Information Brochure

Department of Metallurgical & Materials Engineering (MMT)

MGIT

Mahatma Gandhi Institute of Technology (MGIT), affiliated to JNTU, was established by Chaitanya Bharathi Educational Society (CBES) in the year 1997 in an invigorating ambience at Gandipet, Hyderabad. The CBES was established in the year 1979 by a group of eminent personalities who have excelled in their respective professions. The primary objective of this society is to create temples of knowledge to impart value-based education to the future generations of our country. At present MGIT offers under-graduate courses in MMT, EEE, ECE, CSE, IT, Civil, Mechanical and Mechatronics.

What is MMT?

MMT is a telescopic word for Metallurgical and Materials Engineering at MGIT. Materials construct world. Without materials world does not progress. Metallurgical Engineering is core to the development of materials and their processing technologies. The background of Metallurgical engineering is essential to understand and develop new materials. Metallurgical and Materials Engineering is considered as a mother of all Engineering disciplines.

Atomic Energy, Defence, Space, Oil, gas and petroleum Industries, fossil fired power plants, automobile, aerospace, electronics, software and many other Industries are demanding better materials with special characteristics. Alloy Design, Development, Characterization and processing plays a key role in the above mentioned applications. The Metallurgical and Materials Engineer selects the materials as per the application needs and manufactures the products using appropriate forming techniques and heat treatments. The materials dealt by Metallurgical Engineers include Iron, steel, Non-ferrous metals and alloys, Ceramics, Metal Reinforced Plastics, Ceramic-Coated Metals, Metal-Matrix Composites, Carbon-Carbon Composites, Fiber Reinforced Plastics etc. The specialization strives to train Engineers in mineral beneficiation, Extraction Metallurgy, Physical Metallurgy, Mechanical Metallurgy, Process Metallurgy, Heat treatment Technology, Corrosion, Foundry Technology, Welding Science and Technology, High temperature Materials, Composite Technology, Forming Technologies, Modeling and Simulation. It has excellent employment prospects all over the world. There has always been shortage of metallurgists in India since it is being offered only in selected Institutions. A good Metallurgical Engineer not only finds employment in Industries but also in research labs. Metallurgy and Materials Technology is a very good discipline to pursue high quality Engineering education.

Objectives of the Department

1. Imparting high quality education for Under Graduate Students in MME with special emphasis on understanding the fundamental aspects of various subjects.
2. Making the students to inculcate in conducting high quality scientific and Industry oriented research work.
3. Conducting the advanced research work by the faculty in the frontier areas of importance to India.
4. Offering consultancy to various small scale industries to improve their standards and process efficiency.

**Infrastructure**

The Department has spacious and well-equipped Metallurgical Engineering laboratories for providing much essential practical training during under graduation. Students of this discipline are also trained and exposed to computer operations and have excellent opportunity to apply the gained knowledge in simulation and modeling research.

**Library and Information Center**

A good number of textbooks are available in the Department library. Students can access handbooks, previous Project Reports.

**Faculty**

The Department has well qualified, experienced, and committed faculty members who pay a special attention in imparting high quality education. The faculty keeps in touch with every student by monitoring and mentoring them in their progress.

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<tr>
<th>Name</th>
<th>Position</th>
<th>Qualifications</th>
<th>Specialization</th>
<th>Areas of Interest</th>
<th>Recent Publication</th>
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<tbody>
<tr>
<td>Dr. K. Bhanu Sankara Rao</td>
<td>Ministry of Steel Chair Professor</td>
<td>B. E. NIT/Nagpur M. Tech. IIT Bombay Ph. D. University of Madras</td>
<td>Specialization: Advanced Steels</td>
<td>Areas of Interest: Materials Development, Welding Science and Technology</td>
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<tr>
<td>Dr. K. Ramanjaneyulu</td>
<td>Head and Associate Professor</td>
<td>M. Tech. IIT Madras Ph. D. JNTU Hyderabad</td>
<td>Specialization: Welding of Nonferrous Alloys</td>
<td>Areas of Interest: Iron and Steelmaking, Composite Materials, Heat Treatment</td>
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<tr>
<td>Mr. P K Subramanian</td>
<td>Associate Professor</td>
<td>B. E. NIT/Jaipur M. Tech. IIT Kanpur</td>
<td>Specialization: Physical Metallurgy</td>
<td>Areas of Interest: Welding Science, Metal Casting</td>
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<td>RVSM. Ramakrishna</td>
<td>Assistant Professor</td>
<td>B. Tech. JNTU Hyderabad</td>
<td>Materials Engineering</td>
<td>Thermodynamics, Plastics and Polymers, Engineering Design, Automotive Steels</td>
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<tr>
<td>Mrs. M. Vijaya Lakshmi</td>
<td>Assistant Professor</td>
<td>B. E. (Andhra University)</td>
<td>Welding of metals</td>
<td>Mechanical Metallurgy, metal Joining, Nuclear Steels</td>
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<tr>
<td>Mrs. J Jhansi Jadav</td>
<td>Assistant Professor</td>
<td>B. Tech. JNTU Hyderabad</td>
<td>Physical Metallurgy</td>
<td>Heat Treatment, Structure-Property Correlation, Thermodynamics</td>
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<tr>
<td>Mr. Bhomik K Deogade</td>
<td>Assistant Professor</td>
<td>B. E. NIT</td>
<td>Physical Metallurgy</td>
<td>Materials Characterization, Mineral Beneficiation, Textural Analysis</td>
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<tr>
<td>Mr. PVS Lakshmi Narayana</td>
<td>Assistant Professor</td>
<td>B. Tech. JNTU Hyderabad</td>
<td>Materials Engineering</td>
<td>Corrosion Science and Engineering, Nuclear Materials, Automotive Materials, Materials Design</td>
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<tr>
<td>Dr S Santhi</td>
<td>Assistant Professor</td>
<td>B. Tech. Andhra University Visakhapatnam</td>
<td>Metal Casting</td>
<td>Extraction Metallurgy, Nondestructive Evaluation, Modeling and Simulation</td>
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**Recent Publication:**
- PVSL Narayana, Sreedevi Varam, Koteswararao V. Rajulapati, and K. Bhanu Sankara Rao, Strain Rate Sensitivity Studies on Bulk Nanocrystalline Aluminium by Nanoindentation
- Dr S Santhi, “Design of Gating and Riser System for Grate Bar Casting”
| Dr L M S Sreedevi  
Assistant Professor  
B. Tech. JNTU Hyderabad  
M. Tech. IIT Bombay  
Ph. D. University of Hyderabad  
**Specialization:** Materials Engineering  
**Areas of interest:** Physical Metallurgy, Nanotechnology, Ceramic Materials  
**Recent Publication:**  
| Ms Shaguftha Hina  
Assistant Professor  
B. Tech.  
M. Tech.  
**Specialization:** Ferrous Metallurgy  
**Areas of interest:** Furnace Metallurgy, Physical Metallurgy  
**Recent Publication:** |

