



PDL Hall System

PDL-1000

HIGH-SENSITIVITY PARALLEL DIPOLE LINE HALL MEASUREMENT SYSTEM

AC and DC field Hall measurement methods with permanent magnets, fully integrated instrumentation and software for enhanced research productivity.



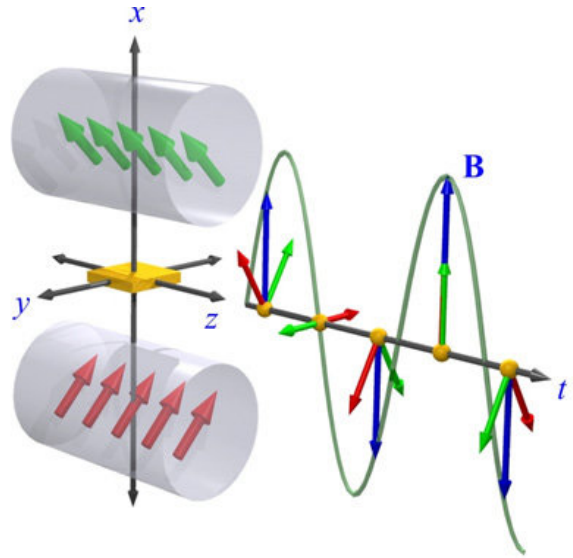
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The PDL Hall system is capable of both AC and DC Hall measurement modes.

The AC field measurement can be used for materials with a mobility not exceeding $0.1 \text{ cm}^2/\text{Vs}$, which is an advantage compared to the DC field measurement mode.

Materials with such attributes are usually semiconductor, photovoltaic or thermoelectric materials.



Operation of the magnets

Features

- High sensitivity (ability to handle mobility of less than $0.1 \text{ cm}^2/\text{Vs}$)
- Large magnetic field (approximately 2 T pk-pk)
- Uniformity ($< 2\%$ standard for 5x5 mm sample)
- Proprietary signal processing and user interface (UI) software
- Compact design
- User-friendly operation
- White light background illumination option
- Gate bias voltage option



Measurement results

Benefits

- Ability to measure a wide range of mobilities, including extremely low mobilities and semi-insulating samples. Capability of both alternating (AC) and traditional static field (DC) Hall measurements.
- Software extracts low Hall signal using software-based lock-in detection (eliminating the need for costly hardware-based lock-in detection).
- Tabletop setup, utilizing rotating Parallel Dipole Line magnets (no bulky electromagnet required).
- No cooling system necessary.
- Software-controlled measurement and automated parameter extraction.
- Simple and robust tabletop system design.

Patents and technology developed by IBM

This material is for information purposes only. Equipment acceptance is based on contracted specifications.



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