Advertisement for Admission to Ph.D. Program in Department of Physics, IIT Indore

Adv. No.: IITI/Phy/Ph.D. Admission/2026/01

Submission Deadline: 27th March, 2026

Written test and offline interviews of Shortlisted candidates: March 30th & 31st, 2026

For FA candidates only

Applications are invited from highly motivated and research-oriented applicants for admission to PhD Program in Physics. Applicants are advised to visit the profiles of the faculty members at the physics department web page (https://physics.iiti.ac.in/faculty/) (also see below), before applying.

Applicants are selected for admission to PhD program through a rigorous evaluation process which includes a written test and an interview by a selection committee and mere application does not imply admission into the PhD program.
Before deciding for paying a non-refundable application fee, please verify your eligibility by checking the MEQ and QE requirements.

Admission Categories:

FA (Fellowship Awardee): Fellowship Awardees from the funding agencies such as CSIR, UGC, NBHM, DST etc. The scholarship will be as per the rules of the concerned funding agency.

For more details about admission category and eligibility, kindly refer to the main Ph.D. Advertisement of the Institute available at https://academic.iiti.ac.in/phdadvt.php.

- **Minimum Educational Qualifications (MEQs) and Qualifying Examination (QE) for applicants:**
- M.Sc./M.S./M.Tech. in Physics, Optoelectronics, Solid State Physics, Nanotechnology/Nano-sciences, Applied Physics or Mathematics or Applied Mathematics (with first division as defined by the awarding Institute/University),

OR

- Four-year UG degree in Engineering Physics/Applied Physics

AND

- with a valid UGC-JRF/ CSIR-JRF, DST Inspire or Equivalent Fellowship.

Applicants must keep in mind the following before applying:

1. Applicant **must visit** the faculty profiles of the Department of Physics at https://physics.iiti.ac.in/faculty/
2. The applicant must understand the research interest of individual faculty members of the department before appearing the interview according to his/her preference.
3. At the time of the application, the applicant should have a very clear idea of the subject of research that he/she wants to pursue and should be able to convince the interview committee about the same.
4. Descriptions on admission categories, eligibility, etc. can be found on the main page: http://academic.iiti.ac.in/phdadvt.php which needs to be read and understood in detail.
5. If selected, the shortlisted applicant will be informed by email.

Application Procedure:

1. Candidates must apply ONLINE through the IIT Indore website. This will generate a unique application number for each applicant. The last date for online application is 27th March, 2026.

2. Application fee should be paid through State Bank Collect only. This will generate a payment code number that will be required while initiating the filling out of online application forms.

3. The shortlisted applicants will be intimated by email ONLY. Early applicants may get intimated early. Hence, please state your email id carefully. Please check your SPAM folder regularly.

4. The Shortlisted candidates should arrange for at least TWO recommendation letters to be submitted to us in the format provided. A separate email for the same will be sent by us in this regard to the short-listed candidates. Those who have already submitted the recommendation letters to us, DO NOT resend it.

5. The interview process consists of 2 stages. Shortlisted candidates will have to physically appear for a written test to be held in IIT Indore. Candidates passing this test will appear for interviews which will be held at IIT Indore. Candidates will be required to make their own travel arrangements and can opt for hostel accommodation. The tentative dates of the written test and interview are **March 30th & 31th, 2026.**

6. The candidates appearing for the interview will be asked for a handwritten 'Statement of Purpose', describing the details of their interest/motivation, their relevant learning, and skills in research as well as their reason for joining Ph.D. in Physics at IIT Indore.

7.The decision of the Institute in all matters will be final.

8. For any queries, please contact admission-phy@iiti.ac.in and/or phone 731-6603417.

Invitation of admission to the Ph.D. Program in the following research areas given below (details can be found from personal webpages):

