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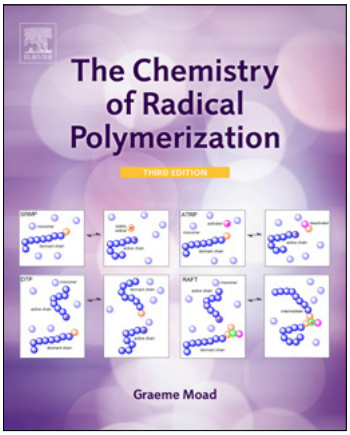

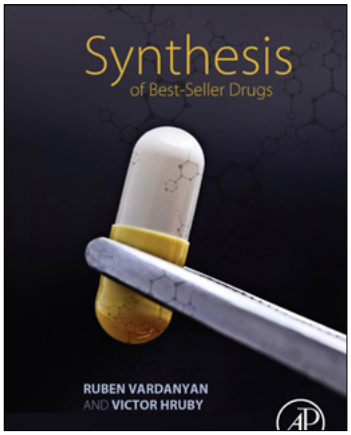

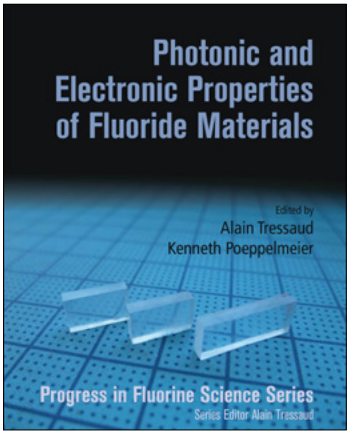

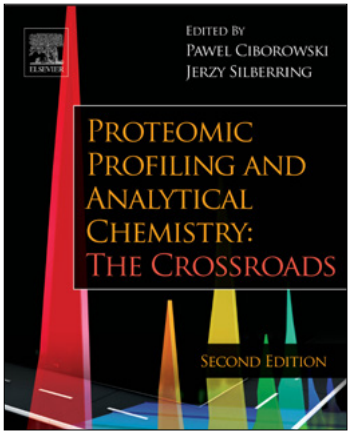

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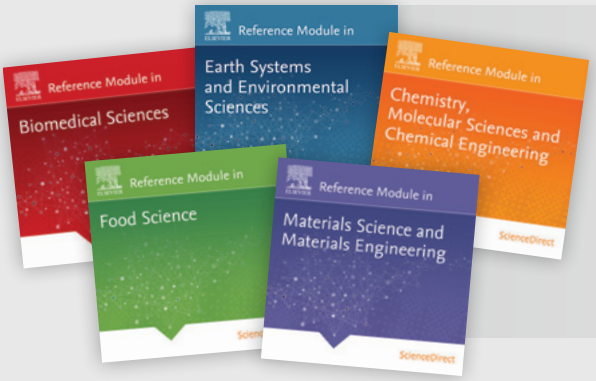

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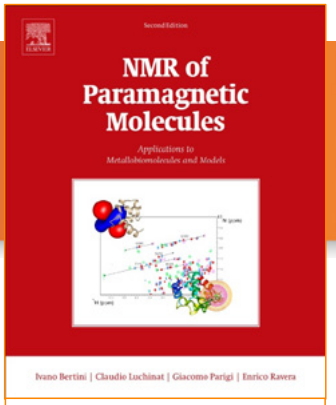

NMR of Paramagnetic Molecules, 2e

Applications to Metallobiomolecules and Models

Ivano Bertini Department of Chemistry, University of Florence, Italy
Claudio Luchinat University of Florence, Florence, Italy
Giacomo Parigi University of Florence, Florence, Italy
Enrico Ravera University of Florence, Florence, Italy

An updated and expanded guide to performing high-resolution NMR experiments and obtaining structural and dynamic information on paramagnetic metal ion-containing systems

ISBN: 978-0-444-63436-8
PREVIOUS EDITION ISBN: 9780444205292
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 448

AUDIENCE

Chemists (analytical, physical, organic, inorganic); structural biologists/life scientists; physicists; advanced students in these areas

KEY FEATURES

- Reflects all advances in the field in a completely updated new edition
- Presents new material on self-orientation residual dipolar couplings, solid state NMR, dynamic nuclear polarization, and paramagnetic restraints for structure calculations
- Includes information relevant to paramagnetic molecules, metallobiomolecules, paramagnetic compounds, and paramagnetic NMR spectroscopy
- Presents specific examples of paramagnetic inorganic species and experimental techniques for structure characterization

DESCRIPTION

NMR of Paramagnetic Molecules: Applications to Metallobiomolecules and Models, Second Edition, is a self-contained, comprehensive reference for chemists, physicists, and life scientists whose research involves analyzing paramagnetic compounds. Since the previous edition of this book was published, there have been many advancements in the field of paramagnetic NMR spectroscopy. This completely updated and expanded edition contains the latest fundamental theory and methods for mastery of this analytical technique. Users will learn how to interpret the NMR spectra of paramagnetic molecules, improve experimental techniques, and strengthen their understanding of the underlying theory and applications.

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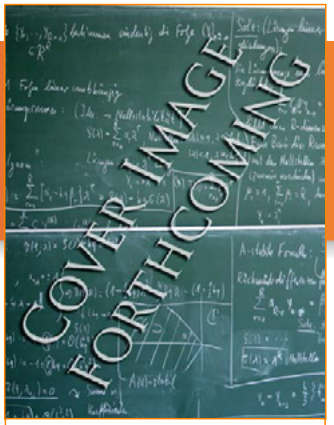

High Throughput Bioanalytical Sample Preparation, 2e

Methods and Automation Strategies

David A. Wells Sample Prep Solutions, St. Paul, Minnesota, USA

ELSEVIER

A must-have resource for industrial analytical chemists and others seeking to optimize their daily workflow, this authoritative reference features detailed coverage of emerging preperation techniques, including micro sampling and molecularly imprinted polymers

ISBN: 978-0-444-63758-1

PREVIOUS EDITION ISBN: 9780444510297

PUB DATE: June 2016

FORMAT: Paperback

PAGES: c. 740

AUDIENCE

Primarily analytical chemists (particularly those performing sample preparation for bioanalytical applications), bench scientist supervising analysts, and pharma/biotech/CROs. Additionally of interest to manufacturers of sample prep products, automation products, and accessory products; academic researchers; non-analytical chemists who are faced with sample preparation challenges.

KEY FEATURES

- Offers broad coverage of all sample preparation methods and techniques—including the latest industry developments—within bioanalysis
- Provides detailed 'How-To' approaches for each technique, making its applications immediately implementable
- Authored by an industry analytical chemist who has more than 30 years of experience in all facets of sample preparation, drug analysis, and more
- Features a thorough and inclusive bibliography of related publications in the field

DESCRIPTION

High Throughput Bioanalytical Sample Preparation: Methods and Automation Strategies, Second Edition, is the go-to resource for industrial analytical chemists and others seeking the latest techniques for optimizing sample preparation in their everyday workflow.

Outlining the latest preparation techniques from around the globe, this helpful guide provides answers to questions such as: How do I automate a procedure? How do I work to reduce matrix interferences? Could I do this procedure on-line instead of in a batch manually? What sorbent materials are available in the market? How do I use a cation exchange resin? What has been published on micro-sampling techniques? What is a molecularly imprinted polymer? Can liquid-liquid extraction be used in a plate format? How do I seal microplates after elution? Can I elute analytes in tiny microliter volumes? How do I evaporate eluates in a microplate? How can I use my LEAP auto-sampler to perform sample prep? Which microplate can work with 50 microliter sample volumes?

Featuring detailed coverage of the newer techniques that have emerged since the first edition published, including micro sampling and molecularly imprinted polymers, this book addresses the workflow pain points associated with extraction process efficiency, outlining exactly how to optimize productivity through enhanced method development. Combining a step-by-step approach with a thorough explanation of the technology, this new edition features 40% new content and 60% revised content, accurately and thoroughly capturing the latest developments in research since the previous edition published in 2003.

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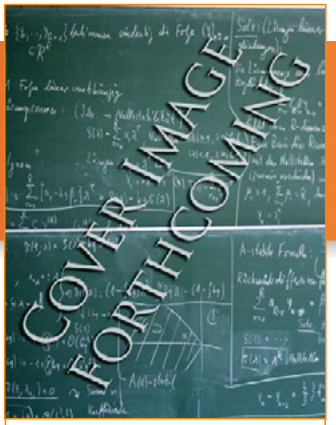

Mass Spectrometry

Techniques for Structural Characterization of Glycans

Mike Madson BioLogistics, LLC, Iowa, USA

ISBN: 978-0-12-804129-1

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 65

AUDIENCE

Analytical chemists, pharmaceutical scientists, and food scientists conducting research in mass spectral analysis.

This short-format reference presents new methods for conducting detailed carbohydrate qualitative analysis—arming analytical chemists, pharmaceutical scientists, and food scientists with a quick reference that will allow them to determine the structures of carbohydrate molecules, thus providing the relevant research necessary for advances in this area of study

KEY FEATURES

- Authored by an analytical chemist with more than 30 years of experience in research and industry
- Serves as a quick reference in mass spectral analysis and carbohydrates
- Includes more than 60 figures to aid in the retention of key concepts

DESCRIPTION

Mass Spectrometry: Techniques for the Structural Characterization of Glycans presents new methods for conducting detailed carbohydrate qualitative analysis—arming analytical chemists, pharmaceutical scientists, and food scientists with a quick reference that will allow them to determine the structures of carbohydrates molecules.

As there is a need in the scientific community for content specific to structural determination and analysis of new glycoprotein drug, and because structure-activity analysis requires a structural determination of the N- and O-linked oligosaccharides linked to glycol-proteins, this book provides the relevant research that are necessary for advances and new outcomes in this area of study.

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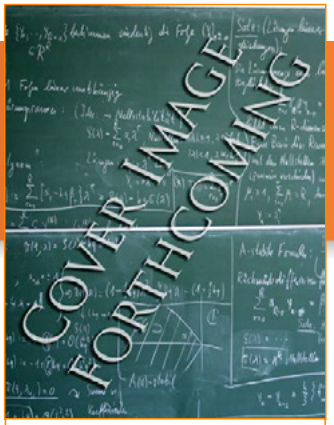

Analytical Chemistry for Assessing Medication Adherence

Sangeeta Tanna De Montfort University, Leicester, UK
Graham Lawson De Montfort University, Leicester, UK

ELSEVIER

An early-stage review of attempts to ameliorate the major public healthcare problem of medication adherence through analytical chemistry techniques, setting the scene for future developments

ISBN: 978-0-12-805463-5

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 140

AUDIENCE

Analytical chemists, clinical chemists, and medicinal chemists; pharmacologists; healthcare professionals including pharmacists, nurses, and clinicians; analytical instrument manufacturers; pharmaceutical scientists; regulatory officials and public health officials

KEY FEATURES

- Surveys the strengths, weaknesses, and appropriateness of existing instruments and techniques and points the way toward a program of therapeutic optimization
- Brings together data scattered amongst professional journals and other sources in a single convenient volume
- Presents the problem of adherence and the authors' evaluation of possible solutions based on the analysis of patient bio-samples

DESCRIPTION

The lack of adherence to medication is a growing public health problem worldwide and is costing many patients their good health and healthcare systems billions of dollars. *Analytical Chemistry for Assessing Medication Adherence* introduces the concept of medication adherence/compliance and reports international perspectives on medication adherence while highlighting its importance. It then describes the opportunities for analytical chemistry to assess medication adherence and thereby provide an evidence base for clinicians to improve patient health outcomes. The authors highlight the strengths and weaknesses of each of the analytical techniques cited in addition to categorizing the findings in terms of the biological samples used to assess adherence and identifying methods to extract biological samples prior to analysis. The final chapter provides the authors' perspective in this area, emphasising the importance of medication optimization for individual patients.

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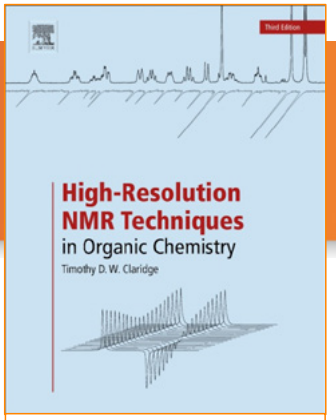


High-Resolution NMR Techniques in Organic Chemistry, 3e

Timothy D.W. Claridge University of Oxford, Oxford, UK

ISBN: 978-0-08-099986-9

PREVIOUS EDITION ISBN: 9780080548180

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 582

AUDIENCE

Organic Chemistry students and professionals who require NMR skills, NMR directors at academic and industry institutions

Timely and thorough, this revision describes the most important high-resolution NMR techniques used in elucidating the structure of organic molecules and examining their behavior in solution

KEY FEATURES

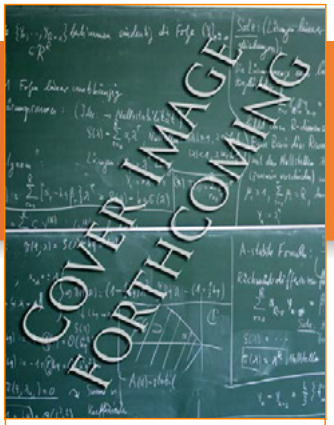
- Uniquely covers both the hardware and the analysis of NMR techniques
- Includes valuable updates on the important, growing area of Ligand-protein binding, recent hardware developments, and additional practical examples
- Focuses on methods and examples vital for the practicing and student chemist

DESCRIPTION

High-Resolution NMR Techniques in Organic Chemistry, Third Edition, describes the most important NMR spectroscopy techniques for structure elucidation of organic molecules and the investigation of their behavior in solution. Appropriate for students as well as chemists, this thorough revision covers the practical aspects of NMR instrumentation and explores the capabilities and the limitations of key one-dimensional and two-dimensional analytical methods including J-resolved, nuclear Overhauser, diffusion, and experimental spectroscopic techniques.

The Third Edition includes valuable updates on recent hardware developments and common and novel techniques. It also features an entirely new chapter on using NMR methods to study protein-ligand binding processes, reflecting this area's growing importance for life science and medicinal chemistry research in industry and academia. Using accessible figures to present and explain techniques, the book limits complex mathematical descriptions and provides multiple worked examples throughout. Additionally, a new, cumulative "Example Problem Solving" chapter demonstrates the application of described methods with readily available samples; readers can view the spectra, follow the interpretation, and collect their own data for comparison and practice.

A trusted authority on this critical expertise, *High-Resolution NMR Techniques in Organic Chemistry*, *Third Edition,* is an essential resource for every NMR manager and chemistry student.



Exercise, Sport, and Bioanalytical Chemistry

Principles and Practice

Anthony C Hackney Schools of Public Health and Medicine, University of North Carolina, Chapel Hill, NC, USA

ISBN: 978-0-12-809206-4

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 140

AUDIENCE

Analytical chemists, biochemists, and physiologists, as well as trainers, competitive and elite athletes, and physical therapists

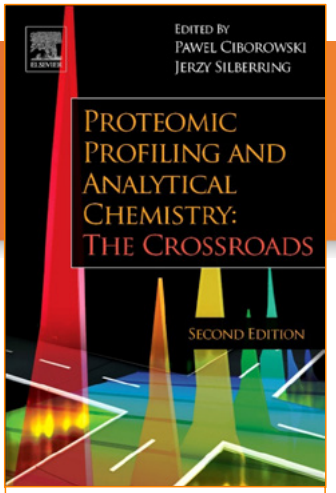
An overview of the biochemistry of exercise, sport, and physical activity—from key traditional concepts and recent findings to developing trends in analytical chemistry that will inform future research and application

KEY FEATURES

- Provides readers with the fundamental biochemistry and some elements of the physiology behind physical activity/exercise and describes the analytical techniques used to elucidate the science
- Written in clear, concise, compelling prose that is neither simplistic to scientists nor too sophisticated for a large, diverse global audience
- A One-Page Close-Up in each chapter illustrates key topics to catch, engage, entertain, and create a novel synthesis of thought

DESCRIPTION

Exercise, Sport, and Bioanalytical Chemistry: Principles and Practice focuses on the basic and applied aspects of energy metabolism in humans. It concisely conveys the key traditional concepts and recent findings and provides insight into developing trends in analytical chemistry that will inform future research and application. Concise and scientific, yet intelligible to the non-scientist, the book consists of two parts, beginning with Part I: Basics and Background, which provides the biochemistry necessary to understand the rest of the book and describes analytical processes and results as an aid to grasping the science. Part II: Applications: Knowledge into Practice then explores measurement techniques for metabolism, energy expenditure of various activities, techniques that enhance expenditure, metabolic adaptation, and foods and drugs that enhance expenditure. The benefits of exercise are discussed, future trends are explored, and the many concrete examples are both useful and entertaining. This volume allows readers to come away with a grasp of the scientific concepts, how they are manifested in research techniques, and how the results of research can be applied in the real world of public health and personal development.



Proteomic Profiling and Analytical Chemistry, 2e

The Crossroads

Edited by: ***Pawel Ciborowski*** Mass Spectrometry and Proteomics Core Facility, University of Nebraska Medical Center, Omaha, NE, USA
Jerzy Silberring AGH University of Science and Technology, Kraków, Poland, and Centre of Polymer and Carbon Materials, Polish Academy of Sciences, Kraków, Poland

ELSEVIER

By providing an overview and understanding of the analytical chemistry tools applicable to proteomic profiling and validation experiments, this book bridges the gap between overly specialized courses and books in mass spectrometry, proteomics, and analytical chemistry, helping researchers with an analytical chemistry background to break into the proteomics field

ISBN: 978-0-444-63688-1

PREVIOUS EDITION ISBN: 9780444593788

PUB DATE: March 2016

FORMAT: Paperback

PAGES: c. 300

AUDIENCE

analytical chemists, mass spectrometrists, researchers in proteomics, molecular biologists, biotechnologists, and pharmaceutical scientists

KEY FEATURES

- Covers the analytical consequences of protein and peptide modifications that may have a profound effect on how and what researchers actually measure
- Includes practical examples illustrating the importance of problems in quantitation and validation of biomarkers
- Helps in designing and executing proteomic experiments with sound analytics

DESCRIPTION

Proteomic Profiling and Analytical Chemistry: The Crossroads, Second Edition, helps scientists without a strong background in analytical chemistry understand basic analytical principles and apply them to proteomics profiling. The book bridges the gap between overly specialized courses and books in mass spectrometry, proteomics, and analytical chemistry, helping researchers with an analytical chemistry background to break into the proteomics field. By focusing on practical applications, the book helps readers design better experiments and more easily interpret, analyze, and validate the resulting data.

Experimental aspects such as sample preparation, protein extraction and precipitation, gel electrophoresis, microarrays, dynamics of fluorescent dyes, and more are covered in detail. The second edition features a new chapter on SWATH-MS, substantial updates to proteomic database search and analytical quantification, an expanded discussion of post-hoc statistical tests, and additional content on validation in proteomics.

