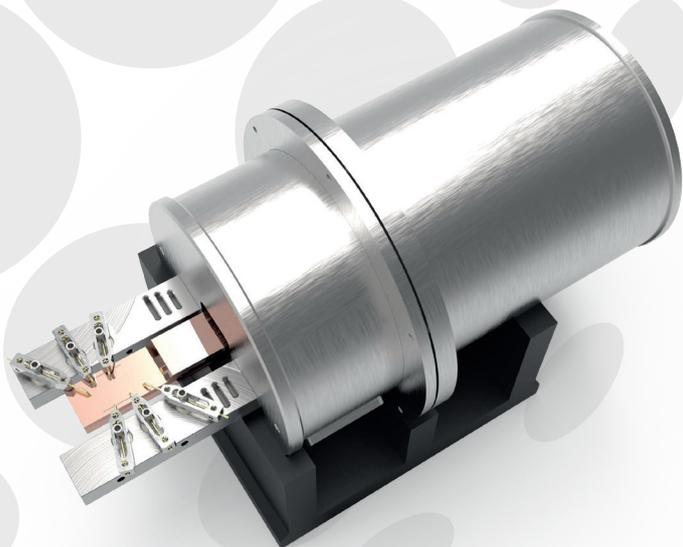


ezHEMS

Hall Effect Measurement System



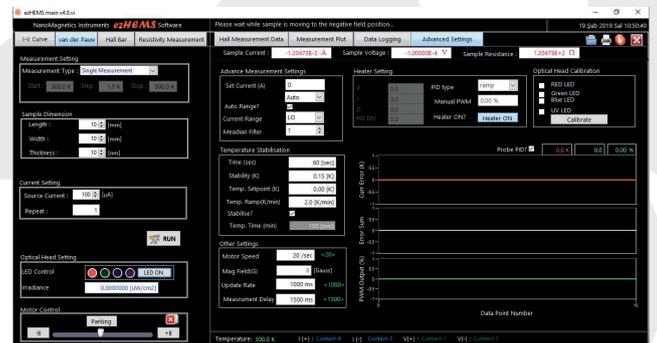
Low Temperature ezHEMS Head
(with Liquid Nitrogen)



4-300K temperature range with
optional cryocooler

Technical Specification

- Resistivity Measurement Range: 10^{-4} to $10^9 \Omega\text{-cm}$ (sample dependent)
- Mobility: 1 to $10^7 \text{cm}^2 / \text{Volt-sec}$ (sample dependent)
- Concentration: 10^7 to 10^{21} per cm^3 (sample dependent)
- Current Source: $\pm 2 \text{ nA}$ to $\pm 20 \text{ mA}$, $\pm 12 \text{ V}$ compliance
- Minimum Hall voltage measurable: $0.10 \mu\text{V}$
- Supports van der Pauw as well as Hall bar shaped samples
- Magnetic Field: 0.6 Tesla or 1 Tesla permanent magnet
- 80-800K ($\pm 5\%$) temperature range with $\pm 0.2\text{K}$ resolution for Low Temperature, $\pm 1\text{K}$ resolution for High Temperature. Entire temperature range in a single system.
- Lower and higher temperature ranges are optional
- Pt-100 resistance thermometer, 750K heater and PID temperature controller
- Computer control through USB interface
- Samples sizes from 5mm x 5mm to 15mm x 15 mm & with thickness < 2mm
- Automated movement of magnets controlled by ezHEMS Control Software



The ezHEMS Measurement System Software Capabilities

- Enables data logging and plotting of different measured quantities; I-V curve, resistance, resistivity, sheet resistance, magnetoresistance, carrier conc., Hall mobility, Hall coefficient etc. as a function of sample temperature
- Provides the measured data in tabular form
- LabVIEW™ drivers