture archiving and communication systems
Radiation imaging
Tomography
Ultrasonic imaging
NT: Angiocardiography
Angiography
Biomedical optical imaging
Cardiography
DICOM
Elastography
Encephalography
Mammography
Medical diagnostic imaging
Molecular imaging
Phantoms
Photoacoustic imaging

Biomedical informatics
USE: Bioinformatics

Biomedical infrared imaging
USE: Biomedical optical imaging

Biomedical instruments
USE: Biomedical measurement

Biomedical materials

BT: Materials

RT: Biological materials
Diamond-like carbon
Molecular biophysics
NT: Bioceramics
Biomembranes

Biomedical measurement
UF: Biomedical instruments
Biomedical measurements
BT: Measurement
RT: Anthropometry
Biomedical electrodes
Biomedical equipment
Biosensors
Pulse oximetry
NT: Biomarkers
Biomedical monitoring
Electroencephalography
Electromyography
Electrooculography
Electrophysiology
Photoplethysmography
Plethysmography
Pulse oximeter
Reproducibility of results
Sensitivity and specificity

Biomedical measurements
USE: Biomedical measurement

Biomedical microelectromechanical systems
UF: Bio-MEMs
BT: Micromechanical devices
RT: Biomedical equipment

Biomedical monitoring
BT: Biomedical measurement
RT: Biomedical engineering
Epidemiology
Phonocardiography
NT: Nanomedicine

Biomedical MRI
USE: Magnetic resonance imaging

Biomedical optical imaging
UF: Biomedical infrared imaging
BT: Biomedical imaging
RT: Biomedical engineering
Biomedical image processing
Endomicroscopy
Endoscopes
Infrared imaging

Optical communication equipment
Optical devices

Biomedical signal processing
BT: Biomedical engineering
RT: Biomedical computing
Fall detection
Neurophysiology
Time-frequency analysis
NT: Biomedical image processing

Biomedical telemetry
UF: Biotelemetry
BT: Biomedical communication
Biomedical equipment
Telemetry

Biomedical transducers
BT: Biomedical equipment
Transducers

Biomedical ultrasonics
USE: Biomedical acoustics

Biomedical X-ray imaging
USE: Biomedical imaging

Biomembranes
UF: Biological membranes
Membranes
BT: Biomedical materials
RT: Biological cells

Biometric systems
USE: Biometrics (access control)

Biometrics (access control)
UF: Biometric systems
BT: Identification of persons
RT: Access control
Algorithms
Automation
Handwriting recognition
Information technology
Security
Speaker recognition
NT: Face recognition
Fingerprint recognition
Gait recognition
Iris recognition
Keystroke dynamics
Palmprint recognition

Biomimetic materials
BT: Biomimetics
   Smart materials

Biomimetic microelectronics
USE: Biomimetics

Biomimetics
UF: Biomimetic microelectronics
   Biomimicry
   Bionics
BT: Microprocessors
RT: Bio-inspired engineering
   Whale optimization
algorithms
NT: Biomimetic materials

Biomimicry
USE: Biomimetics

Biomolecular electronics
USE: Molecular electronics

Biomolecules
USE: Molecular biophysics

Bionanotechnology
UF: Bio-nanotechnology
BT: Engineering in medicine
and biology
   Nanotechnology

Bionics
USE: Biomimetics

Biophotonics
BT: Biology
   Photonics

Biophysics
BT: Biology
   Physics
RT: Computational biophysics
NT: Aerospace biophysics
   Biomagnetics
   Cellular biophysics
   Molecular biophysics

Biopolymers
BT: Polymers

Biopsy
BT: Medical tests

Bioreactors

BT: Chemical reactors
RT: Biochemistry

Biorthogonal modulation
BT: Wavelet transforms

Biosensors
UF: Biological sensors
BT: Chemical and biological
sensors
RT: Biomedical measurement
   Nanobiophotonics

Biosphere
BT: Environmental factors
   Geoscience

Biotechnology
BT: Biomedical engineering
RT: Genetic engineering

Biotelemetry
USE: Biomedical telemetry

Bioterrorism
BT: Engineering in medicine
and biology
   Terrorism

Bipartite graph
BT: Graph theory

Biped locomotion
USE: Legged locomotion

Bipolar integrated circuits
BT: Bipolar transistor circuits
RT: Bipolar transistors

Bipolar transistor circuits
BT: Circuits
RT: Parameter extraction
NT: BiCMOS integrated circuits
   Bipolar integrated circuits

Bipolar transistors
BT: Power semiconductor
switches
RT: Bipolar integrated circuits
   Proton radiation effects
   Semiconductor epitaxial
layers
   Transistors
NT: Insulated gate bipolar
transistors

Kirk field collapse effect

Birds
BT: Animals
RT: Beak

Birefringence
BT: Optics
RT: Photorefractive effect
Photorefractive materials
Refractive index
Thermooptic effects

Birth disorders
BT: Amniocentesis

Bismuth
UF: Bi
BT: Metals
RT: Bismuth compounds

Bismuth compounds
UF: BSCCO
BT: Compounds
RT: Alloying
Bismuth

BIST
USE: Built-in self-test

Bistability (optical)
USE: Optical bistability

Bistable circuits
UF: Bi-stable circuits
BT: Circuits
NT: Latches

Bistable multivibrator
USE: Pulse circuits

Bistatic radar
BT: Radar

Bit allocation
USE: Bit rate

Bit error rate
UF: BER
BER analysis
BER performance
BERT
Bit error rate test
BT: Error analysis

Bit error rate test
USE: Bit error rate

Bit interleaved coded
USE: Interleaved codes

Bit rate
UF: Bit allocation
Bitrate
BT: Timing
RT: Communication system signaling
Computer networks
Signal processing

Bit-interleaved coded
USE: Interleaved codes

Bitcoin
BT: Cryptocurrency
RT: Blockchain
Cryptography
Finance
Online banking

Bitrate
USE: Bit rate

Bitumen
USE: Asphalt

Bixby
USE: Virtual assistants

Black lead
USE: Graphite

BlackBerry
USE: Handheld computers

Blacklist
USE: Blacklisting

Blacklisting
UF: Blacklist
BT: Access control
RT: Computer security
Countermeasures (computer)
Whitelists

Bladder
BT: Urogenital system

Blades

UF: Vanes
BT: Mechanical products
RT: Agricultural machinery
Cutting tools
Fans
Impellers
Propellers
Turbomachinery

Blanking
BT: Manufacturing systems
RT: Metal products
Metals
Sheet metal processing

Blast furnaces
BT: Furnaces
RT: Smelting

Bleaching
BT: Materials processing
RT: Manufacturing systems
Paper making
Process control
Textile technology

Bleeding
USE: Hemorrhaging

Blended learning
USE: Hybrid learning

Blind channel estimation
USE: Blind equalizers

Blind equalisers
USE: Blind equalizers

Blind equalizers
UF: Blind channel estimation
Blind equalisers
BT: Equalizers

Blind signal separation
USE: Blind source separation

Blind source separation
UF: Blind signal separation
BT: Source separation
RT: Adaptive signal detection
Array signal processing
Independent component
analysis
Signal analysis
Signal detection

Blindness
BT: Medical conditions
RT: Visual prosthesis

Blob detection
BT: Computer vision
Image processing
RT: Feature extraction

Block chain
USE: Blockchain

Block codes
UF: Block coding
BT: Channel coding
RT: Mobile communication
NT: Linear codes
Polar codes

Block coding
USE: Block codes

Block signaling
USE: Block signalling

Block signalling
UF: Block signaling
Signaling block systems
Signalling block systems
BT: Control systems
Railway communication
RT: Collision avoidance
Rail transportation

Blockchain
UF: Block chain
BT: Computer applications
RT: Authentication
Bitcoin
Computer security
Content management
Cryptocurrency
Cryptography
Data collection
Directed acyclic graph
Distributed ledger
Proof of Work
NT: Consensus protocol

Blogging
USE: Blogs

Blogs
UF: Blogging

Twitter
Weibo
BT: Information retrieval
RT: Electronic mail
Internet
Social networking (online)

Blood
BT: Blood vessels
NT: Blood platelets
Coagulation
Red blood cells
White blood cells

Blood clots
USE: Coagulation

Blood flow
BT: Blood pressure
RT: Bioimpedance
NT: Hemodynamics

Blood platelets
BT: Blood
RT: Coagulation

Blood pressure
UF: Arterial pressure
BT: Blood vessels
NT: Blood flow
Blood pressure measurement
Blood pressure variability

Blood pressure measurement
BT: Blood pressure

Blood pressure variability
BT: Blood pressure

Blood vessels
BT: Cardiovascular system
RT: Endothelial cells
NT: Arteries
Blood
Blood pressure
Veins

Bluetooth
BT: Personal area networks
Radio communication
RT: Cellular radio
Communication equipment
Digital communication
IEEE 802.11 Standard

IEEE 802.11g Standard
IEEE 802.11n Standard
IEEE 802.15 Standard
Land mobile radio
Protocols
Spread spectrum communication
Wireless LAN
Wireless communication
Zigbee

BNCT
USE: Neutron capture therapy

BNSC
UF: British National Space Centre
BT: Organizations

Boat building industry
USE: Shipbuilding industry

Boats
UF: Barges
Yachts
BT: Marine vehicles
RT: Marine robots

Body area networking
USE: Body area networks

Body area networks
UF: Body area networking
BT: Personal area networks

Body borne computers
USE: Wearable computers

Body regions
BT: Anatomy
NT: Abdomen
Back
Breast
Extremities
Head
Neck
Pelvis
Perineum
Thorax
Torso
Viscera

Body sensor networks
BT: Personal area networks
Wireless sensor networks

RT: Fall detection

Boilers
BT: Heating systems
RT: Heat recovery
        Steam engines
        Turbines
        Waste heat

Bolometers
BT: Radiation detectors
RT: Infrared detectors
        Temperature measurement

Bolts
USE: Fasteners

Boltzmann distribution
BT: Statistics
NT: Lattice Boltzmann methods

Boltzmann equation
UF: Boltzmann transport equation
BT: Equations

Boltzmann transport equation
USE: Boltzmann equation

Bomb
USE: Weapons

Bonding
BT: Bonding processes
RT: Manufacturing
        Materials processing
NT: Adhesives

Bonding forces
BT: Materials testing

Bonding processes
BT: Fabrication
        Joining processes
RT: Soldering
        Welding
NT: Bonding
        Diffusion bonding
        Wafer bonding

Bone density
UF: Bone mineral density
BT: Bones
RT: Density measurement

Bone diseases
BT: Diseases
NT: Osteoarthritis
        Osteoporosis

Bone mineral density
USE: Bone density

Bone tissue
BT: Biological tissues
RT: Bones
NT: Cancellous bone
        Cortical bone

Bones
BT: Skeleton
RT: Bone tissue
        Skull
NT: Bone density
        Pelvic bones

Bonuses
USE: Incentive schemes

Book reviews
BT: IEEE indexing

Boolean algebra
BT: Algebra
RT: Logic
        Logic gates
        Set theory
NT: Boolean functions

Boolean functions
BT: Boolean algebra
RT: Fault trees
NT: Logic functions

Boosting
BT: Machine learning
        Supervised learning

Booting
BT: Operating systems

Boring
BT: Machining
RT: Drilling
        Milling
        Turning

Boron
BT: Chemical elements
        Metals

| | RT: | Fertilizers |
| | NT: | Boron alloys |

Boron alloys
| | BT: | Boron |
| | RT: | Magnetic materials |

Boron neutron capture therapy
| | USE: | Neutron capture therapy |

Bot (Internet)
	UF:	WWW robot
		Web robot
	BT:	Computer applications
		Internet
		World Wide Web
	RT:	Crawlers

Botnet
	BT:	Interconnected systems
		Internet
		Software agents
	RT:	Computer crime
		Distributed denial-of-service attack
		Robots

Bottling
	BT:	Packaging
	RT:	Beverage industry
		Glass products
		Packaging machines
		Plastic products

Boundary conditions
| | BT: | Boundary value problems |
| | NT: | Upper bound |

Boundary element methods
| | USE: | Boundary-element methods |

Boundary value problems
	BT:	Mathematics
	RT:	Partial differential equations
	NT:	Boundary conditions

Boundary-element methods
	UF:	Boundary element methods
	BT:	Partial differential equations
	RT:	Integral equations
		Method of moments

Bovine
| | BT: | Animals |
| | NT: | Cows |

Box Jenkins models
| | USE: | Autoregressive processes |

BPF
| | USE: | Band-pass filters |

BPR
| | USE: | Business process re-engineering |

BPSK
| | USE: | Binary phase shift keying |

Brachial
| | USE: | Brachytherapy |

Brachytherapy
	UF:	Brachial
	BT:	Medical treatment
	RT:	Radiation effects

Bragg gratings
	UF:	Fiber Bragg gratings
		Fiber-Bragg gratings
	BT:	Filters
		Optical devices
	RT:	Diffraction
		Diffraction gratings
		Laser beams
		Light deflectors
		Optical beams
		Optical transmitters
		Temperature sensors
		Wavelength division multiplexing
	NT:	Fiber gratings

Brain
	BT:	Nervous system
	RT:	Bioelectric phenomena
		Cerebrospinal fluid
		Cognition
		Cognitive informatics
		Cognitive science
		Diffusion tensor imaging
		Electroencephalography
		Encephalography
		Head
		Intracranial pressure sensors
		Magnetoencephalography
		Soma
		Synapses
		White matter

NT: Amygdala
        Basal ganglia
        Brain cells
        Brain injuries
        Brain modeling
        Brain ventricles
        Brainstem
        Cerebellum
        Cerebral cortex
        Cerebrum
        Corpus callosum
        Forebrain
        Frontal lobe
        Hindbrain
        Hypothalamus
        Limbic system
        Midbrain
        Neural activity
        Neural implants
        Neurodynamics
        Neurophysiology
        Neuropsychology
        Neurotechnology
        Occipital Lobe
        Parietal lobe
        Primary motor cortex
        Sleep
        Temporal lobe
        Thalamus
        Ventricle system
        Virtual artifact

Brain cells
        BT: Brain

Brain computer interfaces
        USE: Brain-computer interfaces

Brain implants
        USE: Neural implants

Brain injuries
        BT: Brain
                Injuries

Brain interfaces
        USE: Brain-computer interfaces

Brain machine interfaces
        USE: Brain-computer interfaces

Brain mapping
        BT: Nervous system
        NT: Neuroimaging

Brain modeling
        UF: Brain modelling
        BT: Brain
                Modeling

Brain modelling
        USE: Brain modeling

Brain plasticity
        USE: Neuroplasticity

Brain stem
        USE: Brainstem

Brain stem implants
        USE: Brainstem implants

Brain stimulation
        BT: Medical treatment
        NT: Deep brain stimulation

Brain ventricles
        BT: Brain

Brain-computer interaction
        USE: Brain-computer interfaces

Brain-computer interfaces
        UF: BCI
                Brain computer interfaces
                Brain interfaces
                Brain machine interfaces
                Brain-computer interaction
                Brain-computer-interfaces
                Brain-machine interfaces
                Mind-machine interfaces
        BT: User interfaces
        RT: Neural engineering

Brain-computer-interfaces
        USE: Brain-computer interfaces

Brain-machine interfaces
        USE: Brain-computer interfaces

BrainLobe
        USE: Frontal lobe

Brainstem
        UF: Brain stem
        BT: Brain

Brainstem implants
        UF: Brain stem implants
        BT: Implants

Brakes
> BT: Control systems
> Mechanical products
> RT: Automotive components

Brand management
> BT: Marketing management
> RT: Market research
> Product development

Brazing
> BT: Soldering
> RT: Welding

Breadboard
> UF: Plugboard
> Solderless breadboard
> BT: Electronic circuits
> Prototypes

Breakdown
> USE: Electric breakdown

Breakdown voltage
> BT: Voltage
> RT: Current
> Diodes
> Insulators

Breast
> BT: Body regions
> NT: Breast biopsy
> Breast cancer
> Breast tissue
> Breast tumors

Breast biopsy
> BT: Breast

Breast cancer
> UF: Breast-cancer
> BT: Breast
> Cancer

Breast neoplasms
> UF: Mammary neoplasms
> BT: Neoplasms

Breast tissue
> UF: Breast tissues
> BT: Biological tissues
> Breast

Breast tissues
> USE: Breast tissue

Breast tumor
> USE: Breast tumors

Breast tumors
> UF: Breast tumor
> Breast tumour
> Breast tumours
> BT: Breast
> Tumors

Breast tumour
> USE: Breast tumors

Breast tumours
> USE: Breast tumors

Breast-cancer
> USE: Breast cancer

Bremsstrahlung
> BT: Electromagnetic radiation

Bridge circuits
> BT: Circuits
> RT: Rectifiers

Bridges
> BT: Structural shapes
> RT: Civil engineering
> Structural engineering
> Transportation

Brightness
> BT: Optics
> NT: Brightness temperature

Brightness temperature
> BT: Brightness

Brillouin scattering
> BT: Scattering

Bring your own device
> UF: BYOD
> BT: Information technology
> RT: Mobile computing
> Office automation
> Personnel
> Security
> Smart phones

British National Space Centre
> USE: BNSC

2021 IEEE Thesaurus

Broadband amplifiers
- UF: Wideband amplifiers
- BT: Amplifiers
  Broadband communication

Broadband antennas
- UF: Wideband antennas
- BT: Antennas
- RT: Antenna arrays
  Microstrip
  Microwave propagation
  UHF propagation
- NT: Ultra wideband antennas
  Vivaldi antennas

Broadband communication
- UF: Broadband networks
- BT: Communication systems
- RT: Asynchronous transfer mode
  Cable TV
  Frequency division multiaccess
  IEEE 802.16 Standard
  IPTV
  Multimedia communication
  Optical fiber communication
  Ultra wideband communication
  Video on demand
- NT: B-ISDN
  Broadband amplifiers

Broadband ISDN
- USE: B-ISDN

Broadband networks
- USE: Broadband communication

Broadcast technology
- NT: Broadcasting

Broadcasting
- UF: Broadcasts
- BT: Broadcast technology
- RT: Entertainment industry
  Journalism
- NT: Digital audio broadcasting
  Digital multimedia broadcasting
  Digital video broadcasting
  Motion pictures
  Radio broadcasting
  Satellite broadcasting
  Web TV

Broadcasts
- USE: Broadcasting

Bromine
- BT: Chemical elements
- NT: Bromine compounds

Bromine compounds
- UF: Organobromine compounds
- BT: Bromine
  Chemical compounds
- RT: Flame retardants

Bronchi
- USE: Respiratory system

Bronchoscopy
- BT: Medical diagnosis

Brownian motion
- UF: Fractional brownian motion
- BT: Random processes
- RT: Diffusion processes

Browsers
- UF: Google Chrome
  Web browsers
- BT: Computer interfaces
- RT: User interfaces

Brushes
- BT: Contacts
- RT: Rotating machines

Brushless DC motors
- UF: Brushless direct current motors
- BT: Brushless motors
  DC motors

Brushless direct current motors
- USE: Brushless DC motors

Brushless machines
- BT: Electric machines

Brushless motors
- BT: Motors
- RT: Switched reluctance motors
- NT: Brushless DC motors

BSCCO
- USE: Bismuth compounds

Buck converters
BT: DC-DC power converters

Buckeyballs
USE: Fullerenes

Buckminsterfullerene
USE: Fullerenes

Buckyballs
USE: Fullerenes

Buckytubes
USE: Fullerenes

Buffer layers
BT: Thin films
RT: Diffusion processes
Semiconductor films
Semiconductor growth

Buffer overflows
BT: Computer crashes

Buffer storage
BT: Memory
RT: Data handling
Telecommunication buffers
NT: Computer buffers

Bugs
USE: Computer bugs

Building automation
BT: Automation
Building services
RT: Construction industry

Building information management
UF: BIM
Building information modelling
BT: Buildings
Modeling
RT: Architecture
Building management systems
Building services
Design engineering
Facilities management
Project management
Structural engineering

Building information modelling

USE: Building information management

Building integrated photovoltaics
UF: Building-integrated photovoltaics
Roof mounted photovoltaics
Roof mounted solar cell arrays
BT: Photovoltaic systems
RT: Building services
Solar power generation

Building management systems
BT: Buildings
Management
RT: Building information management

Building materials
BT: Buildings
Materials
RT: Aggregates
Construction
Construction industry
Prefabricated construction
Structural beams
NT: Asphalt
Concrete
Floors
Mortar
Tiles
Windows

Building services
BT: Buildings
RT: Access control
Air conditioning
Building information management
Building integrated photovoltaics
Furnaces
Lighting
Space heating
Wiring
NT: Building automation
Elevators
Facilities management

Building-integrated photovoltaics
USE: Building integrated photovoltaics

Buildings

UF:	Space habitats	
BT:	Construction	
RT:	Air conditioning	
	Architecture	
	Civil engineering	
	Construction industry	
	Elevators	
	Escalators	
	Industrial power systems	
	Lighting	
	Modular construction	
	Prefabricated construction	
	Smart cities	
	Space cooling	
	Vents	
NT:	Building information management	
	Building management systems	
	Building materials	
	Building services	
	Flexible structures	
	Intelligent structures	
	Smart buildings	
	Smart homes	

Built-in self-test
UF:	BIST	
	Self-testing	
BT:	Testing	
RT:	Circuit testing	
	Design for testability	

Bulk acoustic wave devices
BT:	Acoustic devices	
RT:	Film bulk acoustic resonators	

Bulk storage
BT:	Material storage	
RT:	Containers	

Bundle adjustment
BT:	Three-dimensional displays	

Buoyancy
BT:	Fluid dynamics	
RT:	Fluids	
	Physics	

Buried object detection
UF:	Buried objects	
	Underground object detection	
	Underground objects	
BT:	Object detection	
RT:	Geophysical measurements	
	Ground penetrating radar	
NT:	Landmine detection	

Buried objects
USE:	Buried object detection	

Burnishing
BT:	Surface finishing	
RT:	Machining	

Burst switching
BT:	Packet switching	
NT:	Optical burst switching	

Bushings
USE:	Insulators	

Business
UF:	Commerce	
	Trade	
BT:	Engineering management	
RT:	Bankruptcy	
	Business process integration	
	Business process management	
	Commercial law	
	Consortia	
	Contracts	
	Employment	
	Enterprise resource planning	
	Finance	
	Industrial communication	
	Industries	
	International trade	
	Leadership	
	Manufacturing	
	Productivity	
	Service computing	
NT:	Business data processing	
	Business intelligence	
	Disruptive innovation	
	Entrepreneurship	
	Franchising	
	Industrial relations	
	Management	
	Operations research	
	Organizations	

Business communication
BT:	Organizational aspects	
RT:	Best practices	

2021 IEEE Thesaurus

Business continuity
BT:	Management
RT:	Security
	System recovery
	Venture capital

Business data processing
BT:	Business
	Data processing
RT:	Data governance
	Information processing

Business intelligence
UF:	BI
BT:	Business
	Data analysis
RT:	Competitive intelligence
	Data mining
	Strategic planning

Business organisation
USE:	Organizational aspects

Business organization
USE:	Organizational aspects

Business process integration
BT:	Enterprise resource planning
	Process planning
RT:	Business
	Resource management
	Supply chain management
	Systems engineering and theory

Business process management
BT:	Management
	Process planning
RT:	Business
	Resource management
	Supply chain management
	Systems engineering and theory
NT:	Task analysis

Business process re-engineering
UF:	BPR
BT:	Management
RT:	Corporate acquisitions
	Organizational aspects
	Total quality management
	WS-BPEL

Business writing
USE:	Writing

Butler matrices
UF:	Butler matrix
BT:	Antenna arrays
RT:	Antennas
	IEEE 802.11 Standard
	Phase shifters
	Wireless LAN

Butler matrix
USE:	Butler matrices

Butter
USE:	Dairy products

Buttocks
BT:	Extremities

BYOD
USE:	Bring your own device

C languages
BT:	Computer languages
RT:	Object oriented programming
NT:	C# languages
	C++ languages

C sharp languages
USE:	C# languages

C# languages
UF:	C sharp languages
BT:	C languages
RT:	Object oriented programming

C++ languages
BT:	C languages

C-band
BT:	Microwave bands

Ca
USE:	Calcium

Cable insulation
BT:	Insulation
RT:	Cables
	Oil filled cables
NT:	Power cable insulation

Cable shielding

BT:	Electromagnetic shielding	
RT:	Cables	

Cable splicing
USE: Splicing

Cable TV
UF: Community antenna television
BT: TV
RT: Broadband communication
Image communication
NT: Must-carry

Cables
BT: Transmission lines
RT: Cable insulation
Cable shielding
Conductors
Fault location
Winches
Wiring
NT: Coaxial cables
Communication cables
Mechanical cables
Optical fiber cables
Power cables
Underwater cables

Cables (mechanical)
USE: Mechanical cables

Cache memory
BT: Memory
NT: Cache storage

Cache storage
BT: Cache memory
RT: Computer buffers

CAD
USE: Design automation

Cadaver
UF: Corpse
BT: Pathological processes

CADCAM
BT: Computer aided manufacturing
Design automation
RT: Computer integrated manufacturing
Integrated manufacturing systems

Rapid prototyping
Virtual manufacturing

Cadmium
BT: Metals
NT: Cadmium compounds

Cadmium compounds
BT: Cadmium

CAE
USE: Computer aided engineering

Caesium
USE: Cesium

CAI
USE: Computer aided instruction

Calcination
BT: Heat treatment
RT: Kilns

Calcium
UF: Ca
BT: Metals
RT: Alloying
NT: Calcium compounds

Calcium carbonate
USE: Calcium compounds

Calcium compounds
UF: Calcium carbonate
Calcium phosphate
BT: Calcium

Calcium phosphate
USE: Calcium compounds

Calculators
BT: Computers
RT: Digital arithmetic
NT: Difference engines

Calculus
BT: Mathematics
NT: Differential equations
Integral equations
Level set

Calibration
UF: Intercalibration
BT: Measurement techniques

2021 IEEE Thesaurus

Californium
 BT: Chemical elements

Call admission control
 BT: Telecommunication congestion control
 RT: Internet telephony

Call conference
 BT: Collaborative tools

Callosal commissure
 USE: Corpus callosum

Calorimetry
 BT: Measurement
 RT: Energy measurement
 Thermal variables measurement

CAM
 USE: Computer aided manufacturing

CAMAC
 UF: Computer automated measurement and control
 BT: Control systems
 RT: Data buses
 Data communication
 Data processing
 Nuclear measurements

Cambelts
 USE: Belts

Camcorders
 USE: Video equipment

Cameras
 BT: Imaging
 RT: Digital photography
 Image capture
 Image sensors
 Motion pictures
 Photography
 Photorealism
 NT: Digital cameras
 Smart cameras
 Webcams

Cams
 BT: Machine components
 RT: Engines

 Mechanical power transmission
 NT: Camshafts

Camshafts
 BT: Cams
 Shafts
 RT: Automotive components
 Belts
 Engines

Canadian Standards Association
 USE: CSA Group

Cancellous bone
 BT: Bone tissue
 RT: Osteoporosis

Cancer
 UF: Malignancy
 Malignant
 BT: Diseases
 RT: Biomedical applications of radiation
 Chemotherapy
 Medical diagnostic imaging
 Oncological surgery
 Oncology
 Single photon emission computed tomography
 Tumors
 NT: Breast cancer
 Cervical cancer
 Lung cancer
 Metastasis
 Ovarian cancer
 Prostate cancer
 Skin cancer

Cancer detection
 BT: Medical tests

Cancer drugs
 BT: Drugs

Cancer treatment
 BT: Medical treatment

Canning
 BT: Packaging
 RT: Containers
 Material storage
 Materials handling
 Materials processing

Cantilever beams
    USE: Structural beams

Cap and trade
    USE: Emissions trading

Cap-and-trade
    USE: Emissions trading

Capability engineering
    BT: Systems engineering and theory

Capability maturity model
    BT: Software engineering
    RT: Software performance
            Software reusability

Capability-based security
    BT: Security
    RT: Access control

Capacitance
    BT: Electric variables
    RT: Capacitance measurement
            Capacitance-voltage characteristics
            Capacitive transducers
            Capacitors
            Supercapacitors
            Transmission line theory
    NT: Parasitic capacitance
            Quantum capacitance

Capacitance measurement
    BT: Electric variables measurement
    RT: Capacitance
            Capacitors
            Dielectric measurement
            Supercapacitors

Capacitance-voltage characteristics
    BT: Electric variables
    RT: Capacitance
            Voltage

Capacitive sensors
    UF: Strain based sensors
            Strain sensors
    BT: Mechanical sensors

Capacitive transducers
    BT: Transducers
    RT: Capacitance

            Position control
            Sensors

Capacitor testing
    USE: Capacitors

Capacitors
    UF: Capacitor testing
            Electric condensers
    BT: Dielectric devices
            Electronic components
            Voltage multipliers
    RT: Capacitance
            Capacitance measurement
            Dielectric constant
            Electrets
            MOS capacitors
            Q-factor
            Switched capacitor networks
    NT: Power capacitors
            Varactors

Capacity planning
    BT: Production planning
    RT: Supply chain management
    NT: Storage management

Capital cost reduction
    USE: Costing

CAPTCHAs
    BT: Symbols
    RT: Access protocols
            Authentication

Carbinol
    USE: Methanol

CarboFullerene
    USE: Fullerenes

Carbon
    BT: Chemical elements
    RT: Carbon compounds
            Low-carbon economy
            Organic compounds
    NT: Carbon nanotubes
            Diamond
            Fullerenes
            Graphene
            Graphite

Carbon capture and storage
    BT: Carbon dioxide

NT: Carbon sequestration

Carbon compounds
BT: Organic compounds
RT: Carbon
NT: Carbon dioxide
           Carbon emissions
           Carbon monoxide

Carbon dioxide
BT: Carbon compounds
RT: Carbon footprint
           Carbon tax
NT: Carbon capture and storage

Carbon emissions
BT: Carbon compounds
           Gases
RT: Emissions trading
           Global warming
           Greenhouse effect
           Methane
           Pollution control
NT: Carbon footprint

Carbon footprint
BT: Carbon emissions
RT: Air pollution
           Carbon dioxide
           Environmental factors
           Greenhouse effect

Carbon monoxide
BT: Carbon compounds

Carbon nanotube
USE: Carbon nanotubes

Carbon nanotube FETs
USE: CNTFETs

Carbon nanotube field effect transistors
USE: CNTFETs

Carbon nanotube field-effect transistors
USE: CNTFETs

Carbon nanotubes
UF: Carbon nanotube
           Carbon-nanotube
           Single-wall carbon nanotubes
BT: Carbon
           Nanotubes

RT: CNTFETs

Carbon sequestration
BT: Carbon capture and storage
RT: Air pollution
           Environmental factors
           Global warming
           Greenhouse effect

Carbon tax
BT: Environmental economics
RT: Carbon dioxide

Carbon-nanotube
USE: Carbon nanotubes

Carbon-nanotube FETs
USE: CNTFETs

Carbon-nanotube field effect transistors
USE: CNTFETs

Carbon-nanotube field-effect transistors
USE: CNTFETs

Cardiac arrest
UF: Cardiopulmonary arrest
           Heart arrest
           Heart attack
BT: Cardiovascular diseases

Cardiac disease
BT: Cardiovascular diseases

Cardiac function
BT: Heart

Cardiac tissue
BT: Biological tissues
           Cardiology

Cardiography
BT: Biomedical imaging
RT: Cardiology
           Sputter etching
NT: Echocardiography
           Electrocardiography
           Phonocardiography

Cardiology
BT: Medical specialties
RT: Cardiography
           Defibrillation
           Heart

Pacemakers
Phonocardiography
NT: Cardiac tissue

Cardiopulmonary arrest
USE: Cardiac arrest

Cardiovascular diseases
BT: Diseases
NT: Cardiac arrest
Cardiac disease

Cardiovascular system
BT: Anatomy
NT: Baroreflex
Blood vessels
Heart

Career development
BT: Education
NT: Continuing education
Jobs listings
Mentoring

Careers
USE: Engineering profession

Cargo handling
USE: Freight handling

Carotid arteries
UF: Carotoid arteries
BT: Arteries

Carotoid arteries
USE: Carotid arteries

Carrier confinement
BT: Charge carrier processes

Carrier density
USE: Charge carrier density

Carrier lifetime
USE: Charge carrier lifetime

Carrier processes
USE: Charge carrier processes

Carrier sense multiaccess
USE: Multiaccess communication

Cars
USE: Automobiles

Cartilage
BT: Musculoskeletal system

Cascade lasers
USE: Quantum cascade lasers

Cascading style sheets
BT: Style sheet languages
RT: Markup languages

Casimir effect
UF: Casimir energy
Casimir force
BT: Electric fields
Nanotechnology
RT: Atomic force microscopy
Elementary particle vacuum
Vacuum systems

Casimir energy
USE: Casimir effect

Casimir force
USE: Casimir effect

Cast iron
BT: Iron
RT: Casting
Production materials

Castellations
USE: Flip chip solder joints

Casting
BT: Materials processing
RT: Cast iron
Foundries
NT: Die casting
Tape casting

Catalysis
BT: Chemical reactors
NT: Electrocatalysis
Photocatalysis

Catalysts
BT: Materials
NT: Electrocatalysts
Photocatalysts

Catalytic converters
USE: Exhaust systems

Catalytic convertors
USE: Exhaust systems

2021 IEEE Thesaurus

Cataracts
BT: Eyes
Medical conditions
RT: Aging

Catheterization
BT: Medical services
RT: Catheters

Catheters
BT: Biomedical equipment
RT: Catheterization
Surgery

Cathode ray tubes
UF: CRT
BT: Displays
Electron devices
RT: Flyback transformers

Cathode-ray oscilloscopes
USE: Oscilloscopes

Cathodes
UF: Photocathodes
BT: Electrodes
RT: Electron emission
Electron tubes

Cats
UF: Felines
BT: Animals

Cattle
USE: Cows

Cause effect analysis
UF: Fishbone diagrams
Ishikawa diagrams
BT: Process planning
RT: Expert systems
Failure analysis
Fault diagnosis
Pareto analysis
Testing

Cavity perturbation methods
BT: Perturbation methods
RT: Cavity resonators

Cavity resonators
BT: Resonators
RT: Cavity perturbation
methods

Klystrons
Microcavities
Resonance
NT: Laser cavity resonators

CCD
USE: Charge coupled devices

CCD image sensors
BT: Image sensors
RT: Digital photography

CD recording
UF: Compact disk
BT: Optical recording
RT: Laser applications
NT: CD-ROMs

CD-ROM
USE: CD-ROMs

CD-ROM reviews
BT: IEEE indexing

CD-ROMs
UF: CD-ROM
BT: CD recording
RT: Electronic publishing
Information systems

CDMA
USE: Multiaccess communication

Cell biology
USE: Biological cells

Cell clones
USE: Cloning

Cell phones
USE: Cellular phones

Cell signaling
UF: Cell signaling
BT: Biological cells
RT: Biochemistry
Biomechanics
Mechanobiology

Cells (biology)
BT: Biological cells
NT: Extracellular
Ganglia
Glial cells
Membrane potentials

Progenitor cells

Cellular biophysics
BT: Biophysics
RT: Molecular biophysics
Nanomedicine

Cellular land mobile radio
USE: Cellular radio

Cellular manufacturing
BT: Manufacturing systems
RT: Flexible manufacturing systems
Production control

Cellular networks
BT: Cellular radio
RT: Cellular technology
Cloud radio access networks
Device-to-device communication
Handover
NT: Femtocell networks
Macrocell networks
Microcell networks
Ultra-dense networks

Cellular neural networks
BT: Neural networks

Cellular phones
UF: Cell phones
BT: Telephone equipment

Cellular radio
UF: Cellular land mobile radio
Land mobile radio cellular systems
Land-mobile radio cellular systems
BT: Land mobile radio
RT: 3G mobile communication
4G mobile communication
5G mobile communication
6G mobile communication
Bluetooth
Channel estimation
Code division multiplexing
Cross layer design
Digital multimedia broadcasting
Downlink

Film bulk acoustic resonators
Intercell interference
Location awareness
Multiuser detection
Network resource management
Personal communication networks
Software radio
Time division synchronous code division multiple access
NT: Cellular networks
Paging systems

Cellular technology
BT: Mobile communication
Radio communication
RT: Cellular networks
NT: 3G mobile communication
4G mobile communication
5G mobile communication
GSM
Land mobile radio networks
Multiaccess communication

Cement industry
BT: Manufacturing industries

Censorship
BT: Law
RT: Consumer protection
Government policies
Law enforcement
Legal factors

Central air conditioning
UF: Central air-conditioning
BT: Air conditioning

Central air-conditioning
USE: Central air conditioning

Central nervous system
BT: Nervous system
RT: Hypothalamus
NT: Grey matter
Midbrain
White matter

Central office
BT: Communication networks

Central Processing Unit
UF: CPU

BT:	Electronic circuits
RT:	Hardware acceleration
NT:	VLIW

Centralized control

UF:	Integrated control
BT:	Control systems

Cepstral analysis

BT:	Acoustics
RT:	Music information retrieval
	Speech analysis
	Speech recognition
NT:	Cepstrum
	Mel frequency cepstral coefficient

Cepstrum

BT:	Cepstral analysis
RT:	Fourier transforms

Ceramic glazes

BT:	Glazes

Ceramic products

BT:	Manufactured products
RT:	Ceramics
	Glass products
	Insulators
	Porcelain
	Tiles

Ceramics

UF:	Glass ceramics
BT:	Insulation
	Materials
RT:	Aluminum oxide
	Ceramic products
	Ceramics industry
	Cermet
	Dielectric materials
	Diffusion bonding
	Electrets
	Firing
	Glass
	Glass products
	Glazes
	High-temperature superconductors
	Magnesium oxide
	Powders
	Tape casting
	Tiles
NT:	Bioceramics
	Porcelain

Ceramics industry

BT:	Manufacturing industries
RT:	Bioceramics
	Ceramics
	Porcelain

Cerebellum

BT:	Brain

Cerebral cortex

BT:	Brain

Cerebrospinal fluid

BT:	Fluids and secretions
	Spinal cord
RT:	Brain

Cerebrum

BT:	Brain

Cerenkov lasers

USE:	Free electron lasers

Cerium

BT:	Chemical elements

Cermet

BT:	Composite materials
RT:	Ceramics
	Metallic materials

Certification

BT:	Training
RT:	Conformance testing

Cervical cancer

BT:	Cancer

Cesium

UF:	Caesium
BT:	Chemical elements

CFD

USE:	Computational fluid dynamics

CGM

USE:	Computer generated music

Chalcogenides

BT:	Chemical compounds

Change detection algorithms

BT:	Algorithms

2021 IEEE Thesaurus

Channel allocation
UF: Bandwidth allocation
BT: Communication channels
NT: Spectral efficiency

Channel bank filters
BT: Filters

Channel capacity
BT: Communication channels
RT: Quantum communication

Channel coding
BT: Encoding
Information theory
RT: Communication channels
Convolutional codes
Polar codes
Rate distortion theory
Space-time codes
NT: Block codes
Combined source-channel coding
Turbo codes

Channel estimation
UF: Channel state estimation
Channel-state estimation
BT: Communication channels
RT: Cellular radio
Equalizers
Land mobile radio
Multipath channels
Signal detection
Spread spectrum communication

Channel hot electron injection
UF: Channel hot-electron injection
BT: Hot carrier injection

Channel hot-electron injection
USE: Channel hot electron injection

Channel models
BT: Communication channels

Channel rate control
BT: Rate distortion theory

Channel spacing
BT: Communication channels

RT: Optical fiber applications
Rate distortion theory

Channel state estimation
USE: Channel estimation

Channel state information
BT: Communication channels

Channel-state estimation
USE: Channel estimation

Chaos
BT: Nonlinear systems
RT: Bifurcation
Econophysics
Fractals
Nonlinear circuits
Nonlinear dynamical systems
Pattern formation
Predator prey systems
Random media
NT: Chaotic communication
Complexity theory
Spatiotemporal phenomena

Chaotic communication
BT: Chaos
RT: Cryptography
Synchronization
Time series analysis

Character generation
BT: Graphics
RT: Computer graphics
Displays
Printing

Character recognition
UF: Print readers
BT: Pattern recognition
RT: Text recognition

Characteristic mode analysis
BT: Electromagnetic analysis

Charge carrier density
UF: Carrier density
BT: Charge carriers

Charge carrier lifetime
UF: Carrier lifetime
BT: Charge carriers

Charge carrier mobility
BT: Charge carriers

Charge carrier processes
UF: Carrier processes
Charge carrier trapping
Electron carriers
Hole carriers
Semiconductor charge carriers
BT: Charge carriers
RT: Diffusion processes
Semiconductor impurities
NT: Carrier confinement
Charge transfer
Electron mobility
Electron traps
Excitons
Space charge

Charge carrier trapping
USE: Charge carrier processes

Charge carriers
BT: Elementary particles
RT: Conductivity
Impact ionization
Semiconductivity
Semiconductor materials
NT: Charge carrier density
Charge carrier lifetime
Charge carrier mobility
Charge carrier processes
Hot carriers

Charge coupled devices
UF: CCD
Charge injection devices
Charge transfer devices
Charge-injection devices
Charge-transfer devices
BT: MIS devices

Charge injection devices
USE: Charge coupled devices

Charge measurement
BT: Electrostatic measurements
RT: Pulsed electroacoustic methods
NT: Battery charge measurement

Charge pumps
UF: Charge-pumping

BT: Circuits
RT: Voltage multipliers

Charge transfer
BT: Charge carrier processes

Charge transfer devices
USE: Charge coupled devices

Charge-coupled image sensors
BT: Image sensors
Optoelectronic devices

Charge-injection devices
USE: Charge coupled devices

Charge-pumping
USE: Charge pumps

Charge-transfer devices
USE: Charge coupled devices

Charged device model
USE: Electrostatic discharges

Charging devices
USE: Battery chargers

Charging stations
BT: Power supplies
RT: Battery chargers
Battery powered vehicles
Electric vehicles
Hybrid electric vehicles
Plug-in hybrid electric vehicles

Chatbot
BT: Human computer interaction
Natural language processing
Speech synthesis
RT: Auditory system
Human factors

CHCP
USE: Trigeneration

Chebyshev approximation
BT: Approximation methods
RT: Discrete cosine transforms

Checkpointing
BT: System recovery

2021 IEEE Thesaurus

Cheese
USE: Dairy products

Chemical analysis
BT: Chemistry
Materials science and technology
RT: Chemical technology
Drugs
Fractionation
NT: Activation analysis
Chemical processes
Chemicals
Electronic noses
pH measurement

Chemical and biological sensors
BT: Sensors
NT: Biosensors
Gas detectors

Chemical compounds
BT: Chemistry
NT: Anti-freeze
Bromine compounds
Chalcogenides
Ethanol
Methanol
Radiotracer

Chemical elements
BT: Chemicals
Materials, elements, and compounds
NT: Actinium
Aluminum
Americium
Antimony
Arsenic
Astatine
Berkelium
Beryllium
Boron
Bromine
Californium
Carbon
Cerium
Cesium
Chlorine
Curium
Darmstadtium
Dysprosium
Europium
Fluorine
Francium
Gadolinium
Hafnium
Helium
Holmium
Hydrogen
Iodine
Iridium
Isotopes
Krypton
Lutetium
Mercury (metals)
Molybdenum
Neon
Neptunium
Nitrogen
Osmium
Oxygen
Phosphorus
Plutonium
Polonium
Potassium
Praseodymium
Promethium
Protactinium
Radium
Radon
Rhenium
Rhodium
Roentgenium
Rubidium
Ruthenium
Scandium
Selenium
Sodium
Sulfur
Tantalum
Technetium
Tellurium
Terbium
Thallium
Thorium
Thulium
Titanium
Uranium
Vanadium
Ytterbium
Yttrium
Zirconium

Chemical engineering
BT: Engineering - general
RT: Chemical industry
Chemical products
Chemical technology

Process design

Chemical hazards
BT: Hazards
RT: Biohazards
Contamination
Explosions
Hazardous materials
Toxicology
NT: Toxic chemicals

Chemical industry
BT: Industries
RT: Chemical engineering
Chemical reactors
Chemical technology
Electrochemical processes
Petrochemicals
Petroleum industry
Pipelines
Plastic products
Plastics industry
Rubber industry

Chemical lasers
BT: Lasers
RT: Gas lasers
NT: Chemical oxygen iodine lasers

Chemical mechanical planarisation
USE: Planarization

Chemical mechanical planarization
USE: Planarization

Chemical oxygen iodine lasers
BT: Chemical lasers

Chemical processes
BT: Chemical analysis
NT: Leaching
Molecular sieves
Osmosis
Oxidation
Reverse osmosis
Solvents
Thermolysis
Water splitting

Chemical products
BT: Manufactured products
RT: Chemical engineering
Chemistry
Glass products

Plastic products
Production materials
NT: Fats
Inhibitors
Lacquers
Mortar
Paints
Petrochemicals
Petroleum
Pharmaceuticals
Plastics
Propellants

Chemical reactors
UF: CSTR
BT: Chemical technology
RT: Chemical industry
Crystallizers
Process control
Water splitting
NT: Bioreactors
Catalysis
Continuous-stirred tank reactor
Ignition

Chemical sensors
BT: Chemical technology
RT: Detectors

Chemical technology
BT: Industry applications
RT: Chemical analysis
Chemical engineering
Chemical industry
Chemistry
Decontamination
Refining
NT: Chemical reactors
Chemical sensors
Crystallizers
Distillation equipment
Fluidization
Pharmaceutical technology
Vitrification

Chemical transducers
BT: Transducers
RT: Gas detectors

Chemical vapor deposition
UF: CVD
BT: Plasma materials processing
RT: Coatings

Epitaxial layers
Films
NT: Atmospheric pressure chemical vapor deposition
Atomic layer deposition
MOCVD
Pulsed laser deposition

Chemicals
BT: Chemical analysis
NT: Chemical elements

Chemistry
BT: Science - general
RT: Chemical products
Chemical technology
Drugs
Petrochemicals
Pharmaceutical technology
Pharmaceuticals
Pickling
Plastic products
NT: Astrochemistry
Biochemistry
Chemical analysis
Chemical compounds
Electrochemistry
Geochemistry
Inorganic chemicals
Interstellar chemistry
Organic chemicals
Photochemistry
Quantum chemistry

Chemotherapy
BT: Medical treatment
RT: Cancer
Drugs
Medical services
Oncology
Patient monitoring

Chest medicine
USE: Pulmonology

Child
USE: Pediatrics

Children
USE: Pediatrics

Chip design
USE: Chip scale packaging

Chip development

USE: Chip scale packaging

Chip fabrication
USE: Chip scale packaging

Chip scale packaging
UF: CSP
Chip design
Chip development
Chip fabrication
Chip-making process
BT: Electronics packaging
RT: Integrated circuit packaging

Chip-making process
USE: Chip scale packaging

Chirp
BT: Signal processing

Chirp modulation
UF: Linear frequency modulation
BT: Modulation
RT: Sonar
Spread spectrum communication
Spread spectrum radar

Chlorine
BT: Chemical elements
NT: Chlorine compounds

Chlorine compounds
UF: Chlorine dioxide
Chloroform
Hydrogen chloride
Sodium chloride
BT: Chlorine

Chlorine dioxide
USE: Chlorine compounds

Chloroform
USE: Chlorine compounds

Chokes
USE: Inductors

Choppers (circuits)
BT: Switching circuits
RT: Power conversion

CHP
USE: Cogeneration

2021 IEEE Thesaurus

Chromatic dispersion
BT: Dispersion

Chrome plating
BT: Plating
RT: Coatings

Chromium
UF: Cr
BT: Metals
NT: Chromium alloys

Chromium alloys
BT: Chromium

Chromosome mapping
BT: Biological cells

Chromosomes
USE: Biological cells

Chronobiology
UF: Biological clocks
BT: Biological processes

CIM
USE: Common Information Model (computing) AND

Common Information Model (electricity) AND

Computer integrated manufacturing

Cinema
USE: Motion pictures

Cinematography
BT: Photography
RT: Motion pictures
Object tracking

Ciphers
UF: Cyphers
BT: Cryptography
RT: Algorithms
Codes
Encryption

Circadian rhythm
UF: Circadian rhythms
BT: Biological processes

Circadian rhythms
USE: Circadian rhythm

Circuit analysis
BT: Circuits
RT: Frequency-domain analysis
SPICE
Sensitivity
Tolerance analysis
Yield estimation
NT: Circuit analysis computing
Coupled mode analysis
Nonlinear network analysis

Circuit analysis computing
BT: Circuit analysis

Circuit boards
USE: Printed circuits

Circuit breakers
BT: Switchgear
RT: Interrupters
Power system protection
Protection
Switching circuits
NT: Molded case circuit breakers

Circuit CAD
USE: Design automation

Circuit complexity
USE: Complexity theory

Circuit design
USE: Circuit synthesis

Circuit design (CAD)
USE: Design automation

Circuit design (logic)
USE: Logic design

Circuit faults
BT: Circuits
NT: Electrical fault detection

Circuit feedback
USE: Feedback circuits

Circuit layout CAD
USE: Design automation

Circuit noise
BT: Circuits
RT: Transmission lines

NT: Thermal noise

NT: Current mirrors

Circuit optimisation
USE: Circuit optimization

Circuit tuning
USE: Circuit optimization

Circuit optimization
UF: Circuit optimisation
Circuit performance
Circuit tuning
BT: Optimization methods
RT: Tolerance analysis

Circuits
BT: Circuits and systems
RT: Flow graphs
Impedance matching
Oscillators
Phase transformers
Poles and zeros
Scattering parameters
NT: Active circuits
Adders
Analog circuits
Application specific integrated circuits
Asynchronous circuits
Bipolar transistor circuits
Bistable circuits
Bridge circuits
Charge pumps
Circuit analysis
Circuit faults
Circuit noise
Circuit simulation
Circuit synthesis
Coprocessors
Counting circuits
Coupling circuits
Digital circuits
Digital signal processors
Distributed parameter circuits
Driver circuits
Electronic circuits
Equivalent circuits
Feedback
Hybrid integrated circuits
Integrated circuits
Isolators
Large scale integration
Linear circuits
Logic arrays
Logic circuits
MOSFET circuits
Magnetic circuits
Microprocessors
Microwave circuits
Millimeter wave circuits
Millimeter wave integrated circuits
Monolithic integrated circuits

Circuit performance
USE: Circuit optimization

Circuit simulation
BT: Circuits
RT: Design automation
Semiconductor process modeling

Circuit stability
BT: Stability
RT: Grounding
Jitter

Circuit subsystems
BT: Solid state circuits
RT: Circuits and systems

Circuit synthesis
UF: Circuit design
BT: Circuits
RT: Control system synthesis
Logic design
Solid state circuit design
NT: High level synthesis
Integrated circuit synthesis

Circuit testing
BT: Testing
RT: Built-in self-test
NT: Integrated circuit measurements

Circuit theory
BT: Solid state circuits

Circuit tolerance analysis
USE: Tolerance analysis

Circuit topology
BT: Digital circuits
RT: Graph theory
Tree graphs

Multiplying circuits
Neural circuits
Nonlinear circuits
Passive circuits
Phase shifters
Power dissipation
Power integrated circuits
Printed circuits
Programmable circuits
Programmable logic arrays
Programmable logic devices
Pulse circuits
Quantum circuit
RLC circuits
Radiation detector circuits
Rail to rail operation
Rectifiers
Sampled data circuits
Sequential circuits
Silicon-on-insulator
Submillimeter wave circuits
Summing circuits
Switched circuits
Switching circuits
Thick film circuits
Thin film circuits
Thyristor circuits
Time varying circuits
Trigger circuits
UHF circuits
UHF integrated circuits
Ultra large scale integration
VHF circuits
Very large scale integration
Voltage multipliers
Wafer scale integration

Circuits and systems
RT: Circuit subsystems
Formal verification
Solid state circuits
NT: Circuits
Contacts
Filtering
Integrated circuit technology
Logic devices
Oscillators
Single electron devices
Tunable circuits and devices

Circular polarisation
USE: Polarization

Circular polarization
USE: Polarization

Circular waveguides
BT: Electromagnetic waveguides

Circulators
BT: Ferrite devices
Microwave technology
RT: Electromagnetic coupling
Waveguide components

Circulatory system
UF: Vascular system
BT: Anatomy

Citation analysis
UF: Citation studies
BT: Bibliometrics

Citation studies
USE: Citation analysis

Cities and towns
USE: Urban areas

City
USE: Urban areas

City planning
USE: Urban planning

Civil engineering
BT: Engineering - general
RT: Bridges
Buildings
Construction
Energy resources
Environmental factors
Power systems
Road transportation
Roads
Transmission lines
NT: Geotechnical engineering
Geotechnical structures
Railway engineering
Structural engineering

Cladistics
USE: Phylogeny

Clamping
USE: Clamps

Clamps
　　UF:　　Clamping
　　BT:　　Production equipment
　　RT:　　Machine tools
　　　　　　Machining

Classification algorithms
　　BT:　　Algorithms
　　NT:　　Relevance vector machines

Classification tree analysis
　　BT:　　Decision trees
　　RT:　　Formal concept analysis

Cleaning
　　BT:　　Materials handling
　　RT:　　Air cleaners
　　　　　　Refining
　　NT:　　Purification
　　　　　　Surface cleaning

Client server model
　　USE:　　Client-server systems

Client server systems
　　USE:　　Client-server systems

Client-server model
　　USE:　　Client-server systems

Client-server systems
　　UF:　　Client server model
　　　　　　Client server systems
　　　　　　Client-server model
　　　　　　Clientserver systems
　　BT:　　Distributed computing
　　　　　　Software architecture
　　RT:　　Dew computing
　　　　　　Unified modeling language
　　NT:　　Middleware
　　　　　　Servers

Clientserver systems
　　USE:　　Client-server systems

Climate
　　USE:　　Meteorology

Climate change
　　BT:　　Environmental factors
　　NT:　　Global warming

Climbing robots
　　BT:　　Mobile robots

Clinical analysis
　　USE:　　Clinical diagnosis

Clinical diagnosis
　　UF:　　Clinical analysis
　　　　　　Clinical engineering
　　　　　　Clinical information
　　BT:　　Medical services
　　RT:　　Point of care
　　NT:　　Clinical neuroscience

Clinical engineering
　　USE:　　Clinical diagnosis

Clinical equipment
　　USE:　　Biomedical equipment

Clinical information
　　USE:　　Clinical diagnosis

Clinical neuroscience
　　UF:　　Cloud security
　　BT:　　Clinical diagnosis
　　　　　　Neuroscience

Clinical trials
　　BT:　　Medical treatment

Clock synchronization
　　USE:　　Synchronization

Clocks
　　BT:　　Time measurement
　　RT:　　Timing
　　NT:　　Atomic clocks
　　　　　　Watches

Clone
　　USE:　　Cloning

Clones
　　USE:　　Cloning

Cloning
　　UF:　　Cell clones
　　　　　　Clone
　　　　　　Clones
　　　　　　Human cloning
　　　　　　Molecular clones
　　　　　　Reproductive cloning
　　BT:　　Biomedical engineering
　　RT:　　DNA
　　　　　　Stem cells

2021 IEEE Thesaurus

Closed captioning
- BT: Assistive technology
- Communication aids
- RT: Media
- TV

Closed form solution
- USE: Closed-form solutions

Closed loop systems
- UF: Closed-loop systems
- BT: Control systems
- RT: H infinity control

Closed-form expression
- USE: Closed-form solutions

Closed-form solutions
- UF: Closed form solution
- Closed-form expression
- BT: Mathematics

Closed-loop systems
- USE: Closed loop systems

Clothing
- UF: Garments
- BT: Consumer products
- RT: Clothing industry
- Fabrics
- Wool
- NT: Footwear
- Protective clothing

Clothing industry
- UF: Garment industry
- BT: Manufacturing industries
- RT: Clothing
- Footwear
- Footwear industry
- Protective clothing
- Textile industry

Clotting
- USE: Coagulation

Cloud computing
- BT: Internet
- RT: Big Data applications
- Dew computing
- Distributed computing
- Edge computing
- Grid computing
- Internet of Things
- Network function virtualization
- Service computing
- Software as a service
- Software defined networking
- Web services
- NT: Cloud computing security
- Cloud gaming
- Elastic computing
- Platform as a service

Cloud computing security
- UF: Cloud security
- BT: Cloud computing
- Computer security

Cloud gaming
- UF: Gaming on demand
- BT: Cloud computing
- Games
- RT: Online services

Cloud radio access networks
- BT: Network function virtualization
- Radio access networks
- RT: Cellular networks

Cloud security
- USE: Clinical neuroscience AND Cloud computing security

Cloud-dew architecture
- USE: Dew computing

Cloud-dew computing
- USE: Dew computing

Clouds
- BT: Terrestrial atmosphere

Cluster computing
- UF: Apache hadoop
- Apache spark
- Network of workstations
- Workstation clusters
- BT: Distributed computing
- RT: Distributed processing
- Message systems
- Parallel processing
- Peer-to-peer computing
- Resource management
- Workstations

Clustering algorithms
BT: Algorithms

Clustering methods
BT: Pattern recognition
RT: Extreme learning machines
NT: Pattern clustering

Clutter
BT: Interference
RT: Echo interference

CMM
USE: Coordinate measuring machines

CMOS analog integrated circuits
UF: Analog CMOS integrated circuits

Analogue CMOS integrated circuits

CMOS analogue integrated circuits
BT: Analog integrated circuits
CMOS integrated circuits

CMOS analogue integrated circuits
USE: CMOS analog integrated circuits

CMOS digital integrated circuits
BT: CMOS integrated circuits
NT: CMOS logic circuits

CMOS image sensors
BT: Image sensors

CMOS integrated circuits
BT: Integrated circuits
RT: CMOSFETs
Neuromorphic engineering
NT: CMOS analog integrated circuits

CMOS digital integrated circuits

CMOS logic circuits
CMOS memory circuits
Transconductors

CMOS logic circuits
BT: CMOS digital integrated circuits

CMOS integrated circuits
RT: Application specific integrated circuits

Power dissipation

CMOS memory circuits
UF: CMOS memory integrated circuits
BT: CMOS integrated circuits
RT: Memory
SRAM chips

CMOS memory integrated circuits
USE: CMOS memory circuits

CMOS process
BT: CMOS technology

CMOS technology
BT: Integrated circuit technology
RT: MOSFET
Microcontrollers
Microprocessors
Transistors
NT: CMOS process
Silicon on sapphire

CMOSFET circuits
BT: MOSFET circuits
RT: Rail to rail operation

CMOSFET logic devices
BT: CMOSFETs
RT: MISFETs
MOSFET
P-i-n diodes

CMOSFETs
BT: MOSFET
RT: CMOS integrated circuits
Semiconductor-insulator interfaces
NT: CMOSFET logic devices

CNC
USE: Computer numerical control

CNFETs
USE: CNTFETs

CNTFETs
UF: CNFETs
Carbon nanotube FETs
Carbon nanotube field effect transistors

Carbon nanotube field-effect transistors

Carbon-nanotube FETs
Carbon-nanotube field
effect transistors
Carbon-nanotube field-
effect transistors
- BT: Field effect transistors
- RT: Carbon nanotubes
  Quantum capacitance

Co-channel interference
- USE: Interchannel interference

Coagulate
- USE: Coagulation

Coagulation
- UF: Blood clots
  Clotting
  Coagulate
- BT: Biological processes
  Blood
- RT: Blood platelets

Coal
- BT: Fuels
- RT: Coal gas
  Coal mining

Coal gas
- UF: Coal gasification
  Illumination gas
  Town gas
- BT: Gases
- RT: Coal
  Fuels

Coal gasification
- USE: Coal gas

Coal industry
- BT: Industries
- RT: Coal mining

Coal mining
- BT: Mining industry
- RT: Coal
  Coal industry

Coal tar
- USE: Fuel processing industries

Coatings
- BT: Materials processing
- RT: Chemical vapor deposition
  Chrome plating

Corrosion
Films
Magnetic multilayers
Painting
Spraying
Sputtering
- NT: Antireflection coatings
  Dip coating
  Epitaxial layers
  Glazes
  Lacquers
  Paints
  Powders

Coaxial cables
- BT: Cables
- RT: Electromagnetic waveguides
  Transmission lines
- NT: Coaxial components
  Hybrid fiber coaxial cables

Coaxial components
- BT: Coaxial cables

Cobalt
- BT: Metals
- RT: Alloying
  Magnets
- NT: Cobalt alloys

Cobalt alloys
- BT: Cobalt
- RT: Alloying

Cochannel interference
- USE: Interchannel interference

Cochlear implants
- BT: Implants
- RT: Ear

Code division multiaccess
- USE: Multiaccess communication

Code division multiple access
- USE: Multiaccess communication

Code division multiplexed
- USE: Code division multiplexing

Code division multiplexing
- UF: Code division multiplexed
  OCDM

2021 IEEE Thesaurus

Optical code division
multiplexing
 BT: Communication switching
  Multiplexing
 RT: Cellular radio
  Codes
  Multicarrier code division
multiple access
  Optical fiber applications
  Software radio
  Spread spectrum
communication

Code refractoring
 UF: Refractoring
 BT: Encoding
 RT: Information theory
  Software engineering

Code-division multiple access
 USE: Multiaccess communication

Code-division multiple-access
 USE: Multiaccess communication

Codecs
 UF: Coder-decoders
 BT: Communication equipment
 RT: Decoding
  Encoding
 NT: Speech codecs
  Video codecs

Coder-decoders
 USE: Codecs

Codes
 UF: Parity check
 BT: Information theory
 RT: Ciphers
  Code division multiplexing
  Cryptography
  Decoding
  Encoding
  Error correction
  Redundancy
  Sequences
  Vector quantization
 NT: Binary codes
  Convolutional codes
  Cyclic redundancy check
codes
  Error correction codes
  Parity check codes
  Product codes

Space-time codes
  Zero correlation zone

Coding
 USE: Encoding

Coding theory
 USE: Information theory

Coercive force
 UF: Coercivity
 BT: Magnetic forces

Coercivity
 USE: Coercive force

Cogen
 USE: Cogeneration

Cogeneration
 UF: CHP
  Cogen
  Combined heat and power
 BT: Heating systems
  Power generation
 RT: Industrial power systems
  Trigeneration
  Waste heat

Cogging
 USE: Forging

Cognition
 UF: Reasoning
 BT: Behavioral sciences
 RT: Active perception
  Brain
  Cognitive systems
  Digital intelligence
  Psychology
 NT: Activity recognition
  Cognitive neuroscience
  Cognitive processes
  Self-aware

Cognitive computing
 USE: Cognitive systems

Cognitive informatics
 BT: Cybernetics
  Informatics
 RT: Brain

Cognitive neuroscience
 BT: Cognition

Neuroscience

Cognitive processes
BT: Cognition

Cognitive radar
BT: Adaptive systems
        Radar

Cognitive radio
UF: Cognitive radio network
BT: Wireless communication

Cognitive radio network
USE: Cognitive radio

Cognitive robotics
BT: Robots
RT: Autonomous robots

Cognitive science
UF: Mental models
BT: Cybernetics
RT: Brain
        Computational and artificial intelligence
        Human factors
        Inference mechanisms
        Logic
        Psychology
        Uncertainty
NT: Human intelligence
        Problem-solving

Cognitive systems
UF: Cognitive computing
        Reasoning
BT: Artificial intelligence
        Learning systems
RT: Adaptive control
        Affective computing
        Automata
        Cognition
        Cybernetics
        Fuzzy cognitive maps
        Machine learning

Coherence
UF: Coherent detection
BT: Electromagnetic scattering
RT: Interference
        Quantum decoherence
NT: Coherence time

Coherence time

BT: Coherence
        Quantum mechanics
RT: Bandwidth
        Electromagnetic scattering
        Quantum computing
        Qubit

Coherent detection
USE: Coherence

Coilguns
BT: Electromagnetic launching

Coils
UF: Electric coils
BT: Electronic components
RT: Electromagnets
        Generators
        Inductance
        Inductors
        Magnetic circuits
        Motors
        Rotating machines
        Transformers
        Windings
NT: Superconducting coils

Cold plates
BT: Cooling

Collaboration
BT: Professional communication
RT: Collective intelligence
        Cyber-physical systems
        Information sharing
        Interoperability
        Wikipedia
NT: Collaborative tools
        Discussion forums
        Teamwork
        Virtual groups

Collaborative filtering
BT: Filtering theory
RT: Recommender systems

Collaborative intelligence
BT: Collaborative work
        Multi-agent systems
RT: Distributed management
        Intelligent systems

Collaborative learning
USE: Collaborative work

Collaborative networking
    USE: Collaborative work

Collaborative problem solving
    USE: Collaborative work

Collaborative software
    UF: Groupware
    BT: Collaborative tools
    RT: Collaborative work
            Communication system software

Collaborative tools
    BT: Collaboration
    NT: Call conference
            Collaborative software
            Videoconferences

Collaborative work
    UF: Collaborative learning
            Collaborative networking
            Collaborative problem solving
            Cooperative work
            Federated learning
    BT: Distributed computing
    RT: Collaborative software
            Communication effectiveness
            Multimedia computing
            Professional communication
    NT: Collaborative intelligence
            Cooperative communication
            Crowdsourcing
            Social computing

Collective bargaining
    USE: Industrial relations

Collective intelligence
    BT: Decision making
            Intelligent systems
    RT: Collaboration
            Crowdsensing
            Crowdsourcing
            Sociology

Colleges
    USE: Educational institutions

Colliding beam accelerators
    BT: Colliding beam devices
            Particle accelerators
    RT: Klystrons
            Particle beams
            Synchrotrons

Colliding beam devices
    BT: Nuclear and plasma sciences
    RT: Particle accelerators
    NT: Colliding beam accelerators
            Muon colliders

Collimators
    UF: Multileaf collimators
    BT: Optical devices
    RT: Biomedical applications of radiation
            Biomedical equipment
            Dosimetry
            Gamma-rays
            Linear accelerators
            Single photon emission computed tomography
            X-ray applications
            X-rays

Collision avoidance
    UF: Collision detection
            Obstacle avoidance
            Sense and avoid
    BT: Motion control
    RT: Advanced driver assistance systems
            Block signalling
            Lane departure warning systems
            Lane detection

Collision detection
    USE: Collision avoidance

Collision mitigation
    BT: Motion control

Collision theory
    USE: Kinetic theory

Colloidal crystals
    BT: Crystals
    RT: Crystallizers

Colloidal lithography
    BT: Lithography
            Nanopatterning
    RT: Biomedical engineering

Nanobioscience
Nanotopography
Polymers
Surface treatment
Tissue engineering

Colloidal nanocrystals
BT: Nanocrystals
Optical materials

Colon
BT: Digestive system
NT: Colonic polyps

Colonic polyps
BT: Colon
Tumors

Colonography
BT: Medical diagnosis

Colonoscopy
BT: Medical tests
NT: Virtual colonoscopy

Color
BT: Optics
RT: Electrochromism
Imaging
Photochromism
NT: Pigmentation

Color blindness
USE: Vision defects

Color center lasers
USE: Solid lasers

Color TV
BT: TV

Colored noise
UF: Coloured noise
BT: Noise

Colossal magnetoresistance
BT: Magnetoresistance

Coloured noise
USE: Colored noise

Comb filters
BT: Filters

Combinational circuits

UF: Combinational logic circuits
BT: Logic circuits

Combinational logic circuits
USE: Combinational circuits

Combinatorial mathematics
BT: Mathematics
NT: Graph theory
Steiner trees

Combinatorial software testing
USE: Combinatorial testing

Combinatorial testing
UF: Combinatorial software testing
BT: Software testing
RT: Design for testability

Combine harvesters
USE: Agricultural machinery

Combined heat and power
USE: Cogeneration

Combined heat, cooling and power
USE: Trigeneration

Combined heat, cooling, and power
USE: Trigeneration

Combined source channel coding
USE: Combined source-channel coding

Combined source-channel coding
UF: Combined source channel coding
BT: Channel coding

Combustion
BT: Oxidation
RT: Exhaust gases
NT: Plasma-assisted combustion

Command and control systems
UF: Military command and control
BT: Aerospace and electronic systems
RT: Military communication

Command languages

BT: Computer languages

Commerce
  USE: Business

Commercial law
  BT: Law
  RT: Bankruptcy
    Business
    Consumer products
    Consumer protection
    Economics

Commercial power systems
  USE: Industrial power systems

Commercialization
  BT: Engineering management

Common Information Model (computing)
  UF: CIM
  BT: Analytical models
    Information management
  RT: DMTF Standards
    Information exchange

Common Information Model (electricity)
  UF: CIM
  BT: Information management
    Power transmission
  RT: IEC Standards
    Information exchange
    Interoperability
    Open systems
    Unified modeling language

Communicable disease
  USE: Infectious diseases

Communication aids
  BT: Professional communication
  RT: Assistive technology
    Auditory displays
  NT: Closed captioning

Communication cables
  UF: Underground communication cables
  BT: Cables
  RT: Fault location
    Wire

Communication cables (optical)
  USE: Optical fiber cables

Communication channels
  UF: Air interface
    Telecom channels
    Telecommunication channels
  BT: Information theory
  RT: Channel coding
    Communication systems
    IEEE 802.11e Standard
    IEEE 802.11n Standard
    Multicarrier code division multiple access
    OFDM
    Synapses
  NT: Channel allocation
    Channel capacity
    Channel estimation
    Channel models
    Channel spacing
    Channel state information
    Gaussian channels
    Multipath channels
    Multiuser channels
    Partial response channels
    Quantum channel
    Throughput
    Time-varying channels

Communication complexity
  USE: Complexity theory

Communication effectiveness
  BT: Professional communication
  RT: Collaborative work
    Cooperative communication

Communication engineering education
  BT: Engineering education

Communication equipment
  BT: Communications technology
  RT: Bluetooth
    Communication systems
    Multiplexing equipment
    Satellite ground stations
  NT: Auditory displays
    Codecs
    Modems
    On board unit
    Optical communication equipment

2021 IEEE Thesaurus

Radio communication equipment
Receivers
Repeaters
Speech codecs
TV equipment
Telephone equipment
Transceivers
Transmitters
Transponders
Video codecs
Video equipment
Vocoders

Communication industry
BT: Industries
RT: Communication systems

Communication network reliability
USE: Telecommunication network reliability

Communication networks
UF: PSTN
Public switched telephone network
BT: Communication systems
RT: Network security
NT: Central office
Cyberspace
Industrial communication
Martime communications
Radio access technologies
Relay networks (telecommunication)

Communication protocols
USE: Protocols

Communication satellites
USE: Satellite communication

Communication standards
UF: Telecommunication standards
BT: Standards categories
RT: Communication systems
FDDI
IEC
ISO
ISO Standards
Radio spectrum management
NT: Data over cable service interface specification

Long Term Evolution
Near field communication
SONET
Synchronous digital hierarchy
Universal Serial Bus

Communication switching
BT: Communications technology
RT: IEEE 802.3 Standard
Switching systems
NT: Code division multiplexing
Electronic switching systems
Frame relay
Handover
Multiprotocol label switching
Packet switching

Communication symbols
BT: Professional communication
RT: Pragmatics
Semiotics
Syntactics
NT: Semiotics

Communication system control
BT: Communication systems
RT: Control systems
NT: Telecommunication control

Communication system operations and management
BT: Management
RT: Communication system signaling
Communication systems

Communication system privacy
USE: Communication system security

Communication system security
UF: Communication system privacy
Telecommunication security
Wireless security
BT: Communication systems
RT: Access control
Cryptography
Data security
Electronic warfare

Privacy

NT: Denial-of-service attack
Impersonation attacks
Quantum key distribution
Radio communication
countermeasures

Communication system signaling

UF: Signaling systems
Telecom signaling
Telecom system signaling
Telecommunication
signalling

BT: Communication systems

RT: Bit rate
Communication system
operations and management
Handover

NT: Received signal strength
indicator

Communication system software

BT: Communication systems

RT: Collaborative software

NT: Streaming media

Communication system traffic

UF: Mice flows

BT: Communication systems

RT: Telecommunication traffic

Communication system traffic control

BT: Communication systems

Communication systems

BT: Communications
technology

RT: Antennas and propagation
Communication channels
Communication equipment
Communication industry
Communication standards
Communication system
operations and management
Digital systems
Huffman coding
Information theory
Office automation
Telecontrol equipment
Traffic control

NT: ARPANET
Biomedical communication
Broadband communication
Communication networks

Communication system
control

Communication system
security

Communication system
signaling

Communication system
software

Communication system
traffic

Communication system
traffic control

Computer networks
Cross layer design
Data buses
Data communication
Device-to-device
communication
Digital communication
FDDI
Facsimile
IP networks
ISDN
Indoor communication
Internet
Local area networks
Low latency communication
MIMO communication
MISO communication
Machine-to-machine
communications
Magnetic communication
Metropolitan area networks
Microwave communication
Military communication
Mobile communication
Molecular communication
(telecommunication)
Multiaccess communication
Multicast communication
Multimedia communication
NOMA
Nanocommunication
(telecommunication)
Narrowband
Optical fiber communication
Personal communication
networks
Protocols
Quality of experience
Quality of service
Quantum communication
Radio communication
Regional area networks
Routing

SIMO communication
SISO communication
Satellite communication
Satellite ground stations
Spatial diversity
Submillimeter wave communication
Subscriber loops
Switching systems
Synchronous digital hierarchy
Telecommunications
Teleconferencing
Telegraphy
Telephony
Teleprinting
Teletext
Token networks
UHF communication
Underwater communication
Vehicle-to-everything
Videophone systems
Videotex
Visual communication
Wide area networks
Wideband
Wireless communication
Wireless mesh networks
Wireless sensor networks

Communications computing
    USE: Telecommunication computing

Communications technology
    RT: Antennas and propagation
    NT: Communication equipment
           Communication switching
           Communication systems
           Couplers
           High-speed electronics
           Image communication
           Information and communication technology
           Message systems
           Modulation
           Multiplexing
           Network topology
           Presence network agents
           TV
           UHF technology
           Ultra wideband technology
           VHF devices

Community antenna television
    USE: Cable TV

Commutation
    BT: Motors

Commutators
    BT: DC motors

Compact disk
    USE: CD recording

Compaction
    BT: Waste reduction
    RT: Materials handling

Companies
    BT: Organizations

Company reports
    BT: Publishing
    RT: Competitive intelligence
           Management
           Management accounting

Compass
    UF: Compasses
    BT: Instruments
    RT: Magnetic fields
           Navigation

Compasses
    USE: Compass

Competitive intelligence
    BT: Information management
    RT: Business intelligence
           Company reports
           Decision support systems
           Digital intelligence
           Knowledge management
           Market research

Compilers (program)
    USE: Program processors

Complex networks
    BT: Network topology
    RT: Social network theory
           Social sciences
           System dynamics
           System of systems

Complex systems
    BT: Systems engineering and theory

RT: Bio-inspired engineering
Configuration management
Large-scale systems

Complexity
USE: Complexity theory

Complexity constrained detection
USE: Maximum likelihood detection

Complexity theory
UF: Circuit complexity
Communication complexity
Complexity
BT: Chaos
RT: Computation theory
Econophysics
NT: Computational complexity
NP-complete problem
NP-hard problem

Compliance testing
USE: Conformance testing

Compliant mechanisms
USE: Manufacturing processes

Component architectures
UF: Component-based systems
BT: Components, packaging, and manufacturing technology

Component-based systems
USE: Component architectures

Components, packaging, and manufacturing technology
NT: Component architectures
Electronic components
Electronic equipment manufacture
Electronics packaging
Environmentally friendly manufacturing techniques
Integrated circuit manufacture
Integrated circuit packaging
Semiconductor device packaging
Thermal management of electronics

Composite materials
BT: Materials

NT: Cermet

Composite media
USE: Nonhomogeneous media

Composite systems
USE: Interconnected systems

Compounds
BT: Materials, elements, and compounds
NT: Bismuth compounds
Gallium compounds
Indium compounds
Inorganic compounds
Lead compounds
Organic compounds
Silicon compounds

Compressed sensing
UF: Compressive sensing
BT: Sampling methods

Compression algorithms
BT: Algorithms

Compression molding
UF: Compression moulding
BT: Production
RT: Injection molding

Compression moulding
USE: Compression molding

Compressive sensing
USE: Compressed sensing

Compressive stress
BT: Stress

Compressors
BT: Electric machines
RT: Air conditioning
Pumps
Turbines
Turbomachinery

Computation complexity
USE: Computational complexity

Computation theory
BT: Computational intelligence
RT: Complexity theory
NT: Computational complexity
Concurrent computing

2021 IEEE Thesaurus

Greedy algorithms
Support vector machines

Computational and artificial intelligence
RT: Cognitive science
Digital systems
NT: Artificial intelligence
Autonomous mental development
Computational intelligence
Logic
Machine intelligence
Neural networks

Computational biochemistry
BT: Computational biology
RT: Biochemistry
Bioinformatics

Computational biology
BT: Engineering in medicine and biology
RT: Bioinformatics
Biology
Computational neuroscience
Synthetic biology
NT: Computational biochemistry
Computational biophysics
Computational systems biology

Computational biophysics
BT: Computational biology
RT: Bioinformatics
Biophysics

Computational complexity
UF: Computation complexity
BT: Complexity theory
Computation theory
RT: Algorithmic efficiency
NT: Time complexity

Computational cultural dynamics
USE: Computational cultural modeling

Computational cultural modeling
UF: Computational cultural dynamics
Computational social and behavioral modeling
BT: Computational modeling

Computational efficiency
BT: Mathematics

Computational electrodynamics
USE: Computational electromagnetics

Computational electromagnetics
UF: Computational electrodynamics
BT: Electromagnetic analysis
RT: Computer applications
Electromagnetic field theory
Electromagnetic fields
Finite difference methods
Monte Carlo methods
Stochastic processes

Computational ethics
USE: Machine ethics

Computational fluid dynamics
UF: CFD
BT: Fluid dynamics
RT: Isosurfaces

Computational geometry
BT: Geometry
RT: Computer graphics
Layered manufacturing
Surface fitting
NT: Fractals

Computational intelligence
BT: Computational and artificial intelligence
RT: Artificial intelligence
Synapses
NT: Computation theory
Evolutionary computation
Fuzzy systems
Genetic algorithms

Computational life sciences
USE: Computational modeling AND
Life sciences

Computational linguistics
BT: Systems, man, and cybernetics
RT: Context modeling
NT: Machine translation
Sentiment analysis

2021 IEEE Thesaurus

Computational modeling
UF:	Computational life sciences	
	Life sciences computing	
	ZINDO	
BT:	Modeling	
RT:	Neuroinformatics	
	Time complexity	
NT:	Agent-based modeling	
	Computational cultural modeling	
	Reversible computing	

Computational morality
USE:	Machine ethics

Computational neuroscience
UF:	Theoretical neuroscience
BT:	Computer science
	Neuroscience
RT:	Computational biology
	Nervous system

Computational science
USE:	Scientific computing

Computational social and behavioral modeling
USE:	Computational cultural modeling

Computational systems biology
BT:	Computational biology

Computed microtomography
USE:	Computed tomography

Computed tomography
UF:	CT scan
	Computed microtomography
	Computerised axial tomography
	Computerised tomography
	Computerized axial tomography
	Computerized tomography
BT:	Tomography
RT:	Biomedical applications of radiation
NT:	Single photon emission computed tomography

Computer aided analysis
BT:	Computer applications
RT:	Digital simulation
	Geophysics computing
	Independent component analysis
	Simulation

Computer aided design
USE:	Design automation

Computer aided diagnosis
UF:	Computer assisted diagnosis
	Computer-aided diagnosis
	Computer-assisted diagnosis
BT:	Medical diagnosis

Computer aided engineering
UF:	CAE
BT:	Computer applications

Computer aided instruction
UF:	CAI
	Computer aided learning
	Computer-aided instruction
	Computer-aided learning
	Teaching machines
BT:	Computer applications
	Educational technology
RT:	Authoring systems
	Continuing education
	Courseware
	Educational courses
	Electronic learning
	Matlab
	Technology acceptance model
NT:	Learning management systems

Computer aided learning
USE:	Computer aided instruction

Computer aided manufacturing
UF:	CAM
BT:	Industrial electronics
	Manufacturing automation
RT:	Computer integrated manufacturing
	Integrated manufacturing systems
NT:	CADCAM
	Silicon compiler

Computer aided software engineering
BT:	Software engineering
RT:	Programming environments

Software tools

Computer animation
    USE: Animation

Computer applications
    UF: Volunteer computing
    BT: Computers and information processing
    RT: Biomedical computing
        Computational electromagnetics
        Computerized monitoring
        Edge computing
        Electrical engineering computing
        Flexible manufacturing systems
        Information technology
        Learning management systems
        Middleware
        Mobile agents
        Software agents
        Software packages
    NT: Application virtualization
        Big Data applications
        Blockchain
        Bot (Internet)
        Computer aided analysis
        Computer aided engineering
        Computer aided instruction
        Computer generated music
        Computer integrated manufacturing
        Control engineering computing
        Green computing
        High energy physics instrumentation computing
        Knowledge management
        Mathematics computing
        Medical information systems
        Military computing
        Mobile applications
        Physics computing
        Power engineering computing
        Power system analysis computing
        Publishing
        Scientific computing

Telecommunication computing
        Virtual assistants
        Virtual enterprises
        Virtual manufacturing
        Web sites
        World Wide Web

Computer architecture
    UF: Architecture (computer)
    BT: Computers and information processing
    RT: Microprogramming
    NT: Accelerator architectures
        Data structures
        Dynamic voltage scaling
        Memory architecture
        Memory management
        Multiprocessor interconnection
        Parallel architectures
        Reconfigurable architectures

Computer arithmetic
    USE: Digital arithmetic

Computer assisted diagnosis
    USE: Computer aided diagnosis

Computer automated measurement and control
    USE: CAMAC

Computer buffers
    BT: Buffer storage
    RT: Cache storage

Computer bugs
    UF: Bugs
    BT: Computer crashes

Computer buses
    USE: Data buses

Computer control
    USE: Digital control

Computer crashes
    BT: Computer errors
    NT: Buffer overflows
        Computer bugs

Computer crime
    UF: Cyber crime
        Cyber-crime

Cybercrime
DDoS attack
DoS attack
Hacking
Piracy (software)
Software piracy
BT: Computer security
RT: Botnet
Computer viruses
Computer worms
Control system security
Data security
Digital rights management
Distributed denial-of-service attack
Privacy-invasive software
Unsolicited e-mail
NT: Counterfeiting
Cyber terrorism
Cyberattack
SQL injection

Computer displays
BT: Displays
RT: Computer graphics
Computer peripherals
Workstations
NT: Mesh generation
Touch sensitive screens

Computer documentation
USE: Documentation

Computer engineering education
USE: Computer science education

Computer errors
BT: Computer performance
NT: Computer crashes

Computer generated music
UF: CGM
Computer music
BT: Computer applications
Music

Computer graphics
BT: Graphics
RT: Animation
Art
Character generation
Computational geometry
Computer displays
Computer peripherals

Curve fitting
Fractals
Graphics processing units
Mesh generation
Modeling
Multimedia computing
Ray tracing
Simulation
Surface fitting
Visual effects
Workstations
NT: Data visualization
Rendering (computer graphics)
Shadow mapping
Sprites (computer)
Video sequences
Virtual reality
Visualization
X3D

Computer hacking
UF: Hacker
Hacks
BT: Computer security

Computer hardware
USE: Hardware

Computer industry
UF: DP industry
BT: Industries
RT: Computers and information processing

Computer integrated manufacturing
UF: CIM
BT: Computer applications
Manufacturing automation
RT: Agile manufacturing
CADCAM
Computer aided manufacturing
Virtual manufacturing

Computer interfaces
UF: Docking stations
BT: Computers and information processing
RT: Computer peripherals
Data buses
Interface management
User interfaces
NT: Application programming interfaces

Browsers
Computer ports
Field buses
Firewire
Haptic interfaces
Hypertext systems
Input devices
Interface phenomena
Interface states
Musical instrument digital
interfaces
System buses

Computer languages
UF: Programming languages
BT: Formal languages
RT: Data structures
Natural languages
Software
NT: Architecture description
languages
C languages
Command languages
Database languages
Hardware design
languages
High level languages
Markup languages
Python
R language
Specification languages
Style sheet languages
Systems Modeling
Language
Visual BASIC
WS-BPEL

Computer mediated communication
UF: Computer-mediated
communication
BT: Social networking (online)

Computer music
USE: Computer generated music
AND
Music

Computer network management
BT: Computer networks
RT: Bandwidth
Computer security
Data security
Software defined
networking
Traffic control

NT: Computer network reliability
Disruption tolerant
networking
Management information
base
Middleboxes
Network address translation
Network synthesis

Computer network reliability
BT: Computer network
management
Network topology

Computer networks
UF: Mice flows
BT: Communication systems
Computers and information
processing
RT: Bit rate
Computer ports
Cyber terrorism
Cyber warfare
Data communication
Delay estimation
Distributed computing
File servers
Firewalls (computing)
Frame relay
Hypercubes
IEEE 802.11 Standard
IEEE 802.11g Standard
IEEE 802.11n Standard
IEEE 802.16 Standard
IEEE 802.3 Standard
IPTV
Internetworking
LAN interconnection
Middleware
Multiprocessing systems
Multiprocessor
interconnection
Open systems
Personal area networks
Radial basis function
networks
TCPIP
Web sites
NT: Ad hoc networks
Computer network
management
Content distribution
networks
Cyberspace
Diffserv networks

Domain Name System
Ethernet
Heterogeneous networks
IP networks
Internet
Intserv networks
Metropolitan area networks
Multiprocessor interconnection networks
Network function virtualization
Network security
Network servers
Next generation networking
Overlay networks
Peer-to-peer computing
Software defined networking
Storage area networks
Token networks
Unicast
Virtual private networks
Wide area networks
Wireless access points

Computer numerical control
UF: CNC
NC machines
BT: Manufacturing automation
RT: Digital control
Industrial control

Computer operating systems
USE: Operating systems

Computer performance
BT: Computers and information processing
NT: Computer errors
Hardware acceleration
Performance loss

Computer peripherals
UF: Computer terminals
Peripheral equipment
BT: Computers and information processing
RT: Computer displays
Computer graphics
Computer interfaces
Device drivers
Firewire
Flash memories
User interfaces
NT: Disk drives

Keyboards
Modems
Printers

Computer pipeline processing
USE: Pipeline processing

Computer ports
BT: Computer interfaces
RT: Computer networks
Hardware
Information exchange

Computer programming profession
USE: Programming profession

Computer science
BT: Computers and information processing
RT: Function approximation
Logic
Software
NT: Computational neuroscience
Formal languages
Network theory (graphs)
Programming

Computer science education
UF: Computer engineering education
BT: Engineering education

Computer security
BT: Computers and information processing
Security
RT: Access control
Blacklisting
Blockchain
Computer network management
Cryptography
Data protection
Data security
Digital forensics
Eavesdropping
Operating systems
Privacy
Privacy-invasive software
Trust management
NT: Application security
Authentication
Cloud computing security
Computer crime

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Computer hacking
Countermeasures
(computer)
Cross-site scripting
Cyber espionage
Cyber warfare
Cyberattack
Data integrity
Denial-of-service attack
Firewalls (computing)
Honey pot (computing)
Identity management
systems
Internet security
Mobile security
Password
Penetration testing
Permission
Phishing
Proof of Work
Trusted computing

Computer simulation
BT: Simulation
RT: EMTP
Human in the loop

Computer software
USE: Software

Computer terminals
USE: Computer peripherals

Computer viruses
UF: Viruses (computer)
BT: Malware
RT: Anti-virus software
Computer crime
Computer worms

Computer vision
BT: Robots
RT: Activity recognition
Distributed vision networks
Gaze tracking
Image capture
Indoor navigation
Pattern recognition
Pose estimation
NT: Active appearance model
Blob detection
Corner detection
Face detection
Feature detection
Interest point detection

Smart cameras
Visual odometry

Computer worms
UF: Worms (computer)
BT: Malware
RT: Computer crime
Computer viruses

Computer-aided design
USE: Design automation

Computer-aided diagnosis
USE: Computer aided diagnosis

Computer-aided instruction
USE: Computer aided instruction

Computer-aided learning
USE: Computer aided instruction

Computer-assisted diagnosis
USE: Computer aided diagnosis

Computer-mediated communication
USE: Computer mediated
communication

Computerised axial tomography
USE: Computed tomography

Computerised instrumentation
USE: Computerized
instrumentation

Computerised monitoring
USE: Computerized monitoring

Computerised tomography
USE: Computed tomography

Computerized axial tomography
USE: Computed tomography

Computerized instrumentation
UF: Computerised
instrumentation
BT: Instrumentation and
measurement

Computerized monitoring
UF: Computerised monitoring
BT: Monitoring
RT: Computer applications

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Computerized tomography
USE: Computed tomography

Computers
UF: Computing technology
BT: Computers and information processing
RT: Cyberspace
NT: Analog computers
Calculators
Digital computers
Microcomputers
Parallel machines
Supercomputers
Tablet computers
Wearable computers

Computers and information processing
RT: Associative processing
Biology computing
Computer industry
Data processing
Electronic learning
Home computing
Information systems
Logic circuits
Multimedia computing
Multiprocessing systems
NT: Approximate computing
Computer applications
Computer architecture
Computer interfaces
Computer networks
Computer performance
Computer peripherals
Computer science
Computer security
Computers
Concurrency control
DNA computing
Data systems
Database machines
Digital systems
Distributed computing
File servers
Hardware
High performance computing
Image processing
Memory
Mobile computing
Molecular computing
Multitasking
Open systems
Optical computing
Parallel processing
Pattern recognition
Pervasive computing
Petascale computing
Platform virtualization
Probabilistic computing
Probability computing
Quantum computing
Real-time systems
Software
Software engineering
System recovery
Time sharing computer systems
Virtual machine monitors

Computing technology
USE: Computers

Concatenated codes
BT: Programming

Concave programming
BT: Optimization methods

Concrete
BT: Building materials
RT: Pressure vessels

Concurrency
USE: Concurrent computing

Concurrency control
BT: Computers and information processing
RT: Distributed computing
Distributed databases
Multiprocessing systems
Parallel processing
Protocols
Synchronization
NT: Processor scheduling

Concurrent computing
UF: Concurrency
BT: Computation theory
RT: Granular computing
Model checking

Concurrent engineering
BT: Engineering - general
RT: Product design
Project management
Quality function deployment

Research and development
management

Time to market
Virtual manufacturing

Condition monitoring
BT: Preventive maintenance

Conditions of employment
USE: Employee welfare

Conducting bodies
USE: Conductors

Conducting materials
BT: Materials
RT: Conductivity
Conductors
Semiconductor materials
NT: Electrolytes

Conductive adhesives
BT: Adhesives

Conductive films
BT: Films
NT: Anisotropic conductive films

Conductivity
UF: Electric conductivity
Electrical conductivity
Resistivity
BT: Electric variables
RT: Charge carriers
Conducting materials
Conductivity measurement
Grain boundaries
Impact ionization
Transmission line theory
NT: Photoconductivity
Semiconductivity
Transconductance

Conductivity measurement
UF: Resistivity measurement
BT: Electric variables
measurement
RT: Conductivity

Conductors
UF: Conducting bodies
BT: Electric machines
RT: Cables
Conducting materials
Core loss

Power cables
Power distribution lines
Power transmission lines
Proximity effects
Skin effect
Thermal noise
Three-phase electric power
Wire
Wireless power
transmission

Wiring

Conference management
BT: Management

Conferences
UF: Meetings (technical)
Symposia
Workshops
BT: Meetings

Configuration management
BT: Systems engineering and
theory
RT: Complex systems
Maintenance engineering
System analysis and design

Conformal mapping
BT: Mathematics
RT: Coplanar waveguides
Wave functions
Waveguide components
Waveguide theory

Conformance testing
UF: Compliance testing
Conformity assessment
Type testing
BT: Testing
RT: Accreditation
Certification
Quality of service
Standards
Surveillance

Conformity assessment
USE: Conformance testing

Congestive heart failure
BT: Medical conditions

Connected cars
USE: Connected vehicles

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Connected vehicles
- UF: Connected cars
- BT: Vehicles
- RT: Intelligent vehicles

Connecting
- USE: Joining processes

Connective tissue
- BT: Biological tissues

Connectors
- BT: Electronic components
- NT: Plugs
  Sockets

Consensus algorithm
- BT: Algorithm design and theory

Consensus control
- BT: Decentralized control
- RT: Swarm robotics

Consensus protocol
- BT: Blockchain
  Protocols
- RT: Ecosystems

Consortia
- BT: Engineering management
- RT: Business

Constellation diagram
- UF: Signal constellation
- BT: Digital modulation

Constraint handling
- UF: Constraint programming
- BT: Logic programming

Constraint optimization
- BT: Design optimization
- RT: Electronics packaging

Constraint programming
- USE: Constraint handling

Constraint theory
- BT: Integer linear programming

Construction
- UF: Erection
- BT: Industries
- RT: Building materials

Civil engineering
Construction industry
Structural engineering
- NT: Buildings
  Green buildings
  Modular construction
  Prefabricated construction
  Stairs

Construction industry
- BT: Industries
- RT: Building automation
  Building materials
  Buildings
  Construction
  Excavation
  Floors
  Mortar
  Shipbuilding industry
  Smart cities
- NT: Prefabricated construction

Consumer behavior
- UF: Consumer behaviour
- BT: Behavioral sciences
- RT: Consumer products
  Customer profiles
  Customer relationship management
  Food waste
  Market opportunities
  Technology acceptance model

Consumer behaviour
- USE: Consumer behavior

Consumer electronics
- UF: Kindle
- RT: Consumer products
  Digital systems
  Firewire
  Flat panel displays
  Microcomputers
  Video equipment
- NT: Ambient intelligence
  Audio systems
  Home automation
  Home computing
  Low-power electronics
  Microwave ovens
  Multimedia systems

Consumer products
- BT: Manufactured products

RT: Commercial law
Consumer behavior
Consumer electronics
Domestic safety
Electrical products
Food industry
Food manufacturing
Food products
Footwear industry
Market research
Plastic products
Product liability
Product safety
Watches
NT: Clothing
Games
Home appliances
Microwave ovens

Consumer protection
BT: Law
Product safety engineering
RT: Censorship
Commercial law
Customer relationship management
Quality assurance

Consumer-generated media
USE: User-generated content

Contact resistance
BT: Contacts

Contactors
BT: Switches

Contacts
BT: Circuits and systems
RT: Semiconductor devices
NT: Brushes
Contact resistance
Ohmic contacts

Containers
BT: Material storage
Materials handling equipment
RT: Bulk storage
Canning
Filling
Fuel storage
Loading
Measurement
Pallets

Production
Stacking
NT: Freight containers

Contamination
BT: Materials science and technology
RT: Chemical hazards
Decontamination
Hazards
Impurities
Microfiltration
Pollution
Quality control
Radiation protection
NT: Surface contamination

Content addressable memory
USE: Associative memory

Content addressable storage
BT: Memory
RT: Content-based retrieval

Content based retrieval
USE: Content-based retrieval

Content delivery networks
USE: Content distribution networks

Content distribution networks
UF: Content delivery networks
BT: Computer networks

Content management
BT: Electronic publishing
Management
RT: Blockchain
Document handling
MPEG 7 Standard
Multimedia computing
Publish subscribe systems
Semantic Web
Web design
Web sites

Content-based retrieval
UF: Content based retrieval
BT: Information retrieval
RT: Content addressable storage

Content-centric networking

USE: Information-centric networking

Context
    BT: Professional communication
    RT: Pragmatics

Context aware*
    USE: Context-aware services

Context awareness
    BT: Artificial intelligence
    RT: Intelligent control
        Intelligent systems
        Knowledge acquisition
        Learning systems
        Pervasive computing
        Semantic search

Context modeling
    BT: Modeling
    RT: Computational linguistics

Context-aware applications
    USE: Context-aware services

Context-aware computing
    USE: Context-aware services

Context-aware services
    UF: Context aware*
        Context-aware applications
        Context-aware computing
    BT: Ubiquitous computing

Continents
    BT: Geoscience
    NT: Africa
        Asia
        Australia
        Europe
        North America
        South America

Contingency management
    BT: Management
    NT: Crisis management
        Disaster management
        Mission critical systems

Continuing education
    UF: Further education
    BT: Career development
        Educational programs

    RT: Computer aided instruction
        Engineering education
        Management training
        Training

Continuing professional development
    UF: Life long learning
    BT: Human resource management
    RT: Qualifications
        Training

Continuous improvement
    UF: Kaizen
    BT: Total quality management
    RT: Production management
        Quality awards

Continuous phase modulation
    BT: Phase modulation

Continuous production
    BT: Flow production systems
        Production control
    RT: Process control
        Production management

Continuous systems
    USE: Continuous time systems

Continuous time models
    USE: Continuous time systems

Continuous time systems
    UF: Continuous systems
        Continuous time models
    BT: Time factors

Continuous wavelet transforms
    BT: Wavelet transforms

Continuous-stirred tank reactor
    BT: Chemical reactors

Continuously variable transmission
    USE: Mechanical power transmission

Contract law
    BT: Law
    RT: Contracts
        Employment law

Contract management
    BT: Contracts

Management
RT: Risk management

Contracts
 BT: Management
 RT: Business
   Contract law
   Procurement
   Proposals
 NT: Contract management
   Forward contracts
   Licenses
   Service level agreements
   Smart contracts
   Subcontracting

Control charts
 UF: Cusum charts
   Shewhart charts
 BT: Production management
 RT: Control systems
   Quality management

Control design
 BT: Control systems
 RT: Feedback
   Lyapunov methods

Control engineering
 BT: Control systems
 RT: Control engineering
education
   Predictive control
 NT: Control system security

Control engineering computing
 BT: Computer applications
 RT: Control engineering
education
   Hardware-in-the-loop
simulation

Control engineering education
 BT: Engineering education
 RT: Control engineering
   Control engineering
computing

Control equipment
 BT: Control systems
 RT: Manipulators
   Mechatronics
   Robots
 NT: Actuators
   Fasteners

Microcontrollers
Regulators
Remote control
Servosystems
Switches
Switchgear
Telecontrol equipment
Thermostats

Control nonlinearities
 BT: Control theory
 RT: Nonlinear control systems
 NT: Backstepping
   Feedback linearization

Control system analysis
 BT: System analysis and design
 RT: Piecewise linear techniques
 NT: State-space methods

Control system security
 BT: Control engineering
   Security
 RT: Computer crime
   Control systems
   Cyber-physical systems
   Industrial control
   National security
   Power system control
   Safety
 NT: Physical unclonable
function

Control system synthesis
 UF: Control systems synthesis
 BT: Control systems
 RT: Circuit synthesis
   Hardware-in-the-loop
simulation
   Linearization techniques
   Piecewise linear techniques

Control systems
 RT: Active perception
   Actuators
   Adaptive control
   Air traffic control
   Communication system
control
   Control charts
   Control system security
   Cybernetics
   Discrete-event systems
   Discrete-time systems
   Estimation

Flexible structures
Force control
Game theory
H infinity control
Interconnected systems
Inventory control
Legged locomotion
Linear systems
Linearization techniques
MIMO communication
Manipulators
Microcontrollers
Microsensors
Mobile robots
Neuromodulation
Nonlinear systems
Parameter estimation
Poles and zeros
Real-time systems
Robots
Robustness
Sensitivity
Stability
State estimation
Stochastic systems
Switched systems
Target tracking
Time-varying systems
Transfer functions
Uncertain systems

NT: Automatic control
Automatic generation control

Autopilot
Bidirectional control
Block signalling
Brakes
CAMAC
Centralized control
Closed loop systems
Control design
Control engineering
Control equipment
Control system synthesis
Controllability
Cruise control
Decentralized control
Delay systems
Digital control
Fault tolerant control
Feedback
Feedback linearization
Fluid flow control
Fluidics
Gaze tracking

Homeostasis
Linear feedback control
systems
Magnetic variables control
Mechanical variables control

Medical control systems
Moisture control
Motion compensation
Networked control systems
Nonlinear control systems
Open loop systems
Optical control
Optimal control
PD control
PI control
Pneumatic systems
Positive train control
Pressure control
Proportional control
Radio control
Robot control
SCADA systems
Sensorless control
Sliding mode control
Supervisory control
Thermal variables control
Traffic control

Control systems synthesis
    USE: Control system synthesis

Control theory
    BT: Cybernetics
    RT: Dynamics
        Feedback circuits
    NT: Control nonlinearities
        Iterative learning control
        Observability

Controllability
    BT: Control systems

Convection
    UF: Mixed convection
        Rayleigh-Benard convection
    BT: Heat transfer

Convergence
    BT: Mathematics

Convergence of numerical methods
    BT: Numerical analysis

Converters
UF: Convertors
Switching convertors
BT: Power electronics
RT: Data conversion
Pulse width modulation
Pulse width modulation inverters
Rectennas
Space vector pulse width modulation
NT: AC-AC converters
DC-AC power converters
Digital-to-frequency converters
Frequency conversion
Multilevel converters
Power conversion
Pulse width modulation converters
Resonant converters
Static power converters
Voltage-source converters
Wavelength converters

Convertors
USE: Converters

Convex functions
UF: Convex optimization
BT: Mathematics

Convex optimization
USE: Convex functions

Convolution
BT: Signal processing
RT: Deconvolution
Numerical analysis
NT: Convolvers

Convolutional codes
UF: Trellis codes
BT: Codes
RT: Channel coding
Digital multimedia broadcasting
Error correction
Error correction codes
Radio communication
Satellite communication
Telecommunications

Convolutional neural nets
USE: Convolutional neural networks

Convolutional neural networks
UF: Convolutional neural nets
BT: Artificial neural networks
RT: Generative adversarial networks
Machine learning

Convolvers
BT: Convolution

Coolants
UF: Antifreeze materials
BT: Cooling
RT: Space cooling
NT: Refrigerants

Cooling
BT: Temperature control
RT: Electronics cooling
Electronics packaging
HVAC
Heat pipes
Thermal engineering
Water pumps
NT: Air conditioning
Cold plates
Coolants
Heat sinks
Immersion cooling
Liquid cooling
Refrigeration
Solar cooling
Space cooling
Thermal quenching
Trigeneration
Ventilation

Cooperative cache
USE: System performance

Cooperative caching
BT: System performance

Cooperative communication
UF: Amplify-and-forward cooperative communication
BT: Collaborative work
Wireless communication
RT: Communication effectiveness
Professional communication

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Cooperative networks
USE: Cooperative systems

Cooperative systems
UF: Cooperative networks
BT: Artificial intelligence
RT: Artificial bee colony algorithm

Cooperative work
USE: Collaborative work

Coordinate measuring machines
UF: CMM
BT: Measurement
RT: Inspection
Machine tools
Quality control

Coplanar transmission lines
BT: Planar transmission lines
NT: Coplanar waveguides

Coplanar waveguides
UF: CPW
BT: Coplanar transmission lines
RT: Conformal mapping
Electromagnetic waveguides

Copper
UF: Cu
BT: Metals
NT: Copper alloys
Copper compounds

Copper alloys
BT: Copper
RT: Alloying

Copper compounds
BT: Copper

Coprocessors
BT: Circuits
Integrated circuits
Microprocessors
RT: AI accelerators
Digital arithmetic

Copyright protection
BT: Legal factors
RT: Plagiarism
Public domain software

Publishing
Trademarks
NT: Intellectual property
Software protection

Core dumps
BT: System recovery

Core loss
UF: Core losses
BT: Energy loss
RT: Conductors
Transformers

Core losses
USE: Core loss

Core-shelf nanostructures
USE: Nanostructured materials

Cornea
BT: Eyes
RT: Ophthalmology

Corner detection
BT: Computer vision
Image processing
RT: Image edge detection
Motion detection

Corona
BT: Electric breakdown
RT: Partial discharges

Corona virus*
USE: Coronaviruses

Coronary arteriosclerosis
BT: Arteriosclerosis

Coronaviruses
UF: Corona virus*
BT: Viruses (medical)
RT: COVID-19
Epidemics
Pandemics

Corporate acquisitions
UF: Mergers
BT: Organizational aspects
RT: Business process re-engineering

Corpse
USE: Cadaver

Corpus amygdaloideum
    USE: Amygdala

Corpus callosum
    UF: Callosal commissure
    BT: Brain

Correlation
    BT: Statistics
    RT: Correlation coefficient
    NT: Autocorrelation

Correlation coefficient
    BT: Statistics
    RT: Correlation
            Regression analysis

Correlators
    BT: Electromagnetic radiation
    RT: Signal detection
            Signal processing

Corrosion
    BT: Surfaces
    RT: Coatings
            Corrosion inhibitors
            Galvanizing
            Grain boundaries
            Magnetic flux leakage
            Passivation

Corrosion inhibitors
    BT: Inhibitors
            Materials
    RT: Corrosion
            Galvanizing
            Materials preparation
            Materials processing

Corrugated surfaces
    BT: Rough surfaces
            Surfaces

Cortana
    USE: Virtual assistants

Cortical bone
    BT: Bone tissue

Cortical plasticity
    USE: Neuroplasticity

Cosmic gamma ray bursts
    USE: Gamma-ray bursts

Cosmic rays
    BT: Extraterrestrial phenomena
    RT: Electrons
            Elementary particles
            Mesons
            Neutrons
            Protons

Cost accounting
    UF: Valuation
    BT: Costing
            Management accounting
    RT: Costs
            Economics
            Profitability

Cost analysis
    USE: Cost benefit analysis

Cost benefit analysis
    UF: Cost analysis
            Cost-benefit analysis
    BT: Costs
    RT: Functional point analysis

Cost function
    BT: Optimization

Cost of living index
    USE: Economic indicators

Cost-benefit analysis
    USE: Cost benefit analysis

Cost-of-living index
    USE: Economic indicators

Costing
    UF: Capital cost reduction
            Operating cost reduction
    BT: Financial management
    NT: Cost accounting

Costs
    BT: Economics
    RT: Cost accounting
            Econometrics
            Exchange rates
    NT: Cost benefit analysis

Cotton
    BT: Agricultural products
            Textiles
    RT: Natural fibers

Textile fibers
Textile industry
Weaving

Counseling
USE: Employee welfare

Counselling
USE: Employee welfare

Counterfeit goods
USE: Counterfeiting AND
Manufactured products

Counterfeiting
UF: Counterfeit goods
BT: Computer crime

Countermeasures (computer)
BT: Computer security
Data protection
RT: Access control
Anti-virus software
Blacklisting
Firewalls (computing)
Whitelists

Counters
USE: Radiation detectors

Counting circuits
BT: Circuits
RT: Logic circuits
Radiation detector circuits

Coupled circuits
USE: Coupling circuits

Coupled mode analysis
BT: Circuit analysis
RT: Multiconductor transmission
lines

Couplers
BT: Communications
technology
RT: Apertures
Coupling circuits
Electromagnetic coupling
NT: Directional couplers

Coupling (process)
USE: Joining processes

Coupling circuits

UF: Coupled circuits
BT: Circuits
RT: Couplers

Couplings
UF: Linkages
BT: Mechanical products
RT: Fasteners
Joining processes
Machine components
Shafts

Course correction
UF: Course-correction
BT: Navigation
RT: Aircraft navigation
Path planning

Course-correction
USE: Course correction

Courseware
BT: Educational technology
RT: Authoring systems
Computer aided instruction
Software

Covariance matrices
UF: Covariance matrix
BT: Statistics

Covariance matrix
USE: Covariance matrices

COVID-19
BT: Diseases
RT: Coronaviruses
Pandemics

Cows
UF: Cattle
BT: Bovine

CPU
USE: Central Processing Unit

CPW
USE: Coplanar waveguides

Cr
USE: Chromium

Cramer Rao bound
USE: Cramer-Rao bounds

Cramer Rao bounds
    USE: Cramer-Rao bounds

Cramer-Rao bounds
    UF: Cramer Rao bound
            Cramer Rao bounds
            Cramer-Rao inequality
            Information inequality
    BT: Estimation theory

Cramer-Rao inequality
    USE: Cramer-Rao bounds

Cranes
    BT: Lifting equipment

Cranial
    BT: Nervous system
    NT: Cranial pressure

Cranial pressure
    BT: Cranial
    NT: Intracranial system

Cranium
    BT: Head

Crawlers
    BT: Web search
    RT: Bot (Internet)

CRC codes
    USE: Cyclic redundancy check codes

Creativity
    BT: Innovation management

Credit cards
    UF: American Express
            Mastercard
            Visa gold
    BT: Financial management

Creep
    BT: Material properties

Criminal law
    BT: Law

Crimping
    BT: Joining processes

Crisis management
    BT: Contingency management

Critical current density
    BT: Critical current density (superconductivity)
    RT: Silicon compounds
            Superconducting materials
            Thermal factors

Critical current density (superconductivity)
    BT: Superconductivity
    RT: Magnetic fields
    NT: Critical current density

Critical infrastructure
    UF: Critical national infrastructure
    BT: Public infrastructure

Critical national infrastructure
    USE: Critical infrastructure

Crops
    BT: Agricultural products
            Vegetation
    RT: Fertilizers
            Greenhouses
            Irrigation
            Water storage
            Yield estimation

Cross cultural communication
    USE: Cross-cultural communication

Cross layer design
    BT: Communication systems
    RT: Ad hoc networks
            Cellular radio
            IEEE 802.16 Standard
            Military communication
            Radio communication

Cross platform virtualization
    USE: Application virtualization

Cross reality
    USE: X reality

Cross-cultural communication
    UF: Cross cultural communication
    BT: Global communication
    RT: Cultural differences

Cross-platform virtualization

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USE: Application virtualization

Cross-site scripting
UF: XSS
BT: Computer security

Crosstalk
UF: Crosstalk noise
BT: Interference
RT: Electromagnetic interference
Interchannel interference
Transmission line theory

Crosstalk noise
USE: Crosstalk

Crowdsensing
BT: Crowdsourcing
RT: Collective intelligence
Mobile computing

Crowdsourcing
BT: Collaborative work
Internet
RT: Collective intelligence
Distributed processing
Mobile computing
Outsourcing
Social computing
Social networking (online)
NT: Crowdsensing
Product development

CRT
USE: Cathode ray tubes

Cruise control
BT: Control systems
Electromechanical systems
RT: Velocity control

Cryobiology
BT: Biology
Temperature measurement

Cryogenic electronics
BT: Industrial electronics
RT: Cryogenics
Superconducting devices
Superconducting materials

Cryogenics
UF: Cryonics
BT: Industry applications

Temperature measurement
RT: Cryogenic electronics
NT: Liquid nitrogen

Cryonics
USE: Cryogenics

Cryotherapy
BT: Medical treatment
Temperature measurement

Crypto currency
USE: Cryptocurrency

Cryptocurrency
UF: Crypto currency
BT: Cryptography
Currencies
RT: Blockchain
Digital systems
Distributed ledger
Finance
Online banking
NT: Bitcoin

Cryptographic
USE: Cryptography

Cryptographic accelerators
USE: Hardware acceleration

Cryptographic hash function
BT: Cryptography
Hash functions

Cryptographic protocols
BT: Protocols

Cryptography
UF: Cryptographic
BT: Data security
Security
RT: Bitcoin
Blockchain
Chaotic communication
Codes
Communication system security
Computer security
Data handling
Encoding
Hash functions
Message authentication
Physical unclonable function

Privacy
Quantum key distribution
Random sequences
Steganography
Trust management
NT: Ciphers
Cryptocurrency
Cryptographic hash function
Encryption
Public key
Quantum cryptography
Random number generation
Side-channel attacks
Zero knowledge proof

Crystal growth
BT: Crystallization
RT: Epitaxial growth
Semiconductor growth

Crystal microstructure
BT: Crystals
RT: Microstructure

Crystalline materials
BT: Materials
NT: Martensite
Nanocrystals
Perovskites
Superlattices

Crystallisation
USE: Crystallization

Crystallisers
USE: Crystallizers

Crystallization
UF: Crystallisation
BT: Crystallography
NT: Crystal growth

Crystallizers
UF: Crystallisers
BT: Chemical technology
RT: Chemical reactors
Colloidal crystals
Crystallography
Crystals

Crystallography
BT: Crystals
RT: Crystallizers

Diffraction
X-ray detectors
NT: Crystallization

Crystals
BT: Materials
RT: Crystallizers
Epitaxial growth
Materials science and technology
Molecular beam epitaxial growth
Phonons
Piezoelectric materials
Semiconductor materials
Solids
NT: Colloidal crystals
Crystal microstructure
Crystallography
Grain boundaries
Grain size
Liquid crystals
Quartz crystals

CSA Group
UF: Canadian Standards Association
BT: Standards organizations

CSA Group Standards
BT: Standards publications

CSMA
USE: Multiaccess communication

CSP
USE: Chip scale packaging

CSTR
USE: Chemical reactors

CT scan
USE: Computed tomography

Cu
USE: Copper

CubeSat
BT: Small satellites

Cultural aspects
BT: Social implications of technology
NT: Cultural differences

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Cultural differences
BT:	Cultural aspects	
	Social implications of technology	
RT:	Cross-cultural communication	
	Developing countries	
	Digital divide	
	Memetics	
	Social intelligence	

Curing
BT:	Materials processing
RT:	Heat treatment
	Kilns

Curium
BT:	Chemical elements

Currencies
BT:	Finance
NT:	Cryptocurrency

Current
UF:	Electric current
BT:	Electric variables
RT:	Breakdown voltage
	Current control
	Current limiters
	Current measurement
	Current supplies
	Current transformers
NT:	Bioimpedance
	Current slump
	Dark current
	Fault currents
	Leakage currents
	Persistent currents
	Short-circuit currents
	Threshold current

Current control
UF:	Current regulation
BT:	Electric variables control
RT:	Current
	Current measurement
	Regulators
	Switches
	Switchgear
NT:	Electric current control
	Electrical ballasts

Current crowding
USE:	Proximity effects

Current density
BT:	Current measurement
RT:	Density measurement
	Particle measurements
NT:	Skin effect

Current distribution
BT:	Current measurement
RT:	Antenna theory

Current limiters
BT:	Power electronics
RT:	Current
	Current measurement
NT:	Fault current limiters

Current measurement
UF:	Electric current measurement
BT:	Electric variables measurement
RT:	Ammeters
	Current
	Current control
	Current limiters
NT:	Current density
	Current distribution

Current measurement (water)
USE:	Sea measurements

Current mirrors
BT:	Circuit topology

Current mode circuits
USE:	Current-mode circuits

Current regulation
USE:	Current control

Current slump
BT:	Current

Current supplies
BT:	Power supplies
RT:	Current

Current transformers
BT:	Transformers
RT:	Current

Current voltage characteristics
USE:	Current-voltage characteristics AND
	Electric variables

Current-mode circuits
UF: Current mode circuits
BT: Integrated circuits

Current-voltage characteristics
UF: Current voltage characteristics
BT: Electric variables

Curriculum development
BT: Educational courses
RT: Educational programs
    STEM

Curve fitting
BT: Approximation methods
    Visualization
RT: Computer graphics
    Interpolation
    Least squares approximations
    Splines (mathematics)
    Surface fitting

Custom integrated circuits
USE: Application specific integrated circuits

Customer profiles
BT: Customer relationship management
RT: Consumer behavior
    Market opportunities

Customer relationship management
BT: Management
RT: Consumer behavior
    Consumer protection
    Data-driven modeling
    Management information systems
    Public relations
    Quality management
    Supply chain management
NT: Customer profiles
    Customer satisfaction
    Customer services
    Market research
    Stakeholders

Customer satisfaction
BT: Customer relationship management
RT: Customer services
    Market research
    Product customization
    Quality management
NT: Quality of experience
    Quality of service

Customer services
BT: Customer relationship management
RT: Customer satisfaction

Cusum charts
USE: Control charts

Cutoff frequency
BT: Integrated circuit modeling

Cutting fluids
USE: Lubricants

Cutting tools
BT: Production equipment
RT: Blades
    Dies
    Machine tools
    Metalworking machines
    Milling machines
NT: Metal cutting tools
    Water jet cutting

CVD
USE: Chemical vapor deposition

Cyber attack
USE: Cyberattack

Cyber attacks
USE: Cyberattack

Cyber crime
USE: Computer crime

Cyber eavesdropping
USE: Eavesdropping

Cyber espionage
UF: Cyber spying
    Cyberespionage
    Cyberspying
BT: Computer security
    Information security
RT: Malware
    Trojan horses

Cyber ethics

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USE: Cyberethics

Cyber sickness
USE: Cybersickness

Cyber spying
USE: Cyber espionage

Cyber terrorism
UF: Cyberterrorism
BT: Computer crime
Terrorism
RT: Computer networks

Cyber warfare
UF: Cyberwarfare
BT: Computer security
RT: Computer networks
Cyberattack
National security

Cyber-crime
USE: Computer crime

Cyber-physical systems
UF: Cyberphysical
BT: System of systems
RT: Collaboration
Control system security
Embedded systems
Human computer interaction
Internet of Things
Operating systems
Smart cities
Smart grids
Wireless sensor networks
NT: Digital twin

Cyber-space
USE: Cyberspace

Cyberattack
UF: Cyber attack
Cyber attacks
BT: Computer crime
Computer security
RT: Cyber warfare
Cyberethics
US Department of Homeland Security

Cybercare
BT: Medical services

Cybercrime
USE: Computer crime

Cybereavesdropping
USE: Eavesdropping

Cyberespionage
USE: Cyber espionage

Cyberethics
UF: Cyber ethics
BT: Ethics
RT: Behavioral sciences
Cyberattack
Intellectual property
Privacy
Social implications of technology

Cybernetics
UF: Biocybernetics
BT: Systems, man, and cybernetics
RT: Automata
Cognitive systems
Control systems
Cyberspace
Econometrics
Ergonomics
Information theory
Learning systems
Man-machine systems
Neural networks
Radial basis function networks
Robots
NT: Adaptive systems
Cognitive informatics
Cognitive science
Control theory
Decision theory
Econophysics
Emergent phenomena
Intelligent control
Linear feedback control systems

Cyberphysical
USE: Cyber-physical systems

Cybersickness
UF: Cyber sickness
BT: Medical conditions
Virtual reality

Cyberspace
  UF: Cyber-space
  BT: Communication networks
       Computer networks
  RT: Computers
       Cybernetics
       Electromagnetics
       Internet
       Telematics
       Virtual reality
       World Wide Web

Cyberspying
  USE: Cyber espionage

Cyberterrorism
  USE: Cyber terrorism

Cyberwarfare
  USE: Cyber warfare

Cyborgs
  USE: Man-machine systems

Cyclic redundancy check
  BT: Mathematics
  RT: Algorithms
       Data communication
       Error analysis
       Error correction
       Information theory
       Noise
  NT: Cyclic redundancy check codes

Cyclic redundancy check codes
  UF: CRC codes
  BT: Codes
       Cyclic redundancy check
  RT: Decoding
       Error analysis
       Error correction

Cyclones
  UF: Polar cyclones
  BT: Geoscience
  NT: Hurricanes
       Tropical cyclones

Cyclonic storms
  USE: Tropical cyclones

Cyclotrons
  BT: Particle accelerators

Cyphers
  USE: Ciphers

D-HEMTs
  UF: Depletion mode HEMTs
       Depletion-mode HEMTs
  BT: HEMTs

D/A
  USE: Digital-analog conversion

D/A conversion
  USE: Digital-analog conversion

D/A converters
  USE: Digital-analog conversion

D2D
  USE: Device-to-device communication

Dailymotion
  USE: Multimedia Web sites

Dairy products
  UF: Butter
       Cheese
       Milk
  BT: Agricultural products
       Food products
  RT: Agriculture

Damascene integration
  BT: Electronic equipment manufacture
  RT: Very large scale integration

Dampers
  USE: Shock absorbers

Damping
  BT: Mechanical factors
  RT: Hysteresis
       Impedance
       Oscillators
       Propagation
       Shock absorbers
       Stability
       Transfer functions
       Transient response
       Vibration control
       Vibrations

Dams
  BT: Geotechnical structures

Water storage
RT: Environmental management
Hydroelectric power generation
Reservoirs

DAQ
USE: Data acquisition

Dark current
BT: Current

Dark energy
BT: Physics

Dark matter
BT: Astrophysics

Dark states
BT: Laser applications

Darmstadtium
BT: Chemical elements

DARPANET
USE: ARPANET

Data acquisition
UF: DAQ
BT: Data systems
RT: Analog-digital conversion
Data handling
Data processing
High energy physics instrumentation computing
Measurement
NT: Fastbus
User-generated content

Data aggregation
BT: Data collection
RT: Data assimilation
Data handling
Data integration
Database systems
Information management

Data analysis
UF: Data analytics
BT: Data processing
RT: Big Data applications
Data collection
Data mining
Formal concept analysis

R language
Text categorization
NT: Business intelligence
Data science
Itemsets
Training data

Data analytics
USE: Data analysis

Data assimilation
BT: Data handling
RT: Data aggregation
Meteorology

Data breach
UF: Data spill
BT: Information security
RT: Data security
Privacy breach
NT: Network intrusion

Data buses
UF: Computer buses
BT: Communication systems
Data communication
RT: CAMAC
Computer interfaces
Fastbus
IEEE 1394 Standard
NT: Backplanes

Data center power
BT: Data centers
Power systems

Data centers
UF: Data centres
BT: Data systems
NT: Data center power

Data centres
USE: Data centers

Data collection
BT: Data processing
RT: Blockchain
Data analysis
Information processing
NT: Big Data
Data aggregation

