

Discipline of Physics

IIT Indore

Experimental Physics:

1. Condensed Matter Physics

Study of crystal and electronic structure, magnetic properties of functional materials; Nano materials, Magnetic/electronic materials with multiferroic properties; Synthesis/engineering/characterization (structure/physical) of nanostructured materials/thin film/single crystal/glassy forms of complex oxides/chalcogenides with semiconducting, superconducting, magnetic and optical properties; synthesis of composite materials for industrial applications, optical/magnetic multilayer, solar cell, etc.; Surface and Interfaces – nanomaterials, thin-films, structure property relationship - optical properties, photocatalytic activity; Electrical Energy Storage- batteries and supercapacitors; Superconductivity, High Pressure techniques in synthesis and characterization; Raman and photoelectron spectroscopy; Material characterization using synchrotron radiation, band structure of complex oxides; highly correlated electron system.

2. High Energy Physics

Relativistic heavy-ion collision experiments: ALICE experiment at LHC (Large Hadron Collider), CERN, Geneva (Switzerland)- world's largest particle accelerator. Compressed Baryonic Matter (CBM) experiment at FAIR, GSI (Germany). QCD phase diagram and Critical point; Phenomenology of (Quark Gluon Plasma) QGP-Students will be involved in detector R&D, data taking, and data analysis at CERN, Switzerland and GSI, Germany

Theoretical Physics:

1. High Energy Physics

Holography, Gauge/gravity duality, AdS/CFT correspondence, general relativity and quantum theories; Dark matter, Higgs and Neutrino physics.

2. Nonlinear Dynamics, Statistical Physics & Networks

IMPORTANT NOTE: This is a rolling advertisement placed on 21st June 2017. Interviews will be conducted whenever sufficient applications are received until all the posts are filled. PhD applications are invited for: (i) admission categories FA/SW/IS/EC/DF in all research areas; (ii) 'TA' admission category in the following areas only - 'High Energy Physics (theory and experiments)' and 'Nonlinear dynamics, statistical physics and networks'. (Description on admission categories can be found on the main page of institute Ph.D. advertisement: <http://academic.iiti.ac.in/phdadvt.php>)

The applicants are encouraged to contact the following faculty members for more information about their research areas and visit <http://physics.iiti.ac.in> for detailed profile of any individual faculty.

Dr. Ankhi Roy	High Energy Physics Experiment	ankhi@iiti.ac.in
Dr Krushna R. Mavani	Experimental Condensed Matter Physics	krushna@iiti.ac.in
Dr Manavendra Mahato	Theoretical High Energy Physics	manav@iiti.ac.in
Dr. Pankaj R. Sagdeo	Experimental/Theoretical Condensed Matter Physics	prs@iiti.ac.in
Dr. Preeti A. Bhoje	Experimental Condensed Matter Physics	pbhobe@iiti.ac.in
Dr Raghunath Sahoo	High Energy Physics Experiment and Phenomenology of Quark Gluon Plasma	raghunath@iiti.ac.in
Dr. Rajesh Kumar	Experimental Condensed Matter Physics	rajeshkumar@iiti.ac.in
Dr Sarika Jalan	Nonlinear Dynamics, Statistical Physics & Networks	sarika@iiti.ac.in
Dr Sudeshna Chattopadhyay	Experimental Condensed Matter Physics	sudeshna@iiti.ac.in
Dr Somaditya Sen	Experimental Condensed Matter Physics	sens@iiti.ac.in
Dr Parashram Shirage	Experimental Condensed Matter Physics	pms Shirage@iiti.ac.in
Dr. Subhendu Rakshit	Theoretical High Energy Physics	rakshit@iiti.ac.in
