3 : Annexes

ANNEX 1: ERC PEER REVIEW EVALUATION PANELS (ERC PANELS)

For the planning and operation of the evaluation of ERC grant proposals by panels, the following panel structure applies. There are 25 ERC panels to cover all fields of science, engineering and scholarship assigned to three research domains: Social Sciences and Humanities (6 Panels, SH1–SH6), Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9).

The panel names are accompanied by a list of panel descriptors (i.e. ERC keywords) indicating the fields of research covered by the respective ERC panels.

The panel descriptors must always be read in the overall context of the panel's titles and sub-titles.

Social Sciences and Humanities

SH1 Individuals, institutions and markets: economics, finance and management

SH1_1	Macroeconomics, business cycles
SH1_2	Development, economic growth
SH1_3	Microeconomics, institutional economics
SH1_4	Econometrics, statistical methods
SH1_5	Financial markets, asset prices, international finance
SH1_6	Banking, corporate finance, accounting
SH1_7	Competitiveness, innovation, research and development
SH1_8	Consumer choice, behavioural economics, marketing
SH1_9	Organization studies, strategy
SH1_10	Human resource management, labour economics
SH1_11	Public economics, political economics, public administration
SH1_12	Income distribution, poverty
SH1_13	International trade, economic geography
SH1_14	History of economics and economic thought, quantitative and institutional economic history

SH2 Institutions, values, beliefs and behaviour: sociology, social anthropology, political science, law, communication, social studies of science and technology

SH2_1	Social structure, inequalities, social mobility, interethnic relations
SH2_2	Ageing, work, social policies, welfare
SH2_3	Kinship, cultural dimensions of classification and cognition, identity, gender
SH2_4	Myth, ritual, symbolic representations, religious studies
SH2_5	Democratization, social movements
SH2_6	Violence, conflict and conflict resolution
SH2_7	Political systems and institutions, governance
SH2_8	Legal theory, legal systems, constitutions, comparative law
SH2_9	Global and transnational governance, international studies, human rights
SH2_10	Communication networks, media, information society
SH2_11	Social studies of science and technology, science, technology and innovation policies

SH3 Environment, space and population: environmental studies, demography, social geography, urban and regional studies

- SH3_1 Environment, resources and sustainability
- SH3_2 Environmental change and society
- SH3_3 Environmental regulations and climate negotiations
- SH3_4 Social and industrial ecology
- SH3_5 Population dynamics, health and society
- SH3_6 Families and households
- SH3_7 Migration
- SH3_8 Mobility, tourism, transportation and logistics
- SH3_9 Spatial development, land use, regional planning
- SH3_10 Urbanization, cities and rural areas
- SH3_11 Infrastructure, human and political geography, settlements
- SH3_12 Geo-information and spatial data analysis

SH4 The Human Mind and its complexity: cognition, psychology, linguistics, philosophy and education

- SH4_1 Evolution of mind and cognitive functions, animal communication
- SH4_2 Human life-span development
- SH4_3 Neuropsychology and clinical psychology
- SH4_4 Cognitive and experimental psychology: perception, action, and higher cognitive processes
- SH4_5 Linguistics: formal, cognitive, functional and computational linguistics
- SH4_6 Linguistics: typological, historical and comparative linguistics
- SH4_7 Psycholinguistics and neurolinguistics: acquisition and knowledge of language, language pathologies
- SH4_8 Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology
- SH4_9 Philosophy, history of philosophy
- SH4_10 Epistemology, logic, philosophy of science
- SH4_11 Ethics and morality, bioethics
- SH4_12 Education: systems and institutions, teaching and learning

SH5 Cultures and cultural production: literature, visual and performing arts, music, cultural and comparative studies

- SH5_1 Classics, ancient Greek and Latin literature and art
- SH5_2 History of literature
- SH5_3 Literary theory and comparative literature, literary styles
- SH5_4 Textual philology and palaeography
- SH5_5 Visual arts
- SH5_6 Performing arts
- SH5_7 Museums and exhibitions
- SH5_8 Music and musicology, history of music
- SH5_9 History of art and history of architecture
- SH5_10 Cultural studies, cultural diversity
- SH5_11 Cultural heritage, cultural memory

SH6 The study of the human past: archaeology, history and memory

- SH6_1 Archaeology, archaeometry, landscape archaeology
- SH6_2 Prehistory and protohistory

SH6_3	Ancient history
SH6_4	Medieval history
SH6_5	Early modern history
SH6_6	Modern and contemporary history
SH6_7	Colonial and post-colonial history, global and transnational history
SH6_8	Social and economic history
SH6_9	History of ideas, intellectual history, history of sciences and techniques
SH6_10	Cultural history
SH6_11	History of collective identities and memories, history of gender
SH6_12	Historiography, theory and methods of history

