NPTEL Video Course - Chemical Engineering - NOC:Chemical Process Intensification

Subject Co-ordinator - Dr. S.K. Majumder

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - History, Philosophy and Concept
Lecture 2 - Principle Features
Lecture 3 - Strategies and domain based techniques
Lecture 4 - Intensification by fluid flow process
Lecture 5 - Mechanism of Intensification by mixing
Lecture 6 - Intensification in Reactive system
Lecture 7 - Problems leading to sustainable development
Lecture 8 - Concept, Issues and Challenges
Lecture 9 - Strategies in process design
Lecture 10 - Scales and stages of process intensification
Lecture 11 - Methods and Tools for Achieving sustainable design
Lecture 12 - Multi-level Computer aided tools
Lecture 13 - Introduction on Stochastic Optimization
Lecture 14 - Optimization Algorithms
Lecture 15 - Applications of Optimization Algorithms
Lecture 16 - Introduction and Mechanism of Cavitation-based PI
Lecture 17 - Cavitational Reactor Configurations and activity
Lecture 18 - Parametric effects on cavitation
Lecture 19 - Introduction of monolith reactor
Lecture 20 - Preparation of monolithic catalyst
Lecture 21 - Application of monolithic catalyst
Lecture 22 - Hydrodynamics, transport of monolithic reactor
Lecture 23 - Overview of interfacial area based processes
Lecture 24 - Ejector induced downflow system for PI
Lecture 25 - Hydrodynamics and transport in downflow system
Lecture 26 - Introduction and Principles
Lecture 27 - Types of Intensified Distillation Units
Lecture 28 - Design of membrane-assisted distillation
Lecture 29 - Introduction and Principles

Lecture 30 - Supercritical extraction for process intensification
Lecture 31 - Introduction to membrane and its principles
Lecture 32 - Membrane engineering in process intensification
Lecture 33 - Introduction to microprocess technology
Lecture 34 - Process Intensification by Microreactors
Lecture 35 - Hydrodynamics and transport in microchannel based microreactor