

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Metallurgy and Material Science - NOC:Advanced Material Characterization by Atom Probe Tomography

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Co-ordinating Institute - IISc Bangalore

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

- Lecture 1 - Introduction to the course
- Lecture 2 - History from electrons to field ionisation to field evaporation
- Lecture 3 - Field Ion Microscopy
- Lecture 4 - Basic physics behind Field Ionisation
- Lecture 5 - Field Ion Microscopy Instrumentation
- Lecture 6 - Field Ionisation to Field Evaporation
- Lecture 7 - Field Desorption Microscopy
- Lecture 8 - Atom Probe Tomography: Variables
- Lecture 9 - Instrumentation
- Lecture 10 - Pulsing methods
- Lecture 11 - Photon-assisted Ionisation
- Lecture 12 - Experimental protocols for APT
- Lecture 13 - Experimental protocols for APT
- Lecture 14 - Experimental protocols for APT
- Lecture 15 - Tomographic Reconstruction
- Lecture 16 - Tomographic Reconstruction
- Lecture 17 - Tomographic Reconstruction
- Lecture 18 - Calibration of reconstruction
- Lecture 19 - Common artifacts in reconstruction
- Lecture 20 - Spatial resolution in reconstruction
- Lecture 21 - Electropolishing
- Lecture 22 - Focused Ion Beam (FIB)
- Lecture 23 - Focused Ion Beam (FIB)
- Lecture 24 - Focused Ion Beam (FIB)
- Lecture 25 - Data analysis
- Lecture 26 - Quality of data
- Lecture 27 - Mounting of specimens
- Lecture 28 - Ion milling of specimens
- Lecture 29 - Data analysis

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- Lecture 30 - Specimen loading
- Lecture 31 - Data acquisition
- Lecture 32 - Data analysis
- Lecture 33 - Basics
- Lecture 34 - Basics
- Lecture 35 - Basics
- Lecture 36 - Electron specimen interaction
- Lecture 37 - TEM column cross-section
- Lecture 38 - Electron Diffraction
- Lecture 39 - Diffraction Patterns
- Lecture 40 - Imaging
- Lecture 41 - Defect analysis
- Lecture 42 - Image Formation
- Lecture 43 - Detection of electrons and ECCI
- Lecture 44 - Application to Materials Science
- Lecture 45 - Application to Materials Science
- Lecture 46 - Application to Materials Science