

1. Record Nr.	UNINA9910960689503321
Autore	Torres Nestor V. <1958->
Titolo	Pathway analysis and optimization in metabolic engineering // Nestor V. Torres, Eberhard O. Voit
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2002
ISBN	1-107-13019-0 0-521-17748-0 1-280-16042-X 9786610160426 1-139-14696-3 0-511-11925-9 0-511-05689-3 0-511-30747-0 0-511-54633-5 0-511-07168-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (xiv, 305 pages) : digital, PDF file(s)
Disciplina	660.6/3
Soggetti	Biochemical engineering - Mathematical models Mathematical optimization System theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Half-title; Title; Copyright; Dedication; Contents; Preface; CHAPTER ONE Target: A Useful Model; CHAPTER TWO Methods of Biochemical Systems Theory; CHAPTER THREE A Model of Citric Acid Production in the Mold Aspergillus niger; CHAPTER FOUR Optimization Methods; CHAPTER FIVE Optimization of Biochemical Systems; CHAPTER SIX Optimization of Citric Acid Production in Aspergillus niger; CHAPTER SEVEN Maximization of Ethanol Production in Saccharomyces cerevisiae; CHAPTER EIGHT Conclusions; Author Index; Subject Index
Sommario/riassunto	Facility in the targeted manipulation of the genetic and metabolic composition of organisms, combined with unprecedented computational power, is forging a niche for a new subspecialty of

biotechnology called metabolic engineering. First published in 2002, this book introduces researchers and advanced students in biology and engineering to methods of optimizing biochemical systems of biotechnological relevance. It examines the development of strategies for manipulating metabolic pathways, demonstrates the need for effective systems models, and discusses their design and analysis, while placing special emphasis on optimization. The authors propose power-law models and methods of biochemical systems theory toward these ends. All concepts are derived from first principles, and the text is richly illustrated with numerous graphs and examples throughout. Special features include: nontechnical and technical introductions to models of biochemical systems; a review of basic methods of model design and analysis; concepts of optimization; and detailed case studies.