Data communication
UF: Data transmission
BT: Communication systems

RT:	Ad hoc networks	
	B-ISDN	
	CAMAC	
	Computer networks	
	Cyclic redundancy check	
	Data dissemination	
	Data security	
	Digital communication	
	Distributed computing	
	Extranets	
	Fastbus	
	File servers	
	Firewire	
	IEEE 1394 Standard	
	ISDN	
	Modems	
	Multiprocessor interconnection	
	Office automation	
	Packet loss	
	Personal area networks	
	TCPIP	
	Telecontrol equipment	
	Teletext	
	Videotex	
NT:	Asynchronous communication	
	Asynchronous transfer mode	
	Data buses	
	Data transfer	
	Telecommunication buffers	
	Telemetry	
	Teleprinting	
	Visible light communication	

Data compression
BT:	Data systems
RT:	Encoding
	Entropy coding
	Fourier series
	Quantization (signal)
	Rate-distortion
	Streaming media
	Transcoding
	Video compression
NT:	Adaptive coding
	Audio compression
	Huffman coding
	Source coding
	Test data compression
	Transform coding

Data confidentiality
USE:	Data privacy

Data conversion
BT:	Data systems
RT:	Converters
NT:	Analog-digital conversion
	Digital-analog conversion

Data dissemination
BT:	Data handling
	Information sharing
RT:	Data communication
	Data integration
	Mobile computing

Data encapsulation
BT:	Data handling

Data engineering
BT:	Data systems

Data envelopment analysis
BT:	Linear programming

Data flow computing
BT:	Multiprocessing systems

Data flow graphs
USE:	Flow graphs

Data freshness
USE:	Data integrity

Data fusion
USE:	Data integration

Data gloves
BT:	Haptic interfaces

Data governance
BT:	Data handling
	Organizational aspects
RT:	Business data processing
	Data integrity
	Data models
	Data privacy
	Data protection
	Data security
	Database systems
	Quality management
NT:	Government policies

Data handling
UF:	Electronic data interchange
BT:	Data systems
RT:	Big Data

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Buffer storage
Cryptography
Data acquisition
Data aggregation
Data processing
Data security
Encoding
Enterprise resource
planning
General Data Protection
Regulation
NT: Data assimilation
Data dissemination
Data encapsulation
Data governance
Data integrity
Document handling
Merging
Open data
Sorting

Data integration
UF: Data fusion
BT: Data processing
RT: Data aggregation
Data dissemination

Data integrity
UF: Data freshness
Data quality
BT: Computer security
Data handling
RT: Data governance
Digital preservation
Quality assurance
Quality control

Data mining
BT: Pattern recognition
RT: Artificial intelligence
Big Data
Business intelligence
Data analysis
Data visualization
Digital forensics
Knowledge discovery
Naive Bayes methods
Nearest neighbor methods
Predictive analytics
R language
NT: Anomaly detection
Association rules
Data privacy
Text analysis
Text mining

Web mining

Data models
BT: Modeling
RT: Data governance
Database systems
Semantic Web
Semantic technology
NT: Data-driven modeling
Metadata

Data over cable service interface specification
UF: DOCSIS
BT: Communication standards

Data preprocessing
BT: Data processing

Data privacy
UF: Data confidentiality
Privacy preserving data
mining
BT: Data mining
RT: Data governance
Privacy
NT: Data protection
Differential privacy

Data processing
BT: Data systems
RT: CAMAC
Computers and information
processing
Data acquisition
Data handling
Database systems
Enterprise resource
planning
Fastbus
Signal processing
Smart cards
Technology management
NT: Associative processing
Business data processing
Data analysis
Data collection
Data integration
Data preprocessing
Data transfer
Information exchange
Spreadsheet programs
Text processing
Virtual enterprises

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Data protection
- BT: Data privacy
- RT: Computer security
  - Data governance
  - Data security
  - Differential privacy
  - Information security
  - Privacy
- NT: Countermeasures (computer)
  - General Data Protection Regulation

Data quality
- USE: Data integrity

Data science
- BT: Data analysis
- RT: Knowledge discovery
  - Neuroinformatics

Data security
- UF: Security of data
  - System privacy management
- BT: Security
- RT: Communication system security
  - Computer crime
  - Computer network management
  - Computer security
  - Data breach
  - Data communication
  - Data governance
  - Data handling
  - Data protection
  - Network intrusion
  - Privacy
  - Privacy breach
  - Virtual private networks
- NT: Cryptography
  - Message authentication
  - Tokenization

Data spill
- USE: Data breach

Data storage
- USE: Memory

Data storage systems
- BT: Data systems
- RT: Big Data
  - Storage area networks

- NT: Triples (Data structure)

Data structures
- BT: Computer architecture
- RT: Computer languages
  - Database systems
  - File systems
  - NoSQL databases
- NT: Arrays
  - Binary decision diagrams
  - Null value
  - Octrees
  - Persistent identifiers
  - Table lookup
  - Tree data structures

Data systems
- BT: Computers and information processing
  - Information systems
- RT: Big Data applications
- NT: Data acquisition
  - Data centers
  - Data compression
  - Data conversion
  - Data engineering
  - Data handling
  - Data processing
  - Data storage systems
  - Data warehouses

Data transfer
- BT: Data communication
  - Data processing
- RT: Packet switching
- NT: Handover

Data transmission
- USE: Data communication

Data visualisation
- USE: Data visualization

Data visualization
- UF: Data visualisation
- BT: Computer graphics
  - User interfaces
- RT: Biomedical imaging
  - Data mining
  - Modeling
  - R language
- NT: Isosurfaces

Data warehouses
- BT: Data systems

RT: NoSQL databases

Data-driven modeling
BT: Data models
        Modeling
RT: Customer relationship management

Database languages
UF: Query languages
BT: Computer languages
RT: Database systems
NT: Structured Query Language

Database machines
BT: Computers and information processing
RT: Database systems
        Information systems

Database management systems
USE: Database systems

Database systems
UF: Database management systems
        Technical data management
BT: Databases
        Information systems
RT: Data aggregation
        Data governance
        Data models
        Data processing
        Data structures
        Database languages
        Database machines
        File systems
        Hypertext systems
        Information architecture
        Linked data
        Triples (Data structure)
NT: Audio databases
        Deductive databases
        Image databases
        Indexes
        Multimedia databases
        NoSQL databases
        Object oriented databases
        Query processing

Databases
BT: Professional communication
NT: Database systems
        Deductive databases
        Distributed databases
        Image databases
        Multimedia databases
        Object oriented databases
        Relational databases
        Spatial databases
        Transaction databases
        Visual databases

Daylighting
BT: Lighting

DBR
USE: Distributed Bragg reflectors

DBS
USE: Satellite broadcasting

DC distribution systems
BT: Network systems
        Power distribution
RT: DC power transmission
        HVDC transmission
        Power transmission lines

DC generators
UF: Direct current generators
BT: DC machines
        Generators
RT: Pulse width modulation
        Rotating machines

DC machines
UF: Direct current machines
BT: Electric machines
RT: Pulse width modulation
        Sensorless control
NT: DC generators
        DC motors
        Homopolar machines

DC motors
UF: Direct current motors
BT: DC machines
        Motors
RT: Pulse width modulation
        Pulse width modulation inverters
        Space vector pulse width modulation
NT: Brushless DC motors
        Commutators

DC power transmission

UF: Direct current power transmission
BT: Power transmission
RT: DC distribution systems

DC-AC power converters
UF: DC-AC power convertors
BT: Converters
Power conversion

DC-AC power convertors
USE: DC-AC power converters

DC-DC converters
USE: DC-DC power converters

DC-DC power conversion
USE: DC-DC power converters

DC-DC power converters
UF: DC-DC converters
DC-DC power conversion
DC-DC power convertors
BT: Power conversion
RT: Machine vector control
Pulse width modulation inverters
NT: Buck converters

DC-DC power convertors
USE: DC-DC power converters

DCT
USE: Discrete cosine transforms

DDoS
USE: Distributed denial-of-service attack

DDoS attack
USE: Computer crime

DDos attack
USE: Denial-of-service attack

DDSM
USE: Delta-sigma modulation

De broglie hypothesis
USE: Matter waves

De Broglie methods
USE: Matter waves

De-noising

USE: Noise reduction

Dead reckoning
BT: Navigation

Deadlocks (computers)
USE: System recovery

Deafness
BT: Medical conditions
RT: Sign language

Death
BT: Pathological processes
NT: Asphyxia

Debugging
BT: System recovery

Deburring
BT: Surface finishing
RT: Drilling
Machining
Polishing machines

Decarbonisation
USE: Low-carbon economy

Decarbonised economy
USE: Low-carbon economy

Decarbonization
USE: Low-carbon economy

Decarbonized economy
USE: Low-carbon economy

Decentralised control
USE: Decentralized control

Decentralized control
UF: Decentralised control
Distrbuted control
Distributed generation
Distributed modeling
BT: Control systems
RT: Flexible structures
NT: Consensus control
Distributed parameter systems

Decision analysis
BT: Decision making
Information analysis

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Decision feedback equalizers
BT: Equalizers

Decision making
BT: Management
RT: Decision support systems
Expert systems
Fuzzy cognitive maps
Planning
Risk analysis
Signal detection
Stakeholders
Strategic planning
TOPSIS
NT: Analytic hierarchy process
Collective intelligence
Decision analysis
Distributed decision making
Game theory
Pattern classification
Persuasive systems
Trust management

Decision support systems
BT: Artificial intelligence
RT: Competitive intelligence
Decision making
Knowledge based systems

Decision theory
BT: Cybernetics
RT: Statistical learning
NT: Decision trees
TOPSIS

Decision trees
UF: Tree searching
BT: Decision theory
RT: Random forests
NT: Classification tree analysis
Regression tree analysis

Decoder
USE: Decoding

Decoding
UF: Decoder
BT: Information theory
RT: Codecs
Codes
Cyclic redundancy check codes
Demodulation
Parity check codes
Product codes
Signal processing
Space-time codes
Speech codecs
Video codecs
NT: Maximum likelihood decoding

Decontamination
BT: Materials handling
RT: Chemical technology
Contamination
Environmental monitoring
Pollution control
Purification

Deconvolution
BT: Inverse problems
RT: Convolution
Integral equations
Numerical analysis
Signal processing
Signal restoration

Decorrelation
BT: Signal processing

Dedicated short range communication
UF: DSRC
BT: Wireless communication
RT: Intelligent vehicles
On board unit
Vehicular ad hoc networks

Deductive databases
UF: Intelligent databases
BT: Database systems
Databases
RT: Knowledge based systems

Deep architecture
BT: Software architecture
Systems architecture
RT: Machine learning
Neural networks
NT: Deep learning

Deep brain stimulation
BT: Brain stimulation
Neurosurgery
RT: Neural implants
Neurostimulation

Deep etching
USE: Etching

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Deep learning
- UF: Deep structured learning
- Hierarchical learning
- BT: Deep architecture
- Machine learning

Deep level transient spectroscopy
- BT: Semiconductor materials
- Spectroscopy

Deep space
- USE: Deep-space communications

Deep structured learning
- USE: Deep learning

Deep-space communications
- UF: Deep space
- BT: Space communications
- RT: Telemetry

Defence industry
- USE: Defense industry

Defense industry
- UF: Defence industry
- BT: Industries
- RT: Military equipment
- Weapons

Defibrillation
- BT: Medical treatment
- RT: Cardiology
- Fibrillation

Definitions
- USE: Terminology

Deformable models
- BT: Modeling

Deformation
- USE: Strain

Degenerative diseases
- BT: Diseases

Degradation
- BT: Materials science and technology

Delamination
- BT: Materials testing

Delay effects
- UF: Time delay
- BT: Electromagnetic analysis
- RT: Delay lines
- Delay systems
- Distortion
- Phase distortion
- NT: Propagation delay

Delay estimation
- BT: Delays
- RT: Computer networks
- Multiaccess communication
- Speech processing

Delay lines
- BT: Delay systems
- RT: Delay effects

Delay lock loops
- USE: Tracking loops

Delay systems
- BT: Control systems
- RT: Delay effects
- Telerobotics
- NT: Added delay
- Delay lines

Delays
- BT: Timing
- NT: Delay estimation

Delta modulation
- BT: Analog-digital conversion
- Digital signal processing
- NT: Delta-sigma modulation
- Sigma-delta modulation

Delta sigma
- USE: Sigma-delta modulation

Delta sigma modulators
- USE: Delta-sigma modulation

Delta-sigma modulation
- UF: DDSM
- Delta sigma modulators
- BT: Delta modulation

Demagnetisation
- USE: Demagnetization

Demagnetization
- UF: Demagnetisation

BT: Magnetics

Demand forecasting
 BT: Forecasting
 RT: Production planning

Demand response
 BT: Power demand

Demand side management
 BT: Energy management
 RT: Power system planning
    Vehicle-to-grid

Dementia
 BT: Diseases
 NT: Alzheimer's disease

Demodulation
 UF: Demodulators
 BT: Modulation
 RT: Amplitude modulation
    Decoding
    Detectors
    Frequency modulation
    Mixers
    Modems
    Phase modulation
    Pulse modulation
    Receivers
    Signal detection

Demodulators
 USE: Demodulation

Demography
 BT: Social factors

Dempster?Shafer theory
 USE: Evidence theory

Demultiplexing
 BT: Multiplexing
 RT: Arrayed waveguide gratings

Dendrites (neurons)
 UF: Dendrons
 BT: Neurons

Dendrons
 USE: Dendrites (neurons)

Denial-of-service attack
 UF: DDos attack
    DoS attack

 BT: Communication system security
    Computer security
 RT: Proof of Work
 NT: Distributed denial-of-service attack

Denoising
 USE: Noise reduction

Density estimation robust algorithm
 UF: DER
 BT: Algorithms

Density function
 USE: Density functional theory

Density function theory
 USE: Density functional theory

Density functional theory
 UF: Density function
    Density function theory
    Density-function
 BT: Quantum mechanics

Density measurement
 BT: Measurement
 RT: Bone density
    Current density
    Pressure gauges
 NT: Hydrometers

Density-function
 USE: Density functional theory

Dental
 USE: Dentistry

Dentistry
 UF: Dental
 BT: Medical treatment

Dependability management
 BT: Management
 RT: Reliability
    Safety management

Depletion mode HEMTs
 USE: D-HEMTs

Depletion-mode HEMTs
 USE: D-HEMTs

Deployable structures

USE: Flexible structures

Depression
UF: Major depressive disorder
BT: Medical conditions

DER
USE: Density estimation robust algorithm

Derailments
USE: Railway accidents

Dermatology
BT: Medical specialties

Dermis
BT: Skin

Desalination
BT: Water conservation
Water resources
RT: Reverse osmosis

Description logic
BT: Knowledge representation
Ontologies

Design
USE: Design methodology

Design automation
UF: CAD
Circuit CAD
Circuit design (CAD)
Circuit layout CAD
Computer aided design
Computer-aided design
BT: Electronic design automation and methodology
RT: Automatic test pattern generation
Circuit simulation
Design tools
EMTDC
Hardware design languages
Laser sintering
SPICE
NT: CADCAM
Logic design
PSCAD

Design engineering
BT: Engineering - general

RT: Building information management
Design optimization
NT: Design tools

Design for disassembly
BT: Design methodology
RT: Pollution
Process design
Product design
Waste reduction

Design for experiments
BT: Design methodology

Design for manufacturabilty
USE: Design for manufacture

Design for manufacture
UF: Design for manufacturabilty
BT: Design methodology
RT: Design tools

Design for quality
BT: Design methodology
RT: Process design
Product design
Quality assurance
Quality control
Quality management
Total quality management

Design for testability
UF: Design-for-test
Design-for-testability
Design-for-testing
BT: Design methodology
RT: Built-in self-test
Combinatorial testing
Logic design
Logic testing

Design methodology
UF: Design
BT: Electronic design automation and methodology
RT: Ergonomics
Industrial engineering
Logic design
Optical design techniques
Rapid prototyping
System analysis and design
NT: Design for disassembly
Design for experiments
Design for manufacture

Design for quality
Design for testability
Design standards
Design tools
Graphics
Green design
Integrated design
Process design
Product design
Prototypes
Technical drawing
Time to market
User centered design
Virtual prototyping

Design optimization
BT:	Optimization methods	
RT:	Design engineering	
NT:	Constraint optimization	

Design standards
BT:	Design methodology

Design tools
BT:	Design engineering
	Design methodology
RT:	Design automation
	Design for manufacture
	Instruments
	Media
	Product design
	Visualization

Design-for-test
USE:	Design for testability

Design-for-testability
USE:	Design for testability

Design-for-testing
USE:	Design for testability

Desktop publishing
BT:	Electronic publishing
	Publishing
RT:	Document handling
	Office automation
	Page description languages
	Text processing

Detection (signal)
USE:	Signal detection

Detection algorithms
BT:	Algorithms

Detectors
BT:	Sensor systems and applications
RT:	Chemical sensors
	Demodulation
	Fall detection
	Nonlinear filters
	Readout electronics
NT:	Envelope detectors
	Semiconductor detectors

Deuterium
BT:	Hydrogen

Developing countries
BT:	Economics
	Social factors
RT:	Cultural differences
	Digital divide
	Globalization
	Government policies
	International trade
	Investment

Device chargers
USE:	Battery chargers

Device drivers
BT:	Input-output programs
RT:	Computer peripherals

Device-to-device communication
UF:	D2D
BT:	Communication systems
RT:	Base stations
	Cellular networks

Dew computing
UF:	Cloud-dew architecture
	Cloud-dew computing
	Dew servers
BT:	Distributed processing
	Software architecture
RT:	Client-server systems
	Cloud computing
	Edge computing

Dew servers
USE:	Dew computing

DFA
USE:	Doped fiber amplifiers

DFIG

> USE: Doubly fed induction generators

DFT
> USE: Discrete Fourier transforms

DGPS
> USE: Global Positioning System

DH-HEMTs
> UF: Double heterojunction HEMTs
> BT: HEMTs

DHBTs
> USE: Double heterojunction bipolar transistors

Diabetes
> UF: Diabetic
> BT: Medical conditions
> RT: Insulin pumps

Diabetic
> USE: Diabetes

Diacs
> USE: Thyristors

Diagnosis (medical)
> USE: Medical diagnosis

Diagnostic expert systems
> BT: Expert systems
> RT: Failure analysis
> Fault diagnosis

Diagnostic radiography
> BT: Radiography
> RT: Attenuation
> Magnetic resonance imaging
> Medical diagnosis
> X-ray detection

Diakoptics
> BT: System analysis and design

Diamagnetic materials
> BT: Magnetic materials

Diamond
> UF: Diamonds
> BT: Carbon

Diamond carbon
> USE: Diamond-like carbon

Diamond like carbon
> USE: Diamond-like carbon

Diamond-like carbon
> UF: Diamond carbon
> Diamond like carbon
> Hard amorphous carbon
> BT: Amorphous materials
> RT: Biomedical materials
> Thin films
> Tissue engineering

Diamonds
> USE: Diamond

DICOM
> UF: Digital Imaging and Communications in Medicine
> BT: Biomedical imaging
> Digital communication

Dictionaries
> BT: Information services
> Terminology
> Writing

Dictionary learning
> USE: Machine learning

Die attach
> USE: Microassembly

Die bonding
> USE: Microassembly

Die casting
> BT: Casting
> RT: Automobile manufacture
> Dies
> Materials handling
> Melt processing
> Metals

Dielectric barrier discharges
> USE: Discharges (electric)

Dielectric breakdown
> UF: Dielectric strength
> Voltage breakdown
> BT: Electric breakdown
> RT: Dielectric measurement
> Insulation

Lightning

NT: Arc discharges
Discharges (electric)
Electrostatic discharges
Flashover
Glow discharges
Partial discharges
Surface discharges
Vacuum breakdown

Dielectric constant
BT: Dielectrics
RT: Capacitors
Permittivity
NT: High-k gate dielectrics

Dielectric devices
BT: Dielectrics
RT: Dielectric materials
Dielectric resonator antennas
Electrets
NT: Capacitors
Ferroelectric devices
Piezoelectric devices
Pyroelectric devices

Dielectric elastomer actuators
BT: Actuators
NT: Dielectric elastomers

Dielectric elastomers
UF: Smart elastomers
BT: Dielectric elastomer actuators
RT: Smart materials

Dielectric electroactive polymer actuators
USE: Actuators

Dielectric films
BT: Dielectric materials
Films
RT: Planarization
Thick films
Thin films
NT: Dielectric thin films
Piezoelectric films

Dielectric liquids
UF: Liquid insulation
BT: Dielectric materials

Dielectric loss measurement
BT: Dielectric measurement

RT: Dielectric losses

Dielectric losses
UF: Dielelectric loss
BT: Dielectrics
RT: Dielectric loss measurement
Insulation

Dielectric materials
UF: Antiferroelectric materials
Paraelectric materials
BT: Materials
RT: Ceramics
Dielectric devices
Dielectric thin films
Electrohydrodynamics
Electrokinetics
Ferroelectric materials
Glass
Insulation
Loaded waveguides
Permittivity
Plastic insulation
NT: Dielectric films
Dielectric liquids
Electrets
Epoxy resins
High-k dielectric materials
Piezoelectric materials

Dielectric measurement
UF: Dielectric measurements
BT: Electric variables measurement
RT: Capacitance measurement
Dielectric breakdown
Electromagnetic measurements
NT: Dielectric loss measurement
Permittivity measurement

Dielectric measurements
USE: Dielectric measurement

Dielectric properties
USE: Dielectrics

Dielectric resonator antennas
BT: Antennas
RT: Dielectric devices
Resonance

Dielectric strength

USE: Dielectric breakdown

Dielectric substrate
USE: Dielectric substrates

Dielectric substrates
UF: Dielectric substrate
BT: Dielectrics

Dielectric thin films
BT: Dielectric films
RT: Dielectric materials
Polymer films
Semiconductor films

Dielectrics
UF: Dielectric properties
Electrical insulation
BT: Dielectrics and electrical insulation
NT: Dielectric constant
Dielectric devices
Dielectric losses
Dielectric substrates
Dielectrophoresis
Electrohydrodynamics
Electrokinetics
Electrostriction

Dielectrics and electrical insulation
NT: Dielectrics
Electric breakdown
Insulation

Dielectrophoresis
BT: Dielectrics

Dielelectric loss
USE: Dielectric losses

Dies
UF: Dies (machine tools)
BT: Machine tools
RT: Cutting tools
Die casting
Presses

Dies (machine tools)
USE: Dies

Diesel engines
BT: Internal combustion engines
RT: Automotive engineering

Difference engines
BT: Calculators

Difference equations
BT: Equations
RT: Discrete-time systems
Numerical analysis
Piecewise linear techniques

Differential algebraic equations
BT: Differential equations

Differential amplifiers
BT: Amplifiers

Differential equations
BT: Calculus
RT: Differential games
Higher order statistics
Integrodifferential equations
Numerical analysis
Predator prey systems
Stability analysis
Time invariant systems
NT: Differential algebraic equations
Differential operators
Navier-Stokes equations
Ordinary differential equations
Partial differential equations
Transfer functions

Differential games
BT: Game theory
RT: Differential equations

Differential gears
USE: Gears

Differential GPS
USE: Global Positioning System

Differential operators
BT: Differential equations

Differential phase shift keying
UF: DPKS
Differential phase-shift keying
BT: Phase modulation

Differential phase-shift keying
USE: Differential phase shift keying

Differential privacy
　　BT:　　Data privacy
　　　　　Statistics
　　RT:　　Data protection
　　　　　Information security
　　　　　Privacy

Differential quadrature phase shift keying
　　BT:　　Quadrature phase shift
keying

Differentiated services networks
　　USE:　　Diffserv networks

Diffraction
　　UF:　　Wave diffraction
　　BT:　　Interference
　　RT:　　Bragg gratings
　　　　　Crystallography
　　　　　Fourier transforms
　　　　　X-ray detection

Diffraction gratings
　　BT:　　Optical diffraction
　　RT:　　Bragg gratings

DiffServ
　　USE:　　Diffserv networks

Diffserv networks
　　UF:　　DiffServ
　　　　　Differentiated services
networks
　　BT:　　Computer networks
　　　　　Distributed computing
　　RT:　　Internet
　　　　　Multimedia communication

Diffusion bonding
　　BT:　　Bonding processes
　　RT:　　Ceramics

Diffusion processes
　　BT:　　Semiconductor device
manufacture
　　RT:　　Brownian motion
　　　　　Buffer layers
　　　　　Charge carrier processes
　　　　　Image denoising
　　　　　Image processing
　　　　　Stochastic processes
　　NT:　　Electromigration

Diffusion tensor imaging
　　UF:　　DT-MRI
　　　　　DTI
　　　　　Diffusion tensor magnetic
resonance imaging
　　BT:　　Magnetic resonance
imaging
　　RT:　　Brain

Diffusion tensor magnetic resonance imaging
　　USE:　　Diffusion tensor imaging

Digestive system
　　BT:　　Anatomy
　　RT:　　Endomicroscopy
　　NT:　　Colon
　　　　　Esophagus
　　　　　Gallbladder
　　　　　Gastrointestinal tract
　　　　　Intestines
　　　　　Liver
　　　　　Mouth
　　　　　Pancreas
　　　　　Pharynx
　　　　　Stomach
　　　　　Tongue

Digital age
　　USE:　　Information age

Digital agriculture
　　UF:　　Smart farming
　　　　　e-agriculture
　　BT:　　Agriculture
　　　　　Information processing
　　RT:　　Food industry
　　　　　Food products
　　　　　Food technology

Digital alloys
　　BT:　　Metals

Digital arithmetic
　　UF:　　Computer arithmetic
　　BT:　　Arithmetic
　　RT:　　Calculators
　　　　　Coprocessors

Digital art
　　BT:　　Art

Digital audio broadcasting
　　UF:　　Digital audio broadcasts
　　　　　Podcast
　　BT:　　Broadcasting
　　　　　Digital communication

	RT:	Audio systems
		Portable media players
	NT:	Digital Radio Mondiale
		Digital audio players

Digital audio broadcasts
USE:	Digital audio broadcasting

Digital audio players
UF:	MP3
BT:	Digital audio broadcasting

Digital camera
USE:	Digital cameras

Digital cameras
UF:	Digital camera
BT:	Cameras
RT:	Digital photography

Digital circuits
BT:	Circuits
RT:	Digital computers
Logic circuits
Pulse circuits
Switching circuits
NT:	Circuit topology
Digital integrated circuits

Digital communication
UF:	Digital radio
BT:	Communication systems
RT:	Bluetooth
Data communication
Digital recording
Musical instrument digital
interfaces
Synchronous digital
hierarchy
TCPIP
Teleprinting
NT:	Baseband
DICOM
DSL
Digital audio broadcasting
Digital images
Digital multimedia
broadcasting
Digital video broadcasting
ISDN
Passband
Portable media players
SONET
Spread spectrum
communication

Digital computers
BT:	Computers
RT:	Digital circuits
Digital systems
Digital-analog conversion
Parallel processing
Programming
Turing machines
NT:	Mainframes

Digital control
UF:	Computer control
BT:	Control systems
RT:	Computer numerical control
NT:	Programmable control

Digital currency
USE:	Online banking

Digital divide
BT:	Sociology
RT:	Cultural differences
Developing countries
Economics
Ethical aspects
Gender issues
Social factors
Social implications of
technology

Digital elevation modeling
USE:	Digital elevation models

Digital elevation models
UF:	Digital elevation modeling
Digital terrain model
Digital terrain modeling
Digital terrain models
BT:	Modeling
Terrain mapping

Digital factories
USE:	Virtual manufacturing

Digital filters
BT:	Filters
RT:	Frequency response
Line enhancers
Optical resonators
Transversal filters
NT:	Finite impulse response
filters

Digital forensics

BT: Forensics
RT: Computer security
       Data mining
       Law enforcement

Digital health
USE: Electronic healthcare

Digital healthcare
USE: Electronic healthcare

Digital image
USE: Digital images

Digital images
UF: Digital image
       Digital imaging
BT: Digital communication
NT: Pixel

Digital imaging
USE: Digital images

Digital Imaging and Communications in Medicine
USE: DICOM

Digital integrated circuits
BT: Digital circuits
       Integrated circuits
RT: Adders
       Logic circuits
       Multiplying circuits
NT: Integrated memory circuits

Digital intelligence
BT: Human intelligence
       Man-machine systems
RT: Behavioral sciences
       Cognition
       Competitive intelligence
       Digital systems
       Ethics
       Human factors
       Psychology
       Social intelligence

Digital magnetic recording
BT: Magnetic recording

Digital microfluidic biochips
BT: Biochips

Digital micromirror devices
USE: Micromirrors

Digital modulation
BT: Modulation
NT: Constellation diagram
       Partial response signaling

Digital multimedia broadcasting
UF: DMB
       Digital multimedia broadcasts
BT: Broadcasting
       Digital communication
RT: Cellular radio
       Convolutional codes
       Digital TV
       MPEG 4 Standard
       MPEG 7 Standard
       MPEG standards
       Multimedia communication
       Radio broadcasting
       Video on demand

Digital multimedia broadcasts
USE: Digital multimedia broadcasting

Digital photography
BT: Photography
RT: CCD image sensors
       Cameras
       Digital cameras
       Transform coding

Digital preservation
BT: Digital systems
       Information management
RT: Data integrity

Digital printing
BT: Printing
RT: Publishing

Digital publishing
USE: Electronic publishing

Digital radio
USE: Digital communication

Digital Radio Mondiale
BT: Digital audio broadcasting

Digital recording
BT: Recording
RT: Digital communication
       Digital systems

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Digital relays
    BT: Relays

Digital representation
    BT: Encoding
            Image representation
            Information representation
    RT: Augmented reality
            Quantization (signal)
            Virtual reality

Digital rights management
    BT: Intellectual property
    RT: Computer crime
            Software protection

Digital sequences
    USE: Sequences

Digital signal processing
    UF: DSP
    BT: Signal processing
    RT: Aerospace and electronic systems
            Digital TV
            Fast Fourier transforms
            OFDM
    NT: Delta modulation
            Digital signal processing chips

Digital signal processing chips
    BT: Digital signal processing

Digital signal processors
    BT: Circuits
    RT: Signal processing

Digital signatures
    BT: Security
    RT: Message authentication
            Message systems

Digital simulation
    BT: Simulation
    RT: Computer aided analysis
            Modeling
            Power system analysis computing
    NT: Digital twin
            Discrete event simulation

Digital storage
    BT: Digital systems

            Storage management
    NT: Solid state drives

Digital subscriber lines
    USE: DSL

Digital subscriber loops
    USE: DSL

Digital systems
    BT: Computers and information processing
    RT: Communication systems
            Computational and artificial intelligence
            Consumer electronics
            Cryptocurrency
            Digital computers
            Digital intelligence
            Digital recording
            Persistent identifiers
            Personal communication networks
    NT: Digital preservation
            Digital storage
            Digital transformation
            ISDN
            Internet
            Local area networks
            Metropolitan area networks
            Token networks
            Virtual artifact

Digital terrain model
    USE: Digital elevation models

Digital terrain modeling
    USE: Digital elevation models

Digital terrain models
    USE: Digital elevation models

Digital to analog conversion
    USE: Digital-analog conversion

Digital to analog converters
    USE: Digital-analog conversion

Digital transformation
    BT: Digital systems
    RT: Augmented reality
            Internet of Things
            Virtual reality

Digital TV

BT: TV
RT: Digital multimedia
broadcasting
            Digital signal processing
            HbbTV Standards
NT: HDTV
            IPTV

Digital twin
      BT: Cyber-physical systems
            Digital simulation
      RT: Augmented reality
            Internet of Things
            Virtual reality

Digital versatile discs
      USE: DVD

Digital video broadcasting
      UF: Digital video broadcasts
      BT: Broadcasting
            Digital communication

Digital video broadcasts
      USE: Digital video broadcasting

Digital video discs
      USE: DVD

Digital watermarking
      USE: Watermarking

Digital-analog
      USE: Digital-analog conversion

Digital-analog conversion
      UF: D/A
            D/A conversion
            D/A converters
            Digital to analog conversion
            Digital to analog converters
            Digital-analog
            Digital-analog converters
            Digital-analogue conversion
            Digital-analogue converters
            Digital-to-analog conversion
            Digital-to-analog converters
      BT: Data conversion
      RT: Digital computers
            Interpolation

Digital-analog converters
      USE: Digital-analog conversion

Digital-analogue conversion
      USE: Digital-analog conversion

Digital-analogue converters
      USE: Digital-analog conversion

Digital-controlled oscillators
      BT: Oscillators

Digital-to-analog conversion
      USE: Digital-analog conversion

Digital-to-analog converters
      USE: Digital-analog conversion

Digital-to-frequency converters
      BT: Converters

Dike
      USE: Levee

DIL
      USE: Electronics packaging

Dimension reduction
      USE: Dimensionality reduction

Dimensionality reduction
      UF: Dimension reduction
      BT: Information retrieval
            Machine learning
            Statistics
      NT: Manifold learning

Dinosaurs
      BT: Animals

Diode lasers
      UF: Laser diodes
      BT: Diodes
            Lasers

Diodes
      BT: Electronic components
            Voltage multipliers
      RT: Breakdown voltage
            Optical transmitters
            Semiconductor diodes
      NT: Diode lasers

DIP
      USE: Electronics packaging

Dip coating
      BT: Coatings

Digital-analogue conversion

Dipole antennas
    BT: Antennas

Direct broadcast satellites
    USE: Satellite broadcasting

Direct current generators
    USE: DC generators

Direct current machines
    USE: DC machines

Direct current motors
    USE: DC motors

Direct current power transmission
    USE: DC power transmission

Direct sequence CDMA
    USE: Direct-sequence code-division multiple access

Direct sequence code division multiple access
    USE: Direct-sequence code-division multiple access

Direct sequence spread spectrum communication
    BT: Radio spectrum management
    RT: Bandwidth
             Modulation

Direct-sequence CDMA
    USE: Direct-sequence code-division multiple access

Direct-sequence code-division multiple access
    UF: Direct sequence CDMA
             Direct sequence code division multiple access
             Direct-sequence CDMA
    BT: Multiaccess communication

Directed acyclic graph
    BT: Graph theory
    RT: Blockchain

Directed graphs
    BT: Graph theory
    NT: Fuzzy cognitive maps

Direction of arrival
    USE: Direction-of-arrival estimation

Direction of arrival estimation
    USE: Direction-of-arrival estimation

Direction-finding
    USE: Navigation

Direction-of-arrival estimation
    UF: Bearing estimation
             DOA estimation
             Direction of arrival
             Direction of arrival estimation
             Estimation of the direction of arrival
    BT: Parameter estimation
    RT: Array signal processing
             Position measurement
             Spectral analysis
             Time of arrival estimation

Directional antennas
    BT: Antennas

Directional couplers
    BT: Couplers
    RT: Hybrid junctions

Directive antennas
    BT: Antennas

Disaster and recovery
    USE: Disaster management

Disaster management
    UF: Disaster and recovery
             Disaster planning
    BT: Contingency management

Disaster planning
    USE: Disaster management

Discharge lamps
    BT: Lamps
    NT: High intensity discharge lamps

Discharges (electric)
    UF: Dielectric barrier discharges
             Gas discharges
             Ozone generators
             Ozonizers

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BT: Dielectric breakdown
RT: Electrostatic processes
Gas discharge devices
Gases
Ionization
Plasmas

Discrete cosine transforms
UF: DCT
BT: Discrete transforms
RT: Chebyshev approximation

Discrete element method
USE: Finite element analysis

Discrete event simulation
BT: Digital simulation
NT: Time warp simulation

Discrete event systems
USE: Discrete-event systems

Discrete Fourier transforms
UF: DFT
BT: Fourier transforms
RT: Signal processing

Discrete Fournier transforms
USE: Discrete transforms

Discrete time systems
USE: Discrete-time systems

Discrete transforms
UF: Discrete Fournier transforms
BT: Transforms
NT: Discrete cosine transforms

Discrete wavelet transforms
BT: Wavelet transforms
RT: Finite impulse response filters

Discrete-event systems
UF: Discrete event systems
BT: Signal analysis
RT: Control systems
Manufacturing
Petri nets
Production systems

Discrete-time systems
UF: Discrete time systems
BT: Time factors

RT: Asymptotic stability
Control systems
Difference equations
NT: Sampled data systems

Discussion forums
BT: Collaboration

Diseases
BT: Medical conditions
RT: Epidemics
Medical diagnosis
Metastasis
Pandemics
Pathology
NT: Acquired immune deficiency syndrome
Alcoholism
Arteriosclerosis
Arthritis
Bacterial infections
Bone diseases
COVID-19
Cancer
Cardiovascular diseases
Degenerative diseases
Dementia
Epilepsy
Human immunodeficiency virus
Infectious diseases
Influenza
Multiple sclerosis
Neurological diseases
Parasitic diseases
Parkinson's disease
Pathogens
Pulmonary diseases
Retinopathy

Disk drives
BT: Computer peripherals
RT: Disk recording
Perpendicular magnetic recording

Disk recording
BT: Recording
RT: Disk drives

Disks (structures)
USE: Structural discs

Dismissal (employment)
USE: Termination of employment

Dispatching
      BT: Object oriented programming
      RT: Materials handling

Dispersed power generation
      USE: Distributed power generation

Dispersion
      UF: Dispersion effect
                Dispersion measurement
                Dispersion relations
                Dispersive
      BT: Signal processing
      RT: Refractive index
      NT: Chromatic dispersion
                Optical fiber dispersion

Dispersion effect
      USE: Dispersion

Dispersion measurement
      USE: Dispersion

Dispersion relations
      USE: Dispersion

Dispersive
      USE: Dispersion

Displacement control
      BT: Mechanical variables control

Displacement measurement
      BT: Mechanical variables measurement

Display systems
      BT: Displays

Displays
      BT: Optical devices
      RT: Character generation
                Graphics
                Thin film transistors
                User interfaces
      NT: Active matrix technology
                Cathode ray tubes
                Computer displays
                Display systems
                Flat panel displays
                Head-mounted displays
                Head-up displays
                Liquid crystal devices
                Microdisplays
                Readout electronics
                Three-dimensional displays
                Two dimensional displays

Disruption tolerant networking
      BT: Computer network management

Disruptive innovation
      BT: Business
      RT: Disruptive technologies
                Entrepreneurship
                Market opportunities
                Technological innovation

Disruptive technologies
      BT: Technology
      RT: Disruptive innovation
                Market opportunities
                Technological innovation

Dissolved air flotation
      USE: Wastewater treatment

Dissolved gas analysis
      BT: Fault diagnosis

Distance
      USE: Distance measurement

Distance learning
      UF: Remote learning
      BT: Learning (artificial intelligence)
      RT: Adaptive learning
                Electronic learning
                Mobile learning

Distance measurement
      UF: Distance
                Ranging
      BT: Measurement
      RT: Micrometers
                Position measurement
      NT: Euclidean distance

Distance relays
      USE: Protective relaying

Distillation columns
      USE: Distillation equipment

2021 IEEE Thesaurus

Distillation equipment
UF: Distillation columns
BT: Chemical technology

Distortion
UF: Distortion information
BT: Signal processing
RT: Delay effects
Distortion measurement
Image restoration
Interference
Noise
Rate distortion theory
Signal restoration
NT: Acoustic distortion
Four-wave mixing
Jitter
Nonlinear distortion
Phase distortion

Distortion information
USE: Distortion

Distortion measurement
UF: Acoustic distortion measurement
Electric distortion measurement
Optical distortion measurement
BT: Measurement
RT: Distortion
Noise measurement
NT: Total harmonic distortion

Distrbuted control
USE: Decentralized control

Distributed algorithms
BT: Algorithms

Distributed amplifiers
BT: Amplifiers

Distributed antennas
USE: Antenna arrays

Distributed Bragg reflectors
UF: DBR
BT: Mirrors
RT: Integrated optics
Vertical cavity surface emitting lasers

Distributed computing

BT: Computers and information processing
RT: Cloud computing
Computer networks
Concurrency control
Data communication
Distributed ledger
Local area networks
Metropolitan area networks
Mobile agents
Multiprocessing systems
Semantic Web
Software agents
Software architecture
NT: Client-server systems
Cluster computing
Collaborative work
Diffserv networks
Distributed databases
Distributed information systems
Internet
Metacomputing
Peer-to-peer computing

Distributed databases
BT: Databases
Distributed computing
RT: Concurrency control
Distributed ledger
NoSQL databases

Distributed decision making
BT: Decision making

Distributed denial-of-service attack
UF: DDoS
BT: Denial-of-service attack
RT: Botnet
Computer crime

Distributed energy resources
USE: Distributed power generation

Distributed feedback devices
UF: Distributed feedback lasers
BT: Laser applications
RT: Feedback circuits
Optical feedback

Distributed feedback lasers
USE: Distributed feedback devices

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Distributed generation
    USE: Decentralized control AND
           Distributed power
generation

Distributed information systems
    BT: Distributed computing
           Information systems
    NT: Distributed management
           Publish-subscribe

Distributed ledger
    UF: DLT
           Hyper ledger
           Hyperledger
           Shared ledger
    BT: Online banking
    RT: Blockchain
           Cryptocurrency
           Distributed computing
           Distributed databases
           Peer-to-peer computing

Distributed management
    BT: Distributed information
systems
           Management
    RT: Collaborative intelligence

Distributed management task force
    USE: DMTF

Distributed modeling
    USE: Decentralized control

Distributed parameter circuits
    UF: Nonuniform transmission
lines
           Transmission line circuits
    BT: Circuits
    RT: Microwave circuits
           Millimeter wave circuits
           Transmission lines

Distributed parameter systems
    BT: Decentralized control

Distributed power generation
    UF: Dispersed power
generation
           Distributed energy
resources
           Distributed generation
           Embedded power
generation

    BT: Power generation
    RT: Hybrid power systems
           Microgrids
           Vehicle-to-grid

Distributed processing
    UF: Volunteer computing
    BT: System analysis and design
    RT: Cluster computing
           Crowdsourcing
           Software defined
networking
    NT: Dew computing
           Edge computing
           Message passing

Distributed vision networks
    UF: Distributed vision
processing
    BT: System analysis and design
    RT: Computer vision
           Embedded computing
           Smart cameras
           Wireless sensor networks

Distributed vision processing
    USE: Distributed vision networks

Distribution functions
    BT: Statistical distributions
    RT: Probability
           Probability density function

Distribution networks
    BT: Supply chains

Distribution of electric power
    USE: Power distribution

Distribution strategy
    BT: Marketing management

Disturbance observers
    BT: Observers
    RT: Adaptive control
           Robust control

Diversity gain
    USE: Diversity methods

Diversity methods
    UF: Diversity gain
    BT: Transmitters
    RT: Fading channels
           Multipath channels

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Radio communication

Diversity reception
BT: Signal resolution
RT: SIMO communication
SISO communication
Telecommunications

Diversity schemes
BT: Telecommunication network reliability
RT: Fading channels
Interference

Diving equipment
USE: Underwater equipment

DLT
USE: Distributed ledger

DMB
USE: Digital multimedia broadcasting

DMTF
UF: Distributed management task force
BT: Standards organizations

DMTF Standards
BT: Standards publications
RT: Common Information Model (computing)

DNA
BT: Genetics
RT: Biological cells
Biological information theory
Cloning
DNA computing
Epigenetics
Genetic communication
Molecular biophysics
NT: Genetic mutations

DNA computing
BT: Computers and information processing
Nanobioscience
RT: DNA
Molecular computing

DOA estimation

USE: Direction-of-arrival estimation

Docking stations
USE: Computer interfaces

DOCSIS
USE: Data over cable service interface specification

Doctor
USE: Medical services

Document delivery
BT: Information services
NT: Ask IEEE

Document handling
BT: Data handling
Information management
RT: Content management
Desktop publishing
Information retrieval
Office automation
Publishing
Semantic Web
Text processing
NT: Document image processing
Portable document format

Document image processing
BT: Document handling
RT: Portable document format

Documentation
UF: Computer documentation
Software documentation
BT: Writing
RT: Engineering drawings
Manuals
Software
NT: Point of care

DoD
USE: US Department of Defense

DoE
USE: US Department of Energy

Dogs
BT: Animals

Dolphins
BT: Marine animals

Domain Name System
BT: Computer networks

Domain specific languages
UF: Domain-specific languages
BT: Specification languages

Domain-specific languages
USE: Domain specific languages

Domestic appliances
USE: Home appliances

Domestic induction appliances
USE: Home appliances

Domestic safety
UF: Safety in the home
BT: Safety
RT: Accidents
        Consumer products
        Electrical safety
        Occupational health
        Occupational safety
        Smoke detectors
NT: Fall detection

Doped fiber amplifiers
UF: DFA
BT: Optical amplifiers

Doping
BT: Materials preparation
RT: Semiconductor device doping
        Silicon devices
NT: Doping profiles

Doping profiles
BT: Doping
RT: Optimization
        Thin film devices

Doppler
USE: Doppler effect

Doppler effect
UF: Doppler
BT: Waves
RT: Doppler measurement
        Doppler radar
NT: Doppler shift

Doppler measurement

BT: Measurement
RT: Doppler effect
        Doppler radar
        Frequency measurement
        Motion measurement
        Velocity measurement

Doppler radar
BT: Radar
RT: Doppler effect
        Doppler measurement

Doppler shift
BT: Doppler effect

DoS attack
USE: Computer crime AND
        Denial-of-service attack

Dosimetry
UF: Radiation dosimetry
BT: Measurement
RT: Collimators
        Neutron capture therapy
        Phantoms
        Radiation detectors
        Radiation monitoring
        Radiation protection

DOT
USE: US Department of
Transportation

Double gate FETs
USE: Double-gate FETs

Double heterojunction bipolar transistors
UF: DHBTs
BT: Heterojunction bipolar
transistors

Double heterojunction HEMTs
USE: DH-HEMTs

Double-gate FETs
UF: Double gate FETs
BT: Field effect transistors
RT: Silicon-on-insulator

Doubly fed induction generators
UF: DFIG
BT: Induction generators
RT: Wind turbines

Downlink

BT: Satellite communication
RT: Cellular radio

DP industry
USE: Computer industry

DPKS
USE: Differential phase shift keying

Drag
BT: Fluid dynamics
RT: Friction

Drain avalanche hot carrier injection
UF: Drain avalanche hot-carrier injection
BT: Hot carrier injection

Drain avalanche hot-carrier injection
USE: Drain avalanche hot carrier injection

DRAM
USE: DRAM chips

DRAM chips
UF: DRAM
BT: Random access memory
RT: Solid state drives

Dredging
USE: Excavation

Drift velocity
USE: Electron mobility

Drilling
UF: Drilling (machining)
BT: Machining
RT: Boring
Deburring
Drilling machines
Geoengineering
Oil drilling

Drilling (machining)
USE: Drilling

Drilling machines
BT: Machine tools
RT: Drilling

Drilling oil
USE: Oil drilling

Driver circuits
BT: Circuits
RT: Power transistors

Driver free automobiles
USE: Autonomous automobiles

Driver free cars
USE: Autonomous automobiles

Driver-free car
USE: Autonomous automobiles

Driverless automobiles
USE: Autonomous automobiles

Driverless cars
USE: Autonomous automobiles

Drives
BT: Machinery
RT: Mechanical power transmission
Sensorless control
Torque converters
NT: Hydraulic drives
Motor drives
Variable speed drives

Drones
BT: Unmanned aerial vehicles

Drug delivery
UF: Drug delivery systems
BT: Biomedical engineering
RT: Nanocarriers
NT: Targeted drug delivery

Drug delivery systems
USE: Drug delivery

Drugs
BT: Pharmaceuticals
RT: Biochemistry
Chemical analysis
Chemistry
Chemotherapy
Molecular biomarkers
NT: Antibiotics
Antidepressants
Aspirin
Cancer drugs
Insulin

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Dry etching
    BT: Etching

DSL
    UF: Digital subscriber lines
            Digital subscriber loops
    BT: Digital communication

DSP
    USE: Digital signal processing

DSRC
    USE: Dedicated short range communication

DT-MRI
    USE: Diffusion tensor imaging

DTI
    USE: Diffusion tensor imaging

Dual band
    UF: Dual-band
            Dualband
    BT: Mobile communication
    RT: GSM
            Mobile handsets
            Roaming

Dual inline packaging
    USE: Electronics packaging

Dual-band
    USE: Dual band

Dualband
    USE: Dual band

Ducts
    BT: Structural shapes
    RT: Air conditioning
            Vents

Dusty plasma
    USE: Dusty plasmas

Dusty plasmas
    UF: Dusty plasma
    BT: Plasma properties

DVD
    UF: DVD-ROM
            Digital versatile discs
            Digital video discs
    BT: Video coding
    RT: Video recording

DVD-ROM
    USE: DVD

Dynamic algorithms
    USE: Heuristic algorithms

Dynamic compiler
    BT: Runtime

Dynamic equilibrium
    BT: Measurement techniques
    NT: Steady-state

Dynamic program analysis
    USE: Performance analysis

Dynamic programming
    BT: Algorithms
    RT: Markov processes
            Neural networks
            Viterbi algorithm

Dynamic range
    BT: Measurement

Dynamic scheduling
    BT: Scheduling

Dynamic service delivery
    USE: Network resource management

Dynamic spectrum access
    BT: Radio transceivers
    RT: Telecommunication network topology
            Wireless communication

Dynamic systems
    USE: Dynamical systems

Dynamic voltage scaling
    UF: Self-dynamic voltage scaling
    BT: Computer architecture
            Voltage

Dynamical systems
    UF: Dynamic systems
    BT: Mathematics
    NT: Nonlinear dynamical systems

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Dynamics
BT:	Mechanical factors	
RT:	Control theory	
	Force	
	Friction	
	Vibrations	
NT:	Aerodynamics	
	Elastodynamics	
	Electrodynamics	
	Hydrodynamics	
	Magnetohydrodynamics	

Dynamo
USE:	Generators

Dynamometers
UF:	Dyno
BT:	Force measurement
	Meters
	Power measurement
	Torque measurement

Dyno
USE:	Dynamometers

Dysprosium
BT:	Chemical elements
NT:	Dysprosium compounds

Dysprosium compounds
BT:	Dysprosium

E health
USE:	Electronic healthcare

E learning
USE:	Electronic learning

e-agriculture
USE:	Digital agriculture

E-banking
USE:	Online banking

E-books
USE:	Electronic publishing

E-commerce
USE:	Electronic commerce

E-currency
USE:	Online banking

E-government
USE:	Electronic government

E-health records
USE:	Electronic medical records

E-learning
USE:	Electronic learning

E-mail
USE:	Electronic mail

E-publishing
USE:	Electronic publishing

E-reader
USE:	Electronic publishing

E-voting
USE:	Electronic voting

E-waste
USE:	Electronic waste

Ear
BT:	Head
	Sense organs
RT:	Cochlear implants

EAROM
USE:	EPROM

Earphones
USE:	Headphones

Earth
BT:	Geoscience
	Planets
RT:	Geophysics
	Remote sensing
	Soil
	Terrain factors
	Terrain mapping

Earth atmosphere
USE:	Terrestrial atmosphere

Earth observation system
USE:	Earth Observing System

Earth Observing System
UF:	EOS
	Earth observation system
BT:	Artificial satellites
	Observers
NT:	Global Earth Observation System of Systems

Earth science
USE: Geoscience

earthing
USE: Grounding

Earthquake engineering
UF: Seismic retrofitting
BT: Earthquakes
RT: Seismology

Earthquakes
BT: Geoscience
RT: Seismic waves
Seismology
NT: Earthquake engineering

Eavesdropping
UF: Cyber eavesdropping
Cybereavesdropping
BT: Privacy
RT: Computer security

ECC
USE: Elliptic curve cryptography
AND
Error correction codes

ECCM
USE: Electronic countermeasures

ECG
USE: Electrocardiography

Echo cancellation
USE: Echo cancellers

Echo cancellers
UF: Echo cancellation
BT: Active noise reduction

Echo interference
BT: Interference
RT: Clutter
TV interference

Echocardiography
UF: ECHOEG
BT: Cardiography

ECHOEG
USE: Echocardiography

ECM

USE: Electronic countermeasures

Eco design
USE: Ecodesign

Eco-design
USE: Ecodesign

Ecodesign
UF: Eco design
Eco-design
BT: Green design
RT: Energy conservation
Environmental factors

Ecology
BT: Environmental factors
RT: Entomology

Ecommerce
USE: Electronic commerce

Econometrics
BT: Economics
RT: Costs
Cybernetics
Mathematics
Profitability
Regression analysis
Statistics
NT: Economic forecasting

Economic forecasting
BT: Econometrics
Forecasting
RT: Economic indicators

Economic indicators
UF: Cost of living index
Cost-of-living index
GDP
GNP
Gross domestic product
Gross national product
Harmonised index of
consumer prices
Harmonized index of
consumer prices
Index of production
Interest rates
RPI
Retail price index
BT: Economics
RT: Economic forecasting
Exchange rates

NT: Share prices

Economics
BT: Engineering management
RT: Bankruptcy
Commercial law
Cost accounting
Digital divide
Econophysics
Finance
Planning
NT: Access charges
Costs
Developing countries
Econometrics
Economic indicators
Electronic commerce
Environmental economics
Exchange rates
Fuel economy
International trade
Macroeconomics
Microeconomics
Monopoly
Oligopoly
Power generation economics
Profitability
Sharing economy
Stock markets
Supply and demand
Trade agreements
Venture capital
Virtual enterprises

Economies of scale
BT: Microeconomics
RT: Industrial economics

Econophysics
BT: Cybernetics
RT: Chaos
Complexity theory
Economics
Fractals
Information theory
Knowledge acquisition
Nonlinear dynamical systems
Philosophical considerations
Science - general

Ecosystems
BT: Environmental factors

RT: Consensus protocol
Low-carbon economy
NT: Wetlands

EDA
USE: Electronic design automation and methodology

Eddy current losses
USE: Eddy currents

Eddy current testing
BT: Eddy currents
RT: Finite element analysis

Eddy currents
UF: Eddy current losses
BT: Electromagnetic induction
RT: Magnetic losses
NT: Eddy current testing

EDFA
USE: Erbium-doped fiber amplifiers

Edge computing
UF: Fog computing
BT: Application virtualization
Distributed processing
RT: Cloud computing
Computer applications
Dew computing
Mobile computing
Wireless sensor networks

Edge detection
USE: Image edge detection

EDTV
USE: HDTV

Education
UF: Inverted classroom
Reverse teaching
Teaching
RT: Personnel
NT: Adaptive learning
Career development
Educational courses
Educational institutions
Educational programs
Educational technology
Engineering education
Training

Educational courses
- BT: Education
- RT: Computer aided instruction
  Educational programs
  STEM
- NT: Curriculum development
  Open Educational Resources

Educational institutions
- UF: Colleges
  Schools
  Universities
- BT: Education

Educational programs
- BT: Education
- RT: Curriculum development
  Educational courses
- NT: Accreditation
  Continuing education
  Pre-college engineering
  STEM
  Scholarships
  Self-study courses
  Seminars
  Tutorials

Educational robots
- BT: Robots
- RT: Engineering education

Educational technology
- UF: Audio-visual instructional aids
  Instructional aids
  Programmed instruction
- BT: Education
- RT: Audio-visual systems
  Visualization
- NT: Computer aided instruction
  Courseware
  Electronic learning

EEG
- USE: Electroencephalography

EEPROM
- USE: EPROM

Effective mass
- BT: Energy states

EFFF
- USE: Field-flow fractionation

Effluents
- BT: Waste materials
- RT: Flue gases
  Industrial waste
  Waste disposal
  Waste management
  Water pollution

Ehealth
- USE: Electronic healthcare

Eigenfunctions
- USE: Eigenvalues and eigenfunctions

Eigenfunctions and eigenvalues
- USE: Eigenvalues and eigenfunctions

Eigenplaces
- USE: Eigenvalues and eigenfunctions

Eigenvalues
- USE: Eigenvalues and eigenfunctions

Eigenvalues and eigenfunctions
- UF: Eigenfunctions
  Eigenfunctions and eigenvalues
  Eigenplaces
  Eigenvalues
- BT: Mathematics
- RT: Asymptotic stability
  Functional analysis
  Linear algebra
  Vectors

EKG
- USE: Electrocardiography

Elastic computing
- BT: Cloud computing
  Resource management

Elastic recovery
- BT: Materials testing

Elasticity
- BT: Material properties
- RT: Strain

Elastodynamics

BT:	Dynamics
RT:	Seismic waves
	Vibrations

Elastography

BT:	Biomedical imaging

Elbow

BT:	Extremities

Elderly

USE:	Senior citizens

Elearning

USE:	Electronic learning

Electrets

BT:	Dielectric materials
RT:	Capacitors
	Ceramics
	Dielectric devices

Electric admittance

USE:	Admittance

Electric ballast

USE:	Electronic ballasts

Electric breakdown

UF:	Breakdown
BT:	Dielectrics and electrical insulation
RT:	Aging
	Fault currents
NT:	Avalanche breakdown
	Corona
	Dielectric breakdown
	Sparks

Electric characteristics

USE:	Electric variables

Electric coils

USE:	Coils

Electric condensers

USE:	Capacitors

Electric conductivity

USE:	Conductivity

Electric current

USE:	Current

Electric current control

BT:	Current control
RT:	Power control
	Power transmission
	Voltage control
NT:	Power factor correction
	Shunts (electrical)

Electric current measurement

USE:	Current measurement

Electric distortion measurement

USE:	Distortion measurement

Electric fences

BT:	Electric machines

Electric field

USE:	Electric fields

Electric fields

UF:	Electric field
BT:	Electromagnetic fields
RT:	Electrohydrodynamics
	Electrokinetics
	Electrostatic analysis
	Electrostatic processes
	Maxwell equations
	Synchrotrons
NT:	Acoustoelectric effects
	Casimir effect
	Nonuniform electric fields

Electric generators

BT:	Generators
RT:	Nanogenerators

Electric heating

USE:	Resistance heating

Electric impedance

USE:	Impedance

Electric machines

BT:	Machinery
RT:	Windings
NT:	AC machines
	Alternators
	Brushless machines
	Compressors
	Conductors
	DC machines
	Electric fences
	Generators
	Permanent magnet machines

Rotating machines
Rotors
Stators
Washing machines

Electric motors
BT: Motors
NT: Planar motors

Electric potential
BT: Electric variables

Electric power
USE: Power electronics AND
Power systems

Electric resistance
UF: Electrical resistivity
BT: Resistance

Electric sensing devices
BT: Sensor systems and
applications

Electric shock
UF: Shock
BT: Bioelectric phenomena
RT: Accidents
Electrical accidents
Grounding
Occupational health
Occupational safety
Safety

Electric stimulation therapy
USE: Electrical stimulation

Electric utilities
USE: Electricity supply industry
AND
Power industry

Electric variables
UF: Current voltage
characteristics
Electric characteristics
Electrical characteristics
BT: Instrumentation and
measurement
RT: Electric variables control
Electric variables
measurement
Frequency
NT: Admittance
Capacitance

Capacitance-voltage
characteristics
Conductivity
Current
Current-voltage
characteristics
Electric potential
Gain
Impedance
Impedance matching
Inductance
Permittivity
Piezoresistance
Q-factor
Resistance
Voltage
Wiring

Electric variables control
BT: Power engineering and
energy
RT: Electric variables
Frequency control
Phase control
Regulators
NT: Current control
Gain control
Power control
Power system control
Reactive power control
Voltage control

Electric variables measurement
BT: Measurement
RT: Electric variables
Electromagnetic
measurements
Frequency measurement
Gain measurement
Integrated circuit
measurements
Noise measurement
Oscilloscopes
Phase measurement
Pulse measurements
Transducers
NT: Admittance measurement
Ammeters
Attenuation measurement
Capacitance measurement
Conductivity measurement
Current measurement
Dielectric measurement
Electrical resistance
measurement

Electrostatic measurements
Energy measurement
Impedance measurement
Inductance measurement
Partial discharge measurement

Phasor measurement units
Power measurement
Q measurement
Rydberg atoms
Transmission line measurements

Voltage measurement

Electric vehicle charging
UF: EV charging
BT: Battery chargers
          Electric vehicles

Electric vehicles
BT: Land vehicles
RT: Charging stations
NT: Battery powered vehicles
          Electric vehicle charging
          Fuel cell vehicles
          Hybrid electric vehicles
          Plug-in electric vehicles
          Solar powered vehicles
          Vehicle-to-grid

Electrical accidents
BT: Accidents
RT: Bioelectric phenomena
          Electric shock
          Electrical safety

Electrical appliances
USE: Electrical products

Electrical ballast
USE: Electronic ballasts

Electrical ballasts
BT: Current control
          Lighting
RT: High intensity discharge lamps

          Inductors
          Resistors

Electrical brain stimulation
USE: Electrical stimulation

Electrical capacitance tomography
BT: Tomography

Electrical characteristics
USE: Electric variables

Electrical conductivity
USE: Conductivity

Electrical double layer capacitors
USE: Supercapacitors

Electrical engineering
BT: Engineering - general
RT: Engineering profession
          Research and development
NT: Electrical engineering computing

Electrical engineering computing
BT: Electrical engineering
RT: Computer applications

Electrical engineering education
BT: Engineering education
NT: Electronics engineering education

Electrical engineering industry
BT: Industries

Electrical equipment industry
BT: Power industry
RT: Electrical products industry
          Electricity supply industry
          Electronics industry

Electrical fault detection
BT: Circuit faults

Electrical impedance tomography
BT: Tomography

Electrical insulation
USE: Dielectrics

Electrical products
UF: Electrical appliances
BT: Electrical products industry
          Manufactured products
RT: Consumer products
NT: Washing machines

Electrical products industry
BT: Manufacturing industries
RT: Electrical equipment industry

              Electronics industry
    NT: Electrical products

Electrical resistance measurement
    UF: Ohmmeters
    BT: Electric variables measurement
    RT: Resistance

Electrical resistivity
    USE: Electric resistance

Electrical safety
    BT: Power system protection
    RT: Domestic safety
              Electrical accidents
              Islanding
              Partial discharge measurement
    NT: Fault protection
              Grounding

Electrical stimulation
    UF: Electric stimulation therapy
              Electrical brain stimulation
              Microelectronic stimulation
              Spinal cord stimulation
    BT: Medical treatment

Electrically alterable read only memory
    USE: EPROM

Electrically erasable programmable read only memory
    USE: EPROM

Electricity
    BT: Science - general
    NT: Photoelectricity
              Piezoelectricity
              Pyroelectricity
              Thermoelectricity
              Triboelectricity

Electricity grids
    USE: Power grids

Electricity market
    USE: Electricity supply industry

Electricity markets
    USE: Power markets

Electricity supply industry
    UF: Electric utilities
              Electricity market
              Power supply industry
    BT: Power industry
    RT: Electrical equipment industry
              Power demand
              Power distribution
              Power quality
              Power system faults
              Power system planning
              Power system restoration
              Public infrastructure
    NT: Electricity supply industry deregulation

Electricity supply industry deregulation
    UF: Electricity supply industry liberalisation
              Electricity supply industry liberalization
              Electricity supply industry privatisation
              Electricity supply industry privatization
    BT: Electricity supply industry
              Power generation economics
    RT: Power system economics
    NT: Power markets

Electricity supply industry liberalisation
    USE: Electricity supply industry deregulation

Electricity supply industry liberalization
    USE: Electricity supply industry deregulation

Electricity supply industry privatisation
    USE: Electricity supply industry deregulation

Electricity supply industry privatization
    USE: Electricity supply industry deregulation

Electricity trading
    USE: Power markets

Electro hydraulics
    USE: Electrohydraulics

Electro oculography
    USE: Electrooculography

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Electro-chromic devices
  USE: Electrochromic devices

Electro-fluid dynamics
  USE: Electrohydrodynamics

Electro-oculography
  USE: Electrooculography

Electro-optic deflectors
  USE: Electrooptic deflectors

Electro-optic effects
  USE: Electrooptic effects

Electro-optic modulators
  USE: Electrooptic modulators

Electro-optical devices
  UF: Electrooptic devices
       Electrooptical devices
  BT: Lasers and electrooptics
  RT: Electroluminescent devices
       Electrooptic effects
       Liquid crystal devices
       Optical bistability
       Optoelectronic devices
  NT: Electrochromic devices
       Electrooptic deflectors
       Electrooptic modulators

Electro-osmosis
  BT: Osmosis

Electroacoustic devices
  USE: Acoustoelectric devices

Electroacoustic effects
  USE: Acoustoelectric effects

Electroactive polymer actuators
  USE: Actuators

Electroactive polymers
  USE: Polymers

Electrobiology
  USE: Bioelectric phenomena

Electrocardiography
  UF: ECG
       EKG
  BT: Cardiography
  RT: Biomedical equipment

Electrocatalysis
  BT: Catalysis
       Electrochemistry
  RT: Electrocatalysts

Electrocatalysts
  BT: Catalysts
  RT: Electrocatalysis
       Electrochemistry
       Mesoporous materials

Electrochemical deposition
  UF: Electroplating
  BT: Surface treatment
  RT: Materials processing

Electrochemical devices
  BT: Industry applications
  RT: Electrochemical processes
       Power engineering and energy
       Synapses
  NT: Amperometric sensors
       Batteries
       Battery management systems
       Fuel cells
       Supercapacitors

Electrochemical impedance spectroscopy
  BT: Spectroscopy
  RT: Electrochemical processes

Electrochemical machining
  UF: Electrolytic machining
  BT: Machining
  RT: Micromachining

Electrochemical processes
  UF: Electrolysis
  BT: Industry applications
  RT: Chemical industry
       Electrochemical devices
       Electrochemical impedance spectroscopy
       Electrolytes

Electrochemistry
  BT: Chemistry
  RT: Electrocatalysts
  NT: Electrocatalysis

Electrochromic devices
  UF: Electro-chromic devices
  BT: Electro-optical devices

RT: Electrochromism

Electrochromism
BT: Electrooptic effects
RT: Color
        Electrochromic devices

Electrodeless lamps
BT: Lamps

Electrodes
BT: Electronic components
RT: Air gaps
        Electron emission
        Electron tubes
        Electrophysiology
        Metal-insulator structures
        Spark gaps
NT: Anodes
        Cathodes
        Microelectrodes

Electrodynamics
BT: Dynamics
        Waves
RT: Electromagnetic fields
        Electron beams
        Electron optics
        Electron tubes
        Ion beams
        Particle beam optics
NT: Electromagnetic wave polarization

Electroencephalography
UF: EEG
BT: Biomedical measurement
RT: Bioelectric phenomena
        Biomedical equipment
        Brain
        Electrooculography
        Medical diagnosis

Electrofluid dynamics
USE: Electrohydrodynamics

Electrohydraulics
UF: Electro hydraulics
BT: Hydraulic systems
RT: Fluid flow
        Liquids
        Magnetohydrodynamics

Electrohydrodynamics
UF: Electro-fluid dynamics

        Electrofluid dynamics
        Electrostrictive hydrodynamics
BT: Dielectrics
        Hydrodynamics
RT: Dielectric materials
        Electric fields
        Electrokinetics

Electrokinetics
BT: Dielectrics
RT: Dielectric materials
        Electric fields
        Electrohydrodynamics

Electroluminescence
BT: Luminescence
RT: Electrooptic effects
        Organic light emitting diodes
NT: Electroluminescent devices

Electroluminescent devices
BT: Electroluminescence
        Light sources
        Luminescent devices
RT: Electro-optical devices

Electrolysis
USE: Electrochemical processes

Electrolytes
BT: Conducting materials
RT: Electrochemical processes
        Supercapacitors

Electrolytic machining
USE: Electrochemical machining

Electromagnetic absorbers
BT: Electromagnetic wave absorption

Electromagnetic analysis
BT: Electromagnetics
RT: Electrostatic analysis
        Magnetic analysis
        Mie scattering
NT: Air gaps
        Characteristic mode analysis
        Computational electromagnetics
        Delay effects
        Electromagnetic fields

Electromagnetic forces
Electromagnetic refraction
Permeability
Spark gaps
Time-domain analysis

Electromagnetic beams
    USE: Beams

Electromagnetic compatibility
    UF: EMC
    BT: Electromagnetic
compatibility and interference
    NT: Immunity testing
            Reverberation chambers

Electromagnetic compatibility and interference
    RT: Electromagnetic
interference
            Open area test sites
            TEM cells
    NT: Electromagnetic
compatibility
            Electromagnetics
            Interference

Electromagnetic coupling
    BT: Electromagnetics
    RT: Circulators
            Couplers
            Electromagnetic induction
            Electromagnetic shielding
    NT: Mutual coupling
            Optical coupling

Electromagnetic devices
    BT: Electromagnetics
    RT: Magnetic gears
    NT: Baluns

Electromagnetic diffraction
    BT: Electromagnetic
propagation
    RT: Electromagnetic fields
    NT: Optical diffraction
            Physical theory of
diffraction
            X-ray diffraction

Electromagnetic field theory
    BT: Electromagnetic fields
    RT: Computational
electromagnetics
            Optical fiber theory

Electromagnetic fields
    BT: Electromagnetic analysis
    RT: Computational
electromagnetics
            Electrodynamics
            Electromagnetic diffraction
            Electromagnetic
propagation
            Electromagnetic radiation
            Electromagnetic reflection
            Electromagnetic refraction
            Electromagnetic scattering
            Magnetic fields
            Mie scattering
    NT: Electric fields
            Electromagnetic field theory
            Electromagnetic spectrum
            Windings

Electromagnetic forces
    BT: Electromagnetic analysis
    RT: Electromagnetic launching
            Magnetic forces
            Mie scattering

Electromagnetic guns
    USE: Electromagnetic launching

Electromagnetic heating
    UF: Microwave heating
    BT: Heating systems
    RT: Hyperthermia
            Induction heating

Electromagnetic induction
    UF: Induction (electromagnetic)
    BT: Electromagnetics
    RT: Electromagnetic coupling
            Geomagnetism
            Magnetic communication
    NT: Eddy currents
            Inductive power
transmission

Electromagnetic interference
    UF: EMI
            Electromagnetic noise
            RF interference
            Radio interference
    BT: Interference
    RT: Crosstalk
            Electromagnetic
compatibility and interference
            Environmental factors

Immunity testing
Noise
Open area test sites
TEM cells
NT: Radiofrequency
interference

Specific absorption rate

Electromagnetic launching
UF: Electromagnetic guns
Electromagnetic propulsion
Launching
(electromagnetic)
BT: Propulsion
RT: Electromagnetic forces
Electrothermal launching
NT: Coilguns
Railguns

Electromagnetic measurements
BT: Measurement
RT: Anechoic chambers
Antenna measurements
Dielectric measurement
Electric variables
measurement
Frequency measurement
Mie scattering
Reflectometry
Wavelength measurement
NT: Electromagnetic modeling
Linearity
Microwave measurement
Millimeter wave
measurements
Parameter extraction
Polarimetry
Radiometry
Submillimeter wave
measurements

Electromagnetic metamaterials
BT: Electromagnetics
Metamaterials
RT: Optical metamaterials
Photonics
Split ring resonators
NT: Terahertz metamaterials

Electromagnetic model
USE: Electromagnetic modeling

Electromagnetic modeling
UF: Electromagnetic model
Electromagnetic modelling

BT: Electromagnetic
measurements

Electromagnetic modelling
USE: Electromagnetic modeling

Electromagnetic noise
USE: Electromagnetic
interference

Electromagnetic propagation
UF: Electromagnetic wave
propagation
BT: Antennas and propagation
Propagation
RT: Electromagnetic fields
Electromagnetic transients
Electromagnetic
waveguides
Magnetostatic waves
Mie scattering
Waves
NT: Electromagnetic diffraction
Electromagnetic
propagation in absorbing media
Electromagnetic reflection
Microwave propagation
Millimeter wave
propagation
Optical propagation
Propagation constant
Propagation losses
Radio propagation
Radiowave propagation
Submillimeter wave
propagation
UHF propagation

Electromagnetic propagation in absorbing media
BT: Electromagnetic
propagation

Electromagnetic propulsion
USE: Electromagnetic launching

Electromagnetic pulse
USE: EMP radiation effects

Electromagnetic pulse propagation
USE: Electromagnetic transients

Electromagnetic pulse scattering
USE: Electromagnetic transients

Electromagnetic radiation
- BT: Electromagnetics
- RT: Electromagnetic fields
  - Electromagnetic wave polarization
  - Waves
  - X-ray detection
  - X-ray detectors
  - X-rays
- NT: Bremsstrahlung
  - Correlators
  - Electromagnetic wave absorption
  - Frequency
  - Gamma-rays
  - Line-of-sight propagation
  - Terahertz radiation

Electromagnetic radiative interference
- BT: Interference

Electromagnetic reflection
- UF: Electromagnetic wave reflection
- BT: Electromagnetic propagation
  - Reflection
- RT: Electromagnetic fields
  - Electromagnetic scattering
  - Reflectometry
- NT: Optical reflection

Electromagnetic refraction
- BT: Electromagnetic analysis
- RT: Electromagnetic fields

Electromagnetic scattering
- UF: Electromagnetic wave scattering
  - Electromagnetic waves
- BT: Scattering
- RT: Coherence time
  - Electromagnetic fields
  - Electromagnetic reflection
  - Electromagnetic transients
  - Waves
- NT: Coherence
  - Mie scattering
  - Optical scattering
  - Polarization
  - Radar scattering
  - Raman scattering
  - Rayleigh scattering

Electromagnetic shielding
- BT: Electromagnetics
- RT: EMP radiation effects
  - Electromagnetic coupling
- NT: Cable shielding
  - Magnetic shielding

Electromagnetic spectrum
- BT: Electromagnetic fields

Electromagnetic transient program
- USE: EMTP

Electromagnetic transients
- UF: Electromagnetic pulse propagation
  - Electromagnetic pulse scattering
- BT: Electromagnetics
- RT: Electromagnetic propagation
  - Electromagnetic scattering
  - Transient analysis
- NT: EMP radiation effects
  - EMTDC
  - EMTP
  - Power system transients
  - Surges

Electromagnetic transients DC
- USE: EMTDC

Electromagnetic transients including DC
- USE: EMTDC

Electromagnetic wave absorption
- BT: Electromagnetic radiation
- NT: Electromagnetic absorbers

Electromagnetic wave attenuation
- USE: Attenuation

Electromagnetic wave polarisation
- USE: Electromagnetic wave polarization

Electromagnetic wave polarization
- UF: Electromagnetic wave polarisation
- BT: Electrodynamics
- RT: Electromagnetic radiation
  - Photonic band gap

Electromagnetic wave propagation
- USE: Electromagnetic propagation

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Electromagnetic wave reflection
    USE: Electromagnetic reflection

Electromagnetic wave scattering
    USE: Electromagnetic scattering

Electromagnetic waveguides
    BT: Transmission lines
    RT: Coaxial cables
        Coplanar waveguides
        Electromagnetic propagation
        Helical antennas
        Microwave devices
        Microwave propagation
        Optical fibers
        Propagation
        Waveguide discontinuities
    NT: Circular waveguides
        Gap waveguide
        Hollow waveguides
        Loaded waveguides
        Planar waveguides
        Rectangular waveguides
        Waveguide components
        Waveguide lasers
        Waveguide theory

Electromagnetic waves
    USE: Electromagnetic scattering

Electromagnetics
    BT: Electromagnetic compatibility and interference
    RT: Cyberspace
        Neuroradiology
    NT: Electromagnetic analysis
        Electromagnetic coupling
        Electromagnetic devices
        Electromagnetic induction
        Electromagnetic metamaterials
        Electromagnetic radiation
        Electromagnetic shielding
        Electromagnetic transients
        Proximity effects

Electromagnets
    BT: Magnets
    RT: Coils
        Magnetic confinement
        Magnetic levitation
        Magnetic levitation vehicles
    NT: Superconducting magnets

Electromechanical devices
    BT: Electromechanical systems
    NT: Armature
        SAW filters

Electromechanical sensors
    BT: Sensors
    NT: Microsensors

Electromechanical systems
    BT: Industry applications
    NT: Cruise control
        Electromechanical devices

Electromigration
    BT: Diffusion processes

Electromyography
    UF: EMG
    BT: Biomedical measurement
    RT: Bioelectric phenomena

Electron accelerators
    BT: Particle accelerators
    RT: Electron beams
        Electron sources
        Electrons

Electron beam applications
    BT: Electron beams
    RT: Flyback transformers
        Scanning electron microscopy

Electron beam pumping
    USE: Laser excitation

Electron beams
    BT: Particle beams
    RT: Electrodynamics
        Electron accelerators
        Electron emission
        Electron sources
        Electrons
        Flyback transformers
        Free electron lasers
        Gyrotrons
        Relativistic effects
        Transmission electron microscopy
    NT: Electron beam applications

Electron carriers
    USE: Charge carrier processes

Electron devices
    RT: Threshold current
    NT: Cathode ray tubes
            Electron guns
            Electron multipliers
            Electron tubes
            Mechatronics
            Microelectromechanical systems
            Microfluidics
            Micromechanical devices
            Photoelectricity
            Photovoltaic cells
            Quantum computing
            Quantum well devices
            Semiconductivity
            Semiconductor devices
            Single electron devices
            Thick film devices
            Thin film devices
            Tunneling
            Vacuum technology

Electron emission
    UF: Field electron emission
            Secondary electron emission
    BT: Nuclear and plasma sciences
    RT: Cathodes
            Electrodes
            Electron beams
            Electron guns
            Electron multipliers
            Electron sources
            Electron tubes
            Electrons
            Photoelectricity
            Thermionic emission
            Vacuum arcs
            Vacuum breakdown
    NT: Ballistic transport

Electron guns
    BT: Electron devices
    RT: Electron emission

Electron microscopy
    BT: Microscopy
    NT: Photoelectron microscopy
            Scanning electron microscopy
            Transmission electron microscopy

Electron mobility
    UF: Drift velocity
    BT: Charge carrier processes
    RT: Plasma properties

Electron multipliers
    BT: Electron devices
    RT: Electron emission
            Electron tubes
            Photomultipliers

Electron optics
    BT: Optics
            Particle beam optics
    RT: Electrodynamics

Electron paramagnetic resonance
    UF: Biological EPR
            Electron spin resonance
    BT: Spectroscopy

Electron sources
    BT: Electrons
    RT: Electron accelerators
            Electron beams
            Electron emission

Electron spin resonance
    USE: Electron paramagnetic resonance

Electron traps
    BT: Charge carrier processes
    RT: Leakage currents
            Reliability

Electron tubes
    UF: Thermionic valves
            Tubes
            Vacuum tubes
    BT: Electron devices
    RT: Anodes
            Cathodes
            Electrodes
            Electrodynamics
            Electron emission
            Electron multipliers
            Gettering
    NT: Field emitter arrays
            Klystrons
            Magnetrons
            Thyratrons
            Traveling wave tubes

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Electronic ballasts
UF: Ballasts
   Electric ballast
   Electrical ballast
BT: Ballistic transport

Electronic banking
USE: Online banking

Electronic books
USE: Electronic publishing

Electronic circuits
BT: Circuits
NT: Breadboard
   Central Processing Unit
   Multivibrators
   Stripboard circuit

Electronic commerce
UF: E-commerce
   Ecommerce
   Online shopping
BT: Economics
RT: Financial management
   Internet
   Marketing management
   Online banking
   Supply chain management
   Virtual enterprises

Electronic components
BT: Components, packaging, and manufacturing technology
NT: Capacitors
   Coils
   Connectors
   Diodes
   Electrodes
   Fuses
   Inductors
   Resistors
   Structural plates
   Switches
   Transducers

Electronic counter-countermeasures
USE: Electronic countermeasures

Electronic countermeasures
UF: ECCM
   ECM
   Electronic counter-countermeasures
BT: Electronic warfare

RT: Jamming
   Military communication
   Radar countermeasures
   Radio communication countermeasures
   Spread spectrum communication
   Spread spectrum radar
   Weapons

Electronic currency
USE: Online banking

Electronic data interchange
USE: Data handling

Electronic design automation and methodology
UF: EDA
RT: VHDL
NT: Design automation
   Design methodology

Electronic equipment
BT: Electronics industry
RT: Electronic equipment manufacture
   Electronic equipment testing
   Low-power electronics
NT: Electronic voting systems
   Microelectronics
   Organic electronics
   Smart devices
   Soft electronics

Electronic equipment manufacture
BT: Components, packaging, and manufacturing technology
RT: Electronic equipment
   Electronics industry
   Optical device fabrication
NT: Damascene integration
   Micromachining
   Radiation hardening (electronics)
   Semiconductor device manufacture

Electronic equipment testing
BT: Testing
RT: Electronic equipment
   TEM cells
NT: Immunity testing

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Electronic government
UF: E-government
BT: Government

Electronic health records
USE: Electronic medical records

Electronic healthcare
UF: Digital health
Digital healthcare
E health
Ehealth
BT: Information processing
Medical services
RT: Smart healthcare

Electronic learning
UF: E learning
E-learning
Elearning
BT: Educational technology
Learning (artificial intelligence)
RT: Computer aided instruction
Computers and information processing
Distance learning
Internet
Learning management systems
Online services
TV
Training
Wide area networks
NT: Mobile learning

Electronic mail
UF: E-mail
Email
Mail (electronic)
BT: Message systems
RT: Blogs
Office automation
Postal services
Social networking (online)
Voice mail
Whitelists
NT: Unified messaging
Unsolicited e-mail

Electronic medical prescriptions
BT: Medical treatment
RT: Electronic medical records

Electronic medical records

UF: E-health records
Electronic health records
BT: Medical information systems
RT: Electronic medical prescriptions
Patient monitoring

Electronic messaging
UF: Text messaging
BT: Message systems
NT: Instant messaging
Unified messaging

Electronic music
BT: Music
NT: Synthesizers

Electronic noses
BT: Chemical analysis
RT: Intelligent sensors

Electronic packaging thermal management
BT: Thermal management of electronics

Electronic portfolios
USE: Portfolios

Electronic publications
USE: IEEE online publications

Electronic publishing
UF: Digital publishing
E-books
E-publishing
E-reader
Electronic books
Epublishing
Kindle
BT: Publishing
RT: CD-ROMs
Journalism
Multimedia systems
Open data
NT: Content management
Desktop publishing

Electronic switching systems
BT: Communication switching
Switching systems

Electronic textiles
USE: Smart textiles

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Electronic visual prosthesis
USE: Visual prosthesis

Electronic voting
UF: E-voting
Online voting
BT: Voting

Electronic voting systems
BT: Electronic equipment
NT: Optical scan voting systems

Electronic warfare
BT: Aerospace and electronic systems
RT: Communication system security
Radio communication countermeasures
Spread spectrum communication
Spread spectrum radar
NT: Electronic countermeasures
Jamming
Radar countermeasures

Electronic waste
UF: E-waste
WEEE
Waste electrical and electronic equipment
BT: Waste materials

Electronics cooling
BT: Thermal management of electronics
RT: Cooling

Electronics engineering education
BT: Electrical engineering education

Electronics industry
UF: Integrated circuits industry
Semiconductor electronics industry
Semiconductor industry
BT: Manufacturing industries
RT: Electrical equipment industry
Electrical products industry
Electronic equipment manufacture
Toy manufacturing industry
NT: Electronic equipment

Electronics packaging
UF: Ball grid arrays
DIL
DIP
Dual inline packaging
PGA
Pin grid arrays
QFP
Quad flat packs
BT: Components, packaging, and manufacturing technology
RT: Constraint optimization
Cooling
Plastic packaging
Printed circuits
NT: Chip scale packaging

Electrons
BT: Elementary particles
RT: Beta rays
Cosmic rays
Electron accelerators
Electron beams
Electron emission
Elementary particle exchange interactions
Impact ionization
Phonons
Schrodinger equation
NT: Electron sources
Quantum wells
Trions

Electrooculography
UF: EOG
Electro oculography
Electro-oculography
BT: Biomedical measurement
Gaze tracking
RT: Bioelectric phenomena
Electroencephalography
Eyes

Electrooptic (EO) waveguides
USE: Electrooptical waveguides

Electrooptic deflectors
UF: Electro-optic deflectors
BT: Electro-optical devices

Electrooptic devices
USE: Electro-optical devices

Electrooptic effects

UF: Electro-optic effects
BT: Lasers and electrooptics
RT: Electro-optical devices
        Electroluminescence
        Nonlinear optics
NT: Electrochromism
        Kerr effect
        Optical bistability
        Stark effect

Electrooptic modulators
UF: Electro-optic modulators
        Pockels readout optical
modulator
BT: Electro-optical devices
        Optical modulation
RT: Integrated optics
        Intensity modulation
        Laser beams
        Microwave photonics
        Optical waveguides
        P-i-n diodes
        Phase modulation
        Quantum well devices

Electrooptic waveguides
USE: Electrooptical waveguides

Electrooptical devices
USE: Electro-optical devices

Electrooptical waveguides
UF: EO waveguides
        Electrooptic (EO)
waveguides
        Electrooptic waveguides
BT: Optical waveguides

Electropermeabilization
USE: Electroporation

Electrophotography
UF: Xerography
BT: Electrostatic processes
        Photoconducting devices
RT: Gas discharge devices
        Photography

Electrophotoluminescence
USE: Photoluminescence

Electrophysiology
BT: Biomedical measurement
RT: Biomedical electrodes
        Electrodes

        Voltage

Electroplating
USE: Electrochemical deposition

Electroporation
UF: Electropermeabilization
BT: Medical treatment
        Microbiology

Electrostatic actuation
USE: Electrostatic actuators

Electrostatic actuators
UF: Electrostatic actuation
BT: Actuators
RT: Electrostatic devices

Electrostatic analysis
BT: Electrostatic processes
RT: Electric fields
        Electromagnetic analysis
        Electrostatic measurements

Electrostatic charges
USE: Electrostatic discharges
AND
        Electrostatics

Electrostatic devices
BT: Industry applications
RT: Electrostatic actuators
        Electrostatic processes

Electrostatic discharges
UF: Charged device model
        ESD
        Electrostatic charges
BT: Dielectric breakdown
RT: Arc discharges
        Electrostatic interference

Electrostatic induction
UF: Induction (electrostatic)
BT: Electrostatic processes

Electrostatic interference
BT: Interference
RT: Electrostatic discharges
NT: Immunity testing

Electrostatic levitation
BT: Electrostatics
        Levitation

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Electrostatic measurements
BT: Electric variables measurement
RT: Electrostatic analysis
NT: Charge measurement

Electrostatic precipitators
BT: Industry applications
RT: Pollution control

Electrostatic processes
BT: Industry applications
RT: Discharges (electric)
         Electric fields
         Electrostatic devices
         Lightning
NT: Aerosols
         Electrophotography
         Electrostatic analysis
         Electrostatic induction
         Electrostatics
         Particle charging
         Particle production
         Space charge
         Surface charging
         Triboelectricity

Electrostatic self assembly
USE: Electrostatic self-assembly

Electrostatic self-assembly
UF: Electrostatic self assembly
BT: Self-assembly

Electrostatics
UF: Electrostatic charges
BT: Electrostatic processes
RT: Poisson equations
NT: Electrostatic levitation

Electrostriction
BT: Dielectrics
RT: Mechanical factors
         Piezoelectricity

Electrostrictive hydrodynamics
USE: Electrohydrodynamics

Electrostrictive polymer actuators
USE: Actuators

Electrothermal actuators
BT: Actuators
         Thermal sensors
RT: Resistance heating

         Thermal expansion

Electrothermal effects
BT: Thermoelectricity
RT: Electrothermal launching
NT: Proton effects

Electrothermal launching
UF: Launching (electrothermal)
BT: Propulsion
RT: Electromagnetic launching
         Electrothermal effects

Elemental semiconductors
BT: Semiconductor materials
RT: Silicon

Elementary particle exchange interactions
BT: Elementary particles
RT: Electrons
         Ions
         Proton effects
         Wave functions

Elementary particle vacuum
UF: Instanton vacuum
         QCD vacuum
         Quantum vacuum
         String vacuum
         Superstring vacuum
         Vacuum energy
BT: Elementary particles
RT: Casimir effect

Elementary particles
UF: Particles (elementary)
BT: Nuclear and plasma sciences
RT: Cosmic rays
         High energy physics instrumentation computing
         Microwave photonics
         Nuclear thermodynamics
         Proton effects
NT: Charge carriers
         Electrons
         Elementary particle exchange interactions
         Elementary particle vacuum
         Ions
         Mesons
         Neutrino sources
         Neutrons
         Particle beams
         Particle collisions

Phonons
Positrons
Protons

Elevators
BT: Building services
RT: Buildings
Stairs

Ellipsoids
BT: Elliptic design

Ellipsometry
BT: Optical variables measurement
RT: Polarimetry

Elliptic curve cryptography
UF: ECC
Elliptic curve cryptosystems
BT: Public key cryptography

Elliptic curve cryptosystems
USE: Elliptic curve cryptography

Elliptic curves
BT: Geometry

Elliptic design
UF: Elliptical design
BT: Geometry
NT: Ellipsoids

Elliptical design
USE: Elliptic design

Elongation
BT: Material properties
RT: Strain

Email
USE: Electronic mail

eMBB
USE: Enhanced mobile broadband

Embedded computing
BT: Embedded systems
RT: Distributed vision networks

Embedded multicore processing
BT: Multicore processing

Embedded power generation

USE: Distributed power generation

Embedded software
BT: Software

Embedded system
USE: Embedded systems

Embedded systems
UF: Embedded system
BT: Operating systems
RT: Cyber-physical systems
Hardware-in-the-loop simulation
Microprocessors
NT: Embedded computing

Embolization
BT: Medical treatment
Noninvasive treatment

Embossing
BT: Manufacturing
Production
RT: Injection molding
Micromachining
Sheet metal processing
Watermarking

Embryo
BT: Embryonic structures

Embryonic structures
BT: Anatomy
NT: Embryo
Fetus

EMC
USE: Electromagnetic compatibility

Emergency lighting
BT: Lighting
RT: High intensity discharge lamps

Emergency management
USE: Emergency services

Emergency medical services
USE: Medical services

Emergency power generators
USE: Standby generators

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Emergency power supplies
UF:	Standby power supplies
BT:	Power supplies
RT:	Batteries
	Standby generators
	Uninterruptible power systems

Emergency response
USE:	Emergency services

Emergency services
UF:	Emergency management
	Emergency response
BT:	Safety
RT:	Accidents
	Fires
	Medical services
	Rescue robots

Emergent phenomena
BT:	Cybernetics
RT:	System of systems

EMG
USE:	Electromyography

EMI
USE:	Electromagnetic interference

Emissions trading
UF:	Cap and trade
	Cap-and-trade
BT:	Environmental economics
	Pollution
RT:	Carbon emissions
	Market opportunities
	Power markets

Emotion recognition
BT:	User interfaces
RT:	Affective computing
	Behavioral sciences
	Emotional responses
	Image recognition
	Psychology
	Sentiment analysis
	Speech recognition

Emotional responses
BT:	Psychology
RT:	Emotion recognition

EMP radiation effects
UF:	Electromagnetic pulse
BT:	Electromagnetic transients
RT:	Electromagnetic shielding

Empirical mode decomposition
UF:	Hilbert?Huang transforms
BT:	Transforms
RT:	Signal processing

Employee rights
BT:	Employment

Employee welfare
UF:	Conditions of employment
	Counseling
	Counselling
	Maternity benefits
	Sick pay
	Working conditions
BT:	Human resource management
RT:	Incentive schemes
	Industrial psychology
	Occupational health
	Occupational safety
	Occupational stress
	Pensions
	Psychology
	Remuneration

Employment
UF:	Work-place
	Workplace
BT:	Human resource management
RT:	Business
	Employment law
	Engineering profession
	Jobs listings
	Personnel
	Programming profession
NT:	Employee rights
	Termination of employment

Employment law
BT:	Law
RT:	Contract law
	Employment

EMTDC
UF:	Electromagnetic transients DC
	Electromagnetic transients including DC

	BT:	Electromagnetic transients
		Geophysics
		Software packages
	RT:	Design automation
		PSCAD

EMTP
UF:	Electromagnetic transient program
BT:	Electromagnetic transients
RT:	Computer simulation

Emulation
BT:	Modeling
RT:	Application virtualization
	Simulation

Encapsulation
BT:	Packaging
RT:	Integrated circuit packaging
	Plastic packaging

Encephalography
| BT: | Biomedical imaging |
| RT: | Brain |

Encoding
UF:	Coding
BT:	Information theory
RT:	Codecs
	Codes
	Cryptography
	Data compression
	Data handling
	Hash functions
	Modulation
	Modulation coding
	Quantization (signal)
	Semantic technology
	Signal processing
	Vector quantization
NT:	Audio coding
	Channel coding
	Code refractoring
	Digital representation
	Entropy coding
	Precoding
	Source coding
	Speech coding
	Transcoding

Encryption
| BT: | Cryptography |
| RT: | Ciphers |

Encyclopedias
| BT: | Information services |
| RT: | Wikipedia |

End effectors
UF:	End-effectors
BT:	Manipulators
RT:	Grippers

End-effectors
| USE: | End effectors |

Endocrine glands
| USE: | Glands |

Endocrine system
| BT: | Anatomy |

Endomicroscopy
BT:	Endoscopes
	Microscopy
RT:	Biomedical equipment
	Biomedical optical imaging
	Digestive system
	Medical robotics
	Optical devices
	Real-time systems

Endoscopes
UF:	Endoscopy
BT:	Biomedical equipment
RT:	Biomedical optical imaging
	Image sensors
	Laser applications
	Surgery
NT:	Endomicroscopy

Endoscopy
| USE: | Endoscopes |

Endothelial cells
| BT: | Biological cells |
| RT: | Blood vessels |

Energy
BT:	Power engineering and energy
RT:	Thermal energy
NT:	Energy barrier
	Energy capture
	Energy consumption
	Energy conversion
	Energy dissipation
	Energy exchange
	Energy harvesting

Energy management
Energy resources
Energy states
Energy storage

Energy barrier
    BT: Energy

Energy capture
    BT: Energy

Energy conservation
    BT: Energy management
    RT: Ecodesign
            Energy resources
            Power demand
            Waste heat
    NT: Green computing
            Potential energy
            Renewable energy sources

Energy consumption
    BT: Energy

Energy conversion
    BT: Energy
    NT: Atomic batteries
            Batteries
            Fuel cells
            Motors
            Photovoltaic cells
            Potential well
            Solar heating
            Thermoelectricity
            Waste heat
            Wave energy conversion
            Wind energy conversion

Energy dissipation
    BT: Energy

Energy efficiency
    UF: Energy efficient
    BT: Energy management
    RT: Energy informatics
    NT: Energy efficient ethernet

Energy efficient
    USE: Energy efficiency

Energy efficient ethernet
    UF: EtherEEE
    BT: Energy efficiency
            Ethernet

Energy exchange
    UF: Energy transfer
    BT: Energy
    NT: Inductive charging

Energy harvesting
    UF: Energy scavenging
            Power harvesting
    BT: Energy
    NT: Nanogenerators

Energy informatics
    BT: Energy management
            Informatics
    RT: Energy efficiency
            Global warming
            Green design
            Information and
communication technology
            Machine learning
            Smart cities
            Smart grids

Energy levels
    USE: Energy states

Energy loss
    BT: Energy measurement
    NT: Core loss

Energy management
    BT: Energy
    NT: Demand side management
            Energy conservation
            Energy efficiency
            Energy informatics
            Energy management
systems
            Load management
            Transactive energy

Energy management systems
    BT: Energy management

Energy measurement
    BT: Electric variables
measurement
    RT: Calorimetry
            Enthalpy
            Watthour meters
    NT: Energy loss

Energy resolution
    BT: Nuclear imaging
    RT: Nuclear medicine

2021 IEEE Thesaurus

Solid scintillation detectors

Energy resources
BT:	Energy
RT:	Civil engineering
	Energy conservation
	Environmental economics
	Natural gas
	Power demand
NT:	Fuels
	Geothermal energy
	Nuclear fuels
	Solar energy
	Wave power
	Wind energy
	Wind farms

Energy scavenging
USE:	Energy harvesting

Energy states
UF:	Energy levels
	Levels, energy
BT:	Energy
NT:	Effective mass
	Orbital calculations
	Polaritons
	Surface states

Energy storage
UF:	Energy storage systems
	Stored energy
BT:	Energy
RT:	Aging
	Battery powered vehicles
	Fuel cell vehicles
	Fuel storage
	Hybrid electric vehicles
	Load management
	Material storage
	Pulsed power systems
	Solar powered vehicles
NT:	Batteries
	Flywheels
	Fuel cells
	Hydrogen storage
	Supercapacitors
	Superconducting magnetic energy storage

Energy storage systems
USE:	Energy storage

Energy transfer
USE:	Energy exchange

Engine cylinders
BT:	Machine components
RT:	Engines
	Gaskets
	Pistons
	Structural rings

Engineering - general
RT:	STEM
	Technology
NT:	Acoustical engineering
	Agricultural engineering
	Bio-inspired engineering
	Chemical engineering
	Civil engineering
	Concurrent engineering
	Design engineering
	Electrical engineering
	Engineering profession
	Environmental engineering
	Maintenance engineering
	Mechanical engineering
	Optical engineering
	Precision engineering
	Production engineering
	Research and development
	Reverse engineering
	Sanitary engineering
	Standardization
	Thermal engineering

Engineering drawings
BT:	Graphics
RT:	Documentation
	Technical drawing
NT:	Flowcharts

Engineering education
BT:	Education
RT:	Continuing education
	Educational robots
	Laboratories
	Logic design
NT:	Biomedical engineering education
	Communication engineering education
	Computer science education
	Control engineering education
	Electrical engineering education
	Engineering students

Physics education
Power engineering
education

Student experiments
Systems engineering
education

Engineering geology
    USE: Geoengineering

Engineering in medicine and biology
    NT: Biology
        Biomedical communication
        Biomedical computing
        Biomedical engineering
        Biomedical equipment
        Biomedical imaging
        Bionanotechnology
        Bioterrorism
        Computational biology
        Genetic engineering
        Medical services
        Medical specialties
        Nuclear medicine
        Synthetic biology

Engineering management
    NT: Business
        Commercialization
        Consortia
        Economics
        Innovation management
        Legal factors
        Market research
        Planning
        Product development
        Project engineering
        Research and development
management
        Research initiatives
        Software development
management

Engineering profession
    UF: Careers
    BT: Engineering - general
    RT: Biographies
        Electrical engineering
        Employment
        Ethics
        Programming profession
        Research and development
        Research and development
management
    NT: Professional aspects

Engineering students
    UF: Student engineers
    BT: Engineering education

Engineering writing
    USE: Writing

Engines
    BT: Industry applications
    RT: Aircraft propulsion
        Automobile manufacture
        Cams
        Camshafts
        Engine cylinders
        Exhaust systems
        Fuel pumps
        Gaskets
        Machine components
        Manifolds
        Mechanical power
transmission
        Oils
        Pistons
        Propellers
        Propulsion
        Rockets
        Torque converters
        Turbomachinery
    NT: Heat engines
        Internal combustion
engines
        Jet engines

Enhanced magnetoresistance
    BT: Magnetoresistance
    RT: Nanocontacts

Enhanced mobile broadband
    UF: eMBB
    BT: 5G mobile communication
    RT: 4G mobile communication

Entangled states
    USE: Quantum entanglement

Enterprise architecture management
    BT: Information architecture
        Information management
    RT: Best practices
        Enterprise resource
planning

Enterprise resource planning
    BT: Management

2021 IEEE Thesaurus

RT: Business
          Data handling
          Data processing
          Enterprise architecture
management
          Software
          System integration
          Venture capital
NT: Business process
integration

Entertainment industry
BT: Industries
RT: Broadcasting
          Films
          Games
          Motion pictures
          TV
NT: Sports

Enthalpy
BT: Thermodynamics
RT: Energy measurement
          Thermal management

Entomology
BT: Zoology
RT: Biochemistry
          Biomechanics
          Ecology
          Insects
          Morphology
          Physiology

Entrepreneurial
USE: Entrepreneurship

Entrepreneurship
UF: Entrepreneurial
BT: Business
RT: Disruptive innovation
          Innovation management

Entropy
BT: Physics
RT: Heating systems
          Nuclear thermodynamics

Entropy coding
BT: Encoding
RT: Data compression
NT: Huffman coding

Entry, descent and landing
USE: Aircraft navigation

Envelope detectors
BT: Detectors

Environmental design
USE: Green design

Environmental economics
BT: Economics
          Environmental factors
RT: Energy resources
          Environmental
management
          Pollution
NT: Carbon tax
          Emissions trading

Environmental engineering
BT: Engineering - general
RT: Environmental factors
          Environmental
management
          Resource management

Environmental factors
UF: Environmental problems
BT: Geoscience and remote
sensing
          Social implications of
technology
RT: Acoustic noise
          Air quality
          Carbon footprint
          Carbon sequestration
          Civil engineering
          Ecodesign
          Electromagnetic
interference
          Environmental engineering
          Epidemiology
          Green buildings
          Green computing
          Greenhouse effect
          Health and safety
          International collaboration
          Meteorology
          Occupational health
          Ozonation
          Safety
NT: Biosphere
          Climate change
          Ecology
          Ecosystems
          Environmental economics
          Environmental monitoring

Global warming
Green manufacturing
Green products
Green transportation
Pollution

Environmental management
BT: Industry applications
RT: Dams
Environmental economics
Environmental engineering
Global warming
International collaboration
Low-carbon economy
Public infrastructure
Sanitary engineering
NT: Biodegradation
Land use planning
Pest control
Pollution control
Recycling
Renewable energy sources
Sustainable development
Waste management
Water conservation
Water resources

Environmental monitoring
BT: Environmental factors
Monitoring
RT: Decontamination
Pollution control
Pollution measurement

Environmental noise
USE: Working environment noise

Environmental problems
USE: Environmental factors

Environmentally friendly manufacturing techniques
BT: Components, packaging, and manufacturing technology

Enzymatic fuel cells
USE: Fuel cells

Enzymes
USE: Biochemistry

EO waveguides
USE: Electrooptical waveguides

EOG

USE: Electrooculography

EOS
USE: Earth Observing System

Epidemics
BT: Epidemiology
RT: Coronaviruses
Diseases
Influenza
Pathogens
Virology
NT: Pandemics

Epidemiology
BT: Science - general
RT: Biomedical monitoring
Environmental factors
Public healthcare
NT: Epidemics

Epidermal
USE: Epidermis

Epidermis
UF: Epidermal
BT: Skin

Epigenetics
BT: Genetics
RT: DNA

Epilepsy
BT: Diseases

Epitaxial growth
UF: Epitaxy
BT: Thin films
RT: Crystal growth
Crystals
Gallium
Germanium
Molecular beams
Nanotechnology
Photonics
Semiconductor devices
Semiconductor thin films
Silicon
Substrates
NT: Molecular beam epitaxial growth

Epitaxial layers
BT: Coatings
Films

RT: Chemical vapor deposition
Semiconductor growth
Thin films
NT: Superconducting epitaxial layers

Epitaxy
USE: Epitaxial growth

EPON
UF: Ethernet passive optical networks
BT: Ethernet
RT: Passive optical networks

Epoxy resins
BT: Dielectric materials
Plastics
Resins

EPROM
UF: EAROM
EEPROM
Electrically alterable read only memory
Electrically erasable programmable read only memory
Erasable programmable read only memory
BT: PROM

Epublishing
USE: Electronic publishing

Equal opportunities
BT: Human resource management
RT: Industrial relations
Labor resources
Personnel
Recruitment
NT: Gender equity
Gender issues

Equalisers
USE: Equalizers

Equalizers
UF: Equalisers
BT: Filters
RT: Channel estimation
Impedance matching
Intersymbol interference
NT: Adaptive equalizers
Blind equalizers

Decision feedback equalizers

Equations
BT: Mathematics
NT: Boltzmann equation
Difference equations
Integrodifferential equations
Maxwell equations
Nonlinear equations
Polynomials
Riccati equations

Equipment failure
BT: Failure analysis

Equivalent circuits
BT: Circuits

Er
USE: Erbium

Er-doped fiber amplifier
USE: Erbium-doped fiber amplifiers

Er-doped fiber lasers
USE: Erbium-doped fiber lasers

Erasable programmable read only memory
USE: EPROM

Erbium
UF: Er
BT: Metals
RT: Erbium-doped fiber amplifiers
Lasers and electrooptics
Optical amplifiers
Optics

Erbium-doped fiber amplifiers
UF: EDFA
Er-doped fiber amplifier
BT: Optical amplifiers
RT: Erbium

Erbium-doped fiber laser
USE: Erbium-doped fiber lasers

Erbium-doped fiber lasers
UF: Er-doped fiber lasers
Erbium-doped fiber laser
Erbiumdoped fiber laser
BT: Fiber lasers

2021 IEEE Thesaurus

Erbiumdoped fiber laser
USE: Erbium-doped fiber lasers

Erection
USE: Construction

Ergonomics
UF: Human engineering
Human factors engineering
BT: Systems, man, and cybernetics
RT: Anthropometry
Behavioral sciences
Cybernetics
Design methodology
Human factors
Keyboards
Man-machine systems
Occupational health
Working environment noise
NT: Job design
Smart spaces
User experience

Error analysis
UF: Error estimation
Error rate
Error rates
Error statistics
BT: Testing
RT: Cyclic redundancy check
Cyclic redundancy check codes
Error correction
Estimation
Mean square error methods
Measurement errors
Numerical analysis
Roundoff errors
NT: Bit error rate
Finite wordlength effects

Error compensation
BT: Information theory
RT: Error correction

Error correcting codes
USE: Error correction codes

Error correction
BT: Signal processing
RT: Codes
Convolutional codes
Cyclic redundancy check

Cyclic redundancy check codes
Error analysis
Error compensation
Error correction codes
Linear codes
Power system faults
Product codes
Turbo codes
NT: Forward error correction

Error correction codes
UF: ECC
Error correcting codes
Error-correcting codes
Error-correction codes
Errorcorrection codes
BT: Codes
RT: Convolutional codes
Error correction
Polar codes
NT: Reed-Muller codes
Reed-Solomon codes

Error estimation
USE: Error analysis

Error free operation
USE: Error-free operations

Error probability
BT: Probability

Error rate
USE: Error analysis

Error rates
USE: Error analysis

Error recovery (computers)
USE: System recovery

Error statistics
USE: Error analysis

Error-correcting codes
USE: Error correction codes

Error-correction codes
USE: Error correction codes

Error-free operations
UF: Error free operation
BT: Testing

Errorcorrection codes
USE: Error correction codes

Escalators
BT: Transportation
RT: Buildings
Mechanical products
Stairs

ESD
USE: Electrostatic discharges

Esophagus
BT: Digestive system

Estimation
UF: Signal estimation
BT: Mathematics
RT: Control systems
Error analysis
Filtering theory
Kalman filters
Measurement uncertainty
Prediction methods
Prediction theory
Reduced order systems
Signal processing
Spectral analysis
NT: Estimation error
Estimation theory
Functional point analysis
Life estimation
Maximum likelihood estimation
Pose estimation
State estimation
Yield estimation

Estimation error
BT: Estimation

Estimation of the direction of arrival
USE: Direction-of-arrival estimation

Estimation theory
BT: Estimation
RT: Mean square error methods
Signal processing
Statistics
NT: Cramer-Rao bounds
Maximum a posteriori estimation

Etalons
USE: Interferometers

Etching
UF: Deep etching
BT: Materials processing
Surface treatment
RT: Fabrication
Micromachining
NT: Dry etching
Wet etching

Ethanol
UF: Ethyl alcohol
Grain alcohol
BT: Chemical compounds
NT: Alcoholic beverages

EtherEEE
USE: Energy efficient ethernet

Ethernet
BT: Computer networks
RT: IEEE 802.3 Standard
Local area networks
NT: EPON
Energy efficient ethernet

Ethernet passive optical networks
USE: EPON

Ethical aspects
BT: Social implications of technology
RT: Digital divide
Ethics
Genetic engineering
Legal factors
Management
Philosophical considerations

Ethics
UF: Morals
BT: Social implications of technology
RT: Digital intelligence
Engineering profession
Ethical aspects
General Data Protection Regulation
NT: Cyberethics
Machine ethics

Ethyl alcohol
USE: Ethanol

2021 IEEE Thesaurus

ETSI
UF: European Telecommunications Standards Institute
BT: Standards organizations

ETSI Standards
BT: Standards publications
NT: HbbTV Standards
SONET
Synchronous digital hierarchy

Euclidean distance
UF: Euclidean measurement
Euclidean metric
BT: Distance measurement
Mathematics
NT: Hilbert space

Euclidean measurement
USE: Euclidean distance

Euclidean metric
USE: Euclidean distance

Europe
BT: Continents

European Telecommunications Standards Institute
USE: ETSI

Europium
BT: Chemical elements

EUV Lithography
USE: Extreme ultraviolet lithography

EV charging
USE: Electric vehicle charging

Event detection
BT: Wireless sensor networks

Everyware
USE: Pervasive computing

Evidence theory
UF: Belief functions
Dempster?Shafer theory
BT: Uncertainty
RT: Belief propagation

Evolution
USE: Evolution (biology)

Evolution (biology)
UF: Evolution
BT: Biology
NT: Memetics
Phylogeny

Evolutionary algorithm
USE: Evolutionary computation

Evolutionary computation
UF: Evolutionary algorithm
BT: Computational intelligence
NT: Evolutionary robotics
Particle swarm optimization

Evolutionary robotics
BT: Evolutionary computation
Robots

Exascale computing
BT: High performance computing
Supercomputers

Excavation
UF: Dredging
BT: Geotechnical engineering
RT: Construction industry
Marine technology
Mining industry
Rivers
Roads
Soil

Exchange rates
BT: Economics
RT: Costs
Economic indicators
International trade

Excitation of lasers
USE: Laser excitation

Excitons
BT: Charge carrier processes
RT: Semiconductor materials

Executive programs
USE: Operating systems

Exhaust gases
BT: Gases

RT: Air pollution
Ash
Combustion
Exhaust systems
Flue gases
Internal combustion engines
Jet engines

Exhaust manifolds
USE: Manifolds

Exhaust systems
UF: Catalytic converters
Catalytic convertors
Mufflers
BT: Machine components
Production systems
RT: Engines
Exhaust gases
Manifolds

Exo planets
USE: Extrasolar planets

Exo-planets
USE: Extrasolar planets

Exocrine glands
USE: Glands

Exoplanets
USE: Extrasolar planets

Exoskeletons
BT: User interfaces

Expectation-maximisation algorithms
USE: Expectation-maximization algorithms

Expectation-maximization algorithms
UF: Expectation-maximisation algorithms
BT: Iterative methods

Expert systems
BT: Knowledge based systems
RT: Cause effect analysis
Decision making
Intelligent systems
Knowledge acquisition
Knowledge representation
NT: Diagnostic expert systems
Medical expert systems

Explosion protection
BT: Protection
Safety
RT: Accident prevention
Flammability
Hazards
Military equipment

Explosions
BT: Hazards
RT: Accidents
Chemical hazards
Flammability
Hazardous areas
Safety
Seismic waves
NT: Explosives

Explosives
BT: Explosions

Exponential distribution
BT: Probability distribution

Extended definition TV
USE: HDTV

Extended reality
UF: HumanXR
BT: Human computer interaction
Man-machine systems
Virtual reality
RT: Augmented reality

Extensible Markup Language
USE: XML

External stimuli
UF: PhysiStimuli
BT: Interactive systems
Physiology

Extinction coefficients
BT: Optics
NT: Extinction ratio

Extinction ratio
BT: Extinction coefficients

Extra solar planets
USE: Extrasolar planets

Extra-solar planets

USE: Extrasolar planets

Extracellular
BT: Cells (biology)

Extranets
BT: Virtual private networks
RT: Data communication
Information systems
Internet
Web sites

Extraordinary magnetoresistance
BT: Magnetoresistance

Extrapolation
BT: Approximation methods
RT: Statistics

Extrasolar planetary atmospheres
BT: Extrasolar planets

Extrasolar planetary mass
BT: Extrasolar planets

Extrasolar planets
UF: Exo planets
Exo-planets
Exoplanets
Extra solar planets
Extra-solar planets
Super earths
BT: Astronomy
RT: Extraterrestrial measurements
Extraterrestrial phenomena
NT: Extrasolar planetary atmospheres
Extrasolar planetary mass

Extraterrestrial measurements
UF: Planetary composition
Space measurements
BT: Measurement
RT: Astronomy
Extrasolar planets
Extraterrestrial phenomena
Interstellar chemistry

Extraterrestrial phenomena
UF: Space phenomena
BT: Geophysics
RT: Extrasolar planets
Extraterrestrial measurements

Planets
Space technology
NT: Cosmic rays
Solar radiation

Extreme learning machines
BT: Feedforward neural networks
RT: Clustering methods

Extreme ultraviolet lithography
UF: EUV Lithography
BT: Lithography

Extremities
BT: Body regions
NT: Arms
Buttocks
Elbow
Fingers
Foot
Hip
Knee
Leg
Shoulder
Thigh

Eye protection
UF: Goggles
BT: Safety devices
RT: Occupational health
Occupational safety
Protective clothing
Safety

Eyebrows
BT: Hair

Eyelashes
BT: Eyes
Hair

Eyelids
BT: Eyes

Eyes
BT: Sense organs
RT: Electrooculography
Gaze tracking
Ophthalmology
Optical coherence tomography
NT: Cataracts
Cornea
Eyelashes

Eyelids
Iris
Pupils
Retina

FAA
UF: Federal Aviation Administration
BT: US Government agencies

Fabrication
UF: Fabrication process
BT: Manufacturing
RT: Etching
Materials processing
NT: Bonding processes
Microfabrication
Optical device fabrication
Soldering
Welding

Fabrication process
USE: Fabrication

Fabrics
UF: Knitted fabric composites
Woven fabric composites
BT: Textiles
RT: Clothing
Weaving
Wool

Fabry-Perot
BT: Interferometry
NT: Fabry-Perot interferometers

Fabry-Perot interferometers
BT: Fabry-Perot

Face detection
BT: Computer vision
RT: Facial animation
NT: Facial features

Face recognition
UF: Facial recognition
BT: Biometrics (access control)
Identification of persons
Pattern recognition
RT: Gaze tracking
Image recognition

Facebook
USE: Social networking (online)

Faces
BT: Head
RT: Stomatognathic system
NT: Facial muscles

Facial animation
BT: Animation
RT: Face detection

Facial attributes
USE: Facial features

Facial features
UF: Facial attributes
BT: Face detection

Facial muscles
BT: Faces

Facial recognition
USE: Face recognition

Facilities management
BT: Building services
Management
Organizational aspects
RT: Building information management

Facsimile
BT: Communication systems
Image communication

Factories
USE: Production facilities

Factory automation
USE: Manufacturing automation

FACTS
USE: Flexible AC transmission systems

Fading channels
BT: Signal processing
RT: Diversity methods
Diversity schemes
Intercell interference
Meteorological factors
Multipath channels
Radio propagation
NT: Frequency-selective fading channels
Rayleigh channels
Weibull fading channels

2021 IEEE Thesaurus

Failure analysis
UF:	Failure analytics
	Failure mechanisms
BT:	Testing
RT:	Cause effect analysis
	Diagnostic expert systems
	Fatigue
	Fault diagnosis
	Fault trees
	Green's function methods
	Life estimation
	Quality control
	Reliability
	Remaining life assessment
	Root cause analysis
	Weibull distribution
NT:	Equipment failure
	Semiconductor device breakdown

Failure analytics
USE:	Failure analysis

Failure mechanisms
USE:	Failure analysis

Fall detection
BT:	Biomechanics
	Domestic safety
RT:	Accelerometers
	Alarm systems
	Assisted living
	Biomedical communication
	Biomedical signal processing
	Body sensor networks
	Detectors
	Geriatrics
	Home automation
	Image motion analysis
	Image recognition
	Injuries
	Patient monitoring
	Video signal processing
	Wearable computers
NT:	Assistive technologies

Fans
BT:	Machinery
	Ventilation
RT:	Air conditioning
	Blades
	Jet engines

Faraday effect
UF:	Faraday rotation
BT:	Magnetooptic effects
RT:	Gyromagnetism
	Gyrotropism

Faraday rotation
USE:	Faraday effect

Fascia
BT:	Musculoskeletal system

Fast Fourier transforms
BT:	Fourier transforms
RT:	Digital signal processing
	Harmonic analysis

Fast light
BT:	Light sources

Fastbus
BT:	Data acquisition
RT:	Data buses
	Data communication
	Data processing
	Nuclear measurements

Fasteners
UF:	Bolts
	Hinges
	Nuts (fasteners)
	Screws
	Zip fasteners
BT:	Control equipment
	Mechanical products
RT:	Belts
	Couplings
	Joining processes
	Welding

Fastening
USE:	Joining processes

Fatigue
BT:	Mechanical factors
RT:	Failure analysis
	Life estimation

Fats
BT:	Chemical products
	Food products
RT:	Biological materials
	Lipidomics
	Oils

Fault current limiters
- BT: Current limiters

Fault currents
- BT: Current
- RT: Electric breakdown
  - Grounding
  - Leakage currents
- NT: Fault protection

Fault detection
- BT: System analysis and design

Fault diagnosis
- BT: Reliability
- RT: Cause effect analysis
  - Diagnostic expert systems
  - Failure analysis
  - Maintenance engineering
  - Testing
- NT: Dissolved gas analysis
  - Fault location

Fault location
- BT: Fault diagnosis
- RT: Cables
  - Communication cables
  - Fault trees
  - Insulation testing

Fault protection
- BT: Electrical safety
  - Fault currents

Fault tolerance
- UF: System resilience
- BT: Reliability
- NT: Fault tolerant control
  - Redundancy

Fault tolerant control
- BT: Control systems
  - Fault tolerance

Fault tolerant systems
- BT: System analysis and design

Fault trees
- BT: Risk analysis
- RT: Boolean functions
  - Failure analysis
  - Fault location

FBAR

FBARs USE: Film bulk acoustic resonators

USE: Film bulk acoustic resonators

FBT
- USE: Flyback transformers

FCC
- UF: Federal Communications Commission
- BT: US Government agencies

FDA
- UF: Food and Drug Administration
- BT: US Government agencies

FDDI
- UF: Fiber distributed data interface
- BT: Communication systems
  - Optical fiber communication
- RT: Communication standards
  - Local area networks

FDM
- USE: Frequency division multiplexing

FDMA
- USE: Frequency division multiaccess

FDTD
- USE: Finite difference methods
- AND
  - Time-domain analysis

Fe
- USE: Iron

Feathers
- BT: Animal structures

Feature detection
- BT: Computer vision
  - Image processing
- RT: Feature extraction
  - Saliency detection

Feature extraction
- BT: Image processing

RT: Blob detection
Feature detection
Image annotation
Image edge detection
Image recognition
Independent component analysis
Mixture models
Pattern classification
Pattern recognition
Principal component analysis
Saliency detection
Signal processing
Speech recognition

Federal Aviation Administration
USE: FAA

Federal Communications Commission
USE: FCC

Federated learning
USE: Collaborative work

Federated search
USE: Metasearch

Federated searching
USE: Metasearch

Feedback
UF: Saturation detection
BT: Circuits
Control systems
RT: Control design
Positive train control
SIMO communication
Scrum (Software development)
System dynamics
NT: Feedback circuits
Negative feedback
Neurofeedback

Feedback amplifiers
UF: NFB
Negative feedback amplifier
BT: Operational amplifiers

Feedback circuits
UF: Circuit feedback
BT: Feedback
RT: Control theory

Distributed feedback devices
Feedback communications
NT: Output feedback

Feedback communications
BT: Telecommunications
RT: Feedback circuits
NT: Automatic repeat request
Feedback control
Feedback loop

Feedback control
BT: Feedback communications
NT: Windup

Feedback linearization
BT: Control nonlinearities
Control systems

Feedback loop
BT: Feedback communications
NT: Negative feedback loops

Feedforward neural nets
USE: Feedforward neural networks

Feedforward neural networks
UF: Feedforward neural nets
BT: Neural networks
RT: Artificial intelligence
Pattern recognition
Self-organizing feature maps
Support vector machines
NT: Extreme learning machines
Multilayer perceptrons

Feedforward systems
BT: Intelligent control
RT: Forward error correction
Open loop systems

Feeds
BT: Antennas
NT: Antenna feeds

FeFETs
UF: Ferroelectric FETs
BT: Field effect transistors

Felines
USE: Cats

2021 IEEE Thesaurus

FEM
USE: Finite element analysis

Femtocell networks
UF: Access point base station
BT: Cellular networks
RT: Base stations

Femtocells
BT: Base stations

Ferrimagnetic films
BT: Ferrimagnetic materials
Films
Magnetic films
Magnetic materials
NT: Ferrite films
Garnet films

Ferrimagnetic materials
BT: Magnetic materials
NT: Ferrimagnetic films
Ferrite films
Ferrites
Garnet films
Garnets

Ferrite devices
BT: Magnetic devices
RT: Ferrites
Flyback transformers
Gyrators
NT: Circulators

Ferrite films
BT: Ferrimagnetic films
Ferrimagnetic materials
Ferrites
Films
Magnetic films
Magnetic materials

Ferrites
BT: Ferrimagnetic materials
Magnetic materials
RT: Ferrite devices
Gyromagnetism
NT: Ferrite films

