

Department of Metallurgical and Materials Engineering

(Recognised by UGC for DRS & COSIST and
DST (FIST) Programmes)

Estd. 1966



सत्यं शिवं सुन्दरम्

Accredited Grade 'A' by NAAC

Faculty of Technology & Engineering

"Kalabhavan", The M.S. University of Baroda,
Vadodara - 390 001, Gujarat, INDIA.

Email: head-metallurgy@msubaroda.ac.in

<http://www.msubaroda.ac.in>

August - 2022

Department of Metallurgical and Materials Engineering

The department of Metallurgical engineering of **M.S University, Baroda**, which started in the year **1966**, is the only department for this discipline in the state of Gujarat. It is located in central part of the state along the golden corridor of industries from **Vapi to Mehsana**. The first gas based sponge iron plant of India in private sector is located hardly 140 kilometers, while largest plant of India (0.15 MTPA) producing copper and precious metals in only 90 kilometers away. At the periphery of the city are located Indias one of the largest oil refineries, petrochemical plants and fertilizer industry. Many foundry and fabrication industries are also present in and around the city. Under this fortunate setting, the department continues its journey towards excellence and quest for quality in education and research.

This is the department in the State of Gujarat offering U.G., P.G., and Doctoral level instruction in metallurgical engineering. It is housed in a building with over 25000 square feet floor area with a dozen teaching and **research laboratory** and **15 teaching faculty**. Currently there are about:160 U.G. students in the four years of B.E. degree course,12 students in the two disciplines of **Industrial Metallurgy** and **Materials Technology** for M.E. degree courses and 15 students in M.E. (**Welding technology**), this course is specially sponsored by L&T. and **ten doctoral students**.The department has received funding for research from CSIR, DST, BRNS, ARDB and ADA amongst others, and infrastructure grants from MHRD, also from UGC under DRS and COSIST programme and MODROB from AICTE.The department has excellent liaison with local metallurgical, chemical and engineering industries and their facilities are usually fairly easily available to the department. Further, therefore the department is many times a preferred place for investigations, industrial testing and problem solving for these industries.

The department has been instrumental in the establishment of local chapters of several professional bodies like **IIM, IIF, ISNT and IIW** and continues to support and sustain them with teachers of the department playing a pivotal role. Many seminars, conferences and training workshops are organized through this avenue. Efforts of the teachers have resulted in publications in new research areas of iron ore-coal composite pellets, utilization of steel plant waste, new alloy steel development, sponge iron, thin films, mechanical alloying, and composite material in conference proceedings and also referred journals.

Department of Metallurgical and Materials Engineering

VISION

To Emerge as a Centre of Excellence in all Aspects of Metallurgical & Materials Engineering for Holistic Development of Students and Sustainable Development of Nation.

MISSION

- **Create and Sustain** an Environment of Academic **Excellence and Innovative Research** in Metallurgical and Materials Engineering.
- **Fostering Collaborations** in various fields of Metallurgical and Materials Engineering with **Institutes, Industries, and Alumni.**
- **Contributing to Holistic Human Development** through **Extracurricular activities.**

SPECIAL CONTRIBUTIONS OF THE DEPARTMENT.

A virtual nodal center for metallurgical & material technology education including research at PG and Ph.D level in the state of Gujarat. It has made many industries conscious of the role of metallurgy in industry. Consequently they have established their own analysis laboratories. Example : GEB, GSFC. Teachers of the Dept. play a vital role in promoting activities of various local professional bodies namely IIM, IIF, IIW, ISNT, etc. Expertise available in the Dept. is utilized in helping the industries in problem solving, materials testing & failure investigations, etc. Over the years the Dept. has strode the path of excellence and quest for quality in education & research. Consequently it has earned the recognition of being covered under the Special Assistance Programme (S.A.P) of UGC. Contributions in respect of Curriculum Improvement for UG & PG programme, Strengthening Industry Academia Interaction and being in rapport with the alumni are noteworthy.

Program Outcomes (PO)

Engineering Graduates will be able to:

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

PSO (Programme Specific Outcome)

Bachelor of Engineering in Metallurgical and Materials Engineering Graduate will be able to

1. Apply knowledge of material sciences, metallurgical engineering and material technology in identifying and providing appropriate solution for metallurgical and materials industries.
2. Design, optimize various metallurgical and materials engineering processes to develop quality and cost effective products.
3. Build successful career in design, development, manufacturing and process control of metallurgical and materials engineering industries.
4. Acquire their knowledge in the domain of different metal and materials working and testing to undertake the challenges of the related industries
5. Manage proficiency and necessary skills to take up entrepreneurial Venture.
6. Serve to the needs of metallurgical and materials engineering Industry and the Nation.
7. Get platform to design and create prototypes with changing demands of the metallurgical and materials engineering fields through various research and development.
8. Develop the right attitude in the metallurgical and materials engineering field so that they become an employable or to pursue higher studies.

