Department of Mechanical Engineering, NIT Calicut

THERMAL CONDUCTIVITY APPARATUS WITH TEMPERATURE CONTROL UNIT (HOT DISK TPS 500S)

Photo of Instrument:

Instrument Name	Thermal Conductivity Apparatus with Temperature Control Unit (Hot Disk TPS 500S)
Instrument Model & Serial No.	TPS 500S
Instrument Make	Sven Hultins gata 9A
Category of Instrument	Characterization and Testing
Description of Instrument	The Hot Disk TPS 500 S rapidly and accurately measures the Thermal Conductivity and Specific Heat Capacity of a wide range of materials and is therefore an excellent step-in thermal conductivity meter, and uniquely suitable for QC testing. The TPS 500 S can handle bulk sample sizes down to a thickness of a few millimetres, has a Thermal Conductivity range of 0.03 to 200 W/m/K, and its temperature span is from -100 ºC to 300 ºC. It is partly based on ISO 22007-2 and is CE marked.
Instrument Technical Description and Major Specifications (This Specifications Limited to Major 5)	Transient State Method Transient Plane Source Method, utilizing a plane sensor and a special mathematical model describing the heat conductivity, combined with electronics, enables the method to be used to measure Thermal transport Properties
Application of Instrument (Limited to Major 4 or 5)	To find Thermal Conductivity, Thermal Diffusivity and Specific Heat

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Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.) Guidelines for Sample Submission – User Instructions	Solid (5-7 cm* 5-7cm), Thickness >2mm) Liquid Powder
Types of Analysis / Testing	In the Transient plane source method sensor is placed between two halves of the sample to be measured. During the measurement constant electrical current passes through the conducting spiral, increasing the sensor temperature. The heat generated dissipates into the sample on both sides of the sensor at a rate depending on the thermal transport properties of the materials
Faculty In-Charge Name / Email / Contact	Dr. T. J. Sarvoththama Jothi tjsjothi@nitc.ac.in 0495 228 6419
Technical Staff Name / Email / Contact	Abhilash A 9037283029
Location of Instrument	Thermal Science Lab
Other Details	

User Charges:

S.NO.	Type of Analysis / Testing	Internal - within Department of NITC	Internal - Other Departments NITC	External Academic Educational Institutes	National R&D Labs	Industry
1	Rate (Rs) per measurement at room temperature	500	500	1000 + GST	2000 + GST	3000 + GST
2	Rate (Rs) per measurement at room temperature other than room temperature in range of (-30^0 C to 250^0 C)	1000	1000	2000 + GST	3000 + GST	4000 + GST

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Slot Booking and Payment Work Flow: