

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

NPTEL Video Course - Chemical Engineering - NOC:Phase Equilibrium Thermodynamics

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Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Introduction (Continued...)
Lecture 3 - First Law of Thermodynamics
Lecture 4 - Second Law of Thermodynamics
Lecture 5 - Second Law of Thermodynamics (Continued...)
Lecture 6 - Entropy Change during Spontaneous Processes
Lecture 7 - Criteria of Spontaneity
Lecture 8 - Criteria of Spontaneity (Continued...)
Lecture 9 - Thermodynamic Network
Lecture 10 - Thermodynamic Network (Continued...)
Lecture 11 - Tutorial 1
Lecture 12 - Gibbs free energy as a function of temperature and pressure
Lecture 13 - P-v-T behaviour of gases
Lecture 14 - P-v-T behaviour (Continued...)
Lecture 15 - P-v-T behaviour (Continued...)
Lecture 16 - P-v-T behaviour (Continued...)
Lecture 17 - Tutorial 2
Lecture 18 - Property estimation from P-v-T behaviour
Lecture 19 - Property estimation (Continued...)
Lecture 20 - Concept of chemical potential
Lecture 21 - Chemical potential (Continued...)
Lecture 22 - Homogeneous open systems
Lecture 23 - Homogeneous open systems (Continued...)
Lecture 24 - Heterogeneous Closed Systems
Lecture 25 - Tutorial 3
Lecture 26 - Concept of fugacity
Lecture 27 - Fugacity (Continued...)
Lecture 28 - Estimation of fugacity coefficients
Lecture 29 - Fugacity of condensed phase

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Lecture 30 - Mixtures
Lecture 31 - Mixtures (Continued...)
Lecture 32 - Tutorial 4
Lecture 33 - Partial molar properties
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Lecture 35 - Partial molar fugacity
Lecture 36 - Ideal solutions
Lecture 37 - Ideal solutions (Continued...)
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Lecture 41 - Non-ideal solutions (Continued...)
Lecture 42 - Non-ideal solutions (Continued...)
Lecture 43 - Non-ideal solutions (Continued...)
Lecture 44 - Non-ideal solutions (Continued...)
Lecture 45 - Deviations from ideal dilute solutions
Lecture 46 - Tutorial 5
Lecture 47 - Tutorial 6
Lecture 48 - Thermodynamics Consistency Test of VLE Data
Lecture 49 - Retrograde Condensation
Lecture 50 - Partial and Complete Immiscibility of Liquid Mixtures
Lecture 51 - Partial and Complete Immiscibility of Liquid Mixtures (Continued...)
Lecture 52 - Phase Equilibrium for Mass Transfer Processes
Lecture 53 - Control Mass Analysis of Transient process
Lecture 54 - Control Volume Analysis
Lecture 55 - Throttling and problem
Lecture 56 - Tutorial 7
Lecture 57 - First Law for reacting systems
Lecture 58 - Estimation of standard heat of reaction
Lecture 59 - Effect of operating variables on heat of reaction
Lecture 60 - Chemical Reaction Equilibrium
Lecture 61 - Equilibrium constant and its estimation
Lecture 62 - Relation of Equilibrium constant to composition
Lecture 63 - Effect of operating conditions on equilibrium conversion
Lecture 64 - Relation of Equilibrium constant to composition (Continued...)
Lecture 65 - Miscellaneous concepts on Reaction Equilibrium