PSO-Master of Engineering in Metallurgical and Materials Engineering

Specialization with Industrial Metallurgy

1. Develop ability to understand and analyze Industrial Metallurgy engineering data and provide the appropriate solutions to engineering problems.
2. Impart theoretical & Practical skills in various metallurgical processes, Failure analysis, testing etc. to optimize the industrial procedures to develop the quality & cost effective products.
3. Expertize to find out the root cause of real world failures in metallurgical industry and to determine the remaining life of system.
4. Emphasis cost effectiveness and environmental safety of the industrial metallurgy field through various dissertation projects.
5. Endowed technical competency, ethics, interdisciplinary working skill and contribute society philanthropically.

Specialization with Materials Technology

1. Understand and analyze engineering properties of various materials and able to provide the suitable material for engineering application.
2. Develop new ideas on material design with the help of best manufacturing practices.
3. Understanding the current scenario in the field of Materials and acquire expertise to find out the root cause of real world failures in materials industry.
4. Expertize in problem solving of the Material engineering field through various dissertation projects.
5. Endowed technical competency. ethics, interdisciplinary working skill and contribute society philanthropically.

Specialization with Welding Technology









1. Understand and acquire fundamental knowledge of welding processes for various Materials.
2. Apply knowledge of various materials to prescribe suitable welding technique for specific Applications in welding industry.
3. Able to Model and simulate welding processes in various industries to conduct experiments and analyze the performance using modern tools through dissertation projects.
4. Expertize to find out the root cause of real world failures in industry and to determine the remaining life of the system.
5. Endowed technical competency, ethics, interdisciplinary working skill and contribute society philanthropically.

Teaching Staff

Sr. No.	Name	Highest Qualification	University of the Ph. D/M.E	Dt. Of Joining	Experience (Years)	Area of Interest
1	 Dr. B. J. Chauhan	Ph.D	Faculty of Technology and Engineering, The M S Uni. Baroda.	25-06-91	32	Physical Metallurgy, Welding Metallurgy, Metallography, Computational Met. and Material Engineering, Failure Analysis
2	 Dr. Vandana J. Rao	Ph.D	Faculty of Technology and Engineering, The M S Uni. Baroda.	15-03-96	29	Process Metallurgy, Advance materials and Process(Composite material),Characterization of Minerals and Metals, Failure Analysis Powder Metallurgy
3	 Mr. Dharmesh R. Lodhari	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	02-04-2003	18	Heat Treatment of Metals and Alloys, Metallography, Alloy Development, Mineral Beneficiation
4	 Dr. Sunil D. Kahar	Ph.D	Faculty of Technology and Engineering, The M S Uni. Baroda.	13-05-2006	18	Corrosion & Corrosion Protection, Surface Engineering
5	 Mr. Hemant N. Panchal	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	04-12-13	10	Composite Material, Corrosion Engineering, Metal Forming & Plastic Deformation of Metal, Physical Metallurgy, Foundry Technology, Welding Technology
6	 Mr. Anil R. Parmar	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	21-12-18	11	Welding, NDT, Corrosion, Material Characterization
7	 Mr. Kaizar Bhaisaheb	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	21-06-16	5	Welding, Foundry, Mineral Processing
8	 Mr. Utkarsh Prajapati	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	17-06-19	8	Material science , Corrosion, Welding , NDT, Foundry
9	 Mr. Suraj D. Dabhekar	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	19-06-17	5	Failure Analysis, Corrosion & surface protection, Powder Metallurgy, Nanotechnology

Sr. No.	Name	Highest Qualification	University of the Ph. D/M.E	Dt. Of Joining	Experience (Years)	Area of Interest
10	 Miss Reena Nagar	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	1-1-18	3	Aluminium Casting
11	 Mr. Ankit H. Bhojani	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	1-1-18	3	Iron and Steel Making Processes, Low grade ore upgradation, Recycling and waste management
12	 Mr. Krunal H. Patel	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	1-10-20	3	Welding Metallurgy, Failure analysis , Corrosion, NDT
13	 Mrs. Jignasha Parmar	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	18-6-18	5	Physical metallurgy and material science
14	 Mr. Mukund Ramani	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	2-12-19	2	Material Science, Industrial Metallurgy
15	 Mr. Raghvendra Darji	M.E	Faculty of Technology and Engineering, The M S Uni. Baroda.	2-8-21	9	Advanced welding and joining processes, Microstructures, Non-Conventional Machining

