

<<生物反应工程原理>>

图书基本信息

书名：<<生物反应工程原理>>

13位ISBN编号：9787502551681

10位ISBN编号：7502551689

出版时间：2004-2

出版时间：化学工业出版社

作者：尼尔森

页数：528

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

内容概要

Preface This is the second edition of the text “ Bioreaction Engineering Principles ” by Jens Nielsen and John Villadsen, originally Published in 1994 by Plenum Press (now part of Kluwer). Time runs fast in Biotechnology, and when Kluwer Plenum stopped reprinting the first edition and asked us to make a second, revised edition we happily accepted. A text on bioreactions written in the early 1990 ’ s will not reflect the enormous development of experimental as well as theoretical aspects of cellular reaction during the past decade. In the preface to the first edition we admitted to be newcomers in the field. One of us (JV) has had 10 more years of job training in biotechnology, and the younger author (JN) has now received international recognition for his work with the hottest topics of “ modern ” biotechnology. Furthermore we are happy to have induced Gunnar Lid é n, professor of chemical reaction engineering at our sister university in Lund, Sweden to join us as co-author of the second edition. His contribution, especially on the chemical engineering aspects of “ real ” bioreactors has been of the greatest value. Chapter 8 of the present edition is largely unchanged from the first edition. We wish to thank professor Martin Hjortso from LSU for his substantial help with this chapter. As was the case for the first edition numerous people helped us by carefully reviewing individual chapters. Professor Lars K Nielsen of University of Queensland was a constant sparring partner, both in Australia and lately as a visiting professor at DTU. The help of Dr. Mats Akesson and of our PhD students, in particular Mikkel Nordkvist, Thomas Grotkjaer, Jochen F rster and Morten Skov Hansen is also gratefully acknowledged. MSc student Rebecca Munk Vejborg was of great help in her careful editing of the final version of the manuscript. All three authors are chemical engineers by education, and we followed in the footsteps of other chemical engineers who “ converted ” to biotechnology, but retained their passion for a quantitative treatment of problems from the physical world. One of the greatest innovators of biochemical engineering, professor James E. Bailey was also a chemical engineer by education. We wish to dedicate this book to the memory of this eminent scientist, who was a close colleague and a friend (of the senior author for more than 35 years), and whose work is admired by all three of us. If the pages of this book could inspire some students in the way Jay Bailey inspired hundreds of chemical engineering and biochemical engineering students we could hope for no better reward.

<<生物反应工程原理>>

书籍目录

List of Symbols
 Chapter 1. Bioreaction Engineering: From Bioprocess Design to Systems Biology 1.1 The Structure of the Book 1.2 Some Comments on Nomenclature used in the Book 1.3 A Final Note
 Chapter 2. From Cellular Function to Industrial Products 2.1 Cellular Growth 2.2 Biotech Processes-An Overview
 Chapter 3. Biochemical Reactions-A First Look 3.1 The Continuous Stirred Tank Reactor 3.2 Yield Coefficients 3.3 Black Box Stoichiometries 3.4 Degree of Reduction Balances 3.5 Systematic Analysis of Black Box Stoichiometries 3.6 Identification of Gross Measurement Errors
 Chapter 4. Thermodynamics of Biochemical Reactions 4.1 Chemical Equilibrium and Thermodynamic State Functions 4.2 Heat of Reaction 4.3 Non-equilibrium Thermodynamics
 Chapter 5. Biochemical Reaction Networks 5.1 Basic Concepts 5.2 Growth Energetics 5.3 Simple Metabolic Networks 5.4 Flux Analysis in Large Metabolic Networks
 Chapter 6. Enzyme Kinetics and Metabolic Control Analysis 6.1 Michaelis-Menten and Analogous Enzyme Kinetics 6.2 More Complicated Enzyme Kinetics
 Chapter 7. Modeling of Growth Kinetics 7.1 Model Structure and Complexity 7.2 A General Structure for Kinetic Models 7.3 Unstructured Growth Kinetics 7.4 Simple Structured Models 7.5 Mechanistic Models 7.6 Morphologically Structured Models
 Chapter 8. Population Balance Equations
 Chapter 9. Design of Fermentation Processes 9.1 The Stirred Tank Bioreactor 9.2 The Plug Flow Reactor 9.3 Dynamic Analysis of Continuous Stirred Tank Bioreactors
 Chapter 10. Mass Transfer 10.1 Gas-Liquid Mass Transfer 10.2 Mass Transfer to and into Solid Particles
 Chapter 11. Scale-Up of Bioprocesses 11.1 Scale-up Phenomena 11.2 Bioreactors 11.3 Physical Processes of Importance for Scale-Up 11.4 Metabolic Processes Affected by Scale-up 11.5 Scale-up in Practice
 Index

<<生物反应工程原理>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>