ElCA

Electrical Conductivity Analyzer

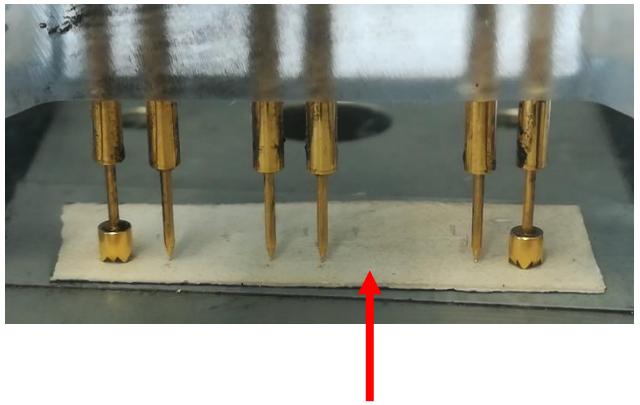
NANOTEST

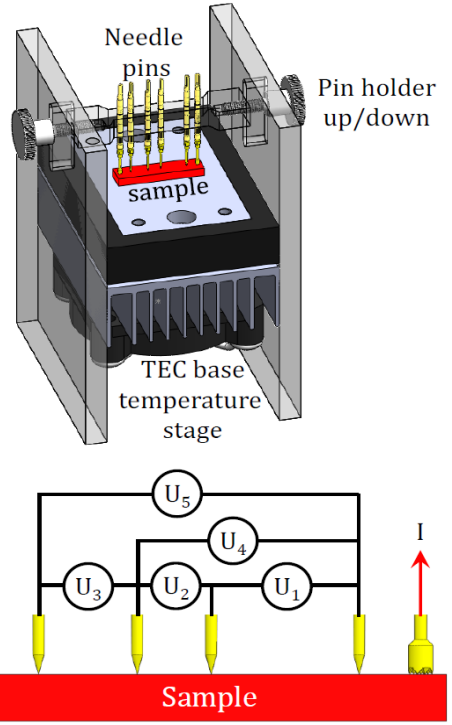
simply measured

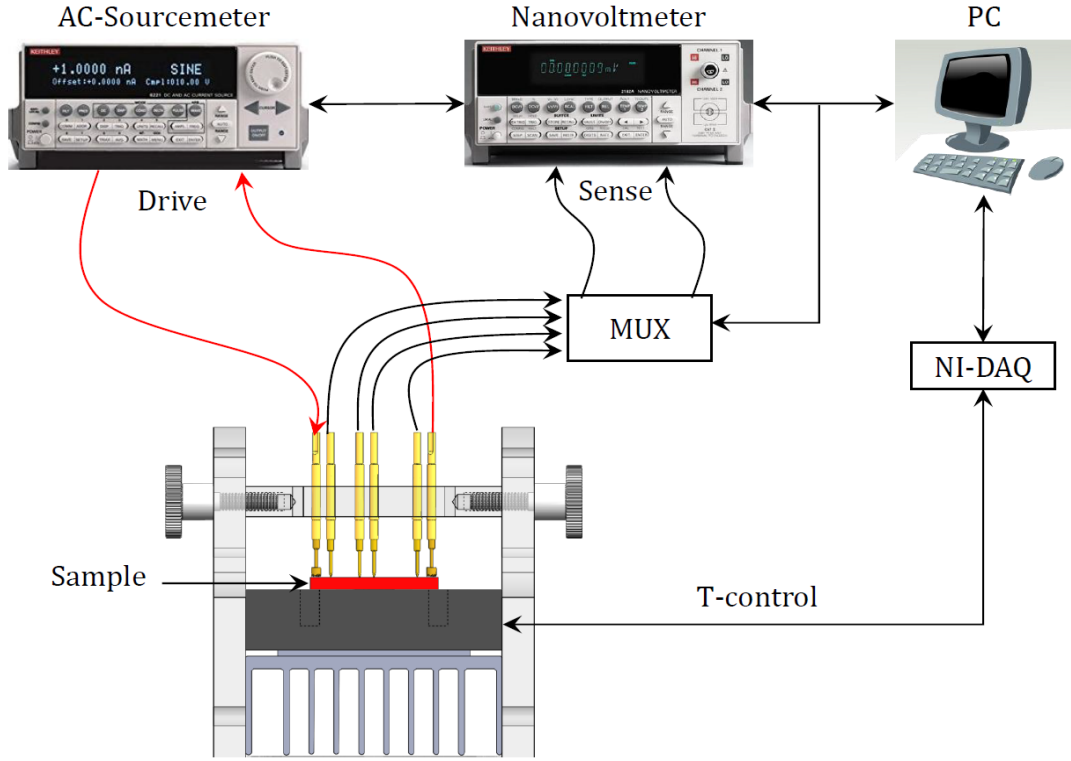
EICA Electrical Conductivity Analyzer

- In-plane electrical conductivity
- Pulse-delta I-V sweep
- Temperature range: 15-125°C
- Max. sample length: 55 mm

