MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY JAIPUR

Malaviya National Institute of Technology Jaipur (An Institute of National Importance)

Important Places

1	Prabha Bhavan
	Directors Office
	Registrar Office
	Dean's Office
	Centralized Computer Lab
	Post Office
	ICICI Bank
	SBI Bank
2	Central Canteen
3	Department of Computer Science & Engineering
4	Department of Chemical Engineering
5	Department of Chemical Engineering
6	Department of Metallurgy & Physics
7	Department of Electrical Engineering
8	Department of Humanities & Social Sciences
9	Lecture Theater 1 To 4
10	Department of Management Studies
11	Cafe
12	Library
13	Department of Civil Engineering
14	Department of Mechanical Engineering
15	Waste To Resource & Sustainable Construction Lab
16	MNIT Innovation & Incubation Centre
17	Earthquake Lab
18	Advance Research Lab- Tribiology
19	Power House
20	Alumini Association
21	Estate Section
22	Scrap Yard
23	Motor Garage
24	Govt. Primary School
25	Department of Chemistry
26	Central Store
27	GIS Lab
28	Fluid Mechanics Lab
29	Mechanical Workshop
30	Building Material Store
31	Department of Metallurgical and Materials Engi
32	Materials Research Center
33	Lecture Theater Room
34	Department of Chemical Engineering
35	Department of Chemical Engineering East Wing
36	Department of Architecture & Planning
37	Department of Electronics and Communication Engi
38	Architecture Annexe Block
39	Dispensary
40	Control Room
41	Open Air Theater
42	Sports Complex
43	Vivekananda Lecture Theatre Complex
	Department of Mathematics
	Lecture Hall's
	Student activity center
	Gym
44	MNIT Shopping Center
45	Indradhanush Guest House
46	Suryoday Guest House

Index

ABOUT THE INSTITUTE

The Institute was jointly established in 1963 as Malaviya Regional Engineering College Jaipur by the Government of India and the Government of Rajasthan. Subsequently, on 26 June, 2002, the college was given the status of National Institute of Technology. On 15 August 2007, it was recognized as the Institute of National Importance through an Act of Parliament. The Institute is fully funded by the Ministry of Education (Shiksha Mantralaya), Government of India.

Campus Introduction

The Institute lies in the heart of the pink city, imaginatively laid out with a picturesque landscape of 317 acres. It presents a spectacle of harmony in modern architecture and natural beauty. The campus is located in close proximity of Jaipur airport, railway station, major hospitals, and shopping malls. It consists of academic and administrative buildings, hostels, and on-campus accommodation for faculty and staff. The campus provides all essential amenities for community living like staff club, primary health center (dispensary), bank, post office, shopping complex, gymnasium, playing fields, guest houses, and canteen.

VISION STATEMENT

To create a centre for imparting technical education of international standards and conduct research at the cutting edge of technology to meet the current and future challenges of technological development.

MISSION STATEMENT

To create technical manpower for meeting the current and future demands of industry: To recognize education and research in close interaction with industry with emphasis on the development of leadership qualities in the young men and women entering the portals of the Institute with sensitivity to social development and eye for opportunities for growth in the international perspective.

KEY OBJECTIVE

MNIT shall strive to impart knowledge in such a manner as to achieve total satisfaction of students, parents, employers, and the society.

योग: कर्मसु कौशलम

DIRECTOR's MESSAGE

Prof. N. P. Padhy
Director, MNIT Jaipur

At MNIT Jaipur, we recognize the invaluable synergy between academia and industry. Our commitment to fostering strong collaborations between these two realms is at the heart of our mission. We believe that through meaningful interaction, we can propel innovation, drive economic growth, and equip our students with the skills and knowledge they need to excel in the professional world.

Through our tailored programs, partnerships, and initiatives, we provide a platform for academia and industry to come together, exchange ideas, and co-create solutions to real-world challenges. By bridging the gap between theory and practice, we empower our students to gain practical insights and experiences that enrich their education and prepare them for the demands of the modern workforce.

I invite representatives from the industry to explore the opportunities for collaboration and engagement at MNIT Jaipur. Whether through sponsored research projects, consultancy assignments, technology transfer agreements, or collaborative R&D initiatives, we are eager to partner with industry stakeholders to address industry challenges, foster innovation, and nurture talent. MNIT's multidisciplinary expertise, world-class infrastructure, and vibrant ecosystem of innovation make it an ideal partner for industry-academia collaborations that drive meaningful impact and create value for all stakeholders.

I am delighted to see the preparations for the publication of the Industry Institute interaction brochure of the institute. This document provides insight into the research and innovation capabilities of our institute. I congratulate the Dean (R&C) and his team for bringing this brochure.

Together, let us build a vibrant ecosystem where academia and industry thrive in harmony, driving progress and realizing the dream of Vikshit Bharat.

ADMINISTRATION

Prof. Mahesh Kumar Jat

Dean of Students Welfare

Prof. Jyotirmay Mathur

Dean of Academic Affairs

Prof. Rakesh Jain

Dean of International and Alumni Affairs

Prof. Kailash Singh

Dean of Faculty Welfare

Prof. Sanjay Mathur

Dean of Planning & Development

Prof. Murari Lal Mittal

Dean of Research & Consultancy

Prof. Vineet Sahula

Dean of Digital Infrastructure & Services

International & National MoUs

International MoUs:

- Mou between TCNJ, USA & MNIT Jaipur
- Mou between North Carolina University USA & MNIT Jaipur
- MOU between OTH Amberg-Weiden Germany & MNIT Jaipur
- MOU between MNIT Jaipur and University of Eastern Finland (UEF)
- MoU between The Governors of the University Of Calgary And MNIT Jaipur
- MoU between University of Mauritius and MNIT Jaipur
- MoU between YASAR University and MNIT Jaipur
- Exchange Agreement between YASAR University and MNIT Jaipur
- MoU between OTH-AW, Germany and MNIT Jaipur
- MoU between Jeonbuk National University, Korea and MNIT Jaipur
- MoU between CRUTECH Renewable Energy Center, Cross River University of Technology, Calabar, Nigeria and MNIT Jaipur
- MoU between Coventry University, United Kingdom and MNIT Jaipur
- MoU between University of Saskatchwan, Saskatoon, Canada and MNIT Jaipur
- MoU between North Dakota State University, USA and MNIT Jaipur
- MoU between University of Technology, Sydney and MNIT Jaipur
- MoU between Eötvös Loránd University Hungary and MNIT Jaipur
- MoU between Hiroshima University and MNIT Jaipur
- MoU between PGNIU Russain Federation and MNIT Jaipur
- MoU between Siberian Federal University Russia and MNIT Jaipur

National MoUs:

- MoU between MNIT Jaipur and Alliance Francaise jaipur
- MoU between MNIT Jaipur and ICCR New Delhi
- MoU between MNIT Jaipur and ICWA
- MoU between MNIT Jaipur and IIT Palakkad
- MoU between MNIT Jaipur and Secure Meters Limited, Udaipur
- MoU between MNIT Jaipur and Regional capacity building and knowledge institute, Jaipur
- MoU between MNIT Jaipur and RUIDP
- MoU between MNIT Jaipur and IIT Jodhpur
- MoU between MNIT Jaipur and NIT Calicut
- MoU between NITTR Chandigarh and MNIT Jaipur
- MoU between NIT Warangal and MNIT Jaipur
- MoU between NIT Jamshedpur and MNIT Jaipur
- MoU between MNNIT Allahabad and MNIT Jaipur
- MoU between NIFT jodhpur and MNIT Jaipur
- MoU between IIT Roorkee and MNIT Jaipur
- MoU between IIT Delhi and MNIT Jaipur
- MoU between Soft Computing Research Society and MNIT Jaipur
- MoU between DoIT&C, Govt. of Rajasthan and MNIT Jaipur
- MoU between IIT Mandi and MNIT Jaipur
- MoU between SVNIT Surat and MNIT Jaipur

Data Centre

Introduction

A user friendly, fully integrated row-based Racks at Data Centre accommodates Blade Servers and Storages. The Rack is having redundant precision cooling, power management, remote monitoring and control system, integrated fire detection and suppression system, biometric access control, intelligent power distribution system, mail and SMS notification system, ultrasonic rat/rodent repellent solutions.

