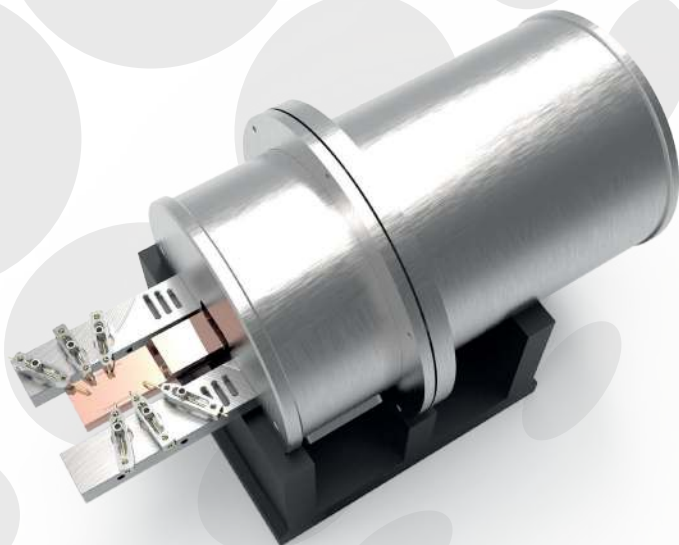


# ezHEMS

## Hall Effect Measurement System

**VASTi**

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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  $\text{cm}^3$  (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:  $0.6 \text{ Tesla}$  or  $1 \text{ Tesla}$  permanent magnet
- $80\text{-}800\text{K}$  ( $\pm 5\%$ ) 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,  $750\text{K}$  heater and PID temperature controller
- Computer control through USB interface
- Samples sizes from  $5\text{mm} \times 5\text{mm}$  to  $15\text{mm} \times 15 \text{mm}$  & with thickness  $< 2\text{mm}$
- 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