Ferroelectric devices
BT: Dielectric devices
RT: Ferroelectric materials

Ferroelectric FETs
USE: FeFETs

Ferroelectric films
BT: Ferroelectric materials
RT: Magnetic field induced strain

Ferroelectric materials
BT: Ultrasonics, ferroelectrics, and frequency control
RT: Dielectric materials
Ferroelectric devices
Magnetic field induced strain
Pyroelectricity
NT: Ferroelectric films
Relaxor ferroelectrics

Ferrofluid
UF: LiquiFerrofluid
BT: Fluids
Magnetic materials

Ferromagnetic materials
BT: Magnetic materials

Ferromagnetic resonance
BT: Magnetic resonance

Ferroresonance
BT: Power engineering
Resonance
RT: Magnetic resonance
Nonlinear magnetics

Fertilisers
USE: Fertilizers

Fertilizers
UF: Fertilisers
BT: Agriculture
RT: Boron
Crops

FET circuits
BT: Solid state circuits
RT: Nuclear electronics
Operational amplifiers
NT: FET integrated circuits
JFET circuits
MESFET circuits
MODFET circuits
MOSFET circuits

FET integrated circuits
BT: FET circuits

		Integrated circuits
RT:		Field effect transistors
NT:		Field effect MMIC
		MESFET integrated circuits

Fetal heart
BT:	Heart

Fetal heart rate
BT:	Heart rate

FETs
USE:	Field effect transistors

Fetus
BT:	Embryonic structures

FFF
USE:	Field-flow fractionation

Fiber Bragg gratings
USE:	Bragg gratings

Fiber distributed data interface
USE:	FDDI

Fiber gratings
UF:	Fibre gratings
BT:	Bragg gratings

Fiber lasers
UF:	Fibre lasers
BT:	Ring lasers
NT:	Erbium-doped fiber lasers
	High power fiber lasers

Fiber nonlinear optics
BT:	Fiber optics
	Nonlinear optics

Fiber optic sensors
USE:	Optical fiber sensors

Fiber optics
UF:	Fibre optics
BT:	Optics
NT:	Fiber nonlinear optics
	Optical fibers

Fiber reinforced plastics
UF:	Fibre reinforced plastics
BT:	Plastics
RT:	Plastic insulators

Fiber-Bragg gratings

USE:	Bragg gratings

Fiber-in-the-loop
USE:	Optical fiber subscriber loops

Fibers
USE:	Textile fibers

Fibre gratings
USE:	Fiber gratings

Fibre lasers
USE:	Fiber lasers

Fibre optic sensors
USE:	Optical fiber sensors

Fibre optics
USE:	Fiber optics

Fibre reinforced plastics
USE:	Fiber reinforced plastics

Fibrillation
BT:	Medical treatment
RT:	Defibrillation
NT:	Atrial fibrillation

Fibroblasts
BT:	Biological cells

Fiducial markers
UF:	Imagimarkers
BT:	Image processing
RT:	Microfabrication
	Semiconductor device manufacture

Field buses
UF:	Instrumentation buses
BT:	Computer interfaces
RT:	Industrial control
	Local area networks

Field effect MMIC
BT:	FET integrated circuits

Field effect transistors
UF:	FETs
BT:	Transistors
RT:	FET integrated circuits
	Graphene devices
	Semiconductor devices
NT:	CNTFETs

Double-gate FETs
FeFETs
HEMTs
JFETs
MESFETs
MISFETs
MODFETs
MOSFET
MOSHFETs
OFETs
Schottky gate field effect transistors
TFETs
Thin film transistors

Field electron emission
    USE: Electron emission

Field emitter arrays
    BT: Electron tubes
    RT: Vacuum technology

Field flow fractionation
    USE: Field-flow fractionation

Field ion emission
    USE: Ion emission

Field multiplication
    USE: Galois fields

Field programmable analog arrays
    UF: FPAA
          Field programmable analogue arrays
    BT: Analog integrated circuits
          Programmable circuits
    RT: Application specific integrated circuits
          Field programmable gate arrays
          Space technology

Field programmable analogue arrays
    USE: Field programmable analog arrays

Field programmable gate arrays
    UF: FPGA
          Field-programmable gate arrays
    BT: Integrated circuits
    RT: AI accelerators
          Field programmable analog arrays

Reconfigurable devices
VHDL

Field-flow fractionation
    UF: EFFF
          FFF
          Field flow fractionation
    BT: Fractionation

Field-programmable gate arrays
    USE: Field programmable gate arrays

Filament lamps
    BT: Lamps
    RT: Lighting

File servers
    BT: Computers and information processing
    RT: Computer networks
          Data communication
          Local area networks

File sharing
    USE: Peer-to-peer computing

File system permissions
    USE: Permission

File systems
    BT: System software
    RT: Audio databases
          Data structures
          Database systems
          Information systems

Fill factor (solar cell)
    BT: Photovoltaic systems

Filler metals
    BT: Joining materials
    RT: Metals

Filling
    BT: Freight handling
    RT: Containers
          Loading
          Packaging

Film bulk acoustic resonators
    UF: FBAR
          FBARs
    BT: Acoustic devices
          Thin film devices

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RT:	Bulk acoustic wave devices	
	Cellular radio	
	Mobile communication	
	Radio communication	
	Resonance	
	Telecommunications	

Films

BT:	Materials	
RT:	Chemical vapor deposition	
	Coatings	
	Entertainment industry	
	Human image synthesis	
	Sputtering	
NT:	Conductive films	
	Dielectric films	
	Epitaxial layers	
	Ferrimagnetic films	
	Ferrite films	
	Garnet films	
	Magnetic films	
	Optical films	
	Piezoelectric films	
	Plastic films	
	Polymer films	
	Semiconductor films	
	Thick films	
	Thin films	

Films (Motion pictures)

USE:	Motion pictures

Filter banks

UF:	Filterbank
BT:	Band-pass filters

Filter-theory

USE:	Filtering theory

Filterbank

USE:	Filter banks

Filtering

BT:	Circuits and systems
RT:	Noise cancellation
NT:	Filters
	Information filtering

Filtering algorithms

UF:	Loop-filtering algorithm
	Post-filtering algorithm
BT:	Algorithms

Filtering theory

UF:	Filter-theory

BT:	Filters
RT:	Estimation
	Line enhancers
	Matched filters
	Maximum likelihood detection
	Transversal filters
NT:	Collaborative filtering
	Image filtering

Filters

BT:	Filtering
	Signal processing
RT:	Passive filters
	Signal to noise ratio
NT:	Active filters
	Anisotropic
	Bragg gratings
	Channel bank filters
	Comb filters
	Digital filters
	Equalizers
	Filtering theory
	Gabor filters
	Harmonic filters
	IIR filters
	Kalman filters
	Low-pass filters
	Matched filters
	Microstrip filters
	Nonlinear filters
	Notch filters
	Particle filters
	Power filters
	Resonator filters
	Spatial filters
	Superconducting filters
	Transversal filters

Filtration

UF:	Nanofiltration
BT:	Materials science and technology
NT:	Microfiltration

Finance

UF:	Taxes
BT:	Financial management
RT:	Banking
	Bitcoin
	Business
	Cryptocurrency
	Economics
NT:	Bankruptcy
	Currencies

Finance sector
    USE: Financial industry

Financial industry
    UF: Finance sector
    BT: Industries
    NT: Banking
                Financial services

Financial management
    UF: Financial planning
                Money management
    BT: Management
    RT: Electronic commerce
                Profitability
                Public finance
    NT: Costing
                Credit cards
                Finance
                Insurance
                Investment
                Loans and mortgages
                Management accounting
                Mutual funds
                Pricing
                Venture capital

Financial planning
    USE: Financial management

Financial services
    BT: Financial industry

FinFETs
    BT: MOSFET

Fingerprint identification
    USE: Fingerprint recognition

Fingerprint images
    USE: Image matching

Fingerprint indexing
    USE: Fingerprint recognition

Fingerprint matching
    USE: Fingerprint recognition

Fingerprint modality
    USE: Fingerprint recognition

Fingerprint recognition
    UF: Fingerprint identification
                Fingerprint indexing
                Fingerprint matching
                Fingerprint modality
                Fingerprint sensing
                Fingerprint sensors
                Fingerprint verification
                Fingerprinting
    BT: Biometrics (access control)
                Identification of persons
                Pattern recognition
    RT: Image matching

Fingerprint sensing
    USE: Fingerprint recognition

Fingerprint sensors
    USE: Fingerprint recognition

Fingerprint verification
    USE: Fingerprint recognition

Fingerprinting
    USE: Fingerprint recognition

Fingers
    BT: Extremities
    NT: Thumb

Finishing
    BT: Surface treatment
    RT: Machining
                Materials processing
                Planing
    NT: Surface finishing

Finite difference methods
    UF: FDTD
                Finite difference time
domain analysis
                Finite difference time
domain methods
                Finite-difference methods
                Finite-difference time-
domain methods
    BT: Mathematics
                Numerical analysis
    RT: Computational
electromagnetics
                Perfectly matched layers

Finite difference time domain analysis
    USE: Finite difference methods

Finite difference time domain methods
    USE: Finite difference methods

Finite element analysis
  UF: Discrete element method
      FEM
      Finite element methods
      Finite element modeling
      Finite element modelling
      Finite-element analysis
      Finite-element methods
      Finite-element modeling
      Finite-element modelling
  BT: Mathematics
      Numerical analysis
  RT: Eddy current testing
      Perfectly matched layers

Finite element methods
  USE: Finite element analysis

Finite element modeling
  USE: Finite element analysis

Finite element modelling
  USE: Finite element analysis

Finite fields
  USE: Galois fields

Finite impulse response filters
  UF: FIR
      FIR filters
  BT: Digital filters
  RT: Discrete wavelet transforms
      Frequency response

Finite state machines
  USE: Automata

Finite volume methods
  UF: Finite-volume method
  BT: Numerical analysis
  RT: Navier-Stokes equations

Finite wordlength effects
  UF: Overflow oscillations
      Truncation errors
  BT: Error analysis
  RT: Quantization (signal)
  NT: Roundoff errors

Finite-difference methods
  USE: Finite difference methods

Finite-difference time-domain methods
  USE: Finite difference methods

Finite-element analysis
  USE: Finite element analysis

Finite-element methods
  USE: Finite element analysis

Finite-element modeling
  USE: Finite element analysis

Finite-element modelling
  USE: Finite element analysis

Finite-volume method
  USE: Finite volume methods

Finline
  BT: Planar transmission lines

FIR
  USE: Finite impulse response
filters

FIR filters
  USE: Finite impulse response
filters

Fire extinguishers
  BT: Safety devices
  RT: Fire safety

Fire retardants
  USE: Flame retardants

Fire safety
  BT: Safety
  RT: Fire extinguishers

Fireproofing
  USE: Flame retardants

Fires
  UF: Flames
      Wild fires
      Wildfires
  BT: Hazards
  RT: Accidents
      Emergency services
      Flammability
      Hazardous areas
      Safety
      Smoke detectors

Firewalls (computing)
  BT: Computer security
  RT: Computer networks

		Countermeasures
(computer)		
		Hardware
		Software

FireWire

	USE:	Firewire

Firewire

	UF:	FireWire
	BT:	Computer interfaces
	RT:	Computer peripherals
		Consumer electronics
		Data communication
		Home computing
		IEEE 1394 Standard
		Video signal processing

Fireworks algorithm

	BT:	Optimization methods
	RT:	Particle swarm optimization

Firing

	BT:	Materials preparation
	RT:	Ceramics
		Heat treatment
		Kilns

Firmware

	USE:	Microprogramming

Fish

	BT:	Organisms

Fishbone diagrams

	USE:	Cause effect analysis

Fisheries

	USE:	Aquaculture

Fission reactors

	UF:	Nuclear fission
		Nuclear reactors (fission)
	BT:	Nuclear power generation
	RT:	Pressure vessels
		Radiation protection

Fitting

	BT:	Assembly
	RT:	Assembly systems

Fixed point arithmetic

	USE:	Fixed-point arithmetic

Fixed-point arithmetic

	UF:	Fixed point arithmetic
	BT:	Arithmetic

Fixtures

	UF:	Fixturing
		Jigs
	BT:	Production equipment
	RT:	Machine tools

Fixturing

	USE:	Fixtures

Flame retardants

	UF:	Fire retardants
		Fireproofing
	BT:	Retardants
	RT:	Bromine compounds
		Flammability
		Materials preparation

Flames

	USE:	Fires

Flammability

	UF:	Inflammability
	BT:	Hazards
	RT:	Explosion protection
		Explosions
		Fires
		Flame retardants
		Hazardous materials

Flanges

	BT:	Mechanical products
	RT:	Rails
		Structural plates
		Wheels

Flash memories

	UF:	NAND flash
	BT:	Memory
	RT:	Automation
		Computer peripherals
		Solid state drives
	NT:	Flash memory cells

Flash memory cells

	BT:	Flash memories
	NT:	Split gate flash memory cells

Flashover

	BT:	Dielectric breakdown

Flat panel displays

UF: Plasma display panel
BT: Displays
RT: Consumer electronics
        TV

Flex
USE: Flexible printed circuits

Flexible ac transmission systems
USE: Flexible AC transmission systems

Flexible AC transmission systems
UF: FACTS
        Flexible ac transmission systems
BT: Power transmission

Flexible electronics
BT: Assembly systems
RT: Graphene devices
        Soft electronics

Flexible fuel vehicles
USE: Land vehicles

Flexible manufacturing systems
BT: Manufacturing automation
RT: Agile manufacturing
        Cellular manufacturing
        Computer applications

Flexible printed circuits
UF: Flex
BT: Printed circuits

Flexible structures
UF: Deployable structures
BT: Buildings
        Structural shapes
RT: Control systems
        Decentralized control
        Mechanical variables control
        Structural engineering

Flickr
USE: Multimedia Web sites

Flight control
USE: Aerospace control

Flight simulation
USE: Aerospace simulation

Flip chip
USE: Flip-chip devices

Flip chip solder joints
UF: Castellations
BT: Soldering
RT: Flip-chip devices

Flip-chip
USE: Flip-chip devices

Flip-chip devices
UF: Flip chip
        Flip-chip
BT: Semiconductor device manufacture
        Semiconductor devices
RT: Flip chip solder joints
        Microassembly
        Microprocessor chips
        Microprocessors

Flip-flops
BT: Pulse circuits
RT: Logic circuits

FLL
USE: Frequency locked loops

Floating point arithmetic
USE: Floating-point arithmetic

Floating-point arithmetic
UF: Floating point arithmetic
BT: Arithmetic

Floods
BT: Hazards
        Hydrology
RT: Land use planning
        Rain
        Rivers
        Structural engineering

Floors
BT: Building materials
RT: Construction industry
        Tiles

Floppy disks
BT: Magnetic memory

Flotation devices
USE: Underwater equipment

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Flow
USE: Fluid flow

Flow batteries
USE: Batteries

Flow graphs
UF: Data flow graphs
Signal flow graphs
BT: Programmable control
RT: Circuits

Flow meters
USE: Flowmeters

Flow production systems
UF: Sequential production
BT: Manufacturing systems
RT: System dynamics
NT: Continuous production

Flowcharts
BT: Engineering drawings
RT: Programming
System analysis and design

Flowmeters
UF: Flow meters
BT: Meters
RT: Automatic meter reading
Fluid flow
Velocity measurement

Fluctuations
BT: Reliability

Flue gases
BT: Gases
RT: Air pollution
Effluents
Exhaust gases

Fluid dynamics
BT: Fluid flow
Fluids
RT: Hydrodynamics
Lattice Boltzmann methods
NT: Buoyancy
Computational fluid
dynamics
Drag
Navier-Stokes equations
Rheology

Fluid flow
UF: Flow
Gas flow
Liquid flow
Smoothed particle
hydrodynamics
BT: Physics
RT: Electrohydraulics
Flowmeters
Fluid flow measurement
Fluidics
Hydraulic systems
Hydrodynamics
Magnetohydrodynamics
NT: Fluid dynamics
Hydraulic diameter
Hydrology
Pipelines
Valves

Fluid flow control
BT: Control systems
RT: Valves

Fluid flow measurement
UF: Anemometers
BT: Measurement
RT: Fluid flow
Hydrologic measurements
Pressure gauges

Fluidic microsystems
BT: Micromechanical devices
RT: Microfluidics

Fluidics
BT: Control systems
RT: Fluid flow
Nanotechnology
Pneumatic systems
NT: Microfluidics
Nanofluidics

Fluidisation
USE: Fluidization

Fluidization
UF: Fluidisation
BT: Chemical technology
RT: Fluids

Fluids
BT: Materials
RT: Buoyancy
Fluidization
Oils

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NT: Ferrofluid
Fluid dynamics
Gases
Hydraulic fluids
Liquids
Viscosity

Fluids and secretions
BT: Anatomy
NT: Amniotic fluid
Cerebrospinal fluid

Fluorescence
BT: Luminescence
Optics
RT: Fluorescent lamps
Judd-Ofelt theory

Fluorescent lamps
BT: Lamps
RT: Fluorescence
Lighting

Fluorine
BT: Chemical elements
NT: Fluorine compounds

Fluorine compounds
BT: Fluorine
NT: Hydrogen fluoride

Flux pinning
BT: Magnetic flux
Superconductivity
RT: Type II superconductors

Fluxtronics
USE: Spintronics

Fly ash
BT: Ash
RT: Slag

Flyback transformers
UF: FBT
LOPT
Line output transformer
BT: Transformers
RT: Cathode ray tubes
Electron beam applications
Electron beams
Ferrite devices

Flywheels
BT: Energy storage

FM
USE: Frequency modulation

fMRI
USE: Functional magnetic resonance imaging

Focusing
BT: Imaging
RT: Lenses

Fog computing
USE: Edge computing

Food and Drug Administration
USE: FDA

Food industry
BT: Manufacturing industries
RT: Beverage industry
Consumer products
Digital agriculture
Food preservation
Food products
Food technology
Sugar industry
Sugar refining
NT: Food manufacturing

Food loss
USE: Food waste

Food manufacturing
BT: Food industry
Manufacturing systems
RT: Consumer products
Food preservation
Food products
Food technology
Food waste
NT: Food packaging

Food packaging
BT: Food manufacturing
Packaging
RT: Food products
Food technology
Food waste

Food preservation
UF: Food preservatives
BT: Food technology
RT: Food industry
Food manufacturing

Food products

Food preservatives
USE: Food preservation

Food products
BT: Manufactured products
          Production
RT: Agricultural products
          Consumer products
          Digital agriculture
          Food industry
          Food manufacturing
          Food packaging
          Food preservation
          Sugar industry
          Sugar refining
          Vegetable oils
NT: Dairy products
          Fats
          Food waste
          Sugar

Food technology
BT: Industry applications
RT: Digital agriculture
          Food industry
          Food manufacturing
          Food packaging
          Sugar refining
NT: Food preservation

Food waste
UF: Food loss
BT: Food products
          Waste materials
RT: Agriculture
          Biofuels
          Consumer behavior
          Food manufacturing
          Food packaging
          Government policies
          Recycling

Foot
BT: Extremities

Football
USE: Sports

Footprinting
USE: Network reconnaissance

Footwear
UF: Shoes
BT: Clothing
RT: Clothing industry
          Footwear industry

Footwear industry
UF: Shoe manufacture
BT: Manufacturing industries
RT: Clothing industry
          Consumer products
          Footwear

Force
BT: Mechanical factors
RT: Dynamics
          Force control
          Magnetic forces
NT: Gravity

Force control
BT: Mechanical variables control
RT: Control systems
          Force
          Robot control

Force feedback
BT: Haptic interfaces

Force measurement
BT: Mechanical variables measurement
RT: Gravity
          Pressure gauges
NT: Dynamometers
          Gravity measurement

Force sensors
BT: Sensors

Forebrain
UF: Prosencephalon
BT: Brain
RT: Hindbrain
          Midbrain
NT: Olfactory bulb

Forecast uncertainty
BT: Forecasting
          Uncertainty

Forecasting
BT: Probability
RT: Prediction methods
NT: Demand forecasting
          Economic forecasting

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Forecast uncertainty
Technology forecasting

Forehead
BT: Head

Forensic photography
USE: Image forensics

Forensics
BT: Law
NT: Digital forensics
Image forensics

Forestry
BT: Geoscience
RT: Pulp and paper industry
Resource management
Vegetation
Vegetation mapping
Wood industry

Forgery
UF: Imposter signature generation
BT: Handwriting recognition

Forging
UF: Cogging
BT: Manufacturing systems

Formal concept analysis
BT: Mathematical analysis
RT: Classification tree analysis
Data analysis
Knowledge representation
Unsupervised learning

Formal languages
BT: Computer science
NT: Computer languages
Runtime library

Formal logic
USE: Logic

Formal specifications
BT: Standardization
RT: Service-oriented systems engineering

Formal verification
BT: Software engineering
RT: Circuits and systems
Model checking

Forward contracts
BT: Contracts

Forward error correction
BT: Error correction
RT: Feedforward systems

Fossil fuels
BT: Fuels
RT: Air pollution
NT: Natural gas

Foundries
BT: Production facilities
RT: Casting
Furnaces
Heat treatment
Materials processing

Four wave mixing
USE: Four-wave mixing

Four-wave mixing
UF: Four wave mixing
BT: Distortion
Optics

Fourier series
BT: Mathematics
RT: Data compression
Signal processing
Spectroscopy

Fourier transform infrared spectra
USE: Fourier transform infrared spectroscopy

Fourier transform infrared spectroscopy
UF: Fourier transform infrared spectra
BT: Fourier transforms
Spectroscopy

Fourier transforms
BT: Transforms
RT: Acoustics
Cepstrum
Diffraction
Harmonic analysis
Optics
Partial differential equations
Probability
Statistics
Time-frequency analysis

NT: Discrete Fourier transforms
              Fast Fourier transforms
              Fourier transform infrared spectroscopy

FPAA
      USE: Field programmable analog arrays

FPGA
      USE: Field programmable gate arrays

Fraccing
      USE: Fracking

Fracking
      UF: Fraccing
              Hydraulic fracking
      BT: Hydrological techniques
      RT: Mining industry
              Natural gas

Fractal antennas
      BT: Antennas

Fractal art
      BT: Art

Fractals
      BT: Computational geometry
      RT: Antennas
              Chaos
              Computer graphics
              Econophysics

Fractional brownian motion
      USE: Brownian motion

Fractional calculus
      BT: Mathematical analysis

Fractionation
      BT: Separation processes
      RT: Chemical analysis
              Oils
              Petroleum industry
      NT: Field-flow fractionation

Frame relay
      BT: Communication switching
               Packet switching
      RT: B-ISDN
              Computer networks
              ISDN

              Protocols
              Wide area networks

Franchises
      USE: Franchising

Franchising
      UF: Franchises
      BT: Business

Francium
      BT: Chemical elements

Free electron lasers
      UF: Cerenkov lasers
      BT: Lasers
      RT: Electron beams
              Relativistic effects
              Undulators

Free trade
      USE: Trade agreements

Free-space optical communication
      BT: Optical fiber communication

Freeware
      UF: WhatsApp
      BT: Software

Freight containers
      BT: Containers
      RT: Freight handling
              Transportation

Freight handling
      UF: Cargo handling
      BT: Materials handling
      RT: Freight containers
              Lifting equipment
              Pulleys
              Transmission line discontinuities
      NT: Filling
              Loading

Frequency
      BT: Electromagnetic radiation
      RT: Band-pass filters
              Electric variables
              Transmission line theory
      NT: Bandwidth
              Frequency dependence
              Frequency diversity
              Frequency synchronization

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Resonant frequency

Frequency allocation
> USE: Radio spectrum management

Frequency control
> UF: Frequency regulation
> BT: Ultrasonics, ferroelectrics, and frequency control
> RT: Electric variables control
> Frequency locked loops
> Mechanical variables control
> Optical variables control
> Tuners
> NT: Automatic frequency control
> Tunable circuits and devices
> Tuning

Frequency conversion
> UF: Frequency division
> Frequency multiplication
> Harmonic generation
> BT: Converters
> RT: Image converters
> Image intensifiers
> NT: Mixers
> Optical frequency conversion

Frequency dependence
> UF: Frequency dependent
> BT: Frequency

Frequency dependent
> USE: Frequency dependence

Frequency diversity
> BT: Frequency

Frequency division
> USE: Frequency conversion

Frequency division multiaccess
> UF: FDMA
> BT: Multiaccess communication
> RT: Broadband communication

Frequency division multiplexing
> UF: FDM
> Frequency multiplexing
> BT: Multiplexing

> RT: Layered division multiplexing

Frequency domain
> USE: Frequency-domain analysis

Frequency domain analysis
> USE: Frequency-domain analysis

Frequency estimation
> BT: Frequency measurement
> Parameter estimation
> RT: Spectral analysis
> Speech analysis

Frequency hop communication
> USE: Spread spectrum communication

Frequency hop radar
> USE: Spread spectrum radar

Frequency locked loops
> UF: FLL
> BT: Linear feedback control systems
> Signal processing
> RT: Frequency control
> Frequency synthesizers
> Phase locked loops
> Synchronization

Frequency measurement
> BT: Measurement
> RT: Acoustic measurements
> Atomic clocks
> Doppler measurement
> Electric variables measurement
> Electromagnetic measurements
> Frequency response
> Mechanical variables measurement
> Optical variables measurement
> Phase frequency detectors
> Time-frequency analysis
> Wavelength measurement
> NT: Frequency estimation
> Frequency-domain analysis

Frequency modulation
> UF: FM
> BT: Modulation

Radio broadcasting
RT: Demodulation
NT: Frequency shift keying

Frequency multiplexing
    USE: Frequency division multiplexing

Frequency multiplication
    USE: Frequency conversion

Frequency regulation
    USE: Frequency control

Frequency response
    BT: Testing
    RT: Amplifiers
            Digital filters
            Finite impulse response filters
            Frequency measurement
            Impulse testing

Frequency selective surfaces
    UF: FSS
    BT: Antenna theory

Frequency shift keying
    UF: FSK
            Frequency-shift modulation
            Frequency-shift signaling
    BT: Frequency modulation

Frequency synchronization
    BT: Frequency
    NT: Frequency synthesizers

Frequency synthesizers
    BT: Frequency synchronization
    RT: Frequency locked loops
            Tuners

Frequency-domain analysis
    UF: Frequency domain
            Frequency domain analysis
    BT: Frequency measurement
    RT: Circuit analysis
            Functional analysis
            Signal analysis
    NT: Time-frequency analysis

Frequency-hop communication
    USE: Spread spectrum communication

Frequency-selective fading channels
    BT: Fading channels

Frequency-shift modulation
    USE: Frequency shift keying

Frequency-shift signaling
    USE: Frequency shift keying

Fresnel integral
    USE: Fresnel reflection

Fresnel lenses
    USE: Fresnel reflection

Fresnel reflection
    UF: Fresnel integral
            Fresnel lenses
            Fresnel zones
    BT: Reflection

Fresnel zones
    USE: Fresnel reflection

Friction
    BT: Mechanical factors
    RT: Drag
            Dynamics
            Lubrication
    NT: Mechanical bearings

Friction stir processing
    USE: Strain control

Frontal lobe
    UF: BrainLobe
    BT: Brain

Froth flotation
    USE: Manufacturing processes

FSK
    USE: Frequency shift keying

FSS
    USE: Frequency selective surfaces

FTTH
    USE: Optical fiber subscriber loops

Fuel additives
    USE: Additives

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Fuel cell vehicles
BT: Electric vehicles
RT: Energy storage
        Fuel cells
        Traction motors
        Vehicle-to-grid

Fuel cells
UF: Enzymatic fuel cells
        Microbial eletrolysis cells
        Microbial fuel cells
        Solid oxide electrolyzer
cells
BT: Electrochemical devices
        Energy conversion
        Energy storage
RT: Fuel cell vehicles
        Fuel storage
        Power generation

Fuel economy
BT: Economics
        Fuels

Fuel processing industries
UF: Coal tar
BT: Manufacturing industries
RT: Fuel storage
        Fuels
        Mining industry
        Oil drilling
        Oils
        Petroleum
        Petroleum industry

Fuel pumps
BT: Pumps
RT: Engines
        Fuels

Fuel storage
UF: Fuel tanks
        Oil tanks
BT: Material storage
RT: Containers
        Energy storage
        Fuel cells
        Fuel processing industries
        Fuels

Fuel tanks
USE: Fuel storage

Fuels
BT: Energy resources

        Manufactured products
RT: Coal gas
        Fuel processing industries
        Fuel pumps
        Fuel storage
        Methanol
        Petrochemicals
        Waste materials
NT: Biofuels
        Coal
        Fossil fuels
        Fuel economy
        Nuclear fuels
        Petroleum

Fullerenes
UF: Buckeyballs
        Buckminsterfullerene
        Buckyballs
        Buckytubes
        CarboFullerene
        Fullerites
BT: Carbon

Fullerites
USE: Fullerenes

Function approximation
BT: Approximation methods
RT: Computer science

Function generators
USE: Signal generators

Functional analysis
BT: Mathematics
RT: Eigenvalues and
eigenfunctions
        Frequency-domain analysis
        Inverse problems
        Lyapunov methods
        Wave functions

Functional electrical stimulation
USE: Neuromuscular stimulation

Functional magnetic resonance imaging
UF: fMRI
BT: Magnetic resonance
imaging
RT: Biomedical image
processing

Functional neuroimaging
BT: Neuroimaging

2021 IEEE Thesaurus

Functional point analysis
- BT: Estimation
- Size measurement
- RT: Cost benefit analysis
- Software engineering

Functional programming
- BT: Programming
- RT: Python

Fungi
- BT: Organisms

Furnaces
- BT: Machinery
- RT: Building services
- Foundries
- Gas appliances
- Heating systems
- NT: Blast furnaces
- Kilns

Further education
- USE: Continuing education

Fuses
- BT: Electronic components
- RT: Interrupters
- Power system protection
- Protection
- Switchgear

Fusion power generation
- BT: Nuclear and plasma sciences
- Nuclear power generation
- RT: Fusion reactors
- Magnetic confinement

Fusion reactor design
- BT: Fusion reactors

Fusion reactors
- UF: Nuclear reactors (fusion)
- Thermonuclear fusion
- BT: Nuclear and plasma sciences
- RT: Fusion power generation
- NT: Fusion reactor design
- Tokamaks

Fusion splicing
- USE: Splicing

Futurism
- USE: Technology forecasting

Fuzz testing
- USE: Fuzzing

Fuzzing
- UF: Fuzz testing
- BT: Software testing

Fuzzy cognitive maps
- BT: Directed graphs
- Knowledge representation
- RT: Cognitive systems
- Decision making
- Fuzzy logic
- Fuzzy reasoning
- Fuzzy set theory
- Fuzzy systems
- Inference mechanisms
- Learning (artificial intelligence)
- Neural networks

Fuzzy control
- BT: Fuzzy systems
- RT: Fuzzy logic
- Fuzzy sets
- Takagi-Sugeno model

Fuzzy inference
- USE: Fuzzy logic

Fuzzy logic
- UF: Fuzzy inference
- BT: Logic
- RT: Fuzzy cognitive maps
- Fuzzy control
- Fuzzy reasoning
- Fuzzy sets
- Fuzzy systems
- Possibility theory
- NT: Takagi-Sugeno model

Fuzzy neural nets
- USE: Fuzzy neural networks

Fuzzy neural networks
- UF: Fuzzy neural nets
- Neuro fuzzy networks
- Neuro-fuzzy networks
- BT: Fuzzy systems

Fuzzy reasoning
- BT: Inference mechanisms

2021 IEEE Thesaurus

RT: Fuzzy cognitive maps
Fuzzy logic

Fuzzy set theory
BT: Set theory
RT: Fuzzy cognitive maps
Fuzzy sets
Fuzzy systems
Power system faults
TOPSIS

Fuzzy sets
BT: Set theory
RT: Fuzzy control
Fuzzy logic
Fuzzy set theory
Fuzzy systems
Nonlinear dynamical
systems
Uncertainty

Fuzzy systems
BT: Computational intelligence
RT: Fuzzy cognitive maps
Fuzzy logic
Fuzzy set theory
Fuzzy sets
Large-scale systems
Takagi-Sugeno model
NT: Fuzzy control
Fuzzy neural networks
Hybrid intelligent systems

Ga
USE: Gallium

GaAs
USE: Gallium arsenide

Gabor filters
BT: Filters
RT: Image processing

Gadolinium
BT: Chemical elements
NT: Gadolinium oxide

Gadolinium oxide
BT: Gadolinium

Gain
BT: Electric variables

Gain control
UF: Automatic gain control

BT: Electric variables control

Gain measurement
BT: Measurement
RT: Electric variables
measurement
Refractive index

Gait assessment
USE: Legged locomotion

Gait control
USE: Legged locomotion

Gait disorders
USE: Legged locomotion

Gait recognition
BT: Biometrics (access control)

Galerkin method
USE: Method of moments

Gallbladder
BT: Digestive system

Gallium
UF: Ga
BT: Metals
Semiconductor materials
RT: Epitaxial growth
Gallium compounds
Molecular beam epitaxial
growth
Semiconductor thin films
NT: Gallium alloys

Gallium alloys
BT: Gallium
RT: Alloying
Wide band gap
semiconductors

Gallium arsenide
UF: GaAs
Gallium-arsenide
Gallium-arsenide (GaAs)
BT: Gallium compounds
Semiconductor materials

Gallium compounds
UF: Gallium devices
Gallium materials
BT: Compounds
RT: Alloying

Gallium
NT: Aluminum gallium nitride
Gallium arsenide
Gallium nitride
Indium gallium arsenide
Indium gallium nitride

Gallium devices
USE: Gallium compounds

Gallium materials
USE: Gallium compounds

Gallium nitride
BT: Gallium compounds

Gallium-arsenide
USE: Gallium arsenide

Gallium-arsenide (GaAs)
USE: Gallium arsenide

Galois fields
UF: Field multiplication
Finite fields
BT: Abstract algebra

Galvanising
USE: Galvanizing

Galvanizing
UF: Galvanising
BT: Surface treatment
RT: Corrosion
Corrosion inhibitors
Protection

Game theory
BT: Decision making
RT: Control systems
Games
Minimax techniques
Oligopoly
Optimal control
Predator prey systems
NT: Differential games
Nash equilibrium

Games
UF: Video games
video-game
BT: Consumer products
RT: Entertainment industry
Game theory
Sports

NT: Cloud gaming
Serious games

Gaming on demand
USE: Cloud gaming

Gamma distribution
BT: Statistics
RT: Probability

Gamma phase iron
USE: Austenite

Gamma radiation detectors
USE: Gamma-ray detectors

Gamma ray bursters
USE: Gamma-ray bursts

Gamma ray bursts
USE: Gamma-ray bursts

Gamma ray detection
USE: Gamma-ray detection

Gamma ray detectors
USE: Gamma-ray detectors

Gamma ray effects
USE: Gamma-ray effects

Gamma rays
USE: Gamma-rays

Gamma-ray bursts
UF: Cosmic gamma ray bursts
Gamma ray bursters
Gamma ray bursts
BT: Gamma-rays

Gamma-ray detection
UF: Gamma ray detection
BT: Gamma-rays

Gamma-ray detectors
UF: Gamma radiation detectors
Gamma ray detectors
BT: Radiation detectors
RT: Astronomy
Biomedical applications of radiation
X-ray detectors
X-ray imaging

Gamma-ray effects

UF: Gamma ray effects
BT: Gamma-rays
Radiation effects

Gamma-ray imaging
USE: Nuclear imaging

Gamma-rays
UF: Gamma rays
BT: Electromagnetic radiation
Nuclear and plasma sciences
RT: Collimators
Nuclear medicine
NT: Gamma-ray bursts
Gamma-ray detection
Gamma-ray effects

GAN
USE: Generative adversarial networks

Ganglia
UF: Ganglion
BT: Cells (biology)
Nervous system

Ganglion
USE: Ganglia

Gap waveguide
BT: Electromagnetic waveguides
RT: Waveguide components

Garbage collection (computers)
USE: Memory management

Garment industry
USE: Clothing industry

Garments
USE: Clothing

Garnet films
BT: Ferrimagnetic films
Ferrimagnetic materials
Films
Garnets
Magnetic films
Magnetic materials

Garnets
BT: Ferrimagnetic materials
Magnetic materials

NT: Garnet films

Gas appliances
BT: Home appliances
RT: Furnaces
Space heating

Gas chromatography
BT: Measurement

Gas detectors
UF: Gas sensors
BT: Chemical and biological sensors
RT: Chemical transducers
NT: Amperometric sensors

Gas discharge devices
BT: Nuclear and plasma sciences
RT: Discharges (electric)
Electrophotography
Gases
Lighting
Plasma devices
Thyratrons
NT: Glow discharge devices

Gas discharges
USE: Discharges (electric)

Gas flow
USE: Fluid flow

Gas industry
BT: Industries
RT: Petroleum industry

Gas insulated switchgear
USE: Gas insulation

Gas insulated transmission lines
UF: GITL
Gas-insulated lines
Gas-insulated transmission
BT: Power transmission lines
RT: Gas insulation

Gas insulation
UF: Gas insulated switchgear
BT: Insulation
RT: Gas insulated transmission lines
Gases
NT: Sulfur hexafluoride

Gas lasers
UF:	Atomic lasers	
	Metal vapor lasers	
BT:	Lasers	
RT:	Atom lasers	
	Chemical lasers	
	Gases	

Gas platforms
USE:	Offshore installations

Gas sensors
USE:	Gas detectors

Gas-insulated lines
USE:	Gas insulated transmission lines

Gas-insulated transmission
USE:	Gas insulated transmission lines

Gases
BT:	Fluids
RT:	Discharges (electric)
	Gas discharge devices
	Gas insulation
	Gas lasers
	Materials science and technology
	Natural gas
NT:	Argon
	Carbon emissions
	Coal gas
	Exhaust gases
	Flue gases
	Helium
	Hydrogen
	Nitrogen
	Oxygen
	Syngas
	Xenon

Gaskets
BT:	Seals
RT:	Engine cylinders
	Engines
	Pistons

Gasoline
USE:	Petroleum

Gastroenterologists
USE:	Gastroenterology

Gastroenterology
UF:	Gastroenterologists
BT:	Medical specialties

Gastrointestinal
USE:	Gastrointestinal tract

Gastrointestinal tract
UF:	Gastrointestinal
BT:	Digestive system

Gate drivers
BT:	Power electronics
RT:	High power amplifiers
	MOSFET

Gate leakage
BT:	Leakage currents
	Solid state circuits
	Tunneling

Gate leakage current
USE:	Leakage currents

GATT
USE:	Trade agreements

Gaussian approximation
BT:	Gaussian distribution

Gaussian channels
BT:	Communication channels
RT:	Intersymbol interference
NT:	AWGN channels

Gaussian distribution
UF:	Normal distribution
BT:	Statistical distributions
NT:	Gaussian approximation

Gaussian mixture model
BT:	Gaussian processes
	Statistics

Gaussian noise
BT:	Noise
RT:	Additive white noise
	Image denoising
	Signal processing
	TV interference
NT:	AWGN

Gaussian processes
BT:	Stochastic processes

2021 IEEE Thesaurus

	RT:	Inference mechanisms
		Learning (artificial intelligence)
		Prediction methods
	NT:	Gaussian mixture model

Gaze tracking
	BT:	Control systems
		Human computer interaction
	RT:	Assistive technology
		Computer vision
		Eyes
		Face recognition
		Motion measurement
		Position measurement
		User interfaces
		Video signal processing
	NT:	Electrooculography

GDP
	USE:	Economic indicators

GDPR
	USE:	General Data Protection Regulation

Ge Si
	USE:	Germanium silicon alloys

Gears
	UF:	Bevel gears
		Differential gears
		Helical gears
		Spur gears
		Worm gears
	BT:	Machinery
		Mechanical products
	RT:	Automotive components
		Machine components
		Machine tools
		Mechanical power transmission
		Mechanical splines
		Mechanical systems
		Production equipment
		Shafts
		Torque converters
	NT:	Magnetic gears

Gender equality
	USE:	Gender issues

Gender equity
	BT:	Equal opportunities

Gender issues
	UF:	Gender equality
		Women's issues
	BT:	Equal opportunities
	RT:	Digital divide

Gene expression
	BT:	Gene therapy

Gene therapy
	BT:	Genetics
	NT:	Gene expression

General agreement on tariffs and trade
	USE:	Trade agreements

General Data Protection Regulation
	UF:	GDPR
	BT:	Data protection
		Government policies
		Legislation
	RT:	Data handling
		Ethics
		Privacy

Generation of electric power
	USE:	Power generation

Generation Y
	USE:	Millennials

Generative adversarial networks
	UF:	GAN
	BT:	Algorithm design and analysis
	RT:	Artificial intelligence
		Convolutional neural networks
		Machine learning
		Neural networks
		Unsupervised learning

Generators
	UF:	Dynamo
	BT:	Electric machines
		Rotating machines
	RT:	Coils
		Islanding
		Power generation
	NT:	AC generators
		DC generators
		Electric generators
		Standby generators

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Genetic algorithms
- BT: Algorithms
- Computational intelligence
- RT: Job shop scheduling
- Pareto optimization
- Search methods

Genetic communication
- BT: Genetics
- Information theory
- RT: Biological information theory
- Biomedical engineering
- DNA

Genetic engineering
- UF: Genetically modified crops
- BT: Engineering in medicine and biology
- RT: Agriculture
- Biomedical engineering
- Biotechnology
- Ethical aspects
- Genetics
- Molecular biophysics
- Tissue engineering

Genetic expression
- BT: Genetics

Genetic mutations
- BT: DNA

Genetic programming
- BT: Genetics

Genetically modified crops
- USE: Genetic engineering

Genetics
- BT: Biology
- RT: Amniocentesis
- Genetic engineering
- Memetics
- Molecular biophysics
- NT: DNA
- Epigenetics
- Gene therapy
- Genetic communication
- Genetic expression
- Genetic programming
- Genomics

Genomes
- USE: Genomics

Genomics
- UF: Genomes
- BT: Genetics
- Molecular biomarkers

Geo tagging
- USE: Location awareness

Geoacoustic inversion
- BT: Sea measurements

Geochemistry
- UF: Hydrochemistry
- BT: Chemistry
- Geoscience
- RT: Geophysics
- Salinity (geophysical)

Geodesy
- BT: Geophysical measurements
- RT: Position measurement
- Theodolites
- NT: Level measurement

Geodynamics
- BT: Geophysics

Geoengineering
- UF: Engineering geology
- Geological engineering
- BT: Geoscience
- RT: Drilling
- Geology
- Geophysics
- Hydrological techniques
- Mining industry

Geographic information systems
- UF: GIS
- BT: Geoscience and remote sensing
- Global communication
- Intelligent transportation systems
- RT: Image databases
- NT: Geospatial analysis
- Gunshot detection systems

Geography
- BT: Geoscience
- RT: Geospatial analysis
- NT: Rural areas
- Urban areas

2021 IEEE Thesaurus

Geologic measurements
- BT: Measurement
- RT: Geology
  Geophysical measurements
  Hyperspectral sensors
  Remote sensing
  Terrain mapping
  Theodolites

Geological engineering
- USE: Geoengineering

Geology
- BT: Geoscience
- RT: Geoengineering
  Geologic measurements
  Geophysics
- NT: Landslides
  Minerals
  Rocks

Geomagnetic navigation
- USE: Geomagnetism AND
  Navigation

Geomagnetism
- UF: Geomagnetic navigation
  Geomatics
- BT: Magnetic fields
- RT: Electromagnetic induction
  Geophysical measurements
  Geophysics
  Magnetosphere

Geomatics
- USE: Geomagnetism

Geometrical optics
- BT: Optics
- RT: Reflectivity
- NT: Ray tracing

Geometry
- BT: Mathematics
- RT: Layout
  Shape
- NT: Computational geometry
  Elliptic curves
  Elliptic design
  Information geometry
  Projective geometry
  Surface topography

Geophysical image processing
- BT: Geophysical measurement techniques
  Image processing

Geophysical measurement techniques
- BT: Geoscience and remote sensing
- RT: Laser radar
  Magneto electrical resistivity imaging technique
  Remote sensing
  Theodolites
  Tomography
  Vegetation mapping
- NT: Geophysical image processing

Geophysical measurements
- UF: Geophysical techniques
- BT: Geoscience and remote sensing
  Measurement
- RT: Atmospheric measurements
  Buried object detection
  Geologic measurements
  Geomagnetism
  Geophysical signal processing
  Geophysics
  Gravity measurement
  Pressure gauges
  Remote sensing
  Soil measurements
  Terrain mapping
- NT: Geodesy
  Sea measurements
  Seismic measurements

Geophysical signal processing
- BT: Geoscience and remote sensing
  Signal processing
- RT: Geophysical measurements

Geophysical techniques
- USE: Geophysical measurements

Geophysics
- BT: Geoscience
  Physics
- RT: Earth
  Geochemistry
  Geoengineering
  Geology

Geomagnetism
Geophysical measurements
Hydrologic measurements
Hydrological techniques
Oceans
Terrestrial atmosphere
NT: EMTDC
Extraterrestrial phenomena
Geodynamics
Geophysics computing
Meteorology
Moisture
Seismology
Surface waves
Well logging

Geophysics computing
BT: Geophysics
RT: Computer aided analysis

Geoscience
UF: Earth science
BT: Geoscience and remote sensing
Science - general
RT: Hydrological techniques
NT: Antarctica
Arctic
Atmosphere
Biosphere
Continents
Cyclones
Earth
Earthquakes
Forestry
Geochemistry
Geoengineering
Geography
Geology
Geophysics
Ice
Lakes
Land surface
Levee
Meteorological factors
Oceanography
Oceans
Rivers
Sediments
Soil
Tornadoes
Tsunami
Volcanoes
Wetlands

Geoscience and remote sensing
NT: Environmental factors
Geographic information systems
Geophysical measurement techniques
Geophysical measurements
Geophysical signal processing
Geoscience
Land surface temperature
Photometry
Radar
Radiometry
Remote sensing
Terrain mapping
Terrestrial atmosphere
Vegetation mapping

Geospatial analysis
BT: Geographic information systems
RT: Geography
Software

GEOSS
USE: Global Earth Observation System of Systems

Geostationary communication satellites
USE: Geostationary satellites

Geostationary satellites
UF: Geostationary communication satellites
BT: Satellites
RT: Orbits

Geosynchronous satellites
BT: Satellites

Geotechnical engineering
BT: Civil engineering
NT: Excavation

Geotechnical structures
BT: Civil engineering
NT: Dams

Geothermal energy
BT: Energy resources
RT: Geothermal power generation

Geothermal power generation

BT: Power generation
RT: Geothermal energy

Geriatrics
BT: Medical treatment
RT: Assisted living
Fall detection
Gerontology
Senior citizens

Germ warfare
USE: Biohazards

Germanium
BT: Metals
Semiconductor materials
RT: Epitaxial growth
Semiconductor thin films
Silicon germanium
NT: Germanium alloys

Germanium alloys
BT: Germanium
RT: Alloying
NT: Germanium silicon alloys

Germanium silicon alloys
UF: Ge Si
BT: Germanium alloys
Silicon alloys

Germs
USE: Pathogens

Gerontechnology
BT: Biomedical equipment
Gerontology
RT: Assistive technology

Gerontology
BT: Medical specialties
RT: Aging
Alzheimer's disease
Geriatrics
Senior citizens
NT: Gerontechnology

Gesture recognition
BT: Pattern recognition
NT: Sign language

Gettering
UF: Getters
BT: Vacuum systems
RT: Electron tubes

Integrated circuit
manufacture

Semiconductor device
manufacture

Vacuum technology

Getters
USE: Gettering

GHZ transverse electromagnetic cells
USE: TEM cells

Giant magnetoresistance
BT: Magnetoresistance
RT: Hard disks
Magnetoresistive devices
Thin film devices

Girders
USE: Structural beams

GIS
USE: Geographic information
systems

Github
USE: Software development
management

GITL
USE: Gas insulated transmission
lines

Glands
UF: Endocrine glands
Exocrine glands
BT: Biological tissues
NT: Mammary glands
Pituitary gland
Salivary glands
Sebaceous glands
Sweat glands
Thyroid

Glass
BT: Amorphous materials
Glass products
RT: Ceramics
Dielectric materials
Glass industry
Insulation
Optical materials

Glass bottles
USE: Glass products

2021 IEEE Thesaurus

Glass ceramics
USE: Ceramics

Glass furnaces
USE: Glass manufacturing

Glass industry
BT: Manufacturing industries
RT: Glass
Glass manufacturing
Glass products

Glass manufacturing
UF: Glass furnaces
BT: Manufacturing systems
RT: Glass industry

Glass products
UF: Glass bottles
BT: Manufactured products
RT: Bottling
Ceramic products
Ceramics
Chemical products
Glass industry
Windows
NT: Glass

Glazes
BT: Coatings
RT: Ceramics
NT: Ceramic glazes

Glial cells
UF: Neuroglia
BT: Cells (biology)
Nervous system

Global communication
UF: Global groups
Global teams
BT: Professional communication
NT: Cross-cultural communication
Geographic information systems

Global Earth Observation System of Systems
UF: GEOSS
BT: Earth Observing System

Global groups
USE: Global communication

Global markets
USE: Globalization

Global navigation satellite system
UF: GNSS
BT: Satellite navigation systems
RT: Global Positioning System

Global Navigational Positioning System
USE: Global Positioning System

Global Positioning System
UF: DGPS
Differential GPS
GPS
Global Navigational Positioning System
BT: Satellite navigation systems
RT: Air transportation
Global navigation satellite system
Indoor navigation
Land transportation
Marine transportation
Military satellites
Road transportation
Satellite broadcasting
Satellite communication
Telecommunications
Terrain mapping

Global System for Mobile Communications
USE: GSM

Global teams
USE: Global communication

Global warming
BT: Climate change
Environmental factors
Temperature measurement
Terrestrial atmosphere
RT: Air pollution
Atmospheric measurements
Carbon emissions
Carbon sequestration
Energy informatics
Environmental management
Greenhouse effect
Land surface temperature
Low-carbon economy
Ocean temperature

2021 IEEE Thesaurus

Thermal pollution

Globalisation
USE: Globalization

Globalization
UF: Global markets
       Globalisation
BT: Social implications of technology
RT: Developing countries
       International collaboration
       International relations
       International trade
       Trade agreements

Glossaries
USE: Terminology

Glow discharge devices
BT: Gas discharge devices
RT: Glow discharges
       Light sources

Glow discharges
BT: Dielectric breakdown
RT: Glow discharge devices

Glucose
BT: Sugar

Glucose sensors
BT: Sensors

Glycomics
BT: Molecular biomarkers

GNP
USE: Economic indicators

GNSS
USE: Global navigation satellite system

Goggles
USE: Eye protection

Gold
UF: Au
BT: Metals
NT: Gold alloys

Gold alloys
BT: Gold
RT: Alloying

Goniometers
BT: Meters

Google
USE: Internet AND
        Search engines

Google Chrome
USE: Browsers

Government
BT: Organizations
RT: Governmental factors
       Leadership
       Macroeconomics
       Public finance
NT: Electronic government
       Government policies
       Legislation
       Local government
       US Government
       Voting

Government borrowing
USE: Public finance

Government expenditure
USE: Public finance

Government policies
BT: Data governance
       Government
RT: Censorship
       Developing countries
       Food waste
       Open data
       Public infrastructure
NT: General Data Protection Regulation
       Must-carry
       Public policy
       Regulation

Governmental factors
BT: Management
RT: Government
       Legal factors
       Social factors
NT: Public finance

GPR
USE: Ground penetrating radar

GPS

USE: Global Positioning System

GPU
USE: Graphics processing units

Gradient methods
BT: Mathematics
Numerical analysis
Optimization methods
RT: Level set
Search methods

Grain alcohol
USE: Ethanol

Grain boundaries
BT: Crystals
RT: Conductivity
Corrosion
Grain size
Thermal conductivity

Grain size
BT: Crystals
RT: Grain boundaries

Grammar
BT: Professional communication
Writing
RT: Syntactics

Granular computing
BT: Programming
RT: Concurrent computing
Information processing

Granular superconductors
BT: Superconducting materials
RT: High-temperature superconductors

Graph neural networks
BT: Neural networks

Graph theory
BT: Combinatorial mathematics
Mathematics
RT: Ant colony optimization
Belief propagation
Circuit topology
Topology
NT: Bipartite graph
Directed acyclic graph
Directed graphs

Optimal matching
Reachability analysis
Shortest path problem
Tree graphs

Graphene
BT: Carbon
NT: Graphene devices

Graphene devices
BT: Graphene
RT: Field effect transistors
Flexible electronics
Molecular electronics
Nanoelectronics

Graphic user interfaces
USE: Graphical user interfaces

Graphical models
BT: Modeling

Graphical user interfaces
UF: GUI
Graphic user interfaces
BT: Product development
User interfaces
NT: Avatars

Graphics
BT: Design methodology
RT: Displays
Technical drawing
NT: Animation
Art
Character generation
Computer graphics
Engineering drawings
Layout
Shape
Symbols
Virtual reality
Visualization

Graphics processing units
UF: GPU
VPU
BT: Program processors
RT: AI accelerators
Computer graphics
Hardware acceleration

Graphite
UF: Black lead
Plumbago

BT: Carbon
RT: Lead

Grasping
BT: Haptic interfaces

Gratings
UF: Optical gratings
         Transient gratings
BT: Periodic structures
RT: Optical devices

Gravimeter
USE: Gravity measurement

Gravitational force
USE: Gravity

Gravitational waves
BT: Astronomy
         Gravity

Gravitometer
USE: Gravity measurement

Gravity
UF: Gravitational force
BT: Force
RT: Acceleration
         Force measurement
NT: Gravitational waves

Gravity measurement
UF: Gravimeter
         Gravitometer
BT: Force measurement
RT: Astrophysics
         Geophysical measurements

Gray codes
USE: Reflective binary codes

Gray matter
USE: Grey matter

Gray-scale
UF: Grayscale
BT: Image processing

Grayscale
USE: Gray-scale

Greedy algorithms
BT: Computation theory

Green buildings
BT: Construction
         Green products
RT: Environmental factors
         Green design

Green cleaning
BT: Green products

Green computing
BT: Computer applications
         Energy conservation
         Green design
RT: Environmental factors
         Sustainable development

Green design
UF: Environmental design
         Sustainable design
BT: Design methodology
RT: Energy informatics
         Green buildings
NT: Ecodesign
         Green computing

Green function
USE: Green's function methods

Green manufacturing
BT: Environmental factors
         Manufacturing

Green products
BT: Environmental factors
RT: Biohazards
         Pollution
NT: Green buildings
         Green cleaning

Green transportation
BT: Environmental factors
         Transportation

Green's function
USE: Green's function methods

Green's function methods
UF: Green function
         Green's function
         Green's functions
BT: Modeling
RT: Failure analysis
         Materials reliability

Green's functions

USE: Green's function methods

Greenhouse effect
UF: Greenhouse gas
BT: Infrared heating
RT: Carbon emissions
           Carbon footprint
           Carbon sequestration
           Environmental factors
           Global warming
           Low-carbon economy
           Pollution control

Greenhouse gas
USE: Greenhouse effect

Greenhouses
BT: Agriculture
           Production facilities
RT: Crops

Grey codes
USE: Reflective binary codes

Grey matter
UF: Gray matter
BT: Central nervous system

Grid computing
UF: Grid maze
BT: Metacomputing
RT: Cloud computing

Grid maze
USE: Grid computing

Grinding machines
BT: Machine tools

Grippers
UF: Microgrippers
           Worms
BT: Materials handling equipment
RT: End effectors
           Loading

Gross domestic product
USE: Economic indicators

Gross national product
USE: Economic indicators

Ground penetrating radar
UF: GPR
           Ground-penetrating radar
BT: Imaging
           Radar
RT: Buried object detection
           Radar detection
           Radar imaging
           Synthetic aperture radar
           Ultra wideband radar

Ground source heat pumps
USE: Heat pumps

Ground state
USE: Stationary state

Ground support
UF: Aerospace ground equipment
           Aerospace ground services
BT: Aerospace control
RT: Aircraft
           Military equipment
           Missiles
           Navigation
           Rockets
           Space vehicles

Ground temperature
USE: Land surface temperature

Ground transportation
USE: Land transportation

Ground vehicles
USE: Land vehicles

Ground-penetrating radar
USE: Ground penetrating radar

Grounding
UF: earthing
BT: Electrical safety
RT: Circuit stability
           Electric shock
           Fault currents
           Power system protection
           Protection

Group technology
BT: Production
RT: Product design
           Production control

Groupware
USE: Collaborative software

GSM
UF: Global System for Mobile Communications
BT: Cellular technology
Wireless communication
RT: Dual band
Roaming
NT: GSM-R

GSM-R
UF: GSM-Railway
BT: GSM
Railway communication

GSM-Railway
USE: GSM-R

GTEM cells
USE: TEM cells

GUI
USE: Graphical user interfaces

Guided electromagnetic wave propagation
USE: Waveguide theory

Guidelines
BT: Standardization
RT: IEEE publishing
ISO
Publishing

Guideways (mechanical)
USE: Mechanical guides

Gunn devices
UF: Transferred electron devices
BT: Semiconductor devices

Guns
BT: Weapons

Gunshot detection systems
BT: Geographic information systems
Sensor systems

Gynaecology
USE: Gynecology

Gynecology
UF: Gynaecology
BT: Medical specialties

Gyrators
BT: Active circuits
RT: Active inductors
Ferrite devices

Gyroklystrons
USE: Klystrons

Gyromagnetism
BT: Magnetics
RT: Faraday effect
Ferrites
Gyrotropism

Gyroscopes
UF: Non-gyroscopes
Nongyroscopes
BT: Level control
RT: Laser applications
Ring lasers

Gyrotrons
BT: Masers
RT: Electron beams

Gyrotropism
BT: Magnetooptic effects
RT: Faraday effect
Gyromagnetism

H infinity control
UF: H-infinity control
BT: Optimization methods
RT: Closed loop systems
Control systems
Intelligent control
Optimal control

H-infinity control
USE: H infinity control

H2O
USE: Water

Hacker
USE: Computer hacking

Hacking
USE: Computer crime

Hacks
USE: Computer hacking

Haemorrhaging

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USE: Hemorrhaging

Hafnium
UF: Hf
BT: Chemical elements
Metals
RT: Nuclear physics
NT: Hafnium compounds

Hafnium compounds
BT: Hafnium
RT: Alloying
NT: Hafnium oxide

Hafnium oxide
BT: Hafnium compounds

Hair
BT: Integumentary system
NT: Eyebrows
Eyelashes
Hair follicle

Hair follicle
BT: Hair

Half-wave plates
USE: Optical retarders

Hall effect
UF: Hall mobility
BT: Magnetoelectric effects
RT: Hall effect devices

Hall effect devices
BT: Semiconductor devices
RT: Hall effect

Hall mobility
USE: Hall effect

Ham radios
BT: Radio communication equipment

Hamming distance
BT: Information theory

Hamming weight
BT: Information theory

HAMR
USE: Heat-assisted magnetic recording

Hand tools
BT: Tools
RT: Machine tools

Handheld computers
UF: BlackBerry
Handheld devices
Wireless handheld devices
BT: Portable computers
NT: Personal digital assistants

Handheld devices
USE: Handheld computers

Handicapped aids
USE: Assistive technology

Handover
BT: Communication switching
Data transfer
RT: Cellular networks
Communication system signaling
Satellite communication

Handsets
USE: Telephone sets

Handwriting recognition
UF: Signature detection
Signature verification
Written character recognition
Written characters
Written-character recognition
BT: Identification of persons
Pattern recognition
RT: Biometrics (access control)
NT: Forgery

Haptic interfaces
UF: Haptic systems
Haptics
BT: Computer interfaces
RT: Modeling
Touch sensitive screens
NT: Data gloves
Force feedback
Grasping
Tactile Internet

Haptic systems
USE: Haptic interfaces

Haptics
    USE: Haptic interfaces

Hard amorphous carbon
    USE: Diamond-like carbon

Hard disc drives
    USE: Hard disks

Hard discs
    USE: Hard disks

Hard disk drives
    USE: Hard disks

Hard disks
    UF: Hard disc drives
              Hard discs
              Hard disk drives
              Hard-disc drives
              Hard-disk drives
    BT: Magnetic memory
    RT: Giant magnetoresistance

Hard-disc drives
    USE: Hard disks

Hard-disk drives
    USE: Hard disks

Hardsuit
    USE: Wearable robots

Hardware
    UF: Computer hardware
    BT: Computers and information processing
    RT: Computer ports
              Firewalls (computing)
    NT: Hardware acceleration
              Input devices
              Open source hardware
              Reconfigurable devices
              Wireless access points

Hardware acceleration
    UF: 3D accelerators
              Accelerated computing
              Cryptographic accelerators
    BT: Computer performance
              Hardware
    RT: Central Processing Unit
              Graphics processing units

Hardware description languages
    USE: Hardware design languages

Hardware design languages
    UF: HDL
              HDVL
              Hardware description languages
              IEEE 1364
    BT: Computer languages
    RT: Design automation
    NT: VHDL

Hardware-in-the-loop simulation
    UF: HIL simulation
    BT: Simulation
    RT: Aerospace control
              Control engineering computing
              Control system synthesis
              Embedded systems
              Real-time systems
              Testing
              Vehicle dynamics

Harmonic analysis
    UF: Harmonics
    BT: Mathematics
              Signal analysis
    RT: Fast Fourier transforms
              Fourier transforms
              Spectral analysis
              Wavelet transforms

Harmonic distortion
    BT: Nonlinear distortion
    RT: Power conversion harmonics
    NT: Harmonics suppression
              Total harmonic distortion

Harmonic filters
    BT: Filters

Harmonic generation
    USE: Frequency conversion

Harmonics
    USE: Harmonic analysis

Harmonics suppression
    BT: Harmonic distortion

Harmonised index of consumer prices
    USE: Economic indicators

Harmonized index of consumer prices
    USE: Economic indicators

Hash functions
    BT: Algorithms
    RT: Cryptography
           Encoding
    NT: Cryptographic hash function

Hashtag
    USE: Tagging

Hazardous areas
    BT: Hazards
    RT: Accidents
           Explosions
           Fires
           Hazardous materials
           Industrial accidents
           Protection
           Radioactive pollution
           Radioactive waste
           Safety
           Surveillance

Hazardous materials
    UF: Hazmat
    BT: Hazards
           Materials
    RT: Chemical hazards
           Flammability
           Hazardous areas
           Radioactive waste
           Toxicology

Hazards
    BT: Safety
    RT: Contamination
           Explosion protection
           Landslides
           Occupational stress
           Pest control
           Rescue robots
           Working environment noise
    NT: Biohazards
           Chemical hazards
           Explosions
           Fires
           Flammability
           Floods
           Hazardous areas
           Hazardous materials
           Toxicology

Hazmat
    USE: Hazardous materials

HbbTV Standards
    BT: ETSI Standards
    RT: Digital TV
           TV

HBT
    USE: Heterojunction bipolar transistors

HCCI engines
    USE: Internal combustion engines

HCI
    USE: Human computer interaction

HD
    USE: High definition video

HD video
    USE: High definition video

HDL
    USE: Hardware design languages

HDTV
    UF: ATV
           Advanced TV
           EDTV
           Extended definition TV
           High definition television
           High-definition TV
           IDTV
           Improved definition TV
    BT: Digital TV
    NT: UHDTV

HDVL
    USE: Hardware design languages

Head
    BT: Body regions
    RT: Auditory system
           Brain
           Visual systems
    NT: Cranium
           Ear
           Faces

Forehead
Lips
Mouth
Nose
Scalp
Skull

Head sets
    USE: Headphones

Head-mounted displays
    UF: Head-worn displays
             Helmet mounted displays
    BT: Displays
             Human computer interaction

Head-up displays
    UF: Heads up displays
    BT: Displays
             Human computer interaction

Head-worn displays
    USE: Head-mounted displays

Headphones
    UF: Earphones
             Head sets
             Headsets
    BT: Audio systems

Heads up displays
    USE: Head-up displays

Headsets
    USE: Headphones

Health (occupational)
    USE: Occupational health

Health and safety
    BT: Safety
    RT: Environmental factors
    NT: Occupational health
             Occupational safety
             Personal protective equipment

Health care
    USE: Medical services

Health informatics
    USE: Bioinformatics

Health information management
    BT: Medical services

Health physics
    USE: Radiation monitoring

Healthcare
    USE: Medical services

Hearing
    USE: Auditory system

Hearing aids
    BT: Sensory aids
    RT: Auditory system
             Speech enhancement

Heart
    BT: Cardiovascular system
    RT: Cardiology
    NT: Cardiac function
             Fetal heart
             Heart rate
             Heart valves
             Heart ventricles

Heart arrest
    USE: Cardiac arrest

Heart attack
    USE: Cardiac arrest

Heart beat
    UF: Heartbeat
    BT: Heart rate

Heart rate
    UF: HR
    BT: Heart
    NT: Fetal heart rate
             Heart beat
             Heart rate detection
             Heart rate interval
             Heart rate measurement
             Heart rate variability

Heart rate detection
    BT: Heart rate

Heart rate interval
    BT: Heart rate

Heart rate measurement
    BT: Heart rate
    RT: Phonocardiography

Heart rate variability
UF: HRV
BT: Heart rate

Heart valves
BT: Heart

Heart ventricles
BT: Heart

Heartbeat
USE: Heart beat

Heat engines
BT: Engines
NT: Steam engines
           Stirling engines

Heat islands
USE: Thermal pollution

Heat pipes
BT: Heating systems
RT: Cooling
           Heat transfer

Heat pumps
UF: Ground source heat pumps
BT: Pumps
RT: Refrigerants

Heat recovery
UF: Industrial heat recovery
BT: Heating systems
RT: Boilers
           Thermal engineering

Heat sinks
UF: Heatsinks
BT: Cooling

Heat transfer
BT: Thermal conductivity
RT: Heat pipes
NT: Convection

Heat treatment
BT: Materials processing
RT: Curing
           Firing
           Foundries
           Kilns
           Smelting
           Thermal factors

NT: Annealing
           Calcination

Heat-assisted magnetic recording
UF: HAMR
BT: Magnetic recording

Heating systems
BT: Temperature control
RT: Entropy
           Furnaces
           HVAC
           High-temperature techniques
           Laser applications
           Rapid thermal processing
           Thermal engineering
NT: Boilers
           Cogeneration
           Electromagnetic heating
           Heat pipes
           Heat recovery
           Induction heating
           Infrared heating
           Resistance heating
           Solar heating
           Space heating
           Thermal energy
           Trigeneration
           Water heating

Heating, ventilation, and air conditioning
USE: HVAC

Heatsinks
USE: Heat sinks

Hebb's methods
USE: Hebbian theory

Hebb's rule
USE: Hebbian theory

Hebbian learning
USE: Hebbian theory

Hebbian principle
USE: Hebbian theory

Hebbian theory
UF: Hebb's methods
           Hebb's rule
           Hebbian learning
           Hebbian principle
BT: Artificial neural networks

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Helical antennas
BT: Antennas
RT: Electromagnetic waveguides
Telecommunications
Transmission lines
VHF circuits
Waveguide components

Helical gears
USE: Gears

Helicopters
BT: Aircraft

Helium
BT: Chemical elements
Gases

Helmet mounted displays
USE: Head-mounted displays

Hemodynamics
UF: Hemorheology
BT: Blood flow

Hemorheology
USE: Hemodynamics

Hemorrhaging
UF: Bleeding
Haemorrhaging
BT: Medical conditions

HEMTs
UF: Heterostructure FETs
High electron mobility transistors
High electron-mobility transistors
High-electron mobility transistors
High-electron-mobility transistors
BT: Field effect transistors
RT: MODFETs
NT: D-HEMTs
DH-HEMTs
PHEMTs
mHEMTs

Hepatectomy
BT: Medical treatment
Surgery

Hermetic seals
BT: Seals

Hetero-nanocrystal memory
BT: Single electron memory

Heterogeneous networks
BT: Computer networks

Heterojunction bipolar transistors
UF: HBT
BT: Transistors
RT: Heterojunctions
Integrated optoelectronics
Semiconductor devices
NT: Double heterojunction bipolar transistors

Heterojunctions
BT: Junctions
RT: Heterojunction bipolar transistors

Heterostructure FETs
USE: HEMTs AND MODFETs

Heuristic algorithms
UF: Dynamic algorithms
BT: Algorithms

HEV
USE: Hybrid electric vehicles

HEVC
USE: High efficiency video coding

Hf
USE: Hafnium

HF radar
USE: High frequency radar

HFC
USE: Hybrid fiber coaxial cables

Hg
USE: Mercury (metals)

Hidden Markov models
BT: Modeling
RT: Markov processes
Pattern recognition

Hierarchical learning
USE: Deep learning

Hierarchical systems
BT: Systems engineering and theory
NT: Multilevel systems

High definition television
USE: HDTV

High definition video
UF: HD
       HD video
BT: Video recording
NT: Ultra-high definition video

High efficiency video coding
UF: HEVC
       High-efficiency video coding
BT: Video coding
RT: MPEG 4 Standard

High electron mobility transistors
USE: HEMTs

High electron-mobility transistors
USE: HEMTs

High energy physics
UF: Particle physics
BT: Physics

High energy physics instrumentation computing
BT: Computer applications
       Instrumentation and measurement
       Nuclear and plasma sciences
RT: Data acquisition
       Elementary particles
       Nuclear electronics
       Particle measurements
       Particle tracking
       Position sensitive particle detectors
       Proton effects
       Radiation effects
       Real-time systems
       Synchrotrons
NT: Linear particle accelerator

High frequency
BT: Radio frequency

High frequency radar
UF: HF radar
BT: Radar

High frequency transformers
USE: High-frequency transformers

High intensity discharge lamps
BT: Discharge lamps
RT: Arc discharges
       Electrical ballasts
       Emergency lighting
       Light sources
       Lighting
       Lighting control

High K
USE: High-k dielectric materials

High level languages
BT: Computer languages
RT: Page description languages
NT: Java
       Linux
       Parallel languages

High level synthesis
BT: Circuit synthesis
RT: Programmable logic devices

High performance computing
UF: HPC
       High-performance computing
BT: Computers and information processing
NT: Exascale computing

High power amplifiers
BT: Power amplifiers
RT: Gate drivers

High power fiber lasers
UF: HPFL
       High-power fiber lasers
BT: Fiber lasers

High power microwave generation
UF: HPM generation
       High-power microwave generation

BT: Microwave generation

High resolution imaging
      USE: High-resolution imaging

High speed electronics
      USE: High-speed electronics

High speed integrated circuits
      USE: High-speed integrated circuits

High speed networking
      USE: High-speed networks

High speed networks
      USE: High-speed networks

High speed optical methods
      USE: High-speed optical techniques

High speed optical techniques
      USE: High-speed optical techniques

High speed rail transportation
      USE: High-speed rail transportation

High speed techniques
      USE: High-speed electronics

High T_c superconductors
      USE: High-temperature superconductors

High Tc superconductors
      USE: High-temperature superconductors

High temperature superconductors
      USE: High-temperature superconductors

High voltage
      USE: High-voltage techniques

High-definition TV
      USE: HDTV

High-efficiency video coding
      USE: High efficiency video coding

High-electron mobility transistors

      USE: HEMTs

High-electron-mobility transistors
      USE: HEMTs

High-frequency transformers
      UF: High frequency transformers
      BT: Transformers

High-K
      USE: High-k dielectric materials

High-k dielectric materials
      UF: High K
                High-K
      BT: Dielectric materials
      RT: Semiconductor materials

High-k gate dielectrics
      BT: Dielectric constant
                 Semiconductor device manufacture

High-performance computing
      USE: High performance computing

High-power fiber lasers
      USE: High power fiber lasers

High-power microwave generation
      USE: High power microwave generation

High-resolution imaging
      UF: High resolution imaging
      BT: Image resolution

High-speed electronics
      UF: High speed electronics
                 High speed techniques
                 High-speed techniques
      BT: Communications technology
      NT: High-speed integrated circuits
                 High-speed networks
                 Ultrafast electronics

High-speed integrated circuits
      UF: High speed integrated circuits
      BT: High-speed electronics

RT: Integrated circuit technology

    Microcontrollers

High-speed networking
    USE: High-speed networks

High-speed networks
    UF: High speed networking
          High speed networks
          High-speed networking
    BT: High-speed electronics
    RT: Long Term Evolution

High-speed optical methods
    USE: High-speed optical techniques

High-speed optical techniques
    UF: High speed optical methods
          High speed optical techniques
          High-speed optical methods
    BT: Optical design techniques
    RT: Light fidelity

High-speed rail transportation
    UF: High speed rail transportation
    BT: Rail transportation
    RT: Magnetic levitation vehicles

High-speed techniques
    USE: High-speed electronics

High-T_c superconductors
    USE: High-temperature superconductors

High-Tc superconductors
    USE: High-temperature superconductors

High-temperature effects
    USE: Thermal factors

High-temperature superconductors
    UF: HTS
          High T_c superconductors
          High Tc superconductors
          High temperature superconductors
          High-T_c superconductors
          High-Tc superconductors

          Superconductors (high temperature)
    BT: Superconducting materials
    RT: Ceramics
          Granular superconductors
          Persistent currents
          Superconducting devices
          Superconducting films
          Superconducting transition temperature
          Surface impedance
          Surface resistance
    NT: Yttrium barium copper oxide

High-temperature techniques
    BT: Industry applications
    RT: Heating systems
    NT: Rapid thermal processing

High-voltage techniques
    UF: High voltage
    BT: Power engineering
    RT: Power electronics
          Pulsed power systems

Higher order statistics
    BT: Statistics
    RT: Differential equations

Highways
    USE: Road transportation

HIL simulation
    USE: Hardware-in-the-loop simulation

Hilbert space
    BT: Euclidean distance

Hilbert?Huang transforms
    USE: Empirical mode decomposition

Hindbrain
    UF: Rhombencephalon
    BT: Brain
    RT: Forebrain
          Midbrain

Hinges
    USE: Fasteners

Hip
    BT: Extremities

Hip joint replacements
    USE: Prosthetics

Hippocampus
    BT: Temporal lobe
    RT: Alzheimer's disease

Histograms
    BT: Statistics

Histology
    USE: Histopathology

Histopathology
    UF: Histology
    BT: Pathology

History
    BT: Science - general

HITL
    USE: Human in the loop

HIV
    USE: Human immunodeficiency virus

Hobbing machines
    BT: Machining
    RT: Machine tools

Hockey
    USE: Sports

Hoists
    USE: Lifting equipment

Hole carriers
    USE: Charge carrier processes

Holey fibers
    UF: Holey fibres
    BT: Photonic crystal fibers

Holey fibres
    USE: Holey fibers

Hollow waveguides
    BT: Electromagnetic waveguides
    NT: Liquid waveguides

Holmium
    BT: Chemical elements

Holographic optical components
    BT: Optical devices
    RT: Holography

Holography
    BT: Imaging
    RT: Holographic optical components
            Image reconstruction
            Laser applications
            Photorefractive materials

Home appliances
    UF: Appliances
            Domestic appliances
            Domestic induction appliances
            Household appliances
    BT: Consumer products
    NT: Gas appliances
            Microwave ovens
            Ovens
            Refrigerators
            Washing machines

Home automation
    UF: Home networks
    BT: Consumer electronics
    RT: Automation
            Fall detection
            Service robots
    NT: Portable media players
            Refrigerators
            Smart homes
            Washing machines

Home computing
    BT: Consumer electronics
    RT: Computers and information processing
            Firewire
            Microcomputers

Home networks
    USE: Home automation

Home phone
    USE: Landline

Homeostasis
    BT: Biology
            Control systems

Homopolar machines

BT: DC machines

Honey pot (computing)
    BT: Computer security

Honeycomb structures
    BT: Structural shapes
    RT: Lightweight structures
          Sandwich structures
          Structural panels
          Thin wall structures

Hopfield networks
    USE: Hopfield neural networks

Hopfield neural networks
    UF: Hopfield networks
    BT: Recurrent neural networks

Hormones
    USE: Biochemistry

Horn antennas
    BT: Antennas

Horses
    BT: Animals

Hoses
    BT: Mechanical products
    RT: Automotive components
          Rubber products

Hospitals
    BT: Medical services
          Medical treatment
    RT: Biomedical engineering

Hot carrier effects
    BT: Hot carriers

Hot carrier injection
    UF: Hot-carrier injection
    BT: Hot carriers
    NT: Channel hot electron injection
          Drain avalanche hot carrier injection
          Secondary generated hot electron injection
          Substrate hot electron injection

Hot carriers
    BT: Charge carriers

    RT: Semiconductor devices
    NT: Hot carrier effects
          Hot carrier injection

Hot-carrier injection
    USE: Hot carrier injection

Household appliances
    USE: Home appliances

HPC
    USE: High performance computing

HPFL
    USE: High power fiber lasers

HPM generation
    USE: High power microwave generation

HR
    USE: Heart rate

HRV
    USE: Heart rate variability

HTML
    BT: Markup languages

HTS
    USE: High-temperature superconductors

Huffman coding
    BT: Data compression
          Entropy coding
    RT: Algorithms
          Communication systems
          Multimedia communication
          Multimedia databases
          Multimedia systems
          Symbols

Human anatomy
    BT: Anatomy

Human cloning
    USE: Cloning

Human computer interaction
    UF: HCI
          Human machine interaction
          Human-centered computing

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		Human-computer
interaction		
		Human-computer interfaces
		User friendliness
	BT:	User interfaces
	RT:	Adaptive learning
		Cyber-physical systems
		Human factors
		Human-vehicle systems
		Immersive audio
		Man-machine systems
		User experience
	NT:	Affective computing
		Chatbot
		Extended reality
		Gaze tracking
		Head-mounted displays
		Head-up displays
		Human in the loop
		Immersive experience
		Telepresence
		Telexistence

Human disease markers
USE: Biomarkers

Human engineering
USE: Ergonomics

Human factors
	UF:	Human factors engineering
		Stress (psychological)
	BT:	Systems, man, and
cybernetics		
	RT:	Aerospace biophysics
		Affective computing
		Androids
		Anthropometry
		Behavioral sciences
		Chatbot
		Cognitive science
		Digital intelligence
		Ergonomics
		Human computer
interaction		
		Man-machine systems
		Persuasive systems
		Problem-solving
		Productivity
		Social engineering
(security)		
		Telerobotics
		User experience
	NT:	Anthropomorphism
		Human image synthesis

		Human intelligence
		Mental health
		Technology acceptance
model		

Human factors engineering
USE: Ergonomics AND
Human factors

Human image synthesis
	BT:	Human factors
		Image synthesis
	RT:	Films
		Photorealism

Human immunodeficiency virus
	UF:	HIV
	BT:	Diseases
	RT:	Acquired immune
deficiency syndrome		

Human in the loop
	UF:	HITL
	BT:	Human computer
interaction		
		Simulation
	RT:	Computer simulation
		Modeling

Human intelligence
	BT:	Cognitive science
		Human factors
	NT:	Digital intelligence

Human machine interaction
USE: Human computer
interaction

Human resource management
	BT:	Management
	RT:	Industrial psychology
	NT:	Appraisal
		Continuing professional
development		
		Employee welfare
		Employment
		Equal opportunities
		Incentive schemes
		Job specification
		Labor resources
		Leadership
		Multiskilling
		Personnel
		Recruitment
		Remuneration

Retirement
Termination of employment
Unemployment

Human robot interaction
  USE: Human-robot interaction

Human voice
  BT: Speech processing

Human-centered computing
  USE: Human computer
interaction

Human-computer interaction
  USE: Human computer
interaction

Human-computer interfaces
  USE: Human computer
interaction

Human-robot interaction
  UF: Human robot interaction
  BT: User interfaces
  RT: Tactile Internet
          Wearable robots

Human-vehicle interaction
  USE: Human-vehicle systems

Human-vehicle systems
  UF: Human-vehicle interaction
  BT: User interfaces
  RT: Human computer
interaction

Humanitarian activities
  UF: Humanitarian aid
  BT: IEEE Corporate activities

Humanitarian aid
  USE: Humanitarian activities

Humanoid robotics
  USE: Humanoid robots

Humanoid robots
  UF: Humanoid robotics
          Humanoids
  BT: Robots
  RT: Mobile robots

Humanoids
  USE: Humanoid robots

HumanXR
  USE: Extended reality

Humidity
  BT: Meteorology
  RT: Humidity control
          Humidity measurement
          Trees - insulation

Humidity control
  BT: Moisture control
  RT: Humidity

Humidity measurement
  BT: Moisture measurement
  RT: Humidity

Hurricanes
  BT: Cyclones

HVAC
  UF: Heating, ventilation, and air
conditioning
  BT: Thermal variables control
  RT: Air conditioning
          Cooling
          Heating systems
          Ventilation

HVDC transmission
  BT: Power transmission
  RT: DC distribution systems
          Voltage-source converters

Hybrid automobiles
  USE: Hybrid electric vehicles

Hybrid cars
  USE: Hybrid electric vehicles

Hybrid electric vehicles
  UF: HEV
          Hybrid automobiles
          Hybrid cars
  BT: Electric vehicles
  RT: Battery powered vehicles
          Charging stations
          Energy storage
          Internal combustion
engines
          Traction motors
          Vehicle-to-grid
  NT: Plug-in hybrid electric
vehicles

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Hybrid fiber coaxial cables
    UF: HFC
                Hybrid fibre coaxial cables
    BT: Coaxial cables

Hybrid fibre coaxial cables
    USE: Hybrid fiber coaxial cables

Hybrid integrated circuits
    BT: Circuits
                Integrated circuits
    RT: Thick film circuits
                Thin film circuits

Hybrid intelligent systems
    BT: Fuzzy systems
    RT: Intelligent systems

Hybrid junctions
    BT: Junctions
    RT: Directional couplers

Hybrid learning
    UF: Blended learning
    BT: Learning systems

Hybrid power systems
    BT: Power systems
    RT: Distributed power generation
                Photovoltaic systems

Hydraulic actuators
    BT: Actuators
    RT: Hydraulic drives

Hydraulic diameter
    BT: Fluid flow
    NT: Microchannels

Hydraulic drives
    BT: Drives
    RT: Hydraulic actuators

Hydraulic equipment
    BT: Hydraulic systems
    RT: Water pumps
    NT: Valves

Hydraulic fluids
    UF: Hydraulic liquids
                Hydraulic oils
    BT: Fluids
                Hydraulic systems

    RT: Production materials

Hydraulic fracking
    USE: Fracking

Hydraulic liquids
    USE: Hydraulic fluids

Hydraulic oils
    USE: Hydraulic fluids

Hydraulic systems
    UF: Hydraulics
    BT: Machinery
    RT: Fluid flow
                Irrigation
    NT: Electrohydraulics
                Hydraulic equipment
                Hydraulic fluids

Hydraulic turbines
    BT: Turbines
    RT: Hydroelectric power generation

Hydraulics
    USE: Hydraulic systems

Hydrocarbon reservoirs
    BT: Hydrocarbons

Hydrocarbons
    UF: Oil sands
                Oil shale
    BT: Organic chemicals
                Petroleum
    NT: Hydrocarbon reservoirs

Hydrochemistry
    USE: Geochemistry

Hydrodynamics
    UF: Smoothed particle hydrodynamics
    BT: Dynamics
                Mechanical factors
    RT: Fluid dynamics
                Fluid flow
                Microfluidics
                Water
    NT: Electrohydrodynamics
                Magnetohydrodynamics

Hydroelectric power

USE: Hydroelectric power generation

Hydroelectric power generation
UF: Hydroelectric power
         Hydroelectricity
         Hydropower
         Hyrdroelectric
BT: Power generation
RT: Dams
         Hydraulic turbines
NT: Hydroelectric-thermal power generation

         Microhydro power
         Picohydro power
         Wave energy conversion

Hydroelectric-thermal power generation
BT: Hydroelectric power generation

Hydroelectricity
USE: Hydroelectric power generation

Hydrogen
BT: Chemical elements
         Gases
RT: Water splitting
NT: Deuterium

Hydrogen chloride
USE: Chlorine compounds

Hydrogen fluoride
BT: Fluorine compounds

Hydrogen powered vehicles
BT: Vehicles

Hydrogen storage
BT: Energy storage

Hydrologic measurements
BT: Hydrology
RT: Fluid flow measurement
         Geophysics
         Hydrological techniques
         Oceanographic techniques
         Water

Hydrological techniques
BT: Hydrology
RT: Geoengineering
         Geophysics

         Geoscience
         Hydrologic measurements
NT: Fracking

Hydrology
BT: Fluid flow
RT: Water
         Wetlands
NT: Floods
         Hydrologic measurements
         Hydrological techniques
         Ocean waves

Hydromagnetics
USE: Magnetohydrodynamics

Hydrometers
BT: Density measurement

Hydrophones
USE: Sonar equipment

Hydropower
USE: Hydroelectric power generation

Hyper ledger
USE: Distributed ledger

Hypercubes
BT: Multiprocessor interconnection
RT: Computer networks

Hyperdermic needles
USE: Hypodermic needles

Hyperledger
USE: Distributed ledger

Hyperlinks
USE: Hypertext systems

Hypermedia
BT: Multimedia communication

Hyperspectral imaging
BT: Hyperspectral sensors

Hyperspectral sensors
BT: Remote sensing
RT: Geologic measurements
         Military aircraft
         Military communication
         Military satellites

Mining industry
Submillimeter wave measurements

Wavelength measurement
NT: Hyperspectral imaging

Hypertension
BT: Medical conditions

Hypertext systems
UF: Hyperlinks
BT: Computer interfaces
Information retrieval
RT: Database systems

Hyperthermia
BT: Medical conditions
Medical treatment
RT: Electromagnetic heating

Hypervisors
USE: Virtual machine monitors

Hypodermic needles
UF: Hyperdermic needles
BT: Biomedical equipment

Hypothalamus
BT: Brain
RT: Central nervous system

Hyrdroelectric
USE: Hydroelectric power generation

Hysteresis
BT: Materials science and technology
RT: Damping
Magnetic hysteresis
Magnetization processes
Spin valves

Hysteresis motors
BT: AC motors
Motors
Rotating machines
Synchronous machines
Synchronous motors

I/O programs
USE: Input-output programs

IC
USE: Integrated circuits

IC packaging
USE: Integrated circuit packaging

Ice
BT: Geoscience
RT: Meteorology
Snow
NT: Ice shelf
Ice surface
Ice thickness
Sea ice

Ice shelf
BT: Ice

Ice surface
BT: Ice

Ice thickness
BT: Ice

ICIC
USE: Intercell interference

ICP
USE: Iterative closest point algorithm

ICs
USE: Integrated circuits

ICT
USE: Information and communication technology

ID-based encryption
USE: Identity-based encryption

Identification of persons
BT: Systems, man, and cybernetics
RT: Access control
Palmprint recognition
Security
NT: Biometrics (access control)
Face recognition
Fingerprint recognition
Handwriting recognition
Speaker recognition
Speech recognition

Identity management systems
BT: Computer security
Information systems

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Identity-based cryptography
USE: Identity-based encryption

Identity-based encryption
UF: ID-based encryption
Identity-based cryptography
BT: Public key cryptography

IDTV
USE: HDTV

IEC
UF: International electrotechnical commission
BT: Standards organizations
RT: Communication standards
IEC Standards
Standardization
Standards
NT: Moving Pictures Experts Group

IEC publications
USE: IEC Standards

IEC Standards
UF: IEC publications
BT: Standards publications
RT: Common Information Model (electricity)
IEC
NT: MPEG standards

IEEE 1364
USE: Hardware design languages

IEEE 1394 Standard
UF: P1394
BT: IEEE Standards
RT: Data buses
Data communication
Firewire
Machine vision
Video signal processing

IEEE 802 LAN-MAN Standards
BT: IEEE Standards
NT: IEEE 802.11 Standard
IEEE 802.15 Standard
IEEE 802.16 Standard
IEEE 802.19 Standard
IEEE 802.22 Standard
IEEE 802.3 Standard

IEEE 802.11 Standard
UF: 802.11
P802.11
WiGig
BT: IEEE 802 LAN-MAN Standards
RT: Bluetooth
Butler matrices
Computer networks
MIMO communication
Modulation
Protocols
Radio communication
Wireless LAN
Wireless access points
Wireless communication
Wireless fidelity
NT: IEEE 802.11ax Standard
IEEE 802.11e Standard
IEEE 802.11g Standard
IEEE 802.11n Standard
IEEE 802.11p Standard

IEEE 802.11ax Standard
UF: 802.11ax
Wi-Fi 6
BT: IEEE 802.11 Standard

IEEE 802.11e Standard
UF: 802.11e
BT: IEEE 802.11 Standard
RT: Communication channels
Protocols
Quality assurance
Quality control
Quality of service
Streaming media
Wireless LAN

IEEE 802.11g Standard
UF: 802.11g
BT: IEEE 802.11 Standard
RT: Bluetooth
Computer networks
Modulation
Protocols
Radio communication
Wireless LAN

IEEE 802.11n Standard
UF: 802.11n
BT: IEEE 802.11 Standard
RT: Antennas
Bluetooth

Communication channels
Computer networks
MIMO communication
Modulation
Protocols
Radio communication
Wireless LAN

IEEE 802.11p Standard
BT: IEEE 802.11 Standard
RT: Intelligent vehicles
         Wireless Access in
Vehicular Environments
         Wireless communication
         Wireless networks

IEEE 802.15 Standard
UF: 802.15
BT: IEEE 802 LAN-MAN
Standards
RT: Bluetooth
         Light fidelity
         Personal communication
networks
         Radio communication
         Wireless LAN
         Zigbee

IEEE 802.16 Standard
UF: 802.16
BT: IEEE 802 LAN-MAN
Standards
RT: Broadband communication
         Computer networks
         Cross layer design
         Internet
         MIMO communication
         Metropolitan area networks
         Multimedia communication
         WiMAX

IEEE 802.19 Standard
BT: IEEE 802 LAN-MAN
Standards

IEEE 802.22 Standard
BT: IEEE 802 LAN-MAN
Standards
RT: Regional area networks
         WRAN
         Wireless communication
         Wireless networks

IEEE 802.3 Standard
UF: 802.3

BT: IEEE 802 LAN-MAN
Standards
RT: Communication switching
         Computer networks
         Ethernet
         Local area networks
         Packet switching
         Switches
         Wide area networks

IEEE activities
UF: Activities
BT: IEEE organization
RT: IEEE Boards
NT: IEEE Awards activities
         IEEE Conference activities
         IEEE Corporate activities
         IEEE Educational activities
         IEEE Intersociety activities
         IEEE Local activities
         IEEE Member and
Geographic activities
         IEEE Professional activities
         IEEE Standards activities
         IEEE Student activities
         IEEE Technical activities
         IEEE United States
activities
         IEEE Volunteer activities
         IEEE publishing

IEEE Associate Members
BT: IEEE members

IEEE audio tapes
BT: IEEE products

IEEE Awards activities
BT: IEEE activities
RT: Awards
         IEEE Educational activities
         IEEE Fellows
         IEEE Foundation
         IEEE Professional activities
         IEEE Technical activities
         IEEE United States
activities
NT: IEEE Corporate awards
         IEEE Society awards
         IEEE Standards awards
         IEEE Student awards
         National Society Agreement
awards

IEEE Boards

2021 IEEE Thesaurus

BT: IEEE entities
RT: IEEE activities

IEEE books
BT: IEEE publications

IEEE bylaws
BT: IEEE governance

IEEE catalogs
BT: IEEE products

IEEE Center for the History of Electrical Engineering
UF: IEEE History Center
BT: IEEE entities

IEEE Chapter news
BT: IEEE news

IEEE Chapters
BT: IEEE entities

IEEE Collabratec
BT: IEEE products

IEEE Committees
BT: IEEE entities

IEEE Communities
BT: IEEE entities

IEEE Computer Society Press
BT: IEEE entities
RT: IEEE publishing

IEEE Conference activities
BT: IEEE activities

IEEE conference proceedings
BT: IEEE publications

IEEE Constitution
BT: IEEE governance

IEEE Corporate activities
BT: IEEE activities
RT: IEEE Corporate awards
          IEEE Professional activities
          IEEE staff
          Legal factors
NT: Humanitarian activities

IEEE Corporate awards
BT: IEEE Awards activities

RT: IEEE Corporate activities
NT: IEEE Medals
          IEEE Recognitions
          IEEE Technical Field awards

IEEE Corporate recognitions
BT: IEEE Recognitions

IEEE Councils
BT: IEEE entities

IEEE directories
BT: IEEE publications

IEEE Educational activities
BT: IEEE activities
RT: IEEE Awards activities
          IEEE Foundation
          IEEE Professional activities

IEEE educational products
BT: IEEE products

IEEE employees
USE: IEEE staff

IEEE entities
BT: IEEE organization
NT: IEEE Boards
          IEEE Center for the History of Electrical Engineering
          IEEE Chapters
          IEEE Committees
          IEEE Communities
          IEEE Computer Society Press
          IEEE Councils
          IEEE Foundation
          IEEE Press
          IEEE Regions
          IEEE Sections
          IEEE Societies

IEEE Fellows
BT: IEEE members
RT: IEEE Awards activities

IEEE Foundation
BT: IEEE entities
RT: IEEE Awards activities
          IEEE Educational activities

IEEE governance
BT: IEEE organization

NT: IEEE Constitution
         IEEE bylaws
         IEEE mission and vision
         IEEE policy and procedures
         IEEE staff

IEEE History Center
     USE: IEEE Center for the History
of Electrical Engineering

IEEE indexing
     BT: IEEE organization
     NT: Awards
         Book reviews
         CD-ROM reviews
         Interviews
         Obituaries
         Software reviews
         Special issues and sections
         Tutorials
         Video reviews

IEEE Intersociety activities
     BT: IEEE activities
     RT: IEEE Professional activities

IEEE journals
     BT: IEEE publications

IEEE Life Members
     BT: IEEE members

IEEE Local activities
     BT: IEEE activities

IEEE magazines
     BT: IEEE publications

IEEE Medals
     BT: IEEE Corporate awards

IEEE Member and Geographic activities
     BT: IEEE activities

IEEE members
     BT: IEEE organization
     RT: IEEE Volunteer activities
     NT: IEEE Associate Members
         IEEE Fellows
         IEEE Life Members
         IEEE Senior Members
         IEEE Student Members

IEEE merchandise
     BT: IEEE products

IEEE mission and vision
     UF: Vision
     BT: IEEE governance

IEEE news
     UF: Announcements
     BT: IEEE organization
     NT: IEEE Chapter news
         IEEE Region news
         IEEE Section news
         IEEE Society news

IEEE newsletters
     BT: IEEE publications

IEEE on-line publications
     USE: IEEE online publications

IEEE online publications
     UF: Electronic publications
         IEEE on-line publications
     BT: IEEE publications

IEEE organization
     NT: IEEE activities
         IEEE entities
         IEEE governance
         IEEE indexing
         IEEE members
         IEEE news
         IEEE products

IEEE policy and procedures
     UF: IEEE procedures
     BT: IEEE governance

IEEE Press
     BT: IEEE entities
     RT: IEEE publishing

IEEE Prize Paper awards
     BT: IEEE Recognitions

IEEE procedures
     USE: IEEE policy and procedures

IEEE products
     BT: IEEE organization
     NT: IEEE Collabratec
         IEEE Xplore
         IEEE audio tapes
         IEEE catalogs
         IEEE educational products
         IEEE merchandise

IEEE publications

IEEE Professional activities
UF: Non-united-states activities
BT: IEEE activities
RT: IEEE Awards activities
        IEEE Corporate activities
        IEEE Educational activities
        IEEE Intersociety activities
        IEEE Technical activities
        IEEE United States
activities

IEEE publications
BT: IEEE products
NT: IEEE books
        IEEE conference
proceedings
        IEEE directories
        IEEE journals
        IEEE magazines
        IEEE newsletters
        IEEE online publications
        IEEE standards
publications
        IEEE transactions
        Notice of Violation

IEEE publishing
BT: IEEE activities
RT: Guidelines
        IEEE Computer Society
Press
        IEEE Press

IEEE Recognitions
BT: IEEE Corporate awards
NT: IEEE Corporate
recognitions
        IEEE Prize Paper awards
        IEEE Service awards
        IEEE Staff recognitions

IEEE Region news
BT: IEEE news
RT: IEEE Regions

IEEE Regions
BT: IEEE entities
RT: IEEE Region news

IEEE Section news
BT: IEEE news

IEEE Sections

BT: IEEE entities

IEEE Senior Members
BT: IEEE members

IEEE Service awards
BT: IEEE Recognitions

IEEE Societies
BT: IEEE entities

IEEE Society awards
BT: IEEE Awards activities

IEEE Society news
BT: IEEE news

IEEE staff
UF: IEEE employees
BT: IEEE governance
RT: IEEE Corporate activities

IEEE Staff recognitions
BT: IEEE Recognitions

IEEE Standards
BT: Standards publications
RT: ANSI Standards
        IEEE Standards activities
NT: AIEE Standards
        IEEE 1394 Standard
        IEEE 802 LAN-MAN
Standards
        IRE Standards

IEEE Standards activities
BT: IEEE activities
RT: IEEE Standards

IEEE Standards Association
BT: Standards organizations

IEEE Standards awards
BT: IEEE Awards activities

IEEE standards glossaries
BT: IEEE standards
publications

IEEE standards publications
BT: IEEE publications
NT: IEEE standards glossaries

IEEE Student activities
BT: IEEE activities

RT: IEEE Student Members

IEEE Student awards
BT: IEEE Awards activities
RT: IEEE Student Members

IEEE Student Members
BT: IEEE members
RT: IEEE Student activities
IEEE Student awards

IEEE Technical activities
BT: IEEE activities
RT: IEEE Awards activities
IEEE Professional activities
IEEE Volunteer activities

IEEE Technical Field awards
BT: IEEE Corporate awards

IEEE transactions
BT: IEEE publications

IEEE United States activities
UF: US activities
BT: IEEE activities
RT: IEEE Awards activities
IEEE Professional activities

IEEE Volunteer activities
BT: IEEE activities
RT: IEEE Technical activities
IEEE members

IEEE Xplore
BT: IEEE products
RT: Information services
NT: IEL

IEEE/IEE Electronic Library
USE: IEL

IEL
UF: IEEE/IEE Electronic Library
BT: IEEE Xplore

Ignition
BT: Chemical reactors
Internal combustion engines
Nuclear physics
Plasma materials processing

II-VI semiconductor materials

BT: Semiconductor materials

III-V semiconductor materials
BT: Semiconductor materials
RT: Aluminum gallium nitride

IIOT
USE: Industrial Internet of Things

IIR filters
UF: Infinite impulse response filters
BT: Filters

Illumination
USE: Lighting

Illumination control
USE: Lighting control

Illumination gas
USE: Coal gas

IM
USE: Instant messaging

Image analysis
UF: Scene analysis
Scene classification
BT: Image processing
RT: Image recognition
Machine vision
NT: Image classification
Image motion analysis
Image quality
Image sequence analysis
Image texture analysis
Object detection
Subtraction techniques

Image annotation
UF: Image tagging
Linguistic indexing
Video annotation
BT: Image processing
RT: Feature extraction
Image classification
Image retrieval
Learning (artificial intelligence)
Metadata
Video signal processing

Image capture
BT: Image processing

RT: Cameras
Computer vision
Image sensors
Photography

Image classification
BT: Image analysis
RT: Image annotation

Image coding
UF: Image compression
BT: Image processing
RT: Image communication
Image databases
Image storage
MPEG standards
Rate distortion theory
Transcoding
Vector quantization
Video codecs
Video coding

Image color analysis
UF: Image colour analysis
BT: Image processing
RT: Image filtering

Image colour analysis
USE: Image color analysis

Image communication
UF: Image transmission
BT: Communications technology
RT: B-ISDN
Cable TV
ISDN
Image coding
Motion compensation
TV
Teleconferencing
Videophone systems
Visual communication
NT: Facsimile
Picture archiving and communication systems

Image compression
USE: Image coding

Image converters
BT: Imaging
RT: Frequency conversion
Image sensors
NT: Image intensifiers

Image databases
BT: Database systems
Databases
RT: Geographic information systems
Image coding
Image storage
Video sequences
NT: Image retrieval

Image de-noising
USE: Image denoising

Image deblurring
USE: Image restoration

Image decomposition
BT: Image processing

Image denoising
UF: Image de-noising
BT: Image processing
RT: Diffusion processes
Gaussian noise
Image enhancement
Image filtering
Image reconstruction
Image resolution
Image restoration

Image edge analysis
USE: Image edge detection

Image edge detection
UF: Edge detection
Image edge analysis
BT: Image recognition
RT: Corner detection
Feature extraction
Image segmentation
Thresholding (Imaging)

Image enhancement
BT: Image processing
RT: Image denoising
Image intensifiers
Image restoration

Image filtering
BT: Filtering theory
Image processing
RT: Image color analysis
Image denoising
Image segmentation

Image forensics
- UF: Forensic photography
- BT: Forensics
  - Photography
- RT: Image processing
  - Law enforcement
  - Visualization

Image fusion
- BT: Image processing

Image generation
- USE: Image synthesis

Image intensifiers
- BT: Image converters
- RT: Frequency conversion
  - Image enhancement
  - Image sensors

Image matching
- UF: Appearance matching
  - Fingerprint images
- BT: Pattern matching
- RT: Fingerprint recognition
  - Image recognition
  - Object detection
  - Object recognition
  - Stereo vision

Image motion analysis
- BT: Image analysis
- RT: Fall detection
  - Motion detection
  - Object tracking
  - Robotics and automation
- NT: Video tracking

Image object detection
- USE: Object detection

Image object recognition
- USE: Object recognition

Image pattern recognition
- USE: Pattern recognition

Image processing
- UF: Picture processing
- BT: Computers and information processing
- RT: Authentication
  - Diffusion processes
  - Gabor filters

Image forensics
Multidimensional signal processing
Optical projectors
Reconstruction algorithms
Time-frequency analysis
Video sequences
Vision sensors
- NT: Active shape model
  - Blob detection
  - Corner detection
  - Feature detection
  - Feature extraction
  - Fiducial markers
  - Geophysical image processing
  - Gray-scale
  - Image analysis
  - Image annotation
  - Image capture
  - Image coding
  - Image color analysis
  - Image decomposition
  - Image denoising
  - Image enhancement
  - Image filtering
  - Image fusion
  - Image recognition
  - Image reconstruction
  - Image registration
  - Image representation
  - Image resolution
  - Image restoration
  - Image sampling
  - Image segmentation
  - Image segmentaton
  - Image sequences
  - Image stitching
  - Image synthesis
  - Image texture
  - Machine vision
  - Morphological operations
  - Optical feedback
  - Pansharpening
  - Saliency detection
  - Smart pixels
  - Spatial coherence
  - Structure from motion
  - Table lookup

Image quality
- BT: Image analysis
- RT: Pansharpening
  - Spatial resolution

Image recognition
- BT: Image processing
- RT: Emotion recognition
  - Face recognition
  - Fall detection
  - Feature extraction
  - Image analysis
  - Image matching
  - Machine vision
  - Object recognition
  - Video signal processing
- NT: Image edge detection

Image reconstruction
- BT: Image processing
- RT: Holography
  - Image denoising
  - Inverse problems
  - Magnetic resonance imaging
  - Pattern clustering
  - Tomography

Image registration
- BT: Image processing

Image representation
- BT: Image processing
- NT: Digital representation

Image resolution
- BT: Image processing
- RT: Image denoising
  - Visual communication
- NT: High-resolution imaging
  - Spatial resolution
  - Superresolution

Image restoration
- UF: Image deblurring
- BT: Image processing
- RT: Distortion
  - Image denoising
  - Image enhancement

Image retrieval
- BT: Image databases
- RT: Image annotation

Image sampling
- BT: Image processing

Image segmentation
- BT: Image processing
- RT: Image edge detection

Image filtering
Mixture models
Object tracking

Image segmentaton
- BT: Image processing
- NT: Thresholding (Imaging)

Image sensors
- UF: Sensors (image)
- BT: Imaging
- RT: Cameras
  - Endoscopes
  - Image capture
  - Image converters
  - Image intensifiers
  - Motion detection
  - Night vision
  - Optical sensors
  - Photodetectors
  - Robot vision systems
- NT: Active pixel sensors
  - CCD image sensors
  - CMOS image sensors
  - Charge-coupled image sensors
  - Infrared image sensors

Image sequence analysis
- BT: Image analysis

Image sequences
- BT: Image processing

Image sharing Web sites
- USE: Multimedia Web sites

Image stitching
- BT: Image processing

Image storage
- BT: Imaging
- RT: Image coding
  - Image databases
  - Photography
  - Video recording

Image synthesis
- UF: Image generation
- BT: Image processing
- RT: Rendering (computer graphics)
- NT: Human image synthesis

Image tagging

USE: Image annotation

Image texture
BT: Image processing

Image texture analysis
BT: Image analysis

Image transmission
USE: Image communication

Image watermarking
USE: Watermarking

Imagimarkers
USE: Fiducial markers

Imaging
RT: Color
Motion pictures
Radiometry
Remote sensing
Robot vision systems
NT: Biomedical imaging
Cameras
Focusing
Ground penetrating radar
Holography
Image converters
Image sensors
Image storage
Infrared imaging
Magnetic resonance imaging
Magneto electrical resistivity imaging technique
Microscopy
Microwave imaging
Multispectral imaging
Nuclear imaging
Optical imaging
Photography
Radiation imaging
Radiography
Stereo vision
Terahertz wave imaging
Tomography

Imaging phantoms
BT: Biomedical image processing

Immersion cooling
BT: Cooling

Immersive audio
BT: Audio systems
Augmented reality
RT: Human computer interaction
Virtual reality

Immersive experience
BT: Augmented reality
Human computer interaction
Virtual reality

Immune system
UF: Immune systems
BT: Anatomy
RT: Biological control systems
Biology
Microorganisms
NT: Artificial immune systems

Immune systems
USE: Immune system

Immunity testing
BT: Electromagnetic compatibility
Electronic equipment testing
Electrostatic interference
RT: Anechoic chambers
Electromagnetic interference
Open area test sites

Impact ionisation
USE: Impact ionization

Impact ionization
UF: Impact ionisation
BT: Ionization
RT: Charge carriers
Conductivity
Electrons
Insulators

Impedance
UF: Electric impedance
BT: Electric variables
RT: Admittance
Damping
Impedance matching
Impedance measurement

Impedance matching

BT: Electric variables
RT: Circuits
Equalizers
Impedance
NT: Baluns

Impedance measurement
UF: Impedance methods
Impedance performance
BT: Electric variables measurement
RT: Admittance measurement
Impedance
Transmission line measurements

Impedance methods
USE: Impedance measurement

Impedance performance
USE: Impedance measurement

Impellers
BT: Machine components
RT: Blades
Propellers
Pumps

Impersonation attacks
BT: Communication system security

Implantable biomedical devices
USE: Implants

Implantable devices
USE: Implants

Implantable electronics
USE: Implants

Implants
UF: Implantable biomedical devices
Implantable devices
Implantable electronics
BT: Biomedical equipment
NT: Auditory implants
Brainstem implants
Cochlear implants
Microelectronic implants
Neural implants

Importance sampling
USE: Monte Carlo methods

Imposter signature generation
USE: Forgery

Improved definition TV
USE: HDTV

Impulse generation
USE: Pulse generation

Impulse measurements
USE: Pulse measurements

Impulse testing
BT: Testing
RT: Frequency response
Insulation testing

Impurities
BT: Materials science and technology
RT: Contamination
NT: Semiconductor impurities

IMT-2000
USE: 3G mobile communication

In vitro
BT: Medical services
NT: In vitro fertilization

In vitro fertilization
BT: In vitro

In vivo
BT: Medical services

Incentive schemes
UF: Bonuses
Merit pay
Performance related pay
Profit sharing schemes
BT: Human resource management
Remuneration
RT: Appraisal
Employee welfare
Productivity

Incineration
UF: Afterburners
Incinerators
Refuse incineration
Waste incineration
BT: Waste disposal

RT: Air pollution
Ash
Radioactive pollution
Radioactive waste
Radioactive waste disposal

Incinerators
USE: Incineration

Independent component analysis
BT: Numerical analysis
RT: Artificial intelligence
Blind source separation
Computer aided analysis
Feature extraction
Principal component analysis
Signal processing

Index of production
USE: Economic indicators

Indexes
BT: Database systems
RT: Information retrieval
Information systems
NT: Indexing
Machine assisted indexing
Spatial indexes

Indexing
UF: Online indexing
BT: Indexes
Information analysis
RT: Keyword search
Machine assisted indexing
Tagging

Indirect liquid cooling
BT: Liquid cooling

Indium
BT: Metals
RT: Indium compounds

Indium compounds
BT: Compounds
RT: Alloying
Indium
NT: Indium gallium arsenide
Indium tin oxide

Indium gallium arsenide
UF: InGaAs
BT: Gallium compounds

Indium compounds
Semiconductor materials

Indium gallium nitride
BT: Gallium compounds

Indium gallium zinc oxide
BT: Zinc oxide

Indium phosphide
UF: InP
BT: Semiconductor materials
RT: Phonons

Indium tin oxide
BT: Indium compounds
RT: Optical materials

Indoor air quality
BT: Air quality

Indoor communication
BT: Communication systems
RT: Mobile communication
Optical fiber communication
Optical modulation
NT: Indoor environment

Indoor environment
BT: Indoor communication

Indoor navigation
BT: Navigation
RT: Computer vision
Global Positioning System
Land mobile radio
Path planning
Radio navigation

Indoor radio
USE: Indoor radio communication

Indoor radio communication
UF: Indoor radio
Indoor radio communications
BT: Radio communication

Indoor radio communications
USE: Indoor radio communication

Inductance
BT: Electric variables
RT: Coils
Inductance measurement

Inductors
Transmission line theory

Inductance measurement
    BT: Electric variables measurement
    RT: Inductance

Induction (electromagnetic)
    USE: Electromagnetic induction

Induction (electrostatic)
    USE: Electrostatic induction

Induction generators
    BT: AC generators
            Induction machines
    NT: Doubly fed induction generators

Induction heating
    BT: Heating systems
    RT: Electromagnetic heating

Induction machines
    BT: AC machines
            Rotating machines
    NT: Induction generators
            Induction motors

Induction motor drives
    BT: Induction motors

Induction motors
    BT: AC motors
            Induction machines
            Motors
            Rotating machines
    RT: Sensorless control
    NT: Induction motor drives

Inductive charging
    UF: Wireless charging
    BT: Energy exchange
            Power supplies
    RT: Wireless communication

Inductive energy transfer
    USE: Inductive power transmission

Inductive power transmission
    UF: Inductive energy transfer
    BT: Electromagnetic induction
            Power transmission

    RT: Inductors
            Sensorless control
            Transformers

Inductive transducers
    BT: Transducers

Inductors
    UF: Chokes
            Reactors
    BT: Electronic components
    RT: Coils
            Electrical ballasts
            Inductance
            Inductive power transmission
            Magnetic cores
            Tunable circuits and devices
    NT: Active inductors
            Thick film inductors
            Thin film inductors

Industrial accidents
    BT: Accidents
    RT: Hazardous areas
            Occupational safety

Industrial communication
    UF: Organizational communication
    BT: Communication networks
            Industrial engineering
    RT: Business
            Organizational aspects

Industrial control
    BT: Industrial electronics
    RT: Assembly systems
            Computer numerical control
            Control system security
            Field buses
            Industrial engineering
            Industrial plants
            Manipulators
            Manufacturing automation
            Mobile robots
            Motor drives
            Programmable control
            Robots
    NT: Process control
            Production control

Industrial democracy
    USE: Industrial relations

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Industrial economics
UF:	Manufacturing economics
	Production economics
BT:	Microeconomics
RT:	Economies of scale
	Privatization

Industrial electronics
NT:	Assembly systems
	Computer aided manufacturing
	Cryogenic electronics
	Industrial control
	Integrated manufacturing systems
	Machine control
	Manufacturing automation
	Testing

Industrial engineering
BT:	Industry applications
RT:	Design methodology
	Industrial control
	Industrial plants
	Industrial training
	Precision engineering
	Production engineering
	Production management
	Research and development
NT:	Industrial communication

Industrial facilities
BT:	Production facilities
RT:	Industrial plants
	Manufacturing systems
NT:	Seaports

Industrial heat recovery
USE:	Heat recovery

Industrial Internet of Things
UF:	IIOT
	Industrial IoT
BT:	Internet of Things
RT:	Machine-to-machine communications
	Robotics and automation

Industrial IoT
USE:	Industrial Internet of Things

Industrial plants
UF:	Plants (industrial)
BT:	Production facilities

RT:	Industrial control
	Industrial engineering
	Industrial facilities
	Industrial power systems
	Industries
	Manufacturing
	Paper mills
	Production systems

Industrial pollution
BT:	Pollution
RT:	Air pollution
	Industrial waste
	Land pollution
	Radioactive pollution
	Thermal pollution
	Water pollution

Industrial power systems
UF:	Commercial power systems
BT:	Power systems
RT:	Buildings
	Cogeneration
	Industrial plants
	Power distribution

Industrial psychology
BT:	Psychology
RT:	Employee welfare
	Human resource management
	Productivity
	Psychometric testing

Industrial relations
UF:	Collective bargaining
	Industrial democracy
	Trade unions
BT:	Business
RT:	Equal opportunities

Industrial training
BT:	Training
RT:	Industrial engineering
	Multiskilling
	On the job training
	Vocational training

Industrial waste
BT:	Waste materials
RT:	Effluents
	Industrial pollution
	Slurries
	Waste heat
	Wastewater

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NT:	Ash	
	Slag	

Industries
BT: Industry applications
RT: Business
Industrial plants
NT: Agriculture
Architecture
Beverage industry
Chemical industry
Coal industry
Communication industry
Computer industry
Construction
Construction industry
Defense industry
Electrical engineering industry
Entertainment industry
Financial industry
Gas industry
Information industry
Manufacturing industries
Metals industry
Mining industry
Natural gas industry
Petroleum industry
Power industry
Steel industry
Sugar industry
Textile technology
Tourism industry
Toy industry
Transportation industry
Wood industry

Industry applications
NT: Accident prevention
Chemical technology
Cryogenics
Electrochemical devices
Electrochemical processes
Electromechanical systems
Electrostatic devices
Electrostatic precipitators
Electrostatic processes
Engines
Environmental management
Food technology
High-temperature techniques
Industrial engineering
Industries

Inspection
Machinery
Manufacturing
Packaging
Paper technology
Production
Safety
Security
Wine industry

Inertial confinement
BT: Plasma confinement

Inertial navigation
BT: Navigation

Inertial sensors
BT: Sensors

Infant
USE: Pediatrics

Infants
USE: Pediatrics

Infectious diseases
UF: Communicable disease
Transmissible disease
BT: Diseases

Inference algorithms
BT: Algorithms

Inference mechanisms
UF: Model-based reasoning
BT: Knowledge engineering
RT: Cognitive science
Fuzzy cognitive maps
Gaussian processes
Learning systems
NT: Belief propagation
Fuzzy reasoning

Infinite horizon
BT: Optimal control
RT: Markov processes
Optimization methods

Infinite impulse response filters
USE: IIR filters

Inflammability
USE: Flammability

Influenza

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BT: Diseases
Viruses (medical)
RT: Epidemics
Pandemics

Informatics
BT: Information processing
Information systems
NT: Bioinformatics
Cognitive informatics
Energy informatics
Neuroinformatics

Information age
UF: AOI
Age of information
Digital age
New media age
BT: Information technology

Information analysis
BT: Professional communication
RT: Big Data applications
Sentiment analysis
NT: Decision analysis
Indexing

Information and communication technology
UF: ICT
BT: Communications technology
Information technology
RT: Energy informatics
NT: Ambient assisted living

Information architecture
BT: Information systems
RT: Database systems
NT: Enterprise architecture management

Information centric networking
USE: Information-centric networking

Information centric networks
USE: Information-centric networking

Information entropy
BT: Information theory

Information exchange
BT: Data processing

Information processing
RT: Common Information Model (computing)

Common Information Model (electricity)

Computer ports
Information management
Information sharing
Tactile Internet

Information extraction
USE: Information retrieval

Information filtering
BT: Filtering
Information retrieval
NT: Information filters
Recommender systems

Information filters
UF: Web filters
BT: Information filtering
RT: Information retrieval
NT: Whitelists

Information geometry
BT: Geometry
RT: Probability

Information industry
BT: Industries

Information inequality
USE: Cramer-Rao bounds

Information integrity
BT: Professional communication

Information management
BT: Information systems
Management
RT: Big Data
Data aggregation
Information exchange
Information services
Knowledge management
NT: Common Information Model (computing)

Common Information Model (electricity)

Competitive intelligence
Digital preservation
Document handling

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Enterprise architecture management

Information security
Information sharing
Knowledge transfer

Information processing
BT: Information systems
RT: Big Data
Business data processing
Data collection
Granular computing
Information sharing
Software as a service
Spectral efficiency
WS-BPEL
NT: Digital agriculture
Electronic healthcare
Informatics
Information exchange
Sonification

Information rates
UF: Throughput (communication systems)
BT: Information retrieval

Information representation
BT: Information technology
RT: Visual analytics
NT: Digital representation

Information resources
BT: Professional communication
RT: Information retrieval
Information systems

Information retrieval
UF: Information extraction
BT: Professional communication
RT: Abstracts
Big Data
Document handling
Indexes
Information filters
Information resources
Knowledge discovery
Persistent identifiers
Portals
Ranking (statistics)
Symbols
Triples (Data structure)
NT: Blogs

Content-based retrieval
Dimensionality reduction
Hypertext systems
Information filtering
Information rates
Music information retrieval
Online services
Search engines
Search methods
Social networking (online)
Tagging
Taxonomy
Terminology
Video sharing
Vocabulary
Web sites

Information science
BT: Professional communication
NT: Quantum information science

Information security
BT: Information management
Security
RT: Data protection
Differential privacy
Internet security
NT: Cyber espionage
Data breach
Intrusion detection
Phishing
Privacy breach
SQL injection
Social engineering (security)
Trust management

Information services
BT: Professional communication
RT: Abstracts
IEEE Xplore
Information management
Journalism
NT: Ask IEEE
Dictionaries
Document delivery
Encyclopedias
Libraries
Teletext
Videotex
Wikipedia

Information sharing
- BT: Information management
- RT: Collaboration
- Information exchange
- Information processing
- NT: Data dissemination

Information systems
- BT: Professional communication
- RT: Big Data applications
- CD-ROMs
- Computers and information processing
- Database machines
- Extranets
- File systems
- Indexes
- Information resources
- Information technology
- Management information base
- Multimedia computing
- Office automation
- Strategic planning
- Technology acceptance model
- NT: Data systems
- Database systems
- Distributed information systems
- Identity management systems
- Informatics
- Information architecture
- Information management
- Information processing
- Management information systems
- Medical information systems

Information technology
- BT: Professional communication
- RT: Automation
- Biometrics (access control)
- Computer applications
- Information systems
- NT: Bring your own device
- Information age
- Information and communication technology
- Information representation
- Printing

Semantic technology
Service computing
Telematics
Universal Serial Bus

Information theory
- UF: Coding theory
- Informationtheoretic
- RT: Bandwidth
- Code refractoring
- Communication systems
- Cybernetics
- Cyclic redundancy check
- Econophysics
- Modulation coding
- Quantum communication
- Statistics
- Teleportation
- Viterbi algorithm
- NT: Audio coding
- Biological information theory
- Channel coding
- Codes
- Communication channels
- Decoding
- Encoding
- Error compensation
- Genetic communication
- Hamming distance
- Hamming weight
- Information entropy
- Mutual information
- Network coding
- Rate distortion theory
- Rate-distortion
- Source coding
- Speech coding
- Technology acceptance model

Information-centric networking
- UF: Content-centric networking
- Information centric networking
- Information centric networks
- Information-centric networks
- BT: Network architecture
- RT: Telecommunication computing

Information-centric networks

        USE: Information-centric
networking

Informationtheoretic
        USE: Information theory

Infrared communication
        USE: Optical fiber communication

Infrared detectors
        BT: Radiation detectors
        RT: Bolometers
                Infrared surveillance
                Motion detection
                Photodetectors
                Superconducting
photodetectors

Infrared heating
        BT: Heating systems
        NT: Greenhouse effect

Infrared image sensors
        BT: Image sensors

Infrared imaging
        BT: Imaging
        RT: Biomedical optical imaging
                Infrared surveillance
                Optical imaging
                Remote sensing
        NT: Night vision

Infrared lasers
        USE: Lasers

Infrared propagation
        USE: Optical propagation

Infrared sensors
        BT: Sensors

Infrared spectra
        UF: IR Spectra
        BT: Spectral analysis
        RT: Spectroscopy

Infrared surveillance
        BT: Surveillance
        RT: Infrared detectors
                Infrared imaging

InGaAs
        USE: Indium gallium arsenide

Inhibitors
        BT: Chemical products
                Production materials
        RT: Retardants
        NT: Corrosion inhibitors

Inhomogeneous media
        USE: Nonhomogeneous media

Injected beams
        USE: Particle beam injection

Injection lasers
        USE: Semiconductor lasers

Injection locked oscillators
        USE: Injection-locked oscillators

Injection locking
        USE: Injection-locked oscillators

Injection molding
        UF: Injection moulding
                Power injection molding
                Power injection moulding
        BT: Production
        RT: Compression molding
                Embossing

