

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

NPTEL Video Course - Chemical Engineering - NOC:Adsorption Science and Technology: Fundamentals and Applications

Subject Co-ordinator - Prof. Sourav Mondal

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Background of Adsorption

Lecture 2 - Adsorbents

Lecture 3 - Key Features of Adsorption, Thermodynamic Background

Lecture 4 - Adsorption Isotherm

Lecture 5 - Langmuir Isotherm

Lecture 6 - Multicomponent Langmuir and Other Isotherms

Lecture 7 - Other Important Isotherms (Continued...)

Lecture 8 - Equilibrium Modelling - I

Lecture 9 - Equilibrium Modelling - II

Lecture 10 - Adsorption Kinetics

Lecture 11 - BET Analysis

Lecture 12 - Gas Sorption

Lecture 13 - Surface Area Calculations

Lecture 14 - Pore Size Analysis

Lecture 15 - Limitations of BET Analysis

Lecture 16 - Adsorption and Diffusion Models

Lecture 17 - Film Diffusion

Lecture 18 - Linear Driving Force Model

Lecture 19 - Intraparticle Adsorption Diffusion Model

Lecture 20 - Slurry Adsorption

Lecture 21 - Fixed Bed Adsorption

Lecture 22 - Mass Transfer Zone Modelling

Lecture 23 - Fixed Bed Design: Thomas Model

Lecture 24 - Fixed Bed Design: Adams-Bohart and Other Models

Lecture 25 - Fixed Bed Design: Constant Pattern Behaviour

Lecture 26 - Fixed Bed Design: Multi-Scale Model

Lecture 27 - Fixed Bed Adsorption: Illustrative Problems

Lecture 28 - Introduction to Pressure Swing Adsorption (PSA)

Lecture 29 - Modelling PSA Systems

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- Lecture 30 - Design of Medical Grade Oxygen Concentrator
- Lecture 31 - Introduction to Chromatography
- Lecture 32 - Chromatography: Principles
- Lecture 33 - Column Chromatography
- Lecture 34 - Chromatography: Illustrative Problems 1
- Lecture 35 - Chromatography: Illustrative Problems 2
- Lecture 36 - Ion Exchange: Principles
- Lecture 37 - Ion Exchange Adsorbents
- Lecture 38 - Ion Exchange: Illustrative Problem
- Lecture 39 - Ion Exchange Cycle
- Lecture 40 - Ion Exchange Cycle: Illustrative Problem