

IV-E439 Energy Band Gap Of Semiconductor Using Four Probe Method

Scope of Learning:

- Bond Gap of Semiconductor
- Resistivity of Semiconductor

Technical Specification:

Digital Meters:

- Digital Milli Voltmeter 200mV/2000mV
- Digital Milli Ammeter 20mA

Power Supply:

- Constant Current Power Supply 20mA

The experiment consists of the following:

- Four Probe Arrangement
- Oven (up to 200°C)
- Sample: Ge Crystal mounted
- Thermometer (0-200°C)



Four Probe Setup

- Output Brought Out Through 4mm Banana Plugs
- Four Probe Setup:
- Voltmeter Display: 3 1/2 digit, 7 segment LED, auto polarity & decimal indication. Voltage Range: X1(0-200.0mV DC) & X10(0-2.00V DC), Current Display: 3 1/2 digit, 7 segment LED, Current Range: 0-20mA DC, 4mm socket
- Oven Supply: 45V AC (Switch position LOW), 60V AC (Switch position HIGH),
- Oven Connector: 5 pin, DIN type
- Input Voltage: 220V, 50Hz AC
- Fuse: 1A, 250V

Oven:

- Heating Element: 35ohm, 75watt,
- Oven Supply: 45V/60V AC
- Oven Connector: 5 pin, DIN type, Ambient Temperature: 175°C
- Fuse: 2A

