Advances in Biochemical Engineering Biotechnology


Volume 123

C. Kasper, University of Hannover, Germany; M. v. Griesenw, Austrian Cluster for Tissue Regeneration, Vienna, Austria; R. Pörtner, Technische Universität Hamburg-Harburg, Hamburg, Germany (Eds.)

Bioreactor Systems for Tissue Engineering II

Strategies for the Expansion and Directed Differentiation of Stem Cells


Features

> Covers trends in modern biotechnology
> All aspects of this interdisciplinary technology, where knowledge, methods and expertise are required from chemistry, biochemistry, microbiology, genetics, chemical engineering and computer science, are treated
> More information as well as the electronic version available at springer.com

Fields of interest

Biotechnology; Human Genetics; Molecular Medicine

Target groups

Research

Type of publication

Reviews

Due October 2010

Advances in Polymer Science


Volume 233

A. M. Herk, Eindhoven University of Technology, Eindhoven, The Netherlands; K. Landfester, MPI for Polymer Research, Mainz, Germany (Eds.)

Hybrid Latex Particles

Preparation with (Mini)emulsion Polymerization


Features

> Highest Impact Factor of all publications ranked by ISI within Polymer Science
> Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
> The electronic version is available free of charge for standing order customers at: springer.com/series/12/

Fields of interest

Polymer Sciences; Soft and Granular Matter, Complex Fluids and Microfluidics

Target groups

Research

Type of publication

Reviews

Due October 2010

Advances in Polymer Science


Volume 234

A. Pich, W. Richtering, RWTH Aachen, Germany (Eds.)

Chemical Design of Responsive Microgels


Features

> Highest Impact Factor of all publications ranked by ISI within Polymer Science
> Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
> The electronic version is available free of charge for standing order customers at: springer.com/series/12/

From the contents


Fields of interest

Polymer Sciences; Soft and Granular Matter, Complex Fluids and Microfluidics; Biomaterials

Target groups

Research

Type of publication

Reviews

Due October 2010

Due October 2010

Due October 2010
**Advances in Polymer Science**


**Volume 235**

A. M. Muzafarov, Russian Academy of Science, Moscow, Russia (Ed.)

**Silicon Polymers**


**Features**
- Highest Impact Factor of all publications ranked by ISI within Polymer Science
- Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
- Still valid and useful after 5 or 10 years
- The electronic version is available free of charge for standing order customers at: springer.com/series/12/

**From the contents**

**Fields of interest**
Polymer Sciences; Soft and Granular Matter, Complex Fluids and Microfluidics; Inorganic Chemistry

**Target groups**
Research

**Type of publication**
Reviews

**Available**
2011. XII, 228 p. Hardcover
- € 189,95 | £171.00
- *€ (D) 203,25 | € (A) 208,94 | sFr 272,50
ISBN 978-3-642-16381-4

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**Advances in Polymer Science**


**Volume 236**

M. Cloitre, ESPCI-CNRS Paris, France (Ed.)

**High Solid Dispersion**


**Features**
- Highest Impact Factor of all publications ranked by ISI within Polymer Science
- Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
- Still valid and useful after 5 or 10 years
- The electronic version is available free of charge for standing order customers at: springer.com/series/12/

**Contents**

**Fields of interest**
Polymer Sciences; Soft and Granular Matter, Complex Fluids and Microfluidics; Biomaterials

**Target groups**
Research

**Type of publication**
Reviews

**Due October 2010**
2010. XIV, 270 p. Hardcover
- € 229,00 | £206.50
- *€ (D) 245,03 | € (A) 251,90 | sFr 328,50
ISBN 978-3-642-16375-3

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**Advances in Polymer Science**


**Volume 237**

A. R. Palms, Eindhoven University of Technology, The Netherlands; A. Heise, Dublin City University, Ireland (Eds.)

**Enzymatic Polymisation**


**Features**
- Highest Impact Factor of all publications ranked by ISI within Polymer Science
- Short and concise reports on physics and chemistry of polymers, each written by the world renowned experts
- Still valid and useful after 5 or 10 years
- The electronic version is available free of charge for standing order customers at: springer.com/series/12/

**From the contents**
Oxireductases in the Enzymatic Synthesis of Water-Soluble Conducting Polymers, by E. Ochoteco and D. Mecerreyes*Transferases in Polymer Chemistry, by J. van der Vlist and K. Loos

