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Autore	Sattler Klaus
Titolo	Thermal separation processes [[electronic resource]] : principles and design / / Klaus Sattler, Hans Jacob Feindt
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Altri autori (Persone)	FeindtHans Jacob SattlerKlaus
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Nota di contenuto	Thermal Separation Processes; Contents; 4.1.2 Processes and Examples; Frequently Used Nomenclature; 1 Basic Concepts; 1.1 Principles of Thermal Separation Processes; 1.2 Thermal Separation Process Modes; 1.3 Mass Balance, Energy Balance, Exergy Balance; 1.3.1 Mass, Energy and Heat Balances; 1.3.2 Exergy Balance; 1.3.3 Calculation of Balance Equations; 1.4 Phase Equilibria; 1.4.1 Basic Concepts; 1.4.1.1 General Differential Equation for the Equilibrium Between Two Phases; 1.4.1.2 The Gibbs Phase Rule; 1.4.2 Liquid-Liquid Equilibrium; 1.4.2.1 The Nernst Distribution Law 1.4.2.2 Representation of Liquid-Liquid Phase Equilibrium1.4.3 Vapor-Liquid Equilibrium; 1.4.3.1 One Component Systems; 1.4.3.2 Two and Multicomponent Systems; 1.4.3.3 Henry's Law, Gas Solubility; 1.4.3.4 Boiling Equilibrium of a Solid Solution, Decrease of Vapor Pressure and Increase of Boiling Point; 1.4.4 Gas-Solid Phase Equilibrium; 1.4.4.1 Gas-Solid Phase Equilibrium, Sublimation; 1.4.4.2 Gas-Solid Phase Equilibrium with Adsorption/Desorption and Convective Solid Drying (Adsorption Equilibrium); 1.4.5 Liquid-Solid Phase Equilibrium; 1.4.5.1 Solubility of Solids in Liquid Solvents

1.4.5.2 Melting Pressure Curve 1.4.5.3 Decrease in the Freezing Point;
 1.4.5.4 State Diagrams of Binary Systems for Solid and Liquid Phase
 Equilibrium; 1.4.6 Enthalpy of Phase Changes; 1.5 Separation Factor
 and Relative Volatility; 1.6 Minimum Separation Work; 1.7 Mass
 Transfer Fundamentals; 1.7.1 Mass Transfer by Molecular Diffusion;
 1.7.1.1 Steady-State Diffusion; 1.7.1.2 Unsteady-State Diffusion;
 1.7.1.3 Diffusion Coefficient; 1.7.2 Mass Transfer by Convection; 1.7.3
 Overall Mass Transfer; 1.7.3.1 Two Film Theory, Mass Transfer
 Coefficient and Turbulence Theory
 1.8 Steady-State Cocurrent Operation 1.9 Steady-State Countercurrent
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 Determine the Number of Theoretical Separation Stages for a
 Countercurrent Column; 1.9.3 Calculation for Counterflow Columns;
 1.9.3.1 Mass Balances; 1.9.3.2 Phase Equilibrium Relationship; 1.9.3.3
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 1.10 Steady-State Crossflow Operation 1.11 General Procedure to
 Design Equipment for the Thermal Separation of Mixtures; 2 Distillation
 and Partial Condensation; 2.1 Concepts of Simple Distillation,
 Rectification and Partial Condensation; 2.2 Discontinuously and
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 Discontinuously Operated Simple Distillation; 2.2.2 Continuously
 Operated Simple Distillation; 2.2.3 Heat Requirement of Simple
 Distillation Units; 2.2.4 Flash Distillation; 2.3 Carrier Distillation; 2.4
 Vacuum and Molecular Distillation
 2.5 Countercurrent Distillation (Rectification)

Sommario/riassunto

This much-needed book presents a clear and very practice-oriented overview of thermal separation processes. An extensive introduction elucidates the physical and physicochemical fundamentals of different unit operations used to separate homogenous mixtures. This is followed by a concise text with numerous explanatory figures and tables referring to process and design, flowsheets, basic engineering and examples of separation process applications. Very helpful guidance in the form of process descriptions, calculation models and operation data is presented in an easy-to-understand manner

2. Record Nr.	UNISANNIONAP0502850	
Autore	Harvey, Adam	
Titolo	Micro-hydro design manual : a guide to small-scale water power schemes / by Adam Harvey ; with Andy Brown, Priyantha Hettiarachi and Allen Inversin	
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