

**Area of Specialization(s) and Research Topic(s) of the faculty members who are interested in taking Ph. D Students: Spring-2023-2024**

<b>Name of Faculty</b>	<b>Area of Specialization(s)</b>	<b>Research Topic(s)</b>
Prof. Naseem Ahmed	Organic Chemistry	Organic synthesis methodology, Medicinal and Radiopharmaceutical probes synthesis
Prof. Swastika Banerjee	Physical Chemistry, Materials Chemistry	Energy Storage and Conversion Focusing on Green H <sub>2</sub> Energy and Battery Materials Research (Theory and Computation)
Prof. Debasis Banerjee	Organic Chemistry	Organic Synthesis: C-H functionalizations and organofluorine chemistry for drugs and bi-active molecules. Electrochemical organic transformations for late stage functionalizations.
Prof. B V V S Pavan Kumar	Physical Chemistry	Smart biomimetic microcompartments, Dynamic colloidal self-assembly at oil-water interface, Chemical signaling between artificial cells, Stimuli-responsive liquid-liquid phase separation for design of smart underwater adhesives
Prof. Ramachandran C.N.	Physical Chemistry	Computational Chemistry, Molecular Modeling
Prof. Sayanti Chatterjee	Inorganic Chemistry, Organic Chemistry	<b>PO!TION LAB: A Journey from POISON to POTION</b> <b><u>The Laboratory of Synthesis Driven Catalysis Focused Sustainable Chemical Research</u></b> Research Topics: Synthesis, Catalysis and Spectroscopy: Bioinorganic and Bioinspired Chemistry, Organometallic Reactivity, New Concepts in Catalysis, Reaction Design, Electrochemistry and Energy Relevant Catalysis, Spectroscopy and Reaction Mechanism.
Prof. Pallavi Debnath	Physical Chemistry	Theoretical problems in soft matter and biology
Prof. Yadagiri Dongari	Organic Chemistry	<b>Organic Synthesis and Catalysis Lab</b> 1. Metallocarbene chemistry 2. Transition-metal catalyzed site-selective C-H functionalization 3. Visible-light induced transformations
Prof. Raj Kumar Dutta	Physical Chemistry, Materials Chemistry	Materials for energy and environment, Quantum dots and sensing applications
Prof. E. Gnanamani	Organic Chemistry	Asymmetric catalysis, Organic Synthesis and Microdroplet Chemistry
Prof. Puneet Gupta	Physical Chemistry, Inorganic Chemistry	<b>Physical Chemistry Group:</b> Molecular Modelling and Simulations on Catalytic Reactions and Batteries <b>Inorganic Chemistry Group:</b> Application of Computational Chemistry to understand Inorganic and Bio-inorganic Reactions.
Prof. P. Jeevanandam	Materials Chemistry, Physical Chemistry	Nanoscale materials and their applications

Prof. Hem C. Kandpal	Physical Chemistry, Inorganic Chemistry, Materials Chemistry	Research Topics: 1. Design and modeling of Intermetallic compounds for energy-related applications (Computational Materials Science, Theoretical work) 2. Synthesis and characterization of materials (nano, bulk, and low dimensional) for thermoelectric applications (Solid State Chemistry, Experimental Work) 3. Synthesis and characterization of materials (nano, bulk, and low dimensional) for water splitting (Solid State Chemistry, Experimental Work)
Prof. Prasenjit Kar	Inorganic Chemistry, Materials Chemistry	Inorganic Fluorescent Nanomaterials
Prof. Dheeraj Kumar	Inorganic Chemistry	Organometallic Chemistry of Energetic Materials
Prof. Tapas Kumar Mandal	Inorganic Chemistry, Physical Chemistry, Materials Chemistry	The topics are as follows: 1. High-entropy oxides for solar energy harvesting. 2. Mixed-anion perovskite semiconductors for energy and environmental applications. 3. Semiconductor hetero-junctions for photocatalytic and photoelectrocatalytic hydrogen and oxygen evolution reactions.
Prof. Ravindra Pandey	Physical Chemistry	1. Physical Chemistry 2. Protein membrane interactions. 3. Charge transfer dynamics for photovoltaic devices. 4. Permeability of nanoparticles to the cell membranes. 5. Metal/ covalent organic frameworks 6. Mechanism of action of freeze and anti-freeze proteins
Rama Krishna Peddinti	Organic Chemistry	Organic synthesis, Stereoselective synthesis, Asymmetric synthesis, and Rapid protocols for the generation of heterocycles.
Prof. Kalyan Kumar Sadhu	Inorganic Chemistry	Nanobio Interfacial Chemistry
Prof. M. Sankar	Inorganic Chemistry	Synthesis of metalloporphyrins and their applications, Coordination Chemistry, Catalysis and Supramolecular Chemistry
Prof. Anuj Sharma	Organic Chemistry	Visible light photo-redox organic synthesis
Prof. U.P. Singh	Inorganic Chemistry	Coordination polymer/Metal organic frameworks (MOFs) as drug delivery system
Prof. K.R. Justin Thomas	Organic Chemistry	Organic Materials, Photocatalytic organic synthesis
Prof. Venkatesh V	Inorganic Chemistry, Organic Chemistry	Chemical Biology and Medicinal Chemistry
Prof. Anil Mishra	Inorganic Chemistry, Organic Chemistry	Metallopharmaceuticals