

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

NPTEL Video Course - Electrical Engineering - NOC:Advanced Neural Science for Engineers

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Co-ordinating Institute - IISc - Bangalore

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

Lecture 1 - Introduction to Biomedical Research
Lecture 2 - Fabricated Biosensors and Systems
Lecture 3 - Lab 1 - Introduction to the Fabrication lab
Lecture 4 - Lab 2 - Cleanroom and Gowning Protocol
Lecture 5 - Developed Systems at a glance
Lecture 6 - Silicon and Silicon Dioxide
Lecture 7 - Piranha Cleaning of Silicon Wafer
Lecture 8 - Polyimide Coating on Silicon Wafer
Lecture 9 - Thermal Oxidation of Silicon and Thickness measurement
Lecture 10 - Fundamental of Physical Vapour Deposition
Lecture 11 - Lab 3 - Lithography: Demonstration
Lecture 12 - Sputtering
Lecture 13 - Basics of Photolithography
Lecture 14 - Lab 4 - E-Beam Evaporation: Demo
Lecture 15 - Photolithography - II
Lecture 16 - Photolithography - III
Lecture 17 - Lab 5 - E-Beam Evaporation: Demo - II
Lecture 18 - Lab 6 - Liftoff Demonstration
Lecture 19 - Lithography Optics - I
Lecture 20 - Soft Lithography - I
Lecture 21 - Soft Lithography - II
Lecture 22 - Lab 7 - Sputtering Demonstration - I
Lecture 23 - Lab 8 - Sputtering Demonstration - II
Lecture 24 - Thin Film Deposition: CVD - I
Lecture 25 - Thin Film Deposition: CVD - II
Lecture 26 - Lithography Optics - II
Lecture 27 - Role of Fabrication in Neural Engineering
Lecture 28 - Micromachining
Lecture 29 - Overview of Experimental Neurophysiology

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- Lecture 30 - Fabrication of Neural Implants
- Lecture 31 - Introduction to Packaging for Neural Systems
- Lecture 32 - Lab 9 - 3D Printing for neural devices
- Lecture 33 - Introduction to Biopotentials
- Lecture 34 - EEG: Introduction, Demonstration and Applications
- Lecture 35 - Neural Implants: Fabrication and Characterization
- Lecture 36 - Design of Wireless Biphasic Pulse Generator
- Lecture 37 - Basics of EEG/ERP Experimental Design
- Lecture 38 - Micromachining and Etching
- Lecture 39 - Epileptic Seizure Detection and Classification
- Lecture 40 - Newborn Hearing Screening - I
- Lecture 41 - Newborn Hearing Screening - II
- Lecture 42 - Applications of EEG/ERP Experimental Design
- Lecture 43 - Flexible MEA for Electrocorticography Signal Acquisition
- Lecture 44 - Flexible biodegradable MEAs
- Lecture 45 - Microneedle Electrode Array
- Lecture 46 - Neurosurgery-based MEA Implantation - I
- Lecture 47 - Neurosurgery-based MEA Implantation - II
- Lecture 48 - Neurosurgery-based MEA Implantation - III
- Lecture 49 - Neurosurgery-based MEA Implantation - IV
- Lecture 50 - Deep Brain Stimulation/Recording for Parkinson's - I
- Lecture 51 - Deep Brain Stimulation/Recording for Parkinson's - II
- Lecture 52 - Computational Neuroscience Fundamentals
- Lecture 53 - Mathematical Analysis in Neural Science
- Lecture 54 - Neuroanatomy for Neural Engineering