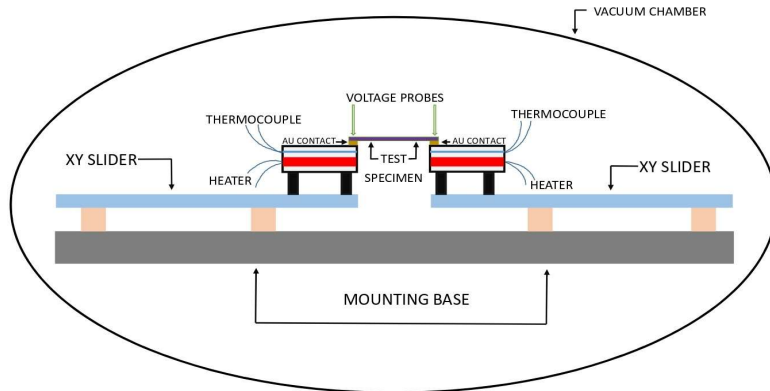


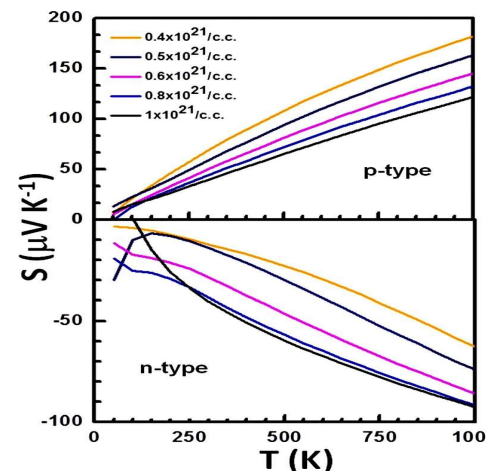
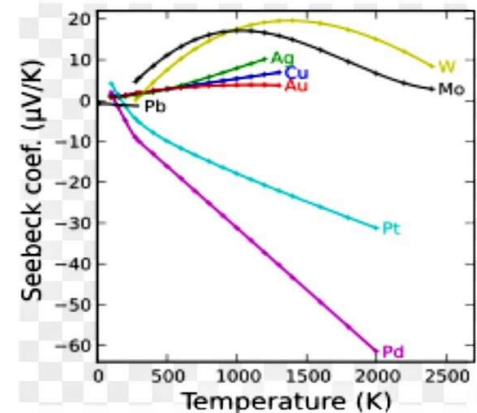
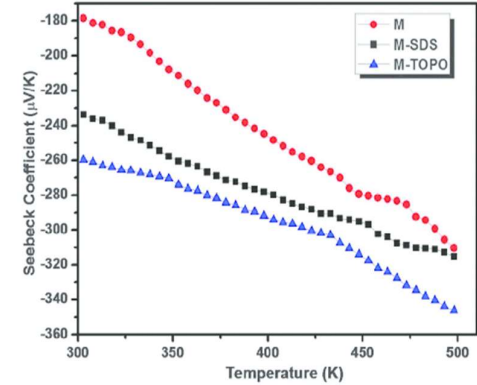
# SEEBECK MEASUREMENT SYSTEM



## ABOUT THE SYSTEM

## MODEL: SM800

The Seebeck measurement system also known as thermopower thermoelectric power, and thermoelectric sensitivity of a material is a measure of the magnitude of an induced thermoelectric voltage in response to a temperature difference across that material, as induced by the Seebeck effect. It is measured in microvolts per kelvin ( $\mu\text{V/K}$ ). The sample is generally rectangular/Cylindrical in shape with a length of approximately 10 to 20 mm. The test is performed under vacuum or in presence of gas to maintain accurate thermal gradient across sample. Standard 6<sup>1/2</sup> Digit Multi meter is used to measure thermoelectric voltage produce by the specimen. The sample can be semiconductor, crystal, and ceramics. Seebeck measurement system is designed and developed by our company and has recognition in India & Abroad. The measurement are performed from LN2 – 773°K with different temperature options. A high resolution Keithley delta mode is also supplied for lower to higher current voltage requirements. Sample Holder are specially designed to suit both bulk & film specimen.

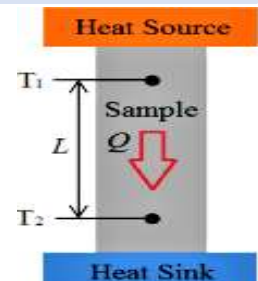


## TESTS PERFORMED IN THIS MODEL

- Seebeck Coefficient vs Temperature
- DC Resistivity Vs Temperature

## SOFTWARE FEATURES

- Representation of data and graphs in automatic scale.
- Online export of data from graph.
- A Highly advance software to show values of Seebeck Coefficient at different Temperature.
- Data in standard ASCII Format exportable to standard software's like excel origin etc.



# SEEBECK MEASUREMENT SYSTEM

## TECHNICAL SPECIFICATION

Seebeck Measurement System	SM800
Measurement Range	0.5 ( $\mu\text{V/K}$ ) to 25,000 ( $\mu\text{V/K}$ ).
Resolution	0.1 ( $\mu\text{V/K}$ )
Electrical Resistance	0.1m $\Omega$ – 100M $\Omega$
Resistance Resolution	0.1m $\Omega$ – 100 $\Omega$
Electrical Conductivity Range	0.05-150000 S/CM
Electrical Conductivity Resolution	0.1%
Principle of Measurement	Steady State DC Method/ Four Terminal
Gradient	1 to 50 $^{\circ}\text{K}$
Gradient Resolution	0.1 $^{\circ}\text{K}$
Stabilisation Cycle	50 to 500 Readings
Temperature Ranges	LN2 – 473 $^{\circ}\text{K}$   RT – 573 $^{\circ}\text{K}$   RT – 773 $^{\circ}\text{K}$
Resolution	0.1 $^{\circ}\text{K}$
Accuracy	1 $^{\circ}\text{K}$
Test Chamber	Specification
Chamber Construction	SS316
Atmosphere	Vacuum/Presence of Gas/Air
Sample Holder Stage	Micro Sliding Stage with DC Heater
Sample Stage Connections	2/4 Probe
Electrode Distance	10 – 25mm
Electrode Material	Au (Gold)
Thermocouple	K Type
Sample Stage Compatibility	Bulk/Thick Film/Flexible Films
Measurement Unit	DMM 6500
DC Current Range   Resolution	10 $\mu\text{A}$ – 10A   10pA – 10 $\mu\text{A}$
DC Voltage Range   Resolution	10mV – 1000V   100nV – 1mV
Resistance Range   Resolution	1 $\Omega$ – 100M $\Omega$   1 $\mu\Omega$ – 100 $\Omega$
Single Stage Vacuum Pump	Mono Block Pump
Flow Rate	3.6m <sup>3</sup> /hour
Power	150W (Single Phase)
Pressure	2 Bar
Test Specimen	Specification
Sample Shape	Rectangular / Cylindrical
Sample Dimension	Length 10 - 20mm / Width 3 – 5mm
Sample Thickness	Thickness 100 $\mu\text{m}$ – 2mm
Optional Items	Standard Accessories
Mounting Rack, LN2 Dewar	Interconnecting Cables, Test Sample, Manual