Injection moulding
        USE: Injection molding

Injection-locked oscillators
        UF: Injection locked oscillators
                Injection locking
        BT: Oscillators

Injuries
        UF: Injury
        BT: Medical conditions
        RT: Fall detection
        NT: Brain injuries
                Pain
                Wounds

Injury
        USE: Injuries

Ink
        BT: Production materials
        RT: Paints
                Printing
        NT: Ink jet printing

Ink jet printing

UF: Ink-jet printers
Ink-jet printing
Inkjet printing
BT: Ink
Printing
RT: Three-dimensional printing

Ink-jet printers
USE: Ink jet printing

Ink-jet printing
USE: Ink jet printing

Inkjet printing
USE: Ink jet printing

Innovation
USE: Technological innovation

Innovation management
BT: Engineering management
Research and development management
RT: Entrepreneurship
Technology management
NT: Creativity

Inorganic chemicals
BT: Chemistry

Inorganic compounds
BT: Compounds
RT: Metals
Organic inorganic hybrid materials

Inorganic LEDs
USE: Inorganic light emitting diodes

Inorganic light emitting diodes
UF: Inorganic LEDs
BT: Light emitting diodes

Inorganic materials
BT: Materials
RT: Soft electronics

Inorganic organic hybrid materials
USE: Organic inorganic hybrid materials

Inorganic-organic hybrid materials
USE: Organic inorganic hybrid materials

InP
USE: Indium phosphide

Input devices
BT: Computer interfaces
Hardware

Input variables
UF: Variable selection
BT: Modeling

Input-output programs
UF: I/O programs
BT: Operating systems
RT: Program processors
NT: Device drivers

Insect control
USE: Pest control

Insects
BT: Animals
RT: Entomology

Insertion loss
BT: Propagation
RT: Attenuation

Inspection
BT: Industry applications
RT: Coordinate measuring machines
Maintenance engineering
Testing
NT: Automatic optical inspection

Instagram
USE: Multimedia Web sites

Instant messaging
UF: IM
BT: Electronic messaging
Internet

Instanton vacuum
USE: Elementary particle vacuum

Instruction repertory
USE: Instruction sets

Instruction sets
UF: Instruction repertory
BT: Program processors
NT: Out of order

Prefetching
Reduced instruction set
computing

Instructional aids
    USE: Educational technology

Instrument transformers
    BT: Transformers
    RT: Protective relaying
    NT: Voltage transformers

Instrumentation and measurement
    NT: Computerized
instrumentation
        Electric variables
        High energy physics
instrumentation computing
        Instruments
        Measurement
        Monitoring
        Pulse oximetry
        Testing

Instrumentation buses
    USE: Field buses

Instruments
    BT: Instrumentation and
measurement
    RT: Design tools
        Measurement
    NT: Compass
        Medical instruments
        Meters
        Microscopy
        Network analyzers
        Oscilloscopes
        Pressure gauges
        Probes
        Telescopes
        Theodolites
        Tuners

Insulated gate bipolar transistors
    BT: Bipolar transistors

Insulation
    BT: Dielectrics and electrical
insulation
    RT: Dielectric breakdown
        Dielectric losses
        Dielectric materials
        Glass
        Insulation life

        Insulation testing
        Oils
        Polymer foams
        Power transformer
insulation
        Spark gaps
    NT: Cable insulation
        Ceramics
        Gas insulation
        Insulators
        Isolation technology
        Oil insulation
        Plastic insulation

Insulation life
    BT: Insulation testing
    RT: Aging
        Insulation
        Life estimation
        Partial discharge
measurement
        Trees - insulation

Insulation testing
    BT: Insulator testing
    RT: Fault location
        Impulse testing
        Insulation
        Partial discharge
measurement
        Pulsed electroacoustic
methods
    NT: Insulation life

Insulator testing
    BT: Testing
    RT: Insulators
        Surface discharges
    NT: Insulation testing

Insulators
    UF: Bushings
    BT: Insulation
    RT: Breakdown voltage
        Ceramic products
        Impact ionization
        Insulator testing
        Polymer foams
        Temperature distribution
    NT: Metal-insulator structures
        Plastic insulators
        Rubber
        Topological insulators
        Trees - insulation

Insulin
    BT: Drugs

Insulin pumps
    BT: Pumps
    RT: Biomedical equipment
           Diabetes

Insurance
    BT: Financial management

Intake systems
    BT: Machine components

Integer linear programming
    BT: Programming
    NT: Constraint theory
           Mixed integer linear programming

Integer programming
    BT: Linear programming

Integral equations
    UF: Antiderivatives
    BT: Calculus
    RT: Boundary-element methods
           Deconvolution
           Integrodifferential equations
           Inverse problems
           Method of moments
           Numerical analysis
    NT: Probability density function

Integrated circuit design
    USE: Integrated circuit synthesis

Integrated circuit interconnections
    BT: Integrated circuits

Integrated circuit layout
    BT: Integrated circuit synthesis
    RT: Layout
           Physical design
           Printed circuits

Integrated circuit manufacture
    BT: Components, packaging, and manufacturing technology
    RT: Gettering
           Integrated circuits
           Microassembly
           Micromachining
           Silicon compiler
    NT: Surface-mount technology

Integrated circuit measurements
    BT: Circuit testing
    RT: Electric variables measurement

Integrated circuit metallisation
    USE: Integrated circuit metallization

Integrated circuit metallization
    UF: Integrated circuit metallisation
    BT: Metallization

Integrated circuit modeling
    UF: Integrated circuit modelling
    BT: Integrated circuits
           Modeling
    NT: Cutoff frequency

Integrated circuit modelling
    USE: Integrated circuit modeling

Integrated circuit noise
    BT: Integrated circuits
    RT: Semiconductor device noise
           Threshold voltage
    NT: Optical noise

Integrated circuit packaging
    UF: IC packaging
    BT: Components, packaging, and manufacturing technology
    RT: Chip scale packaging
           Encapsulation
           Integrated circuits
           Plastic packaging
           Semiconductor device packaging
    NT: Multichip modules
           Plastic integrated circuit packaging

Integrated circuit reliability
    BT: Reliability
    RT: Integrated circuit testing
           Thermal stability

Integrated circuit synthesis
    UF: Integrated circuit design
    BT: Circuit synthesis
           Integrated circuits
    NT: Integrated circuit layout

Integrated circuit technology
- BT: Circuits and systems
- RT: High-speed integrated circuits
- NT: Beyond CMOS
  CMOS technology
  Moore's Law

Integrated circuit testing
- BT: Testing
- RT: Integrated circuit reliability
- NT: Integrated circuit yield
  Logic testing

Integrated circuit yield
- BT: Integrated circuit testing

Integrated circuits
- UF: IC
  ICs
  Microchips
- BT: Circuits
- RT: Active inductors
  Integrated circuit manufacture
  Integrated circuit packaging
  Integrated optoelectronics
  Memory modules
  Microelectronics
  Neural network hardware
  Planarization
  SPICE
  Semiconductor devices
  Semiconductor memory
  Silicon-on-insulator
  VHDL
- NT: Analog integrated circuits
  Analog-digital integrated circuits
  Application specific integrated circuits
  CMOS integrated circuits
  Coprocessors
  Current-mode circuits
  Digital integrated circuits
  FET integrated circuits
  Field programmable gate arrays
  Hybrid integrated circuits
  Integrated circuit interconnections
  Integrated circuit modeling
  Integrated circuit noise
  Integrated circuit synthesis
  Large scale integration
  MESFET integrated circuits
  Microprocessors
  Microwave integrated circuits
  Millimeter wave integrated circuits
  Monolithic integrated circuits
  Photonic integrated circuits
  Power integrated circuits
  Radiofrequency integrated circuits
  Submillimeter wave integrated circuits
  Superconducting integrated circuits
  Thick film circuits
  Thin film circuits
  Three-dimensional integrated circuits
  Through-silicon vias
  UHF integrated circuits
  Ultra large scale integration
  Very high speed integrated circuits
  Very large scale integration
  Wafer scale integration

Integrated circuits industry
- USE: Electronics industry

Integrated control
- USE: Centralized control

Integrated design
- BT: Design methodology
  Systems engineering and theory

Integrated manufacturing systems
- BT: Industrial electronics
  Manufacturing systems
- RT: CADCAM
  Computer aided manufacturing
  System integration

Integrated memory circuits
- BT: Digital integrated circuits
  Semiconductor memory
- RT: Solid state drives

Integrated optics
- BT: Optics

RT: Arrayed waveguide gratings
Distributed Bragg reflectors
Electrooptic modulators
Integrated optoelectronics
Microoptics
Optical films
Optical waveguides
Synapses
Thermooptical devices

Integrated optoelectronics
BT: Optoelectronic devices
RT: Heterojunction bipolar transistors
Integrated circuits
Integrated optics
Liquid crystal on silicon
Microoptics
Microwave photonics
Smart pixels

Integrated services digital networks
USE: ISDN

Integrated services networks
USE: Intserv networks

Integrodifferential equations
BT: Equations
RT: Differential equations
Integral equations

Integumentary system
BT: Anatomy
NT: Hair
Nails
Skin

Intellectual capital
USE: Knowledge management

Intellectual property
UF: IP rights
IPR
BT: Copyright protection
RT: Cyberethics
Notice of Violation
Patents
Software protection
NT: Digital rights management

Intelligent actuators
UF: Smart actuators
BT: Actuators

Intelligent agents
BT: Software agents

Intelligent control
BT: Cybernetics
RT: Context awareness
H infinity control
Mechatronics
NT: Feedforward systems
Neurocontrollers

Intelligent databases
USE: Deductive databases

Intelligent manufacturing systems
BT: Manufacturing systems
Production systems
RT: Smart manufacturing

Intelligent networks
BT: Telecommunication network topology
RT: Software defined networking

Intelligent robots
BT: Intelligent systems
Robots
RT: Autonomous robots
Robot vision systems

Intelligent sensors
UF: Smart sensors
BT: Sensors
RT: Electronic noses
Mechatronics

Intelligent structures
UF: Smart structures
BT: Buildings
RT: Intelligent systems
Structural engineering
NT: Smart cities

Intelligent systems
BT: Artificial intelligence
RT: Ambient intelligence
Automata
Collaborative intelligence
Context awareness
Expert systems
Hybrid intelligent systems
Intelligent structures
Knowledge based systems

2021 IEEE Thesaurus

Massive machine type communications

Mobile agents
Software agents
NT: Autonomous systems
Collective intelligence
Intelligent robots

Intelligent transportation systems
RT: Smart transportation
NT: Automated highways
Autonomous automobiles
Geographic information systems
Intelligent vehicles
Navigation
Transportation

Intelligent vehicles
BT: Intelligent transportation systems
Vehicles
RT: Advanced driver assistance systems
Connected vehicles
Dedicated short range communication
IEEE 802.11p Standard
Smart transportation
Vehicle routing
Vehicular automation
Wireless Access in Vehicular Environments
NT: Autonomous vehicles
Unmanned vehicles
Vehicle-to-everything

Intensity modulation
BT: Optical modulation
RT: Amplitude modulation
Electrooptic modulators

Inter-cell interference
USE: Intercell interference

Inter-cell interference coordination
USE: Intercell interference

Interactive systems
BT: Man-machine systems
RT: Affordances
Authentication
NT: External stimuli

Intercalibration

USE: Calibration

Intercell interference
UF: ICIC
Inter-cell interference
Inter-cell interference coordination
BT: Network resource management
Radiofrequency interference
RT: Cellular radio
Fading channels
Location awareness
Radio communication

Interchannel interference
UF: Adjacent channel interference
Co-channel interference
Cochannel interference
Intersystem interference
BT: Interference
RT: Crosstalk

Interconnected systems
UF: Composite systems
BT: System analysis and design
RT: Control systems
NT: Botnet

Interconnection networks
USE: Multiprocessor interconnection

Interest point detection
BT: Computer vision

Interest rates
USE: Economic indicators

Interface management
BT: Management
Systems engineering and theory
RT: Computer interfaces
Network interfaces

Interface phenomena
BT: Computer interfaces
RT: Adsorption
NT: Network interfaces

Interface states
BT: Computer interfaces

MOSFET
RT: Silicon-on-insulator

Interference
UF: Interference (signal)
BT: Electromagnetic
compatibility and interference
RT: Coherence
Distortion
Diversity schemes
Noise
NT: Clutter
Crosstalk
Diffraction
Echo interference
Electromagnetic
interference
Electromagnetic radiative
interference
Electrostatic interference
Interchannel interference
Interference cancellation
Interference channels
Interference constraints
Interference elimination
Interference suppression
Intersymbol interference
Rain fading
TV interference
Terrain factors

Interference (signal)
USE: Interference

Interference cancellation
BT: Interference

Interference channels
BT: Interference

Interference constraints
BT: Interference

Interference elimination
BT: Interference

Interference suppression
BT: Interference

Interferometers
UF: Etalons
BT: Interferometry
NT: Mach-Zehnder
interferometers

Interferometric lithography
BT: Lithography

Interferometry
BT: Measurement
RT: Micrometers
Talbot effect
NT: Fabry-Perot
Interferometers
Optical interferometry
Phase shifting
interferometry
Radar interferometry
Radio interferometry
Sagnac interferometers

Interleaved codes
UF: Bit interleaved coded
Bit-interleaved coded
BT: Modulation coding

Intermetallic
BT: Alloying

Intermodulation distortion
BT: Nonlinear distortion

Internal combustion engines
UF: HCCI engines
BT: Engines
RT: Automotive components
Exhaust gases
Hybrid electric vehicles
NT: Diesel engines
Ignition

Internal stresses
BT: Stress
RT: Surface stress

International Atomic Time
UF: TAI
BT: Standards categories
RT: Atomic clocks

International collaboration
UF: Joint ventures
BT: Management
RT: Environmental factors
Environmental
management
Globalization
International relations
International trade
Research and development

Social factors
Standards
Trade agreements

International electrotechnical commission
    USE: IEC

International organization for standardization
    USE: ISO

International relations
    BT: Social implications of
technology
    RT: Globalization
        International collaboration
        Social factors

International Space Station
    BT: Space stations

International standards organization
    USE: ISO

International System of Units
    BT: Measurement units

International Telecommunications Union
    USE: ITU

International trade
    UF: Trade (international)
    BT: Economics
    RT: Business
        Developing countries
        Exchange rates
        Globalization
        International collaboration
        Macroeconomics
        Trade agreements

Internet
    UF: Google
    BT: Communication systems
        Computer networks
        Digital systems
        Distributed computing
    RT: ARPANET
        Blogs
        Cyberspace
        Diffserv networks
        Electronic commerce
        Electronic learning
        Extranets
        IEEE 802.16 Standard
        IP networks

IPTV
Internetworking
Intserv networks
Multicast protocols
Multiprotocol label
switching
Next generation networking
Online services
Open data
Point-to-multipoint
communications
Routing protocols
Service level agreements
Smart TV
Social networking (online)
Streaming media
TCPIP
Video sharing
Virtual enterprises
Virtual private networks
Web sites
Wikipedia
World Wide Web
    NT: Bot (Internet)
        Botnet
        Cloud computing
        Crowdsourcing
        Instant messaging
        Internet of Things
        Internet security
        Internet telephony
        Internet topology
        Linked data
        Middleboxes
        Semantic Web
        Social computing
        Web 2.0
        Web services

Internet banking
    USE: Online banking

Internet neutrality
    USE: Network neutrality

Internet of Everything
    USE: Internet of Things

Internet of Things
    UF: IOT
        Internet of Everything
    BT: Internet
    RT: Ambient intelligence
        Bar codes
        Cloud computing

Cyber-physical systems
Digital transformation
Digital twin
Machine-to-machine
communications
Middleware
Object detection
Protocols
Radiofrequency
identification
Tagging
Virtual environments
Watermarking
Wireless sensor networks
    NT: Industrial Internet of Things
Tactile Internet

Internet Protocol networks
    USE: IP networks

Internet protocol television
    USE: IPTV

Internet security
    BT: Computer security
                Internet
    RT: Information security

Internet services
    USE: Web and internet services

Internet telephony
    UF: IP telephony
                VOIP
                Voice over IP
                Voice over Internet protocol
                Voice-over-Internet protocol
                WhatsApp
    BT: Internet
    RT: Call admission control
                Point-to-multipoint
communications

Internet topology
    BT: Internet

Internetworking
    BT: Telecommunication
computing
    RT: Computer networks
                Internet
                Local area networks
                Metropolitan area networks
                Open systems
                Wide area networks

    NT: Interoperability
                LAN interconnection

Interoperability
    UF: Service composability
    BT: Internetworking
    RT: Collaboration
                Common Information Model
(electricity)
                Open systems

Interplanetary exploration
    BT: Space exploration
    RT: Space missions

Interpolating
    USE: Interpolation

Interpolation
    UF: Interpolating
    BT: Approximation methods
    RT: Curve fitting
                Digital-analog conversion
                Radial basis function
networks
                Statistics
                Surface fitting

Interpreters (program)
    USE: Program processors

Interrupters
    UF: Interruption
    BT: Switchgear
    RT: Circuit breakers
                Fuses

Interruption
    USE: Interrupters

Interstellar chemistry
    BT: Chemistry
    RT: Extraterrestrial
measurements

Intersymbol interference
    BT: Interference
    RT: AWGN channels
                Equalizers
                Gaussian channels

Intersystem interference
    USE: Interchannel interference

Interviews

BT: IEEE indexing

Intestines
 BT: Digestive system

Intracranial pressure sensors
 BT: Biomedical equipment
   Sensors
 RT: Brain
   Neural engineering

Intracranial system
 BT: Cranial pressure

Intrusion detection
 BT: Information security
 RT: Network function
virtualization
 NT: Network intrusion detection

Intserv networks
 UF: Integrated services
networks
 BT: Computer networks
 RT: Internet
   Multimedia communication

Intubation
 UF: Tracheal intubation
 BT: Medical treatment
 RT: Respiratory system
   Ventilators

Invasive software
 USE: Privacy-invasive software

Invention
 USE: Technological innovation

Inventory control
 BT: Operations research
 RT: Control systems
   Production control
   Production management

Inventory management
 BT: Production management
 RT: Bar codes
   Production engineering
 NT: Bills of materials

Inverse distortion
 USE: Predistortion

Inverse method

USE: Inverse problems

Inverse methods
 USE: Inverse problems

Inverse modeling
 USE: Inverse problems

Inverse problem
 USE: Inverse problems

Inverse problems
 UF: Inverse method
   Inverse methods
   Inverse modeling
   Inverse problem
   Inverse scattering
 BT: Modeling
 RT: Functional analysis
   Image reconstruction
   Integral equations
   Numerical analysis
   Signal reconstruction
 NT: Deconvolution

Inverse scattering
 USE: Inverse problems

Inverse synthetic aperture radar
 BT: Synthetic aperture radar

Inverse transforms
 USE: Laplace equations

Inverted classroom
 USE: Education AND
   Online services

Inverters
 BT: Power electronics
 RT: Maximum power point
trackers
   Zero current switching
   Zero voltage switching
 NT: Multilevel inverters
   Pulse inverters
   Resonant inverters
   Voltage source inverters

Investment
 BT: Financial management
 RT: Developing countries

Iodine
 BT: Chemical elements

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NT: Iodine compounds

Iodine compounds
 BT: Iodine

Ion accelerators
 BT: Particle accelerators
 RT: Ion beam effects
  Ion beams
  Ion sources
  Ions
  Proton accelerators

Ion beam applications
 BT: Nuclear and plasma sciences
 RT: Ion beams
 NT: Ion implantation

Ion beam effects
 BT: Ion beams
 RT: Aerospace safety
  Ion accelerators
  Ion emission

Ion beams
 BT: Particle beams
 RT: Electrodynamics
  Ion accelerators
  Ion beam applications
  Ion emission
  Ion sources
  Ions
 NT: Ion beam effects

Ion emission
 UF: Field ion emission
  Secondary ion emission
 BT: Nuclear imaging
 RT: Ion beam effects
  Ion beams
  Ion sources
  Ions
  Thermionic emission

Ion implantation
 BT: Ion beam applications
  Materials preparation
 RT: Plasma sources
  Semiconductor device manufacture
 NT: Plasma immersion ion implantation

Ion optics

USE: Particle beam optics

Ion radiation effects
 BT: Radiation effects
 RT: Ionizing radiation
  Proton radiation effects

Ion sources
 BT: Ions
  Nuclear physics
 RT: Ion accelerators
  Ion beams
  Ion emission
  Plasma sources

Ionisation
 USE: Ionization

Ionisation chambers
 USE: Ionization chambers

Ionising radiation
 USE: Ionizing radiation

Ionization
 UF: Ionisation
  Photoionisation
  Photoionization
 BT: Ions
 RT: Discharges (electric)
  Plasmas
  Space radiation
 NT: Impact ionization
  Ionization chambers
  Ionizing radiation
  Single event transients
  Single event upsets

Ionization chambers
 UF: Ionisation chambers
 BT: Ionization
 RT: Ionizing radiation
  Smoke detectors

Ionizing radiation
 UF: Ionising radiation
 BT: Ionization
 RT: Ion radiation effects
  Ionization chambers
  Radiation hardening (electronics)
  Silicon radiation detectors

Ionizing radiation sensors
 BT: Sensors

NT: Position sensitive particle detectors

Radiation detectors
X-ray detectors

Ionomeric polymer-metal composite actuators
USE: Actuators

Ionosphere
BT: Terrestrial atmosphere
RT: Meteorology
Plasmas

Ions
BT: Elementary particles
RT: Alpha particles
Elementary particle exchange interactions
Ion accelerators
Ion beams
Ion emission
Protons
Storage rings
NT: Ion sources
Ionization

IOT
USE: Internet of Things

IP
USE: IP networks

IP networks
UF: IP
IP-networks
Internet Protocol networks
BT: Communication systems
Computer networks
Telecommunications
RT: IPTV
Internet
Machine-to-machine communications
Next generation networking
Quality of service
Transport protocols
NT: TCPIP

IP rights
USE: Intellectual property

IP telephony
USE: Internet telephony

IP-networks

USE: IP networks

iPOD
USE: Portable media players

IPR
USE: Intellectual property

IPTV
UF: Internet protocol television
BT: Digital TV
RT: Broadband communication
Computer networks
IP networks
Internet
Local area networks
Protocols
Streaming media

IR Spectra
USE: Infrared spectra

IRE Standards
BT: IEEE Standards

Iridium
BT: Chemical elements

Iris
BT: Eyes
RT: Ophthalmology

Iris recognition
BT: Biometrics (access control)

Irises
USE: Waveguide discontinuities

Iron
UF: Fe
BT: Metals
NT: Cast iron
Iron alloys

Iron alloys
BT: Iron
RT: Alloying
Metallurgy
NT: Austenite

Irradiation
USE: Radiation effects

Irrigation
BT: Agriculture

RT: Agricultural products
Crops
Hydraulic systems
Water pumps

Irtran 5
USE: Magnesium oxide

Ischemic pain
BT: Pain

ISDN
UF: Integrated services digital networks
BT: Communication systems
Digital communication
Digital systems
RT: Asynchronous transfer mode

Data communication
Frame relay
Image communication
Multimedia communication
NT: B-ISDN

Ishikawa diagrams
USE: Cause effect analysis

Islanding
BT: Power supplies
RT: Electrical safety
Generators

ISO
UF: International organization for standardization

International standards organization
BT: Standards organizations
RT: Communication standards
Guidelines
ISO Standards
Measurement standards
Software standards
Standardization
Standards
NT: Moving Pictures Experts Group

ISO 9000
USE: Quality management

ISO Standards
BT: Standards publications
RT: ANSI Standards

Communication standards
ISO
Quality management
Software standards
Standardization
X3D
NT: MPEG standards

Isobaric
BT: Thermodynamics

Isolation technology
BT: Insulation
RT: Vibration control

Isolators
BT: Circuits

Isosurfaces
BT: Data visualization
RT: Biomedical imaging
Computational fluid dynamics

Isothermal processes
BT: Thermodynamics

Isotopes
BT: Chemical elements
Nuclear physics
RT: Radioactive materials

Itemsets
BT: Data analysis
Transaction databases

Iterative algorithms
BT: Iterative methods
NT: Iterative closest point algorithm

Sum product algorithm

Iterative closest point algorithm
UF: ICP
BT: Iterative algorithms

Iterative decoding
BT: Parity check codes

Iterative learning control
BT: Control theory
Iterative methods
RT: Adaptive control
Learning systems
Tracking

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Iterative methods
  BT: Mathematics
        Numerical analysis
  RT: Belief propagation
  NT: Expectation-maximization algorithms
        Iterative algorithms
        Iterative learning control

ITU
  UF: International Telecommunications Union
  BT: Standards organizations

ITU Standards
  BT: Standards publications
  RT: UHDTV

Jacks
  USE: Lifting equipment

Jacobian matrices
  UF: Jacobian matrix
  BT: Matrices

Jacobian matrix
  USE: Jacobian matrices

Jamming
  BT: Electronic warfare
  RT: Electronic countermeasures
        Radar clutter
        Radar countermeasures
        Radio communication countermeasures

Java
  BT: High level languages

Jet engines
  BT: Engines
  RT: Aircraft propulsion
        Exhaust gases
        Fans

JFET circuits
  BT: FET circuits
  NT: JFET integrated circuits

JFET integrated circuits
  BT: JFET circuits
  RT: JFETs

JFETs
  UF: Junction FETs
  BT: Field effect transistors
  RT: JFET integrated circuits

Jigs
  USE: Fixtures

Jitter
  BT: Distortion
  RT: Circuit stability
  NT: Timing jitter

Job design
  BT: Ergonomics

Job production systems
  UF: Bespoke production
  BT: Manufacturing systems

Job rotation
  USE: Multiskilling

Job shop scheduling
  BT: Scheduling
  RT: Genetic algorithms

Job specification
  BT: Human resource management
  RT: Multiskilling
        Recruitment

Jobs listings
  BT: Career development
  RT: Employment

Johnson Nyquist noise
  USE: Thermal noise

Joining materials
  BT: Production materials
  RT: Joining processes
        Soldering equipment
  NT: Filler metals
        Sealing materials

Joining processes
  UF: Connecting
        Coupling (process)
        Fastening
        Linking
  BT: Manufacturing systems
        Materials processing
  RT: Couplings
        Fasteners

Joining materials
Plasma welding
Soldering equipment
NT: Bonding processes
Crimping
Soldering
Splicing
Welding

Joint ventures
USE: International collaboration

Joints
BT: Skeleton

Josephson devices
USE: Superconducting devices

Josephson effect
BT: Tunneling
RT: Josephson junctions

Josephson junctions
UF: Josephson logic
Superconducting junction
devices
BT: Superconducting devices
RT: Josephson effect

Josephson logic
USE: Josephson junctions

Journalism
BT: Publishing
Social sciences
RT: Broadcasting
Electronic publishing
Information services
Multimedia communication
Radio broadcasting
Social networking (online)

JPEG
USE: Transform coding

JPEG2000
USE: Transform coding

Judd-Ofelt theory
BT: Spectral analysis
RT: Fluorescence
Photoluminescence

Junction detectors
USE: Semiconductor counters

Junction FETs
USE: JFETs

Junction lasers
USE: Semiconductor lasers

Junctionless nanowire transistors
BT: MOSFET
Nanoelectronics
RT: Nanowires
Silicon-on-insulator

Junctions
BT: Semiconductor devices
NT: Heterojunctions
Hybrid junctions
P-n junctions
Waveguide junctions

Junk e-mail
USE: Unsolicited e-mail

Junk email
USE: Unsolicited e-mail

Jupiter
BT: Planets

k neighbor methods
USE: Nearest neighbor methods

k neighbour methods
USE: Nearest neighbor methods

K-band
BT: Microwave bands

K-NN methods
USE: Nearest neighbor methods

Kaizen
USE: Continuous improvement

Kalman filtering
USE: Kalman filters

Kalman filters
UF: Kalman filtering
BT: Filters
RT: Estimation
Nonlinear dynamical
systems
Prediction methods
Sensor fusion

Kaons
USE: Mesons

Karhunen-Loeve transforms
BT: Transforms

KBO
USE: Kuiper belt

Kelvin
BT: Temperature measurement

Kernel
BT: Mathematics
Operating systems
NT: Null space
System kernels

Kerr effect
BT: Electrooptic effects
RT: Magnetooptic effects

Key performance indicator
UF: KPI
BT: Measurement
Performance evaluation

Keyboards
BT: Computer peripherals
RT: Ergonomics

Keystroke dynamics
BT: Biometrics (access control)

Keyways
BT: Plugs

Keyword search
UF: Keyword searches
Keyword searching
BT: Search methods
RT: Indexing

Keyword searches
USE: Keyword search

Keyword searching
USE: Keyword search

Kidney
BT: Urogenital system
NT: Kidney stones

Kidney stones

UF: Nephrolithiasis
Renal calculi
Urinary calculesis
BT: Kidney
Medical conditions
RT: Lithotripsy

Kilns
BT: Furnaces
RT: Calcination
Curing
Firing
Heat treatment

Kindle
USE: Consumer electronics AND
Electronic publishing

Kinematic analysis
USE: Kinematics

Kinematic faults
USE: Kinematics

Kinematic model
USE: Kinematics

Kinematic noise
USE: Kinematics

Kinematics
UF: Kinematic analysis
Kinematic faults
Kinematic model
Kinematic noise
BT: Mechanical factors
NT: Motor coordination

Kinetic energy
BT: Kinetic theory
RT: Mechanical energy
Potential energy
Thermal energy

Kinetic molecular theory
USE: Kinetic theory

Kinetic theory
UF: Collision theory
Kinetic molecular theory
Kinetic-molecular theory
Kinetics
BT: Motion control
Physics
NT: Kinetic energy

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Kinetic-molecular theory
      USE: Kinetic theory

Kinetics
      USE: Kinetic theory

Kirchhoff approximation
      USE: Kirchhoff's Law

Kirchhoff current law
      USE: Kirchhoff's Law

Kirchhoff scattering
      USE: Kirchhoff's Law

Kirchhoff's Law
      UF: Kirchhoff approximation
                Kirchhoff current law
                Kirchhoff scattering
      BT: Spectroscopy

Kirk effect
      USE: Kirk field collapse effect

Kirk field collapse effect
      UF: Kirk effect
      BT: Bipolar transistors

Klystrons
      UF: Gyroklystrons
      BT: Electron tubes
      RT: Amplifiers
                Cavity resonators
                Colliding beam accelerators
                Oscillators
                Relativistic effects

Knee
      BT: Extremities

Knee joint replacements
      USE: Prosthetics

Knitted fabric composites
      USE: Fabrics

Knowledge acquisition
      BT: Knowledge engineering
      RT: Context awareness
                Econophysics
                Expert systems
                Knowledge based systems
                Self-organizing feature
maps

Knowledge based systems
      UF: Knowledge systems
                Knowledge-based systems
                Rule based systems
      BT: Artificial intelligence
      RT: Decision support systems
                Deductive databases
                Intelligent systems
                Knowledge acquisition
                Knowledge representation
                Linked data
                Software agents
      NT: Expert systems
                Mobile agents

Knowledge discovery
      BT: Knowledge engineering
      RT: Data mining
                Data science
                Information retrieval
                Knowledge management

Knowledge engineering
      BT: Artificial intelligence
      RT: Knowledge management
      NT: Inference mechanisms
                Knowledge acquisition
                Knowledge discovery
                Knowledge representation

Knowledge management
      UF: Intellectual capital
      BT: Computer applications
                Management
      RT: Competitive intelligence
                Information management
                Knowledge discovery
                Knowledge engineering
                Management information
systems
                Semantic Web
      NT: Knowledge transfer

Knowledge representation
      BT: Knowledge engineering
      RT: Expert systems
                Formal concept analysis
                Knowledge based systems
                Linked data
                OWL
      NT: Description logic
                Fuzzy cognitive maps
                Ontologies
                Thesauri

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Knowledge systems
USE: Knowledge based systems

Knowledge transfer
BT: Information management
Knowledge management

Knowledge-based systems
USE: Knowledge based systems

Kohonen maps
USE: Self-organizing feature maps

KPI
USE: Key performance indicator

Krypton
BT: Chemical elements

Kuiper belt
UF: KBO
Kuiper belt objects
Kuiper belts
BT: Solar system

Kuiper belt objects
USE: Kuiper belt

Kuiper belts
USE: Kuiper belt

L-band
BT: Microwave bands

Lab-on-a-chip
UF: Lab-on-chip
BT: System-on-chip

Lab-on-chip
USE: Lab-on-a-chip

Label swapping
USE: Multiprotocol label switching

Labeling
UF: Labelling
BT: Packaging
RT: Applicators
Packaging machines

Labelling
USE: Labeling

Labor productivity
USE: Productivity

Labor resources
UF: Labor supply
Labour resources
Labour supply
Manpower planning
BT: Human resource management
Personnel
RT: Equal opportunities
Recruitment

Labor supply
USE: Labor resources

Laboratories
BT: Test facilities
RT: Engineering education
Research and development
Student experiments
NT: Remote laboratories

Labour productivity
USE: Productivity

Labour resources
USE: Labor resources

Labour supply
USE: Labor resources

Lacquers
BT: Chemical products
Coatings
Materials
RT: Paints

Lagrange duality
USE: Lagrangian functions

Lagrange functions
USE: Lagrangian functions

Lagrange relaxation
USE: Lagrangian functions

Lagrangian functions
UF: Lagrange duality
Lagrange functions
Lagrange relaxation
BT: Quantum mechanics

Lakes
  BT: Geoscience
  RT: Reservoirs
        Rivers
        Sediments
        Water
        Water pollution
        Water resources
        Water storage
        Wetlands

Laminates
  BT: Materials
  RT: Lamination

Lamination
  BT: Materials processing
  RT: Laminates

Lamps
  BT: Lighting
  RT: Light sources
        Lighting control
        Ultraviolet sources
  NT: Discharge lamps
        Electrodeless lamps
        Filament lamps
        Fluorescent lamps
        LED lamps

LAN
  USE: Local area networks

LAN emulation
  UF: Local area network emulation
  BT: Optical fiber networks

LAN interconnection
  BT: Internetworking
  RT: Computer networks
        Local area networks
        Metropolitan area networks
        Wide area networks
        Wireless LAN

Land mine detection
  USE: Landmine detection

Land mines
  USE: Landmine detection

Land mobile radio
  UF: Land mobile radio service
        Land-mobile radio

        Mobile radio
  BT: Mobile communication
        Radio communication
  RT: 5G mobile communication
        Ad hoc networks
        Bluetooth
        Channel estimation
        Indoor navigation
        Land mobile radio equipment

        Location awareness
        Mobile antennas
        Mobile handsets
        Multiuser detection
        Personal area networks
        Radio access networks
        Routing protocols
        Software radio
  NT: Cellular radio

Land mobile radio cellular systems
  USE: Cellular radio

Land mobile radio equipment
  UF: Land-mobile radio equipment
  BT: Radio communication equipment
        Vehicular and wireless technologies
  RT: Land mobile radio
        Telephone equipment
        Transceivers
  NT: Mobile antennas

Land mobile radio networks
  BT: Cellular technology

Land mobile radio service
  USE: Land mobile radio

Land pollution
  BT: Pollution
  RT: Industrial pollution
        Land use planning
        Oil pollution
        Radioactive pollution
  NT: Soil pollution

Land surface
  BT: Geoscience
  RT: Land surface temperature

Land surface temperature
  UF: Ground temperature

Land temperature
BT: Geoscience and remote sensing
RT: Global warming
Land surface
Ocean temperature
Remote sensing

Land temperature
USE: Land surface temperature

Land transportation
UF: Ground transportation
Planetary landers
BT: Transportation
RT: Global Positioning System
Land vehicles
NT: Rail transportation
Road transportation

Land use planning
BT: Environmental management
RT: Floods
Land pollution
Reservoirs
Water storage

Land vehicles
UF: Flexible fuel vehicles
Ground vehicles
BT: Vehicles
RT: Land transportation
Rail transportation
NT: Bicycles
Electric vehicles
Road vehicles

Land-mobile radio
USE: Land mobile radio

Land-mobile radio cellular systems
USE: Cellular radio

Land-mobile radio equipment
USE: Land mobile radio equipment

Landline
UF: Home phone
Landline telephone
Main line
POTS
BT: Telephone equipment

Landline telephone
USE: Landline

Landmine detection
UF: Land mine detection
Land mines
Landmines
BT: Buried object detection
RT: Military equipment
Radar imaging
Remote sensing

Landmines
USE: Landmine detection

Landslides
BT: Geology
RT: Hazards

Lane departure warning systems
BT: Road safety
Vehicle safety
RT: Collision avoidance
Lane detection
NT: Lane keeping assist systems

Lane detection
BT: Vehicle safety
RT: Collision avoidance
Lane departure warning systems
Road safety

Lane keeping assist systems
UF: Lane keeping assistance
Lane-keeping assistance
BT: Lane departure warning systems

Lane keeping assistance
USE: Lane keeping assist systems

Lane-keeping assistance
USE: Lane keeping assist systems

Lanthanum
BT: Metals
NT: Lanthanum compounds

Lanthanum compounds
BT: Lanthanum

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Laparoscopes
  BT: Surgical instruments
  RT: Minimally invasive surgery

Laparoscopic surgery
  USE: Minimally invasive surgery

Laplace equations
  UF: Inverse transforms
          Laplace operator
          Laplace transform
          Laplacian
  BT: Mathematics

Laplace operator
  USE: Laplace equations

Laplace transform
  USE: Laplace equations

Laplacian
  USE: Laplace equations

Lapping
  BT: Machining
  RT: Surface finishing

Laptops
  USE: Microcomputers AND
          Portable computers

Large Hadron Collider
  UF: LHC
  BT: Test facilities
  RT: Particle accelerators

Large scale integration
  UF: LSI
          Large-scale integration
  BT: Circuits
          Integrated circuits
  NT: Ultra large scale integration
          Very large scale integration
          Wafer scale integration

Large screen displays
  UF: Large-screen displays
  BT: TV equipment

Large-scale integration
  USE: Large scale integration

Large-scale systems
  BT: System analysis and design
  RT: Complex systems
          Fuzzy systems

Large-screen displays
  USE: Large screen displays

Larynx
  UF: Voice tract
  BT: Respiratory system

Laser ablation
  BT: Laser applications

Laser applications
  BT: Lasers
  RT: CD recording
          Endoscopes
          Gyroscopes
          Heating systems
          Holography
          Measurement by laser
beam
          Optical recording
          Photoacoustic effects
          Stereolithography
  NT: Dark states
          Distributed feedback
devices
          Laser ablation
          Laser beam cutting
          Laser beam machining
          Laser fusion
          Laser theory
          Magnetooptic recording

Laser beam cutting
  BT: Laser applications
  RT: Laser beam machining

Laser beam machining
  BT: Laser applications
          Machining
  RT: Laser beam cutting

Laser beams
  UF: Laser guide stars
  BT: Beams
  RT: Bragg gratings
          Electrooptic modulators
          Laser theory
          Lasers
          Optical beams
          Optical vortices
          Refractive index
          Supercontinuum generation
          Thermal lensing

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Laser cavity resonators
- BT: Cavity resonators
- RT: Optical resonators
- Surface emitting lasers

Laser diodes
- USE: Diode lasers AND
- Semiconductor lasers

Laser excitation
- UF: Electron beam pumping
- Excitation of lasers
- Pumping of lasers
- BT: Lasers
- NT: Optical pumping

Laser feedback
- BT: Laser noise

Laser fusion
- BT: Laser applications

Laser guide stars
- USE: Laser beams

Laser materials processing
- BT: Materials processing

Laser mode locking
- BT: Laser modes

Laser modes
- BT: Lasers
- NT: Laser mode locking

Laser noise
- BT: Noise
- Optical signal processing
- RT: Lasers and electrooptics
- NT: Laser feedback

Laser physics
- USE: Laser theory

Laser printers
- BT: Printers

Laser radar
- UF: Lidar
- Optical radar
- BT: Radar
- RT: Geophysical measurement techniques
- Optical scattering

Laser science
- USE: Laser theory

Laser sintering
- UF: Selective laser sintering
- BT: Materials preparation
- RT: Design automation
- Prototypes
- Stereolithography

Laser stability
- BT: Lasers
- RT: Stability analysis

Laser surgery
- BT: Surgery

Laser theory
- UF: Laser physics
- Laser science
- BT: Laser applications
- RT: Laser beams
- Lasers
- Optical beams
- Optical design
- Optics
- Particle beams
- Quantum mechanics

Laser transitions
- BT: Lasers

Laser tuning
- BT: Semiconductor lasers
- Tuning
- RT: Optical tuning

Laser velocimetry
- BT: Measurement by laser beam

Lasers
- UF: Infrared lasers
- BT: Lasers and electrooptics
- RT: Laser beams
- Laser theory
- Light sources
- Nanobiophotonics
- Optical distortion
- Oscillators
- Stereolithography
- Stimulated emission
- Superluminescent diodes
- Threshold current

Ultraviolet sources
Waveguide lasers
NT: Atom lasers
Chemical lasers
Diode lasers
Free electron lasers
Gas lasers
Laser applications
Laser excitation
Laser modes
Laser stability
Laser transitions
Power lasers
Pump lasers
Quantum well lasers
Ring lasers
Semiconductor lasers
Solid lasers
Surface emitting lasers
X-ray lasers

Lasers and electrooptics
RT: Erbium
Laser noise
NT: Electro-optical devices
Electrooptic effects
Lasers
Optics
Optoelectronic devices
Photonics

Latches
BT: Bistable circuits

Lattice Boltzmann
USE: Lattice Boltzmann methods

Lattice Boltzmann methods
UF: Lattice Boltzmann
BT: Boltzmann distribution
Lattices
RT: Fluid dynamics

Lattices
UF: Optical lattices
BT: Mathematics
NT: Lattice Boltzmann methods

Launching (electromagnetic)
USE: Electromagnetic launching

Launching (electrothermal)
USE: Electrothermal launching

Law

UF: Legal aspects
BT: Legal factors
NT: Censorship
Commercial law
Consumer protection
Contract law
Criminal law
Employment law
Forensics
Law enforcement
Patent law
Trademarks

Law enforcement
UF: Police
BT: Law
RT: Censorship
Digital forensics
Image forensics
Legal factors
Threat assessment

Layered division multiplexing
UF: LDM
Layered-division-multiplexing
BT: Multiplexing
RT: Frequency division multiplexing

Layered manufacturing
BT: Manufacturing systems
RT: Computational geometry
Stereolithography

Layered media
USE: Nonhomogeneous media

Layered-division-multiplexing
USE: Layered division multiplexing

Layout
BT: Graphics
RT: Art
Geometry
Integrated circuit layout
Wiring

LCD
USE: Liquid crystal displays

LCDs
USE: Liquid crystal displays

Lcos
USE: Liquid crystal on silicon

LDM
USE: Layered division multiplexing

LDPA
USE: Log-periodic dipole antennas

LDPC
USE: Parity check codes

Ldpc codes
USE: Parity check codes

Leaching
BT: Chemical processes

Lead
UF: Pb
BT: Metals
RT: Graphite
Lead compounds
NT: Lead isotopes

Lead acid batteries
UF: Lead-acid batteries
BT: Batteries

Lead compounds
BT: Compounds
RT: Lead

Lead isotopes
BT: Lead

Lead time reduction
BT: Production management
RT: Production planning
Project management

Lead-acid batteries
USE: Lead acid batteries

Leadership
BT: Human resource management
RT: Business
Government
Organizations

Leak detection
BT: Sensor systems and applications
RT: Packaging
Testing
Vacuum systems

Leakage currents
UF: Gate leakage current
BT: Current
RT: Electron traps
Fault currents
NT: Gate leakage

Leaky wave antennas
UF: Leaky-wave antennas
BT: Antennas

Leaky-wave antennas
USE: Leaky wave antennas

Lean production
BT: Manufacturing systems
Production systems
RT: Production management

Learning (artificial intelligence)
BT: Artificial intelligence
RT: AI accelerators
Fuzzy cognitive maps
Gaussian processes
Image annotation
Manifold learning
NT: Distance learning
Electronic learning
Naive Bayes methods
Nearest neighbor methods

Learning automata
UF: Learning automaton
BT: Learning systems

Learning automaton
USE: Learning automata

Learning management systems
BT: Computer aided instruction
Learning systems
RT: Computer applications
Electronic learning
Management
Training

Learning mechanisms
USE: Learning systems

Learning methods
USE: Learning systems

Learning systems
UF: Learning mechanisms
Learning methods
Learning-based method
BT: Artificial intelligence
RT: Adaptive systems
Context awareness
Cybernetics
Inference mechanisms
Iterative learning control
Mobile agents
Pattern recognition
Software agents
White matter
NT: Backpropagation
Cognitive systems
Hybrid learning
Learning automata
Learning management systems
Semisupervised learning
Supervised learning
Unsupervised learning

Learning-based method
USE: Learning systems

Least mean squares methods
BT: Least squares approximations
Mean square error methods

Least squares approximations
UF: Least-squares approximations
BT: Numerical analysis
RT: Approximation methods
Curve fitting
Mean square error methods
Optimization
Recursive estimation
NT: Least mean squares methods

Least-squares approximations
USE: Least squares approximations

LED
USE: Light emitting diodes

LED lamps

UF: AC lIght emitting diode lamps
AC-LED lamps
Light emitting diode lamps
BT: Lamps
Light emitting diodes
RT: Light sources

LEDs
USE: Light emitting diodes

Left handed materials
USE: Metamaterials

Left-handed materials
USE: Metamaterials

Leg
BT: Extremities

Legal aspects
USE: Law

Legal factors
BT: Engineering management
RT: Censorship
Ethical aspects
Governmental factors
IEEE Corporate activities
Law enforcement
NT: Copyright protection
Law
Patents
Product liability
Software protection
Trademarks

Legged locomotion
UF: Biped locomotion
Gait assessment
Gait control
Gait disorders
Walking
BT: Mobile robots
RT: Biological control systems
Control systems
Motion control
Stairs

Legislation
BT: Government
NT: General Data Protection Regulation

Length measurement

BT:	Measurement	
RT:	Micrometers	
	Size measurement	

Lens
USE: Lenses

Lenses
UF: Lens
BT: Optical devices
RT: Focusing
Optical materials

LEO
USE: Low earth orbit satellites

Lesions
BT: Tumors
NT: Tissue damage

Levee
UF: Dike
Levee system
BT: Geoscience

Levee system
USE: Levee

Level control
UF: Liquid level control
BT: Mechanical variables control
NT: Gyroscopes

Level measurement
UF: Liquid level measurement
BT: Geodesy

Level set
BT: Calculus
RT: Gradient methods

Levels, energy
USE: Energy states

Levitation
BT: Physics
NT: Electrostatic levitation
Magnetic levitation

LF noise
USE: Low-frequency noise

LHC
USE: Large Hadron Collider

Li
USE: Lithium

li-fi
USE: Light fidelity

Li-ion batteries
USE: Lithium-ion batteries

Li-S batteries
USE: Lithium-sulfur batteries

Libraries
BT: Information services
NT: Software libraries

Licence
USE: Licenses

License plate recognition
USE: Optical character recognition software

Licenses
UF: Licence
Licensing
BT: Contracts
RT: Must-carry

Licensing
USE: Licenses

Licensing (nuclear facilities)
USE: Nuclear facility regulation

Lidar
USE: Laser radar

Life estimation
UF: Accelerated testing
BT: Estimation
RT: Aging
Failure analysis
Fatigue
Insulation life

Life long learning
USE: Continuing professional development

Life sciences
UF: Computational life sciences
BT: Science - general
RT: Animals

Biology
Plants (biology)

Life sciences computing
    USE: Computational modeling

Life testing
    BT: Testing
    RT: Reliability

Lifetime estimation
    UF: Lifetime measurement
            Lifetime tests
    BT: Measurement

Lifetime measurement
    USE: Lifetime estimation

Lifetime tests
    USE: Lifetime estimation

lifi
    USE: Light fidelity

Lifting equipment
    UF: Hoists
            Jacks
    BT: Materials handling equipment
    RT: Freight handling
            Materials handling
            Pulleys
            Winches
    NT: Cranes

Ligaments
    BT: Musculoskeletal system

Light attenuation
    USE: Attenuation

Light deflectors
    BT: Optical devices
    RT: Bragg gratings

Light emitters
    USE: Light emitting diodes

Light emitting diode lamps
    USE: LED lamps

Light emitting diodes
    UF: LED
            LEDs
            Light emitters

            Light-emitting diodes
    BT: Optoelectronic devices
    RT: Microcavities
            Molecular beam applications
            P-n junctions
            Visible light communication
    NT: Inorganic light emitting diodes
            LED lamps
            Organic light emitting diodes
            Superluminescent diodes

Light fidelity
    UF: li-fi
            lifi
    BT: Wireless LAN
    RT: High-speed optical techniques
            IEEE 802.15 Standard
            Optical fiber networks
            Radio frequency
            Visible light communication
            Wireless communication
            Wireless fidelity

Light fields
    BT: Optics

Light interferometry
    USE: Optical interferometry

Light polarisation
    USE: Optical polarization

Light polarization
    USE: Optical polarization

Light rail systems
    UF: Light railways
            Streetcars
    BT: Rail transportation
    RT: Public transportation

Light railways
    USE: Light rail systems

Light scattering
    BT: Scattering
    RT: Optical scattering
            Resonance light scattering

Light sources
    BT: Optics

	RT:	Arc discharges
		Glow discharge devices
		High intensity discharge lamps
		LED lamps
		Lamps
		Lasers
		Lighting
		Lighting control
		Photometry
		Supercontinuum generation
		Synchrotron radiation
	NT:	Electroluminescent devices
		Fast light
		Luminescent devices
		Phosphors
		Slow light
		Stray light
		Superluminescent diodes
		Ultraviolet sources

Light trapping
- UF: Plasmonic solar cells
- BT: Photovoltaic cells
- RT: Reflectivity

Light-emitting diodes
- USE: Light emitting diodes

Lighting
- UF: Arc lamps
  - Illumination
- BT: Optical devices
- RT: Building services
  - Buildings
  - Filament lamps
  - Fluorescent lamps
  - Gas discharge devices
  - High intensity discharge lamps
  - Light sources
  - Lighting control
  - Photometry
  - Quantum radar
  - Visible light communication
- NT: Daylighting
  - Electrical ballasts
  - Emergency lighting
  - Lamps
  - Solid state lighting

Lighting control
- UF: Illumination control
- BT: Optical control

	RT:	High intensity discharge lamps
		Lamps
		Light sources
		Lighting

Lightning
- BT: Meteorology
- RT: Dielectric breakdown
  - Electrostatic processes
  - Storms
- NT: Lightning protection

Lightning protection
- BT: Lightning
  - Protection

Lightweight structures
- BT: Structural shapes
- RT: Aerospace engineering
  - Aerospace industry
  - Aerospace materials
  - Honeycomb structures
  - Metal foam
  - Sandwich structures
  - Thin wall structures

Limbic system
- BT: Brain

Limit cycle
- USE: Limit-cycles

Limit-cycle
- USE: Limit-cycles

Limit-cycles
- UF: Limit cycle
  - Limit-cycle
- BT: Mathematics

Limiting
- BT: Signal processing
- RT: Nonlinear distortion
  - Voltage control

Linac
- USE: Linear particle accelerator

LINACS
- USE: Linear accelerators

Line enhancers
- BT: Adaptive systems
- RT: Digital filters

2021 IEEE Thesaurus

Line output transformer
      USE: Flyback transformers

Line-of-sight propagation
      BT: Electromagnetic radiation

Linear accelerators
      UF: LINACS
      BT: Particle accelerators
      RT: Collimators

Linear algebra
      UF: Linear systems (algebraic)
      BT: Algebra
      RT: Eigenvalues and eigenfunctions
      NT: Linear programming
                Matrices
                Vectors

Linear antenna arrays
      BT: Antenna arrays

Linear approximation
      BT: Approximation methods
      RT: Nonlinear equations
                Nonlinear systems

Linear circuits
      BT: Circuits
      RT: Ohmic contacts

Linear codes
      BT: Block codes
      RT: Error correction
      NT: Polar codes

Linear discriminant analysis
      UF: Linear discriminant classification
      BT: Statistics
      RT: Machine learning

Linear discriminant classification
      USE: Linear discriminant analysis

Linear feedback control systems
      BT: Control systems
                Cybernetics
      RT: Linear systems
      NT: Frequency locked loops
                Phase locked loops
                State feedback

Linear feedback shift registers
      BT: Shift registers

Linear filtering
      USE: Maximum likelihood detection

Linear frequency modulation
      USE: Chirp modulation

Linear integrated circuits
      USE: Analog integrated circuits

Linear matrix inequalities
      BT: Mathematics
      RT: Linear systems
                Uncertain systems

Linear parameter varying systems
      USE: Linear systems

Linear particle accelerator
      UF: Linac
                Particle accelerator
      BT: High energy physics instrumentation computing

Linear predictive coding
      BT: Prediction methods

Linear programming
      UF: Linear-programming
      BT: Linear algebra
      RT: Algorithms
                Microeconomics
                Operations research
                Optimization methods
      NT: Data envelopment analysis
                Integer programming

Linear regression
      BT: Regression analysis
      NT: Maximum likelihood linear regression

Linear systems
      UF: Linear parameter varying systems
      BT: Mathematics
      RT: Control systems
                Linear feedback control systems
                Linear matrix inequalities

Principal component analysis
Transfer functions

Linear systems (algebraic)
    USE: Linear algebra

Linear-programming
    USE: Linear programming

Linearisation techniques
    USE: Linearization techniques

Linearity
    BT: Electromagnetic measurements

Linearization techniques
    UF: Linearisation techniques
    BT: Mathematics
    RT: Control system synthesis
        Control systems
        MOSFET circuits
        Modulation
        Operational amplifiers
        Transmitters

Linguistic indexing
    USE: Image annotation

Linguistics
    BT: Natural languages
    RT: Semiotics
    NT: Phonetics
        Pragmatics

Link aggregation
    BT: Telecommunication network topology

Linkages
    USE: Couplings

Linked data
    BT: Internet
    RT: Big Data
        Database systems
        Knowledge based systems
        Knowledge representation
        Metadata
        NoSQL databases
        Ontologies
        Open data
        Query processing
        Semantic Web

Linkedin
    USE: Social networking (online)

Linking
    USE: Joining processes

Linux
    BT: High level languages

Lipid bilayers
    USE: Lipidomics

Lipidomics
    UF: Lipid bilayers
        Lipids
    BT: Molecular biomarkers
    RT: Fats

Lipids
    USE: Lipidomics

Lips
    BT: Head
    RT: Stomatognathic system

Liquefied natural gas
    UF: LNG
    BT: Natural gas

Liquid cooling
    BT: Cooling
    NT: Indirect liquid cooling

Liquid crystal devices
    UF: Liquid-crystal devices
    BT: Displays
    RT: Electro-optical devices
        Liquid crystals
        Microdisplays
        Thin film transistors
    NT: Liquid crystal displays
        Liquid crystal on silicon

Liquid crystal displays
    UF: LCD
        LCDs
        Liquid-crystal displays
    BT: Liquid crystal devices
    NT: Active matrix liquid crystal displays

Liquid crystal on silicon
    UF: Lcos
    BT: Liquid crystal devices

RT: Integrated optoelectronics
       Microdisplays

Liquid crystal polymers
    UF: Liquid-crystal polymers
    BT: Polymers

Liquid crystals
    BT: Crystals
    RT: Liquid crystal devices

Liquid flow
    USE: Fluid flow

Liquid insulation
    USE: Dielectric liquids

Liquid level control
    USE: Level control

Liquid level measurement
    USE: Level measurement

Liquid nitrogen
    BT: Cryogenics
       Refrigerants

Liquid waveguides
    BT: Hollow waveguides

Liquid-crystal devices
    USE: Liquid crystal devices

Liquid-crystal displays
    USE: Liquid crystal displays

Liquid-crystal polymers
    USE: Liquid crystal polymers

Liquids
    BT: Fluids
    RT: Aerosols
       Electrohydraulics
       Materials science and technology
       Spraying
    NT: Water

LiquiFerrofluid
    USE: Ferrofluid

Lithium
    UF: Li
    BT: Metals
    RT: Alloying

       Batteries
    NT: Lithium compounds

Lithium batteries
    BT: Batteries
       Lithium compounds

Lithium compounds
    BT: Lithium
    RT: Alloying
       Batteries
    NT: Lithium batteries
       Lithium niobate

Lithium ion batteries
    USE: Lithium-ion batteries

Lithium niobate
    BT: Lithium compounds

Lithium-ion batteries
    UF: Li-ion batteries
       Lithium ion batteries
    BT: Batteries

Lithium-sulfur batteries
    UF: Li-S batteries
    BT: Batteries

Lithography
    UF: Photolithography
    BT: Manufacturing
    RT: Nanotechnology
       Printing
       Proximity effects
    NT: Colloidal lithography
       Extreme ultraviolet lithography
       Interferometric lithography
       Nanolithography
       Soft lithography
       Stereolithography
       X-ray lithography

Lithotripsy
    BT: Medical treatment
    RT: Kidney stones
       Lithotriptors

Lithotriptors
    BT: Biomedical equipment
    RT: Lithotripsy

Liver
    BT: Digestive system

NT: Liver diseases

Liver diseases
 BT: Liver

Liver neoplasms
 BT: Neoplasms

Livestock
 USE: Agriculture

LNG
 USE: Liquefied natural gas

Load balancing
 USE: Load management

Load compensation
 USE: Load management

Load composition
 USE: Load management

Load flow
 UF: Power flow
 BT: Power system management
 NT: Load flow analysis

Load flow analysis
 UF: Power flow analysis
 BT: Load flow
 RT: Power system security
   Power transmission

Load flow control
 UF: Power flow control
 BT: Power system control
 NT: Power factor correction

Load forecasting
 BT: Power demand
 RT: Load management

Load management
 UF: Load balancing
   Load compensation
   Load composition
   Load variations
 BT: Energy management
 RT: Energy storage
   Load forecasting
   Pallets
   Power demand
   Vehicle-to-grid
 NT: Load shedding

Load modeling
 BT: Modeling
   Power system modeling
 RT: Power demand

Load shedding
 BT: Load management
 RT: Power distribution

Load tap changers
 USE: On load tap changers

Load variations
 USE: Load management

Loaded antennas
 BT: Antennas

Loaded waveguides
 BT: Electromagnetic waveguides
 RT: Dielectric materials
   Waveguide discontinuities

Loading
 BT: Freight handling
 RT: Containers
   Filling
   Grippers
   Pulleys

Loans and mortgages
 UF: Mortgages
 BT: Financial management

Local area network emulation
 USE: LAN emulation

Local area networks
 UF: LAN
 BT: Communication systems
   Digital systems
 RT: Distributed computing
   Ethernet
   FDDI
   Field buses
   File servers
   IEEE 802.3 Standard
   IPTV
   Internetworking
   LAN interconnection
   Media Access Protocol
   Multiprocessor interconnection

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Office automation
Open systems
Protocols
Regional area networks
Storage area networks
Token networks
Virtual private networks
NT: Wireless LAN

Local authorities
    USE: Local government

Local government
    UF: Local authorities
    BT: Government

Local oscillators
    BT: Oscillators

Localization
    USE: Location awareness

Location awareness
    UF: Geo tagging
Localization
Location based services
Location metadata
Mobile location
management
Mobile radio mobility
management
    BT: Mobile communication
    RT: Cellular radio
Intercell interference
Land mobile radio
Mobile computing
Navigation
Personal communication
networks
Position measurement
Wireless communication
    NT: Network location
awareness

Location based services
    USE: Location awareness

Location metadata
    USE: Location awareness

Log normal distribution
    USE: Log-normal distribution

Log periodic antennas
    BT: Antenna arrays

Log-normal distribution
    UF: Log normal distribution
    BT: Probability distribution

Log-periodic dipole antennas
    UF: LDPA
    BT: Antennas

Logic
    UF: Formal logic
    BT: Computational and artificial
intelligence
    RT: Boolean algebra
Cognitive science
Computer science
Logic circuits
Logic functions
    NT: Fuzzy logic
Multivalued logic
Probabilistic logic
Sufficient conditions

Logic arrays
    BT: Circuits
Logic circuits
    NT: Programmable logic arrays

Logic CAD
    USE: Logic design

Logic circuit testing
    USE: Logic testing

Logic circuits
    BT: Circuits
Switching circuits
    RT: Adders
Computers and information
processing
Counting circuits
Digital circuits
Digital integrated circuits
Flip-flops
Logic
Logic design
Logic devices
Logic functions
Multiplying circuits
Pulse inverters
Shift registers
    NT: Combinational circuits
Logic arrays
Programmable logic arrays

2021 IEEE Thesaurus

Superconducting logic circuits

Logic design
UF:	Circuit design (logic)
	Logic CAD
BT:	Design automation
RT:	Circuit synthesis
	Design for testability
	Design methodology
	Engineering education
	Logic circuits
	Timing
NT:	Reconfigurable logic

Logic devices
BT:	Circuits and systems
RT:	Logic circuits
NT:	Logic gates
	Programmable logic devices

Logic functions
BT:	Boolean functions
RT:	Logic
	Logic circuits
	Multivalued logic

Logic gates
BT:	Logic devices
RT:	Boolean algebra

Logic inverters
USE:	Pulse inverters

Logic programming
BT:	Programming
NT:	Constraint handling

Logic test
USE:	Logic testing

Logic testing
UF:	Logic circuit testing
	Logic test
BT:	Integrated circuit testing
RT:	Design for testability

Logical decomposition
USE:	System analysis and design

Logistics
UF:	Physical distribution management
BT:	Production management

RT:	Procurement
NT:	Reverse logistics
	Supply chains

Long short term memory
UF:	LSTM
BT:	Artificial neural networks
RT:	Machine learning

Long Term Evolution
UF:	LTE
	LTE advanced
BT:	3GPP Standards
	Communication standards
RT:	4G mobile communication
	High-speed networks
	Mobile communication
	Mobile handsets
	Wireless communication

Look-up table
USE:	Table lookup

Lookup table
USE:	Table lookup

Loop-filtering algorithm
USE:	Filtering algorithms

LOPT
USE:	Flyback transformers

Loran
USE:	Radio navigation

Lorentz covariance
UF:	Lorentz force
	Lorentz invariance
BT:	Physics

Lorentz force
USE:	Lorentz covariance

Lorentz invariance
USE:	Lorentz covariance

Loss measurement
BT:	Measurement
RT:	Attenuation measurement
	Magnetic losses
	Optical losses
NT:	Packet loss

Lot sizing
BT:	Production control

RT: Materials requirements
planning

Loudspeakers
BT: Audio systems
RT: Acoustic distortion

Low density parity check codes
USE: Parity check codes

Low earth orbit satellites
UF: LEO
Low-earth-orbit
BT: Artificial satellites

Low fossil fuel economy
USE: Low-carbon economy

Low frequency noise
USE: Low-frequency noise

Low latency communication
UF: Low-latency communication
BT: Communication systems
NT: Ultra reliable low latency
communication

Low noise amplifiers
USE: Low-noise amplifiers

Low pass filters
USE: Low-pass filters

Low power electronics
USE: Low-power electronics

Low temperature plasmas
USE: Low-temperature plasmas

Low voltage
UF: Low-voltage
BT: Voltage measurement

Low-carbon economy
UF: Decarbonisation
Decarbonised economy
Decarbonization
Decarbonized economy
Low fossil fuel economy
BT: Power system economics
RT: Carbon
Ecosystems
Environmental
management
Global warming

Greenhouse effect
Renewable energy sources

Low-earth-orbit
USE: Low earth orbit satellites

Low-frequency noise
UF: LF noise
Low frequency noise
BT: Noise

Low-latency communication
USE: Low latency communication

Low-noise amplifiers
UF: Low noise amplifiers
BT: Amplifiers

Low-pass filters
UF: Low pass filters
BT: Filters

Low-power electronics
UF: Low power electronics
Ultra low power*
Ultra-low power*
BT: Consumer electronics
RT: Electronic equipment
Nanogenerators

Low-temperature plasmas
UF: Low temperature plasmas
BT: Plasmas
RT: Plasma applications

Low-voltage
USE: Low voltage

LSI
USE: Large scale integration

LSTM
USE: Long short term memory

LTE
USE: Long Term Evolution

LTE advanced
USE: Long Term Evolution

Lubricants
UF: Cutting fluids
BT: Production materials
RT: Lubrication

2021 IEEE Thesaurus

Lubricating oils
UF: Oil filters
Oiling (lubrication)
BT: Oils

Lubrication
BT: Mechanical factors
RT: Friction
Lubricants
Mechanical bearings

Luminescence
BT: Optics
RT: Luminescent devices
Muon colliders
Scintillators
NT: Bioluminescence
Electroluminescence
Fluorescence
Phosphorescence
Photoluminescence
Thermoluminescence

Luminescent devices
BT: Light sources
Optical devices
RT: Luminescence
Muon colliders
NT: Electroluminescent devices

Lunar
USE: Moon

Lung
BT: Respiratory system
RT: Pulmonary diseases
Pulmonology

Lung cancer
BT: Cancer

Lung diseases
USE: Pulmonary diseases

Lung neoplasms
BT: Neoplasms

LUT
USE: Table lookup

Lutecium
USE: Lutetium

Lutetium
UF: Lutecium

BT: Chemical elements

Lyapunov function
USE: Lyapunov methods

Lyapunov methods
UF: Lyapunov function
Lyapunov stability
BT: System analysis and design
RT: Control design
Functional analysis
Stability

Lyapunov stability
USE: Lyapunov methods

Lymph nodes
BT: Lymphatic system

Lymphatic system
BT: Anatomy
NT: Lymph nodes

M2M
USE: Machine-to-machine communications

MAC
USE: Media Access Protocol

MAC protocol
USE: Media Access Protocol

Mach-Zehnder interferometers
UF: Mach-Zehnder modulation
BT: Interferometers

Mach-Zehnder modulation
USE: Mach-Zehnder interferometers

Machine added indexing
USE: Machine assisted indexing

Machine aided indexing
USE: Machine assisted indexing

Machine assisted indexing
UF: Automated indexing
Automatic indexing
MAI
Machine added indexing
Machine aided indexing
Machine indexing
Machine-added indexing

		Machine-aided indexing
		Machine-assisted indexing
BT:		Indexes
RT:		Indexing

Machine components

BT:	Machinery
	Mechanical products
RT:	Couplings
	Engines
	Gears
	Turbomachinery
	Wheels
NT:	Air cleaners
	Belts
	Cams
	Engine cylinders
	Exhaust systems
	Impellers
	Intake systems
	Manifolds
	Mechanical splines
	Pistons
	Rotors
	Shafts
	Valves

Machine control

BT:	Industrial electronics
NT:	Machine vector control

Machine ethics

UF:	Computational ethics
	Computational morality
	Machine morality
BT:	Ethics
	Technology
RT:	Artificial intelligence
	Philosophical considerations

Machine indexing

USE:	Machine assisted indexing

Machine intelligence

BT:	Computational and artificial intelligence
RT:	Machine-to-machine communications
NT:	Pattern analysis

Machine learning

UF:	Dictionary learning
	Machine-learning
BT:	Artificial intelligence

RT:	Bio-inspired computing
	Cognitive systems
	Convolutional neural networks
	Deep architecture
	Energy informatics
	Generative adversarial networks
	Linear discriminant analysis
	Long short term memory
	Naive Bayes methods
	Predictive analytics
	Radiomics
NT:	Adversarial machine learning
	Boosting
	Deep learning
	Dimensionality reduction
	Random forests
	Reinforcement learning
	Relevance vector machines
	Robot learning
	Statistical learning

Machine learning algorithms

BT:	Algorithms

Machine morality

USE:	Machine ethics

Machine shops

BT:	Production facilities
RT:	Machine tools
	Machinery production industries
	Machining

Machine tool spindles

UF:	Spindle bearings
BT:	Machine tools
RT:	Mechanical splines
	Shafts

Machine tools

BT:	Production equipment
RT:	Clamps
	Coordinate measuring machines
	Cutting tools
	Fixtures
	Gears
	Hand tools
	Hobbing machines
	Machine shops
	Machining

Manufacturing
Mechanical guides
Turning
NT: Dies
Drilling machines
Grinding machines
Machine tool spindles
Metalworking machines
Milling machines
Presses
Sawing machines

Machine translation
BT: Computational linguistics
Natural language processing

Machine vector control
BT: Machine control
RT: AC-DC power converters
DC-DC power converters

Machine vision
UF: Vision systems (nonbiological)
BT: Image processing
RT: Automatic optical inspection
IEEE 1394 Standard
Image analysis
Image recognition
Manufacturing automation
Observers
Pattern recognition
Stereo vision
Visual systems
NT: Object recognition
Object segmentation

Machine windings
BT: Windings

Machine-added indexing
USE: Machine assisted indexing

Machine-aided indexing
USE: Machine assisted indexing

Machine-assisted indexing
USE: Machine assisted indexing

Machine-learning
USE: Machine learning

Machine-to-machine communications
UF: M2M

BT: Communication systems
RT: IP networks
Industrial Internet of Things
Internet of Things
Machine intelligence
Remote monitoring
Tactile Internet
Wireless communication
Wireless sensor networks
NT: Massive machine type communications

Machinery
BT: Industry applications
RT: Machinery production industries
Machining
Materials handling equipment
Production equipment
NT: Agricultural machinery
Ball bearings
Belts
Drives
Electric machines
Fans
Furnaces
Gears
Hydraulic systems
Machine components
Motors
Printing machinery
Pumps
Textile machinery

Machinery production industries
BT: Manufacturing industries
RT: Machine shops
Machinery

Machining
BT: Materials processing
RT: Burnishing
Clamps
Deburring
Finishing
Machine shops
Machine tools
Machinery
Manufacturing
NT: Boring
Drilling
Electrochemical machining
Hobbing machines
Lapping

Laser beam machining
Milling
Planing
Sawing
Turning
Virtual machining

Macrocell networks
UF:	Macrocells
BT:	Cellular networks
RT:	Rural areas

Macrocells
USE:	Macrocell networks

Macroeconomics
BT:	Economics
RT:	Government
	International trade
	Public finance
NT:	Privatization

Maglev
USE:	Magnetic levitation

Maglev trains
USE:	Magnetic levitation vehicles

Maglev transportation
USE:	Magnetic levitation vehicles

Maglev vehicles
USE:	Magnetic levitation vehicles

Magnesium
UF:	Mg
BT:	Metals
NT:	Magnesium compounds

Magnesium compounds
BT:	Magnesium
NT:	Magnesium oxide

Magnesium oxide
UF:	Irtran 5
	MgO
BT:	Magnesium compounds
RT:	Ceramics
	Optical materials

Magnetic analysis
BT:	Magnetics
RT:	Electromagnetic analysis
	Magnetic fields
NT:	Magnetization

Magnetic anisotropy
BT:	Magnetics
NT:	Magnetic domain walls
	Magnetic domains
	Magnetic moments
	Perpendicular magnetic anisotropy

Magnetic anomaly detection
BT:	Magnetic variables measurement
RT:	Magnetic fields
	Object detection

Magnetic anomaly detectors
BT:	Magnetometers
RT:	Magnetic fields
	Military equipment
	Object detection

Magnetic bearings
USE:	Magnetic levitation

Magnetic circuits
BT:	Circuits
RT:	Coils
	Magnetic devices
	Windings

Magnetic communication
BT:	Communication systems
RT:	Electromagnetic induction
	Near field communication

Magnetic confinement
BT:	Plasma confinement
RT:	Electromagnets
	Fusion power generation
	Tokamak devices
	Tokamaks

Magnetic core losses
USE:	Magnetic losses

Magnetic cores
BT:	Magnetic devices
RT:	Inductors
NT:	Transformer cores

Magnetic devices
BT:	Magnetics
RT:	Magnetic circuits
	Magnetic materials
NT:	Accelerator magnets

Ferrite devices
Magnetic cores
Magnetic gears
Magnetic heads
Magnetic memory
Magnetic modulators
Magnetooptic devices
Magnetoresistive devices
Magnetostrictive devices
Solenoids
Transformer cores
Undulators

Magnetic domain walls
> BT: Magnetic anisotropy

Magnetic domains
> BT: Magnetic anisotropy

Magnetic field induced strain
> BT: Magnetomechanical effects
> RT: Ferroelectric films
> Ferroelectric materials
> MISFETs
> Semiconductor diodes
> Semiconductor films
> Semiconductor-metal interfaces

Magnetic field measurement
> BT: Magnetic variables measurement
> RT: Magnetic fields

Magnetic fields
> BT: Magnetics
> RT: Biomagnetics
> Compass
> Critical current density (superconductivity)
> Electromagnetic fields
> Magnetic analysis
> Magnetic anomaly detection
> Magnetic anomaly detectors
> Magnetic field measurement
> Magnetic levitation vehicles
> Maxwell equations
> Remanence
> SQUID magnetometers
> Saturation magnetization
> Synchrotrons
> NT: Geomagnetism

Magnetic reconnection
Magnetic separation
Magnetostatics
Toroidal magnetic fields

Magnetic films
> UF: Magnetic thin films
> BT: Films
> Magnetic materials
> RT: Thin films
> NT: Ferrimagnetic films
> Ferrite films
> Garnet films

Magnetic filters
> USE: Magnetic separation

Magnetic fluids
> USE: Magnetic liquids

Magnetic flux
> BT: Magnetics
> RT: Remanence
> NT: Flux pinning
> Magnetic flux density
> Magnetic flux leakage

Magnetic flux density
> BT: Magnetic flux

Magnetic flux leakage
> BT: Magnetic flux
> Nondestructive testing
> RT: Corrosion
> Pipelines

Magnetic force microscopy
> BT: Magnetics
> RT: Atomic force microscopy
> Magnetic forces

Magnetic forces
> BT: Magnetics
> RT: Electromagnetic forces
> Force
> Magnetic force microscopy
> Magnetic levitation
> NT: Coercive force

Magnetic gears
> BT: Gears
> Magnetic devices
> RT: Electromagnetic devices
> Magnetic levitation
> Permanent magnets

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Power transmission
Variable speed drives

Magnetic heads
BT: Magnetic devices
RT: Magnetic recording
        Magnetoresistive devices

Magnetic hysteresis
BT: Magnetics
RT: Hysteresis
        Remanence

Magnetic levitation
UF: Maglev
        Magnetic bearings
BT: Levitation
        Magnetics
RT: Electromagnets
        Magnetic forces
        Magnetic gears
        Rail transportation
NT: Magnetic levitation vehicles

Magnetic levitation vehicles
UF: Maglev trains
        Maglev transportation
        Maglev vehicles
BT: Magnetic levitation
        Rail transportation
RT: Electromagnets
        High-speed rail transportation
        Magnetic fields
        Permanent magnets
        Superconducting magnets

Magnetic liquids
UF: Magnetic fluids
BT: Magnetic materials

Magnetic losses
UF: Magnetic core losses
BT: Magnetics
RT: Eddy currents
        Loss measurement

Magnetic materials
BT: Magnetics
        Materials
RT: Biomagnetics
        Boron alloys
        Magnetic devices
        Magnetoelasticity
        Magnetostriction

Permeability
NT: Amorphous magnetic materials
        Antiferromagnetic materials
        Diamagnetic materials
        Ferrimagnetic films
        Ferrimagnetic materials
        Ferrite films
        Ferrites
        Ferrofluid
        Ferromagnetic materials
        Garnet films
        Garnets
        Magnetic films
        Magnetic liquids
        Magnetic semiconductors
        Magnetic superlattices
        Paramagnetic materials
        Soft magnetic materials

Magnetic measurements
USE: Magnetic variables measurement

Magnetic memory
UF: Magnetic storage
BT: Magnetic devices
        Memory
RT: Magnetic recording
NT: Floppy disks
        Hard disks

Magnetic modulators
BT: Magnetic devices
        Modulation

Magnetic moments
BT: Magnetic anisotropy

Magnetic multilayers
BT: Magnetics
RT: Coatings

Magnetic nanoparticles
BT: Nanoparticles

Magnetic noise
BT: Magnetic recording

Magnetic particles
BT: Magnetics
RT: Biomagnetics
        Microelectromechanical devices

Magnetic permeability
　　USE:　　Permeability

Magnetic properties
　　BT:　　Magnetics

Magnetic reconnection
　　BT:　　Magnetic fields

Magnetic recording
　　UF:　　Perpendicular recording
　　BT:　　Recording
　　RT:　　Magnetic heads
　　　　　　Magnetic memory
　　NT:　　Digital magnetic recording
　　　　　　Heat-assisted magnetic recording
　　　　　　Magnetic noise
　　　　　　Magnetooptic recording
　　　　　　Microwave-assisted magnetic recording
　　　　　　Perpendicular magnetic recording
　　　　　　Shingled magnetic recording

Magnetic resonance
　　BT:　　Resonance
　　　　　　Resonant frequency
　　RT:　　Ferroresonance
　　　　　　Magnetic resonance imaging
　　NT:　　Antiferromagnetic resonance
　　　　　　Ferromagnetic resonance
　　　　　　Nuclear magnetic resonance
　　　　　　Paramagnetic resonance

Magnetic resonance elastography
　　BT:　　Magnetic resonance imaging

Magnetic resonance fingerprinting
　　BT:　　Magnetic resonance imaging

Magnetic resonance imaging
　　UF:　　Biomedical MRI
　　　　　　MRI
　　　　　　NMR imaging
　　　　　　Nuclear magnetic resonance imaging
　　BT:　　Imaging
　　RT:　　Diagnostic radiography

　　　　　　Image reconstruction
　　　　　　Magnetic resonance
　　NT:　　Diffusion tensor imaging
　　　　　　Functional magnetic resonance imaging
　　　　　　Magnetic resonance elastography
　　　　　　Magnetic resonance fingerprinting

Magnetic semiconductors
　　BT:　　Magnetic materials
　　　　　　Semiconductor materials

Magnetic sensors
　　BT:　　Magnetics
　　　　　　Sensors
　　NT:　　Spin valves

Magnetic separation
　　UF:　　Magnetic filters
　　BT:　　Magnetic fields
　　RT:　　Particle separators

Magnetic shielding
　　BT:　　Electromagnetic shielding

Magnetic stimulation
　　BT:　　Medical treatment

Magnetic storage
　　USE:　　Magnetic memory

Magnetic superlattices
　　BT:　　Magnetic materials
　　　　　　Superlattices

Magnetic susceptibility
　　BT:　　Magnetics

Magnetic switching
　　BT:　　Magnetics

Magnetic thin films
　　USE:　　Magnetic films

Magnetic tunnel junctions
　　USE:　　Magnetic tunneling

Magnetic tunneling
　　UF:　　Magnetic tunnel junctions
　　　　　　Magnetic tunnelling
　　　　　　Spin-dependent tunneling
　　　　　　Spin-dependent tunnelling
　　BT:　　Magnetoelectric effects

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Tunneling
RT: Magnetoelectronics
        Spin polarized transport

Magnetic tunnelling
    USE: Magnetic tunneling

Magnetic variables control
    BT: Control systems

Magnetic variables measurement
    UF: Magnetic measurements
    BT: Measurement
    NT: Magnetic anomaly detection
        Magnetic field measurement
        Magnetometers
        Permeability measurement

Magnetics
    NT: Biomagnetics
        Demagnetization
        Gyromagnetism
        Magnetic analysis
        Magnetic anisotropy
        Magnetic devices
        Magnetic fields
        Magnetic flux
        Magnetic force microscopy
        Magnetic forces
        Magnetic hysteresis
        Magnetic levitation
        Magnetic losses
        Magnetic materials
        Magnetic multilayers
        Magnetic particles
        Magnetic properties
        Magnetic sensors
        Magnetic susceptibility
        Magnetic switching
        Magnetization processes
        Magnetoacoustic effects
        Magnetoelectric effects
        Magnetomechanical effects
        Magnetooptic effects
        Magnets
        Magnonics
        Microwave magnetics
        Nonlinear magnetics
        Remanence

Magnetisation
    USE: Magnetization

Magnetisation processes
    USE: Magnetization processes

Magnetisation reversal
    USE: Magnetization reversal

Magnetization
    UF: Magnetisation
    BT: Magnetic analysis

Magnetization processes
    UF: Magnetisation processes
    BT: Magnetics
    RT: Hysteresis
    NT: Magnetization reversal
        Saturation magnetization

Magnetization reversal
    UF: Magnetisation reversal
    BT: Magnetization processes

Magneto electrical resistivity imaging technique
    UF: MERIT
    BT: Imaging
    RT: Geophysical measurement techniques

Magnetoacoustic effects
    UF: Acoustomagnetic effects
    BT: Magnetics
    RT: Acoustics
        Magnetomechanical effects

Magnetoelasticity
    BT: Magnetomechanical effects
    RT: Magnetic materials
    NT: Magnetostriction

Magnetoelectric effects
    BT: Magnetics
    NT: Hall effect
        Magnetic tunneling
        Magnetoelectronics
        Magnetoresistance
        Spintronics

Magnetoelectronic devices
    USE: Magnetoelectronics

Magnetoelectronics
    UF: Magnetoelectronic devices
    BT: Magnetoelectric effects
    RT: Magnetic tunneling
        Magnetoresistive devices

NT: Spin polarized transport

Magnetoencephalography
BT: Biomagnetics
RT: Biomedical image processing
Brain

Magnetofluid dynamics
USE: Magnetohydrodynamics

Magnetofluiddynamics
USE: Magnetohydrodynamics

Magnetohydrodynamic power generation
BT: Power generation
RT: Magnetohydrodynamics

Magnetohydrodynamics
UF: Hydromagnetics
MHD
Magnetofluid dynamics
Magnetofluiddynamics
BT: Dynamics
Hydrodynamics
Mechanical factors
RT: Electrohydraulics
Fluid flow
Magnetohydrodynamic power generation

Magnetomechanical effects
UF: Piezomagnetic effects
BT: Magnetics
RT: Magnetoacoustic effects
Mechanical factors
Stress
NT: Magnetic field induced strain
Magnetoelasticity
Magnetostriction

Magnetometers
UF: Magnetometry
BT: Magnetic variables measurement
NT: Magnetic anomaly detectors
SQUID magnetometers

Magnetometry
USE: Magnetometers

Magnetooptic devices
UF: Photomagnetic devices

BT: Magnetic devices
RT: Magnetooptic effects

Magnetooptic effects
UF: Photomagnetic effects
BT: Magnetics
RT: Kerr effect
Magnetooptic devices
Magnetooptic recording
Optics
NT: Faraday effect
Gyrotropism

Magnetooptic recording
BT: Laser applications
Magnetic recording
RT: Magnetooptic effects

Magnetoresistance
UF: Magnetoresistivity
BT: Magnetoelectric effects
RT: Magnetoresistive devices
Nanocontacts
Spin polarized transport
NT: Anisotropic magnetoresistance
Ballistic magnetoresistance
Colossal magnetoresistance
Enhanced magnetoresistance
Extraordinary magnetoresistance
Giant magnetoresistance
Ordinary magnetoresistance
Tunneling magnetoresistance

Magnetoresistive devices
UF: Magnetoresistors
BT: Magnetic devices
RT: Giant magnetoresistance
Magnetic heads
Magnetoelectronics
Magnetoresistance
Tunneling magnetoresistance

Magnetoresistivity
USE: Magnetoresistance

Magnetoresistors
USE: Magnetoresistive devices

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Magnetosphere
	UF:	Magnetotail
	BT:	Terrestrial atmosphere
	RT:	Geomagnetism

Magnetostatic waves
	BT:	Waves
	RT:	Electromagnetic propagation
		Magnetostatics

Magnetostatics
	BT:	Magnetic fields
	RT:	Magnetostatic waves

Magnetostriction
	BT:	Magnetoelasticity
		Magnetomechanical effects
	RT:	Magnetic materials
		Magnetostrictive devices

Magnetostrictive devices
	BT:	Magnetic devices
	RT:	Magnetostriction
		Sensors

Magnetotail
	USE:	Magnetosphere

Magnetrons
	BT:	Electron tubes
	RT:	Relativistic effects
		Sputtering

Magnets
	BT:	Magnetics
	RT:	Cobalt
		Saturation magnetization
	NT:	Electromagnets
		Micromagnetics
		Permanent magnets

Magnonics
	BT:	Magnetics

MAI
	USE:	Machine assisted indexing

Mail
	USE:	Postal services

Mail (electronic)
	USE:	Electronic mail

Main frames

Main line
	USE:	Mainframes
	USE:	Landline

Mainframes
	UF:	Main frames
	BT:	Digital computers
	RT:	Microcomputers
		Time sharing computer systems

Maintenance
	BT:	Reliability

Maintenance engineering
	UF:	Repair
	BT:	Engineering - general
	RT:	Automatic testing
		Availability
		Configuration management
		Fault diagnosis
		Inspection
		Monitoring
		Remaining life assessment
		Testing
	NT:	Maintenance management
		Predictive maintenance
		Preventive maintenance
		Systems support

Maintenance management
	BT:	Maintenance engineering
		Technical management

Major depressive disorder
	USE:	Depression

Maldistribution
	BT:	Reliability

Malicious software
	USE:	Malware

Malignancy
	USE:	Cancer

Malignant
	USE:	Cancer

Malignant tumors
	BT:	Tumors

Malware
	UF:	Malicious software

BT:	Software	
RT:	Anti-virus software	
	Cyber espionage	
	Phishing	
	Privacy	
	Security	
NT:	Computer viruses	
	Computer worms	
	Ransomware	
	Rootkit	
	Trojan horses	

Mammary glands
BT: Glands

Mammary neoplasms
USE: Breast neoplasms

Mammography
BT: Biomedical imaging
RT: Medical tests

Man machine systems
USE: Man-machine systems

Man-machine interfaces
USE: User interfaces

Man-machine systems
UF: Cyborgs
Man machine systems
BT: Systems, man, and cybernetics
RT: Androids
Cybernetics
Ergonomics
Human computer interaction
Human factors
Persuasive systems
Tactile Internet
NT: Digital intelligence
Extended reality
Interactive systems

Management
UF: Reliability management
BT: Business
RT: Analytic hierarchy process
Company reports
Ethical aspects
Learning management systems
Management information systems

Management training
Operations research
Personnel
Productivity
NT: Asset management
Best practices
Building management systems
Business continuity
Business process management
Business process re-engineering
Communication system operations and management
Conference management
Content management
Contingency management
Contract management
Contracts
Customer relationship management
Decision making
Dependability management
Distributed management
Enterprise resource planning
Facilities management
Financial management
Governmental factors
Human resource management
Information management
Interface management
International collaboration
Knowledge management
Marketing management
Organizational aspects
Outsourcing
Process planning
Production management
Program management
Project management
Public relations
Quality management
Requirements management
Research and development management
Resource management
Risk analysis
Safety management
Security management
Storage management
Supply chain management
Technical management

Technology management

Management accounting
- BT: Financial management
- RT: Company reports
- NT: Cost accounting

Management information base
- UF: MIB
- BT: Computer network management
- RT: Information systems
  - Telecommunication network management
  - Virtual environments

Management information systems
- BT: Information systems
- RT: Customer relationship management
  - Knowledge management
  - Management
  - Supply chain management
- NT: Portals

Management training
- BT: Training
- RT: Continuing education
  - Management

MANET
- USE: Mobile ad hoc networks

Manganese
- UF: Mn
- BT: Metals
- NT: Manganese alloys

Manganese alloys
- BT: Manganese

Manifold learning
- BT: Dimensionality reduction
- RT: Learning (artificial intelligence)

Manifolds
- UF: Exhaust manifolds
- BT: Machine components
- RT: Engines
  - Exhaust systems
  - Valves

Manipulator dynamics
- BT: Manipulators

Manipulator sensing systems
- USE: Robot sensing systems

Manipulator vision systems
- USE: Robot vision systems

Manipulators
- UF: Arms (robotic)
- BT: Robots
- RT: Assembly
  - Assembly systems
  - Control equipment
  - Control systems
  - Industrial control
  - Manufacturing automation
  - Materials handling
  - Mechanical variables control
  - Motion control
  - Nonlinear systems
  - Position control
  - Service robots
  - Servomechanisms
  - Servosystems
  - Telerobotics
- NT: End effectors
  - Manipulator dynamics
  - Micromanipulators

Manipulators (nonrobotic)
- USE: Remote handling

Manpower planning
- USE: Labor resources

Manuals
- UF: Technical manuals
- BT: Professional communication
- RT: Documentation
  - Training
  - Writing

Manufactured products
- UF: Counterfeit goods
- BT: Manufacturing
- RT: Product customization
  - Product design
  - Product development
- NT: Ceramic products
  - Chemical products
  - Consumer products
  - Electrical products
  - Food products

Fuels
Glass products
Mechanical products
Metal products
Paper products
Paper pulp
Plastic products
Rubber products
Sports equipment
Textile products
Tools
Windows

Manufacturing
- BT: Industry applications
- RT: Bonding
  - Business
  - Discrete-event systems
  - Industrial plants
  - Machine tools
  - Machining
  - Materials handling
  - Materials processing
  - Production control
  - Production engineering
  - Production facilities
  - Production systems
  - Productivity
  - Soldering
  - Stereolithography
  - Welding
  - Wheels
  - Wire drawing
- NT: Assembly
  - Assembly systems
  - Embossing
  - Fabrication
  - Green manufacturing
  - Lithography
  - Manufactured products
  - Manufacturing systems
  - Mass customization
  - Smart manufacturing
  - Tolerance analysis

Manufacturing automation
- UF: Factory automation
- BT: Automation
  - Industrial electronics
- RT: Assembly
  - Assembly systems
  - Automatic optical inspection
  - Industrial control
  - Machine vision
  - Manipulators

Mobile robots
Process control
Programmable control
Robots
- NT: Computer aided manufacturing
  - Computer integrated manufacturing
  - Computer numerical control
  - Flexible manufacturing systems

Manufacturing economics
- USE: Industrial economics

Manufacturing facilities
- USE: Production facilities

Manufacturing industries
- BT: Industries
- NT: Aerospace industry
  - Cement industry
  - Ceramics industry
  - Clothing industry
  - Electrical products industry
  - Electronics industry
  - Food industry
  - Footwear industry
  - Fuel processing industries
  - Glass industry
  - Machinery production industries
  - Metal product industries
  - Plastics industry
  - Pulp and paper industry
  - Rubber industry
  - Shipbuilding industry
  - Textile industry
  - Toy manufacturing industry

Manufacturing management
- USE: Production management

Manufacturing process
- USE: Manufacturing processes

Manufacturing processes
- UF: Compliant mechanisms
  - Froth flotation
  - Manufacturing process
- BT: Manufacturing systems
- RT: Rapid prototyping

Manufacturing systems
- BT: Manufacturing

	Production systems	
RT:	Bleaching	
	Industrial facilities	
	Production engineering	
NT:	Agile manufacturing	
	Automobile manufacture	
	Batch production systems	
	Blanking	
	Cellular manufacturing	
	Flow production systems	
	Food manufacturing	
	Forging	
	Glass manufacturing	
	Integrated manufacturing systems	
	Intelligent manufacturing systems	
	Job production systems	
	Joining processes	
	Layered manufacturing	
	Lean production	
	Manufacturing processes	
	Mass production	
	Melt processing	
	Pulp manufacturing	
	Sheet metal processing	
	Thermoforming	
	Three-dimensional printing	

Many core processing
USE: Multicore processing

Many core systems
USE: Multicore processing

Many valued logic
USE: Multivalued logic

Manycore computing
USE: Manycore processors

Manycore processors
UF: Manycore computing
BT: Multicore processing
RT: Program processors

Marine accidents
BT: Accidents
RT: Marine pollution
Marine safety
Marine vehicles

Marine animals
UF: Ocean animals
Sea animals

BT: Animals
RT: Aquaculture
NT: Dolphins
Whales

Marine cables
USE: Underwater cables

Marine equipment
BT: Marine technology
RT: Marine robots

Marine navigation
BT: Navigation
Oceanic engineering and marine technology
RT: Marine robots
Sea state

Marine pollution
BT: Water pollution
RT: Marine accidents
Oil pollution
Oils
Thermal pollution

Marine robots
BT: Marine vehicles
Robots
Underwater technology
RT: Autonomous underwater vehicles
Boats
Marine equipment
Marine navigation
Military vehicles
Mobile robots
Oceanography
Rescue robots
Underwater vehicles

Marine safety
BT: Safety
RT: Marine accidents
Marine technology
Marine vehicles

Marine science
USE: Oceanography

Marine technology
UF: Ocean technology
BT: Oceanic engineering and marine technology
RT: Excavation

	Marine safety
	Oceans
	Underwater vehicles
NT:	Marine equipment
	Marine transportation
	Underwater cables
	Underwater communication
	Underwater equipment
	Underwater structures
	Underwater technology

Marine transportation
BT:	Marine technology
RT:	Global Positioning System
	Seaports
NT:	Marine vehicles

Marine vegetation
UF:	Ocean vegetation
	Sea vegetation
BT:	Vegetation

Marine vehicles
UF:	Ships
BT:	Marine transportation
RT:	Marine accidents
	Marine safety
	Propellers
	Seaports
NT:	Boats
	Marine robots
	Underwater vehicles

Market opportunities
BT:	Marketing management
RT:	Consumer behavior
	Customer profiles
	Disruptive innovation
	Disruptive technologies
	Emissions trading

Market research
BT:	Customer relationship management
	Engineering management
RT:	Brand management
	Competitive intelligence
	Consumer products
	Customer satisfaction

Marketing management
BT:	Management
RT:	Electronic commerce
	Public relations
NT:	Advertising

	Brand management
	Distribution strategy
	Market opportunities
	Mass customization
	Promotion - marketing

Markov decision processes
| USE: | Markov processes |

Markov network
| USE: | Markov random fields |

Markov processes
UF:	Markov decision processes
BT:	Stochastic processes
RT:	Belief propagation
	Dynamic programming
	Hidden Markov models
	Infinite horizon
NT:	Markov random fields

Markov random fields
| UF: | Markov network |
| BT: | Markov processes |

Markup languages
BT:	Computer languages
RT:	Cascading style sheets
	Semantic Web
NT:	HTML
	OWL
	Page description languages
	SGML
	XML

Mars
| BT: | Planets |

Martensite
BT:	Crystalline materials
	Steel
RT:	Smart materials

Martime communications
| BT: | Communication networks |

Masers
UF:	Microwave lasers
BT:	Microwave devices
	Microwave technology
RT:	Atomic clocks
	Relativistic effects
	Stimulated emission
NT:	Gyrotrons

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MASH
USE: Multi-stage noise shaping

Mashing
USE: Mashups

Mashups
UF: Mashing
BT: Web services
World Wide Web

Masking threshold
BT: Psychoacoustic models

Mass customization
BT: Manufacturing
Marketing management

Mass production
BT: Manufacturing systems
RT: Production management

Mass spectrometry
USE: Mass spectroscopy

Mass spectroscopy
UF: Mass spectrometry
BT: Spectroscopy

Massive machine type communications
UF: MMTC
mmtc
BT: Machine-to-machine communications
RT: Intelligent systems

Massive MIMO
BT: MIMO communication

Master-slave
BT: Protocols

Mastercard
USE: Credit cards

Masticatory muscles
BT: Stomatognathic system

Matched filters
BT: Filters
RT: Filtering theory

Matching pursuit algorithms
BT: Algorithms

Material properties
BT: Materials
NT: Creep
Elasticity
Elongation
Resilience
Rigidity

Material storage
BT: Materials, elements, and compounds
RT: Canning
Energy storage
NT: Bulk storage
Containers
Fuel storage
Secure storage
Stacking
Storage automation
Warehousing
Water storage

Materials
BT: Materials, elements, and compounds
RT: Materials handling
Oxidation
NT: Acoustic materials
Additives
Aggregates
Amorphous materials
Auxetic materials
Biological materials
Biomedical materials
Building materials
Catalysts
Ceramics
Composite materials
Conducting materials
Corrosion inhibitors
Crystalline materials
Crystals
Dielectric materials
Films
Fluids
Hazardous materials
Inorganic materials
Lacquers
Laminates
Magnetic materials
Material properties
Media
Mesoporous materials
Metal foam
Metallic materials

Metamaterials
Nanostructured materials
Oils
Optical materials
Organic inorganic hybrid materials
Organic materials
Paints
Paper pulp
Petrochemicals
Phase change materials
Photoconducting materials
Plastics
Polymer foams
Polymer gels
Polymers
Production materials
Radioactive materials
Raw materials
Resins
Resists
Semiconductor materials
Sheet materials
Smart materials
Solids
Superconducting materials
Surfactants
Terahertz materials
Textiles
Thermoelectric materials
Waste materials
Wire

Materials handling
UF: Materials handling systems
      Scrubbers
BT: Materials science and technology
RT: Canning
      Compaction
      Die casting
      Dispatching
      Lifting equipment
      Manipulators
      Manufacturing
      Materials
      Mobile robots
      Pipelines
      Radioactive waste
      Radioactive waste disposal
      Robots
      Stacking
NT: Cleaning
      Decontamination
      Freight handling
      Materials handling equipment
      Pallets
      Remote handling

Materials handling equipment
BT: Materials handling
RT: Machinery
      Production equipment
      Waste handling equipment
NT: Containers
      Grippers
      Lifting equipment
      Pulleys
      Remote handling equipment
      Winches

Materials handling systems
USE: Materials handling

Materials preparation
UF: Atmospheric sintering
BT: Materials science and technology
RT: Corrosion inhibitors
      Flame retardants
NT: Doping
      Firing
      Ion implantation
      Laser sintering
      Sputtering

Materials processing
UF: Mineral processing
BT: Production
RT: Bonding
      Canning
      Corrosion inhibitors
      Electrochemical deposition
      Fabrication
      Finishing
      Foundries
      Manufacturing
      Materials science and technology
      Metalworking machines
      Plasma welding
      Soldering
      Welding
NT: Annealing
      Bleaching
      Casting
      Coatings
      Curing

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Etching
Heat treatment
Joining processes
Lamination
Laser materials processing
Machining
Melt processing
Plasma materials
processing
Plating
Pressing
Punching
Refining
Shearing
Smelting
Softening
Swaging

Materials reliability
    BT: Materials science and
technology
             Reliability
    RT: Green's function methods

Materials requirements planning
    UF: MRP
    BT: Production planning
    RT: Lot sizing
             Scheduling
             Supply chain management
             Supply chains
    NT: Bills of materials

Materials science
    USE: Materials science and
technology

Materials science and technology
    UF: Materials science
    BT: Materials, elements, and
compounds
    RT: Austenite
             Crystals
             Gases
             Liquids
             Materials processing
             Solid-state physics
             Solids
    NT: Absorption
             Aging
             Chemical analysis
             Contamination
             Degradation
             Filtration
             Hysteresis

Impurities
Materials handling
Materials preparation
Materials reliability
Materials testing
Metallurgy
Microstructure
Periodic structures
Pigmentation
Separation processes
Surface engineering
Surfaces

Materials testing
    BT: Materials science and
technology
             Testing
    NT: Accelerated aging
             Acoustic testing
             Adhesive strength
             Bonding forces
             Delamination
             Elastic recovery
             Nondestructive testing

Materials, elements, and compounds
    NT: Chemical elements
             Compounds
             Material storage
             Materials
             Materials science and
technology
             Metals

Maternity benefits
    USE: Employee welfare

Mathematical analysis
    BT: Mathematical model
    NT: Formal concept analysis
             Fractional calculus
             Modal analysis

Mathematical model
    BT: Mathematics
    RT: Artificial neural networks
    NT: Mathematical analysis

Mathematical programming
    BT: Mathematics
             Optimization methods

Mathematics
    RT: Bio-inspired computing
             Econometrics

	Maximum likelihood	
detection		
	STEM	
	Viterbi algorithm	
	Waveguide theory	
NT:	Accuracy	
	Algebra	
	Algorithms	
	Arithmetic	
	Azimuth	
	Boundary value problems	
	Calculus	
	Closed-form solutions	
	Combinatorial mathematics	
	Computational efficiency	
	Conformal mapping	
	Convergence	
	Convex functions	
	Cyclic redundancy check	
	Dynamical systems	
	Eigenvalues and	
eigenfunctions		
	Equations	
	Estimation	
	Euclidean distance	
	Finite difference methods	
	Finite element analysis	
	Fourier series	
	Functional analysis	
	Geometry	
	Gradient methods	
	Graph theory	
	Harmonic analysis	
	Iterative methods	
	Kernel	
	Laplace equations	
	Lattices	
	Limit-cycles	
	Linear matrix inequalities	
	Linear systems	
	Linearization techniques	
	Mathematical model	
	Mathematical programming	
	Method of moments	
	Minimization	
	Mode matching methods	
	Network theory (graphs)	
	Nonlinear equations	
	Nonlinear systems	
	Numerical analysis	
	Optimization	
	Piecewise linear techniques	
	Predator prey systems	
	Probability	
	Quaternions	

Random processes
Root mean square
Sequences
Set theory
Simulated annealing
Smoothing methods
Spirals
Statistics
Stochastic processes
Superposition calculus
Taylor series
Tensors
Topology
Transforms
Transmission line matrix
methods
Uncertain systems
Utility theory

Mathematics computing
  BT: Computer applications
  NT: Matlab

Matlab
  UF: Matrix laboratory
  BT: Mathematics computing
  RT: Computer aided instruction
          Numerical analysis
          Simulation
          Software libraries

Matrices
  UF: Matrix algebra
  BT: Linear algebra
  RT: Method of moments
          Mode matching methods
  NT: Jacobian matrices
          Matrix decomposition
          Singular value
decomposition

Matrix algebra
  USE: Matrices

Matrix converters
  UF: Matrix convertors
  BT: Power conversion
  RT: Power electronics

Matrix convertors
  USE: Matrix converters

Matrix decomposition
  BT: Matrices
  RT: Signal processing

Statistics

Matrix laboratory
>   USE: Matlab

Matter waves
>   UF: De Broglie methods
>   De broglie hypothesis
>   BT: Waves

Maximum a posteriori estimation
>   UF: Maximum a posteriori estimator
>   Maximum a posteriori framework
>   Maximum a posteriori method
>   Maximum a posteriori probability
>   Maximum a-posteriori
>   Maximum aposteriori
>   BT: Estimation theory

Maximum a posteriori estimator
>   USE: Maximum a posteriori estimation

Maximum a posteriori framework
>   USE: Maximum a posteriori estimation

Maximum a posteriori method
>   USE: Maximum a posteriori estimation

Maximum a posteriori probability
>   USE: Maximum a posteriori estimation

Maximum a-posteriori
>   USE: Maximum a posteriori estimation

Maximum aposteriori
>   USE: Maximum a posteriori estimation

Maximum likelihood decoding
>   BT: Decoding
>   RT: Algorithms

Maximum likelihood detection
>   UF: Additive metric
>   Complexity constrained detection

Linear filtering
>   BT: Algorithms
>   RT: Filtering theory
>   Mathematics
>   Probability
>   Statistics

Maximum likelihood estimation
>   UF: MLE
>   BT: Estimation
>   Statistics
>   RT: Set theory
>   Tracking

Maximum likelihood linear regression
>   BT: Linear regression

Maximum power point trackers
>   UF: MPPT
>   Maximum power point tracking
>   BT: Solar power generation
>   RT: Inverters
>   Power conversion
>   Solar energy

Maximum power point tracking
>   USE: Maximum power point trackers

Maxwell equations
>   BT: Equations
>   RT: Electric fields
>   Magnetic fields
>   Perfectly matched layers

Maxwell-Boltzmann distribution
>   UF: Maxwell-Boltzmann statistics
>   BT: Probability distribution

Maxwell-Boltzmann statistics
>   USE: Maxwell-Boltzmann distribution

MC-CDMA
>   USE: Multicarrier code division multiple access

MCCDMA
>   USE: Multicarrier code division multiple access

MDDI

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USE: Musical instrument digital interfaces

Mean square error methods
BT: Approximation methods
RT: Error analysis
Estimation theory
Least squares approximations
NT: Least mean squares methods

Measurement
UF: Metrics
Performance measurement
Performance metrics
BT: Instrumentation and measurement
RT: Containers
Data acquisition
Instruments
Measurement standards
Phase frequency detectors
Telemetry
Testing
Transducers
NT: Accelerometers
Acoustic measurements
Antenna measurements
Anthropometry
Area measurement
Atmospheric measurements
Atomic measurements
Bathymetry
Biomedical measurement
Calorimetry
Coordinate measuring machines
Density measurement
Distance measurement
Distortion measurement
Doppler measurement
Dosimetry
Dynamic range
Electric variables measurement
Electromagnetic measurements
Extraterrestrial measurements
Fluid flow measurement
Frequency measurement
Gain measurement
Gas chromatography

Geologic measurements
Geophysical measurements
Interferometry
Key performance indicator
Length measurement
Lifetime estimation
Loss measurement
Magnetic variables measurement
Measurement by laser beam
Measurement errors
Measurement techniques
Measurement uncertainty
Measurement units
Mechanical variables measurement
Micrometers
Moisture measurement
Noise measurement
Nuclear measurements
Optical variables measurement
Particle beam
Particle measurements
Performance evaluation
Phase measurement
Plasma measurements
Pollution measurement
Pressure measurement
Pulse measurements
Reflectometry
Reproducibility of results
Scintillation counters
Sea state
Semiconductor device measurement
Sensitivity
Shape measurement
Size measurement
Software measurement
Soil measurements
Spectral efficiency
Spectroscopy
Thermal variables measurement
Time measurement
UHF measurements
Ultrasonic variables measurement
Viscosity
Wavelength measurement
Wide area measurements
pH measurement

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Measurement by laser beam
BT: Measurement
RT: Laser applications
NT: Laser velocimetry

Measurement errors
BT: Measurement
RT: Error analysis
        Statistical analysis

Measurement standards
BT: Standards categories
RT: ISO
        Measurement
        Measurement units

Measurement techniques
BT: Measurement
RT: Measurement uncertainty
NT: Calibration
        Dynamic equilibrium

Measurement uncertainty
BT: Measurement
RT: Estimation
        Measurement techniques

Measurement units
UF: Units (measurement)
BT: Measurement
RT: Measurement standards
NT: International System of Units
        Nanometers

Mechanical bearings
BT: Friction
RT: Ball bearings
        Lubrication
        Mechanical factors
NT: Rolling bearings

Mechanical cables
UF: Cables (mechanical)
BT: Cables

Mechanical energy
BT: Mechanical systems
RT: Kinetic energy
        Potential energy

Mechanical engineering
BT: Engineering - general
RT: Mechanical products

Precision engineering
Pressure vessels
NT: Mechanical power transmission

        Mechanical systems

Mechanical factors
UF: Mechanical properties
BT: Physics
RT: Acoustic noise
        Electrostriction
        Magnetomechanical effects
        Mechanical bearings
        Mechanical variables control
        Oils
        Structural engineering
NT: Acceleration
        Aerodynamics
        Bending
        Biomechanics
        Damping
        Dynamics
        Fatigue
        Force
        Friction
        Hydrodynamics
        Kinematics
        Lubrication
        Magnetohydrodynamics
        Photoelasticity
        Pressure effects
        Shock (mechanics)
        Strain
        Stress
        Surface cracks
        Surface stress
        Torque
        Vibrations
        Volume relaxation
        Workability

Mechanical guides
UF: Guideways (mechanical)
        Slideways (mechanical)
BT: Mechanical products
RT: Machine tools
        Position control

Mechanical power transmission
UF: Continuously variable transmission
        Powertrain
BT: Mechanical engineering
RT: Cams

Drives
Engines
Gears
Oils
Power systems
Shafts
NT: Torque converters

Mechanical products
UF: Ball screws
BT: Manufactured products
      Production
RT: Escalators
      Mechanical engineering
      Structural rings
NT: Automotive components
      Axles
      Bellows
      Blades
      Brakes
      Couplings
      Fasteners
      Flanges
      Gears
      Hoses
      Machine components
      Mechanical guides
      Needles
      Orifices
      Pistons
      Pressure vessels
      Seals
      Springs
      Steering systems
      Structural shapes
      Tires
      Vents
      Wheels

Mechanical properties
USE: Mechanical factors

Mechanical sensors
BT: Sensors
NT: Capacitive sensors

Mechanical splines
BT: Machine components
RT: Gears
      Machine tool spindles
      Shafts

Mechanical stress
USE: Stress

Mechanical systems
BT: Mechanical engineering
RT: Gears
      Mechatronics
      Microelectromechanical devices
      Pneumatic systems
      Turbomachinery
NT: Mechanical energy
      Micromechanical devices
      Suspensions (mechanical systems)

Mechanical variables control
BT: Control systems
RT: Flexible structures
      Frequency control
      Manipulators
      Mechanical factors
      Mobile robots
      Motor drives
      Robots
NT: Displacement control
      Force control
      Level control
      Motion control
      Pitch control (position)
      Position control
      Shape control
      Size control
      Strain control
      Stress control
      Thickness control
      Torque control
      Velocity control
      Vibration control
      Weight control

Mechanical variables measurement
BT: Measurement
RT: Frequency measurement
      Transducers
NT: Angular velocity
      Displacement measurement
      Force measurement
      Motion measurement
      Position measurement
      Rotation measurement
      Strain measurement
      Stress measurement
      Thickness measurement
      Torque measurement
      Velocity measurement
      Vibration measurement

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Volume measurement
Weight measurement

Mechanical vibrations
    USE: Vibrations

Mechanobiology
    BT: Biology
    RT: Biological system modeling
            Biomechanics
            Cell signaling
            Nanomedicine

Mechatronics
    BT: Electron devices
    RT: Autonomous vehicles
            Control equipment
            Intelligent control
            Intelligent sensors
            Mechanical systems
            Microelectromechanical devices
            Microelectromechanical systems
            Robots
            Vehicular automation
    NT: Biomechatronics

Media
    BT: Materials
    RT: Closed captioning
            Design tools
    NT: Nonhomogeneous media
            Photorealism
            Random media

Media access control
    USE: Media Access Protocol

Media Access Protocol
    UF: MAC
            MAC protocol
            Media access control
            Medium access control
    BT: Access protocols
    RT: Local area networks
            Metropolitan area networks

Media sharing Web sites
    USE: Multimedia Web sites

Media streaming
    USE: Streaming media

Mediation

    BT: Middleware

Medical computing
    USE: Biomedical computing

Medical conditions
    UF: Medical disorders
    BT: Medical services
    NT: Aneurysm
            Atrophy
            Autism
            Blindness
            Cataracts
            Congestive heart failure
            Cybersickness
            Deafness
            Depression
            Diabetes
            Diseases
            Hemorrhaging
            Hypertension
            Hyperthermia
            Injuries
            Kidney stones
            Obesity
            Paralysis
            Pregnancy
            Sleep apnea
            Stroke (medical condition)
            Thrombosis
            Tumors

Medical control systems
    BT: Control systems
    RT: Assistive technology
            Biomedical equipment
            Orthotics
            Prosthetics

Medical devices
    BT: Biomedical equipment
    RT: Biomedical communication

Medical diagnosis
    UF: Diagnosis (medical)
            Patient diagnosis
    BT: Medical services
    RT: Biomedical imaging
            Diagnostic radiography
            Diseases
            Electroencephalography
            Medical expert systems
            Occupational medicine
            Radiography
            Translational research

NT: Autopsy
Bronchoscopy
Colonography
Computer aided diagnosis
Medical signal detection
Nanomedicine
Plethysmography
Sensitivity and specificity

Medical diagnostic imaging
BT: Biomedical imaging
RT: Cancer
Positron emission tomography
Solid scintillation detectors
Tumors
NT: Anatomical structure

Medical disorders
USE: Medical conditions

Medical equipment
USE: Biomedical equipment AND Medical instruments

Medical expert systems
BT: Biomedical computing
Expert systems
RT: Medical diagnosis
Medical treatment

Medical image processing
USE: Biomedical image processing

Medical imaging
USE: Biomedical imaging

Medical information systems
BT: Biomedical computing
Computer applications
Information systems
NT: Electronic medical records

Medical instruments
UF: Medical equipment
BT: Biomedical equipment
Instruments

Medical robotics
UF: Medical robots
Surgical robots
BT: Robots
RT: Biomedical equipment
Endomicroscopy

Wearable robots
NT: Rehabilitation robotics

Medical robots
USE: Medical robotics

Medical services
UF: Doctor
Emergency medical services
Health care
Healthcare
Nursing
Physician
BT: Engineering in medicine and biology
RT: Behavioral sciences
Chemotherapy
Emergency services
Translational research
NT: Assisted living
Catheterization
Clinical diagnosis
Cybercare
Electronic healthcare
Health information management
Hospitals
In vitro
In vivo
Medical conditions
Medical diagnosis
Medical tests
Medical treatment
Occupational medicine
Point of care
Prosthetics
Public healthcare
Sensory aids
Smart healthcare
Vaccines
X-rays

Medical signal detection
BT: Medical diagnosis

Medical simulation
BT: Simulation

Medical specialties
BT: Engineering in medicine and biology
NT: Anesthesiology
Cardiology
Dermatology

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Gastroenterology
Gerontology
Gynecology
Neonatology
Neurology
Oncology
Ophthalmology
Pathology
Pediatrics
Pulmonology

Medical tests
BT:	Medical services
RT:	Mammography
NT:	Amniocentesis
	Biopsy
	Cancer detection
	Colonoscopy
	Pregnancy test

Medical treatment
UF:	Patient identification
	Patient treatment
	Therapy
BT:	Medical services
RT:	Biohazards
	Biomedical applications of radiation
	Medical expert systems
	Occupational medicine
	Psychiatry
NT:	Anesthesia
	Angioplasty
	Brachytherapy
	Brain stimulation
	Cancer treatment
	Chemotherapy
	Clinical trials
	Cryotherapy
	Defibrillation
	Dentistry
	Electrical stimulation
	Electronic medical prescriptions
	Electroporation
	Embolization
	Fibrillation
	Geriatrics
	Hepatectomy
	Hospitals
	Hyperthermia
	Intubation
	Lithotripsy
	Magnetic stimulation
	Neuromuscular stimulation

Neutron capture therapy
Noninvasive treatment
Orthopedic procedures
Orthotics
Patient rehabilitation
Pharmaceuticals
Precision medicine
Proton therapy
Surgery

Medium access control
USE:	Media Access Protocol

Medium resolution imaging spectrometer
USE:	MERIS

Medium voltage
UF:	Medium-voltage
BT:	Voltage measurement

Medium-voltage
USE:	Medium voltage

Meeting planning
BT:	Planning

Meetings
UF:	Technical meetings
BT:	Professional communication
RT:	Public speaking
	Teleconferencing
NT:	Conferences

Meetings (technical)
USE:	Conferences

Mel frequency cepstral coefficient
UF:	MFCC
	Mel-frequency cepstral coefficient
BT:	Cepstral analysis

Mel-frequency cepstral coefficient
USE:	Mel frequency cepstral coefficient

Melanoma
BT:	Skin cancer

Melt processing
BT:	Manufacturing systems
	Materials processing
RT:	Die casting
	Smelting

NT: Vacuum arc remelting

Membrane potentials
UF: Membrane voltage
          Transmembrane potential
BT: Cells (biology)
RT: Action potentials
          Neurons

Membrane voltage
USE: Membrane potentials

Membranes
USE: Biomembranes

Memetics
BT: Evolution (biology)
RT: Cultural differences
          Genetics

Memoirs
USE: Autobiographies

Memory
UF: Data storage
BT: Computers and information processing
RT: CMOS memory circuits
          Memory architecture
          Phase change materials
          Recording
NT: Analog memory
          Associative memory
          Buffer storage
          Cache memory
          Content addressable storage
          Flash memories
          Magnetic memory
          Memory management
          Nonvolatile memory
          Phase change memory
          Random access memory
          Read only memory
          Read-write memory
          Registers
          Scanning probe data storage
          Semiconductor memory

Memory architecture
BT: Computer architecture
RT: Memory
          Memory management

Memory management (computers)
UF: Garbage collection
BT: Computer architecture
          Memory
RT: Memory architecture
          Memory modules
          Storage management

Memory modules
BT: Printed circuits
RT: Integrated circuits
          Memory management

Memory resistors
USE: Memristors

Memoryless channel
USE: Memoryless systems

Memoryless systems
UF: Memoryless channel
BT: Probability

Memristor circuits
USE: Memristors

Memristors
UF: Memory resistors
          Memristor circuits
BT: Resistors
RT: Neuromorphic engineering
          Resistive RAM

MEMS
USE: Microelectromechanical systems

MEMS switches
USE: Microswitches

Mental disorders
UF: Mental illness
BT: Psychiatry

Mental health
BT: Human factors
          Psychology
RT: Behavioral sciences

Mental illness
USE: Mental disorders

Mental models
USE: Cognitive science

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Mentoring
  BT: Career development
  RT: Training

Mercury (metals)
  UF: Hg
  BT: Chemical elements
          Metals

Mercury (planets)
  BT: Planets

Mergers
  USE: Corporate acquisitions

Merging
  BT: Data handling
  RT: Sorting

MERIS
  UF: Medium resolution imaging
spectrometer
  BT: Spectroscopy

MERIT
  USE: Magneto electrical
resistivity imaging technique

Merit pay
  USE: Incentive schemes

Mesencephalon
  USE: Midbrain

MESFET circuits
  BT: FET circuits
  RT: MESFETs
  NT: MESFET integrated circuits

MESFET integrated circuits
  BT: FET integrated circuits
          Integrated circuits
          MESFET circuits
  RT: MESFETs
  NT: Microwave FET integrated
circuits

MESFETs
  UF: Schottky FETs
  BT: Field effect transistors
  RT: MESFET circuits
          MESFET integrated circuits
          Schottky barriers
  NT: Microwave FETs

Mesh generation
  BT: Computer displays
  RT: Computer graphics

Mesh networks
  BT: Ad hoc networks

Mesomycetozoea
  BT: Organisms

Mesons
  UF: Kaons
          Muons
          Pions
  BT: Elementary particles
  RT: Cosmic rays

Mesoporous
  USE: Mesoporous materials

Mesoporous materials
  UF: Mesoporous
  BT: Materials
  RT: Electrocatalysts

Message authentication
  BT: Data security
  RT: Cryptography
          Digital signatures
          Message systems
  NT: Steganography

Message passing
  BT: Distributed processing
  RT: Belief propagation

Message service
  UF: Messaging service
          WeChat
  BT: Web services

Message systems
  BT: Communications
technology
  RT: Cluster computing
          Digital signatures
          Message authentication
  NT: Electronic mail
          Electronic messaging
          Postal services
          Publish subscribe systems
          Voice mail

Message-oriented middleware

BT: Middleware

Messaging service
USE: Message service

Meta data
USE: Metadata

Meta search
USE: Metasearch

Meta-modeling
USE: Metamodeling

Meta-search
USE: Metasearch

Metabolic networks
USE: Biochemistry

Metabolism
USE: Biochemistry

Metabolomics
BT: Molecular biomarkers

Metacomputing
BT: Distributed computing
NT: Grid computing

Metadata
UF: Meta data
BT: Data models
RT: Image annotation
Linked data
NT: Annotations

Metal cutting tools
BT: Cutting tools
RT: Plasma jets

Metal enclosures
BT: Metal products

Metal foam
BT: Materials
RT: Lightweight structures
Metals
Polymer foams

Metal oxide semiconductor heterojunction FETs
USE: MOSHFETs

Metal product industries
BT: Manufacturing industries

RT: Metal products

Metal products
BT: Manufactured products
RT: Ball bearings
Blanking
Metal product industries
Metals industry
Swaging
NT: Metal enclosures

Metal vapor lasers
USE: Gas lasers

Metal-insulator structures
BT: Insulators
RT: Electrodes
MIS devices
MOS integrated circuits
NT: MIM capacitors
MIM devices

Metal-insulator-metal capacitors
USE: MIM capacitors

Metal-insulator-metal devices
USE: MIM devices

Metal-insulator-semiconductor devices
USE: MIS devices

Metal-oxide semiconductor field effect transistor
USE: MOSFET circuits

Metal-oxide semiconductors
USE: MOS devices

Metal-oxide-nitride-oxide-semiconductors
USE: MONOS devices

Metal-oxide-nitride-oxide-silicon
USE: MONOS devices

Metal-oxide-semiconductor devices
USE: MOS devices

Metal-semiconductor interfaces
USE: Semiconductor-metal interfaces

Metallic materials
BT: Materials
RT: Cermet

Metallic superlattices

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BT: Superlattices

Metallisation
USE: Metallization

Metallization
UF: Metallisation
BT: Metals
RT: Wiring
NT: Integrated circuit metallization

Metallurgy
BT: Materials science and technology
RT: Iron alloys
          Metals

Metalorganic vapor deposition
USE: MOCVD

Metals
UF: Alloys
BT: Materials, elements, and compounds
RT: Blanking
          Die casting
          Filler metals
          Inorganic compounds
          Metal foam
          Metallurgy
          Metalworking machines
NT: Alloying
          Aluminum
          Barium
          Bismuth
          Boron
          Cadmium
          Calcium
          Chromium
          Cobalt
          Copper
          Digital alloys
          Erbium
          Gallium
          Germanium
          Gold
          Hafnium
          Indium
          Iron
          Lanthanum
          Lead
          Lithium
          Magnesium
          Manganese

Mercury (metals)
Metallization
Neodymium
Nickel
Niobium
Palladium
Platinum
Rare earth metals
Samarium
Silver
Steel
Strontium
Tin
Titanium
Tungsten
Yttrium
Zinc

Metals industry
UF: Aluminium industry
          Aluminum industry
BT: Industries
RT: Metal products
          Smelting

