Department of Physics, IIT Delhi
PhD vacancy May 2021-22

Name of the Faculty	Topic	Source of funding	Email id	Full Time / Part Time	Requirement
Abhishek Iyer	1) Particle Physics: Theory and Phenomenology of composite models. Novel techniques for collider physics. 2) Particle Physics: Flavour physics of B and K mesons. 3)Particle Physics: Aspects of holographic QCD	CSiR/UGC/INSTITUTE	iyerabhishek@physics.iitd.ac.in	FT	3
Amartya Sengupta	THz Imaging & Spectroscopy; Raman Imaging & Spectroscopy,	CSIR/UGC/INSTITUTE	amartya@physics.iitd.ac.in	FT	1
Amita Das	PIC simulations for plasmas in strong field	Institute/External	amita@iitd.ac.in	FT	1
Bhaskar Kanseri	Quantum communication with single and entangled photons	Institute/External	bkanseri@physics.iitd.ac.in	FT	1
Bodhaditya Santra	1. Construction of a portable and high precision cold atom quantum gravimeter for field applications (Desirable skills: Electronics, Python programming, Optics, Atomic physics) 2. High precision measurement and	CSIR/UGC/INSTITUTE	bsantra@physics.iitd.ac.in	FT	3

	interpretation of gravity anomaly using cold atom quantum gravimeter (Desirable skills: Electronics, Python programming, Optics, Atomic physics) 3. Precision quantum sensing with cold atom interferometer (Desirable skills: Electronics, Python programming, Optics, Atomic physics)				
Brajesh Kumar Mani	i) Theoretical Atomic Phyiscs: Atomic clocks using ab initio structure calculations ii) Theoretical Atomic Physics: Parity and time-reversal violations in atoms and ions iii) Theoretical Condensed Matter Physics: First-principles simulations of multiferroics at finite temperatures	CSIR/UGC/INSTITUTE	bkmani@physics.iitd.ac.in	FT	2
Brajesh Kumar Mani and Sunil Kumar	Spectroscopic Properties of Atoms and Ions	CSIR/UGC/INSTITUTE	bkmani@physics.iitd.ac.in, kumarsunil@physics.iitd.ac.in	FT	1
D S Mehta	1. Laser Based Solid State Lighting and Visible Light Communications 2. Multimodal optical imaging and spectroscopy techniques for cancer detection 3. Label-free quantitative phase	CSIR/UGC/INSTITUTE	mehtads@physics.iitd.ac.in	FT	3

	nanoscopy using structured illumination microscopy				
Deepak Kumar	Dynamics of driven Granular matter	CSIR/UGC/INSTITUTE	krdeepak@physics.iitd.ac.in	FT	1
G Vijaya Prakash	(a) Photonics of metal organic frameworks; (b) nonlinearities in complex photonic structures	CSIR/UGC/INSTITUTE	prakash@physics.iitd.ac.in	FT	2
GV Prakash and Pankaj Srivastava	Fabrication and photonics of Silicon based photonic structures	CSIR/UGC/INSTITUTE(GATE)	prakash@physics.iitd.ac.in; pankajs@physics.iitd.ac.in	FT	1
Joby Joseph	Super Resolution Optical Imaging	CSIR/UGC/INSTITUTE	joby@physics.iitd.ac.in	FT	1
Joyee Ghosh	Quantum technology with single and entangled photons	Institute/External	joyee@physics.iitd.ac.in	FT	1
JP Singh	Study of glancing angle deposited active matter; Study of micro/nano actuators	CSIR/UGC	jpsingh@physics.iitd.ac.in	FT	2
Kaustuv Manna	i) Electronic correlation controlled Berry phase transport in quantum materials. ii)Single crystal growth and tuning anomalous Hall effect via Berry curvature engineering in quantum materials. iii) Search for new materials for quantum anomalous Hall and 3-D quantum Hall effect.	CSIR/UGC/INSTITUTE	kaustuvmanna@physics.iitd.ac.in	FT	2
Kaustav Manna and Amartya Sengupta	Terahertz spectroscopy study of topological semimetals	CSIR/UGC/Institute	kaustuvmanna@physics.iitd.ac.in, amartya@physics.iitd.ac.in	FT	1
Kedar Khare	Optics/Photonics/Computational Imaging	CSIR/UGC/INSTITUTE	kedark@physics.iitd.ac.in	FT	1

