

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

NPTEL Video Course - Metallurgy and Material Science - NOC:Fundamentals of electronic materials and devices

Subject Co-ordinator - Prof. Parasuraman S

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Electronic Materials
- Lecture 2 - Semiconductors - Introduction
- Lecture 3 - Electron statistics in a solid
- Lecture 4 - Worked numericals on week 1 lessons
- Lecture 5 - Intrinsic semiconductors
- Lecture 6 - Intrinsic semiconductors - conductivity
- Lecture 7 - Optional - worked assignment on intrinsic semiconductors
- Lecture 8 - Extrinsic semiconductors - Introduction
- Lecture 9 - Extrinsic semiconductors - Fermi level
- Lecture 10 - Extrinsic semiconductors - Mobility
- Lecture 11 - Worked assignment on extrinsic semiconductors
- Lecture 12 - Metal-semiconductor junctions
- Lecture 13 - pn junctions in equilibrium
- Lecture 14 - Optional - worked assignment on metal-semiconductor junctions
- Lecture 15 - pn junctions under bias
- Lecture 16 - Junction breakdown and heterojunctions
- Lecture 17 - Worked assignment on pn junctions
- Lecture 18 - Transistors - overview
- Lecture 19 - MOSFETs
- Lecture 20 - Worked assignment on transistors
- Lecture 21 - Optoelectronic devices - Introduction
- Lecture 22 - Light emitting diodes
- Lecture 23 - Solid state semiconductor lasers
- Lecture 24 - Optional - worked assignment on optical properties
- Lecture 25 - Photodetectors
- Lecture 26 - Solar cells
- Lecture 27 - Worked assignment on optoelectronic devices

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