Metalworking machines
BT: Machine tools
RT: Cutting tools
          Materials processing
          Metals

Metamaterial cloaking
USE: Optical cloaking

Metamaterials
UF: Acoustic metamaterials
          Left handed materials
          Left-handed materials
          Microwave metamaterials
BT: Materials
RT: Metasurfaces
          Nanocomposites
          Optical materials
          Refractive index
          Smart materials
          Split ring resonators
NT: Electromagnetic metamaterials

          Optical cloaking
          Optical metamaterials

Metamodeling
UF: Meta-modeling
BT: Modeling

Metamorphic HEMTs
    USE: mHEMTs

Metasearch
    UF: Federated search
        Federated searching
        Meta search
        Meta-search
    BT: Search methods
    RT: Triples (Data structure)
        Web search

Metastasis
    UF: Metastatic disease
    BT: Cancer
    RT: Diseases

Metastatic disease
    USE: Metastasis

Metasurfaces
    BT: Surfaces
    RT: Metamaterials
        Thin films

Meteorological factors
    BT: Geoscience
    RT: Fading channels
        Multipath channels

Meteorological radar
    UF: Radar meteorology
    BT: Radar
    RT: Backscatter
        Radar imaging

Meteorology
    UF: Climate
        Weather
    BT: Geophysics
    RT: Air pollution
        Atmosphere
        Atmospheric measurements
        Data assimilation
        Environmental factors
        Ice
        Ionosphere
        Pressure effects
        Remote sensing
        Terrestrial atmosphere
    NT: Humidity
        Lightning
        Monsoons
        Rain
        Snow
        Storms
        Weather forecasting
        Wind

Meter reading
    BT: Power system measurements
    NT: Automatic meter reading
        Smart meters

Meters
    BT: Instruments
    NT: Dynamometers
        Flowmeters
        Goniometers
        Potentiometers
        Radiometers
        Tachometers
        Vibrometers
        Voltmeters
        Watthour meters
        Wattmeters

Methane
    BT: Natural gas
    RT: Carbon emissions

Methanol
    UF: Carbinol
        Methyl alcohol
        Wood alcohol
        Wood naphtha
        Wood spirits
    BT: Chemical compounds
    RT: Anti-freeze
        Fuels
        Solvents

Method of moments
    UF: Galerkin method
        Method-of-moments
        MoM
        Moment methods
    BT: Mathematics
        Numerical analysis
    RT: Boundary-element methods
        Integral equations
        Matrices

Method-of-moments
    USE: Method of moments

Methyl alcohol
    USE: Methanol

Metrics
USE:　　Measurement

Metro area networks
USE:　　Metropolitan area networks

Metrology
BT:　　Science - general
NT:　　Optical metrology

Metropolitan area networks
UF:　　Metro area networks
BT:　　Communication systems
　　　　Computer networks
　　　　Digital systems
RT:　　Distributed computing
　　　　IEEE 802.16 Standard
　　　　Internetworking
　　　　LAN interconnection
　　　　Media Access Protocol
　　　　Multiprocessor interconnection
　　　　Open systems
　　　　Protocols
　　　　Regional area networks
　　　　Token networks

Metropolitan areas
USE:　　Urban areas

MFCC
USE:　　Mel frequency cepstral coefficient

Mg
USE:　　Magnesium

MgO
USE:　　Magnesium oxide

MHD
USE:　　Magnetohydrodynamics

mHEMTs
UF:　　Metamorphic HEMTs
BT:　　HEMTs

MIB
USE:　　Management information base

MIC
USE:　　Microwave integrated circuits

Mice
UF:　　Mouse
BT:　　Animals

Mice flows
USE:　　Communication system traffic AND
　　　　Computer networks

Micro air vehicles
USE:　　Unmanned aerial vehicles

Micro computers
USE:　　Microcomputers

Micro-computers
USE:　　Microcomputers

Micro-electro-mechanical devices
USE:　　Microelectromechanical devices

Micro-electro-mechanical systems
USE:　　Microelectromechanical systems

Micro-electromechanical devices
USE:　　Microelectromechanical devices

Micro-electromechanical systems
USE:　　Microelectromechanical systems

Micro-hydro
USE:　　Microhydro power

Micro-optical components
USE:　　Microoptics

Micro-opticalmechanical devices
USE:　　Microoptics

Microactuators
BT:　　Actuators
　　　　Microelectromechanical devices
RT:　　Microrelays

Microarchitecture
BT:　　Software architecture

Microassembly
UF:　　Die attach

Die bonding
BT: Assembly
RT: Flip-chip devices
Integrated circuit manufacture
Micromachining
Semiconductor device manufacture

Microbial eletrolysis cells
USE: Fuel cells

Microbial fuel cells
USE: Fuel cells

Microbiology
BT: Biology
NT: Electroporation
Virology

Microcavities
BT: Optical resonators
RT: Cavity resonators
Light emitting diodes
Microoptics
Photoluminescence
Spontaneous emission
Whispering gallery modes

Microcell networks
UF: Microcells
Small cell networks
BT: Cellular networks
RT: Ultra-dense networks

Microcells
USE: Microcell networks

Microchannels
BT: Hydraulic diameter

Microchip lasers
BT: Solid lasers

Microchips
USE: Integrated circuits

Microcomputers
UF: Laptops
Micro computers
Micro-computers
Minicomputers
Personal computers
BT: Computers
RT: Consumer electronics

Home computing
Mainframes
Microprocessors
Office automation
NT: Portable computers
Workstations

Microcontact printing
USE: Soft lithography

Microcontrollers
BT: Control equipment
Microprocessors
RT: CMOS technology
Control systems
High-speed integrated circuits
Neurocontrollers
System-on-chip

Microdisplays
BT: Displays
RT: Liquid crystal devices
Liquid crystal on silicon
Microoptics

Microeconomics
BT: Economics
RT: Linear programming
Monopoly
Oligopoly
Supply and demand
NT: Economies of scale
Industrial economics

Microelectrodes
BT: Electrodes
RT: Neurophysiology
Neurostimulation

Microelectromechanical devices
UF: Micro-electro-mechanical devices
Micro-electromechanical devices
BT: Microelectromechanical systems
RT: Magnetic particles
Mechanical systems
Mechatronics
Micromachining
Microsensors
NT: Microactuators
Micromotors
Micropumps

2021 IEEE Thesaurus

Microvalves

Microelectromechanical systems
UF: MEMS
Micro-electro-mechanical systems
Micro-electromechanical systems
BT: Electron devices
RT: Mechatronics
Nanoelectromechanical systems
NT: Microelectromechanical devices
Radiofrequency microelectromechanical systems

Microelectronic implants
BT: Implants

Microelectronic stimulation
USE: Electrical stimulation

Microelectronics
BT: Electronic equipment
RT: Integrated circuits

Microfabrication
BT: Fabrication
Micromechanical devices
RT: Fiducial markers
Nanotechnology

Microfiltration
BT: Filtration
RT: Contamination

Microfluidics
BT: Electron devices
Fluidics
RT: Biochips
Biomedical engineering
Fluidic microsystems
Hydrodynamics

Micrographs
USE: Photomicrography

Microgrids
BT: Power grids
RT: Distributed power generation
Power distribution networks
Power generation
Power system management
Power system reliability
Smart grids

Microgrippers
USE: Grippers

Microhydro power
UF: Micro-hydro
BT: Hydroelectric power generation
RT: Appropriate technology

Microinjection
BT: Biology

Micromachining
BT: Electronic equipment manufacture
RT: Electrochemical machining
Embossing
Etching
Integrated circuit manufacture
Microassembly
Microelectromechanical devices
Semiconductor device manufacture

Micromagnetics
BT: Magnets

Micromanipulators
BT: Manipulators

Micromechanical devices
UF: Micromechanical systems
Microsystems
BT: Electron devices
Mechanical systems
RT: Microoptics
Nanogenerators
NT: Biomedical microelectromechanical systems
Fluidic microsystems
Microfabrication

Micromechanical systems
USE: Micromechanical devices

Micrometers
UF: Micrometres
Micrometry
Microns
BT: Measurement

2021 IEEE Thesaurus

RT: Distance measurement
Interferometry
Length measurement
Strain measurement
Thickness measurement

Micrometres
USE: Micrometers

Micrometry
USE: Micrometers

Micromirrors
UF: Digital micromirror devices
BT: Microoptics
Mirrors
RT: Optical arrays
Optical projectors

Micromotors
BT: Microelectromechanical devices
Motors
Rotating machines

Microns
USE: Micrometers

Microoptical components
USE: Microoptics

Microoptics
UF: Micro-optical components
Micro-opticalmechanical devices
Microoptical components
BT: Optics
RT: Integrated optics
Integrated optoelectronics
Microcavities
Microdisplays
Micromechanical devices
Microswitches
NT: Micromirrors

Microorganisms
UF: Bacteria
Bacterial content
Viruses (microorganisms)
BT: Organisms
RT: Biological cells
Immune system
Molecular biophysics
NT: Adenoviruses
Viruses (medical)

Microphone arrays
BT: Microphones

Microphones
BT: Audio systems
NT: Microphone arrays

Microphotographs
USE: Photomicrography

Microphotography
USE: Photomicrography

Microprocessor chips
BT: Microprocessors
RT: Flip-chip devices
Substrates
Yield estimation
NT: AI accelerators

Microprocessors
BT: Circuits
Integrated circuits
RT: CMOS technology
Embedded systems
Flip-chip devices
Microcomputers
Processor scheduling
System-on-chip
NT: Automatic logic units
Biomimetics
Coprocessors
Microcontrollers
Microprocessor chips
Vector processors

Microprogramming
UF: Firmware
BT: Programming
RT: Computer architecture
Software

Micropumps
BT: Microelectromechanical devices
Pumps

Microrelays
BT: Relays
RT: Microactuators

Microsatellites
USE: Small satellites

2021 IEEE Thesaurus

Microscopy
> BT: Imaging
> Instruments
> RT: Optical imaging
> NT: Atomic force microscopy
> Electron microscopy
> Endomicroscopy
> Scanning microwave microscopy
> Scanning probe microscopy

Microsensors
> BT: Electromechanical sensors
> RT: Control systems
> Microelectromechanical devices
> Wireless sensor networks

Microsoft Excel
> USE: Spreadsheet programs

Microsoft Windows
> USE: Operating systems

Microstrip
> UF: Microstrip lines
> BT: Planar transmission lines
> RT: Broadband antennas
> NT: Microstrip components

Microstrip antenna arrays
> UF: Microstrip arrays
> BT: Antenna arrays
> RT: Antennas
> Aperture coupled antennas
> Microstrip antennas

Microstrip antennas
> BT: Antennas
> RT: Aperture coupled antennas
> Microstrip antenna arrays
> Patch antennas

Microstrip arrays
> USE: Microstrip antenna arrays

Microstrip components
> BT: Microstrip
> RT: Power combiners
> Power dividers
> Thick film inductors
> NT: Microstrip resonators

Microstrip filters
> BT: Filters

> RT: Microwave communication

Microstrip lines
> USE: Microstrip

Microstrip resonators
> BT: Microstrip components
> RT: Resonance

Microstructure
> BT: Materials science and technology
> RT: Crystal microstructure

Microstructured fibers
> USE: Photonic crystal fibers

Microstructured fibres
> USE: Photonic crystal fibers

Microsurgery
> BT: Surgery

Microswitches
> UF: MEMS switches
> BT: Switches
> RT: Microoptics

Microsystems
> USE: Micromechanical devices

Microvalves
> BT: Microelectromechanical devices
> Valves

Microwave amplifiers
> BT: Microwave devices

Microwave antenna arrays
> BT: Antenna arrays

Microwave antennas
> BT: Antennas

Microwave bands
> BT: Microwave technology
> NT: C-band
> K-band
> L-band

Microwave circuits
> BT: Circuits
> Microwave technology
> RT: Analog circuits

		Distributed parameter
circuits		
		Microwave devices
		Microwave integrated
circuits		
		Microwave photonics

Microwave communication
- BT: Communication systems
  - Microwave technology
- RT: Microstrip filters
  - Microwave photonics
- NT: Rectennas

Microwave devices
- BT: Microwave technology
- RT: Electromagnetic waveguides
  - Microwave circuits
  - Microwave photonics
  - Photonic crystals
  - Superconducting microwave devices
- NT: Masers
  - Microwave amplifiers
  - Microwave filters
  - Microwave transistors

Microwave FET integrated circuits
- BT: MESFET integrated circuits
- RT: Microwave FETs

Microwave FETs
- BT: MESFETs
  - Microwave transistors
- RT: Microwave FET integrated circuits

Microwave filters
- BT: Microwave devices

Microwave frequencies
- BT: Microwave measurement

Microwave generation
- BT: Microwave technology
- NT: High power microwave generation

Microwave heating
- USE: Electromagnetic heating

Microwave imaging
- BT: Imaging
- RT: Remote sensing

Microwave integrated circuits
- UF: MIC
- BT: Integrated circuits
- RT: Analog integrated circuits
  - Microwave circuits
- NT: MMICs

Microwave lasers
- USE: Masers

Microwave magnetics
- BT: Magnetics

Microwave measurement
- BT: Electromagnetic measurements
- RT: Microwave technology
- NT: Microwave frequencies

Microwave metamaterials
- USE: Metamaterials

Microwave oscillators
- BT: Oscillators

Microwave ovens
- BT: Consumer electronics
  - Consumer products
  - Home appliances
  - Ovens

Microwave photonics
- BT: Microwave technology
  - Photonics
- RT: Electrooptic modulators
  - Elementary particles
  - Integrated optoelectronics
  - Microwave circuits
  - Microwave communication
  - Microwave devices
  - Optical modulation

Microwave propagation
- BT: Electromagnetic propagation
- RT: Broadband antennas
  - Electromagnetic waveguides

Microwave radar
- USE: Radar

Microwave radiometry
- BT: Radiometry

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Microwave sensors
BT: Microwave technology

Microwave technology
BT: Microwave theory and techniques
RT: Microwave measurement
Radar
NT: Baluns
Beam steering
Circulators
Masers
Microwave bands
Microwave circuits
Microwave communication
Microwave devices
Microwave generation
Microwave photonics
Microwave sensors

Microwave theory and techniques
NT: Microwave technology
Millimeter wave technology
Submillimeter wave technology

Microwave transistors
BT: Microwave devices
NT: Microwave FETs

Microwave-assisted magnetic recording
BT: Magnetic recording

Midbrain
UF: Mesencephalon
BT: Brain
Central nervous system
RT: Forebrain
Hindbrain

Middleboxes
BT: Computer network management
Internet

Middleware
BT: Client-server systems
Software
RT: Computer applications
Computer networks
Internet of Things
Publish subscribe systems
NT: Mediation

Message-oriented middleware
Web services

Mie scattering
BT: Electromagnetic scattering
RT: Electromagnetic analysis
Electromagnetic fields
Electromagnetic forces
Electromagnetic measurements
Electromagnetic propagation

Mil standards
USE: Military standards

Military aircraft
BT: Military equipment
RT: Aircraft
Hyperspectral sensors
NT: Payloads

Military command and control
USE: Command and control systems

Military communication
BT: Communication systems
RT: Command and control systems
Cross layer design
Electronic countermeasures
Hyperspectral sensors
Military satellites
Ultra wideband communication
NT: Reconnaissance

Military computing
BT: Computer applications
RT: Mobile computing

Military equipment
BT: Aerospace and electronic systems
RT: Defense industry
Explosion protection
Ground support
Landmine detection
Magnetic anomaly detectors
Night vision
Open area test sites
Wearable robots

NT: Military aircraft
Military satellites
Military vehicles
Weapons

Military satellites
BT: Artificial satellites
Military equipment
RT: Global Positioning System
Hyperspectral sensors
Military communication

Military standards
UF: Mil standards
BT: Standards categories

Military vehicles
BT: Military equipment
Vehicles
RT: Marine robots

Milk
USE: Dairy products

Millennial generation
USE: Millennials

Millennials
UF: Generation Y
Millennial generation
BT: Social groups

Millimeter wave circuits
UF: Millimeter-wave circuits
BT: Circuits
Millimeter wave technology
RT: Analog circuits
Distributed parameter circuits
Millimeter wave devices
NT: Millimeter wave integrated circuits

Millimeter wave communication
UF: Millimeter-wave communication
mmwave communication
BT: Radio communication
RT: Millimeter wave propagation

Millimeter wave devices
UF: Millimeter-wave devices
BT: Millimeter wave technology
RT: Millimeter wave circuits

Millimeter wave integrated circuits
NT: Millimeter wave transistors

Millimeter wave integrated circuits
UF: Millimeter-wave integrated circuits
BT: Circuits
Integrated circuits
Millimeter wave circuits
Millimeter wave technology
RT: Analog integrated circuits
Millimeter wave devices
NT: MIMICs

Millimeter wave measurements
UF: Millimeter-wave measurements
BT: Electromagnetic measurements
RT: Millimeter wave technology

Millimeter wave monolithic integrated circuits
USE: MIMICs

Millimeter wave propagation
UF: Millimeter-wave propagation
BT: Electromagnetic propagation
RT: Millimeter wave communication

Millimeter wave radar
UF: Millimeter-wave radar
BT: Millimeter wave technology
Radar

Millimeter wave technology
UF: Millimeter-wave technology
BT: Microwave theory and techniques
RT: Millimeter wave measurements
NT: Millimeter wave circuits
Millimeter wave devices
Millimeter wave integrated circuits
Millimeter wave radar

Millimeter wave transistors
UF: Millimeter-wave transistors
BT: Millimeter wave devices
Transistors

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Millimeter-wave circuits
USE: Millimeter wave circuits

Millimeter-wave communication
USE: Millimeter wave communication

Millimeter-wave devices
USE: Millimeter wave devices

Millimeter-wave integrated circuits
USE: Millimeter wave integrated circuits

Millimeter-wave measurements
USE: Millimeter wave measurements

Millimeter-wave monolithic integrated circuits
USE: MIMICs

Millimeter-wave propagation
USE: Millimeter wave propagation

Millimeter-wave radar
USE: Millimeter wave radar

Millimeter-wave technology
USE: Millimeter wave technology

Millimeter-wave transistors
USE: Millimeter wave transistors

Millimicron
USE: Nanometers

Milling
BT: Machining
RT: Boring
         Milling machines

Milling machines
BT: Machine tools
RT: Ball milling
         Cutting tools
         Milling

MIM capacitors
UF: Metal-insulator-metal capacitors
BT: Metal-insulator structures

MIM devices

UF: Metal-insulator-metal devices
BT: Metal-insulator structures
RT: Semiconductor-insulator interfaces

MIMICs
UF: Millimeter wave monolithic integrated circuits
         Millimeter-wave monolithic integrated circuits
BT: Millimeter wave integrated circuits
         Monolithic integrated circuits
RT: MMICs
         Radiofrequency integrated circuits

MIMO communication
UF: MIMO systems
         Multiple antenna systems
         Multiple input multiple output
         Multiple input multiple output systems
         Multiple-input multiple-output
         Multiple-input multiple-output systems
         Multiple-input-multiple-output
         Multivariable systems
BT: Communication systems
RT: 3G mobile communication
         Control systems
         IEEE 802.11 Standard
         IEEE 802.11n Standard
         IEEE 802.16 Standard
         MISO communication
         Multipath channels
         NOMA
         OFDM
         Optimization methods
         Radio communication
         SIMO communication
         SISO communication
NT: Massive MIMO
         Rician channels

MIMO radar
BT: Multistatic radar

MIMO systems
USE: MIMO communication

Mind-machine interfaces
      USE: Brain-computer interfaces

Mineral processing
      USE: Materials processing

Mineral resources
      BT: Minerals

Mineralization
      BT: Minerals

Minerals
      BT: Geology
      NT: Mineral resources
              Mineralization
              Ores

Miniaturized satellites
      USE: Small satellites

Minicomputers
      USE: Microcomputers

Minimally invasive surgery
      UF: Laparoscopic surgery
      BT: Surgery
      RT: Laparoscopes

Minimax techniques
      UF: Minmax techniques
      BT: Statistics
      RT: Artificial intelligence
              Game theory
              Minimization methods

Minimisation
      USE: Minimization

Minimisation methods
      USE: Minimization methods

Minimization
      UF: Minimisation
      BT: Mathematics
      RT: Optimization
      NT: Minimization methods

Minimization methods
      UF: Minimisation methods
      BT: Minimization
      RT: Approximation methods
              Minimax techniques

Minimum analog-digital integrated circuits
      USE: Analog-digital integrated
circuits

Mining equipment
      BT: Production equipment
      RT: Mining industry

Mining industry
      BT: Industries
      RT: Excavation
              Fracking
              Fuel processing industries
              Geoengineering
              Hyperspectral sensors
              Mining equipment
              Raw materials
      NT: Coal mining

Minmax techniques
      USE: Minimax techniques

Mirrors
      BT: Optical devices
      RT: Optical materials
              Optical reflection
              Reflection
      NT: Distributed Bragg reflectors
              Micromirrors

MIS devices
      UF: Metal-insulator-
semiconductor devices
      BT: Semiconductor devices
      RT: Metal-insulator structures
              Semiconductor-insulator
interfaces
      NT: Charge coupled devices
              MOS devices

MISFETs
      BT: Field effect transistors
      RT: CMOSFET logic devices
              Magnetic field induced
strain

MISO communication
      UF: multiple input single-output
              multiple-input single output
              multiple-input single-output
      BT: Communication systems
      RT: MIMO communication
              SIMO communication
              SISO communication

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Missile guidance
> BT: Missiles
> RT: Target recognition

Missiles
> UF: Torpedoes
> BT: Weapons
> RT: Aerospace control
> Ground support
> NT: Missile guidance

Mission critical systems
> UF: Mission-critical systems
> BT: Contingency management

Mission-critical systems
> USE: Mission critical systems

Mixed analog digital integrated circuits
> USE: Mixed analog-digital integrated circuits

Mixed analog-digital integrated circuits
> UF: Mixed analog digital integrated circuits
> BT: Analog-digital integrated circuits
> RT: Analog processing circuits
> System-on-chip

Mixed convection
> USE: Convection

Mixed integer linear programming
> UF: Mixed-integer linear programming
> BT: Integer linear programming

Mixed reality
> BT: Simulation
> RT: Augmented reality
> Multimedia systems
> Virtual reality

Mixed-integer linear programming
> USE: Mixed integer linear programming

Mixers
> BT: Frequency conversion
> RT: Demodulation
> Modulation
> Nonlinear circuits

Mixture models
> BT: Statistics
> RT: Feature extraction
> Image segmentation
> Probabilistic logic

MLE
> USE: Maximum likelihood estimation

MLFMA
> UF: Multilevel fast multipole algorithm
> BT: Algorithms

MMICs
> UF: Monolithic microwave integrated circuits
> BT: Microwave integrated circuits
> Monolithic integrated circuits
> RT: Analog integrated circuits
> MIMICs
> Radiofrequency integrated circuits

MMTC
> USE: Massive machine type communications

mmtc
> USE: Massive machine type communications

mmwave communication
> USE: Millimeter wave communication

Mn
> USE: Manganese

MNN
> USE: Multi-layer neural network

Mobile ad hoc networks
> UF: MANET
> Wireless ad hoc network
> BT: Ad hoc networks

Mobile agents
> BT: Knowledge based systems
> RT: Computer applications
> Distributed computing
> Intelligent systems
> Learning systems

Mobile computing
Software agents

Mobile video
Software radio
Ultra-dense networks

Mobile antennas
BT: Antennas
Land mobile radio equipment
RT: Land mobile radio

Mobile application development
USE: Application programming interfaces

Mobile applications
UF: Mobile apps
BT: Computer applications
RT: Mobile communication
Mobile handsets
Wireless communication

Mobile apps
USE: Mobile applications

Mobile communication
BT: Communication systems
Near field communication
RT: Acoustic communication (telecommunication)
Block codes
Film bulk acoustic resonators
Indoor communication
Long Term Evolution
Mobile applications
Mobile handsets
Multiuser detection
Network resource management
Radio communication
Routing protocols
Time-varying channels
Transceivers
Vehicular ad hoc networks
NT: 3G mobile communication
4G mobile communication
5G mobile communication
6G mobile communication
Ambient networks
Cellular technology
Dual band
Land mobile radio
Location awareness
Mobile learning
Mobile nodes
Mobile security

Mobile computing
BT: Computers and information processing
RT: Ad hoc networks
Bring your own device
Crowdsensing
Crowdsourcing
Data dissemination
Edge computing
Location awareness
Military computing
Mobile agents
Mobile learning
Software defined networking
Telecommunication computing
User experience
NT: Wireless access points

Mobile device security
USE: Mobile security

Mobile devices
USE: Mobile handsets

Mobile handsets
UF: Mobile devices
Mobile phones
BT: Telephone sets
RT: Dual band
Land mobile radio
Long Term Evolution
Mobile applications
Mobile communication
Personal communication networks
Tablet computers
Transceivers
UHF communication
NT: Smart phones

Mobile learning
BT: Electronic learning
Mobile communication
RT: Distance learning
Mobile computing

Mobile location management
USE: Location awareness

Mobile nodes
BT: Mobile communication
       Telecommunication network management

Mobile office
USE: Teleworking

Mobile payment
USE: Online banking

Mobile phones
USE: Mobile handsets

Mobile radio
USE: Land mobile radio

Mobile radio mobility management
USE: Location awareness

Mobile robot sensing systems
USE: Robot sensing systems

Mobile robot vision systems
USE: Robot vision systems

Mobile robots
BT: Robots
RT: Agricultural robots
       Assembly systems
       Control systems
       Humanoid robots
       Industrial control
       Manufacturing automation
       Marine robots
       Materials handling
       Mechanical variables control
       Motion control
       Motion detection
       Nonlinear systems
       Service robots
       Stairs
       Telerobotics
       Unmanned aerial vehicles
       Vehicles
       Vehicular automation
       Wearable robots
NT: Autonomous automobiles
       Climbing robots
       Legged locomotion

Mobile security
UF: Mobile device security
BT: Computer security

       Mobile communication

Mobile television
USE: TV

Mobile TV
BT: TV

Mobile video
BT: Mobile communication
       Streaming media
RT: Video recording

MOCVD
UF: Metalorganic vapor deposition
BT: Chemical vapor deposition

Modal analysis
BT: Mathematical analysis
RT: Vibration measurement

Mode matching methods
BT: Mathematics
       Numerical analysis
       Statistical analysis
RT: Antenna theory
       Matrices
       Waveguide theory

Model checking
BT: System testing
RT: Algorithms
       Concurrent computing
       Formal verification
       Static analysis

Model driven engineering
UF: Model-driven engineering
BT: Software design

Model predictive control
USE: Predictive control

Model reduction
USE: Reduced order systems

Model-based reasoning
USE: Inference mechanisms

Model-driven development
BT: Software development management

Model-driven engineering

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USE: Model driven engineering

Model-predictive control
USE: Predictive control

Modeling
UF: Modelling
         System modeling
BT: Systems engineering and theory
RT: Computer graphics
         Data visualization
         Digital simulation
         Haptic interfaces
         Human in the loop
         Monte Carlo methods
         Numerical simulation
         Petri nets
         Plasma simulation
         Power system analysis computing
         Systems Modeling Language
         Time series analysis
NT: Analytical models
         Atmospheric modeling
         Brain modeling
         Building information management
         Computational modeling
         Context modeling
         Data models
         Data-driven modeling
         Deformable models
         Digital elevation models
         Emulation
         Graphical models
         Green's function methods
         Hidden Markov models
         Input variables
         Integrated circuit modeling
         Inverse problems
         Load modeling
         Metamodeling
         Numerical models
         Object oriented modeling
         Power system modeling
         Process modeling
         Semiconductor device modeling
         Semiconductor process modeling
         Signal representation
         Simulation
         Solid modeling

         System identification
         Systems modeling

Modelling
USE: Modeling

Modems
UF: Modulator-demodulators
BT: Communication equipment
         Computer peripherals
RT: Data communication
         Demodulation
         Modulation

Moderate resolution imaging spectroradiometer
USE: MODIS

Moderate-resolution Imaging Spectroradiometer
USE: MODIS

MODFET circuits
BT: FET circuits
RT: MODFETs
         Rail to rail amplifiers
         Rail to rail operation
NT: MODFET integrated circuits

MODFET integrated circuits
BT: MODFET circuits
RT: MODFETs

MODFETs
UF: Heterostructure FETs
         SDHTs
         Selectively doped heterojunction transistors
         TEGFETs
         Two-dimensional electron gas FETs
BT: Field effect transistors
RT: HEMTs
         MODFET circuits
         MODFET integrated circuits

MODIS
UF: Moderate resolution imaging spectroradiometer
         Moderate-resolution Imaging Spectroradiometer
BT: Payloads
         Spectroradiometers

Modular construction
BT: Construction
RT: Buildings

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Prefabricated construction

Modular multi-level converters
    USE: Multilevel converters AND
        Voltage-source converters

Modular multilevel converters
    USE: Multilevel converters

Modulation
    UF: Modulation format
        Modulation index
        Modulation-coding
        Modulators
    BT: Communications technology
        Signal processing
    RT: Direct sequence spread spectrum communication
        Encoding
        IEEE 802.11 Standard
        IEEE 802.11g Standard
        IEEE 802.11n Standard
        Linearization techniques
        Mixers
        Modems
        OFDM
        Phase locked loops
        Tracking loops
        Transmitters
    NT: Amplitude modulation
        Chirp modulation
        Demodulation
        Digital modulation
        Frequency modulation
        Magnetic modulators
        Modulation coding
        Optical modulation
        Phase modulation
        Pulse modulation
        Pulse width modulation

Modulation coding
    BT: Modulation
    RT: Encoding
        Information theory
    NT: Interleaved codes

Modulation format
    USE: Modulation

Modulation index
    USE: Modulation

Modulation-coding
    USE: Modulation

Modulator-demodulators
    USE: Modems

Modulators
    USE: Modulation

Modules (abstract algebra)
    BT: Abstract algebra

Moisture
    BT: Geophysics
    RT: Moisture control
        Moisture measurement
        Trees - insulation

Moisture control
    BT: Control systems
    RT: Moisture
    NT: Humidity control

Moisture measurement
    BT: Measurement
    RT: Moisture
        Soil measurements
    NT: Humidity measurement

Molded case circuit breakers
    UF: Molded-case circuit breakers
    BT: Circuit breakers
    RT: Short-circuit currents

Molded-case circuit breakers
    USE: Molded case circuit breakers

Molding equipment
    UF: Moulding equipment
    BT: Production equipment

Molecular beam applications
    BT: Molecular beams
    RT: Light emitting diodes
        Semiconductor devices
        Semiconductor lasers

Molecular beam epitaxial growth
    BT: Epitaxial growth
    RT: Crystals
        Gallium
        Thin films

Molecular beams

BT:	Beams
RT:	Epitaxial growth
	Thin films
NT:	Molecular beam applications

Molecular biology

BT:	Biological processes
NT:	Biochips

Molecular biomarkers

BT:	Biomarkers
RT:	Drugs
NT:	Genomics
	Glycomics
	Lipidomics
	Metabolomics
	Proteomics

Molecular biophysics

UF:	Biological macromolecules
	Biomolecules
BT:	Biophysics
RT:	Biochemistry
	Biomedical equipment
	Biomedical imaging
	Biomedical materials
	Cellular biophysics
	DNA
	Genetic engineering
	Genetics
	Microorganisms

Molecular clones

USE:	Cloning

Molecular communication (telecommunication)

BT:	Biological systems
	Communication systems
RT:	Nanocommunication (telecommunication)

Molecular computing

BT:	Computers and information processing
	Nanotechnology
RT:	DNA computing
	Quantum chemistry

Molecular electronics

UF:	Biomolecular electronics
BT:	Nanotechnology
RT:	Graphene devices
	Nanoelectronics

	Organic light emitting diodes

Molecular imaging

BT:	Biomedical imaging

Molecular sieves

BT:	Chemical processes
RT:	Adsorption

Molybdenum

BT:	Chemical elements

MoM

USE:	Method of moments

Moment methods

USE:	Method of moments

Money management

USE:	Financial management

Monitoring

BT:	Instrumentation and measurement
RT:	Alarm systems
	Maintenance engineering
	Power system management
NT:	Computerized monitoring
	Environmental monitoring
	Patient monitoring
	Process monitoring
	Radiation monitoring
	Remote monitoring
	Surveillance
	Water monitoring

Monolithic integrated circuits

UF:	Monolithic integration
BT:	Circuits
	Integrated circuits
NT:	MIMICs
	MMICs

Monolithic integration

USE:	Monolithic integrated circuits

Monolithic microwave integrated circuits

USE:	MMICs

Monopoly

BT:	Economics
RT:	Microeconomics

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MONOS devices
UF: Metal-oxide-nitride-oxide-semiconductors
Metal-oxide-nitride-oxide-silicon
BT: Semiconductor devices

Monsoons
BT: Meteorology
RT: Rain
Storms

Monte Carlo methods
UF: Importance sampling
Monte Carlo simulations
Monte-Carlo methods
Monte-Carlo simulations
BT: Statistical analysis
RT: Computational electromagnetics
Modeling
Probability
Simulated annealing
Simulation

Monte Carlo simulations
USE: Monte Carlo methods

Monte-Carlo methods
USE: Monte Carlo methods

Monte-Carlo simulations
USE: Monte Carlo methods

Mood
BT: Psychology

Moon
UF: Lunar
BT: Satellites

Moore's Law
BT: Integrated circuit technology

Mopeds
USE: Motorcycles

Morals
USE: Ethics

Morphological operations
BT: Image processing
RT: Topology

Morphology
BT: Natural language processing
RT: Entomology

Mortar
BT: Building materials
Chemical products
RT: Construction industry

Mortgages
USE: Loans and mortgages

MOS capacitors
BT: MOS devices
RT: Capacitors

MOS devices
UF: Metal-oxide semiconductors
Metal-oxide-semiconductor devices
BT: MIS devices
RT: Semiconductor-insulator interfaces
NT: MOS capacitors
MOSFET
Negative bias temperature instability

MOS integrated circuits
BT: MOSFET circuits
RT: Metal-insulator structures

MOS transistors
USE: MOSFET

MOSFET
UF: MOS transistors
nMOSFETs
pMOSFETs
BT: Field effect transistors
MOS devices
RT: CMOS technology
CMOSFET logic devices
Gate drivers
TFETs
NT: CMOSFETs
FinFETs
Interface states
Junctionless nanowire transistors

MOSFET circuits

UF: Metal-oxide semiconductor field effect transistor
- BT: Circuits
- FET circuits
- RT: Active inductors
- Linearization techniques
- Operational amplifiers
- Power dissipation
- Rail to rail amplifiers
- Rail to rail operation
- Threshold voltage
- NT: CMOSFET circuits
- MOS integrated circuits
- Power MOSFET

MOSHFETs
UF: Metal oxide semiconductor heterojunction FETs
- BT: Field effect transistors

Motion analysis
- BT: Robot kinematics
- NT: Active contours
- Motion segmentation
- Robot localization

Motion artifacts
- BT: Biomedical image processing
- Video signal processing

Motion compensation
- BT: Control systems
- RT: Image communication

Motion control
- BT: Mechanical variables control
- RT: Aerospace control
- Legged locomotion
- Manipulators
- Mobile robots
- Motion detection
- Motor coordination
- Servosystems
- Structure from motion
- Trajectory
- Trajectory tracking
- Velocity control
- NT: Collision avoidance
- Collision mitigation
- Kinetic theory
- Motion planning
- Path planning
- Visual servoing

Motion detection
- UF: Motion sensors
- BT: Signal detection
- RT: Alarm systems
- Corner detection
- Image motion analysis
- Image sensors
- Infrared detectors
- Mobile robots
- Motion control
- Surveillance
- Video signal processing
- Video surveillance

Motion estimation
- BT: Parameter estimation
- RT: Object tracking

Motion measurement
- BT: Mechanical variables measurement
- RT: Doppler measurement
- Gaze tracking
- Velocity measurement
- NT: Tracking
- Tribology

Motion pictures
- UF: Cinema
- Films (Motion pictures)
- Movies
- BT: Broadcasting
- RT: Cameras
- Cinematography
- Entertainment industry
- Imaging
- Optical projectors

Motion planning
- BT: Motion control
- RT: Navigation
- Robot control

Motion segmentation
- BT: Motion analysis

Motion sensors
- USE: Motion detection

Motor control
- USE: Motor drives

Motor coordination
- BT: Kinematics

RT: Motion control
         Paralysis

Motor drives
    UF: Motor control
    BT: Drives
    RT: Industrial control
         Mechanical variables
control
         Motors
         Sensorless control
         Servosystems
         Torque control
         Variable speed drives
         Velocity control
         Voltage control

Motorbikes
    USE: Motorcycles

Motorcycles
    UF: Mopeds
         Motorbikes
         Scooters
    BT: Road vehicles

Motors
    BT: Energy conversion
         Machinery
    RT: Coils
         Motor drives
         Sensorless control
    NT: AC motors
         Brushless motors
         Commutation
         DC motors
         Electric motors
         Hysteresis motors
         Induction motors
         Micromotors
         Permanent magnet motors
         Servomotors
         Traction motors
         Universal motors

Moulding equipment
    USE: Molding equipment

Mouse
    USE: Mice

Mouth
    BT: Digestive system
         Head
    RT: Stomatognathic system

NT: Teeth

Movies
    USE: Motion pictures

Moving object databases
    USE: Visual databases

Moving picture experts group
    USE: MPEG standards

Moving Pictures Experts Group
    BT: IEC
         ISO

MP3
    USE: Digital audio players AND
         Portable media players

MPEG
    USE: Transform coding

MPEG 1 Standard
    BT: MPEG standards

MPEG 2 Standard
    BT: MPEG standards

MPEG 4 Standard
    UF: MPEG4
    BT: MPEG standards
    RT: Digital multimedia
broadcasting
         High efficiency video coding
         Streaming media
         Vector quantization
         Video codecs
         Video coding
         Video signal processing

MPEG 7 Standard
    UF: MPEG7
    BT: MPEG standards
    RT: Audio coding
         Content management
         Digital multimedia
broadcasting
         Multimedia communication
         Multimedia systems

MPEG standards
    UF: Moving picture experts
group
    BT: IEC Standards
         ISO Standards

2021 IEEE Thesaurus

RT: Digital multimedia broadcasting

Image coding
Streaming media
Transform coding
Video codecs
Video coding
Video signal processing
NT: MPEG 1 Standard
MPEG 2 Standard
MPEG 4 Standard
MPEG 7 Standard

MPEG4
USE: MPEG 4 Standard

MPEG7
USE: MPEG 7 Standard

MPLS
USE: Multiprotocol label switching

MPPT
USE: Maximum power point trackers

MRI
USE: Magnetic resonance imaging

MRP
USE: Materials requirements planning

Mud
USE: Sediments

Mufflers
USE: Exhaust systems

Multi modal integration
USE: Multisensory integration

Multi sensory integration
USE: Multisensory integration

Multi stage noise shaping
USE: Multi-stage noise shaping

Multi-agent models
USE: Multi-agent systems

Multi-agent systems
UF: Multi-agent models

Multiagent models
Multiagent systems
BT: Adaptive systems
RT: Agent-based modeling
Autonomous vehicles
System analysis and design
Vehicular automation
NT: Collaborative intelligence

Multi-attribute optimization
USE: Pareto optimization

Multi-carrier code division multiple access
USE: Multicarrier code division multiple access

Multi-casting
USE: Multicast communication

Multi-core processing
USE: Multicore processing

Multi-core processors
USE: Multicore processing

Multi-factor authentication
BT: Access control
Authentication

Multi-hop
USE: Spread spectrum communication

Multi-layer neural network
UF: MNN
BT: Neural networks

Multi-level converters
USE: Multilevel converters

Multi-level inverters
USE: Multilevel inverters

Multi-level invertors
USE: Multilevel inverters

Multi-modal sensors
USE: Multimodal sensors

Multi-objective programming
USE: Pareto optimization

Multi-resolution
USE: Multiresolution analysis

2021 IEEE Thesaurus

Multi-robot systems
    UF: Multirobot systems
    BT: Robotics and automation
    NT: Swarm robotics

Multi-stage noise shaping
    UF: MASH
            Multi stage noise shaping
            Multistage noise shaping
    BT: Noise shaping

Multi-threaded comput*
    USE: Multithreading

Multi-threaded systems
    USE: Program processors

Multi-threading systems
    USE: Program processors

Multi-user channels
    USE: Multiuser channels

Multi-user detection
    USE: Multiuser detection

Multi-vibrators
    USE: Multivibrators

Multiaccess communication
    UF: CDMA
            CSMA
            Carrier sense multiaccess
            Code division multiaccess
            Code division multiple access
            Code-division multiple access
            Code-division multiple-access
            Multiaccess systems
            Random access communication
    BT: Cellular technology
            Communication systems
    RT: 3G mobile communication
            Delay estimation
            Multiplexing
            OFDM
            Telecommunications
            Viterbi algorithm
    NT: Access charges
            Direct-sequence code-division multiple access

            Frequency division multiaccess
            Multicarrier code division multiple access
            Subscriber loops
            Time division multiple access
            Time division synchronous code division multiple access
            Zero correlation zone

Multiaccess systems
    USE: Multiaccess communication

Multiagent models
    USE: Multi-agent systems

Multiagent systems
    USE: Multi-agent systems

Multicarrier code division multiple access
    UF: MC-CDMA
            MCCDMA
            Multi-carrier code division multiple access
    BT: Multiaccess communication
    RT: Code division multiplexing
            Communication channels
            OFDM
            Protocols
            Spread spectrum communication
            Telecommunications
            Time division synchronous code division multiple access

Multicast algorithms
    BT: Algorithms

Multicast communication
    UF: Multi-casting
            Multicasting
    BT: Communication systems
    RT: Ad hoc networks
            Multicast protocols
            Optical wavelength conversion
            Routing
            Telecommunications
            Wavelength division multiplexing
    NT: Multicast VPN

Multicast protocols
    BT: Protocols

RT: Internet
Multicast communication
Routing protocols

Multicast VPN
BT: Multicast communication

Multicasting
USE: Multicast communication

Multichip modules
BT: Integrated circuit packaging
Packaging

Multiconductor transmission lines
BT: Transmission lines
RT: Coupled mode analysis

Multicore
USE: Multicore processing

Multicore processing
UF: Many core processing
Many core systems
Multi-core processing
Multi-core processors
Multicore
BT: Parallel architectures
NT: Embedded multicore processing
Manycore processors

Multidimensional signal processing
BT: Signal processing
RT: Image processing
NT: Video signal processing

Multidimensional systems
BT: Systems engineering and theory

Multifilamentary superconductors
BT: Superconducting materials

Multifrequency antennas
BT: Antennas

Multigrid methods
BT: Numerical analysis

Multihop
USE: Spread spectrum communication

Multilayer perceptrons

BT: Feedforward neural networks

Multilayers
USE: Nonhomogeneous media

Multileaf collimators
USE: Collimators

Multilevel converters
UF: Modular multi-level converters
Modular multilevel converters
Multi-level converters
BT: Converters

Multilevel fast multipole algorithm
USE: MLFMA

Multilevel inverters
UF: Multi-level inverters
Multi-level invertors
Multilevel invertors
BT: Inverters

Multilevel invertors
USE: Multilevel inverters

Multilevel systems
BT: Hierarchical systems

Multilinear systems
USE: Nonlinear systems

Multimedia communication
BT: Communication systems
Multimedia systems
RT: B-ISDN
Broadband communication
Diffserv networks
Digital multimedia broadcasting
Huffman coding
IEEE 802.16 Standard
ISDN
Intserv networks
Journalism
MPEG 7 Standard
Multimedia computing
Streaming media
Transcoding
NT: Hypermedia

Multimedia computing

BT: Multimedia systems
RT: Audio user interfaces
Collaborative work
Computer graphics
Computers and information processing
Content management
Information systems
Multimedia communication
Multimedia databases
Video sequences
NT: Multimedia Web sites

Multimedia databases
BT: Database systems
Databases
Multimedia systems
RT: Audio databases
Huffman coding
Multimedia computing

Multimedia products
USE: Videos

Multimedia systems
BT: Consumer electronics
RT: Authoring systems
Electronic publishing
Huffman coding
MPEG 7 Standard
Mixed reality
NT: Multimedia communication
Multimedia computing
Multimedia databases

Multimedia Web sites
UF: Dailymotion
Flickr
Image sharing Web sites
Instagram
Media sharing Web sites
Photo sharing Web sites
Pinterest
Snapchat
Video sharing Web sites
Vimeo
Youtube
BT: Multimedia computing
Web sites
RT: Social networking (online)
Streaming media
Video on demand
Video sharing

Multimodal integration

USE: Multisensory integration

Multimodal sensing
USE: Multimodal sensors

Multimodal sensors
UF: Multi-modal sensors
Multimodal sensing
BT: Sensors
RT: Sensor fusion

Multiobjective programming
USE: Pareto optimization

Multipath channels
BT: Communication channels
RT: Channel estimation
Diversity methods
Fading channels
MIMO communication
Meteorological factors
Multiuser detection
Radio propagation
Terrain factors
Ultra wideband communication

Multiple access interference
BT: OFDM

Multiple antenna systems
USE: MIMO communication

Multiple input multiple output
USE: MIMO communication

Multiple input multiple output systems
USE: MIMO communication

multiple input single-output
USE: MISO communication

Multiple sclerosis
BT: Diseases

Multiple signal classification
UF: MUSIC
BT: Noise measurement

Multiple-input multiple-output
USE: MIMO communication

Multiple-input multiple-output systems
USE: MIMO communication

multiple-input single output
    USE: MISO communication

multiple-input single-output
    USE: MISO communication

Multiple-input-multiple-output
    USE: MIMO communication

Multiplexed
    USE: Multiplexing

Multiplexing
    UF: Multiplexed
    BT: Communications technology
    RT: Arrayed waveguide gratings
                  Multiaccess communication
    NT: Code division multiplexing
                  Demultiplexing
                  Frequency division multiplexing
                  Layered division multiplexing
                  Multiplexing equipment
                  OFDM
                  Space division multiplexing
                  Time division multiplexing
                  Wavelength division multiplexing

Multiplexing equipment
    BT: Multiplexing
    RT: Communication equipment
    NT: Add-drop multiplexers

Multiplying circuits
    BT: Circuits
    RT: Digital integrated circuits
                  Logic circuits

Multiprocessing systems
    BT: Parallel processing
    RT: AI accelerators
                  Computer networks
                  Computers and information processing
                  Concurrency control
                  Distributed computing
                  Parallel languages
                  Parallel programming
                  Pipeline processing
    NT: Data flow computing
                  Processor scheduling
                  Systolic arrays

Multiprocessor interconnection
    UF: Interconnection networks
                  Parallel processor interconnection
    BT: Computer architecture
    RT: Computer networks
                  Data communication
                  Local area networks
                  Metropolitan area networks
                  Wide area networks
    NT: Hypercubes

Multiprocessor interconnection networks
    BT: Computer networks

Multiprocessor scheduling
    USE: Processor scheduling

Multiprotocol label switching
    UF: Label swapping
                  MPLS
    BT: Communication switching
                  Packet switching
                  Protocols
    RT: Asynchronous transfer mode
                  Internet
                  Routing protocols

Multiresolution analysis
    UF: Multi-resolution
    BT: Wavelet analysis

Multirobot systems
    USE: Multi-robot systems

Multisensor systems
    BT: Sensor fusion
    RT: Robot sensing systems

Multisensory integration
    UF: Multi modal integration
                  Multi sensory integration
                  Multimodal integration
    BT: Sense organs

Multiskilling
    UF: Job rotation
    BT: Human resource management
    RT: Industrial training
                  Job specification
                  Vocational training

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Multispectral imaging
      BT: Imaging

Multistage noise shaping
      USE: Multi-stage noise shaping

Multistatic radar
      BT: Radar
      NT: MIMO radar

Multitasking
      BT: Computers and information processing
      NT: Parametric study

Multithreaded systems
      USE: Program processors

Multithreading
      UF: Multi-threaded comput*
                Multithreading comput*
      BT: Parallel processing

Multithreading comput*
      USE: Multithreading

Multithreading systems
      USE: Program processors

Multiuser channels
      UF: Multi-user channels
      BT: Communication channels

Multiuser detection
      UF: Multi-user detection
      BT: Signal detection
      RT: Cellular radio
                Land mobile radio
                Mobile communication
                Multipath channels
                Spread spectrum communication

Multivalued logic
      UF: Many valued logic
                 Ternary logic
      BT: Logic
      RT: Logic functions

Multivariable systems
      USE: MIMO communication

Multivariate regression
      BT: Regression analysis

Multivibrators
      UF: Multi-vibrators
      BT: Electronic circuits

Multiwave mixing
      BT: Optical mixing

Munitions
      USE: Weapons

Muon colliders
      UF: Muon sources
      BT: Colliding beam devices
      RT: Luminescence
                Luminescent devices
                Storage rings

Muon sources
      USE: Muon colliders

Muons
      USE: Mesons

Muscles
      BT: Musculoskeletal system
      NT: Myocardium
                Neuromuscular

Musculoskeletal system
      BT: Anatomy
      NT: Cartilage
                Fascia
                Ligaments
                Muscles
                Skeleton
                Tendons

MUSIC
      USE: Multiple signal classification

Music
      UF: Computer music
                Musical
      BT: Acoustics
      RT: Audio systems
                White noise
      NT: Computer generated music
                Electronic music
                Musical instrument digital interfaces
                Rhythm
                Timbre

Music information retrieval
      BT: Information retrieval

RT: Cepstral analysis

Music recommendation
USE: Recommender systems

Musical
USE: Music

Musical instrument digital interfaces
UF: MDDI
BT: Computer interfaces
     Music
RT: Digital communication

Must carry
USE: Must-carry

Must-carry
UF: Must carry
BT: Cable TV
     Government policies
RT: Licenses
     TV

Mutual conductance
USE: Transconductance

Mutual coupling
BT: Electromagnetic coupling

Mutual funds
BT: Financial management

Mutual information
UF: Transinformation
BT: Information theory

Myelin
BT: Nerve fibers
RT: Axons

Myocardial
USE: Myocardium

Myocardium
UF: Myocardial
BT: Muscles

Myopia
USE: Vision defects

Myspace
USE: Social networking (online)

MySpace

BT: Social networking (online)
     Video sharing
     Web sites

NACE International
UF: National Association of Corrosion Engineers
BT: Standards organizations

NACE Standards
BT: Standards publications

Nails
BT: Integumentary system

Naive Bayes algorithms
USE: Naive Bayes methods

Naive Bayes classification
USE: Naive Bayes methods

Naive Bayes classifiers
USE: Naive Bayes methods

Naive Bayes methods
UF: Naive Bayes algorithms
     Naive Bayes classification
     Naive Bayes classifiers
BT: Bayes methods
     Learning (artificial intelligence)
     Pattern classification
RT: Data mining
     Machine learning
     Probability
     Supervised learning
     Support vector machines
     Text analysis

Nakagami distribution
BT: Probability distribution

NAND flash
USE: Flash memories

Nano biophotonics
USE: Nanobiophotonics

Nano communication
USE: Nanocommunication (telecommunication)

Nano devices
USE: Nanoscale devices

2021 IEEE Thesaurus

Nano generators
USE: Nanogenerators

Nano packaging
USE: Nanopackaging

Nano ribbons
USE: Nanoribbons

Nanoactuators
USE: Actuators AND Nanoelectronics

Nanobiophotonics
UF: Nano biophotonics
BT: Nanobiotechnology
Photonics
RT: Biomedical imaging
Biosensors
Lasers
Nanoparticles
Nanoscale devices

Nanobioscience
BT: Biology
Nanotechnology
RT: Colloidal lithography
Nanofluidics
NT: DNA computing
Nanobiotechnology

Nanobiotechnology
BT: Nanobioscience
RT: Nanomedicine
NT: Nanobiophotonics

Nanocarriers
BT: Nanomaterials
RT: Drug delivery

Nanocommunication (telecommunication)
UF: Nano communication
BT: Communication systems
Nanotechnology
RT: Biomedical communication
Molecular communication (telecommunication)
Wireless networks
Wireless sensor networks

Nanocomposites
BT: Nanostructured materials
RT: Metamaterials

Nanocontacts

BT: Nanoscale devices
RT: Enhanced magnetoresistance
Magnetoresistance
Nanoelectronics
Nanowires

Nanocrystal
USE: Nanocrystals

Nanocrystals
UF: Nanocrystal
BT: Crystalline materials
Nanoparticles
RT: Quantum dots
NT: Colloidal nanocrystals

Nanodevices
USE: Nanoscale devices

Nanoelectromechanical systems
UF: NEMS
BT: Nanotechnology
RT: Microelectromechanical systems

Nanoelectronics
UF: Nanoactuators
BT: Nanotechnology
RT: Graphene devices
Molecular electronics
Nanocontacts
NT: Junctionless nanowire transistors

Nanofabrication
BT: Nanotechnology

Nanofiltration
USE: Filtration

Nanofluidics
UF: Nanofluids
BT: Fluidics
Nanotechnology
RT: Nanobioscience

Nanofluids
USE: Nanofluidics

Nanogenerators
UF: Nano generators
BT: Energy harvesting
RT: Electric generators
Low-power electronics

Micromechanical devices
Nanowires
Piezoelectric devices
Triboelectricity
Vibrations

Nanoimprint lithography
    USE: Nanolithography

Nanolithography
    UF: Nanoimprint lithography
    BT: Lithography
           Nanotechnology
    RT: Nanopatterning
           Soft lithography

Nanomaterials
    BT: Nanotechnology
    RT: Nanopackaging
    NT: Nanocarriers

Nanomedicine
    BT: Biomedical monitoring
           Medical diagnosis
    RT: Cellular biophysics
           Mechanobiology
           Nanobiotechnology
           Nanoparticles

Nanometers
    UF: Millimicron
           Nanometres
    BT: Measurement units

Nanometres
    USE: Nanometers

Nanopackaging
    UF: Nano packaging
    BT: Nanotechnology
           Packaging
    RT: Nanomaterials

Nanoparticles
    UF: Nanopowders
    BT: Nanostructures
    RT: Nanobiophotonics
           Nanomedicine
           Nanosensors
    NT: Magnetic nanoparticles
           Nanocrystals

Nanopatterning
    BT: Nanotechnology
    RT: Nanolithography

Nanotopography
Soft lithography
    NT: Colloidal lithography

Nanophotonics
    BT: Nanotechnology
           Photonics

Nanoporous materials
    BT: Nanostructured materials

Nanopositioning
    BT: Nanotechnology
           Position control

Nanopowders
    USE: Nanoparticles

Nanoribbons
    UF: Nano ribbons
    BT: Nanostructures

Nanosatellites
    USE: Small satellites

Nanoscale devices
    UF: Nano devices
           Nanodevices
    BT: Nanotechnology
    RT: Nanobiophotonics
           Single electron devices
    NT: Nanocontacts
           Nanotube devices

Nanosensors
    BT: Nanotechnology
           Sensors
    RT: Biomedical equipment
           Nanoparticles
           Nanostructures

Nanostructured materials
    UF: Core-shelf nanostructures
    BT: Materials
           Nanotechnology
    NT: Nanocomposites
           Nanoporous materials

Nanostructures
    BT: Nanotechnology
    RT: Nanosensors
    NT: Nanoparticles
           Nanoribbons
           Nanotubes
           Nanowires

2021 IEEE Thesaurus

Semiconductor nanostructures

Nanotechnology
RT: Atomic force microscopy
Epitaxial growth
Fluidics
Lithography
Microfabrication
Nanotube devices
Power dissipation
Quantum mechanics
Semiconductor device manufacture
Single electron devices
Very large scale integration
NT: Bionanotechnology
Casimir effect
Molecular computing
Molecular electronics
Nanobioscience
Nanocommunication (telecommunication)
Nanoelectromechanical systems
Nanoelectronics
Nanofabrication
Nanofluidics
Nanolithography
Nanomaterials
Nanopackaging
Nanopatterning
Nanophotonics
Nanopositioning
Nanoscale devices
Nanosensors
Nanostructured materials
Nanostructures
Self-assembly
Self-replicating machines

Nanotopography
BT: Surface topography
RT: Colloidal lithography
Nanopatterning

Nanotube devices
BT: Nanoscale devices
RT: Nanotechnology

Nanotubes
BT: Nanostructures
NT: Carbon nanotubes
Semiconductor nanotubes

Nanowires
BT: Nanostructures
RT: Junctionless nanowire transistors
Nanocontacts
Nanogenerators
Wires

Narrowband
BT: Bandwidth
Communication systems
RT: Wideband

NASA
UF: National Aeronautics & Space Administration
National Aeronautics and Space Administration
BT: US Government agencies
RT: Space exploration
Space missions
Space technology

Nash equilibrium
BT: Game theory

National Aeronautics & Space Administration
USE: NASA

National Aeronautics and Space Administration
USE: NASA

National Association of Corrosion Engineers
USE: NACE International

National Bureau of Standards
USE: NIST

National Electric Code
UF: National electric safety code
BT: ANSI Standards

National electric safety code
USE: National Electric Code

National Fire Protection Agency
USE: NFPA

National Fire Protection Association
USE: NFPA

National Institute of Standards & Technology
USE: NIST

National Institute of Standards and Technology
    USE: NIST

National Institutes of Health
    UF: NIH
    BT: US Department of Health and Human Services

National security
    BT: Terrorism
    RT: Control system security
           Cyber warfare

National Society Agreement awards
    BT: IEEE Awards activities

National Telecommunications and Information Administration
    USE: NTIA

National vocational qualification
    USE: Vocational training

Natural fibers
    UF: Natural fibres
    BT: Textile fibers
    RT: Cotton
           Wool
    NT: Bamboo

Natural fibres
    USE: Natural fibers

Natural gas
    BT: Fossil fuels
    RT: Energy resources
           Fracking
           Gases
           Natural gas industry
    NT: Liquefied natural gas
           Methane

Natural gas industry
    BT: Industries
    RT: Natural gas
           Petroleum industry
           Pipelines

Natural language processing
    UF: NLP
    BT: Natural languages
    RT: Phonetics
           Pragmatics
           Semantic search
           Semantic technology
           Semantics
           Semiotics
           Syntactics
    NT: Chatbot
           Machine translation
           Morphology
           Sentiment analysis
           Tokenization

Natural languages
    UF: Natural speech
    BT: Systems, man, and cybernetics
    RT: Artificial intelligence
           Computer languages
    NT: Linguistics
           Natural language processing

Natural response
    USE: Transient response

Natural speech
    USE: Natural languages

Navier-Stokes equations
    BT: Differential equations
           Fluid dynamics
    RT: Finite volume methods
           Viscosity

Navigation
    UF: Direction-finding
           Geomagnetic navigation
    BT: Intelligent transportation systems
           Vehicular and wireless technologies
    RT: Compass
           Ground support
           Location awareness
           Motion planning
           Position measurement
           Sensor systems
    NT: Aircraft navigation
           Course correction
           Dead reckoning
           Indoor navigation
           Inertial navigation
           Marine navigation
           Radio navigation
           Satellite navigation systems
           Sonar navigation

Nb

2021 IEEE Thesaurus

USE: Niobium

Nb3Sn
USE: Niobium-tin

NBS
USE: NIST

NBTI
USE: Negative bias temperature instability

NC machines
USE: Computer numerical control

Nd
USE: Neodymium

Near field communication
UF: NFC
Nearfield communication
BT: Communication standards
Radio communication
RT: Magnetic communication
NT: Mobile communication

Near field radiation pattern
USE: Near-field radiation pattern

Near-field radiation pattern
UF: Near field radiation pattern
BT: Antenna radiation patterns

Nearest neighbor methods
UF: K-NN methods
Nearest neighbor searches
Nearest neighbour methods
k neighbor methods
k neighbour methods
BT: Learning (artificial intelligence)
Nonparametric statistics
Pattern recognition
RT: Data mining
Pattern classification
Pattern clustering
Regression analysis
Search methods
Statistical analysis

Nearest neighbor searches
USE: Nearest neighbor methods

Nearest neighbour methods
USE: Nearest neighbor methods

Nearfield communication
USE: Near field communication

Neck
BT: Body regions

Needles
BT: Mechanical products
RT: Biomedical equipment
Textile machinery

Negative bias temperature instability
UF: NBTI
BT: MOS devices

Negative feedback
BT: Feedback

Negative feedback amplifier
USE: Feedback amplifiers

Negative feedback loops
BT: Feedback loop

NEMA
BT: Standards organizations

NEMS
USE: Nanoelectromechanical systems

Neodymium
UF: Nd
BT: Metals
NT: Neodymium alloys
Neodymium compounds

Neodymium alloys
BT: Neodymium
RT: Alloying

Neodymium compounds
BT: Neodymium

Neon
BT: Chemical elements

Neonatology
BT: Medical specialties
RT: Pediatrics

Neoplasia
USE: Neoplasms

2021 IEEE Thesaurus

Neoplasms
- UF: Neoplasia
- BT: Biological tissues
- NT: Breast neoplasms
  - Liver neoplasms
  - Lung neoplasms
  - Skin neoplasms

Nephrolithiasis
- USE: Kidney stones

Neptunium
- BT: Chemical elements

Nerve cells
- USE: Neurons

Nerve endings
- BT: Nervous system

Nerve fibers
- BT: Neurons
- NT: Axons
  - Myelin

Nerve tissues
- BT: Nervous system

Nervous system
- BT: Anatomy
- RT: Bioelectric phenomena
  - Computational neuroscience
  - Neural networks
  - Neurological diseases
  - Neurology
  - Neuromuscular stimulation
  - Neuropathology
- NT: Autonomic nervous system
  - Brain
  - Brain mapping
  - Central nervous system
  - Cranial
  - Ganglia
  - Glial cells
  - Nerve endings
  - Nerve tissues
  - Neural pathways
  - Neuroanatomy
  - Neurons
  - Neuroradiology
  - Neuroscience
  - Peripheral nervous system
  - Pituitary gland
  - Spinal cord
  - Spine
  - Synapses

Net neutrality
- USE: Network neutrality

Network address translation
- BT: Computer network management

Network analyzers
- BT: Instruments

Network architecture
- BT: Network topology
  - Telecommunication network management
- NT: Active networking
  - Information-centric networking
  - Network function virtualization
  - Network slicing

Network coding
- BT: Information theory
- RT: Network security

Network control systems
- USE: Networked control systems

Network function virtualization
- UF: NFV
- BT: Computer networks
  - Network architecture
- RT: Application virtualization
  - Cloud computing
  - Intrusion detection
  - Servers
  - Software defined networking
- NT: Cloud radio access networks

Network interfaces
- BT: Interface phenomena
- RT: Interface management

Network intrusion
- BT: Data breach
- RT: Data security
  - Network security
  - Privacy
- NT: Network intrusion detection

2021 IEEE Thesaurus

Network intrusion detection
- BT: Intrusion detection
- Network intrusion

Network location awareness
- BT: Location awareness

Network neutrality
- UF: Internet neutrality
- Net neutrality
- BT: Telecommunication network management

Network of workstations
- USE: Cluster computing

Network operating systems
- BT: Operating systems
- RT: Software defined networking
- NT: Autonomic systems

Network reconnaissance
- UF: Footprinting
- BT: Network security

Network resource management
- UF: Dynamic service delivery
- BT: Resource management
- Telecommunication network management
- RT: Cellular radio
- Mobile communication
- NT: Intercell interference

Network security
- BT: Computer networks
- Security
- RT: Communication networks
- Network coding
- Network intrusion
- NT: Network reconnaissance

Network servers
- BT: Computer networks

Network slicing
- BT: Network architecture
- RT: Augmented reality

Network synthesis
- BT: Computer network management

Network systems
- BT: Systems engineering and theory
- NT: DC distribution systems

Network theory (graphs)
- BT: Computer science
- Mathematics
- Physics
- RT: Social sciences

Network throughput
- USE: Throughput

Network topology
- BT: Communications technology
- RT: Overlay networks
- Telecommunication network topology
- NT: Complex networks
- Computer network reliability
- Network architecture

Network traffic
- USE: Telecommunication traffic

Network-on-a-chip
- USE: Network-on-chip

Network-on-chip
- UF: Network-on-a-chip
- BT: System-on-chip

Networked control systems
- UF: Network control systems
- BT: Control systems
- RT: Real-time systems
- System of systems

Neural activity
- UF: Neural oscillation
- BT: Brain

Neural chips
- USE: Neural network hardware

Neural circuits
- BT: Circuits
- Neural engineering
- RT: Neurons

Neural engineering
- UF: Neuro engineering
- Neuroengineering
- BT: Biomedical engineering

	RT:	Brain-computer interfaces
		Intracranial pressure

sensors

	NT:	Neural circuits
		Neural microtechnology
		Neural nanotechnology
		Neural prosthesis

Neural implants

	UF:	Brain implants
	BT:	Brain
		Implants
	RT:	Deep brain stimulation

Neural microtechnology

	BT:	Neural engineering

Neural nanotechnology

	BT:	Neural engineering

Neural nets

	USE:	Neural networks

Neural network hardware

	UF:	Neural chips
	BT:	Neural networks
	RT:	AI accelerators
		Analog integrated circuits
		Integrated circuits
		Neurocontrollers

Neural networks

	UF:	Neural nets
		Wavelet neural networks
	BT:	Computational and artificial

intelligence

	RT:	AI accelerators
		Adaptive systems
		Artificial intelligence
		Associative memory
		Backpropagation
		Bio-inspired computing
		Cybernetics
		Deep architecture
		Dynamic programming
		Fuzzy cognitive maps
		Generative adversarial

networks

		Nervous system
		Neurophysiology
		Nonlinear dynamical

systems

		Pattern classification
		Systems neuroscience
	NT:	Artificial neural networks

		Biological neural networks
		Cellular neural networks
		Feedforward neural

networks

		Graph neural networks
		Multi-layer neural network
		Neural network hardware
		Radial basis function

networks

		Recurrent neural networks

Neural oscillation

	USE:	Neural activity

Neural pathways

	BT:	Nervous system

Neural prostheses

	USE:	Prosthetics

Neural prosthesis

	BT:	Neural engineering

Neurites

	UF:	Neuronal process
	BT:	Neurons

Neuro engineering

	USE:	Neural engineering

Neuro fuzzy networks

	USE:	Fuzzy neural networks

Neuro imaging

	USE:	Neuroimaging

Neuro transmitters

	USE:	Neurotransmitters

Neuro-feedback

	USE:	Neurofeedback

Neuro-fuzzy networks

	USE:	Fuzzy neural networks

Neuro-imaging

	USE:	Neuroimaging

Neuro-transmitters

	USE:	Neurotransmitters

Neuroanatomy

	BT:	Anatomy
		Nervous system

Neurocontrollers
 BT: Intelligent control
 RT: Artificial intelligence
   Microcontrollers
   Neural network hardware

Neurodynamics
 BT: Brain
 RT: Neurophysiology

Neuroengineering
 USE: Neural engineering

Neurofeedback
 UF: Neuro-feedback
 BT: Feedback

Neuroglia
 USE: Glial cells

Neuroimaging
 UF: Neuro imaging
   Neuro-imaging
 BT: Biomedical image processing
   Brain mapping
 RT: Neuroradiology
 NT: Functional neuroimaging

Neuroinformatics
 BT: Bioinformatics
   Informatics
   Neuroscience
 RT: Analytical models
   Big Data
   Computational modeling
   Data science
   Synapses

Neurological diseases
 UF: Neurological disorders
 BT: Diseases
 RT: Nervous system
   Spinal cord injury

Neurological disorders
 USE: Neurological diseases

Neurology
 BT: Medical specialties
 RT: Nervous system

Neuromodulation
 BT: Neurons
   Physiology

 RT: Control systems
 NT: Neurostimulation

Neuromorphic computing
 USE: Neuromorphic engineering

Neuromorphic engineering
 UF: Neuromorphic computing
 BT: Neuromorphics
 RT: AI accelerators
   Artificial neural networks
   CMOS integrated circuits
   Memristors
   Neurophysiology
   Synapses

Neuromorphics
 BT: Very large scale integration
 RT: Analog circuits
 NT: Neuromorphic engineering

Neuromuscular
 BT: Muscles

Neuromuscular stimulation
 UF: Functional electrical stimulation
 BT: Medical treatment
 RT: Nervous system

Neuronal networks
 USE: Biological neural networks

Neuronal process
 USE: Neurites

Neurone
 USE: Neurons

Neurons
 UF: Nerve cells
   Neurone
 BT: Nervous system
 RT: Action potentials
   Membrane potentials
   Neural circuits
   Synapses
 NT: Dendrites (neurons)
   Nerve fibers
   Neurites
   Neuromodulation
   Photoreceptors
   Soma

Neuropathic pain

2021 IEEE Thesaurus

BT: Pain

Neuropathology
BT: Pathology
RT: Nervous system

Neurophysiology
BT: Brain
RT: Biomedical signal processing
         Microelectrodes
         Neural networks
         Neurodynamics
         Neuromorphic engineering
         Science - general
NT: Biological neural networks
         Neuroplasticity

Neuroplasticity
UF: Brain plasticity
         Cortical plasticity
BT: Neurophysiology

Neuropsychology
BT: Brain
         Psychology

Neuroradiology
BT: Nervous system
         Radiology
RT: Electromagnetics
         Neuroimaging

Neuroscience
BT: Nervous system
         Science - general
NT: Clinical neuroscience
         Cognitive neuroscience
         Computational neuroscience
         Neuroinformatics
         Systems neuroscience
         Transcranial direct current stimulation
         Transcranial magnetic stimulation

Neurostimulation
BT: Neuromodulation
RT: Deep brain stimulation
         Microelectrodes
NT: Transcranial direct current stimulation
         Transcranial magnetic stimulation

Neurosurgery
BT: Surgery
NT: Deep brain stimulation

Neurotechnology
BT: Brain
         Technology

Neurotransmission
USE: Neurotransmitters

Neurotransmitters
UF: Neuro transmitters
         Neuro-transmitters
         Neurotransmission
         Synaptic transmission
BT: Transmitters
RT: Synapses

Neutrino
USE: Neutrino sources

Neutrino sources
UF: Neutrino
         Neutrinos
BT: Elementary particles
RT: Radioactive materials

Neutrinos
USE: Neutrino sources

Neutron beams
USE: Particle beams

Neutron capture therapy
UF: BNCT
         Boron neutron capture therapy
BT: Medical treatment
RT: Biological effects of radiation
         Dosimetry

Neutron radiation effects
BT: Radiation effects

Neutron scattering
USE: Neutron spin echo

Neutron spin echo
UF: Neutron scattering
BT: Spectroscopy

Neutrons

BT: Elementary particles
RT: Cosmic rays

New media age
 USE: Information age

New Radio
 BT: 5G mobile communication
   Radio access technologies
 RT: 3GPP

Newborns
 USE: Pediatrics

Newton Fourier method
 USE: Newton method

Newton method
 UF: Newton Fourier method
   Newton Raphson method
   Newton's method
   Newton-Fourier method
   Newton-Raphson method
   Newtons method
 BT: Numerical analysis
 RT: Optimization methods
   Poles and zeros

Newton Raphson method
 USE: Newton method

Newton's method
 USE: Newton method

Newton-Fourier method
 USE: Newton method

Newton-Raphson method
 USE: Newton method

Newtons method
 USE: Newton method

Next generation network architecture
 USE: Next generation networking

Next generation networking
 UF: 21CN
   21st century networks
   NGN
   NGNA
   Next generation network architecture
   Next generation networks
   Next-generation networks

BT: Computer networks
RT: 3G mobile communication
   4G mobile communication
   5G mobile communication
   IP networks
   Internet
   Packet switching
   Pervasive computing
   Quality of service
   Telecommunications

Next generation networks
 USE: Next generation networking

Next-generation networks
 USE: Next generation networking

NFB
 USE: Feedback amplifiers

NFC
 USE: Near field communication

NFPA
 UF: National Fire Protection Agency
   National Fire Protection Association
 BT: Standards organizations

NFV
 USE: Network function virtualization

NGN
 USE: Next generation networking

NGNA
 USE: Next generation networking

Ni
 USE: Nickel

Nickel
 UF: Ni
 BT: Metals
 NT: Nickel alloys
   Nickel compounds

Nickel alloys
 BT: Nickel
 RT: Alloying

Nickel cadmium batteries
 BT: Batteries

2021 IEEE Thesaurus

Silicon nitride

Nickel compounds
　　BT:　　　Nickel

Night vision
　　BT:　　　Infrared imaging
　　RT:　　　Image sensors
　　　　　　　Military equipment

NIH
　　USE:　　National Institutes of Health

Niobium
　　UF:　　　Nb
　　BT:　　　Metals
　　RT:　　　Type II superconductors
　　NT:　　　Niobium alloys
　　　　　　　Niobium compounds

Niobium alloys
　　BT:　　　Niobium
　　RT:　　　Alloying
　　NT:　　　Niobium-tin

Niobium compounds
　　BT:　　　Niobium

Niobium-tin
　　UF:　　　Nb3Sn
　　BT:　　　Niobium alloys
　　　　　　　Superconducting materials
　　　　　　　Tin alloys

NISO Standards
　　BT:　　　Standards publications

NIST
　　UF:　　　NBS
　　　　　　　National Bureau of Standards
　　　　　　　National Institute of Standards & Technology
　　　　　　　National Institute of Standards and Technology
　　BT:　　　Standards organizations
　　　　　　　US Department of Commerce

NIST Standards
　　BT:　　　Standards publications

Nitrogen
　　BT:　　　Chemical elements
　　　　　　　Gases
　　NT:　　　Nitrogen compounds

Nitrogen compounds
　　BT:　　　Nitrogen
　　NT:　　　Ammonia

NLP
　　USE:　　Natural language processing

nMOSFETs
　　USE:　　MOSFET

NMR
　　USE:　　Nuclear magnetic resonance

NMR imaging
　　USE:　　Magnetic resonance imaging

Noise
　　BT:　　　Signal processing
　　RT:　　　Autoregressive processes
　　　　　　　Cyclic redundancy check
　　　　　　　Distortion
　　　　　　　Electromagnetic interference
　　　　　　　Interference
　　　　　　　Noise generators
　　　　　　　Noise measurement
　　　　　　　Roundoff errors
　　NT:　　　1/f noise
　　　　　　　Additive noise
　　　　　　　Colored noise
　　　　　　　Gaussian noise
　　　　　　　Laser noise
　　　　　　　Low-frequency noise
　　　　　　　Noise cancellation
　　　　　　　Phase noise
　　　　　　　Signal to noise ratio
　　　　　　　Superconducting device noise
　　　　　　　White noise

Noise abatement
　　USE:　　Noise reduction

Noise cancellation
　　UF:　　　Noise cancellers
　　BT:　　　Acoustic noise
　　　　　　　Noise
　　RT:　　　Filtering

Noise cancellers

USE: Noise cancellation

Noise figure
BT: Noise measurement
RT: Signal to noise ratio

Noise generators
BT: Signal generators
RT: Noise

Noise level
BT: Acoustic noise

Noise measurement
UF: Noisy
BT: Measurement
RT: Distortion measurement
Electric variables measurement
Noise
Packet loss
NT: Multiple signal classification
Noise figure
Noise shaping

Noise reduction
UF: Audio enhancement
De-noising
Denoising
Noise abatement
Noise suppression
BT: Acoustic noise
NT: Active noise reduction
Noise robustness
Wiener filters

Noise robust
USE: Noise robustness

Noise robustness
UF: Noise robust
BT: Noise reduction

Noise shaping
UF: Noise-shaping
BT: Noise measurement
NT: Multi-stage noise shaping

Noise suppression
USE: Noise reduction

Noise-shaping
USE: Noise shaping

Noisy

USE: Noise measurement

NOMA
UF: non-orthogonal multiple access
BT: Communication systems
RT: MIMO communication
OFDM
Radio communication

Non relational databases
USE: NoSQL databases

Non-gyroscopes
USE: Gyroscopes

non-orthogonal multiple access
USE: NOMA

Non-parametric statistics
USE: Nonparametric statistics

Non-united-states activities
USE: IEEE Professional activities

Non-volatile memory
USE: Nonvolatile memory

Non-volatile single electron memory
USE: Nonvolatile single electron memory

Non-volatile single-electron memory
USE: Nonvolatile single electron memory

Nonconductive adhesives
BT: Adhesives

Nondestructive testing
BT: Materials testing
RT: Acoustic emission
Ultrasonic transducers
NT: Magnetic flux leakage

Nondeterministic polynomial-time hard
USE: NP-hard problem

Nongyroscopes
USE: Gyroscopes

Nonhomogeneous media
UF: Composite media
Inhomogeneous media
Layered media

       Multilayers
       Periodic media
       Stratified media
BT: Media
RT: Random media

Noninvasive diagnosis
     USE: Noninvasive treatment

Noninvasive measurement
     USE: Noninvasive treatment

Noninvasive surgery
     USE: Noninvasive treatment

Noninvasive technique
     USE: Noninvasive treatment

Noninvasive treatment
     UF: Noninvasive diagnosis
            Noninvasive measurement
            Noninvasive surgery
            Noninvasive technique
     BT: Medical treatment
     RT: Pulse oximeter
     NT: Embolization
            Pulse oximetry

Nonlinear acoustics
     BT: Acoustics
     RT: Acoustic distortion
            Nonlinear wave propagation

Nonlinear circuits
     BT: Circuits
     RT: Chaos
            Mixers
            Power conversion
            Rail to rail inputs
            Rail to rail outputs
     NT: Nonlinear network analysis

Nonlinear control systems
     BT: Control systems
     RT: Control nonlinearities
            Piecewise linear techniques

Nonlinear distortion
     BT: Distortion
     RT: Limiting
            Predistortion
     NT: Harmonic distortion
            Intermodulation distortion

Nonlinear dynamical systems
     UF: Nonlinear dynamics
     BT: Dynamical systems
            Nonlinear systems
     RT: Chaos
            Econophysics
            Fuzzy sets
            Kalman filters
            Neural networks
            Pattern formation
            Possibility theory
            Predator prey systems
            Spatiotemporal phenomena
            Uncertainty

Nonlinear dynamics
     USE: Nonlinear dynamical systems

Nonlinear equations
     BT: Equations
            Mathematics
     RT: Algebra
            Linear approximation
            Nonlinear systems
            Numerical analysis
     NT: Bifurcation

Nonlinear filters
     BT: Filters
     RT: Detectors
            Phase locked loops

Nonlinear magnetics
     BT: Magnetics
     RT: Ferroresonance

Nonlinear network analysis
     BT: Circuit analysis
            Nonlinear circuits

Nonlinear optical devices
     BT: Nonlinear optics
     RT: Optical detectors

Nonlinear optics
     BT: Optics
     RT: Electrooptic effects
            Pattern formation
            Photonic crystals
            Thermal lensing
     NT: Fiber nonlinear optics
            Nonlinear optical devices
            Optical mixing
            Optical saturation

2021 IEEE Thesaurus

Photorefractive effect
Raman scattering
Supercontinuum generation

Nonlinear systems
UF: Bilinear systems
        Multilinear systems
BT: Mathematics
RT: Control systems
        Linear approximation
        Manipulators
        Mobile robots
        Nonlinear equations
        Robots
NT: Chaos
        Nonlinear dynamical systems

Nonlinear wave propagation
BT: Propagation
RT: Nonlinear acoustics

Nonparametric statistics
UF: Non-parametric statistics
BT: Statistics
NT: Nearest neighbor methods

Nonrelational databases
USE: NoSQL databases

Nonuniform electric fields
BT: Electric fields

Nonuniform sampling
BT: Sampling methods

Nonuniform transmission lines
USE: Distributed parameter circuits

Nonvolatile memories
USE: Nonvolatile memory

Nonvolatile memory
UF: Non-volatile memory
        Nonvolatile memories
BT: Memory
NT: Nonvolatile single electron memory

Nonvolatile single electron memory
UF: Non-volatile single electron memory
        Non-volatile single-electron memory
        Nonvolatile single-electron memory
BT: Nonvolatile memory

Nonvolatile single-electron memory
USE: Nonvolatile single electron memory

Normal distribution
USE: Gaussian distribution

North America
BT: Continents

North Pole
BT: Arctic

Nose
BT: Head
        Sense organs
NT: Olfactory

NoSQL databases
UF: Non relational databases
        Nonrelational databases
BT: Database systems
RT: Big Data
        Data structures
        Data warehouses
        Distributed databases
        Linked data
        Query processing

Notch filters
UF: Band-stop filters
BT: Filters

Notice of Violation
BT: IEEE publications
RT: Intellectual property
        Plagiarism

NP hard problem
USE: NP-hard problem

NP-C
USE: NP-complete problem

NP-complete problem
UF: NP-C
BT: Complexity theory

NP-hard problem
UF: NP hard problem

Nondeterministic polynomial-time hard
    BT: Complexity theory
    NT: Traveling salesman problems

NTIA
    UF: National Telecommunications and Information Administration
    BT: US Department of Commerce

Nuclear and plasma sciences
    NT: Biomedical applications of radiation
            Colliding beam devices
            Electron emission
            Elementary particles
            Fusion power generation
            Fusion reactors
            Gamma-rays
            Gas discharge devices
            High energy physics instrumentation computing
            Ion beam applications
            Nuclear electronics
            Nuclear imaging
            Nuclear medicine
            Nuclear physics
            Particle accelerators
            Particle beam handling
            Particle beam injection
            Plasmas
            Radiation effects
            Radiation hardening (electronics)
            Radiation monitoring
            Radiation safety
            Reactor instrumentation
            Scintillation counters
            Thermionic emission

Nuclear batteries
    USE: Atomic batteries

Nuclear bombs
    USE: Nuclear weapons

Nuclear electronics
    BT: Nuclear and plasma sciences
    RT: FET circuits
            High energy physics instrumentation computing

Nuclear energy
    USE: Nuclear power generation

Nuclear facility licensing
    USE: Nuclear facility regulation

Nuclear facility regulation
    UF: Licensing (nuclear facilities)
            Nuclear facility licensing
    BT: Power industry
    RT: Radioactive waste

Nuclear fission
    USE: Fission reactors

Nuclear fuels
    BT: Energy resources
            Fuels
             Radioactive materials
    RT: Nuclear power generation
            Radioactive waste

Nuclear imaging
    UF: Gamma-ray imaging
    BT: Imaging
            Nuclear and plasma sciences
    RT: Nuclear medicine
            Radiography
    NT: Energy resolution
            Ion emission

Nuclear magnetic resonance
    UF: NMR
    BT: Magnetic resonance

Nuclear magnetic resonance imaging
    USE: Magnetic resonance imaging

Nuclear measurements
    BT: Measurement
    RT: Atomic measurements
            CAMAC
            Fastbus
            Position sensitive particle detectors
            Radiation detectors
            Spectroscopy
    NT: Particle tracking

Nuclear medicine
    BT: Engineering in medicine and biology

Nuclear and plasma sciences
- RT: Energy resolution
  - Gamma-rays
  - Nuclear imaging
  - Positron emission tomography

Nuclear phase transformations
- UF: Nuclear phase transitions
  - Phase transformations, nuclear
  - Phase transitions, nuclear
- BT: Nuclear physics
- RT: Nuclear thermodynamics

Nuclear phase transitions
- USE: Nuclear phase transformations

Nuclear physics
- BT: Nuclear and plasma sciences
- RT: Hafnium
- NT: Alpha particles
  - Beta rays
  - Ignition
  - Ion sources
  - Isotopes
  - Nuclear phase transformations
  - Nuclear thermodynamics
  - Relativistic effects

Nuclear Power Generating Stations
- USE: Nuclear power generation

Nuclear power generation
- UF: Atomic energy
  - Nuclear Power Generating Stations
  - Nuclear energy
- BT: Power generation
- RT: Nuclear fuels
- NT: Atomic batteries
  - Fission reactors
  - Fusion power generation

Nuclear reactors (fission)
- USE: Fission reactors

Nuclear reactors (fusion)
- USE: Fusion reactors

Nuclear thermodynamics

- BT: Nuclear physics
- RT: Elementary particles
  - Entropy
  - Nuclear phase transformations
  - Phase change materials

Nuclear wastes
- USE: Radioactive pollution

Nuclear weapons
- UF: Nuclear bombs
- BT: Weapons

Null space
- BT: Kernel

Null value
- UF: Nullvalue
- BT: Data structures
- RT: Programming

Nullvalue
- USE: Null value

Number portability
- BT: Telecommunication services

Numerical analysis
- BT: Mathematics
- RT: Convolution
  - Deconvolution
  - Difference equations
  - Differential equations
  - Error analysis
  - Integral equations
  - Inverse problems
  - Matlab
  - Nonlinear equations
  - Numerical models
  - Transforms
- NT: Adaptive mesh refinement
  - Approximation methods
  - Convergence of numerical methods
  - Finite difference methods
  - Finite element analysis
  - Finite volume methods
  - Gradient methods
  - Independent component analysis
  - Iterative methods
  - Least squares approximations

Method of moments
Mode matching methods
Multigrid methods
Newton method
Numerical simulation
Numerical stability
Relaxation methods
Sparse matrices
Splines (mathematics)
Surface fitting
Symmetric matrices
Transmission line matrix methods

Numerical models
BT: Modeling
RT: Numerical analysis

Numerical simulation
BT: Numerical analysis
RT: Modeling
Plasma simulation
Simulation

Numerical stability
BT: Numerical analysis
RT: Algorithms

Nursing
USE: Medical services

Nuts (fasteners)
USE: Fasteners

NVQ
USE: Vocational training

Nylon fiber
USE: Synthetic fibers

O-rings
USE: Structural rings

OATS
USE: Open area test sites

Obesity
BT: Medical conditions

Obituaries
BT: IEEE indexing

Object detection
UF: Image object detection
Target detection

BT: Image analysis
RT: Image matching
Internet of Things
Magnetic anomaly detection

Magnetic anomaly detectors

Robot vision systems
NT: Buried object detection
Time difference of arrival

Object oriented databases
BT: Database systems
Databases
RT: Object oriented methods

Object oriented methods
BT: Programming
RT: Object oriented databases
Object oriented programming

Object oriented modeling
BT: Modeling

Object oriented programming
UF: Object-oriented programming
BT: Programming
RT: C languages
C# languages
Object oriented methods
Python
Software libraries
Software reusability
NT: Dispatching

Object recognition
UF: Image object recognition
BT: Machine vision
RT: Image matching
Image recognition
Object tracking
Robot vision systems
NT: Affordances
Target recognition

Object segmentation
BT: Machine vision
NT: Subspace constraints

Object tracking
BT: Tracking
RT: Cinematography
Image motion analysis

2021 IEEE Thesaurus

Image segmentation
Motion estimation
Object recognition
Trajectory
Video signal processing

Object-oriented programming
      USE: Object oriented
programming

Observability
      BT: Control theory

Observatories
      BT: Astronomy
      RT: Telescopes

Observers
      BT: State estimation
      RT: Machine vision
      NT: Disturbance observers
              Earth Observing System

Obstacle avoidance
      USE: Collision avoidance

Occipital Lobe
      BT: Brain

Occupational health
      UF: Health (occupational)
      BT: Health and safety
      RT: Accidents
              Biological effects of
radiation
              Domestic safety
              Electric shock
              Employee welfare
              Environmental factors
              Ergonomics
              Eye protection
              Occupational medicine
              Occupational safety
              Pollution
              Protective clothing
              Radioactive materials
              Risk analysis
              Safety
              Toxicology
              Working environment noise
      NT: Occupational stress

Occupational medicine
      BT: Medical services
      RT: Medical diagnosis

              Medical treatment
              Occupational health

Occupational pensions
      USE: Pensions

Occupational safety
      UF: OSHA
      BT: Health and safety
      RT: Accidents
              Domestic safety
              Electric shock
              Employee welfare
              Eye protection
              Industrial accidents
              Occupational health
              Protection
              Protective clothing
              Radioactive materials
              Risk analysis
              Working environment noise

Occupational stress
      BT: Occupational health
      RT: Employee welfare
              Hazards

OCDM
      USE: Code division multiplexing

Ocean animals
      USE: Marine animals

Ocean circulation
      BT: Oceanography
      RT: Ocean waves
              Sea level
              Tides

Ocean composition
      USE: Oceans

Ocean salinity
      BT: Oceans
      RT: Salinity (geophysical)
      NT: SMOS mission

Ocean technology
      USE: Marine technology

Ocean temperature
      UF: Sea surface temperature
      BT: Oceanic engineering and
marine technology
              Oceans

2021 IEEE Thesaurus

RT: Global warming
         Land surface temperature

Ocean vegetation
     USE: Marine vegetation

Ocean waves
     BT: Hydrology
     RT: Ocean circulation
     NT: Sea state
         Wave power

Oceanic engineering and marine technology
     NT: Marine navigation
         Marine technology
         Ocean temperature
         Oceanographic techniques
         Water pollution

Oceanographic techniques
     BT: Oceanic engineering and marine technology
     RT: Acoustic imaging
         Hydrologic measurements
         Radar applications
         Remote sensing

Oceanography
     UF: Marine science
         Oceanology
     BT: Geoscience
     RT: Marine robots
         Oceans
     NT: Ocean circulation

Oceanology
     USE: Oceanography

Oceans
     UF: Ocean composition
         Planetary oceans
     BT: Geoscience
     RT: Geophysics
         Marine technology
         Oceanography
         Sea ice
         Sea measurements
         Water
     NT: Ocean salinity
         Ocean temperature
         Sea coast
         Sea floor
         Sea level
         Sea surface
         Tides

OCR
     USE: Optical character recognition software

Octrees
     BT: Data structures

OFDM
     UF: Orthogonal frequency division multiple access
         Orthogonal frequency division multiplexing
     BT: Multiplexing
     RT: 3G mobile communication
         Acoustic communication (telecommunication)
         Communication channels
         Digital signal processing
         MIMO communication
         Modulation
         Multiaccess communication
         Multicarrier code division multiple access
         NOMA
     NT: Multiple access interference
         OFDM modulation
         Partial transmit sequences
         Peak to average power ratio

OFDM modulation
     BT: OFDM

OFETs
     UF: Organic FETS
         Organic field effect transistors
         Organic field-effect transistors
     BT: Field effect transistors

Office automation
     BT: Automation
     RT: Bring your own device
         Communication systems
         Data communication
         Desktop publishing
         Document handling
         Electronic mail
         Information systems
         Local area networks
         Microcomputers
         Teleconferencing
         Text processing

2021 IEEE Thesaurus

		Unsolicited e-mail
		Voice mail
	NT:	Workflow management software

Offshore distribution systems
 USE: Offshore installations

Offshore installations
 UF: Gas platforms
  Offshore distribution systems
  Offshore power plants
  Oil platforms
 BT: Structural engineering
 RT: Oil drilling
  Petroleum industry
  Power industry

Offshore power plants
 USE: Offshore installations

OGC
 USE: Open Geospatial Consortium

Ohmic contacts
 BT: Contacts
 RT: Linear circuits

Ohmmeters
 USE: Electrical resistance measurement

Oil drilling
 UF: Drilling oil
 BT: Petroleum industry
 RT: Drilling
  Fuel processing industries
  Offshore installations
  Technology
  Well logging

Oil filled cables
 BT: Oil insulation
 RT: Cable insulation

Oil filters
 USE: Lubricating oils

Oil industry
 USE: Petroleum industry

Oil insulation
 UF: Transformer oil

 BT: Insulation
 RT: Oils
 NT: Oil filled cables

Oil platforms
 USE: Offshore installations

Oil pollution
 BT: Pollution
 RT: Accidents
  Land pollution
  Marine pollution
  Oils
  Petroleum
  Petroleum industry

Oil refineries
 BT: Petroleum industry

Oil sands
 USE: Hydrocarbons

Oil shale
 USE: Hydrocarbons

Oil tanks
 USE: Fuel storage

Oiling (lubrication)
 USE: Lubricating oils

Oils
 BT: Materials
 RT: Engines
  Fats
  Fluids
  Fractionation
  Fuel processing industries
  Insulation
  Marine pollution
  Mechanical factors
  Mechanical power transmission
  Oil insulation
  Oil pollution
  Petroleum
  Petroleum industry
  Pipelines
  Water pollution
 NT: Lubricating oils
  Vegetable oils

OLED
 USE: Organic light emitting diodes

2021 IEEE Thesaurus

Olfactory
    BT: Nose

Olfactory bulb
    BT: Forebrain
               Sense organs

Oligopoly
    BT: Economics
    RT: Game theory
               Microeconomics

Omnidirectional antennas
    BT: Antennas

On board unit
    BT: Communication equipment
    RT: Dedicated short range communication
               Vehicle-to-everything

On demand software
    USE: Software as a service

On load tap changers
    UF: Load tap changers
               On-load tap changers
               Onload tap changers
    BT: Power transformers
               Tap changers
    RT: Voltage control

On the job training
    UF: On-the-job training
    BT: Training
    RT: Industrial training

On-chip
    USE: System-on-chip

On-demand software
    USE: Software AND
               Software as a service

On-line services
    USE: Online services

On-load tap changers
    USE: On load tap changers

On-the-job training
    USE: On the job training

Oncological surgery
    UF: Otologic surgery
               Surgery oncology
    BT: Surgery
    RT: Cancer
               Oncology

Oncology
    BT: Medical specialties
    RT: Cancer
               Chemotherapy
               Oncological surgery
               Tumors

Online banking
    UF: Digital currency
               E-banking
               E-currency
               Electronic banking
               Electronic currency
               Internet banking
               Mobile payment
               Virtual currency
    BT: Banking
               Online services
    RT: Bitcoin
               Cryptocurrency
               Electronic commerce
    NT: Distributed ledger

Online indexing
    USE: Indexing

Online services
    UF: Inverted classroom
               On-line services
               Reverse teaching
    BT: Information retrieval
    RT: Cloud gaming
               Electronic learning
               Internet
    NT: Online banking

Online shopping
    USE: Electronic commerce

Online voting
    USE: Electronic voting

Onload tap changers
    USE: On load tap changers

Ontologies
    UF: Ontology
    BT: Knowledge representation
    RT: Linked data

		Open data
		Ranking (statistics)
		Semantic Web
		Semantic search
		Thesauri
	NT:	Description logic

Ontology
　　USE:　Ontologies

ONU
　　USE:　Optical network units

OOO
　　USE:　Out of order

Op amp
　　USE:　Operational amplifiers

Open Access
　　BT:　Open systems
　　　　Publishing
　　NT:　Public domain software

Open area test sites
　　UF:　OATS
　　BT:　Test facilities
　　RT:　Electromagnetic compatibility and interference
　　　　Electromagnetic interference
　　　　Immunity testing
　　　　Military equipment

Open data
　　BT:　Data handling
　　RT:　Electronic publishing
　　　　Government policies
　　　　Internet
　　　　Linked data
　　　　Ontologies
　　　　Open systems
　　　　Public domain software
　　　　Semantic Web

Open Educational Resources
　　BT:　Educational courses
　　　　Open systems

Open Geospatial Consortium
　　UF:　OGC
　　BT:　Standards organizations

Open loop control
　　USE:　Open loop systems

Open loop systems
　　UF:　Open loop control
　　BT:　Control systems
　　RT:　Feedforward systems
　　　　Operational amplifiers

Open source hardware
　　UF:　Opensource hardware
　　BT:　Hardware

Open source software
　　UF:　Open-source
　　BT:　Software
　　RT:　Public domain software

Open systems
　　UF:　OSI
　　BT:　Computers and information processing
　　　　System analysis and design
　　RT:　Common Information Model (electricity)
　　　　Computer networks
　　　　Internetworking
　　　　Interoperability
　　　　Local area networks
　　　　Metropolitan area networks
　　　　Open data
　　　　Standards
　　　　Wide area networks
　　NT:　Open Access
　　　　Open Educational Resources
　　　　Physical layer

Open wireless architecture
　　UF:　OWA
　　BT:　Wireless communication

Open-source
　　USE:　Open source software

Opensource hardware
　　USE:　Open source hardware

Operating cost reduction
　　USE:　Costing

Operating systems
　　UF:　Android (operating system)
　　　　Computer operating systems
　　　　Executive programs
　　　　Microsoft Windows

	Robot operating systems	
	Supervisory programs	
BT:	System software	
RT:	Computer security	
	Cyber-physical systems	
	Program processors	
	Software defined networking	
	System recovery	
NT:	Booting	
	Embedded systems	
	Input-output programs	
	Kernel	
	Network operating systems	
	System kernels	

Operational amplifiers

UF:	Op amp
BT:	Active circuits
	Amplifiers
RT:	FET circuits
	Linearization techniques
	MOSFET circuits
	Open loop systems
NT:	Feedback amplifiers

Operations research

BT:	Business
RT:	Linear programming
	Management
	Optimization methods
	Principal component analysis
	Resource management
	Statistics
	TOPSIS
NT:	Inventory control
	Virtual enterprises

Ophthalmology

BT:	Medical specialties
RT:	Cornea
	Eyes
	Iris
	Pupils
	Retina

Opinion mining

USE:	Sentiment analysis

Opportunistic software systems development

BT:	Programming

Optic flow

USE:	Optical flow

Optical add-drop multiplexers

UF:	ROADMS
BT:	Add-drop multiplexers

Optical amplification

USE:	Stimulated emission

Optical amplifiers

BT:	Optics
RT:	Erbium
NT:	Doped fiber amplifiers
	Erbium-doped fiber amplifiers
	Semiconductor optical amplifiers

Optical arrays

BT:	Optical devices
RT:	Micromirrors
	Phased arrays

Optical attenuators

UF:	Variable optical attenuators
BT:	Attenuators
	Optical devices
RT:	Optical communication equipment
	Optical losses

Optical beam splitting

BT:	Optical beams

Optical beams

BT:	Beams
RT:	Bragg gratings
	Laser beams
	Laser theory
NT:	Optical beam splitting

Optical bistability

UF:	Bistability (optical)
BT:	Electrooptic effects
RT:	Electro-optical devices
	Optical switches

Optical buffering

BT:	Optical fiber communication

Optical burst switching

BT:	Burst switching

Optical character recognition software

UF:	License plate recognition

OCR
BT: Software

Optical cloaking
UF: Metamaterial cloaking
BT: Metamaterials
    Optical materials

Optical code division multiplexing
USE: Code division multiplexing

Optical coherence tomography
BT: Tomography
RT: Eyes

Optical collimators
BT: Optical devices

Optical communication
USE: Optical fiber communication

Optical communication equipment
BT: Communication equipment
RT: Biomedical optical imaging
    Optical attenuators
    Optical switches
NT: Optical transmitters

Optical components
USE: Optical devices

Optical computing
BT: Computers and information processing

Optical control
BT: Control systems
RT: Optical switches
NT: Lighting control
    Optical variables control

Optical coupling
BT: Electromagnetic coupling
RT: Optical fiber couplers

Optical crosstalk
BT: Optics
RT: Optical fiber communication

Optical design
BT: Optics
RT: Laser theory
NT: Optical design techniques

Optical design techniques

BT: Optical design
RT: Design methodology
NT: High-speed optical techniques

Optical detectors
BT: Optical sensors
RT: Nonlinear optical devices
NT: Bar codes

Optical device fabrication
UF: Optical device manufacture
BT: Fabrication
    Optical devices
RT: Electronic equipment manufacture

Optical device manufacture
USE: Optical device fabrication

Optical devices
UF: Optical components
BT: Optics
RT: Biomedical optical imaging
    Endomicroscopy
    Gratings
    Optical materials
NT: Bragg gratings
    Collimators
    Displays
    Holographic optical components
    Lenses
    Light deflectors
    Lighting
    Luminescent devices
    Mirrors
    Optical arrays
    Optical attenuators
    Optical collimators
    Optical device fabrication
    Optical filters
    Optical resonators
    Optical sensors
    Thermooptical devices

Optical diffraction
BT: Electromagnetic diffraction
RT: Photonic band gap
NT: Diffraction gratings

Optical distortion
BT: Optics
RT: Lasers
    Optical noise

Thermal lensing

Optical distortion measurement
    USE: Distortion measurement

Optical engineering
    BT: Engineering - general
            Optics
    RT: Optical materials

Optical feedback
    BT: Image processing
    RT: Distributed feedback devices

Optical fiber amplifiers
    UF: Optical fibre amplifiers
    BT: Optical fibers
    RT: Amplifiers

Optical fiber applications
    UF: Optical fibre applications
    BT: Optics
    RT: Channel spacing
            Code division multiplexing
            Optical fiber cables
            Optical fiber communication
            Optical fibers
    NT: Optical fiber devices

Optical fiber cables
    UF: Communication cables (optical)
            Optical fibre cables
    BT: Cables
    RT: Optical fiber applications
            Splicing

Optical fiber communication
    UF: Infrared communication
            Optical communication
            Optical fibre communication
            Optical links
    BT: Communication systems
    RT: Avalanche photodiodes
            Broadband communication
            Indoor communication
            Optical crosstalk
            Optical fiber applications
            Optical transmitters
            Quantum communication
            Silicon photonics
            Synchronous digital hierarchy
    NT: FDDI

            Free-space optical communication
            Optical buffering
            Optical fiber networks
            Optical fiber subscriber loops
            Optical interconnections
            Optical packet switching
            Optical wavelength conversion
            SONET
            Scheduling algorithms
            Visible light communication

Optical fiber couplers
    UF: Optical fibre couplers
    BT: Optical fibers
    RT: Optical coupling

Optical fiber devices
    UF: Optical fibre devices
    BT: Optical fiber applications
    RT: Optical fibers
    NT: Optical fiber sensors

Optical fiber dispersion
    UF: Optical fibre dispersion
    BT: Dispersion

Optical fiber filters
    BT: Optical filters

Optical fiber LAN
    UF: Optical fiber local area network
            Optical fibre LAN
            Optical fibre local area network
    BT: Optical fiber networks

Optical fiber local area network
    USE: Optical fiber LAN

Optical fiber loss
    USE: Optical fiber losses

Optical fiber losses
    UF: Optical fiber loss
            Optical fibre losses
    BT: Optical fibers

Optical fiber networks
    UF: Optical fibre networks
            Optical networks
            Optical-fiber networks

Optical-fibre networks
- BT: Optical fiber communication
- RT: Light fidelity
- NT: All-optical networks
  LAN emulation
  Optical fiber LAN
  Optical network units
  Passive optical networks
  Protection switching
  Wavelength assignment

Optical fiber polarization
- UF: Optical fibre polarisation
  Polarization-maintaining optical fibers
- BT: Optical fibers
- RT: Optical fiber sensors
  Optical interferometry
- NT: Polarization mode dispersion

Optical fiber sensors
- UF: Fiber optic sensors
  Fibre optic sensors
  Optical fibre sensors
- BT: Optical fiber devices
  Optical sensors
- RT: Optical fiber polarization
  Partial discharge measurement

Optical fiber subscriber loops
- UF: FTTH
  Fiber-in-the-loop
  Optical fibre subscriber loops
- BT: Optical fiber communication

Optical fiber testing
- UF: Optical fibre testing
- BT: Testing
- RT: Optical fibers

Optical fiber theory
- UF: Optical fibre theory
- BT: Optical fibers
- RT: Electromagnetic field theory

Optical fibers
- UF: Optical fibres
- BT: Fiber optics
  Optical waveguides
- RT: Electromagnetic waveguides
  Optical fiber applications

Optical fiber devices
Optical fiber testing
Optical materials
Optical propagation
Optical waveguide theory
Optical wavelength conversion
Supercontinuum generation
Temperature sensors
- NT: Optical fiber amplifiers
  Optical fiber couplers
  Optical fiber losses
  Optical fiber polarization
  Optical fiber theory
  Plastic optical fiber
  Wavelength conversion

Optical fibre amplifiers
- USE: Optical fiber amplifiers

Optical fibre applications
- USE: Optical fiber applications

Optical fibre cables
- USE: Optical fiber cables

Optical fibre communication
- USE: Optical fiber communication

Optical fibre couplers
- USE: Optical fiber couplers

Optical fibre devices
- USE: Optical fiber devices

Optical fibre dispersion
- USE: Optical fiber dispersion

Optical fibre LAN
- USE: Optical fiber LAN

Optical fibre local area network
- USE: Optical fiber LAN

Optical fibre losses
- USE: Optical fiber losses

Optical fibre networks
- USE: Optical fiber networks

Optical fibre polarisation
- USE: Optical fiber polarization

Optical fibre sensors
- USE: Optical fiber sensors

Optical fibre subscriber loops
    USE: Optical fiber subscriber loops

Optical fibre testing
    USE: Optical fiber testing

Optical fibre theory
    USE: Optical fiber theory

Optical fibres
    USE: Optical fibers

Optical films
    BT: Films
    RT: Integrated optics
           Optical materials

Optical filters
    BT: Optical devices
    RT: Photography
    NT: Optical fiber filters

Optical flow
    UF: Optic flow
    BT: Optical imaging
           Relativistic effects

Optical frequency combs
    USE: Optical harmonic generation

Optical frequency conversion
    BT: Frequency conversion

Optical gratings
    USE: Gratings

Optical harmonic generation
    UF: Optical frequency combs
    BT: Optics

Optical heterodyning
    USE: Optical mixing

Optical imaging
    BT: Imaging
    RT: Infrared imaging
           Microscopy
           Remote sensing
    NT: Optical flow
           Optical projectors
           Talbot effect
           Thermoreflectance imaging

Optical interconnections
    UF: Optical interconnects
    BT: Optical fiber communication

Optical interconnects
    USE: Optical interconnections

Optical interferometry
    UF: Light interferometry
    BT: Interferometry
    RT: Optical fiber polarization
           Speckle
           Talbot effect

Optical lattices
    USE: Lattices

Optical links
    USE: Optical fiber communication

Optical losses
    BT: Optics
    RT: Loss measurement
           Optical attenuators
           Optical scattering

Optical materials
    BT: Materials
    RT: Glass
           Indium tin oxide
           Lenses
           Magnesium oxide
           Metamaterials
           Mirrors
           Optical devices
           Optical engineering
           Optical fibers
           Optical films
           Optics
           Organic inorganic hybrid materials
           Phase change materials
           Photonic crystals
           SIMO communication
    NT: Colloidal nanocrystals
           Optical cloaking
           Optical polymers
           Optical retarders
           Optical superlattices
           Photorefractive materials

Optical measurements
    USE: Optical variables measurement

Optical metamaterials
UF:	Photonic metamaterials
BT:	Metamaterials
RT:	Electromagnetic metamaterials

Optical metrology
BT:	Metrology

Optical microscopy
BT:	Optics

Optical mixing
UF:	Optical heterodyning
BT:	Nonlinear optics
	Optics
RT:	Photorefractive materials
NT:	Multiwave mixing

Optical modulation
BT:	Modulation
RT:	Indoor communication
	Microwave photonics
	Optical transmitters
NT:	Electrooptic modulators
	Intensity modulation

Optical multilayers
USE:	Optical superlattices

Optical network units
UF:	ONU
BT:	Optical fiber networks

Optical networks
USE:	Optical fiber networks

Optical noise
BT:	Integrated circuit noise
RT:	Optical distortion
NT:	Speckle

Optical packet switching
BT:	Optical fiber communication

Optical planar waveguides
BT:	Optical waveguides

Optical polarisation
USE:	Optical polarization

Optical polarization
UF:	Light polarisation
	Light polarization
	Optical polarisation
BT:	Optics
RT:	Photoelasticity
NT:	Polarization shift keying
	Stokes parameters

Optical polymers
BT:	Optical materials
	Polymers

Optical projectors
UF:	projectors (optical)
BT:	Optical imaging
	Video equipment
RT:	Image processing
	Micromirrors
	Motion pictures

Optical propagation
UF:	Infrared propagation
BT:	Electromagnetic propagation
RT:	Optical fibers
	Thermooptic effects
NT:	Optical surface waves
	Optical waveguides

Optical pulse compression
BT:	Pulse compression methods

Optical pulse generation
BT:	Pulse generation
RT:	Optical pulse shaping

Optical pulse shaping
BT:	Pulse shaping methods
RT:	Optical pulse generation

Optical pulses
BT:	Optics

Optical pumping
BT:	Laser excitation

Optical radar
USE:	Laser radar

Optical receivers
BT:	Receivers

Optical recording
BT:	Recording
RT:	Laser applications
NT:	CD recording

Optical reflection
- BT: Electromagnetic reflection
- RT: Antireflection coatings
  - Mirrors
  - Optical scattering
  - Reflectivity
  - Reflectometry
  - Thermooptic effects

Optical refraction
- BT: Physical optics
- RT: Photorefractive effect
  - Photorefractive materials
  - Refractive index
  - Thermooptic effects

Optical regenerators
- USE: Repeaters

Optical resonators
- BT: Optical devices
- RT: Digital filters
  - Laser cavity resonators
  - Resonance
  - Split ring resonators
- NT: Microcavities
  - Optical ring resonators

Optical retarders
- UF: Half-wave plates
  - Quarter-wave plates
- BT: Optical materials
  - Optics
- RT: Polarimetry

Optical ring resonators
- UF: Ring resonators
- BT: Optical resonators

Optical saturation
- BT: Nonlinear optics
  - Optics

Optical scan voting systems
- BT: Electronic voting systems

Optical scattering
- BT: Electromagnetic scattering
- RT: Laser radar
  - Light scattering
  - Optical losses
  - Optical reflection
  - Speckle

Optical sensors
- BT: Optical devices
  - Sensors
- RT: Image sensors
- NT: Optical detectors
  - Optical fiber sensors

Optical signal detection
- BT: Signal detection
- RT: Photodetectors

Optical signal processing
- BT: Signal processing
- NT: Laser noise

Optical solitons
- BT: Optics
  - Solitons
- RT: Optical vortices

Optical superlattices
- UF: Optical multilayers
- BT: Optical materials
  - Superlattices

Optical surface waves
- BT: Optical propagation

Optical switch
- USE: Optical switches

Optical switches
- UF: Optical switch
- BT: Switches
- RT: Optical bistability
  - Optical communication equipment
  - Optical control
  - Photothyristors
  - Smart pixels
  - Thermooptical devices

Optical transmitters
- BT: Optical communication equipment
  - Transmitters
- RT: Bragg gratings
  - Diodes
  - Optical fiber communication
  - Optical modulation
  - Photodiodes
  - Semiconductor lasers
  - Semiconductor optical amplifiers

Optical tuning
    BT: Optics
            Tuning
    RT: Laser tuning

Optical variables control
    BT: Optical control
    RT: Frequency control
            Phase control

Optical variables measurement
    UF: Optical measurements
    BT: Measurement
    RT: Frequency measurement
            Phase measurement
            Reflectometry
            Wavelength measurement
    NT: Ellipsometry
            Photometry
            Reflection coefficient
            Refractive index

Optical vortex
    USE: Optical vortices

Optical vortices
    UF: Optical vortex
            Vortices, optical
    BT: Physical optics
    RT: Laser beams
            Optical solitons

Optical waveguide components
    BT: Optical waveguides

Optical waveguide theory
    BT: Optical waveguides
    RT: Optical fibers

Optical waveguides
    BT: Optical propagation
            Waveguide components
    RT: Electrooptic modulators
            Integrated optics
            Photonic crystals
    NT: Arrayed waveguide gratings
            Electrooptical waveguides
            Optical fibers
            Optical planar waveguides
            Optical waveguide
components
            Optical waveguide theory

Optical wavelength conversion
    BT: Optical fiber communication

            Signal processing
    RT: Multicast communication
            Optical fibers
            Telecommunications

Optical-fiber networks
    USE: Optical fiber networks

Optical-fibre networks
    USE: Optical fiber networks

Optics
    BT: Lasers and electrooptics
    RT: Erbium
            Fourier transforms
            Laser theory
            Magnetooptic effects
            Optical materials
    NT: Adaptive optics
            Birefringence
            Brightness
            Color
            Electron optics
            Extinction coefficients
            Fiber optics
            Fluorescence
            Four-wave mixing
            Geometrical optics
            Integrated optics
            Light fields
            Light sources
            Luminescence
            Microoptics
            Nonlinear optics
            Optical amplifiers
            Optical crosstalk
            Optical design
            Optical devices
            Optical distortion
            Optical engineering
            Optical fiber applications
            Optical harmonic
generation
            Optical losses
            Optical microscopy
            Optical mixing
            Optical polarization
            Optical pulses
            Optical retarders
            Optical saturation
            Optical solitons
            Optical tuning
            Particle beam optics
            Photoluminescence
            Physical optics

Ray tracing
Stray light
Ultrafast optics
Whispering gallery modes

Optimal control
    BT: Control systems
    RT: Game theory
           H infinity control
    NT: Bang-bang control
           Infinite horizon

Optimal matching
    BT: Graph theory

Optimal scheduling
    BT: Optimization

Optimisation
    USE: Optimization

Optimisation methods
    USE: Optimization methods

Optimised production technology
    USE: Optimized production
technology

Optimising compilers
    USE: Optimizing compilers

Optimization
    UF: Optimisation
           Performance optimisation
           Performance optimization
    BT: Mathematics
    RT: Artificial bee colony
algorithm
           Doping profiles
           Least squares
approximations
           Minimization
           Parametric study
           Performance analysis
           TOPSIS
    NT: Cost function
           Optimal scheduling
           Optimization methods
           Trajectory optimization

Optimization methods
    UF: Optimisation methods
    BT: Optimization
    RT: Infinite horizon
           Linear programming

MIMO communication
Newton method
Operations research
Processor scheduling
Response surface
methodology
           Search methods
           Single machine scheduling
           Traveling salesman
problems
    NT: Affordances
           Circuit optimization
           Concave programming
           Design optimization
           Fireworks algorithm
           Gradient methods
           H infinity control
           Mathematical programming
           Optimized production
technology
           Pareto optimization
           Quadratic programming
           Simulated annealing

Optimized production technology
    UF: Optimised production
technology
    BT: Optimization methods
           Production control
    RT: Production planning
           Production systems

Optimizing compilers
    UF: Optimising compilers
    BT: Program processors

Opto-electronic devices
    USE: Optoelectronic devices

Optoacoustic effects
    USE: Photoacoustic effects

Optoelectronic and photonic sensors
    BT: Sensors

Optoelectronic devices
    UF: Opto-electronic devices
    BT: Lasers and electrooptics
    RT: Electro-optical devices
           Phototransistors
    NT: Charge-coupled image
sensors
           Integrated optoelectronics
           Light emitting diodes
           Photoconducting devices

Photodetectors
Superluminescent diodes

Optothermal effects
USE: Photothermal effects

Optothyristors
USE: Photothyristors

Oral communication
UF: Speech communication
BT: Professional communication
NT: Public speaking
Speech

Orange technology
USE: Social implications of technology

Orbital calculations
BT: Energy states

Orbital debris
USE: Space debris

Orbital robotics
BT: Robots

Orbits
BT: Astrophysics
RT: Geostationary satellites
NT: Orbits (stellar)
Planetary orbits

Orbits (stellar)
BT: Orbits
RT: Stellar motion

Ordinance
USE: Weapons

Ordinary differential equations
BT: Differential equations

Ordinary magnetoresistance
BT: Magnetoresistance

Ores
BT: Minerals

Organic chemicals
BT: Chemistry
NT: Hydrocarbons

Organic compounds
BT: Compounds
RT: Carbon
NT: Carbon compounds
Organic semiconductors
Volatile organic compounds

Organic electronics
UF: Paper electronics
BT: Electronic equipment
RT: Synapses

Organic FETS
USE: OFETs

Organic field effect transistors
USE: OFETs

Organic field-effect transistors
USE: OFETs

Organic inorganic hybrid materials
UF: Inorganic organic hybrid materials
Inorganic-organic hybrid materials
Organic-inorganic hybrid materials
Organically modified silicates
Ormosils
BT: Materials
RT: Inorganic compounds
Optical materials

Organic light emitting diodes
UF: OLED
Organic light-emitting diodes
Polymer led
BT: Light emitting diodes
RT: Electroluminescence
Molecular electronics
NT: Active matrix organic light emitting diodes

Organic light-emitting diodes
USE: Organic light emitting diodes

Organic materials
BT: Materials

Organic semiconductors
BT: Organic compounds

Semiconductor materials
NT: Pentacene

Organic thin film transistors
UF: OTFT
Organic thin-film transistors
BT: Thin film transistors

Organic thin-film transistors
USE: Organic thin film transistors

Organic-inorganic hybrid materials
USE: Organic inorganic hybrid materials

Organically modified silicates
USE: Organic inorganic hybrid materials

Organisational aspects
USE: Organizational aspects

Organisational culture
USE: Organizational aspects

Organisational structure
USE: Organizational aspects

Organisms
BT: Biological systems
NT: Algae
Animals
Archaea
Fish
Fungi
Mesomycetozoea
Microorganisms
Plants (biology)

Organizational aspects
UF: Business organisation
Business organization
Organisational aspects
Organisational culture
Organisational structure
Organizational culture
Organizational structure
BT: Management
RT: Business process re-engineering
Industrial communication
NT: Business communication
Corporate acquisitions
Data governance
Facilities management

Role transfer
Scheduling
Stakeholders
Team working

Organizational communication
USE: Industrial communication

Organizational culture
USE: Organizational aspects

Organizational structure
USE: Organizational aspects

Organizations
BT: Business
RT: Leadership
NT: BNSC
Companies
Government
Sociotechnical systems
United Kingdom Space Agency

Organobromine compounds
USE: Bromine compounds

Organs (biological)
USE: Biological systems

Orientation control
USE: Position control

Orientation determination
USE: Position measurement

Orientation measurement
USE: Position measurement

Orifices
BT: Mechanical products

Ormosils
USE: Organic inorganic hybrid materials

Orthogonal frequency division multiple access
USE: OFDM

Orthogonal frequency division multiplexing
USE: OFDM

Orthopedic procedures
BT: Medical treatment

Orthopedic surgery
BT:	Surgery

Orthotics
BT:	Medical treatment
RT:	Assistive technology
	Biomedical engineering
	Biomedical equipment
	Medical control systems
	Prosthetics
	Sensory aids
	Wearable robots

Oscillations
USE:	Oscillators

Oscillators
UF:	Oscillations
BT:	Circuits and systems
RT:	Circuits
	Damping
	Klystrons
	Lasers
	Resonant frequency
	Vibrations
NT:	Digital-controlled oscillators
	Injection-locked oscillators
	Local oscillators
	Microwave oscillators
	Phase noise
	Ring oscillators
	Voltage-controlled oscillators

Oscilloscopes
UF:	Cathode-ray oscilloscopes
BT:	Instruments
RT:	Electric variables measurement
	Test equipment

OSHA
USE:	Occupational safety

OSI
USE:	Open systems

Osmium
BT:	Chemical elements

Osmosis
BT:	Chemical processes
NT:	Electro-osmosis

Osteoarthritis
BT:	Bone diseases

Osteoporosis
BT:	Bone diseases
RT:	Cancellous bone

OTFT
USE:	Organic thin film transistors

Otologic surgery
USE:	Oncological surgery

OTT
USE:	Over-the-top media services

Out of order
UF:	OOO
BT:	Instruction sets

Outlier detection
USE:	Anomaly detection

Output feedback
BT:	Feedback circuits

Output power
USE:	Power generation

Outsourcing
BT:	Management
RT:	Crowdsourcing

Ovarian cancer
BT:	Cancer

Ovens
BT:	Home appliances
NT:	Microwave ovens

Over-the-top media services
UF:	OTT
BT:	Streaming media

Overflow oscillations
USE:	Finite wordlength effects

Overhead distribution lines
USE:	Power distribution lines

Overhead transmission lines
USE:	Power transmission lines

Overlay networks
BT:	Computer networks

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RT: Network topology
Transport protocols

OWA
USE: Open wireless architecture

OWL
UF: Web ontology language
BT: Markup languages
Semantic Web
RT: Knowledge representation

Oxidation
BT: Chemical processes
RT: Materials
NT: Combustion

Oxygen
BT: Chemical elements
Gases
RT: Pulse oximetry

Ozonation
UF: Ozone treatment
BT: Wastewater treatment
RT: Environmental factors
Pollution control

Ozone generators
USE: Discharges (electric)

Ozone treatment
USE: Ozonation

Ozonizers
USE: Discharges (electric)

P-I-N
USE: PIN photodiodes

P-i-n diodes
BT: Semiconductor devices
Semiconductor diodes
RT: CMOSFET logic devices
Electrooptic modulators
Vertical cavity surface
emitting lasers

P-n junctions
BT: Junctions
RT: Light emitting diodes
Photodiodes
Semiconductor diodes

P1394
USE: IEEE 1394 Standard

P2MP
USE: Point-to-multipoint communications

P2P
USE: Peer-to-peer computing

P802.11
USE: IEEE 802.11 Standard

PAAS
USE: Platform as a service

Pacemakers
BT: Biomedical equipment
RT: Cardiology

Packaging
BT: Industry applications
RT: Filling
Leak detection
Packaging machines
Seals
NT: Bagging
Bottling
Canning
Encapsulation
Food packaging
Labeling
Multichip modules
Nanopackaging
Plastic packaging
Wrapping

Packaging machines
BT: Production equipment
RT: Bagging
Bottling
Labeling
Packaging
Wrapping

Packet loss
BT: Loss measurement
Packet switching
RT: Data communication
Noise measurement

Packet radio
USE: Packet radio networks

Packet radio networks
UF: Packet radio

BT: Radio communication

Packet switching
BT: Communication switching
RT: ARPANET
Data transfer
IEEE 802.3 Standard
Next generation networking
NT: Burst switching
Frame relay
Multiprotocol label
switching
Packet loss