Physical Sciences and Engineering

PE1 Mathematics: all areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

PE1_1	Logic and foundations
PE1_2	Algebra
PE1_3	Number theory
PE1_4	Algebraic and complex geometry
PE1_5	Geometry
PE1_6	Topology
PE1_7	Lie groups, Lie algebras
PE1_8	Analysis
PE1_9	Operator algebras and functional analysis
PE1_10	ODE and dynamical systems
PE1_11	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimization
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society life

PE2 Fundamental constituents of matter: particle, nuclear, plasma, atomic, molecular, gas, and optical physics

PE2_1	Fundamental interactions and fields
PE2_2	Particle physics
PE2_3	Nuclear physics
PE2_4	Nuclear astrophysics
PE2_5	Gas and plasma physics
PE2_6	Electromagnetism
PE2_7	Atomic, molecular physics
PE2_8	Ultra-cold atoms and molecules
PE2_9	Optics, non-linear optics and nano-optics
PE2_10	Quantum optics and quantum information

PE2_11 Lasers, ultra-short lasers and laser physics
PE2_12 Acoustics
PE2_13 Relativity
PE2_14 Thermodynamics
PE2_15 Non-linear physics
PE2_16 General physics
PE2_17 Metrology and measurement
PE2_18 Statistical physics (gases)

PE3 Condensed matter physics: structure, electronic properties, fluids, nanosciences

PE3_1 Structure of solids and liquids
PE3_2 Mechanical and acoustical properties of condensed matter
PE3_3 Thermal properties of condensed matter
PE3_4 Transport properties of condensed matter
PE3_5 Electronic properties of materials and transport
PE3_6 Lattice dynamics
PE3_7 Semiconductors, material growth, physical properties
PE3_8 Superconductivity
PE3_9 Superfluids
PE3_10 Spintronics
PE3_11 Magnetism
PE3_12 Electro-optics
PE3_13 Nanophysics: nanoelectronics, nanophotonics, nanomagnetism
PE3_14 Mesoscopic physics
PE3_15 Molecular electronics
PE3_16 Soft condensed matter (liquid crystals…)
PE3_17 Fluid dynamics (physics)
PE3_18 Statistical physics (condensed matter)
PE3_19 Phase transitions, phase equilibria
PE3_20 Biophysics

PE4 Physical and analytical chemical sciences: analytical chemistry, chemical theory, physical chemistry/chemical physics

PE4_1 Physical chemistry
PE4_2 Spectroscopic and spectrometric techniques
PE4_3 Molecular architecture and Structure
PE4_4 Surface science and nanostructures
PE4_5 Analytical chemistry
PE4_6 Chemical physics
PE4_7 Chemical instrumentation
PE4_8 Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9 Method development in chemistry
PE4_10 Heterogeneous catalysis
PE4_11 Physical chemistry of biological systems
PE4_12 Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions
PE4_13 Theoretical and computational chemistry
PE4_14 Radiation chemistry
PE4_15 Nuclear chemistry
PE4_16 Photochemistry

PE4_17 Corrosion

PE4_18 Characterization methods of materials

PE5 Synthetic chemistry and materials: materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry

PE5_1 Structural properties of materials

PE5_2 Solid state materials

PE5_3 Surface modification

PE5_4 Thin films

PE5_5 Ionic liquids

PE5_6 New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles

PE5_7 Biomaterials synthesis

PE5_8 Intelligent materials – self assembled materials

PE5_9 Environment chemistry

PE5_10 Coordination chemistry

PE5_11 Colloid chemistry

PE5_12 Biological chemistry

PE5_13 Chemistry of condensed matter

PE5_14 Homogeneous catalysis

PE5_15 Macromolecular chemistry

PE5_16 Polymer chemistry

PE5_17 Supramolecular chemistry

PE5_18 Organic chemistry

PE5_19 Molecular chemistry

PE5_20 Combinatorial chemistry

PE6 Computer science and informatics: informatics and information systems, computer science, scientific computing, intelligent systems

PE6_1 Computer architecture, pervasive computing, ubiquitous computing

PE6_2 Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems

PE6_3 Software engineering, operating systems, computer languages

PE6_4 Theoretical computer science, formal methods, and quantum computing

PE6_5 Cryptology, security, privacy, quantum crypto

PE6_6 Algorithms, distributed, parallel and network algorithms, algorithmic game theory

