



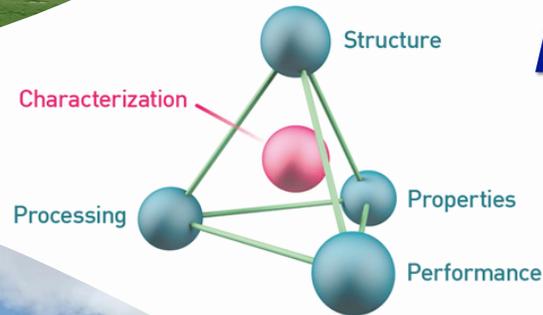
M.Tech in MSME

Admissions (A.Y.: 2026-2027)

Department of Materials Science &

Metallurgical Engineering

(MSME)

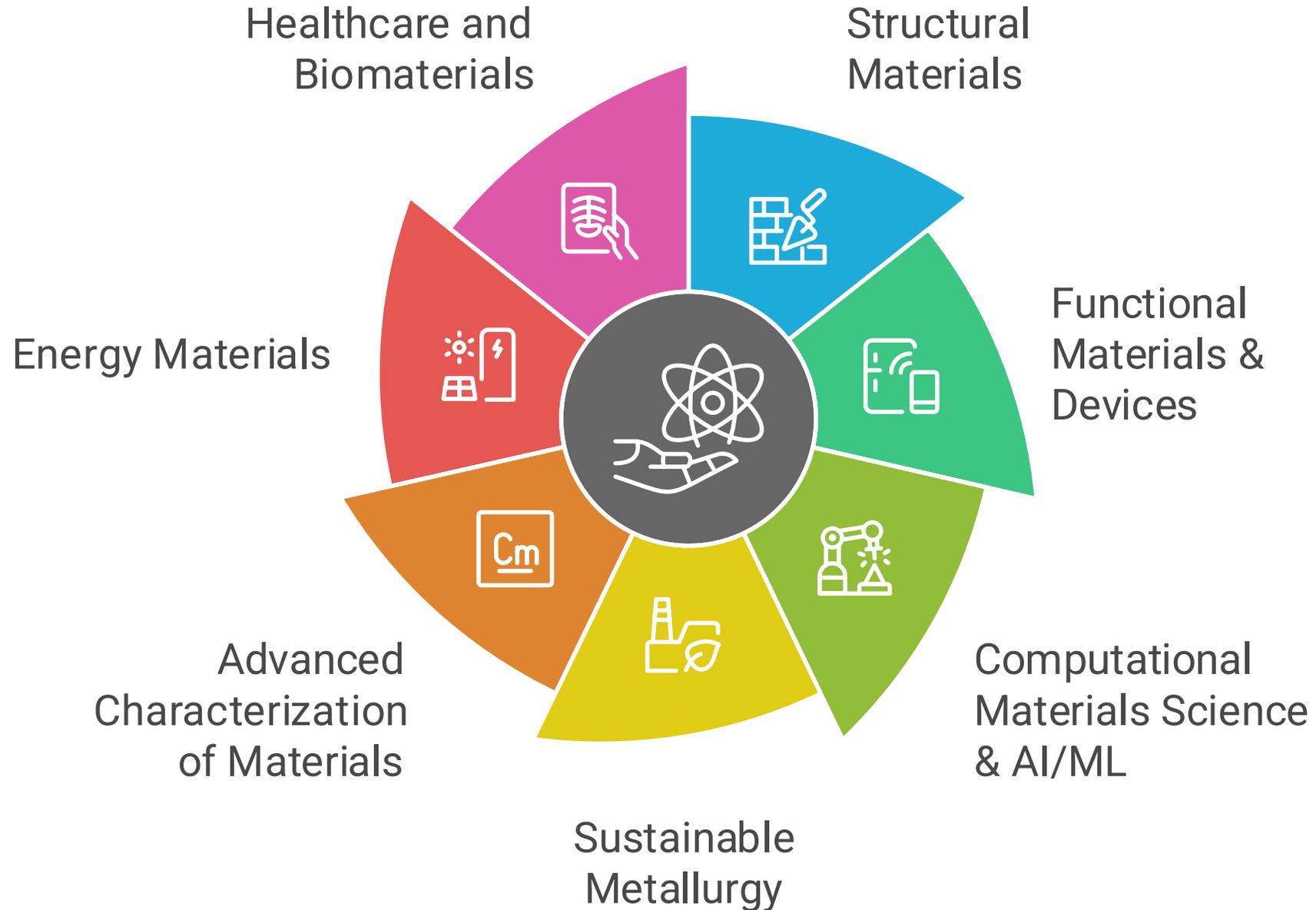


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భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Major Research Areas