Highlights of Data Centre

- Centralized provisioning of IT resources for MNIT
- Work load elasticity
- Storage of lectures, assignments, notes etc.
- Provide data storage to departments
- Provide high end computational resources for research purpose

Various License Servers

- Autodesk software for educational institutions Licensing Server for 3000 users
- MATLAB R2023a and Simulink License Server
- Hyperworks 13.0 Licensing Server 120 users
- Minitab v18 License Server for 10 users
- Mathematica v12 License Server 10 users
- JMat-Pro v8 License Server for 10 users (Comprehensive Tool for Metallurgy).
- ERDAS IMAGINE v15 for 15 users (Geographic Imaging solutions) and Hexagon Geo Media Desktop 2015
- SimaProv8 License server for 20 users
- ESETENDPOINT SECURITY Antivirus v8 server for 500 users.
- Visual MODFLOW License server for 5 users (For ground water simulations)
- IBM SPSS v25 Licensing Server for 10 users (predictive analytics software)
- aspenONEv10 License Server for 150 users
- ArcGIS v10 License Server for 9 users.
- WITNESS 23.1 Simulation License server 10 users.
- FRANC3D – 3D CRACK Fracture Mechanics Simulation license server 1 user.
- SIMULIA Abaqus License server 5 users.
- Ansys Academic License server 25 task and more.
- COMSOL 5.6 Multiphysics License server 30 users.
- LabVIEW Software License server 50+250 SIO users.
- MATLAB R2023a Unlimited cloud license.
- Google Workspace Education Plus 6000 students + 1500 staff cloud license.

Introduction to Department

The Department of Electronics & Communication Engineering (ECE), established in 1981, offers one BTech and four MTech programs in ECE, Wireless & Optical Communication (WOC), Embedded Systems, and VLSI. Apart from this, currently, 100+ students are pursuing Ph.D. in different advanced research areas. The Department has 25 faculty members, a blend of young and experienced, dynamic faculty members, and is committed to providing quality education and research.

Thrust Areas of Research

- Analog & Digital Integrated Circuit Design
- Antennas & Wireless Communication for 5G and beyond applications
- Artificial Intelligence & Machine Learning
- Biomedical Engineering: Device and Sensor development, Diagnostic instruments, Prosthetics, Brain Computer Interface, Medical Computer Vision, Signal Processing
- Drone Electronic Designs
- Electrochemical Sensors and Energy Harvesting.
- Embedded & Intelligent Systems
- Metamaterials, Absorbers, and Frequency Selective Surfaces
- Microwaves, Millimeter-wave circuits, and Computational Electromagnetics
- Nanoelectronics, Nanosensors, and MEMS.
- Optical fibre communication systems, Optical wireless communication systems, Optoelectronics and Photonics
- Security analysis for Cyber-Physical Systems
- Signal/Image Processing and Computer Vision

Major Equipments & Lab Facilities:

Major Equipments/Facilities:

- Anechoic Chamber
- Benchtop Vector Network Analyzers (VNA)
- Analog Signal generator
- Digital Storage Oscilloscope
- Mixed Signal Oscilloscope(100 Mhz)
- PCB prototyping Machine
- Microwave X/C/S band Test Bench
- Spectrum Analyzer
- ELVIS-Signal System and Communication Boards
- GPU Workstations

Major Softwares:

- Synopsys EDA Tools
- VIVADO
- RSoft Photonic Device Tools
- National Instruments LABVIEW
- Proteus VSM Simulation
- COMSOL MULTI PHYSICS
- IC Design Nanometer (Calibere)
- Agilent ADS for RF Circuit
- Agilent Golden Gate
- Cadence EDA
- ANSYS HFSS version 2024
- CST STUDIO SUITE 2021

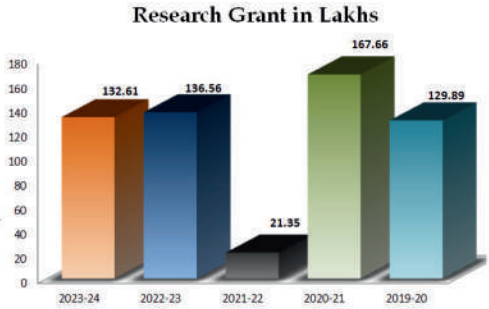
Technology Transfer & Patent Details:

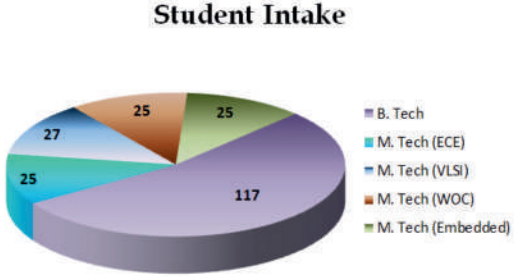
- Patents : Awarded -2
- Published-4

Faculty/Student Startup:

- "Svararogyam Medical Device" Pvt Ltd.

Demographics:





Introduction to Department

The Department of Chemical Engineering was commenced in the year 1988 with 30 undergraduate students in the B. Tech. Chemical Engineering programme and has been doing its best to bring about excellence in academics achieved in the last 36 years. The department is well equipped with good undergraduate laboratories and research laboratories that have been strengthened and modernized under TEQIP (World Bank) grants and Institute grants funded from MHRD. The Department aims to provide students with a balance of intellectual and practical expertise that enables them to serve the worldwide chemical industry as well as the societal needs. The programmes offered by the department are accredited by NBA and has educational objectives that are consistent with the vision and mission of the Department. The department has also acquired standard chemical process simulators such as Aspen Plus and Matlab for design, simulation and control of various unit operations in the chemical industry for training the students. The department has many ongoing research projects being funded by many prestigious funding organizations such as Department of Science & Technology, Rajasthan Pollution Control Board in the areas of water and environmental research.

Thrust Areas of Research

- Composite Materials, Soft Matter
- Desalination and Water Treatment
- Advanced Process Control
- Separation Processes
- Industrial Pollution Abatement
- Waste to resource valorization
- Artificial Intelligence in Process Control
- Membrane Separation
- Computational Fluid Dynamics (CFD)
- Heterogeneous Catalysis for Environmental Applications and Green Technology
- Nanoparticle synthesis
- Molecular modeling
- Carbon dioxide utilization
- Solid oxide fuel cell or electrolysis cell
- Plastic and biomass Pyrolysis

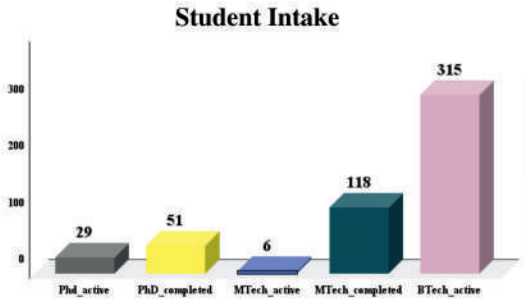
Major Equipments & Lab Facilities:

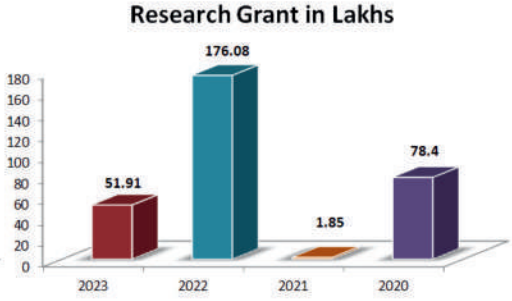
- UV Spectrophotometer Double Beam
- BET Surface Analyzer
- Turbidity Meter Digital
- Viscometer
- Centrifuge
- COD Digester and Multiparameter Photometer
- Conductivity/ TDS Meter
- Density Meter with Oscillating 'U' Tube
- DO Meter
- Drop Shape Analyzer
- Gas Chromatography
- Flow Sheet Membrane
- Ion Chromatography
- Water and Soil Testing Kit
- Liquid Chromatography
- pH Meter
- Digital refractometer
- TOC Analyzer
- SO2 Analyzer
- BOD Incubator
- Biogas Analyzer

Technology Transfer & Patent Details:

- Utilization of marble slurry powder for production of hydroxyapatite (HAP)

Demographics:





Introduction to Department

Department of Computer Science & Engineering came into existence in 1994. The first degree program offered by the Department was B.E. (Computer Engineering) in affiliation with the University of Rajasthan. The first batch graduated in 1998. Another degree programme B.E. (Information Technology) was initiated in 2001. In January 2004, first admissions to Ph.D. programme took place. In 2008, M.Tech. (Computer Science & Engineering) programme was initiated whereas, M.Tech. (Computer Science & Information Security) was started in 2016. Department has recently started a new B.Tech. Program in Artificial Intelligence and Data Engineering from Academic Year 2023-24.

Faculty at Computer Science & Engineering believes in open interaction with students who are encouraged to participate in academic, research and extra-curricular activities. Students have never misplaced trust put in them by department and have done well in academic and industry alike.