Manisha Thakurathi	Theoretical Condensed Matter Physics: (i) Exceptional topological insulator (ii) Floquet Weyl and nodal line semimetal (iii) Higher order topological superconductors	CSIR/UGC/INSTITUTE	manisha@physics.iitd.ac.in	FT	3
Neeraj Khare	1. Suerconducting Materials and Devices 2. Electrical Transport in nanostructres and nanocomposites	CSIR/UGC/INSTITUTE	nkhare@physics.iitd.ac.in	FT	2
P K Muduli	Theoretical Study of magnetic skyrmions	CSIR/UGC/INSTITUTE(GATE)	muduli@physics.iitd.ac.in	FT	1
P.Senthilkumaran	(a)Polarization based signal processing (b) Studies on spin-orbit beams	CSIR/UGC/INSTITUTE	psenthil@physics.iitd.ac.in	FT	2
P.Senthilkumaran and Sunil Kumar	Nonlinear processes and singular optics	CSIR/UGC/INSTITUTE(GATE)	psenthil@physics.iitd.ac.in,kumarsunil@physics.iitd.ac.in	FT	1
Pintu Das	Electronic and optical properties of III-V compund semiconductors and their heterostructures	CSIR/UGC	pintu@physics.iitd.ac.in	FT	1
R. K. Varsheny	Metamaterial based devices	CSIR/UGC/INSTITUTE	ravi@physics.iitd.ac.in	FT	2
Rajendra S. Dhaka	Na-ion batteries/Complex oxides/Heusler alloys/Topological insulator/2D materials	CSIR/UGC	rsdhaka@physics.iitd.ac.in	FT	1
Rajendra S. Dhaka and Brajesh K. Mani	Experimental and theoretical condensed matter physics	CSIR/UGC/INSTITUTE	rsdhaka@physics.iitd.ac.in, bkmani@physics.iitd.ac.in	FT	1
Sankalpa Ghosh and Suprit Singh	Analogue Gravity with Ultra Cold Atoms :	CSIR/UGC/INSTITUTE	sankalpa@physics.iitd.ac.in	FT	1

Santanu Ghosh and Pankaj Srivastava	Study of Defect and Electronic structure of low dimensional magnetic materials	CSIR/UGC/INSTITUTE	santanu1@physics.iitd.ac.in, pankajs@physics.iitd.ac.in	FT	1
Saswata Bhattacharya	Condensed matter theory: (i) Electronic structure of quantum materials (ii) Exciton and polaron dominated excited state physics in opto-electronic energy materials from many-body perturbation theory (iii) 2D Topological Insulators	CSIR/UGC/INSTITUTE	saswata@physics.iitd.ac.in	FT	2
Sujin B Babu	1. Modeling self propelled particles 2. Modelling patchy particles aggregation	CSIR/UGC/INSTITUTE(GATE)	sujin@physics.iitd.ac.in	FT	2
Sujit Manna	Thermoelectric Hall Effect in Dirac/Weyl Materials	CSIR/UGC/INSTITUTE	smanna@iitd.ac.in	FT	1
Sunil Kumar	Experimental condensed matter physics	CSIR/UGC/INSTITUTE(GATE)	kumarsunil@physics.iitd.ac.in	FT	1
Suprit Singh	Quantum effects in Gravitation and Cosmology	CSIR/UGC/INSTITUTE	suprit@iitd.ac.in	FT	1
Tarun Sharma	Theoretical high energy physics : Non relativistic supersymmetric theories on curved spaces, Large N Chern-Simons vector models	CSIR/UGC/Institute	tks@physics.iitd.ac.in	FT	2
Varsha Banerjee	1. Active Matter in non-Newtonian fluids; 2. Magnetic Colloids	CSIR/UGC/INSTITUTE	varsha@physics.iitd.ac.in	FT	2
Vikrant Saxena	Computational plasma physics	CSIR/UGC/INSTITUTE	vsaxena@physics.iitd.ac.in	FT	1