Indian Institute of Technology Patna

COMMUNICATION SYSTEM ENGINEERING

M.TECH PLACEMENT BROCHURE
2018-2019

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Course Curriculum

- Advanced Digital Communication
- Advanced Digital Signal Processing
- Wireless Communication
- Advanced Optical Communication
- Communication Networks
- Radio Frequency Integrated Circuits
- Information Theory & Coding
- Digital Image Processing
- Intelligent Video Surveillance Systems.
- VLSI Design

Laboratories

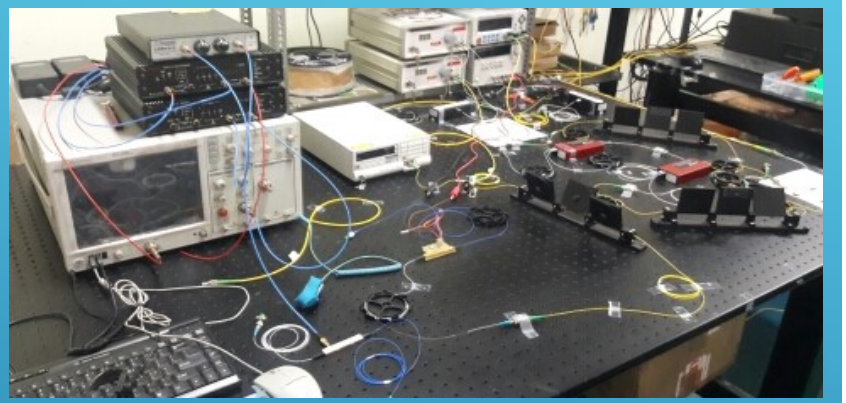
- Optical Communication Lab
- Wireless Communication Lab
- RF & Microwave Engg. Lab
- Digital Signal & Image Processing Lab
- Optical Networking Lab
- Sensor Network Research Lab

OPTICAL COMMUNICATION LAB

Optical Communication Systems, bringing revolution in the way the world communicates. The technology which uses light to enhance data rate beyond Gbps.

Research Areas

- Under Water Optical Communication
- Free Space Optical Communication
- Digital Signal Processing for Optical Communication
- Active/Passive Silicon Photonic Devices
- Optical Fiber Communication Systems
- Few Mode Optical Fiber Design
- Space Division Multiplexing
- Coherent Optical Communication



Software

- MATLAB
- RSoft Photonics CAD Suite
- COMSOL Multiphysics
- Lumerical Device, Mode Solution

We have complete test bed for 12.5Gbps Optical Fiber Communication

Characterization setup of Silicon Photonics Devices

WIRELESS COMMUNICATION LAB

Wireless Communication is amongst technology's biggest contributions to mankind. It is, by any measure, the fastest growing segment of the communication industry.

Research Areas

- ❑ Study of Waveform Contenders for 5G
- ❑ MC Modulation Schemes for Satellite COM
- ❑ Massive MIMO
- ❑ Millimeter Wave Technology
- ❑ Designing of Transceiver for Cognitive Radio

Software

- ❑ MATLAB
- ❑ Labview

Facilities

- ❑ RFID Training System
- ❑ Zigbee Training System
- ❑ Bluetooth Training System
- ❑ GPRS Training System
- ❑ Wi-fi Training System
- ❑ Software Defined Radio
- ❑ Antenna Measurement System
- ❑ Satellite Communication Trainer

RF & MICROWAVE LAB

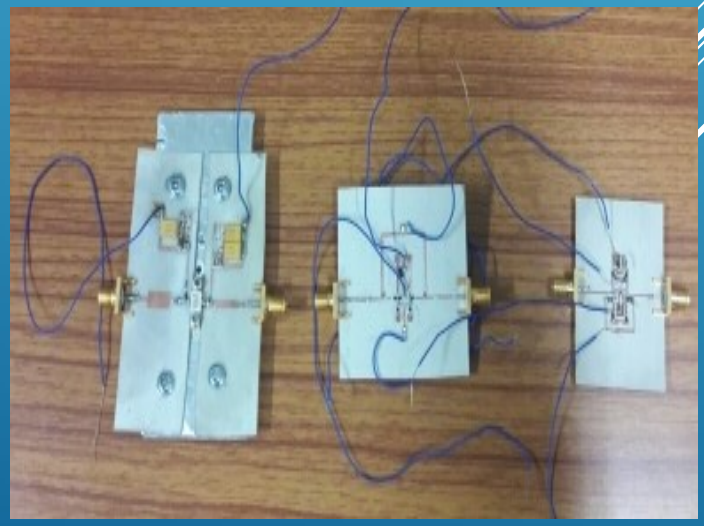
This Laboratory is dedicated for experiment and simulation in the field of any integrated electrical circuit operating in a frequency range suitable for wireless transmission.