Facilities at MSME

Material Synthesis and Processing

- Pulse Laser Deposition
- E-beam deposition
- Planetary Ball mill
- Rolling mill
- Robotic GTA welding
- Uniaxial Compaction Press
- Cold-Isostatic Press
- Induction-melting furnace
- Arc-melting furnace
- Glass vacuum sealing
- Spin and Dip coater
- Sputtering
- Hot press
- High Temperature Vacuum Furnace
- Infra-red heating furnace
- Muffle and tube furnaces
- Salt-bath furnace
- Autoclave Ovens
- Incubator shaker
- Freeze drier
- Bio-safety cabinet
- Glove-box

Computational

- Thermo-Calc
- DICTRA
- TC-Prisma
- COMSOL Multiphysics, ANSYS
- CrystalMaker Suite
- VASP
- State-of-the-art GPU clusters
- Inhouse NSM Supercomputing facility ParamSeva
- MicroSim



Characterization facilities

- Cold FEG-TEM
- FEG- SEM with EBSD
- Optical Microscopes
- FIB
- Ion-milling, PIPS
- SPM
- Surface area and porosity analyser
- Powder & thin film XRD
- UV visible spectrophotometer
- Raman spectrometer
- DTA, DSC, TGA, Dilatometer
- Universal testing machine (MTS, Instron)
- Creep Testing
- Hardness Tester
- Wear (Pin-on-disk)
- Nanoindenter
- Electrochemical analyser
- Viscometer

A decorative graphic consisting of several concentric, overlapping bands in shades of blue and green, forming a circular shape that is open on the right side. The bands have a slight gradient and a soft shadow effect, giving them a three-dimensional appearance.

Meet Our Faculty



B. S. Murty

Professor

Research Interests

Thermodynamics & kinetics of phase transformations ,
High entropy alloys

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Bharat B. Panigrahi

Professor

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Advanced ceramics & composites

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Pinaki P. Bhattacharjee

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Materials processing

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Suhash R. Dey

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G. D. Janaki Ram

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Saswata Bhattacharya

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Atul S. Deshpande

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Chandrasekhar Murapaka

Associate Professor

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Shourya Dutta Gupta

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Research Interests

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Nanophotonics Sensors

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Deepu J. Babu

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Research Interests

Carbon capture

Nanoporous materials

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Research Interests

In situ and correlative

Characterizations, Corrosion

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Suresh Kumar Garlapati

Assistant Professor

Research Interests

Printed electronics and Memristors

Oxide Semiconductors

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Mayur Vaidya

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Ashok Kamaraj

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process modelling & steel development

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Suresh Perumal

Assistant Professor

Research Interests

*Thermoelectric Materials and Devices
Magnetic Refrigeration, SOFCs,
Photodetectors*

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Anuj Goyal

Assistant Professor

Research Interests

*Multiscale modeling
Electronic structure theory*

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Hemam Rachna Devi

Assistant Professor

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*Green Hydrogen Generation
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Rama Srinivas Varanasi

Assistant Professor

Research Interests

*Atom probe tomography, Hydrogen
embrittlement, Segregation engineering*

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Amit Barnwal

Assistant Professor

Research Interests

*Non-Ferrous Extractive Metallurgy, E-waste and
Battery Recycling, Critical Metals and Rare
Earth Recovery, Hydrometallurgy*

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M.Tech Program (MoE Fellowship)

For 2-Year M. Tech (TA): Students get opportunity to learn various advanced level courses and carryout thesis in various cutting-edge areas.

ELIGIBILITY:

- Candidates having First Class in B.E./B.Tech. or equivalent in Metallurgy/ Ceramics/ Mechanical / Production / Industrial / Plastics / Polymer/ Chemical Engineering or related discipline or M.Sc. in Materials Science/Physics/Chemistry Valid GATE score required in MT/ME/PI/PH/CY/XE. (or)
- IIT Graduates - Do not need a GATE score for admissions but must have a CGPA of 8.0.

