

## Areas of Interest/Research Topic

Name of Faculty Mentor	Areas of Interest/Research Topic	Remarks
<b>Department Of Astronomy, Astrophysics And Space Engineering (DAASE)</b>		
<a href="#">Dr. Abhirup Datta</a>	1) Observational Cosmology and Astrophysics - statistics, machine learning, and simulations. 2) Radio and X-ray Astronomy - Observations, Data Analysis and Instrumentation (Square Kilometre Array, GMRT) 3) Statistics and Machine Learning related to Space Applications 4) Space Weather and Ionosphere: NaVIC and GPS applications 5) Space Instrumentation - Payloads and future missions	
<a href="#">Dr. Suman Majumdar</a>	1) Cosmology 2) Early Universe 3) Epoch of Reionization and Cosmic Dawn 4) 21-cm Cosmology 5) Statistical Inference 6) Observations of the Early Universe with Next Generation Telescopes 7) Large Scale Structures 8) Simulations of the Early Universe 9) Cosmological N-body Simulations 10) Square Kilometer Array 11) Machine Learning and Artificial Intelligence 12) Statistics with BIG DATA Cosmology	
<a href="#">Dr. Saurabh Das</a>	1) Space weather/Solar wind prediction and modelling using AI/ML 2) GNSS/GPS navigation and remote sensing 3) Pulsar-based navigation for Human Space Mission 4) Hyperspectral, Multi-spectral and UAV remote Sensing 5) Cyclone and extreme weather prediction using Deep Learning/ AI	

<a href="#">Dr. Amit Shukla</a>	<ol style="list-style-type: none"> <li>1) Active galactic nuclei</li> <li>2) Blazars</li> <li>3) High Energy Astrophysics</li> <li>4) Pulsars</li> <li>5) Multi-wavelength &amp; multi-messenger astrophysics</li> <li>6) Kilonova (electromagnetic counterpart to a gravitational-wave)</li> </ol>	
<a href="#">Dr. Rajkumar Hajra</a>	<ol style="list-style-type: none"> <li>1) Space weather</li> <li>2) Geomagnetic storms and substorms</li> <li>3) Earth's outer radiation belt</li> <li>4) Ionospheric modeling</li> </ol>	
<b>Department of Biosciences and Biomedical Engineering (BSBE)</b>		
<a href="#">Dr. Sharad Gupta</a>	<ol style="list-style-type: none"> <li>1) Biophotonics</li> <li>2) NIR imaging</li> </ol>	
<a href="#">Dr. Prashant Kodgire</a>	<ol style="list-style-type: none"> <li>1) Molecular Biology</li> <li>2) Molecular Immunology</li> <li>3) Genetic Engineering</li> <li>4) Recombinant DNA Technology</li> <li>5) Microbiology</li> <li>6) Recombinant Protein Expression and Purification</li> <li>7) Diagnostics</li> </ol>	
<a href="#">Dr. Mirza S. Baig</a>	<ol style="list-style-type: none"> <li>1) Disease Modelling, Target Identification, and Drug Discovery</li> </ol>	
<a href="#">Dr. Hem Chandra Jha</a>	<ol style="list-style-type: none"> <li>1) Project 1- Determination of Epstein Barr Virus and host interaction using bioinformatic tools.</li> <li>2) Project 2- Bioinformatic approach to study plant based products as potential antivirals.</li> </ol>	