**Students’ Performance (Academic Excellence)**

- Graduates of the discipline are being admitted into Masters and Direct Ph. D. Programs at various and prestigious Universities abroad, IITs, and NITs with scholarships and assistance ships.

- The Students of the discipline have secured top ranks of the Institute during the last three Academic Years.

- Every year, the topper of the Department is being awarded with Gold Medal by Jawaharlal Nehru Technological University, Hyderabad.

- Year after year, the performance of the students has been improving in the National level Competitive examinations like GATE, NALCO, SAIL.

- Students are serving in Iron and Steel Industries in public and private sectors, nonferrous industries, heat treatment and foundry industries, various research laboratories like BARC, IGCAR, DMRL, DRDO, ISRO, NMDC, BHEL, NTPC etc.

- Some of the students attained positions as teaching faculty at Universities in Germany, USA, UK, Sweden, Netherlands, and IITs and NITs in India.

**Industry-Department Interaction**

The Industrial sector has been highly cooperative towards the Department. The students of the Department have been encouraged to undergo Industrial Training during their semester vacation period, and the allocation of project work of the final year students has been well taken care. The Department has organized fruitful Industrial Visits to Steel Plants, Defence
Industries, Nuclear Industries, various Research Laboratories, and small scale industries. It has been a tradition in the Department to conduct Industrial visits to the reputed Industries in Hyderabad once or twice in every semester so that the students would get exposed to Industrial Environment. During 2010, the Department has entered into Memorandum of Understanding with Ministry of Defence. **The Department is in the process of entering into Memoranda of Understanding with reputed Industries and Research Laboratories in and around Hyderabad. The Faculty of the Department are working in close collaboration with reputed National Laboratories and conducting research work in the frontier areas of interest to the Nation. The research work of the faculty is highly appreciated and earned many research awards for their oral presentations and publications in highly reputed international journals.**

**Student Centered Activities**

**i) MMT Technical Association:**

The Department has formed MMT Technical Association, which comprises of an Advisory Committee consisting of senior faculty members and Working Committee consisting of student members from each class. All the students of Department will automatically become members of the MMT Technical Association. It conducts various extra-curricular and co-curricular activities like Group Discussions, Debate, Elocution, Paper Presentation, etc. The working committee comprising of 2 students from each class would organize various activities in consultation with advisory committee consisting of head and other senior faculty members. These activities are organized mainly for improving the oral communication skills, cooperative skill development, building the confidence and personality development of students, so as to do their best when they come out of MGIT. The Institute has students’ chapters of Indian Institute of Metals and Indian Society for Technical Education. The students take active part in organizing various activities of this technical association.

**ii) Class Review Committee (CRC):**

CRC consists of Principal, Head, two faculty members and 6 students (2 from each strata i.e., good, average and below average levels). Its main objective is to check out for syllabus coverage, improving the faculty teaching standards and other matters related to the improvement of overall standard.

**iii) Special Care for weak Students:**

Remedial classes are held in order to provide special care to the students who are unable to perform well in the University Examinations and the students who are admitted through lateral entry scheme in the Second Year within the class work schedule.

