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Enzyme Engineering Fundamentals of Enzyme Engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering and Evolution: General Methods Enzyme Engineering XII Enzyme engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering and Evolution: Specific Enzyme Applications Enzyme Engineering Enzyme Engineering Enzyme Functionality Enzyme Engineering Enzyme Engineering Enzyme Engineering Enzyme Engineering Volume 2 Enzyme Reaction Kinetics and Reactor Performance PRINCIPLES OF ENZYME TECHNOLOGY Understanding Enzymes Enzyme Engineering Enzyme Reaction Kinetics and Reactor Performance, 2 Volume Set Enzyme Engineering Enzyme Technology Vocabulaire du génie enzymatique Directory of Therapeutic Enzymes Fundamentals of Biochemical Engineering Enzymes in Detergency Bioprocess Engineering Enzyme Technology Asymmetric Organic Synthesis with Enzymes Annual Reports on Fermentation Processes Enzyme Inhibition and Bioapplications Enzyme Technologies Advances in Textile Biotechnology Handbook of Renewable Materials for Coloration and Finishing Green Chemistry for Sustainable Textiles

## Enzyme Engineering

2014-01-15

this book provides a comprehensive introduction to all aspects of enzyme engineering from fundamental principles through to the state of the art in research and industrial applications it begins with a brief history describing the milestones of advancement in enzyme science and technology before going on to cover the fundamentals of enzyme chemistry the biosynthesis of enzymes and their production enzyme stability and the reaction kinetics during enzymatic reactions are presented to show how enzymes function during catalysis and the factors that affect their activity methods to improve enzyme performance are also presented such as cofactor regeneration and enzyme immobilization the book emphasizes and elaborates on the performance and characteristics of enzymes at the molecular level finally the book presents recent advances in enzyme engineering and some key industrial application of enzymes addressing the present needs of society this book presents essential information not only for undergraduate and graduate students but also for researchers in academia and industry providing a valuable reference for the development of commercial applications of enzyme technology

## Fundamentals of Enzyme Engineering

2017-01-12

this new volume of methods in enzymology continues the legacy of this premier serial with quality chapters authored by leaders in the field provides the authority and expertise of leading contributors from an international board of authors presents the latest release in the methods in enzymology series

## *Enzyme Engineering*

1972

this text focuses on scientific as well as engineering aspects of enzyme technology including recent advances in protein and metabolic engineering supramolecular biochemistry nanotechnology new biocatalysts such as ribozymes and abazymes metal based biocatalysts and glycosylation the important lipase programme of the eec is widely discussed the book presents a cross fertilisation between microscopic chemistry molecular biology and macroscopic bioreactors biosensors levels of inquiry revealing a complementarity between industrial medical and analytical applications enzyme technology inheres in many facets of human activity agriculture pharmaceuticals diagnostics cosmetics chemicals pollution control and energy

## Enzyme Engineering

2014-01-15

the unique catalytic properties of enzymes and the numerous techniques for immobilization of enzymes and cells continue to maintain a high degree of practical and scientific interest in this area called enzyme engineering this fourth international enzyme engineering confer ence was the first to be held outside of the united states europe was chosen as the site primarily to en able greater participation by investigators from that continent the engineering foundation of new york which was the principal sponsor of the first three conferences was most fortunate in having the dechema deutsche gesell schaft fur chemisches apparatewesen e v of frankfurt main f r germany as the cosponsor for this fourth conference the success of the conference also was due in large part to the generous financial support especially by the government of the federal republic of germany as well as by european enzyme and chemical companies the fourth conference held september 25 30 1977 at bad neuenahr federal republic of germany was certainly successful with 240 participants from 23 countries repre senting many academic disciplines and occupational special ties at this conference special emphasis was placed on the immobilization of whole cells and organelles medical applications of immobilized enzymes and organelles and the industrial status and future for immobilized biological materials