**Fields of interest**
Polymer Sciences; Medicinal Chemistry; Pharmacy

**Target groups**
Research

**Type of publication**
Reviews

**Due October 2010**
2010. XIV, 140 p. Hardcover
- € 189,95 | £171.00
- *€ (D) 203,25 | € (A) 208,94 | sFr 272,50
ISBN 978-3-642-16381-4
Molecular Dynamics of Glass-Forming Systems

Effects of Pressure

Pressure is one of the essential thermodynamic variables that, due to some former experimental difficulties, was long known as the "forgotten variable." But this has changed over the last decade. This book includes the most essential first experiments from the 1960s and reviews the progress made in understanding glass formation with the application of pressure in the last ten years. The systems include amorphous polymers and glass-forming liquids, polypeptides and polymers blends. The thermodynamics of these systems, the glass-forming liquids, polypeptides and polymers are discussed in detail.

Features
- First book on the subject
- First volume of the series "Advances in Dielectrics"
- Written by renowned experts

Contents
The Glass "transition".- Origin of glass formation.- Models of temperature-pressure dependence of structural relaxation time.- New physics gained by the application of pressure in the study of dynamics of glass-formers.- Pressure effects on polymer blends.- Polypeptide dynamics.

Fields of interest
Polymer Sciences; Condensed Matter Physics; Ceramics, Glass, Composites, Natural Materials

Type of publication
Reviews

Due December 2010

2011. 200 p. (Advances in Dielectrics) Hardcover
- approx. € 189,95 | £171.00
- app.: € (D) 203,25 | € (A) 208,94 | sFr 272,50
ISBN 978-3-642-04901-9

K. J. Knox, University of British Columbia, Vancouver, BC, Canada

Light-Induced Processes in Optically-Tweezed Aerosol Droplets

Aerosols play a critical role in a broad range of scientific disciplines, such as atmospheric chemistry and physics, combustion science, drug delivery and human health. This thesis explores the fundamentals of a new technique for capturing single or multiple particles using light, and for characterising these particles by Raman or fluorescence spectroscopy. The outcome of this research represents a significant development in optical manipulation techniques, specifically in optical tweezing. These findings can be applied to studies of the mass accommodation of gas-phase water molecules adsorbing onto a water surface. Not only is this a fundamental process of interest to physical chemists, but it is important for understanding the role of aerosol particles in the atmosphere, including their ability to become cloud droplets. This new strategy for investigating aerosol dynamics is fundamental in helping us understand the indirect effect of aerosols on the climate.

Features
- Nominated by University of Bristol, UK for a Springer Theses Prize
- The thesis outlines the development of a new strategy for investigating aerosol dynamics
- The outcome of this research represents a significant development in optical manipulation techniques, specifically in optical tweezing

Contents
Introduction, Aerosol mass transfer, Experimental techniques Optical manipulation in aerosol optical tweezers, Spectroscopy of optically-tweezed aerosol droplets containing fluorescent chromophores, Ultra-sensitive absorption spectroscopy of optically-tweezed aerosol droplets, Kinetics of aerosol mass transfer, Summary, conclusions and future directions.

Fields of interest
Physical Chemistry; Geophysics and Environmental Physics; Climate Change

Type of publication
Monograph

Due January 2011

2011. 258 p. 170 illus., 54 in color. (Springer Theses) Hardcover
- approx. € 99,95 | £90.00
- app.: € (D) 106,95 | € (A) 109,95 | sFr 143,50
ISBN 978-3-642-16347-4
**Topics in Current Chemistry**

C. Wong  
Series editor: M. Olivucci, C. Wong

**Volume 297**

J. Piel, Universität Bonn, Germany (Ed.)

**Natural Products via Enzymatic Reactions**

Features  
► This series presents critical reviews of the present position and future trends in modern chemical research  
► Short and concise reports on chemistry, each written by the world renowned experts  
► Still valid and useful after 5 or 10 years  
► More information as well as the electronic version of the whole content available at: springerlink.com

From the contents  

**Fields of interest**  
Bioorganic Chemistry; Enzymology

**Target groups**  
Professional/practitioner

**Type of publication**  
Reviews

**Due October 2010**

2010. XIV, 200 p. Hardcover  
► € 189,95 | £171.00  
► *€ (D) 203,25 | € (A) 208,94 | sFr 272,50  
ISBN 978-3-642-16426-2

