



PLACEMENT BROCHURE

Photonics Science & Engineering (PSE)

Official Website: <https://www.iitk.ac.in/celp/>

Centre of Lasers and Photonics (CELP)

About Us



Prof. P K Panigrahi
HoD (PSE-CELP)

The Center for Lasers and Photonics (CELP) is an interdisciplinary center of excellence that combines cutting-edge technology from engineering and theoretical advances in science to create new horizons in the field of photonics science and engineering.

Three PG programmes offered at CELP: PhD, M.Tech and M.S(Research) in **Photonics Science and Engineering Programme (PSEP)**. Graduates from this programme have been playing important roles in various industries like telecom, networking, VLSI, optics, as entrepreneurs, and in research and development organizations such as ISRO, DRDO and C-DOT.

Message from Head of the Department:

For the placement season 2022-23, we would like to invite the industry leaders to recruit the students of our program. This is a unique program which prepares our students to relate the intricate issues from the electrical, electronics and physics domain into the software/ hardware based concepts of the Engineering Industry. The course work is designed to meet industry standards & students are prepared to tackle various challenges faced by the industry through exposure to various industry oriented projects in our excellent labs.

We believe that our students are highly skilled and will add great value to your organization

Curriculum

- 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 in Optics
- Optical Coherent Imaging
- Photonics
- Quantum Computing
- Image Processing and Speech Recognition
- Solid-State Devices
- Fibre Optic Systems
- Nonlinear Fibre Optics.



Labs and Resources

- 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

Opto-Electronics and Nano-Fabrication Laboratory

Research Area:

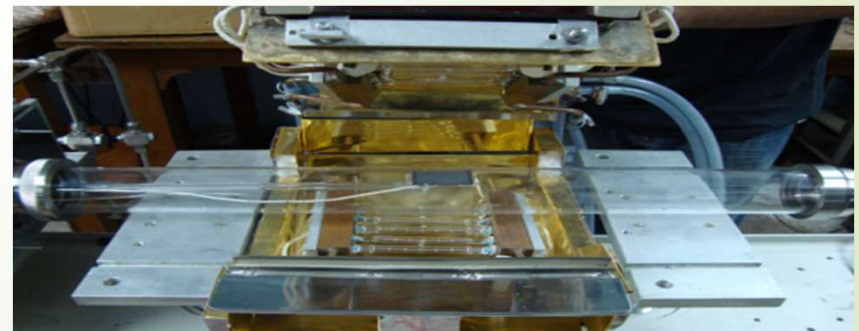
- Multiquantum Well Intermixed Waveguide Grating Assisted Couplers
- High Speed Waveguide Photodiodes
- Photodiode Arrays
- SiGeC/SiC Quantum Dash LEDs on silicon by spin-on technique
- Laser assisted vision through Fog

Resources:

- ps-pulsed laser source at 980nm, 1550nm, and 400nm
- Sorption pump
- CO2 laser (10W)
- Laser Scanner (1kHz)
- MCT detectors (4kHz, 4kV/W)
- Data acquisition cards and systems (GHz).
- Tunable laser (1270-1650nm), etc.



Photolithography Room



Lamp Anneal System

Photonics Laboratory

Research Interest:

Photonics, Nonlinear Optics, Fiber Optics, Photonic crystals, Optical Nanostructures

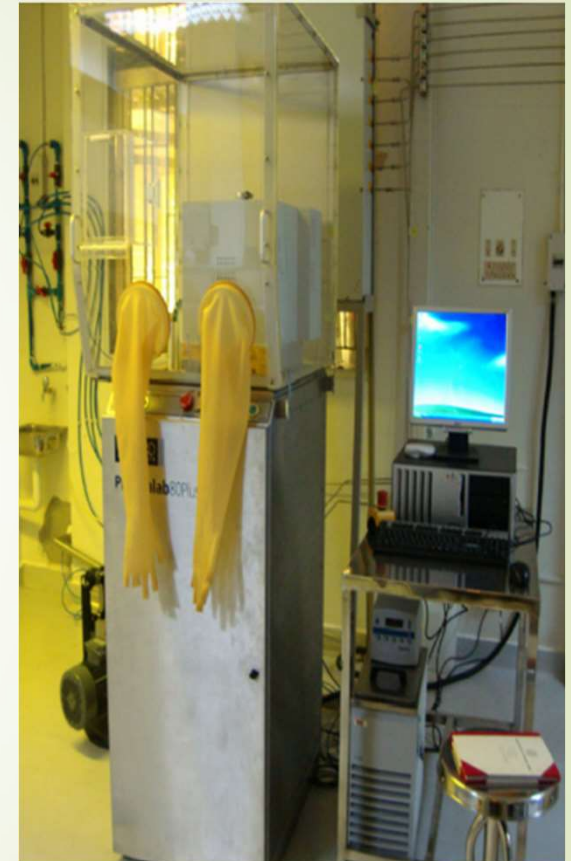
Resources:

Fabrication: Spin coater (Apex), dip coater (Holmarc), furnace, hotplate, stirrer.

Characterization: UV-Vis-NIR spectrophotometer with universal reflectance accessory (Perkin-Elmer), Stylus profilometer (KLA-Tencor), Microscope (Olympus), USB-based spectrometers (Ocean Optics and StellarNet).

Lasers: Nanosecond-pulsed Nd:YAG laser (Litron), He-Ne laser, green laser.

Ancillary equipment: Optical polishing machine (Ultrapol), Wafer cutting and dicing saw (Logitech), Integrating sphere (Labsphere), Monochromator (Jobin-Yvon), Camera (Andor).



Reactive Ion Etch System

Ultrafast Laser Laboratory

Research Area:

- Femtosecond Pulse Shaping
- Nonlinear Spectroscopy
- Quantum Computing
- Coherent Control
- Development of Optical Analogue of MRI
- Multidimensional Spectroscopy

Resources:

- Pentium 4 workstations
- Protel
- Altium
- Ti-Sapphire Laser
- Arbitrary Wave form Generator
- Time delay and Synchronizing Circuits
- Beam Chamber



Optical Surface Profiler

Ongoing Projects

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

Our Alumni



Aditya Madipadaga
(MS – Y21 Batch)
Multimedia Systems Engineer
Qualcomm



Lakshay Thukral
(M. Tech. – Y21 Batch)
SoC DV Engineer
Qualcomm



Vastavikta Singh
(M. Tech. – Y20 Batch)
Application Development
Engineer
KLA



Tarique Anwar
(M. Tech. – Y18 Batch)
CAD Engineer
Intel



Debabrata Chowdhury
(MS – Y23 Batch)
Asic Engineer 2
Juniper Networks

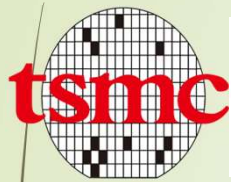


Mukund Anandam
(M. Tech. – Y13 Batch)
Simulink Quality Engineer
Mathworks



Anand Chintamani Sabne
(M. Tech. – Y23 Batch)
Engineer
Sedemac

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shair and partners



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MATERIALS®
make possible



सी-डॉट
C-DOT

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