

PLASTICS TESTING LAB
DEPARTMENT OF MECHANICAL ENGINEERING
Faculty-In-Charge: Prof. Sachin Waigaonkar

Lab Overview

This Lab focuses on providing practical knowledge and experimental understanding of melt flow properties, static and dynamic mechanical properties of polymeric materials. It supports undergraduate and postgraduate courses in Mechanical Engineering as well as facilitates research activities in the field of polymer and composite materials.

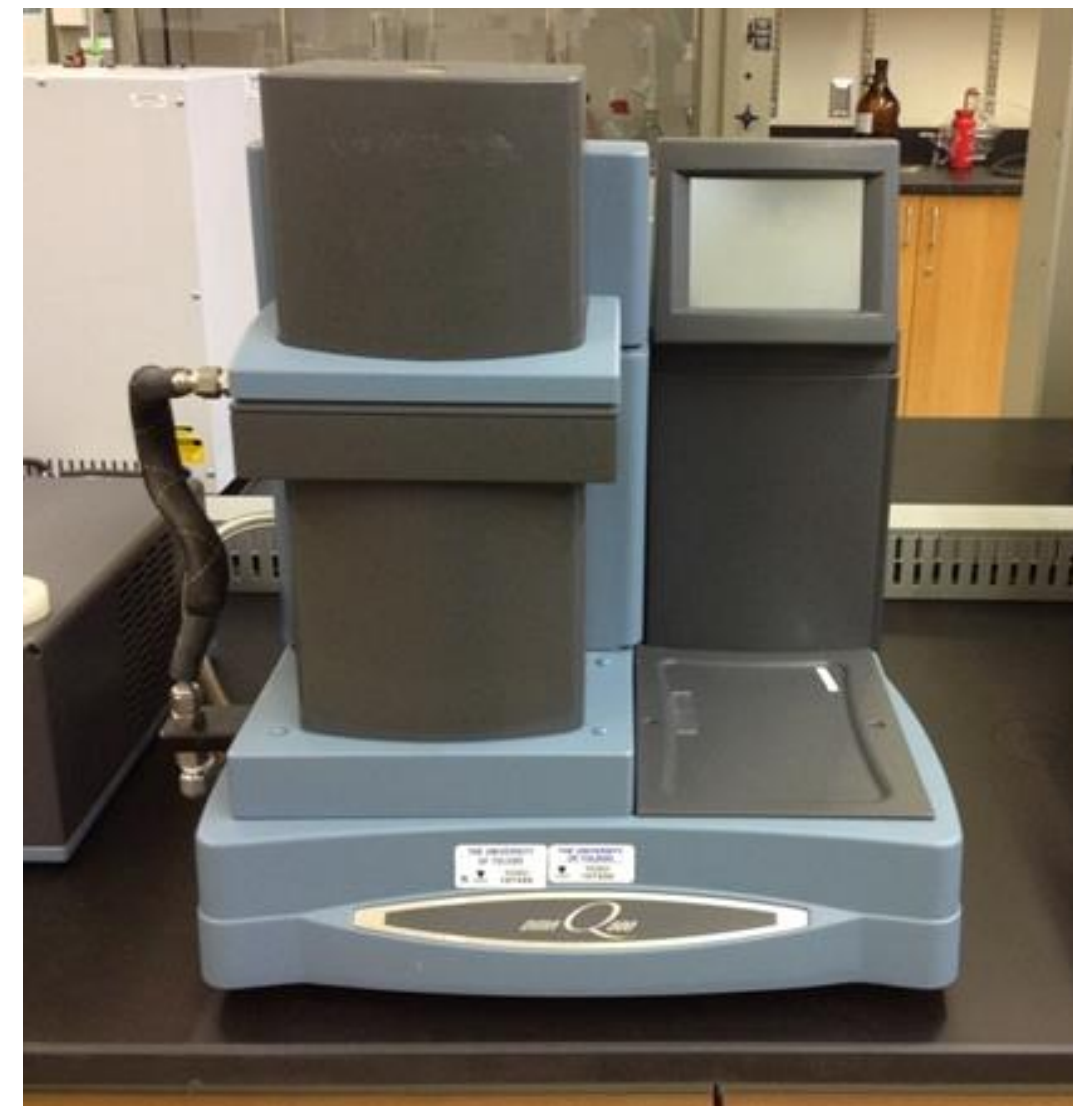
Key Research Areas

- Rotational Molding of Plastics
- Rheological and Melt Flow Characteristic of Resins
- Static and Dynamic Mechanical Properties of Polymers and Composites
- Accelerated Creep Behavior of Polymers and Composites
- Environmental Stress Cracking Resistance (ESCR)
- Oxidative Induction Stability, Heat Deflection Temperature
- Dry Flow and Bulk Density Studies of Polymeric Materials

Significant Facilities & Special Features

- **Melt Flow Indexer (MFI)**
An indispensable tool for characterizing a polymer's flow behavior when subjected to heat, offering insights into its processability and quality
- **Hybrid Rheometer Make TA Instruments USA**
Extensively used to study the flow and deformation behaviours of materials like Polymers, Plastics, Rubber and other materials to understand how materials respond to mechanical stress
- **Dynamic Mechanical Analyzer (DMA) Make TA Instruments USA**
An insightful tool for investigating Viscoelastic properties like Creep, Glass transition temperature, Storage modulus, Loss modulus and other Material properties
- **Heat Deflection and VICAT Softening Point Tester (HDT/VSP)**
HDT/VSP tester serves as a fundamental tool for determining a material's response to heat and load, for finding deformation behavior at elevated temperatures
- **Dry Flow and Bulk Density Test Apparatus**
Instrument used to measure the dry flow time and packing density of polymer powders

Major Equipment



Dynamic Mechanical Analyzer



Hybrid Rheometer



Melt Flow Indexer (MFI)



HDT/VSP Tester



Dry Flow and Bulk Density Apparatus

Achievements

- 4 Students Completed Ph.D. 2 are Ongoing
- 10+ Publications in International Journals
- Empanelment of Prof. Sachin Waigaonkar as coordinator for Standard development of Rotomolded Septic Tanks by Bureau of Indian Standards (Govt. of India)
- Formation of Rotational Moulding Center for Education and Research (RM CER): A Joint Initiative by Society of Asian Rotomolders (StAR) and BITS



RM CER activities with Rotomolding Industry

Research Funding & Grants



Emergency Contact

Emergency Contacts:

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