Thrust Areas of Research

- Neural Networks, Natural Language Processing, computer vision , Machine Vision, Artificial Intelligence, Machine Learning, Deep learning Image Processing, Pattern Recognition, Medical Image Analysis, Hyperspectral Image Analysis, Deep Learning, Remote sensing
- Computer Networks, Wireless Sensor Networks, Wireless Ad hoc Networks, Opportunistic Networks, Software Defined Networks , Internet of Things, Intelligent Transportation Systems, Vehicular Networks, Next Generation (xG) Networks, Intelligent Communication , Networks (5G and Beyond 5G)
- Network Security, Information Security and Privacy, Forensics, Malware Analysis, Blockchain, Cyber Security, Quantum Computing
- Information Retrieval, Big data and Data Mining, Data Science
- Theoretical Computer Science, Compilers and Programing Languages ,Social Network Analysis, Graph Theory, Software Engineering
- Real Time Systems, Parallel & Distributed Systems, Fault Tolerant Systems, Cloud Computing. Intelligent Systems, Soft computing techniques, Bio and Nature Inspired Algorithms, Embedded Systems

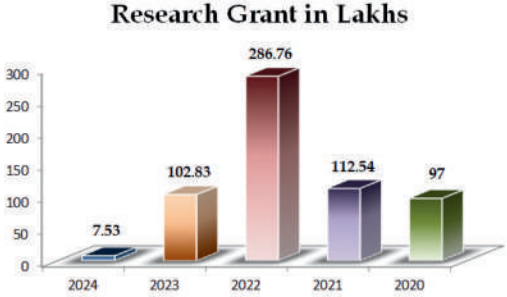
Major Lab Facilities:

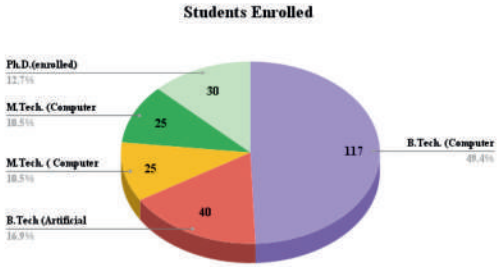
- Cloud & Data Science Lab
- Computer Network Lab
- Minsky Research Lab
- Software Design Lab
- ISEA Lab (Information Security Lab)
- Ramanujan Lab
- Kalam Research Lab
- Real Time Embedded System Lab
- Digital System Lab
- IOT Lab

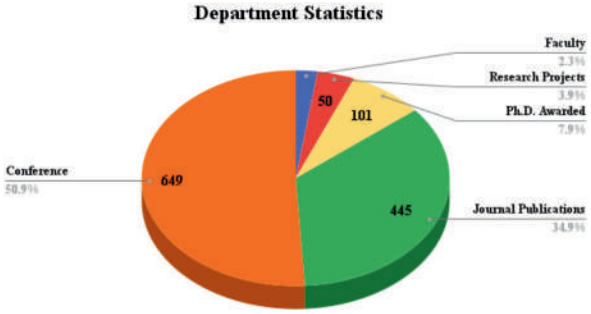
Technology Transfer & Patent Details:

- Patents granted -03
- Research publication -1094

Demographics:







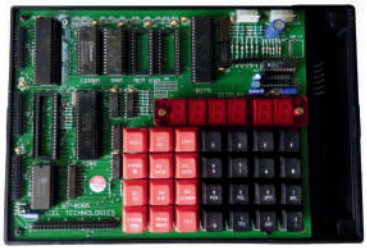
Introduction to Department

The Department of Electrical Engineering (EE), established in 1963, offers one BTech and three MTech programs in Power Electronics and Drives, Power System and Power System Management. Apart from this currently 50+ students are pursuing Ph.D. in different advanced areas. The department has 29 faculty members, a blend of young and experienced, dynamic faculty members, and is committed to providing quality education and research.

Thrust Areas of Research

- Power System analysis & optimization
- Power System Operation and Control
- Renewable Energy Systems, their Integration in Power System, Optimization and challenges
- Artificial Intelligence application for Power System
- Smart grid
- Renewable energy/Microgrids
- Power System Economics
- Combined AC/DC EV charger
- High-Density High-Efficiency Micro-inverter
- DC-DC Converter for EV chargers
- Electric Vehicles, Smart Grid and Applications of AI in Evs and Smart Grid
- Electricity Markets
- Trading of energy and ancillary service in electricity markets
- Signal Processing Applications to Power System
- Cyber Security and Data Analysis
- Signal and image processing
- Switching Techniques for Parallel Connected Converters

Major Equipments & Lab Facilities:



Major Equipments/Facilities:

- Advanced Simulators like Over Head Line and Fault Simulator
- Single and Three phase power analyzer
- Modern control kits like Micro-processor-controlled stepper motor
- PID Simulator and System Simulators
- Virtual Control Laboratory System for combinatorial experiments in the area of computer controlled servomotors.
- Control Engineering Trainer Kits like Temperature Control and flow control.

Major Softwares:

- MATLAB
- Power Systems Block Set
- ETAP
- PST
- MiPower
- GAMS

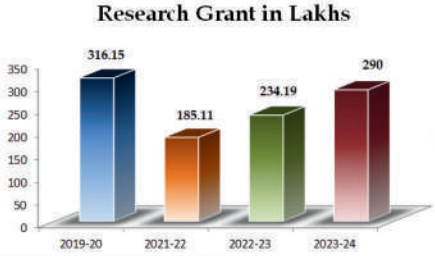
Faculty/Student Startup:

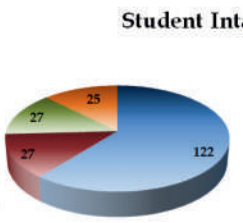
- Zine

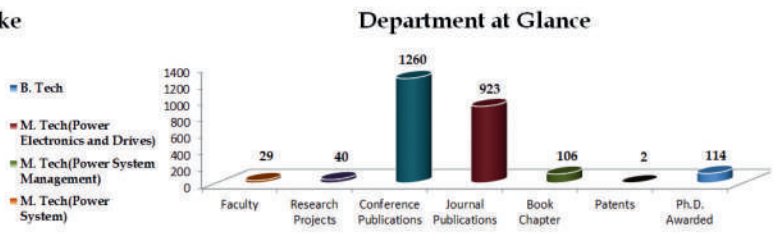
Technology Transfer & Patent Details:

- Switched -Capacitor Multilevel inverter with Self-Voltage-Balancing for High-Frequency Power Distribution System, US Patent
- A Multiphase Transformer Rectifier unit and a Method Thereof, Indian Patent office

Demographics:







Introduction to Department

The Department of Mechanical Engineering was established since the inception of the Institute. The Department offers academic programmes at three levels leading to Bachelor of Technology (B.Tech.), Master of Technology (M.Tech.), and Doctor of Philosophy (Ph.D.) degrees.

An extremely dynamic and large faculty (current strength of about 36), and a well experienced support staff, give the Department a breadth of research focus and wide range of technical expertise. All our 36 odd full time experienced faculty members have a passion for teaching and an avowed commitment to research and development. Majority of the faculty holds doctoral degrees from reputed institutes.

Apart from teaching, the faculty is engaged in diverse research areas with several faculty members even serving as guest editors of various reputed journals. They publish their work in highly reputed journals and present their work at prestigious national and international conferences. The department is continually striving to improve the quality of our programs by finding new ways of structuring our curriculum and exploring new delivery methods.

Thrust Areas of Research

- Design Engineering
- Industrial Engineering
- Production Engineering
- Thermal Engineering
- Product Design and Development
- Design Thinking

Major Equipments & Lab Facilities:

Major Equipments/Facilities:

- Central Workshop
- Production Engineering Labs
- Thermal Engineering Labs
- Design Engineering Lab
- Industrial Engineering
- Central Workshop
- Tribology & Advanced Composite Lab
- Advance Casting Lab
- Advanced Manufacturing Lab
- Mechatronics Lab
- Automobile Engineering Lab
- Heat Transfer Lab
- I. C. Engine Lab
- Dynamics of Machine Lab
- Metrology & Instrumentation Lab
- Industry 4.0 Compatible FMS Lab
- Work System Design Lab
- Ergonomics Lab
- Industrial & System Engineering Lab
- Metal Cutting Lab
- Refrigeration & Air Conditioning Lab

Major Softwares:

- Autodesk Fusion 360
- Autodesk Inventor
- Solidworks
- Altair HyperWorks
- LabVIEW from National Instruments
- ANSYS
- Minitab
- Tora
- Delmia
- Thingworx and Vuforia Studio

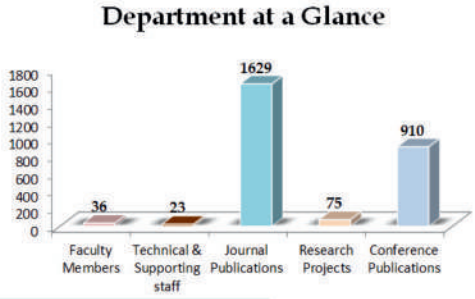
Technology Transfer & Patent Details:

