



The Department of Physics is amongst the largest physics departments in the country in terms of quality research output, number of faculty, students and programs. The research spans many frontier areas from experimental solid state physics, optical and laser physics to high-energy particle physics. Theoretical and computational physics research ranges from condensed matter, quantum information theory and dynamics to string theory and cosmology.

The Department offers programs at the Bachelor's, Master's as well as at the Doctoral Research levels. There is a vibrant undergraduate 4 year program -- Bachelor of Technology (B.Tech.) in 'Engineering Physics'-- in conjunction with the Department of Electrical Engineering. Students with a good academic record in this program have an option to upgrade to an M. Tech. in various interdisciplinary areas (IDDD) as well as in Electrical Engineering.

We offer three types of Master's programs: a 5 year Dual Degree (BS-MS), a 2-year Master of Science (M.Sc.), and a Master of



Prof. Arul Lakshminarayan
Head of the Department



Technology (M.Tech.) in Functional Materials and Nanotechnology. At the apex is the prestigious Doctoral (Ph.D.) program with more than 200 research scholars at any given time. They spend about 5 years interacting with our expert faculty and typically publish their research in reputed international journals with high impact factors.

Programmes (M.Tech.)

- Functional Materials and Nanotechnology

Programmes (Ph.D.)

- Physics

Research areas

Theoretical Condensed Matter Physics

- Electronic Structure
- Quantum Magnetism
- Strongly Correlated Systems

Dynamical Systems

- Quantum Chaos
- Complex systems

Gravitation and Cosmology

- Gravitational Waves
- Classical and Quantum Gravity
- Early Universe

Theoretical High Energy Physics, Nuclear Physics and Strings

- Quantum Field Theory
- Black Holes
- Nuclear Structure

Quantum Information and Quantum Optics

- Quantum Information and computing
- Photonics
- Quantum Sensing





DEPARTMENT OF PHYSICS

Soft Matter and Biological Physics

- Active Matter
- Complex Fluids
- Polymer Physics
- High resolution imaging & optical tweezer

Experimental High Energy Physics

- Particle Detectors
- Relativistic Heavy Ion Collisions
- Quark Interactions

Optics and Photonics

- Nanophotonic Materials
- Ultrafast Spectroscopy
- Photonic Crystals

Atomic and Molecular Physics

- Intermolecular Coulombic Decay
- Trapped Ions

Energy Materials

- Solar Cells
- Batteries

Experimental Condensed Matter Physics

- Multiferroic and magnetoelectric oxides
- Low Temperature Physics, Superconductivity
- Quantum Materials and Devices
- Weyltronic
- Microwave Materials, Meta Materials
- Spintronics

Placements





Faculty

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Dr. Anbarasu M
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Dr. Arul Lakshminarayan
Dr. Ashwin Joy
Dr. Ayan Mukhopadhyay
Dr. Basudev Roy
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