Department	Research Area
Chemical Engineering	1) Stabilization techniques for natural circulation loops 2) Thermal hydraulic design of MMR
Chemical Engineering	Hydrogen Storage and Production, Affordable healthcare devices, Microfludics and Complex fluids, Sustainable Agriculture and Biomass, Electrochemical Energy Storage, MD Simulation for Energy and Environment applications, Carbon Capture Utilization and Storage, Heat Exchangers, Porous Media
Chemistry	Materials Chemistry for Carbon Capture/ Conversion, and Heterogeneous Catalysis
Chemistry	Solid-State Chemistry: Development of Novel Oxide Materials
Chemistry	Photocatalytic H2 production, Solid state lighting, Photoredox catalysis
Chemistry	Organometallic and Bio-inspired catalysis, Electrocatalysis and CO2 reduction reactions, Photocatalytic Chemical transformations.

Civil Engineering	Structural Engineering
Civil Engineering	Structural Engineering
Civil Engineering	Experimental Hydraulics, Hydrology and Water Resources Engineering
Civil Engineering	Advanced concrete materials for sustainable and resilient infrastructure
Computer Science and Engineering	5G/6G Networking -- Resource Allocation, Security, Supporting IoT/IIoT Applications
Computer Science and Engineering	AI and Blockchain

Computer Science and Engineering	Cyber Security
Electrical Engineering	Converters for EV, Hydrogen generation and Renewable Energy
Electrical Engineering	Control systems and Robotics
Electrical Engineering	Signal Processing and Artificial Intelligence
Electrical Engineering	AI application to Sonar and Radar, Deep learning, Computer Vision
Electrical Engineering	Robotics Control, Network Control

Electrical Engineering	VLSI Design
Electrical Engineering	RF and Microwave Engineering
Electrical Engineering	Beyond 5G (B5G) Wireless Communications
Electrical Engineering	Machine learning & Deep learning applications to Speech Processing, Signal Processing,
Electrical Engineering	RF & Microwave Devices (Antennas, Filters, Multiplexers, etc.) for Next Generation Microwave Devices, RFIC Design, FDTD Methods, Computational Electromagnetics
Electrical Engineering	Digital VLSI Design, FPGA Based System Design and ASIC Chip Design of Post Processing Tasks for Quantum Key Distribution.

HSS	Financial and Environmental economics
HSS	Social Psychology
HSS	Development Economics
HSS	Sociology of Stratification and Everyday Marginalization; Climate Change, Ecology, and Human-Wild Animal Relations; Indigenous Peoples and Cultural Change; Sociology of Migration and Employment
Materials Engineering	Cathode material and Solid electrolyte for next-gen Batteries
Materials Engineering	Coputational modelling of Metal Extraction and Recycling

Materials Engineering	Alloy development, microstructural kinetics, processing-property correlations, metallic glasses, high entropy alloys, coatings.
Materials Engineering	Polymer Nanocomposites for semiconductor industry
Mathematics	Commutative Algebra
Mathematics	Combinatorial Commutative Algebra
Mathematics	PDE and Numerical Analysis
Mathematics	Analysis, Fourier Analysis

Mathematics	Analysis, Fourier Analysis
Mathematics	Finite Fields and Their Applications
Mechanical Engineering	Desalination Technoloy
Mechanical Engineering	Gas turbine engine combustors, Reusable liquid rocket engine injection systems, UAVs
Mechanical Engineering	1. Numerical/experimental thermal-hydraulic analysis, 2. Reactor kinetics
Mechanical Engineering	Computational and Experimental Fracture Mechanics

Mechanical Engineering	Nonlinear Dynamics and Vibrations
Mechanical Engineering	Dynamics and optimal control of soft magnetoelastic solids.
Physics	Information-Theoretic Biophysics
Physics	Optics, Spectroscopy, Device
IDP	**Energy Storage Materials for Li and Na Ion Batteries** **Eligibility : Candidates must have an MTech/MSc degree with a valid GATE score or CSIR-UGC NET qualification.**
IDP	**1. AI/ML analysis of reactor, 2. Reactor kinetics** **Eligibility: Basic undergraduate/master degree of the candidates should be from Mechanical / Chemical / Aerospace engineering or from Physics with a background in thermodynamics and nuclear physics.**

IDP	**Development of High performance lithium batteries** **Eligibility: A Master's or Bachelor's degree in Engineering/Technology in Materials Engineering, Metallurgical and Materials Engineering, Chemical Engineering, Polymer/Plastics Engineering, Mechanical Engineering, or a related discipline, with a proven understanding of electrochemistry and/or battery technologies, and a strong academic record.** **A Master's degree in Science (Physics, Chemistry, or related fields) with a demonstrated background or proven understanding of electrochemistry and/or battery technologies, along with a strong academic record.**