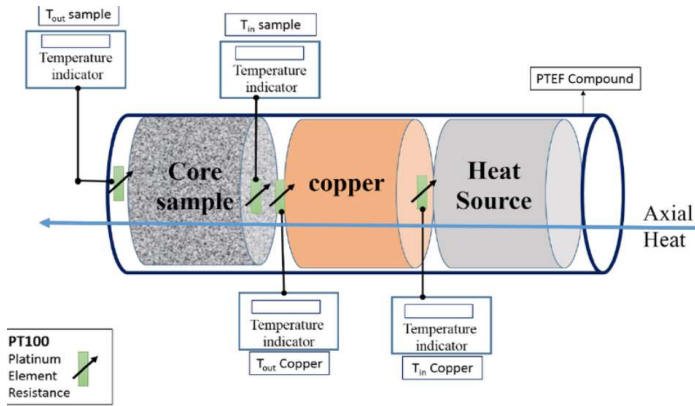


THERMAL CONDUCTIVITY TEST SYSTEM

MODEL TC 800



ABOUT THE SYSTEM

Thermal conductivity and interfacial thermal conductance play crucial roles in the design of engineering systems where temperature and thermal stress are of concerns. To date, a variety of measurement techniques are available for both bulk and thin film solid-state materials with a broad temperature range. For thermal characterization of bulk material, we use Comparative cut bar technique. A standard material with known thermal conductivity is mounted in series with the test sample. It is measured in W/m·K Thermal conductivity test system is designed and developed by our company and has recognition in INDIA. The new system is digital and has PC USB interface. Total operations are performed by highly advanced Thermal conductivity system test software.



MODEL TC 800

Various tests performed by this model

- Thermal conductivity vs temperature

Optional test performed by this model

- Seebeck measurement tests
- Resistivity tests

MARINE INDIA
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THERMAL CONDUCTIVITY TEST SYSTEM

General Specifications

Range of measurement

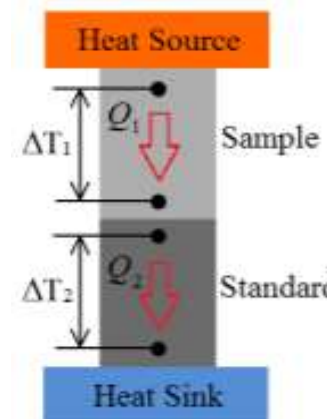
- ~0.01 W/m · K to ~5000 W/m · K
- **Temperature range**
- Main furnace RT – 873-degree kelvin
- Delta T option to choose steps of 1- 25 degree
- Auto balancing temperature algorithm for steady state fine measurement
- No of sensors 4 nos. 2 for each standard and test specimen

Vacuum furnace

- Main furnace is vacuum furnace

Sample Size

- 16*4*2 mm rectangular bar



System Test Specification

- Gradient 1 to 20 degree
- Gradient resolution 0.1 degree
- Stabilisation cycle 50 to 500 readings
- Heating cooling terminology is used
- Four probe microtip thermocouples
- Simultaneous measurement of seebeck and resistivity

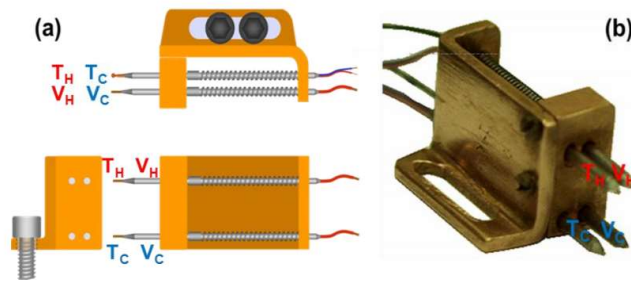
$$k_1 = k_2 \frac{A_2 \Delta T_2 L_1}{A_1 \Delta T_1 L_2}$$

Optional accessories

- Seebeck measurement chamber

- ❖ Note – Some specifications are related with optional test indicated above. Those are valid only when particular option is purchased

THERMAL CONDUCTIVITY TEST SYSTEM



List of Deliverables

- Hot stage thermal conductivity measurement system
- Temperature controller stage
- Thermal conductivity Test Software
- Standard test sample
- Vacuum pump
- Inter connecting cables and manual

List of users

- Delhi University
- IGCAR Kalpakkam
- IIT BHU
- Anna University