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| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | INTRODUCTION TO CHEMICAL ENGINEERING COMPUTING; Contents; Preface; How to use This Book in Teaching; What is New?; Acknowledgments; 1 Introduction; Organization; Algebraic Equations; Process Simulation; Differential Equations; Appendices; 2 Equations of State; Equations of State-Mathematical Formulation; Solving Equations of State Using Excel (Single Equation in One Unknown); Solution Using "Goal Seek"; Solution Using "Solver"; Example of a Chemical Engineering Problem Solved Using "Goal Seek"; Solving Equations of State Using MATLAB (Single Equation in One Unknown) Example of a Chemical Engineering Problem Solved Using MATLAB Another Example of a Chemical Engineering Problem Solved Using MATLAB; Equations of State With Aspen Plus; Example Using Aspen Plus; Specific Volume of a Mixture; Chapter Summary; Problems; Numerical Problems; 3 Vapor-Liquid Equilibria; Flash and Phase Separation; Isothermal Flash-Development of Equations; Example Using Excel; Thermodynamic Parameters; Example Using MATLAB; Example Using Aspen Plus; Nonideal Liquids-Test of Thermodynamic Model; Nist Thermo Data Engine in Aspen Plus; Chapter Summary; Problems; Numerical Problems 4 Chemical Reaction Equilibria Chemical Equilibrium Expression; Example of Hydrogen for Fuel Cells; Solution Using Excel; Solution |

Using MATLAB; Chemical Reaction Equilibria with Two or More Equations; Multiple Equations, Few Unknowns Using MATLAB; Chemical Reaction Equilibria Using Aspen Plus; Chapter Summary; Problems; Numerical Problems; 5 Mass Balances with Recycle Streams; Mathematical Formulation; Example Without Recycle; Example with Recycle; Comparison of Sequential and Simultaneous Solution Methods; Example of Process Simulation Using Excel for Simple Mass Balances

Example of Process Simulation Using Aspen Plus for Simple Mass BalancesExample of Process Simulation with Excel Including Chemical Reaction Equilibria; Did the Iterations Converge?; Extensions; Chapter Summary; Class Exercises; Class Discussion (After Viewing Problem 5.10 on the Book Website); Problems; 6 Thermodynamics and Simulation of Mass Transfer Equipment; Thermodynamics; Guidelines for Choosing; Properties Environment | Home | Methods Selection Assistant; Thermodynamic Models; Example: Multicomponent Distillation with Shortcut Methods

Multicomponent Distillation with Rigorous Plate-to-Plate MethodsExample: Packed Bed Absorption; Example: Gas Plant Product Separation; Example: Water Gas Shift Equilibrium Reactor with Sensitivity Block and Design Specification Block; Chapter Summary; Class Exercise; Problems (Using Aspen Plus); 7 Process Simulation; Model Library; Example: Ammonia Process; Development of the Model; Solution of the Model; Examination of Results; Testing the Thermodynamic Model; Utility Costs; Greenhouse Gas Emissions; Convergence Hints; Optimization; Integrated Gasification Combined Cycle

Cellulose to Ethanol

Sommario/riassunto

Step-by-step instructions enable chemical engineers to master key software programs and solve complex problems
