

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

NPTEL Video Course - Electrical Engineering - NOC:Semiconductor Device Modeling and Simulation

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Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Introduction (Continued...)
Lecture 3 - Crystal Concept
Lecture 4 - Crystal Concept
Lecture 5 - Crystal Concept
Lecture 6 - Reciprocal Space
Lecture 7 - Problem Session - 1
Lecture 8 - Doping In Semiconductors
Lecture 9 - Bandstructure
Lecture 10 - Effective Mass
Lecture 11 - Density of States
Lecture 12 - Mobility
Lecture 13 - Problem Session - 2
Lecture 14 - Semiconductor statistics
Lecture 15 - Semiconductor statistics (Continued...)
Lecture 16 - P-N Junction
Lecture 17 - P-N Junction (Continued...)
Lecture 18 - P-N Junction (Continued...)
Lecture 19 - Problem Session - 3
Lecture 20 - BJT
Lecture 21 - Bipolar Junction Transistor
Lecture 22 - Bipolar Junction Transistor (Continued...)
Lecture 23 - Bipolar Junction Transistor (Continued...)
Lecture 24 - Problem Session - 4
Lecture 25 - Metal- Semiconductor Interface
Lecture 26 - Schottky junction
Lecture 27 - Field Effect Transistor
Lecture 28 - MOS Capacitor
Lecture 29 - MOS-CV

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- Lecture 30 - REAL MOS (Continued...)
- Lecture 31 - MOSFET
- Lecture 32 - MOSFET (Continued...)
- Lecture 33 - Problem Session - 5
- Lecture 34 - Semiclassical Transport
- Lecture 35 - Semiclassical Transport (Continued...)
- Lecture 36 - Semiclassical Transport (Continued...)
- Lecture 37 - Semiclassical Transport (Continued...)
- Lecture 38 - Semiclassical Transport (Continued...)
- Lecture 39 - Problem Session - 6
- Lecture 40 - Drift-diffusion model
- Lecture 41 - Drift-diffusion model (Continued...)
- Lecture 42 - Drift-diffusion model (Continued...)
- Lecture 43 - Drift-diffusion model (Continued...)
- Lecture 44 - Generation-Recombination
- Lecture 45 - Generation-Recombination (Continued...)
- Lecture 46 - Solving DD Equations (Continued...)
- Lecture 47 - Solving DD Equations (Continued...)
- Lecture 48 - Problem Session - 7
- Lecture 49 - Hydrodynamic Model
- Lecture 50 - Hydrodynamic Model (Continued...)
- Lecture 51 - Hydrodynamic Model (Continued...)
- Lecture 52 - Monte Carlo simulations
- Lecture 53 - Problem Session - 8
- Lecture 54 - Quantum Mechanics
- Lecture 55 - Solving Schrodinger Equation
- Lecture 56 - Quantum Correction Models
- Lecture 57 - Quantum Transport
- Lecture 58 - Transfer Matrix Approach
- Lecture 59 - TCAD Tools
- Lecture 60 - ATLAS SILVACO
- Lecture 61 - Simulating Junctions
- Lecture 62 - Models and Simulation Concepts
- Lecture 63 - Mixed-mode Simulation