Research Areas

- Different filters like Planar filter, Tunable filter
- RF MEMS based filter
- Oscillators, Power Amplifier Design
- Computational Electromagnetics

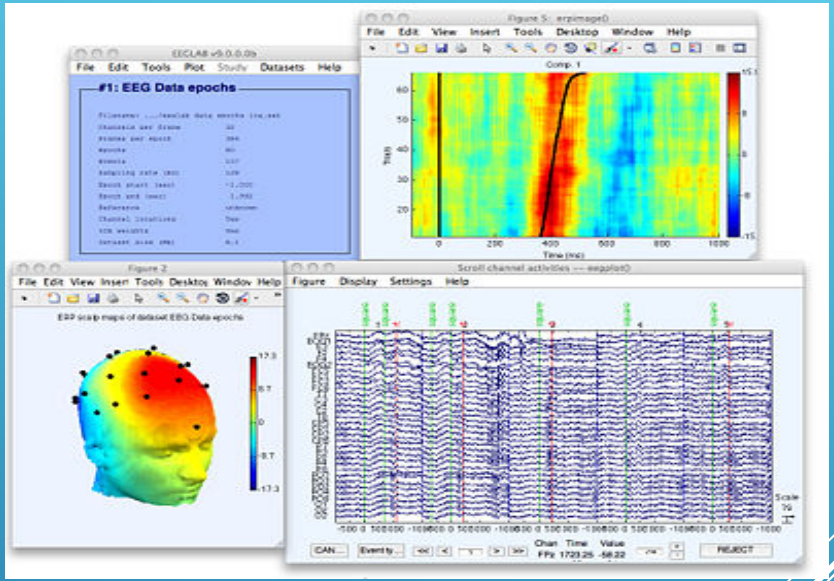
Software & Facilities

- Keysight Advanced Design System, Coventor Ware, Ansoft Product HFSS 3.0
- Signal Generator, Soldering station, Spectrum Analyzer, DSO, Vector Network Analyzer, Cadence Virtuoso



DIGITAL IMAGE & SIGNAL PROCESSING LAB

Digital Signal & Image Processing is to reduce and analyze the amount of digitised data as much as possible . Reduction of digitised data allows improvement of storage capacity in the memory and reduces the cost of transmission.

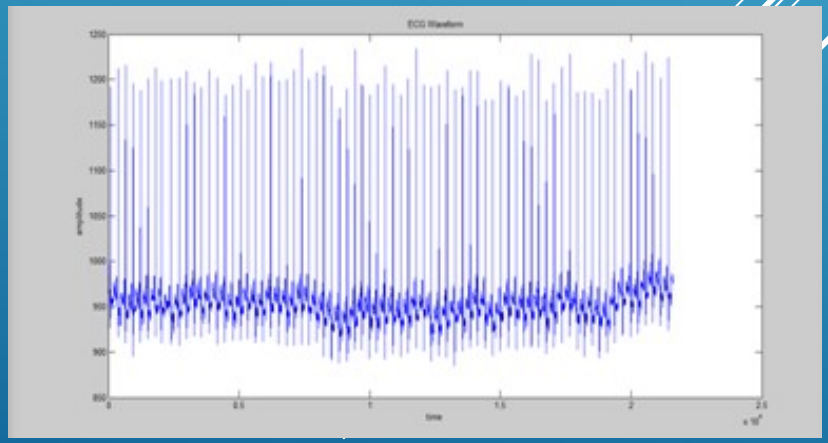


Research Areas

- EEG Signal Analysis
- ECG Signal Analysis
- Medical Image Segmentation
- Use of Stochastic Resonance for weak signal detection