	<ul style="list-style-type: none"> <li>3) How to diagnose viral infection!</li> <li>4) How to choose correct diagnostics targets in various infections!</li> <li>5) Genomics &amp; proteomics approaches to understand the host-pathogens interactions!</li> <li>6) Metabolomics &amp; other OMICS studies in modern health sciences!</li> <li>7) Viral infection in brain cells</li> <li>8) Our gut is more important than any other organs!</li> </ul>	
<a href="#">Dr. Parimal Kar</a>	1) Computer Aided Drug Design for Infectious Diseases	
<b>Department of Chemistry</b>		
<a href="#">Professor Suman Mukhopadhyay</a>	1) Biological applications of transition metal complexes	
<a href="#">Dr. Apurba K. Das</a>	<ul style="list-style-type: none"> <li>1) Bio-organic chemistry</li> <li>2) Electrocatalysis</li> </ul>	
<a href="#">Dr. Chelvam Venkatesh</a>	<ul style="list-style-type: none"> <li>1) Synthesis of Natural products, Heterocycles and Carbocycles, Construction of C-C and C-X (X =N,O,S,P) bonds</li> <li>2) Diagnostic Applications of New targeting ligands for Cancers and Inflammatory diseases</li> <li>3) Synthesis of Inhibitors for Drug Targets, Drug delivery systems</li> <li>4) Near-infra red fluorescence optical and Nuclear Imaging</li> <li>5) Bio-conjugate Chemistry</li> </ul>	
<a href="#">Dr. Sampak Samanta</a>	<ul style="list-style-type: none"> <li>1) Organocatalytic Asymmetric Transformations</li> <li>2) Metal-free Based Pot-Economic Approaches to Functionalized Heterocycles</li> <li>3) Spectroscopic Techniques (IR, NMR, MS etc) for the Characterization of Organic Molecules.</li> </ul>	

<b>Department of Civil Engineering</b>		
<a href="#">Dr. Neelima Satyam</a>	<ol style="list-style-type: none"> <li>1) Soil structure interaction</li> <li>2) Environmental geotechnics</li> <li>3) Transportation geotechnics</li> <li>4) Soil dynamics</li> <li>5) Rock mechanics and underground structures</li> </ol>	
<a href="#">Professor Sandeep Chaudhary</a>	<ol style="list-style-type: none"> <li>1) Sustainable building materials</li> <li>2) Concrete Technology</li> <li>3) Tall Buildings</li> </ol>	
<a href="#">Dr. Gourab Sil</a>	<ol style="list-style-type: none"> <li>1) Performance Based Geometric Design of Highways</li> <li>2) Safety of Roadway Infrastructure</li> <li>3) Effects of Highway Infrastructure on Driver Behavior</li> <li>4) Traffic Engineering</li> </ol>	
<a href="#">Dr. Manish Kumar Goyal</a>	<ol style="list-style-type: none"> <li>1) Climate change <ul style="list-style-type: none"> <li>* Impact of climate change on water resources</li> <li>* Statistical Downscaling</li> <li>* Climate variability and change detection</li> </ul> </li> <li>2) Hydrology and Glaciology <ul style="list-style-type: none"> <li>* Hydro-Climatology</li> <li>* Hydrological Modeling and Flood Routing</li> <li>* Snow-melt Hydrology</li> <li>* Glacial Lake Changes</li> <li>* Hydro-geoInformatics</li> <li>* Remote Sensing Applications</li> </ul> </li> <li>3) Irrigation <ul style="list-style-type: none"> <li>* Crop modeling</li> <li>* Irrigation Water Management</li> </ul> </li> </ol>	

	4) Data Mining applications in water management and climate change * Multivariate Statistical Analysis * Machine Learning Models -Neural Network, Fuzzy logic, clustering	
<a href="#">Dr. Kaustav Bakshi</a>	1) Finite element analysis of laminated composites 2) Mechanics of laminated composites 3) Geometrically nonlinear finite elements	
<b>Department of Computer Science and Engineering</b>		
<a href="#">Dr. Aruna Tiwari</a>	1) Artificial Intelligence 2) Machine Learning for Big Data handling 3) Soft-computing 4) Data Mining	
<a href="#">Dr. Anirban Sengupta</a>	1) Hardware Security 2) Digital Forensics 3) CAD-VLSI 4) Machine Learning Chips 5) Computer Architecture and Optimization 6) Soft Computing	
<a href="#">Dr. Surya Prakash</a>	1) Machine Learning 2) Deep Learning 3) Pattern Recognition 4) Computer Vision 5) Image Processing 6) Biometrics	
<a href="#">Dr. Somnath Dey</a>	1) Biometric Security 2) Image Processing	