Pacs
USE: Picture archiving and
communication systems

Paediatrics
USE: Pediatrics

Page description languages
UF: Postscript
BT: Markup languages
RT: Desktop publishing
High level languages

Paging strategies
USE: Paging systems

Paging systems
UF: Paging strategies
BT: Cellular radio
RT: Wireless communication

Pain
BT: Injuries
NT: Ischemic pain
Neuropathic pain

Painting
BT: Surface finishing
Surface treatment
RT: Coatings
Paints
Photorealism

Paints
BT: Chemical products
Coatings
Materials
RT: Ink
Lacquers
Painting

Pair-wise error probability
USE: Pairwise error probability

Pairwise correlations
USE: Pairwise error probability

Pairwise error probability
UF: Pair-wise error probability
Pairwise correlations
BT: Probability

Palladium
BT: Metals

Palletising
USE: Pallets

Palletizing
USE: Pallets

Pallets
UF: Palletising
Palletizing
BT: Materials handling
RT: Containers
Load management

Palm print recognition
USE: Palmprint recognition

Palmprint identification
USE: Palmprint recognition

Palmprint recognition
UF: Palm print recognition
Palmprint identification
BT: Biometrics (access control)
RT: Identification of persons

Palmtop computers
USE: Personal digital assistants

Pancreas
BT: Digestive system

Pandemics
BT: Epidemics
RT: COVID-19
Coronaviruses
Diseases
Influenza

Pansharpened
USE: Pansharpening

Pansharpening
UF:	Pansharpened
BT:	Image processing
RT:	Image quality

Paper electronics
USE:	Organic electronics

Paper industry
USE:	Pulp and paper industry

Paper making
BT:	Pulp and paper industry
RT:	Bleaching
	Paper making machines
	Paper products
	Paper pulp
	Paper technology
	Pulp manufacturing
	Spinning machines

Paper making machines
BT:	Production equipment
	Pulp and paper industry
RT:	Paper making
	Paper products
	Paper pulp
	Paper technology
	Pulp manufacturing
	Spinning machines

Paper mills
BT:	Production facilities
	Pulp and paper industry
RT:	Industrial plants
	Paper products
	Paper pulp
	Pulp manufacturing
	Spinning machines

Paper products
BT:	Manufactured products
RT:	Paper making
	Paper making machines
	Paper mills
	Paper pulp
	Paper technology
	Pulp and paper industry

Paper pulp
BT:	Manufactured products
	Materials
RT:	Paper making
	Paper making machines
	Paper mills

	Paper products
	Pulp and paper industry
	Pulp manufacturing

Paper technology
BT:	Industry applications
RT:	Paper making
	Paper making machines
	Paper products
	Pulp and paper industry

PAPR
USE:	Peak to average power ratio

Paraelectric materials
USE:	Dielectric materials

Parallel algorithms
BT:	Algorithms
	Parallel processing

Parallel architectures
BT:	Computer architecture
RT:	Parallel machines
	Parallel processing
NT:	Multicore processing

Parallel computing
USE:	Parallel processing

Parallel languages
BT:	High level languages
RT:	Multiprocessing systems
	Parallel processing
	Parallel programming

Parallel machines
BT:	Computers
RT:	Parallel architectures
	Parallel processing

Parallel processing
UF:	Array processing
	Parallel computing
	Parallelism
BT:	Computers and information processing
RT:	Cluster computing
	Concurrency control
	Digital computers
	Parallel architectures
	Parallel languages
	Parallel machines
	Parallel programming

NT: Multiprocessing systems
Multithreading
Parallel algorithms
Pipeline processing

Parallel processor interconnection
    USE: Multiprocessor interconnection

Parallel programming
    BT: Programming
    RT: Multiprocessing systems
        Parallel languages
        Parallel processing
        VHDL

Parallel robots
    BT: Robots

Parallelism
    USE: Parallel processing

Paralysis
    BT: Medical conditions
    RT: Motor coordination

Paramagnetic materials
    BT: Magnetic materials
    RT: Paramagnetic resonance

Paramagnetic resonance
    BT: Magnetic resonance
    RT: Paramagnetic materials

Parameter estimation
    UF: Parameter identification
    BT: Signal analysis
        Statistical analysis
    RT: Control systems
        Power system analysis computing
        Spectral analysis
    NT: Amplitude estimation
        Direction-of-arrival estimation
        Frequency estimation
        Motion estimation
        Phase estimation
        Time of arrival estimation

Parameter extraction
    BT: Electromagnetic measurements
    RT: Bipolar transistor circuits
        Very large scale integration

Parameter identification
    USE: Parameter estimation

Parameter uncertainty
    USE: Uncertain systems

Parametric model
    USE: Parametric statistics

Parametric statistics
    UF: Parametric model
    BT: Statistics

Parametric study
    BT: Multitasking
    RT: Optimization

Parasitic capacitance
    BT: Capacitance

Parasitic diseases
    BT: Diseases

Parasympathetic nervous system
    BT: Autonomic nervous system

Pareto analysis
    BT: Statistical analysis
    RT: Cause effect analysis
        Quality management
    NT: Pareto optimization

Pareto optimisation
    USE: Pareto optimization

Pareto optimization
    UF: Multi-attribute optimization
        Multi-objective programming
        Multiobjective programming
        Pareto optimisation
        Vector optimization
    BT: Optimization methods
        Pareto analysis
    RT: Genetic algorithms

Parietal lobe
    BT: Brain

Parity check
    USE: Codes

Parity check codes
    UF: LDPC

Ldpc codes
Low density parity check codes
Parity-check codes
BT: Codes
RT: Decoding
NT: Iterative decoding

Parity-check codes
USE: Parity check codes

Parkinson's disease
BT: Diseases

Parotid
USE: Salivary glands

Partial differential equations
BT: Differential equations
RT: Boundary value problems
Fourier transforms
NT: Boundary-element methods
Poisson equations

Partial discharge measurement
BT: Electric variables measurement
RT: Electrical safety
Insulation life
Insulation testing
Optical fiber sensors

Partial discharges
BT: Dielectric breakdown
RT: Corona

Partial response channels
BT: Communication channels

Partial response signaling
BT: Digital modulation

Partial transmit sequences
BT: OFDM

Particle accelerator
USE: Linear particle accelerator

Particle accelerators
BT: Nuclear and plasma sciences
RT: Colliding beam devices
Large Hadron Collider
Particle beams
Voltage multipliers

NT: Accelerator magnets
Colliding beam accelerators
Cyclotrons
Electron accelerators
Ion accelerators
Linear accelerators
Photon collider
Plasma accelerators
Proton accelerators
Storage rings
Synchrocyclotrons
Synchrotrons

Particle beam handling
BT: Nuclear and plasma sciences
RT: Particle beams

Particle beam injection
UF: Injected beams
BT: Nuclear and plasma sciences
RT: Particle beams

Particle beam measurements
BT: Measurement
RT: Particle beams

Particle beam optics
UF: Ion optics
BT: Optics
RT: Electrodynamics
Particle beams
NT: Atom optics
Electron optics
Stimulated emission

Particle beams
UF: Accelerator beams
Neutron beams
Proton beams
BT: Beams
Elementary particles
RT: Colliding beam accelerators
Laser theory
Particle accelerators
Particle beam handling
Particle beam injection
Particle beam measurements
Particle beam optics
Storage rings
Synchrotrons
NT: Atomic beams
Electron beams

Ion beams

Particle charging
  BT: Electrostatic processes
  RT: Semiconductor detectors

Particle collisions
  BT: Elementary particles

Particle detectors
  USE: Radiation detectors

Particle filters
  BT: Filters

Particle measurements
  UF: Particulate measurements
  BT: Measurement
  RT: Current density
            High energy physics
instrumentation computing
            Position sensitive particle
detectors

Particle physics
  USE: High energy physics

Particle production
  BT: Electrostatic processes
  RT: Aerosols
            Spraying

Particle scattering
  BT: Scattering
  RT: Scanning electron
microscopy

Particle separators
  UF: Separators
  BT: Separation processes
  RT: Magnetic separation

Particle swarm
  USE: Particle swarm optimization

Particle swarm optimization
  UF: Particle swarm
            Particle-swarm optimization
            Swarm intelligence
            Swarm optimization
  BT: Evolutionary computation
  RT: Artificial bee colony
algorithm
            Fireworks algorithm
            Stochastic processes

Particle tracking
  BT: Nuclear measurements
  RT: High energy physics
instrumentation computing
            Tracking

Particle-swarm optimization
  USE: Particle swarm optimization

Particles (elementary)
  USE: Elementary particles

Particulate measurements
  USE: Particle measurements

Partitioning algorithms
  BT: Algorithms

Passband
  BT: Digital communication
            Radio communication
  RT: Baseband

Passivation
  BT: Surface treatment
  RT: Corrosion

Passive circuits
  BT: Circuits

Passive filters
  BT: Passive networks
  RT: Filters

Passive microwave remote sensing
  BT: Remote sensing

Passive networks
  BT: Telecommunication
network topology
  NT: Passive filters

Passive optical networks
  UF: PON
            Passive-optical-network
  BT: Optical fiber networks
  RT: EPON

Passive radar
  BT: Radar
  RT: Radar detection
            Radar imaging

Passive RFID tags

BT: RFID tags

Passive-optical-network
     USE: Passive optical networks

Password
     BT: Access control
              Computer security
     RT: Authentication

Patch antennas
     BT: Antennas
     RT: Microstrip antennas

Patent law
     BT: Law

Patents
     BT: Legal factors
     RT: Intellectual property
              US Government agencies

Path planning
     UF: piano mover's problem
     BT: Motion control
     RT: Course correction
              Indoor navigation
              Vehicle routing
     NT: Trajectory
              Trajectory planning
              Trajectory tracking

Pathogens
     UF: Germs
     BT: Diseases
     RT: Epidemics

Pathological
     USE: Pathology

Pathological processes
     BT: Pathology
     NT: Cadaver
              Death

Pathology
     UF: Pathological
     BT: Medical specialties
     RT: Autopsy
              Diseases
     NT: Histopathology
              Neuropathology
              Pathological processes

Patient diagnosis

USE: Medical diagnosis

Patient identification
     USE: Medical treatment

Patient monitoring
     BT: Monitoring
     RT: Chemotherapy
              Electronic medical records
              Fall detection
              Point of care

Patient rehabilitation
     BT: Medical treatment
     RT: Rehabilitation robotics

Patient treatment
     USE: Medical treatment

Pattern analysis
     BT: Machine intelligence
     RT: Surface reconstruction

Pattern classification
     UF: Signal classification
     BT: Decision making
     RT: Feature extraction
              Nearest neighbor methods
              Neural networks
              Pattern recognition
              Support vector machines
     NT: Naive Bayes methods

Pattern clustering
     BT: Clustering methods
     RT: Image reconstruction
              Nearest neighbor methods
              Pattern matching
              Signal analysis
              Signal detection
              Signal processing

Pattern formation
     BT: Process design
     RT: Chaos
              Nonlinear dynamical systems
              Nonlinear optics
              Spatiotemporal phenomena

Pattern matching
     BT: Pattern recognition
     RT: Pattern clustering
              Spatiotemporal phenomena
     NT: Image matching

Pattern recognition
UF: Image pattern recognition
BT: Computers and information processing
RT: Automatic optical inspection
Computer vision
Feature extraction
Feedforward neural networks
Hidden Markov models
Learning systems
Machine vision
Pattern classification
Principal component analysis
Publish subscribe systems
Random forests
Robot vision systems
Shape
Spatiotemporal phenomena
Statistical learning
Symbols
NT: Active shape model
Activity recognition
Character recognition
Clustering methods
Data mining
Face recognition
Fingerprint recognition
Gesture recognition
Handwriting recognition
Nearest neighbor methods
Pattern matching
Speech recognition
Text recognition

Payloads
BT: Military aircraft
Space technology
NT: MODIS

Pb
USE: Lead

PCA
USE: Principal component analysis

PCG
USE: Phonocardiography

PCM
USE: Phase change materials

PCRAM
USE: Phase change random access memory

PD control
UF: PID control
Proportional + derivative control
Proportional derivative control
Proportional plus derivative control
Proportional-derivative control
Proportional-integral-derivative
BT: Control systems

PDA
USE: Personal digital assistants

PDAs
USE: Personal digital assistants

PDF
USE: Portable document format

Peace technology
BT: Social implications of technology

Peak signal to noise ratio
USE: PSNR

Peak signal-to-noise ratio
USE: PSNR

Peak to average power ratio
UF: PAPR
Peak-to-average power ratio
Peak-to-average ratio
BT: OFDM

Peak-to-average power ratio
USE: Peak to average power ratio

Peak-to-average ratio
USE: Peak to average power ratio

Pediatrics
UF: Babies
Baby

Child
Children
Infant
Infants
Newborns
Paediatrics
Toddler
- BT: Medical specialties
- RT: Neonatology

Peer to peer communications
- USE: Peer-to-peer computing

Peer to peer computing
- USE: Peer-to-peer computing

Peer to peer exchange
- USE: Peer-to-peer computing

Peer to peer network
- USE: Peer-to-peer computing

Peer-to-peer communications
- USE: Peer-to-peer computing

Peer-to-peer computing
- UF: File sharing
  P2P
  Peer to peer communications
  Peer to peer computing
  Peer to peer exchange
  Peer to peer network
  Peer-to-peer communications
  Peer-to-peer exchange
  Peer-to-peer network
- BT: Computer networks
  Distributed computing
- RT: Cluster computing
  Distributed ledger
  Workstations

Peer-to-peer exchange
- USE: Peer-to-peer computing

Peer-to-peer network
- USE: Peer-to-peer computing

Peltier effect
- BT: Thermoelectricity

Pelvic bones
- BT: Bones

Pelvis
- BT: Body regions

Pen test
- USE: Penetration testing

Penetration testing
- UF: Pen test
- BT: Computer security

Pensions
- UF: Occupational pensions
  Personal pensions
  Stakeholder pensions
  State pensions
- BT: Remuneration
- RT: Employee welfare
  Termination of employment

Pentacene
- BT: Organic semiconductors

Peptides
- BT: Biochemistry

Perfectly matched layers
- BT: Propagation
- RT: Finite difference methods
  Finite element analysis
  Maxwell equations

Performance analysis
- UF: Dynamic program analysis
  Performance index
- BT: Programming
- RT: Optimization
- NT: Performance gain

Performance evaluation
- BT: Measurement
- RT: Benchmark testing
- NT: Key performance indicator

Performance gain
- BT: Performance analysis

Performance index
- USE: Performance analysis

Performance loss
- BT: Computer performance

Performance measurement
- USE: Measurement

Performance metrics
      USE: Measurement

Performance optimisation
      USE: Optimization

Performance optimization
      USE: Optimization

Performance related pay
      USE: Incentive schemes

Perineum
      BT: Body regions

Periodic media
      USE: Nonhomogeneous media

Periodic structures
      BT: Materials science and technology
      NT: Gratings
                Photonic crystals

Peripheral equipment
      USE: Computer peripherals

Peripheral nervous system
      BT: Nervous system

Permanent magnet generators
      BT: Permanent magnet machines

Permanent magnet machines
      UF: Permanent magnet synchronous machines
      BT: Electric machines
                Rotating machines
      RT: Permanent magnet motors
                Permanent magnets
      NT: Permanent magnet generators

Permanent magnet motors
      UF: Permanent magnet synchronous motors
                Permanent-magnet generators
                Permanent-magnet motors
      BT: Motors
      RT: Permanent magnet machines

Permanent magnet synchronous machines
      USE: Permanent magnet machines

Permanent magnet synchronous motors
      USE: Permanent magnet motors

Permanent magnets
      BT: Magnets
      RT: Magnetic gears
                Magnetic levitation vehicles
                Permanent magnet machines
                Remanence

Permanent-magnet generators
      USE: Permanent magnet motors

Permanent-magnet motors
      USE: Permanent magnet motors

Permeability
      UF: Magnetic permeability
      BT: Electromagnetic analysis
      RT: Magnetic materials
                Permeability measurement

Permeability measurement
      BT: Magnetic variables measurement
      RT: Permeability

Permission
      UF: Access rights
                File system permissions
      BT: Computer security

Permittivity
      BT: Electric variables
      RT: Dielectric constant
                Dielectric materials
                Permittivity measurement

Permittivity measurement
      BT: Dielectric measurement
      RT: Permittivity

Perovskites
      BT: Crystalline materials

Perpendicular magnetic anisotropy
      BT: Magnetic anisotropy

Perpendicular magnetic recording
      UF: Vertical recording
      BT: Magnetic recording

RT: Disk drives

Perpendicular recording
    USE: Magnetic recording

Persistent currents
    BT: Current
    RT: High-temperature superconductors
          Superconducting magnets

Persistent identifiers
    BT: Data structures
    RT: Digital systems
          Information retrieval

Personal area networks
    UF: Piconets
          Scatternets
    BT: Radio communication
    RT: Computer networks
          Data communication
          Land mobile radio
          Personal communication networks
          Wireless LAN
          Zigbee
    NT: Bluetooth
          Body area networks
          Body sensor networks
          Wireless personal area networks

Personal communication networks
    UF: Personal communication services
    BT: Communication systems
    RT: Cellular radio
          Digital systems
          IEEE 802.15 Standard
          Location awareness
          Mobile handsets
          Personal area networks
          Zigbee

Personal communication services
    USE: Personal communication networks

Personal computers
    USE: Microcomputers

Personal digital assistants
    UF: PDA
          PDAs
          Palmtop computers
    BT: Handheld computers

Personal pensions
    USE: Pensions

Personal protective equipment
    BT: Health and safety
    RT: Protective clothing

Personnel
    BT: Human resource management
    RT: Appraisal
          Bring your own device
          Education
          Employment
          Equal opportunities
          Management
          Productivity
          Training
    NT: Labor resources

Personnel monitoring
    USE: Radiation monitoring

Persuasive systems
    BT: Decision making
          Social computing
    RT: Behavioral sciences
          Human factors
          Man-machine systems
          Psychology

Perturbation methods
    UF: Perturbation techniques
    BT: Approximation methods
    NT: Cavity perturbation methods

Perturbation techniques
    USE: Perturbation methods

Pervasive computing
    UF: Everyware
          Ubicomp
    BT: Computers and information processing
          Systems, man, and cybernetics
    RT: Artificial intelligence
          Context awareness
          Next generation networking
    NT: Ubiquitous computing
          Wearable computers

Pest control
    UF: Insect control
                Vermin control
    BT: Environmental management
    RT: Agriculture
                Hazards

PET
    USE: Positron emission tomography

Petascale computing
    BT: Computers and information processing
    RT: Supercomputers

Petri nets
    BT: System analysis and design
    RT: Discrete-event systems
                Modeling

Petrochemicals
    BT: Chemical products
                Materials
    RT: Chemical industry
                Chemistry
                Fuels
                Petroleum
                Petroleum industry
                Plastic products
                Plastics

Petrol
    USE: Petroleum

Petroleum
    UF: Gasoline
                Petrol
    BT: Chemical products
                Fuels
    RT: Fuel processing industries
                Oil pollution
                Oils
                Petrochemicals
                Petroleum industry
    NT: Hydrocarbons

Petroleum industry
    UF: Oil industry
    BT: Industries
    RT: Chemical industry
                Fractionation
                Fuel processing industries

                Gas industry
                Natural gas industry
                Offshore installations
                Oil pollution
                Oils
                Petrochemicals
                Petroleum
                Pipelines
    NT: Oil drilling
                Oil refineries
                Well logging

PFD
    USE: Phase frequency detectors

PGA
    USE: Electronics packaging

pH measurement
    BT: Chemical analysis
                Measurement

Phantoms
    BT: Biomedical imaging
    RT: Dosimetry
                Positron emission tomography
                Single photon emission computed tomography
                X-ray applications
                X-ray detection
                X-ray imaging

Pharmaceutical technology
    BT: Chemical technology
    RT: Biochemistry
                Chemistry
                Pharmaceuticals

Pharmaceuticals
    BT: Chemical products
                Medical treatment
    RT: Biochemistry
                Chemistry
                Pharmaceutical technology
    NT: Drugs

Pharynx
    BT: Digestive system
    RT: Stomatognathic system

Phase change materials
    UF: PCM
    BT: Materials
    RT: Memory

Nuclear thermodynamics
Optical materials
Phase change memory
Solar heating

Phase change memory
BT: Memory
RT: Phase change materials
         Resistive RAM
NT: Phase change random
access memory

Phase change RAM
USE: Phase change random
access memory

Phase change random access memory
UF: PCRAM
         Phase change RAM
         Phase-change RAM
         Phase-change random
access memory
BT: Phase change memory
         Random access memory

Phase control
UF: Phase-control
BT: Power electronics
RT: Electric variables control
         Optical variables control
         Phase transformers

Phase detection
BT: Signal detection
NT: Phase frequency detectors

Phase distortion
BT: Distortion
RT: Delay effects

Phase estimation
BT: Parameter estimation

Phase frequency detectors
UF: PFD
BT: Phase detection
RT: Frequency measurement
         Measurement
         Voltage
         Voltage control

Phase locked loops
UF: PLL
         Phase locked-loops
         Phase-locked loops

         Phase-locked-loops
BT: Linear feedback control
systems

         Signal processing
RT: Frequency locked loops
         Modulation
         Nonlinear filters

Phase locked-loops
USE: Phase locked loops

Phase measurement
BT: Measurement
RT: Acoustic measurements
         Electric variables
measurement
         Optical variables
measurement

Phase modulation
BT: Modulation
RT: Demodulation
         Electrooptic modulators
NT: Continuous phase
modulation
         Differential phase shift
keying
         Phase shift keying

Phase noise
BT: Noise
         Oscillators
RT: Time-domain analysis

Phase shift keying
UF: PSK
         Phase-shift keying
         Phase-shift-keying
         QPSK
BT: Phase modulation
NT: Binary phase shift keying
         Quadrature phase shift
keying

Phase shifters
BT: Circuits
RT: Butler matrices
NT: Phase transformers

Phase shifting interferometry
BT: Interferometry

Phase transformations, nuclear
USE: Nuclear phase
transformations

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Phase transformers
    BT: Phase shifters
                Transformers
    RT: Circuits
                Phase control

Phase transitions, nuclear
    USE: Nuclear phase transformations

Phase-change RAM
    USE: Phase change random access memory

Phase-change random access memory
    USE: Phase change random access memory

Phase-control
    USE: Phase control

Phase-locked loops
    USE: Phase locked loops

Phase-locked-loops
    USE: Phase locked loops

Phase-shift keying
    USE: Phase shift keying

Phase-shift-keying
    USE: Phase shift keying

Phased arrays
    UF: Antenna phased arrays
    BT: Antenna arrays
    RT: Optical arrays
    NT: Steerable antennas

Phasor measurement units
    UF: PMU
                PMUs
                Synchrophasors
    BT: Electric variables measurement

PHEMTs
    UF: Pseudomorphic HEMTs
    BT: HEMTs

Philosophical considerations
    BT: Social implications of technology
    RT: Econophysics

                Ethical aspects
                Machine ethics
                Quantum mechanics
                Social factors
                Technology
                Technology social factors

Phishing
    BT: Computer security
                Information security
    RT: Malware

PHM
    USE: Prognostics and health management

Phonetics
    BT: Linguistics
    RT: Natural language processing
                Semiotics
                Speech processing
    NT: Acoustic phonetics

Phonocardiogram
    USE: Phonocardiography

Phonocardiography
    UF: PCG
                Phonocardiogram
    BT: Cardiography
    RT: Biomedical monitoring
                Cardiology
                Heart rate measurement

Phonographs
    USE: Audio systems

Phonons
    BT: Elementary particles
    RT: Acoustics
                Crystals
                Electrons
                Indium phosphide

Phosphorescence
    BT: Luminescence
    RT: Phosphors

Phosphors
    BT: Light sources
    RT: Phosphorescence

Phosphorus
    BT: Chemical elements

2021 IEEE Thesaurus

Photo sharing Web sites
    USE: Multimedia Web sites

Photoacoustic effects
    UF: Optoacoustic effects
    BT: Spectroscopy
    RT: Acoustic testing
            Laser applications
            Photothermal effects
    NT: Photoacoustic imaging

Photoacoustic imaging
    BT: Biomedical imaging
            Photoacoustic effects

Photobleaching
    BT: Photochemistry

Photocatalysis
    BT: Catalysis
            Photochemistry
    RT: Photocatalysts

Photocatalysts
    BT: Catalysts
    RT: Photocatalysis

Photocathodes
    USE: Cathodes

Photochemistry
    BT: Chemistry
    RT: Water splitting
    NT: Photobleaching
            Photocatalysis

Photochromism
    UF: Photodarkening
    BT: Photonics
    RT: Color

Photocomposition
    USE: Text processing

Photoconducting devices
    BT: Optoelectronic devices
    RT: Photoconducting materials
            Photoconductivity
            Photodetectors
            Semiconductor devices
    NT: Electrophotography

Photoconducting materials
    UF: Photoconductors

    BT: Materials
    RT: Photoconducting devices
            Photoconductivity
            Photodetectors
            Semiconductor materials

Photoconductivity
    UF: Photocurrent
    BT: Conductivity
    RT: Photoconducting devices
            Photoconducting materials

Photoconductors
    USE: Photoconducting materials

Photocurrent
    USE: Photoconductivity

Photodarkening
    USE: Photochromism

Photodetector
    USE: Photodetectors

Photodetectors
    UF: Photodetector
    BT: Optoelectronic devices
            Radiation detectors
    RT: Image sensors
            Infrared detectors
            Optical signal detection
            Photoconducting devices
            Photoconducting materials
            Photoelectricity
    NT: Photodiodes
            Phototransistors
            Superconducting
photodetectors

Photodiodes
    BT: Photodetectors
    RT: Optical transmitters
            P-n junctions
    NT: Avalanche photodiodes
            PIN photodiodes

Photoelasticity
    BT: Mechanical factors
    RT: Optical polarization
            Piezooptic effects
            Stress

Photoelectricity
    UF: Photoemission
            Phototubes

BT: Electricity
Electron devices
RT: Electron emission
Photodetectors
Photomultipliers
Photovoltaic cells
NT: Photovoltaic effects

Photoelectron microscopy
UF: Photoemission electron microscopy
BT: Electron microscopy

Photoemission
USE: Photoelectricity

Photoemission electron microscopy
USE: Photoelectron microscopy

Photogalvanic effects
USE: Photovoltaic effects

Photography
BT: Imaging
RT: Cameras
Electrophotography
Image capture
Image storage
Optical filters
NT: Cinematography
Digital photography
Image forensics
Photomicrography
Photorealism

Photoionisation
USE: Ionization

Photoionization
USE: Ionization

Photolithography
USE: Lithography

Photoluminescence
UF: Electrophotoluminescence
BT: Luminescence
Optics
RT: Judd-Ofelt theory
Microcavities

Photomagnetic devices
USE: Magnetooptic devices

Photomagnetic effects

USE: Magnetooptic effects

Photometry
BT: Geoscience and remote sensing
Optical variables measurement
RT: Light sources
Lighting
Radiometry

Photomicrographs
USE: Photomicrography

Photomicrography
UF: Micrographs
Microphotographs
Microphotography
Photomicrographs
BT: Photography

Photomultipliers
BT: Vacuum technology
RT: Avalanche photodiodes
Electron multipliers
Photoelectricity

Photon collider
BT: Particle accelerators

Photon crystal fibers
USE: Photonic crystal fibers

Photon crystal fibres
USE: Photonic crystal fibers

Photonic band gap
UF: Band gap
Band-gap
Bandgap
Photonic bandgap
BT: Photonic crystals
RT: Electromagnetic wave polarization
Optical diffraction

Photonic bandgap
USE: Photonic band gap

Photonic bandgap fibers
UF: Photonic bandgap fibres
BT: Photonic crystal fibers

Photonic bandgap fibres
USE: Photonic bandgap fibers

Photonic crystal fibers
UF: Microstructured fibers
Microstructured fibres
Photon crystal fibers
Photon crystal fibres
Photonic crystal fibres
Photonic-crystal fibers
Photonic-crystal fibres
BT: Photonic crystals
NT: Holey fibers
Photonic bandgap fibers

Photonic crystal fibres
USE: Photonic crystal fibers

Photonic crystals
UF: 2-D photonic crystals
2D photonic crystals
Photonic cyrstal fibers
Two dimensional photonic crystals
Two-dimensional photonic crystals
BT: Periodic structures
RT: Microwave devices
Nonlinear optics
Optical materials
Optical waveguides
Spontaneous emission
NT: Photonic band gap
Photonic crystal fibers

Photonic cyrstal fibers
USE: Photonic crystals

Photonic integrated circuits
BT: Integrated circuits

Photonic metamaterials
USE: Optical metamaterials

Photonic-crystal fibers
USE: Photonic crystal fibers

Photonic-crystal fibres
USE: Photonic crystal fibers

Photonics
BT: Lasers and electrooptics
RT: Electromagnetic metamaterials
Epitaxial growth
Silicon devices
Synapses

NT: Biophotonics
Microwave photonics
Nanobiophotonics
Nanophotonics
Photochromism
Photothermal effects
Silicon photonics
Spontaneous emission

Photoplethysmography
BT: Biomedical measurement
Plethysmography

Photorealism
BT: Media
Photography
RT: Art
Cameras
Human image synthesis
Painting

Photoreceptors
BT: Neurons

Photorefractive effect
BT: Nonlinear optics
RT: Birefringence
Optical refraction
Photorefractive materials
Refractive index

Photorefractive materials
BT: Optical materials
RT: Birefringence
Holography
Optical mixing
Optical refraction
Photorefractive effect

Photoresists
USE: Resists

Photothermal effects
UF: Optothermal effects
Thermal wave imaging
BT: Photonics
RT: Photoacoustic effects

Photothyristors
UF: Optothyristors
BT: Thyristors
RT: Optical switches

Phototransistors
BT: Photodetectors

Transistors
RT: Optoelectronic devices
Radiation detectors

Phototubes
USE: Photoelectricity

Photovoltaic cells
UF: Solar cells
BT: Electron devices
Energy conversion
RT: Photoelectricity
Photovoltaic effects
Photovoltaic systems
NT: Light trapping

Photovoltaic effects
UF: Photogalvanic effects
BT: Photoelectricity
RT: Photovoltaic cells
Photovoltaic systems
NT: Shunts (electrical)

Photovoltaic power systems
USE: Photovoltaic systems

Photovoltaic systems
UF: Photovoltaic power systems
BT: Solar power generation
RT: Hybrid power systems
Photovoltaic cells
Photovoltaic effects
Water pumps
NT: Building integrated
photovoltaics
Fill factor (solar cell)
Solar panels

Phylogenetic tree
USE: Phylogeny

Phylogenetics
USE: Phylogeny

Phylogeny
UF: Cladistics
Phylogenetic tree
Phylogenetics
BT: Evolution (biology)

Physical design
BT: System analysis and design
Systems engineering and
theory
RT: Integrated circuit layout

Physical distribution management
USE: Logistics

Physical layer
BT: Open systems
NT: Physical layer security

Physical layer security
BT: Physical layer

Physical optics
BT: Optics
NT: Optical refraction
Optical vortices

Physical theory of diffraction
BT: Electromagnetic diffraction

Physical unclonable function
UF: PUF
Physically unclonable
function
BT: Control system security
Semiconductor device
manufacture
RT: Cryptography
Security
Semiconductor devices
Smart devices

Physical vapor deposition
UF: Physical vapor transport
Physical vapour deposition
Physical vapour transport
BT: Plasma materials
processing
RT: Sputtering

Physical vapor transport
USE: Physical vapor deposition

Physical vapour deposition
USE: Physical vapor deposition

Physical vapour transport
USE: Physical vapor deposition

Physically unclonable function
USE: Physical unclonable
function

Physician
USE: Medical services

2021 IEEE Thesaurus

Physics
BT:	Science - general	
RT:	Buoyancy	
NT:	Acoustics	
	Astrophysics	
	Beams	
	Biophysics	
	Dark energy	
	Entropy	
	Fluid flow	
	Geophysics	
	High energy physics	
	Kinetic theory	
	Levitation	
	Lorentz covariance	
	Mechanical factors	
	Network theory (graphs)	
	Physics education	
	Quantum mechanics	
	Rydberg atoms	
	Solid-state physics	
	String theory	
	Thermal factors	
	Waves	

Physics computing
BT:	Computer applications

Physics education
BT:	Engineering education
	Physics

Physiology
BT:	Biology
RT:	Entomology
NT:	Action potentials
	External stimuli
	Neuromodulation

PhysiStimuli
USE:	External stimuli

PI control
UF:	PI controller
	Proportional + integral control
	Proportional-integral control
	Proportional-integral controller
	Proportional-integral-derivative control
	Proportional-integral-derivative controller
BT:	Control systems

PI controller
USE:	PI control

piano mover's problem
USE:	Path planning

Pickling
BT:	Surface treatment
RT:	Chemistry

Pico-hydro
USE:	Picohydro power

Picohydro power
UF:	Pico-hydro
BT:	Hydroelectric power generation
RT:	Appropriate technology

Piconets
USE:	Personal area networks

Picture archiving and communication systems
UF:	Pacs
BT:	Image communication
RT:	Biomedical communication
	Biomedical computing
	Biomedical imaging

Picture phones
USE:	Videophone systems

Picture processing
USE:	Image processing

Picturephones
USE:	Videophone systems

PID control
USE:	PD control

Piecewise linear approximation
BT:	Piecewise linear techniques

Piecewise linear techniques
BT:	Mathematics
RT:	Control system analysis
	Control system synthesis
	Difference equations
	Nonlinear control systems
NT:	Piecewise linear approximation

Piezoceramics

USE: Piezoelectric materials

Piezoelectric actuators
BT: Actuators

Piezoelectric devices
BT: Dielectric devices
RT: Acoustic devices
Acoustoelectric devices
Nanogenerators
Piezoelectric films
Piezoelectric materials
Piezoelectricity
Piezoresistive devices
Surface acoustic wave devices

Piezoelectric effect
BT: Piezoelectricity

Piezoelectric effects
USE: Piezoelectricity

Piezoelectric films
BT: Dielectric films
Films
Piezoelectric materials
RT: Piezoelectric devices
Piezoelectricity

Piezoelectric materials
UF: Piezoceramics
BT: Dielectric materials
RT: Acoustic materials
Crystals
Piezoelectric devices
Piezoelectricity
NT: Piezoelectric films

Piezoelectric polarization
BT: Piezoelectricity

Piezoelectric transducers
BT: Transducers

Piezoelectricity
UF: Piezoelectric effects
BT: Electricity
Ultrasonics, ferroelectrics, and frequency control
RT: Electrostriction
Piezoelectric devices
Piezoelectric films
Piezoelectric materials
Piezoresistance

Pyroelectricity
Stress
Ultrasonic transducers
NT: Piezoelectric effect
Piezoelectric polarization

Piezomagnetic effects
USE: Magnetomechanical effects

Piezooptic effects
BT: Acoustooptic effects
RT: Photoelasticity
Pressure effects
Stress

Piezoresistance
UF: Piezoresistive
BT: Electric variables
Resistance
RT: Piezoelectricity
Piezoresistive devices
Pressure effects
Stress

Piezoresistive
USE: Piezoresistance

Piezoresistive devices
UF: Piezoresistors
BT: Semiconductor devices
RT: Piezoelectric devices
Piezoresistance
Pressure measurement

Piezoresistors
USE: Piezoresistive devices

Pigmentation
BT: Color
Materials science and technology
NT: Pigments

Pigments
BT: Pigmentation

PIN diodes
USE: PIN photodiodes

Pin grid arrays
USE: Electronics packaging

PIN photodiodes
UF: P-I-N
PIN diodes

BT: Photodiodes

Pink noise
USE: 1/f noise

Pins
BT: Plugs

Pinterest
USE: Multimedia Web sites

Pions
USE: Mesons

Pipeline processing
UF: Computer pipeline processing
          Pipelining
BT: Parallel processing
RT: Multiprocessing systems
          Systolic arrays

Pipelines
BT: Fluid flow
RT: Chemical industry
          Magnetic flux leakage
          Materials handling
          Natural gas industry
          Oils
          Petroleum industry

Pipelining
USE: Pipeline processing

Piracy (software)
USE: Computer crime

Pistons
BT: Machine components
          Mechanical products
RT: Bellows
          Engine cylinders
          Engines
          Gaskets
          Shafts
          Structural rings

Pitch control (audio)
BT: Audio systems
          Variable speed drives

Pitch control (position)
BT: Mechanical variables control

Pituitary gland
BT: Glands
          Nervous system

Pixel
BT: Digital images

PLA
USE: Programmable logic arrays

Plagiarism
BT: Professional communication
RT: Copyright protection
          Notice of Violation
          Publishing

Planar antennas
USE: Planar arrays

Planar array
USE: Planar arrays

Planar arrays
UF: Planar antennas
          Planar array
BT: Antenna arrays

Planar motors
BT: Electric motors

Planar transmission lines
BT: Transmission lines
RT: Spurline
NT: Coplanar transmission lines
          Finline
          Microstrip
          Slot lines
          Stripline

Planar waveguides
BT: Electromagnetic waveguides
RT: Rectangular waveguides

Planarisation
USE: Planarization

Planarization
UF: Chemical mechanical planarisation
          Chemical mechanical planarization
          Planarisation
BT: Surface treatment

RT: Dielectric films
    Integrated circuits

Planetary chemistry
    USE: Astrochemistry

Planetary composition
    USE: Extraterrestrial measurements AND
    Planets

Planetary landers
    USE: Land transportation AND
    Space vehicles

Planetary oceans
    USE: Oceans AND
    Planets

Planetary orbits
    BT: Orbits

Planetary volcanic activity
    USE: Planetary volcanoes

Planetary volcano
    USE: Planetary volcanoes

Planetary volcanoes
    UF: Planetary volcanic activity
    Planetary volcano
    BT: Volcanoes

Planets
    UF: Planetary composition
    Planetary oceans
    BT: Solar system
    RT: Extraterrestrial phenomena
    NT: Earth
    Jupiter
    Mars
    Mercury (planets)
    Pluto
    Saturn
    Venus

Planing
    BT: Machining
    RT: Finishing
    Surface roughness
    Surface treatment

Planning
    UF: System planning
    BT: Engineering management

RT: Decision making
    Economics
NT: Meeting planning
    Schedules
    Strategic planning
    Technical planning
    Technology planning

Plants (biology)
    BT: Organisms
    RT: Life sciences
    NT: Bamboo

Plants (industrial)
    USE: Industrial plants

Plasma accelerators
    BT: Particle accelerators
    Plasma devices

Plasma applications
    BT: Plasmas
    RT: Low-temperature plasmas
    Plasma materials processing
    NT: Plasma devices
    Plasma immersion ion implantation
    Plasma welding
    Tokamaks

Plasma chemistry
    BT: Plasma properties

Plasma confinement
    BT: Plasmas
    NT: Inertial confinement
    Magnetic confinement

Plasma density
    BT: Plasma properties

Plasma devices
    BT: Plasma applications
    RT: Gas discharge devices
    Plasmas
    NT: Plasma accelerators
    Plasma jets
    Tokamaks

Plasma diagnostics
    BT: Plasmas
    RT: Plasma measurements

Plasma display panel

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USE: Flat panel displays

Plasma immersion ion implantation
BT: Ion implantation
        Plasma applications
RT: Semiconductor impurities

Plasma jets
BT: Plasma devices
RT: Metal cutting tools
        Propulsion

Plasma materials processing
BT: Materials processing
RT: Plasma applications
NT: Chemical vapor deposition
        Ignition
        Physical vapor deposition

Plasma measurements
BT: Measurement
RT: Plasma diagnostics
        Plasmas

Plasma properties
BT: Plasmas
RT: Electron mobility
        Stability analysis
NT: Dusty plasmas
        Plasma chemistry
        Plasma density
        Plasma sheaths
        Plasma stability
        Plasma temperature
        Plasmons

Plasma sheaths
BT: Plasma properties

Plasma simulation
BT: Plasmas
RT: Modeling
        Numerical simulation
        Tokamaks

Plasma sources
BT: Plasmas
RT: Ion implantation
        Ion sources

Plasma stability
BT: Plasma properties

Plasma temperature
BT: Plasma properties

Plasma transport processes
BT: Plasmas

Plasma waves
BT: Waves
RT: Plasmas

Plasma welding
BT: Plasma applications
RT: Joining processes
        Materials processing
        Plasmas

Plasma x-ray sources
BT: X-ray imaging
RT: X-ray lasers

Plasma-assisted combustion
BT: Combustion
        Plasmas

Plasmas
BT: Nuclear and plasma sciences
RT: Arc discharges
        Discharges (electric)
        Ionization
        Ionosphere
        Plasma devices
        Plasma measurements
        Plasma waves
        Plasma welding
        Relativistic effects
NT: Atmospheric-pressure plasmas
        Low-temperature plasmas
        Plasma applications
        Plasma confinement
        Plasma diagnostics
        Plasma properties
        Plasma simulation
        Plasma sources
        Plasma transport processes
        Plasma-assisted combustion

Plasmon
USE: Plasmons

Plasmonic solar cells
USE: Light trapping

Plasmonics
USE: Plasmons

Plasmons
UF:	Plasmon
	Plasmonics
BT:	Plasma properties
NT:	Surface plasmons

Plastic bottles
USE:	Plastic products

Plastic containers
USE:	Plastic products

Plastic films
BT:	Films
	Plastics
RT:	Plastic insulation
	Plastic insulators

Plastic IC packaging
USE:	Plastic integrated circuit packaging

Plastic insulation
BT:	Insulation
RT:	Dielectric materials
	Plastic films
	Plastic insulators

Plastic insulators
BT:	Insulators
RT:	Fiber reinforced plastics
	Plastic films
	Plastic insulation
	Plastic packaging

Plastic integrated circuit packaging
UF:	Plastic IC packaging
BT:	Integrated circuit packaging

Plastic optical fiber
BT:	Optical fibers
	Plastics

Plastic packaging
BT:	Packaging
RT:	Bagging
	Electronics packaging
	Encapsulation
	Integrated circuit packaging
	Plastic insulators
	Plastics

Plastic products
UF:	Plastic bottles
	Plastic containers
BT:	Manufactured products
RT:	Bottling
	Chemical industry
	Chemical products
	Chemistry
	Consumer products
	Petrochemicals
	Plastics
	Plastics industry

Plastics
BT:	Chemical products
	Materials
RT:	Petrochemicals
	Plastic packaging
	Plastic products
	Plastics industry
	Polymers
	Resins
NT:	Epoxy resins
	Fiber reinforced plastics
	Plastic films
	Plastic optical fiber

Plastics industry
BT:	Manufacturing industries
RT:	Chemical industry
	Plastic products
	Plastics

Platform as a service
UF:	PAAS
BT:	Cloud computing

Platform virtualization
BT:	Computers and information processing
RT:	Virtual machine monitors

Plating
BT:	Materials processing
NT:	Chrome plating

Platinum
BT:	Metals
NT:	Platinum alloys

Platinum alloys
BT:	Platinum
RT:	Alloying

Plethysmography
BT:	Biomedical measurement
	Medical diagnosis

	NT:	Photoplethysmography

PLL
USE: Phase locked loops

Plug-in electric vehicles
BT: Electric vehicles

Plug-in hybrid electric vehicles
BT: Hybrid electric vehicles
RT: Charging stations

Plugboard
USE: Breadboard

Plugs
BT: Connectors
NT: Keyways
Pins

Plumbago
USE: Graphite

Pluto
BT: Planets

Plutonium
BT: Chemical elements

pMOSFETs
USE: MOSFET

PMU
USE: Phasor measurement units

PMUs
USE: Phasor measurement units

PNAs
USE: Presence network agents

Pneumatic actuators
BT: Actuators

Pneumatic systems
BT: Control systems
RT: Bellows
Fluidics
Mechanical systems

Pneumology
USE: Pulmonology

Pnictide superconductors
USE: Superconducting materials

Pockels readout optical modulator
USE: Electrooptic modulators

Podcast
USE: Digital audio broadcasting

Poincare group
USE: Poincare invariance

Poincare invariance
UF: Poincare group
BT: Transforms

Point of care
BT: Documentation
Medical services
RT: Biomedical communication
Clinical diagnosis
Patient monitoring
Smart healthcare

Point-to-multipoint communications
UF: P2MP
PTMP
BT: Wireless communication
RT: Internet
Internet telephony

Poisons
USE: Toxicology

Poisson equation
USE: Poisson equations

Poisson equations
UF: Poisson equation
BT: Partial differential equations
RT: Electrostatics

Polar codes
BT: Block codes
Linear codes
RT: Channel coding
Error correction codes
Reed-Muller codes

Polar cyclones
USE: Cyclones

Polarimetric synthetic aperture radar
BT: Synthetic aperture radar

Polarimetry
UF: Solar polarimetry

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BT: Electromagnetic measurements
RT: Ellipsometry
Optical retarders

Polarisation
USE: Polarization

Polaritons
BT: Energy states
NT: Surface plasmon polaritons

Polarization
UF: Circular polarisation
Circular polarization
Polarisation
BT: Electromagnetic scattering

Polarization mode dispersion
UF: Polarization-mode dispersion
BT: Optical fiber polarization

Polarization shift keying
BT: Optical polarization

Polarization-maintaining optical fibers
USE: Optical fiber polarization

Polarization-mode dispersion
USE: Polarization mode dispersion

Poles & zeros
USE: Poles and zeros

Poles and towers
UF: Pylons
Towers
Wood poles
BT: Transmission lines
RT: Power distribution lines
Power transmission lines
NT: Telephone poles

Poles and zeros
UF: Poles & zeros
Roots
Zeros
BT: Transfer functions
RT: Circuits
Control systems
Newton method
Polynomials

Police
USE: Law enforcement

Polishing machines
BT: Production equipment
RT: Deburring
Rough surfaces
Surface finishing
Surface roughness

Pollution
BT: Environmental factors
RT: Contamination
Design for disassembly
Environmental economics
Green products
Occupational health
Pollution control
Pollution measurement
Sewage treatment
Toxicology
Waste disposal
NT: Air pollution
Emissions trading
Industrial pollution
Land pollution
Oil pollution
Radioactive pollution
Thermal pollution
Urban pollution
Water pollution

Pollution control
BT: Environmental management
RT: Carbon emissions
Decontamination
Electrostatic precipitators
Environmental monitoring
Greenhouse effect
Ozonation
Pollution
Pollution measurement
Sewage treatment
Sludge treatment

Pollution measurement
BT: Measurement
RT: Environmental monitoring
Pollution
Pollution control

Polonium
BT: Chemical elements

Polycaprolactone
    BT: Polymers
    RT: Smart materials

Polyethylene
    BT: Polymers
    NT: Thermoplastic polyethylene

Polyimides
    BT: Polymers

Polymer coatings
    USE: Polymer films

Polymer films
    UF: Polymer coatings
    BT: Films
    RT: Dielectric thin films

Polymer foams
    BT: Materials
    RT: Insulation
             Insulators
             Metal foam
             Resins

Polymer gels
    BT: Materials

Polymer led
    USE: Organic light emitting
diodes

Polymers
    UF: Electroactive polymers
    BT: Materials
    RT: Colloidal lithography
             Plastics
    NT: Azobenzene
             Biopolymers
             Liquid crystal polymers
             Optical polymers
             Polycaprolactone
             Polyethylene
             Polyimides

Polynomials
    BT: Equations
    RT: Poles and zeros

PON
    USE: Passive optical networks

Porcelain
    BT: Ceramics

    RT: Ceramic products
             Ceramics industry

Porous silicon
    BT: Silicon

Portable computers
    UF: Laptops
             Portable PCs
    BT: Microcomputers
    NT: Handheld computers

Portable document format
    UF: PDF
    BT: Document handling
    RT: Document image
processing

Portable media players
    UF: MP3
             Portable Multimedia players
             Portable video players
             iPOD
    BT: Audio systems
             Digital communication
             Home automation
    RT: Digital audio broadcasting
             Tablet computers

Portable Multimedia players
    USE: Portable media players

Portable PCs
    USE: Portable computers

Portable video players
    USE: Portable media players

Portals
    BT: Management information
systems
    RT: Information retrieval
             Web sites

Portfolios
    UF: Electronic portfolios
    BT: Professional
communication

Pose estimation
    BT: Estimation
    RT: Computer vision

Position control
    UF: Orientation control

2021 IEEE Thesaurus

BT: Mechanical variables
control
RT: Attitude control
Capacitive transducers
Manipulators
Mechanical guides
Servosystems
NT: Nanopositioning

Position measurement
UF: Attitude determination
Orientation determination
Orientation measurement
Source location
BT: Mechanical variables
measurement
RT: Direction-of-arrival
estimation
Distance measurement
Gaze tracking
Geodesy
Location awareness
Navigation
Tracking

Position sensitive particle detectors
BT: Ionizing radiation sensors
RT: High energy physics
instrumentation computing
Nuclear measurements
Particle measurements
Semiconductor counters

Positive train control
BT: Control systems
Rail transportation
RT: Feedback
Railway accidents
Railway safety

Positron emission tomography
UF: PET
BT: Tomography
RT: Biomedical applications of
radiation
Medical diagnostic imaging
Nuclear medicine
Phantoms
Tumors
NT: Whole-body PET

Positrons
BT: Elementary particles

Possibility theory

BT: Probability
RT: Fuzzy logic
Nonlinear dynamical
systems

Post human
USE: Posthuman

Post-filtering algorithm
USE: Filtering algorithms

Post-human
USE: Posthuman

Post-wall waveguides
USE: Substrate integrated
waveguides

Postal services
UF: Mail
BT: Message systems
RT: Electronic mail

Posthuman
UF: Post human
Post-human
BT: Systems, man, and
cybernetics
RT: Artificial intelligence
Transhuman

Postscript
USE: Page description languages

Potassium
BT: Chemical elements

Potential energy
BT: Energy conservation
RT: Kinetic energy
Mechanical energy

Potential transformers
USE: Voltage transformers

Potential well
UF: Potential wells
Quantum confinement
BT: Energy conversion

Potential wells
USE: Potential well

Potentiometers
BT: Meters

	RT:	Resistors
		Voltage measurement

POTS

	USE:	Landline

Powders

	BT:	Coatings
	RT:	Ceramics

Power amplifiers

	UF:	Radio frequency power amplifiers
		Radiofrequency power amplifiers
	BT:	Amplifiers
	NT:	High power amplifiers
		Predistortion

Power and energy standards

	BT:	Standards categories

Power cable insulation

	BT:	Cable insulation
	RT:	Power cables

Power cables

	BT:	Cables
		Power transmission lines
	RT:	Conductors
		Power cable insulation
		Power distribution lines
	NT:	Underground power cables

Power capacitors

	BT:	Capacitors
	NT:	Supercapacitors

Power combiners

	BT:	Waveguide components
	RT:	Microstrip components
		Power dividers
		Stripline components

Power conditioning

	BT:	Power electronics
	RT:	Power conversion
		Pulse width modulation converters
	NT:	Power smoothing

Power consumption

	USE:	Power demand

Power control

	BT:	Electric variables control
	RT:	Electric current control
		Power factor correction
		Pulse width modulation converters

Power conversion

	BT:	Converters
	RT:	Choppers (circuits)
		Maximum power point trackers
		Nonlinear circuits
		Power conditioning
		Power electronics
		Power semiconductor devices
		Power supplies
		Pulse width modulation converters
		Regulators
		Switched systems
	NT:	AC-AC converters
		AC-DC power converters
		DC-AC power converters
		DC-DC power converters
		Matrix converters
		Power conversion harmonics
		Voltage-source converters

Power conversion harmonics

	BT:	Power conversion
	RT:	Harmonic distortion

Power demand

	UF:	Power consumption
	BT:	Power supplies
		Power system planning
	RT:	Electricity supply industry
		Energy conservation
		Energy resources
		Load management
		Load modeling
		Power distribution
	NT:	Demand response
		Load forecasting

Power dissipation

	BT:	Circuits
	RT:	CMOS logic circuits
		MOSFET circuits
		Nanotechnology
		Power transmission
		System-on-chip

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Power distribution
UF: Distribution of electric power
BT: Power systems
RT: Electricity supply industry
Industrial power systems
Load shedding
Power demand
Transactive energy
NT: DC distribution systems
Power distribution control
Power distribution faults
Power distribution lines
Power distribution networks
Power distribution planning
Power distribution reliability

Power distribution control
BT: Power distribution
RT: Voltage control

Power distribution faults
BT: Power distribution

Power distribution lines
UF: Overhead distribution lines
BT: Power distribution
RT: Conductors
Poles and towers
Power cables

Power distribution networks
BT: Power distribution
RT: Microgrids
Power grids
Smart grids
NT: Active distribution networks

Power distribution planning
BT: Power distribution
Power system planning

Power distribution reliability
BT: Power distribution
Power system reliability

Power distribution transformers
USE: Power transformers

Power dividers
BT: Waveguide components
RT: Microstrip components
Power combiners
Stripline components

Power electronics
UF: Electric power
RT: High-voltage techniques
Matrix converters
Power conversion
Power filters
Pulse width modulation converters
Rectifiers
Resonant inverters
Switching converters
Voltage-source converters
NT: Adiabatic
Converters
Current limiters
Gate drivers
Inverters
Phase control
Power conditioning
Power semiconductor devices
Power semiconductor switches
Snubbers
Three-phase electric power

Power engineering
BT: Power engineering and energy
RT: Power engineering education
NT: Ferroresonance
High-voltage techniques
Power engineering computing
Power system simulation

Power engineering and energy
RT: Electrochemical devices
NT: Electric variables control
Energy
Power engineering
Power generation
Power systems

Power engineering computing
BT: Computer applications
Power engineering
RT: Power system analysis computing

Power engineering education
BT: Engineering education
RT: Power engineering

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Power exchange
USE: Power markets

Power factor
USE: Reactive power

Power factor correction
BT: Electric current control
Load flow control
RT: Power control
Power transmission
Voltage control

Power filters
UF: Power line filters
BT: Filters
RT: Power electronics
NT: Spurline

Power flow
USE: Load flow

Power flow analysis
USE: Load flow analysis

Power flow control
USE: Load flow control

Power generation
UF: Generation of electric power

Output power
Power plants
Power stations
BT: Power engineering and energy
RT: Batteries
Fuel cells
Generators
Microgrids
Power generation economics

Power supplies
Pulsed power systems
Space power stations
NT: Automatic generation control

Cogeneration
Distributed power generation

Geothermal power generation

Hydroelectric power generation

Magnetohydrodynamic power generation

Nuclear power generation
Power generation control
Power generation dispatch
Power generation planning
Power generation reliability
Solar power generation
Trigeneration
Turbomachinery
Wind energy generation
Wind power generation

Power generation control
BT: Automatic control
Power generation

Power generation dispatch
BT: Power generation

Power generation economics
BT: Economics
RT: Power generation
NT: Electricity supply industry deregulation

Power generation planning
BT: Power generation

Power generation reliability
BT: Power generation

Power grids
UF: Electricity grids
BT: Power systems
RT: Power distribution networks
Wind energy integration
NT: Microgrids
Smart grids

Power harmonic filters
BT: Power system harmonics

Power harvesting
USE: Energy harvesting

Power industry
UF: Electric utilities
BT: Industries
RT: Offshore installations
Power system faults
Telecontrol equipment
NT: Electrical equipment industry

Electricity supply industry

Nuclear facility regulation
Power system interconnection

Power injection molding
USE: Injection molding

Power injection moulding
USE: Injection molding

Power integrated circuits
BT: Circuits
Integrated circuits
RT: Power semiconductor devices

Power lasers
BT: Lasers
RT: Power semiconductor devices

Power line communications
BT: Transmission lines

Power line filters
USE: Power filters

Power management
USE: Power system management

Power markets
UF: Electricity markets
Electricity trading
Power exchange
Power pools
Power trading
Power wheeling
BT: Electricity supply industry deregulation
RT: Emissions trading
Power transmission
Transactive energy

Power measurement
BT: Electric variables measurement
RT: Wattmeters
NT: Dynamometers

Power MOSFET
BT: MOSFET circuits
RT: Power semiconductor devices

Power outages

USE: Power system reliability

Power overhead lines
BT: Power transmission lines
RT: Railway electrification

Power plants
USE: Power generation

Power pools
USE: Power markets

Power quality
UF: Power supply quality
Voltage sags
BT: Power supplies
RT: Electricity supply industry
Power system harmonics
Power system transients

Power semiconductor devices
BT: Power electronics
Semiconductor devices
RT: Power MOSFET
Power conversion
Power integrated circuits
Power lasers
NT: Power transistors

Power semiconductor switches
BT: Power electronics
Semiconductor devices
NT: Bipolar transistors
Thyristors

Power smoothing
BT: Power conditioning

Power spectra
USE: Spectral analysis

Power stations
USE: Power generation

Power stations (space)
USE: Space power stations

Power stations (substations)
USE: Substations

Power steering
BT: Automotive engineering

Power supplies
BT: Power systems

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RT: Power conversion
Power generation
Pulsed power systems
Uninterruptible power systems

NT: Battery chargers
Charging stations
Current supplies
Emergency power supplies
Inductive charging
Islanding
Power demand
Power quality
Power system restoration
Switched mode power supplies
Traction power supplies
Umbilical cable

Power supplies to apparatus
USE: Umbilical cable

Power supply industry
USE: Electricity supply industry

Power supply quality
USE: Power quality

Power system analysis computing
BT: Computer applications
Power systems
RT: Digital simulation
Modeling
Parameter estimation
Power engineering computing
Software packages

Power system control
BT: Electric variables control
RT: Control system security
Power systems
NT: Bidirectional power flow
Load flow control
SCADA systems

Power system dynamics
BT: Power systems

Power system economics
BT: Power systems
RT: Electricity supply industry deregulation
Transactive energy
NT: Low-carbon economy

Power system faults
BT: Power systems
RT: Electricity supply industry
Error correction
Fuzzy set theory
Power industry
Power system protection
Signal analysis

Power system harmonics
BT: Power systems
RT: Power quality
NT: Power harmonic filters

Power system interconnection
BT: Power industry
RT: Power systems
Power transmission

Power system management
UF: Power management
Telecommunication power management
BT: Power systems
RT: Microgrids
Monitoring
Preventive maintenance
NT: Load flow

Power system measurements
BT: Power systems
NT: Meter reading

Power system modeling
BT: Modeling
RT: Power systems
NT: Load modeling

Power system planning
BT: Power systems
RT: Demand side management
Electricity supply industry
NT: Power demand
Power distribution planning

Power system protection
BT: Power systems
Product safety engineering
RT: Arresters
Circuit breakers
Fuses
Grounding
Power system faults
Power system transients

		Protective relaying
NT:		Electrical safety
		Substation protection
		Surge protection

Power system relaying
BT:	Relays
RT:	Power systems
	Protective relaying

Power system reliability
UF:	Power outages
BT:	Power systems
RT:	Microgrids
	Power system stability
	Reliability
NT:	Power distribution reliability

Power system restoration
BT:	Power supplies
RT:	Electricity supply industry
	Power systems

Power system security
BT:	Security
RT:	Load flow analysis
	Power systems
	Reactive power control

Power system simulation
BT:	Power engineering
RT:	Power systems

Power system stability
BT:	Power systems
RT:	Power system reliability

Power system transients
BT:	Electromagnetic transients
RT:	Arresters
	Power quality
	Power system protection
NT:	Transient analysis

Power systems
UF:	Electric power
BT:	Power engineering and energy
RT:	Civil engineering
	Mechanical power transmission
	Power system control
	Power system interconnection
	Power system modeling

		Power system relaying
		Power system restoration
		Power system security
		Power system simulation
		Skin effect
		Telecontrol equipment
		Time-frequency analysis
		Voltage fluctuations
NT:		Data center power
		Hybrid power systems
		Industrial power systems
		PSCAD
		Power distribution
		Power grids
		Power supplies
		Power system analysis computing
		Power system dynamics
		Power system economics
		Power system faults
		Power system harmonics
		Power system management
		Power system measurements
		Power system planning
		Power system protection
		Power system reliability
		Power system stability
		Power transmission
		Pulsed power systems
		Reactive power
		Substations
		Transformers
		Uninterruptible power systems
		Wind energy integration

Power Systems Computer Aided Design
USE:	PSCAD

Power trading
USE:	Power markets

Power transformer insulation
BT:	Power transformers
RT:	Insulation

Power transformers
UF:	Power distribution transformers
BT:	Transformers
RT:	Transformer cores
	Windings
NT:	On load tap changers

Power transformer insulation

Power transistors
  BT: Power semiconductor devices
  RT: Driver circuits

Power transmission
  UF: Transmission of electric power
  BT: Power systems
  RT: Electric current control
      Load flow analysis
      Magnetic gears
      Power dissipation
      Power factor correction
      Power markets
      Power system interconnection
      Power transmission lines
  NT: Common Information Model (electricity)
      DC power transmission
      Flexible AC transmission systems
      HVDC transmission
      Inductive power transmission
      Static VAr compensators
      Transmission lines
      Wireless power transmission

Power transmission lines
  UF: Overhead transmission lines
  BT: Transmission lines
  RT: Conductors
      DC distribution systems
      Poles and towers
      Power transmission
      Superconducting transmission lines
  NT: Gas insulated transmission lines
      Power cables
      Power overhead lines

Power wheeling
  USE: Power markets

Powered armor
  USE: Wearable robots

Powered exoskeleton
  USE: Wearable robots

Powertrain
  USE: Mechanical power transmission

Praeseodymium
  USE: Praseodymium

Pragmatics
  BT: Linguistics
      Semiotics
  RT: Communication symbols
      Context
      Natural language processing
      Professional communication

Praseodymium
  UF: Praeseodymium
  BT: Chemical elements

Pre-college engineering
  UF: Precollege engineering
  BT: Educational programs

Preamplifiers
  BT: Amplifiers

Precision engineering
  BT: Engineering - general
  RT: Industrial engineering
      Mechanical engineering

Precision medicine
  BT: Medical treatment

Precoding
  BT: Encoding

Precollege engineering
  USE: Pre-college engineering

Predator prey systems
  UF: Predator-prey models
      Predator-prey systems
  BT: Biology
      Mathematics
  RT: Chaos
      Differential equations
      Game theory
      Nonlinear dynamical systems

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Stability

Predator-prey models
  USE: Predator prey systems

Predator-prey systems
  USE: Predator prey systems

Prediction algorithms
  BT: Algorithms

Prediction methods
  BT: Artificial intelligence
  RT: Estimation
       Forecasting
       Gaussian processes
       Kalman filters
       Prediction theory
       Signal processing
       Spectral analysis
       Speech processing
  NT: Linear predictive coding
       Predictive coding
       Predictive encoding
       Predictive models

Prediction theory
  BT: Statistics
  RT: Artificial intelligence
       Estimation
       Prediction methods

Predictive analysis
  USE: Predictive analytics

Predictive analytics
  UF: Predictive analysis
  BT: Statistical analysis
  RT: Data mining
       Machine learning
       Predictive models

Predictive coding
  BT: Prediction methods

Predictive control
  UF: Model predictive control
       Model-predictive control
  BT: Process control
  RT: Control engineering

Predictive encoding
  BT: Prediction methods

Predictive maintenance

  BT: Maintenance engineering

Predictive models
  BT: Prediction methods
  RT: Predictive analytics

Predistortion
  UF: Inverse distortion
  BT: Power amplifiers
  RT: Nonlinear distortion

Prefabricated buildings
  USE: Prefabricated construction

Prefabricated construction
  UF: Prefabricated buildings
  BT: Construction
       Construction industry
  RT: Building materials
       Buildings
       Modular construction

Prefetching
  BT: Instruction sets

Preforms
  BT: Assembly

Pregnancy
  UF: Pregnant
  BT: Medical conditions

Pregnancy test
  BT: Medical tests

Pregnant
  USE: Pregnancy

Presence network agents
  UF: PNAs
  BT: Communications technology

Presses
  BT: Machine tools
  RT: Dies
       Pressing

Pressing
  BT: Materials processing
  RT: Presses

Pressure control
  BT: Control systems

Pressure effects
- BT: Mechanical factors
- RT: Meteorology
  Piezooptic effects
  Piezoresistance

Pressure gauges
- BT: Instruments
- RT: Atmospheric measurements
  Density measurement
  Fluid flow measurement
  Force measurement
  Geophysical measurements
  Pressure measurement
  Pressure sensors
  Torque measurement

Pressure measurement
- BT: Measurement
- RT: Piezoresistive devices
  Pressure gauges
  Pressure sensors
  Tactile sensors
- NT: Altimetry
  Tire pressure

Pressure sensors
- BT: Sensors
- RT: Pressure gauges
  Pressure measurement

Pressure vessels
- BT: Mechanical products
- RT: Concrete
  Fission reactors
  Mechanical engineering
  Steel

Preventive maintenance
- BT: Maintenance engineering
- RT: Accident prevention
  Power system management
  Reliability
  Safety
- NT: Condition monitoring

Pricing
- BT: Financial management

Primary motor cortex
- BT: Brain

Principal component analysis
- UF: PCA
- BT: Statistical analysis
- RT: Feature extraction
  Independent component analysis
  Linear systems
  Operations research
  Pattern recognition
  Transform coding

Print readers
- USE: Character recognition

Printed circuit boards
- USE: Printed circuits

Printed circuits
- UF: Circuit boards
  Printed circuit boards
- BT: Circuits
- RT: Electronics packaging
  Integrated circuit layout
  Substrates
  Wiring
- NT: Flexible printed circuits
  Memory modules

Printers
- BT: Computer peripherals
- RT: Printing
- NT: Laser printers

Printing
- BT: Information technology
- RT: Character generation
  Ink
  Lithography
  Printers
  Printing machinery
  Publishing
  Typesetting
- NT: Digital printing
  Ink jet printing
  Teleprinting
  Three-dimensional printing

Printing machinery
- UF: Printing presses
- BT: Machinery
- RT: Printing

Printing presses
- USE: Printing machinery

Privacy
- BT: Technology social factors

RT: Authorization
      Communication system
security

      Computer security
      Cryptography
      Cyberethics
      Data privacy
      Data protection
      Data security
      Differential privacy
      General Data Protection
Regulation
      Malware
      Network intrusion
      Trust management
NT: Eavesdropping
      Privacy breach

Privacy breach
    BT: Information security
           Privacy
    RT: Data breach
           Data security

Privacy preserving data mining
    USE: Data privacy

Privacy-invasive software
    UF: Invasive software
    BT: Software
    RT: Computer crime
           Computer security
           Unsolicited e-mail
    NT: Spyware

Privatisation
    USE: Privatization

Privatization
    UF: Privatisation
    BT: Macroeconomics
    RT: Industrial economics

Probabilistic computing
    BT: Computers and information
processing

Probabilistic logic
    BT: Logic
    RT: Mixture models

Probability
    BT: Mathematics
    RT: Belief propagation
           Distribution functions

      Fourier transforms
      Gamma distribution
      Information geometry
      Maximum likelihood
detection

      Monte Carlo methods
      Naive Bayes methods
      Random processes
      Statistical analysis
      Statistics
      Stochastic processes
      Stochastic systems
      Viterbi algorithm
      Weibull distribution
    NT: Ant colony optimization
           Bayes methods
           Error probability
           Forecasting
           Memoryless systems
           Pairwise error probability
           Possibility theory
           Probability distribution
           Random variables
           Statistical distributions
           Uncertainty

Probability computing
    BT: Computers and information
processing

Probability density function
    BT: Integral equations
    RT: Distribution functions

Probability distribution
    BT: Probability
    NT: Exponential distribution
           Log-normal distribution
           Maxwell-Boltzmann
distribution
           Nakagami distribution

Probes
    BT: Instruments

Problem-solving
    BT: Cognitive science
    RT: Human factors

Process control
    BT: Industrial control
    RT: Bleaching
           Chemical reactors
           Continuous production
           Manufacturing automation

Process design
Process modeling
Process planning
Production control
NT: Predictive control
Three-term control
Two-term control

Process design
    BT: Design methodology
    RT: Chemical engineering
Design for disassembly
Design for quality
Process control
Process planning
Product design
Service computing
    NT: Pattern formation
Process modeling

Process modeling
    BT: Modeling
Process design
    RT: Process control

Process monitoring
    BT: Monitoring

Process planning
    BT: Management
Production
Production management
Production planning
    RT: Process control
Process design
    NT: Business process integration
Business process management
Cause effect analysis
Root cause analysis

Processor scheduling
    UF: Multiprocessor scheduling
    BT: Concurrency control
Multiprocessing systems
    RT: Microprocessors
Optimization methods
    NT: Scheduling algorithms

Processors (program)
    USE: Program processors

Procurement
    BT: Supply chain management

    RT: Contracts
Logistics
Proposals
Supply chains

Product codes
    BT: Codes
    RT: Decoding
Error correction
Radiofrequency identification
    NT: Bar codes

Product customisation
    USE: Product customization

Product customization
    UF: Product customisation
    BT: Product development
    RT: Customer satisfaction
Manufactured products
Product design

Product design
    BT: Design methodology
    RT: Concurrent engineering
Design for disassembly
Design for quality
Design tools
Group technology
Manufactured products
Process design
Product customization
Product development
Prototypes
Requirements engineering

Product development
    BT: Crowdsourcing
Engineering management
    RT: Brand management
Manufactured products
Product design
Quality function deployment
Rapid prototyping
Reverse engineering
Virtual prototyping
    NT: Graphical user interfaces
Product customization
Product lifecycle management
Software product lines
Time to market

Product liability

BT: Legal factors
RT: Consumer products
       Product safety
       Quality assurance
       Quality management
NT: Warranties

Product life cycle management
    USE: Product lifecycle management

Product lifecycle management
    UF: Product life cycle management
          System lifecycle management
    BT: Product development
    RT: Release engineering
    NT: Prognostics and health management

Product safety
    BT: Safety
    RT: Accidents
          Consumer products
          Product liability

Product safety engineering
    RT: Software safety
    NT: Consumer protection
          Power system protection
          Safety
          Vehicle crash testing

Product warranties
    USE: Warranties

Product warranty
    USE: Warranties

Production
    BT: Industry applications
    RT: Containers
          Wheels
          Wire drawing
    NT: Ball milling
          Compression molding
          Embossing
          Food products
          Group technology
          Injection molding
          Materials processing
          Mechanical products
          Process planning
          Production control

          Production engineering
          Production equipment
          Production facilities
          Production management
          Production materials
          Production systems
          Productivity
          Shafts
          Springs
          Transfer molding

Production control
    BT: Industrial control
          Production
    RT: Adaptive scheduling
          Cellular manufacturing
          Group technology
          Inventory control
          Manufacturing
          Process control
          Production systems
          Supply chain management
    NT: Continuous production
          Lot sizing
          Optimized production technology
          Scheduling

Production economics
    USE: Industrial economics

Production engineering
    BT: Engineering - general
          Production
    RT: Industrial engineering
          Inventory management
          Manufacturing
          Manufacturing systems
          Production equipment
          Production management
          Production materials
    NT: Production planning

Production equipment
    BT: Production
    RT: Gears
          Machinery
          Materials handling equipment
          Production engineering
    NT: Applicators
          Clamps
          Cutting tools
          Fixtures
          Machine tools

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Mining equipment
Molding equipment
Packaging machines
Paper making machines
Polishing machines
Soldering equipment

Production facilities
- UF: Factories
  Manufacturing facilities
- BT: Production
- RT: Manufacturing
  Warehousing
- NT: Foundries
  Greenhouses
  Industrial facilities
  Industrial plants
  Machine shops
  Paper mills

Production management
- UF: Manufacturing management
- BT: Management
  Production
- RT: Continuous improvement
  Continuous production
  Industrial engineering
  Inventory control
  Lean production
  Mass production
  Production engineering
  Productivity
  Research and development management
  Technology management
  Waste management
- NT: Control charts
  Inventory management
  Lead time reduction
  Logistics
  Process planning
  Production planning

Production materials
- BT: Materials
  Production
- RT: Additives
  Cast iron
  Chemical products
  Hydraulic fluids
  Production engineering
- NT: Abrasives
  Aerospace materials
  Automotive materials

Inhibitors
Ink
Joining materials
Lubricants
Retardants

Production planning
- BT: Production engineering
  Production management
- RT: Demand forecasting
  Lead time reduction
  Optimized production technology
- NT: Capacity planning
  Materials requirements planning
  Process planning

Production systems
- BT: Production
- RT: Discrete-event systems
  Industrial plants
  Manufacturing
  Optimized production technology
  Production control
- NT: Assembly systems
  Exhaust systems
  Intelligent manufacturing systems
  Lean production
  Manufacturing systems
  Steering systems

Productivity
- UF: Labor productivity
  Labour productivity
- BT: Production
- RT: Business
  Human factors
  Incentive schemes
  Industrial psychology
  Management
  Manufacturing
  Personnel
  Production management
  Profitability

Professional aspects
- BT: Engineering profession

Professional communication
- UF: Technical communication
- RT: Collaborative work
  Cooperative communication

Pragmatics
Semantics
Semiotics
Syntactics
NT: Collaboration
Communication aids
Communication effectiveness
Communication symbols
Context
Databases
Global communication
Grammar
Information analysis
Information integrity
Information resources
Information retrieval
Information science
Information services
Information systems
Information technology
Manuals
Meetings
Oral communication
Plagiarism
Portfolios
Professional societies
Public speaking
Rhetoric
Writing

Professional societies
BT: Professional communication

Profit sharing schemes
USE: Incentive schemes

Profitability
BT: Economics
RT: Cost accounting
Econometrics
Financial management
Productivity

Progenitor cells
BT: Cells (biology)
RT: Stem cells

Prognostics and health management
UF: PHM
BT: Product lifecycle management

Program generators

USE: Automatic programming

Program management
UF: Programme management
BT: Management
RT: Project management
Technical management

Program processors
UF: Assemblers (program)
Compilers (program)
Interpreters (program)
Multi-threaded systems
Multi-threading systems
Multithreaded systems
Multithreading systems
Processors (program)
BT: System software
RT: Input-output programs
Manycore processors
Operating systems
NT: Application specific processors
Graphics processing units
Instruction sets
Optimizing compilers

Program profiling
USE: Programming

Programmable circuits
BT: Circuits
NT: Field programmable analog arrays
Programmable logic arrays
Programmable logic devices

Programmable control
BT: Digital control
RT: Industrial control
Manufacturing automation
NT: Flow graphs

Programmable logic arrays
UF: PLA
BT: Circuits
Logic arrays
Logic circuits
Programmable circuits
RT: Programmable logic devices

Programmable logic controllers

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            USE: Programmable logic
devices

Programmable logic devices
            UF: Programmable logic
controllers
            BT: Circuits
                    Logic devices
                    Programmable circuits
            RT: High level synthesis
                    Programmable logic arrays

Programmable read only memory
            USE: PROM

Programme management
            USE: Program management

Programmed instruction
            USE: Educational technology

Programming
            UF: Program profiling
            BT: Computer science
            RT: Aerospace and electronic
systems
                    Digital computers
                    Flowcharts
                    Null value
                    Programming environments
                    Runtime
                    Self-assembly
                    Software
                    Software debugging
                    Software tools
                    Structured Query Language
                    Syntactics
            NT: Augmented reality
                    Automatic programming
                    Concatenated codes
                    Functional programming
                    Granular computing
                    Integer linear programming
                    Logic programming
                    Microprogramming
                    Object oriented methods
                    Object oriented
programming
                    Opportunistic software
systems development
                    Parallel programming
                    Performance analysis
                    Programming profession
                    Robot programming

Programming environments
            BT: Software engineering
            RT: Computer aided software
engineering
                    Programming
                    Software debugging
                    Software tools

Programming languages
            USE: Computer languages

Programming profession
            UF: Computer programming
profession
            BT: Programming
            RT: Employment
                    Engineering profession

Project engineering
            BT: Engineering management
            NT: Scheduling
                    Turnkey project

Project management
            BT: Management
            RT: Building information
management
                    Concurrent engineering
                    Lead time reduction
                    Program management
                    Requirements engineering
                    Requirements management
                    Research and development
management
                    Scrum (Software
development)
                    System integration
                    Technology management
            NT: Proposals
                    Turnkey project

Projectiles
            BT: Weapons

Projection algorithms
            BT: Algorithms

Projective geometry
            BT: Geometry

Projective shadowing
            USE: Shadow mapping

projectors (optical)
            USE: Optical projectors

PROM
UF: Programmable read only memory
BT: Read only memory
NT: EPROM

Promethium
BT: Chemical elements

Promotion - marketing
UF: Sales promotion
BT: Marketing management
RT: Public relations

Proof of Work
BT: Computer security
Protocols
RT: Blockchain
Denial-of-service attack

Propagation
UF: Wave equations
Wave propagation
BT: Waves
RT: Damping
Electromagnetic waveguides
NT: Attenuation
Electromagnetic propagation
Insertion loss
Nonlinear wave propagation
Perfectly matched layers
Reflection
Scattering
Transient response

Propagation constant
BT: Electromagnetic propagation

Propagation delay
BT: Delay effects

Propagation loss
USE: Propagation losses

Propagation losses
UF: Propagation loss
BT: Electromagnetic propagation

Propellants

BT: Chemical products

Propellers
BT: Aircraft propulsion
RT: Aircraft
Blades
Engines
Impellers
Marine vehicles
Shafts

Proportional + derivative control
USE: PD control

Proportional + integral control
USE: PI control

Proportional control
BT: Control systems

Proportional derivative control
USE: PD control

Proportional plus derivative control
USE: PD control

Proportional-derivative control
USE: PD control

Proportional-integral control
USE: PI control

Proportional-integral controller
USE: PI control

Proportional-integral-derivative
USE: PD control

Proportional-integral-derivative control
USE: PI control

Proportional-integral-derivative controller
USE: PI control

Proposals
UF: Technical proposals
BT: Project management
RT: Contracts
Procurement
Technical requirements
Writing

Propulsion
BT: Vehicular and wireless technologies

RT: Engines
Plasma jets
Traction motors
Vehicle-to-grid
NT: Aerospace propulsion
Aircraft propulsion
Electromagnetic launching
Electrothermal launching
Rockets

Prosencephalon
USE: Forebrain

Prostate cancer
BT: Cancer

Prosthesis
USE: Prosthetics

Prosthetic hand
BT: Prosthetics

Prosthetic limbs
BT: Prosthetics

Prosthetics
UF: Hip joint replacements
Knee joint replacements
Neural prostheses
Prosthesis
BT: Medical services
RT: Assistive technology
Bioceramics
Biological control systems
Biomedical equipment
Medical control systems
Orthotics
Sensory aids
Wearable robots
NT: Artificial biological organs
Artificial limbs
Prosthetic hand
Prosthetic limbs
Visual prosthesis

Protactinium
BT: Chemical elements

Protection
BT: Safety
RT: Circuit breakers
Fuses
Galvanizing
Grounding
Hazardous areas

Occupational safety
Security
Uninterruptible power systems
NT: Explosion protection
Lightning protection
Radiation protection

Protection switching
UF: Automatic protection switching
BT: Optical fiber networks

Protective clothing
BT: Clothing
Safety devices
RT: Clothing industry
Eye protection
Occupational health
Occupational safety
Personal protective equipment
Safety

Protective relaying
UF: Distance relays
Protective relays
BT: Relays
RT: Instrument transformers
Power system protection
Power system relaying

Protective relays
USE: Protective relaying

Protein engineering
BT: Biomedical engineering

Protein sequence
BT: Proteins

Proteins
BT: Biochemistry
NT: Protein sequence

Proteomics
BT: Molecular biomarkers

Protocols
UF: Communication protocols
BT: Communication systems
RT: Ad hoc networks
Bluetooth
Concurrency control
Frame relay

2021 IEEE Thesaurus

IEEE 802.11 Standard
IEEE 802.11e Standard
IEEE 802.11g Standard
IEEE 802.11n Standard
IPTV
Internet of Things
Local area networks
Metropolitan area networks
Multicarrier code division
multiple access
Software defined
networking
TCPIP
Wide area networks
- NT: Access protocols
Asynchronous transfer
mode
Consensus protocol
Cryptographic protocols
Master-slave
Multicast protocols
Multiprotocol label
switching
Proof of Work
Routing protocols
Smart contracts
Transport protocols
Wireless application
protocol
Zero knowledge proof

Proton accelerators
- BT: Particle accelerators
- RT: Ion accelerators
Protons

Proton beam effects
- USE: Proton effects

Proton beams
- USE: Particle beams

Proton effects
- UF: Biological effects of protons
Proton beam effects
- BT: Electrothermal effects
Quantum mechanics
- RT: Elementary particle
exchange interactions
Elementary particles
High energy physics
instrumentation computing
Protons
Radiation effects
Space vehicles

Thermal factors
- NT: Proton radiation effects
Single event latchup

Proton radiation effects
- BT: Proton effects
- RT: Bipolar transistors
Ion radiation effects
Protons
Radiation effects
Semiconductor devices
Silicon-on-insulator

Proton therapy
- BT: Medical treatment
- RT: Biological effects of
radiation

Protons
- BT: Elementary particles
- RT: Cosmic rays
Ions
Proton accelerators
Proton effects
Proton radiation effects

Prototypes
- BT: Design methodology
- RT: Laser sintering
Product design
Stereolithography
Virtual prototyping
- NT: Breadboard
Rapid prototyping

Proximity effects
- UF: Current crowding
- BT: Electromagnetics
- RT: Conductors
Lithography

Pry and Bean model
- USE: Bean model

PSCAD
- UF: Power Systems Computer
Aided Design
- BT: Design automation
Power systems
Software packages
- RT: EMTDC

Pseudobinary semiconductors
- USE: Semiconductor materials

2021 IEEE Thesaurus

Pseudomorphic HEMTs
  USE: PHEMTs

Pseudonoise coded communication
  USE: Spread spectrum communication

Pseudonoise coded radar
  USE: Spread spectrum radar

Pseudorandom sequences
  USE: Random sequences

PSK
  USE: Phase shift keying

PSNR
  UF: Peak signal to noise ratio
      Peak signal-to-noise ratio
  BT: Signal to noise ratio

pSPICE
  USE: SPICE

PSTN
  USE: Communication networks

Psychiatry
  BT: Behavioral sciences
  RT: Medical treatment
  NT: Mental disorders

Psychoacoustic models
  BT: Auditory system
  NT: Masking threshold

Psychoacoustics
  BT: Acoustics
  RT: Auditory system

Psychology
  BT: Behavioral sciences
      Social sciences
  RT: Affective computing
      Cognition
      Cognitive science
      Digital intelligence
      Emotion recognition
      Employee welfare
      Persuasive systems
      Social engineering (security)
  NT: Active perception
      Emotional responses
      Industrial psychology
      Mental health
      Mood
      Neuropsychology
      Psychometric testing

Psychometric testing
  BT: Psychology
  RT: Industrial psychology

PTMP
  USE: Point-to-multipoint communications

Public domain software
  BT: Open Access
      Software
  RT: Copyright protection
      Open data
      Open source software
  NT: Python
      R language

Public finance
  UF: Government borrowing
      Government expenditure
  BT: Governmental factors
  RT: Financial management
      Government
      Macroeconomics

Public health
  USE: Public healthcare

Public healthcare
  UF: Public health
  BT: Medical services
  RT: Epidemiology

Public infrastructure
  BT: Asset management
  RT: Electricity supply industry
      Environmental management
      Government policies
      Public policy
      Rural areas
      Urban areas
      Urban planning
  NT: Critical infrastructure

Public key
  BT: Cryptography
  NT: Public key cryptography

Public key cryptography

2021 IEEE Thesaurus

UF:	Public key cryptosystems
BT:	Public key
NT:	Elliptic curve cryptography
	Identity-based encryption

Public key cryptosystems
USE: Public key cryptography

Public policy
BT: Government policies
RT: Public infrastructure

Public relations
BT: Management
RT: Customer relationship management

Marketing management
Promotion - marketing

Public speaking
UF: Speechmaking
BT: Oral communication
Professional communication
RT: Meetings

Public switched telephone network
USE: Communication networks

Public transportation
UF: Subways
Taxi
Trolley cars
Uber
BT: Transportation
RT: Light rail systems
Rail transportation
Urban areas

Publish subscribe systems
UF: Publish-subscribe systems
Publish/subscrbe systems
BT: Message systems
RT: Content management
Middleware
Pattern recognition
Queueing analysis

Publish-subscribe
BT: Distributed information systems

Publish-subscribe systems
USE: Publish subscribe systems

Publish/subscrbe systems
USE: Publish subscribe systems

Publishing
BT: Computer applications
RT: Bibliographies
Copyright protection
Digital printing
Document handling
Guidelines
Plagiarism
Printing
Text processing
NT: Bibliometrics
Company reports
Desktop publishing
Electronic publishing
Journalism
Open Access
Scientific publishing

PUF
USE: Physical unclonable function

Pulleys
BT: Materials handling equipment
RT: Freight handling
Lifting equipment
Loading

Pulmonary diseases
UF: Lung diseases
Respiratory diseases
BT: Diseases
RT: Lung
Respiratory system

Pulmonology
UF: Chest medicine
Pneumology
Respiratory medicine
Respirology
BT: Medical specialties
RT: Lung
Respiratory system

Pulp and paper industry
UF: Paper industry
BT: Manufacturing industries
RT: Forestry
Paper products
Paper pulp
Paper technology

Pulp manufacturing
Spinning machines
Wood industry
NT: Paper making
Paper making machines
Paper mills

Pulp manufacturing
BT: Manufacturing systems
RT: Paper making
Paper making machines
Paper mills
Paper pulp
Pulp and paper industry
Wood industry

Pulse amplifiers
BT: Amplifiers

Pulse circuits
UF: Bistable multivibrator
BT: Circuits
RT: Digital circuits
NT: Flip-flops

Pulse compression methods
BT: Signal processing
NT: Optical pulse compression

Pulse generation
UF: Impulse generation
Pulse generators
BT: Signal generators
NT: Optical pulse generation

Pulse generators
USE: Pulse generation

Pulse inverters
UF: Logic inverters
BT: Inverters
RT: Logic circuits

Pulse measurements
UF: Impulse measurements
BT: Measurement
RT: Electric variables measurement

Pulse modulation
BT: Modulation
RT: Demodulation

Pulse oximeter
BT: Biomedical equipment

Biomedical measurement
RT: Noninvasive treatment
Pulse oximetry

Pulse oximetry
BT: Instrumentation and measurement
Noninvasive treatment
RT: Biomedical measurement
Oxygen
Pulse oximeter
Remote sensing

Pulse shaping
USE: Pulse shaping methods

Pulse shaping methods
UF: Pulse shaping
BT: Signal processing
NT: Optical pulse shaping

Pulse transformers
BT: Transformers

Pulse width modulated power converters
USE: Pulse width modulation converters

Pulse width modulation
UF: PWM
Pulsewidth modulation
Pulsewidth-modulation
BT: Modulation
RT: AC generators
AC machines
AC motors
Converters
DC generators
DC machines
DC motors
Pulse width modulation converters
NT: Pulse width modulation inverters
Space vector pulse width modulation

Pulse width modulation converters
UF: PWM converters
PWM convertors
Pulse width modulated power converters
Pulse width modulation convertors

Pulsewidth modulation converters

Pulsewidth modulation convertors
- BT: Converters
- RT: Power conditioning
  Power control
  Power conversion
  Power electronics
  Pulse width modulation
  Voltage-source converters

Pulse width modulation convertors
USE: Pulse width modulation converters

Pulse width modulation inverters
- UF: PWM inverters
  PWM invertors
  Pulse width modulation invertors
- BT: Pulse width modulation
- RT: AC motors
  AC-DC power converters
  Converters
  DC motors
  DC-DC power converters

Pulse width modulation invertors
USE: Pulse width modulation inverters

Pulsed electroacoustic methods
- BT: Acoustoelectric effects
- RT: Acoustoelectric devices
  Charge measurement
  Insulation testing
  Space charge

Pulsed laser deposition
- BT: Chemical vapor deposition

Pulsed power supplies
- BT: Pulsed power systems

Pulsed power systems
- BT: Power systems
- RT: Energy storage
  High-voltage techniques
  Power generation
  Power supplies
- NT: Pulsed power supplies

Pulsewidth modulation
USE: Pulse width modulation

Pulsewidth modulation converters
USE: Pulse width modulation converters

Pulsewidth modulation convertors
USE: Pulse width modulation converters

Pulsewidth-modulation
USE: Pulse width modulation

Pump lasers
- BT: Lasers

Pumping of lasers
USE: Laser excitation

Pumps
- BT: Machinery
- RT: Bellows
  Compressors
  Impellers
  Turbomachinery
- NT: Fuel pumps
  Heat pumps
  Insulin pumps
  Micropumps
  Water pumps

Punching
- BT: Materials processing
- RT: Sheet metal processing

Pupils
- BT: Eyes
- RT: Ophthalmology

Purification
- BT: Cleaning
- RT: Air cleaners
  Decontamination
  Refining
  Sugar refining

Pursuit algorithms
- BT: Algorithms

PWM
USE: Pulse width modulation

PWM converters
USE: Pulse width modulation converters

PWM convertors
      USE: Pulse width modulation converters

PWM inverters
      USE: Pulse width modulation inverters

PWM invertors
      USE: Pulse width modulation inverters

Pylons
      USE: Poles and towers

Pyroelectric devices
      BT: Dielectric devices
      RT: Pyroelectricity

Pyroelectricity
      BT: Electricity
                 Ultrasonics, ferroelectrics, and frequency control
      RT: Ferroelectric materials
                 Piezoelectricity
                 Pyroelectric devices
                 Thermal factors

Python
      BT: Computer languages
                 Public domain software
      RT: Functional programming
                 Object oriented programming
                 Software libraries

Q factor
      USE: Q-factor

Q measurement
      BT: Electric variables measurement
      RT: Q-factor

Q-factor
      UF: Q factor
                 Quality factor
      BT: Electric variables
      RT: Capacitors
                 Q measurement

QAM
      USE: Quadrature amplitude modulation

qbit
      USE: Qubit

QCD vacuum
      USE: Elementary particle vacuum

QFD
      USE: Quality function deployment

QFP
      USE: Electronics packaging

QoE
      USE: Quality of experience

QoS
      USE: Quality of service

Qox
      USE: Quality of experience

QPSK
      USE: Phase shift keying

QR codes
      USE: Bar codes

Quad flat packs
      USE: Electronics packaging

Quadratic programming
      BT: Optimization methods

Quadrature amplitude modulation
      UF: QAM
      BT: Amplitude modulation

Quadrature phase shift keying
      BT: Phase shift keying
      NT: Differential quadrature phase shift keying

Qualifications
      BT: Training
      RT: Continuing professional development
                 Standards

Quality assessment
      BT: Quality management

Quality assurance
      BT: Quality management
      RT: Consumer protection
                 Data integrity

	Design for quality			Product liability
	IEEE 802.11e Standard			Reliability
	Product liability			System improvement
	Quality awards		NT:	Quality assessment
	Quality control			Quality assurance
	Quality function deployment			Quality awards
	Six sigma			Quality control
	Total quality management			Quality function deployment
NT:	Best practices			Total quality management

Quality awards
- BT: Quality management
- RT: Continuous improvement
  - Quality assurance
  - Quality function deployment
  - Total quality management

Quality control
- BT: Quality management
- RT: Contamination
  - Coordinate measuring machines
  - Data integrity
  - Design for quality
  - Failure analysis
  - IEEE 802.11e Standard
  - Quality assurance
  - Quality function deployment
  - Reliability
  - Six sigma
  - Total quality management

Quality factor
- USE: Q-factor

Quality function deployment
- UF: QFD
- BT: Quality management
- RT: Concurrent engineering
  - Product development
  - Quality assurance
  - Quality awards
  - Quality control

Quality management
- UF: ISO 9000
- BT: Management
- RT: Control charts
  - Customer relationship management
  - Customer satisfaction
  - Data governance
  - Design for quality
  - ISO Standards
  - Pareto analysis

Quality of experience
- UF: QoE
  - Qox
- BT: Communication systems
  - Customer satisfaction
- RT: Quality of service
  - User experience

Quality of service
- UF: QoS
  - Quality-of-service
- BT: Communication systems
  - Customer satisfaction
- RT: Conformance testing
  - IEEE 802.11e Standard
  - IP networks
  - Next generation networking
  - Quality of experience
  - Service level agreements
  - Spatial diversity
  - Telecommunication computing
- NT: Admission control

Quality-of-service
- USE: Quality of service

Quantisation
- USE: Quantization (signal)

Quantization (signal)
- UF: Quantisation
  - Quantization effects
  - Quantization errors
  - Signal quantisation
  - Signal quantization
- BT: Signal processing
- RT: Analog-digital conversion
  - Data compression
  - Digital representation
  - Encoding
  - Finite wordlength effects
  - Signal sampling
- NT: Vector quantization

2021 IEEE Thesaurus

Quantization effects
      USE: Quantization (signal)

Quantization errors
      USE: Quantization (signal)

Quantum algorithm
      BT: Quantum computing

Quantum capacitance
      BT: Capacitance
                 Quantum mechanics
      RT: CNTFETs

Quantum cascade lasers
      UF: Cascade lasers
      BT: Quantum well lasers
      RT: Quantum mechanics

Quantum cellular automata
      BT: Quantum computing

Quantum channel
      BT: Communication channels
                 Quantum information science
      RT: Qubit

Quantum chemistry
      BT: Chemistry
                 Quantum computing
      RT: Molecular computing

Quantum circuit
      BT: Circuits
                 Quantum communication
                 Quantum computing
                 Quantum information science

Quantum communication
      BT: Communication systems
      RT: Channel capacity
                 Information theory
                 Optical fiber communication
                 Teleportation
      NT: Quantum circuit
                 Quantum networks

Quantum computing
      BT: Computers and information processing
                 Electron devices
      RT: Coherence time
      NT: Quantum algorithm

                 Quantum cellular automata
                 Quantum chemistry
                 Quantum circuit
                 Quantum networks
                 Quantum simulation
                 Qubit

Quantum confinement
      USE: Potential well

Quantum cryptography
      BT: Cryptography
                 Quantum mechanics

Quantum dash
      USE: Quantum dots

Quantum decoherence
      BT: Quantum mechanics
      RT: Coherence

Quantum dot lasers
      UF: Quantum-dot lasers
      BT: Semiconductor lasers
      RT: Quantum dots
                 Quantum mechanics
                 Quantum well lasers

Quantum dots
      UF: Quantum dash
                 Quantum-dot
                 Quantum-dots
      BT: Semiconductor devices
      RT: Nanocrystals
                 Quantum dot lasers
                 Quantum mechanics

Quantum entanglement
      UF: Entangled states
      BT: Quantum mechanics
      RT: Quantum radar
                 Quantum state
                 Teleportation

Quantum information science
      BT: Information science
                 Quantum mechanics
      NT: Quantum channel
                 Quantum circuit

Quantum key distribution
      BT: Communication system security
                 Quantum mechanics
      RT: Cryptography

2021 IEEE Thesaurus

Quantum mechanics
- UF: Quantum theory
- BT: Physics
- RT: Laser theory
  - Nanotechnology
  - Philosophical considerations
  - Quantum cascade lasers
  - Quantum dot lasers
  - Quantum dots
  - Quantum well devices
  - Quantum well lasers
  - Resonant frequency
  - Solid-state physics
  - String theory
- NT: Coherence time
  - Density functional theory
  - Lagrangian functions
  - Proton effects
  - Quantum capacitance
  - Quantum cryptography
  - Quantum decoherence
  - Quantum entanglement
  - Quantum information science
  - Quantum key distribution
  - Quantum optics
  - Quantum simulation
  - Quantum state
  - Quantum system
  - Relativistic quantum mechanics
  - Schrodinger equation
  - Stationary state
  - Teleportation
  - Tunneling

Quantum networks
- BT: Quantum communication
  - Quantum computing

Quantum optics
- BT: Quantum mechanics

Quantum radar
- BT: Radar
  - Remote sensing
- RT: Lighting
  - Quantum entanglement

Quantum simulation
- BT: Quantum computing
  - Quantum mechanics
  - Simulation

Quantum state
- BT: Quantum mechanics
- RT: Quantum entanglement

Quantum system
- BT: Quantum mechanics

Quantum teleportation
- USE: Teleportation

Quantum theory
- USE: Quantum mechanics

Quantum vacuum
- USE: Elementary particle vacuum

Quantum well devices
- UF: Quantum-well devices
  - Quantumwell devices
- BT: Electron devices
- RT: Electrooptic modulators
  - Quantum mechanics
  - Resonant tunneling devices
  - Tunneling
- NT: Quantum well lasers
  - Quantum wells
  - Two dimensional hole gas

Quantum well lasers
- UF: Quantum-well lasers
- BT: Lasers
  - Quantum well devices
  - Semiconductor devices
  - Semiconductor lasers
  - Solid lasers
- RT: Quantum dot lasers
  - Quantum mechanics
  - Quantum wells
  - Semiconductor optical amplifiers
  - Surface emitting lasers
  - Two dimensional hole gas
- NT: Quantum cascade lasers

Quantum wells
- UF: Semiconductor quantum wells
- BT: Electrons
  - Quantum well devices
- RT: Quantum well lasers
  - Surface emitting lasers
  - Two dimensional hole gas

Quantum-dot

USE: Quantum dots

Quantum-dot lasers
USE: Quantum dot lasers

Quantum-dots
USE: Quantum dots

Quantum-well devices
USE: Quantum well devices

Quantum-well lasers
USE: Quantum well lasers

Quantumwell devices
USE: Quantum well devices

Quarter-wave plates
USE: Optical retarders

Quartz crystals
BT: Crystals

Quasi-doping
BT: Semiconductor device manufacture
RT: Semiconductor device doping

Quasi-resonant inverters
USE: Resonant inverters

Quasi-resonant invertors
USE: Resonant inverters

Quaternions
BT: Mathematics

Qubit
UF: qbit
BT: Quantum computing
RT: Coherence time
Quantum channel

Query evaluation
USE: Query processing

Query languages
USE: Database languages

Query optimisation
USE: Query processing

Query optimization
USE: Query processing

Query pipeline
USE: Query processing

Query process
USE: Query processing

Query processing
UF: Query evaluation
Query optimisation
Query optimization
Query pipeline
Query process
Query routing
BT: Database systems
RT: Linked data
NoSQL databases
Semantic search

Query routing
USE: Query processing

Queueing analysis
UF: Queueing theory
BT: Traffic control
RT: Publish subscribe systems
Scheduling

Queueing theory
USE: Queueing analysis

R & D management
USE: Research and development management

R language
BT: Computer languages
Public domain software
RT: Data analysis
Data mining
Data visualization
Statistical analysis

Rabbits
BT: Animals

Rad hardened
USE: Radiation hardening (electronics)

Rad-hard
USE: Radiation hardening (electronics)

Radar

2021 IEEE Thesaurus

	UF:	Microwave radar
	BT:	Aerospace and electronic systems
		Geoscience and remote sensing
	RT:	Microwave technology
		Radar detection
		Radar scattering
	NT:	Airborne radar
		Bistatic radar
		Cognitive radar
		Doppler radar
		Ground penetrating radar
		High frequency radar
		Laser radar
		Meteorological radar
		Millimeter wave radar
		Multistatic radar
		Passive radar
		Quantum radar
		Radar applications
		Radar clutter
		Radar cross-sections
		Radar equipment
		Radar theory
		Spaceborne radar
		Spread spectrum radar
		Synthetic aperture radar
		Ultra wideband radar

Radar antennas
- BT: Antennas

Radar applications
- BT: Radar
- RT: Oceanographic techniques
- NT: Radar countermeasures
  - Radar detection
  - Radar imaging
  - Radar measurements
  - Radar polarimetry
  - Radar remote sensing
  - Radar tracking

Radar clutter
- BT: Radar
- RT: Jamming

Radar countermeasures
- BT: Electronic warfare
  - Radar applications
- RT: Adaptive arrays
  - Electronic countermeasures
  - Jamming
  - Spread spectrum radar

Radar cross section
- USE: Radar cross-sections

Radar cross sections
- USE: Radar cross-sections

Radar cross-section
- USE: Radar cross-sections

Radar cross-sections
- UF: Radar cross section
  - Radar cross sections
  - Radar cross-section
- BT: Radar
  - Radar measurements
  - Reflection

Radar detection
- BT: Radar applications
  - Signal detection
- RT: Ground penetrating radar
  - Passive radar
  - Radar
  - Ultra wideband radar

Radar equipment
- BT: Radar

Radar imaging
- BT: Radar applications
- RT: Ground penetrating radar
  - Landmine detection
  - Meteorological radar
  - Passive radar
  - Remote sensing
  - Synthetic aperture radar
  - Ultra wideband radar

Radar interferometry
- BT: Interferometry
- NT: Synthetic aperture radar interferometry

Radar measurements
- BT: Radar applications
- RT: Remote sensing
- NT: Radar cross-sections

Radar meteorology
- USE: Meteorological radar

Radar polarimetry
- UF: SAR imaging

Synthetic aperture radar
imaging
    BT: Radar applications

Radar remote sensing
    BT: Radar applications
    RT: Spaceborne radar

Radar scattering
    BT: Electromagnetic scattering
    RT: Radar

Radar signal processing
    BT: Signal processing

Radar theory
    BT: Radar

Radar tracking
    BT: Radar applications
    RT: Target tracking

Radial basis function networks
    UF: RBF networks
           Radial basis function neural
networks
    BT: Neural networks
    RT: Artificial intelligence
           Computer networks
           Cybernetics
           Interpolation

Radial basis function neural networks
    USE: Radial basis function
networks

Radiation counters
    USE: Radiation detectors

Radiation detection
    USE: Radiation detectors

Radiation detector circuits
    BT: Circuits
    RT: Counting circuits
           Radiation detectors

Radiation detectors
    UF: Counters
           Particle detectors
           Radiation counters
           Radiation detection
           Ratemeters
    BT: Ionizing radiation sensors
    RT: Atomic measurements

           Dosimetry
           Nuclear measurements
           Phototransistors
           Radiation detector circuits
           Radiation monitoring
           Spectroscopy
           X-ray detectors
    NT: Bolometers
           Gamma-ray detectors
           Infrared detectors
           Photodetectors
           Semiconductor radiation
detectors
           Silicon radiation detectors

Radiation dosage
    BT: Radiation monitoring

Radiation dosimetry
    USE: Dosimetry

Radiation effects
    UF: Irradiation
    BT: Nuclear and plasma
sciences
    RT: Biomedical applications of
radiation
           Brachytherapy
           High energy physics
instrumentation computing
           Proton effects
           Proton radiation effects
           Radiation monitoring
           Radiation protection
           Safety
    NT: Biological effects of
radiation
           Gamma-ray effects
           Ion radiation effects
           Neutron radiation effects
           Scintillators
           Single event latchup
           Space radiation
           Terahertz radiation
           Total ionizing dose

Radiation hardening (electronics)
    UF: Rad hardened
           Rad-hard
    BT: Electronic equipment
manufacture
           Nuclear and plasma
sciences
    RT: Ionizing radiation
           Satellite communication

Total ionizing dose

Radiation imaging
BT: Imaging
RT: Biomedical imaging

Radiation monitoring
UF: Health physics
Personnel monitoring
BT: Monitoring
Nuclear and plasma sciences
RT: Dosimetry
Radiation detectors
Radiation effects
Radiation protection
Radioactive pollution
Reactor instrumentation
NT: Radiation dosage

Radiation pattern
USE: Antenna radiation patterns

Radiation protection
UF: Radiation shielding
Radiological protection
BT: Protection
Radiation safety
RT: Biological effects of radiation
Contamination
Dosimetry
Fission reactors
Radiation effects
Radiation monitoring
Radioactive pollution

Radiation safety
BT: Nuclear and plasma sciences
Safety
NT: Radiation protection

Radiation shielding
USE: Radiation protection

Radiation therapy
USE: Biomedical applications of radiation

Radiative recombination
BT: Spontaneous emission
RT: Semiconductor materials

Radiators (automotive)
USE: Automotive components

Radio access networks
UF: RAN
BT: Telecommunications
RT: 3G mobile communication
4G mobile communication
Land mobile radio
Radio communication
Telecommunication services
NT: Cloud radio access networks

Radio access technologies
BT: Communication networks
NT: New Radio

Radio astronomy
UF: Radio telescopes
BT: Antennas and propagation
Astronomy
RT: Reflector antennas
Telescopes

Radio broadcasting
BT: Broadcasting
Radio communication
RT: Digital multimedia broadcasting
Journalism
NT: Frequency modulation
Radio networks

Radio communication
BT: Communication systems
RT: Bandwidth
Convolutional codes
Cross layer design
Diversity methods
Film bulk acoustic resonators
IEEE 802.11 Standard
IEEE 802.11g Standard
IEEE 802.11n Standard
IEEE 802.15 Standard
Intercell interference
MIMO communication
Mobile communication
NOMA
Radio access networks
Radio communication equipment
Radio propagation
SIMO communication

SISO communication
Wireless LAN
NT: Baseband
Bluetooth
Cellular technology
Indoor radio communication
Land mobile radio
Millimeter wave communication
Near field communication
Packet radio networks
Passband
Personal area networks
Radio broadcasting
Radio communication countermeasures
Radio frequency
Radio links
Radio spectrum management
Satellite communication
Satellite ground stations
Software radio
Zigbee

Radio communication countermeasures
BT: Communication system security
Radio communication
RT: Adaptive arrays
Electronic countermeasures
Electronic warfare
Jamming
Spread spectrum communication

Radio communication equipment
BT: Communication equipment
RT: Antennas
Radio communication
Telephone equipment
NT: Base stations
Ham radios
Land mobile radio equipment
Radio transceivers
Transponders

Radio control
BT: Control systems

Radio frequency
UF: RF
Radio-frequency
Radiofrequency

BT: Radio communication
RT: Light fidelity
Wireless fidelity
NT: High frequency

Radio frequency identification
USE: Radiofrequency identification

Radio frequency integrated circuits
USE: Radiofrequency integrated circuits

Radio frequency interference
USE: Radiofrequency interference

Radio frequency power amplifiers
USE: Power amplifiers

Radio interference
USE: Electromagnetic interference

Radio interferometry
UF: Radiowave interferometry
BT: Interferometry

Radio LAN
USE: Wireless LAN

Radio links
BT: Radio communication
RT: Transport protocols

Radio navigation
UF: Loran
BT: Navigation
RT: Air traffic control
Indoor navigation
Satellite navigation systems
Transponders

Radio networks
BT: Radio broadcasting

Radio propagation
BT: Electromagnetic propagation
RT: Fading channels
Multipath channels
Radio communication
Radiowave propagation
Rayleigh channels

Radio receivers
USE: Receivers

Radio resource management
USE: Resource management

Radio spectrum management
UF: Frequency allocation
Spectrum management
BT: Radio communication
RT: Communication standards
NT: Direct sequence spread spectrum communication
White spaces

Radio telescopes
USE: Radio astronomy

Radio transceivers
BT: Radio communication equipment
Transceivers
NT: Dynamic spectrum access

Radio transmitters
BT: Transmitters

Radio-frequency
USE: Radio frequency

Radio-frequency identification
USE: Radiofrequency identification

Radio-frequency interference
USE: Radiofrequency interference

Radioactive decay
BT: Radioactive materials

Radioactive label
USE: Radiotracer

Radioactive materials
UF: Alphavoltaic power sources
Betavoltaic power sources
Radioisotopes
BT: Materials
RT: Isotopes
Neutrino sources
Occupational health
Occupational safety
Radioactive pollution
Safety

NT: Nuclear fuels
Radioactive decay
Radioactive waste

Radioactive pollution
UF: Nuclear wastes
BT: Pollution
RT: Hazardous areas
Incineration
Industrial pollution
Land pollution
Radiation monitoring
Radiation protection
Radioactive materials
Radioactive waste
Radioactive waste disposal
Safety
Waste materials

Radioactive tracer
USE: Radiotracer

Radioactive waste
BT: Radioactive materials
Waste materials
RT: Hazardous areas
Hazardous materials
Incineration
Materials handling
Nuclear facility regulation
Nuclear fuels
Radioactive pollution
Waste disposal
Waste management
NT: Radioactive waste disposal

Radioactive waste disposal
BT: Radioactive waste
Waste disposal
RT: Incineration
Materials handling
Radioactive pollution
Vitrification
Waste handling

Radiofrequency
USE: Radio frequency

Radiofrequency amplifiers
UF: Radiofrequency power amplifiers
BT: Amplifiers

Radiofrequency identification
UF: RFID

2021 IEEE Thesaurus

Radio frequency identification
Radio-frequency identification
BT: Sensor systems and applications
RT: Internet of Things
Product codes
Radiofrequency integrated circuits
NT: RFID tags

Radiofrequency integrated circuits
UF: RFIC
Radio frequency integrated circuits
BT: Integrated circuits
RT: MIMICs
MMICs
Radiofrequency identification

Radiofrequency interference
UF: Radio frequency interference
Radio-frequency interference
BT: Electromagnetic interference
RT: Superconducting filters
NT: Intercell interference

Radiofrequency micro-electro-mechanical systems
USE: Radiofrequency microelectromechanical systems

Radiofrequency micro-electromechanical systems
USE: Radiofrequency microelectromechanical systems

Radiofrequency microelectromechanical systems
UF: RF micro-electro-mechanical systems
RF microelectromechanical systems
Radiofrequency micro-electro-mechanical systems
Radiofrequency micro-electromechanical systems
BT: Microelectromechanical systems

Radiofrequency power amplifiers
USE: Power amplifiers AND Radiofrequency amplifiers

Radiographic image enhancement
BT: Biomedical image processing

Radiography
BT: Imaging
RT: Biomedical applications of radiation
Medical diagnosis
Nuclear imaging
X-ray detection
X-ray imaging
NT: Diagnostic radiography

Radioisotope thermoelectric generators
BT: Atomic batteries

Radioisotopes
USE: Radioactive materials

Radiological protection
USE: Radiation protection

Radiology
BT: Biomedical image processing
NT: Neuroradiology

Radiometers
BT: Meters
Radiometry
NT: Spectroradiometers

Radiometry
BT: Electromagnetic measurements
Geoscience and remote sensing
RT: Imaging
Photometry
Remote sensing
Temperature measurement
NT: Microwave radiometry
Radiometers

Radiomics
BT: Biomedical image processing
RT: Machine learning

Radiotracer

UF: Radioactive label
            Radioactive tracer
BT: Chemical compounds

Radiowave interferometry
      USE: Radio interferometry

Radiowave propagation
      BT: Electromagnetic propagation
      RT: Radio propagation

Radium
      BT: Chemical elements

Radomes
      BT: Antenna accessories

Radon
      BT: Chemical elements

Rail guns
      USE: Railguns

Rail line
      USE: Rail transportation

Rail lines
      USE: Rail transportation

Rail to rail amplifiers
      BT: Rail to rail operation
      RT: Amplifiers
            MODFET circuits
            MOSFET circuits
            Rail to rail inputs
            Rail to rail outputs

Rail to rail inputs
      UF: RRI
      BT: Rail to rail operation
      RT: Nonlinear circuits
            Rail to rail amplifiers

Rail to rail operation
      BT: Circuits
      RT: Amplifiers
            CMOSFET circuits
            MODFET circuits
            MOSFET circuits
      NT: Rail to rail amplifiers
            Rail to rail inputs
            Rail to rail outputs

Rail to rail outputs

UF: RRO
BT: Rail to rail operation
RT: Nonlinear circuits
            Rail to rail amplifiers

Rail traffic
      USE: Rail transportation

Rail transportation
      UF: Rail line
            Rail lines
            Rail traffic
            Rail ways
            Railways
      BT: Land transportation
      RT: Block signalling
            Land vehicles
            Magnetic levitation
            Public transportation
      NT: High-speed rail transportation
            Light rail systems
            Magnetic levitation vehicles
            Positive train control
            Railway communication
            Railway electrification

Rail ways
      USE: Rail transportation

Railguns
      UF: Rail guns
      BT: Electromagnetic launching
      RT: Rails

Rails
      BT: Structural shapes
      RT: Flanges
            Railguns

Railway accidents
      UF: Derailments
      BT: Accidents
      RT: Positive train control
            Railway engineering
            Railway safety

Railway bridges
      USE: Structural panels

Railway communication
      BT: Rail transportation
            Telecommunications
      NT: Block signalling
            GSM-R

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Railway electrification
BT: Rail transportation
RT: Power overhead lines

Railway engineering
BT: Civil engineering
RT: Railway accidents
NT: Railway safety

Railway safety
BT: Railway engineering
RT: Positive train control
Railway accidents
Safety devices

Railways
USE: Rail transportation

Rain
BT: Meteorology
RT: Floods
Monsoons

Rain fades
USE: Rain fading

Rain fading
UF: Rain fades
BT: Interference

RAKE receivers
BT: Receivers
RT: Signal to noise ratio

Raleigh fading
USE: Rayleigh channels

Raleigh fading channels
USE: Rayleigh channels

RAM
USE: Random access memory

Raman effect
USE: Raman scattering

Raman scattering
UF: Raman effect
Raman spectroscopy
BT: Electromagnetic scattering
Nonlinear optics

Raman spectroscopy
USE: Raman scattering

RAN
USE: Radio access networks
AND
Regional area networks

Random access communication
USE: Multiaccess communication

Random access memory
UF: RAM
Random access storage
BT: Memory
NT: DRAM chips
Phase change random access memory
Resistive RAM
SDRAM
SRAM cells
SRAM chips

Random access storage
USE: Random access memory

Random forests
BT: Machine learning
Random processes
RT: Decision trees
Pattern recognition
Regression analysis

Random media
UF: Turbulent media
BT: Media
RT: Chaos
Nonhomogeneous media

Random number generation
BT: Cryptography
RT: Random sequences
Stochastic processes
White noise

Random processes
BT: Mathematics
RT: Algorithms
Probability
Signal processing
Statistical analysis
Time series analysis
NT: Brownian motion
Random forests

Random sequences
UF: Pseudorandom sequences

BT: Sequences
RT: Cryptography
Random number generation

Random variables
BT: Probability
RT: Stochastic processes
Stochastic systems

Ranging
USE: Distance measurement

Ranking (statistics)
BT: Statistics
RT: Information retrieval
Ontologies
Search methods
Semantic Web
Vocabulary

Ransomware
BT: Malware

Rapid eye movement sleep
UF: REM sleep
BT: Sleep

Rapid prototyping
BT: Prototypes
RT: CADCAM
Design methodology
Manufacturing processes
Product development
Software engineering
Three-dimensional printing
Virtual prototyping

Rapid thermal annealing
BT: Annealing
RT: Semiconductor devices

Rapid thermal processing
BT: High-temperature techniques
RT: Heating systems

Rare earth metals
BT: Metals

Rate distortion
USE: Rate-distortion

Rate distortion theory
BT: Information theory

RT: Audio coding
Channel coding
Channel spacing
Distortion
Image coding
Signal analysis
Signal processing
Source coding
Speech coding
Video coding
NT: Channel rate control

Rate-distortion
UF: Rate distortion
BT: Information theory
RT: Data compression

Ratemeters
USE: Radiation detectors

Rats
BT: Animals

Raw materials
BT: Materials
RT: Mining industry

Ray tracing
UF: Ray-tracing
BT: Geometrical optics
Optics
RT: Computer graphics
Stray light

Ray-tracing
USE: Ray tracing

Rayleigh channels
UF: Raleigh fading
Raleigh fading channels
Rayleigh-fading
BT: Fading channels
RT: Radio propagation

Rayleigh scattering
BT: Electromagnetic scattering

Rayleigh-Benard convection
USE: Convection

Rayleigh-fading
USE: Rayleigh channels

RBF networks

USE: Radial basis function networks

RDF
USE: Resource description framework

Re-configurable devices
USE: Reconfigurable devices

Reachability analysis
BT: Graph theory

Reactive power
UF: Power factor
VAR
BT: Power systems
RT: Reactive power control
Static VAr compensators

Reactive power control
BT: Electric variables control
RT: Power system security
Reactive power
Voltage control

Reactor instrumentation
BT: Nuclear and plasma sciences
RT: Radiation monitoring

Reactors
USE: Inductors

Read only memory
UF: ROM
BT: Memory
RT: Read-write memory
NT: PROM

Read-write memory
BT: Memory
RT: Read only memory

Readability formulas
USE: Readability metrics

Readability metrics
UF: Readability formulas
Readability tests
BT: Writing

Readability tests
USE: Readability metrics

Readout electronics
BT: Displays
RT: Detectors
SQUIDs

Real time
USE: Real-time systems

Real time control
USE: Real-time systems

Real time monitoring
USE: Real-time systems

Real time processing
USE: Real-time systems

Real time systems
USE: Real-time systems

Real-time control
USE: Real-time systems

Real-time monitoring
USE: Real-time systems

Real-time processing
USE: Real-time systems

Real-time systems
UF: Real time
Real time control
Real time monitoring
Real time processing
Real time systems
Real-time control
Real-time monitoring
Real-time processing
BT: Computers and information processing
RT: Control systems
Endomicroscopy
Hardware-in-the-loop simulation
High energy physics instrumentation computing
Networked control systems
NT: Telexistence
WebRTC

Reasoning
USE: Cognition AND
Cognitive systems

Reasoning about programs

UF: Type interference
BT: Software engineering

Rebreathers
    USE: Rebreathing equipment

Rebreathing equipment
    UF: Rebreathers
    BT: Underwater equipment

Receive antennas
    USE: Receiving antennas

Received signal strength indicator
    UF: RSSI
    BT: Communication system signaling
                Signal processing

Receivers
    UF: Radio receivers
    BT: Communication equipment
    RT: Demodulation
                Signal detection
    NT: Optical receivers
                RAKE receivers
                Receiving antennas

Receiving antennas
    UF: Receive antennas
    BT: Antennas
                Receivers
    RT: Spatial diversity
                Transmitting antennas

Receptor (biochemistry)
    BT: Biochemistry

Recommender systems
    UF: Music recommendation
    BT: Information filtering
    RT: Collaborative filtering

Reconfigurable architectures
    BT: Computer architecture
    NT: Reconfigurable intelligent surfaces

Reconfigurable devices
    UF: Re-configurable devices
    BT: Hardware
    RT: Field programmable gate arrays

Reconfigurable intelligent surfaces

    BT: Reconfigurable architectures
    RT: Wireless communication

Reconfigurable logic
    BT: Logic design

Reconfigurable radio
    USE: Software radio

Reconnaissance
    BT: Military communication
                Security
    RT: Remote sensing
                Surveillance

Reconstruction algorithm
    USE: Reconstruction algorithms

Reconstruction algorithms
    UF: Reconstruction algorithm
                Reconstruction methods
    BT: Tomography
    RT: Image processing
                Three-dimensional displays

Reconstruction methods
    USE: Reconstruction algorithms

Recording
    BT: Signal processing
    RT: Memory
    NT: Audio recording
                Digital recording
                Disk recording
                Magnetic recording
                Optical recording
                Video recording

Recruitment
    BT: Human resource management
    RT: Equal opportunities
                Job specification
                Labor resources

Rectangular waveguides
    BT: Electromagnetic waveguides
    RT: Planar waveguides

Rectennas
    BT: Antennas
                Microwave communication
    RT: Converters

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Rectifiers
    BT: Circuits
    RT: Bridge circuits
           Power electronics
           Voltage multipliers

Rectifying circuits
    BT: AC-DC power converters

Recurrent neural nets
    USE: Recurrent neural networks

Recurrent neural networks
    UF: RNN
           Recurrent neural nets
    BT: Neural networks
    NT: Hopfield neural networks

Recursive estimation
    BT: Bayes methods
    RT: Least squares
approximations

Recycle
    USE: Recycling

Recycling
    UF: Recycle
    BT: Environmental
management
    RT: Food waste

Red blood cells
    BT: Blood

Reddit
    USE: Social networking (online)
AND
           Web sites

Reduced instruction set computing
    UF: RISC
    BT: Instruction sets

Reduced order model
    USE: Reduced order systems

Reduced order systems
    UF: Model reduction
           Reduced order model
           Reduced-order model
           Reduced-order systems
    BT: Systems engineering and
theory

    RT: Estimation
           Simulation

Reduced-order model
    USE: Reduced order systems

Reduced-order systems
    USE: Reduced order systems

Redundancy
    BT: Fault tolerance
    RT: Codes
           Reliability

Redundancy (employment)
    USE: Termination of employment

Reed Solomon codes
    USE: Reed-Solomon codes

Reed-Muller codes
    BT: Error correction codes
    RT: Polar codes

Reed-Solomon codes
    UF: Reed Solomon codes
    BT: Error correction codes

Refining
    BT: Materials processing
    RT: Chemical technology
           Cleaning
           Purification
           Smelting
           Sugar refining

Reflectance
    USE: Reflectivity

Reflection
    BT: Propagation
    RT: Mirrors
           Scattering
    NT: Acoustic reflection
           Backscatter
           Electromagnetic reflection
           Fresnel reflection
           Radar cross-sections

Reflection coefficient
    BT: Optical variables
measurement
           Waveguide discontinuities
    RT: Amplitude estimation

Reflective binary codes
UF:	Gray codes
	Grey codes
BT:	Binary codes

Reflectivity
UF:	Reflectance
BT:	Waves
RT:	Geometrical optics
	Light trapping
	Optical reflection
	Sonar detection
	Telecommunications

Reflectometry
BT:	Measurement
RT:	Electromagnetic measurements
	Electromagnetic reflection
	Optical reflection
	Optical variables measurement

