

# Hall Effect Measurement System

- Multisample experiments with 4-contact van der Pauw and 6-contact Hall
- Wide range of materials; GaAs, InP, InAs, Si, Ge, SiGe, HgCdTe, GaN, SiC, AlN, metal oxides and organic conductors
- Ideally suited for materials research, product development and quality control
- Sample resistance, resistivity, Hall coefficient, Hall mobility, carrier concentration or current-voltage characteristics
- Windows Operating System for system operation, data acquisition and analysis.



### Suitable for:

GaAs based materials (HEMSTs,pHEMTs,HBTs,FETs,MESFETs), InP, InAs, GaN and AlN, Si, Ge, SiC, HgCdTd, ZnO, SiGe, MnGaAS, ZnO, infrared applications (LED, laser diodes, detectors), metal oxides, organic, inorganic conductors, ferrites etc.

### Measurements Include:

- Mobility measurement
- Charge carrier measurements
- Resistivity measurements
- Van der Pauw measurements
- Hall bar measurements

### Pole Caps:

- Adjustable Pole caps
- 25mm face diameter
- Continuously adjustable 0-130 mm pole gap
- Larger diameter is optional, 50mm, 75mm

### Electromagnet:

- $\pm 2.5T$  @ 10 mm gap with 25mm pole face
- $\pm 35V$ ,  $\pm 70A$  Coils
- Magnetic field  $> \pm 1T$  @ 25mm pole gap
- High magnetic field strength with large pole separation
- Resistance in series coils:  $0.5 \Omega$  ( $20^\circ C$ )
- Water cooled

### Chiller:

- Closed cycle water cooling
- Interlocks to coils over temperature

### NanoMagnetics Gaussmeter:

- Magnetic Field Controlled sweeps using integrated Gaussmeter
- Field calibration with Hall probes
- High sensitivity magnetic field measurement
- Software control of all the parameters

### Sample Holders:

#### Spring Loaded Design Option:

- Van der Pauw measurement design
- Four, Six or Eight contact Hall bar measurement design
- Easy sample mount with spring pin connections
- $? mm \times ? mm$  sample sizes (larger sizes are optional)
- Multiple sample mount

#### Sample soldered/bonded Design Option:

- Van der Pauw measurement design
- Four or Six contact Hall bar measurement design
- Eight contact Hall bar measurement design (optional)
- $mm \times mm$  sample sizes
- Multiple (2 off) sample mount

### Controller & Software

- Keithley Instruments pA/ $\mu V$  sensitivity state of the art SourceMeter
- Layer by Layer Mobility Analysis using our powerfull Software
- C# based fully automated software
- Magnet & System control with USB / IEEE / Ethernet interface
- Temperature control option for RT-HT measurements, 300 - 1,273K
- Field controlled measurements with the Gaussmeter
- Easy visualized set-ups for Van der Pauw and Hall Bar Measurements
- Free update of software for lifetime