	3) Machine Learning	
<a href="#">Dr. Gourinath Banda</a>	<ul style="list-style-type: none"> <li>1) Developing Application and Guidance notes for formal analyses of software systems</li> <li>2) Applied Static analyses for systems programs</li> <li>3) Precision positioning system for laboratory scales</li> <li>4) Developing medical cyber physical systems</li> <li>5) Systematic studies into ancient yogic practice affects on human anatomy, physiology and genetics</li> </ul>	
<a href="#">Dr. Neminath Hubballi</a>	<ul style="list-style-type: none"> <li>1) Network Security</li> <li>2) Cyber Security</li> <li>3) Cloud Security</li> <li>4) Fault Detection in Networks</li> </ul>	
<a href="#">Dr. Bodhisatwa Mazumdar</a>	<ul style="list-style-type: none"> <li>1) Secure Lightweight Cryptographic Implementations for IoT Devices.</li> <li>2) Machine Learning Model for Synthesizing Lightweight Cryptographic Primitives.</li> <li>3) Fault Analysis Techniques for Lightweight Cryptography.</li> </ul>	
<a href="#">Dr. Puneet Gupta</a>	<ul style="list-style-type: none"> <li>1) Deep Learning</li> <li>2) Computer Vision</li> <li>3) Image Processing</li> <li>4) Artificial Intelligence</li> </ul>	
<a href="#">Dr. Chandresh Kumar Maurya</a>	<ul style="list-style-type: none"> <li>1) Machine learning</li> <li>2) Deep learning</li> <li>3) Natural language processing</li> <li>4) Text Mining</li> </ul>	
<a href="#">Dr. Nagendra Kumar</a>	<ul style="list-style-type: none"> <li>1. Deep Learning</li> <li>2. Machine Learning</li> <li>3. Social Network Analysis</li> </ul>	

	4. Natural Language Processing	
<a href="#">Dr. Ayan Mondal</a>	<ul style="list-style-type: none"> <li>1) Internet of Things (IoT) Networks</li> <li>2) Traffic Management in Software-Defined Networks</li> <li>3) Provisioning Sensors-as-a-Service in Sensor-Cloud</li> </ul>	
<a href="#">Dr. Aniruddha Singh Kushwaha</a>	<ul style="list-style-type: none"> <li>1) Computer Networks</li> <li>2) Network Programmability</li> <li>3) Traffic management, monitoring and provisioning in SDN Network</li> <li>4) Application of AI/ML in Networks</li> <li>5) SmartNICs based network function offloading</li> <li>6) Network Accelerators</li> </ul>	
<b>Department of Electrical Engineering</b>		
<a href="#">Professor Ram Bilas Pachori</a>	<ul style="list-style-type: none"> <li>1) Signal Processing</li> <li>2) Biomedical Signal Processing</li> <li>3) Speech Signal Processing</li> <li>4) Machine Learning</li> </ul>	
<a href="#">Dr. Shaibal Mukherjee</a>	<ul style="list-style-type: none"> <li>1) Solar cell</li> <li>2) RF transistor</li> <li>3) Artificial neurons/Silicon brain/RRAM for image processing</li> <li>4) 2D materials for RRAMs</li> <li>5) Biochemical sensor</li> </ul>	
<a href="#">Dr. Vivek Kanhangad</a>	<ul style="list-style-type: none"> <li>1) Image analysis</li> <li>2) Computer vision</li> <li>3) Machine learning with a focus on biometric security and biomedical applications.</li> </ul>	

<a href="#">Dr. Mukesh Kumar</a>	<ol style="list-style-type: none"> <li>1) Optoelectronics/Photonics</li> <li>2) Integrated CMOS-Photonics</li> <li>3) On-chip Optical Biosensors</li> <li>4) Device Fabricatoin</li> </ol>	
<a href="#">Dr. Abhinoy Kumar Singh</a>	<ol style="list-style-type: none"> <li>1) Stochastic estimation and filtering</li> <li>2) Target tracking</li> </ol>	
<a href="#">Dr. Saptarshi Ghosh</a>	<ol style="list-style-type: none"> <li>1) Electromagnetics</li> <li>2) Frequency selective surfaces (FSSs)</li> <li>3) Metamaterials</li> <li>4) Microwave absorbers</li> <li>5) Microwave antennas</li> <li>6) 3-dimensional (3-D) printing</li> </ol>	
<a href="#">Dr. Swaminathan R.</a>	<ol style="list-style-type: none"> <li>1) Space-Air-Ground Integrated Networks (SAGIN)</li> <li>2) Hybrid Optical-RF Communication</li> <li>3) Blind Channel Code and Interleaver Reconstruction Techniques</li> <li>4) Index Modulation Techniques for Next-generation Wireless Communication</li> <li>5) Energy Harvesting Schemes for Integrated Optical-RF Networks.</li> <li>6) Non-Orthogonal Multiple Access (NOMA) Techniques</li> <li>7) Intelligent Reflecting Surface-based Wireless Communications</li> <li>8) TeraHertz Wireless Communication</li> <li>9) Machine Learning/Deep Learning for Communication Systems</li> </ol>	
<a href="#">Dr. Santosh Kumar Vishvakarma</a>	<ol style="list-style-type: none"> <li>1) Energy-Efficient and Reliable SRAM Memory Design</li> <li>2) Enhancing Performance and Configurable Architecture for DNN Accelerators</li> <li>3) SRAM based In-Memory Computing Architecture for Edge AI</li> <li>4) Reliable, Secure Design for IoT Application</li> <li>5) Design for Reliability</li> </ol>	



