

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

NPTEL Video Course - Mechanical Engineering - NOC:Electron Diffraction and Imaging

Subject Co-ordinator - Prof. Sundararaman M

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - 1D-2D-3D lattice
- Lecture 2 - Stereographic projection - 1
- Lecture 3 - Stereographic Projection - 2
- Lecture 4 - Symmetry in 1-D crystals
- Lecture 5 - Symmetry in 2-D crystals
- Lecture 6 - Symmetry in 3-D crystals
- Lecture 7 - Understanding IUCr tables
- Lecture 8 - Symmetry in 3-D Crystals
- Lecture 9 - Reciprocal lattice
- Lecture 10 - Directions Planes and zone axes
- Lecture 11 - Interplanar distances and angles
- Lecture 12 - Diffraction - 1
- Lecture 13 - Diffraction - 2
- Lecture 14 - Diffraction - Structure and Shape Factor
- Lecture 15 - Transformation of Indices
- Lecture 16 - Microscope - 1
- Lecture 17 - Microscope - 2
- Lecture 18 - Kikuchi Diffraction
- Lecture 19 - Double Diffraction and CBED
- Lecture 20 - CBED and Precession Electron Diffraction
- Lecture 21 - Indexing Diffraction Pattern
- Lecture 22 - Correlation of Diffraction Spots to Microstructure
- Lecture 23 - 3-Index to 4-Index System
- Lecture 24 - Kinematical and Dynamical Theory of Diffraction and Imaging
- Lecture 25 - Contrast from Planar Defects
- Lecture 26 - Contrast from Strain Fields
- Lecture 27 - Atomic Scattering Factor
- Lecture 28 - Coherence
- Lecture 29 - Lens Aberrations

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- Lecture 30 - Phase Contrast Microscopy - 1
- Lecture 31 - Phase Contrast Microscopy - 2
- Lecture 32 - Phase Contrast Microscopy - 3
- Lecture 33 - STEM
- Lecture 34 - ELES and EDS
- Lecture 35 - Recent trends
- Lecture 36 - Energy dispersive Spectroscopy
- Lecture 37 - Revision - 1
- Lecture 38 - Revision - 2
- Lecture 39 - Revision of Recent trends in Microscopy
- Lecture 40 - Crystallography Revision