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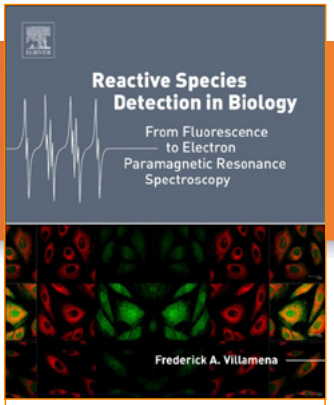

Reactive Species Detection in Biology

From Fluorescence to Electron Paramagnetic Resonance Spectroscopy

Frederick A. Villamena Ohio State University, Columbus, Ohio, USA

ISBN: 978-0-12-420017-3

PUB DATE: March 2016

FORMAT: Hardback

PAGES: c. 416

AUDIENCE

Research scientists / principal investigators in the fields of chemistry, biomedical research, nutrition/food science, public health, biology/biochemistry, biomedical engineering, and other related fields dealing with antioxidants (cosmetics, home products, fuel cell research, materials research)

Describes the theories, chemistries, methodologies, and applications for the detection of reactive species in biological systems, both in-vitro and in-vivo

KEY FEATURES

- Reviews all current advances in radical detection
- Emphasizes chemical structures and reaction schemes fundamental to radical detection and identification
- Describes the uses, advantages, and disadvantages of various probe designs
- Examines new approaches to radical probe development

DESCRIPTION

Reactive oxygen species have been implicated in the pathogenesis of various diseases and therefore their detection and identification in biological systems is of extreme importance. *Reactive Species Detection in Biology* presents theories, chemistries, methodologies, and various applications for the detection of reactive species in biological systems, both *in-vitro* and *in-vivo*. Techniques covered include fluorescence, high performance chromatography, mass spectrometry, immunochemistry, and electron paramagnetic resonance spectroscopy. Probe design and development are also reviewed in order to advance new approaches in radical detection either through synthesis, computations, or experimental applications.

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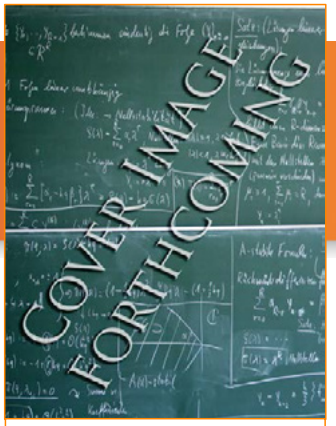


Methods and Advances in Traditional Chinese Medicine

David Yue-Wei Lee McLean Hospital/Harvard Medical School, Belmont, MA, USA
Kai-Shun Bi Shenyang Pharmaceutical University, Shenyang, China
Ronghua Dai Shenyang Pharmaceutical University, Shenyang, China
Gerald T. Pollard Howard Associates, LLC, Research Triangle Park, NC, USA

Applies the modern tools of analytical chemistry to the ancient, whole-body approach of Traditional Chinese Medicine to bring it into the mainstream of therapeutics

ISBN: 978-0-12-805161-0
PUB DATE: March 2016
FORMAT: Paperback
PAGES: c. 140

AUDIENCE

chemists, pharmacologists, and toxicologists in academic, government, and pharmaceutical company research laboratories developing therapeutic natural products, especially Chinese herbal medicines; public health and pharmaceutical regulatory agency scientists and officials charged with assuring the quality and safety of herbal therapeutic preparations; and those concerned with the sourcing of and international trade in herbal raw materials

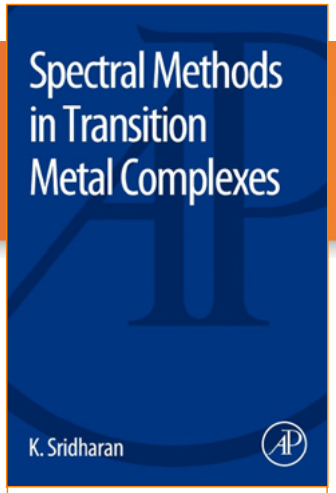
KEY FEATURES

- Emphasizes the advantages of combining traditional medicine and modern tools for drug discovery and development
- Provides examples which source, identify, and assay materials; describe preparation of complex remedies and isolate or synthesize their components; characterize complexes and derivatives; and test selected entities for efficacy in animals and humans
- Explains the capabilities and limitations of various methods for evaluating test results, establishing the parameters of quality assurance

DESCRIPTION

Methods and Advances in Traditional Chinese Medicine describes analytical chemistry methods used to characterize constituents of herbal remedies, explore their mechanisms of action singly and in concert, and support the clinical trials necessary to bring Traditional Chinese Medicine (TCM) into the mainstream of therapeutics. With recent advances in analytical instruments, molecular pharmacology, and genetics, it is now possible to investigate the bioactive molecules in a complex medicine on a rational basis. This book is the first to combine TCM with analytical chemistry methods toward this goal.

The book begins with a brief history of TCM, consideration of its strengths and weaknesses, and a review of the literature on application of Western analytical methods. It continues with an examination of the concept of synergistic, multi-targeted action among components, followed by an analysis of how analytical chemistry and other methods are used to assure quality and uniformity of natural products within tolerable limits. It then addresses the complexity introduced by absorption, distribution, and metabolism of an already complex drug. The last chapter advocates a system biological approach as the way forward for drug discovery and development in TCM.



Spectral Methods in Transition Metal Complexes

K. Sridharan Dean, School of Chemistry and Biotechnology, SASTRA University, Thanjavur, Tamil Nadu, India

ELSEVIER

Characterizes the metal complexes using electronic spectroscopy, IR spectroscopy, NMR spectroscopy and EPR spectroscopy

ISBN: 978-0-12-809591-1

PUB DATE: February 2016

FORMAT: Paperback

PAGES: c. 190

AUDIENCE

Analytical chemists, spectroscopy researchers, and instructors at the graduate level teaching related coursework

KEY FEATURES

- Provides readers with a single reference on metal complexes and coordination compounds
- More than 100 figures, tables, and illustrations aid in the retention of key concepts
- Authored by a scientist with nearly 40 years of experience in research and instruction

DESCRIPTION

Spectral Methods in Transition Metal Complexes provides a conceptual understanding of how to interpret the optical UV-vis, vibrational EPR, and NMR spectroscopy of transition metal complexes.

Metal complexes have broad applications across chemistry in the areas of drug discovery such as anticancer drugs, sensors, special materials for specific requirements, and catalysis. A thorough knowledge in preparation and characterization of metal complexes, while niche, is critical.

Characterizing the metal complexes using electronic spectroscopy, IR spectroscopy, NMR spectroscopy and EPR spectroscopy plays a crucial role in the characterization of metal complexes. Accessible to both the seasoned researcher and the graduate student alike, this book provides readers with a single source of content that addresses spectral methods in transition metal complexes.

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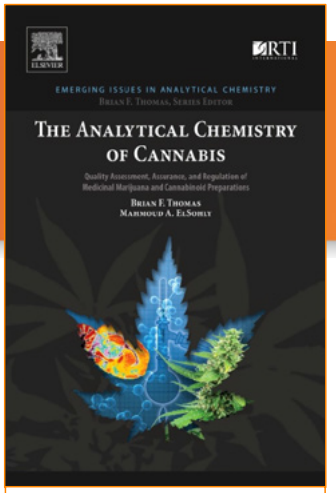

The Analytical Chemistry of Cannabis

Quality Assessment, Assurance, and Regulation of Medicinal Marijuana and Cannabinoid Preparations

Brian F Thomas Principal Scientist, Analytical Chemistry and Pharmaceutics, RTI International, Research Triangle Park, NC, USA

Mahmoud Elsohly Research Professor and Professor of Pharmaceutics, Research Institute of Pharmaceutical Sciences, National Center for Natural Products Research, The University of Mississippi, University, MS, USA

ELSEVIER

A detailed discussion of the analytical chemistry methods employed in the characterization of the chemical constituents in *Cannabis sativa* and cannabinoid-containing dosage formulations

ISBN: 978-0-12-804646-3

PUB DATE: December 2015

FORMAT: Paperback

PAGES: c. 116

AUDIENCE

Analytical chemists, pharmacologists, medical doctors, clinical trials specialists, public health officials, international food and drug monitoring agencies, forensics specialists, law enforcement officers; Advanced undergraduate and graduate level courses in pharmacy, pharmacology, experimental therapeutics, analytical chemistry, and forensics

KEY FEATURES

- Addresses current and emerging analytical chemistry methods—an approach that is unique among the literature on this topic
- Presents information from a broad perspective of the issues in a single compact volume
- Employs language comprehensible to non-technical stakeholders as well as to specialists in analytical chemistry

DESCRIPTION

A volume in the *Emerging Issues in Analytical Chemistry* series, published in partnership with RTI International and edited by Brian F. Thomas, *The Analytical Chemistry of Cannabis: Quality Assessment, Assurance, and Regulation of Medicinal Marijuana and Cannabinoid Preparations* provides analytical chemistry methods that address the latest issues surrounding cannabis-based products. The plethora of marketed strains of cannabis and cannabinoid-containing products, combined with the lack of industry standards and labelling requirements, adds to the general perception of poor quality control and limited product oversight. The methods described in this leading-edge volume help to support the manufacturing, labelling, and distribution of safe and consistent products with known chemical content and demonstrated performance characteristics. It treats analytical chemistry within the context of the diverse issues surrounding medicinal and recreational cannabis in a manner designed to foster understanding and rational perspective in non-scientist stakeholders as well as scientists who are concerned with bringing a necessary degree of order to a field now characterized by confusion and contradiction.

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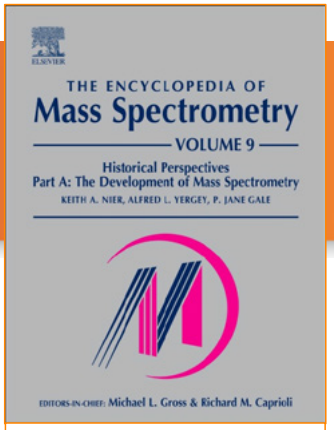

The Encyclopedia of Mass Spectrometry

Volume 9: Historical Perspectives, Part A: The Development of Mass Spectrometry

Edited by: ***Keith A. Nier*** Historian, Madison, NJ, USA
Alfred L. Yergey NIH Scientist Emeritus, National Institute of Child Health and Human Development, Bethesda, MD, USA
P. Jane Gale Waters Educational Services, Boston, MA, USA

ISBN: 978-0-08-043848-1
PUB DATE: December 2015
FORMAT: Hardback
PAGES: c. 390

AUDIENCE
Researchers and professionals in Mass Spectrometry

Historical overview of Mass Spectrometry's development and uses

KEY FEATURES

- Preserves the history and development of Mass Spectrometry for use across scientific fields
- Written and edited by Mass Spectrometry experts
- Coordinates with *Volume 9: Historical Perspectives, Part B: Notable People in Mass Spectrometry*, a collection of short biographies on many of the major people who carried out this development

DESCRIPTION

Volume 9: Historical Perspectives, Part A: The Development of Mass Spectrometry of *The Encyclopedia of Mass Spectrometry* describes and analyzes the development of many aspects of Mass Spectrometry. Beginning with the earliest types of Mass Analyzers, *Historical Perspectives* explores the development of many different forms of analytical processes and methods. The work follows various instruments and interfaces, to the current state of detectors and computerization. It traces the use of Mass Spectrometry across many different disciplines, including Organic Chemistry, Biochemistry, and Proteomics; Environmental Mass Spectrometry; Forensic Science; Imaging; Medical Monitoring and Diagnosis; Earth and Planetary Sciences; and Nuclear Science.

Finally, the book covers the history of manufacturers and societies as well as the professionals who form the Mass Spectrometry community.

Also available: *Volume 9: Historical Perspectives, Part B: Notable People in Mass Spectrometry* briefly reviews the lives and works of many of the major people who carried out this development.

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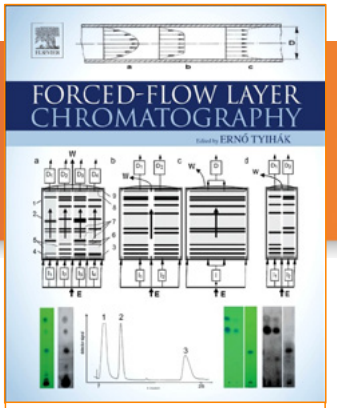

Forced-Flow Layer Chromatography

Edited by: ***Erno Tyihak*** Honorary Professor, University of Szeged, Szeged, Hungary; Scientific Advisor, Plant Protection Institute, Budapest, Hungary

ELSEVIER

A review of the basic elements, separation methodologies, and biological detection potential of forced-flow layer chromatography, with special emphasis on overpressured layer chromatography

ISBN: 978-0-12-420161-3

PUB DATE: December 2015

FORMAT: Hardback

PAGES: c. 510

AUDIENCE

Analytical chemists, scientists, and researchers working in drug discovery, food and plant science, environmental science, and forensics; graduate students in these disciplines

KEY FEATURES

- Details a variety of forced-flow techniques, explaining how they markedly reduce developing time and result in less lateral diffusion and more compact spots
- Emphasizes the benefits of OPLC separation techniques, a method pioneered by the authors nearly forty years ago
- Discusses new developments, such as the BioArena system used to facilitate detection, isolation, and identification of new antimicrobials, antineoplastics, biopesticides, and other biologically active substances

DESCRIPTION

Forced-Flow Layer Chromatography takes a close look at the specifics of forced-flow layer chromatography techniques, from their evolution to the nuances of using these techniques in a variety of applications where traditional thin-layer chromatography (TLC) and high-performance thin-layer chromatography (HPTLC) are not as effective.

This book presents a number of variations of TLC techniques, with special emphasis on the overpressured-layer chromatography (OPLC) technique and newer developments such as the BioArena System for biomedical analysis. The versatility of these forced-flow techniques opens up new avenues for the analysis of a large number of samples for high-throughput screening and for the analysis of very complex matrices, while the development of BioArena extends the use of these techniques to challenging new areas of bioanalysis.

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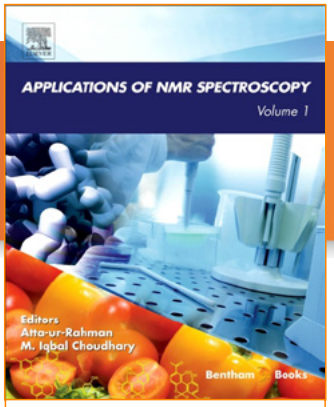


Applications of NMR Spectroscopy: Volume 1

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
M. Iqbal Choudhary International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Pakistan

ISBN: 978-1-60805-963-8
PUB DATE: November 2015
FORMAT: Paperback
PAGES: c. 220

AUDIENCE

Analytical and medicinal chemists; food scientists, pharmaceutical scientists; students taking related coursework at the upper undergraduate or graduate level

Presents NMR spectroscopy's role in the analysis of edible oils and lipid content in foods, human metabolomics and the diagnosis of autism-related disorders, protein-protein interactions, and chiral molecules

KEY FEATURES

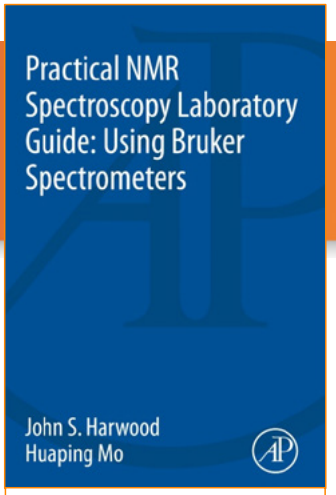
- Consolidates the latest developments in NMR spectroscopy into a single volume
- Authored and edited by world-leading experts in spectroscopy
- Features comprehensive references to the most recent related literature
- More than 75 illustrations aid in the retention of key concepts

DESCRIPTION

Applications of NMR Spectroscopy, Volume 1, originally published by Bentham and now distributed by Elsevier, presents the latest developments in the field of NMR spectroscopy, including the analysis of edible oils and lipid content in foods, the role of NMR spectroscopy in the human metabolomics and the diagnosis of autism-related disorders, protein-protein interactions, and NMR spectroscopy of chiral molecules.

The fully illustrated chapters contain comprehensive references to the recent literature. The applications presented cover a wide range of the field, such as drug development, medical imaging and diagnostics, food science, mining, petrochemical, process control, materials science, and chemical engineering, making this resource a multi-disciplinary reference with broad applications.

The content is ideal for readers who are seeking reviews and updates, as it consolidates scientific articles of a diverse nature into a single volume. Sections are organized based on disciplines, such as food science and medical diagnostics. Each chapter is written by eminent experts in the field.



Practical NMR Spectroscopy Laboratory Guide: Using Bruker Spectrometers

John S. Harwood Purdue University Interdepartmental NMR Facility, Department of Chemistry, Purdue University, West Lafayette, IN, USA
Huaping Mo Purdue University Interdepartmental NMR Facility, Department of Chemistry, Purdue University, West Lafayette, IN, USA

ISBN: 978-0-12-800689-4
PUB DATE: October 2015
FORMAT: Paperback
PAGES: c. 126

AUDIENCE
Graduate students in chemistry and related disciplines taking courses in NMR spectroscopy

KEY FEATURES

- Written by experts in solution-state NMR spectroscopy
- Provides step-by-step instructions for more than 50 activities using a Bruker NMR spectrometer
- Includes detailed appendices and sample questions for lab reports

DESCRIPTION

Practical NMR Spectroscopy Laboratory Guide is designed to provide non-expert NMR users, typically graduate students in chemistry, an introduction to various facets of practical solution-state NMR spectroscopy. Each chapter offers a series of hands-on exercises, introducing various NMR concepts and experiments and guiding the reader in running these experiments using an NMR spectrometer. The book is written for use with a Bruker NMR spectrometer running TopSpin software versions 1 or 2. This practical resource functions both as a text for instructors of a practical NMR course and also as a reference for spectrometer administrators or NMR facility directors when doing user training. This guide serves as serve as excellent, practical resource on its own or as a companion book to Timothy Claridge's *High-Resolution NMR Techniques in Organic Chemistry, 2nd Edition* (Elsevier, 2009).

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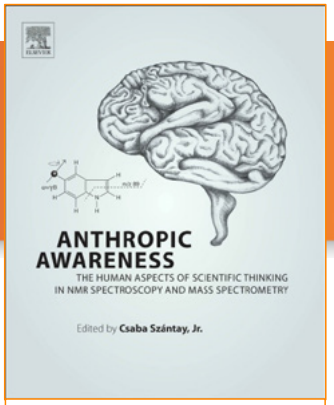

Anthropic Awareness

The Human Aspects of Scientific Thinking in NMR Spectroscopy and Mass Spectrometry

Csaba Szantay, Jr. Gedeon Richter Chemical Works, Budapest, Hungary

ELSEVIER

A practical guide to small molecule structure elucidation, featuring interesting case studies, strategies for avoiding pitfalls, and expert advice on data analysis and interpretation

ISBN: 978-0-12-419963-7

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 454

AUDIENCE

Scientists working in industry and academia in the areas of drug discovery and natural product research, consumer products, food science, forensics, and cosmetics (including but not limited to analytical, organic and medicinal chemists), and graduate-level students in chemistry.

KEY FEATURES

- Provides strategies on how to deal with molecular challenges and instrument limitations
- Presents multiple applications of small molecule structure elucidation using NMR, MS, IR, and UV
- Explores critical topics, including anthropic awareness (AA), NMR Spectroscopy, mass spectrometry, scientific thinking, and more
- Includes tactics on how to Improve quality control and data interpretation skills while minimizing data analysis time and increasing confidence in results
- Presents coverage on tactics to optimize experimental NMR parameters and enhance NMR vocabulary

DESCRIPTION

Anthropic Awareness: The Human Aspects of Scientific Thinking in NMR Spectroscopy and Mass Spectrometry blends psychology, philosophy, physics, mathematics, and chemistry, describing a human-centered philosophy of the essence of scientific thinking in the natural sciences and in everyday life.

It addresses the reasons why we are prone to make errors in our conclusions and how to avoid such mistakes, also exploring a number of the "mental traps" that can lead to both individual mistakes and mass misconceptions.

The book advocates that by understanding the nature of these mental traps we can adopt tactics to safely evade them. It includes Illustrative examples of common scientific misunderstandings and mental traps in both the theory and real-life application of NMR spectroscopy and mass spectrometry.

