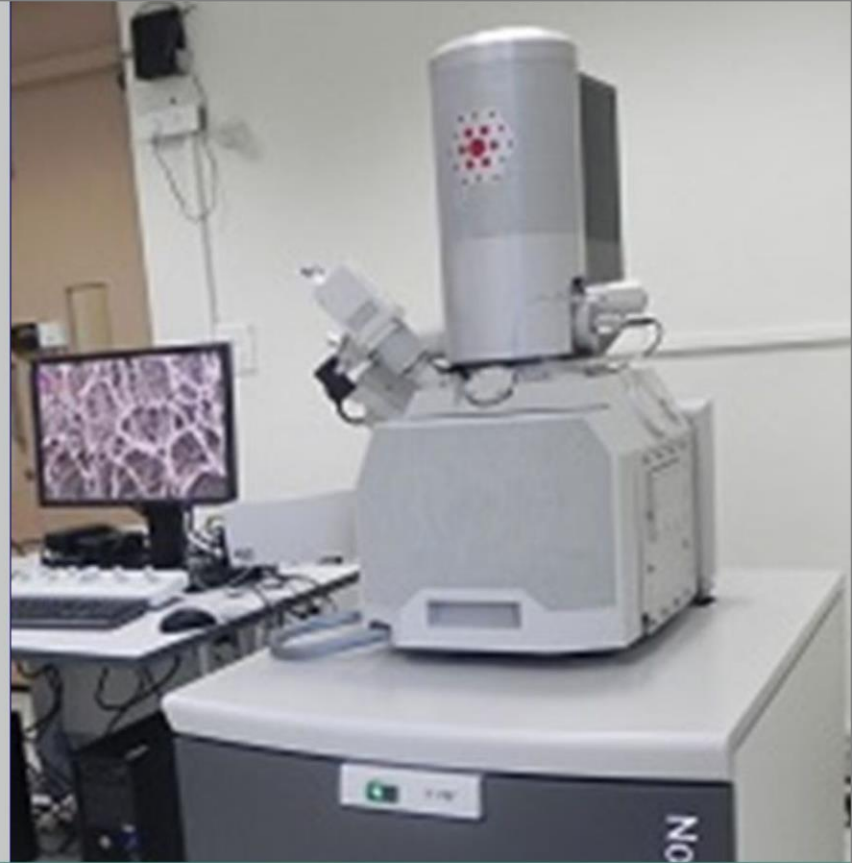


भारतीय प्रौद्योगिकी संस्थान कानपुर
Indian Institute of Technology Kanpur



MATERIALS SCIENCE AND ENGINEERING

POST GRADUATE PROGRAM

Website: www.iitk.ac.in/mse



MATERIALS SCIENCE AND ENGINEERING

The Department of Materials Science and Engineering at IIT Kanpur is world renowned for its excellence in research, teaching (undergraduate and postgraduate) and state-of-the-art research and teaching infrastructure. The departmental facilities are well aided by the Advanced Center for Materials Sciences housing several advanced processing and characterization facilities. The research landscape of the Department encompasses the cutting edge computational as well as experimental research in both traditional as well as modern areas of materials science and engineering on a wide selection of materials including metals and alloys, semiconductors, electronic and structural ceramics, polymers, biomaterials and composites. The Department's research is directly relevant to various technology sectors such as Ferrous and Nonferrous Industry, Health, Renewable Energy, Transport and Automotive, Defense, Aerospace and Consumer Electronics.



POST-GRADUATE PROGRAMMES OFFERED

- Ph.D.
- M.Tech.

LABS/FACILITIES

The list of Departmental facilities can be found in
<https://www.iitk.ac.in/mse/MSE-Facilities/index.html>

- Physical Metallurgy Laboratory
- Mechanical Testing Laboratory
- X-ray diffraction Facility
- Scanning Electron Microscopy
- Transmission Electron Microscopy
- Raman Spectroscopy



FACULTY LIST

- **Nilesh Badwe:** Mechanical properties of materials, Microelectronics packaging
- **Kantesh Balani:** Biomaterials, Computational Modeling, CNT Reinforced Nanocomposites, Nanomechanics & Tribology
- **Somnath Bhowmick:** Computational Materials Science
- **Krishanu Biswas:** Nanomaterials, Phase Transformation, Electron microscopy, Alloy Design
- **Niraj Mohan Chawake:** Creep, Mechanical Behavior of Materials, Solid-State Sintering
- **Anshu Gaur:** Electronic Materials, Nano-Materials, Device Physics and Device Characterization
- **Srinu Gangolu:** Structure-property correlation and High temperature deformation
- **Deepak Gupta:** Device Materials
- **Nilesh Prakash Gurao:** Crystallographic Texture, Thermomechanical Processing and Mechanical Behaviour of Materials
- **Sarang Ingole:** Semiconductor materials, Micro and Nano-fabrication, Electrical Characterization of Materials
- **Shikhar Krishn Jha:** Advanced material processing under externally applied fields and its effect on electrical, optical, and chemical properties of the materials
- **Monica Katiyar:** Opto-Electronic Materials and Devices
- **Kaustubh Kulkarni:** Multicomponent Diffusion, Thermodynamics, Physical Metallurgy
- **Tanmoy Maiti:** Clean Energy, Thermoelectrics, Oxide Electronics
- **Dipak Mazumdar:** Steelmaking, Process Modelling
- **Arunabh Meshram:** Recovery of metals, Non-Ferrous Extractive Metallurgy
- **Shikhar Misra:** Functional thin films, epitaxy, ceramic nanocomposites, Optical metamaterials
- **Kallol Mondal:** Corrosion, Physical Metallurgy, Glassy Alloys
- **Rajdip Mukherjee:** Microstructure Modelling and Simulation
- **Shobit Omar:** Ionic Conductors, Ceramic Processing, Solid Oxide Fuel Cells, Batteries, Supercapacitors, Electrolysis
- **Sandeep Sangal:** Physical and Mechanical Metallurgy
- **Rahul Sarkar:** Oxygen steel making, Alternative iron making, Refractory-metalslag interactions, High temperature chemical processing
- **Rajiv Shekhar:** Electrochemical Materials Processing
- **Shashank Shekhar:** Severe Plastic Deformation, Grain boundary engineering
- **Amarendra Kumar Singh:** Steel making, Process Modelling and Simulations
- **Sudhanshu Shekhar Singh:** Deformation behavior of materials, Physical Metallurgy
- **Shivam Tripathi:** Computational Materials Science, Atomistic simulations, Thermodynamics, and physical metallurgy
- **Anish Upadhyaya:** Powder Metallurgy, Sintering of Ferrous & Non-Ferrous Alloys & Composites
- **Vivek Verma:** Biomaterials, Biodegradable Polymers
- **Raghupathy Yuvaraj:** Microbially Induced Corrosion, Corrosion Engineering, Nanomaterials and Surface Coatings, Material-Microbe Interactions



BROAD RESEARCH AREAS

- AI and ML for Materials Science and Engineering
- Biomaterials
- Computational Materials Science
- Corrosion and Oxidation
- Electroceramics
- Extractive Metallurgy
- Flexible and Organic Electronics
- Manufacturing Processes
- Material Degradation
- Mechanical behaviour of Materials
- Nanomaterials and Nanotechnology
- Physical Metallurgy
- Powder Metallurgy
- Process Modelling
- Structural Ceramics





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