Contact for M.Tech Program
(MoE Fellowship):
Dr. Suresh Perumal
Assistant Professor
Department of Materials Science
& Metallurgical Engineering
E.mail: suresh@msme.iith.ac.in

SELECTION PROCESS:
Based on **GATE SCORE**

APPLICATION PROCEDURE:
visit www.iith.ac.in for detail
information and apply online

Glimpses of advanced level courses offered

- Properties of Materials
- Electron Microscopy
- Thermomechanical Processing Of Materials
- Advanced Physical Metallurgy
- Advanced Materials
- Thin Films Technology
- Advanced Materials Synthesis And Characterization
- Composite Materials
- Scientific Writing And Ethics In Research
- Energy Materials and Devices
- Powder Metallurgy Manufacturing
- Introduction To Computational Methods In Materials Science
- Biomaterials- Materials In Medicine
- Polymer Science And Engineering
- Thermodynamics And Kinetics Of Materials
- Electrochemistry in Materials Science and Engineering
- Soft Materials
- Phase Transformations
- Hierarchical Nanostructured Materials
- Nature Inspired Materials Engineering
- 2D Materials: Synthesis, Characterization and Applications
- Wear & Triobology

3-year M.Tech., Program (Project Funding)

For 3-Year M. Tech (RA): Admissions will be based on the written test / personal interview. Only the first preference of chosen specializations filled in the application form will be considered.

The selected applicants will have to provide research / teaching assistance of up to 8 hours per week.

ELIGIBILITY:

Candidates having First Class in B.E./B.Tech. or equivalent in Metallurgy/ Ceramics/ Mechanical / Production / Industrial / Plastics / Polymer/ Chemical Engineering or related discipline or M.Sc. in Science/Physics/Chemistry.

- Applicants should have a valid GATE score in the MT/ME/PI/PH/CY/XE (or)
- Valid GATE score is optional with 6 months of experience at IITH (or)
- 2 years experience in industry/R&D lab

Contact for M.Tech Program (Project Funding):

Dr. Suresh Perumal

Assistant Professor

Department of Materials Science &
Metallurgical Engineering

E.mail: suresh@msme.iith.ac.in

APPLICATION PROCEDURE:
Visit: www.iith.ac.in for detail
information and apply online

Glimpses of advanced level courses offered

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- Electron Microscopy
- Thermomechanical Processing Of Materials
- Advanced Physical Metallurgy
- Advanced Materials
- Thin Films Technology
- Advanced Materials Synthesis And Characterization
- Composite Materials
- Scientific Writing And Ethics In Research
- Energy Materials and Devices
- Powder Metallurgy Manufacturing
- Introduction To Computational Methods In Materials Science
- Biomaterials- Materials In Medicine
- Polymer Science And Engineering
- Thermodynamics And Kinetics Of Materials
- Electrochemistry in Materials Science and Engineering
- Soft Materials
- Phase Transformations
- Hierarchical Nanostructured Materials
- Nature Inspired Materials Engineering
- 2D Materials: Synthesis, Characterization and Applications
- Wear & Triobology

M.Tech., Program (Self-sponsored)

For 2-Year M. Tech (SS): Students get opportunity to learn various advanced level courses in various cutting edge areas. Admissions will be based on the written test / personal interview.

ELIGIBILITY:

- Candidates having First Class in B.E./B.Tech or equivalent in Metallurgy/ Ceramics/ Mechanical/ Production / Industrial / Plastics / Polymer/ Chemical Engineering or related discipline. (or)
- First class M.Sc. or equivalent degree in Materials Science/Physics/Chemistry (or)
- Related discipline with minimum first class.

Contact for M.Tech. Program
(Self-sponsored):

Dr. Suresh Perumal
Assistant Professor
Department of Materials Science &
Metallurgical Engineering
Email: suresh@msme.iith.ac.in

SELECTION PROCESS:

Written test (and/or) interview
GATE Score is not Mandatory

APPLICATION PROCEDURE:

visit www.iith.ac.in for detail information and apply online

- Properties of Materials
- Electron Microscopy
- Thermomechanical Processing Of Materials
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- Advanced Materials
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- Hierarchical Nanostructured Materials
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- 2D Materials: Synthesis, Characterization and Applications
- Wear & Tribology