Advances in Polymer Science
Volume 252
T. Kanaya, Kyoto University, Japan (Ed)

Glass Transition, Dynamics and Heterogeneity of Polymer Thin Films

Features
► A high Impact Factor and a top position in the ISI ranking (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; Surface and Interface Science, Thin Films; Surfaces and Interfaces, Thin Films

Target groups
Research

Discount group
Professional Non-Medical

H. S. Alper, The University of Texas at Austin, TX, USA (Ed)

Systems Metabolic Engineering
Methods and Protocols

Contents
A Structural and Vibrational Study of the Chromyl Chlorosulfate, Fluorosulfate, and Nitrate Compounds

A Structural and Vibrational Study of the Chromyl Chlorosulfate, Fluorosulfate and Nitrate Compounds presents important studies related to the structural and vibrational properties of the chromyl compounds based on Ab-initio calculations. The synthesis and the study of such properties are of chemical importance because the stereochemistries and reactivities of these compounds are strongly dependent on the coordination modes that adopt the different ligands linked to the chromyl group. In this book, the geometries of all stable structures in gas phase for chromyl chlorosulfate, fluorosulfate, and nitrate are optimized using Density functional Theory (DFT). Then, the complete assignments of all observed bands in the infrared and Raman spectra are performed combining DFT calculations with Pulay’s Scaled Quantum Mechanics Force Field (SQMFF) methodology and taking into account the type of coordination adopted by the chlorosulfate, fluorosulfate and nitrate ligands as monodentate and bidentate. Moreover, the force constants for each compound at the same levels of theory are calculated.

Contents
Structural and Vibrational Analysis of Chromyl Chlorosulfate.- Structural and Vibrational Study of Chromyl Fluorosulfate.- Structural and Vibrational Study of Chromyl Nitrate.

Fields of interest
Theoretical and Computational Chemistry; Inorganic Chemistry; Atomic/Molecular Structure and Spectra

Target groups
Research

Discount group
Professional Non-Medical

Due November 2012
2013. VII, 83 p. 13 illus., 3 in color. (SpringerBriefs in Molecular Science) Softcover
► $49.95

Due January 2013
2013. 400 p. (Springer Series on Chemical Sensors and Biosensors, Volume 13) Hardcover
► approx. $409.00
ISBN 978-3-642-34647-7

Due February 2013
7th ed. 2013. X, 455 p. 130 illus., 44 in color. Hardcover
► approx. $89.95
ISBN 978-1-4614-6095-4

Autonomous Sensor Networks

Collective Sensing Strategies for Analytical Purposes

This volume surveys recent research on autonomous sensor networks from the perspective of enabling technologies that support medical, environmental and military applications. State of the art, as well as emerging concepts in wireless sensor networks, body area networks and ambient assisted living introduce the reader to the field, while subsequent chapters deal in depth with established and related technologies, which render their implementation possible.

Features
► Written by international experts from multiple disciplines
► Richly illustrated
► A valuable source of information for researchers in both academic and industrial settings and advanced students

Contents

Fields of interest
Industrial Chemistry/Chemical Engineering; Signal, Image and Speech Processing; Special Purpose and Application-Based Systems

Target groups
Research

Discount group
Professional Non-Medical

Due January 2013
2013. 400 p. (Springer Series on Chemical Sensors and Biosensors, Volume 13) Hardcover
► approx. $409.00
ISBN 978-3-642-34647-7

Ice Cream

Ice Cream is the only comprehensive textbook and reference book published in the US on the technical and scientific aspects of the formulation, manufacture, and analysis of frozen dairy desserts. The 7th edition will incorporate crucial information for manufacturers and researchers alike, such as the latest research reports and the newest equipment produced by the supplying industry, and expand on important topics like composition and property, ingredients, calculations, refrigeration, and microbiological quality and safety. In addition, there will be updates on international regulations on composition and labeling, as well as the principles of food safety and quality regarding cleaning, sanitizing, and total quality assurance in the industry.

Features
► The only American comprehensive reference book on the technical and scientific aspects of frozen dairy desserts
► Includes the latest research report
► Updated information on international regulations on composition and labeling

Contents

Fields of interest
Food Science; Carbohydrate Chemistry

Target groups
Professional/practitioner

Discount group
Professional Non-Medical
W. Hu, Nanjing University, China

Polymer Physics
A Molecular Approach

A molecular view on the fundamental issues in polymer physics is provided with an aim at students in chemistry, chemical engineering, condensed matter physics and material science courses. An updated translation by the author, a renowned Chinese chemist, it has been proven to be an effective source of learning for many years. Up-to-date developments are reflected throughout the work in this concise presentation of the topic. The author aims at presenting the subject in an efficient manner, which makes this particularly suitable for teaching polymer physics in settings where time is limited, without having to sacrifice the extensive scope that this topic demands.

