



IIT Kanpur

Photonics Science & Engineering

Placement Brochure 2021-22

About PSE

- Widely recognized to be a pioneer in Photonics and Optoelectronics Engineering in India.
- It offers M. Tech, MS by research and PhD programs.
- A total of 14 highly qualified faculty who are among the best in the world in their areas of interest.
- Around 20 students, selected through examinations like GATE pass out each year.
- The department currently houses 7 research labs and 9 teaching labs.
- The research interests of the faculty members encompass a wide gamut of sub-disciplines of Electronics and Communication Engineering, Electrical Engineering , Instrumentation Engineering, Engineering Physics, Mechanical Engineering etc. Collaboration with faculty members from other disciplines, both within and outside the institute, is encouraged. The research activity of the department includes fundamental research, sponsored and consultancy projects, and is carried out with active participation of the students, faculty, staff and research engineers.

Infrastructure - Labs and Facilities

- Opto-electronics and Nano-Fabrication Laboratory
- Optical Metrology and Imaging Laboratory
- Optical Communication Laboratory
- Photonics Laboratory
- Tomographic imaging Lab
- Ultra-fast Laser Laboratory
- Microfluidics and Sensors Laboratory etc

Softwares

- FPGA (Xilinx)
- VHDL
- IBM ILOG CPLEX Optimization Studio
- Lumerical Mode Solution
- Comsol Multiphysics
- Optilux
- Cuda GPU Programming
- Matlab
- Pspice
- Optilux, etc.

Equipments

- Fiber Optics Cable
- Lock-in Amplifier
- Nanofabrication and Imaging Tools like FIB, SEM, and AFM
- Optical Fiber Components
- Lasers(Co2, He-Ne)
- Optical Fiber Components
- Altium
- Pspice , etc.

Ongoing Projects

1. Design, Fabrication And Characterization of Nanoparticle Based Photonic Elements
2. Photodiode Arrays for Near Infrared Detection and Tracking
3. Electro-Optic and Magneto-Optic Interaction Based High Speed Quantum Key Distribution
4. Fluorescence Diffuse Optical Tomography for Grading of Dysplasia in Cervical Cancer Progression
5. RTE-Tomography Based Cloud Monitoring
6. Quantum Key Distribution Using Magneto-Optic Interactions in Epitaxial Garnet Film
7. Development of Frequency Coded Quantum Key Distribution Solutions Suitable for development on 25 Km Fiber Optic Links

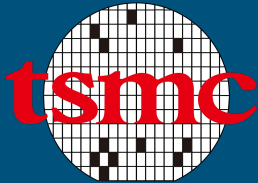
Ongoing Projects

8. Design and Simulation of Multicore optical fiber.
9. Design and Simulation of semiconductor ring laser gyroscope.
10. In Vivo Testing and Up-Gradation of Prototype Optical Probe For Cervical And Oral Precancer Detection.
11. Optical Approaches to Quantum Computing.

Academic Courses

- Analog/Digital VLSI circuits
- VLSI System Design
- Introduction to lasers and detectors
- Machine Learning
- Quantum Electronics
- Semiconductor Device Modelling
- IC Fabrication Technology
- Semiconductor Optical Communication Devices
- Numerical Methods
- Optical Coherent imaging
- Photonics
- Quantum computing
- Image processing and speech recognition
- Solid-State Devices
- Fibre Optic Systems
- Nonlinear Fibre Optics.

Past Recruiters



Past Recruiters



Thank You



Prof. Harshawardhan Wanare

Head of Department

Email: hwanare@iitk.ac.in

Phone: 0512- 2597885

Akanksha Sharma

Department Placement Coordinator

Students' Placement Office, IIT-Kanpur

Email: akanksha20@iitk.ac.in

Phone: 8965020084