## Enzyme Engineering

1980-05-01

methods in enzymology volume 644 the latest release in this ongoing serial continues the legacy of this premier serial with quality chapters authored by leaders in the field chapters in this new release include site directed recombination sdr in vivo a fast and reliable tool to unveil beneficial epistasis creation and application of amine oxidase with expanded substrate specificities from porcine kidney d amino acid oxidase methods to assess correlation networks for engineering transketolase exploration of enzyme diversity by integrating bioinformatics with microfluidics engineering lytic polysaccharide monooxygenases lpmos emulsion based directed evolution of enzymes in yeast and much more provides the authority and expertise of leading contributors from an international board of authors presents the latest release in the methods in enzymology series

## Enzyme Engineering

1980

enzyme functionality serves as a conduit for trailblazing research in enzyme engineering relating current understanding of sequence families the new notion of enzyme structure classes and modern methods in protein engineering design and directed evolution to accelerate the development of novel enzyme functionalities this reference gathers the

## *Enzyme Engineering*

2002

introduces the basic theories basic technologies recent developments and growth trends in the fields of enzyme production and applications topics covered include enzyme production by microbial fermentation enzyme production by animal and plant cell cultures extraction and separation and purification of enzymes

## Enzyme Engineering and Evolution: General Methods

2020-09-05

consists of papers presented at the 1st 3d engineering foundation conference on enzyme engineering

## Enzyme Engineering XII

1995

the recent worldwide explosion of interest in enzymes as cata lysts in industrial processes has arisen primarily because of the potential of major innovative advances which have taken place over the last two decades foremost among these being novel methods of enzyme immobilization and affinity chromatography for rapid enzyme purification this interest is now being further stimulated by the remarkable commercial success of several enzyme based industrial processes particularly the production of high fructose syrup in the u s and amino acid production in japan with the initiation of these and other processes together with the readying for commercial ization of several other enzyme based operations interest has ex panded in other areas in which enzymes may playa useful role particularly in medicine and analytical chemistry the development of this technology has required the cooperative efforts of practi tioners of several disciplines primarily chemical engineers bio chemists and other life scientists indeed from this cooperation is arising the new interdisciplinary field of enzyme engineering to stimulate communication information exchange and advance ment of knowledge in this new field on an international level the engineering foundation through the efforts of lemuel b wingard jr initiated in 1971 a series of international conferences on enzyme engineering to be held biannually the first two conferences were held in henniker new hampshire in the summers of 1971 and 1973 respectively while the third conference from which these proceedings derived was held in august 1975 in portland oregon

## Enzyme engineering

1990

considerable worldwide interest has arisen in recent years in the controlled use of enzymes as catalysts in industrial processing analytical chemistry and medical therapy this interest has genera ted the new interdisciplinary field of enzyme engineering which includes both the scientific and technologic aspects of the produc tion purification immobilization and application of enzymes in a variety of situations and reactor configurations a series of engineering foundation conferences on enzyme engineering was initia ted to provide an international forum for the exchange of ideas and information over the entire range of this new field the outstanding success of the first two conferences attests to the vigor and poten tial of this field to contribute significantly to a better under standing and resolution of some of the major problems faced by man kind the first conference which was held august 9 13 1971 at henniker new hampshire u s a aided significantly in molding the several traditional disciplines that interact to form the field of enzyme engineering the conference was highly successful mainly because many of the key scientists and engineers from the several facets of enzyme engineering were brought together for the first time at a single residential meeting the result was an exchange of ideas and education of one another in the pertinent principles of the diverse disciplines which contribute to this field the second conference held august 5 10 1973 at henniker new hampshire u s a

