

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:

1. Ultraviolet-visible spectroscopy
2. Fourier Transform Infrared Spectroscopy
3. Differential scanning calorimetry (DSC)
4. TG-IR
5. Bomb Calorimeter
6. Laser Flash Apparatus
7. Contact Angle Meter
8. CHNSO Analyzer



Equipment Name: Ultraviolet-visible spectroscopy

Make: Perkin Elmer

Model: Lambda 365

Application: UV-VIS spectroscopy is an instrumental technique used for chemical analysis. It is used for qualitative as well as quantitative analysis.

Equipment Name: Fourier Transform Infrared Spectroscopy.

Make: Perkin Elmer

Model: Spectrum Two

Application: Spectroscopic Analysis of Solid, liquid, Thin films, Gel, and Powder samples





Equipment Name: Differential scanning calorimetry (DSC)

Make: Perkin Elmer

Model: DSC6000

Applications: Identify the phase transition energy and study related thermal behavior / kinetics of the material under study.

Equipment Name: Hyphenated TG-IR

Make: Perkin Elmer

Model: TGA 8000 coupled to a Frontier FT-IR spectrometer with a TL 8000

Applications: Identify the temperature onset of chemical changes (functional group changes & disappearance) on solid materials (e.g., biomass, coal) can be precisely studied, with 0.1°C accuracy. Hyphenated TG-IR solution facilitates in identification of elements in the sample.



Equipment Name: Bomb Calorimeter

Make: IKA

Model: C5003

Applications: It is used to determine the calorific values of liquid and solid sample.



Equipment Name: Laser Flash Apparatus

Make: NETZSCH

Model: LFA467

Applications: This instrument is used to measure thermal diffusivity and calculation of Thermal conductivity of different materials.

Equipment Name: Contact angle meter

Make: Apex Instruments

Model: ACAM-D3

Applications: Contact angle measurements for thin film or solid with smooth surface. can be estimated to identify the degree of hydrophobicity or hydrophilicity. Surface Tension Measurements using Pendent drop method can also be performed.



Equipment Name: CHNS/O Analyzer

Make: Perkin Elmer

Model: EA 2400 Series-II

Applications: Performing ultimate analysis of a material to determine the percentage of nitrogen, hydrogen, oxygen, carbon, and sulphur in the given sample weight.