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Hall Effect Experiment Kit

Product Image



Description

The resistivity measurements of semiconductors can not reveal whether one or two types of carriers are present; nor distinguish between them. However, this information can be obtained from Hall Coefficient measurements, which are also basic tools for the determination of carrier density and mobilities in conjunctions with resistivity measurement.

Hall Effect experiment consists of the following:

- 1). Hall Probe (Ge. Crystal Mounted on a PCB).
- 2). Electromagnet 10,000 Gauss.
- 3). Power Supply for Electromagnet.
- 4). Constant Current Power supply with Two Digital Meters.
Digital Millivoltmeter 0-200mV sensitivity $\pm 0.1\text{mV}$. Auto polarity.
Digital milli Ampere-meter 0-20mA , sensitivity $\pm 0.01\text{mA}$.
- 5). Digital Gauss meter with Hall Probe , 20KG.
- 6). Wooden stand for probes.

SPECIFICATIONS :-

(A). Hall Probe:-

Contacts : Phosphor Bronze Adjustable

Hall Voltage : 0.1-1 Volt /100mA/KG

Thickness of Ge Crystal : As per mention on Sample

Resistivity : $\sim 10\text{cm}$

(B). CONSTANT CURRENT POWER SUPPLY FOR HALL PROBE:-

Digital Millivoltmeter : 0-200mV, 0-20mA

Accuracy : 0.1% of the reading 1 digit

Load Regulation : 0.03% for no load to full load.

Impedance : 1 Ohm

Display : 3 ½ digit 7 Segment LED (12.5mm) Height

(C). POWER SUPPLY FOR ELECTROMAGNET :-

Standard Accessories :- 0-6Amp, 60V, High Accuracy, High Stability, Allow full scale long time operation, Voltage and current continuously variable within nominal value current continuously variable.

(D). ELECTROMAGNET :-

Low Cost Electromagnet Made of Soft Iron , Specially design for l Hall Effect and other experiments, mounted on a Wooden Base for Stable performance,

Pole pieces :- 50mm Diameter flat

Field :- 7.5kG 10mm. air-gap

Energising Coils :- Two coils each with total resistance of 9 ohms.

(E). DIGITAL GAUSS METER:-

Range : 0-2 K Gauss & 0-20 K Gauss

Resolution : 1Gauss at 0-2 K Gauss Range

Accuracy : 0.5%

Display : 3 ½ Digit, 7 Segment LED DPM.

Power : 200V , 50Hz

Special : Indicates the direction of the magnetic field.

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Catalog No. 101022

Disclaimer

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