

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

NPTEL Video Course - Chemical Engineering - Fundamentals of Transport Processes

Subject Co-ordinator - Prof. V. Kumaran

Co-ordinating Institute - IISc - Bangalore

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

- Lecture 1 - Introduction
- Lecture 2 - Dimensional Analysis
- Lecture 3 - Dimensional Analysis (Continued...)
- Lecture 4 - Dimensionless Groups
- Lecture 5 - Continuum description
- Lecture 6 - Mechanisms of diffusion - I
- Lecture 7 - Mechanisms of diffusion - II
- Lecture 8 - Unidirectional Transport Cartesian Coordinates - I
- Lecture 9 - Unidirectional Transport Cartesian Coordinates - II Similarity Solutions
- Lecture 10 - Unidirectional Transport Cartesian Coordinates - III Similarity Solutions
- Lecture 11 - Unidirectional Transport Cartesian Coordinates - IV Separation of Variables
- Lecture 12 - Unidirectional Transport Cartesian Coordinates - V Separation of Variables
- Lecture 13 - Unidirectional Transport Cartesian Coordinates - VI Oscillatory Flows
- Lecture 14 - Unidirectional Transport Cartesian Coordinates - VII Momentum Source in the Flow
- Lecture 15 - Unidirectional Transport Cartesian Coordinates - VIII Heat & Mass Sources
- Lecture 16 - Unidirectional Transport Cylindrical Coordinates - I Conservation Equations
- Lecture 17 - Unidirectional Transport Cylindrical Coordinates - II Similarity Solutions
- Lecture 18 - Unidirectional Transport Cylindrical Coordinates - III Separation of Variables
- Lecture 19 - Unidirectional Transport Cylindrical Coordinates - IV Steady flow in a pipe
- Lecture 20 - Unidirectional Transport Cylindrical Coordinates - V Oscillatory flow in a pipe
- Lecture 21 - Unidirectional Transport Cylindrical Coordinates - VI Oscillatory flow in a pipe Regular Perturbation
- Lecture 22 - Unidirectional Transport Cylindrical Coordinates - VII Oscillatory flow in a pipe Singular Perturbation
- Lecture 23 - Unidirectional Transport Spherical Coordinates - I Balance Equation
- Lecture 24 - Unidirectional Transport Spherical Coordinates - II Separation of Variables
- Lecture 25 - Mass & Energy Conservation Cartesian Coordinates
- Lecture 26 - Mass & Energy Conservation Cartesian Coordinates Heat Conduction in a Cube
- Lecture 27 - Mass & Energy Conservation Spherical Coordinates Balance Laws
- Lecture 28 - Mass & Energy Conservation Cylindrical Coordinates
- Lecture 29 - Diffusion Equation Spherical Co-ordinates Separation of Variables

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- Lecture 30 - Diffusion Equation Spherical Co-ordinates Seperation of Variables (Continued...)
- Lecture 31 - Diffusion Equation Spherical Co-ordinates Effective Conductivity of a Composite
- Lecture 32 - Diffusion Equation Spherical Harmonics
- Lecture 33 - Diffusion Equation Delta Functions
- Lecture 34 - Diffusion Equation Multipole Expansions
- Lecture 35 - Diffusion Equation Greens Function Formulations
- Lecture 36 - High Peclet Number Transport Flow Past a Flat Plate
- Lecture 37 - High Peclet Number Transport Heat Transfer from a Spherical Particle - I
- Lecture 38 - High Peclet Number Transport Heat Transfer from a Spherical Particle - II
- Lecture 39 - High Peclet Number Transport Heat Transfer from a Gas Bubble
- Lecture 40 - Summary