Non- Teaching Staff

Sr. No.	Name	Designation
1	 Mr. Ishwarbhai Baranda	Technical Assistant
2	 Mr. Rajeshbhai Pepavansi	Laboratory Assistant
3	 Mr. Hardik Talati	Temp. Technical Assitant
4	 Mr. Amit Kahar	Temp. Lab Attender
5	 Mr. Rakesh Javle	Temp. Lab Attender
6	 Mr. Dharmesh Solanki	Temp. Lab Attender
7	 Mr. Shankar K. Thakor	Peon
8	 Mr. Tejas C. Jani	Peon

List of Ph.D Awarded from the Department

Sr. No.	Name Of Students	Completed Year
1	Dr.N.S.S. Murthy	1974
2	Dr. Roy Chaudhary	-----
3	Dr. P.B. Joshi	1996
4	Dr. Vandana J. Rao	2002
5	Dr. I B Dave	2004
6	Dr. G.H. Upadhyay	2005
7	Dr. Vishvesh Badheka	2007
8	Dr. Rameshwar Sah	2008
9	Dr. Jyoti Menghani	2008
10	Dr. Bharti Rehani	2009
11	Dr. U.N. Puntambekar	2014
12	Dr. Sunil Kahar	2015
13	Dr. Purvesh Nanavati	2018
14	Dr. Bharat Chauhan	2020
15	Dr. Ela Jha	2021

Total On-going Ph.D at the Department

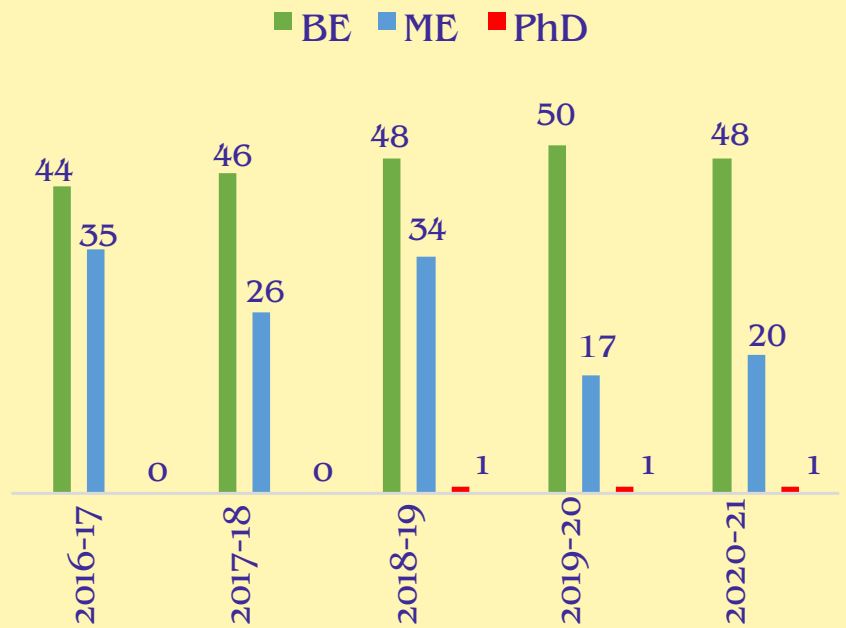
Sr. No.	Name Of Students
1	Lodhari D. R
2	Mukherjee. J.M
3	Choksi Y. B
4	Panchal H. N
5	Joshi R. P
6	Patel Sonam M
7	Mahant Devang V
8	Nipurn Rajguru
9	Suraj Dabhekar
10	Krunal Kumar Patel

Curriculum Aspects

Courses with the Sanctioned Intake

Sr No	Programs	Sanctioned Intake
1	Bachelor of Engineering	40
2	M.E. – Welding Technology	25
3	M.E. – Materials Technology	12
4	M.E. – Industrial Metallurgy	12

Number of students graduated (2016 - 21)



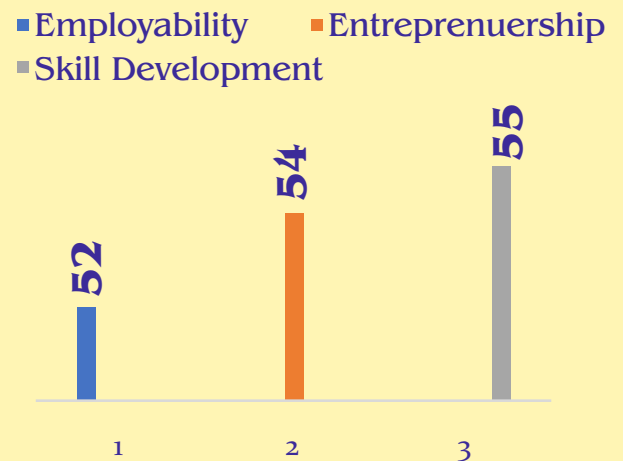
□ TOTAL ONGOING
Ph.D.: 10 (2022)