**Topics in Heterocyclic Chemistry**

Series editor: B. U. Maes, Editorial board: S. Polanc

**Volume 26**

G. W. Gribble, Dartmouth College, Hanover, NH, USA (Ed.)

**Heterocyclic Scaffolds II**  
Reactions and Applications of Indoles  


**Features**  
► Heterocyclic chemistry is the biggest branch of chemistry covering two-third of the chemical literature  
► The series covers hot topics of frontier research summarized by reputed scientists in the field  
► Our review series is topic related Online version available on SpringerLink.com

From the contents  

**Field of interest**  
Organic Chemistry

**Target groups**  
Research

**Type of publication**  
Reviews

**Due November 2010**

► € 299,00 | £269.50  
► *€ (D) 319,93 | € (A) 328,90 | sFr 429,00  
ISBN 978-3-642-15732-5

**Genomics of Foodborne Bacterial Pathogens**

Foodborne illnesses caused by various bacterial, viral, and fungal pathogens lead to a high number of morbidity and mortality in the U.S. and throughout the world. Recent advances in microbial genomics have significantly improved our understanding of the physiology, evolution, ecology, epidemiology, and pathogenesis of different foodborne pathogens. This book focuses on the genomics of foodborne bacterial pathogens. It begins with a brief overview of the recent advances in microbial genomics and the impact of genomics on food safety research. Then, eight chapters follow that elaborate some in-depth reviews on the genomics of several common foodborne bacterial pathogens including Bacillus, Campylobacter, Clostridium, Escherichia coli, Listeria, Salmonella, Staphylococcus, and Vibrio. Finally, the last four chapters focus on some current genomic, transcriptomic, and proteomic technologies and their applications in studying the epidemiology, evolution, and pathogenesis of foodborne bacterial pathogens.

**Features**  
► One of the only books focusing on the genomics of foodborne bacterial pathogens  
► Includes in-depth reviews on the genomics of several common foodborne bacterial pathogens including Bacillus, Campylobacter, Clostridium, Escherichia coli, Listeria, Salmonella, Staphylococcus, and Vibrio Versatile book  
► Excellent reference for scientists can also be used as a textbook at both the undergraduate and graduate level

**Fields of interest**  
Food Science; Chemistry/Food Science, general; Microbial Genetics and Genomics

**Target groups**  
Professional/practitioner

**Type of publication**  
Contributed volume

**Due March 2011**

2011. 640 p. 48 illus., 31 in color. (Food Microbiology and Food Safety) Hardcover  
► approx. *€ 122,45 | £145.00  
► appprox. *€ (D) 131,02 | € (A) 134,70 | sFr 264,00  
X. Zhang, The Scripps Research Institute, La Jolla, CA, USA

**Multistate GTPase Control**

**Co-translational Protein Targeting**

Proteins act as macromolecular machinery that mediate many diverse biological processes – the molecular mechanisms of this machinery has fascinated biologists for decades. Analysis of the kinetic and thermodynamic features of these mechanisms could reveal unprecedented aspects of how the machinery function and will eventually lead to a novel understanding of various biological processes. This dissertation comprehensively demonstrates how two universally conserved guanosine triphosphatases in the signal recognition particle and its membrane receptor maintain the efficiency and fidelity of the co-translational protein targeting process essential to all cells.

A series of quantitative experiments reveal that the highly ordered and coordinated conformational states of the machinery are the key to their regulatory function.

**Features**
- Prize-awarded thesis
- New research in an emerging field
- Interdisciplinary applications

**Contents**

Introduction.- A Multistep Mechanism for Assembly of the SRP-SR Complex.- Dynamics of the Transient Intermediate during SRP-SR Association.- Multiple Conformational Switches Control Cotranslational Protein Targeting.- Sequential Checkpoints Govern Substrate Selection during Cotranslational Protein Targeting.

**Fields of interest**
Bioorganic Chemistry; Proteomics; Analytical Chemistry

**Target groups**
Research

**Type of publication**
Monograph

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Due January 2011

2011. 150 p. 80 illus., 30 in color. (Springer Theses)
Hardcover

- approx. € 99,95 | £90.00
- approx. € (D) 106,95 | € (A) 109,95 | sFr 143,50