



Indian Institute of Technology, Patna

M.Tech. (Materials Science and Engineering)

Placement Brochure 2016-17



Contents

- About Us
- Course Structure
- Laboratory Facilities
- Student Profile
- Faculty Profile
- Sponsored Projects
- Collaborations
- Placements
- Contact Us

About us

- Materials have played a key role in the development of mankind. Materials Science and Engineering (MSE) is an interdisciplinary field of science and engineering which investigates how changes in the structure of a material influence its properties. This field encompasses mechanical, chemical, biomedical, civil, electrical, and aerospace engineering physics; and chemistry.
- It is a discipline that enables both the creation and application of materials in society. Materials scientists and engineers develop materials for new applications, improve existing materials to enhance performance and evaluate ways in which different materials can be used together

Course Structure

First Year
Specializations and Electives



Second Year
Research and Teaching
Assistantship

Courses Offered

Core Courses

- Nano-structured Materials
- Materials Processing Technology
- Advanced Materials Characterization Techniques
- Structural and Functional Properties of Materials

Elective Courses

- Surface Engineering
- Rubber Science and Technology
- Advanced Building Materials
- Composite Science and Technology
- Alloy Development and Heat Treatment

Lab Courses

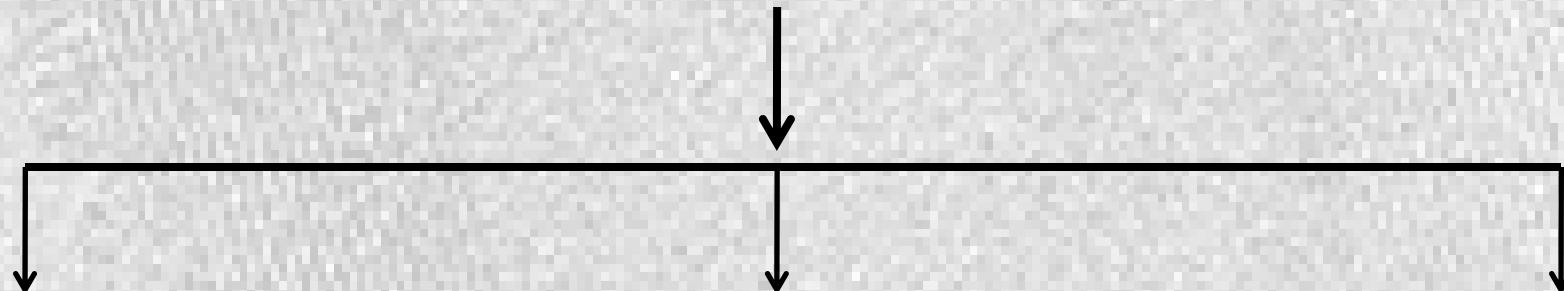
- Microstructure and Phase Analysis Laboratory
- Materials Characterization Laboratory

Research Work

Students undertake projects pertaining to some real time problems in final year under the guidance of distinguished faculties and complete their thesis as a part of the course.

LABORATORY FACILITIES

Ceramics and nano materials lab

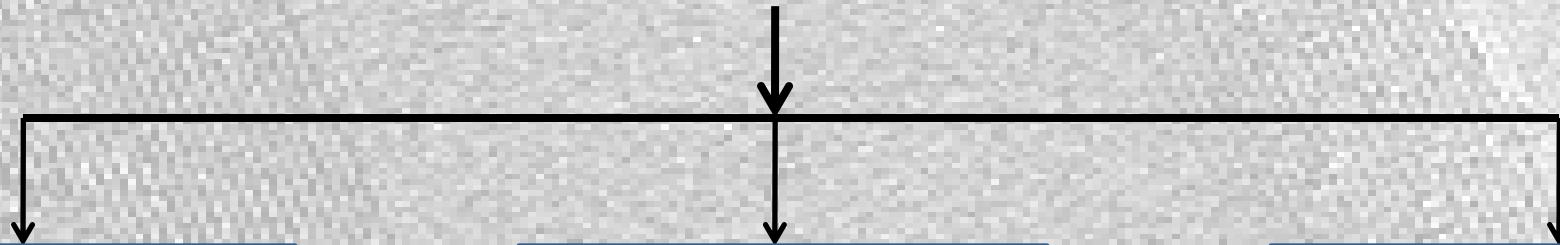


Nano materials lab



Ceramic and nano materials lab in department of MSE focuses on the area of materials chemistry of advanced materials which probes into the synthesis issues for the nano particles (via materials chemistry routes) and try to understand the complexities involved via different structural characterisation methods.