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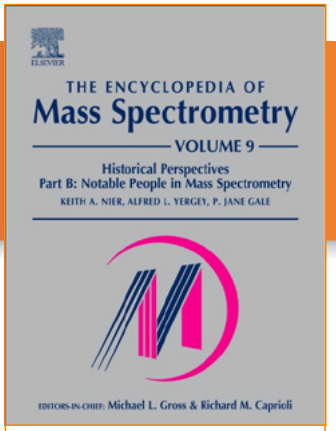

The Encyclopedia of Mass Spectrometry

Volume 9: Historical Perspectives, Part B: Notable People in Mass Spectrometry

Edited by: ***Keith A. Nier*** Historian, Madison, NJ, USA
Alfred L. Yergey NIH Scientist Emeritus, National Institute of Child Health and Human Development, Bethesda, MD, USA
P. Jane Gale Waters Educational Services, Boston, MA, USA

ISBN: 978-0-08-100379-4
PUB DATE: May 2015
FORMAT: Hardback
PAGES: c. 244

AUDIENCE
Researchers and professionals in Mass Spectrometry

Presents information on the biographies of recognized pioneers and innovators in the field of mass spectrometry

KEY FEATURES

- Highlights over 120 innovators in mass spectrometry, including several Nobel Prize winners
- Discusses instrumentation and their uses, also providing interesting information on the careers, characters, and life stories of the people who did the work
- Offers unique insight into the careers and personalities of luminaries in the field
- Coordinates with *Volume 9: Historical Perspectives, Part A: The Development of Mass Spectrometry,* an overview of mass spectrometry development and progress
- Ideal reference for those interested in a wide variety of topics, including analytical chemistry and chemical analysis, amongst others

DESCRIPTION

Volume 9: Historical Perspectives, Part B: Notable People in Mass Spectrometry of *The Encyclopedia of Mass Spectrometry* briefly reviews the lives and works of many of the major people who carried out this development, providing insights into the history of mass spectrometry applications through the personal stories of pioneers and innovators in the field.

The book presents biographies of notable contributors, including Nobel Prize winners J. J. Thomson, Francis W. Aston, Wolfgang Paul, John B. Fenn, and Koichi Tanaka, along with other luminaries in the field, including Franz Hillenkamp, Catherine Clarke Fenselau, Alfred O. C. Nier, and many more, discussing not only the instruments and their uses, but also providing interesting information on the careers, characters, and life stories of the people who did the work.

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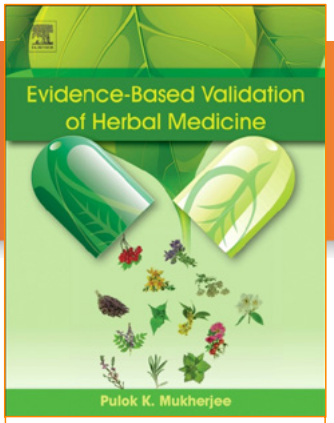

Evidence-Based Validation of Herbal Medicine

Edited by: ***Pulok K. Mukherjee*** Jadavpur University, Kolkata, India

ELSEVIER

A structured approach to the characterization and validation of herbal medicines and natural products using evidence-based analytical and bio-analytical methods

ISBN: 978-0-12-800874-4

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 550

AUDIENCE

Analytical/bioanalytical chemists, researchers working in natural product drug discovery/medicinal chemists, pharmacists and pharmacognosists, advanced students in these disciplines

KEY FEATURES

- Includes state-of-the-art methods for detecting, isolating, and performing structure elucidation by degradation and spectroscopic techniques
- Covers biosynthesis, synthesis, and biological activity related to natural products
- Consolidates information to save time and money in research
- Increases confidence levels in quality and validity of natural products

DESCRIPTION

Evidence-Based Validation of Herbal Medicines brings together current thinking and practice in the areas of characterization and validation of natural products. This book reviews all aspects of evaluation and development of medicines from plant sources, including their cultivation, collection, phytochemical and phyto-pharmacological evaluation, and therapeutic potential. Emphasis is placed on describing the full range of evidence-based analytical and bio-analytical techniques used to characterize natural products, including –*omic* technologies, phyto-chemical analysis, hyphenated techniques, and many more.

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Essentials of Botanical Extraction

Principles and Applications

Subhash C. Mandal Jadavpur University, Kolkata, India
Vivekananda Mandal Guru Ghasidas University, Bilaspur, India
Anup Kumar Das Pavan Structurals Private Limited, Mumbai, India

Techniques for natural product extraction for pharmacognosy drug development

KEY FEATURES

- Reviews the history and current state of natural product drug discovery and development, highlighting successes and current issues
- Explains the application of chemometric tools in extraction process design and method development
- Introduces process intensification as applied to the processing of medicinal plant extracts for rapid and cost-effective extraction

DESCRIPTION

Essentials of Botanical Extraction: Principles and Applications provides a unique, single source of valuable information on the various botanical extraction methods available, from conventional to the use of green and modern extraction technologies including ultrasounds, microwaves, pressurized liquids, and supercritical fluids. Most extracts obtained from botanicals are often poorly characterized with unidentified active or inactive constituents. A wise selection of an extraction strategy is vital to drug discovery from medicinal plants as extraction forms the basic first step in medicinal plant research. This book also explores the mathematical hypotheses and innovations in botanical extractions and analyzes different post extraction operations so that dependency on serendipity is reduced and the same be converted into programmed drug discovery.

ISBN: 978-0-12-802325-9
PUB DATE: February 2015
FORMAT: Paperback
PAGES: c. 210

AUDIENCE

Analytical chemists, pharmacognosists, medicinal chemists, and graduate level students in these disciplines

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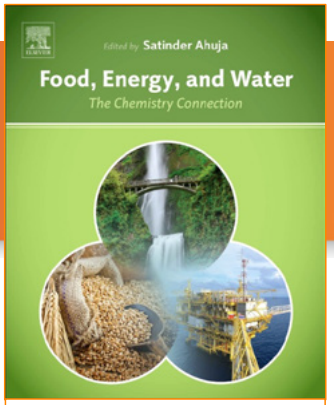


Food, Energy, and Water

The Chemistry Connection

Edited by: ***Satinder Ahuja*** Ahuja Consulting, Calabash, NC, USA

ISBN: 978-0-12-800211-7

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 470

AUDIENCE

Chemists/chemical engineers, environmental, food and marine scientists, graduate students in these areas

Examines the role of chemistry in the nexus of food, energy, and water – three areas that are inextricably linked and thus require an integrated approach to researching and problem solving across sectors

KEY FEATURES

- Presents a clear, quantitative explanation of the link between food, energy, and water
- Provides information not currently available in chemistry curricula or synthesized in existing resources
- Examines the challenges of the food-energy-water nexus from a chemistry perspective within a multi-disciplinary domain
- Includes the latest research on critical topics such as fracking, water use conflicts, and sustainability in food production cycles

DESCRIPTION

How will chemists of the future balance competing concerns of environmental stewardship and innovative, cost-effective product development? For chemists to accept the idea that environmental quality and economic prosperity can be intertwined, the concept of the food-energy-water nexus must first be integrated into underlying thought processes. *Food, Energy and Water: The Chemistry Connection* provides today's scientists with the background information necessary to fully understand the inextricable link between food, energy and water and how this conceptual framework should form the basis for all contemporary research and development in chemistry in particular, and the sciences in general.

Environment and Development

Basic Principles, Human Activities, and Environmental Implications

Edited by: ***Stavros Poulopoulos*** National Technical University of Athens, School of Chemical Engineering, Athens, Greece
Vassilis Inglezakis National Technical University of Athens, School of Chemical Engineering, Athens, Greece

ELSEVIER

This thorough book focuses on the adverse impacts of human activities and development on both natural and inhabited environments. Covers associated problems and recommends solutions for achieving harmonic sustainable development in a range of environments. Presents the latest research findings and trends in global environmental policy for each issue.

ISBN: 978-0-444-62733-9

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 500

AUDIENCE

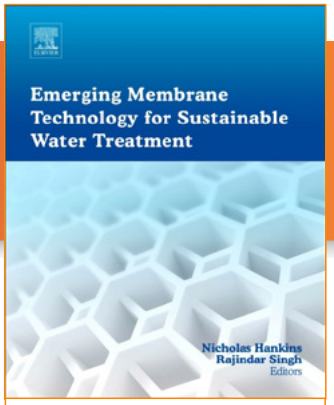
The book suits students in all engineering disciplines (particularly chemical, mechanical, and environmental engineering), environmental science and technology professionals (including ecologists, environmentalists, and professional engineers dealing with environmental issues), and policy makers and government officials.

KEY FEATURES

- Offers a discussion of the extraterrestrial environment and waste in earth orbit as one of the distinctive topics of the book
- Addresses global environmental policy issues and policies
- Presents tabulated data to support the analysis and explain the issues presented
- Includes case studies covering many topics of current interest
- Analyzes environmental issues and proposes solutions grounded in recent research findings
- Discusses the various interpretations of the development concept as well as alternative pathways to sustainable development

DESCRIPTION

Environment and Development: Basic Principles, Human Activities, and Environmental Implications focuses on the adverse impact that human activities, developments, and economic growth have on both natural and inhabited environments. The book presents the associated problems, along with solutions that can be used to achieve a harmonic, sustainable development that provides for the co-existence of man and natural life. Chapters provide detailed information on a range of environments including: atmospheric, aquatic, soil, natural, urban, energy, and extraterrestrial, as well as the relationship between the environment and development. In addition, this comprehensive book presents the latest research findings and trends in global environmental policy for each issue.



Emerging Membrane Technology for Sustainable Water Treatment

Edited by: ***Rajindar Singh*** Membrane Ventures, LLC, Colorado Springs, CO, USA
Nick Hankins The Centre for Sustainable Water Technology, Department of Engineering Science, The University of Oxford, Oxford, UK

ISBN: 978-0-444-63312-5
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 462

AUDIENCE

Chemical and environmental engineers working in membrane treatment of water and wastewater; graduate and postgraduate students and researchers in academia; government and corporate labs; and water treatment equipment and global engineering companies.

This timely, practical guide discusses how membrane technology—a viable solution to the problems of water stress and poor sanitation—can be an economically and environmentally friendly approach to address the escalating problem of water availability and shortages on a global scale

KEY FEATURES

- Provides a unique source on membrane technology and its application for water treatment
- Focuses on technologies designed for the treatment of seawater and brackish water
- Highlights the most economically and environmentally friendly membrane technologies
- Lists various technologies and emphasizes their link to renewable energy, energy efficiency, nanotechnology, reuse, and recycle

DESCRIPTION

Emerging Membrane Technology for Sustainable Water Treatment provides the latest information on the impending crisis posed by water stress and poor sanitation, a timely issue that is one of the greatest human challenges of the 21st century. The book also discusses the use of membrane technology, a serious contender that can be used to confront the crisis on a global scale, along with its specific uses as a solution to this escalating problem.

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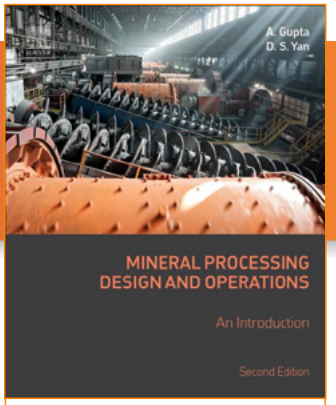


Mineral Processing Design and Operations, 2e

An Introduction

Ashok Gupta Carine-Perth, Australia
Dennis S Yan Minerals Engineering and Extractive Metallurgy, Curtin University of Technology, Kalgoorlie, Australia

ELSEVIER

The practical resource describes the basic theory and current practices behind separating and concentrating minerals of economic interest such as iron ores, beach sand minerals, and rare earth minerals

ISBN: 978-0-444-63589-1

PREVIOUS EDITION ISBN: 9780444516367

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 800

AUDIENCE

metallurgists and process engineers as well as university students as an introductory guide to large scale industrial operations to liberate and recover commercially minerals from ores. Students and engineers interested in the disciplines of metallurgy, chemical engineering, mechanical and electrical engineering (including electronic engineering), both in operation and research are expected to benefit.

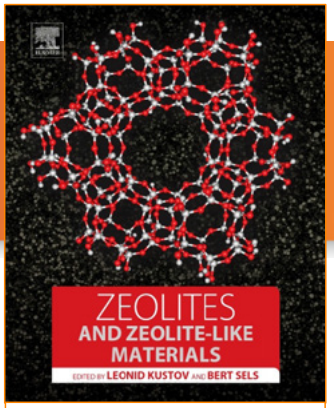
KEY FEATURES

- Outlines the theory and practice in the design of flow sheets and operation of an integrated mineral processing plant
- Introduces the basic magnetism, electrostatic, conductivity, and dielectrophoresis properties of minerals and related separation techniques
- Describes automation in mineral processing plants allowing maximum yields and consistent high concentrate grades
- Outlines problems and offers solutions in the form of various examples

DESCRIPTION

Mineral Processing Design and Operations: An Introduction, Second Edition, helps further understanding of the various methods commonly used in mineral beneficiation and concentration processes. Application of theory to practice is explained at each stage, helping operators understand associated implications in each unit process. Covers the theory and formulae for unit capacities and power requirements to help the designer develop the necessary equipment and flow-sheets to economically attain maximum yield and grade.

This second edition describes theories and practices of design and operation of apparatus and equipment, including an additional chapter on magnetic, electrostatic, and conductivity modes of mineral separation. Basics of process controls for efficient and economic modes of separation are introduced.



Zeolites and Zeolite-like Materials

Edited by: ***Bert Sels*** Center for Surface Chemistry and Catalysis, Catholic University of Leuven, Leuven, Belgium
Leonid Kustov Head of Laboratory of Polyfunctional Catalysts, N.D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Head of Laboratory of Green Chemistry Chemistry Department, Moscow State University, Moscow, Russia

ELSEVIER

This comprehensive book reviews important aspects of the synthesis, characterization and applications of zeolites, zeolite-like materials and new micro/mesoporous systems, including novel catalytic processes related to the conversion of renewable raw materials, applications in drug delivery, sorption/separations, non-linear optics, and new membrane systems.

ISBN: 978-0-444-63506-8
PUB DATE: April 2016
FORMAT: Hardback
PAGES: c. 600

AUDIENCE

(Physical) chemists and chemical engineers, graduate and post graduate students working in the field of zeolites, MOFs, micro/mesoporous materials, catalysis, optoelectronic materials, laser techniques, drug delivery, adsorption/separation of complicated mixtures, organic synthesis

KEY FEATURES

- Provides a comprehensive review of the literature pertaining to zeolites and zeolite-like materials since 2000
- Covers the chemistry of novel zeolite-like materials such as Metal-Organic Frameworks (MOFs), Covalent Organic Frameworks (COFs), hierarchical zeolite materials, new mesoporous and composite zeolite-like micro/mesoporous materials
- Presents essential information of the new zeolite-like structures, with a balanced coverage of the most important areas of the zeolite research (synthesis, characterization, adsorption, catalysis, new applications of zeolites and zeolite-like materials)
- Contains chapters prepared by known specialists who are members of the International Zeolite Association

DESCRIPTION

Zeolites and Zeolite-like Materials offers a comprehensive and up-to-date review of the important areas of zeolite synthesis, characterization, and applications. Its chapters are written in an educational, easy-to-understand format for a generation of young zeolite chemists, especially those who are just starting research on the topic and need a reference that not only reflects the current state of zeolite research, but also identifies gaps and opportunities.

The book demonstrates various applications of zeolites in heterogeneous catalysis and biomass conversion and identifies the endless possibilities that exist for this class of materials, their structures, functions, and future applications. In addition, it demonstrates that zeolite-like materials should be regarded as a living body developing towards new modern applications, thereby responding to the needs of modern technology challenges, including biomass conversion, medicine, laser techniques, and nanomaterial design, etc.

The book will be of interest not only to zeolite-focused researchers, but also to a broad scientific and non-scientific audience.

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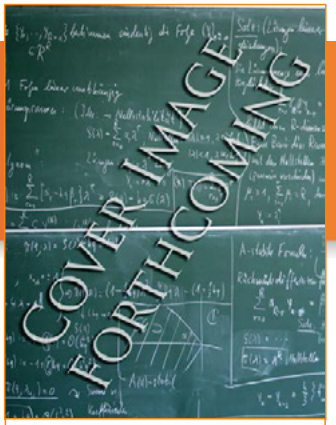

High Temperature Oxidation and Corrosion of Metals, 2e

David John Young David John Young School of Materials Science and Engineering University of New South Wales New South Wales, Australia

ISBN: 978-0-08-100101-1

PREVIOUS EDITION ISBN: 9780080445878

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 650

AUDIENCE

The book is intended for post-graduate students and others taking up research or seeking an understanding in the field of high temperature corrosion resistance. It is relevant to the power generation, waste incineration and petrochemical industries, as well as gas turbine, fuel cell and solar thermal technologies.

Beginning with a high level understanding of the fundamental mechanisms of high temperature alloy oxidation, this book presents a combination of the physical chemistry and materials science methodologies used to analyze alloy corrosion mechanisms and how they can provide quantitative predictions for reaction rates

KEY FEATURES

- Emphasizes quantitative calculations for predicting reaction rates and the effects of temperature, oxidant activities, and alloy compositions
- Uses phase diagrams and diffusion paths to analyze and interpret scale structures and internal precipitation distributions
- Presents a detailed examination of corrosion in industrial gases (water vapor effects, carburization and metal dusting, sulphidation)
- Contains numerous micrographs, phase diagrams, and tabulations of relevant thermodynamic and kinetic data
- Combines physical chemistry and materials science methodologies
- Provides two completely new chapters (chapters 11 and 13), and numerous other updates throughout the text

DESCRIPTION

High Temperature Oxidation and Corrosion of Metals, Second Edition, provides a high level understanding of the fundamental mechanisms of high temperature alloy oxidation. It uses this understanding to develop methods of predicting oxidation rates and the way they change with temperature, gas chemistry, and alloy composition.

The book focuses on the design and selection of alloy compositions which provide optimal resistance to attack by corrosive gases, providing a rigorous treatment of the thermodynamics and kinetics underlying high temperature alloy corrosion.

In addition, it emphasizes quantitative calculations for predicting reaction rates and the effects of temperature, oxidant activities, and alloy compositions. Users will find this book to be an indispensable source of information for researchers and students who are dealing with high temperature corrosion.

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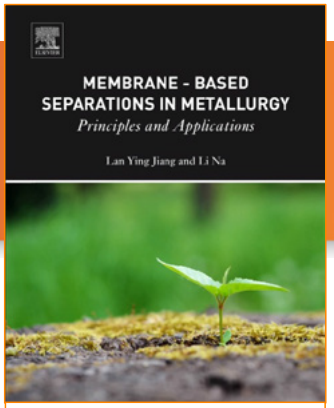


Membrane-Based Separations in Metallurgy

Principles and Applications

Edited by: ***Lan Ying Jiang*** School of Metallurgy and Environment, Central South University (Main Campus), Hunan, China
Li Na Department of Chemical Engineering, School of Chemical Engineering and Technology, Xi'an Jiaotong University, Shannxi, China

ISBN: 978-0-12-803410-1
PUB DATE: April 2016
FORMAT: Hardback
PAGES: c. 300

AUDIENCE

Chemists; chemical and metallurgical engineers; membrane technologists; environmental engineers in academia, research and industry, developers and manufacturers of membranes

The book is a unique reference to the application of membrane separations in the metallurgical industry that comprehensively outlines metallurgy background, the fundamentals of membrane separations, separation process design, and all of the socioeconomic and environmental benefits of these technologies

KEY FEATURES

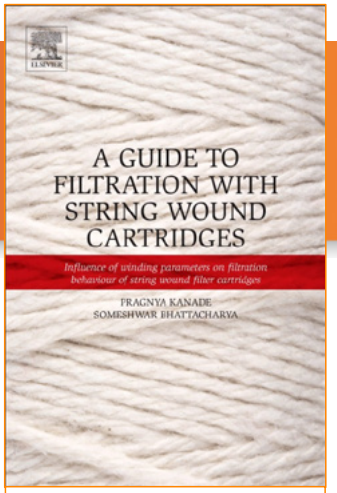
- Outlines membrane separation processes and their use in the field of metallurgy
- Includes case studies and examples of various processes
- Describes individual unit operations and sectors of extractive metallurgy in a clear and thorough presentation for students and engineers
- Provides a quick reference to wastewater treatment using membrane technology in the metallurgical industry
- Outlines the design of flowsheets, a topic that is not covered in academic studies, but is necessary for the design of working process
- Provides examples and analysis of the economic implications and environmental and social impacts

DESCRIPTION

Membrane-Based Separation in Metallurgy: Principles and Applications begins with basic coverage of the basic principles of the topic and then explains how membrane technology helps in the development of new environmentally friendly and sustainable metallurgical processes.

