

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

NPTEL Video Course - Chemical Engineering - NOC:Chemical Reaction Engineering-II

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Co-ordinating Institute - IIT - Bombay

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

Lecture 1 - Introduction
Lecture 2 - Introduction to catalysis and catalytic processes
Lecture 3 - Catalyst properties and classification
Lecture 4 - Steps in catalysis
Lecture 5 - Adsorption isotherm
Lecture 6 - Surface reaction
Lecture 7 - Rate controlling steps and Rate law
Lecture 8 - Rate law
Lecture 9 - Heterogeneous data analysis for reactor design - I
Lecture 10 - Heterogeneous data analysis for reactor design - II
Lecture 11 - Design of reactors
Lecture 12 - Case study
Lecture 13 - Catalyst deactivation - I
Lecture 14 - Catalyst deactivation - II
Lecture 15 - Catalyst deactivation - III
Lecture 16 - Catalyst deactivation - IV
Lecture 17 - Diffusional effects
Lecture 18 - Internal diffusion effects
Lecture 19 - Non-dimensionalization
Lecture 20 - Concentration profile
Lecture 21 - Internal effectiveness factor - I
Lecture 22 - Internal effectiveness factor - II
Lecture 23 - Internal effectiveness factor - III
Lecture 24 - Falsification of kinetics
Lecture 25 - External mass transport limitations
Lecture 26 - Estimation of mass transfer coefficient
Lecture 27 - Mass transfer to a single particle with reaction
Lecture 28 - Packed-bed reactor design
Lecture 29 - Mass transfer coefficient in Packed-beds

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- Lecture 30 - Estimation of conversion in Packed-bed reactor
- Lecture 31 - Overall effectiveness factor - I
- Lecture 32 - Overall effectiveness factor - II
- Lecture 33 - Identification of internal diffusion and reaction-limited regimes
- Lecture 34 - Packed-bed reactor design
- Lecture 35 - Generalized criterion for diffusion and reaction-limited conditions
- Lecture 36 - Network of first order reactions
- Lecture 37 - Use of experimental data
- Lecture 38 - Packed-bed reactor design
- Lecture 39 - Fluidized bed reactor design - I
- Lecture 40 - Fluidized bed reactor design - II
- Lecture 41 - Fluidized bed reactor design - III
- Lecture 42 - Fluidized bed reactor design - IV
- Lecture 43 - Fluid-solid noncatalytic reactions - I
- Lecture 44 - Fluid-solid noncatalytic reactions - II
- Lecture 45 - Fluid-solid noncatalytic reactions - III
- Lecture 46 - Fluid-solid noncatalytic reactions - IV
- Lecture 47 - Fluid-solid noncatalytic reactions - V
- Lecture 48 - Fluid-solid noncatalytic reactions - VI
- Lecture 49 - Residence time distribution (RTD)
- Lecture 50 - RTD
- Lecture 51 - Measurement of RTD - I
- Lecture 52 - Measurement of RTD - II
- Lecture 53 - RTD function
- Lecture 54 - Properties of RTD function
- Lecture 55 - Reactor diagnostics and troubleshooting - I
- Lecture 56 - Reactor diagnostics and troubleshooting - II
- Lecture 57 - Modeling nonideal reactors - I
- Lecture 58 - Modeling nonideal reactors - II
- Lecture 59 - Non-ideal reactors
- Lecture 60 - Non-ideal reactors