## Enzyme Engineering

2012-12-06

provides a thorough study of the engineering of enzyme reactors including comprehensive mathematical modeling and optimization enzyme reactor engineering principles and applications sequentially covers the three classical levels of description macroscopic or ideal microscopic or nonideal in terms of hydrodynamics including homogeneous nontrivial flow patterns as well as heterogeneous systems and submicroscopic in terms of mixing major emphasis is placed on general simulation from first principles rather than empirical correlation this methodology rationally departs from balance equations carefully eliminates overparameterization and establishes dimensionless simpler relationships and builds on such models to find optima of relevance while constructing rational strategies to approach common problems this book begins with an organized introduction to enzyme reactor engineering followed by two major parts analysis of enzyme reaction kinetics and analysis of enzyme reactor features it concludes with a brief coverage of relevant mathematical concepts a carefully paced approach suitable even for nonspecialists allows the reader to gain insight about the detailed kinetics of the reaction brought about by a general enzyme and provides the complementary tools necessary to design and optimize the overall reactor behavior provides thorough study of the engineering of enzyme reactors including comprehensive mathematical modeling and coverage of additional topics e g separation control required for effective integration and overall understanding chapters introduce basic phenomenological principles and subsequently derive usable results ending up with generic examples of germane applications environmental concerns supporting white biotechnology and a growing portfolio of available tailored and less expensive enzymes on the market have turned enzyme reactors into a better and better performing and recommended technology for industrial implementation enzyme reactor engineering is thus the ideal text to support that effort suitable for students researchers and practitioners working in chemical engineering biochemistry biological engineering chemistry physical chemistry and applied physics

## Enzyme Engineering

1974

today enzyme technology amalgamating enzymology with biotechnology has become a household name in practically all branches of the contemporary science and technology the book principles of enzyme technology provides an exhaustive presentation of enzyme technology the text is organised into four parts out of which the first three are more inclined towards imparting the conceptual aspects of the subject whereas the fourth part accentuates more on the escalating applications of enzymes in industry be it food textile or pharmaceutical thus the book offers a balanced insight into the immense world of enzymes in a single readable volume highlights of the book inclusion of a chapter on enzyme engineering and technology makes the book more future oriented highlighting the wonders that the modern science can make the textual presentation is very lucid illustrative and organised in a manner that it is not based solely on the complexity of the subject but also on its usefulness adequate number of references listing of literature for further reading and problems both multiple choice and thought based given at the end of each chapter make the book an ideal tool for learning enzyme technology primarily intended as a text for the students of biotechnology biochemistry and other life science branches this book will be of immense use to the professionals as well as researchers for teaching and references

## Enzyme Engineering and Evolution: Specific Enzyme Applications

2020-09-15

this book focuses on the understanding of enzyme function and optimization gained in the past decade past enzyme function analysis enzyme engineering and growing insights from the simulation work as well and nanotechnology measurement of enzymes in action in vitro or in silico it presents new insights into the mechanistic function and understanding of enzyme reactions and covers novel structure analysis technologies in conjunction with x ray and nmr structural methods the text discusses topics that include single molecules molecular dynamic simulations of different conformers of enzymes surface enzyme kinetics metagenomics and bioinformatics sequence handling and coupled reactions in nanodevices

## Enzyme Engineering

1984

provides a thorough study of the engineering of enzyme reactors including comprehensive mathematical modeling and optimization enzyme reactor engineering principles and applications sequentially covers the three classical levels of description macroscopic or ideal microscopic or nonideal in terms of hydrodynamics including homogeneous nontrivial flow patterns as well as heterogeneous systems and submicroscopic in terms of mixing major emphasis is placed on general simulation from first principles