□ TOTAL COMPLETED **Ph.D.** in the Department: 14 (2022)

Percentage Revised Syllabus of the Courses offered by the Department

Sr No	Course	Year	% Revision
1	B.E. – Metallurgical & Materials	2019 – 20	23 %
2	M.E. – Met & Mats – Industrial Metallurgy	2020 – 21	33 %
3	M.E. – Met & Mats – Materials Technology	2020 – 21	31 %
4	M.E. – Met & Mats – Welding Technology	2016 - 17	31 %

Subjects and the Contributions to the Skill Development, Employability, and Entrepreneurship



Out of 57 subjects, 52 encompassed Employability, 54 encompassed Entrepreneurship, and 55 covered Skill Development and Bloom's Taxonomy.

M.E. (Met. & Mats. Engg.): 13+2+5 = 20 (2021-22)

Students passed the Gate: 5 {1 (2018)+ 2(2019) + 2 (2021)}

Steps Initiated for “National Education Policy” (NEP) in the Present Curriculum

- ❑ Marks System Converted into **Credit System**,
- ❑ **Two Electives** will be offered in the **5th, 6th & 7th Semesters in B.E.**
- ❑ Each Elective will be offered **Five to Six Different Subjects**,
- ❑ **One Open Elective** will be offered in the **5th Semester of B.E.**
- ❑ **8th Semester** Includes only **Industrial Projects / Internships.**

Teaching, Learning & Evaluation

Interdisciplinary Programmes

Sr No	Name of the Department Running the Course	Interdisciplinary Programmes	Number of Subjects
1	Applied Chemistry	PG Diploma in Corrosion Engineering	04
2	Applied Physics	M.Sc. Materials Technology (Nanotechnology)	04
3	All the Departments of Faculty of Tech and Engg	B.E. -First Year, First Sem (All Branches)	01
4	Applied Chemistry, Chemical Engg., Pharmacy, Textile Engg. CivilEngg, and MechanicalEngg,	PG Diploma in Packaging	01
5	Textile Processing	B.E. -Textile Processing	01

Teaching Staff at Present

Sr No	Position	Existing Staff
1	Professors	0
2	Associate Professors	2
3	Assistant Professors	3
4	Temporary Assistant Professor	10

Research, Innovation & Extension



XRD Unit



**Scanning Electron
Microscope (SEM)**



Pycnometer



**Thermographic
Camera**



XRF Unit



Proof Ring Test



**Universal Testing
Machine**

Testing Facilities Offered

Physical Testing

- 1) Brinell and Rockwell Hardness Testing,
- 2) Rebound Hardness Testing,
- 3) Hardness Profiles Spot, Rockwell and Brinell,
- 4) Tensile Testing of Prepared Sample as per Industrial Standards
- 5) Impact Testing on Prepared Sample,

Corrosion Engineering Laboratory

- 1) Corrosion rate by Weight loss method,
- 2) Pitting Corrosion Testing (as per ASTM Standards),
- 3) Inter Granular Corrosion (IGC) Testing,
- 4) Sacrificial and material Testing,
- 5) Galvanic Coupling Test,
- 6) Salt Spray Test,
- 7) Polarization Study by Potentiodynamic, Tafle Curve, Polarization Resistance,
- 8) Stress Corrosion Cracking (SCC) Proof Ring Test Method,
- 9) Sulphide Stress Corrosion Cracking (SSCC)

Scanning Electron Microscopy and high end characterization

- 1) Scanning Electron Microscopy,
- 2) EDAX on Inclusion, coating, phases, cracks, particles,
- 3) EDAX on powder sample,
- 4) X – ray diffraction pattern with D values.

Analytical Laboratory

- 1) Carbon determination in Steel and Cast Iron,
- 2) Sulphur Determination.

