NPTEL Video Course - Biotechnology - NOC:Structural Biology

Subject Co-ordinator - Prof. Saugata Hazra

Co-ordinating Institute - IIT - Roorkee

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

Lecture 30 - 2D and 3D NMR Spectroscopy focusing on protein structure
Lecture 31 - Introduction to Spectroscopy
Lecture 32 - UV-Vis and CD spectroscopy
Lecture 33 - Fluorescence Spectroscopy and Green Fluorescence Protein (GFP)
Lecture 34 - Infrared and Raman Spectroscopy for protein
Lecture 35 - Raman Spectroscopy, Raman Microscopy and Raman Crystallography for studying protein
Lecture 36 - Introduction to Microscopy
Lecture 37 - Functioning details of Cryo Electron Microscopy (Cryo EM)
Lecture 38 - Cryo Electron Microscopy: Data Collection and Analysis
Lecture 39 - A concise story of advancement Cryo-EM
Lecture 40 - Protein Data Bank
Lecture 41 - History of Molecular Visualizations of Biological Macromolecules
Lecture 42 - Description of structure related files (.pdb, .mmcif, .mtz, etc.)
Lecture 43 - Demonstration of COOT
Lecture 44 - 3D visualization using Pymol
Lecture 45 - Demonstration of Pymol
Lecture 46 - Why we need MD Simulation
Lecture 47 - Molecular Dynamic Simulation Process - Part I
Lecture 48 - Molecular Dynamic Simulation Process - Part II
Lecture 49 - Molecular Dynamic Simulation Process - Part III
Lecture 50 - Application of Molecular Dynamic Simulation
Lecture 51 - What, How and Which of Protein Engineering
Lecture 52 - How to make logical Protein Engineering: Process of Rational design
Lecture 53 - Success story of Rational Protein designing: Focusing on De Novo Process
Lecture 54 - Designing Protein by mimicking nature: Process of Directed Evolution
Lecture 55 - Achievement, Challenges, and Future direction in the field of Protein Engineering
Lecture 56 - Introduction to Structure Based Drug Discovery (SBDD)
Lecture 57 - Rational Drug Discovery
Lecture 58 - Docking Based Virtual Screening: Progress, Challenges and Future perspective
Lecture 59 - What makes a small molecule an ideal drug: Developing in silico ADMETox Model
Lecture 60 - Structure Based Drug Discovery: Case study and Conclusion