<a href="#">Professor Vimal Bhatia</a>	<ul style="list-style-type: none"> <li>1) AI/Machine/Deep Learning</li> <li>2) Wireless Communications</li> <li>3) 5G, 6G</li> <li>4) Image/Video Processing</li> </ul>	
<b>School of Humanities and Social Sciences</b>		
<a href="#">Dr. Nirmala Menon</a>	<ul style="list-style-type: none"> <li>1) Digital Humanities</li> </ul>	
<a href="#">Dr. Ruchi Sharma</a>	<ul style="list-style-type: none"> <li>1) Economics of innovation</li> <li>2) International economics</li> <li>3) Industrial organization</li> <li>4) R&amp;D</li> <li>5) Patenting</li> <li>6) Patent policy</li> <li>7) Technology transfer</li> <li>8) Foreign direct investment and licensing</li> <li>9) Entrepreneurship</li> </ul>	
<a href="#">Dr. Akshaya Kumar</a>	<ul style="list-style-type: none"> <li>1) Indian Cinema</li> <li>2) Comparative Media studies</li> <li>3) Cultural studies</li> <li>4) Sociology of labour migration</li> <li>5) Performance studies</li> </ul>	
<a href="#">Dr. Ananya Ghoshal</a>	<ul style="list-style-type: none"> <li>1) 20th Century American and British Literature</li> <li>2) William Blake- Poet and Printmaker</li> <li>3) Narratives of the Anthropocene/Climate Change</li> <li>4) Parallel Cinema/The Indian New Wave</li> <li>5) Literature and Disability</li> <li>6) Photography and Children's Literature/Picture books</li> </ul>	

	7) 19th Century Bengal: Thoughts and Ideas	
<a href="#">Dr. Kalandi Charan Pradhan</a>	1) Assessing the Vulnerability to Climate Change 2) Sustainable Development 3) Economics of Labour Migration 4) Socio-Economic Impacts of Climate Change	
<a href="#">Dr. Aratrika Das</a>	1. Nineteenth Century British Literature 2. Gothic 3. Medical Humanities 4. Graphic Novel; Visual Culture 5. Writing Pedagogy	
<b>Department of Mathematics</b>		
<a href="#">Dr. Md. Aquil Khan</a>	1) Modal Logic 2) Rough Set Theory	
<a href="#">Dr. Anand Parkash</a>	1) Commutative Algebra	
<a href="#">Dr. Sanjeev Singh</a>	1) Special functions related to Bessel function	
<a href="#">Dr. Santanu Manna</a>	1) Mathematical Modelling of near-surface Love wave fields. (Minimum time required one month) 2) Asymptotic analysis of the Rayleigh wave propagation in layered media. (Minimum time required 2 months) 3) Dynamic stiffness formulation and Wave motion in a Non-homogeneous structure. (Minimum time required 2 months) 4) Apart from the above 3 topics faculty/students can propose any other topic from Applied Mathematics or Wave Theory	
<a href="#">Dr. Bapan Ghosh</a>	1) Chaotic Dynamics and Computations	