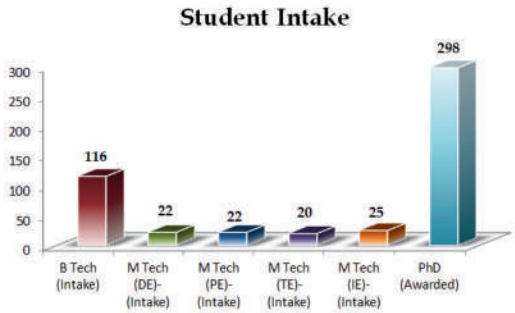
- Patents Awarded -13
- Patents Filed- 48

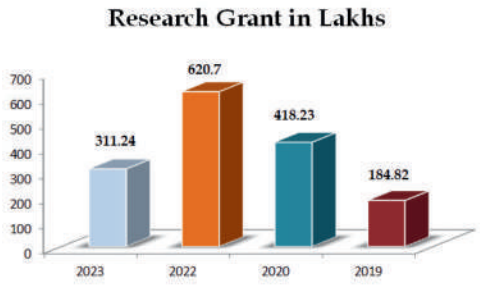
Faculty/Student Startup:

- Jaipur Club Foot Pvt. Ltd

Demographics:







Introduction to Department

The Department of Metallurgical and Materials Engineering is one of the oldest departments established in 1965. The department offers B.Tech., M. Tech., and Ph.D. programs in all frontier areas globally. The department has produced 32 PhD graduates to date and 25 are pursuing their PhD in various advanced research areas. The department's motto is to provide quality education through highly qualified and experienced faculty members. The department has 16 faculty members, most of them are young and dynamic. The faculty are continuously motivated to keep abreast with state-of-the-art technology.

Thrust Areas of Research

- **Materials design:** alloy design, light alloys, super alloys, strategic materials, ultra fine & nanostructured materials, high entropy alloys, shape memory alloy, thin films, composite materials, polymer materials, nano materials, functional materials, functional oxides, non-stoichiometric oxides etc.
- **Processing:** welding, metal casting, extractive metallurgy, physical metallurgy, powder metallurgy, powder processing, mechanical alloying, additive manufacturing, advanced manufacturing techniques.
- **Property design/evaluation**: crystallographic texture, thermo-mechanical processing, tribology, corrosion & surface engineering, creep, fatigue, creep-fatigue interactions, fracture mechanics, etc.
- **Fundamental science:** Phase transformations, growth mechanisms, formation mechanisms, deformation micro mechanisms, etc.
- **Areas of application:** materials for structural, automobile, aerospace and high temperature applications, solar cells, electronic materials, thermoelectric, energy storage, materials protection, etc.

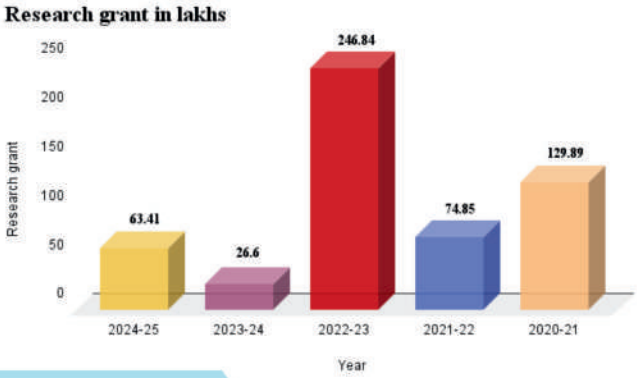
Major Equipments & Lab Facilities:

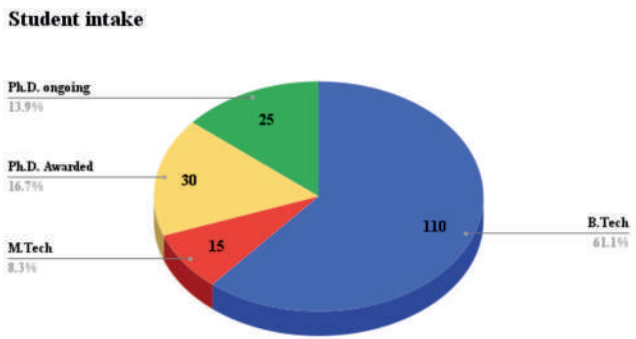
- Mineral Dressing Facility
- Induction Furnace
- Pusher type Sintering Furnace
- Bottom Pouring Furnace
- Raising Hearth Furnace
- Universal Testing Machine
- Hardness Tester
- Microscope
- Image Analyzer
- Differential Scanning Calorimeter
- Dilatometer
- Planetary Ball-mills
- Plasma Nitriding
- Potentiostat

Technology Transfer & Patent Details:

- Patents : Awarded - 4
- Published- 8

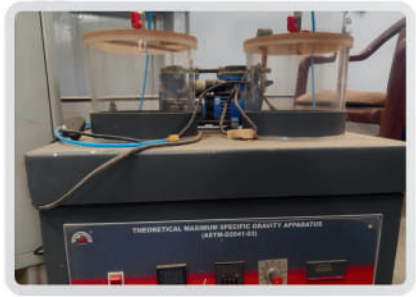
Demographics:





Introduction to Department

The Civil engineering discipline was introduced, at Malaviya National Institute of Technology (then Malaviya Regional Engineering College), Jaipur, in 1965. At the beginning world-class laboratories, especially material testing, hydraulics, survey, road material testing, and soil testing laboratories were developed. The Department has 36 faculty members, a blend of young and experienced, dynamic faculty members, and is committed to providing quality education and research.
The department is equipped with latest facilities and equipments for extensive training to both the undergraduate and postgraduate students. In addition to that these are also used for numerous research, consultancy and testing works.



Thrust Areas of Research

- Structural Engineering: Structural Analysis and Design, building Retrofitting and Rehabilitation, Finite Element Analysis, Seismic Engineering, construction material testing, Computational Modelling and Simulation, Industrial and Special Structures, Sustainable and Green Building Design.
- Transportation Engineering: Traffic Engineering and Management, Public Transportation Systems, Transportation Safety, Highway and Pavement Design.
- Environmental Engineering: Water treatment and supply, sewage treatment, Industrial effluent, municipal waste management, legacy waste, landfills, environmental management plan, environmental impact assessment, composting, waste incineration.
- Water Resources Engineering: Water Resources Planning and Management, Watershed Management, Flood Risk Management, Stormwater Management, Groundwater Assessment and Management, Climate Change Adaptation.
- Geotechnical Engineering: Ground Improvement Technologies, Soil Reinforcement Techniques, Geosynthetics and reinforced soil structures, Geotechnical and Geoenvironmental Engineering, Valorization of mine tailings and industrial

Major Equipments & Lab Facilities:

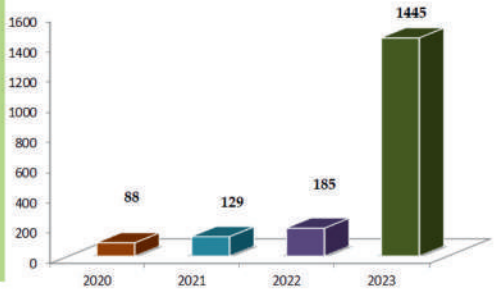
- Environmental Engineering Lab: Facilities for complete physical and chemical analysis of water & wastewater, e.g., TOC analyser, Photo-spectrometer; Facilities for micro-biological analysis of water, e.g., Coliform test; Air quality measurement, e.g., High volume sampler, Optical particle counter, Sound level meter, Cascade impactor, Personal sampler
- Surveying: Total Station, Electronic Distance Measuring Instrument, GPS
- Road Material Testing: Nuclear Density Gauge, CBR Apparatus, Digital Benkelmen Beam, Core Cutter, Marshall Apparatus, Bump Integrator & Viscometers
- Hydraulics Lab: DISA Hot Wire Anemometer, Wind Tunnel, Rigid and Tilting Bed Flumes, Francis Turbine, Pelton Wheel Turbine, Kaplan Turbine
- Remote Sensing/GIS: ArcGIS Software, GeoMedia Professional, GRID, ERMapper, Groundwater Modelling System (GMS), Watershed Modeling System (WMS).
- Concrete testing: Electronic Universal Testing Machine, Rebound Hammer, Digital Compressive Testing Machine, Ultra-sonic Pulse Velocity Apparatus, Concrete Core Cutter, Carbonation Chamber, Abrasion Testing Machine, Salt Spray Chamber, Corrosion Monitoring System.
- Structural Analysis Lab: Fatigue Testing Machine, Unsymmetrical Bending Apparatus, Searle's Apparatus, Column Buckling Apparatus, Centrifugal Force Apparatus, Simply Supported Beam, Hardness Testing Equipment, Three-Hinged Arch Apparatus, Maxwell Reciprocal Theorem Apparatus, Curved Member Apparatus, Carry Over Factor Beam Apparatus, Impact Test Apparatus, Two-Hinged Arch Apparatus, Deflection of Truss Apparatus, Redundant Joint Apparatus
- WRSC Lab: Electric operated Brick Making machine, Humidity chamber, Jaw Crusher, Cement Calorimeter, Inntecninc Tilting Type Batch Concrete Mixer, Thermal Conductivity of Guarded Hot Plate, Pulverizer,