The book features the principles of metallurgical process and how widely the membrane-based technology has been applied in metallurgical industry, including the basic principles of membrane-based separation in terms of material science, membrane structure engineering, transport mechanisms, and module design, detailed metallurgical process flowcharts with emphasis on membrane separations, current process designs, and describes problems and provides possible solutions.

In addition, the book includes specific membrane applications, molecular design of materials, fine tuning of membrane's multi-scale structure, module selection and process design, along with a final analysis of the environmental and economic benefits achieved by using these new processes.



A Guide to Filtration with String Wound Cartridges

Influence of Winding Parameters on Filtration Behaviour of String Wound Filter Cartridges

Pragnya S. Kanade Textile Engineering Department, Faculty of Technology and Engineering, The M.S. University of Baroda, Gujarat, India
Someshwar S. Bhattacharya Textile Engineering Department, Faculty of Technology and Engineering, The M.S. University of Baroda, Gujarat, India

ISBN: 978-0-12-804847-4
PUB DATE: April 2016
FORMAT: Paperback
PAGES: c. 250

AUDIENCE

Researchers, scientists and chemical engineers working in filtration and separation industry

The book provides a concise but comprehensive reference that explains the science behind winding phenomena with reference to the use of string wound cartridges in various environments and their necessity as a tool to help quell the ever-increasing scarcity of water reserves

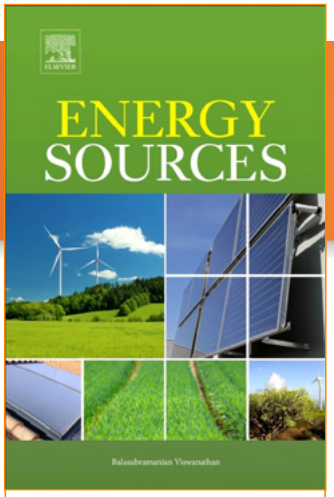
KEY FEATURES

- Presents data and conclusions that are based on actual experimental work
- Provides explanations on why winding parameters influence the performance of wound cartridges
- Describes problems encountered during cartridge formation and during its use in filter testing

DESCRIPTION

A Guide to Filtration with String Wound Cartridges: Influence of Winding Parameters on Filtration Behaviour of String Wound Filter Cartridges explains the science behind winding phenomena with reference to the use of string wound cartridges in various environments, and is helpful in educating aspiring researchers and technicians on these new technologies that seek to quell the ongoing scarcity of water through the use of new and emerging filtration techniques.

The book provides detailed information about cartridge winding parameters, the number of layers put on the cartridge, their necessary availability, and the retention capacity and pressure drop. In addition, the book provides guidelines regarding the selection of winding variables so that new cartridges that cater to the specific porosity of different sized particles can be developed.



Energy Sources

Fundamentals of Chemical Conversion Processes and Applications

Balasubramanian Viswanathan Head, National Center for Catalysis Research, Indian Institute of Technology, Chennai, India

ELSEVIER

By providing an overview of the chemistry behind all potential energy sources, this book compares their potential applications and outlines research directions that can be used by chemists/chemical engineers working in the development of future energy sources, with an equal focus on environmental concerns.

ISBN: 978-0-444-56353-8

PUB DATE: March 2016

FORMAT: Hardback

PAGES: c. 450

AUDIENCE

Academics and Researchers, graduate students in energy engineering courses, energy technocrats, energy policy makers.

KEY FEATURES

- Compiles, in a single source, all energy conversion processes, enabling easy evaluation and selection
- Explains the science behind each conversion process and facilitates understanding
- Contains many illustrations, diagrams, and tables enabling a clear and comprehensible understanding of the pros and cons of the various processes
- Includes an exhaustive glossary of all terms used in the conversion processes which makes the understanding easy and facilitates better communication across all groups in this multidisciplinary area
- Presents the current status and future directions, thus enabling good identification of future research needs and planning new research
- Presents a concise and comprehensive overview of all energy sources

DESCRIPTION

Energy Sources: Fundamentals of Chemical Conversion Processes and Applications provides the latest information on energy and the environment, the two main concerns of any progressive society. Continuous efforts have to be exercised in both these areas by any of the developing communities. Energy conversion has evolved as the main concern today due to various ecological imbalances, including climate change. Only a well-informed society on energy can be a sustainable in the future.

This book attempts to inform and provide the fundamentals behind all energy conversion processes, identifies future research needs, and discusses the potential application of each process in a clear and concise manner. It is a valuable source for both chemists and chemical engineers who are working to improve current and developing future energy sources, and is a single source that deals with almost all energy sources for these purposes, reviewing the fundamentals, comparing the various processes, and suggesting future research directions.

CHEMISTRY

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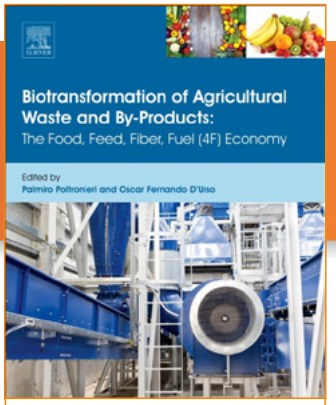


Biotransformation of Agricultural Waste and By-Products

The Food, Feed, Fibre, Fuel (4F) Economy

Edited by: ***P Poltronieri*** Institute of Sciences of Food Production, National Research Council (ISPA-CNR), Lecce, Italy
Oscar Fernando D'Urso Food Safety and Technology Research Group, Bioesplora, San Michele Salentino, Italy

ISBN: 978-0-12-803622-8
PUB DATE: March 2016
FORMAT: Hardback
PAGES: c. 450

AUDIENCE

Biotechnologists, biochemical engineers, biochemists, microbiologists, plant biochemists, agronomists, research students in these areas, entrepreneurs, policy makers, stakeholders, and politicians

Discusses advances in technology and plant design which support the exploitation and valorization of vegetable and fruit by-products through fermentation (feed-batch liquid fermentation, solid state fermentation) in bio-based bio-chemicals/biofuels production

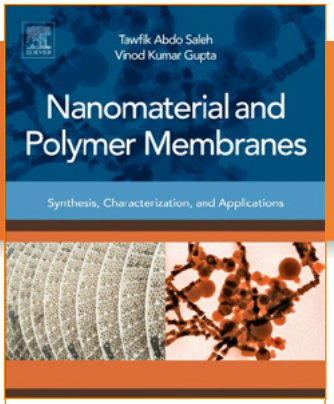
KEY FEATURES

- Provides an overview of all plant based biosources
- Includes examples of biochemical/biofuel production from plant waste
- Discusses the production of enzymes used in the plant fermentation processes
- Explores the new fermentation technologies and production of chemicals and fuels from various plants

DESCRIPTION

Biotransformation of Agricultural Waste and By-Products in the 4F Economy: The Food, Feed, Fiber, Fuel (4F) Economy presents an evaluation of plant species better exploitable for a particular transformation. As crops are already covering large parts of cultivable soils, is it is not conceivable to try to extend the cultures beyond the limit of available soils, but a further increase in productivity is not easy to obtain.

The book discusses advances in technology and plants design which support the exploitation and valorization of vegetable and fruit by-products through fermentation (feed-batch liquid fermentation, solid-state fermentation) in bio-based bio-chemicals/biofuels production. Pathways in the biosynthesis of fibers, sugars, and metabolites are provided with a focus on the lifecycle of bacteria, yeasts, and even plant species. The text analyzes cellular structures and the organization of cell walls in order to show which polysaccharides offer more favorable fermentative processes and which are detrimental.



Nanomaterial and Polymer Membranes

Synthesis, Characterization, and Applications

Tawfik A Saleh Chemistry Department, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
Vinod Kumar Gupta Department of Chemistry, Indian Institute of Technology, Roorkee, India, and Department of Chemistry, King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia

ELSEVIER

Through a comprehensive but concise reference on the theory, characterization, and applications of the synthesis of polymeric nanocomposite membranes, this book offers a perfect source to document state-of-the-art developments and innovations in the field

ISBN: 978-0-12-804703-3
PUB DATE: March 2016
FORMAT: Paperback
PAGES: c. 330

AUDIENCE

Graduate and postgraduate students, researchers in academia and industry, and chemical engineers working in the field of membrane science and nanomaterials and their applications in water treatment, desalination, and adsorption

KEY FEATURES

- Presents a powerful single source for the development of new, rapid, and highly efficient membrane composites
- Offers a perfect source to document state-of-the-art developments and innovations in nanocomposite membranes, ranging from materials development and characterization of properties to membrane applications
- Covers applications in membrane science, water treatment, and the removal of pollutants from waste water
- Provides theoretical and practical information about the synthesis and application of polymeric nanocomposite membranes

DESCRIPTION

Nanomaterial and Polymer Membranes: Synthesis, Characterization, and Applications presents a unique collection of up-to-date polymeric nanomaterial membranes. The book offers a perfect source to document state-of-the-art developments and innovations in nanocomposite membranes, ranging from materials development and characterization of properties to membrane applications.

The book discusses applications that encompass the enhancement of sorption and degradation processes and their usage for the removal of different pollutants, including heavy metals, dyes, pesticides, and other organic and inorganic pollutants from the industry.

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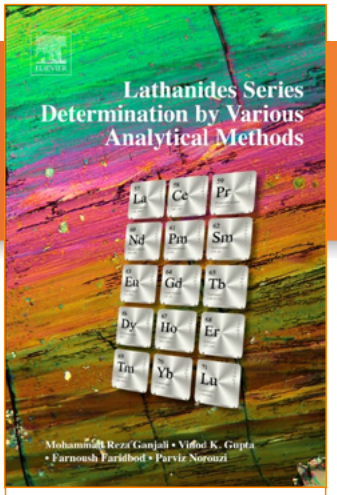

Lanthanides Series Determination by Various Analytical Methods

Mohammad Reza Ganjali Centre of Excellence in Electrochemistry, Faculty of Chemistry, University of Tehran, Tehran, Iran; ***Vinod Kumar Gupta*** Department of Chemistry, Indian Institute of Technology, Roorkee, India, and Department of Chemistry, King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia; ***Farnoush Faridbod*** Faculty of Chemistry, University of Tehran, Tehran, Iran; ***Parviz Norouzi*** Centre of Excellence in Electrochemistry, Faculty of Chemistry, University of Tehran, Tehran, Iran

ISBN: 978-0-12-804704-0

PUB DATE: March 2016

FORMAT: Paperback

PAGES: c. 438

AUDIENCE

Researchers in academia and industry working on lanthanide applications in chemical engineering, chemistry, physics, materials, and environmental and life sciences, and postgraduate students in these areas

Comprehensive and concise overview of recent advances in the determination and application of lanthanides in catalysis, chemical industry, aerospace, materials and life sciences, and in sustainable energy technologies

KEY FEATURES

- Written by world-leading experts in research on lanthanide determination
- Discusses determination methods that range from very advanced and expensive techniques to simple and inexpensive methods
- A single source of information for a broad collection of lanthanide detection techniques and applications
- Includes a complete list of reports and patents on lanthanide determination
- Discusses both advantages and disadvantages of each determination method, giving a well-balanced overview

DESCRIPTION

Lanthanides Series Determination by Various Analytical Methods describes the different spectroscopic and electrochemical methods used for the determination and measurement of lanthanides. Numerous examples of determination methods used in real sample analysis are gathered and explained, and the importance of lanthanides as applied in chemical industry, agriculture, clinical and pharmaceutical industry, and biology is discussed, with many applications and recent advantages given.

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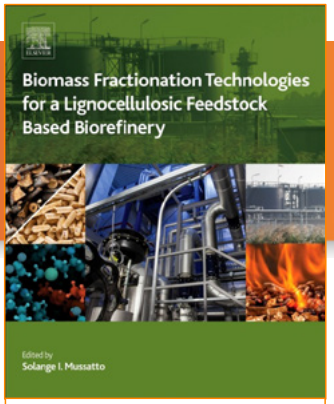

Biomass Fractionation Technologies for a Lignocellulosic Feedstock Based Biorefinery

Edited by: ***Solange Inês Mussatto*** Department of Biotechnology Delft University of Technology Delft, The Netherlands

ELSEVIER

Through the presentation of extensive research and tremendous scientific and technological developments, this book covers the most important topics relating to biomass fractionation, including the most recent advances, challenges, and perspectives for each fractionation technique

ISBN: 978-0-12-802323-5

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 670

AUDIENCE

Chemical Engineers, biotechnologists, microbiologists, biologists, agricultural chemists, environmental engineers

KEY FEATURES

- Provides information on the most advanced and innovative pretreatment processes and technologies for biomass
- Reviews numerous valuable products from lignocellulose
- Discusses integration of processes for complete biomass conversion with minimum waste generation
- Identifies the research gaps in scale-up
- Presents an indispensable reference for all professionals, students, and workers involved in biomass biorefinery, assisting them in establishing efficient and economically viable process technologies for biomass fractionation

DESCRIPTION

Biomass Fractionation Technologies for a Lignocellulosic Feedstock-based Biorefinery reviews the extensive research and tremendous scientific and technological developments that have occurred in the area of biorefinering, including industrial processes and product development using 'green technologies', often referred as white biotechnology.

As there is a huge need for new design concepts for modern biorefineries as an alternative and amendment to industrial crude oil and gas refineries, this book presents the most important topics related to biomass fractionation, including advances, challenges, and perspectives, all with references to current literature for further study.

Presented in 27 chapters by international field specialists, each chapter consists of review text that comprises the most recent advances, challenges, and perspectives for each fractionation technique. The book is an indispensable reference for all professionals, students, and workers involved in biomass biorefinery, assisting them in establishing efficient and economically viable process technologies for biomass fractionation.

CHEMISTRY

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New and Future Developments in Microbial Biotechnology and Bioengineering

Microbial Cellulase System Properties and Applications

Edited by: ***Vijai G. Gupta*** Biochemistry School of Natural Sciences, National University of Ireland, Galway, Ireland

ELSEVIER

An indispensable reference source for chemists, biochemical engineers/bioengineers, biochemists, biotechnologists and researchers who want to know about the unique properties of microbial cellulose and its future applications

ISBN: 978-0-444-63507-5

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 276

AUDIENCE

Bioengineers, Biochemical Engineers, Biochemist, Biotechnologists

KEY FEATURES

- Compiles the latest developments made and currently undergoing in the area of microbial cellulase system.
- Chapters are contributed from top researchers on this area around the globe
- Includes information related to almost all areas of microbial cellulase system
- Extensive cover of current industrial applications and discusses potential future applications

DESCRIPTION

New and Future Developments in Microbial Biotechnology and Bioengineering: Microbial Cellulase System Properties and Applications covers the biochemistry of cellulase system, its mechanisms of action, and its industrial applications. Research has shed new light on the mechanisms of microbial cellulase production and has led to the development of technologies for production and applications of cellulose degrading enzymes.

The biological aspects of processing of cellulosic biomass have become the crux of future research involving cellulases and cellulolytic microorganisms, as they are being commercially produced by several industries globally and are widely being used in food, animal feed, fermentation, agriculture, pulp and paper, and textile applications. The book discusses modern biotechnology tools, especially in the area of microbial genetics, novel enzymes, and new enzyme and the applications in various industries.

As a professional reference, this new book is useful to all researchers working with microbial cellulase system, both academic institutions and industry-based research bodies, as well as to teachers, graduate, and postgraduate students with information on continuous developments in microbial cellulase system. The book provides an indispensable reference source for chemists, biochemical engineers/bioengineers, biochemists, biotechnologists and researchers who want to know about the unique properties of this microbe and explore its future applications.

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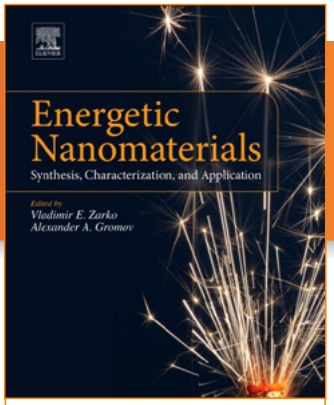


Energetic Nanomaterials

Synthesis, Characterization, and Application

Edited by: ***Vladimir E Zarko*** Institute of Chemical Kinetics and Combustion, Siberian Branch, Academy of Sciences, Novosibirsk, Russia
Alexander Gromov Nuremberg Technical University Georg Simon Ohm, Nuremberg, Germany; Solid Propulsion Laboratory, Aerospace Engineering Department, Milan Polytechnic University, Milan, Italy

ISBN: 978-0-12-802710-3
PUB DATE: February 2016
FORMAT: Paperback
PAGES: c. 374

AUDIENCE

Researchers in academia and industry working in the fields of energetic materials, combustion chemistry, and chemical engineering; and graduate students in these areas

Fills the current gap in book publications on nanoenergetics, the energetic nanomaterials that are applied in explosives, gun and rocket propellants, and pyrotechnic devices, covering their unique properties and future applications

KEY FEATURES

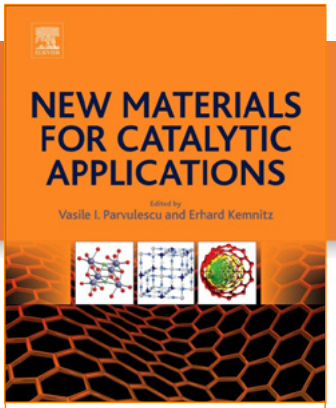
- Written by high-level experts in the field of nanoenergetics
- Covers the hot topic of energetic nanomaterials, including nanometals and their applications in nanoexplosives
- Fills a gap in energetic nanomaterials book publications

DESCRIPTION

Energetic Nanomaterials: Synthesis, Characterization, and Application provides researchers in academia and industry the most novel and meaningful knowledge on nanoenergetic materials, covering the fundamental chemical aspects from synthesis to application.

This valuable resource fills the current gap in book publications on nanoenergetics, the energetic nanomaterials that are applied in explosives, gun and rocket propellants, and pyrotechnic devices, which are expected to yield improved properties, such as a lower vulnerability towards shock initiation, enhanced blast, and environmentally friendly replacements of currently used materials.

The current lack of a systematic and easily available book in this field has resulted in an underestimation of the input of nanoenergetic materials to modern technologies. This book is an indispensable resource for researchers in academia, industry, and research institutes dealing with the production and characterization of energetic materials all over the world.



New Materials for Catalytic Applications

Vasile I. Parvulescu Department of Organic Chemistry, Biochemistry and Catalysis, University of Bucharest, Bucharest, Romania
Erhard Kemnitz Institut für Chemie, Humboldt-Universität zu Berlin, Berlin, Germany

ISBN: 978-0-444-63587-7
PUB DATE: February 2016
FORMAT: Hardback
PAGES: c. 374

AUDIENCE

Academics researching catalytic phenomena, materials scientists, industrial researchers working with solid state materials to invent new chemicals, industrial development scientists

This comprehensive book on the topic of the use of new materials in catalytic applications discusses new materials for applications in which heterogeneous catalysts are less investigated and suggests new catalytic uses for these materials

KEY FEATURES

- Presents organometallic concepts for the synthesis of nanocatalysts
- Provides a synthesis of new materials following the fluorolytic sol-gel concept
- Covers electronic and photocatalytic properties via synthesis of nano-oxide materials
- Details the nature of sites in MOFs generating catalytic properties immobilization of triflates in solid matrices for organic reactions

DESCRIPTION

New Materials for Catalytic Applications proposes the use of both new and existing materials for catalytic applications, such as zeolites, metal oxides, microporous and mesoporous materials, and monocrystals. In addition, metal-oxides are discussed from a new perspective, i.e. nano- and photocatalytic applications.