	<ul style="list-style-type: none"> <li>2) Delay Differential Equations and Applications</li> <li>3) Fractional Differential Equations</li> <li>4) Mathematical Biology</li> <li>5) Numerical Methods and Computations</li> </ul>	
<b>Department of Mechanical Engineering</b>		
<a href="#">Professor Anand Parey</a>	<ul style="list-style-type: none"> <li>1) Condition monitoring</li> <li>2) Noise and vibration</li> <li>3) Mechanical Systems Signal Processing</li> </ul>	
<a href="#">Dr. Shanmugam Dhinakaran</a>	<ul style="list-style-type: none"> <li>1) <b>Computational Fluid Dynamics and Heat Transfer:</b> Mathematical modelling and CFD simulations in all areas.</li> <li>2) <b>COVID-19:</b> Modelling of SARS-CoV-2 transmission</li> <li>3) <b>Analytical solutions:</b> Advanced fluid flow and heat transfer problems</li> <li>4) <b>CFD Softwares:</b> CFD modelling and simulations with OpenFOAM and Ansys Fluent</li> <li>5) <b>Bluff Body Aerodynamics:</b> Drag reduction techniques; Flow control; Vortex shedding and heat transfer, etc.</li> <li>6) <b>Marine Hydrodynamics</b></li> <li>7) <b>Porous Media:</b> Fluid flow and heat transfer in Porous Media applied to all fields of Science and Engineering</li> <li>8) <b>Non-Newtonian fluid Mechanics:</b> Viscoelastic fluid flows; Flow in microchannels; Optimization of microfluidic devices</li> <li>9) <b>Multi phase flows:</b> Modelling and simulation of multiphase flows</li> <li>10) <b>Heat transfer enhancement:</b> Electronic cooling; Nanofluids; Science and technology of heat pipes; Evaporation, etc.</li> <li>11) <b>Renewable energy:</b> Solar air heaters; Solar collectors; Solar stills, etc.</li> <li>12) <b>Development of numerical schemes:</b> Finite volume methods: Development of high resolution schemes; Lattice Boltzmann</li> </ul>	

	<p>methods, etc.</p> <p>13) <b>Biofluid Mechanics and Bio-heat transfer:</b> Respiratory air flow, Blood flow in diseased arteries; Cancer treatment; Drug delivery; Human body heat transfer.</p> <p>14) <b>Engineering Device development:</b> Design and development of devices that involves fluid flow, heat and mass transfer.</p> <p>15) <b>Other areas:</b> Fuel cells; Thermal Energy Storage; CFD in welding and Metallurgy; CFD in Sports</p> <p><b>Who can apply?</b> All those who are awarded or pursuing B.Tech/M.Tech/B.Sc/M.Sc/Ph.D in <b>Engineering</b> (Aerospace, Agriculture, Automobile, Chemical, Civil, Environmental, Mechanical, Textile, Manufacturing, Petroleum, Geotechnical, Nuclear, Marine, Nanotechnology, Mining, Ceramics, Metallurgy, Biomedical, Biotechnology etc) or <b>Science</b> (Applied mathematics, Physics, Biosciences, Biochemistry, Life Sciences, Sports science, etc.)</p> <p><b><u>BSBE Department:</u></b></p> <p>1) <b>Computational Fluid Dynamics and heat transfer:</b> CFD applied to all areas of Biochemistry, Biosciences, Bioengineering, Biotechnology and Biomedical Engineering</p> <p>2) <b>COVID-19:</b> Mathematical modelling and simulations of infectious SARS-CoV-2 virus transport</p> <p>3) <b>Biofluid Dynamics:</b> Biofluids &amp; general biological fluid flows; BioMEMS; Biomicrofluidics; Lab-on-a-chip, etc.</p> <p>4) <b>Human body:</b> Respiratory obstructive diseases; Blood flow in diseased arteries (Stenosis &amp; Aneurysm); CFD in cardiovascular disease; Modelling of heat transfer from human body</p> <p>5) <b>Diseases diagnosis and treatment:</b> Drug delivery; Cancer treatment; COPD, etc.</p> <p>6) <b>Tissue Engineering:</b> Heat transfer in biological tissues; Scaffolding;</p>	
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	<p>Porous scaffolds; Bio-reactor, etc.</p> <p>7) <b>Bioenergy:</b> Bioenergy systems and modelling; Biomass, Biomass thermochemical conversion; Bioreactors; Microbial fuel cells; Waste water treatment</p> <p>8) <b>Biomedical device development:</b> Respiratory devices; Devices for the disabled and elderly; other medical devices.</p> <p><b>Who can apply?</b> All those who are awarded or pursuing B.Tech/M.Tech/B.Sc/M.Sc/Ph.D in the following streams: Biosciences, Biochemistry, Biotechnology, Bioengineering, Biomedical Engineering and other relevant science/engineering backgrounds.</p>	
<a href="#">Dr. Shailesh I. Kundalwal</a>	<ol style="list-style-type: none"> <li>1) Composite Structures</li> <li>2) Experimental Characterization of Composites</li> <li>3) Finite Element Applications</li> <li>4) Flexoelectricity and Piezoelectricity</li> <li>5) Mechanics of Nanostructures</li> <li>6) Nanomechanics &amp; Micromechanics of Composites</li> <li>7) Nanotechnology in Engineering</li> <li>8) Smart Materials and Structures</li> </ol>	
<a href="#">Dr. Indrasen Singh</a>	<ol style="list-style-type: none"> <li>1) Finite Element Methods (Linear as well as Non-linear)</li> <li>2) Finite Element Modeling of Indentation in Elastic-Plastic solids in Abaqus</li> <li>3) Fracture Mechanics</li> <li>4) Continuum Mechanics</li> <li>5) Theory of plasticity</li> <li>6) Mechanical Behaviour of Materials</li> <li>7) Metallic Glasses</li> <li>8) Piezoelectric Materials</li> </ol>	
<a href="#">Dr. Harekrishna Yadav</a>	<ol style="list-style-type: none"> <li>1) Fluid-Structure Interaction</li> </ol>	