Technology Transfer & Patent Details:

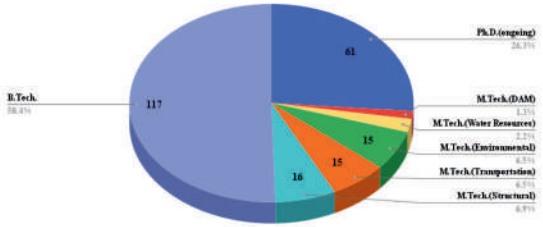
- Patents : Awarded - 4

Demographics:

Research Grant in Lakhs



Student Intake



Introduction to Department

The Department of Architecture and Planning offers B.Arch. (Bachelor of Architecture), M.Plan (specialization in Urban planning) and PhD Programme. The Department has 22 faculty members, a blend of young and experienced, dynamic faculty members, and is committed to providing quality education and research. The M.Plan programme is designed to prepare students in the skills of analysing the physical, social, cultural, economic and ecological dimensions of urban settlements, comprehending their problems, and evolving measures to address the issues and emerging challenges in a planned manner. Along with a group of core courses common to all planning programmes, specializations are built around courses such as City and Metropolitan Planning, Infrastructure Planning, Transport Planning, Environment, Development and Disaster Management, Heritage Conservation, Urban Development Management, and Project Planning.

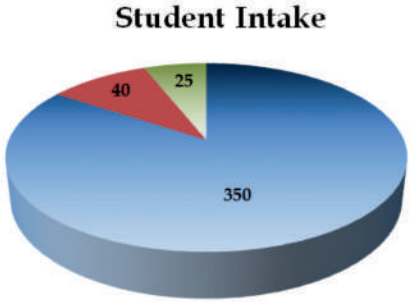
Thrust Areas of Research

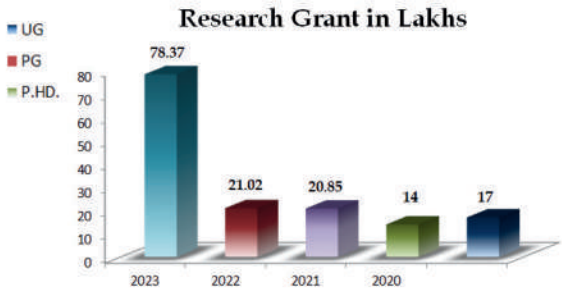
- Land use and physical planning
- Urban Infrastructure Planning and Management
- Sustainable Urban Development
- Urban transportation
- Building Construction and management
- Land Management
- Heritage conservation
- Energy efficiency in buildings
- Vernacular Architecture
- Solid Waste Management

Major Equipments & Lab Facilities:

- **Climatology lab:** The department's Climatology lab serves as a vital resource for teaching and research, providing students with hands-on experience and access to cutting-edge instruments. Equipped with state-of-the-art tools such as Hydrothermal, Lux, CO2, PH meters, Infrared thermometers, and Globe meters, it enables detailed analysis of climatic parameters essential for effective building design and environmental assessment
- **3D printing & Laser cutter:** The Department boasts advanced 3D printing capabilities with an FDM-based printer, offering students the ability to materialize their designs in ABS, PLA, and other materials. Additionally, a laser cutter enhances precision and versatility in model-making, enabling intricate architectural components to be crafted with ease.
- **Data Analytics Lab for Urban Studies (DALUS):** This lab empowers students to translate data into meaningful insights for shaping the future of our cities. Architecture and planning students explore trends, patterns, and relationships within cityscapes, informing design decisions and fostering data-driven urban planning.
- **Documentation lab:** The Department is responsible for promoting information exchange mechanisms by reporting and disseminating the outcomes by students. It has a large collection of work done in National association for students of Architecture, Studio works, Annual Report, Seminar, Convocation Booklets, and Newsletters etc.
- **Carpentry lab:** Facility to provide practical experience by working with various materials like wood and using tools like hammers and saws. They build 3D models of buildings, furniture, and other structures, learning to visualize and create physical forms from their designs. This hands-on learning is guided by the lab's technical staff.

Demographics:





Introduction to Department

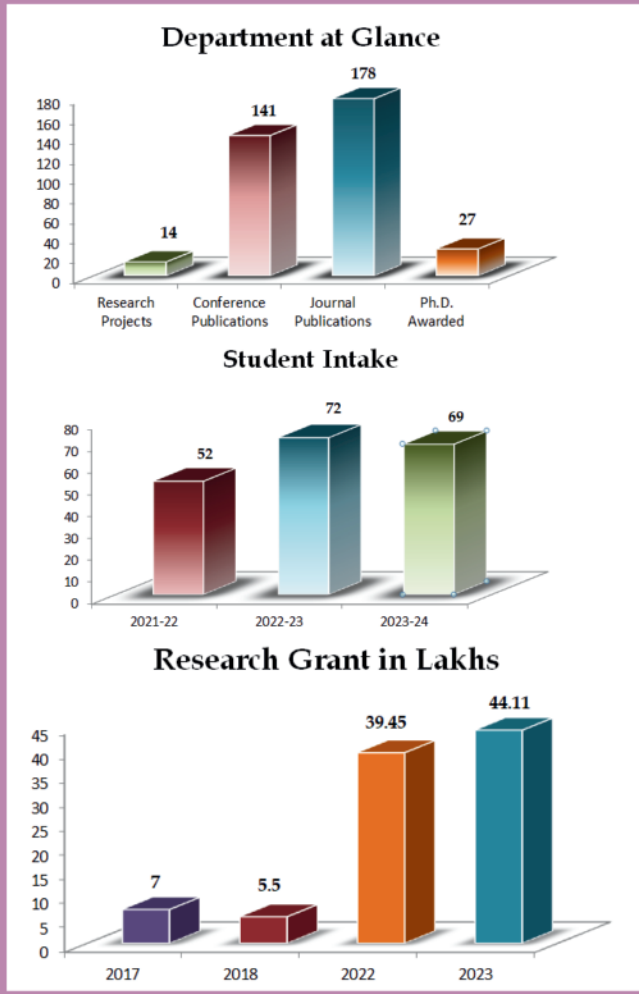
The Department of Management Studies was established in the year 1996 as a Centre of Management Studies and Industrial Collaboration under self-finance scheme and was upgraded to the status of a full-fledged academic department in 2004. Since its inception, DMS has been playing a seminal role in the growth of the corporate sector and management education in India. We groom future business leaders by following a judicious blend of theory and practice, using highly innovative teaching pedagogy. The program aims to develop social and ethically-oriented management professionals equipped to face changes in modern business organizations.

Department of Management Studies has applied separately for NIRF ranking under the management institutes category this year and we Ranked 2nd in Rajasthan and 69th in the all India Rankings 2023: Management. We also ranked 2nd among the NITs that participated in the Management category.

Thrust Areas of Research

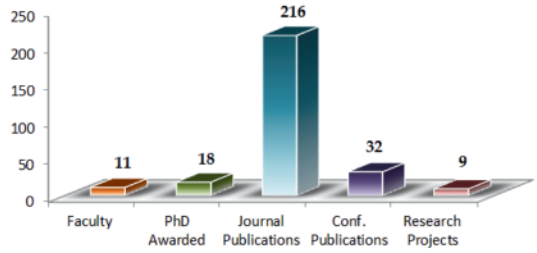
- Entrepreneurship development, Industrial Engineering
- Sustainable Manufacturing, Industry 4.0, Circular Economy
- Industrial Management, Lean manufacturing, E-Waste Management.
- Total Quality Management, Sustainable Manufacturing
- Operations and Supply Chain Management, Lean Six Sigma
- Marketing Management, Business to Business Marketing
- Sustainable Consumption Behavior, Value co-creation
- Behavioral Issues in Online Environments
- Business Analytics, Technology Adoption Behaviour.
- Financial Institutions Management, Corporate Finance
- Sustainable Finance, Behavioural finance
- Organizational psychology, Employee behavior and well-being
- HRM, Change Management, HR analytics
- Labor Legislation, Occupational stress & Well-Being.
- Management Education, CSR, and Sustainable Development Strategy.

