

Area of Summer Internship 2024 for the Postgraduate Students

Name of Faculty Mentor	Area of Summer Internship 2024	Remarks
Department Of Astronomy, Astrophysics And Space Engineering (DAASE)		
Dr. Unmesh Govind Khati	<ol style="list-style-type: none"> 1. Remote sensing techniques 2. Remote sensing applications 3. AI/ML applications in earth observation 4. AI/ML applications in remote sensing 5. Modeling biophysical parameters using remote sensing data 6. Drone based imaging and applications 7. Drone sensor integration and calibration 	
Department of Biosciences and Biomedical Engineering (BSBE)		
Dr. Hem Chandra Jha	<ol style="list-style-type: none"> 1. Role of pathogens in Gut-Brain axis 2. Cancer treatments through small molecules 	
Professor Amit Kumar	<ol style="list-style-type: none"> 1. Molecular Biology 2. RNA Biology 3. Protein Biochemistry 4. Drug Discovery 	
Professor Prashant Kodgire	<ol style="list-style-type: none"> 1. Molecular Immunology 2. Molecular Biology 3. Infectious Biology 	
Dr. Kiran Bala	<ol style="list-style-type: none"> 1. Algal Biotechnology 	

	2. Metabolomics	
Dr. Hitendra Kumar	1. Biomaterials synthesis and bioprinter development. 2. Diagnostic device development.	
Dr. Mirza S. Baig	1. Cancer and Inflammation	
Dr. Lokesh Basavarajappa	1. Implementation of quantitative ultrasound imaging techniques	
Dr. Sourav Chandra	1. Biomechanics 2. Movement Neuroscience 3. Biomedical Instrumentation 4. Signal Processing	
Dr. Sivaraj Mohana Sundaram	1. Biomedical image analysis	
Department of Chemistry		
Dr. Sampak Samanta	1. Organic Synthesis	
Dr. Chelvam Venkatesh	1. Total synthesis of biologically important natural products; Design and synthesis of heterocycles and carbocycles of biological importance; Developing new methodologies for construction of C-C and C-X (X =N,O,S,P) bonds; Design, synthesis and diagnostic applications of new targeting ligands for cancers and inflammatory diseases; 2. Drug delivery systems, near-infra red fluorescence, nuclear Imaging and bio-conjugate chemistry; Synthesis of Inhibitors for drug targets	
Dr. Debayan Sarkar	1. Visible Light Asymmetric catalysis.	
Dr. Abhinav Raghuvanshi	1. Synthesis and applications of luminescent Inorganic materials	

Professor Satya Bulusu	1. Theoretical Chemistry	
Department of Civil Engineering		
Professor Sandeep Chaudhary	Sustainable Concrete (with following subareas) 1. Complete recovery of cement, sand and aggregate from end of life concrete. 2. Use of cow dung for the development of innovative lightweight 3. Use of discarded cement bags as fibres in concrete	
Professor Neelima Satyam	Geotechnical Engineering	
Dr. Mayur Shirish Jain	Waste-to-Energy; Water Quality Analysis; Circular Economy	
Dr. Priyank J. Sharma	Hydrology, Water Resources and Climate Change	
Dr. Kaustav Bakshi	Hygrothermal analysis of laminated composites, Impact in laminated composites	
Dr. Gourab Sil	Traffic Engineering, Road Safety, Geometric Design	
Dr. Baadiga Ramu	Geotechnical Engineering	
Dr. Sridharan Balakrishnan	Hydraulic and water resources	
Department of Computer Science and Engineering		
Dr. Nagendra Kumar	Natural Language Processing, Computer Vision, Machine Learning, Deep Learning, Data Mining	
Dr. Ayan Mondal	Edge Intelligence and IoT	

Dr. Soumi Chattopadhyay	Machine learning	
Dr. Subhra Mazumdar	Blockchain and Distributed Systems	
Dr. Puneet Gupta	Deep Learning, Computer vision	
Professor Neminath Hubballi	Computer Networks, Cyber Security	
Dr. Surya Prakash	Biometrics, Machine Learning, Deep Learning, Pattern Recognition, Computer Vision, Image Processing	
Professor Aruna Tiwari	AI/ML, Big Data Analytics, Generative AI	
Department of Electrical Engineering		
Professor Ram Bilas Pachori	Signal Processing and Machine Learning	
Professor Vimal Bhatia	AI/ML, Wireless Communications, Quantum Communications	
Dr. Swaminathan Ramabadrnan	6G and Beyond Wireless Communications, Deep Learning for Communication	
Professor Santosh Kumar Vishvakarma	SRAM Memory Architectures In-Memory Computing for AI Chips (SRAM, RRAM/MRAM) AI Hardware Accelerators Reliable and Secure Circuits Silicon Photonics Circuits	
Dr. Sumit Gautam	1. Cooperative SWIPT-Caching Systems 2. Multigroup Multicasting SWIPT Systems	
Professor Trapti Jain	Data analytics in smart grid, cyber security in smart grid	