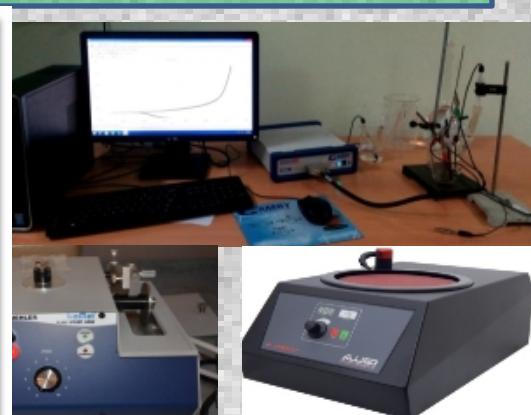
b Metallurgical and materials engineering lab



Plasma spray lab



Metallographic and corrosion lab



Mechanical testing lab



Metallurgical and materials engineering lab in department of MSE has set-up the world-class plasma spray coating facility (Oerlikon Metco, USA), which has the potential of fabricating the large domain of metal and ceramic coating for the wear and corrosion resistance applications. In addition, sophisticated micro indentation with the scratch tester (Microtest, Spain) is a part of mechanical testing lab. For characterizing the corrosion behaviour of coating/substrate, corrosion lab consisting of Potentiostat/Galvanostat (GAMRY, USA) has been established

Polymer science and technology lab



Polymer characterization lab



Polymer processing lab



Polymer synthesis lab



Polymer science and technology lab in department of MSE has set-up the world-class polymer synthesis, processing and testing lab.

Ongoing research activities:- Projects related to polymer science and technology with specialization in adhesion, blends / alloys, composites (micro and nano), hybrid fillers (conventional / nano), thermal stability and chemical modification of polymers

Student Profile



The admissions to M.Tech. in Materials Science and Engineering program is based on the performance of students in the national level GATE (Graduate Aptitude Test in Engineering) examination along with personal interview.

The students are chosen from different engineering backgrounds viz. Mechanical Engineering, Plastic Technology ,Chemical Engineering, Mettalurgy.

The M.Tech. degree is designed in a way to provide a holistic view on all the classes of materials including metals, ceramics and polymers. The program is intended to provide in-depth knowledge in the fundamentals, analysis and structure-property correlation of various materials system. Current batch of Materials Science and Engineering is working on following projects

- Ceramic nano composites.
- Renewable processing oils for the compounds used in tyre.
- Polymer blends and composites.



Faculty Profile



Dr. Dinesh Kumar Kotnees

Head: Department of Materials
Science & Engineering

Email id : dinesh@iitp.ac.in

Research Areas : Polymer Science and Technology
with specialization in Adhesion, Blends, Composites,
Fillers and Bulk/Surface properties of Polymers



Dr. Anirban Chowdhury

Asst. Professor

Email id : anirc@iitp.ac.in

Research Area :

Materials Chemistry - chemical synthesis - structural
and spectroscopic characterisations - thin films &
coatings - nanomaterials- sol gel - ceramics

Dr. Anup Kumar Keshri
Asst. Professor

Email id : anup@iitp.ac.in

Research Area : Carbon Nanotube
Reinforced Ceramic Matrix and
Metal Matrix Composites, Thermal Spraying,
Tribology of Materials, Process-Structure-
Property Relationship

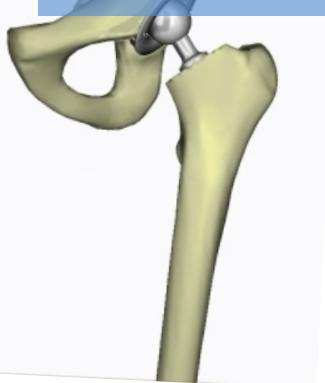


Sponsored Projects



Denka

- Fabrication of Robust Plasma Sprayed Rare Earth Oxide Hydrophobic Coating for the High Temperature and Wear Resistance Applications.(Sponsored by SERB-DST)
- Synthesis & characterization of faceted nano crystalline powders of Ceria-Zirconia and related systems. .(Sponsored by SERB-DST)
- Surface modified metallic orthopedic implant for sustained drug release. .(Sponsored by DST/TSG/AMT)
- Simultaneous improvement of low temperature and room temperature properties of elastomers. .(Sponsored by DENKA, Tokyo, Japan)



Collaborations



| | |
|----------------|--------------------|
| JK Tyres | NCL Pune |
| BHEL Hyderabad | IRMRA Mumbai |
| NML Jamshedpur | Action Shoes Delhi |



Several students have also gone at these reputed organisations for Internships and M.Tech projects



Placements

| | | |
|---------------|-----------|-----|
| IIT Bombay | IIT Patna | RRB |
| TATA Steel | DRDO | PWD |
| IIT Kharagpur | | |



Several students also choose to go for higher studies. Many students from the M.Tech Materials Science and Engineering program have also been selected to visit various international laboratories/institutions/universities

Contact Us

Head:

Dr. Dinesh Kumar Kotnees

Office Phone: +91-612-302-8185

Email id : dinesh@iit.ac.in

Phone no : +91-8051100995

Training & Placement Cell:

Professor In-Charge

Dr. Sumanta Gupta

Phone No: +91-612-302-8096

Email: sumanta@iitp.ac.in

Address:

Training and Placement Cell

IIT Patna, Bihta Campus

Bihta Kanpa Road

Bihar, Pin- 80118, India

Student Placement Coordinator

Nishtha Singh

Phone No : +91- 7256992565

Email id :

nishtha.mtms15@iitp.ac.in

Ravikaran Singh

Phone No : +91- 73980713685

Email id :

ravi.mtms15@iitp.ac.in

