Measurement of: Magnetic properties

Equipment: Physical Property Measurement System (PPMS)

Property Measured: (i) AC/DC magnetization

Photograph: Physical Property Measurement System (PPMS)

Basic Principle:

It is one of the most versatile low temperature scientific laboratory equipment, designed and developed by M/s Quantum Design. It is an open-architecture, variable-temperature field system optimized to perform a variety of automated measurements like magnetic, thermal and electrical transport. The sample environment allows fields of up to ±14 Tesla and standard temperature ranges of 2 to 350 K. The AC/DC magnetization (ACMS) and vibrating sample magnetometer (VSM) is a powerful measurement tool for magnetic characterization, which are very important aspect for scientific communities.

Capabilities:

1. AC/DC Magnetization

(A). AC Measurements (1.9 K – 350 K)
AC Frequency Range: 10 Hz to10 kHz;
AC Field Amplitude Range: 2 mOe to 15 Oe
Sensitivity Range: 2.5 x 10^{-5} emu to 5 emu (2.5 x 10^{-8} Am^2 to 5 x 10^{-3} Am^2)

(B). DC magnetization measurements (1.9 K – 350 K)
AC Susceptibility Measurements: 2 x 10-8 emu (2 x 10^{-11} Am^2 @ 10 kHz)

Sample Requirement: Powder and pellet form samples.