Software

- MATLAB
- EEGLAB Toolbox
- EGI Avatar



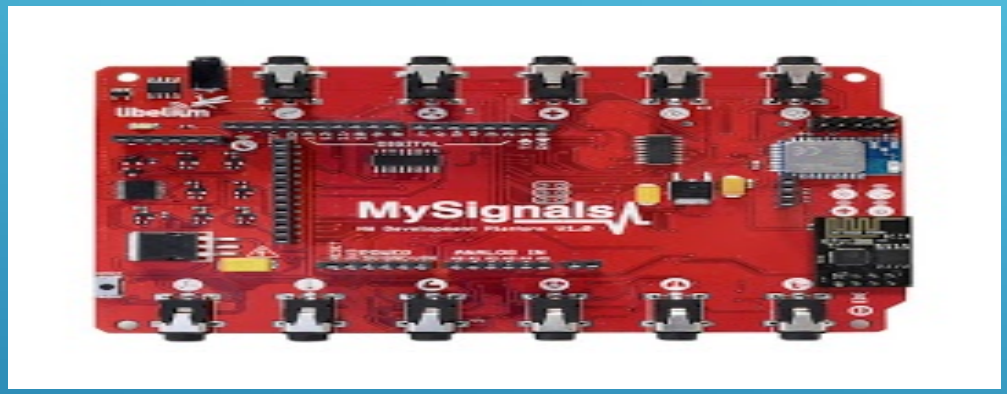
OPTICAL NETWORKING LAB

Research Areas

- Physical layer impairment-aware WDM backbone networks
- Traffic grooming, energy efficiency in backbone and access networks
- CapEx and OpEx studies
- Elastic Optical Network, Next generation PON
- Hybrid wireless-optical broadband access
- Software Define Networks
- Computer communication and networks

SENSOR NETWORK RESEARCH LAB

The emphasis is on building the energy efficient systems for location estimation, navigation, clustering, anomaly detection using smart sensors and on automation of healthcare, agriculture, home and city.



Research Areas

- ❑ Wireless Sensor Network
- ❑ Internet of Things
- ❑ Cyber Physical System

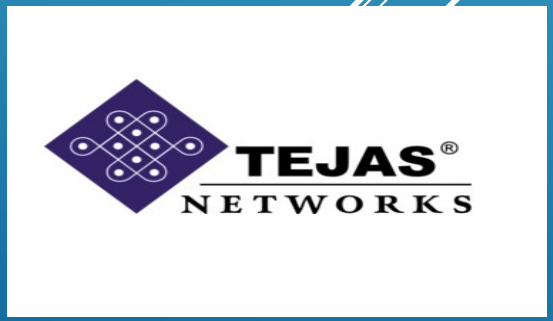
Software & Facilities

- ❑ Wearable Body Sensing Platform- biosignalplux
- ❑ My Signals HW Complete Kit
- ❑ Smart City IoT Vertical Kit
- ❑ Smart Agriculture IoT Vertical Kit

Few Achievements of the Communication System Engineering (EE)

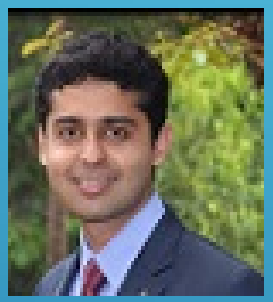
1. DAAD, a German-Indian Scholarship awarded to students in the past years.
2. Students placed at prestigious Institutions such as ISRO, Railways Communication Division.
3. Research papers published at prestigious Conferences such as ICC, NCC,GLOBECOM and journals like IEEE and Springer Wireless.
4. Students selected for Gandhian Young Technological Innovation (GYTI) Award.
5. FIRST INTERNATIONAL SYMPOSIUM ON 5G Jointly Organized By Indian Institute of Technology Patna (IITP) and Center for TeleInfrastruktur, Aalborg University (CTIF).
6. NCV Spring on image processing.
7. Senior IEEE member faculties with publications amongst best journals of the World.

FEW EMINENT PAST RECRUITERS



CONTACT DETAILS

PROFESSOR-IN-CHARGE



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