Reflector antennas
BT:	Antennas
RT:	Aperture antennas
	Radio astronomy

Reflow soldering
BT:	Soldering

Refractive index
UF:	Refractivity
BT:	Optical variables measurement
RT:	Birefringence
	Dispersion
	Gain measurement
	Laser beams
	Metamaterials
	Optical refraction
	Photorefractive effect
	Semiconductor device measurement
	Semiconductor lasers

Refractivity
USE:	Refractive index

Refractoring
USE:	Code refractoring

Refrigerants
BT:	Coolants
RT:	Heat pumps

	Space cooling
NT:	Liquid nitrogen

Refrigeration
BT:	Cooling

Refrigerators
BT:	Home appliances
	Home automation

Refuse
USE:	Waste materials

Refuse incineration
USE:	Incineration

Regeneration engineering
BT:	Tissue engineering

Regional area networks
UF:	RAN
BT:	Communication systems
RT:	IEEE 802.22 Standard
	Local area networks
	Metropolitan area networks
	Wireless communication
NT:	WRAN

Registers
BT:	Memory
NT:	Shift registers

Regression analysis
BT:	Statistical analysis
RT:	Correlation coefficient
	Econometrics
	Nearest neighbor methods
	Random forests
NT:	Linear regression
	Multivariate regression

Regression tree analysis
BT:	Decision trees

Regulation
BT:	Government policies
NT:	Tariffs

Regulators
BT:	Control equipment
RT:	Current control
	Electric variables control
	Power conversion
	Voltage control

Rehabilitation robotics
UF:	Assistive robotics
BT:	Medical robotics
	Robots
RT:	Assistive technology
	Patient rehabilitation

Reinforcement learning
BT:	Machine learning

Relational databases
BT:	Databases
RT:	Structured Query Language
	Triples (Data structure)

Relativistic effects
BT:	Nuclear physics
RT:	Electron beams
	Free electron lasers
	Klystrons
	Magnetrons
	Masers
	Plasmas
NT:	Optical flow

Relativistic quantum mechanics
BT:	Quantum mechanics

Relaxation methods
BT:	Numerical analysis
RT:	Simulated annealing

Relaxor ferroelectrics
BT:	Ferroelectric materials

Relay networks (telecommunication)
BT:	Communication networks
	Relays

Relays
BT:	Switchgear
RT:	Switching circuits
NT:	Digital relays
	Microrelays
	Power system relaying
	Protective relaying
	Relay networks (telecommunication)
	Road side unit

Release engineering
UF:	Releng
BT:	Software engineering
RT:	Product lifecycle management
	Software development management
	Source coding

Releng
USE:	Release engineering

Relevance vector machines
BT:	Classification algorithms
	Machine learning
RT:	Bayes methods
	Support vector machines

Reliability
UF:	Reliability management
	System reliability
RT:	Aging
	Dependability management
	Electron traps
	Failure analysis
	Life testing
	Power system reliability
	Preventive maintenance
	Quality control
	Quality management
	Redundancy
	Risk analysis
	System improvement
	System recovery
	Thermal management
NT:	Availability
	Fault diagnosis
	Fault tolerance
	Fluctuations
	Integrated circuit reliability
	Maintenance
	Maldistribution
	Materials reliability
	Reliability engineering
	Reliability theory
	Robustness
	Semiconductor device reliability
	Software reliability
	Stability
	Telecommunication network reliability

Reliability engineering
BT:	Reliability
RT:	Weibull distribution

Reliability management
USE:	Management AND Reliability

2021 IEEE Thesaurus

Reliability theory
      BT: Reliability

Reluctance generators
      BT: Synchronous generators

Reluctance machines
      BT: Rotating machines
                 Synchronous machines
      NT: Reluctance motors

Reluctance motors
      BT: Reluctance machines
                 Synchronous motors
      NT: Switched reluctance motors

REM sleep
      USE: Rapid eye movement sleep

Remaining life assessment
      BT: Testing
      RT: Failure analysis
                 Maintenance engineering

Remanence
      BT: Magnetics
      RT: Magnetic fields
                 Magnetic flux
                 Magnetic hysteresis
                 Permanent magnets

Remote control
      BT: Control equipment

Remote handling
      UF: Manipulators (nonrobotic)
      BT: Materials handling
      RT: Remote handling
equipment
                 Telecontrol equipment

Remote handling equipment
      BT: Materials handling
equipment
      RT: Remote handling
                 Telerobotics
                 Waste handling equipment

Remote laboratories
      BT: Laboratories

Remote learning
      USE: Distance learning

Remote monitoring
      BT: Monitoring
                 Remote sensing
      RT: Machine-to-machine
communications

Remote sensing
      BT: Geoscience and remote
sensing
      RT: Atmospheric
measurements
                 Earth
                 Geologic measurements
                 Geophysical measurement
techniques
                 Geophysical measurements
                 Imaging
                 Infrared imaging
                 Land surface temperature
                 Landmine detection
                 Meteorology
                 Microwave imaging
                 Oceanographic techniques
                 Optical imaging
                 Pulse oximetry
                 Radar imaging
                 Radar measurements
                 Radiometry
                 Reconnaissance
                 Sea measurements
                 Soil measurements
                 Sonar measurements
                 Surveillance
                 Terrain mapping
                 Vegetation mapping
                 Water resources
      NT: Hyperspectral sensors
                 Passive microwave remote
sensing
                 Quantum radar
                 Remote monitoring

Remotely guided vehicles
      USE: Unmanned vehicles

Remotely operated automobiles
      USE: Unmanned vehicles

Remotely operated cars
      USE: Unmanned vehicles

Remotely operated vehicles
      USE: Unmanned vehicles

Remuneration

BT: Human resource
management
RT: Employee welfare
NT: Incentive schemes
Pensions

Renal calculi
USE: Kidney stones

Rendering (computer graphics)
BT: Computer graphics
RT: Image synthesis

Renewable energy
USE: Renewable energy sources

Renewable energy resources
USE: Renewable energy sources

Renewable energy sources
UF: Renewable energy
Renewable energy
resources
Renewable-energy
BT: Energy conservation
Environmental
management
RT: Low-carbon economy
Wave power
NT: Biomass

Renewable-energy
USE: Renewable energy sources

Repair
USE: Maintenance engineering

Repeaters
UF: Optical regenerators
BT: Communication equipment

Replica molding
USE: Soft lithography

Replica moulding
USE: Soft lithography

Report writing
USE: Writing

Representational state transfer
BT: Software architecture

Reproducibility of results
UF: Reproductible research

BT: Biomedical measurement
Measurement

Reproductible research
USE: Reproducibility of results

Reproductive cloning
USE: Cloning

Requirements engineering
BT: Systems engineering and
theory
RT: Product design
Project management
Requirements management
Software engineering
Stakeholders
NT: Technical requirements

Requirements management
BT: Management
Systems engineering and
theory
RT: Project management
Requirements engineering

ReRAM
USE: Resistive RAM

Rescue robots
BT: Robots
RT: Emergency services
Hazards
Marine robots

Research & development
USE: Research and development

Research and development
UF: Research & development
BT: Engineering - general
RT: Electrical engineering
Engineering profession
Industrial engineering
International collaboration
Laboratories
Research and development
management
Reverse engineering
Science - general
Technology
Virtual enterprises
Virtual manufacturing
Virtual prototyping
NT: Translational research

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Research and development management
UF:	R & D management	
BT:	Engineering management	
	Management	
RT:	Concurrent engineering	
	Engineering profession	
	Production management	
	Project management	
	Research and development	
	Technology management	
	Venture capital	
NT:	Innovation management	

Research initiatives
BT:	Engineering management

Reservoirs
BT:	Water resources
	Water storage
RT:	Dams
	Lakes
	Land use planning
	Water

Residual networks
USE:	Residual neural networks

Residual neural networks
UF:	Residual networks
BT:	Artificial neural networks

Residual stress
USE:	Residual stresses

Residual stresses
UF:	Residual stress
BT:	Stress

Resilience
UF:	Resiliency
	Resilient systems
BT:	Material properties

Resiliency
USE:	Resilience

Resilient systems
USE:	Resilience

Resin transfer molding
USE:	Transfer molding

Resin transfer moulding
USE:	Transfer molding

Resins
BT:	Materials
RT:	Plastics
	Polymer foams
NT:	Epoxy resins

Resistance
BT:	Electric variables
RT:	Electrical resistance measurement
	Resistance heating
	Skin effect
NT:	Electric resistance
	Piezoresistance
	Surface resistance
	Thermal resistance
	Viscosity

Resistance heating
UF:	Electric heating
BT:	Heating systems
RT:	Electrothermal actuators
	Resistance

Resistive RAM
UF:	RRAM
	ReRAM
BT:	Random access memory
RT:	Memristors
	Phase change memory

Resistive transducers
BT:	Transducers

Resistivity
USE:	Conductivity

Resistivity measurement
USE:	Conductivity measurement

Resistors
BT:	Electronic components
RT:	Electrical ballasts
	Potentiometers
NT:	Memristors
	Switched capacitor networks
	Varistors

Resists
UF:	Photoresists
BT:	Materials

Resonance

RT: Cavity resonators
           Dielectric resonator antennas
           Film bulk acoustic resonators
           Microstrip resonators
           Optical resonators
           Resonant inverters
           Resonant tunneling devices
           Resonator filters
           Resonators
           Vibrations
NT: Ferroresonance
           Magnetic resonance
           Resonance light scattering
           Stochastic resonance

Resonance frequency
       USE: Resonant frequency

Resonance light scattering
       BT: Resonance
           Spectroscopy
       RT: Light scattering

Resonant circuits
       USE: RLC circuits

Resonant converters
       BT: Converters

Resonant frequency
       UF: Resonance frequency
       BT: Frequency
       RT: Oscillators
           Quantum mechanics
       NT: Magnetic resonance

Resonant inverters
       UF: Quasi-resonant inverters
           Quasi-resonant invertors
           Resonant invertors
       BT: Inverters
       RT: Power electronics
           Resonance

Resonant invertors
       USE: Resonant inverters

Resonant tunneling devices
       UF: Resonant tunnelling devices
           Resonant-tunneling devices
           Resonant-tunnelling devices

BT: Tunneling
RT: Quantum well devices
           Resonance
           Single electron devices

Resonant tunnelling devices
       USE: Resonant tunneling devices

Resonant-tunneling devices
       USE: Resonant tunneling devices

Resonant-tunnelling devices
       USE: Resonant tunneling devices

Resonator filters
       BT: Filters
       RT: Resonance

Resonators
       BT: Amplifiers
       RT: Acoustics
           Resonance
           Tuners
       NT: Cavity resonators
           Split ring resonators

Resource allocation
       USE: Resource management

Resource description framework
       UF: RDF
       BT: Semantic Web

Resource distribution
       USE: Resource management

Resource management
       UF: Allocation
           Radio resource management
           Resource allocation
           Resource distribution
           Resource sharing
           Resource utilisation
           Resource utilization
           Resources management
       BT: Management
       RT: Business process integration
           Business process management
           Cluster computing
           Environmental engineering
           Forestry
           Operations research

System integration
NT: Elastic computing
Network resource management
Resource virtualization

Resource sharing
USE: Resource management

Resource utilisation
USE: Resource management

Resource utilization
USE: Resource management

Resource virtualization
BT: Resource management

Resources management
USE: Resource management

Respiratory diseases
USE: Pulmonary diseases

Respiratory medicine
USE: Pulmonology

Respiratory system
UF: Asthma
Bronchi
BT: Anatomy
RT: Intubation
Pulmonary diseases
Pulmonology
Ventilators
NT: Larynx
Lung

Respirology
USE: Pulmonology

Response surface methodology
BT: Surface fitting
RT: Optimization methods

Restful API
BT: Application programming interfaces
Software architecture

Resumes
BT: Writing

Retail price index
USE: Economic indicators

Retardants
BT: Production materials
RT: Inhibitors
NT: Flame retardants

Retina
UF: Retinal
BT: Eyes
RT: Ophthalmology
NT: Retinal vessels

Retinal
USE: Retina

Retinal vessels
BT: Retina

Retinopathy
BT: Diseases

Retirement
BT: Human resource management

Reverberation
BT: Acoustics

Reverberation chambers
BT: Electromagnetic compatibility

Reverse engineering
BT: Engineering - general
RT: Product development
Research and development

Reverse logistics
BT: Logistics

Reverse osmosis
BT: Chemical processes
RT: Desalination

Reverse teaching
USE: Education AND
Online services

Reversible computing
BT: Computational modeling
Time complexity

Reviews
BT: Writing

2021 IEEE Thesaurus

RF
      USE: Radio frequency

RF interference
      USE: Electromagnetic interference

RF micro-electro-mechanical systems
      USE: Radiofrequency microelectromechanical systems

RF microelectromechanical systems
      USE: Radiofrequency microelectromechanical systems

RF signals
      BT: Signal processing

RFIC
      USE: Radiofrequency integrated circuits

RFID
      USE: Radiofrequency identification

RFID tags
      BT: Radiofrequency identification
      NT: Active RFID tags
                 Passive RFID tags

Rhenium
      BT: Chemical elements

Rheology
      BT: Fluid dynamics
      RT: Viscosity

Rhetoric
      BT: Professional communication

Rhodium
      BT: Chemical elements

Rhombencephalon
      USE: Hindbrain

Rhythm
      BT: Music

Ribonucleic acid
      USE: RNA

Ribs
      BT: Thorax

Riccati equations
      BT: Equations

Rician channels
      UF: Rician fading
                 Rician fading channels
      BT: MIMO communication

Rician fading
      USE: Rician channels

Rician fading channels
      USE: Rician channels

Rigidity
      BT: Material properties

Ring generators
      BT: Automatic testing
                 Testing

Ring lasers
      BT: Lasers
      RT: Gyroscopes
      NT: Fiber lasers

Ring oscillators
      BT: Oscillators

Ring resonators
      USE: Optical ring resonators

RISC
      USE: Reduced instruction set computing

Risk analysis
      BT: Management
      RT: Accident prevention
                 Accidents
                 Decision making
                 Occupational health
                 Occupational safety
                 Reliability
                 Safety
                 Technology social factors
                 Venture capital
      NT: Fault trees
                 Risk management
                 Threat assessment

Risk assessment

2021 IEEE Thesaurus

USE: Risk management

Risk handling
USE: Risk management

Risk management
UF: Risk assessment
Risk handling
Risk minimization
Risk mitigation
Risk reduction
BT: Risk analysis
RT: Contract management

Risk minimization
USE: Risk management

Risk mitigation
USE: Risk management

Risk reduction
USE: Risk management

Rivers
BT: Geoscience
RT: Excavation
Floods
Lakes
Sediments
Water
Water pollution
Water resources
Wetlands

RLC circuits
UF: Resonant circuits
BT: Circuits
Tunable circuits and devices

RNA
UF: Ribonucleic acid
BT: Biological cells

RNN
USE: Recurrent neural networks

Road accidents
BT: Accidents
RT: Road safety
Road vehicles

Road bridges
USE: Structural panels

Road safety
BT: Roads
RT: Automated highways
Automotive engineering
Lane detection
Road accidents
Vehicle-to-everything
NT: Lane departure warning systems

Road side unit
BT: Relays
Vehicular ad hoc networks

Road traffic control
BT: Road transportation
Traffic control

Road transportation
UF: Highways
BT: Land transportation
RT: Civil engineering
Global Positioning System
NT: Road traffic control
Roads
Traffic congestion

Road vehicles
BT: Land vehicles
RT: Road accidents
Roads
NT: Automobiles
Motorcycles

Roadmaps (technology planning)
BT: Strategic planning
Technology forecasting

ROADMS
USE: Optical add-drop multiplexers

Roads
BT: Road transportation
RT: Civil engineering
Excavation
Road vehicles
NT: Road safety

Roaming
BT: Wireless communication
RT: Dual band
GSM

Robot automobiles

USE: Autonomous automobiles

Robot cars
    USE: Autonomous automobiles

Robot control
    UF: Robotic control
    BT: Control systems
              Robots
    RT: Force control
              Motion planning
              Trajectory tracking
    NT: Robot motion

Robot kinematics
    BT: Robots
    NT: Motion analysis

Robot learning
    BT: Machine learning
              Robots
    RT: Artificial intelligence

Robot localization
    BT: Motion analysis
    RT: Robot sensing systems

Robot motion
    UF: Robotic motion
    BT: Robot control

Robot operating systems
    USE: Operating systems

Robot programming
    UF: Robotic programming
    BT: Programming
              Robots

Robot sensing systems
    UF: Manipulator sensing systems
              Mobile robot sensing systems
              Robot sensor networks
    BT: Robots
              Sensor systems and applications
    RT: Multisensor systems
              Robot localization
    NT: Robot vision systems
              Simultaneous localization and mapping
              Tactile sensors

Robot sensor networks
    USE: Robot sensing systems

Robot vision systems
    UF: Manipulator vision systems
              Mobile robot vision systems
    BT: Robot sensing systems
    RT: Image sensors
              Imaging
              Intelligent robots
              Object detection
              Object recognition
              Pattern recognition
              Stereo vision
    NT: Visual servoing

Robot-assisted surgery
    USE: Surgery

Robotic assembly
    UF: Assembly robots
    BT: Assembly systems
    RT: Robotics and automation

Robotic control
    USE: Robot control

Robotic motion
    USE: Robot motion

Robotic programming
    USE: Robot programming

Robotics and automation
    RT: Image motion analysis
              Industrial Internet of Things
              Robotic assembly
    NT: Animatronics
              Automation
              Autonomous systems
              Multi-robot systems
              Robots

Robots
    BT: Robotics and automation
    RT: Assembly systems
              Botnet
              Control equipment
              Control systems
              Cybernetics
              Industrial control
              Manufacturing automation
              Materials handling
              Mechanical variables control

	Mechatronics
	Nonlinear systems
	Servosystems
NT:	Agricultural robots
	Androids
	Aquatic robots
	Automata
	Autonomous robots
	Bio-inspired robotics
	Cognitive robotics
	Computer vision
	Educational robots
	Evolutionary robotics
	Humanoid robots
	Intelligent robots
	Manipulators
	Marine robots
	Medical robotics
	Mobile robots
	Orbital robotics
	Parallel robots
	Rehabilitation robotics
	Rescue robots
	Robot control
	Robot kinematics
	Robot learning
	Robot programming
	Robot sensing systems
	Service robots
	Snake robots
	Soft robotics
	Telerobotics
	Visual odometry
	Wearable robots

Robust control
- UF: Active disturbance rejection control
- BT: System analysis and design
- RT: Disturbance observers

Robust stability
- BT: Stability

Robustness
- BT: Reliability
- RT: Control systems
- Sensitivity
- Stability
- Uncertain systems

Rockets
- BT: Propulsion
- RT: Engines
- Ground support

Rocks
- BT: Geology

Rodents
- BT: Animals

Roentgenium
- BT: Chemical elements

Role transfer
- BT: Organizational aspects

Roller bearings
- USE: Rolling bearings

Rolling bearings
- UF: Roller bearings
- Rolling contact bearings
- Rolling element bearings
- BT: Mechanical bearings
- RT: Ball bearings

Rolling contact bearings
- USE: Rolling bearings

Rolling element bearings
- USE: Rolling bearings

Rollover
- BT: Vehicle dynamics

ROM
- USE: Read only memory

Roof mounted photovoltaics
- USE: Building integrated photovoltaics

Roof mounted solar cell arrays
- USE: Building integrated photovoltaics

Root cause analysis
- BT: Process planning
- RT: Failure analysis

Root kit
- USE: Rootkit

Root mean square
- UF: Root mean square error
- Root mean square value
- BT: Mathematics
- Statistics

Root mean square error
　　USE:　　Root mean square

Root mean square value
　　USE:　　Root mean square

Rootkit
　　UF:　　Root kit
　　BT:　　Malware

Roots
　　USE:　　Poles and zeros

Rotating machines
　　BT:　　Electric machines
　　RT:　　Brushes
　　　　　　Coils
　　　　　　DC generators
　　　　　　Synchronous motors
　　　　　　Windings
　　NT:　　Generators
　　　　　　Hysteresis motors
　　　　　　Induction machines
　　　　　　Induction motors
　　　　　　Micromotors
　　　　　　Permanent magnet machines
　　　　　　Reluctance machines
　　　　　　Servomotors
　　　　　　Standby generators

Rotation measurement
　　UF:　　Rotation representation
　　BT:　　Mechanical variables measurement

Rotation representation
　　USE:　　Rotation measurement

Rotational measurement
　　USE:　　Velocity control

Rotational speed
　　USE:　　Velocity control

Rotors
　　BT:　　Electric machines
　　　　　　Machine components

Rough sets
　　BT:　　Set theory

Rough surfaces
　　BT:　　Surfaces

　　RT:　　Polishing machines
　　　　　　Surface roughness
　　　　　　Terrain factors
　　NT:　　Corrugated surfaces

Round robin
　　BT:　　Scheduling algorithms

Roundoff errors
　　BT:　　Finite wordlength effects
　　RT:　　Error analysis
　　　　　　Noise

Routing
　　BT:　　Communication systems
　　RT:　　Multicast communication
　　　　　　Routing protocols
　　　　　　Soft switching
　　NT:　　Wavelength routing

Routing protocols
　　BT:　　Protocols
　　RT:　　Internet
　　　　　　Land mobile radio
　　　　　　Mobile communication
　　　　　　Multicast protocols
　　　　　　Multiprotocol label switching
　　　　　　Routing
　　　　　　Wireless access points

RPI
　　USE:　　Economic indicators

RRAM
　　USE:　　Resistive RAM

RRI
　　USE:　　Rail to rail inputs

RRO
　　USE:　　Rail to rail outputs

RSSI
　　USE:　　Received signal strength indicator

Rubber
　　BT:　　Insulators
　　RT:　　Rubber industry
　　　　　　Rubber products

Rubber industry
　　BT:　　Manufacturing industries
　　RT:　　Chemical industry

Rubber
Rubber products

Rubber products
BT: Manufactured products
RT: Hoses
        Rubber
        Rubber industry
        Wastewater treatment
NT: Tires

Rubidium
BT: Chemical elements

Rule based systems
USE: Knowledge based systems

Runtime
BT: Software engineering
RT: Programming
NT: Dynamic compiler
        Runtime environment

Runtime environment
BT: Runtime

Runtime library
BT: Formal languages

Rural areas
BT: Geography
RT: Macrocell networks
        Public infrastructure

Ruthenium
BT: Chemical elements

Rydberg atoms
UF: Rydberg sensors
BT: Electric variables
measurement
        Physics

Rydberg sensors
USE: Rydberg atoms

S parameters
USE: Scattering parameters

S-parameters
USE: Scattering parameters

S/N
USE: Signal to noise ratio

SaaS
USE: Software as a service

Safety
BT: Industry applications
        Product safety engineering
RT: Alarm systems
        Control system security
        Electric shock
        Environmental factors
        Explosions
        Eye protection
        Fires
        Hazardous areas
        Occupational health
        Preventive maintenance
        Protective clothing
        Radiation effects
        Radioactive materials
        Radioactive pollution
        Risk analysis
NT: Aerospace safety
        Domestic safety
        Emergency services
        Explosion protection
        Fire safety
        Hazards
        Health and safety
        Marine safety
        Product safety
        Protection
        Radiation safety
        Safety devices
        Safety management
        Vehicle safety

Safety devices
BT: Safety
RT: Accident prevention
        Alarm systems
        Railway safety
        Smoke detectors
NT: Eye protection
        Fire extinguishers
        Protective clothing

Safety in the home
USE: Domestic safety

Safety management
BT: Management
        Safety
RT: Dependability management

Sagnac interferometers

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BT: Interferometry

Sales promotion
    USE: Promotion - marketing

Saliency detection
    BT: Image processing
    RT: Feature detection
           Feature extraction
           Visual systems

Salinity (geophysical)
    BT: Soil measurements
    RT: Geochemistry
           Ocean salinity
           Sea measurements
           Sea surface salinity

Salivary glands
    UF: Parotid
    BT: Glands
           Stomatognathic system

Samarium
    BT: Metals
    NT: Samarium alloys

Samarium alloys
    BT: Samarium

Sampled data circuits
    BT: Circuits

Sampled data systems
    BT: Discrete-time systems

Sampling methods
    BT: Statistics
    RT: Signal sampling
    NT: Compressed sensing
           Nonuniform sampling

SAN
    USE: Storage area networks

Sandblasting
    BT: Surface treatment
    RT: Surface roughness

Sandwich structures
    BT: Structural shapes
    RT: Honeycomb structures
           Lightweight structures
           Sheet materials
           Structural panels

           Thin wall structures

Sanitary engineering
    BT: Engineering - general
    RT: Environmental management
           Sewage treatment
           Waste disposal
           Waste management
           Waste materials
           Wastewater
           Wastewater treatment
           Water pollution

SAR
    USE: Specific absorption rate
AND
           Synthetic aperture radar

SAR imaging
    USE: Radar polarimetry

SAS
    USE: Synthetic aperture sonar

Satellite antennas
    BT: Antennas

Satellite born radar
    USE: Spaceborne radar

Satellite borne radar
    USE: Spaceborne radar

Satellite broadcasting
    UF: DBS
           Direct broadcast satellites
           Satellite broadcasts
    BT: Broadcasting
           Satellite communication
    RT: Global Positioning System

Satellite broadcasts
    USE: Satellite broadcasting

Satellite communication
    UF: Communication satellites
    BT: Communication systems
           Radio communication
    RT: Artificial satellites
           Convolutional codes
           Global Positioning System
           Handover
           Radiation hardening (electronics)

Transponders
NT: Downlink
Satellite broadcasting
Satellite ground stations
Uplink

Satellite constellations
BT: Satellite navigation systems

Satellite ground stations
BT: Communication systems
Radio communication
Satellite communication
RT: Communication equipment

Satellite navigation systems
BT: Navigation
RT: Radio navigation
Time dissemination
NT: Global Positioning System
Global navigation satellite system
Satellite constellations

Satellites
BT: Solar system
RT: Artificial satellites
NT: Geostationary satellites
Geosynchronous satellites
Moon
Small satellites

Saturation detection
USE: Feedback

Saturation magnetisation
USE: Saturation magnetization

Saturation magnetization
UF: Saturation magnetisation
BT: Magnetization processes
RT: Magnetic fields
Magnets

Saturn
BT: Planets

SAW filters
BT: Electromechanical devices

Sawing
BT: Machining
RT: Sawing machines

Sawing machines

BT: Machine tools
RT: Sawing

SCADA systems
UF: Supervisory control and data acquisition systems
Supervisory control and data-acquisition systems
BT: Control systems
Power system control
Supervisory control
RT: Substation automation

Scalability
BT: System analysis and design

Scalp
BT: Head

Scandium
BT: Chemical elements

Scanning electron microscopy
UF: SEM
BT: Electron microscopy
RT: Electron beam applications
Particle scattering

Scanning microwave microscopy
BT: Microscopy
RT: Atomic force microscopy

Scanning probe data storage
BT: Memory

Scanning probe microscopy
BT: Microscopy
NT: Scanning thermal microscopy

Scanning thermal microscopy
BT: Scanning probe microscopy

Scattering
UF: Backscattering
Wave scattering
BT: Propagation
RT: Reflection
Scattering parameters
NT: Acoustic scattering
Brillouin scattering
Electromagnetic scattering
Light scattering
Particle scattering

Scattering parameters
UF:	S parameters
	S-parameters
BT:	System analysis and design
RT:	Circuits
	Scattering

Scatternets
USE:	Personal area networks

Scene analysis
USE:	Image analysis

Scene classification
USE:	Image analysis

Schedules
BT:	Planning
RT:	Scheduling

Scheduling
BT:	Organizational aspects
	Production control
	Project engineering
RT:	Materials requirements planning
	Queueing analysis
	Schedules
	Statistics
	Synchronization
NT:	Adaptive scheduling
	Dynamic scheduling
	Job shop scheduling
	Single machine scheduling

Scheduling algorithms
BT:	Optical fiber communication
	Processor scheduling
NT:	Round robin

Scholarships
BT:	Educational programs

Schools
USE:	Educational institutions

Schottky barriers
UF:	Schottky contacts
BT:	Semiconductor-metal interfaces
RT:	MESFETs
	Schottky diodes

Schottky contacts
USE:	Schottky barriers

Schottky diode
USE:	Schottky diodes

Schottky diodes
UF:	Schottky diode
BT:	Semiconductor devices
	Semiconductor diodes
RT:	Schottky barriers
	Semiconductor-metal interfaces

Schottky FETs
USE:	MESFETs

Schottky gate FET
USE:	Schottky gate field effect transistors

Schottky gate field effect transistors
UF:	Schottky gate FET
BT:	Field effect transistors

Schrodinger equation
BT:	Quantum mechanics
RT:	Electrons

Science - general
RT:	Econophysics
	Neurophysiology
	Research and development
	STEM
NT:	Astronomy
	Biology
	Chemistry
	Electricity
	Epidemiology
	Geoscience
	History
	Life sciences
	Metrology
	Neuroscience
	Physics
	Social sciences
	Thermodynamics

science technology engineering and math
USE:	STEM

Science technology engineering mathematics
USE:	STEM

science, technology, engineering, and math
USE:	STEM

Scientific computing
UF:	Computational science	
BT:	Computer applications	

Scientific publishing
BT:	Publishing

Scintillation counters
BT:	Measurement
	Nuclear and plasma sciences
NT:	Solid scintillation detectors

Scintillators
BT:	Radiation effects
RT:	Luminescence

SCM supply chains
USE:	Supply chain management

Scooters
USE:	Motorcycles

SCR
USE:	Thyristors

Screws
USE:	Fasteners

Scrubbers
USE:	Materials handling

Scrum (Software development)
BT:	Agile software development
RT:	Feedback
	Project management
	Software development management

SDH
USE:	Synchronous digital hierarchy

SDHTs
USE:	MODFETs

SDN
USE:	Software defined networking

SDRAM
UF:	Synchronous DRAM
	Synchronous dynamic random access memory
BT:	Random access memory

Sea animals
USE:	Marine animals

Sea coast
BT:	Oceans

Sea floor
UF:	Seafloor
BT:	Oceans
RT:	Sediments
NT:	Bathymetry
	Sea floor roughness

Sea floor roughness
BT:	Sea floor

Sea ice
BT:	Ice
RT:	Oceans

Sea level
BT:	Oceans
RT:	Ocean circulation

Sea measurements
UF:	Current measurement (water)
BT:	Geophysical measurements
RT:	Oceans
	Remote sensing
	Salinity (geophysical)
	Sonar measurements
NT:	Geoacoustic inversion

Sea ports
USE:	Seaports

Sea state
BT:	Measurement
	Ocean waves
RT:	Marine navigation
	Sea surface roughness

Sea surface
BT:	Oceans
RT:	Surface waves
	Wind
NT:	Sea surface roughness
	Sea surface salinity

Sea surface roughness
BT:	Sea surface
RT:	Sea state

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Sea surface salinity
    BT: Sea surface
    RT: Salinity (geophysical)

Sea surface temperature
    USE: Ocean temperature

Sea vegetation
    USE: Marine vegetation

Seafloor
    USE: Sea floor

Sealants
    USE: Sealing materials

Sealing materials
    UF: Sealants
    BT: Joining materials
    RT: Seals

Seals
    BT: Mechanical products
    RT: Packaging
            Sealing materials
            Structural rings
    NT: Gaskets
            Hermetic seals

Seaports
    UF: Sea ports
    BT: Industrial facilities
            Transportation
    RT: Marine transportation
            Marine vehicles

Search engines
    UF: Google
    BT: Information retrieval

Search methods
    BT: Information retrieval
    RT: Genetic algorithms
            Gradient methods
            Nearest neighbor methods
            Optimization methods
            Ranking (statistics)
    NT: Keyword search
            Metasearch
            Search problems
            Semantic search
            Web search

Search problems
    BT: Search methods

    RT: Artificial bee colony algorithm

Seat belts
    USE: Belts

Sebaceious glands
    USE: Sebaceous glands

Sebaceous glands
    UF: Sebaceious glands
    BT: Glands
            Skin

Second Life
    BT: Social networking (online)

Secondary cells
    USE: Batteries

Secondary electron emission
    USE: Electron emission

Secondary generated hot electron injection
    UF: Secondary generated hot-electron injection
    BT: Hot carrier injection

Secondary generated hot-electron injection
    USE: Secondary generated hot electron injection

Secondary ion emission
    USE: Ion emission

Secure storage
    BT: Material storage
    RT: Security

Security
    BT: Industry applications
    RT: Anti-virus software
            Biometrics (access control)
            Bring your own device
            Business continuity
            Identification of persons
            Malware
            Physical unclonable function
            Protection
            Secure storage
            Surveillance
    NT: Access control
            Alarm systems
            Capability-based security

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Computer security
Control system security
Cryptography
Data security
Digital signatures
Information security
Network security
Power system security
Reconnaissance
Security management
Terrorism
Watermarking

Security management
 BT: Management
   Security

Security of data
 USE: Data security

Sediments
 UF: Mud
 BT: Geoscience
 RT: Lakes
   Rivers
   Sea floor
   Soil

Seebeck effect
 USE: Thermoelectricity

Seismic measurements
 UF: Seismic visualization
 BT: Geophysical measurements
 RT: Acoustic measurements
   Seismology

Seismic retrofitting
 USE: Earthquake engineering

Seismic visualization
 USE: Seismic measurements

Seismic waves
 BT: Waves
 RT: Acoustic waves
   Earthquakes
   Elastodynamics
   Explosions
   Seismology
   Shock waves

Seismology
 BT: Geophysics
 RT: Earthquake engineering

Earthquakes
Seismic measurements
Seismic waves
Well logging

Selective laser sintering
 USE: Laser sintering

Selectively doped heterojunction transistors
 USE: MODFETs

Selenium
 BT: Chemical elements

Self organising feature maps
 USE: Self-organizing feature maps

Self organizing feature maps
 USE: Self-organizing feature maps

Self organizing maps
 USE: Self-organizing feature maps

Self organizing networks
 USE: Self-organizing networks

Self replicating machines
 USE: Self-replicating machines

Self testing
 USE: Automatic testing

Self-assembly
 BT: Nanotechnology
 RT: Biological cells
   Programming
   Semiconductor device manufacture
   Thin films
 NT: Electrostatic self-assembly

Self-aware
 BT: Cognition

Self-driving automobiles
 USE: Autonomous automobiles

Self-driving car
 USE: Autonomous automobiles

Self-dynamic voltage scaling
 USE: Dynamic voltage scaling

Self-organizing feature maps
UF: Kohonen maps
SOM
Self organising feature maps
Self organizing feature maps
Self organizing maps
Self-organizing maps
BT: Artificial neural networks
RT: Feedforward neural networks
Knowledge acquisition

Self-organizing maps
USE: Self-organizing feature maps

Self-organizing networks
UF: Self organizing networks
BT: Wireless networks

Self-replicating machines
UF: Self replicating machines
BT: Nanotechnology

Self-study courses
BT: Educational programs

Self-testing
USE: Built-in self-test

Self-tuning regulators
USE: Adaptive control

SEM
USE: Scanning electron microscopy

Semantic search
BT: Search methods
Semantics
RT: Context awareness
Natural language processing
Ontologies
Query processing
Semantic Web

Semantic technology
BT: Information technology
Semantics
RT: Data models
Encoding
Natural language processing
Semantic Web

Semantic triple
USE: Triples (Data structure)

Semantic Web
BT: Internet
RT: Artificial intelligence
Content management
Data models
Distributed computing
Document handling
Knowledge management
Linked data
Markup languages
Ontologies
Open data
Ranking (statistics)
Semantic search
Semantic technology
NT: OWL
Resource description framework

Semantics
BT: Semiotics
RT: Natural language processing
Professional communication
Sign language
NT: Semantic search
Semantic technology

Semi-insulating materials
USE: Semiconductor materials

Semi-supervised learning
USE: Semisupervised learning

Semiconductivity
BT: Conductivity
Electron devices
RT: Charge carriers

Semiconductor alloys
USE: Semiconductor materials

Semiconductor charge carriers
USE: Charge carrier processes

Semiconductor controlled rectifiers
USE: Thyristors

Semiconductor counters
UF:	Junction detectors
BT:	Semiconductor devices
RT:	Position sensitive particle detectors

Semiconductor detectors
BT:	Detectors
	Semiconductor devices
RT:	Absorption
	Particle charging

Semiconductor device breakdown
BT:	Failure analysis
RT:	Semiconductor device reliability
	Semiconductor device testing
	Tolerance analysis

Semiconductor device doping
UF:	Semiconductor doping
BT:	Semiconductor device manufacture
RT:	Doping
	Quasi-doping
	Semiconductor materials

Semiconductor device manufacture
BT:	Electronic equipment manufacture
RT:	Fiducial markers
	Gettering
	Ion implantation
	Microassembly
	Micromachining
	Nanotechnology
	Self-assembly
	Semiconductor devices
	Surface cleaning
	Surface contamination
NT:	Diffusion processes
	Flip-chip devices
	High-k gate dielectrics
	Physical unclonable function
	Quasi-doping
	Semiconductor device doping
	Semiconductor epitaxial layers
	Semiconductor growth
	Silicidation
	Wafer bonding

Semiconductor device measurement
BT:	Measurement
RT:	Refractive index
	Semiconductor device noise
	Semiconductor device reliability
	Semiconductor device testing

Semiconductor device modeling
UF:	Semiconductor device models
BT:	Modeling
	Semiconductor devices
RT:	Semiconductor device noise

Semiconductor device models
USE:	Semiconductor device modeling

Semiconductor device noise
BT:	Semiconductor devices
RT:	Integrated circuit noise
	Semiconductor device measurement
	Semiconductor device modeling

Semiconductor device packaging
BT:	Components, packaging, and manufacturing technology
RT:	Integrated circuit packaging
	Semiconductor devices

Semiconductor device reliability
BT:	Reliability
RT:	Semiconductor device breakdown
	Semiconductor device measurement

Semiconductor device testing
BT:	Testing
RT:	Semiconductor device breakdown
	Semiconductor device measurement

Semiconductor devices
UF:	SIS devices (semiconductor)

Semiconductor-insulator-semiconductor devices
- BT: Electron devices
- RT: Contacts
  Epitaxial growth
  Field effect transistors
  Heterojunction bipolar transistors
  Hot carriers
  Integrated circuits
  Molecular beam applications
  Photoconducting devices
  Physical unclonable function
  Proton radiation effects
  Rapid thermal annealing
  Semiconductor device manufacture
  Semiconductor device packaging
  Silicon-on-insulator
  Varistors
- NT: Flip-chip devices
  Gunn devices
  Hall effect devices
  Junctions
  MIS devices
  MONOS devices
  P-i-n diodes
  Piezoresistive devices
  Power semiconductor devices
  Power semiconductor switches
  Quantum dots
  Quantum well lasers
  SONOS devices
  Schottky diodes
  Semiconductor counters
  Semiconductor detectors
  Semiconductor device modeling
  Semiconductor device noise
  Semiconductor diodes
  Semiconductor lasers
  Semiconductor waveguides
  Semiconductor-insulator interfaces
  Silicon devices
  Superluminescent diodes
  Surface emitting lasers
  Thermistors
  Transistors

Semiconductor diodes
- BT: Semiconductor devices
- RT: Diodes
  Magnetic field induced strain
  P-n junctions
- NT: P-i-n diodes
  Schottky diodes
  Semiconductor-metal interfaces
  Superluminescent diodes
  Varactors

Semiconductor doping
- USE: Semiconductor device doping

Semiconductor electronics industry
- USE: Electronics industry

Semiconductor epitaxial layers
- UF: Silicon epitaxial layers
- BT: Semiconductor device manufacture
- RT: Bipolar transistors

Semiconductor films
- BT: Films
- RT: Buffer layers
  Dielectric thin films
  Magnetic field induced strain
  Semiconductor growth
  Semiconductor materials
  Thick films
  Thin films

Semiconductor growth
- BT: Semiconductor device manufacture
- RT: Buffer layers
  Crystal growth
  Epitaxial layers
  Semiconductor films
  Semiconductor materials

Semiconductor impurities
- BT: Impurities
- RT: Charge carrier processes
  Plasma immersion ion implantation
  Semiconductor materials

Semiconductor industry

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USE: Electronics industry

Semiconductor laser arrays
BT: Semiconductor lasers

Semiconductor lasers
UF: Injection lasers
Junction lasers
Laser diodes
BT: Lasers
Semiconductor devices
Solid lasers
RT: Molecular beam applications
Optical transmitters
Refractive index
NT: Laser tuning
Quantum dot lasers
Quantum well lasers
Semiconductor laser arrays
Semiconductor optical amplifiers
Surface emitting lasers

Semiconductor materials
UF: Pseudobinary semiconductors
Semi-insulating materials
Semiconductor alloys
BT: Materials
RT: Acoustoelectric effects
Charge carriers
Conducting materials
Crystals
Excitons
High-k dielectric materials
Photoconducting materials
Radiative recombination
Semiconductor device doping
Semiconductor films
Semiconductor growth
Semiconductor impurities
Semiconductor thin films
Silicon compounds
Tunneling
NT: Amorphous semiconductors
Deep level transient spectroscopy
Elemental semiconductors
Gallium
Gallium arsenide
Germanium
II-VI semiconductor materials

III-V semiconductor materials
Indium gallium arsenide
Indium phosphide
Magnetic semiconductors
Organic semiconductors
Semiconductor superlattices
Silicon
Silicon germanium
Substrates
Wide band gap semiconductors

Semiconductor memory
UF: Semiconductor storage
BT: Memory
RT: Integrated circuits
NT: Integrated memory circuits

Semiconductor nanostructures
BT: Nanostructures

Semiconductor nanotubes
BT: Nanotubes

Semiconductor optical amplifiers
UF: SOA
BT: Optical amplifiers
Semiconductor lasers
RT: Optical transmitters
Quantum well lasers

Semiconductor process modeling
BT: Modeling
RT: Circuit simulation

Semiconductor quantum wells
USE: Quantum wells

Semiconductor radiation detectors
BT: Radiation detectors

Semiconductor storage
USE: Semiconductor memory

Semiconductor superlattices
BT: Semiconductor materials
Superlattices

Semiconductor thin films
BT: Thin films
RT: Epitaxial growth
Gallium
Germanium

Semiconductor materials
Silicon

Semiconductor waveguides
BT: Semiconductor devices

Semiconductor-insulator interfaces
BT: Semiconductor devices
RT: CMOSFETs
MIM devices
MIS devices
MOS devices
Silicon-on-insulator

Semiconductor-insulator-semiconductor devices
USE: Semiconductor devices

Semiconductor-metal interfaces
UF: Metal-semiconductor interfaces
BT: Semiconductor diodes
RT: Magnetic field induced strain
Schottky diodes
NT: Schottky barriers

Semicustom integrated circuits
USE: Application specific integrated circuits

Seminars
BT: Educational programs
NT: Webinars

Semiology
USE: Semiotics

Semiosis
USE: Semiotics

Semiotic studies
USE: Semiotics

Semiotics
UF: Semiology
Semiosis
Semiotic studies
BT: Communication symbols
RT: Communication symbols
Linguistics
Natural language processing
Phonetics
Professional communication

NT: Pragmatics
Semantics
Syntactics

Semisupervised learning
UF: Semi-supervised learning
BT: Learning systems
RT: Supervised learning
Unsupervised learning

Senior citizens
UF: Elderly
BT: Social groups
RT: Aging
Assisted living
Geriatrics
Gerontology

Sense and avoid
USE: Collision avoidance

Sense organs
BT: Anatomy
NT: Ear
Eyes
Multisensory integration
Nose
Olfactory bulb
Taste buds
Visual systems

Sensitivity
BT: Measurement
RT: Circuit analysis
Control systems
Robustness
Tolerance analysis
NT: Sensitivity analysis

Sensitivity analysis
BT: Sensitivity

Sensitivity and specificity
BT: Biomedical measurement
Medical diagnosis

Sensor arrays
BT: Arrays
Sensor systems and applications
NT: Sensor fusion

Sensor fusion
BT: Sensor arrays
RT: Active perception

Kalman filters
Multimodal sensors
NT: Multisensor systems

Sensor phenomena and characterization
    BT: Sensors

Sensor placement
    BT: Sensors

Sensor systems
    BT: Aerospace and electronic systems
            Sensor systems and applications
    RT: Navigation
    NT: Activity recognition
            Gunshot detection systems

Sensor systems and applications
    BT: Sensors
    NT: Detectors
            Electric sensing devices
            Leak detection
            Radiofrequency identification
            Robot sensing systems
            Sensor arrays
            Sensor systems

Sensorless control
    BT: Control systems
    RT: AC machines
            DC machines
            Drives
            Induction motors
            Inductive power transmission
            Motor drives
            Motors

Sensors
    UF: Sun sensors
    RT: Capacitive transducers
            Magnetostrictive devices
            Wireless sensor networks
    NT: Acoustic sensors
            Chemical and biological sensors
            Electromechanical sensors
            Force sensors
            Glucose sensors
            Inertial sensors
            Infrared sensors
            Intelligent sensors

            Intracranial pressure sensors
            Ionizing radiation sensors
            Magnetic sensors
            Mechanical sensors
            Multimodal sensors
            Nanosensors
            Optical sensors
            Optoelectronic and photonic sensors
            Pressure sensors
            Sensor phenomena and characterization
            Sensor placement
            Sensor systems and applications
            Thermal sensors
            Thick film sensors
            Thin film sensors
            Vision sensors
            Wearable sensors

Sensors (image)
    USE: Image sensors

Sensory aids
    BT: Medical services
    RT: Assistive technology
            Biomedical equipment
            Orthotics
            Prosthetics
    NT: Hearing aids

Sentiment analysis
    UF: Opinion mining
    BT: Computational linguistics
            Natural language processing
    RT: Emotion recognition
            Information analysis

Separation processes
    BT: Materials science and technology
    NT: Fractionation
            Particle separators

Separators
    USE: Particle separators

September 11
    USE: Terrorism

Sequence analysis
    USE: Sequences

Sequences
　　UF:　　Digital sequences
　　　　　　Sequence analysis
　　BT:　　Mathematics
　　RT:　　Codes
　　NT:　　Binary sequences
　　　　　　Random sequences

Sequencing
　　USE:　　Sequential analysis

Sequential analysis
　　UF:　　Sequencing
　　BT:　　System analysis and design
　　NT:　　Zero correlation zone

Sequential circuits
　　UF:　　Sequential logic circuits
　　BT:　　Circuits

Sequential diagnosis
　　BT:　　System analysis and design

Sequential logic circuits
　　USE:　　Sequential circuits

Sequential production
　　USE:　　Flow production systems

Serious games
　　BT:　　Games
　　　　　　Simulation

Servers
　　BT:　　Client-server systems
　　RT:　　Network function virtualization
　　NT:　　Web servers

Service composability
　　USE:　　Interoperability

Service computing
　　BT:　　Information technology
　　RT:　　Business
　　　　　　Cloud computing
　　　　　　Process design
　　　　　　Service-oriented architecture
　　　　　　Service-oriented systems engineering
　　　　　　Web services
　　NT:　　Service level agreements

Service function chaining
　　UF:　　Service function chains
　　BT:　　Software defined networking

Service function chains
　　USE:　　Service function chaining

Service level agreements
　　UF:　　SLA
　　BT:　　Contracts
　　　　　　Service computing
　　RT:　　Internet
　　　　　　Quality of service

Service oriented architecture
　　USE:　　Service-oriented architecture

Service robots
　　BT:　　Robots
　　RT:　　Home automation
　　　　　　Manipulators
　　　　　　Mobile robots
　　　　　　Wearable robots

Service-oriented architecture
　　UF:　　SOA
　　　　　　Service oriented architecture
　　　　　　Service-oriented architectures
　　BT:　　Web services
　　RT:　　Service computing
　　　　　　Service-oriented systems engineering

Service-oriented architectures
　　USE:　　Service-oriented architecture

Service-oriented systems engineering
　　UF:　　SOSE
　　BT:　　Systems engineering and theory
　　RT:　　Formal specifications
　　　　　　Service computing
　　　　　　Service-oriented architecture
　　　　　　Software engineering

Servo control
　　USE:　　Servosystems

Servo-control

USE: Servosystems

Servomechanisms
BT: Servomotors
RT: Actuators
Manipulators

Servomotors
UF: Servos
BT: Motors
Rotating machines
Servosystems
NT: Servomechanisms

Servos
USE: Servomotors

Servosystems
UF: Servo control
Servo-control
BT: Control equipment
RT: Actuators
Manipulators
Motion control
Motor drives
Position control
Robots
Velocity control
NT: Servomotors

Set theory
BT: Algebra
Mathematics
RT: Boolean algebra
Maximum likelihood estimation
NT: Fuzzy set theory
Fuzzy sets
Rough sets

SEU
USE: Single event upsets

Sewage treatment
BT: Waste handling
RT: Pollution
Pollution control
Sanitary engineering
Sludge treatment
Water pollution

SF6
USE: Sulfur hexafluoride

SGML

UF: Standard Generalized Markup Language
BT: Markup languages

Shadow mapping
UF: Projective shadowing
Shadowing
BT: Computer graphics
RT: Three-dimensional displays

Shadowing
USE: Shadow mapping

Shafts
BT: Machine components
Production
RT: Couplings
Gears
Machine tool spindles
Mechanical power transmission
Mechanical splines
Pistons
Propellers
Torque converters
NT: Camshafts

Shape
BT: Graphics
RT: Geometry
Pattern recognition
Shape control
Shape measurement

Shape control
BT: Mechanical variables control
RT: Shape

Shape measurement
BT: Measurement
RT: Shape

Shape memory alloys
BT: Alloying
RT: Actuators

Shape memory material
USE: Smart materials

Shape memory technology
USE: Smart materials

Share prices
BT: Economic indicators

Shared ledger
USE: Distributed ledger

Sharing economy
BT: Economics

Shearing
BT: Materials processing
RT: Sheet metal processing

Sheet materials
BT: Materials
Structural shapes
RT: Sandwich structures
Sheet metal processing
Structural panels
Thin wall structures

Sheet metal processing
BT: Manufacturing systems
RT: Blanking
Embossing
Punching
Shearing
Sheet materials

Shewhart charts
USE: Control charts

Shift registers
BT: Registers
RT: Logic circuits
NT: Linear feedback shift registers

Shingled magnetic recording
BT: Magnetic recording

Shipbuilding industry
UF: Boat building industry
BT: Manufacturing industries
RT: Construction industry

Ships
USE: Marine vehicles

Shock
USE: Electric shock

Shock (mechanics)
BT: Mechanical factors
NT: Thermal shock

Shock absorbers
UF: Dampers
BT: Suspensions (mechanical systems)
RT: Automotive components
Damping
Springs
Vibration control

Shock waves
BT: Waves
RT: Aerodynamics
Seismic waves

Shoe manufacture
USE: Footwear industry

Shoes
USE: Footwear

Short circuit currents
USE: Short-circuit currents

Short-circuit currents
UF: Short circuit currents
BT: Current
RT: Molded case circuit breakers

Shortest path problem
UF: Shortest-path-problem
BT: Graph theory
RT: Traveling salesman problems

Shortest-path-problem
USE: Shortest path problem

Shoulder
BT: Extremities
NT: Axilla

Shunts (electrical)
BT: Electric current control
Photovoltaic effects

Si
USE: Silicon

SiC
USE: Silicon carbide

Sick pay
USE: Employee welfare

Side channel attacks

USE: Side-channel attacks

Side-channel attacks
UF: Side channel attacks
BT: Cryptography

SiGe
USE: Silicon germanium

Sigma delta
USE: Sigma-delta modulation

Sigma-delta modulation
UF: Delta sigma
      Sigma delta
BT: Delta modulation

Sign language
BT: Gesture recognition
RT: Assistive technology
      Deafness
      Semantics

Signal analysis
UF: Waveform analysis
BT: Signal processing
RT: Autocorrelation
      Blind source separation
      Frequency-domain analysis
      Pattern clustering
      Power system faults
      Rate distortion theory
      Signal resolution
      Speech analysis
      Total harmonic distortion
      Transient analysis
      Wavelet transforms
NT: Discrete-event systems
      Harmonic analysis
      Parameter estimation
      Signal mapping
      Spectral analysis

Signal classification
USE: Pattern classification

Signal constellation
USE: Constellation diagram

Signal de-noising
USE: Signal denoising

Signal decomposition
USE: Signal resolution

Signal denoising
UF: Signal de-noising
BT: Signal reconstruction
RT: Signal resolution
      Signal restoration
      Signal to noise ratio

Signal design
BT: Signal processing

Signal detection
UF: Detection (signal)
BT: Signal processing
RT: Blind source separation
      Channel estimation
      Correlators
      Decision making
      Demodulation
      Pattern clustering
      Receivers
      Signal resolution
      Source separation
      Time of arrival estimation
NT: Acoustic signal detection
      Motion detection
      Multiuser detection
      Optical signal detection
      Phase detection
      Radar detection

Signal estimation
USE: Estimation

Signal flow graphs
USE: Flow graphs

Signal generators
UF: Function generators
      Waveform generators
BT: Signal processing
NT: Noise generators
      Pulse generation

Signal integrity
BT: Signal processing

Signal mapping
BT: Signal analysis

Signal processing
UF: Vibrational signal processing
RT: Analog processing circuits
      Antennas and propagation
      Band-pass filters

Bandwidth
Biomedical computing
Bit rate
Correlators
Data processing
Decoding
Deconvolution
Digital signal processors
Discrete Fourier transforms
Empirical mode
decomposition
Encoding
Estimation
Estimation theory
Feature extraction
Fourier series
Gaussian noise
Independent component
analysis
Matrix decomposition
Pattern clustering
Prediction methods
Random processes
Rate distortion theory
Stability analysis
Structure from motion
Synapses
System-on-chip
Transforms
Transversal filters
Vectors
Wavelet transforms

NT: Acoustic signal processing
Adaptive signal processing
Amplifiers
Array signal processing
Attenuators
Chirp
Convolution
Decorrelation
Digital signal processing
Dispersion
Distortion
Error correction
Fading channels
Filters
Frequency locked loops
Geophysical signal
processing
Limiting
Modulation
Multidimensional signal
processing
Noise
Optical signal processing

Optical wavelength
conversion
Phase locked loops
Pulse compression
methods
Pulse shaping methods
Quantization (signal)
RF signals
Radar signal processing
Received signal strength
indicator
Recording
Signal analysis
Signal design
Signal detection
Signal generators
Signal integrity
Signal reconstruction
Signal resolution
Signal restoration
Signal sampling
Signal synthesis
Source separation
Spectrogram
Tracking loops

Signal processing algorithms
BT: Algorithms

Signal quantisation
USE: Quantization (signal)

Signal quantization
USE: Quantization (signal)

Signal reconstruction
BT: Signal processing
RT: Inverse problems
          Signal sampling
          Signal to noise ratio
NT: Signal denoising

Signal representation
BT: Modeling
RT: Approximation methods
          Wavelet transforms

Signal resolution
UF: Signal decomposition
BT: Signal processing
RT: Array signal processing
          Signal analysis
          Signal denoising
          Signal detection
          Spectral analysis

NT: Diversity reception

Signal restoration
BT: Signal processing
RT: Deconvolution
Distortion
Signal denoising

Signal sampling
BT: Signal processing
RT: Quantization (signal)
Sampling methods
Signal reconstruction

Signal separation
USE: Source separation

Signal synthesis
BT: Signal processing
RT: Speech synthesis

Signal to noise ratio
UF: S/N
SNR
Signal-to-noise ratio
Signal-to-noise-ratio
BT: Noise
RT: Filters
Noise figure
RAKE receivers
Signal denoising
Signal reconstruction
NT: PSNR

Signal-to-noise ratio
USE: Signal to noise ratio

Signal-to-noise-ratio
USE: Signal to noise ratio

Signaling block systems
USE: Block signalling

Signaling systems
USE: Communication system signaling

Signalling block systems
USE: Block signalling

Signature detection
USE: Handwriting recognition

Signature verification
USE: Handwriting recognition

Silica
USE: Silicon compounds

Silicidation
BT: Semiconductor device manufacture

Silicides
BT: Silicon compounds

Silicon
UF: Si
Silicon materials
Siliconization
BT: Semiconductor materials
RT: Amorphous semiconductors
Elemental semiconductors
Epitaxial growth
Semiconductor thin films
Silicon compounds
Silicon devices
Silicon germanium
Silicon-on-insulator
NT: Amorphous silicon
Porous silicon
Silicon alloys
Silicon photonics

Silicon alloys
BT: Silicon
RT: Alloying
NT: Germanium silicon alloys

Silicon carbide
UF: SiC
BT: Silicon compounds

Silicon compiler
BT: Computer aided manufacturing
RT: Integrated circuit manufacture

Silicon compounds
UF: Silica
Silicon dioxide
BT: Compounds
RT: Critical current density
Semiconductor materials
Silicon
Wide band gap semiconductors
NT: Silicides
Silicon carbide

Silicon nitride

Silicon controlled rectifiers
    USE: Thyristors

Silicon devices
    BT: Semiconductor devices
    RT: Doping
            Photonics
            Silicon

Silicon dioxide
    USE: Silicon compounds

Silicon epitaxial layers
    USE: Semiconductor epitaxial layers

Silicon germanium
    UF: SiGe
    BT: Semiconductor materials
    RT: Germanium
            Silicon
            Silicon-on-insulator
            Substrates
            Transistors

Silicon materials
    USE: Silicon

Silicon nitride
    BT: Nitrogen
            Silicon compounds

Silicon on insulator
    USE: Silicon-on-insulator

Silicon on insulator technology
    USE: Silicon-on-insulator

Silicon on sapphire
    UF: Silicon-on-sapphire
    BT: CMOS technology
            Silicon-on-insulator
    RT: Substrates

Silicon photonics
    BT: Photonics
            Silicon
    RT: Optical fiber communication

Silicon radiation detectors
    BT: Radiation detectors
    RT: Ionizing radiation

Silicon-on-insulator
    UF: SOI
            SOS (silicon on sapphire)
            Silicon on insulator
            Silicon on insulator technology
            Silicon-on-insulator technology
    BT: Circuits
    RT: Double-gate FETs
            Integrated circuits
            Interface states
            Junctionless nanowire transistors
            Proton radiation effects
            Semiconductor devices
            Semiconductor-insulator interfaces
            Silicon
            Silicon germanium
            Thin film circuits
    NT: Silicon on sapphire

Silicon-on-insulator technology
    USE: Silicon-on-insulator

Silicon-on-sapphire
    USE: Silicon on sapphire

Silicon-oxide-nitride-oxide-silicon
    USE: SONOS devices

Siliconization
    USE: Silicon

Silver
    UF: Ag
    BT: Metals

SIMO communication
    UF: Single input multiple output systems
    BT: Communication systems
    RT: Antenna arrays
            Diversity reception
            Feedback
            MIMO communication
            MISO communication
            Optical materials
            Radio communication
            SISO communication

Simple object access protocol
    UF: SOAP
    BT: Web services

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Simulated annealing
BT:	Mathematics
	Optimization methods
RT:	Annealing
	Monte Carlo methods
	Relaxation methods

Simulation
UF:	Simulation results
BT:	Modeling
RT:	Application virtualization
	Computer aided analysis
	Computer graphics
	Emulation
	Matlab
	Monte Carlo methods
	Numerical simulation
	Reduced order systems
NT:	Computer simulation
	Digital simulation
	Hardware-in-the-loop simulation
	Human in the loop
	Medical simulation
	Mixed reality
	Quantum simulation
	Serious games
	Systems simulation

Simulation Program with Integrated Circuit Emphasis
USE:	SPICE

Simulation results
USE:	Simulation

Simultaneous localization and mapping
UF:	SLAM
BT:	Robot sensing systems

Single atom lasers
USE:	Atom lasers

Single electron devices
BT:	Circuits and systems
	Electron devices
RT:	Nanoscale devices
	Nanotechnology
	Resonant tunneling devices
NT:	Single electron memory
	Single electron transistors

Single electron memory
BT:	Single electron devices

NT:	Hetero-nanocrystal memory

Single electron transistors
UF:	Single-electron transistors
BT:	Single electron devices

Single event latchup
BT:	Proton effects
	Radiation effects

Single event transients
BT:	Ionization

Single event upsets
UF:	SEU
BT:	Ionization

Single input multiple output systems
USE:	SIMO communication

Single input single output systems
USE:	SISO communication

Single machine scheduling
BT:	Scheduling
RT:	Optimization methods

single photon avalanche diodes
USE:	Single-photon avalanche diodes

Single photon emission computed tomography
UF:	SPECT
BT:	Computed tomography
RT:	Cancer
	Collimators
	Phantoms
	Tumors

Single-electron transistors
USE:	Single electron transistors

Single-photon avalanche diodes
UF:	SPAD
	single photon avalanche diodes
BT:	Avalanche photodiodes

Single-wall carbon nanotubes
USE:	Carbon nanotubes

Singular value decomposition
BT:	Matrices

Siri
USE: Virtual assistants

SIS devices (semiconductor)
USE: Semiconductor devices

SIS devices (superconductor)
USE: Superconducting devices

SISO communication
UF: Single input single output systems
BT: Communication systems
RT: Antenna arrays
Diversity reception
MIMO communication
MISO communication
Radio communication
SIMO communication
Transmitters

Six sigma
BT: Total quality management
RT: Quality assurance
Quality control

Size control
BT: Mechanical variables control
RT: Thickness control

Size measurement
BT: Measurement
RT: Area measurement
Length measurement
Thickness measurement
Volume measurement
NT: Functional point analysis

Skeleton
BT: Musculoskeletal system
NT: Bones
Joints
Spine
Thorax

Skin
BT: Integumentary system
NT: Dermis
Epidermis
Sebaceous glands
Sweat glands

Skin cancer
UF: Basal cell carcinoma
BT: Cancer
NT: Melanoma

Skin effect
BT: Current density
RT: Conductors
Power systems
Resistance
System analysis and design

Skin neoplasms
BT: Neoplasms

Skull
BT: Head
RT: Bones

Skyrmions
BT: Solitons

SLA
USE: Service level agreements

Slabs
BT: Structural shapes

Slag
BT: Industrial waste
RT: Fly ash
Waste disposal
Waste management

SLAM
USE: Simultaneous localization and mapping

SLD
USE: Superluminescent diodes

Sleep
BT: Brain
NT: Rapid eye movement sleep
Sleep apnea

Sleep apnea
UF: Sleep apnoea
Snore activity
Snore signals
Snoring
BT: Medical conditions
Sleep

Sleep apnoea
USE: Sleep apnea

Slideways (mechanical)
USE: Mechanical guides

Sliding mode control
UF: Sliding-mode control
BT: Control systems

Sliding-mode control
USE: Sliding mode control

Slot antennas
BT: Antennas

Slot line components
UF: Slotline components
BT: Slot lines

Slot lines
UF: Slotline
BT: Planar transmission lines
NT: Slot line components

Slotline
USE: Slot lines

Slotline components
USE: Slot line components

Slow light
BT: Light sources
RT: Velocity measurement

Sludge treatment
UF: Activated sludge process
BT: Waste handling
RT: Pollution control
Sewage treatment
Wastewater
Wastewater treatment

Slurries
BT: Waste materials
RT: Industrial waste

Small business technology transfer
BT: Technology transfer

Small cell networks
USE: Microcell networks

Small satellites
UF: Microsatellites
Miniaturized satellites
Nanosatellites
Smallsats

BT: Satellites
NT: CubeSat

Smallsats
USE: Small satellites

SMAP mission
UF: Soil Moisture Active
Passive mission
BT: Soil moisture

Smart actuators
USE: Intelligent actuators

Smart buildings
BT: Buildings

Smart cameras
BT: Cameras
Computer vision
RT: Distributed vision networks

Smart cards
BT: User interfaces
RT: Access control
Data processing

Smart cities
BT: Intelligent structures
Urban areas
RT: Buildings
Construction industry
Cyber-physical systems
Energy informatics

Smart clothing
USE: Smart textiles

Smart contracts
BT: Contracts
Protocols

Smart devices
BT: Electronic equipment
Wireless communication
RT: Physical unclonable
function
Smart healthcare
Smart manufacturing
Tactile Internet
Virtual assistants
NT: Smart glasses

Smart elastomers
USE: Dielectric elastomers

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Smart fabrics
USE: Smart textiles

Smart factories
USE: Smart manufacturing

Smart farming
USE: Digital agriculture

Smart garments
USE: Smart textiles

Smart glasses
UF: Smartglasses
BT: Smart devices
Wearable computers

Smart grids
UF: Smart microgrids
Smart power grids
BT: Power grids
RT: Cyber-physical systems
Energy informatics
Microgrids
Power distribution networks
Smart meters
Transactive energy
NT: Vehicle-to-grid

Smart health
USE: Smart healthcare

Smart healthcare
UF: Smart health
Smart medical services
BT: Medical services
RT: Electronic healthcare
Point of care
Smart devices

Smart homes
BT: Buildings
Home automation

Smart manufacturing
UF: Smart factories
BT: Manufacturing
RT: Intelligent manufacturing systems
Smart devices
Smart materials

Smart materials
UF: Shape memory material

Shape memory technology
BT: Materials
RT: Austenite
Azobenzene
Dielectric elastomers
Martensite
Metamaterials
Polycaprolactone
Smart manufacturing
Smart transportation
NT: Biomimetic materials
Smart textiles

Smart medical services
USE: Smart healthcare

Smart meters
BT: Meter reading
RT: Automatic meter reading
Smart grids

Smart microgrids
USE: Smart grids

Smart phones
UF: Smartphones
BT: Mobile handsets
RT: Bring your own device

Smart pixels
BT: Image processing
RT: Integrated optoelectronics
Optical switches

Smart power grids
USE: Smart grids

Smart sensors
USE: Intelligent sensors

Smart spaces
BT: Ergonomics
Sociotechnical systems

Smart structures
USE: Intelligent structures

Smart textiles
UF: Electronic textiles
Smart clothing
Smart fabrics
Smart garments
BT: Smart materials
RT: Wearable computers

Smart transportation
- BT: Transportation
- RT: Automated highways
  - Intelligent transportation systems
  - Intelligent vehicles
  - Smart materials

Smart TV
- BT: TV
- RT: Internet

Smartglasses
- USE: Smart glasses

Smartphones
- USE: Smart phones

Smelting
- BT: Materials processing
- RT: Blast furnaces
  - Heat treatment
  - Melt processing
  - Metals industry
  - Refining

SMES
- USE: Superconducting magnetic energy storage

Smoke detectors
- BT: Alarm systems
- RT: Domestic safety
  - Fires
  - Ionization chambers
  - Safety devices
  - Zigbee

Smoothed particle hydrodynamics
- USE: Fluid flow AND Hydrodynamics

Smoothing methods
- BT: Mathematics

SMOS mission
- UF: Soil moisture and ocean salinity
  - Soil moisture and ocean salinity mission
- BT: Ocean salinity
  - Soil moisture

SMPS
- USE: Switched mode power supplies

SMPTE
- UF: Society of Motion Picture and Television Engineers
- BT: Standards organizations

SMPTE Standards
- BT: Standards publications

Sn
- USE: Tin

Snake bots
- USE: Snake robots

Snake robots
- UF: Snake bots
  - Snakebots
- BT: Robots

Snakebots
- USE: Snake robots

Snapchat
- USE: Multimedia Web sites

Snore activity
- USE: Sleep apnea

Snore signals
- USE: Sleep apnea

Snoring
- USE: Sleep apnea

Snow
- BT: Meteorology
- RT: Ice

SNR
- USE: Signal to noise ratio

SNS devices
- USE: Superconducting devices

Snubbers
- BT: Power electronics

SOA
- USE: Semiconductor optical amplifiers AND Service-oriented architecture

2021 IEEE Thesaurus

SOAP
    USE: Simple object access protocol

SOC
    USE: System-on-chip

Soccer
    USE: Sports

Social computing
    BT: Collaborative work
             Internet
    RT: Behavioral sciences
             Crowdsourcing
             Social computing
             Social networking (online)
    NT: Persuasive systems
             Social intelligence

Social engineering (security)
    BT: Information security
    RT: Human factors
             Psychology
             Social factors

Social factors
    BT: Social implications of technology
    RT: Bio-inspired computing
             Digital divide
             Governmental factors
             International collaboration
             International relations
             Philosophical considerations
             Social engineering (security)
             Social intelligence
             Technology planning
    NT: Demography
             Developing countries
             Technology social factors

Social groups
    BT: Sociology
    NT: Millennials
             Senior citizens

Social implications of technology
    UF: Orange technology
    RT: Cyberethics
             Digital divide

             Technology acceptance model
    NT: Cultural aspects
             Cultural differences
             Environmental factors
             Ethical aspects
             Ethics
             Globalization
             International relations
             Peace technology
             Philosophical considerations
             Social factors
             Sustainable development
             Technology

Social intelligence
    BT: Behavioral sciences
             Social computing
             Sociology
    RT: Cultural differences
             Digital intelligence
             Social factors

Social media
    USE: Social networking (online)

Social network theory
    BT: Sociotechnical systems
    RT: Complex networks
             Social networking (online)

Social networking
    USE: Social networking (online)

Social networking (online)
    UF: Facebook
             Linkedin
             Myspace
             Reddit
             Social media
             Social networking
             Social networking services
             Social networks
             Social-network
             Twitter
             WeChat
    BT: Information retrieval
    RT: Blogs
             Crowdsourcing
             Electronic mail
             Internet
             Journalism
             Multimedia Web sites
             Social computing

2021 IEEE Thesaurus

Social network theory
Web sites
NT: Computer mediated communication

MySpace
Second Life

Social networking services
USE: Social networking (online)

Social networks
USE: Social networking (online)

Social sciences
BT: Science - general
RT: Complex networks
Network theory (graphs)
NT: Behavioral sciences
Journalism
Psychology
Sociology

Social-network
USE: Social networking (online)

Society of Motion Picture and Television Engineers
USE: SMPTE

Socio-technical systems
USE: Sociotechnical systems

Sociology
BT: Social sciences
RT: Collective intelligence
NT: Digital divide
Social groups
Social intelligence

Sociotechnical systems
UF: Socio-technical systems
BT: Organizations
NT: Smart spaces
Social network theory

Sockets
BT: Connectors

Sodium
BT: Chemical elements

Sodium chloride
USE: Chlorine compounds

Soft electronics

BT: Electronic equipment
RT: Flexible electronics
Inorganic materials
Wearable computers

Soft lithography
UF: Microcontact printing
Replica molding
Replica moulding
BT: Lithography
RT: Nanolithography
Nanopatterning

Soft magnetic materials
BT: Magnetic materials

Soft robotics
UF: Soft robots
BT: Robots

Soft robots
USE: Soft robotics

Soft switch
USE: Soft switching

Soft switching
UF: Soft switch
Softswitch
BT: Telecommunication computing
RT: Routing

Softening
UF: Softening (metallurgical)
BT: Materials processing
RT: Annealing

Softening (metallurgical)
USE: Softening

Softswitch
USE: Soft switching

Software
UF: Computer software
On-demand software
BT: Computers and information processing
RT: Algorithms
Computer languages
Computer science
Courseware
Documentation

Enterprise resource planning
Firewalls (computing)
Geospatial analysis
Microprogramming
Programming
Software engineering
Software protection
Software standards
NT: Anti-virus software
Application software
Embedded software
Freeware
Malware
Middleware
Open source software
Optical character recognition software
Privacy-invasive software
Public domain software
Software agents
Software as a service
Software debugging
Software maintenance
Software packages
Software performance
Software quality
Software reusability
Software safety
Software systems
Software tools
System software

Software agents
BT: Software
RT: Artificial intelligence
Computer applications
Distributed computing
Intelligent systems
Knowledge based systems
Learning systems
Mobile agents
NT: Agent-based modeling
Autonomous agents
Botnet
Intelligent agents

Software algorithms
BT: Algorithms

Software architecture
BT: Software engineering
RT: Distributed computing
NT: Client-server systems
Deep architecture

Dew computing
Microarchitecture
Representational state transfer
Restful API

Software as a service
UF: On demand software
On-demand software
SaaS
Software-as-a-service
BT: Software
RT: Cloud computing
Information processing

Software debugging
BT: Software
RT: Programming
Programming environments
NT: Software design

Software defined networking
UF: SDN
Software defined networks
Software-defined networking
BT: Computer networks
RT: Application programming interfaces
Cloud computing
Computer network management
Distributed processing
Intelligent networks
Mobile computing
Network function virtualization
Network operating systems
Operating systems
Protocols
Virtual machining
Virtualization
NT: Service function chaining

Software defined networks
USE: Software defined networking

Software defined radio
USE: Software radio

Software design
BT: Software debugging
RT: Web design
NT: Model driven engineering

Usability

Software development management
> UF: Github
> BT: Engineering management
> RT: Release engineering
> Scrum (Software development)
> Software product lines
> NT: Agile software development
> Model-driven development

Software documentation
> USE: Documentation

Software engineering
> BT: Computers and information processing
> RT: Code refractoring
> Functional point analysis
> Rapid prototyping
> Requirements engineering
> Service-oriented systems engineering
> Software
> Static analysis
> Systems Modeling Language
> Visual BASIC
> NT: Capability maturity model
> Computer aided software engineering
> Formal verification
> Programming environments
> Reasoning about programs
> Release engineering
> Runtime
> Software architecture
> Software libraries
> Software product lines

Software libraries
> BT: Libraries
> Software engineering
> RT: Algorithms
> Matlab
> Object oriented programming
> Python
> Software reusability

Software maintenance
> BT: Software
> RT: Software product lines

Software measurement
> BT: Measurement

Software packages
> BT: Software
> RT: Computer applications
> Power system analysis computing
> NT: EMTDC
> PSCAD
> SPICE

Software performance
> BT: Software
> RT: Algorithmic efficiency
> Capability maturity model

Software piracy
> USE: Computer crime

Software product lines
> BT: Product development
> Software engineering
> RT: Software development management
> Software maintenance

Software protection
> BT: Copyright protection
> Legal factors
> RT: Digital rights management
> Intellectual property
> Software

Software prototyping
> BT: System analysis and design

Software quality
> BT: Software
> RT: Algorithmic efficiency

Software radio
> UF: Reconfigurable radio
> Software defined radio
> Software-defined radio
> BT: Mobile communication
> Radio communication
> RT: Cellular radio
> Code division multiplexing
> Land mobile radio
> Telecommunication computing
> Transceivers

Software reliability

BT: Reliability

Software reusability
UF: Software reuse
BT: Software
RT: Capability maturity model
     Object oriented programming
     Software libraries

Software reuse
USE: Software reusability

Software reviews
BT: IEEE indexing

Software safety
BT: Software
RT: Product safety engineering

Software standards
BT: Standards categories
RT: ISO
     ISO Standards
     Software

Software systems
BT: Software

Software testing
BT: Testing
NT: Combinatorial testing
     Fuzzing

Software tools
BT: Software
RT: Computer aided software engineering
     Programming
     Programming environments
     Visual BASIC
NT: Authoring systems

Software-as-a-service
USE: Software as a service

Software-defined networking
USE: Software defined networking

Software-defined radio
USE: Software radio

SOI
USE: Silicon-on-insulator

Soil
BT: Geoscience
RT: Earth
     Excavation
     Sediments
     Soil measurements
     Soil pollution
NT: Soil moisture
     Soil properties
     Soil texture

Soil measurements
BT: Measurement
RT: Geophysical measurements
     Moisture measurement
     Remote sensing
     Soil
NT: Salinity (geophysical)

Soil moisture
BT: Soil
NT: SMAP mission
     SMOS mission

Soil Moisture Active Passive mission
USE: SMAP mission

Soil moisture and ocean salinity
USE: SMOS mission

Soil moisture and ocean salinity mission
USE: SMOS mission

Soil pollution
BT: Land pollution
RT: Agriculture
     Soil

Soil properties
BT: Soil

Soil texture
BT: Soil

Solar cells
USE: Photovoltaic cells

Solar cooling
BT: Cooling

Solar eclipses
BT: Sun

Solar energy

BT: Energy resources
RT: Maximum power point trackers
    Solar heating
    Solar power generation
    Solar radiation

Solar generation
USE: Solar power generation

Solar heating
BT: Energy conversion
    Heating systems
RT: Phase change materials
    Solar energy
    Space heating

Solar panels
BT: Photovoltaic systems
    Solar power generation

Solar polarimetry
USE: Polarimetry

Solar power generation
UF: Solar generation
BT: Power generation
RT: Building integrated photovoltaics
    Solar energy
    Solar powered vehicles
NT: Maximum power point trackers
    Photovoltaic systems
    Solar panels

Solar powered vehicles
BT: Electric vehicles
RT: Battery powered vehicles
    Energy storage
    Solar power generation
    Traction motors
    Vehicle-to-grid

Solar radiation
BT: Extraterrestrial phenomena
RT: Solar energy
    Space radiation

Solar system
BT: Astronomy
NT: Kuiper belt
    Planets
    Satellites
    Sun

Solder joints
USE: Soldering

Soldering
UF: Solder joints
BT: Assembly
    Fabrication
    Joining processes
RT: Bonding processes
    Manufacturing
    Materials processing
    Soldering equipment
NT: Brazing
    Flip chip solder joints
    Reflow soldering

Soldering equipment
BT: Production equipment
RT: Joining materials
    Joining processes
    Soldering

Solderless breadboard
USE: Breadboard

Solenoids
BT: Magnetic devices
RT: Switches
    Transducers

Solid lasers
UF: Color center lasers
    Solid state lasers
    Solid-state lasers
BT: Lasers
RT: Thermal lensing
    Thermooptical devices
NT: Microchip lasers
    Quantum well lasers
    Semiconductor lasers
    Surface emitting lasers

Solid modeling
BT: Modeling
RT: Solid-state physics
    Virtual reality

Solid oxide electrolyzer cells
USE: Fuel cells

Solid scintillation detectors
BT: Scintillation counters
RT: Energy resolution
    Medical diagnostic imaging

Spectroscopy

Solid state batteries
UF: Solid-state batteries
BT: Batteries

Solid state circuit design
UF: Solid-state circuit design
BT: Solid state circuits
RT: Circuit synthesis

Solid state circuits
UF: Solid-state circuits
RT: Circuits and systems
Solid state drives
NT: Circuit subsystems
Circuit theory
FET circuits
Gate leakage
Solid state circuit design
Transistors

Solid state drives
BT: Digital storage
RT: DRAM chips
Flash memories
Integrated memory circuits
Solid state circuits

Solid state lasers
USE: Solid lasers

Solid state lighting
UF: Solid-state lighting
BT: Lighting

Solid waste
USE: Waste materials

Solid-state batteries
USE: Solid state batteries

Solid-state circuit design
USE: Solid state circuit design

Solid-state circuits
USE: Solid state circuits

Solid-state lasers
USE: Solid lasers

Solid-state lighting
USE: Solid state lighting

Solid-state physics

BT: Physics
RT: Materials science and technology
Quantum mechanics
Solid modeling

Solids
BT: Materials
RT: Crystals
Materials science and technology
NT: Young's modulus

Solitons
BT: Waves
NT: Optical solitons
Skyrmions

Solution design
BT: Systems engineering and theory

Solvents
BT: Chemical processes
RT: Methanol

SOM
USE: Self-organizing feature maps

Soma
UF: Somata
BT: Neurons
RT: Brain

Somata
USE: Soma

Sonar
BT: Aerospace and electronic systems
RT: Acoustic arrays
Chirp modulation
Ultrasonic transducers
NT: Sonar applications
Sonar equipment
Synthetic aperture sonar

Sonar applications
BT: Sonar
RT: Sonar navigation
NT: Sonar detection
Sonar measurements

Sonar detection

BT: Acoustic signal detection
               Sonar applications
RT: Reflectivity

Sonar equipment
UF: Hydrophones
BT: Sonar

Sonar measurements
BT: Sonar applications
RT: Remote sensing
               Sea measurements

Sonar navigation
BT: Navigation
RT: Sonar applications

SONET
UF: Synchronous optical network
BT: Communication standards
               Digital communication
               ETSI Standards
               Optical fiber communication
RT: Asynchronous transfer mode
               Synchronous digital hierarchy
               Transport protocols

Sonification
BT: Audio systems
               Information processing

Sonogram
BT: Ultrasonography
RT: Spectrogram

SONOS devices
UF: Silicon-oxide-nitride-oxide-silicon
BT: Semiconductor devices

Sorting
BT: Data handling
RT: Merging

SOS (silicon on sapphire)
USE: Silicon-on-insulator

SOSE
USE: Service-oriented systems engineering

Sound systems
USE: Audio systems

Source coding
BT: Data compression
               Encoding
               Information theory
RT: Rate distortion theory
               Release engineering

Source location
USE: Position measurement

Source separation
UF: Signal separation
BT: Signal processing
RT: Adaptive signal detection
               Array signal processing
               Signal detection
NT: Blind source separation

South America
BT: Continents

South Pole
BT: Antarctica

Space based radar
USE: Spaceborne radar

Space born radar
USE: Spaceborne radar

Space charge
BT: Charge carrier processes
               Electrostatic processes
RT: Pulsed electroacoustic methods
               Vacuum technology

Space communications
BT: Telecommunications
NT: Deep-space communications

Space cooling
BT: Cooling
RT: Buildings
               Coolants
               Refrigerants

Space debris
UF: Orbital debris
               Space junk
               Space waste
BT: Space technology

Space diversity
USE: Spatial diversity

Space division multiplexing
UF: Space-division multiplexing
BT: Multiplexing

Space exploration
UF: Space travel
BT: Space technology
RT: NASA
NT: Interplanetary exploration
Space missions

Space habitats
USE: Buildings AND
Space technology

Space heating
BT: Heating systems
RT: Building services
Gas appliances
Solar heating
Temperature control
Vents

Space junk
USE: Space debris

Space measurements
USE: Extraterrestrial measurements

Space missions
BT: Space exploration
RT: Interplanetary exploration
NASA

Space phenomena
USE: Extraterrestrial phenomena

Space power stations
UF: Power stations (space)
BT: Space stations
RT: Power generation

Space radiation
BT: Radiation effects
RT: Ionization
Solar radiation

Space shuttles
BT: Space vehicles
RT: Aerospace safety

Space stations
BT: Artificial satellites
NT: International Space Station
Space power stations

Space technology
UF: Space habitats
BT: Aerospace engineering
RT: Artificial satellites
Extraterrestrial phenomena
Field programmable analog arrays
NASA
Space vehicles
NT: Payloads
Space debris
Space exploration

Space travel
USE: Space exploration

Space vector pulse width modulation
UF: SVPWM
BT: Pulse width modulation
RT: AC motors
Converters
DC motors

Space vehicle electronics
USE: Aerospace electronics

Space vehicle instrumentation
USE: Aerospace electronics

Space vehicle navigation
USE: Space vehicles

Space vehicles
UF: Planetary landers
Space vehicle navigation
BT: Vehicles
RT: Aerospace accidents
Aerospace control
Aerospace electronics
Aerospace materials
Aerospace safety
Artificial satellites
Ground support
Proton effects
Space technology
NT: Space shuttles

Space waste
USE: Space debris

Space-division multiplexing
USE: Space division multiplexing

Space-time codes
BT: Codes
RT: Channel coding
Decoding

Spaceborn radar
USE: Spaceborne radar

Spaceborne radar
UF: Satellite born radar
Satellite borne radar
Space based radar
Space born radar
Spaceborn radar
BT: Radar
RT: Radar remote sensing
Synthetic aperture radar

Spacecraft materials
USE: Aerospace materials

Spacial indices
USE: Spatial indexes

SPAD
USE: Single-photon avalanche diodes

Spam
USE: Unsolicited e-mail

Spamming
USE: Unsolicited e-mail

Spark gaps
BT: Electromagnetic analysis
RT: Air gaps
Electrodes
Insulation
Sparks
Switches

Sparks
BT: Electric breakdown
RT: Spark gaps

Sparse matrices
UF: Sparse matrix
BT: Numerical analysis

Sparse matrix

USE: Sparse matrices

Spatial augmented reality
BT: Augmented reality

Spatial coherence
BT: Image processing

Spatial databases
BT: Databases

Spatial diversity
UF: Antenna diversity
Space diversity
BT: Communication systems
Wireless communication
RT: Antennas
Quality of service
Receiving antennas

Spatial filters
BT: Filters

Spatial indexes
UF: Spacial indices
BT: Indexes

Spatial resolution
BT: Image resolution
RT: Image quality

Spatio-temporal phenomena
USE: Spatiotemporal phenomena

Spatiotemporal phenomena
UF: Spatio-temporal phenomena
BT: Chaos
RT: Nonlinear dynamical systems
Pattern formation
Pattern matching
Pattern recognition

Speaker recognition
BT: Identification of persons
RT: Biometrics (access control)
Speech
Speech recognition
Viterbi algorithm

Special issues
USE: Special issues and sections

Special issues and sections

UF: Special issues
Special sections
BT: IEEE indexing

Special sections
USE: Special issues and sections

Specific absorption rate
UF: SAR
BT: Electromagnetic interference

Specification languages
BT: Computer languages
NT: Domain specific languages
Unified modeling language

Speckle
BT: Optical noise
RT: Optical interferometry
Optical scattering

SPECT
USE: Single photon emission computed tomography

Spectral analysis
UF: Power spectra
Spectral domain
Spectral-domain
Spectrum analysis
Spectrum estimation
BT: Signal analysis
RT: Direction-of-arrival estimation
Estimation
Frequency estimation
Harmonic analysis
Parameter estimation
Prediction methods
Signal resolution
Spectroscopy
Speech analysis
Time series analysis
Transforms
NT: Infrared spectra
Judd-Ofelt theory
Spectroradiometers

Spectral domain
USE: Spectral analysis

Spectral efficiency
UF: Bandwidth efficiency
BT: Channel allocation

Measurement
RT: Bandwidth
Information processing

Spectral shape
BT: Acoustics

Spectral waterfall
USE: Spectrogram

Spectral-domain
USE: Spectral analysis

Spectrogram
UF: Spectral waterfall
Voice print
Voicegram
Voiceprint
BT: Signal processing
RT: Sonogram

Spectrometry
USE: Spectroscopy

Spectroradiometers
BT: Radiometers
Spectral analysis
NT: MODIS

Spectroscopy
UF: Spectrometry
BT: Measurement
RT: Atomic measurements
Bandwidth
Fourier series
Infrared spectra
Nuclear measurements
Radiation detectors
Solid scintillation detectors
Spectral analysis
Thermoreflectance imaging
NT: Deep level transient spectroscopy
Electrochemical impedance spectroscopy
Electron paramagnetic resonance
Fourier transform infrared spectroscopy
Kirchhoff's Law
MERIS
Mass spectroscopy
Neutron spin echo
Photoacoustic effects
Resonance light scattering

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Spectrum analysis
USE: Spectral analysis

Spectrum estimation
USE: Spectral analysis

Spectrum management
USE: Radio spectrum management

Speech
BT: Oral communication
RT: Speaker recognition

Speech activity detection
USE: Voice activity detection

Speech analysis
BT: Speech recognition
RT: Cepstral analysis
Frequency estimation
Signal analysis
Spectral analysis
Speech coding
Speech synthesis

Speech codecs
BT: Codecs
Communication equipment
RT: Decoding
Speech coding
Vocoders

Speech coding
BT: Encoding
Information theory
RT: Audio coding
Rate distortion theory
Speech analysis
Speech codecs
Vector quantization
Vocoders
Voice activity detection

Speech communication
USE: Oral communication

Speech detection
USE: Voice activity detection

Speech enhancement
BT: Speech processing
RT: Hearing aids
Speech recognition

Speech processing
BT: Acoustic signal processing
RT: Delay estimation
Phonetics
Prediction methods
NT: Human voice
Speech enhancement
Speech synthesis
Voice activity detection

Speech recognition
BT: Identification of persons
Pattern recognition
RT: Cepstral analysis
Emotion recognition
Feature extraction
Speaker recognition
Speech enhancement
Voice activity detection
NT: Automatic speech recognition
Speech analysis

Speech synthesis
UF: Synthetic speech
Voice response systems
BT: Speech processing
RT: Biomedical equipment
Signal synthesis
Speech analysis
Voice activity detection
NT: Chatbot

Speechmaking
USE: Public speaking

Speed control
USE: Velocity control

Speed measurement
USE: Velocity measurement

SPICE
UF: Simulation Program with Integrated Circuit Emphasis
pSPICE
BT: Software packages
RT: Circuit analysis
Design automation
Integrated circuits

Spin injection
USE: Spin polarized transport

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Spin polarised transport
    USE: Spin polarized transport

Spin polarized transport
    UF: Spin injection
              Spin polarised transport
    BT: Magnetoelectronics
    RT: Magnetic tunneling
              Magnetoresistance

Spin valves
    BT: Magnetic sensors
    RT: Hysteresis

Spin-dependent tunneling
    USE: Magnetic tunneling

Spin-dependent tunnelling
    USE: Magnetic tunneling

Spinal cord
    BT: Nervous system
    NT: Cerebrospinal fluid
              Spinal cord injury

Spinal cord injuries
    USE: Spinal cord injury

Spinal cord injury
    UF: Spinal cord injuries
    BT: Spinal cord
    RT: Neurological diseases

Spinal cord stimulation
    USE: Electrical stimulation

Spindle bearings
    USE: Machine tool spindles

Spine
    BT: Nervous system
              Skeleton

Spinelectronics
    USE: Spintronics

Spinning
    BT: Textile technology
    RT: Spinning machines
              Textile fibers

Spinning machines
    BT: Textile machinery
    RT: Paper making
              Paper making machines
              Paper mills
              Pulp and paper industry
              Spinning
              Textile industry
              Textiles

Spintronics
    UF: Fluxtronics
              Spinelectronics
    BT: Magnetoelectric effects

Spirals
    BT: Mathematics

Splicing
    UF: Cable splicing
              Fusion splicing
    BT: Joining processes
    RT: Optical fiber cables
              Transmission lines

Spline functions
    USE: Splines (mathematics)

Splines (mathematics)
    UF: B-Spline
              Spline functions
    BT: Numerical analysis
    RT: Curve fitting

Split gate flash memory cells
    UF: Split-gate flash memory cells
    BT: Flash memory cells

Split ring resonators
    BT: Resonators
    RT: Electromagnetic metamaterials
              Metamaterials
              Optical resonators
              Terahertz metamaterials

Split-gate flash memory cells
    USE: Split gate flash memory cells

SPO
    USE: Triples (Data structure)

Spontaneous emission
    UF: Superradiance
    BT: Photonics
    RT: Microcavities
              Photonic crystals

2021 IEEE Thesaurus

NT: Radiative recombination

Sports
UF: Baseball
Football
Hockey
Soccer
Swimming
Tennis
BT: Entertainment industry
RT: Games
Sports equipment

Sports equipment
BT: Manufactured products
RT: Bicycles
Sports

Spot welding
BT: Welding

Spraying
BT: Surface finishing
RT: Aerosols
Coatings
Liquids
Particle production
Surface charging
NT: Thermal spraying

Spread spectrum communication
UF: Frequency hop communication
Frequency-hop communication
Multi-hop
Multihop
Pseudonoise coded communication
BT: Digital communication
RT: 3G mobile communication
4G mobile communication
Bluetooth
Channel estimation
Chirp modulation
Code division multiplexing
Electronic countermeasures
Electronic warfare
Multicarrier code division multiple access
Multiuser detection
Radio communication countermeasures
Time division synchronous code division multiple access

Ultra wideband communication

Spread spectrum radar
UF: Frequency hop radar
Pseudonoise coded radar
BT: Radar
RT: Chirp modulation
Electronic countermeasures
Electronic warfare
Radar countermeasures

Spreadsheet programs
UF: Microsoft Excel
BT: Data processing

Springs
BT: Mechanical products
Production
RT: Shock absorbers
Suspensions (mechanical systems)
Wires

Sprites (computer)
BT: Computer graphics
RT: Three-dimensional displays
Two dimensional displays

Spur gears
USE: Gears

Spurline
BT: Power filters
RT: Planar transmission lines
NT: Spurline components

Spurline components
BT: Spurline

Sputter deposition
USE: Sputtering

Sputter etching
BT: Sputtering
RT: Cardiography

Sputtering
UF: Sputter deposition
Thin film deposition
BT: Materials preparation
RT: Coatings
Films
Magnetrons
Physical vapor deposition

2021 IEEE Thesaurus

NT: Sputter etching

Spyware
BT: Privacy-invasive software

SQL
USE: Structured Query Language

SQL injection
BT: Computer crime
              Information security

SQUID magnetometers
BT: Magnetometers
RT: Magnetic fields

SQUIDs
UF: Superconducting quantum interference devices
BT: Superconducting devices
RT: Readout electronics

Sr
USE: Strontium

SRAM
USE: SRAM chips

SRAM cells
BT: Random access memory

SRAM chips
UF: SRAM
BT: Random access memory
RT: CMOS memory circuits

Stability
BT: Reliability
RT: Asymptotic stability
              Control systems
              Damping
              Lyapunov methods
              Predator prey systems
              Robustness
NT: Circuit stability
              Robust stability
              Stability analysis
              Thermal stability

Stability analysis
BT: Stability
RT: Algorithms
              Differential equations
              Laser stability
              Plasma properties

              Signal processing
              System analysis and design
NT: Stability criteria

Stability criteria
BT: Stability analysis

Stacking
BT: Material storage
RT: Containers
              Materials handling
              Warehousing

Stairs
BT: Construction
RT: Elevators
              Escalators
              Legged locomotion
              Mobile robots

Stakeholder pensions
USE: Pensions

Stakeholders
BT: Customer relationship management
              Organizational aspects
RT: Decision making
              Requirements engineering
              Strategic planning

Standard Generalized Markup Language
USE: SGML

Standardization
BT: Engineering - general
RT: IEC
              ISO
              ISO Standards
NT: Formal specifications
              Guidelines
              Standards

Standards
BT: Standardization
RT: Conformance testing
              IEC
              ISO
              International collaboration
              Open systems
              Qualifications
NT: Standards categories
              Standards organizations
              Standards publications

2021 IEEE Thesaurus

Standards categories
BT: Standards
NT: Communication standards
    International Atomic Time
    Measurement standards
    Military standards
    Power and energy standards
    Software standards

Standards organizations
BT: Standards
NT: 3GPP
    ANSI
    ASA
    CSA Group
    DMTF
    ETSI
    IEC
    IEEE Standards Association
    ISO
    ITU
    NACE International
    NEMA
    NFPA
    NIST
    Open Geospatial Consortium
    SMPTE
    W3C

Standards publications
BT: Standards
NT: 3GPP Standards
    ANSI Standards
    ASA Standards
    CSA Group Standards
    DMTF Standards
    ETSI Standards
    IEC Standards
    IEEE Standards
    ISO Standards
    ITU Standards
    NACE Standards
    NISO Standards
    NIST Standards
    SMPTE Standards
    W3C Standards

Standby generators
UF: Emergency power generators
BT: Generators
    Rotating machines

RT: Emergency power supplies

Standby power supplies
USE: Emergency power supplies

Stark effect
BT: Electrooptic effects

Starter motors (automotive)
USE: Automotive components

STATCOM
UF: Static compensator
BT: Static VAr compensators

State estimation
BT: Estimation
RT: Control systems
NT: Observers

State feedback
BT: Linear feedback control systems

State of charge
BT: Battery chargers

State pensions
USE: Pensions

State space theory
USE: State-space methods

State-space methods
UF: State space theory
    State-space model
BT: Control system analysis
RT: Time-domain analysis

State-space model
USE: State-space methods

Static analysis
UF: Static projection
    Statis scoring
BT: Statistical analysis
    System analysis and design
RT: Model checking
    Software engineering

Static compensator
USE: STATCOM

Static converters
USE: Static power converters

2021 IEEE Thesaurus

Static induction transistors
        BT: Transistors

Static power converters
        UF: Static converters
        BT: Converters

Static projection
        USE: Static analysis

Static VAr compensators
        UF: SVC
        BT: Power transmission
        RT: Reactive power
        NT: STATCOM

Stationary state
        UF: Ground state
        BT: Quantum mechanics

Statis scoring
        USE: Static analysis

Statistical analysis
        UF: Statistical testing
        BT: Statistics
        RT: Measurement errors
                 Nearest neighbor methods
                 Probability
                 R language
                 Random processes
                 Technology acceptance model
                 Time series analysis
        NT: Analysis of variance
                 Mode matching methods
                 Monte Carlo methods
                 Parameter estimation
                 Pareto analysis
                 Predictive analytics
                 Principal component analysis
                 Regression analysis
                 Static analysis

Statistical distributions
        BT: Probability
        NT: Distribution functions
                 Gaussian distribution
                 Weibull distribution

Statistical learning
        BT: Machine learning
        RT: Decision theory

                 Pattern recognition

Statistical testing
        USE: Statistical analysis

Statistics
        BT: Mathematics
        RT: Econometrics
                 Estimation theory
                 Extrapolation
                 Fourier transforms
                 Information theory
                 Interpolation
                 Matrix decomposition
                 Maximum likelihood detection
                 Operations research
                 Probability
                 Scheduling
                 Weibull distribution
        NT: Adaptive estimation
                 Autoregressive processes
                 Boltzmann distribution
                 Correlation
                 Correlation coefficient
                 Covariance matrices
                 Differential privacy
                 Dimensionality reduction
                 Gamma distribution
                 Gaussian mixture model
                 Higher order statistics
                 Histograms
                 Linear discriminant analysis
                 Maximum likelihood estimation
                 Minimax techniques
                 Mixture models
                 Nonparametric statistics
                 Parametric statistics
                 Prediction theory
                 Ranking (statistics)
                 Root mean square
                 Sampling methods
                 Statistical analysis
                 Time series analysis

Stator bars
        BT: Stators

Stator cores
        BT: Stators

Stator windings
        BT: Stators

2021 IEEE Thesaurus

Stators
BT:	Electric machines
NT:	Stator bars
	Stator cores
	Stator windings

Steady state
USE:	Steady-state

Steady-state
UF:	Steady state
BT:	Dynamic equilibrium
RT:	Transient analysis

Steam engines
BT:	Heat engines
RT:	Boilers
	Water

Steel
BT:	Metals
RT:	Pressure vessels
NT:	Martensite

Steel industry
BT:	Industries

Steerable antennas
BT:	Antennas
	Beam steering
	Phased arrays

Steering systems
BT:	Mechanical products
	Production systems
RT:	Automotive components
	Wheels

Steganography
BT:	Message authentication
RT:	Cryptography

Steiner points
USE:	Steiner trees

Steiner trees
UF:	Steiner points
	Steiner vertices
BT:	Combinatorial mathematics

Steiner vertices
USE:	Steiner trees

Stellar dynamics
BT:	Astrophysics
NT:	Stellar motion

Stellar motion
BT:	Stellar dynamics
RT:	Orbits (stellar)

STEM
UF:	Science technology engineering mathematics
	science technology engineering and math
	science, technology, engineering, and math
BT:	Educational programs
RT:	Curriculum development
	Educational courses
	Engineering - general
	Mathematics
	Science - general
	Technology

Stem cell research
USE:	Stem cells

Stem cells
UF:	Stem cell research
BT:	Biological cells
RT:	Cloning
	Progenitor cells

Stereo image processing
UF:	Stereoscopic
BT:	Stereo vision

Stereo vision
UF:	Three-dimensional vision
BT:	Imaging
RT:	Image matching
	Machine vision
	Robot vision systems
NT:	Stereo image processing

Stereolithography
BT:	Lithography
RT:	Laser applications
	Laser sintering
	Lasers
	Layered manufacturing
	Manufacturing
	Prototypes

Stereophonic systems
USE:	Audio systems

Stereoscopic

2021 IEEE Thesaurus

USE: Stereo image processing

Sternum
BT: Thorax

Stethoscope
BT: Biomedical equipment

Stimulated emission
UF: Optical amplification
BT: Particle beam optics
RT: Lasers
Masers

Stirling engines
BT: Heat engines

Stochastic distribution
USE: Stochastic processes

Stochastic prediction
USE: Stochastic processes

Stochastic processes
UF: Stochastic distribution
Stochastic prediction
Stochastic theory
BT: Mathematics
RT: Computational electromagnetics
Diffusion processes
Particle swarm optimization
Probability
Random number generation
Random variables
Viterbi algorithm
NT: Gaussian processes
Markov processes

Stochastic resonance
BT: Resonance

Stochastic systems
BT: Systems engineering and theory
RT: Control systems
Probability
Random variables

Stochastic theory
USE: Stochastic processes

Stock exchanges
USE: Stock markets

Stock markets
UF: Stock exchanges
BT: Economics

Stokes parameters
BT: Optical polarization

Stomach
BT: Digestive system

Stomatognathic system
BT: Anatomy
RT: Faces
Lips
Mouth
Pharynx
Tongue
NT: Masticatory muscles
Salivary glands

Storage area networks
UF: SAN
BT: Computer networks
RT: Data storage systems
Local area networks

Storage automation
UF: Automated storage and retrieval systems
BT: Automation
Material storage
RT: Warehousing

Storage batteries
USE: Batteries

Storage battery
USE: Batteries

Storage management
BT: Capacity planning
Management
RT: Memory management
NT: Digital storage

Storage rings
BT: Particle accelerators
RT: Ions
Muon colliders
Particle beams

Stored energy
USE: Energy storage

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Storm systems
  USE: Tropical cyclones

Storms
  BT: Meteorology
  RT: Lightning
         Monsoons

Strain
  UF: Deformation
  BT: Mechanical factors
  RT: Elasticity
         Elongation
         Strain control
         Strain measurement
  NT: Tensile strain
         Uniaxial strain

Strain based sensors
  USE: Capacitive sensors

Strain control
  UF: Friction stir processing
  BT: Mechanical variables
control
  RT: Strain

Strain gauges
  USE: Strain measurement

Strain measurement
  UF: Strain gauges
  BT: Mechanical variables
measurement
  RT: Micrometers
         Strain

Strain sensors
  USE: Capacitive sensors

Strategic planning
  BT: Planning
  RT: Analytic hierarchy process
         Business intelligence
         Decision making
         Information systems
         Stakeholders
  NT: Roadmaps (technology
planning)

Stratified media
  USE: Nonhomogeneous media

Stratosphere
  USE: Terrestrial atmosphere

Stray light
  BT: Light sources
         Optics
  RT: Ray tracing

Streaming media
  UF: Media streaming
         Video streaming
  BT: Communication system
software
  RT: Data compression
         IEEE 802.11e Standard
         IPTV
         Internet
         MPEG 4 Standard
         MPEG standards
         Multimedia Web sites
         Multimedia communication
         Unicast
         Video coding
         Video signal processing
  NT: Mobile video
         Over-the-top media
services
         Video on demand

Streetcars
  USE: Light rail systems

Stress
  UF: Mechanical stress
  BT: Mechanical factors
  RT: Magnetomechanical effects
         Photoelasticity
         Piezoelectricity
         Piezooptic effects
         Piezoresistance
         Stress control
         Stress measurement
  NT: Compressive stress
         Internal stresses
         Residual stresses
         Tensile stress
         Wind stress

Stress (psychological)
  USE: Human factors

Stress control
  BT: Mechanical variables
control
  RT: Stress
         Surface stress

2021 IEEE Thesaurus

Stress measurement
    BT: Mechanical variables measurement
    RT: Stress

String theory
    BT: Physics
    RT: Quantum mechanics

String vacuum
    USE: Elementary particle vacuum

Stripboard circuit
    UF: Veroboard
    BT: Electronic circuits

Stripline
    BT: Planar transmission lines
             Transmission lines
    NT: Stripline components

Stripline components
    BT: Stripline
    RT: Power combiners
             Power dividers

Strips
    BT: Structural shapes

Stroke (medical condition)
    BT: Medical conditions

Strontium
    UF: Sr
    BT: Metals
    NT: Strontium compounds

Strontium compounds
    BT: Strontium
    RT: Alloying

Structural beams
    UF: Cantilever beams
             Girders
    BT: Structural shapes
    RT: Building materials

Structural discs
    UF: Disks (structures)
    BT: Structural shapes

Structural engineering
    UF: Structural parameter
             Structural stability
    BT: Civil engineering

    RT: Architecture
             Bridges
             Building information management
             Construction
             Flexible structures
             Floods
             Intelligent structures
             Mechanical factors
    NT: Offshore installations

Structural panels
    UF: Railway bridges
             Road bridges
             Suspension bridges
    BT: Structural shapes
    RT: Honeycomb structures
             Sandwich structures
             Sheet materials
             Structural plates
             Thin wall structures

Structural parameter
    USE: Structural engineering

Structural plates
    BT: Electronic components
             Structural shapes
    RT: Flanges
             Structural panels
             Wheels

Structural rings
    UF: O-rings
    BT: Structural shapes
    RT: Engine cylinders
             Mechanical products
             Pistons
             Seals

Structural rods
    BT: Structural shapes

Structural shapes
    BT: Mechanical products
    NT: Bars
             Bridges
             Ducts
             Flexible structures
             Honeycomb structures
             Lightweight structures
             Rails
             Sandwich structures
             Sheet materials
             Slabs

Strips
Structural beams
Structural discs
Structural panels
Structural plates
Structural rings
Structural rods
Structural shells
Thin wall structures
Wires

Structural shells
BT: Structural shapes
RT: Thin wall structures

Structural stability
USE: Structural engineering

Structure from motion
BT: Image processing
RT: Motion control
Signal processing
Three-dimensional displays
Two dimensional displays

Structured Query Language
UF: SQL
BT: Database languages
RT: Programming
Relational databases

Student engineers
USE: Engineering students

Student experiments
BT: Engineering education
RT: Laboratories

Style sheet languages
BT: Computer languages
NT: Cascading style sheets

Sub-mm wave filters
USE: Submillimeter wave filters

Sub-sea cables
USE: Underwater cables

Subcontracting
BT: Contracts

Subject predicate object
USE: Triples (Data structure)

Submarine cables

USE: Underwater cables

Submarine technology
USE: Underwater technology

Submarines
USE: Underwater vehicles

Submersibles
USE: Underwater vehicles

Submillimeter wave circuits
BT: Circuits
Submillimeter wave technology
RT: Analog circuits
Submillimeter wave devices
Submillimeter wave filters
NT: Submillimeter wave integrated circuits

Submillimeter wave communication
BT: Communication systems
Submillimeter wave technology

Submillimeter wave devices
UF: Submillimeter wave systems
BT: Submillimeter wave technology
RT: Submillimeter wave circuits
Submillimeter wave integrated circuits
NT: Submillimeter wave filters

Submillimeter wave filters
UF: Sub-mm wave filters
Submillimetre wave filters
BT: Submillimeter wave devices
RT: Submillimeter wave circuits

Submillimeter wave integrated circuits
BT: Integrated circuits
Submillimeter wave circuits
Submillimeter wave technology
RT: Analog integrated circuits
Submillimeter wave devices

Submillimeter wave measurements
BT: Electromagnetic measurements
RT: Hyperspectral sensors

Submillimeter wave technology

Submillimeter wave propagation
BT: Electromagnetic propagation

Submillimeter wave systems
USE: Submillimeter wave devices

Submillimeter wave technology
BT: Microwave theory and techniques
RT: Submillimeter wave measurements
NT: Submillimeter wave circuits
Submillimeter wave communication
Submillimeter wave devices
Submillimeter wave integrated circuits

Submillimetre wave filters
USE: Submillimeter wave filters

Subroutines
USE: Algorithms

Subscriber loops
BT: Communication systems
Multiaccess communication

Subscriber sets
USE: Telephone sets

Subsea cables
USE: Underwater cables

Subspace constraints
BT: Object segmentation

Substation automation
BT: Substations
RT: Automation
SCADA systems
Substation protection

Substation protection
BT: Power system protection
Substations
RT: Substation automation

Substations
UF: Power stations (substations)

BT: Power systems
NT: Substation automation
Substation protection

Substrate hot electron injection
UF: Substrate hot-electron injection
BT: Hot carrier injection

Substrate hot-electron injection
USE: Substrate hot electron injection

Substrate integrated waveguides
UF: Post-wall waveguides
BT: Waveguide lasers

Substrates
BT: Semiconductor materials
RT: Epitaxial growth
Microprocessor chips
Printed circuits
Silicon germanium
Silicon on sapphire

Subthreshold conduction
USE: Subthreshold current

Subthreshold current
UF: Subthreshold conduction
Subthreshold drain current
Subthreshold leakage
BT: Threshold voltage

Subthreshold drain current
USE: Subthreshold current

Subthreshold leakage
USE: Subthreshold current

Subtraction techniques
BT: Image analysis
RT: Biomedical image processing

Subways
USE: Public transportation

Sucrose
USE: Sugar

Sufficient conditions
BT: Logic

Sugar

UF:	Sucrose	
BT:	Agricultural products	
	Food products	
RT:	Sugar industry	
	Sugar refining	
NT:	Glucose	

Sugar industry
BT:	Industries
RT:	Food industry
	Food products
	Sugar
NT:	Sugar refining

Sugar refining
BT:	Sugar industry
RT:	Food industry
	Food products
	Food technology
	Purification
	Refining
	Sugar

Sulfur
UF:	Sulphur
BT:	Chemical elements
NT:	Sulfur compounds

Sulfur compounds
UF:	Sulphur compounds
BT:	Sulfur

Sulfur hexafluoride
UF:	SF6
BT:	Gas insulation

Sulphur
USE:	Sulfur

Sulphur compounds
USE:	Sulfur compounds

Sum product algorithm
UF:	Sum-product algorithm
BT:	Iterative algorithms

Sum product message passing
USE:	Belief propagation

Sum-product algorithm
USE:	Sum product algorithm

Summing circuits
BT:	Circuits
RT:	Analog computers

Sun
BT:	Solar system
NT:	Solar eclipses

Sun sensors
USE:	Sensors

Super earths
USE:	Extrasolar planets

Super hi-vision
USE:	UHDTV

Super-resolution
USE:	Superresolution

Supercapacitors
UF:	Electrical double layer capacitors
	Ultracapacitors
BT:	Electrochemical devices
	Energy storage
	Power capacitors
RT:	Capacitance
	Capacitance measurement
	Electrolytes

Supercomputers
BT:	Computers
RT:	Petascale computing
NT:	Exascale computing

Superconducting cables
BT:	Superconducting transmission lines
RT:	Superconducting coils
	Superconducting magnets

Superconducting coils
BT:	Coils
	Superconducting devices
RT:	Superconducting cables
	Superconducting magnets

Superconducting device noise
BT:	Noise
RT:	Superconducting devices

Superconducting devices
UF:	Josephson devices
	SIS devices (superconductor)
	SNS devices

Superconductor-insulator-superconductor devices
Superconductor-normal-superconductor devices
BT: Superconductivity
RT: Cryogenic electronics
High-temperature superconductors
Superconducting device noise
Superconducting films
Thermal factors
NT: Josephson junctions
SQUIDs
Superconducting coils
Superconducting magnets
Superconducting microwave devices
Superconducting photodetectors

Superconducting epitaxial layers
BT: Epitaxial layers
RT: Superconducting materials

Superconducting filaments
USE: Superconducting materials

Superconducting filaments and wires
BT: Superconductivity

Superconducting films
UF: Superconducting tapes
BT: Superconductivity
RT: High-temperature superconductors
Superconducting devices
Surface impedance
Surface resistance
Thick films
Thin films
NT: Superconducting thin films

Superconducting filters
BT: Filters
RT: Radiofrequency interference

Superconducting infrared detectors
USE: Superconducting photodetectors

Superconducting integrated circuits
BT: Integrated circuits
Superconductivity

Superconducting junction devices
USE: Josephson junctions

Superconducting logic circuits
BT: Logic circuits

Superconducting magnet energy storage
USE: Superconducting magnetic energy storage

Superconducting magnetic energy storage
UF: SMES
Superconducting magnet energy storage
BT: Energy storage
Superconductivity

Superconducting magnets
BT: Electromagnets
Superconducting devices
RT: Magnetic levitation vehicles
Persistent currents
Superconducting cables
Superconducting coils

Superconducting materials
UF: Pnictide superconductors
Superconducting filaments
Superconducting wires
BT: Materials
Superconductivity
RT: Critical current density
Cryogenic electronics
Superconducting epitaxial layers
Thermal factors
NT: Granular superconductors
High-temperature superconductors
Multifilamentary superconductors
Niobium-tin
Type II superconductors

Superconducting microwave devices
BT: Superconducting devices
RT: Microwave devices

Superconducting photodetectors
UF: Superconducting infrared detectors
Superconducting ultraviolet detectors
BT: Photodetectors

Superconducting devices
RT: Infrared detectors

Superconducting quantum interference devices
USE: SQUIDs

Superconducting tapes
USE: Superconducting films

Superconducting thin films
BT: Superconducting films
RT: Thin films

Superconducting transition temperature
BT: Superconductivity
RT: High-temperature superconductors

Superconducting transmission lines
BT: Transmission lines
RT: Power transmission lines
NT: Superconducting cables

Superconducting ultraviolet detectors
USE: Superconducting photodetectors

Superconducting wires
USE: Superconducting materials

Superconductive tunneling
UF: Superconductive tunnelling
BT: Superconductivity
Tunneling

Superconductive tunnelling
USE: Superconductive tunneling

Superconductivity
NT: Bean model
Critical current density (superconductivity)
Flux pinning
Superconducting devices
Superconducting filaments and wires
Superconducting films
Superconducting integrated circuits
Superconducting magnetic energy storage
Superconducting materials
Superconducting transition temperature
Superconductive tunneling

Superconductor-insulator-superconductor devices
USE: Superconducting devices

Superconductor-normal-superconductor devices
USE: Superconducting devices

Superconductors (high temperature)
USE: High-temperature superconductors

Supercontinuum generation
BT: Nonlinear optics
RT: Laser beams
Light sources
Optical fibers

Superlattices
BT: Crystalline materials
NT: Magnetic superlattices
Metallic superlattices
Optical superlattices
Semiconductor superlattices

Superluminescent diodes
UF: SLD
BT: Light emitting diodes
Light sources
Optoelectronic devices
Semiconductor devices
Semiconductor diodes
RT: Lasers

Superposition calculus
BT: Mathematics

Superradiance
USE: Spontaneous emission

Superresolution
UF: Super-resolution
BT: Image resolution

Superstring vacuum
USE: Elementary particle vacuum

Supervised learning
BT: Learning systems
RT: Naive Bayes methods
Semisupervised learning
NT: Boosting

Supervisory control

BT: Control systems
NT: SCADA systems

Supervisory control and data acquisition systems
USE: SCADA systems

Supervisory control and data-acquisition systems
USE: SCADA systems

Supervisory programs
USE: Operating systems

Supply and demand
BT: Economics
RT: Microeconomics
Utility theory

Supply chain management
UF: SCM supply chains
BT: Management
RT: Business process integration
Business process management
Capacity planning
Customer relationship management
Electronic commerce
Management information systems
Materials requirements planning
Production control
Supply chains
NT: Procurement

Supply chains
BT: Logistics
RT: Materials requirements planning
Procurement
Supply chain management
NT: Distribution networks

Support vector machine classification
BT: Support vector machines

Support vector machines
UF: SVM
Support vector regression
BT: Computation theory
RT: Artificial intelligence

Feedforward neural networks
Naive Bayes methods
Pattern classification
Relevance vector machines
NT: Support vector machine classification

Support vector regression
USE: Support vector machines

Surface acoustic wave devices
BT: Acoustic devices
RT: Acoustoelectric devices
Piezoelectric devices

Surface acoustic waves
UF: Acoustic surface waves
BT: Acoustic waves
Surface waves
Waves

Surface charging
BT: Electrostatic processes
RT: Spraying
NT: Triboelectricity

Surface cleaning
BT: Cleaning
Surface treatment
RT: Semiconductor device manufacture
Surface contamination

Surface contamination
BT: Contamination
RT: Semiconductor device manufacture
Surface cleaning
Surface treatment

Surface cracks
BT: Mechanical factors

Surface discharges
BT: Dielectric breakdown
RT: Insulator testing

Surface emitting lasers
BT: Lasers
Semiconductor devices
Semiconductor lasers
Solid lasers
RT: Laser cavity resonators
Quantum well lasers

Quantum wells
NT: Vertical cavity surface emitting lasers

Surface engineering
BT: Materials science and technology
RT: Surface treatment

Surface finishing
BT: Finishing
RT: Lapping
    Polishing machines
NT: Burnishing
    Deburring
    Painting
    Spraying

Surface fitting
BT: Numerical analysis
RT: Computational geometry
    Computer graphics
    Curve fitting
    Interpolation
NT: Response surface methodology

Surface impedance
BT: Surfaces
RT: High-temperature superconductors
    Superconducting films

Surface morphology
BT: Surfaces
RT: Surface roughness
NT: Adsorption

Surface plasmon polaritons
BT: Polaritons
    Surface plasmons

Surface plasmons
BT: Plasmons
NT: Surface plasmon polaritons

Surface reconstruction
BT: Visualization
RT: Pattern analysis

Surface resistance
BT: Resistance
    Surfaces
RT: High-temperature superconductors

Superconducting films

Surface roughness
BT: Surfaces
RT: Planing
    Polishing machines
    Rough surfaces
    Sandblasting
    Surface morphology

Surface soil
BT: Surfaces

Surface states
BT: Energy states
    Surface structures
NT: Surfactants

Surface stress
BT: Mechanical factors
    Surfaces
RT: Internal stresses
    Stress control

Surface structures
BT: Surfaces
NT: Surface states

Surface tension
BT: Surfaces
RT: Surfactants

Surface texture
BT: Surfaces

Surface topography
BT: Geometry
    Surfaces
NT: Nanotopography

Surface treatment
BT: Surfaces
RT: Colloidal lithography
    Planing
    Surface contamination
    Surface engineering
NT: Electrochemical deposition
    Etching
    Finishing
    Galvanizing
    Painting
    Passivation
    Pickling
    Planarization
    Sandblasting

Surface cleaning
Surfactants

Surface waves
BT: Geophysics
RT: Sea surface
NT: Surface acoustic waves

Surface-mount technology
BT: Integrated circuit manufacture

Surfaces
BT: Materials science and technology
NT: Corrosion
Corrugated surfaces
Metasurfaces
Rough surfaces
Surface impedance
Surface morphology
Surface resistance
Surface roughness
Surface soil
Surface stress
Surface structures
Surface tension
Surface texture
Surface topography
Surface treatment

Surfactants
BT: Materials
Surface states
Surface treatment
RT: Adsorption
Surface tension

Surge protection
BT: Power system protection
RT: Surges
NT: Arresters

Surgery
UF: Robot-assisted surgery
BT: Medical treatment
RT: Biomedical equipment
Catheters
Endoscopes
NT: Ambulatory surgery
Hepatectomy
Laser surgery
Microsurgery
Minimally invasive surgery
Neurosurgery

Oncological surgery
Orthopedic surgery

Surgery oncology
USE: Oncological surgery

Surges
BT: Electromagnetic transients
RT: Surge protection

Surgical instruments
BT: Biomedical equipment
NT: Laparoscopes

Surgical robots
USE: Medical robotics

Surveillance
BT: Monitoring
RT: Conformance testing
Hazardous areas
Motion detection
Reconnaissance
Remote sensing
Security
Terrorism
NT: Infrared surveillance
Video surveillance

Suspension bridges
USE: Structural panels

Suspensions (mechanical systems)
BT: Mechanical systems
RT: Automotive components
Springs
NT: Shock absorbers

Sustainability
USE: Sustainable development

Sustainable design
USE: Green design

Sustainable development
UF: Sustainability
BT: Environmental management
Social implications of technology
RT: Green computing

SVC
USE: Static VAr compensators

SVM
      USE: Support vector machines

SVPWM
      USE: Space vector pulse width modulation

Swaging
      BT: Materials processing
      RT: Metal products

Swarm intelligence
      USE: Particle swarm optimization

Swarm optimization
      USE: Particle swarm optimization

Swarm robotics
      UF: Swarm robots
      BT: Multi-robot systems
      RT: Consensus control

Swarm robots
      USE: Swarm robotics

Sweat glands
      BT: Glands
                 Skin

Swimming
      USE: Sports

Swimming robots
      USE: Aquatic robots

Switched capacitor circuits
      UF: Switched-capacitor circuit
      BT: Switched circuits

Switched capacitor networks
      UF: Switched-capacitor networks
      BT: Resistors
      RT: Analog circuits
                 Capacitors

Switched circuits
      BT: Circuits
      RT: Telecommunications
      NT: Switched capacitor circuits

Switched mode power
      USE: Switched mode power supplies

Switched mode power supplies
      UF: SMPS
                 Switched mode power
      BT: Power supplies

Switched reluctance motors
      BT: Reluctance motors
      RT: Brushless motors

Switched systems
      BT: Time-varying systems
      RT: Control systems
                 Power conversion

Switched-capacitor circuit
      USE: Switched capacitor circuits

Switched-capacitor networks
      USE: Switched capacitor networks

Switches
      BT: Control equipment
                 Electronic components
      RT: Current control
                 IEEE 802.3 Standard
                 Solenoids
                 Spark gaps
                 Switchgear
                 Switching circuits
      NT: Contactors
                 Microswitches
                 Optical switches

Switchgear
      BT: Control equipment
      RT: Current control
                 Fuses
                 Switches
      NT: Circuit breakers
                 Interrupters
                 Relays

Switching circuits
      BT: Circuits
      RT: Circuit breakers
                 Digital circuits
                 Relays
                 Switches
      NT: Choppers (circuits)
                 Logic circuits
                 Switching converters
                 Zero current switching
                 Zero voltage switching

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Switching converters
BT: Switching circuits
RT: Power electronics
Zero current switching
Zero voltage switching