Mineral Dressing Laboratory

- 1) Grindability Test (Bond's Test),
- 2) Microstructure of ore sample with Photograph,
- 3) Sieve analysis of ore or mineral,
- 4) Separation of mineral by magnetic concentrator,
- 5) Separation by Tabling or Jigging methods,
- 6) Separation by Floatation,

Foundry Laboratory

- 1) Sieve Analysis (AFS Fineness Number),
- 2) Grain Shape and Distribution,
- 3) Permeability Test for Foundry sand,
- 4) Green Strength of foundry sand,
- 5) Mould Hardness (Green),
- 6) Mould Hardness (Dry),
- 7) Dry Strength of Foundry Sand,
- 8) Determination of clay content of foundry sand,
- 9) Shatter Index of sand Compacts

Metallography and Failure Analysis Laboratory

- 1) Macrostructure Examination with sample preparation and image,
- 2) Microstructure Examination with sample preparation and image,
- 3) Grain Size measurement by comparison method,
- 4) Inclusion Rating,
- 5) Grain Size measurement by qualitative metallography,
- 6) Visual Analysis of failed component,
- 7) Microstructure of metal, ore, and mineral,
- 8) Qualitative Metallography by Image Analysis system,
- 9) Micro measurement in metallographic sample,
- 10) Microscopic measurement for coating thickness,
- 11) Microstructure of Welded Sample

Research Grant Received from the University at Present

Sr No	Name of the Teacher	Grant Received
1	Dr. Vandana J Rao	1,00,000 /- INR
2	Mr. Hemant N Panchal	1,00,000 /- INR

Testings and Consultancies for Industries and Universities

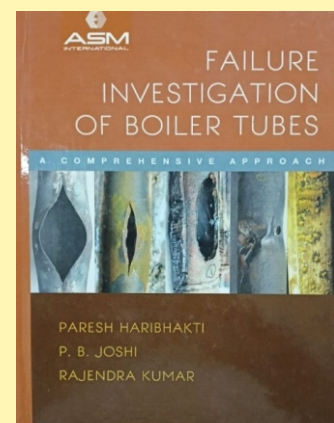
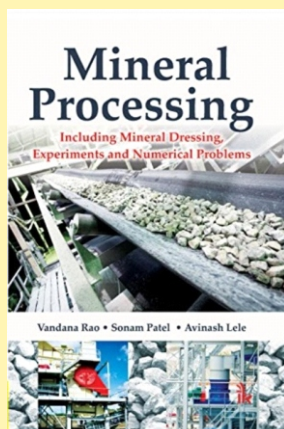
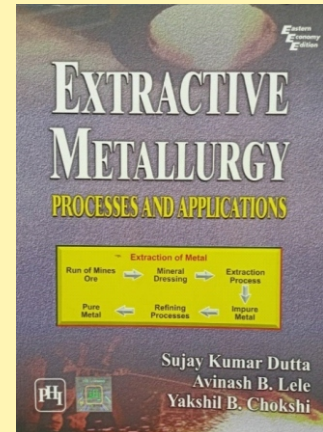
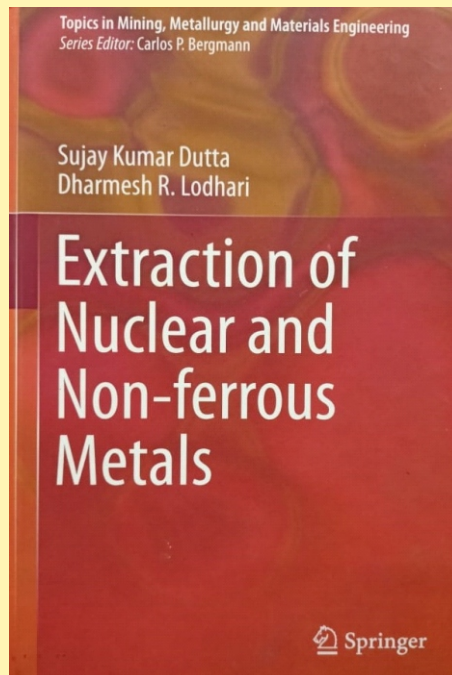
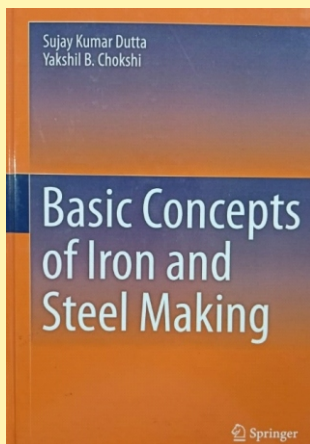
Industries

- GSFC,
- GNFC,
- IPCL,
- Gujarat Thermal Power,
- L & T,
- 20 microns,
- Rachana Constructions,
- Altret,
- Apicore Pvt. Ltd.,
- Accuprec Pvt. Ltd.,
- Sahajanand Ltd,
- Shri Krishna Industries,
- Diffusion Ltd,

Universities

- The M S Uni.,
- Parul University,
- Udaipur University,
- Rofel University,
- GTU,
- Manubhai Dental,
- Sumandeep University,
- RK University,
- Punjab University
- Manipal University,
- South Gujarat University,
- North Gujarat University,
- SVNIT Surat,
- PDEU,

We also give our services of **Testings and Consultancies** for **Industries and Universities** at **Local, Regional, and National levels.**



Books Authored by Professors, Alumni, and Scientists.