Demographics:

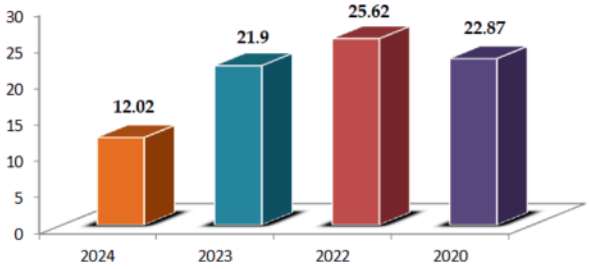


Demographics:

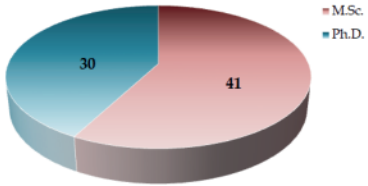
Department Statistics



Research Grant in Lakhs



Student Intake



Introduction to Department

Mathematics is an indispensable complement to the fields of engineering, technology and more recently life sciences. The department is constantly evolving with taking up research in new and dynamic areas of pure and applied mathematics since its inception in 1963. The department has faculty members with research interests in the areas of Linear and nonlinear stability analyses of convective flows, Numerical and analytical methods in Fluid Dynamics, Computational Methods for Partial Differential Equations, Function Spaces, generalized metric spaces, Hyperspace Topologies, Functional Analysis, Linear algebra and its applications, Fractional Calculus, Machine Learning, Computational statistics, Bicomplex Analysis, Geometric Function Theory and Mathematical Modeling.

Thrust Areas of Research

- Fluid Dynamics, Computational Methods for Partial Differential Equations, Computational Fluid Dynamics (CFD), Computer Programming, System Analysis, Electrohydrodynamic stability, Modeling of thin film flows over a corrugated substrate, Magnetic Nanofluids, Porous Media, Variable Viscosity, Boundary Layer Flow, stability of convective flows.
- Special Functions, Integral Transform, Fractional Calculus, Fractional transforms, Mathematical Modeling.
- Topology, Generalized Metric Spaces, Set-Theoretic Topology, Topology and Functional Analysis, Bicomplex Analysis.
- Machine Learning, Computational statistics.

Technology Transfer & Patent Details:

- Patents granted - 01
- Research publication stats -248

Introduction to Department

New developments in Physics have led to paradigm shifting transformations in Engineering & Technology. It is thus critical that Physics be an integral part of Engineering Education. The Department of Physics has been dedicated to imparting quality Physics education since the inception of MNIT Jaipur. The Department is currently DST-FIST (Level 1) sponsored.

The Department also offers a vibrant research program with 14 full-time faculty, and spans over condensed matter physics, cosmology, energy systems, high energy physics, nuclear and particle physics and materials research.

The vision of the department is to create a centre for imparting technical education of international standards and conduct research at the cutting edge of technology to meet the current and future challenges of technological development. With that vision in mind, our mission is to create technical manpower for meeting the current and future demands of industry: to recognize education and research in close interaction with industry with emphasis on the development of leadership qualities in the young men and women entering the portals of the Institute with sensitivity to social development and eye for opportunities for growth in the international perspective.

Thrust Areas of Research

- ·Material Science and technology, Condensed Matter Physics, Transparent Conducting thin film oxides, Metal oxide doped with metal & rare earth metal, Surface modification by ion beam irradiation/ Glow Discharge Plasma, Thermo-chemical behavior of amorphous alloys, Gas Sensing, Thermoelectric materials for Energy conversion, Graphene and its composites for various applications.
- ·Synthesis, characterization and modification of semiconductor nanostructures, Nanostructured thin films, Growth and modification of high K oxides, Applications of metal and semiconductor nanocrystals
- ·Astrophysics, Astro-Particle Physics, Cosmology, Dark Matter, Dark Energy, Quantum Field Theory
- ·Metal-carbon nanocomposite, Fullerene based nanostructures, organic solar cell, neutron-based studies
- ·Nanostructured thin films, Membrane Separation, Polymer Nanofilters, Block copolymers, Polymer solar cell, Hydrogen separation, Gas separation and sensing, Soft Materials, Functional nanomaterials, Hydrogen Energy.
- ·High Pressure Physics, Low Temperature Electrical and Magnetotransport Properties of Topological Insulators and Topological Superconductors, Fe-based Superconductors and Intermetallic materials, Thermoelectric materials for Energy conversion and storage, Energy Systems, Energy Storage, Spintronic materials
- ·Experimental High Energy Physics, Semiconductor Device Physics, Microwave Electronics
- ·Electrochemical Energy Conversion and Storage, Photoelectrochemical water splitting, Sensing, Photo-switching, Memory devices.

Major Equipments & Lab Facilities:

Research Labs:

- Functional Materials Research Lab
- Nanomaterials Research Lab
- Optical Material Lab
- Soft Materials Lab
- Electrochemical Energy Conversion & Storage Lab
- Experimental High Energy Physics Lab
- High Pressure Physics Lab
- Electrochemical Energy Research Lab

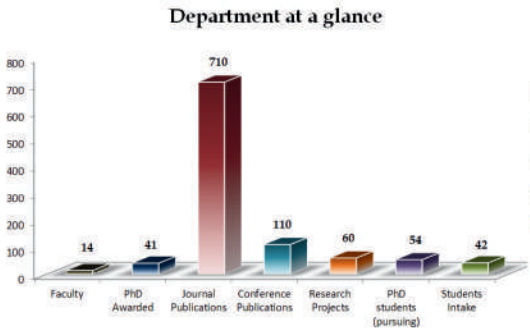
Major equipments:

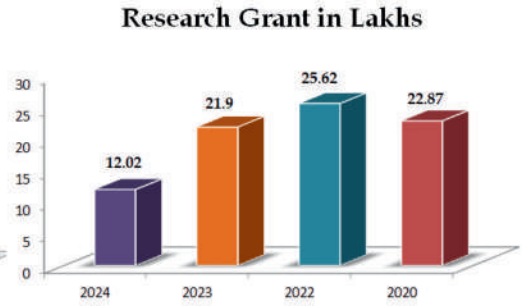
- High-end Computing Workstation
- Low Temperature Cryostat
- Diffusion permeator
- Gas sensing measurement system
- Magnetron Sputtering Unit
- Thermal evaporation system
- Inert atmosphere glove boxes
- High temperature dual-zone furnace
- Solar simulator
- Battery cycler
- Electrochemical workstation

Technology Transfer & Patent Details:

- Patents : Awarded -4
- Published-5

Demographics:





Introduction to Department

Department of Chemistry at Malaviya National Institute of Technology Jaipur has been established in 1963. Alumni of this department are at prestigious positions in India and abroad. The vision of the department is to establish a world class academic and research center by providing advance and latest knowledge of chemistry to impart outstanding education and research environment by creating smart classes and hi-tech laboratories. We strive to contribute to a chemically literate society through continuous pursuit of educational excellence and cutting-edge research in chemistry. Our vision is to continue industry and academia need based teaching programs to meet the current and future challenges by having educational excellence through imparting basic as well as advance knowledge of chemistry and related interdisciplinary areas. The mission of the department is to produce students who have in depth understanding of chemistry, highly skilled having academically and technically sound knowledge to serve not only the needs of academic Institutions and Industries but also of the society at large. We are dedicated to rigorous standards for content knowledge, communication skills, research quality, and professional behavior.

This department offers 2-year M.Sc. program and full-time and part-time doctoral program (PhD) in Chemistry.