PE6_7 Artificial intelligence, intelligent systems, multi agent systems

PE6_8 Computer graphics, computer vision, multi media, computer games

PE6_9 Human computer interaction and interface, visualization and natural language processing

PE6_10 Web and information systems, database systems, information retrieval and digital libraries

PE6_11 Machine learning, statistical data processing and applications using signal processing (eg. speech, image, video)

PE6_12 Scientific computing, simulation and modelling tools

PE6_13 Bioinformatics, biocomputing, and DNA and molecular computation

PE7 Systems and communication engineering: electronic, communication, optical and systems engineering

PE7_1 Control engineering

PE7_2 Electrical and electronic engineering: semiconductors, components, systems
PE7_3 Simulation engineering and modelling
PE7_4 Systems engineering, sensorics, actorics, automation
PE7_5 Micro- and nanoelectronics, optoelectronics
PE7_6 Communication technology, high-frequency technology
PE7_7 Signal processing
PE7_8 Networks (communication networks, sensor networks, networks of robots.....)
PE7_9 Man-machine-interfaces
PE7_10 Robotics

PE8 Products and processes engineering: product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE8_1 Aerospace engineering
PE8_2 Chemical engineering, technical chemistry
PE8_3 Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment
PE8_4 Computational engineering
PE8_5 Fluid mechanics, hydraulic-, turbo-, and piston engines
PE8_6 Energy systems (production, distribution, application)
PE8_7 Micro (system) engineering
PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation)
PE8_9 Materials engineering (biomaterials, metals, ceramics, polymers, composites, ...)
PE8_10 Production technology, process engineering
PE8_11 Product design, ergonomics, man-machine interfaces
PE8_12 Sustainable design (for recycling, for environment, eco-design)
PE8_13 Lightweight construction, textile technology
PE8_14 Industrial bioengineering
PE8_15 Industrial biofuel production

PE9 Universe sciences: astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation

PE9_1 Solar and interplanetary physics
PE9_2 Planetary systems sciences
PE9_3 Interstellar medium
PE9_4 Formation of stars and planets
PE9_5 Astrobiology
PE9_6 Stars and stellar systems
PE9_7 The Galaxy
PE9_8 Formation and evolution of galaxies
PE9_9 Clusters of galaxies and large scale structures
PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11 Relativistic astrophysics
PE9_12 Dark matter, dark energy
PE9_13 Gravitational astronomy
PE9_14 Cosmology
PE9_15 Space Sciences
PE9_16 Very large data bases: archiving, handling and analysis
PE9_17 Instrumentation - telescopes, detectors and techniques

PE10 Earth system science: physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

- PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
- PE10_2 Meteorology, atmospheric physics and dynamics
- PE10_3 Climatology and climate change
- PE10_4 Terrestrial ecology, land cover change
- PE10_5 Geology, tectonics, volcanology
- PE10_6 Paleoclimatology, paleoecology
- PE10_7 Physics of earth's interior, seismology, volcanology
- PE10_8 Oceanography (physical, chemical, biological, geological)
- PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
- PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
- PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
- PE10_12 Sedimentology, soil science, palaeontology, earth evolution
- PE10_13 Physical geography
- PE10_14 Earth observations from space/remote sensing
- PE10_15 Geomagnetism, paleomagnetism
- PE10_16 Ozone, upper atmosphere, ionosphere
- PE10_17 Hydrology, water and soil pollution

Life Sciences

LS1 Molecular and Structural Biology and Biochemistry: molecular biology, biochemistry, biophysics, structural biology, biochemistry of signal transduction

- LS1_1 Molecular biology and interactions
- LS1_2 General biochemistry and metabolism
- LS1_3 DNA synthesis, modification, repair, recombination and degradation
- LS1_4 RNA synthesis, processing, modification and degradation
- LS1_5 Protein synthesis, modification and turnover
- LS1_6 Biophysics
- LS1_7 Structural biology (crystallography, NMR, EM)
- LS1_8 Biochemistry of signal transduction

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: genetics, population genetics, molecular genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

- LS2_1 Genomics, comparative genomics, functional genomics
- LS2_2 Transcriptomics
- LS2_3 Proteomics
- LS2_4 Metabolomics
- LS2_5 Glycomics
- LS2_6 Molecular genetics, reverse genetics and RNAi
- LS2_7 Quantitative genetics
- LS2_8 Epigenetics and gene regulation
- LS2_9 Genetic epidemiology
- LS2_10 Bioinformatics

LS2_11 Computational biology
LS2_12 Biostatistics
LS2_13 Systems biology
LS2_14 Biological systems analysis, modelling and simulation

LS3 Cellular and Developmental Biology: cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals

LS3_1 Morphology and functional imaging of cells
LS3_2 Cell biology and molecular transport mechanisms
LS3_3 Cell cycle and division
LS3_4 Apoptosis
LS3_5 Cell differentiation, physiology and dynamics
LS3_6 Organelle biology
LS3_7 Cell signalling and cellular interactions
LS3_8 Signal transduction
LS3_9 Development, developmental genetics, pattern formation and embryology in animals
LS3_10 Development, developmental genetics, pattern formation and embryology in plants
LS3_11 Cell genetics
LS3_12 Stem cell biology

LS4 Physiology, Pathophysiology and Endocrinology: organ physiology, pathophysiology, endocrinology, metabolism, ageing, regeneration, tumorigenesis, cardiovascular disease, metabolic syndrome

LS4_1 Organ physiology
LS4_2 Comparative physiology
LS4_3 Endocrinology
LS4_4 Ageing
LS4_5 Metabolism, biological basis of metabolism related disorders
LS4_6 Cancer and its biological basis
LS4_7 Cardiovascular diseases
LS4_8 Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)

LS5 Neurosciences and neural disorders: neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological disorders, psychiatry

LS5_1 Neuroanatomy and neurophysiology
LS5_2 Molecular and cellular neuroscience
LS5_3 Neurochemistry and neuropharmacology
LS5_4 Sensory systems (e.g. visual system, auditory system)
LS5_5 Mechanisms of pain
LS5_6 Developmental neurobiology
LS5_7 Cognition (e.g. learning, memory, emotions, speech)
LS5_8 Behavioral neuroscience (e.g. sleep, consciousness, handedness)
LS5_9 Systems neuroscience
LS5_10 Neuroimaging and computational neuroscience
LS5_11 Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's

disease)

LS5_12 Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive-compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

LS6 Immunity and infection: immunobiology, aetiology of immune disorders, microbiology, virology, parasitology, global and other infectious diseases, population dynamics of infectious diseases, veterinary medicine

LS6_1 Innate immunity
LS6_2 Adaptive immunity
LS6_3 Phagocytosis and cellular immunity
LS6_4 Immunosignalling
LS6_5 Immunological memory and tolerance
LS6_6 Immunogenetics
LS6_7 Microbiology
LS6_8 Virology
LS6_9 Bacteriology
LS6_10 Parasitology
LS6_11 Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)
LS6_12 Biological basis of immunity related disorders
LS6_13 Veterinary medicine

LS7 Diagnostic tools, therapies and public health: aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

LS7_1 Medical engineering and technology
LS7_2 Diagnostic tools (e.g. genetic, imaging)
LS7_3 Pharmacology, pharmacogenomics, drug discovery and design, drug therapy
LS7_4 Analgesia
LS7_5 Toxicology
LS7_6 Gene therapy, stem cell therapy, regenerative medicine
LS7_7 Surgery
LS7_8 Radiation therapy
LS7_9 Health services, health care research
LS7_10 Public health and epidemiology
LS7_11 Environment and health risks including radiation
LS7_12 Occupational medicine
LS7_13 Medical ethics

LS8 Evolutionary, population and environmental biology: evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, prokaryotic biology

LS8_1 Ecology (theoretical, community, population, microbial, evolutionary ecology)
LS8_2 Population biology, population dynamics, population genetics, plant-animal interactions
LS8_3 Systems evolution, biological adaptation, phylogenetics, systematics
LS8_4 Biodiversity, comparative biology
LS8_5 Conservation biology, ecology, genetics
LS8_6 Biogeography
LS8_7 Animal behaviour (behavioural ecology, animal communication)

LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology
LS8_10	Prokaryotic biology
LS8_11	Symbiosis

LS9 Applied life sciences and biotechnology: agricultural, animal, fishery, forestry and food sciences; biotechnology, chemical biology, genetic engineering, synthetic biology, industrial biosciences; environmental biotechnology and remediation

LS9_1	Genetic engineering, transgenic organisms, recombinant proteins, biosensors
LS9_2	Synthetic biology and new bio-engineering concepts
LS9_3	Agriculture related to animal husbandry, dairying, livestock raising
LS9_4	Aquaculture, fisheries
LS9_5	Agriculture related to crop production, soil biology and cultivation, applied plant biology
LS9_6	Food sciences
LS9_7	Forestry, biomass production (e.g. for biofuels)
LS9_8	Environmental biotechnology, bioremediation, biodegradation
LS9_9	Biotechnology (non-medical), bioreactors, applied microbiology
LS9_10	Biomimetics
LS9_11	Biohazards, biological containment, biosafety, biosecurity