Infrastructure and Learning Resources

- Classrooms Equipped with Projectors and Smart Board.
- Research Oriented Laboratories,
- Physical Metallurgy Lab.,
- Powder Metallurgy Lab.,
- Welding Technology Lab.,
- Heat Treatment Lab.,
- Corrosion Engineering Lab.,
- Mineral Dressing Lab.,
- Foundry Technology Lab.,
- Thin Film Lab.,
- High-End Metallurgical characterization such as SEM – EDS, and XRD.

Facilities	No
Library	01
Laboratory	14
Classroom	04
ICT Enabled Classroom	03
Seminar Hall	01
Visitor Room	01

FACILITIES



Friction Stir Welding Machine



Shielded Metal Arc Welding Machines for Demonstration and Hands-On experiments



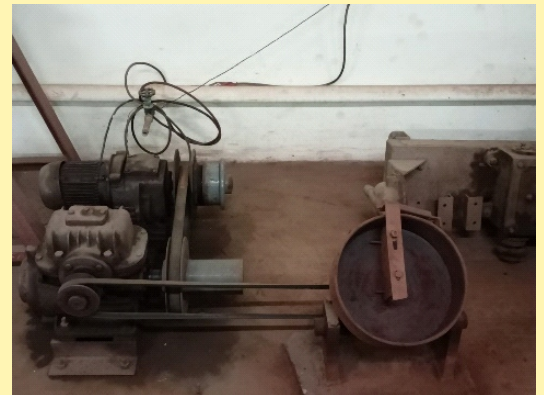
Submerged Arc Welding Machine



Microwave Furnace



Resistance Spot Welding Machine with Miyachi Controller



Disc Pelletizer



Wilfley Table



Various Microstructures of differently processed ferrous metals and alloys



Plasma Nitriding Unit

Catering to the Diversity of the Students

- ❑ Students based on their Internal Exam Marks divided into two categories
 - 1) Advanced learners (Obtained more than 50 % marks), and
 - 2) Slow learners (Obtained less than 50 % Marks)
- ❑ Students also diversified based on the Interaction during the lectures and practicals.
- ❑ Advanced learners promoted for the MOOC Courses, Advanced Problems of the Industries, Field/Industrial Visit etc.
- ❑ Slow learners are considered for the extra classes in the last week of the semester which includes the revision of the syllabus, brush up the fundamentals and Methods to remember the concepts for the lifelong.



DOUBT CLEARING SESSIONS



EXTRA CLASS FOR SLOW LEARNER



ENCOURAGEMENT THROUGH SPORTS EVENT NAMED, "META CUP"



BRUSH UP THE FUNDAMENTALS THROUGH MODELS



INDUSTRIAL VISITS



FRESHERS AND THE FAREWELL PARTIES.

Governance, Leadership & Management

Professional Conferences and Courses organized and Attended		
1	ISMANAM 2016	Dr. Bharati Rehani from 03-07-2016 to 08-07-2016 attended in Japan
2	META-FIESTA-2017	30 th March 2017 at Department of Metallurgical and Materials Engg. In collaboration with SMES – Society of Metallurgical Engineering Students
3	RAPM -2017	1 st April 2017 at Department of Metallurgical and Materials Engg. In collaboration with Ministry of Steel GOI ,New Delhi
4	PMSC-2017 (Powder Metallurgy Short Course)	25 th to 28 th September 2017 2017 at Department of Metallurgical and Materials Engg. In collaboration with Powder Metallurgy Association of India (PMAI)
5	IC RAMSD	01-02-2018 to 03-02-2018 at Department of Metallurgical and Materials Engg. In collaboration with Ministry of Steel GOI ,New Delhi , Total 75 Participants
6	Symposium - SCIC 2018	03/10/2018 to 04/10/2018 at Department of Metallurgical and Materials Engg. With IIM –Indian Institute of Metal
7	National Workshop on Metallurgy for Non-Metallurgist -2021	20 th March,2021 at Department of Metallurgical and Materials Engg. In collaboration with SRTMI-Steel Research & Technology Mission Of India FICCI –Federation Of Indian Chambers Of Commerce and Industry ,IIM –Indian Institute of Metal

- Redressal Committee- To Solve the Various Problems Related to Students.
- Committee has formed at the Departmental Level.
- All the Staff Members are Involved in Student Support and Activities.