rather than empirical correlation this methodology rationally departs from balance equations carefully eliminates overparameterization and establishes dimensionless simpler relationships and builds on such models to find optima of relevance while constructing rational strategies to approach common problems this book begins with an organized introduction to enzyme reactor engineering followed by two major parts analysis of enzyme reaction kinetics and analysis of enzyme reactor features it concludes with a brief coverage of relevant mathematical concepts a carefully paced approach suitable even for nonspecialists allows the reader to gain insight about the detailed kinetics of the reaction brought about by a general enzyme and provides the complementary tools necessary to design and optimize the overall reactor behavior provides thorough study of the engineering of enzyme reactors including comprehensive mathematical modeling and coverage of additional topics e g separation control required for effective integration and overall understanding chapters introduce basic phenomenological principles and subsequently derive usable results ending up with generic examples of germane applications environmental concerns supporting white biotechnology and a growing portfolio of available tailored and less expensive enzymes on the market have turned enzyme reactors into a better and better performing and recommended technology for industrial implementation enzyme reactor engineering is thus the ideal text to support that effort suitable for students researchers and practitioners working in chemical engineering biochemistry biological engineering chemistry physical chemistry and applied physics

## *Enzyme Engineering*

1978

records of meetings 1808 1916 in v 11 27

## Enzyme Functionality

2003-10-28

what are enzymes how do they behave how are they obtained what are their uses this book manages to cover all this most of the young workers in r d of biotechnological industries would find it useful for a quick introduction â current science vol 96 no 11 2009 this book gives a broad account of enzymology and aims to put the current knowledge into perspective the chapters follow a progression from the properties of isolated enzymes to the behaviour of enzymes in increasingly complex systems leading up to the cell included is the discussion on the importance of enzymes in medicine and industry this book discusses the behaviour of isolated enzymes dealing in turn with isolation methods structural characterization kinetics catalytic action and control of activity immobilization methods and various applications of enzymes the methods for isolation and characterization of enzymes are now well established procedures so the rate at which three dimensional structures and mechanisms are being determined is increasing dramatically ultimately it is necessary to know the behaviour of enzymes in living cells this involves in part a synthesis of the information obtained from the study of isolated enzymes but it also requires detailed knowledge of the molecular morphology of the cell which in turn requires methods for making measurements on intact cells the study and applications of enzymes have assumed increasing importance both in medicine and in industry and a discussion of these aspects is

therefore given prime importance this book will be of immense use to all the ug and pg students of biotechnology engineering and science students and also to other the sciences students and research scholars new to this edition apart from updating the complete text wherever required new material has been added namely â œmechanism of enzyme activities in organic solventsâ and â œimmobilization kineticsâ

## Enzyme Engineering

2014

designed to provide a specialized public with up to date terminology this vocabulary builds on a nucleus of basic terms used in industrial enzyme production to which have been added terms concerned with recent applications and related subjects our objective was to list all terms required to understand enzyme engineering and to explain their meaning by means of contexts and definitions we also have added some self explanatory terms which are simply listed with their equivalents

## Enzyme Engineering

1980-10

carefully crafted to provide tightly focused and authoritative information the directory of therapeutic enzymes covers all approved therapeutic enzymes currently used in medicine written mainly by industry experts the book includes information sourced directly from the company that developed or manufactured the product it explores major development issues from manufacturing and marketing to delivery of the finished product chapter 1 reviews applied enzymology while chapter 2 delineates theory and applications between them the first two chapters set the appropriate backdrop for the remaining chapters which focus on actual enzyme products that have gained regulatory approval for general medical use the chapter authors discuss the biochemistry of the enzymes the reactions they catalyze how they are produced or manufactured and their medical applications the book highlights the many applications of approved therapeutic enzymes including use in the treatment of blood clotting disorders certain cancers and a variety of genetic disorders illustrated with tables and figures that support the text the book is a single source of in depth technical information

## Enzyme Engineering

2013-03-09

offers an integrated overview of enzyme use in household detergents from product development and manufacturing to safety and health related issues the text details the major types of enzymes structure function relationships life cycle analyses protein engineering techniques cleaning mechanisms and past present and future applications