	<ul style="list-style-type: none"> <li>2) Shear Flow</li> <li>3) Flow and Turbulence Measurement using Optical Techniques</li> <li>4) Heat Transfer Enhancement</li> <li>5) Supersonic Flow</li> <li>6) Renewable and Sustainable Energy</li> </ul>	
<a href="#">Dr. Satyanarayan Patel</a>	<ul style="list-style-type: none"> <li>1) Thermal energy harvesting using pyroelectric materials</li> <li>2) Heat Transfer analysis for solid-state refrigeration</li> <li>3) Image-based FEM analysis of Composite materials for thermal stress and electric properties</li> <li>4) Energy conversion, storage and harvesting materials</li> <li>5) Piezoelectric, Pyroelectric and ferroelectric materials</li> </ul>	
<a href="#">Dr. Ankur Miglani</a>	<ul style="list-style-type: none"> <li>1) Combustion of next-generation fuels: Gel fuels and nanoparticle laden fuels</li> <li>2) Thermal management of power-dense electronics: Flow boiling in microchannels</li> <li>3) Microfluidics</li> <li>4) Soft-matter: Instabilities in drying colloidal systems</li> <li>5) Machine learning based pattern recognition in energy systems</li> </ul>	
<a href="#">Dr. I. A. Palani</a>	<ul style="list-style-type: none"> <li>1) Mechatronics system Design</li> <li>2) Soft Robotics</li> <li>3) Laser based Measurements and micro-Manufacturing</li> <li>4) Laser Based Surface Engineering</li> <li>5) Additive Manufacturing</li> </ul>	
<a href="#">Dr. Ashish Rajak</a>	<ul style="list-style-type: none"> <li>1) High Strain Metal Forming</li> <li>2) Advanced Metal Joining</li> <li>3) Advanced Manufacturing Processes</li> <li>4) Materials Science in High Strain Rate Processes</li> </ul>	

