

**FOURIER –TRANSFORM INFRARED SPECTROMETER AND
MICROSCOPE**

Photo of Instrument:



Instrument Name	FOURIER –TRANSFORM INFRARED SPECTROMETER AND MICROSCOPE (FTIR IMAGING)
Instrument Model & Serial No.	UATR Two
Instrument Make	PerkinElmer
Category of Instrument	Characterisation and Testing Facility
Description of Instrument	FTIR spectrometers are analytical instruments used to obtain an infrared spectrum of absorption or emission of a solid and liquid. It can provide information about chemical composition, functional groups, and molecular structure.
Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)	<ol style="list-style-type: none"> 1) Principle of FTIR: FTIR spectroscopy is based on the measurement of the interference pattern created when infrared light passes through a sample. The instrument measures the intensity of the transmitted or reflected light at different wavelengths. 2) Fourier-Transform Technique: The term "Fourier-Transform" in FTIR refers to the mathematical technique used to convert the raw data (interference pattern) into a spectrum. This technique provides advantages in terms of speed and sensitivity compared to older dispersive methods. 3) UATR (Universal Attenuated Total Reflectance): This is a sampling

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	<p>technique used in FTIR spectroscopy. UATR involves pressing the sample against a crystal with high refractive index, allowing for the analysis of solids, liquids, and even semi-solid samples directly.</p>
<p>Application of Instrument (Limited to Major 4 or 5)</p>	<ul style="list-style-type: none"> • Chemistry and biology • Pharmaceuticals • Material science and Environmental science.
<p>Type of Sample Required for Analysis/Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions</p>	<p>Sample can be liquid or solid without water content.</p>
<p>Types of Analysis/Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions</p>	<p>Optical Analysis</p>
<p>Faculty In-Charge Name / Email / Contact</p>	<p>Prof. Shiny Joseph shiny@nitc.ac.in 04952285404</p>
<p>Technical Staff Name / Email / Contact</p>	<p>Muhammed Munaver Muhammedmunaver@nitc.ac.in 04952285484</p>
<p>Location of Instrument</p>	<p>Instrumentation Lab</p>
<p>Other Details</p>	

User Charges

S.NO.	Type of Analysis/Testing	Internal - within Department of NITC	Internal - Other Department s NITC	External Academic Educational Institutes	National Labs	Industry
1	Optical Analysis		200	400	400	800

Slot Booking and Payment Work Flow:

- Discuss the slot availability with the technical staff in the instrumentation lab of chemical engineering department.

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- Collect the request form.
- Payment should be at the accounts section of the institute.
- Get the request form signed from the faculty in charge.
- Submit the request form and samples in the instrumentation lab.