Photo:







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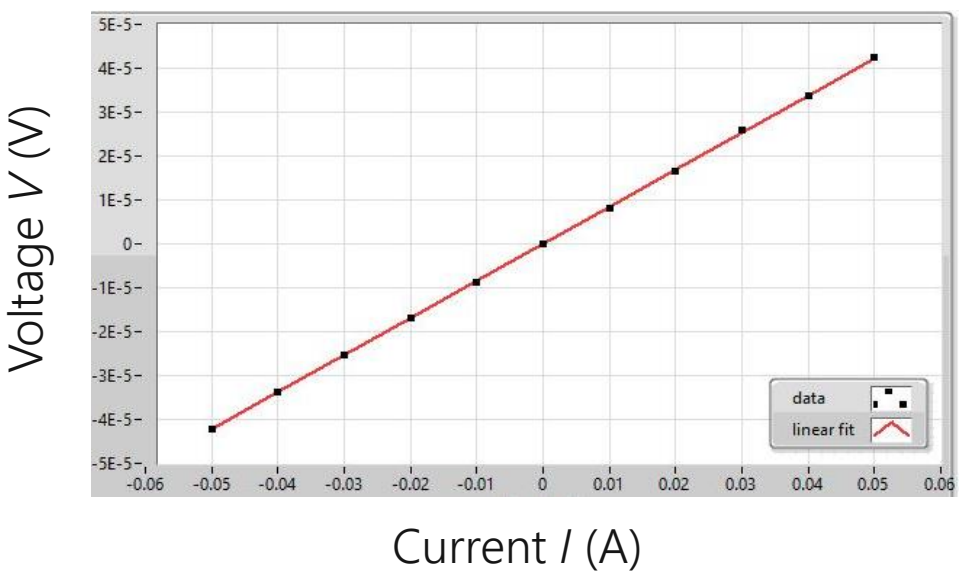

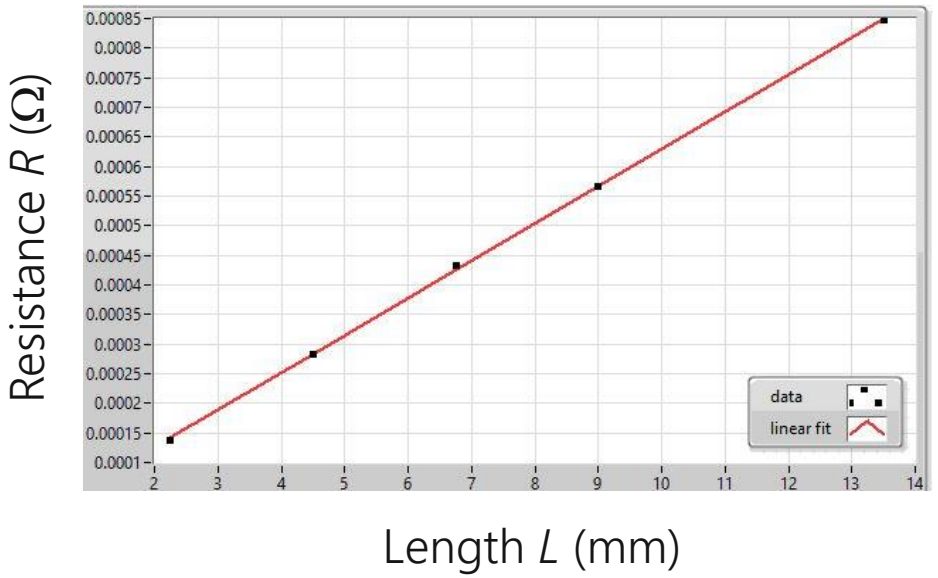

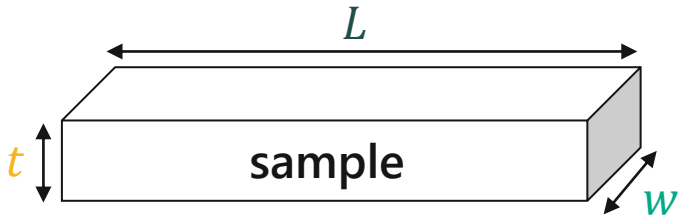

R: Electrical resistance
ρ: Electrical resistivity
σ: Electrical conductivity

$$R = \frac{dV}{dI} = \rho \cdot \frac{L}{t \cdot w}$$

$$\frac{dR}{dL} = \frac{\rho}{t \cdot w}$$

$$\sigma = \frac{1}{\rho} = \left(\frac{dR}{dL} \cdot t \cdot w\right)^{-1}$$

Features

- Straightforward approach
- Feasible for metals
- Conductivity + resistivity
- Temperature dependency

Limits

- In-plane only
- Current source: AC, DC, 2 nA - 100 mA, Constant current and pulse modes
- Nanovoltmeter: 10 mV - 100 V, DC; >10 GΩ Input resistance, min. resolution: 1 nV
- Semiconductors need Ohmic contacts to gold needle probes

Thank you

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