<b>Department of Metallurgy Engineering and Materials Science</b>		
<a href="#">Dr. Rupesh Devan</a>	<ol style="list-style-type: none"> <li>1) Nanomaterials for energy applications</li> <li>2) Thin films: synthesis and characterization</li> <li>3) Nanomaterials: synthesis and characterization</li> </ol>	
<a href="#">Dr. Santosh Hosmani</a>	<ol style="list-style-type: none"> <li>1) Surface Engineering and Characterisation</li> <li>2) Tribology</li> <li>3) Physical Metallurgy</li> <li>4) Microstructure-Property correlation</li> </ol>	
<a href="#">Dr. Jayaprakash Murugesan</a>	<ol style="list-style-type: none"> <li>1) Advanced welding techniques</li> <li>2) Fatigue and fracture behavior of advanced materials</li> <li>3) Surface engineering</li> </ol>	
<a href="#">Dr. Hemant Borkar</a>	<ol style="list-style-type: none"> <li>1) Materials Science and Engineering</li> <li>2) Mechanical metallurgy</li> <li>3) Lightweight materials for automotive applications</li> </ol>	
<a href="#">Dr. Ram Sajeevan Maurya</a>	<ol style="list-style-type: none"> <li>1) Bulk Metallic glass (BMG)</li> <li>2) Composite Materials</li> <li>3) Oxide dispersion strengthened (ODS) alloys</li> <li>4) High entropy alloys (HEAs)</li> <li>5) Alloy/composite development by powder technology route: Mechanical alloying</li> <li>6) Spark plasma sintering</li> </ol>	
<a href="#">Dr. Dudekula Althaf Basha</a>	<ol style="list-style-type: none"> <li>1) Deformation behavior of magnesium alloys</li> </ol>	
<a href="#">Dr. Ajay Kumar Kushwaha</a>	<ol style="list-style-type: none"> <li>1) Nanomaterials Synthesis and Characterization</li> <li>2) 2-D Materials and Devices</li> <li>3) Thin films and Memristors</li> </ol>	

	<ul style="list-style-type: none"> <li>4) Next-generation solar cell</li> <li>5) Applied Electrochemistry</li> <li>6) Electrochemical Sensors</li> <li>7) Photo/electrochemical water-splitting</li> <li>8) Corrosion Analysis and Anti-corrosion Coatings</li> </ul>	
<b>Department of Physics</b>		
<a href="#">Dr. Raghunath Sahoo</a>	<ul style="list-style-type: none"> <li>1) High Energy Nuclear Physics, Quark-Gluon Plasma (Experiment and Phenomenology)</li> <li>2) Application of Statistical Mechanics in High-energy Physics</li> <li>3) Relativistic Kinematics, Statistical Methods in Physical Sciences and Engineering</li> <li>4) Experimental Techniques in Nuclear and High-energy Physics</li> </ul>	
<a href="#">Professor Rajesh Kumar</a>	<ul style="list-style-type: none"> <li>1) Devices physics</li> <li>2) semiconductor nanomaterials</li> <li>3) Raman spectroscopy</li> </ul>	
<a href="#">Dr. Sudeshna Chattopadhyay</a>	<ul style="list-style-type: none"> <li>1) Electrical Energy Storage: Lithium-ion batteries, and batteries beyond Lithium.</li> <li>2) X-ray scattering (including X-ray diffraction (XRD), X-ray reflectivity (XRR), Grazing incidence small angle X-ray scattering (GISAXS)): Characterization of Nanomaterials, Surface and Interfaces.</li> <li>3) Spectroscopy for interdisciplinary research (for Physicist, Materials scientist and Biologist)</li> <li>4) Nanotechnology in Biomedical applications and Environmental remediation</li> </ul>	
<a href="#">Dr. Pankaj R. Sagdeo</a>	<ul style="list-style-type: none"> <li>1) Physics of Memory devices</li> <li>2) Physics of Solar cell</li> <li>3) Characterization of Nanomaterials</li> </ul>	



<a href="#">Dr. Somaditya Sen</a>	<ul style="list-style-type: none"> <li>1) Semiconductors</li> <li>2) Dielectrics</li> <li>3) Ferroelectrics</li> <li>4) Magnetism</li> <li>5) Multiferroics</li> <li>6) Spintronics</li> <li>7) Dilute Magnetic Semiconductors</li> </ul>	
<a href="#">Professor Preeti Anand Bhohe</a>	<ul style="list-style-type: none"> <li>1) X-ray Absorption Spectroscopy (XANES/EXAFS)</li> <li>2) Temperature-dependent electrical resistivity</li> <li>3) Crystal structure studies</li> <li>4) Thermoelectric materials</li> <li>5) Magnetic Materials</li> </ul>	
<a href="#">Professor Krushna R. Mavani</a>	<ul style="list-style-type: none"> <li>1) Basics of Pulsed Laser Deposition technique</li> <li>2) Functional Oxide Thin Films</li> <li>3) Terahertz Time-Domain Spectroscopy</li> <li>4) Colossal Magnetoresistive Manganites</li> </ul>	

**Important Note:**

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