

Marwadi University Research Center (MURC)

Marwadi University Research Center (MURC) has been established by Marwadi University with a vision to foster a vibrant research ecosystem that empowers innovation, sustainability, and academic excellence. The center is dedicated to providing high-end research facilities to faculty members, scholars, and researchers from both the university and the surrounding academic and industrial community.

With a strong commitment to environmental protection and sustainable development, MURC is equipped with state-of-the-art analytical instruments and experimental infrastructure that support the development of eco-friendly materials, processes, and technologies. These facilities are designed to aid the exploration of new compositions and prototypes with a lower environmental footprint and higher resource efficiency.

This quote, displayed in the lab, reflects the bold spirit of research and transformation that MURC aims to ignite.

“The people who are crazy enough to think they can change the world are the ones who do.” – Steve Jobs

Objectives

1. To provide the cutting-edge analytical instrumentation facilities for high-quality research in various scientific disciplines.
2. To strengthen institutional research facilities by integrating state-of-the-art analytical instruments.
3. To facilitate knowledge transfer and training by organizing short-term courses, workshops, and seminars on sophisticated analytical techniques.
4. To offer sustainable and cost-efficient analytical services that empower scientists and researchers from academic institutions, R&D laboratories, government bodies, and industries to pursue research that supports climate action, resource conservation, and environmental resilience.

5. To bridge academia and industry through collaborative research focused on developing green technologies, circular economy models, and sustainable materials.
6. To assist researchers in generating high-quality data for patents, publications, and eco-conscious industrial applications, especially in the study of sustainable materials, prototypes, and products through advanced, low-impact analytical methods.

Sustainability through Research

In an era marked by environmental challenges and resource constraints, research plays a pivotal role in driving sustainable solutions. Marwadi University is deeply committed to leveraging scientific inquiry and technological innovation to address the pressing issues of climate change, pollution, renewable energy, waste management, and sustainable development.

Through interdisciplinary collaboration and cutting-edge infrastructure like the Marwadi University Research Center (MURC), researchers are empowered to explore eco-friendly alternatives, develop green technologies, and create materials and processes that align with global sustainability goals. The focus is not only on solving today's challenges but also on shaping a resilient, environmentally responsible future. Here are some research focus areas on which research is ongoing by the researchers of the university that contribute to sustainable development:

1. Development of Bio-based and Biodegradable Materials
2. Green Energy Conversion and Storage Technologies
3. Sustainable Water Purification and Management Systems
4. Eco-friendly Additive Manufacturing (3D Printing with Sustainable Materials)
5. Nanotechnology for Environmental Remediation
6. Carbon Capture and Utilization Techniques
7. Sustainable Food Processing and Packaging Innovations
8. Smart Agriculture and Resource-efficient Farming
9. Circular Economy and Waste-to-Value Conversion
10. Low-energy Manufacturing and Processing Systems
11. Life Cycle Assessment of Industrial Processes
12. Green Chemistry and Pollution-free Synthesis

MURC Laboratory Infrastructure

In addition to the advanced instrumentation, MURC provides a modern, collaborative workspace equipped with conference facilities, discussion zones, and research cabins. The lab interiors have been thoughtfully designed to create an inspiring environment for innovation and discovery.



Modern analytical lab and workspace

Instrumental Facilities

Over ₹5 crore has been invested in cutting-edge equipment that facilitates interdisciplinary research across material science, environmental studies, polymer engineering, nanotechnology, and applied sciences. Instruments at MURC include:

1. Scanning Electron Microscope
2. X-Ray Diffraction
3. Fourier Transform Infrared Spectrometer
4. Fluorescence Spectrophotometer
5. Differential Scanning Calorimeter
6. DLS Particle Size and Zeta Potential Analyzer
7. 3D Printer – FDM
8. 3D Printer – Fabric
9. 3D Printer – Food
10. Single Screw Extruder
11. Melt Flow Index
12. Universal Testing Machine



Instrumental Facility