

Applications are invited for the Doctor of Philosophy (PhD) program in Physics for Spring 2026

Minimum Eligibility criteria:

- Master's degree with at least 60% aggregate marks (55% for reserved category) in any field of Physical Sciences (OR)
- A 4-year BS degree with 75% aggregate marks (70% for reserved category), with Physics as one of the subjects (OR)
- Final year MS/BS students who are yet to obtain their degree may also apply; however, they must complete the MSc/MS/BS degree at the time of admission with the requisite aggregate marks.
- Selection of candidates will be carried out as per **Gol norms**. Candidates belonging to the reserved categories must submit the relevant certificates and documents.

Selection Channels:

1. **Self Funded:** Apart from satisfying the minimum eligibility criteria, candidates must have their own PhD fellowships, such as UGC/CSIR-JRF/NET-Category-1.
2. **Institute Funded:** Apart from satisfying the minimum eligibility criteria, candidates must have a valid rank in one of the following national-level exams: GATE / JAM / JEST / NET-LS / NET-Category-2 / NET-Category-3/ INSPIRE.

Available Positions (Page-1/2)

Prof. Amit Ghoshal (Condensed Matter Physics Theory)

Open Positions: 1+1 [Self Funded + Institute Funded]

1. Study of static and dynamic correlations across melting in two dimensional systems with long-range interacting particles, both in the presence and absence of impurities.
2. Disordered quantum systems and non-equilibrium dynamics in them.

Prof. Ananda Dasgupta (Quantum Information Theory and Technology)

Open Positions: 1 [Self Funded / Institute Funded]

1. Study of the statistical mechanics of complex networks.

Prof. Arindam Kundagrami (StatPhys/Biophys/NLD)

Open Positions: 1+1 [Self Funded + Institute Funded]

1. Theoretical polymer physics.
2. Physics of intrinsically disordered proteins (IDP).
3. Soft condensed matter physics.

Prof. Ayan Banerjee (Optics/Spectroscopy)

Open Positions: 01 [Self Funded]

1. Device and bio-sensor development using optical tweezers: Generating novel mesoscopic architectures using microbubbles generated by thermo-optical tweezers based on directed self-assembly, developing devices for chemical and bio-sensing, and studying the science of self assembly.
2. Optical tweezers for trapping particles in air: Developing 3D optical tweezers for trapping absorbing microparticles and uncovering the physics behind the trapping and observed dynamics.

Prof. Bhavtosh Bansal (Condensed Matter Physics Experiment)

Open Positions: 02 [Self Funded]

1. Phase transitions.
2. Physics in very high magnetic fields.
3. Semiconductor spectroscopy

Dr. Bheemalingam Chittari (Condensed Matter Physics Theory)

Open Positions: 02 [Self Funded]

1. Study of Electronic, Magnetic and topological properties of 2D and Bulk materials.

Prof. Bipul Pal (Condensed Matter Physics Experiment)

Open Positions: 01 [Self Funded]

1. Probing opto-electronic properties of materials by ultrafast time-resolved optical spectroscopy.
2. Probing advanced functional materials through nonlinear optical experiments.

Prof. Chiranjib Mitra (Condensed Matter Physics Experiment/ Quantum Information)

Open Positions: 01 [Self Funded]

1. Quantum Information Processing using NV centres in diamond.
2. Topological Insulators, Majorana Fermions and Weyl Semi-metals.

Prof. Dhananjay Nandi (Optics/Spectroscopy)

Open Positions: 1+1 [Self Funded + Institute Funded]

1. Study of Dissociative Electron Attachment using Time-of-Flight and Velocity Map Imaging Techniques.
2. Study of Dipolar Dissociation using Time-of-Flight and Velocity Map Imaging Techniques.

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Available Positions (Page-2/2)

Prof. Golam M Hossain (Gravitational Physics and Astrophysics)

Open Positions: 1 [Self Funded / Institute Funded]

1. Quantum fields in curved spacetime and relativistic astrophysics of compact stars.

Prof. Goutam Dev Mukherjee (Condensed Matter Physics Experiment)

Open Positions: 01 [Self Funded]

1. Condensed Matter Experiments: Quantum materials at extreme conditions of pressure.

Dr. Kamaraju Natarajan (Condensed Matter Physics Experiment)

Open Positions: 02 [Self Funded]

1. Ultrafast and THz Spectroscopy of 2D magnets.
2. Nonlinear Spectroscopy/High Harmonics Spectroscopy of quantum materials using femtosecond pulses.

Prof. Nirmalya Ghosh (Condensed Matter Physics Theory and Statistical Physics)

Open Positions: 01 [Self Funded]

1. Spin orbit interaction of light
2. Weak measurements in nano photonics

Dr. Partha Mitra (Condensed Matter Physics Experiment)

Open Positions: 02 [Self Funded]

1. Condensed Matter Experiments: Spintronics and nano materials.

Prof. Pradeep Kumar Mohanty (StatPhys/Biophys/NLD)

Open Positions: 01 [Self Funded]

1. Active matter and non equilibrium dynamics (experiment and theory).
2. Hyper-uniformity, unusual fluctuations (theory).

Prof. Ritesh K. Singh (High Energy Physics)

Open Positions: 01 [Self Funded]

1. Particle physics at colliders using machine learning.
2. Bound states in quantum field theory.
3. Neutron star as dark matter detector.

Prof. Rumi De (Biological physics, Nonlinear dynamics, Statistical Physics, Soft condensed matter physics)

Open Positions: 1+1 [Self Funded + Institute Funded]

1. To develop theoretical and computational models to understand the collective dynamics of active, out-of-equilibrium systems by using the tools from statistical physics, nonlinear dynamics, and soft condensed matter physics.

Prof. Satyabrata Raj (Condensed Matter Physics)

Open Positions: 04 [Self Funded]

1. Electronic and Magnetic structure of strongly correlated systems by synchrotron based Photoemission Spectroscopy (Both AI- and AR-PES) (experiment).
2. Electronic, Optical, Magnetic, and Transport properties of novel Nanomaterials (experiment).
3. Electronic, Optical, and Magnetic structure of 2D and 3D-strongly correlated systems by Density Functional Theory (DFT) approach (theory).

Prof. Sourin Das (Condensed Matter Physics Theory)

Open Positions: 02 [Self Funded]

1. Topological field theory in low dimensional systems.
2. Quantum Machine Learning.

Prof. Subhasis Sinha (Condensed Matter Physics Theory and Statistical Physics)

Open Positions: 01 [Self Funded]

1. Ultracold quantum gases.
2. Many body quantum chaos.
3. Open quantum system.

Prof. Supratim Sengupta (StatPhys/Biophys/NLD)

Open Positions: 01 [Self Funded]

1. Dynamical Systems, Evolutionary Game Theory, Networks, Bayesian Inference and applications of reinforcement learning.

Additional benefits:

- Every PhD student will be sponsored to attend an international conference abroad based on the availability of institute funds.
- Chairman's Medal of Commendation for excellence in extracurricular activities for PhD students.
- Every PhD student is entitled to 30 academic leave days per year.

Department website: <https://physics.iiserkol.ac.in/>, **contact us at** dps.phd.application@iiserkol.ac.in