1. Record Nr. UNISALENTO991003149829707536

Autore	Cohen, Beth
Titolo	Attic bilingual vases and their painters / Beth Cohen
Pubbl/distr/stampa	Ann Arbor : University Microfilms International, c1977
Descrizione fisica	1 v. ; 21 cm
Disciplina	738.3
Soggetti	Vasi greci - Attica
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910784637203321

Autore	Foley Henry C
Titolo	Introduction to chemical engineering analysis using Mathematica [[electronic resource] /] / Henry C. Foley
Pubbl/distr/stampa	San Diego, Calif., : Academic Press, c2002
ISBN	1-281-05419-4 9786611054199 0-08-053495-3 1-4356-0499-7
Descrizione fisica	1 online resource (539 p.)
Disciplina	660
Soggetti	Chemical engineering Mathematica (Computer program language)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Front Cover; Introduction to Chemical Engineering Analysis Using Mathematica®; Copyright Page; Contents; Preface for an Instructor;

Preface for the Student; Acknowledgment; Chapter 1 . A Primer of Mathematica; 1.1 Getting Started in Mathematica; 1.2 Basics of the Language; 1.3 Simple Commands; 1.4 Table, Plot, Map, and Plot3D; 1.5 Lists and ListPlot, Fit, and Show; 1.6 Solve and NSolve; 1.7 Differentiate and Integrate; 1.8 DSolve; 1.9 NDSolve; 1.10 Units Interconversion; 1.11 Summary; Chapter 2. Elementary-Single-Component Systems
2.1 The Conservation of Mass Principle and the Concept of a Control Volume2.2 Geometry and the Left-Hand Side of the Mass Balance Equation; 2.3 Summary; Chapter 3. The Draining Tank and Related Systems; 3.1 The Right-Hand Side of the Mass Balance Equation; 3.2 Mechanism of Water Flow from Tank-Torricelli's Law, A Constitutive Relationship; 3.3 Experiment and the Constitutive Equation; 3.4 Solving for Level as a Function of Time; 3.5 Mass Input, Output, and Control; 3.6 Control; 3.7 Summary; Chapter 4. Multiple-Component Systems; 4.1 The Concept of the Component Balance
4.2 Concentration versus Density4.3 The Well-Mixed System; 4.4 Multicomponent Systems; 4.5 Liquid and Soluble Solid; 4.6 Washing a Salt Solution from a Vessel; 4.7 The Pulse Input Tracer Experiment and Analysis; 4.8 Mixing; 4.9 Summary; Chapter 5. Multiple Phases-Mass Transfer; 5.1 Mass Transfer versus Diffusion; 5.2 Salt Dissolution; 5.3 Batch; 5.4 Fit to the Batch Data; 5.5 Semicontinuous: Pseudo Steady State; 5.6 Full Solution; 5.7 Liquid-Liquid System; 5.8 Summary; Chapter 6. Adsorption and Permeation; 6.1 Adsorption; 6.2 Permeation; 6.3 Permeation-Adsorption and Diffusion
6.4 Expanding Cell6.5 Summary; Chapter 7. Reacting Systems-Kinetics and Batch Reactors; 7.1 How Chemical Reactions Take Place; 7.2 No-Flow/Batch System; 7.3 Simple Irreversible Reactions-Zeroth to Nth Order; 7.4 Reversible Reactions-Chemical Equilibrium; 7.5 Complex Reactions; 7.6 Summary; Chapter 8. Semi-Continuous Flow Reactors; 8.1 Introduction to Flow Reactors; 8.2 Semicontinuous Systems; 8.3 Negligible Volume Change; 8.4 Large Volume Change; 8.5 Pseudo-Steady State; 8.6 Summary; Chapter 9. Continuous Stirred Tank and the Plug Flow Reactors; 9.1 Continuous Flow-Stirred Tank Reactor
9.2 Steady-State CSTR with Higher-Order, Reversible Kinetics9.3 Time Dependence-The Transient Approach to Steady-State and Saturation Kinetics; 9.4 The Design of an Optimal CSTR; 9.5 Plug Flow Reactor; 9.6 Solution of the Steady-State PFR; 9.7 Mixing Effects on Selectivities-Series and Series-Parallel with CSTR and RFR; 9.8 PFR as a Series of CSTRs; 9.9 Residence Time Distribution; 9.10 Time-Dependent PFR-Complete and Numerical Solutions; 9.11 Transient PFR; 9.12 Equations, Initial Conditions , and Boundary Conditions; 9.13 Summary; Chapter I 0. Worked Problems; 10.1 The Level-Controlled Tank
10.2 Batch Competitive Adsorption

Sommario/riassunto

This book provides an introduction to chemical engineering analysis-which reviews the processes and designs used to manufacture, use, and dispose of chemical products-and to Mathematica, one of the most powerful mathematical software tools available for symbolic, numerical, and graphical computing. Analysis and computation are explained simultaneously. The book covers the core concepts of chemical engineering, ranging from the conservation of mass to chemical kinetics. At the same time the text shows how to use the latest version of Mathematica, from the basics of writing a few lines of code