The material presents these concepts with a new focus on strategies in synthesis, synthesis based on a rational design, the correlation between basic properties/potential applications, and new catalytic solutions for acid-base, redox, hydrogenation, photocatalytic reactions, etc.

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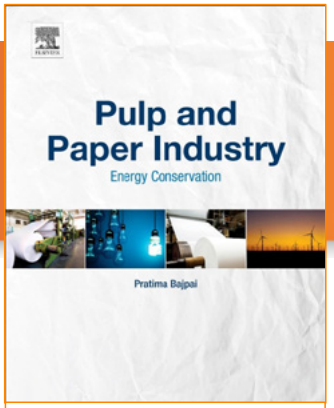


Pulp and Paper Industry

Energy Conservation

Pratima Bajpai Consultant-Pulp and Paper, Thapar Centre for Industrial R&D, Patiala, India

ISBN: 978-0-12-803411-8

PUB DATE: January 2016

FORMAT: Hardback

PAGES: c. 280

AUDIENCE

Pulp and Paper technologist/ Engineers, Paper manufacturers, Paper mill personnel, Senior Paper Scientists and R&D Professionals, Academics, Analysts and Consultants

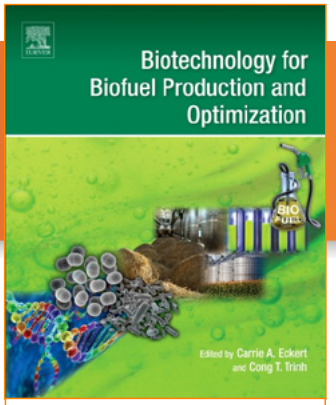
Presents a number of energy-efficient technologies and practices that are cost-effective and available for implementation today in the pulp and paper industry.

KEY FEATURES

- Thorough and in-depth coverage of energy-efficient technologies and practices in paper and pulp industry
- Presents cost-effective and available for implementation today technologies
- Discusses Biotechnological processes, especially enzymatic processes in the pulp and paper industry to reduce the energy consumption and improve the product quality
- Presents qualitative and quantitative results/data on energy savings for various steps of pulp and paper making process

DESCRIPTION

Pulp and Paper Industry: Energy Conservation presents a number of energy-efficient technologies and practices that are cost-effective and available for implementation today. Emerging energy-efficient technologies and future prospects in this field are also dealt with. Qualitative and quantitative results/data on energy savings for various steps of pulp and paper making process are presented. There is no specific book on this topic. This will be a comprehensive reference in the field.



Biotechnology for Biofuel Production and Optimization

Edited by: ***Carrie E Eckert*** National Renewable Energy Laboratory (NREL); University of Colorado, Boulder; the Renewable and Sustainable Energy Institute (RASEI), Golden, CO, USA
Cong T Trinh Dept of Chemical and Biomolecular Engineering, University of Tennessee Knoxville, TN, USA

ELSEVIER

Presents the process engineering and enzyme pathways for the production of a variety of biofuels and biofuels precursors, providing the most recent research

ISBN: 978-0-444-63475-7
PUB DATE: January 2016
FORMAT: Hardback
PAGES: c. 552

AUDIENCE

Chemical Engineers, Biochemical Engineers, Microbiologists, Biotechnologists working in academic institutes, research institutes, industries and governmental agencies; MS/M Tech students; Ph D scholars; researchers studying Biohydrogen production, Wastewater treatment for value-addition, Alternate energy sources, and/or Renewable energy from biomass

KEY FEATURES

- Provides the latest information on biofuel production, an important field of research that seeks to help us reduce our dependence on fossil fuels and decrease our impact on the environment
- Compiles a variety of biofuels pathways
- Discusses a variety of microorganisms with biomass conversion potential
- Presents a large selection of engineering strategies

DESCRIPTION

Biotechnology for Biofuel Production and Optimization presents the latest information on biofuel production, an important field of research that seeks to help us reduce our dependence on fossil fuels and decrease our impact on the environment. The book provides an overview of the variety of biofuels and biofuel precursors currently being produced and the technologies developed that are important to improving production rates and titers to become financially relevant for large-scale production.

The field of biofuel production has experienced a surge in recent years in response to the imminent need for renewable and cleaner sources of energy. The use of metabolic engineering is imperative for the development of efficient pathways for the production of a number of biofuels in both model and novel organisms. Numerous breakthroughs have developed in the field of biofuel production in recent years, many due to the advent of synthetic biology technologies used for metabolic engineering of microbes. Herein, this book describe the pathways utilized for the production of a variety of promising biofuels, as well as the techniques that are being employed for the improvement of construction, use, titers, and tolerance in a variety of organisms.

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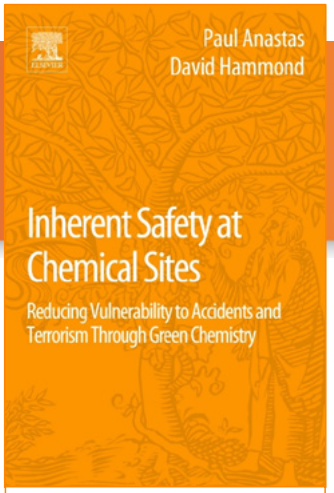

Inherent Safety at Chemical Sites

Reducing Vulnerability to Accidents and Terrorism Through Green Chemistry

Paul Anastas
David G Hammond

ELSEVIER

Primer highlighting practical solutions and real world examples for implementing Green process changes to improve Chemical Site security by reducing the use and storage of harmful chemicals

ISBN: 978-0-12-804190-1

PUB DATE: October 2015

FORMAT: Paperback

PAGES: c. 124

AUDIENCE

Chemists and chemical engineers interested in Green Chemistry, site safety and process improvement

KEY FEATURES

- Addresses security at chemical plants, manufacturers, water utilities and other facilities utilizing and storing hazardous chemical
- Provides practical suggestions and insightful case studies for green chemistry innovations from replacement processes and new technologies
- Covers multiple important chemicals and categories, including: Chlorine, Hydrogen cyanide, Hydrogen fluoride (hydrofluoric acid), Phosgene, Sulfur Dioxide, Sulfuric Acid, Ammonia, Benzene, Pesticides, and cleaning technologies

DESCRIPTION

Inherent Safety at Chemical Sites: Reducing Vulnerability to Accidents and Terrorism Through Green Chemistry highlights the use of green chemistry principles to identify and address serious threats and potential consequences caused by accidental and deliberate industrial chemical releases. Through valuable case studies, the book suggests wholesale replacements of hazardous chemicals with benign and inherently safer, or "greener," materials. More than physical security barriers and plans, such preventative measures better guarantee the safety of industrial employees and nearby residents.

This valuable primer begins with an introduction to the concepts of green chemistry and outlines the various ways that a green approach to chemical design, production, and management is not only good for the planet, but also serves to protect people and infrastructure from terrorist acts. Specific examples and case studies are cited to illustrate what has been done to advance this cause, and offer guidance to those decision-makers who similarly aspire to greater safety and security for the people and resources they manage.

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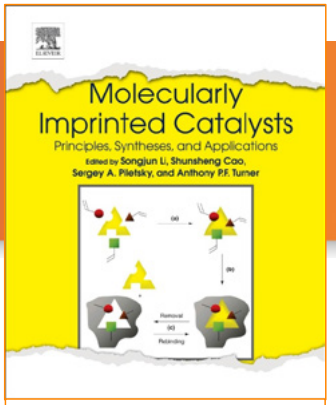

Molecularly Imprinted Catalysts

Principles, Syntheses, and Applications

Edited by: ***Songjun Li*** School of Materials Science & Engineering, Jiangsu University, Zhenjiang, China
Shunsheng Cao School of Materials Science & Engineering, Jiangsu University, Zhenjiang, China; and Cranfield Health, Cranfield University, Cranfield, Bedfordshire, UK
Sergey A. Piletsky Cranfield Health, Cranfield University, Cranfield, Bedfordshire, UK
Anthony P.F. Turner Biosensors & Bioelectronics Centre, IFM-Linköping University, Linköping, Sweden

ISBN: 978-0-12-801301-4
PUB DATE: October 2015
FORMAT: Hardback
PAGES: c. 300

AUDIENCE

Researchers in academia and industry working in molecular imprinting, catalysis, molecular recognition, materials science, biotechnology, and nanotechnology

A comprehensive reference for scientists, students, and researchers working in the fields of molecular imprinting, (selective) catalysis, molecular recognition, materials, biotechnology, and nanotechnology

KEY FEATURES

- The first book in the field on molecularly imprinted catalysts (MIPs)
- Provides a systematic background to selective catalysis, especially the basic concepts and key principles of the different MIP-based catalysts
- Features state-of-the art presentation of preparation methods and applications of MIPs
- Written by scientists from prestigious universities and industries across the world, and edited by veteran researchers in molecular imprinting and selective catalysis

DESCRIPTION

Molecularly Imprinted Catalysts: Principle, Synthesis, and Applications is the first book of its kind to provide an in-depth overview of molecularly imprinted catalysts and selective catalysis, including technical details, principles of selective catalysis, preparation processes, the catalytically active polymers themselves, and important progress made in this field. It serves as an important reference for scientists, students, and researchers who are working in the areas of molecular imprinting, catalysis, molecular recognition, materials science, biotechnology, and nanotechnology.

Comprising a diverse group of experts from prestigious universities and industries across the world, the contributors to this book provide access to the latest knowledge and eye-catching achievements in the field, and an understanding of what progress has been made and to what extent it is being advanced in industry.

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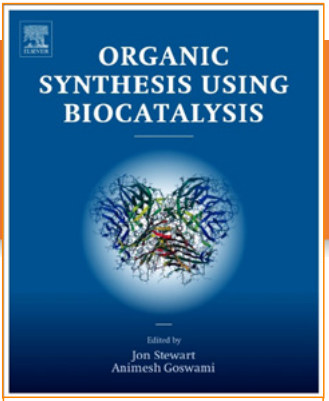

Organic Synthesis Using Biocatalysis

Edited by: ***Animesh Goswami*** Chemical Development, Bristol-Myers Squibb, New Brunswick, NJ, USA
Jon Stewart University of Florida, Gainesville, FL, USA

ELSEVIER

A concise background of the application of biocatalysis for the synthesis of organic compounds, including biocatalysis in organic synthesis, biocatalysis for selective organic transformation, and enzymes as catalysis for organic synthesis

ISBN: 978-0-12-411518-7
PUB DATE: September 2015
FORMAT: Hardback
PAGES: c. 432

AUDIENCE

Designed for postgraduates in chemistry or chemical engineering and industry professionals who need to understand the use of enzymes to perform synthetic organic transformations.

KEY FEATURES

- Provides a concise background of the application of biocatalysis for the synthesis of organic compounds
- Expert contributors present recipes for carrying out biocatalytic reactions, including subject worthy discussions on biocatalysis in organic synthesis, biocatalysis for selective organic transformation, enzymes as catalysis for organic synthesis, biocatalysis in Industry, including pharmaceuticals, and more
- Contains detailed, separate chapters that describe the application of biocatalysis

DESCRIPTION

Organic Synthesis Using Biocatalysis provides a concise background on the application of biocatalysis for the synthesis of organic compounds, including the important biocatalytic reactions and application of biocatalysis for the synthesis of organic compounds in pharmaceutical and non-pharmaceutical areas.

The book provides recipes for carrying out various biocatalytic reactions, helping both newcomers and non-experts use these methodologies. It is written by experts in their fields, and provides both a current status and future prospects of biocatalysis in the synthesis of organic molecules.

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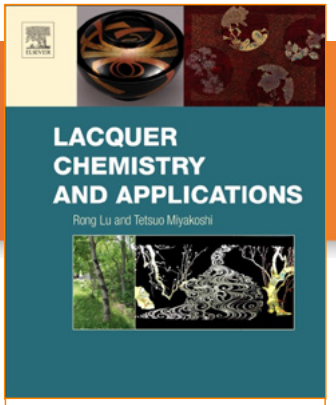


Lacquer Chemistry and Applications

Rong Lu Meiji University, Japan
Tetsuo Miyakoshi Meiji University, Japan

ISBN: 978-0-12-803589-4
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 300

AUDIENCE

Chemists, chemical engineers, materials scientists, students, and researchers in lacquer and its applications. Lacquer workers including restoration and protection of lacquerwares, lacquer painting majors student, and the people who use lacquer as a material.

This book provides a unique reference and history on lacquer chemistry, presenting users with a go-to resource on its origins, synthesis, properties, and how the applications of lacquer as a coating material have been used in artwork and other mediums in Asian countries for thousands of years.

KEY FEATURES

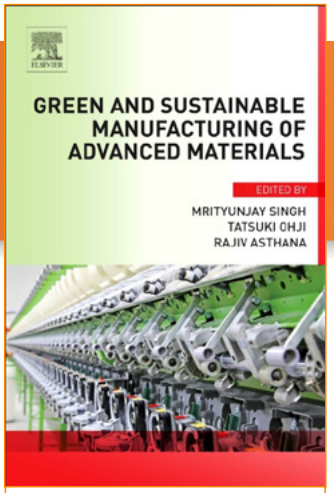
- Covers the chemistry and properties of lacquer, including synthesis of its various components
- Provides up-to-date analytical techniques for lacquer identification and characterization
- Discusses possible toxicity effects
- Outlines new modification techniques for developing higher performance material
- Presents the history of this versatile coating material that has evolved from its origins in Asian countries over thousands of years

DESCRIPTION

Lacquer Chemistry and Applications explores the topic of lacquer, the only natural product polymerized by an enzyme that has been used for a coating material in Asian countries for thousands of years.

Although the human-lacquer-culture, including cultivation of the lacquer tree, harvesting, and the use of lacquer sap, has a long history of more than thousand years, there is very little information available on the modern scientific methods to study lacquer chemistry.

This book, based on the results of the authors' 30 years of research on lacquer chemistry, offers lacquer researchers a unique reference on the science and applications of this extremely important material.



Green and Sustainable Manufacturing of Advanced Material

Edited by: ***Mrityunjay Singh*** Chief Scientist, Ohio Aerospace Institute, NASA Glenn Research Center
Tatsuki Ohji Advanced Manufacturing Research Institute National Institute of Advanced Industrial Science and Technology (AIST) Nagoya, Japan
Rajiv Asthana Manufacturing Engineering Technology Department, University of Wisconsin-Stout, USA

ELSEVIER

An in-depth cutting-edge treatment of topics of critical importance to the future of green manufacturing

KEY FEATURES

- A one-stop compendium of new research and technology of green manufacturing of metals, ceramics and their composites.
- In-depth cutting-edge treatment of synthesis, processing, fabrication, process optimization, testing, performance evaluation and reliability which are of critical importance to green manufacturing.
- Stimulates fresh thinking and exchange of ideas and information on approaches to green materials processing across disciplines

DESCRIPTION

Sustainable development is a globally recognized mandate and it includes green or environment-friendly manufacturing practices. Such practices orchestrate with the self-healing and self-replenishing capability of natural ecosystems. Green manufacturing encompasses synthesis, processing, fabrication, and process optimization, but also testing, performance evaluation and reliability. The book shall serve as a comprehensive and authoritative resource on sustainable manufacturing of ceramics, metals and their composites. It is designed to capture the diversity and unity of methods and approaches to materials processing, manufacturing, testing and evaluation across disciplines and length scales. Each chapter incorporates in-depth technical information without compromising the delicate link between factual data and fundamental concepts or between theory and practice. Green and sustainable materials processing and manufacturing is designed as a key enabler of sustainable development.

ISBN: 978-0-12-411497-5
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 668

AUDIENCE

Practicing engineers and technologists at major manufacturing companies and R&D establishments with current or emerging interest in green and sustainable manufacturing; these include nuclear industry, automotive industry, aerospace, defense, and general manufacturing. Also, researchers at companies and organizations such as Honeywell, Lockheed-Martin, Boeing, Siemens, IBM, Intel, Department of Energy (DoE), Department of Defense (DoD), NASA, Sandia, Oak Ridge and their contractors. Also advanced graduate students at universities worldwide with departments and/or degree programs in Materials Science and Engineering, Manufacturing, Ceramics, Chemistry, Chemical Engineering and Electronics.

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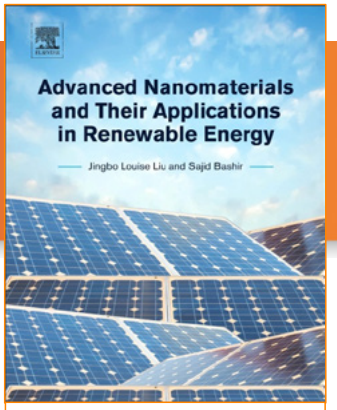


Advanced Nanomaterials and Their Applications in Renewable Energy

Louise Jingbo Liu Texas A&M University, Kingsville, TX, USA
Sajid Bashir Texas A&M University, Kingsville, TX, USA

ISBN: 978-0-12-801528-5
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 426

AUDIENCE

Graduate Students, Chemical Engineers, Materials Scientists, Facility and Characterization Center Managers

Researchers at the department of energy research laboratories (Argonne National Laboratory, Lawrence Berkeley National Laboratory, DARPA, etc)

Researchers at Engineering and State Universities who work in the field (MIT, GIT, Cornell University, UC Berkeley etc)

Timely topics related to nano-materials' feasibility synthesis and characterization, and their application in the energy fields

KEY FEATURES

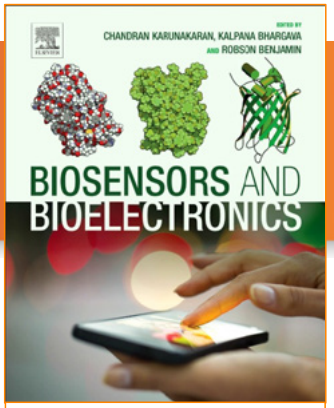
- Provides a comprehensive review of solar energy, fuel cells, and gas storage from 2010 to the present
- Reviews feasible synthesis and modern analytical techniques used in alternative energy
- Explores examples of research in alternative energy, including current assessments of nanomaterials and safety
- Contains a glossary of terms, units, and historical benchmarks
- Presents a useful guide that will bring readers up to speed on historical developments in alternative fuel cells

DESCRIPTION

Advanced Nanomaterials and Their Applications in Renewable Energy presents timely topics related to nanomaterials' feasible synthesis and characterization, and their application in the energy fields. In addition, the book provides insights and scientific discoveries in toxicity study, with information that is easily understood by a wide audience.

Advanced energy materials are important in designing materials that have greater physical, electronic, and optical properties. This book emphasizes the fundamental physics and chemistry underlying the techniques used to develop solar and fuel cells with high charge densities and energy conversion efficiencies.

New analytical techniques (synchronous X-ray) which probe the interactions of particles and radiation with matter are also explored, making this book an invaluable reference for practitioners and those interested in the science.



