

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

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

Subject Co-ordinator - Dr. B. Mandal

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Introduction and Overview on Reaction Engineering
Lecture 2 - Kinetics of Homogeneous Reactions
Lecture 3 - Kinetic Model and Temperature Dependency
Lecture 4 - Introduction and Stoichiometry for the Batch System
Lecture 5 - Stoichiometry for Constant Volume Flow and Variable Volume Batch Systems
Lecture 6 - Stoichiometry for Variable Volume Flow System
Lecture 7 - Analysis of Batch Reactor Kinetic Data
Lecture 8 - Integral Method of Analysis of Batch Reactor Data - Part 1
Lecture 9 - Integral Method of Analysis of Batch Reactor Data - Part 2
Lecture 10 - Differential Method of Analysis and Variable Volume Batch Reactor Data
Lecture 11 - Introduction and Ideal Batch Reactor Design
Lecture 12 - Ideal Mixed Flow Reactor Design
Lecture 13 - Ideal Plug Flow Reactor Design
Lecture 14 - Size Comparison of Single and Multiple Reactors
Lecture 15 - Size Comparison Multiple Reactors
Lecture 16 - Recycle and Autocatalytic Reactors
Lecture 17 - Design for Parallel Reactions
Lecture 18 - Design for Series Reactions
Lecture 19 - Design for Series-Parallel Reactions
Lecture 20 - Denbigh Reactions and Their Special Cases
Lecture 21 - Heats of Reaction and Equilibrium Conversion from Thermodynamics
Lecture 22 - General Graphical Reactor Design Procedure
Lecture 23 - Material and Energy Balances in Batch Reactor
Lecture 24 - Optimum Temperature Progression in Batch Reactor
Lecture 25 - Material and Energy Balances in Plug Flow and Mixed Flow Reactors
Lecture 26 - Ideal and Non-Ideal Mixed Flow Reactor Design and Multiple Steady States
Lecture 27 - Non-Ideal Reactors and Residence Time Distribution
Lecture 28 - RTD Measurement and Moments of RTD
Lecture 29 - RTD in Ideal Reactors

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Lecture 30 - Reactor Modeling using the RTD