NPTEL Video Course - Chemical Engineering - NOC:Thermodynamics Of Fluid Phase Equilibria

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Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Review - 1
Lecture 2 - Review - Temperature and Pressure
Lecture 3 - Review - Energy Conservation
Lecture 4 - Properties - Part 1
Lecture 5 - Properties - Part 2
Lecture 6 - Mass-energy analysis of open system
Lecture 7 - Energy analysis of closed system
Lecture 8 - The Second Law of Thermodynamics
Lecture 9 - Entropy
Lecture 10 - Thermodynamic Calculus - 1
Lecture 11 - Thermodynamic Calculus - 2
Lecture 12 - Thermodynamic Calculus - 3
Lecture 13 - Thermodynamic Calculus - 4
Lecture 14 - Legendre Transformation and Free-energy
Lecture 15 - Criteria for phase equilibria
Lecture 16 - Maxwell Relation
Lecture 17 - Stability Criteria
Lecture 18 - Thermodynamics of phase equilibrium
Lecture 19 - Chemical potential and fugacity
Lecture 20 - General discussion on fugacity
Lecture 21 - Ideal Gas Mixture - Part 1
Lecture 22 - Ideal Gas Mixture - Part 2
Lecture 23 - Partial Molar Properties
Lecture 24 - Partial Molar Properties from experimental data
Lecture 25 - Thermodynamics properties from volumetric data - 1
Lecture 26 - Thermodynamics properties from volumetric data - 2
Lecture 27 - Fugacity of pure liquids and solids
Lecture 28 - Thermodynamics properties from volumetric data
Lecture 29 - Approaches to phase equilibria calculation

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Lecture 30 - Traditional Approaches to phase equilibria calculations
Lecture 31 - Algorithms for vapor-liquid equilibria
Lecture 32 - Probability and Multiplicity
Lecture 33 - Multiplicity and maximising the multiplicity
Lecture 34 - Introduction to statistical mechanics
Lecture 35 - Partition function for independent particles
Lecture 36 - Lecture 36
Lecture 37 - Models of Molecular Pair Potentials
Lecture 38 - Molecular Theory of Corresponding States
Lecture 39 - Molecular Interactions in Dense Fluid Media
Lecture 40 - Models for Electrolyte Systems
Lecture 41 - Membrane Osmometry
Lecture 42 - Fugacity of liquid mixture - 1
Lecture 43 - Fugacity of liquid mixture - 2
Lecture 44 - Models for fugacity of liquid mixtures - 1
Lecture 45 - Models for fugacity of liquid mixtures - 2
Lecture 46 - Examples of Fugacity of liquids
Lecture 47 - Stability of the Fluid Phases
Lecture 48 - Theories of Solution - I
Lecture 49 - Theories of Solution - II
Lecture 50 - Polymer Solutions
Lecture 51 - Example Problems on Polymer Solutions
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