Faculty Member	Research Area
Condensed Matter Physics (Experimental)	
Prof. Preeti A. Bhobe pbhobe@iiti.ac.in	Unconventional Magnetism in quantum materials, Magneto-transport in 2D and Spintronic materials, Magnetocaloric effect, X-ray Absorption Fine Structure, Photoemission Spectroscopy, Neutron Diffraction.
Prof. Krushna R. Mavani krushna@iiti.ac.in	Terahertz spectroscopy of solid materials, Pulsed Laser Deposited nanostructures, thin films and multilayers, Phase-transitions, Electronic and magnetic properties, Structure-property relations, Optoelectronic materials and devices, Superconducting oxides, Quantum materials.
Prof. Rajesh Kumar rajeshkumar@iiti.ac.in	Nanomaterials & nanodevices, electronic and electrochromic devices, Device physics, Raman Spectroscopy & Microscopy, Natural Biomaterials
Prof. Sudeshna Chattopadhyay sudeshna@iiti.ac.in	Surface and Interface science, Nano and 2D-materials, Thin films, Quantum materials; Energy conversion and Energy storage: Batteries (Li and Al-ion batteries) and Supercapacitors; Nano-devices, Nanotechnology in disease diagnosis and Environmental remediation; Soft matter physics; Organic/inorganic-heterojunction; Structure-Property Correlations: optical/electronic properties; X-ray scattering (XRR, GISAXS, GID, XRD), Spectroscopy, Atomic Layer Deposition (ALD).
Prof. Pankaj R. Sagdeo prs@iiti.ac.in	Physics of Semiconductors, Nanomaterials, Materials for Solar cell and Energy applications, Photovoltaics, Magnetic and ferroelectric, magneto-dielectric and optoelectronic materials, Physics of Crystallographic and related phase transition/structure property correlations across phase transition, Superconductivity, Electron-Phonon Physics, Thin-films, multilayers, Raman and Optical spectroscopy etc.
Prof. Somaditya Sen	Structure-Correlated Physical Property Studies on the following fields: 1. Dielectric Resonator Antennas: Studies of designing Antennas using Oxide Ceramics to cater to different bands especially in the GHz and THz range

Faculty Member	Research Area
	2. Ferroelectric, Magnetoelectric, Piezoelectric Materials: Studies on Polarization, Energy Storage Efficiency, Phase Transitions, Morphotropic Phase Boundaries, Piezo-photonics, Transport/Dielectric/Polaronic Properties 3. Oxide Thin Films: Device Studies 4. Green Synthesized Oxide Nano-Materials: Studies on Functionalization of Nanoparticles, Effect and Mechanism on Antibacterial, Wound Healing and Seed Germination Properties 5. Modified Simple Oxides: Studies on Light-Sensing, Gas-Sensing, Device Fabrication 6. Green synthesis of Nano-Materials for biological applications.
Dr. Onkar S. Game ogame@iiti.ac.in	We work in the realm of novel semiconductor nanostructures and thin films for energy (Solar Cell, Solar-fuel etc.) and optoelectronic applications (LEDs, photosensors, transistors etc.). Specifically, we use nanostructures and thin films of semiconductors such as metal oxides, organic-inorganic hybrid halide perovskites, organic semiconductors etc. for renewable energy generation using Solar Cells and/or Solar Fuel (H2 generation by solar-water splitting/ Solar-CO2 reduction etc). We aim to gain thorough understanding of underlying device physics and hence improve the performance/efficiency of such energy and optoelectronic devices. For this we use range of material and device characterization tools (XRD, UV, SEM, Raman, PL, XPS, IV-measurements, electrochemical JV/impedance analysis etc.)
Dr. Naresh K. Kumawat nkumawat@iiti.ac.in	Metal Halide Perovskite (MHP) and Organic Semiconductors, Organic-inorganic perovskite semiconductors and solar cells; Fabrication, Light Emitting Diodes (PeLEDs) and Solar Cells; Device Characteristics; Device Physics
Dr. Bivas Dutta bivas@iiti.ac.in	Cryogenic-Temperature Quantum Transport Lab: Quantum heat transport and thermodynamics; Nano-electronic quantum devices: Quantum-Dots, Superconducting tunnel junctions; Quantum Hall thermal transport in 2D materials; Employing non-abelian Majorana edge modes in the Topological Quantum Computations.
Condensed Matter Physics (Theory and Computation)	
Dr. Alestin Mawrie amawrie@iiti.ac.in	(Nanoscale and Mesoscale physics): Topological Insulators, Topological Spintronics, Dirac materials, Quantum Transport properties.
Experimental and Theoretical Condensed Matter Physics	
Dr. Srimanta Pakhira spakhira@iiti.ac.in	Condensed Matter Theory, Computational Materials Physics and Materials Science, Condensed Matter Nanoscience, Electronic Structure Theory, Density Functional Theory and Molecular Dynamics (MD) Simulations, Semiconductor Physics, Magnetism, Physics of Novel Solar Cells and Perovskite, Renewable Energy Technology. Porous Materials and Their Applications in Gas Storage, Separation, Adsorption and Drug Delivery in Metal-Organic Frameworks and Covalent Organic Frameworks. Alkali-ion Battery, Novel Batteries Technology, Renewable Energy Materials, Carbon Capture, Graphene, Bilayer Graphene, Mxene, Electrocatalysts, Photocatalysts, Novel 2D Materials, H2 & O2 Evolutions, and Alkane Cracking in Oil Refining Technology.
High Energy Physics (Experimental)	
Prof. Raghunath Sahoo raghunath@iiti.ac.in	High-Energy Physics Experiment (ALICE Experiment @ CERN, Switzerland and CBM Experiment @ GSI, Germany), Phenomenology of Quark-Gluon Plasma, Exploration of QCD Phase Diagram, GRAPES-3 (Gamma Ray Astronomy PeV Energies); Applications of Statistical Mechanics and Machine Learning in High Energy Physics, Charmonia production dynamics at LHC energies, Event topology and multihadron production dynamics, Astroparticle Physics.
Prof. Ankhi Roy ankhi@iiti.ac.in	Heavy Flavor Hadrons, Heavy Ion Collision (Experiment: ALICE@LHC, CBM@FAIR), Study of Exotics with Electron Ion Collider (EIC)Experiment, Detector Simulation, Machine Learning, QGP Phenomenology
High Energy Physics and Particle Physics (Theory)	
Prof. Subhendu Rakshit rakshit@iiti.ac.in	Astroparticle physics with dark matter and neutrinos, cosmology, experimental constraints on models beyond the standard model of particle physics, effective field theory and collider physics, gravitational waves, etc.
Dr. Manavendra Mahato manav@iiti.ac.in	Gauge/gravity correspondence, String Theory, General relativity.