Institutional Values and Best Practices

- ❑ M.E.-Welding Technology Goes Beyond the Best Practice because of Its Benefits Industry, Academics, Students, Society, and the Nation.
- ❑ The course was started in 2006 and it was conducted satisfactorily. Initially, only L & T participated in the course, but as time passed, other industries joined.
- ❑ The Department and L & T conducted research for Defense, Space, Submarine, Power Plants, International Thermonuclear Experimental Reactor (ITER), Nuclear Power Plants, Refineries, Cross-Country Pipelines, and other Critical fields at all levels, Local, State, National, and International.

- ❑ Best M.E. Dissertation Award Associated Engineer at the National level to Mr. Samir Taral(2017), Guided by Dr. B J Chauhan (Dept., The M S Uni.) , Mr. Kartik Iyer (L&T), & Mr. Sritam Pradhan (L&T).

- ❑ M.E. Welding Technology – 40% Syllabus Covered by Industrial Experts
- ❑ M.E. Welding Technology– 100% Dissertation Project Carried out at Welding Industries
- ❑ MoU with L&T and other Related Industries like EWAC Alloys, ESAB India, Voestalpine Bohler, etc.
- ❑ Guidance for Career by Alumni
- ❑ L&T Chair Professors

About the L&T Chair Professors

- Dr. S Sundaresan (2006-2010)
- B Sc (Honors) Physics, B E (Metallurgy), Ph. D
- Ex – Professor, IIT Chennai.
- Dr. K. L. Rohira (2010-2014)
- BE (Mechanical), ME (Welding), Ph.D.
- Ex-BHEL & WRI Fellow
- Number o Patents: 14
- Dr. J Krishnan (2014 – 2017)
- Presently He is serving as an L&T Chair at the Department of Metallurgical and Materials Engineering.
- Mr. Keshav Narayan (2018-2020)
- Post Graduation. - IIT Chennai,
- Graduation Metallurgical Engineering, IISC Bangalore.
- More than 40 years of experience

L&T- Welding Chair at Present

Dr. J.K. Krishnan

- ❑ Specialization in Diffusion Bonding and Explosion Welding
- ❑ More than 42 years of experience.
- ❑ Ex-Chairman, M.Tech – Dissertation Evaluation Committee- HBNI
- ❑ Headed Manufacturing Group: Centre for Design & Manufacture-BARC
- ❑ Numbers of Papers Presented / Published: 85
- ❑ Number of Patents: 01
- ❑ Number of Ph.D. Guide: 01; Number of MTech Guided: 60
- ❑ Prime Minister's Award- Floor type HT furnace for Precision AI 6061 frames

Steel Chair Professor from the Ministry of Steel, Government of India.
(January – 2015 to July 2020)

- ❑ **Dr. Ashok Kumar Vaish**
Second Ph.D.- Metallurgical Engineering (IIT BHU)
First Ph.D. – Chemical Engineering (IISc Bangalore)
M.E. – Chemical Engineering (IISc Bangalore)
B.E.- Chemical Engineering (IIT Roorkee)
- ❑ 25 years of Experience from Scientist 'C' to 'G' at CSIR – National Metallurgical Laboratory, Jamshedpur (1982 – 2007), & CSIR – Emeritus Scientist, MEF Division, NML, Jamshedpur, 2008 – 2013.
- ❑ Published 90 Research Articles, 60 National Proceedings, 30 International Proceedings, and 3 books.
- ❑ Recognized through many Awards
- ❑ 1,20,000 /- INR Scholarship received by the B.E. – III and B.E. – IV students (Top five) every year from 2015 to 2018.
- ❑ To Promote Research and Awareness in the field of Iron and Steelmaking this Program was Sponsored by the Ministry of Steel from 2015 to 2018.
- ❑ Steel Chair Professor organized a visit to O P Jindal University for International Conference with 38 B.E. Students.
- ❑ IIT BHU National Workshop Visited with 20 B.E. Students.
- ❑ Organized visit to R.M.G. Alloys Steel Ltd. With 50 Persons (Students and Faculties)
- ❑ Organized visit to L & T, Hazira with 52 Students.
- ❑ Organized One International Conference, One National Seminar, and One National Workshop at The Department of Metallurgical and Materials Science Engineering.
- ❑ Ministry of Steel Spent a Total of 48 Lakhs INR on the Students Scholarships.

