

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

NPTEL Video Course - Physics - NOC:Accelerator Physics

Subject Co-ordinator - Prof. Rajni Pande, Prof. Amalendu Sharma, Prof. Pitamber Singh

Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Why accelerators
- Lecture 2 - Accelerator as a microscope
- Lecture 3 - Charging and Discharging of capacitors
- Lecture 4 - Charging and Discharging of capacitors (Continued...)
- Lecture 5 - Introduction to DC accelerators
- Lecture 6 - Cockcroft Walton Accelerator (1929)
- Lecture 7 - Van-de-Graaff accelerator and Tandem and Pelletron accelerators
- Lecture 8 - Van-de-Graaff accelerator and Tandem and Pelletron accelerators
- Lecture 9 - Voltage measurement and stabilisation
- Lecture 10 - Voltage measurement and stabilisation
- Lecture 11 - Beam energy calibration/measurement
- Lecture 12 - Beam energy calibration/measurement
- Lecture 13 - Beam focussing using electrostatic and magnetic lenses and beam optics
- Lecture 14 - Beam focussing using electrostatic and magnetic lenses and beam optics
- Lecture 15 - Beam focussing using electrostatic and magnetic lenses and beam optics
- Lecture 16 - Ion Sources
- Lecture 17 - Ion Sources
- Lecture 18 - Introduction and Basic concepts of linear accelerators
- Lecture 19 - Introduction and Basic concepts of linear accelerators
- Lecture 20 - RF Acceleration - 1
- Lecture 21 - RF Acceleration - 1
- Lecture 22 - RF Acceleration - 2
- Lecture 23 - RF Acceleration - 2
- Lecture 24 - RF Acceleration - 3 - Waveguides and cavities
- Lecture 25 - RF Acceleration - 3 - Waveguides and cavities
- Lecture 26 - Accelerating structures - Pillbox cavity and DTL
- Lecture 27 - Accelerating structures - Pillbox cavity and DTL
- Lecture 28 - Accelerating structures - Travelling wave linacs and periodic accelerating structures
- Lecture 29 - Accelerating structures - Travelling wave linacs and periodic accelerating structures

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

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- Lecture 30 - Superconducting cavities
- Lecture 31 - Superconducting cavities
- Lecture 32 - Transverse Dynamics - 1
- Lecture 33 - Transverse Dynamics - 1
- Lecture 34 - Transverse Dynamics - 2
- Lecture 35 - Transverse Dynamics - 2
- Lecture 36 - Transverse Dynamics - 3
- Lecture 37 - Transverse Dynamics - 3
- Lecture 38 - Longitudinal Dynamics - 1
- Lecture 39 - Longitudinal Dynamics - 1
- Lecture 40 - Longitudinal Dynamics - 2
- Lecture 41 - Longitudinal Dynamics - 2
- Lecture 42 - Radio Frequency Quadrupole
- Lecture 43 - Radio Frequency Quadrupole
- Lecture 44 - Cyclic accelerators: Some basic principles
- Lecture 45 - Cyclic accelerators: Some basic principles
- Lecture 46 - About the cyclotron
- Lecture 47 - About the cyclotron
- Lecture 48 - Microtron
- Lecture 49 - Equation of motion, Focusing
- Lecture 50 - Equation of motion, Focusing
- Lecture 51 - Strong focusing, Edge focusing, AG principle
- Lecture 52 - Strong focusing, Edge focusing, AG principle
- Lecture 53 - Matrix methods
- Lecture 54 - Matrix methods
- Lecture 55 - Hill's equation and parameterization - 1
- Lecture 56 - Hill's equation and parameterization - 1
- Lecture 57 - Hill's equation and parameterization - 2
- Lecture 58 - Hill's equation and parameterization - 2
- Lecture 59 - Hill's equation and parameterization - 3
- Lecture 60 - Hill's equation and parameterization - 3
- Lecture 61
- Lecture 62
- Lecture 63
- Lecture 64
- Lecture 65
- Lecture 66
- Lecture 67 - Proton synchrotron for spallation source
- Lecture 68 - Proton synchrotron for spallation source

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

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Lecture 69 - Colliders

Lecture 70 - Colliders

Lecture 71 - Laser Plasma accelerators and Accelerator Driven Systems (ADS)

Lecture 72 - Laser Plasma accelerators and Accelerator Driven Systems (ADS)