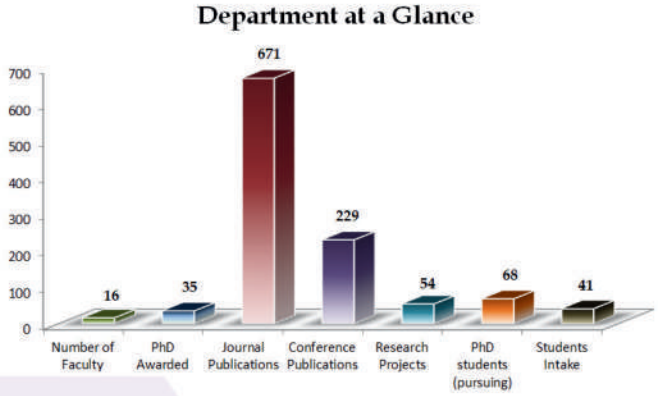
Thrust Areas of Research

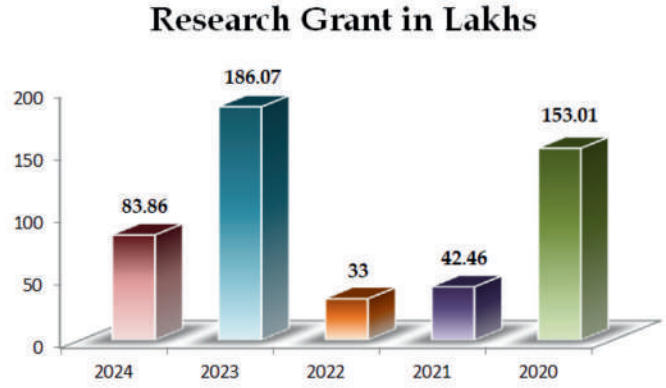
- Synthetic organic chemistry, Green Chemistry, Organo-metallic chemistry, Electrochemistry, Water Treatment.
- Synthetic Organo-Fluorine Compounds, Some aspects of the Chemistry of Biologically Active Heterocyclic Compounds, Click Chemistry, Nano-chemistry, Green Chemistry, Biocatalysis, Phase Transfer Catalysis, Microwave Chemistry.
- Functional Organometallic Chemistry, Inorganic-Photo Physics, Organometallics for Sustainable Energy and Biological applications, # Nanomaterials Chemistry for New Materials, Smart Materials and Nanoscale Composites, Energy Conservation and renewables, Hydrogen energy, Organometallic and Coordination Chemistry, Photo-voltaic Materials, Photcatalytic oxidation.
- Atmospheric Chemistry, Hydrogen Bonding, Tautomerization, H Atom Transfer Reactions, Electronic Structure Calculation, Vibrational Spectroscopy, Computational Chemistry.
- Quantum Confinement, Chemical kinetics and Dynamics, Atmospheric Chemistry, Electronic Structure.
- Organo-catalysis, Metal Mediate organic transformation, Cluster chemistry of metalcarbonyls, Mixed metal cluster synthesis and their potential application in NLO and homogenous catalysis, Coordination chemistry of Scorpionate ligands and main group metals.
- Green Chemistry, Synthetic organic chemistry, Carbohydrate Chemistry, Medicinal Chemistry, Chemical Biology, Application of Iodate reagent, Glycochemistry, DOS of carbohydrate structures, Glycoconjugates synthesis.
- Electrochemical Energy Conversion and Storage Systems, Engineered Nanomaterials/Composites for Electrocatalysis, Nanoscale Electrochemistry, Nanomaterials Chemistry for New Materials, Smart Materials and Nanoscale Composites, Nanoparticle Synthesis, Growth and Assembly, Heterogeneous Catalysis for Environmental Applications and Green Technology, Nanoscale Materials for Cleaner Environment and Sustainability.
- Nanomaterials Chemistry for New Materials, Smart Materials and Nanoscale Composites, Carbon nanostructures, Composite Materials, Nano-chemistry.
- Spectroscopy, Molecular Magnetism, Crystallogyaphy, Lanthanide NIR Materials.
- Main Group Organometallic Chemistry, Catalysis and Reaction Mechanism, Supramolecular Chemistry - Synthesis and Applications, Small Molecule Activation, Environmental Chemistry.
- Analytical Chemistry, Environmental Chemistry, persistent organic pollutants, Plastic polymers and associated chemicals, Chromatographic analysis, Pesticide and Poly aromatic hydrocarbon analysis, Solvent extraction, Environment & Health, Nanochemistry; Green Chemistry: Green synthesis of nanomaterials and their application, Environmental Nanotechnology, water and wastewater treatment, exploration of photocatalytic materials, Heterogeneous Catalysis for Environmental Applications and Green Technology, Advanced Separation Processes, Adsorption, Sensors for biomedical and environmental applications.
- Green Chemistry, Electrochemistry, electrocatalysis, Organic Synthesis, Nano Catalysis, Nanoparticle Synthesis, Growth and Assembly, Nanochemistry; Green Chemistry: Green synthesis of nanomaterials and their application.
- Heterocyclic chemistry, Synthetic Organic Chemistry, Electrochemistry.
- Adsorption, Carbon Capture & Sequestration, Click Chemistry, Wastewater Treatment, Chemical fixation of CO2.
- Chemical Sensors, Photodynamic Therapy, Advanced Functional Materials for Drug Delivery, Nano Materials for Biomedical Applications.

Major Equipments & Lab Facilities:

- FTIR spectrometer
- UV-Vis spectrophotometer
- Rotatory evaporator
- Electrochemical workstation
- Fluorescence spectrophotometer
- Inert atmosphere glove box
- High temperature furnace
- Sunlight simulator
- Gas chromatograph
- High-performance liquid chromatograph

Demographics:





Introduction to Department

The Centre of Energy and Environment(CEE) established in 2012, offers one MTech in Renewable Energy, and a Ph.D. in different advanced research areas related to renewable and sustainability.

Centre for Energy and Environment aims to find sustainable solutions to global energy inadequacy and environmental degradation as the global energy systems will experience major changes in the coming decades.

Centre is at the cutting edge in northwest India when it comes to research in renewable energy systems and sustainability domain.

o UG/PG/PhD student stats

M.Tech in Renewable Energy student-sanctioned intake is 15

PHD Awarded: 21

PhD ongoing: 20

Thrust Areas of Research

- Solar photovoltaic systems
- Energy Systems Planning
- Hydrogen Energy Systems
- Hybrid Energy Systems
- Bioenergy Systems
- Wind Energy Systems
- Electric Vehicle
- Smart grid & Micro grid
- Energy/Electricity Markets
- Sustainable buildings
- Energy Storage & Thermal management
- Sustainability
- Energy audit
- Energy Policies and economics
- Thermal Comfort
- Resource Forecasting & Planning

Radiant Cooling (Low Energy) lab

Collaborations:

- Indian Green Building Congress, CII
- The Energy and Resource Institute (TERI), New Delhi
- FENESTA Building Systems, Gurgaon
- South Asia Energy Efficiency Forum, New Delhi
- Moinee Systems, Jaipur
- Rajasthan Electronics and Instrumentation Limited, Jaipur
- Indian Society for Heating Refrigeration and Air-conditioning Engineers
- Rajasthan Renewable Energy Corporation Ltd., Govt. of Rajasthan
- Rajasthan Pollution Control Board, Govt. of Rajasthan
- Price Waterhouse Coopers, Gurgaon

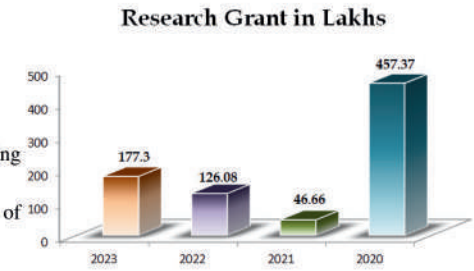
Major Equipments & Lab Facilities:

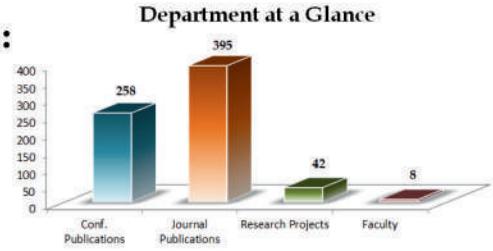
- Energy Storage Laboratory
- Bio-Fuel Labrotary
- Heating Ventillation & Air-Conditioning Laboratory
- Renewable Energy Laboratory
- Low Energy Cooling Laboratory
- Energy Simulation Laboratory
- Sustainability Research Laboratory

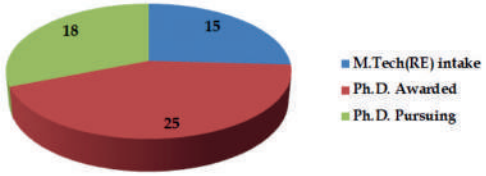
Technology Transfer & Patent Details:

- Patents: 3 filed and 1 published

Demographics:





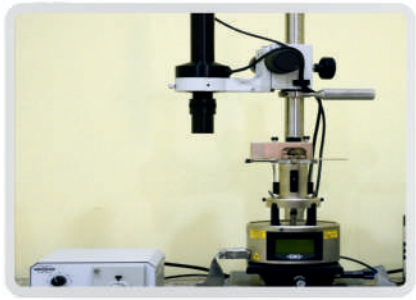


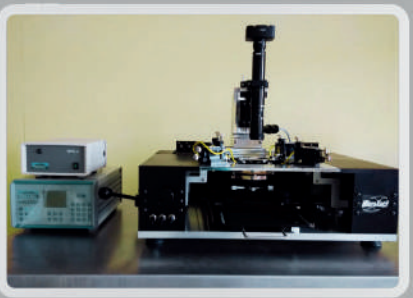
Introduction to Department

To enhance the infrastructure for advanced research and achieve excellence in innovative materials technology, the Materials Research Centre (MRC) has been established under the guidance of competent authorities. The MRC aims to leverage MNIT's talent pool to foster interdisciplinary research in relevant materials technologies. Apart from serving the research needs of institutional faculty and students, the MRC's cutting-edge facilities is also accessible to scientists, faculty, and researchers from other institutes and industries. The MRC is committed to providing training to potential users on instrument operation and data interpretation. It welcomes inquiries for new methodologies and opportunities for collaboration. The comprehensive list of equipment installation and commissioned can be seen at https://mrc.mnit.ac.in/Mnit_mrc/about_mrc, and to make online reservations and check availability of facility visit: https://mrc.mnit.ac.in/Mnit_mrc/facilities. MRC staff and faculty are extensively trained in utilizing these advanced experimental facilities. MNIT students have also received training on the equipment, which is now available for use by individuals across the country.

