

## 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

- + GC-MS
- + Microwave synthesizer
- + Fluorescence Spectrophotometer
- + NMR
- + LC-MS
- + TGA-DTA-DSC
- + UV/VIS/NIR Spectrophotometer

### GC-MS

**Make:** Agilent

**Model:** Agilent\_5975C TAD

**Applications:** GC-MS can be used to study liquid, gaseous or solid samples. GC-MS is a hyphenated analytical technique that combines the separation properties of gas-liquid chromatography with the detection feature of mass spectrometry to identify different substances within a test sample.





### **Microwave Synthesizer**

**Make: CEM Corporation**

**Model: Discover SP**

**Applications:** It is used for performing a wide range of organic and inorganic synthetic chemistry. It significantly reduces synthesis time for both organic and inorganic compounds—in some cases reducing a reaction that would occur over several hours to several minutes. Other benefits include milder reaction conditions, higher chemical yield, and lower energy usage.

### **FLUORESCENCE spectrophotometer**

**Make: Horiba Instruments**

**Model: Fluoromax c+**

**Applications:** A sensitive technique for qualitative and quantitative analysis of fluorophoric systems. The device performed both in steady state and time domain mode.



### **LC-MS**

**Make: Thermo fisher**

**Model: Exactive plus**

**Applications:** Ultra-sensitive qualitative and quantitative analysis of novel synthetic molecules and of molecular traces present in an analyte.



## NMR

**Make:** Bruker

**Model:** Ascend 400 MHz

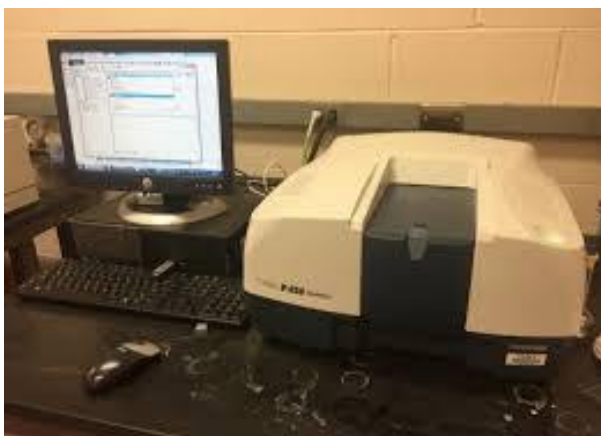
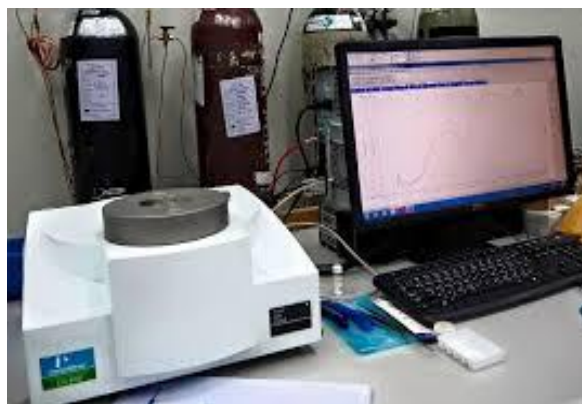
**Applications:** Identification of unknown materials, determination of chemical structures and quantification of components in a mixture and analysis of conformational and molecular dynamics by 1D and 2D NMR.

## TGA-DTA-DSC

**Make:** PerkinElmer

**Model:** STA8000

**Applications:** STA8000 features simultaneous analysis of TGA, DTA & DSC. That is weight change, heat flow and heat differences a sample of interest with a reference sample over a temperature range can be simultaneously measured.



## UV/VIS/NIR Spectrophotometer

**Make:** JASCO

**Model:** V-670

**Applications:** Analytical technique to determine the optical properties (transmittance, reflectance and absorbance) of liquids and solids. It is used to characterize semiconductor materials, coatings, glass and study molecular level interaction. UV/VIS/NIR operates in the optical range between 175 nm to 3300 nm