Physics

Indian Institute of Technology, Kanpur

Placement Brochure 2023-24

Introduction to the department

Since the inception of the Institute in 1960, the Department of Physics has been extremely active and has, over the years, established itself as one of the premier Science departments at an international level.

The Physics Department of IIT Kanpur is engaged in research and teaching in the frontier areas of experimental and theoretical physics. These include biological physics, condensed matter physics, high energy and nuclear physics, cosmology, astrophysics, string theory, photonics, quantum optics, information theory, quantum computation, nonlinear dynamics, statistical physics and soft matter physics. Excellence in research and teaching has been the focus of this Department ever since its inception. Today, the vision is to groom leaders who will excel in their workplace as a result of the foundation they have received during their education at IIT Kanpur.

The Physics Department can boast of several physicists of immense international reputation among its alumni. Not only have these scientists received their basic training from I.I.T. Kanpur, but several of them keep close contact with their alma mater to mutual profit. It is our contention that our students all over the world are brand ambassadors for the quality scientific environment they have encountered - usually for the first time - in I.I.T. Kanpur, and the excellence of the training they have received in their formative years.

Information about the department (as on June, 2023)

Number of faculty members	55 (Full time: 51, Visiting: 4)
Number of REOs	02
Number of staff members	26
Number of Inst. Post-doctoral fellows	18
Number of women scientists	01
Number of Ph.D students	191
Number of M.Sc-Ph.D students	38
Number of M.Sc (2 yr) students	70
Number of B.S-M.S students	19
Number of B.S students	171

List of Research laboratories:

- **Biophotonics Lab (BIOPSYL):** Dr. Asima Pradhan
- **Photonics Lab:** Dr. R. Vijaya
- **Diffuse Light Imaging Laboratory:** Dr. H. Wanare
- **Quantum Measurements Lab:** Dr. Saikat Ghosh
- **Quantum Optics and Entanglement Lab:** Dr. Anand Kumar Jha
- **Fiber Optics Lab:** Dr. Saurabh Mani Tripathi
- **Magnetic Field Imaging Lab:** Dr. Satyajit Banerjee
- **Superconductivity and Magnetism Lab:** Dr. Zakir Hossain
- **Soft Matter Physics Laboratory:** Dr. Krishnacharya
- **Magnetoelectronics Lab:** Dr. Soumik Mukhopadhyay
- **Low-Temperature Lab, SQUID/PPMS Lab:** Dr. K. P. Rajeev
- **STM Lab:** Dr. Anjan Kumar Gupta
- **Physics of Electronic Materials:** Dr. Y. N. Mohapatra
- **Optical Spectroscopy Lab:** Dr. Rajeev Gupta
- **Condensed Matter-Low Dimensional Systems Lab:** Dr. Zakir Hossain
- **Waves and Beams Lab:** Dr. Sudeep Bhattacharjee
- **Simulation and Modeling Lab:** Dr. M. K. Verma
- **Soft and active matter Lab:** Dr. Manas Khan
- **Tandetron Accelerator Lab:** Dr. Aditya H Kelkar
- **Spectroscopic Investigation of Novel systems:** Dr. Jayita Nayak
- **Quantum Materials Laboratory:** Dr. Chanchal Sow
- **Soft and Biological Matter Lab:** Dr. Sivasurendar Chandran
- **Opto-Electronics Lab:** Dr. Sudipta Dubey
- **Opto-Spintronics Lab:** Dr Rohit Medwal
- **Cold Ions Quantum Technologies Lab :** Dr Sapam Ranjita Chanu
- **Nano scale optics Lab :** Dr Venkata Jayasurya Yallapragada

Information about the department

List of Teaching Laboratories:

- UG Lab (PHY 101)
- Optics Lab (PHY 224)
- Modern Physics Lab (PHY 315)
- Electronics Lab (PHY441)
- MSc Lab (PHY 461/462)

List of central/common facilities:

- Workshop
- Department Library
- Squid/PPMS lab
- FIB facility
- Low Dimensional Lab
- Tandetron Accelerator
- Computer Lab for PhD students

Admission criteria

B.S.

Admission is by the nation-wide Joint Entrance Examination (IIT-JEE) conducted for those who have completed 12 years of schooling. Admission is done once in a year. One can consult the IIT-JEE website for relevant details.

M.Sc (2 yrs) and M.Sc-Ph.D.

Admission is by the nation-wide Joint Admission Test (JAM) conducted for those with Bachelors' Degree. Admission is done once in a year. For more details, one may consult the JAM website.

Ph.D.

Admission is by a written test and interview for those who have a Masters degree in Physics and have secured a fellowship (either by clearing the GATE exam with a cut-off score decided each year, or have a JRF for research from agencies such as Inspire/CSIR/UGC/PMRF/JEST). Admission is also possible directly to 4-yr undergraduate degree holders from IITs with a CPI more than 8.0 and also to GATE toppers. Admission is done once or twice in a year, depending on the availability of seats.

Distinguished Alumni

- Ashoke Sen (string theorist, HRI)
- Jainendra Jain (condensed matter theorist, Penn State)
- T Senthil (condensed matter theorist, MIT)
- H R Krishnamurthy (condensed matter theorist, IISc)
- Spenta Wadia (theoretical physicist, TIFR)
- Sandeep Trivedi (theoretical physicist, TIFR)
- D D Sarma (condensed matter physicist, IISc, Bangalore)
- Dinakar Kanjilal (accelerator physicist, IUAC)
- Arup Kumar Raychaudhury (condensed matter experimentalist, SNBNCBS)
- Deepak Dhar (statistical mechanics, TIFR)
- G Ravindra Kumar (laser-matter interaction, TIFR)
- Jnanadeva Maharana (high energy physicist, IOP)
- Rajeev Bhalerao (high energy physicist, TIFR)
- Samir Mathur (string theorist, Ohio)
- Abhay Pasupathy (McMillan Award – 2011, condensed matter theorist, Columbia)
- Shiraz Minwalla (string theorist, TIFR)
- Rajesh Gopakumar (string theorist, HRI)
- Ashvin Vishwanath (condensed matter theorist, Harvard)

Courses common to B.S. and M.Sc.

- CLASSICAL MECHANIC
- SPECIAL AND GENERAL RELATIVITY
- STATISTICAL MECHANICS
- MATHEMATICAL METHODS I
- MATHEMATICAL METHODS II
- QUANTUM MECHANICS I
- QUANTUM MECHANICS II
- ELECTRONICS
- EXPERIMENTAL PHYSICS I
- EXPERIMENTAL PHYSICS II
- COMPUTATIONAL METHODS IN PHYSICS
- INTRODUCTION TO ATOMIC AND NUCLEAR PHYSICS
- CONDENSED MATTER PHYSICS
- CLASSICAL ELECTRODYNAMICS I
- CLASSICAL ELECTRODYNAMICS II

Past Recruiters

- JPMorgan Chase & Co
- American Express
- Javis technologies
- Godrej capital limited
- Indus Insights And Analytical Services Pvt. Ltd.
- Rakuten Group, Inc.

Thank you

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