PY2N20
Material Properties and Phase Diagrams
Lecture 12

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Measuring Material Properties 1

- Structural Properties
  - Long Range Order
    - X-ray Diffraction
    - Neutron Diffraction
    - Electron Diffraction
  - Short Range Order
    - X-ray Absorption Fine Structure
    - Scanning Tunneling Microscopy
    - Transmission Electron Microscopy
  - Morphology
    - Scanning Probe Microscopy
    - Scanning Electron/Ion Microscopy
    - Light Scattering
  - Defectoscopy
    - X-ray Tomography
    - Neutron Tomography
    - Incoherent X-ray Scattering
    - Densitometry

Measuring Material Properties 2

- Transport Properties
  - Conductivity
    - The 4-point Method
  - Hall resistivity
    - The Van der Pauw Method
  - Heat conductivity and capacity
    - Differential Calorimetry
  - Diffusivity
    - Isotope Marking
    - Scanning Ion Mass Spectroscopy
- Magnetic Properties
  - Magnetic moment
  - Susceptibility
- Optical Properties
  - Transmission, Absorption and Reflection; Refractive Index
- Acoustic Properties
  - Acoustic Impedance

End of Course

General Questions?