Biosensors and Bioelectronics

CHANDRAN KARUNAKARAN Associate Professor of Chemistry, Biomedical Research Lab, VHNSN College, Tamilnadu, India
KALPANA BHARGAVA Defence Institute of Physiological and Allied Sciences (DIPAS), Defence Research and Development Organization (DRDO), Ministry of Defence, Government of India,Delhi, India
ROBSON BENJAMIN Department of Physics, American College, Tamilnadu, India

ELSEVIER

An interdisciplinary reference that reflects the latest developments in biosensors and bioinstrumentation

ISBN: 978-0-12-803100-1
PUB DATE: July 2015
FORMAT: Hardback
PAGES: c. 340

AUDIENCE

Chemical Engineers (primarily those in the R&D sector), Electronics Engineers, and Materials Scientists. Secondary audience includes students at the upper undergraduate and graduate level taking related coursework

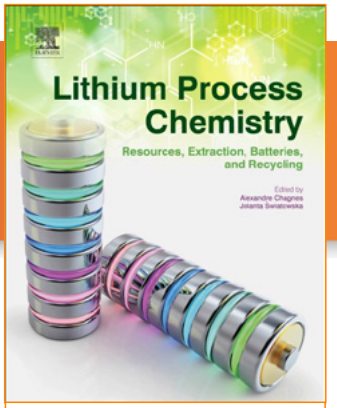
KEY FEATURES

- Features descriptions of functionalized nanocomposite materials and carbon fibre electrode-based biosensors for field and in vivo applications
- Presents a range of interwoven contributing subjects, including electrochemistry, nanoparticles, and conducting polymers
- Includes more than 70 figures and illustrations that enhance key concepts and aid in retention
- Ideal reference for those studying bioreceptors, transducers, bioinstrumentation, nanomaterials, immunosensors, nanotubes, nanoparticles, and electrostatic interactions
- Authored by a collaborative team of scientists with more than 50 years of experienced in field research and instruction combined

DESCRIPTION

Biosensors and Bioelectronics presents the rapidly evolving methodologies that are relevant to biosensors and bioelectronics fabrication and characterization. The book provides a comprehensive understanding of biosensor functionality, and is an interdisciplinary reference that includes a range of interwoven contributing subjects, including electrochemistry, nanoparticles, and conducting polymers.

Authored by a team of bioinstrumentation experts, this book serves as a blueprint for performing advanced fabrication and characterization of sensor systems—arming readers with an application-based reference that enriches the implementation of the most advanced technologies in the field.



Lithium Process Chemistry

Resources, Extraction, Batteries, and Recycling

Edited by: ***Alexandre Chagnes*** Chimie ParisTech-CNRS, Institut de Recherche de Chimie Paris, Paris, France
Jolanta Swiatowska PSL Research University, Chimie ParisTech-CNRS, Institut de Recherche de Chimie Paris, Paris, France

ELSEVIER

Presents, for the first time, the most recent developments and state-of-the-art of lithium production, lithium-ion batteries, and their recycling

ISBN: 978-0-12-801417-2
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 300

AUDIENCE

Chemical engineers, metallurgists, academic researchers in these areas
Scientific libraries in universities and research institutes

KEY FEATURES

- Provides fundamental and theoretical knowledge on hydrometallurgy and electrochemistry in lithium-ion batteries
- Represents the first time that hydrometallurgy and electrochemistry on lithium-ion batteries are assembled in one unique source.
- Ideal for both electrochemists who usually have no knowledge in hydrometallurgy and hydrometallurgists not familiar with electrochemistry applied to Li-ion batteries
- Presents recent developments, as well as challenges in lithium production and lithium-ion battery technologies and their recycling
- Covers examples of Li processes production with schematics, also including numerous graphical presentations of different battery systems and their electrochemical performances

DESCRIPTION

Lithium Process Chemistry: Resources, Extraction, Batteries and Recycling presents, for the first time, the most recent developments and state-of-the-art of lithium production, lithium-ion batteries, and their recycling.

The book provides fundamental and theoretical knowledge on hydrometallurgy and electrochemistry in lithium-ion batteries, including terminology related to these two fields. It is of particular interest to electrochemists who usually have no knowledge in hydrometallurgy and hydrometallurgists not familiar with electrochemistry applied to Li-ion batteries.

It is also useful for both teachers and students, presenting an overview on Li production, Li-ion battery technologies, and lithium battery recycling processes that is accompanied by numerous graphical presentations of different battery systems and their electrochemical performances. The book represents the first time that hydrometallurgy and electrochemistry on lithium-ion batteries are assembled in one unique source.

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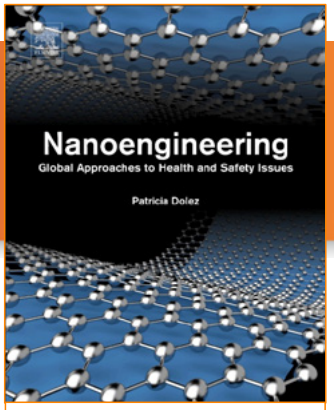


Nanoengineering

Global Approaches to Health and Safety Issues

Edited by: ***Patricia Dolez*** CTT Group, Saint-Hyacinthe, QC, Canada

ISBN: 978-0-444-62747-6

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 720

AUDIENCE

Academic and research institute scientists doing research on nanomaterials; Professors teaching about nanotechnologies; Researchers and engineers in companies manufacturing and using nanomaterials; Health and Safety preventionists; Public Health personnel; Consumer protection analysts; Company directors and supervisors; Worker protection advisors.

Secondary: Workers and consumers concerned about nanomaterials; legislators and law makers

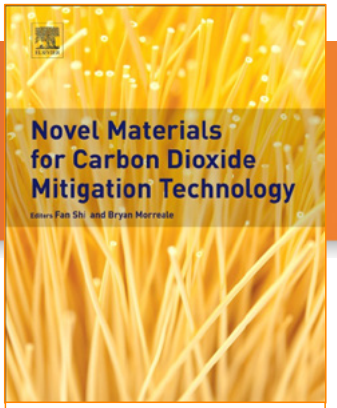
Looks at the impact of engineered nanomaterials on health, safety, and the environment for the general public and for the workforce

KEY FEATURES

- Provides a global vision on the different aspects related to nanosafety and a synthesis of the information available
- Gives all the information required for precision decision-making in a single book, offering both general public and occupational aspects
- Contains separate chapters on each subject written by world-renowned contributors
- Presents a complete vision of the problem, with perspectives on global approaches
- Includes case studies that illustrate important processes

DESCRIPTION

Nanoengineering: Global Approaches to Health and Safety Issues provides a global vision on the impact of engineered nanomaterials both for the consumer/general public and in occupational settings. The book also presents a hint on what can be expected for the future from nanomaterials and their effects on our lives, both at home and at work. In addition, users will find valuable information on nanomaterials' irreplaceable value and their risks for health, safety, and environmental issues. Case studies illustrate key points and provide information on important processes.



Novel Materials for Carbon Dioxide Mitigation Technology

Edited by: ***Bryan Morreale*** National Energy Technology Laboratory, US Department of Energy, Pittsburgh, PA, USA
Fan Shi U.S. Department of Energy's (DOE) National Energy Technology Laboratory (NETL), Pittsburgh, PA, USA

ELSEVIER

This book presents experts' view of the current state of play and prospects for the development of novel materials dedicated to carbon mitigation technologies

ISBN: 978-0-444-63259-3
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 404

AUDIENCE

Chemical, material, or environmental engineers who need to design, develop, or configure an effective material for CO_2 mitigation. Chemical, material, or environmental engineers, researchers and professionals in the energy industry. It could also be used as supplemental text for graduate courses in chemical, material, or environmental engineering in carbon mitigation technology

KEY FEATURES

- Emphasizes material development for carbon mitigation technologies rather than regulations
- Provides a fundamental understanding of the underpinning science as well as technological approaches to implement carbon capture, utilization and storage technologies.
- Introduces the driving force behind novel materials, their performance and applications for carbon dioxide mitigation
- Contains figures, tables and an abundance of examples clearly explaining the development, characterization and evaluation of novel carbon mitigation materials
- Includes hundreds of citations drawing on the most recent published works on the subject
- Provides a wealth of real-world examples, illustrating how to bridge nano-scale materials to bulk carbon mitigation properties.

DESCRIPTION

Materials for Carbon Dioxide Mitigation Technology offers expert insight and experience from recognized authorities in advanced material development in carbon mitigation technology and constitutes a comprehensive guide to the selection and design of a wide range of solvent/sorbent/catalyst used by scientists globally. It appeals to chemical scientists, material scientists and engineers, energy researchers, and environmental scientists from academia, industry, and government in their research directed toward greener, more efficient carbon mitigation processes.

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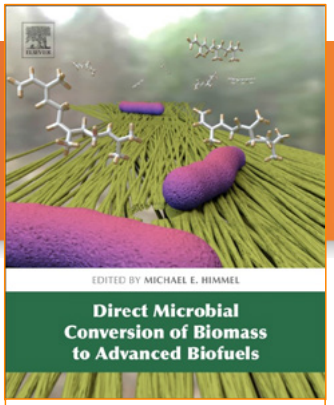

Direct Microbial Conversion of Biomass to Advanced Biofuels

Edited by: ***Michael E Himmel*** Group Manager, National Renewable Energy Laboratory

ELSEVIER

ISBN: 978-0-444-59592-8

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 404

AUDIENCE

This book will appeal not only to biochemists, molecular biologists, chemists, and microbiologists working to understand the fundamental problems associated with biomass conversion research, but also chemical and mechanical engineers working to design new conversion processes for advanced biofuels. A secondary market will be DOE and other government staff looking for expert advice in the field of Biofuels production.

This book describes an important new field in biotechnology, the consolidated conversion of lignocellulosic feedstocks to advanced fuels, bringing the latest research and experiments to the forefront

KEY FEATURES

- Describes an important new field in biotechnology, the consolidated conversion of lignocellulosic feedstocks to advanced fuels
- Up-to-date views of promising technologies used in the production of advanced biofuels
- Presents the newest ideas, well-designed experiments, and outcomes
- Provides outstanding illustrations from NREL and contributing researchers
- Contains contributions from leaders in the field that provide numerous examples and insights into the most important aspects of the topic

DESCRIPTION

'Direct Microbial Conversion of Biomass to Advanced Biofuels' is a stylized text that is rich in both the basic and applied sciences. It provides a higher level summary of the most important aspects of the topic, addressing critical problems solved by deep science.

Expert users will find new, critical methods that can be applied to their work, detailed experimental plans, important outcomes given for illustrative problems, and conclusions drawn for specific studies that address broad based issues.

A broad range of readers will find this to be a comprehensive, informational text on the subject matter, including experimentalists and even CEOs deciding on new business directions.

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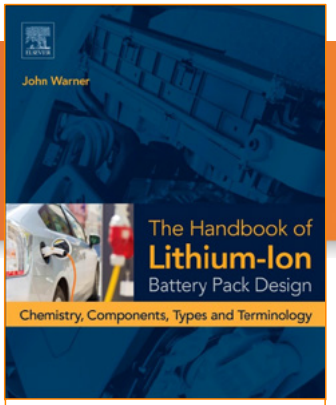

The Handbook of Lithium-Ion Battery Pack Design

Chemistry, Components, Types and Terminology

John T Warner Grand Blanc, MI USA

ELSEVIER

A clear and concise description of Li-ion battery development for the professional who is dealing with their design and applications

ISBN: 978-0-12-801456-1

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 240

AUDIENCE

Engineering designers, manufacturing managers, engineering technicians, chemical and mechanical engineers, thermal engineers, battery chemists, and anyone working in the Li-ion battery industry who is not an engineer by training

KEY FEATURES

- Offers an easy explanation of battery terminology and enables better understanding of batteries, their components and the market place.
- Demonstrates simple battery scaling calculations in an easy to understand description of the formulas
- Describes clearly the various components of a Li-ion battery and their importance
- Explains the differences between various Li-ion cell types and chemistries and enables the determination which chemistry and cell type is appropriate for which application
- Outlines the differences between battery types, e.g., power vs energy battery
- Presents graphically different vehicle configurations: BEV, PHEV, HEV
- Includes brief history of vehicle electrification and its future

DESCRIPTION

The Handbook of Lithium-Ion Battery Pack Design: Chemistry, Components, Types and Terminology offers to the reader a clear and concise explanation of how Li-ion batteries are designed from the perspective of a manager, sales person, product manager or entry level engineer who is not already an expert in Li-ion battery design. It will offer a layman's explanation of the history of vehicle electrification, what the various terminology means, and how to do some simple calculations that can be used in determining basic battery sizing, capacity, voltage and energy. By the end of this book the reader has a solid understanding of all of the terminology around Li-ion batteries and is able to do some simple battery calculations.

The book is immensely useful to beginning and experienced engineer alike who are moving into the battery field. Li-ion batteries are one of the most unique systems in automobiles today in that they combine multiple engineering disciplines, yet most engineering programs focus on only a single engineering field. This book provides you with a reference to the history, terminology and design criteria needed to understand the Li-ion battery and to successfully lay out a new battery concept. Whether you are an electrical engineer, a mechanical engineer or a chemist this book helps you better appreciate the inter-relationships between the various battery engineering fields that are required to understand the battery as an Energy Storage System.

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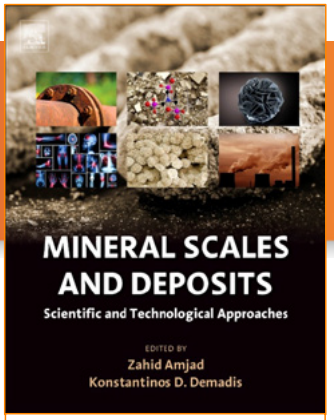


Mineral Scales and Deposits

Scientific and Technological Approaches

Edited by: ***Zahid Amjad*** School of Arts and Sciences, Walsh University, N. Canton, OH, USA

Kostas Demadis Department of Chemistry, University of Crete, Heraklion, Greece

ISBN: 978-0-444-63228-9

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 26

AUDIENCE

For scientists/experts working in academia, it offers a number of crystal growth topics with emphasis on mechanistic details, prediction modules, inhibition/dispersion chemistry, etc. For technologists, chemists, chemical engineers, water technologists, consultants, plant managers, plant engineers, plant designers working in industry, it provides a more field-friendly overview of scale-related challenges and technological options to mitigate them.

All fundamental and applications aspects of scale deposits in industrial water systems and selected biological systems, with formation mechanisms and prevention methods

KEY FEATURES

- Provides a unique, detailed focus on scale deposits, includes the basic science and mechanisms of scale formation
- Present a field-friendly overview of scale-related challenges and technological options for their mitigation
- Correlates chemical structure to performance
- Provides guidelines for easy assessment of a particular case, also including solutions
- Includes an extensive list of industrial case studies for reference

DESCRIPTION

Mineral Scales and Deposits: Scientific and Technological Approaches presents, in an integrated way, the problem of scale deposits (precipitation/crystallization of sparingly-soluble salts) in aqueous systems, both industrial and biological.

It covers several fundamental aspects, also offering an applications' perspective, with the ultimate goal of helping the reader better understand the underlying mechanisms of scale formation, while also assisting the user/reader to solve scale-related challenges.

It is ideal for scientists/experts working in academia, offering a number of crystal growth topics with an emphasis on mechanistic details, prediction modules, and inhibition/dispersion chemistry, amongst others. In addition, technologists, consultants, plant managers, engineers, and designers working in industry will find a field-friendly overview of scale-related challenges and technological options for their mitigation.

Industrial Biorefineries & White Biotechnology

Edited by: ***Ashok Pandey*** CSIR, National Institute for Interdisciplinary Science and Technology, Trivandrum, India
Rainer Hofer Editorial Ecosiris, Düsseldorf, Germany
Mohammad Taherzadeh University of Borås in Sweden
Madhavan Nampoothiri CSIR-NIIST, Trivandrum, India
Christian Larroche Blaise Pascal University, Aubiére Cedex, France

ELSEVIER

Presents the latest scientific and technological developments used in biomass conversion, covering the most up-to-date information and technological perspectives

*"Intended for post-graduate students and researchers in applied biology, biotechnology and chemical engineering, this guide to state of the art of biofuel processes and techniques showcases current scholarship and real world implementations of this important and emerging alternative energy technology. The volume is divided into sections covering general principles of biorefining, production of bioethanol from feedstocks, production of biodiesel from vegetable oils, production of biofuels from algae, biohydrogen and biobutanol and other green fuels and individual chapters address specific aspects of the production process, raw materials, and assessments of the efficiency and practicality of each technology."**--SciTech Book News***

ISBN: 978-0-444-63453-5
PUB DATE: May 2015
FORMAT: Hardback
PAGES: c. 716

AUDIENCE
Chemical Engineers, Biotechnologists, microbiologists/biologists, Agricultural Chemists, Environmental Engineers, Petroleum Engineers and graduate and postgraduate students in these areas

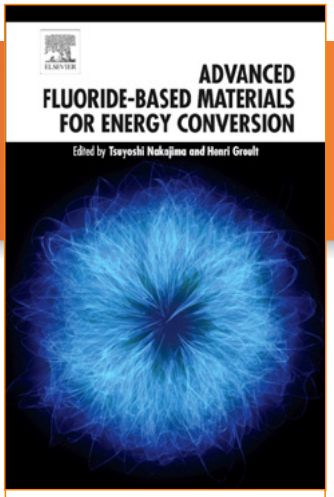
KEY FEATURES

- Provides information on the most advanced and innovative pretreatment processes and technologies for biomass
- Covers information on lignocellulosic and algal biomass to work on the principles of biorefinery
- Provides information on integration of processes for the pretreatment of biomass
- Designed as a textbook for both graduate students and researchers

DESCRIPTION

Industrial Biorefineries and White Biotechnology provides a comprehensive look at the increasing focus on developing the processes and technologies needed for the conversion of biomass to liquid and gaseous fuels and chemicals, in particular, the development of low-cost technologies.

During the last 3-4 years, there have been scientific and technological developments in the area; this book represents the most updated information and technological perspective on the topic.



Advanced Fluoride-Based Materials for Energy Conversion

Edited by: ***Tsuyoshi Nakajima*** Aichi Institute of Technology, Toyota, Japan
Henri Groult University of Pierre and Marie Curie, Paris, France

ELSEVIER

An all-encompassing look at the properties and functions of fluorinated materials, including guidance on fluorination reactions and techniques for chemical energy devices

ISBN: 978-0-12-800679-5

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 440

AUDIENCE

Inorganic fluorine chemists and electrochemists: industry researchers and technicians, university professors and graduate students, researchers and technicians of research institutes

KEY FEATURES

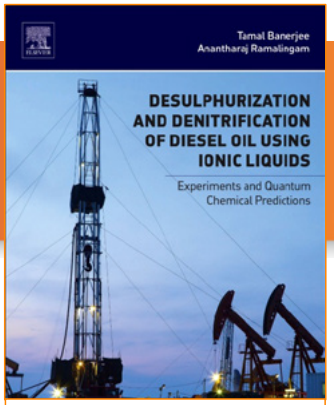
- Provides thorough and applied information on new fluorinated materials for chemical energy devices
- Describes the emerging role of stable energy devices with high-level functions and the research surrounding the technology
- Ideal for the chemist, research, technician, or academic seeking current insights into the synthesis of fluorine compounds and fluorination reactions using fluorinating agents

DESCRIPTION

Advanced Fluoride-Based Materials for Energy Conversion provides thorough and applied information on new fluorinated materials for chemical energy devices, exploring the electrochemical properties and behavior of fluorinated materials in lithium ion and sodium ion batteries, fluoropolymers in fuel cells, and fluorinated carbon in capacitors, while also exploring synthesis applications, and both safety and stability issues.

As electronic devices, from cell phones to hybrid and electric vehicles, are increasingly common and prevalent in modern lives and require dependable, stable chemical energy devices with high-level functions are becoming increasingly important. As research and development in this area progresses rapidly, fluorine compounds play a critical role in this rapid progression. Fluorine, with its small size and the highest electronegativity, yields stable compounds under various conditions for utilization as electrodes, electrolytes, and membranes in energy devices.

The book is an ideal reference for the chemist, researcher, technician, or academic, presenting valuable, current insights into the synthesis of fluorine compounds and fluorination reactions using fluorinating agents.



