

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

NPTEL Video Course - Electronics and Communication Engineering - High Speed Devices and Circuits

Subject Co-ordinator - Prof. K.N. Bhat

Co-ordinating Institute - IIT - Madras

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

- Lecture 1 - Introduction to Basic concepts
- Lecture 2 - Requirements for high speed circuits, devices and materials
- Lecture 3 - Classification and properties of semiconductor devices
- Lecture 4 - Ternary compound semiconductors and their applications
- Lecture 5 - Ternary compound semiconductors and their applications (Continued.)
- Lecture 6 - Crystal structures in GaAs
- Lecture 7 - Dopants and impurities in GaAs and InP
- Lecture 8 - Brief Overview of GaAs Technology for High Speed Devices
- Lecture 9 - Epitaxial Techniques for GaAs and high speed devices
- Lecture 10 - MBE and LPE for GaAs Epitaxy
- Lecture 11 - GaAs and InP devices for Microelectronics
- Lecture 12 - Metal Semiconductor contacts for MESFET
- Lecture 13 - Metal Semiconductor contacts for MESFET (Continued.)
- Lecture 14 - Metal Semiconductor contacts for MESFET (Continued.)
- Lecture 15 - Ohmic contacts on semiconductors
- Lecture 16 - Fermi level pinning, I V characteristics of Schottky Barrier Diodes
- Lecture 17 - Schottky Barrier Diodes I V characteristics of Non idealities -1
- Lecture 18 - Schottky Barrier Diodes I V characteristics of Non idealities -1
- Lecture 19 - Causes of Non idealities in the Schottky Barrier Diodes (I V characteristics)
- Lecture 20 - MESFET operations and I V characteristics
- Lecture 21 - MESFET I V characteristics Shockley's Model
- Lecture 22 - MESFET Shockley's Model and velocity saturation effect
- Lecture 23 - MESFET velocity saturation effect on drain current saturation
- Lecture 24 - MESFET
- Lecture 25 - MESFET
- Lecture 26 - MESFET
- Lecture 27 - MESFET
- Lecture 28 - MESFET
- Lecture 29 - Self Aligned MESFET SAINT Threshold Voltage and Sub Threshold current

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- Lecture 30 - Hetero junctions
- Lecture 31 - Hetero junctions and high electron Mobility Transistor (HEMT)
- Lecture 32 - Hetero junctions and high electron Mobility Transistor (HEMT) (Continued.)
- Lecture 33 - High Electron Mobility Transistor
- Lecture 34 - HEMT off voltage, I-V characteristics and trans conductance
- Lecture 35 - I-V characteristics and trans conductance and optimization
- Lecture 36 - Indium phosphide based HEMT
- Lecture 37 - Pseudomorphic HEMT and Hetrojunction Bipolar Transistors
- Lecture 38 - Hetero junction Bipolar Transistors (HBT)
- Lecture 39 - Hetero junction Bipolar Transistors (HBT) (Continued.)
- Lecture 40 - Hetero junction Bipolar Transistors (HBT) (Continued.)
- Lecture 41 - Hetero junction Bipolar Transistors (HBT) (Continued.)