

About STUTI:

The Scheme 'Synergistic Training program Utilizing the Scientific and Technological Infrastructure' (STUTI) is intended to build human resource and its knowledge capacity through open access S&T Infrastructure across the country. As a complement to the various schemes of DST funding for expansion of R&D Infrastructure at academic institutions, STUTI scheme envisions a hands-on training program and sensitization of the state-of-the-art equipment as well as towards sharing while ensuring transparent access of S&T facilities.

Instruments covered for training:

HR TEM	SEM	AFM	Fluorescence
UV-Vis	GPC	UTM	Thermal analyser
DLS	NMR	XRD	Rheometer
Contact Angle			

Fluorescence Spectrophotometer

Make: Marutek

Model: FL-100

Application: This is used to find the emission spectrum of materials. It can be done for both solid and liquid samples. It is used to determine the emission at particular wavelength, sensing of materials, biological studies, etc.



UV-Visible Spectrophotometer

Make: Jasco

Model: V-730

Application: This is used to find the absorption spectrum of materials. It can be done for both solid and liquid samples. It is used to determine the absorbance wavelength, bandgap and many other fields.



Nuclear Magnetic Resonance

Make : Spinsolve

Model : Proton NMR 40 MHz

Application : This is used to find the structure of organic molecules, determine physical, chemical and biological properties of matter. Used in advanced medical techniques, MRI.

Dynamic Light Scattering

Make: Malvern

Model: Zetasizer Nano-ZS ZEN 3600

Application: This is used to find the particle size of various materials. It gives the hydrodynamic size and also the size distribution range.



Gel Permeation Chromatography

Make: Shimadzu

Model: LC-20AD, RIC-20A, CTO 20A

Application: This is used to find the relative molecular weight of the polymer materials. It gives information on the distribution of the molecular weights. Based on which, separation of the materials can also be done.



Thermal Analyser

Make : TA Instruments

Model: Q100, Q10

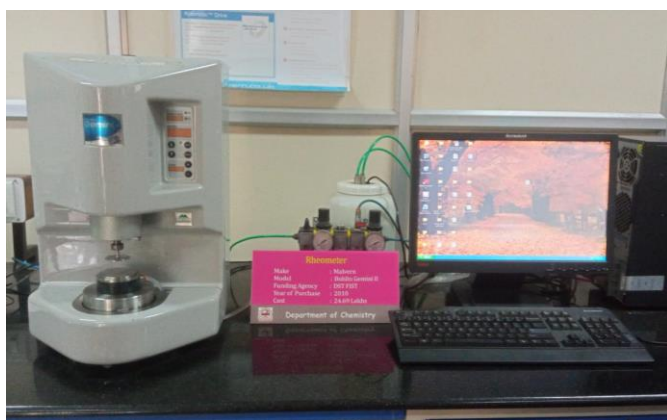
Application: This is used to find the thermal properties of the material. It is used to determine the melting point, degradation temperature, moisture content present , etc.

Contact Angle Meter

Make : Kyowa

Model : Dme-210

Application : This is used to find the wettability of the materials. It helps to determine the surface energy value.



Rheometer

Make: Malvern

Model: Bohlin Gemini II

Application: This is used to understand the flow/deformation properties of a material. It is used to find the stress-strain relationship. It is used to determine the viscous fluid flow.



Powder X-Ray Diffractometer

Make: PANalytical

Model: X'Pert Powder Pro

Application: This is used to understand the crystalline nature, and Phase analysis of a material. Used to calculate crystallite size and strain and identification of impurity and defects.

Atomic Force Microscope

Make: Park

Model: XE 100

Application: This is used to find surface topography of the material. It can be used for any type of material. 3D height images can be obtained. Surface roughness can be determined.



Scanning Electron Microscope

Make: Carl Zeiss

Model: MA 15 / EVO 18

Application: This is used to find the size and shape of the material. It is used to identify the structural morphology of the material. Elemental mapping and identification of elements can also be done.





Universal Testing Machine

Make: Hounsfield

Model: S-0154-50kN

Application: This is used to find the mechanical properties of the materials. It gives information in the tensile stress and compressive strength.