Desulphurization and Denitrification of Diesel Oil Using Ionic Liquids

Experiments and Quantum Chemical Predictions

Tamal Banerjee Department of Chemical Engineering, Indian Institute of Technology Guwahati, Guwahati, India
Anantharaj Ramalingam Senior Lecturer Department of Chemical Engineering Faculty of Engineering Building University of Malaya Kuala Lumpur Malaysia

ISBN: 978-0-12-801347-2
PUB DATE: May 2015
FORMAT: Hardback
PAGES: c. 330

AUDIENCE

Post-graduate students, researchers in academia and industry and chemical engineers working in the field of desulphurization and ionic liquids, using *ab initio*, quantum and COSMO techniques

Comprehensive but concise evaluation of the usage of ionic liquids for desulphurization and denitrification of diesel oil using quantum chemical calculations

KEY FEATURES

- Provides current research on green solvents, such as ionic liquids, used in desulphurization and denitrification of fuels
- Discusses the COSMO-RS model in predicting the properties of ionic liquids to aid in the design of separation processes
- Includes real-world applications of desulphurization and denitrification using ionic liquids

DESCRIPTION

Desulphurization and Denitrification of Diesel Oil using Ionic Liquids: Experiments and Quantum Chemical Predictions discusses how quantum chemical calculations are applied to investigate the fundamental nature of the IL-sulphur-nitrogen systems at atomic and molecular levels.

The book will help readers understand the nature of the structural relationship between molecules such as ionic liquid + aromatic sulphur + aromatic nitrogen system(s).

In addition, COSMO-RS (Conductor Like Screening Model for Real Solvents) predictions and subsequent experimentation are discussed to evaluate the performance of ionic liquids for desulphurization and denitrification of diesel oil.

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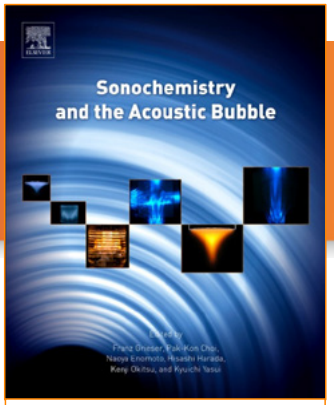

Sonochemistry and the Acoustic Bubble

Edited by: ***Franz Grieser*** University of Melbourne, Victoria, Australia
Pak-Kon Choi Meiji University, Kawasaki, Japan
Naoya Enomoto Kyushu University Fukuoka, Japan
Hisashi Harada Meisei University, Tokyo, Japan
Kenji Okitsu Osaka Prefecture University, Osaka, Japan
Kyuichi Yasui National Institute of Advanced Industrial Science and Technology (AIST), Nagoya Japan

ISBN: 978-0-12-801530-8
PUB DATE: April 2015
FORMAT: Hardback
PAGES: c. 282

AUDIENCE

Primarily readers are Students in Science and Engineering, Researchers, Chemical Engineers, Engineers in Ultrasonic Cleaning, Ultrasonic Atomization, Food Processing, Chemists, Physicists, Libraries. The book will also have value to Engineers in Medical and Environmental Technology, Medical Doctors, High School Teachers, Journalists in Science and Engineering

This book is a comprehensive introduction and fundamental guide to the field of acoustic cavitation and sonochemistry and its (potential) applications with respect to industrial and medical technologies.

KEY FEATURES

- Experimental methods on acoustic cavitation and sonochemistry
- Helps users understand how to readily begin experiments in the field
- Provides an understanding of the physics behind the phenomenon
- Contains examples of (possible) industrial applications in chemical engineering and environmental technologies
- Presents the possibilities for adopting the action of acoustic cavitation with respect to industrial applications

DESCRIPTION

Sonochemistry and the Acoustic Bubble provides an introduction to the way ultrasound acts on bubbles in a liquid to cause bubbles to collapse violently, leading to localized 'hot spots' in the liquid with temperatures of 5000° celcius and under pressures of several hundred atmospheres.

These extreme conditions produce events such as the emission of light, sonoluminescence, with a lifetime of less than a nanosecond, and free radicals that can initiate a host of varied chemical reactions (sonochemistry) in the liquid, all at room temperature.

The physics and chemistry behind the phenomena are simply, but comprehensively presented. In addition, potential industrial and medical applications of acoustic cavitation and its chemical effects are described and reviewed.

The book is suitable for graduate students working with ultrasound, and for potential chemists and chemical engineers wanting to understand the basics of how ultrasound acts in a liquid to cause chemical and physical effects.

CHEMISTRY

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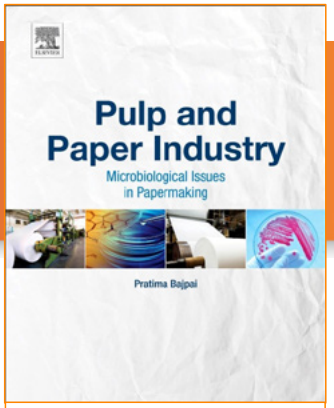

Pulp and Paper Industry

Microbiological Issues in Papermaking

Pratima Bajpai Consultant-Pulp and Paper, Thapar Centre for Industrial R&D, Patiala, India

ELSEVIER

Focuses on microbial problems and their consequences in paper mill systems, chemistry of paper machines deposits and strategies for control, and methods for biofouling analysis

ISBN: 978-0-12-803409-5

PUB DATE: April 2015

FORMAT: Hardback

PAGES: c. 210

AUDIENCE

Researchers, Scientists, Graduate students, Teachers in Pulp and Paper technology, Biotechnology, Microbiology, Environmental pollution, Pulp and Paper Technologist/ Engineers, Paper manufacturers, Paper mill personnel, Senior Paper Scientists and R&D Professionals, Academics, Analysts and Consultants

KEY FEATURES

- In-depth coverage of microbiological issues in papermaking and their consequences
- Discusses eco-efficient processes **(green processes)** for biofilm/slime control
- Offers a thorough review of the current literature with links to the primary literature
- Comprehensive indexing
- Author is an authority in the pulp and paper industry

DESCRIPTION

Pulp and Paper Industry: Microbiological Issues in Papermaking features in-depth and thorough coverage of microbiological issues in papermaking and their consequences and the current state of the different alternatives for prevention, treatment and control of biofilm/slime considering the impact of the actual technological changes in papermaking on the control programmes. The microbial issues in paper mill systems, chemistry of deposits on paper machines, the strategies for deposit control and methods used for the analysis of biofouling are all dealt in this book along with various growth prevention methods. The traditional use of biocides is discussed taken into account the new environmental regulations regarding their use. Finally, discusses the trends regarding the future of the microbiological control in papermaking systems.

CHEMISTRY

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Pulp and Paper Industry

Chemicals

Pratima Bajpai Consultant-Pulp and Paper, Thapar Centre for Industrial R&D, Patiala, India

ELSEVIER

Up-to-date information on chemicals in the pulp and paper industry, describing chemical demand by end users and key and niche players and what the future holds

ISBN: 978-0-12-803408-8

PUB DATE: April 2015

FORMAT: Hardback

PAGES: c. 324

AUDIENCE

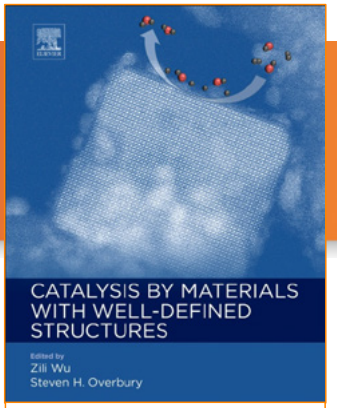
Chemists, chemical engineers, Chemicals suppliers, Chemicals manufacturers, Pulp and Paper technologist/ Engineers, Paper manufacturers, Paper mill personnel, Senior Paper Scientists and R&D Professionals, Academics, Analysts and Consultants

KEY FEATURES

- Detailed and up-to-date coverage of Chemicals in Pulp and Paper Industry
- Authoritative, thorough, and comprehensive content on a wide variety of Enzymes "Green Chemicals"
- Comprehensive list of Paper and Pulp Related Chemicals
- Comprehensive list of all Pulp and paper Suppliers
- Comprehensive Indexing

DESCRIPTION

Pulp and Paper Industry: Chemicals features in-depth and thorough coverage of Chemical additives in the Pulp and Paper Industry. It discusses use of Enzymes "Green Chemicals" that can improve operations in pulp and paper, describes Chemicals demanded by the end user and many key and niche players such as Akzo Nobel NV, Eka Chemicals AB, Ashland, Inc., BASF, Buckman Laboratories International, Inc., Clariant, Cytec Industries, Inc., Enzymatic Deinking Technologies, LLC, ERCO Worldwide, FMC Corporation, Georgia-Pacific Corporation, Georgia-Pacific Chemicals LLC, Imerys SA, Momentive Specialty Chemicals, Inc., Novozymes, Kemira Chemicals, Nalco Holding Company, Omya AG, Solvay AG, and Solvay Chemicals, Inc.. Paper and pulp processing and additive chemicals are an integral part of the total papermaking process from pulp slurry, through sheet formation, to effluent disposal. Environmental concerns, increased use of recycled waste paper as a replacement for virgin pulp, changes in bleaching and pulping processes, increased efficiency requirements for the papermaking process, limits on effluent discharge as well as international competitiveness have greatly impacted the paper and pulp chemical additive market. This book features in-depth and thorough coverage of Chemical additives in Pulp and Paper Industry.



Catalysis by Materials with Well-Defined Structures

Edited by: ***Zili Wu*** Chemical Science Division and Center for Nanophase Materials Sciences, Oak Ridge National Lab, Oak Ridge, TN, USA
Steven H. Overbury Chemical Science Division and Center for Nanophase Materials Sciences, Oak Ridge National Lab, Oak Ridge, TN, USA

ISBN: 978-0-12-801217-8
PUB DATE: April 2015
FORMAT: Hardback
PAGES: c. 376

AUDIENCE

Academic researchers, industrial professionals in catalysis science, inorganic and physical chemistry, chemical engineering, material science, and physics. Graduate and undergraduate students in catalysis, material science, chemistry and chemical engineering.

A concise reference work on nanomaterials catalysts, their synthesis, characterization, and use in developing new and efficient heterogeneous catalytic processes

KEY FEATURES

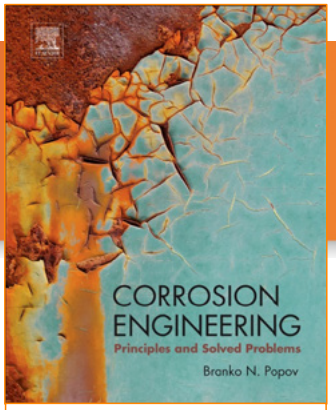
- Outlines the importance of nanomaterials and their potential as catalysts
- Provides detailed information on synthesis and characterization of nanomaterials with well-defined structures, relating surface activity to catalytic activity
- Details how to establish the structure-catalysis relationship and how to reveal the surface chemistry and surface structure of catalysts
- Offers examples on various in situ characterization instrumental techniques
- Includes in-depth theoretical modeling utilizing advanced Density Functional Theory (DFT) methods

DESCRIPTION

Catalysis by Materials with Well-Defined Structures examines the latest developments in the use of model systems in fundamental catalytic science. A team of prominent experts provides authoritative, first-hand information, helping readers better understand heterogeneous catalysis by utilizing model catalysts based on uniformly nanostructured materials.

The text addresses topics and issues related to material synthesis, characterization, catalytic reactions, surface chemistry, mechanism, and theoretical modeling, and features a comprehensive review of recent advances in catalytic studies on nanomaterials with well-defined structures, including nanoshaped metals and metal oxides, nanoclusters, and single sites in the areas of heterogeneous thermal catalysis, photocatalysis, and electrocatalysis.

Users will find this book to be an invaluable, authoritative source of information for both the surface scientist and the catalysis practitioner



Corrosion Engineering

Principles and Solved Problems

Branko N Popov Carolina Distinguished Professor and Director of the Center for Electrochemical Engineering, University of South Carolina, Columbia, SC, USA

ISBN: 978-0-444-62722-3

PUB DATE: March 2015

FORMAT: Hardback

PAGES: c. 774

AUDIENCE

Graduate students who take corrosion engineering courses in chemical engineering, mechanical engineering, civil engineering, chemistry and materials science courses. Also intended for practicing corrosion engineers, chemical engineers, mechanical engineers, civil engineers, materials scientists and energy engineers.

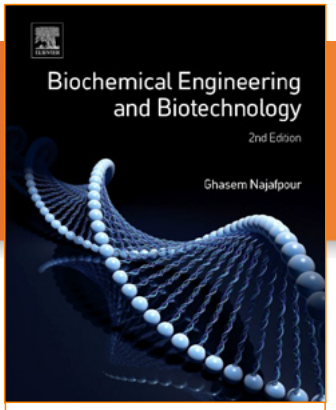
The book focuses on extensive theoretical description of the principles of corrosion theory, passivity, material selections and design and engineering of corrosion prevention strategies

KEY FEATURES

- Addresses the corrosion theory, passivity, material selections and designs
- Covers extensively the corrosion engineering protection strategies
- Contains over 500 solved problems, diagrams, case studies and end of chapter problems
- Could be used as a text in advanced/graduate corrosion courses as well self-study reference for corrosion engineers

DESCRIPTION

Corrosion Engineering: Principles and Solved Problems covers corrosion engineering through an extensive theoretical description of the principles of corrosion theory, passivity and corrosion prevention strategies and design of corrosion protection systems. The book is updated with results published in papers and reviews in the last twenty years. Solved corrosion case studies, corrosion analysis and solved corrosion problems in the book are presented to help the reader to understand the corrosion fundamental principles from thermodynamics and electrochemical kinetics, the mechanism that triggers the corrosion processes at the metal interface and how to control or inhibit the corrosion rates. The book covers the multidisciplinary nature of corrosion engineering through topics from electrochemistry, thermodynamics, mechanical, bioengineering and civil engineering.



Biochemical Engineering and Biotechnology, 2e

Ghasem Najafpour University of Mazanadaran, Faculty of Chemical Engineering, Babol, Iran

ISBN: 978-0-444-63357-6

PREVIOUS EDITION ISBN: 978-0-444-52845-2

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 660

AUDIENCE

The book is appropriate as a college and university text book for undergraduate senior courses and postgraduate course. Students and research scientists in biochemical engineering and biological sciences will find this reference particularly useful for gaining an overview of the subject and planning research activities. It is also useful for research institutes and postgraduates who are involved in practical research in biochemical engineering and biotechnology.

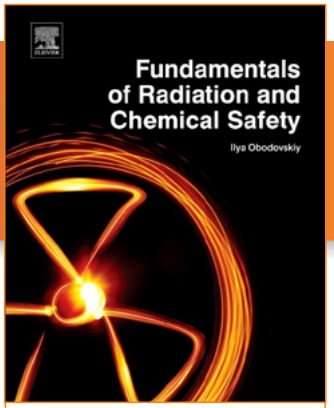
Presents the principles and applications of biochemical and biotechnology concepts in a clear and easy to understand way using numerous examples and case studies

KEY FEATURES

- Covers major concepts of biochemical engineering and biotechnology, including applications in bioprocesses, fermentation technologies, enzymatic processes, and membrane separations, amongst others
- Accessible to chemical engineering students who need to both learn, and apply, biological knowledge in engineering principals
- Includes solved problems, examples, and demonstrations of detailed experiments with simple design equations and all required calculations
- Offers many graphs that present actual experimental data, figures, and tables, along with explanations

DESCRIPTION

Biochemical Engineering and Biotechnology, 2nd Edition, outlines the principles of biochemical processes and explains their use in the manufacturing of every day products. The author uses a diirect approach that should be very useful for students in following the concepts and practical applications. This book is unique in having many solved problems, case studies, examples and demonstrations of detailed experiments, with simple design equations and required calculations.



Fundamentals of Radiation and Chemical Safety

Ilya Obodovskiy Frankfurt, Germany

ELSEVIER

Provides for the first time a common biophysical basis for radiation and chemical safety with special attention to low doses of both radiation and chemical exposure

ISBN: 978-0-12-802026-5

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 250

AUDIENCE

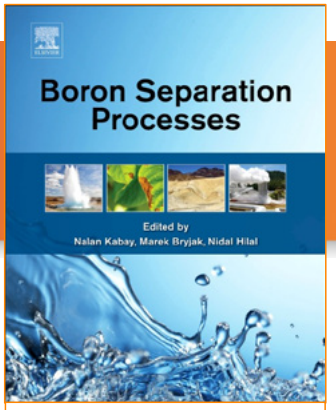
Chemists, physical chemists, chemical engineers, physicists, biologists and radiation experts and safety officers, governments and radiation protection agents.

KEY FEATURES

- Brings together, for the first time, the problems of radiation and chemical safety on a common biophysical basis.
- Relates hazards caused by ionizing radiation and chemicals and discusses the common effective mechanisms
- Outlines common methodology and data processing between radiation and regular chemical hazards
- Concerns primarily with low levels of radiation and chemical exposure

DESCRIPTION

Fundamentals of Radiation and Chemical Safety covers the effects and mechanisms involved in radiation and chemical exposure on humans. The mechanisms and effects of these damaging factors have many aspects in common, as do their research methodology and the methods used for data processing. In many cases of these types of exposures the same final effect can also be noted: Cancer. Low doses of radiation and small doses of chemical exposure are continuously active and they could influence the entire population. The analysis of these two main source hazards on the lives of the human population is covered here for the first time in a single volume determining and demonstrating their common basis. *Fundamentals of Radiation and Chemical Safety* includes the necessary knowledge from nuclear physics, chemistry and biology, as well the methods of processing the experimental results. This title focuses on the effects of low radiation dosage and chemical hormesis as well as the hazards associated with, and safety precautions in radiation and chemicals, rather than the more commonly noted safety issues high level emergencies and disasters of this type.



Boron Separation Processes

Edited by: ***Nalan Kabay*** Ege University, Turkey
Marek Bryjak Wroclaw University of Technonolgy, Poland
Nidal Hilal Centre for Water Advanced Technologies and Environmental Research (CWATER,) Swansea University, U.K.

ELSEVIER

ISBN: 978-0-444-63454-2
PUB DATE: January 2015
FORMAT: Hardback
PAGES: c. 400

AUDIENCE

Chemical and environmental engineers working in membrane treatment of water and waste-water as well as professionals in companies related to water treatment equipment, global engineering, mining, geothermal energy, and seawater desalination. Also for undergraduate and graduate students, postdoctoral researchers, and professors.

A comprehensive picture of the boron based membrane separation technologies and their contribution to solving the problem of water stress and poor sanitation, two of the greatest challenges of the 21st century.

KEY FEATURES

- Provides in one source a state-of-the-art overview of this compelling area
- Reviews the environmental impact of boron before introducing emerging boron separation processes
- Includes simulation and optimization studies for boron separation processes
- Describes boron separation processes applicable to specific sources, such as seawater, geothermal water and wastewater

DESCRIPTION

The impending crisis posed by water stress and poor sanitation represents one of greatest human challenges for the 21st century, and membrane technology has emerged as a serious contender to confront the crisis. Yet, whilst there are countless texts on wastewater treatment and on membrane technologies, none address the boron problem and separation processes for boron elimination. ***Boron Separation Processes*** fills this gap and provides a unique and single source that highlights the growing and competitive importance of these processes. For the first time, the reader is able to see in one reference work the state-of-the-art research in this rapidly growing field. The book focuses on four main areas:

- Effect of boron on humans and plants
- Separation of boron by ion exchange and adsorption processes
- Separation of boron by membrane processes
- Simulation and optimization studies for boron separation

CHEMISTRY

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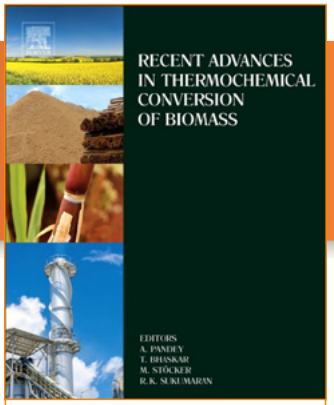


Recent Advances in Thermochemical Conversion of Biomass

Edited by: ***Ashok Pandey*** CSIR, National Institute for Interdisciplinary Science and Technology, Trivandrum, India
Thallada Bhaskar CSIR, Indian Institute of Petroleum, India
M. Stöcker SINTEF Materials and Chemistry, Oslo, Norway
Rajeev Sukumaran CSIR, National Institute for Interdisciplinary Science and Technology, Trivandrum, India

ELSEVIER

Current state-of-art information on the processes, product development, and perspectives for future R&D and applications

ISBN: 978-0-444-63289-0
PUB DATE: January 2015
FORMAT: Hardback
PAGES: c. 484

AUDIENCE

Chemical engineers, biochemical engineers, microbiologists, biotechnologists working in academic and research institutes, or in industry or governmental agencies.MS/M Tech students, Ph D scholars, and researchers studying biohydrogen production, wastewater treatment for value-addition, alternate energy sources, renewable energy from biomass.