Faculty Member	Research Area
Dr. Dipankar Das d.das@iiti.ac.in	Particle Physics phenomenology, Phenomenology of the Higgs boson, Flavor Physics, Grand Unified Theories, Interplay between Neutrino mass and Dark matter.
Dr. Debajyoti Sarkar dsarkar@iiti.ac.in	Theory of quantum gravity (string theory), in particular Anti de Sitter (AdS)/ conformal field theory (CFT) correspondence. Connections between AdS/CFT and quantum information theory. Topics on semiclassical gravity and its applications in black hole physics and Hawking's information paradox.
Dr. Mritunjay Kumar Verma mritunjay@iiti.ac.in	String Theory, AdS/CFT correspondence, Flat space holography and quantum gravity, Higher spin fields, Low energy physics from string theory and machine learning, String field theory.
Nonlinear Dynamics and Complex Systems (Networks, Statistical Physics, Nonlinear Dynamics, Computational Biology)	
Prof. Sarika Jalan sarika@iiti.ac.in	Synchronization, Hypergraphs, Machine learning, Power-grid networks, Financial networks, Tipping points, Time evolving networks, Chaos, Coupled Oscillators
Quantum Information and technology (Theory)	
Dr. Shashank Gupta shashankg@iiti.ac.in	Qurious Labs conducts cutting-edge research at the intersection of quantum information theory, cryptography, and network security. The digital lab investigates fundamental quantum phenomena—including multipartite entanglement, EPR steering, and quantum contextuality—while developing practical quantum key distribution protocols (BBM92, MDI-QKD, Twin Field QKD, CV-QKD) with rigorous security analysis against realistic attacks. Research extends to architecting scalable quantum network topologies for secure multi-party computation, designing continuous-variable quantum systems with experimentally realistic simulations, and exploring hybrid quantum-classical cryptographic schemes for post-quantum security. Through systematic optimization of protocol parameters, reconciliation algorithms, and error correction techniques, the lab bridges theoretical foundations with practical deployment challenges to advance quantum-secure communication networks.