Features
► Provides a concise introduction balanced view of basic issues in polymer physics ► The content has been refined over years of teaching experience ► Represents the cutting-edge knowledge in the field

Contents

Fields of interest
Polymer Sciences; Thermodynamics; Characterization and Evaluation of Materials

Target groups
Research

Discount group
Professional Non-Medical

J. J. Li, Bristol-Myers Squibb and Company, Princeton, NJ, USA; E. Corey, Harvard University, Cambridge, MA, USA (Eds)

Total Synthesis of Natural Products
At the Frontiers of Organic Chemistry

‘Total Synthesis of Natural Products’ is written and edited by some of today’s leaders in organic chemistry. Eleven chapters cover a range of natural products, from steroids to alkaloids. Each chapter contains an introduction to the natural product in question, descriptions of its biological and pharmaceutical properties and outlines of total synthesis procedures already carried out. Particular emphasis is placed on novel methodologies developed by the respective authors and their research groups. This text is ideal for graduate and advanced undergraduate students, as well as organic chemists in academia and industry.

Features
► Latest offer to the organic chemistry community ► Edited by two distinguished chemists in academia and industry ► A stellar group of authors are recruited who are well-known scholars in the field of total synthesis

Contents

Fields of interest
Organic Chemistry; Pharmacology/Toxicology; Medicinal Chemistry

Target groups
Research

Discount group
Professional Non-Medical

G. Li, Nanjing University, China; P. Miao, Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China

Electrochemical Analysis of Proteins and Cells

Electrochemical Analysis of Proteins and Cells presents the remarkable progress made over the years in the electrochemical analysis of proteins and cells, due to the rapid development of protein electrochemistry together with related technologies such as surface modification, molecular recognition, molecular assembly, and nanotechnology. As an interdisciplinary field combining electrochemistry, analytical chemistry, biochemistry, biophysics, biomedicine and material science, the electrochemical analysis of proteins and cells has attracted broad and extensive research interest. The main emphasis of this book is on the principles of electrochemical strategies and the practical utility of related detection systems, which is of great importance in all biological sciences, such as cell biology and molecular biology, as well as in biomedical fields like cancer research.

Features
► Offers an up-to-date, easy-to-follow presentation of recent advances in the electrochemical analysis of proteins and cells ► Emphasizes on the principles of electrochemical strategies and the practical utility of related detection systems ► Includes the applications of nanomaterials in the electrochemical analysis of protein and cells

Contents
Introduction.- Theoretical Background of Electrochemical Analysis.- Electrochemical Analysis of Proteins.- Electrochemical Analysis of Cells

Fields of interest
Electrochemistry; Protein Science; Biomedical Engineering

Target groups
Research

Discount group
Professional Non-Medical

If you have any questions, please let me know. I'm here to help.
N. B. Rizvi, S. A. Nagra, University of the Punjab, Lahore, Pakistan

**Minerals and Lipids Profiles in Cardiovascular Disorders in South Asia**

Cu, Mg, Se, Zn and Lipid Serum Profiles for the Example of Patients in Pakistan

This book correlates different minerals and lipids serum profiles with the prevalence of cardiovascular disorders in South Asian countries with special emphasis on Pakistan. Cardiovascular disorders (CVD, e.g.)

**Features**

► Provides important information about minerals and lipid profiles in cardiovascular disorders (CVD) in South Asian countries like Pakistan ► Fills the data gap on the relation between minerals and lipid profiles in CVD patients in South Asia ► Delivers background information to establish possible solutions to counteract the increasing problem of CVD in South Asian countries like Pakistan, e.g. through proper dietary profiles ► Describes results of great significance for developing dietary management strategies for treatment and prevention of CVD

**Contents**


**Fields of interest**

Medicinal Chemistry; Medical Biochemistry; Nutrition

**Target groups**

Research

**Discount group**

Professional Non-Medical

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**Topics in Organometallic Chemistry**


**Volume 44**

L. J. Gooßen, University of Kaiserslautern, Germany (Ed)

**Inventing Reactions**

**Contents**