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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 & Development  Characterizing 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**  Internals  Externals |

**Contact Details**

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**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 |
| **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 |

**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. |

**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 |