## Enzyme Engineering Volume 2

2012-12-06

bioprocess engineering kinetics sustainability and reactor design second edition provides a comprehensive resource on bioprocess kinetics bioprocess systems sustainability and reaction engineering author dr shijie liu reviews the relevant fundamentals of chemical kinetics batch and continuous reactors biochemistry microbiology molecular biology reaction engineering and bioprocess systems engineering also introducing key principles that enable bioprocess engineers to engage in analysis optimization and design with consistent control over biological and chemical transformations the quantitative treatment of bioprocesses is the central theme in this book with more advanced techniques and applications being covered in depth this updated edition reflects advances that are transforming the field ranging from genetic sequencing to new techniques for producing proteins from recombinant dna and from green chemistry to process stability and sustainability the book introduces techniques with broad applications including the conversion of renewable biomass the production of chemicals materials pharmaceuticals biologics and commodities medical applications such as tissue engineering and gene therapy and solving critical environmental problems includes the mechanistic description of biotransformations and chemical transformations provides quantitative descriptions of bioprocesses contains extensive illustrative drawings which make the understanding of the subject easy includes bioprocess kinetics and reactor analysis contains examples of the various process parameters their significance and their specific practical use incorporates sustainability concepts into the various bioprocesses

## Enzyme Reaction Kinetics and Reactor Performance

2023-06-05

publisher description

## *PRINCIPLES OF ENZYME TECHNOLOGY*

2015-08-31

perfect for biochemists synthetic and organic chemists this book covers all important reactions including c c coupling reactions oxidation reactions and many more divided into two parts the first section on methodology presents new innovative methods for enzymatic catalysis optimization including such new trends as medium engineering directed evolution and computer aided prediction of enantioselectivity the second and main section deals with applications to synthesis showing important reaction types and their applications only those reactions with very high selectivity are presented allowing readers to improve their own reaction yields

## Understanding Enzymes

2016

annual reports on fermentation processes volume 1 furnishes a critical account of significant developments concerning fermentation processes this book discusses the mutation selection and optimization of mutagenesis fermentation substrates and published accounts of computer coupled fermentation systems the waste materials as scp substrates immobilized cell processes and microbial transformations of organic compounds are also elaborated this publication likewise covers the microbiological and enzymatic conversion of ß lactam antibiotics microbiological production of chemical feedstocks and aeration systems and their performance other topics include the toxicology and regulation of enzyme use general considerations of immobilized enzyme systems mutational biosynthesis and biotransformations and the role of precursors this volume is a good reference for students and researchers interested in fermentation research and developments

## Enzyme Engineering

1992

enzyme inhibition and bioapplications is a concise book on applied methods of enzymes used in drug testing the present volume will serve the purpose of applied drug evaluation methods in research projects as well as relatively experienced enzyme scientists who might wish to develop their experiments further chapters are arranged in the order of basic concepts of enzyme inhibition and physiological basis of cytochromes followed by new concepts of applied drug therapy reliability analysis and new enzyme applications from mechanistic point of view

## Enzyme Reaction Kinetics and Reactor Performance, 2 Volume Set

2023-07-03

sets the stage for advances in drug discovery using the latest enzyme technology reviewing new and emerging applications of enzyme technology in drug discovery this book highlights some of the most promising areas of pharmaceutical and biotechnology research it covers enzyme assay technology utilization of enzymology for prodrug design and the application of enzymes as therapeutic agents expert reviews highlight how our latest understanding of enzymology is used to develop new practical applications in drug discovery and design filled with case studies enzyme technologies pluripotent players in discovering therapeutic agents enables readers to better understand the diverse functions of enzymes and master specific applications in drug discovery research in addition to small molecule drug discovery the book explores new developments in enzymes as therapeutic agents for genetic disorders section a enzymes essential workhorses in pharmaceutical research offers support in selecting the best enzyme targets for drug discovery designing enzyme inhibitors for therapeutic agents and evaluating selective

enzyme inhibitors section b enzymes indispensable tools for improving druggability sets forth the principles alongside real world examples of exploiting specific properties of enzymes to design successful prodrugs section c enzymes powerful weapons for correcting nature s errors provides new insights on applying enzymes as therapeutic agents or diagnostic tools to treat genetic disorders chapters are contributed by leading experts from around the world their contributions are based on a thorough review of the current literature as well as their own research reviewing our latest understanding of the nature of enzymes and their role in drug discovery this book is recommended for researchers in pharmaceuticals and biotechnology as well as for researchers in enzymology biochemistry molecular biology and medicinal chemistry