Distinguish Alumni of the Department

(Leading Position in Industries , Successful Entrepreneur)

- ❑ Mr. Yogesh S Trivedi, Chair Person, Ex-Senior VP, L & T
- ❑ Dr. Parag Ahmedabadi, Scientist BARC, Mumbai
- ❑ Mr. B S Kandpal, Bureau Veritas
- ❑ Mr. Rajesh Vishwakarma, Ex- Engineer GEB, Vadodara
- ❑ Mr. Paresh Haribhakti, Managing Director TCR Advanced Engineering (Start-up), Vadodara
- ❑ Mr. Raghavendra Joshi, Aadhya Engineering (Start-up), Vadodara
- ❑ Mr. Dharmesh Sachapara, NDT Services (Start-up),
- ❑ Mr. Gautam Banerjee, R&D, Arcelor Mittal Nippon Steel, Hazira, Surat
- ❑ Mr. Kashyap Bhatt, Rushikesh Engineering (Start-up), Vadodara
- ❑ Mr. Krutik Shah, D K Shah NDT services (Second Generation Start-up)
- ❑ Dr. Nirav Jamnapara, Scientist G, IPR, Bhat, Gandhinagar
- ❑ Miss Farheen Mevliwala, Petrofac (Highest Package of 14 Lacs offered)
- ❑ Dr. Suresh Gangotra, DAE, Ex- Sr. Technical Advisor to Chairman, Atomic Energy Commission
- ❑ Dr. Shyam Sundar, Mandayam, Ex-Sr. Scientist IGCAR, DAE, Kalpakkam
- ❑ Mr. Pranav Mehta, Chairman, National Solar Energy Federation of India



Teaching
Staff &
Students

Membership
& Office
Bearers in
Professional
Bodies



Some of the Professional Bodies, such as IIM, IIF, and IIW
Originated from the Dept. of Metallurgical and Materials
Engineering.

Collaborations for Research Activity and Recruiters



Journey of Department from Cycle 3 to Cycle 4

Research parameter	Up to 2016	Till 2022
h-Index	14	14
i-10 Index	9	9
Average impact Factor	2.13	3.5
Impact factor Range	0.5-4.14	0.5-7.7
Number of Patents	1	1 (Patented, 2016) + 1 (Filed)
Highest Individual h-index	6	7
Highest Individual i10-index	5	5
Total No. of Paper Published	78	48
Academic	Syllabus Subject Revision in BOS	<ul style="list-style-type: none"> ➤ Proposed Credit system ➤ BT,PSO,CO& NEP ➤ Syllabus Revision under BOS.
Teaching resources	Offline	<ul style="list-style-type: none"> ➤ Offline/Online-ICT ➤ University planned to implement Moodle Software for the Students 10 – 20 % online interaction in 2019.
Interdisciplinary Academic Programmes	3	5

Future Road Map for Next Five Years (2022-2027)

- “Centre of Excellence” in Welding Technology** Jointly Plan with L&T
- Modernization of Corrosion Research Lab** by Various Industries as per their requirement considering the Research aspect as well.
- Development of In-situ Metal Matrix Composite**
- Up gradation of Melting Facility** for the Development of New Alloys.
- Weld Metal Modelling, Friction Stir Welding, and Thermographic Studies of the Weld Joint.**
- Different Types of Collaboration with Industries** such as Problem-Solving, Research, Quality Improvement, Remaining Life Assessment, etc.
- To get CSR (Corporate Social Responsibilities) Funding From the Industries**
- To Develop a lab for Computer Programming, Simulation, Computational Metallurgy, and Materials Engineering.**
- Expansion of Infrastructure Facilities**

Photo Gallery



Distinguished Alumni



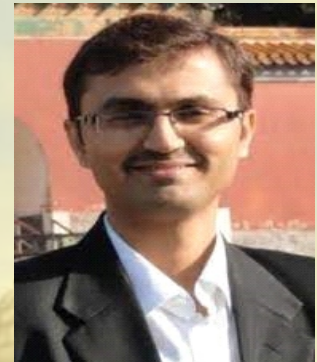
Mr. Yogeshchandra S. Trivedi
Adviser to the CEO & M.D., L&T



Dr. Parag Ahmedabadi
Scientific Officer,
Bhabha Atomic Research Center



Mr. Paresh Haribhakti
MD, TCR Advanced Engineering



Dr. Nirav Jamnapara
Scientific Officer G,
Institute for Plasma Research



Dr. Shyamsundar
Ex-Sr. Scientist, IGCAR
Chief Scientific Advisor, Azeriri Pvt. Ltd



Dr. Alphonsa Joseph
Engineer at Institute for Plasma Research