Dr. Lokesh Kumar Dewangan	Power Electronics and Power Systems	
Dr. Balasubramanyam Appina	Image and video processing	
Dr. Saptarshi Ghosh	<ol style="list-style-type: none"> 1. Antennas for biomedical applications 2. RIS for 6G communication 3. Conformal antennas 4. FPGA-based multifunctional FSS 	
School of Humanities and Social Sciences		
Professor Pritee Sharma	Agricultural Economics, and Environmental Economics	
Dr. Kalandi Charan Pradhan	Development Economics and Socioeconomic Impact of Climate Change	
Dr. Mohanasundari Thangavel	Natural Resource and Environmental Economics	
Professor Ruchi Sharma	Economics	
Dr. Akshaya Kumar	Comparative Media Studies, Platform Economy	
Department of Mathematics		
Dr. Santanu Manna	<ol style="list-style-type: none"> 1. Mathematical Modelling 2. Local/Nonlocal elastic wave propagation 3. Earthquake Prediction Analysis 	
Dr. Sanjeev Singh	Complex Analysis and Special Functions	

Department of Mechanical Engineering		
Dr. Shanmugam Dhinakaran	Computational Fluid Dynamics	
Dr. Santosh Kumar Sahu	Thermal management of electronic devices, jet impingement cooling, synthetic jets, electric battery thermal management, phase change materials	
Professor Pavan Kumar Kankar	Applications of machine learning, condition monitoring, reliability	
Dr. Harekrishna Yadav	Fluid flow, heat transfer and renewable energy	
Dr. Dan Sathiaraj	Additive Manufacturing	
Dr. S Janakiraman	Advanced Materials for Electrochemical Energy Storage Applications	
Department of Metallurgical Engineering and Materials Science (MEMS)		
Dr. Hemant Borkar	Lightweight alloys for automotive applications Deformation behavior of light alloys Additive manufacturing of light alloys	
Dr. Rupesh Devan	1. Materials for energy storage 2. Photoactive materials for water remediation.	
Dr. Jayaprakash Murugesan	Additive manufacturing, Fatigue and fracture of advanced materials, alloy development, Welding Engineering, Mechanical metallurgy	
Dr. Ajay Kumar Kushwaha	Nano and Quantum Materials	

	Compound Semiconductors Green Hydrogen: Materials & Technologies	
Dr. Vinod Kumar	1. Spark plasma sintering of advanced metallic systems. 2. Development of composite materials using industrial waste	
Dr. Dharendra Kumar Rai	Energy harvesting and storage	
Department of Physics		
Professor Rajesh Kumar	Raman spectroscopy and Raman Microscopy, Nanomaterials and nanodevices, Smart windows, Energy Storage Devices	
Professor Somaditya Sen	Material Characterization	
Professor Preeti Anand Bhobe	Electrical transport in composites	
Professor Sarika Jalan	Nonlinear dynamics and Complex Systems, Computational biology, Machine learning	
Professor Krushna R. Mavani	Experimental Condensed Matter Physics	
Dr. Manavendra N Mahato	Topics in Quantum Field theory	
Professor Ankhi Roy	Deep Inelastic Scattering	
Dr. Debajyoti Sarkar	Theoretical Physics. String theory and gauge-gravity duality. Quantum information theory. Black hole physics. Quantum field theory. General Relativity.	
Dr. Alestin Mawrie	Topological Insulators, Non-volatile memory	

Dr. Mritunjay Kumar Verma	Theoretical High energy physics, quantum field theory, General relativity, string theory	
Dr. Dipankar Das	Advanced topics in Quantum Mechanics, High Energy Physics, Statistical and Computational Methods in Physics	

Important Note:

- 1. Fees once paid is non-refundable.**
- 2. The Postgraduate Students are requested to contact concerned faculty mentor for any query/clarification.**
- 3. Consent from the faculty mentor of IIT Indore is a must.**