Thrust Areas of Research

- Energy Materials
- Advanced Materials Processing
- Materials Synthesis and Processing
- Nanotechnology
- Polymers and Soft Matter
- Semiconductor Physics and Devices
- Electrochemical Energy Harvesting
- Gas Sensors
- Catalytic process for Energy and Environment
- Sensors for ion detection
- Corrosion Engineering
- Heterocyclic compounds
- Biosensors



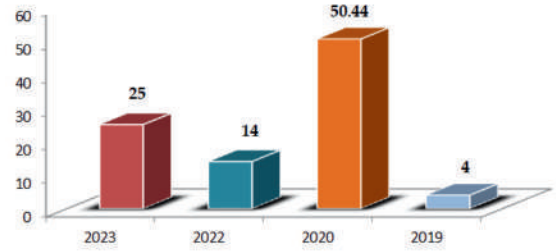


Major Equipments & Lab Facilities:

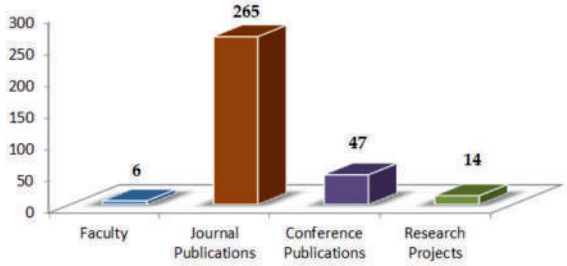
- Atomic Absorption Spectrometer (AAS)
- Atomic Force Microscope (AFM)
- BET Surface Area Analyzer
- Comsol Software
- Copper grid Carbon Coated
- De-Ionized water unit
- Dynamic Mechanical Analyzer (DMA)
- E-Beam/Vacuum Coating Unit
- Electro-Chemical Workstation
- Flourescence Spectrometer
- FTIR Spectrometer
- Glow Discharge Spectroscopy (GDS)
- Gold coating Unit (Only For FESEM)
- Hall Effect Measurement System
- Impedence Analyzer
- Liquid Nitrogen Plant
- Mass Spectrometer
- Micro Hardness Tester
- Microwave Reactor
- Nuclear Magnetic Resonance Spectrometer (NMR)
- Optical Microscope
- Planetary Mono Ball Mill
- Raman Spectroscopy with PL
- RF-DC Magnetron Sputtering Unit
- Sample Preparation Lab - Abrasive Cutter
- Sample Preparation Lab - Hot Mounting Press
- Sample Preparation Lab - Illion II
- Sample Preparation Lab - PIPS II Ion Beam Milling
- Sample Preparation Lab - Twin Jet Tenupol
- Sample Preparation Lab - Ultra Sonicator Bath & Probe

Demographics:

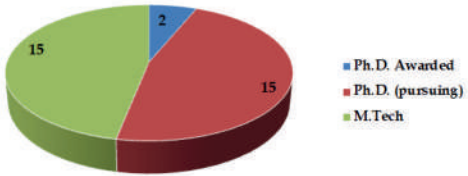
Research Grant in Lakhs



Department at a Glance



Student Intake



NATIONAL CENTRE FOR DISASTER MITIGATION & MANAGEMENT

Introduction to Department

National Centre for Disaster Mitigation and Management is an Academic & Research Center, established by the Board of Governors (27th Meeting of the Board of Governors, 7 October 2013) as per the NITSER Act, and First Statute of the National Institute of Technologies with a mandate to work in the domain of Earthquake Safety of the Built Environment.

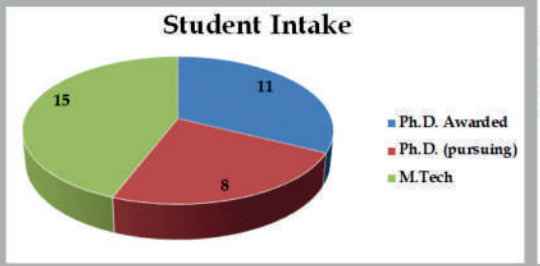
Thrust Areas of Research

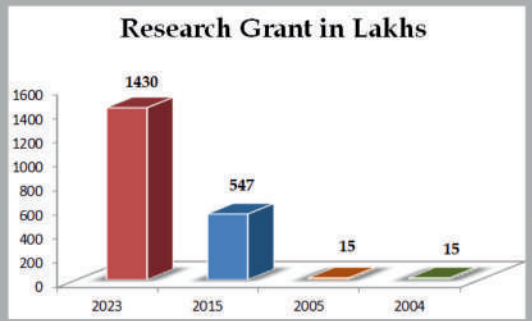
- Earthquake Engineering
- Instrumentation and Seismic Diagnostic System
- Resistant Design of Steel Structures
- Retrofitting of Structure for Earthquake Loading
- Reliability Analysis

Major Equipments & Lab Facilities

- Strong Wall (Seismic Load Reaction Wall)
- LRB Base Isolation Testing Rig
- Servo Valve Actuators
- Horizontal Harmonic Shake Table Setup
- Seismic Wave Amplification and Vertical Shake Table
- Dynamic Vibration Absorber
- Electro Dynamic Vibration Test System

Demographics:

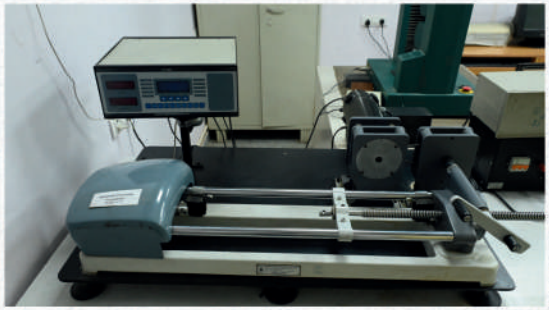
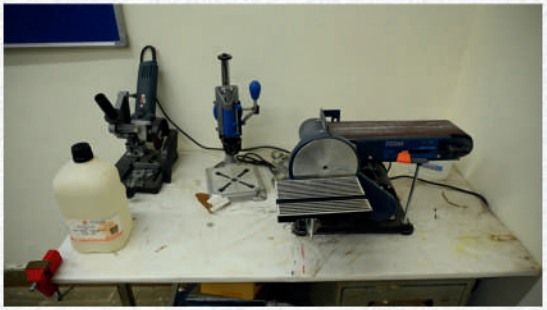
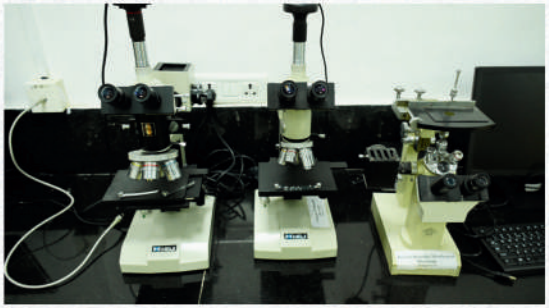
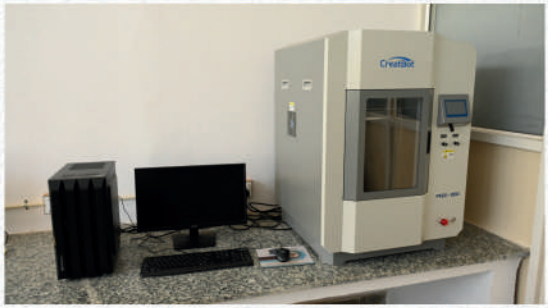




MAJOR RECRUITERS

MAJOR FUNDING AGENCIES

MNIT JAIPUR


Laboratory Equipments








Laboratory Equipments

Central Library

Address of Correspondence

Dean (Research and Consultancy)
dean.rnc@mnit.ac.in

Co-ordiantor (Industry Institute)
coordinator.ii@mnit.ac.in

Follow us

https://twitter.com/NIT_Jaipur
https://www.linkedin.com/school/mnitjaipur
https://www.facebook.com/mnitjaipurindia/
https://www.instagram.com/accounts/login/?next=/mnitjaipurindia/
https://www.youtube.com/c/MNITJaipurIndia

मालवीय राष्ट्रीय प्रौद्योगिकी संस्थान जयपुर (राष्ट्रीय महत्व का संस्थान)

Malaviya National Institute of Technology Jaipur (An Institute of National Importance)

Jawahar Lal Nehru Marg,
Jaipur-302017 (Rajasthan) India