



## ABOUT SOPHISTICATED INSTRUMENTATION FACILITY

The state-of-the-art research facility at the institute has been pooled under the Sophisticated Instrumentation facility (SIF) to support the research activities of faculties and students. This initiative is to make the resources available under the sharing basis for carrying out the research and consultancy activities. One of the primary objectives of this facility is to promote and strengthen collaborative activities with other institutes and industries. SIF envisages to make use of the facilities at its maximum potential and disseminating the resources available to the smaller institutes and industries.

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### Contact Angle Measurement

- Make: Apex Instruments
- Model: ACAM-D3
- Applications: Measurement of contact angle with water as fluid for thin film or solid with smooth surface
- Testing Charges:

	Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
Contact Angle	150	250	300	450
Tilt Angle	250	350	500	750

### Thermal Cycling Chamber

- Make: CME Bangalore
- Model: PAC-120-A-7K
- Applications: Measurement of Thermal cycling Tests with temperature range between -40°C to 180°C
- Testing Charges:

Temp. Range	Internal User (Rs/ cycle)	External (Academic) (Rs/ cycle)	R&D Lab (Rs/ cycle)	Industry (Rs/ cycle)
-20°C to RT	45	50	90	150
RT to 100°C	40	45	80	120
100 to 160°C	45	50	90	150



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**National Institute of Technology**  
**Tiruchirappalli -620015**



## Differential Scanning Calorimetry (DSC)



- Make: SETARAM
- Model: Setline DSC
- Applications: Measurement of heat flow and Specific Heat Capacity at constant pressure (Cp) from -30°C to 600°C
- Sample type: Solid, Liquid, Powder
- Testing Charges:

Temp. Range	Internal User	External (Academic)	R&D Lab	Industry
-30 °C to RT (Rs/ hr)	650 (min. Rs.540)	790 (min. Rs.790)	1300(min. Rs.1080)	1800(min. Rs.1620)
RT to 600 °C (Rs/ hr)	500(min. Rs.450)	625(min. Rs.625)	1000(min. Rs.900)	1500(min. Rs.1350)

## Trident C-Therm



- Make: C-Therm
- Model: Trident
- Application: Measurement of Thermal Conductivity and Effusivity
- Sample: Powder, Liquid, Metals, Pellets etc.
- Testing Charges:

Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
1000	1300	2000	2600

## UV-Visible Spectroscopy



- Make: PerkinElmer
- Model: LAMDA 365
- Applications: Measurement of Absorbance, % Transmittance, % reflection
- Sample type: Solid, Liquid
- Testing Charges:

Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
100	150	350	700

## Thermo Gravimetric Analysis (TGA)



- Make: SETARAM
- Model: LABSYS EVO
- Applications: Determination of mass changes in mg and wt% with Temperature, Study of Thermal Stability of the material
- Sample type: Solid, Liquid
- Testing Charges:

Temp. Range	Internal User	External (Academic)	R&D Lab	Industry
RT to 1000 °C (Rs/ hr)	Rs.740 (min. Rs. 450, max. 1000)	Rs. 960 (min. Rs. 600, max. 1300)	Rs.1440 (min. Rs. 900, max. 1500)	Rs.3600 (min. Rs. 1350, max. 2000)

## Force Tensiometer



- Make: Biolin Scientific
- Model: T700-Sigma
- Applications: Measurement of Surface Tension, Interfacial Tension, Density of Liquid and Adhesion force
- Sample type: Liquid
- Testing Charges:

Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
300	500	750	1000

## Laser Flash Apparatus



- Make: Netzsch
- Model: LFA 457
- Applications: Measurement of Thermal Diffusivity at various Temperatures
- Testing Charges:

Internal Use (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
1200	1400	2400	3000

## Rheometer



- Make: Anton Paar
- Model: MCR 92
- Applications: It measures
  1. Viscosity as a function of time and Temperature
  2. Shear rate and shear stress
  3. Yield stress measurements
  4. Constant Shear rate (CSR) and Shear stress (CSS)
  5. Shear rate sweep
- Sample type: Liquid
- Testing Charges:

Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
500	650	750	1250

## Fourier Transform Infrared Spectroscopy (FTIR)



- Make: PerkinElmer
- Model: Spectrum Two
- Applications: Structure Determination
- Sample type: Solid, Liquid, powders, Thin films
- Testing Charges:

Internal User (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
150	200	750	1500

## KD2 Pro- Thermal

### Conductivity Analyzer



- Make: Decagon
- Model: KD2 Pro
- Applications: Measurement of Thermal Diffusivity at RT
- Sample type: Liquid
- Testing Charges:

Internal Use (Rs/ sample)	External (Academic) (Rs/ sample)	R&D Lab (Rs/ sample)	Industry (Rs/ sample)
250	350	750	1000