**Seminars/Conferences/Guest Lectures Organized**

- The Department has organized 7 National Level Conventions/Short Courses, 2 International Level Conferences/Schools, 6 National Level Students’ Symposia (METALLON), and good number of Invited Talks/Guest Lectures till date. These Events were supported by various Government Organizations, Industries, Research and Development Laboratories from India and abroad. Some of the symposia held by Metallurgical and Materials Engineering Department include:

International Conference on Frontiers of Metallurgy and Materials Technology, fMMT-09 during 29-31 January 2009 This had been the first-ever International Conference organized by the Institute.

International Winter School (IWS) on “Advances in Aeronautical Materials and Technology” (AAMT-10) during December 15-19, 2010.


Advanced Steels for Strategic Applications during December 30-31, 2015.

Apart from these, every year, the Department organizes National Level Students’ Technical Event, METALLON. The prime objective of the event is to make students participate in Technical Competitions and develop communication, creative, managerial and technical abilities. This event witnesses huge participation of students of the Institute and other Institutes.

The Department organizes Guest Lectures by eminent personalities from Industries, R&D Centres and National Institutes, who have vast experience in the field of Metallurgical and Materials Engineering.

**Milestones Achieved by the Department**

- The Department has been Accredited by National Board of Accreditation, AICTE, New Delhi twice (2009 and 2014)

- The Department has the remarkable credit of organizing Two International Level Symposia during 2009 and 2010 successively and successfully.

- The Department has entered into a Memorandum of Understanding with the Ministry of Defence, Government of India during 2010. This is the First-ever MoU for the Defence Ministry with a Discipline being offered at self financed Technical Institutions across the country. MoUs have been signed with CEMILAC, DMRL.

- Ministry of Steel, Government of India has chosen the Department to institute the Scheme of Steel Chair Professor and Scholarships to the 5 Best Academic Performers of third and fourth year (worth Rs. 10,000/- per student per month) for 5 years i.e., in the tenure 2013-2018. Dr. K Bhanu Sankara Rao, a renowned Scientist and Academician who has been the Associate Director of Indira Gandhi Center for Atomic Research (IGCAR), Kalpakkam and as Dean, School of Engineering Sciences and Technology, University of Hyderabad joined the Department as Steel Chair.
Professor. He has been guiding the faculty in their Doctoral programme and students for undertaking the Industry oriented Mini Project work and Final Year Project Works.

**Industrial Training & Projects**

The Department encourages the students to undergo Industrial Training and undertakes the task of arranging Industry oriented Mini Project and Final Year Project works to all the students in various reputed Industries and R&D organizations like DMRL, RCMA, NFC, BARC, ARCI, IICT, ADA & NAL, Bangalore, Vizag Steel Plant, ISPAT Steels, Tata Motors, MIDHANI, and BHEL Bhilai Steel Plant, Bhart Forge, and Kalyani Steels. The students are performing well and securing best project awards. Some of the meritorious students are being awarded summer internships from reputed agencies like Indian National Academy of Engineering (INAE), and Indian National Science Academy (INSA), Indian Academy of Sciences, and TR Anantharaman Education and Research Foundation.

**Placement**

Institute has a Training & Placement cell. Reputed organizations like ESSAR Steels Ltd., ISPAT (India) Ltd., Donald McCarthy, Singapore and BMM Ispat have recruited the undergraduate students of the Department through the campus. Off the campus, most of the students are being recruited in various reputed metallurgical organizations. Software Organizations like TCS, Wipro, Keane, Virtusa, and Cognizant Technology and Solutions also recruit the students of the Department along with other Departments. The Department is in the process of bringing esteemed Industries like JSW, TISCO, HINDALCO to the campus for recruitment.

**Sports, Extra & Co-curricular activities**

Students are also encouraged in various indoor games like Badminton, Table Tennis, Chess, Carroms etc. and outdoor games like Cricket, Volleyball, Basketball etc. so as to participate in University sport competitions. Institute organizes extra & co-curricular activities like cultural and NSS programs etc.

**Alumni**

The Alumni of the Department are doing exceptionally well within India and abroad. They are placed well in various Government and Private Sectors viz., DMRL, ARCI, BARC, SAIL, HINDALCO, NFC, VSSC, IGCAR, NMDC, SANDVIK, ESSAR, L&T, Zindal, Shell, Vedanta, Atlas Copco, and many other places. Some Alumni are into Teaching Profession and serving at the IITs, NITs and Universities in India and abroad. Higher Education in India (IISc, IITs, NITs) and Reputed Universities abroad like Oxford University, UK, University of Florida, USA, New Jersey Institute of Technology, USA, University of Missouri Rolla, USA, University of Maryland, USA, Keil University, Germany, Katholieke University, Belgium, and other Universities in Australia, Sweden and Newzealand. The contribution of the Alumni to the Department is remarkable. They have instituted Gold Medals for the toppers of the Department in I, II and III years. They have been supporting the ongoing events being organized by the Department. As and when the Alumni visit the Institute, they are in the task of guiding the career of undergraduates.
Goals

- Good Placements
- Imparting the best education to the students and moulding them as good engineers
- Introducing M. Tech Program
- Consultancy to reputed Organizations
- Development of the Department to high standards with excellent reputation and making it as the most sought after branch.