Switching convertors
USE: Converters

Switching frequency
BT: Switching systems

Switching loss
UF: Switching losses
BT: Switching systems

Switching losses
USE: Switching loss

Switching systems
BT: Communication systems
RT: Communication switching
NT: Electronic switching systems
Switching frequency
Switching loss
Telecommunication switching

Symbiosis
UF: Symbiotic relationships
BT: Biological processes

Symbiotic relationships
USE: Symbiosis

Symbols
BT: Graphics
RT: Huffman coding
Information retrieval
Pattern recognition
NT: CAPTCHAs

Symmetric matrices
UF: Symmetric matrix
BT: Numerical analysis

Symmetric matrix
USE: Symmetric matrices

Sympathetic nervous system
UF: Sympathetic outflow
BT: Autonomic nervous system

Sympathetic outflow
USE: Sympathetic nervous system

Symposia
USE: Conferences

Synapses
BT: Nervous system
RT: Artificial intelligence
Artificial neural networks
Brain
Communication channels
Computational intelligence
Electrochemical devices
Integrated optics
Neuroinformatics
Neuromorphic engineering
Neurons
Neurotransmitters
Organic electronics
Photonics
Signal processing

Synaptic transmission
USE: Neurotransmitters

Sync
USE: Synchronization

Synchrocyclotrons
BT: Particle accelerators

Synchronisation
USE: Synchronization

Synchronization
UF: Clock synchronization
Sync
Synchronisation
BT: Timing
RT: Chaotic communication
Concurrency control
Frequency locked loops
Scheduling
Synchronous digital hierarchy
Time dissemination
Tracking loops

Synchronous digital hierarchy
UF: SDH
BT: Communication standards
Communication systems
ETSI Standards
RT: Digital communication

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	Optical fiber communication	
	SONET	
	Synchronization	
	Transport protocols	

Synchronous DRAM
    USE: SDRAM

Synchronous dynamic random access memory
    USE: SDRAM

Synchronous generators
    BT: AC generators
             Synchronous machines
    RT: Alternators
    NT: Reluctance generators

Synchronous machines
    BT: AC machines
    NT: Hysteresis motors
             Reluctance machines
             Synchronous generators
             Synchronous motors

Synchronous motors
    BT: Synchronous machines
    RT: Rotating machines
    NT: Hysteresis motors
             Reluctance motors

Synchronous optical network
    USE: SONET

Synchrophasors
    USE: Phasor measurement units

Synchrotron radiation
    BT: Synchrotrons
    RT: Biomedical applications of radiation
             Light sources
             X-rays

Synchrotrons
    BT: Particle accelerators
    RT: Colliding beam accelerators
             Electric fields
             High energy physics instrumentation computing
             Magnetic fields
             Particle beams
    NT: Synchrotron radiation
             Undulators

Syngas

    UF: Synthesis gas
             Synthetic gas
    BT: Gases

Syntactics
    UF: Syntax
    BT: Semiotics
    RT: Communication symbols
             Grammar
             Natural language processing
             Professional communication
             Programming

Syntax
    USE: Syntactics

Synthesis gas
    USE: Syngas

Synthesisers
    USE: Synthesizers

Synthesizers
    UF: Synthesisers
    BT: Electronic music

Synthetic aperture radar
    UF: SAR
    BT: Radar
    RT: Airborne radar
             Ground penetrating radar
             Radar imaging
             Spaceborne radar
             Synthetic aperture sonar
             Ultra wideband radar
    NT: Inverse synthetic aperture radar
             Polarimetric synthetic aperture radar

Synthetic aperture radar imaging
    USE: Radar polarimetry

Synthetic aperture radar interferometry
    BT: Radar interferometry

Synthetic aperture sonar
    UF: SAS
    BT: Sonar
    RT: Synthetic aperture radar

Synthetic biology
    UF: Synthetic life research

BT: Biology
Engineering in medicine and biology
RT: Biological system modeling
Computational biology

Synthetic fibers
UF: Artificial fibers
Artificial fibres
Nylon fiber
Synthetic fibres
BT: Textile fibers

Synthetic fibres
USE: Synthetic fibers

Synthetic gas
USE: Syngas

Synthetic life research
USE: Synthetic biology

Synthetic speech
USE: Speech synthesis

SYSML
USE: Systems Modeling Language

System analysis
USE: System analysis and design

System analysis and design
UF: Logical decomposition
System analysis
System design
System metrics
BT: Systems engineering and theory
RT: Configuration management
Design methodology
Flowcharts
Multi-agent systems
Skin effect
Stability analysis
System improvement
System validation
System verification
Systems simulation
NT: Asymptotic stability
Control system analysis
Diakoptics
Distributed processing
Distributed vision networks
Fault detection

Fault tolerant systems
Interconnected systems
Large-scale systems
Lyapunov methods
Open systems
Petri nets
Physical design
Robust control
Scalability
Scattering parameters
Sequential analysis
Sequential diagnosis
Software prototyping
Static analysis
System dynamics
System performance
System-level design
Systems Modeling Language

Systems modeling
Task analysis
Time factors

System availability
USE: Availability

System buses
BT: Computer interfaces

System design
USE: System analysis and design

System dynamics
BT: System analysis and design
RT: Behavioral sciences
Complex networks
Feedback
Flow production systems
Timing

System identification
BT: Modeling

System implementation
BT: Systems engineering and theory

System improvement
BT: Systems engineering and theory
RT: Quality management
Reliability
System analysis and design
System testing

2021 IEEE Thesaurus

System integration
BT: Systems engineering and theory
RT: Enterprise resource planning
Integrated manufacturing systems
Project management
Resource management

System kernels
BT: Kernel
Operating systems

System level design
USE: System-level design

System life cycle management
USE: Technical management

System lifecycle management
USE: Product lifecycle management

System metrics
USE: System analysis and design

System modeling
USE: Modeling

System of systems
BT: Systems engineering and theory
RT: Complex networks
Emergent phenomena
Networked control systems
NT: Cyber-physical systems

System on chip
USE: System-on-chip

System performance
UF: Cooperative cache
BT: System analysis and design
NT: Cooperative caching

System planning
USE: Planning

System privacy management
USE: Data security

System realization
BT: Systems engineering and theory

System recovery
UF: Deadlocks (computers)
Error recovery (computers)
BT: Computers and information processing
RT: Business continuity
Operating systems
Reliability
NT: Checkpointing
Core dumps
Debugging

System reliability
USE: Reliability

System resilience
USE: Fault tolerance

System software
BT: Software
RT: Visual BASIC
NT: File systems
Operating systems
Program processors
Utility programs

System testing
BT: System validation
System verification
Testing
RT: System improvement
NT: Model checking

System validation
BT: Systems engineering and theory
RT: System analysis and design
NT: System testing

System verification
BT: Systems engineering and theory
RT: System analysis and design
NT: System testing

System-level design
UF: System level design
BT: System analysis and design

System-on-a-chip
USE: System-on-chip

System-on-chip
UF: On-chip

SOC
System on chip
System-on-a-chip
BT: Application specific
integrated circuits
RT: AI accelerators
Microcontrollers
Microprocessors
Mixed analog-digital
integrated circuits
Power dissipation
Signal processing
NT: Lab-on-a-chip
Network-on-chip

Systematics
UF: Biological systematics
BT: Biology

Systems architecture
BT: Systems engineering and
theory
NT: Deep architecture

Systems biology
BT: Biology

Systems engineering
USE: Systems engineering and
theory

Systems engineering and theory
UF: Systems engineering
RT: Aerospace and electronic
systems
Business process
integration
Business process
management
NT: Adaptive systems
Capability engineering
Complex systems
Configuration management
Hierarchical systems
Integrated design
Interface management
Modeling
Multidimensional systems
Network systems
Physical design
Reduced order systems
Requirements engineering
Requirements management
Service-oriented systems
engineering

Solution design
Stochastic systems
System analysis and design
System implementation
System improvement
System integration
System of systems
System realization
System validation
System verification
Systems architecture
Systems engineering
education
Systems operation
Systems simulation
Systems support
Systems thinking
Task analysis
Technical management

Systems engineering education
BT: Engineering education
Systems engineering and
theory

Systems modeling
BT: Modeling
System analysis and design

Systems Modeling Language
UF: SYSML
BT: Computer languages
System analysis and design
RT: Modeling
Software engineering

Systems neuroscience
BT: Neuroscience
RT: Neural networks

Systems operation
BT: Systems engineering and
theory

Systems simulation
BT: Simulation
Systems engineering and
theory
RT: System analysis and design
Technical management

Systems support
BT: Maintenance engineering
Systems engineering and
theory

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Systems thinking
BT:	Systems engineering and theory
RT:	Systems, man, and cybernetics

Systems, man, and cybernetics
RT:	Systems thinking
NT:	Behavioral sciences
	Biological control systems
	Computational linguistics
	Cybernetics
	Ergonomics
	Human factors
	Identification of persons
	Man-machine systems
	Natural languages
	Pervasive computing
	Posthuman
	Teleworking
	Transhuman
	User interfaces

Systolic arrays
BT:	Multiprocessing systems
RT:	Pipeline processing

Table lookup
UF:	LUT
	Look-up table
	Lookup table
BT:	Data structures
	Image processing

Tablet computers
UF:	Tablet PC
BT:	Computers
RT:	Mobile handsets
	Portable media players

Tablet PC
USE:	Tablet computers

Tachometers
BT:	Meters

Tactile feedback
USE:	Tactile sensors

Tactile Internet
BT:	Haptic interfaces
	Internet of Things
RT:	5G mobile communication
	Human-robot interaction

	Information exchange
	Machine-to-machine communications
	Man-machine systems
	Smart devices
	Tactile sensors

Tactile sensors
UF:	Tactile feedback
	Touch sensors
BT:	Robot sensing systems
RT:	Pressure measurement
	Tactile Internet
	Touch sensitive screens

Tag clouds
UF:	Word cloud
BT:	Tagging

Tagging
UF:	Hashtag
BT:	Information retrieval
RT:	Indexing
	Internet of Things
NT:	Tag clouds

TAI
USE:	International Atomic Time

Tail
BT:	Animal structures

Takagi-Sugeno model
BT:	Fuzzy logic
RT:	Fuzzy control
	Fuzzy systems
NT:	Takagi-Sugeno-Kang model

Takagi-Sugeno-Kang model
BT:	Takagi-Sugeno model

Talbot effect
BT:	Optical imaging
RT:	Interferometry
	Optical interferometry

TAM
USE:	Technology acceptance model

Tantalum
BT:	Chemical elements

Tap changers

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BT: Transformers
NT: On load tap changers

Tape casting
BT: Casting
RT: Ceramics

Target detection
USE: Object detection

Target recognition
BT: Object recognition
RT: Missile guidance

Target tracking
BT: Tracking
RT: Control systems
Radar tracking

Targeted drug delivery
BT: Drug delivery

Tariffs
BT: Regulation
RT: Trade agreements

Task analysis
BT: Business process management

System analysis and design
Systems engineering and theory

Taste buds
BT: Sense organs

Taxes
USE: Finance

Taxi
USE: Public transportation

Taxonomy
BT: Information retrieval

Taylor expansion
USE: Taylor series

Taylor series
UF: Taylor expansion
BT: Mathematics

TCP/IP
USE: TCPIP

TCP/IP protocol suite
USE: TCPIP

TCPIP
UF: TCP/IP
TCP/IP protocol suite
Transmission control protocol-internet protocol
Transmission control protocol/internet protocol
BT: IP networks
RT: Computer networks
Data communication
Digital communication
Internet
Protocols
Transport protocols

TDM
USE: Time division multiplexing

TDSCDMA
USE: Time division synchronous code division multiple access

Teaching
USE: Education

Teaching machines
USE: Computer aided instruction

Team working
BT: Organizational aspects

Teamwork
BT: Collaboration

Technetium
BT: Chemical elements

Technical assessment
USE: Technical management

Technical communication
USE: Professional communication

Technical data management
USE: Database systems AND Technical management

Technical drawing
BT: Design methodology
RT: Engineering drawings
Graphics

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Technical management
  UF: System life cycle management
      Technical assessment
      Technical data management
      Technical risk management
  BT: Management
      Systems engineering and theory
  RT: Program management
      Systems simulation
  NT: Maintenance management
      Technical planning

Technical manuals
  USE: Manuals

Technical meetings
  USE: Meetings

Technical planning
  BT: Planning
      Technical management

Technical proposals
  USE: Proposals

Technical reports
  USE: Writing

Technical requirements
  BT: Requirements engineering
  RT: Proposals

Technical risk management
  USE: Technical management

Technical textiles
  USE: Textile products

Technical writing
  USE: Writing

Technician training
  USE: Training

Technique for order of preference by simularity to ideal solution
  USE: TOPSIS

Technological forecasting
  USE: Technology forecasting

Technological innovation
  UF: Innovation
      Invention
  BT: Technology
  RT: Disruptive innovation
      Disruptive technologies
      Technology social factors

Technology
  BT: Social implications of technology
  RT: Engineering - general
      Oil drilling
      Philosophical considerations
      Research and development
      STEM
      Technology forecasting
      Technology planning
  NT: Appropriate technology
      Disruptive technologies
      Machine ethics
      Neurotechnology
      Technological innovation
      Technology social factors
      Technology transfer
      Telepresence
      Telexistence

Technology acceptance model
  UF: TAM
  BT: Human factors
      Information theory
  RT: Computer aided instruction
      Consumer behavior
      Information systems
      Social implications of technology
      Statistical analysis
      Technology transfer
      User centered design
      User experience

Technology forecasting
  UF: Futurism
      Technological forecasting
  BT: Forecasting
  RT: Technology
      Technology social factors
  NT: Roadmaps (technology planning)

Technology management
  BT: Management
  RT: Data processing

Innovation management
Production management
Project management
Research and development
management

Technology transfer

Technology planning
    BT: Planning
    RT: Social factors
        Technology

Technology social factors
    BT: Social factors
        Technology
    RT: Philosophical
considerations
        Risk analysis
        Technological innovation
        Technology forecasting
    NT: Privacy

Technology transfer
    BT: Technology
    RT: Technology acceptance
model
        Technology management
    NT: Small business technology
transfer

Teeth
    UF: Tooth
    BT: Mouth

TEGFETs
    USE: MODFETs

Telecom
    USE: Telecommunications

Telecom buffers
    USE: Telecommunication buffers

Telecom channels
    USE: Communication channels

Telecom computing
    USE: Telecommunication
computing

Telecom congestion control
    USE: Telecommunication
congestion control

Telecom control

    USE: Telecommunication control

Telecom network management
    USE: Telecommunication
network management

Telecom network reliability
    USE: Telecommunication
network reliability

Telecom network topology
    USE: Telecommunication
network topology

Telecom services
    USE: Telecommunication
services

Telecom signaling
    USE: Communication system
signaling

Telecom switching
    USE: Telecommunication
switching

Telecom system signaling
    USE: Communication system
signaling

Telecom traffic
    USE: Telecommunication traffic

Telecommunication buffers
    UF: Telecom buffers
    BT: Data communication
    RT: Buffer storage

Telecommunication channels
    USE: Communication channels

Telecommunication computing
    UF: Communications computing
        Telecom computing
    BT: Computer applications
        Telecommunications
    RT: 3G mobile communication
        4G mobile communication
        Information-centric
networking
        Mobile computing
        Quality of service
        Software radio
        TV
        Telecommunication control

Telecommunication network management

Telegraphy
Telephony
NT: Internetworking
Soft switching

Telecommunication congestion control
UF: Telecom congestion control
BT: Telecommunication network topology
NT: Call admission control

Telecommunication control
UF: Telecom control
BT: Communication system control
RT: Telecommunication computing

Telecommunication network management
UF: Telecom network management
BT: Telecommunication network topology
RT: Management information base
Telecommunication computing
NT: Mobile nodes
Network architecture
Network neutrality
Network resource management

Telecommunication network reliability
UF: Communication network reliability
Telecom network reliability
BT: Reliability
Telecommunication network topology
NT: Diversity schemes

Telecommunication network topology
UF: Telecom network topology
BT: Telecommunications
RT: Dynamic spectrum access
Network topology
NT: Intelligent networks
Link aggregation
Passive networks
Telecommunication congestion control

Telecommunication network management
Telecommunication network reliability
Telecommunication traffic

Telecommunication power management
USE: Power system management

Telecommunication security
USE: Communication system security

Telecommunication services
UF: Telecom services
BT: Telecommunications
RT: Radio access networks
NT: Acoustic communication (telecommunication)
Number portability

Telecommunication signalling
USE: Communication system signaling

Telecommunication standards
USE: Communication standards

Telecommunication switching
UF: Telecom switching
BT: Switching systems

Telecommunication traffic
UF: Network traffic
Telecom traffic
Traffic load
BT: Telecommunication network topology
RT: Communication system traffic

Telecommunications
UF: Telecom
BT: Communication systems
RT: Convolutional codes
Diversity reception
Film bulk acoustic resonators
Global Positioning System
Helical antennas
Multiaccess communication
Multicarrier code division multiple access
Multicast communication
Next generation networking

Optical wavelength conversion

Reflectivity
Switched circuits
Telecontrol equipment
NT: Ambient intelligence
Feedback communications
IP networks
Radio access networks
Railway communication
Space communications
Telecommunication computing
Telecommunication network topology
Telecommunication services
Telematics

Telecommuting
USE: Teleworking

Teleconferencing
    UF: Videoconferencing
    BT: Communication systems
    RT: Image communication
        Meetings
        Office automation

Telecontrol equipment
    BT: Control equipment
    RT: Communication systems
        Data communication
        Power industry
        Power systems
        Remote handling
        Telecommunications

Telegraphy
    BT: Communication systems
    RT: Telecommunication computing

Telematics
    BT: Information technology
        Telecommunications
    RT: Cyberspace

Telemedicine
    BT: Biomedical communication
    RT: Telepresence

Telemetry
    BT: Aerospace and electronic systems

Data communication
    RT: Deep-space communications

Measurement
    NT: Biomedical telemetry

Teleoperators
    BT: Telerobotics

Telephone equipment
    BT: Communication equipment
    RT: Land mobile radio equipment
Radio communication equipment
Telephony
    NT: Cellular phones
        Landline
        Telephone sets
        Vocoders

Telephone poles
    BT: Poles and towers

Telephone sets
    UF: Handsets
        Subscriber sets
    BT: Telephone equipment
    RT: Telephony
    NT: Mobile handsets

Telephony
    BT: Communication systems
    RT: Telecommunication computing
Telephone equipment
Telephone sets
Videophone systems

Teleportation
    UF: Quantum teleportation
    BT: Quantum mechanics
    RT: Information theory
        Quantum communication
        Quantum entanglement

Telepresence
    BT: Human computer interaction
Technology
    RT: Telemedicine

Teleprinting
    UF: Teletype
    BT: Communication systems

		Data communication
		Printing
	RT:	Digital communication

Telerobotics
	BT:	Robots
	RT:	Delay systems
		Human factors
		Manipulators
		Mobile robots
		Remote handling equipment
	NT:	Teleoperators

Telescopes
	BT:	Instruments
	RT:	Astronomy
		Observatories
		Radio astronomy

Teletext
	BT:	Communication systems
		Information services
	RT:	Data communication
		Videotex

Teletype
| | USE: | Teleprinting |

Television
| | USE: | TV |

Teleworking
	UF:	Mobile office
		Telecommuting
		Virtual office
	BT:	Systems, man, and cybernetics

Telexistence
	BT:	Human computer interaction
		Real-time systems
		Technology

Tellurium
| | BT: | Chemical elements |

TEM cells
	UF:	GHZ transverse electromagnetic cells
		GTEM cells
		Transverse electromagnetic cells
	BT:	Test facilities

	RT:	Anechoic chambers
		Electromagnetic compatibility and interference
		Electromagnetic interference
		Electronic equipment testing

Temperature
	BT:	Thermal factors
	RT:	Temperature control
		Temperature measurement
	NT:	Temperature distribution

Temperature control
	BT:	Thermal variables control
	RT:	Space heating
		Temperature
		Thermal factors
		Ventilation
	NT:	Cooling
		Heating systems

Temperature dependence
| | BT: | Thermal factors |

Temperature distribution
| | BT: | Temperature |
| | RT: | Insulators |

Temperature measurement
	BT:	Thermal variables measurement
	RT:	Bolometers
		Radiometry
		Temperature
		Temperature sensors
		Thermistors
		Thermoresistivity
	NT:	Cryobiology
		Cryogenics
		Cryotherapy
		Global warming
		Kelvin
		Thomson effect

Temperature sensors
	BT:	Thermal sensors
	RT:	Bragg gratings
		Optical fibers
		Temperature measurement
		Transducers
	NT:	Thermometers

Temporal lobe

BT: Brain
NT: Hippocampus

Tendons
BT: Musculoskeletal system

Tennis
USE: Sports

Tensile strain
BT: Strain
RT: Tensile stress

Tensile stress
BT: Stress
RT: Tensile strain

Tensors
BT: Mathematics

Terahertz materials
BT: Materials
NT: Terahertz metamaterials

Terahertz metamaterials
BT: Electromagnetic metamaterials
        Terahertz materials
RT: Split ring resonators

Terahertz radiation
BT: Electromagnetic radiation
        Radiation effects

Terahertz wave imaging
BT: Imaging

Terbium
BT: Chemical elements

Termination of employment
UF: Dismissal (employment)
        Redundancy (employment)
BT: Employment
        Human resource management
RT: Pensions

Terminology
UF: Definitions
        Glossaries
BT: Information retrieval
NT: Dictionaries

Ternary logic

USE: Multivalued logic

Terrain factors
BT: Interference
RT: Earth
        Multipath channels
        Rough surfaces

Terrain mapping
UF: Topography (earth)
BT: Geoscience and remote sensing
RT: Earth
        Geologic measurements
        Geophysical measurements
        Global Positioning System
        Remote sensing
        Vegetation mapping
NT: Digital elevation models

Terrestrial atmosphere
UF: Earth atmosphere
        Stratosphere
        Troposphere
BT: Geoscience and remote sensing
RT: Atmospheric measurements
        Geophysics
        Meteorology
NT: Clouds
        Global warming
        Ionosphere
        Magnetosphere

Terrorism
UF: 9/11
        9/11 attack
        911 attack
        September 11
        Terrorist
BT: Security
RT: Biohazards
        Surveillance
        Threat assessment
        US Department of Homeland Security
        Weapons
NT: Bioterrorism
        Cyber terrorism
        National security

Terrorist
USE: Terrorism

Test data compression
- BT: Data compression

Test equipment
- BT: Testing
- RT: Oscilloscopes
- NT: Automatic test equipment

Test facilities
- BT: Testing
- NT: Anechoic chambers
  - Laboratories
  - Large Hadron Collider
  - Open area test sites
  - TEM cells
  - Wind tunnels

Test generation
- USE: Test pattern generators

Test pattern generators
- UF: Test generation
- BT: Automatic test pattern generation

Testing
- BT: Industrial electronics
  - Instrumentation and measurement
- RT: Cause effect analysis
  - Fault diagnosis
  - Hardware-in-the-loop simulation
  - Inspection
  - Leak detection
  - Maintenance engineering
  - Measurement
- NT: Aerospace testing
  - Automatic testing
  - Benchmark testing
  - Built-in self-test
  - Circuit testing
  - Conformance testing
  - Electronic equipment testing
  - Error analysis
  - Error-free operations
  - Failure analysis
  - Frequency response
  - Impulse testing
  - Insulator testing
  - Integrated circuit testing
  - Life testing
  - Materials testing
  - Optical fiber testing
  - Remaining life assessment
  - Ring generators
  - Semiconductor device testing
  - Software testing
  - System testing
  - Test equipment
  - Test facilities

Text analysis
- BT: Data mining
- RT: Annotations
  - Naive Bayes methods
- NT: Text categorization

Text categorization
- UF: Text classification
- BT: Text analysis
- RT: Data analysis

Text classification
- USE: Text categorization

Text messaging
- USE: Electronic messaging

Text mining
- BT: Data mining
- RT: Triples (Data structure)

Text processing
- UF: Photocomposition
  - Word processing
- BT: Data processing
- RT: Desktop publishing
  - Document handling
  - Office automation
  - Publishing
  - Text recognition
- NT: Typesetting

Text recognition
- BT: Pattern recognition
- RT: Character recognition
  - Text processing

Textile fibers
- UF: Fibers
  - Textile fibres
- BT: Textiles
- RT: Cotton
  - Spinning
  - Textile products
  - Textile technology
  - Weaving

	Wool
NT:	Natural fibers
	Synthetic fibers
	Yarn

Textile fibres
USE: Textile fibers

Textile industry
BT: Manufacturing industries
RT: Clothing industry
Cotton
Spinning machines
Textile machinery
Textile products
Textile technology
Weaving

Textile machinery
BT: Machinery
RT: Needles
Textile industry
Textile products
Textile technology
Textiles
NT: Spinning machines

Textile products
UF: Technical textiles
BT: Manufactured products
RT: Textile fibers
Textile industry
Textile machinery
Textile technology
Textiles

Textile technology
BT: Industries
RT: Bleaching
Textile fibers
Textile industry
Textile machinery
Textile products
Textiles
NT: Spinning
Weaving

Textiles
BT: Materials
RT: Spinning machines
Textile machinery
Textile products
Textile technology
Weaving
NT: Cotton

Fabrics
Textile fibers
Wool

TFETs
UF: Tunnel field effect transistors
BT: Field effect transistors
RT: MOSFET

TFT
USE: Thin film transistors

Thalamus
BT: Brain

Thallium
BT: Chemical elements

Theodolites
BT: Instruments
RT: Geodesy
Geologic measurements
Geophysical measurement techniques

Theoretical neuroscience
USE: Computational neuroscience

Therapy
USE: Medical treatment

Thermal analysis
BT: Thermal variables control
NT: Thermomechanical processes

Thermal conductivity
BT: Thermal factors
RT: Grain boundaries
Thermal resistance
NT: Heat transfer

Thermal decomposition
BT: Thermolysis

Thermal degradation
BT: Thermolysis

Thermal energy
BT: Heating systems
RT: Energy
Kinetic energy
Thermal engineering

2021 IEEE Thesaurus

Thermal engineering
      BT: Engineering - general
      RT: Cooling
              Heat recovery
              Heating systems
              Thermal energy
              Thermal factors
              Thermal variables control
              Thermal variables
measurement

Thermal expansion
      BT: Thermal factors
      RT: Electrothermal actuators
      NT: Thermal force

Thermal factors
      UF: High-temperature effects
      BT: Physics
      RT: Annealing
              Critical current density
              Heat treatment
              Proton effects
              Pyroelectricity
              Superconducting devices
              Superconducting materials
              Temperature control
              Thermal engineering
              Thermal stability
              Thermal variables control
              Thermal variables
measurement
      NT: Temperature
              Temperature dependence
              Thermal conductivity
              Thermal expansion
              Thermal management
              Thermal stresses
              Thermoelasticity
              Thermoelectricity
              Thermolysis
              Thermooptic effects
              Thermoresistivity

Thermal force
      BT: Thermal expansion

Thermal lensing
      BT: Thermooptic effects
      RT: Laser beams
              Nonlinear optics
              Optical distortion
              Solid lasers

Thermal loading
      BT: Thermal stresses

Thermal management
      BT: Thermal factors
      RT: Enthalpy
              Reliability

Thermal management of electronics
      BT: Components, packaging,
and manufacturing technology
      NT: Electronic packaging
thermal management
              Electronics cooling

Thermal noise
      UF: Johnson Nyquist noise
      BT: Circuit noise
      RT: Conductors

Thermal plumes
      USE: Thermal pollution

Thermal pollution
      UF: Heat islands
              Thermal plumes
              Urban heat islands
      BT: Pollution
      RT: Air pollution
              Global warming
              Industrial pollution
              Marine pollution
              Waste heat
              Water pollution

Thermal quenching
      BT: Cooling

Thermal resistance
      BT: Resistance
      RT: Thermal conductivity

Thermal sensors
      BT: Sensors
      NT: Electrothermal actuators
              Temperature sensors

Thermal shock
      BT: Shock (mechanics)
              Thermal stresses

Thermal spraying
      BT: Spraying

Thermal stability

BT: Stability
RT: Integrated circuit reliability
Thermal factors

Thermal stresses
BT: Thermal factors
NT: Thermal loading
Thermal shock

Thermal variables control
BT: Control systems
RT: Thermal engineering
Thermal factors
NT: HVAC
Temperature control
Thermal analysis

Thermal variables measurement
BT: Measurement
RT: Calorimetry
Thermal engineering
Thermal factors
Transducers
NT: Temperature measurement

Thermal wave imaging
USE: Photothermal effects

Thermionic emission
BT: Nuclear and plasma sciences
RT: Electron emission
Ion emission
Transmission electron microscopy
Vacuum arcs

Thermionic valves
USE: Electron tubes

Thermistors
BT: Semiconductor devices
RT: Temperature measurement
Thermoresistivity

Thermo-mechanics
USE: Thermomechanical processes

Thermo-optic effects
USE: Thermooptic effects

Thermo-optical devices
USE: Thermooptical devices

Thermochromism
BT: Thermooptic effects

Thermodynamics
BT: Science - general
NT: Enthalpy
Isobaric
Isothermal processes

Thermoelasticity
BT: Thermal factors

Thermoelectric devices
BT: Thermoelectricity

Thermoelectric effect
USE: Thermoelectricity

Thermoelectric materials
BT: Materials
Thermoelectricity

Thermoelectricity
UF: Seebeck effect
Thermoelectric effect
BT: Electricity
Energy conversion
Thermal factors
NT: Electrothermal effects
Peltier effect
Thermoelectric devices
Thermoelectric materials

Thermoforming
BT: Manufacturing systems

Thermoluminescence
BT: Luminescence

Thermolysis
BT: Chemical processes
Thermal factors
NT: Thermal decomposition
Thermal degradation

Thermomechanical processes
UF: Thermo-mechanics
Thermomechanics
BT: Thermal analysis

Thermomechanics
USE: Thermomechanical processes

Thermometers

BT: Temperature sensors

Thermonuclear fusion
    USE: Fusion reactors

Thermooptic effects
    UF: Thermo-optic effects
    BT: Thermal factors
    RT: Birefringence
           Optical propagation
           Optical reflection
           Optical refraction
           Thermooptical devices
    NT: Thermal lensing
           Thermochromism
           Thermoreflectance

Thermooptical devices
    UF: Thermo-optical devices
    BT: Optical devices
    RT: Integrated optics
           Optical switches
           Solid lasers
           Thermooptic effects

Thermoplastic polyethylene
    BT: Polyethylene
    NT: UHMWPE

Thermoreflectance
    BT: Thermooptic effects

Thermoreflectance imaging
    BT: Optical imaging
    RT: Spectroscopy

Thermoresistivity
    BT: Thermal factors
    RT: Temperature measurement
           Thermistors

Thermostats
    BT: Control equipment

Thesauri
    UF: Thesaurus
    BT: Knowledge representation
           Writing
    RT: Ontologies

Thesaurus
    USE: Thesauri

Thick film circuits
    BT: Circuits

           Integrated circuits
    RT: Hybrid integrated circuits
           Thick film devices
           Thick film inductors

Thick film devices
    BT: Electron devices
    RT: Thick film circuits
           Thick films
    NT: Thick film inductors

Thick film inductors
    BT: Inductors
           Thick film devices
    RT: Microstrip components
           Thick film circuits
           Thick films

Thick film sensors
    UF: Thick-film sensors
    BT: Sensors

Thick films
    BT: Films
    RT: Dielectric films
           Semiconductor films
           Superconducting films
           Thick film devices
           Thick film inductors

Thick-film sensors
    USE: Thick film sensors

Thickness control
    BT: Mechanical variables control
    RT: Size control

Thickness measurement
    BT: Mechanical variables measurement
    RT: Micrometers
           Size measurement

Thigh
    BT: Extremities

Thin film circuits
    BT: Circuits
           Integrated circuits
    RT: Hybrid integrated circuits
           Silicon-on-insulator
           Thin film devices
           Thin film inductors

2021 IEEE Thesaurus

Thin film deposition
    USE: Sputtering

Thin film devices
    BT: Electron devices
    RT: Amorphous semiconductors
          Doping profiles
          Giant magnetoresistance
          Thin film circuits
          Thin films
    NT: Film bulk acoustic
resonators
          Thin film inductors
          Thin film transistors

Thin film inductors
    BT: Inductors
          Thin film devices
    RT: Thin film circuits
          Thin films

Thin film sensors
    BT: Sensors

Thin film transistors
    UF: TFT
          Thin-film transistors
    BT: Active matrix technology
          Field effect transistors
          Thin film devices
    RT: Displays
          Liquid crystal devices
    NT: Organic thin film transistors

Thin films
    BT: Films
    RT: Diamond-like carbon
          Dielectric films
          Epitaxial layers
          Magnetic films
          Metasurfaces
          Molecular beam epitaxial
growth
          Molecular beams
          Self-assembly
          Semiconductor films
          Superconducting films
          Superconducting thin films
          Thin film devices
          Thin film inductors
    NT: Buffer layers
          Epitaxial growth
          Semiconductor thin films

Thin wall structures
    BT: Structural shapes
    RT: Honeycomb structures
          Lightweight structures
          Sandwich structures
          Sheet materials
          Structural panels
          Structural shells

Thin-film transistors
    USE: Thin film transistors

Third generation mobile communication
    USE: 3G mobile communication

Thomson effect
    BT: Temperature measurement

Thorax
    BT: Body regions
          Skeleton
    NT: Ribs
          Sternum

Thorium
    BT: Chemical elements

Threat assessment
    BT: Risk analysis
    RT: Law enforcement
          Terrorism

Three dimensional displays
    USE: Three-dimensional displays

Three dimensional integrated circuits
    USE: Three-dimensional
integrated circuits

Three-dimensional displays
    UF: 3-D displays
          3-D modeling
          3-D modelling
          3-D reconstruction
          3D displays
          3D modeling
          3D modelling
          3D reconstruction
          Three dimensional displays
    BT: Displays
    RT: Reconstruction algorithms
          Shadow mapping
          Sprites (computer)
          Structure from motion
    NT: Bundle adjustment
          X3D

Three-dimensional integrated circuits
UF: 3D integrated circuits
Three dimensional
integrated circuits
BT: Integrated circuits

Three-dimensional printing
UF: 3D printing
Additive manufacturing
BT: Manufacturing systems
Printing
RT: Ink jet printing
Rapid prototyping

Three-dimensional television
BT: TV

Three-dimensional vision
USE: Stereo vision

Three-phase electric power
BT: Power electronics
RT: Conductors
Voltage control

Three-term control
BT: Process control

Threshold current
BT: Current
RT: Electron devices
Lasers

Threshold voltage
BT: Voltage
RT: Integrated circuit noise
MOSFET circuits
Transistors
NT: Subthreshold current

Thresholding (Imaging)
BT: Image segmentaton
RT: Image edge detection

Thrombosis
BT: Medical conditions

Through-silicon vias
UF: TSV
BT: Integrated circuits

Throughput
UF: Network throughput
BT: Communication channels

Throughput (communication systems)
USE: Information rates

Thulium
BT: Chemical elements

Thumb
BT: Fingers

Thyratrons
BT: Electron tubes
RT: Gas discharge devices

Thyristor circuits
BT: Circuits
RT: Thyristors

Thyristors
UF: Diacs
SCR
Semiconductor controlled
rectifiers
Silicon controlled rectifiers
Triacs
BT: Power semiconductor
switches
RT: Thyristor circuits
NT: Photothyristors

Thyroid
BT: Glands

Ti
USE: Titanium

Tides
BT: Oceans
RT: Ocean circulation

Tiles
BT: Building materials
RT: Ceramic products
Ceramics
Floors

Timbre
BT: Music

Time complexity
BT: Computational complexity
RT: Computational modeling
NT: Reversible computing

Time delay

USE: Delay effects

Time difference of arrival
- UF: Time-difference-of-arrival
- BT: Object detection

Time dissemination
- BT: Time measurement
- RT: Satellite navigation systems
      Synchronization

Time division multiaccess
- USE: Time division multiple access

Time division multiple access
- UF: Time division multiaccess
- BT: Multiaccess communication

Time division multiplexed
- USE: Time division multiplexing

Time division multiplexing
- UF: TDM
      Time division multiplexed
- BT: Multiplexing

Time division synchronous code division multiple access
- UF: TDSCDMA
- BT: Multiaccess communication
- RT: 3G mobile communication
      4G mobile communication
      Cellular radio
      Multicarrier code division multiple access
      Spread spectrum communication

Time domain analysis
- USE: Time-domain analysis

Time factors
- BT: System analysis and design
- RT: Bang-bang control
- NT: Continuous time systems
      Discrete-time systems
      Time invariant systems
      Time-varying systems

Time frequency analysis
- USE: Time-frequency analysis

Time invariant systems
- BT: Time factors

RT: Differential equations

Time measurement
- BT: Measurement
- RT: Time-frequency analysis
      Watches
- NT: Clocks
      Time dissemination
      Timing

Time of arrival estimation
- UF: TOA estimation
      Time-of-arrival estimation
- BT: Parameter estimation
- RT: Array signal processing
      Direction-of-arrival estimation
      Signal detection

Time series analysis
- UF: time-series analysis
- BT: Statistics
- RT: Autocorrelation
      Autoregressive processes
      Chaotic communication
      Modeling
      Random processes
      Spectral analysis
      Statistical analysis

Time sharing computer systems
- UF: Time-sharing computer systems
      Time-sharing systems
- BT: Computers and information processing
- RT: Mainframes

Time to market
- BT: Design methodology
      Product development
- RT: Concurrent engineering

Time varying circuits
- BT: Circuits

Time varying systems
- USE: Time-varying systems

Time warp simulation
- BT: Discrete event simulation

Time-difference-of-arrival
- USE: Time difference of arrival

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Time-domain analysis
UF:	FDTD	
	Time domain analysis	
BT:	Electromagnetic analysis	
RT:	Phase noise	
	State-space methods	
	Waves	

Time-frequency analysis
UF:	Time frequency analysis	
BT:	Frequency-domain analysis	
RT:	Biomedical signal processing	
	Fourier transforms	
	Frequency measurement	
	Image processing	
	Power systems	
	Time measurement	
	Video signal processing	

Time-of-arrival estimation
USE:	Time of arrival estimation	

time-series analysis
USE:	Time series analysis	

Time-sharing computer systems
USE:	Time sharing computer systems	

Time-sharing systems
USE:	Time sharing computer systems	

Time-varying channels
BT:	Communication channels	
RT:	Mobile communication	
	Wireless LAN	

Time-varying systems
UF:	Time varying systems	
BT:	Time factors	
RT:	Control systems	
NT:	Switched systems	

Timing
BT:	Time measurement	
RT:	Clocks	
	Logic design	
	System dynamics	
	Timing jitter	
NT:	Bit rate	
	Delays	
	Synchronization	

Timing jitter
BT:	Jitter	
RT:	Timing	

Tin
UF:	Sn	
BT:	Metals	
NT:	Tin alloys	
	Tin compounds	

Tin alloys
BT:	Tin	
RT:	Alloying	
NT:	Niobium-tin	

Tin compounds
BT:	Tin	

Tire pressure
BT:	Pressure measurement	
	Tires	

Tires
UF:	Tyres	
BT:	Mechanical products	
	Rubber products	
RT:	Automobile manufacture	
	Automotive components	
	Vehicles	
	Wheels	
NT:	Tire pressure	

Tissue damage
BT:	Lesions	

Tissue engineering
UF:	Tissue scaffolds	
BT:	Biomedical engineering	
RT:	Biological materials	
	Colloidal lithography	
	Diamond-like carbon	
	Genetic engineering	
NT:	Regeneration engineering	

Tissue scaffolds
USE:	Tissue engineering	

Tissues
USE:	Biological tissues	

Titanates
USE:	Titanium compounds	

Titania
USE:	Titanium dioxide	

2021 IEEE Thesaurus

Titanium
	UF:	Ti
	BT:	Chemical elements
		Metals
	NT:	Titanium alloys
		Titanium compounds
		Titanium dioxide
		Titanium nitride

Titanium alloys
	BT:	Titanium
	RT:	Alloying

Titanium compounds
	UF:	Titanates
	BT:	Titanium

Titanium dioxide
	UF:	Titania
	BT:	Titanium

Titanium nitride
	BT:	Titanium

TMR
	USE:	Tunneling magnetoresistance

TOA estimation
	USE:	Time of arrival estimation

Toddler
	USE:	Pediatrics

Tokamak devices
	BT:	Tokamaks
	RT:	Magnetic confinement
		Toroidal magnetic fields

Tokamaks
	BT:	Fusion reactors
		Plasma applications
		Plasma devices
	RT:	Magnetic confinement
		Plasma simulation
	NT:	Tokamak devices

Token networks
	BT:	Communication systems
		Computer networks
		Digital systems
	RT:	Local area networks
		Metropolitan area networks
		Wide area networks

Tokenization
	BT:	Data security
		Natural language processing

Tolerance analysis
	UF:	Circuit tolerance analysis
		Tolerating problems
	BT:	Manufacturing
	RT:	Circuit analysis
		Circuit optimization
		Semiconductor device breakdown
		Sensitivity

Tolerating problems
	USE:	Tolerance analysis

Tomographic
	USE:	Tomography

Tomography
	UF:	Tomographic
	BT:	Imaging
	RT:	Biomedical imaging
		Geophysical measurement techniques
		Image reconstruction
	NT:	Computed tomography
		Electrical capacitance tomography
		Electrical impedance tomography
		Optical coherence tomography
		Positron emission tomography
		Reconstruction algorithms

Tomosynthesis
	USE:	Biomedical imaging

Tongue
	BT:	Digestive system
	RT:	Stomatognathic system

Tools
	BT:	Manufactured products
	NT:	Hand tools

Tooth
	USE:	Teeth

Topography (earth)

USE: Terrain mapping

Topological insulators
BT: Insulators

Topology
BT: Mathematics
RT: Graph theory
Morphological operations

TOPSIS
UF: Technique for order of preference by simularity to ideal solution
BT: Decision theory
RT: Decision making
Fuzzy set theory
Operations research
Optimization

Tornado
USE: Tornadoes

Tornadoes
UF: Tornado
Tornados
BT: Geoscience

Tornados
USE: Tornadoes

Toroidal magnetic fields
BT: Magnetic fields
RT: Tokamak devices

Torpedoes
USE: Missiles

Torque
BT: Mechanical factors
RT: Torque control
Torque converters
Torque measurement

Torque control
BT: Mechanical variables control
RT: Motor drives
Torque

Torque converters
UF: Torque convertors
BT: Mechanical power transmission
RT: Automotive components
Drives

Engines
Gears
Shafts
Torque

Torque convertors
USE: Torque converters

Torque measurement
UF: Torque ripple
BT: Mechanical variables measurement
RT: Pressure gauges
Torque
NT: Dynamometers

Torque ripple
USE: Torque measurement

Torso
BT: Body regions

Total harmonic distortion
BT: Distortion measurement
Harmonic distortion
RT: Signal analysis

Total ionizing dose
BT: Radiation effects
RT: Aerospace electronics
Radiation hardening (electronics)

Total quality management
UF: TQM
BT: Quality management
RT: Business process re-engineering
Design for quality
Quality assurance
Quality awards
Quality control
NT: Continuous improvement
Six sigma

Touch screens
USE: Touch sensitive screens

Touch sensitive screens
UF: Touch screens
BT: Computer displays
RT: Haptic interfaces
Tactile sensors

Touch sensors

2021 IEEE Thesaurus

	USE:	Tactile sensors

Tourism industry
	BT:	Industries

Towers
	USE:	Poles and towers

Town gas
	USE:	Coal gas

Toxic chemicals
	BT:	Chemical hazards
		Toxicology

Toxicology
	UF:	Poisons
	BT:	Hazards
	RT:	Chemical hazards
		Hazardous materials
		Occupational health
		Pollution
	NT:	Toxic chemicals

Toy industry
	BT:	Industries

Toy manufacturing industry
	UF:	Toys
	BT:	Manufacturing industries
	RT:	Electronics industry

Toys
	USE:	Toy manufacturing industry

TQM
	USE:	Total quality management

Tracheal intubation
	USE:	Intubation

Tracking
	BT:	Motion measurement
	RT:	Iterative learning control
		Maximum likelihood estimation
		Particle tracking
		Position measurement
		Tracking loops
		Velocity measurement
	NT:	Object tracking
		Target tracking
		Trajectory tracking
		Underwater tracking
		Video tracking

Tracking loops
	UF:	Delay lock loops
	BT:	Linear feedback control systems
		Signal processing
	RT:	Modulation
		Synchronization
		Tracking

Traction motors
	BT:	Motors
	RT:	Battery powered vehicles
		Fuel cell vehicles
		Hybrid electric vehicles
		Propulsion
		Solar powered vehicles

Traction power supplies
	BT:	Power supplies

Tractors
	USE:	Agricultural machinery

Trade
	USE:	Business

Trade (international)
	USE:	International trade

Trade agreements
	UF:	Free trade
		GATT
		General agreement on tariffs and trade
	BT:	Economics
	RT:	Globalization
		International collaboration
		International trade
		Tariffs

Trade unions
	USE:	Industrial relations

Trademarks
	BT:	Law
		Legal factors
	RT:	Copyright protection

Traffic congestion
	BT:	Road transportation
	RT:	Traffic control

Traffic control
	UF:	Traffic pattern

Traffic simulation
BT: Control systems
RT: Communication systems
Computer network management
Traffic congestion
NT: Queueing analysis
Road traffic control
Vehicle routing

Traffic load
USE: Telecommunication traffic

Traffic pattern
USE: Traffic control

Traffic simulation
USE: Traffic control

Training
UF: Technician training
BT: Education
RT: Accreditation
Continuing education
Continuing professional development
Electronic learning
Learning management systems
Manuals
Mentoring
Personnel
NT: Certification
Industrial training
Management training
On the job training
Qualifications
Vocational training

Training data
BT: Data analysis

Trajectory
BT: Path planning
RT: Motion control
Object tracking
NT: Trajectory optimization

Trajectory optimization
BT: Optimization
Trajectory

Trajectory planning
BT: Path planning

Trajectory tracking
BT: Path planning
Tracking
RT: Motion control
Robot control

Trans human
USE: Transhuman

Trans-human
USE: Transhuman

Transaction databases
BT: Databases
NT: Itemsets

Transactive control
USE: Transactive energy

Transactive energy
UF: Transactive control
BT: Energy management
RT: Power distribution
Power markets
Power system economics
Smart grids

Transceivers
BT: Communication equipment
RT: Land mobile radio equipment
Mobile communication
Mobile handsets
Software radio
NT: Radio transceivers

Transcoding
BT: Encoding
RT: Data compression
Image coding
Multimedia communication
Video coding

Transconductance
UF: Mutual conductance
BT: Conductivity
RT: Transconductors

Transconductors
BT: CMOS integrated circuits
RT: Transconductance

Transcranial direct current stimulation
BT: Neuroscience
Neurostimulation

2021 IEEE Thesaurus

Transcranial magnetic stimulation
BT: Neuroscience
        Neurostimulation

Transducers
BT: Electronic components
RT: Electric variables
measurement
        Measurement
        Mechanical variables
measurement
        Solenoids
        Temperature sensors
        Thermal variables
measurement
NT: Acoustic transducers
        Biomedical transducers
        Capacitive transducers
        Chemical transducers
        Inductive transducers
        Piezoelectric transducers
        Resistive transducers
        Ultrasonic transducer
arrays

Transfer function
USE: Transfer functions

Transfer functions
UF: Transfer function
BT: Differential equations
RT: Control systems
        Damping
        Linear systems
NT: Poles and zeros

Transfer molding
UF: Resin transfer molding
        Resin transfer moulding
        Transfer moulding
BT: Production

Transfer moulding
USE: Transfer molding

Transferred electron devices
USE: Gunn devices

Transform coding
UF: JPEG
        JPEG2000
        MPEG
BT: Data compression
RT: Digital photography

        MPEG standards
        Principal component
analysis
        Vector quantization

Transformer cores
BT: Magnetic cores
        Magnetic devices
RT: Power transformers
        Transformers

Transformer oil
USE: Oil insulation

Transformer windings
USE: Windings

Transformers
BT: Power systems
RT: Coils
        Core loss
        Inductive power
transmission
        Transformer cores
        Voltage multipliers
        Windings
NT: Baluns
        Current transformers
        Flyback transformers
        High-frequency
transformers
        Instrument transformers
        Phase transformers
        Power transformers
        Pulse transformers
        Tap changers

Transforms
BT: Mathematics
RT: Numerical analysis
        Signal processing
        Spectral analysis
NT: Discrete transforms
        Empirical mode
decomposition
        Fourier transforms
        Karhunen-Loeve transforms
        Poincare invariance
        Wavelet transforms

Transhuman
UF: Trans human
        Trans-human
        Transhumanism

2021 IEEE Thesaurus

BT: Systems, man, and cybernetics
RT: Posthuman

Transhumanism
USE: Transhuman

Transient analysis
UF: Transients
BT: Power system transients
RT: Electromagnetic transients
Signal analysis
Steady-state

Transient gratings
USE: Gratings

Transient response
UF: Natural response
BT: Propagation
RT: Damping

Transients
USE: Transient analysis

Transinformation
USE: Mutual information

Transistors
BT: Semiconductor devices
Solid state circuits
RT: Aluminum gallium nitride
Bipolar transistors
CMOS technology
Silicon germanium
Threshold voltage
NT: Field effect transistors
Heterojunction bipolar transistors
Millimeter wave transistors
Phototransistors
Static induction transistors

Translational medicine
USE: Translational research

Translational research
UF: Bench to bedside
Translational medicine
Translational science
BT: Biomedical engineering
Research and development
RT: Medical diagnosis
Medical services

Translational science
USE: Translational research

Transmembrane potential
USE: Membrane potentials

Transmissible disease
USE: Infectious diseases

Transmission control protocol-internet protocol
USE: TCPIP

Transmission control protocol/internet protocol
USE: TCPIP

Transmission electron microscopy
BT: Electron microscopy
RT: Electron beams
Thermionic emission

Transmission line antennas
BT: Antennas
RT: Transmission lines

Transmission line circuits
USE: Distributed parameter circuits

Transmission line discontinuities
BT: Transmission lines
RT: Freight handling
NT: Waveguide discontinuities

Transmission line matrix methods
BT: Mathematics
Numerical analysis

Transmission line measurements
BT: Electric variables measurement
RT: Impedance measurement
Transmission lines

Transmission line theory
BT: Transmission lines
RT: Capacitance
Conductivity
Crosstalk
Frequency
Inductance

Transmission lines
UF: Transmission-line
BT: Power transmission
RT: Baluns

Circuit noise
Civil engineering
Coaxial cables
Distributed parameter circuits
Helical antennas
Splicing
Transmission line antennas
Transmission line measurements
NT: Cables
Electromagnetic waveguides
Multiconductor transmission lines
Planar transmission lines
Poles and towers
Power line communications
Power transmission lines
Stripline
Superconducting transmission lines
Transmission line discontinuities
Transmission line theory

Transmission of electric power
USE: Power transmission

Transmission-line
USE: Transmission lines

Transmit antennas
USE: Transmitting antennas

Transmitters
BT: Communication equipment
RT: Linearization techniques
Modulation
SISO communication
NT: Auxiliary transmitters
Diversity methods
Neurotransmitters
Optical transmitters
Radio transmitters
Transmitting antennas

Transmitting antennas
UF: Transmit antennas
BT: Antennas
Transmitters
RT: Receiving antennas

Transponders
BT: Communication equipment

Radio communication equipment
RT: Radio navigation
Satellite communication

Transport protocols
BT: Protocols
RT: IP networks
Overlay networks
Radio links
SONET
Synchronous digital hierarchy
TCPIP

Transportation
BT: Intelligent transportation systems
RT: Bridges
Freight containers
NT: Air transportation
Escalators
Green transportation
Land transportation
Public transportation
Seaports
Smart transportation
Vehicles

Transportation industry
BT: Industries

Transversal filters
BT: Filters
RT: Digital filters
Filtering theory
Signal processing

Transverse electromagnetic cells
USE: TEM cells

Traveling salesman
USE: Traveling salesman problems

Traveling salesman problems
UF: Traveling salesman
Travelling salesman problem
BT: NP-hard problem
RT: Optimization methods
Shortest path problem

Traveling wave tubes
UF: Travelling wave tubes

BT: Electron tubes

Travelling salesman problem
    USE: Traveling salesman problems

Travelling wave tubes
    USE: Traveling wave tubes

Tree data structures
    BT: Data structures
    NT: Binary trees

Tree graphs
    BT: Graph theory
    RT: Circuit topology

Tree searching
    USE: Decision trees

Trees (botanical)
    USE: Vegetation

Trees - insulation
    UF: Water trees
    BT: Insulators
    RT: Humidity
        Insulation life
        Moisture

Trellis codes
    USE: Convolutional codes

Triacs
    USE: Thyristors

Triboelectricity
    BT: Electricity
        Electrostatic processes
        Surface charging
    RT: Nanogenerators

Tribology
    BT: Motion measurement

Trigen
    USE: Trigeneration

Trigeneration
    UF: CHCP
        Combined heat, cooling and power
        Combined heat, cooling, and power
        Trigen

    BT: Cooling
        Heating systems
        Power generation
    RT: Cogeneration

Trigger circuits
    BT: Circuits

Trions
    BT: Electrons

Triples (Data structure)
    UF: SPO
        Semantic triple
        Subject predicate object
        Triplestore
    BT: Data storage systems
    RT: Database systems
        Information retrieval
        Metasearch
        Relational databases
        Text mining

Triplestore
    USE: Triples (Data structure)

Tritium batteries
    USE: Atomic batteries

Trojan horses
    UF: Trojans
    BT: Malware
    RT: Cyber espionage

Trojans
    USE: Trojan horses

Trolley cars
    USE: Public transportation

Tropical cyclones
    UF: Cyclonic storms
        Storm systems
        Tropical depressions
        Tropical storms
    BT: Cyclones

Tropical depressions
    USE: Tropical cyclones

Tropical storms
    USE: Tropical cyclones

Troposphere
    USE: Terrestrial atmosphere

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Truncation errors
USE: Finite wordlength effects

Trust management
BT: Decision making
Information security
RT: Access control
Computer security
Cryptography
Privacy
NT: Trusted computing

Trusted computing
BT: Computer security
Trust management

Tsunami
BT: Geoscience

TSV
USE: Through-silicon vias

Tubes
USE: Electron tubes

Tumor
USE: Tumors

Tumor cells
USE: Tumors

Tumor detection
USE: Tumors

Tumors
UF: Tumor
Tumor cells
Tumor detection
Tumours
BT: Medical conditions
RT: Cancer
Medical diagnostic imaging
Oncology
Positron emission
tomography
Single photon emission
computed tomography
NT: Benign tumors
Breast tumors
Colonic polyps
Lesions
Malignant tumors

Tumours

USE: Tumors

Tunable circuits and devices
BT: Circuits and systems
Frequency control
RT: Inductors
Tuners
Tuning
NT: RLC circuits
Tuned circuits

Tuned circuits
BT: Tunable circuits and
devices

Tuners
BT: Instruments
Tuning
RT: Frequency control
Frequency synthesizers
Resonators
Tunable circuits and
devices

Tungsten
UF: Wolfram
BT: Metals

Tuning
BT: Frequency control
RT: Tunable circuits and
devices
NT: Laser tuning
Optical tuning
Tuners

Tuning forks
USE: Vibrations

Tunnel effect
USE: Tunneling

Tunnel field effect transistors
USE: TFETs

Tunneling
UF: Tunnel effect
BT: Electron devices
Quantum mechanics
RT: Quantum well devices
Semiconductor materials
NT: Gate leakage
Josephson effect
Magnetic tunneling
Resonant tunneling devices

2021 IEEE Thesaurus

Superconductive tunneling
Tunneling
magnetoresistance

Tunneling magnetoresistance
UF: TMR
Tunnelling
magnetoresistance
BT: Magnetoresistance
Tunneling
RT: Magnetoresistive devices

Tunnelling magnetoresistance
USE: Tunneling
magnetoresistance

Turbines
BT: Turbomachinery
RT: Aircraft propulsion
Boilers
Compressors
Turbogenerators
Wind energy
NT: Hydraulic turbines
Wind turbines

Turbo codes
BT: Channel coding
RT: Error correction
Viterbi algorithm

Turbo generators
USE: Turbogenerators

Turbogenerators
UF: Turbo generators
BT: Turbomachinery
RT: Turbines
Wind power generation

Turbomachine blades
USE: Turbomachinery

Turbomachinery
UF: Turbomachine blades
BT: Power generation
RT: Blades
Compressors
Engines
Machine components
Mechanical systems
Pumps
NT: Turbines
Turbogenerators

Turbulent media
USE: Random media

Turing machines
BT: Automata
RT: Digital computers

Turning
BT: Machining
RT: Boring
Machine tools

Turnkey project
BT: Project engineering
Project management

Tutorials
BT: Educational programs
IEEE indexing

TV
UF: Mobile television
TV broadcasting
Television
BT: Communications
technology
RT: Closed captioning
Electronic learning
Entertainment industry
Flat panel displays
HbbTV Standards
Image communication
Must-carry
TV equipment
Telecommunication
computing
UHDTV
Visual communication
NT: Analog TV
Cable TV
Color TV
Digital TV
Mobile TV
Smart TV
Three-dimensional
television
Web TV

TV broadcasting
USE: TV

TV equipment
BT: Communication equipment
RT: TV
Video equipment

NT: Large screen displays
          TV receivers

TV interference
       BT: Interference
       RT: Echo interference
            Gaussian noise

TV receivers
       BT: TV equipment

Twitter
       USE: Blogs AND
            Social networking (online)

Two dimensional displays
       UF: 2-D displays
            2D displays
            Two-dimensional displays
       BT: Displays
       RT: Sprites (computer)
            Structure from motion

Two dimensional hole gas
       UF: 2-d hole gas
             2d hole gas
       BT: Quantum well devices
       RT: Quantum well lasers
            Quantum wells

Two dimensional photonic crystals
       USE: Photonic crystals

Two-dimensional displays
       USE: Two dimensional displays

Two-dimensional electron gas FETs
       USE: MODFETs

Two-dimensional photonic crystals
       USE: Photonic crystals

Two-term control
       BT: Process control

Type II superconductors
       BT: Superconducting materials
       RT: Flux pinning
            Niobium

Type interference
       USE: Reasoning about programs

Type testing
       USE: Conformance testing

Typesetting
       BT: Text processing
       RT: Printing

Tyres
       USE: Tires

Uber
       USE: Public transportation

Ubicomp
       USE: Pervasive computing

Ubiquitous computing
       UF: Ubiquitous wireless*
       BT: Pervasive computing
       RT: Ambient intelligence
       NT: Context-aware services

*Ubiquitous wireless**
       USE: Ubiquitous computing

UDN
       USE: Ultra-dense networks

UHD
       USE: UHDTV

UHDTV
       UF: 4K UHD
            8K UHD
            Super hi-vision
            UHD
            Ultra HD
            Ultra HD TV
            Ultra-high definition TV
            Ultra-high definition television
       BT: HDTV
       RT: ITU Standards
            TV

UHF antennas
       BT: Antennas
            UHF technology
       RT: UHF devices

UHF circuits
       UF: Ultra-high-frequency circuits
       BT: Circuits
            UHF technology
       RT: Analog circuits
       NT: UHF integrated circuits

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UHF communication
UF: Ultra-high-frequency communication
BT: Communication systems
UHF technology
RT: Mobile handsets

UHF devices
UF: Ultra-high-frequency devices
BT: UHF technology
RT: UHF antennas
UHF integrated circuits

UHF integrated circuits
UF: Ultra-high-frequency integrated circuits
BT: Circuits
Integrated circuits
UHF circuits
UHF technology
RT: Analog integrated circuits
UHF devices

UHF measurements
UF: Ultra-high-frequency measurements
BT: Measurement
RT: UHF technology

UHF propagation
UF: UHF radio propagation
Ultra-high-frequency propagation
BT: Electromagnetic propagation
RT: Broadband antennas

UHF radio propagation
USE: UHF propagation

UHF technology
UF: Ultra-high-frequency technology
BT: Communications technology
RT: UHF measurements
NT: UHF antennas
UHF circuits
UHF communication
UHF devices
UHF integrated circuits

UHMWPE

UF: Ultra high molecular weight polyethylene
BT: Thermoplastic polyethylene

UK Space Agency
USE: United Kingdom Space Agency

ULSI
USE: Ultra large scale integration

Ultra HD
USE: UHDTV

Ultra HD TV
USE: UHDTV

Ultra high molecular weight polyethylene
USE: UHMWPE

Ultra large scale integration
UF: ULSI
BT: Circuits
Integrated circuits
Large scale integration

*Ultra low power**
USE: Low-power electronics

Ultra reliable low latency communication
UF: URLLC
Ultra-reliable low latency communication
Ultra-reliable low-latency communication
BT: Low latency communication

Ultra violet
USE: Ultraviolet sources

Ultra wide-band
USE: Ultra wideband technology

Ultra wideband
USE: Ultra wideband technology

Ultra wideband antennas
UF: UWB antennas
Ultrawideband antennas
BT: Broadband antennas
Ultra wideband technology
RT: Ultra wideband radar

Ultra wideband communication
UF: UWB communication

Ultrawideband communication
- BT: Ultra wideband technology
- RT: Broadband communication
  Military communication
  Multipath channels
  Spread spectrum communication

Ultra wideband radar
- UF: UWB radar
  Ultrawideband radar
- BT: Radar
  Ultra wideband technology
- RT: Ground penetrating radar
  Radar detection
  Radar imaging
  Synthetic aperture radar
  Ultra wideband antennas

Ultra wideband technology
- UF: UWB technology
  Ultra wide-band
  Ultra wideband
  Ultra-wide-band
  Ultra-wideband
  Ultrawideband
  Ultrawideband technology
- BT: Communications technology
- NT: Ultra wideband antennas
  Ultra wideband communication
  Ultra wideband radar

Ultra-dense networks
- UF: UDN
- BT: Cellular networks
  Mobile communication
- RT: 5G mobile communication
  Microcell networks

Ultra-high definition television
- USE: UHDTV

Ultra-high definition TV
- USE: UHDTV

Ultra-high definition video
- BT: High definition video

Ultra-high-frequency circuits
- USE: UHF circuits

Ultra-high-frequency communication
- USE: UHF communication

Ultra-high-frequency devices
- USE: UHF devices

Ultra-high-frequency integrated circuits
- USE: UHF integrated circuits

Ultra-high-frequency measurements
- USE: UHF measurements

Ultra-high-frequency propagation
- USE: UHF propagation

Ultra-high-frequency technology
- USE: UHF technology

*Ultra-low power**
- USE: Low-power electronics

Ultra-reliable low latency communication
- USE: Ultra reliable low latency communication

Ultra-reliable low-latency communication
- USE: Ultra reliable low latency communication

Ultra-violet
- USE: Ultraviolet sources

Ultra-wide-band
- USE: Ultra wideband technology

Ultra-wideband
- USE: Ultra wideband technology

Ultracapacitors
- USE: Supercapacitors

Ultrafast electronics
- BT: High-speed electronics

Ultrafast optics
- BT: Optics

Ultrasonic applications
- USE: Acoustic applications

Ultrasonic devices
- USE: Acoustic devices

Ultrasonic imaging
- UF: Ultrasonic techniques
  Ultrasound

BT: Ultrasonics, ferroelectrics, and frequency control
    RT: Amniocentesis
        Biomedical imaging
    NT: Ultrasonography

Ultrasonic techniques
    USE: Ultrasonic imaging

Ultrasonic transducer arrays
    BT: Transducers

Ultrasonic transducers
    BT: Ultrasonics, ferroelectrics, and frequency control
    RT: Nondestructive testing
        Piezoelectricity
        Sonar

Ultrasonic variables measurement
    BT: Measurement

Ultrasonics
    USE: Acoustics

Ultrasonics, ferroelectrics, and frequency control
    NT: Ferroelectric materials
        Frequency control
        Piezoelectricity
        Pyroelectricity
        Ultrasonic imaging
        Ultrasonic transducers

Ultrasonography
    BT: Biomedical image processing
        Ultrasonic imaging
    NT: Sonogram

Ultrasound
    USE: Ultrasonic imaging

Ultraviolet sources
    UF: UV sources
        Ultra violet
        Ultra-violet
    BT: Light sources
    RT: Lamps
        Lasers

Ultrawideband
    USE: Ultra wideband technology

Ultrawideband antennas
    USE: Ultra wideband antennas

Ultrawideband communication
    USE: Ultra wideband communication

Ultrawideband radar
    USE: Ultra wideband radar

Ultrawideband technology
    USE: Ultra wideband technology

Umbilical cable
    UF: Power supplies to apparatus
    BT: Power supplies

UML
    USE: Unified modeling language

UMTS
    USE: 3G mobile communication

Uncertain systems
    UF: Parameter uncertainty
    BT: Mathematics
    RT: Control systems
        Linear matrix inequalities
        Robustness
        Uncertainty

Uncertainty
    BT: Probability
    RT: Cognitive science
        Fuzzy sets
        Nonlinear dynamical systems
        Uncertain systems
    NT: Evidence theory
        Forecast uncertainty

Underarm
    USE: Axilla

Underground communication cables
    USE: Communication cables

Underground object detection
    USE: Buried object detection

Underground objects
    USE: Buried object detection

Underground power cables
    BT: Power cables

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Undersea communication
USE: Underwater communication

Underwater acoustics
BT: Acoustics

Underwater autonomous vehicles
USE: Autonomous underwater vehicles

Underwater cables
UF: Marine cables
Sub-sea cables
Submarine cables
Subsea cables
BT: Cables
Marine technology

Underwater communication
UF: Undersea communication
BT: Communication systems
Marine technology
Underwater technology

Underwater drones
USE: Unmanned underwater vehicles

Underwater equipment
UF: Diving equipment
Flotation devices
BT: Marine technology
Underwater technology
RT: Underwater vehicles
NT: Rebreathing equipment

Underwater exploration robots
USE: Unmanned underwater vehicles

Underwater robots
USE: Unmanned underwater vehicles

Underwater sensor networks
USE: Wireless sensor networks

Underwater structures
BT: Marine technology
Underwater technology

Underwater technology
UF: Submarine technology
BT: Marine technology

RT: Underwater vehicles
NT: Marine robots
Underwater communication
Underwater equipment
Underwater structures

Underwater tracking
BT: Tracking

Underwater vehicles
UF: Aquatic vehicles
Submarines
Submersibles
BT: Marine vehicles
RT: Marine robots
Marine technology
Underwater equipment
Underwater technology

Undulators
UF: Wiggler magnets
BT: Magnetic devices
Synchrotrons
RT: Free electron lasers
X-rays

Unemployment
BT: Human resource management

Uniaxial strain
BT: Strain

Unicast
BT: Computer networks
RT: Streaming media

Unified messaging
BT: Electronic mail
Electronic messaging

Unified modeling language
UF: UML
BT: Specification languages
RT: Client-server systems
Common Information Model (electricity)

Uniform Resource Identifier
USE: Uniform resource locators

Uniform resource locators
UF: URL
Uniform Resource Identifier
Uniform resource name

BT: Web sites

Uniform resource name
      USE: Uniform resource locators

Uninterruptible power systems
      BT: Power systems
      RT: Batteries
               Emergency power supplies
               Power supplies
               Protection

United Kingdom Space Agency
      UF: UK Space Agency
      BT: Organizations

Units (measurement)
      USE: Measurement units

Universal mobile telecommunication service
      USE: 3G mobile communication

Universal motors
      BT: Motors

Universal Serial Bus
      UF: USB
      BT: Communication standards
               Information technology

Universities
      USE: Educational institutions

Unmanned aerial vehicles
      UF: Aerial robots
               Micro air vehicles
               Unmanned air vehicles
               Unmanned airborne vehicles
      BT: Unmanned vehicles
      RT: Mobile robots
      NT: Drones

Unmanned air vehicles
      USE: Unmanned aerial vehicles

Unmanned airborne vehicles
      USE: Unmanned aerial vehicles

Unmanned autonomous cars
      USE: Unmanned autonomous vehicles

Unmanned autonomous vehicle
      USE: Autonomous vehicles

Unmanned autonomous vehicles
      UF: Unmanned autonomous cars
      BT: Autonomous vehicles
      NT: Autonomous aerial vehicles
               Autonomous underwater vehicles

Unmanned underwater vehicles
      UF: Underwater drones
               Underwater exploration robots
               Underwater robots
      BT: Unmanned vehicles

Unmanned vehicles
      UF: Remotely guided vehicles
               Remotely operated automobiles
               Remotely operated cars
               Remotely operated vehicles
      BT: Intelligent vehicles
      RT: Agricultural robots
      NT: Unmanned aerial vehicles
               Unmanned underwater vehicles

Unsolicited e-mail
      UF: Junk e-mail
               Junk email
               Spam
               Spamming
               Unsolicited electronic e-mail
               Unsolicited electronic email
               Unsolicited email
      BT: Electronic mail
      RT: Computer crime
               Office automation
               Privacy-invasive software

Unsolicited electronic e-mail
      USE: Unsolicited e-mail

Unsolicited electronic email
      USE: Unsolicited e-mail

Unsolicited email
      USE: Unsolicited e-mail

Unsupervised learning
      BT: Learning systems
      RT: Formal concept analysis

Generative adversarial networks

Semisupervised learning

Uplink
BT: Satellite communication

Upper bound
BT: Boundary conditions

Uranium
BT: Chemical elements

Urban areas
UF: Cities and towns
   City
   Metropolitan areas
   Urban environments
BT: Geography
RT: Public infrastructure
   Public transportation
NT: Smart cities
   Urban planning

Urban environments
USE: Urban areas

Urban heat islands
USE: Thermal pollution

Urban modeling
USE: Urban planning

Urban planning
UF: City planning
   Urban modeling
BT: Urban areas
RT: Public infrastructure
NT: Urban policy

Urban policy
BT: Urban planning

Urban pollution
BT: Pollution

Urinary calculesis
USE: Kidney stones

URL
USE: Uniform resource locators

URLLC
USE: Ultra reliable low latency communication

Urogenital system
BT: Anatomy
NT: Bladder
   Kidney

US activities
USE: IEEE United States activities

US Department of Agriculture
BT: US Government

US Department of Commerce
BT: US Government
NT: NIST
   NTIA

US Department of Defense
UF: DoD
BT: US Government

US Department of Energy
UF: DoE
BT: US Government

US Department of Health and Human Services
BT: US Government agencies
NT: National Institutes of Health

US Department of Homeland Security
BT: US Government
RT: Cyberattack
   Terrorism

US Department of Transportation
UF: DOT
BT: US Government

US Government
BT: Government
NT: US Department of Agriculture
   US Department of Commerce
   US Department of Defense
   US Department of Energy
   US Department of Homeland Security
   US Department of Transportation
   US Government agencies
   US local government

US Government agencies
  BT: US Government
  RT: Patents
  NT: FAA
       FCC
       FDA
       NASA
       US Department of Health
and Human Services

US local government
  BT: US Government

Usability
  BT: Software design

USB
  USE: Universal Serial Bus

User centered design
  UF: User-centered design
       User-centred design
  BT: Design methodology
  RT: Technology acceptance
model

User computer interfaces
  USE: User interfaces

User experience
  BT: Ergonomics
  RT: Affective computing
       Human computer
interaction
       Human factors
       Mobile computing
       Quality of experience
       Technology acceptance
model
       User interfaces

User friendliness
  USE: Human computer
interaction

User generated content
  USE: User-generated content

User interfaces
  UF: Man-machine interfaces
       User computer interfaces
       User-computer interfaces
  BT: Systems, man, and
cybernetics
  RT: Adaptive learning

       Affordances
       Ambient intelligence
       Browsers
       Computer interfaces
       Computer peripherals
       Displays
       Gaze tracking
       User experience
       Web design
  NT: Audio user interfaces
       Brain-computer interfaces
       Data visualization
       Emotion recognition
       Exoskeletons
       Graphical user interfaces
       Human computer
interaction
       Human-robot interaction
       Human-vehicle systems
       Smart cards

User-centered design
  USE: User centered design

User-centred design
  USE: User centered design

User-computer interfaces
  USE: User interfaces

User-created content
  USE: User-generated content

User-generated content
  UF: Consumer-generated
media
       User generated content
       User-created content
  BT: Data acquisition

Utility programs
  BT: System software

Utility theory
  BT: Mathematics
  RT: Supply and demand

UV sources
  USE: Ultraviolet sources

UWB antennas
  USE: Ultra wideband antennas

UWB communication

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USE: Ultra wideband communication

UWB radar
USE: Ultra wideband radar

UWB technology
USE: Ultra wideband technology

V2G
USE: Vehicle-to-grid

V2I
USE: Vehicle-to-infrastructure

V2V
USE: Vehicular ad hoc networks

V2X
USE: Vehicle-to-everything

Vaccines
BT: Medical services

Vacuum arc remelting
BT: Melt processing

Vacuum arcs
BT: Vacuum breakdown
RT: Electron emission
Thermionic emission
Vacuum systems

Vacuum breakdown
BT: Dielectric breakdown
RT: Electron emission
Vacuum systems
NT: Vacuum arcs

Vacuum electronics
BT: Vacuum technology

Vacuum energy
USE: Elementary particle vacuum

Vacuum systems
BT: Vacuum technology
RT: Bellows
Casimir effect
Leak detection
Vacuum arcs
Vacuum breakdown
NT: Gettering

Vacuum technology

BT: Electron devices
RT: Field emitter arrays
Gettering
Space charge
NT: Photomultipliers
Vacuum electronics
Vacuum systems

Vacuum tubes
USE: Electron tubes

VAD
USE: Voice activity detection

Valuation
USE: Cost accounting

Valves
BT: Fluid flow
Hydraulic equipment
Machine components
RT: Fluid flow control
Manifolds
NT: Microvalves

Vanadium
BT: Chemical elements

Vanes
USE: Blades

VANET
USE: Vehicular ad hoc networks

VAR
USE: Reactive power

Varactors
BT: Capacitors
Semiconductor diodes

Variable frequency drives
USE: Variable speed drives

Variable optical attenuators
USE: Optical attenuators

Variable selection
USE: Input variables

Variable speed drives
UF: Variable frequency drives
BT: Drives
RT: Magnetic gears
Motor drives

NT: Pitch control (audio)

Variable structure systems
      BT: Adaptive systems

Varistors
      BT: Resistors
      RT: Arresters
                Semiconductor devices

Vascular system
      USE: Circulatory system

VCO
      USE: Voltage-controlled oscillators

VCR
      USE: Video recording

VCSEL
      USE: Vertical cavity surface emitting lasers

Vector optimization
      USE: Pareto optimization

Vector processors
      BT: Microprocessors

Vector quantisation
      USE: Vector quantization

Vector quantization
      UF: Vector quantisation
      BT: Quantization (signal)
      RT: Codes
                Encoding
                Image coding
                MPEG 4 Standard
                Speech coding
                Transform coding
                Video coding

Vectors
      BT: Linear algebra
      RT: Eigenvalues and eigenfunctions
                Signal processing

Vegetable oils
      BT: Oils
      RT: Food products

Vegetation

UF: Trees (botanical)
BT: Biology
RT: Forestry
            Vegetation mapping
NT: Crops
            Marine vegetation

Vegetation mapping
      BT: Geoscience and remote sensing
      RT: Agriculture
                Forestry
                Geophysical measurement techniques
                Remote sensing
                Terrain mapping
                Vegetation

Vehicle crash testing
      BT: Automotive engineering
                Product safety engineering
      RT: Vehicles

Vehicle detection
      BT: Automotive engineering

Vehicle driving
      BT: Automotive engineering

Vehicle dynamics
      BT: Automotive engineering
      RT: Hardware-in-the-loop simulation
                Vehicles
      NT: Rollover

Vehicle routing
      BT: Traffic control
      RT: Intelligent vehicles
                Path planning

Vehicle safety
      BT: Automotive engineering
                Safety
      RT: Vehicle-to-everything
      NT: Advanced driver assistance systems
                Lane departure warning systems
                Lane detection

Vehicle to vehicle communication
      USE: Vehicular ad hoc networks

Vehicle-to-everything

UF: V2X
BT: Communication systems
Intelligent vehicles
RT: Advanced driver assistance systems
On board unit
Road safety
Vehicle safety
Vehicular ad hoc networks
NT: Vehicle-to-infrastructure

Vehicle-to-grid
UF: V2G
BT: Electric vehicles
Smart grids
RT: Battery powered vehicles
Demand side management
Distributed power generation
Fuel cell vehicles
Hybrid electric vehicles
Load management
Propulsion
Solar powered vehicles

Vehicle-to-infrastructure
UF: V2I
BT: Vehicle-to-everything

Vehicle-to-vehicle
USE: Vehicular ad hoc networks

Vehicles
BT: Transportation
Vehicular and wireless technologies
RT: Mobile robots
Tires
Vehicle crash testing
Vehicle dynamics
Vehicular ad hoc networks
NT: Connected vehicles
Hydrogen powered vehicles
Intelligent vehicles
Land vehicles
Military vehicles
Space vehicles

Vehicular ad hoc networks
UF: V2V
VANET
Vehicle to vehicle communication
Vehicle-to-vehicle
BT: Ad hoc networks

RT: Dedicated short range communication
Mobile communication
Vehicle-to-everything
Vehicles
Vehicular automation
NT: Road side unit

Vehicular and wireless technologies
UF: Vehicular technologies
NT: Automotive engineering
Land mobile radio equipment
Navigation
Propulsion
Vehicles
Wireless sensor networks

Vehicular automation
BT: Automation
RT: Autonomous vehicles
Intelligent vehicles
Mechatronics
Mobile robots
Multi-agent systems
Vehicular ad hoc networks

Vehicular technologies
USE: Vehicular and wireless technologies

Veins
BT: Blood vessels

Velocity control
UF: Rotational measurement
Rotational speed
Speed control
BT: Mechanical variables control
RT: Aerospace control
Angular velocity
Cruise control
Motion control
Motor drives
Servosystems
NT: Angular velocity control

Velocity measurement
UF: Speed measurement
BT: Mechanical variables measurement
RT: Angular velocity
Doppler measurement
Flowmeters

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Motion measurement
Slow light
Tracking

Ventilation
BT: Cooling
RT: Air conditioning
HVAC
Temperature control
Vents
NT: Fans

Ventilators
BT: Biomedical equipment
RT: Intubation
Respiratory system

Ventricle system
BT: Brain

Vents
BT: Mechanical products
RT: Air conditioning
Buildings
Ducts
Space heating
Ventilation
Windows

Venture capital
BT: Economics
Financial management
RT: Business continuity
Enterprise resource planning
Research and development management
Risk analysis

Venus
BT: Planets

Vermin control
USE: Pest control

Veroboard
USE: Stripboard circuit

Vertical cavity surface emitting lasers
UF: VCSEL
Vertical cavity surface-emitting lasers
Vertical-cavity surface-emitting lasers
BT: Surface emitting lasers

RT: Distributed Bragg reflectors
P-i-n diodes

Vertical cavity surface-emitting lasers
USE: Vertical cavity surface emitting lasers

Vertical recording
USE: Perpendicular magnetic recording

Vertical-cavity surface-emitting lasers
USE: Vertical cavity surface emitting lasers

Very high speed integrated circuits
UF: VHSIC
BT: Integrated circuits

Very large scale integration
UF: VLSI
Very-large-scale-integration
BT: Circuits
Integrated circuits
Large scale integration
RT: Damascene integration
Nanotechnology
Parameter extraction
NT: Neuromorphics
Wafer scale integration

Very long instruction word
USE: VLIW

Very-high-frequency circuits
USE: VHF circuits

Very-high-frequency devices
USE: VHF devices

Very-large-scale-integration
USE: Very large scale integration

Very-long-instruction-word
USE: VLIW

VHDL
UF: VHSIC Hardware Description Language
BT: Hardware design languages
RT: Electronic design automation and methodology
Field programmable gate arrays

2021 IEEE Thesaurus

Integrated circuits
Parallel programming

VHF circuits
UF: Very-high-frequency circuits
BT: Circuits
RT: Analog circuits
Helical antennas
VHF devices

VHF devices
UF: Very-high-frequency devices
BT: Communications technology
RT: VHF circuits

VHSIC
USE: Very high speed integrated circuits

VHSIC Hardware Description Language
USE: VHDL

Vibrating bodies
USE: Vibrations

Vibration control
BT: Mechanical variables control
RT: Damping
Isolation technology
Shock absorbers
Vibration measurement
Vibrations

Vibration measurement
BT: Mechanical variables measurement
RT: Modal analysis
Vibration control
Vibrations
Vibrometers

Vibrational signal processing
USE: Signal processing

Vibrations
UF: Mechanical vibrations
Tuning forks
Vibrating bodies
BT: Mechanical factors
RT: Acoustic noise
Acoustics
Damping

Dynamics
Elastodynamics
Nanogenerators
Oscillators
Resonance
Vibration control
Vibration measurement

Vibrometers
BT: Meters
RT: Vibration measurement

Video analytics
USE: Visual analytics

Video annotation
USE: Image annotation

Video codecs
BT: Codecs
Communication equipment
Video equipment
RT: Decoding
Image coding
MPEG 4 Standard
MPEG standards
Video coding

Video coding
UF: Advanced video coding
Videocoding
BT: Video signal processing
RT: Image coding
MPEG 4 Standard
MPEG standards
Rate distortion theory
Streaming media
Transcoding
Vector quantization
Video codecs
NT: DVD
High efficiency video coding

Video compression
BT: Video signal processing
RT: Data compression

Video description
BT: Assistive technology
Audio systems
Videos

Video equipment
UF: Camcorders
BT: Communication equipment

2021 IEEE Thesaurus

RT:	Consumer electronics
	TV equipment
	Video recording
NT:	Optical projectors
	Video codecs
	Videos

Video games
    USE: Games

Video on demand
    BT: Streaming media
    RT: Broadband communication
            Digital multimedia broadcasting
            Multimedia Web sites

Video recording
    UF: VCR
            VTR
    BT: Recording
    RT: DVD
            Image storage
            Mobile video
            Video equipment
    NT: High definition video
            Videos
            Webcams

Video reviews
    BT: IEEE indexing

Video sequence
    USE: Video sequences

Video sequences
    UF: Video sequence
    BT: Computer graphics
    RT: Image databases
            Image processing
            Multimedia computing

Video sharing
    BT: Information retrieval
    RT: Internet
            Multimedia Web sites
    NT: MySpace

Video sharing Web sites
    USE: Multimedia Web sites

Video signal processing
    BT: Multidimensional signal processing
    RT: Authentication

	Fall detection
	Firewire
	Gaze tracking
	IEEE 1394 Standard
	Image annotation
	Image recognition
	MPEG 4 Standard
	MPEG standards
	Motion detection
	Object tracking
	Streaming media
	Time-frequency analysis
NT:	Motion artifacts
	Video coding
	Video compression

Video streaming
    USE: Streaming media

Video surveillance
    BT: Surveillance
    RT: Motion detection

Video tracking
    BT: Image motion analysis
            Tracking

video-game
    USE: Games

Videocoding
    USE: Video coding

Videoconferences
    BT: Collaborative tools

Videoconferencing
    USE: Teleconferencing

Videophone systems
    UF: Picture phones
            Picturephones
    BT: Communication systems
    RT: Image communication
            Telephony
            Visual communication

Videos
    UF: Multimedia products
    BT: Video equipment
            Video recording
    NT: Video description

Videotex
    UF: Viewdata

	BT:	Communication systems
		Information services
	RT:	Data communication
		Teletext

Viewdata
| | USE: | Videotex |

Vimeo
| | USE: | Multimedia Web sites |

Virology
	BT:	Microbiology
	RT:	Epidemics
		Viruses (medical)

Virtual artifact
	BT:	Artificial intelligence
		Brain
		Digital systems
		Virtual reality

Virtual assistants
	UF:	Alexa
		Bixby
		Cortana
		Siri
	BT:	Computer applications
	RT:	Smart devices

Virtual colonoscopy
| | BT: | Colonoscopy |

Virtual currency
| | USE: | Online banking |

Virtual enterprises
	BT:	Computer applications
		Data processing
		Economics
		Operations research
	RT:	Electronic commerce
		Internet
		Research and development
		Virtual manufacturing
		Virtual reality

Virtual environments
	BT:	Virtual reality
	RT:	Internet of Things
		Management information base
	NT:	Virtualization

Virtual factories

| | USE: | Virtual manufacturing |

Virtual groups
| | UF: | Virtual teams |
| | BT: | Collaboration |

Virtual machine monitors
	UF:	Hypervisors
		VMMs
	BT:	Computers and information processing
	RT:	Platform virtualization

Virtual machines
| | USE: | Virtual machining |

Virtual machining
	UF:	Virtual machines
	BT:	Machining
		Virtual manufacturing
	RT:	Software defined networking
		Virtual prototyping
		Virtual reality

Virtual manufacturing
	UF:	Digital factories
		Virtual factories
	BT:	Computer applications
	RT:	CADCAM
		Computer integrated manufacturing
		Concurrent engineering
		Research and development
		Virtual enterprises
		Virtual prototyping
		Virtual reality
	NT:	Virtual machining

Virtual office
| | USE: | Teleworking |

Virtual private networks
	UF:	VPN
	BT:	Computer networks
	RT:	Data security
		Internet
		Local area networks
		Wide area networks
	NT:	Extranets

Virtual prototyping
	BT:	Design methodology
	RT:	Product development
		Prototypes

Rapid prototyping
Research and development
Virtual machining
Virtual manufacturing
Virtual reality

Virtual reality
BT: Computer graphics
Graphics
RT: 3D audio
Affordances
Cyberspace
Digital representation
Digital transformation
Digital twin
Immersive audio
Mixed reality
Solid modeling
Virtual enterprises
Virtual machining
Virtual manufacturing
Virtual prototyping
Virtualization
NT: Augmented reality
Augmented virtuality
Avatars
Cybersickness
Extended reality
Immersive experience
Virtual artifact
Virtual environments
X reality

Virtual teams
USE: Virtual groups

Virtualization
BT: Virtual environments
RT: Software defined
networking
Virtual reality

Viruses (computer)
USE: Computer viruses

Viruses (medical)
BT: Microorganisms
RT: Virology
NT: Coronaviruses
Influenza

Viruses (microorganisms)
USE: Microorganisms

Visa gold

USE: Credit cards

Viscera
BT: Body regions

Viscosity
BT: Fluids
Measurement
Resistance
RT: Navier-Stokes equations
Rheology

Visible light communication
UF: VLC
BT: Data communication
Optical fiber communication
RT: Light emitting diodes
Light fidelity
Lighting

Vision
USE: IEEE mission and vision

Vision (biological)
USE: Visual systems

Vision Based Robot Control
USE: Visual servoing

Vision defects
UF: Amblyopia
Color blindness
Myopia
BT: Visual systems

Vision sensors
BT: Sensors
RT: Image processing

Vision systems (nonbiological)
USE: Machine vision

Visual
USE: Visualization

Visual analytics
UF: Video analytics
BT: Visualization
RT: Information representation

Visual BASIC
BT: Computer languages
RT: Software engineering
Software tools
System software

Visual communication
  BT: Communication systems
  RT: Image communication
       Image resolution
       TV
       Videophone systems

Visual databases
  UF: Moving object databases
  BT: Databases

Visual effects
  BT: Visualization
  RT: Animation
       Computer graphics

Visual odometry
  BT: Computer vision
       Robots

Visual perception
  BT: Visual systems

Visual prostheses
  USE: Visual prosthesis

Visual prosthesis
  UF: Electronic visual prosthesis
       Visual prostheses
  BT: Prosthetics
  RT: Blindness

Visual servoing
  UF: Vision Based Robot Control
  BT: Motion control
       Robot vision systems

Visual systems
  UF: Vision (biological)
  BT: Sense organs
  RT: Head
       Machine vision
       Saliency detection
  NT: Vision defects
       Visual perception

Visualisation
  USE: Visualization

Visualization
  UF: Visual
       Visualisation
  BT: Computer graphics
       Graphics

  RT: Animation
       Design tools
       Educational technology
       Image forensics
  NT: Curve fitting
       Surface reconstruction
       Visual analytics
       Visual effects

Viterbi algorithm
  BT: Algorithms
  RT: Dynamic programming
       Information theory
       Mathematics
       Multiaccess communication
       Probability
       Speaker recognition
       Stochastic processes
       Turbo codes

Vitrification
  BT: Chemical technology
  RT: Radioactive waste disposal

Vivaldi antennas
  UF: Vivaldi-antennas
  BT: Broadband antennas

Vivaldi-antennas
  USE: Vivaldi antennas

VLC
  USE: Visible light communication

VLIW
  UF: Very long instruction word
       Very-long-instruction-word
  BT: Central Processing Unit

VLSI
  USE: Very large scale integration

VMMs
  USE: Virtual machine monitors

Vocabulary
  BT: Information retrieval
  RT: Ranking (statistics)

Vocational training
  UF: NVQ
       National vocational
qualification
  BT: Training
  RT: Industrial training

Multiskilling

Vocoders
BT:	Communication equipment
	Telephone equipment
RT:	Speech codecs
	Speech coding

Voice activity detection
UF:	Speech activity detection
	Speech detection
	VAD
BT:	Speech processing
RT:	Speech coding
	Speech recognition
	Speech synthesis

Voice mail
BT:	Message systems
RT:	Electronic mail
	Office automation

Voice over Internet protocol
USE:	Internet telephony

Voice over IP
USE:	Internet telephony

Voice print
USE:	Spectrogram

Voice response systems
USE:	Speech synthesis

Voice tract
USE:	Larynx

Voice-over-Internet protocol
USE:	Internet telephony

Voicegram
USE:	Spectrogram

Voiceprint
USE:	Spectrogram

VOIP
USE:	Internet telephony

Volatile organic compounds
BT:	Organic compounds

Volcanic activity
BT:	Volcanoes

Volcanic ash
BT:	Volcanoes
RT:	Ash

Volcano
USE:	Volcanoes

Volcanoes
UF:	Volcano
BT:	Geoscience
NT:	Planetary volcanoes
	Volcanic activity
	Volcanic ash

Voltage
BT:	Electric variables
RT:	Automatic voltage control
	Capacitance-voltage characteristics
	Electrophysiology
	Phase frequency detectors
	Voltage control
	Voltage measurement
NT:	Breakdown voltage
	Dynamic voltage scaling
	Threshold voltage
	Voltage fluctuations

Voltage breakdown
USE:	Dielectric breakdown

Voltage control
UF:	Voltage mode control
	Voltage regulation
	Voltage-mode control
BT:	Electric variables control
RT:	Electric current control
	Limiting
	Motor drives
	On load tap changers
	Phase frequency detectors
	Power distribution control
	Power factor correction
	Reactive power control
	Regulators
	Three-phase electric power
	Voltage
	Voltage multipliers
NT:	Automatic voltage control

Voltage controlled oscillators
USE:	Voltage-controlled oscillators

Voltage fluctuations

BT: Voltage
RT: Power systems

Voltage measurement
BT: Electric variables measurement
RT: Automatic voltage control
Potentiometers
Voltage
Voltage transformers
Voltmeters
NT: Low voltage
Medium voltage

Voltage mode control
USE: Voltage control

Voltage multipliers
BT: Circuits
RT: AC-DC power converters
Charge pumps
Particle accelerators
Rectifiers
Transformers
Voltage control
NT: Capacitors
Diodes

Voltage regulation
USE: Voltage control

Voltage sags
USE: Power quality

Voltage source inverters
BT: Inverters

Voltage transformers
UF: Potential transformers
BT: Instrument transformers
RT: Voltage measurement

Voltage-controlled oscillators
UF: VCO
Voltage controlled oscillators
BT: Oscillators

Voltage-mode control
USE: Voltage control

Voltage-source converters
UF: Modular multi-level converters
VSC

Voltage-source convertors
BT: Converters
Power conversion
RT: AC-DC power converters
HVDC transmission
Power electronics
Pulse width modulation converters

Voltage-source convertors
USE: Voltage-source converters

Voltmeters
BT: Meters
RT: Voltage measurement

Volume estimation
USE: Volume measurement

Volume measurement
UF: Volume estimation
BT: Mechanical variables measurement
RT: Size measurement

Volume relaxation
BT: Mechanical factors

Volunteer computing
USE: Computer applications AND
Distributed processing

Vortices, optical
USE: Optical vortices

Voting
BT: Government
NT: Electronic voting

VPN
USE: Virtual private networks

VPU
USE: Graphics processing units

VSC
USE: Voltage-source converters

VTR
USE: Video recording

W3C
UF: World Wide Web Consortium
BT: Standards organizations

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W3C Standards
BT: Standards publications

Wafer bonding
BT: Bonding processes
           Semiconductor device manufacture

Wafer level packaging
USE: Wafer scale integration

Wafer scale integration
UF: Wafer level packaging
           Wafer-level packaging
BT: Circuits
           Integrated circuits
           Large scale integration
           Very large scale integration

Wafer-level packaging
USE: Wafer scale integration

Walking
USE: Legged locomotion

WAMS
USE: Wide area measurements

WAN
USE: Wide area networks

WANs
USE: Wide area networks

WAP
USE: Wireless access points
AND
           Wireless application protocol

Warehousing
BT: Material storage
RT: Production facilities
           Stacking
           Storage automation

Warning systems
USE: Alarm systems

Warranties
UF: Product warranties
           Product warranty
BT: Product liability

Washing machines
BT: Electric machines
           Electrical products
           Home appliances
           Home automation

Waste compaction
USE: Waste reduction

Waste disposal
BT: Waste management
RT: Effluents
           Pollution
           Radioactive waste
           Sanitary engineering
           Slag
NT: Incineration
           Radioactive waste disposal

Waste electrical and electronic equipment
USE: Electronic waste

Waste handling
BT: Waste management
RT: Radioactive waste disposal
           Waste reduction
NT: Sewage treatment
           Sludge treatment
           Waste handling equipment
           Wastewater treatment

Waste handling equipment
BT: Waste handling
RT: Materials handling equipment
           Remote handling equipment

Waste heat
BT: Energy conversion
RT: Boilers
           Cogeneration
           Energy conservation
           Industrial waste
           Thermal pollution

Waste incineration
USE: Incineration

Waste management
BT: Environmental management
RT: Biodegradation
           Effluents
           Production management

Radioactive waste
Sanitary engineering
Slag
Waste materials
Wastewater treatment
NT: Waste disposal
Waste handling
Waste recovery
Waste reduction

Waste materials
UF: Refuse
Solid waste
BT: Materials
RT: Fuels
Radioactive pollution
Sanitary engineering
Waste management
Waste recovery
Water pollution
NT: Effluents
Electronic waste
Food waste
Industrial waste
Radioactive waste
Slurries
Wastewater

Waste recovery
BT: Waste management
RT: Waste materials
Waste reduction

Waste reduction
UF: Waste compaction
BT: Waste management
RT: Design for disassembly
Waste handling
Waste recovery
NT: Compaction

Wastewater
BT: Waste materials
RT: Industrial waste
Sanitary engineering
Sludge treatment
Wastewater treatment
Water
Water pollution
Water pumps

Wastewater treatment
UF: Dissolved air flotation
BT: Waste handling
RT: Rubber products

Sanitary engineering
Sludge treatment
Waste management
Wastewater
Water conservation
Water pollution
NT: Ozonation

Watches
BT: Clocks
RT: Consumer products
Time measurement

Water
UF: H2O
BT: Liquids
RT: Hydrodynamics
Hydrologic measurements
Hydrology
Lakes
Oceans
Reservoirs
Rivers
Steam engines
Wastewater
Water heating
Water pollution
Water resources
Water splitting
Water storage
Wetlands
NT: Water quality

Water conservation
UF: Water recycling
BT: Environmental
management
RT: Wastewater treatment
Water resources
Water storage
NT: Desalination

Water heating
BT: Heating systems
RT: Water

Water jet cutting
UF: Abrasive water jet cutting
BT: Cutting tools

Water monitoring
BT: Monitoring
Water resources

Water pollution

BT:	Oceanic engineering and marine technology	
	Pollution	
RT:	Effluents	
	Industrial pollution	
	Lakes	
	Oils	
	Rivers	
	Sanitary engineering	
	Sewage treatment	
	Thermal pollution	
	Waste materials	
	Wastewater	
	Wastewater treatment	
	Water	
	Water quality	
	Water resources	
NT:	Marine pollution	

Water pumps
- **BT:** Pumps
- **RT:** Automotive components
- Cooling
- Hydraulic equipment
- Irrigation
- Photovoltaic systems
- Wastewater

Water quality
- **BT:** Water
- **RT:** Water pollution

Water recycling
- **USE:** Water conservation

Water resources
- **BT:** Environmental management
- **RT:** Lakes
- Remote sensing
- Rivers
- Water
- Water conservation
- Water pollution
- **NT:** Desalination
- Reservoirs
- Water monitoring

Water splitting
- **BT:** Chemical processes
- **RT:** Chemical reactors
- Hydrogen
- Photochemistry
- Water

Water storage
- **BT:** Material storage
- **RT:** Crops
- Lakes
- Land use planning
- Water
- Water conservation
- **NT:** Dams
- Reservoirs

Water trees
- **USE:** Trees - insulation

Watermark
- **USE:** Watermarking

Watermarking
- **UF:** Audio watermarking
- Digital watermarking
- Image watermarking
- Watermark
- **BT:** Security
- **RT:** Embossing
- Internet of Things

Watt hour meters
- **USE:** Watthour meters

Watt-hour meters
- **USE:** Watthour meters

Watthour meters
- **UF:** Watt hour meters
- Watt-hour meters
- **BT:** Meters
- **RT:** Energy measurement

Wattmeters
- **BT:** Meters
- **RT:** Power measurement

WAVE
- **USE:** Wireless Access in Vehicular Environments

Wave diffraction
- **USE:** Diffraction

Wave energy conversion
- **UF:** Wave energy converters
- **BT:** Energy conversion
- Hydroelectric power generation

Wave energy converters

USE: Wave energy conversion

Wave equations
     USE: Propagation

Wave functions
     BT: Waves
     RT: Conformal mapping
           Elementary particle exchange interactions
           Functional analysis
     NT: Wavelet analysis
           Wavelet domain

Wave power
     BT: Energy resources
           Ocean waves
     RT: Renewable energy sources

Wave propagation
     USE: Propagation

Wave scattering
     USE: Scattering

Waveform analysis
     USE: Signal analysis

Waveform generators
     USE: Signal generators

Waveguide components
     BT: Electromagnetic waveguides
     RT: Circulators
           Conformal mapping
           Gap waveguide
           Helical antennas
           Waveguide theory
     NT: Optical waveguides
           Power combiners
           Power dividers

Waveguide discontinuities
     UF: Irises
           Waveguide obstacles
     BT: Transmission line discontinuities
     RT: Electromagnetic waveguides
           Loaded waveguides
           Waveguide theory
     NT: Reflection coefficient
           Waveguide transitions

Waveguide junctions
     BT: Junctions

Waveguide lasers
     BT: Electromagnetic waveguides
     RT: Lasers
     NT: Substrate integrated waveguides

Waveguide obstacles
     USE: Waveguide discontinuities

Waveguide theory
     UF: Guided electromagnetic wave propagation
     BT: Electromagnetic waveguides
     RT: Antennas
           Conformal mapping
           Mathematics
           Mode matching methods
           Waveguide components
           Waveguide discontinuities
           Waveguide transitions

Waveguide transitions
     BT: Waveguide discontinuities
     RT: Waveguide theory

Wavelength assignment
     BT: Optical fiber networks

Wavelength conversion
     BT: Optical fibers
     RT: Wavelength converters

Wavelength converters
     UF: Wavelength convertors
     BT: Converters
     RT: Wavelength conversion

Wavelength convertors
     USE: Wavelength converters

Wavelength division multiplexed
     USE: Wavelength division multiplexing

Wavelength division multiplexing
     UF: WDM
           Wavelength division multiplexed
           Wavelength-division multiplexing

BT: Multiplexing
RT: Bragg gratings
       Multicast communication
NT: WDM networks

Wavelength measurement
BT: Measurement
RT: Acoustic measurements
       Electromagnetic measurements
       Frequency measurement
       Hyperspectral sensors
       Optical variables measurement

Wavelength routing
BT: Routing

Wavelength-division multiplexing
USE: Wavelength division multiplexing

Wavelet analysis
BT: Wave functions
RT: Wavelet transforms
NT: Multiresolution analysis

Wavelet coefficients
BT: Wavelet transforms

Wavelet domain
BT: Wave functions

Wavelet neural networks
USE: Neural networks

Wavelet packets
BT: Wavelet transforms

Wavelet transforms
BT: Transforms
RT: Harmonic analysis
       Signal analysis
       Signal processing
       Signal representation
       Wavelet analysis
NT: Biorthogonal modulation
       Continuous wavelet transforms
       Discrete wavelet transforms
       Wavelet coefficients
       Wavelet packets

Waves
BT: Physics

RT: Acoustic propagation
       Acoustic scattering
       Electromagnetic propagation
       Electromagnetic radiation
       Electromagnetic scattering
       Time-domain analysis
NT: Atmospheric waves
       Berry phase
       Doppler effect
       Electrodynamics
       Magnetostatic waves
       Matter waves
       Plasma waves
       Propagation
       Reflectivity
       Seismic waves
       Shock waves
       Solitons
       Surface acoustic waves
       Wave functions

WDM
USE: Wavelength division multiplexing

WDM networks
BT: Wavelength division multiplexing

Weapons
UF: Bomb
       Munitions
       Ordinance
BT: Military equipment
RT: Defense industry
       Electronic countermeasures
       Terrorism
NT: Guns
       Missiles
       Nuclear weapons
       Projectiles

Wearable computers
UF: Body borne computers
       Wearable Health Monitoring System
       Wearable computing
       Wearable devices
       Wearable electronics
       Wearables
BT: Computers
       Pervasive computing
RT: Fall detection
       Smart textiles

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		Soft electronics
	NT:	Smart glasses

Wearable computing
    USE: Wearable computers

Wearable devices
    USE: Wearable computers

Wearable electronics
    USE: Wearable computers

Wearable Health Monitoring System
    USE: Wearable computers

Wearable robots
	UF:	Hardsuit
		Powered armor
		Powered exoskeleton
	BT:	Robots
	RT:	Assistive technology
		Biomechanics
		Human-robot interaction
		Medical robotics
		Military equipment
		Mobile robots
		Orthotics
		Prosthetics
		Service robots

Wearable sensors
    BT: Sensors

Wearables
    USE: Wearable computers

Weather
    USE: Meteorology

Weather forecasting
	UF:	Weather prediction
	BT:	Meteorology
	NT:	Wind forecasting

Weather prediction
    USE: Weather forecasting

Weaving
	BT:	Textile technology
	RT:	Cotton
		Fabrics
		Textile fibers
		Textile industry
		Textiles

Web 2.0
    BT: Internet

Web and internet services
	UF:	Baidu
		Internet services
	BT:	Web services

Web browsers
    USE: Browsers

Web cams
    USE: Webcams

Web design
	UF:	Web site design
	BT:	Web sites
	RT:	Authoring systems
		Content management
		Software design
		User interfaces
	NT:	Web page design
		Web pages

Web filters
    USE: Information filters

Web mining
    BT: Data mining

Web ontology language
    USE: OWL

Web page design
    BT: Web design

Web pages
    BT: Web design

Web real-time communications
    USE: WebRTC

Web robot
    USE: Bot (Internet)

Web search
	BT:	Search methods
	RT:	Metasearch
	NT:	Crawlers

Web servers
	BT:	Servers
		Web services

Web services

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BT: Internet
  Middleware
RT: Asynchronous communication
  Cloud computing
  Service computing
  Webcams
NT: Mashups
  Message service
  Service-oriented architecture
  Simple object access protocol
  WS-BPEL
  Web TV
  Web and internet services
  Web servers
  WebRTC

Web services business process execution language
  USE: WS-BPEL

Web site design
  USE: Web design

Web sites
  UF: Reddit
  BT: Computer applications
    Information retrieval
  RT: Computer networks
    Content management
    Extranets
    Internet
    Portals
    Social networking (online)
    Wikipedia
    World Wide Web
  NT: Multimedia Web sites
    MySpace
    Uniform resource locators
    Web design

Web television
  USE: Web TV

Web TV
  UF: Web television
  BT: Broadcasting
    TV
    Web services

Webcams
  UF: Web cams
  BT: Cameras

    Video recording
  RT: Web services

Webinars
  BT: Seminars

WebRTC
  UF: Web real-time communications
  BT: Application programming interfaces
    Real-time systems
    Web services

WeChat
  USE: Message service AND
    Social networking (online)

WEEE
  USE: Electronic waste

Weibo
  USE: Blogs

Weibull distribution
  BT: Statistical distributions
  RT: Failure analysis
    Probability
    Reliability engineering
    Statistics

Weibull fading channels
  BT: Fading channels

Weight control
  BT: Mechanical variables control

Weight measurement
  BT: Mechanical variables measurement

Welding
  BT: Fabrication
    Joining processes
  RT: Bonding processes
    Brazing
    Fasteners
    Manufacturing
    Materials processing
  NT: Spot welding

Well logging
  BT: Geophysics
    Petroleum industry

	RT:	Oil drilling
		Seismology

Wet etching
	BT:	Etching

Wetlands
	BT:	Ecosystems
		Geoscience
	RT:	Hydrology
		Lakes
		Rivers
		Water

Whale optimization algorithms
	BT:	Algorithms
	RT:	Biomimetics

Whales
	BT:	Marine animals

WhatsApp
	USE:	Freeware AND
		Internet telephony

Wheelchairs
	BT:	Assistive technology

Wheels
	BT:	Mechanical products
	RT:	Automobile manufacture
		Automotive components
		Automotive engineering
		Axles
		Flanges
		Machine components
		Manufacturing
		Production
		Steering systems
		Structural plates
		Tires

Whispering gallery modes
	UF:	Whispering-gallery modes
	BT:	Optics
	RT:	Microcavities

Whispering-gallery modes
	USE:	Whispering gallery modes

White blood cells
	BT:	Blood

White matter
	BT:	Central nervous system

	RT:	Action potentials
		Axons
		Brain
		Learning systems

White noise
	BT:	Noise
	RT:	AWGN channels
		Music
		Random number generation
	NT:	AWGN

White spaces
	BT:	Radio spectrum management

Whitelists
	BT:	Information filters
	RT:	Access control
		Blacklisting
		Countermeasures (computer)
		Electronic mail

Whole body imaging
	BT:	Biomedical image processing

Whole-body PET
	BT:	Positron emission tomography

wi-fi
	USE:	Wireless fidelity

Wi-Fi 6
	USE:	IEEE 802.11ax Standard

Wi-Max
	USE:	WiMAX

Wide area measurement systems
	USE:	Wide area measurements

Wide area measurements
	UF:	WAMS
		Wide area measurement systems
		Wide-area measurement systems
		Wide-area measurements
	BT:	Measurement

Wide area networks

2021 IEEE Thesaurus

UF:	WAN	
	WANs	
BT:	Communication systems	
	Computer networks	
RT:	Electronic learning	
	Frame relay	
	IEEE 802.3 Standard	
	Internetworking	
	LAN interconnection	
	Multiprocessor interconnection	
	Open systems	
	Protocols	
	Token networks	
	Virtual private networks	

Wide band gap semiconductors
BT: Semiconductor materials
RT: Gallium alloys
Silicon compounds

Wide-area measurement systems
USE: Wide area measurements

Wide-area measurements
USE: Wide area measurements

Wideband
BT: Bandwidth
Communication systems
RT: Narrowband

Wideband amplifiers
USE: Broadband amplifiers

Wideband antennas
USE: Broadband antennas

Wiener filters
BT: Noise reduction

wifi
USE: Wireless fidelity

Wiggler magnets
USE: Undulators

WiGig
USE: IEEE 802.11 Standard

Wikipedia
UF: Wikis
BT: Information services
RT: Collaboration
Encyclopedias

Internet
Web sites

Wikis
USE: Wikipedia

Wild fires
USE: Fires

Wildfires
USE: Fires

Wildlife
BT: Animals

WiMax
USE: WiMAX

Wimax
USE: WiMAX

WiMAX
UF: Wi-Max
WiMax
Wimax
Worldwide Interoperability for Microwave Access
BT: Wireless communication
RT: IEEE 802.16 Standard

Winches
BT: Materials handling equipment
RT: Cables
Lifting equipment

Wind
BT: Meteorology
RT: Sea surface
Wind energy
Wind power generation
NT: Wind forecasting
Wind speed
Wind stress

Wind energy
UF: Wind-energy
BT: Energy resources
RT: Turbines
Wind
Wind forecasting
Wind power generation
Wind turbines
NT: Wind energy conversion

Wind energy conversion
    BT: Energy conversion
           Wind energy
           Wind power generation

Wind energy generation
    BT: Power generation
    RT: Wind forecasting
           Wind turbines
    NT: Wind energy integration

Wind energy integration
    UF: Wind integration
           Wind power grid integration
    BT: Power systems
           Wind energy generation
    RT: Power grids

Wind farm
    USE: Wind farms

Wind farms
    UF: Wind farm
    BT: Energy resources

Wind forecasting
    BT: Weather forecasting
           Wind
    RT: Wind energy
           Wind energy generation
           Wind turbines

Wind integration
    USE: Wind energy integration

Wind power
    USE: Wind power generation

Wind power generation
    UF: Wind power
    BT: Power generation
    RT: Turbogenerators
           Wind
           Wind energy
    NT: Wind energy conversion

Wind power grid integration
    USE: Wind energy integration

Wind speed
    BT: Wind
    RT: Wind stress

Wind stress
    BT: Stress

           Wind
    RT: Wind speed

Wind tunnels
    BT: Aerospace testing
           Test facilities
    RT: Aerodynamics
           Aerospace simulation

Wind turbines
    BT: Turbines
    RT: Doubly fed induction
generators
           Wind energy
           Wind energy generation
           Wind forecasting

Wind-energy
    USE: Wind energy

Windings
    UF: Transformer windings
    BT: Electromagnetic fields
    RT: AC machines
           Coils
           Electric machines
           Magnetic circuits
           Power transformers
           Rotating machines
           Transformers
    NT: Machine windings

Windows
    BT: Building materials
           Manufactured products
    RT: Glass products
           Vents

Windscreen wipers
    USE: Automotive components

Windscreens
    USE: Automotive components

Windshield wipers
    USE: Automotive components

Windshields
    USE: Automotive components

Windup
    BT: Feedback control

Wine industry
    BT: Industry applications

2021 IEEE Thesaurus

NT: Wineries

Wineries
BT: Wine industry

Wire
BT: Materials
RT: Communication cables
    Conductors
    Wiring

Wire drawing
BT: Wires
RT: Manufacturing
    Production

Wireless Access in Vehicular Environments
UF: WAVE
BT: Wireless networks
RT: IEEE 802.11p Standard
    Intelligent vehicles

Wireless access networks
USE: Wireless networks

Wireless access points
UF: WAP
BT: Computer networks
    Hardware
    Mobile computing
    Wireless communication
RT: IEEE 802.11 Standard
    Routing protocols
    Wireless LAN
    Wireless fidelity

Wireless ad hoc network
USE: Mobile ad hoc networks

Wireless application protocol
UF: WAP
BT: Protocols
    Wireless communication

Wireless cellular systems
BT: Wireless networks

Wireless charging
USE: Inductive charging

Wireless communication
UF: Wireless systems
BT: Communication systems
RT: Bluetooth
    Dynamic spectrum access

    IEEE 802.11 Standard
    IEEE 802.11p Standard
    IEEE 802.22 Standard
    Inductive charging
    Light fidelity
    Location awareness
    Long Term Evolution
    Machine-to-machine
communications
    Mobile applications
    Paging systems
    Reconfigurable intelligent
surfaces
    Regional area networks
    Wireless LAN
    Wireless fidelity
NT: Cognitive radio
    Cooperative communication
    Dedicated short range
communication
    GSM
    Open wireless architecture
    Point-to-multipoint
communications
    Roaming
    Smart devices
    Spatial diversity
    WRAN
    WiMAX
    Wireless access points
    Wireless application
protocol
    Wireless networks

Wireless energy transmission
USE: Wireless power transfer

Wireless fidelity
UF: wi-fi
    wifi
BT: Wireless LAN
RT: IEEE 802.11 Standard
    Light fidelity
    Radio frequency
    Wireless access points
    Wireless communication

Wireless handheld devices
USE: Handheld computers

Wireless LAN
UF: Radio LAN
    WLAN
    Wireless Metropolitan Area
Networks

Wireless local area networks
- BT: Local area networks
- RT: Ad hoc networks
  Bluetooth
  Butler matrices
  IEEE 802.11 Standard
  IEEE 802.11e Standard
  IEEE 802.11g Standard
  IEEE 802.11n Standard
  IEEE 802.15 Standard
  LAN interconnection
  Personal area networks
  Radio communication
  Time-varying channels
  Wireless access points
  Wireless communication
  Wireless sensor networks
- NT: Light fidelity
  Wireless fidelity

Wireless local area networks
- USE: Wireless LAN

Wireless mesh networks
- BT: Communication systems
- RT: Wireless sensor networks

Wireless Metropolitan Area Networks
- USE: Wireless LAN

Wireless networks
- UF: Wireless access networks
- BT: Wireless communication
- RT: Acoustic communication (telecommunication)
  IEEE 802.11p Standard
  IEEE 802.22 Standard
  Nanocommunication (telecommunication)
  WRAN
  Wireless power transmission
- NT: AODV
  Self-organizing networks
  Wireless Access in Vehicular Environments
  Wireless cellular systems

Wireless personal area networks
- UF: WPAN
- BT: Personal area networks

Wireless power transfer

UF: Wireless energy transmission
- BT: Wireless power transmission

Wireless power transmission
- BT: Power transmission
- RT: Conductors
  Wireless networks
- NT: Wireless power transfer

Wireless regional area networks
- USE: WRAN

Wireless security
- USE: Communication system security

Wireless sensor networks
- UF: Underwater sensor networks
- BT: Communication systems
  Vehicular and wireless technologies
- RT: Ad hoc networks
  Cyber-physical systems
  Distributed vision networks
  Edge computing
  Internet of Things
  Machine-to-machine communications
  Microsensors
  Nanocommunication (telecommunication)
  Sensors
  Wireless LAN
  Wireless mesh networks
- NT: Body sensor networks
  Event detection

Wireless systems
- USE: Wireless communication

Wires
- BT: Structural shapes
- RT: Nanowires
  Springs
- NT: Wire drawing

Wiring
- BT: Electric variables
- RT: Building services
  Cables
  Conductors
  Layout

	Metallization	
	Printed circuits	
	Wire	

WLAN
    USE: Wireless LAN

Wolfram
    USE: Tungsten

Women's issues
    USE: Gender issues

Wood alcohol
    USE: Methanol

Wood industry
    BT: Industries
    RT: Forestry
           Pulp and paper industry
           Pulp manufacturing

Wood naphtha
    USE: Methanol

Wood poles
    USE: Poles and towers

Wood spirits
    USE: Methanol

Wool
    BT: Agricultural products
           Textiles
    RT: Clothing
           Fabrics
           Natural fibers
           Textile fibers
           Yarn

Word cloud
    USE: Tag clouds

Word processing
    USE: Text processing

Work-place
    USE: Employment

Workability
    BT: Mechanical factors

Workflow management software
    UF: Workflow management system

    BT: Office automation

Workflow management system
    USE: Workflow management software

Working conditions
    USE: Employee welfare

Working environment noise
    UF: Environmental noise
    BT: Acoustic noise
    RT: Ergonomics
           Hazards
           Occupational health
           Occupational safety

Workplace
    USE: Employment

Workshops
    USE: Conferences

Workstation clusters
    USE: Cluster computing

Workstations
    BT: Microcomputers
    RT: Cluster computing
           Computer displays
           Computer graphics
           Peer-to-peer computing

World Wide Web
    UF: WWW
    BT: Computer applications
    RT: Cyberspace
           Internet
           Web sites
    NT: Bot (Internet)
           Mashups

World Wide Web Consortium
    USE: W3C

Worldwide Interoperability for Microwave Access
    USE: WiMAX

Worm gears
    USE: Gears

Worms
    USE: Grippers

Worms (computer)

2021 IEEE Thesaurus

USE: Computer worms

Wounds
BT: Injuries

Woven fabric composites
USE: Fabrics

WPAN
USE: Wireless personal area networks

WRAN
UF: Wireless regional area networks
BT: Regional area networks
Wireless communication
RT: IEEE 802.22 Standard
Wireless networks

Wrapping
BT: Packaging
RT: Packaging machines

Wrist
BT: Arms

Writing
UF: Business writing
Engineering writing
Report writing
Technical reports
Technical writing
BT: Professional communication
RT: Manuals
Proposals
NT: Abstracts
Bibliographies
Biographies
Dictionaries
Documentation
Grammar
Readability metrics
Resumes
Reviews
Thesauri

Written character recognition
USE: Handwriting recognition

Written characters
USE: Handwriting recognition

Written-character recognition

USE: Handwriting recognition

WS-BPEL
UF: Web services business process execution language
BT: Computer languages
Web services
RT: Business process re-engineering
Information processing

WWW
USE: World Wide Web

WWW robot
USE: Bot (Internet)

X reality
UF: Cross reality
XR
BT: Augmented reality
Virtual reality

X-ray applications
BT: X-rays
RT: Collimators
Phantoms
X-ray detection
NT: X-ray imaging
X-ray lasers

X-ray detection
BT: X-rays
RT: Diagnostic radiography
Diffraction
Electromagnetic radiation
Phantoms
Radiography
X-ray applications
X-ray detectors
X-ray imaging

X-ray detectors
BT: Ionizing radiation sensors
RT: Crystallography
Electromagnetic radiation
Gamma-ray detectors
Radiation detectors
X-ray detection
X-ray imaging
X-rays

X-ray diffraction
BT: Electromagnetic diffraction

2021 IEEE Thesaurus

X-ray imaging
- BT: X-ray applications
- RT: Gamma-ray detectors
  Phantoms
  Radiography
  X-ray detection
  X-ray detectors
- NT: Plasma x-ray sources

X-ray lasers
- BT: Lasers
  X-ray applications
- RT: Plasma x-ray sources
  X-rays

X-ray lithography
- BT: Lithography

X-ray scattering
- UF: XRD
- BT: X-rays

X-ray tomography
- BT: X-rays

X-rays
- BT: Medical services
- RT: Collimators
  Electromagnetic radiation
  Synchrotron radiation
  Undulators
  X-ray detectors
  X-ray lasers
- NT: X-ray applications
  X-ray detection
  X-ray scattering
  X-ray tomography

X3D
- BT: Computer graphics
  Three-dimensional displays
- RT: ISO Standards

Xenon
- BT: Gases

Xerography
- USE: Electrophotography

XML
- UF: Automatic Test Markup Language
  Extensible Markup Language
- BT: Markup languages

XR
- USE: X reality

XRD
- USE: X-ray scattering

XSS
- USE: Cross-site scripting

Y-Ba-Cu-O
- USE: Yttrium barium copper oxide

Yachts
- USE: Boats

Yagi-Uda antennas
- BT: Antennas

Yarn
- BT: Textile fibers
- RT: Wool

YBa2Cu3O7
- USE: Yttrium barium copper oxide

YBCO
- USE: Yttrium barium copper oxide

Yield estimate
- USE: Yield estimation

Yield estimation
- UF: Yield estimate
- BT: Estimation
- RT: Circuit analysis
  Crops
  Microprocessor chips

Young modulus
- USE: Young's modulus

Young's modulus
- UF: Young modulus
- BT: Solids

Youtube
- USE: Multimedia Web sites

Ytterbium
- BT: Chemical elements

2021 IEEE Thesaurus

Yttrium
BT:	Chemical elements
	Metals
NT:	Yttrium compounds

Yttrium barium copper oxide
UF:	Y-Ba-Cu-O
	YBCO
	YBa2Cu3O7
BT:	High-temperature superconductors
	Yttrium compounds
RT:	Barium compounds

Yttrium compounds
BT:	Yttrium
RT:	Alloying
NT:	Yttrium barium copper oxide

ZCS
USE:	Zero current switching

Zero correlation zone
BT:	Codes
	Multiaccess communication
	Sequential analysis

Zero current switching
UF:	ZCS
	Zero-current switching
BT:	Switching circuits
RT:	Inverters
	Switching converters

Zero knowledge proof
BT:	Cryptography
	Protocols

Zero voltage switching
UF:	ZVS
	Zero-voltage switching
BT:	Switching circuits
RT:	Inverters
	Switching converters

Zero-current switching
USE:	Zero current switching

Zero-voltage switching
USE:	Zero voltage switching

Zeros
USE:	Poles and zeros

Zigbee
BT:	Radio communication
RT:	Automation
	Biomedical equipment
	Bluetooth
	IEEE 802.15 Standard
	Personal area networks
	Personal communication networks
	Smoke detectors

Zinc
UF:	Zn
BT:	Metals
NT:	Zinc compounds

Zinc compounds
BT:	Zinc
NT:	Zinc oxide

Zinc oxide
UF:	ZnO
BT:	Zinc compounds
NT:	Indium gallium zinc oxide

ZINDO
USE:	Computational modeling

Zip fasteners
USE:	Fasteners

Zirconium
BT:	Chemical elements

Zn
USE:	Zinc

ZnO
USE:	Zinc oxide

Zoology
BT:	Biology
NT:	Animals
	Entomology

ZVS
USE:	Zero voltage switching