

THERMAL CONDUCTIVITY OF INSULATING POWDER (EE-1561)

Insulating Powder Apparatus is designed to determine the thermal conductivity of insulating powder. The Apparatus consists of two thin-walled concentric copper spheres. Inner sphere houses Nichrome Wire heating coil. Insulating powder is filled between the spheres. Heat flows radially outwards. Temperature sensors at proper positions are fitted to measure surface temperatures of spheres. Heat input to the heater is given through a variac and measured by Digital Voltmeter & Digital Ammeter. By varying the heat input rates, wide range of experiments can be Performed.

EXPERIMENTS:

-) Determination of thermal conductivity of insulating powder
-) Comparison of thermal Conductivity of insulating powder at different Temperatures

UTILITIES REQUIRED:

-) Electricity Supply: 1 Phase, 220 V AC, 2 Amp.
-) Table for set-up support

TECHNICAL DETAILS:

-) Inner Sphere : Dia. - 100mm.
-) Outer Sphere : Dia.- 200mm.
-) Heater : Nichrome Wire.
-) Temperature Sensors : RTD PT-100 type (10 Nos.)
-) Control panel : Digital Voltmeter : 0-300 Volt., Digital Ammeter : 0-2 Amp., Variac : 0-230 V, 2 A, Digital Temperature Indicator: 0-3000 C, with multi-channel switch, On off switch, Mains Indicator etc.
-) The whole set-up is mounted on a base plate.

