

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

NPTEL Video Course - Electrical Engineering - NOC:Introduction to Photonics

Subject Co-ordinator - Prof. Balaji Srinivasan

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Introduction to Photonics
Lecture 2 - Diffraction and Interference
Lecture 3 - Tutorial on Ray Optics and Wave Optics
Lecture 4 - Lab Demonstration
Lecture 5 - Interferometers
Lecture 6 - Coherence
Lecture 7 - Spatial and Temporal Coherence
Lecture 8 - Tutorial on Wave Optics
Lecture 9 - Lab Demonstration
Lecture 10 - Electromagnetic Optics
Lecture 11 - Fiber Optics
Lecture 12 - Photon Properties
Lecture 13 - Lab Demonstration
Lecture 14 - Photon Optics
Lecture 15 - Tutorial on Photon optics
Lecture 16 - Photon interaction - 1
Lecture 17 - Photon interaction - 2
Lecture 18 - Lab Demonstration
Lecture 19 - Optical Amplification
Lecture 20 - Three Level systems
Lecture 21 - Four Level Systems
Lecture 22 - EDFA Introduction
Lecture 23 - EDFA Tutorial
Lecture 24 - Lasers Part - 1
Lecture 25 - Lab Demonstration
Lecture 26 - Lasers part- 2
Lecture 27 - Lasers part- 3
Lecture 28 - Lasers part- 4
Lecture 29 - Lab Demonstration

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- Lecture 30 - Semiconductor light Source and detector - Band structure
- Lecture 31 - Semiconductor light Source and detector - Light emission
- Lecture 32 - Semiconductor light Source and detector LED Characteristics
- Lecture 33 - Lab Demonstration
- Lecture 34 - Semiconductor light Source and detector Laser Characteristics
- Lecture 35 - Semiconductor Detectors - 1
- Lecture 36 - Semiconductor Detectors - 2
- Lecture 37 - Semiconductor Detectors - 3
- Lecture 38 - Lab Demonstration
- Lecture 39 - Semiconductor Detectors - 4
- Lecture 40 - Light manipulation-Mallus' Law
- Lecture 41 - Light manipulation-Birefringence
- Lecture 42 - Light manipulation-Faraday Rotation
- Lecture 43 - Lab Demonstration
- Lecture 44 - Non-linear optics-Pockels effect
- Lecture 45 - Non-linear optics-Kerr Effect
- Lecture 46 - Lab Demonstration
- Lecture 47 - Non-linear optics-stimulated Brillouin scattering
- Lecture 48 - Non-linear optics-stimulated Raman scattering