## *Enzyme Engineering*

1982

biotechnology has impacted the textiles industry through the development of more efficient and environmentally friendly manufacturing processes as well as enabling the design of improved textile materials this book will provide a thorough overview of current and future focuses of biotechnology in the fibre and textile industry part one of the book opens with a review of technologies involved in textile biotechnology chapters explore the design and engineering of novel enzymes for textile applications and developments in processes and equipment for enzymatic textile treatments part two investigates the modification of particular fibres through the use of biotechnology key topics include the treatment of wool and silk fibres and the enzymatic treatment versus conventional processing of cotton with expert contributions from leaders in their fields advances in textile biotechnology is a comprehensive guide for those in the textile and fibre industry as well as experts in the biology chemical and environmental engineering industries provides a thorough overview of current and future focuses of biotechnology in the fibre and textile industry explores production of enzymes searching for efficient production systems and also documents the advantages and limitations associated with the process reviews the debate surrounding enzymatic treatment versus conventional processing of cotton along with engineering of plants for improved fibre qualities

## **Enzyme Technology**

2012-02-28

this unique handbook provides a vivid multidisciplinary dimension through technological perspectives to present cutting edge research in the field of natural coloration and finishing the 20 chapters are divided in to four parts substrates for coloration and finishing renewable colorants and their applications advanced materials and technologies for coloration and finishing sustainability among the topics included in the handbook of renewable materials for coloration and finishing are the systematic discussion on the suitability physical chemical and processing aspects of substrates for coloration and finishing bio colorant s application as photosensitizers for dye sensitized solar cells animal based natural dyes natural dyes extraction and dyeing methodology application of natural dyes to cotton and jute textiles sol gel flame retardant and or antimicrobial finishings for cellulosic textiles rot resistance and antimicrobial finish of cotton khadi fabrics advanced materials and technologies for

antimicrobial finishing of cellulosic textiles

## Vocabulaire du génie enzymatique

1993

green chemistry for sustainable textiles modern design and approaches provides a comprehensive survey of the latest methods in green chemistry for the reduction of the textile industry s environmental impact in recent years industrial r d has been exploring more sustainable chemicals as well as eco friendly technologies in the textile wet processing chain leading to a range of new techniques for sustainable textile manufacture this book discusses and explores basic principles of green chemistry and their implementation along with other aspects of cleaner production strategies as well as new and emerging textile technologies providing a comprehensive reference for readers at all levels potential benefits to industry from the techniques covered in this book include savings in water energy and chemical consumption waste minimization as well as disposal cost reduction and production of high added value sustainable textile products to satisfy consumer demands for comfort safety aesthetic and multi functional performance properties innovative emerging methods are covered as well as popular current technologies creating a comprehensive reference that facilitates comparisons between methods evaluates the fundamental green chemistry principles as drivers for textile sustainability explains how and why to use renewable green chemicals in the textile wet processing chain

## Directory of Therapeutic Enzymes

2020-09-30

## Fundamentals of Biochemical Engineering

2008

## Enzymes in Detergency

1997-04-01

## Bioprocess Engineering

2016-08-29

## Enzyme Technology

2006-04-28

## Asymmetric Organic Synthesis with Enzymes

2008-03-31

## Annual Reports on Fermentation Processes

2014-12-01

## Enzyme Inhibition and Bioapplications

2012-05-09

## *Enzyme Technologies*

2013-11-22

## Advances in Textile Biotechnology

2010-09-01

## *Handbook of Renewable Materials for Coloration and Finishing*

2018-07-24

## Green Chemistry for Sustainable Textiles

2021-07-21

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