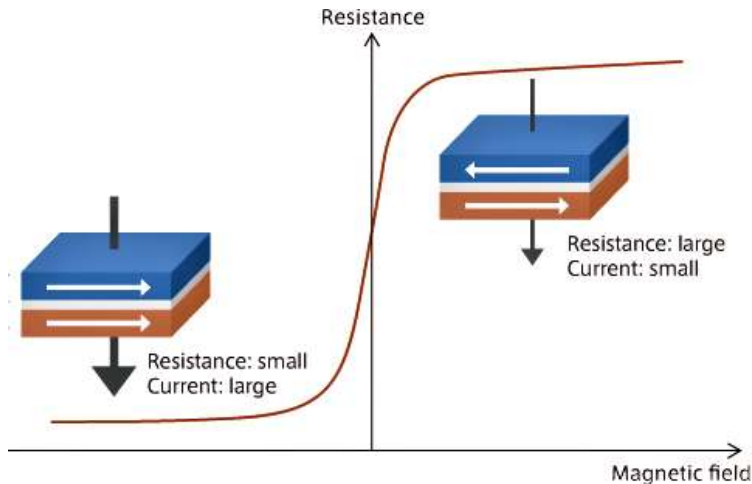
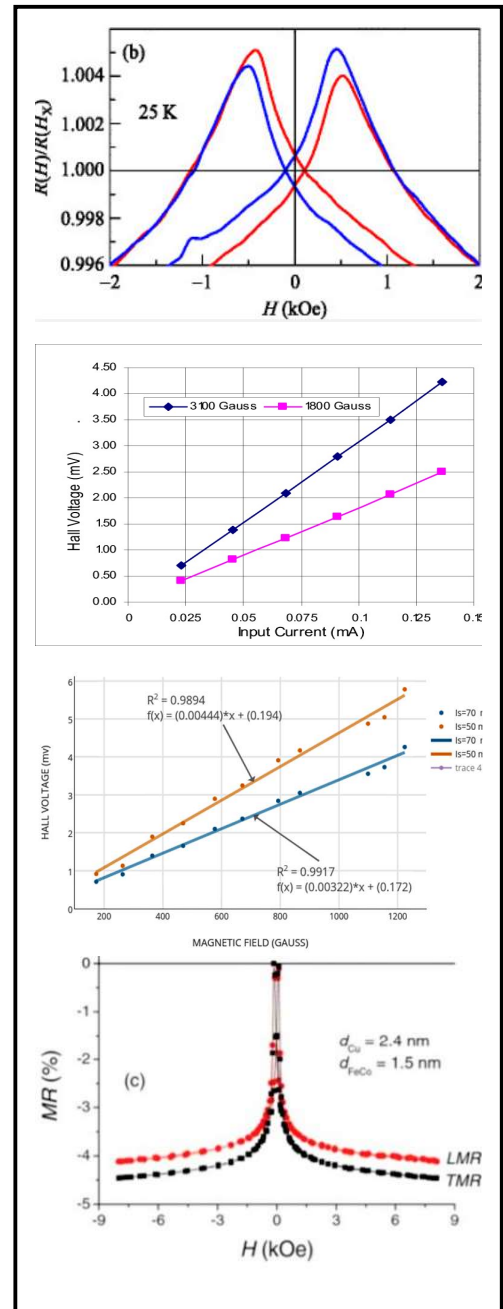


MAGNETO RESISTANCE MEASUREMENT SYSTEM



ABOUT THE SYSTEM

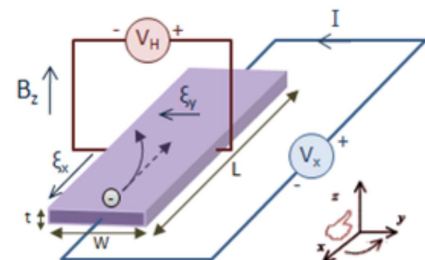
The Magnetoresistance is the tendency of a material preferably ferromagnetic to change the value of its electrical resistance in an externally-applied magnetic field. There is a variety of effects that can be called magneto-resistance. One occurs in bulk non-magnetic metals and semi-conductors, such as geometrical magneto-resistance, or the common positive magneto-resistance in metals. Other effects occur in magnetic, metals, such as negative magneto-resistance in ferromagnets or anisotropic magneto-resistance. Finally, in multi-component or multilayer systems giant magneto-resistance, tunnel magneto resistance colossal magneto-resistance, and extraordinary & extraordinary magneto-resistance can be observed. The MR is designed by our company are most advanced in its specifications and can undertake various tests needed by researchers. The complete system is fully automatic with temperature variation and can go down as low as liquid nitrogen. The system also has option to go beyond room temperature with high temperature options in them same sample holder such as 273K & 573K.



MODEL: MRS818

Various Tests Performed by this Model

- Magneto resistance measurement
- Current vs Voltage at various magnetic field
- Hall voltage vs Magnetic field



MAGNETO RESISTANCE MEASUREMENT SYSTEM

TECHNICAL SPECIFICATION

The Advance MR test software perform important functions of the measurement automatically without any human interventions. Following are highlights of important functions:

- Simultaneous measurement of Magnetic field and Magneto Resistance.
- Automatic measurement of Voltage/ Current and Temperature under varying magnetic field.
- Representation of data and graphs in automatic scale.
- Online math work for different calculations using sample dimensions to calculate MR.
- Data in standard ASCII Format exportable to standard software's like excel origin etc.

Electromagnet	0.8T /1.5T /1.8T
Magnetic Field	Field 0.8/1.5/1.8 Tesla
Field Resolution	10 Gauss in 2 Tesla Range
Measurement	Four Quadrant
Measurement Options	2182A&6220/2450
Voltage Range	10 nV – 100 V/20mV-200V
Resolution	0.1 nV/10nV
Current Range	± 2nA to ±100mA/± 10nA to ±1A
Accuracy	0.04 to 0.1 %/0.012%
Magneto Resistance Range	0.01mΩ - 1TΩ/0.1mΩ – 20GΩ
Measurement	Range 2182A&6220/2450
DC Resistivity	1X10 ⁻⁵ to 1X10 ⁵ Ω cm/ 1X10 ⁻⁴ to 1X10 ⁴ Ω cm
Mobility	1 to 1 10 ⁶ cm ² /v s / 1 to 1 10 ⁶ cm ² /v s
Carrier Concentration Density	8 X 10 ² to 8 X 10 ²³ cm ⁻³
Minimum Current Source	1nA/10nA
Minimum Voltage Source	10nA/100nV
Measurement	Two/Four Probe
Temperature Stage	100RT
Temperature range	96°K – 573°K
Resolution	0.1°K
Accuracy	1°K
Control	PID Controller
Heating Stage	DC Thyristor
Test Specimen	Two/Four Probe
Sample Dimension	8X8 mm
Thickness (Bulk)	0.1mm to 1mm
Thickness (Film)	10µm to 100µm
For detailed specification, please refer to respective brochures	

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