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| **Thermal Constant Analyzer** | **Name of the equipment:** Thermal Constant Analyzer**Make & Model:**Sven Hultins gata 9A & Hot Disk TPS 500 S **I-Stem Registration ID-** **3224904** **Category of Instrument**Characterisation and Testing**Types of Analysis / Testing**Thermal property measurement (Thermal conductivity, Diffusivity and specific heat)**Application:** Material Research & DevelopmentCharacterizing thermal properties of new materials.**Description of Instrument**The Hot Disk Thermal Constant Analyzer is a versatile instrument that uses the transient plane source method to rapidly and accurately measure the thermal conductivity, diffusivity and specific heat capacity of various materials. |

**Booking Details**

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| **Book through I-STEM:** <https://www.istem.gov.in/>**Slot Booking Link**[I-STEM Slot Booking link for External User](https://www.istem.gov.in/equipment-info/24904/Thermal-Conductivity-Apparatus) | **Booking available for**Internal and External Both**Requisition form for** InternalsExternals |

**Contact Details**

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| **Faculty In-charge:** Dr. T. J. Sarvoththama Jothi**Email ID:**tjsjothi@nitc.ac.in**Phone number:**0495 228 6419 | **Technical Staff:** Abhilash Aabhilasha@nitc.ac.inDhaneesh D Cdhaneeshdc@nitc.ac.inAthulkrishna K R athulkrishnakr@nitc.ac.in | **Department**MED**Office Email ID**medoffice@nitc.ac.in**Location**Thermal Science Laboratory, Department of Mechanical Engineering**Lab Phone No**0495-2286449 |

**Features, Working Principle and Specifications**

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| **Features of the equipment*** Transient Plane Source (TPS) Technique for fast, accurate and Non-destruction measurement
* Versatile Material Compatibility
* Small sample size requirement
 | **Unique features/Measurement capabilities, if any*** Simultaneous Measurement of Multiple Thermal properties
* Ability to Measure Anisotropic Materials
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| **Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)*** Thermal Conductivity: 0.03 to 100 W/m-K
* Diffusivity: 0.02 to 50 mm2 /s
* Temperature: With TCU -50oC to 300oC
* Measurement time: 2.5 to 2560 seconds
* Measurement Accuracy better than 5%
 | **Measurement/Sample specifications:** * Sample Type Compatibility: Solids, Liquids, Powders and thin films.
* No strict shape requirement- can be disk, slab, rod.
* Measurements depends on good sensor-sample contact.
* Sample is not damaged or altered after testing
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**Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions**

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| * Quantity: 30ml minimum required for liquid sample. Please supply in a sealed container.
* Sample Type: Solid, Liquid, Powder and thin films
* Pre-preparation: In solid sample, its surface must be flat.
* User instructions: Submit two Identical Pieces (if solid), most test require the sensor to be sandwiched between two identical pieces.
* If the test must be conducted at non-ambient temperature, specify the required temperature.
* Submit a brief description of your material, expected thermal range.
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**User Charges Rs. (GST Extra)**

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| **Test Details** | **Internal** | **External Academic Institutes** | **National R&D Lab** | **Industry** |
| Samples testing for room temperature | Rs.500 | 1000 + 18% GST  | 2000 + 18% GST | 3000 + 18% GST |
| Samples testing for variable temperatures (only solid sample) | Rs.1000 | 2000 + 18% GST  | 3000 + 18% GST | 4000 + 18% GST |