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Titolo	Chemical reactor design and control [[electronic resource] /] / William L. Luyben
Pubbl/distr/stampa	[New York], : AIChE Hoboken, N.J., : Wiley-Interscience, c2007
ISBN	1-281-00186-4 9786611001865 0-470-13491-7 0-470-13490-9
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Soggetti	Chemical reactors - Design and construction Reactors químics Llibres electrònics
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CHEMICAL REACTOR DESIGN AND CONTROL; CONTENTS; PREFACE; 1 REACTOR BASICS; 1.1 Fundamentals of Kinetics and Reaction Equilibrium; 1.1.1 Power-Law Kinetics; 1.1.2 Heterogeneous Reaction Kinetics; 1.1.3 Biochemical Reaction Kinetics; 1.1.4 Literature; 1.2 Multiple Reactions; 1.2.1 Parallel Reactions; 1.2.2 Series Reactions; 1.3 Determining Kinetic Parameters; 1.4 Types and Fundamental Properties of Reactors; 1.4.1 Continuous Stirred-Tank Reactor; 1.4.2 Batch Reactor; 1.4.3 Tubular Plug Flow Reactor; 1.5 Heat Transfer in Reactors; 1.6 Reactor ScaleUp; 1.7 Conclusion 2.8.1 Simulation Setup2.8.2 Specifying Reactions; 2.8.3 Reactor Setup; 2.9 Optimization of CSTR Systems; 2.9.1 Economics of Series CSTRs; 2.9.2 Economics of a Reactor-Column Process; 2.9.3 CSTR Processes with Two Reactants; 2.10 Conclusion; 3 CONTROL OF CSTR SYSTEMS; 3.1 Irreversible, Single Reactant; 3.1.1 Nonlinear Dynamic Model; 3.1.2 Linear Model; 3.1.3 Effect of Conversion on Openloop and Closedloop Stability; 3.1.4 Nonlinear Dynamic Simulation; 3.1.5 Effect of Jacket

Volume; 3.1.6 Cooling Coil; 3.1.7 External Heat Exchanger; 3.1.8 Comparison of CSTR-in-Series Processes  
3.1.9 Dynamics of Reactor-Stripper Process  
3.2 Reactor-Column Process with Two Reactants; 3.2.1 Nonlinear Dynamic Model of Reactor and Column; 3.2.2 Control Structure for Reactor-Column Process; 3.2.3 Reactor-Column Process with Hot Reaction; 3.3 AutoRefrigerated Reactor Control; 3.3.1 Dynamic Model; 3.3.2 Simulation Results; 3.4 Reactor Temperature Control Using Feed Manipulation; 3.4.1 Introduction; 3.4.2 Revised Control Structure; 3.4.3 Results; 3.4.4 Valve Position Control; 3.5 Aspen Dynamics Simulation of CSTRs; 3.5.1 Setting up the Dynamic Simulation  
3.5.2 Running the Simulation and Tuning Controllers  
3.5.3 Results with Several Heat Transfer Options; 3.5.4 Use of RGIBBS Reactor; 3.6 Conclusion; 4 CONTROL OF BATCH REACTORS; 4.1 Irreversible, Single Reactant; 4.1.1 Pure Batch Reactor; 4.1.2 Fed-Batch Reactor; 4.2 Batch Reactor with Two Reactants; 4.3 Batch Reactor with Consecutive Reactions; 4.4 Aspen Plus Simulation Using RBatch; 4.5 Ethanol Batch Fermentor; 4.6 Fed-Batch Hydrogenation Reactor; 4.7 Batch TML Reactor; 4.8 Fed-Batch Reactor with Multiple Reactions; 4.8.1 Equations; 4.8.2 Effect of Feed Trajectory on Conversion and Selectivity  
4.8.3 Batch Optimization

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#### Sommario/riassunto

Chemical Reactor Design and Control uses process simulators like Matlab®, Aspen Plus, and Aspen Dynamics to study the design of chemical reactors and their dynamic control. There are numerous books that focus on steady-state reactor design. There are no books that consider practical control systems for real industrial reactors. This unique reference addresses the simultaneous design and control of chemical reactors. After a discussion of reactor basics, it: Covers three types of classical reactors: continuous stirred tank (CSTR), batch, and tubular plug flow Emphasizes tempe

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2. Record Nr.	UNINA9910286407803321
Autore	Aellah Gemma
Titolo	Global Health Research in an Unequal World : Ethics Case Studies from Africa
Pubbl/distr/stampa	Oxford, : CAB International, 2016
ISBN	9781786390066 178639006X 9781786390059 1786390051
Descrizione fisica	1 online resource (262 p.)
Altri autori (Persone)	ChantlerTracey GeisslerP. Wenzel OndiekJohnson
Disciplina	362.107
Soggetti	Globalization Ethical issues & debates Ethnic studies Africa
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Sommario/riassunto	This book is a collection of fictionalised case studies of everyday ethical dilemmas and challenges, encountered in the process of conducting global health research in places where the effects of global, political and economic inequality are particularly evident. It is a training tool to fill the gap between research ethics guidelines, and their implementation 'on the ground'. The case studies, therefore, focus on 'relational' ethics: ethical actions and ideas that emerge through relations with others, rather than in regulations.