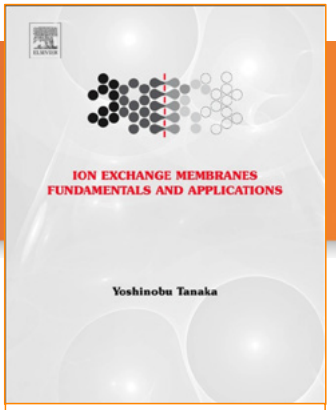
KEY FEATURES

- Provides the most advanced and innovative thermochemical conversion technology for biomass
- Provides information on large scales such as thermochemical biorefinery
- Useful for researchers intending to study scale up
- Serves as both a textbook for graduate students and a reference book for researchers
- Provides information on integration of process and technology on thermochemical conversion of biomass

DESCRIPTION

This book provides general information and data on one of the most promising renewable energy sources: biomass for its thermochemical conversion. During the last few years, there has been increasing focus on developing the processes and technologies for the conversion of biomass to liquid and gaseous fuels and chemicals, in particular to develop low-cost technologies.

This book provides date-based scientific information on the most advanced and innovative processing of biomass as well as the process development elements on thermochemical processing of biomass for the production of biofuels and bio-products on (biomass-based biorefinery). The conversion of biomass to biofuels and other value-added products on the principle biorefinery offers potential from technological perspectives as alternate energy. The book covers intensive R&D and technological developments done during the last few years in the area of renewable energy utilizing biomass as feedstock and will be highly beneficial for the researchers, scientists and engineers working in the area of biomass-biofuels- biorefinery.



Ion Exchange Membranes, 2e

Fundamentals and Applications

Yoshinobu Tanaka Representative, IEM Research Ibaraki Prefecture, Japan

ISBN: 978-0-444-63319-4

PREVIOUS EDITION ISBN: 978-0-444-51982-5

PUB DATE: January 2015

FORMAT: Hardback

PAGES: c. 510

AUDIENCE

Membranologists; research scientists, graduate students, plant managers and process engineers in chemical engineering, environmental engineering, biotechnology, technical chemistry, chemical technology, biotechnology, water desalination and waste water treatment, pollution control, etc.

This revised and fully updated new edition includes a computer simulation program for designing, manufacturing and operating practical-scale electrodialyzers.

KEY FEATURES

- New edition features ten revised and expanded chapters, providing the latest developments in ion exchange membrane technology
- Computer simulation program, accessible through a companion website, provides a guideline for designing, manufacturing and operating practical-scale electrodialyzers
- Attractive visual presentation, including many figures and diagrams

DESCRIPTION

Fundamental study and industrial application of ion exchange membranes started over half a century ago. Through ongoing research and development, ion exchange membrane technology is now applied to many fields and contributes to the improvement of our standard of living. *Ion Exchange Membranes, 2nd edition* states the ion exchange membrane technology from the standpoint of fundamentals and applications. It discusses not only various phenomena exhibited by membranes but also their applications in many fields with economical evaluations.

This second edition is updated and revised, featuring ten expanded chapters. New to this edition is a computer simulation program of ion-exchange membrane electrodialysis for water desalination that provides a guideline for designing, manufacturing and operating a practical-scale electrodialyzer. Meant to replace experiments, this program will be an important asset to those with time and monetary budgets.

CHEMISTRY

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Demystifying Explosives

Concepts in High Energy Materials

Sethuramasharma Venugopalan High Energy Materials Research Laboratory, Pune, India

ELSEVIER

Comprehensive overview of the basic concepts of and science behind the entire spectrum of high energy materials

ISBN: 978-0-12-801576-6

PUB DATE: January 2015

FORMAT: Hardback

PAGES: c. 224

AUDIENCE

Graduate students, chemistry researchers in academia and industry, and chemical engineers

KEY FEATURES

- Explains the concept of high energy materials in simple language and down-to-earth examples
- Worked examples and problems are given wherever required
- Demystifies the concept of explosives
- Limited use of big and complex equations
- Questions and Suggested Reading are given at the end of each chapter

DESCRIPTION

Demystifying Explosives: Concepts in High Energy Materials explains the basic concepts of and the science behind the entire spectrum of high energy materials (HEMs) and gives a broad perspective about all types of HEMs and their interrelationships. *Demystifying Explosives* covers topics ranging from explosives, deflagration, detonation, and pyrotechnics to safety and security aspects of HEMS, looking at their aspects, particularly their inter-relatedness with respect to properties and performance. The book explains concepts related to the molecular structure of HEMs, their properties, performance parameters, detonation and shock waves including explosives and propellants. The theory-based title also deals with important (safety and security) and interesting (constructive applications) aspects connected with HEMs and is of fundamental use to students in their introduction to these materials and applications.

CHEMISTRY

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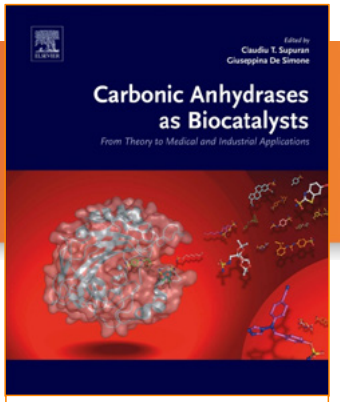

Carbonic Anhydrases as Biocatalysts

From Theory to Medical and Industrial Applications

Edited by: ***Claudiu T Supuran*** University of Florence, Italy
Giuseppina De Simone Institute of Biostructures and Bioimaging (IBB) of the Italian National Research Council, Napoli, Italy

ELSEVIER

An exhaustive description of the carbonic anhydrase enzyme family focusing attention on their main medical and biotechnological applications

ISBN: 978-0-444-63258-6
PUB DATE: January 2015
FORMAT: Hardback
PAGES: c. 382

AUDIENCE

It can be useful for many type of readers: biochemists, chemists and specialists in drug design, but also medical doctors and students of life sciences.

KEY FEATURES

- Offers comprehensive coverage of the carbonic anhydrases enzyme family and their properties as biocatalysts
- Includes current applications of carbonic anhydrases in biotechnology on the basis of their catalytic efficiency, including new technologies for CO_2 capture processes
- Identifies new targets for drug design studies
- Provides a selectivity profile for the different carbonic anhydrases and their related biomedical applications

DESCRIPTION

Carbonic anhydrases (CAs, EC 4.2.1.1) are ubiquitous metalloenzymes, present throughout most living organisms and encoded by five evolutionarily unrelated gene families. *The Carbonic Anhydrases as Biocatalysts: From Theory to Medical and Industrial Applications* presents information on the growing interest in the study of this enzyme family and their applications to both medicine and biotechnology.

CHEMISTRY

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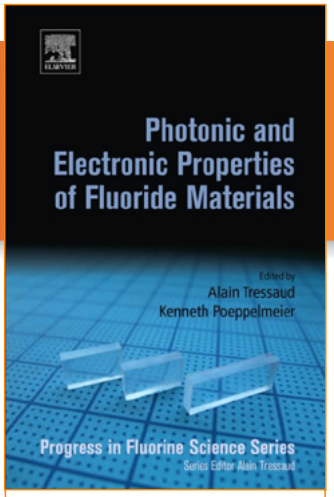

Photonic and Electronic Properties of Fluoride Materials

Progress in Fluorine Science Series

Edited by: ***Alain Tressaud*** ICMCB-CNRS University of Bordeaux, Pessac Cedex, France
Kenneth R. Poeppelmeier Northwestern University, Chicago, IL, USA

ELSEVIER

As the first volume in this new series, this book provides an overview of the important optical, magnetic, and nonlinear properties of fluoride materials that begins with a brief review of relevant synthesis methods from single crystals to nanopowders, offering valuable insight for inorganic chemistry and materials science researchers

ISBN: 978-0-12-801639-8
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 520

AUDIENCE
Researchers in inorganic chemistry and materials science

KEY FEATURES

- Provides unique coverage of the physical properties of fluoride materials for chemists and material scientists
- Begins with a brief review of relevant synthesis methods from single crystals to nanopowders
- Includes valuable information about functional organic fluorides used in nano-electronics, in particular in liquid crystal devices, in organic light-emitting diodes, or in organic dyes for sensitized solar cells

DESCRIPTION

Photonic and Electronic Properties of Fluoride Materials: Progress in Fluorine Science, the first volume in this new Elsevier series, provides an overview of the important optical, magnetic, and non-linear properties of fluoride materials. Beginning with a brief review of relevant synthesis methods from single crystals to nanopowders, this volume offers valuable insight for inorganic chemistry and materials science researchers.

Edited and written by leaders in the field, this book explores the practical aspects of working with these materials, presenting a large number of examples from inorganic fluorides in which the type of bonding occurring between fluorine and transition metals (either d- or 4f-series) give rise to peculiar properties in many fundamental and applicative domains.

This one-of-a-kind resource also includes several chapters covering functional organic fluorides used in nano-electronics, in particular in liquid crystal devices, in organic light-emitting diodes, or in organic dyes for sensitized solar cells.

The book describes major advances and breakthroughs achieved by the use of fluoride materials in important domains such as superconductivity, luminescence, laser properties, multiferroism, transport properties, and more recently, in fluoro-perovskite for dye-sensitized solar cells and inorganic fluoride materials for NLO, and supports future development in these varied and key areas.

The book is edited by Alain Tressaud, past chair and founder of the CNRS French Fluorine Network. Each book in the collection includes the work of highly-respected volume editors and contributors from both academia and industry to bring valuable and varied content to this active field.

CHEMISTRY
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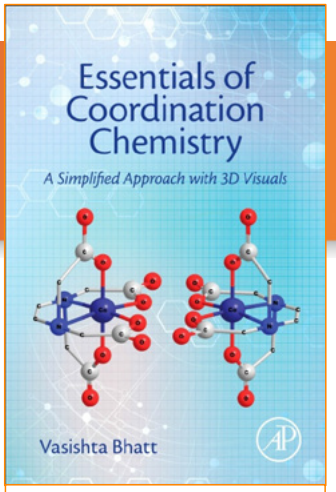

Essentials of Coordination Chemistry

A Simplified Approach with 3D Visuals

Vasishta Bhatt UGC-Academic Staff College-Sardar Patel University, Gujarat, India

Provides accessible, visual introduction to foundational inorganic chemistry

KEY FEATURES

- Includes valuable visual content through 3D images and videos in full color, available online
- Provides a valuable introduction to the study of organic and inorganic ligands with metal centers
- Discusses advanced topics including metal carbonyls and nitrosyls

DESCRIPTION

Essentials of Coordination Chemistry: A Simplified Approach with 3D Visuals provides an accessible overview of this key, foundational topic in inorganic chemistry. Thoroughly illustrated within the book and supplemented by online 3D images and videos in full color, this valuable resource covers basic fundamentals before exploring more advanced topics of interest.

The work begins with an introduction to the structure, properties, and syntheses of ligands with metal centers, before discussing the variety of isomerism exhibited by coordination compounds, such as structural, geometrical and optical isomerism. As thermodynamics and kinetics provide a gateway to synthesis and reactivity of coordination compounds, the book then describes the determination of stability constants and composition of complexes. Building upon those principles, the resource then explains a wide variety of nucleophilic substitution reactions exhibited by both octahedral and square planar complexes. Finally, the book discusses metal carbonyls and nitrosyls, special classes of compounds that can stabilize zero or even negative formal oxidation states of metal ions. Highlighting preparations, properties, and structures, the text explores the unique type of Metal-Ligand bonding which enable many interesting applications of these compounds.

Thoughtfully organized for academic use, *Essentials of Coordination Chemistry: A Simplified Approach with 3D Visuals* encourages interactive learning. Advanced undergraduate and graduate students, as well as researchers requiring a full overview and visual understanding of coordination chemistry, will find this book invaluable.

ISBN: 978-0-12-803895-6

PUB DATE: November 2015

FORMAT: Paperback

PAGES: c. 272

AUDIENCE

Upper undergraduate students and researchers requiring introduction to key topic in inorganic chemistry

CHEMISTRY

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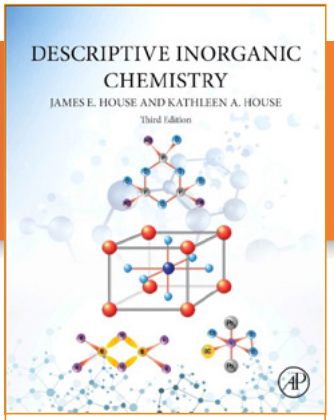


Descriptive Inorganic Chemistry, 3e

James E. House Emeritus Professor of Chemistry, Illinois State University, Normal, IL, USA; Adjunct Professor of Chemistry, Illinois Wesleyan University, Bloomington, IL, USA
Kathleen A. House Adjunct Professor of Chemistry, Illinois Wesleyan University, Bloomington, IL, USA

ISBN: 978-0-12-804697-5
PREVIOUS EDITION ISBN: 9780120887552
PUB DATE: November 2015
FORMAT: Hardback
PAGES: c. 428

AUDIENCE
Undergraduate students

This third edition textbook offers an accessible introduction for undergraduate descriptive inorganic chemistry courses, highlighting real world applications and active areas of research such as nanostructures and bioinorganic chemistry

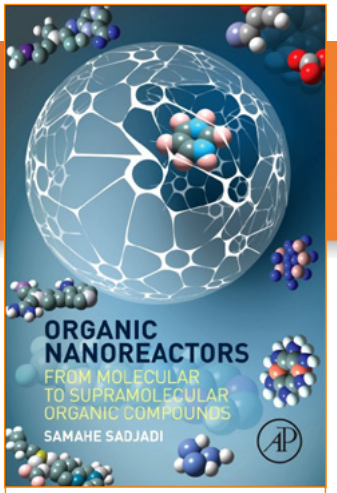
KEY FEATURES

- Highlights the Earth's crust as the source of most inorganic compounds and explains the transformations of those compounds into useful products
- Provides a coherent treatment of the field, covering the chemical behavior of the elements, acid-base chemistry, coordination chemistry, and organometallic compounds
- Connects key topics to real world industrial applications, such as in the area of nanostructures
- Includes expanded coverage on bioinorganic chemistry, green chemistry, redox chemistry, superacids, catalysis, and other areas of recent development

DESCRIPTION

House's *Descriptive Inorganic Chemistry, Third Edition,* provides thoroughly updated coverage of the synthesis, reactions, and properties of elements and inorganic compounds. Ideal for the one-semester (ACS-recommended) sophomore or junior level course in descriptive inorganic chemistry, this resource offers a readable and engaging survey of the broad spectrum of topics that deal with the preparation, properties, and use of inorganic materials.

Using rich graphics to enhance content and maximize learning, the book covers the chemical behavior of the elements, acid-base chemistry, coordination chemistry, organometallic compounds, and numerous other topics to provide a coherent treatment of the field. The book pays special attention to key subjects such as chemical bonding and Buckminster Fullerenes, and includes new and expanded coverage of active areas of research, such as bioinorganic chemistry, green chemistry, redox chemistry, nanostructures, and more.



Organic Nanoreactors

From Molecular to Supramolecular Organic Compounds

Edited by: ***Samahe Sadjadi*** Alzahra University, Vanak, Tehran, Iran

This comprehensive resource reviews previous research in the emerging field of organic nanoreactors, including coverage of both well-known as well as little-examined compounds

KEY FEATURES

- Focuses on organic nanoreactor compounds for greater depth
- Covers the molecular, supramolecular, and macromolecular perspectives
- Compiles previous and current sources from this growing field in one unique reference
- Provides brief overviews of synthetic routes and characterization methods

DESCRIPTION

Organic Nanoreactors: From Molecular to Supramolecular Organic Compounds provides a unique overview of synthetic porous compounds containing a reaction space which influences the movement and interactions among the molecules inside. Naturally occurring enzymes are compelling catalysts for selective reactions as their three-dimensional structures build up clefts, caves, or niches in which the active site is located. Additionally, reactive sites carrying special functional groups allow only specific reagents to react in a particular way, to lead to specific enantiomers as products. Equipped with suitable functional groups, nanoreactors then form a new class of bio-mimetic catalysts, which have multiple important applications in the synthesis of nanomaterials, enzyme immobilization, enzyme therapy, and more.

This volume addresses synthetic, organic nanoreactors, updating the previous decade of research and examining recent advances in the field. Tapping the Editor's experience in both academic research and industrial application, the book focuses on the properties and applications of nanoreactor compounds and materials, with brief overviews of synthetic routes and characterization methods. Covering well-known as well as some little-examined compounds, *Organic Nanoreactors: From Molecular To Supramolecular Organic Compounds* reviews the previous research in the field for the first comprehensive overview of this exciting group of compounds and their practical applications.

ISBN: 978-0-12-801713-5

PUB DATE: June 2016

FORMAT: Paperback

PAGES: c. 434

AUDIENCE

Researchers and advanced students in organic
synthesis and nanochemistry

CHEMISTRY

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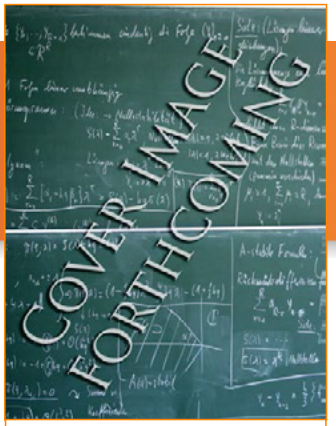

Carboranes, 3e

Russell N Grimes University of Virginia, Charlottesville, VA, USA

ISBN: 978-0-12-801894-1

PREVIOUS EDITION ISBN: 9780123741707

PUB DATE: June 2016

FORMAT: Hardback

AUDIENCE

Chemistry researchers in organometallic, organic, and inorganic areas

This definitive resource on the fundamental and applied aspects of carborane chemistry provides a comprehensive overview of the latest published research and review articles in the field

KEY FEATURES

- Includes over 2,000 molecular structure drawings throughout the text
- Features expanded coverage on applications of carboranes, particularly in biomedicine and nanomaterials, given the growth of research in these areas
- Presents extended and updated tables, listing thousands of compounds with key literature references, provided online via the book's website
- Explores the advances in practical applications for the many areas in which experts have discovered that carboranes afford new possibilities for solving problems and advancing the science

DESCRIPTION

Carboranes, Third Edition, by Russell Grimes, is the definitive resource on the subject. Completely updated with a wealth of research and review articles published in this active field since the previous volume was released in 2011, the book provides a readable and concise introduction to the basic principles underlying the synthesis, structures, and reactions of carboranes, heterocarboranes, and metallacarboranes. Following the valuable foundational information, the book explores the advances in practical applications for the many areas in which experts have discovered that carboranes afford new possibilities for solving problems and advancing the science. These disciplines include polymer science, catalysis, biomedicine, nanomaterials, and others.

Mechanochemical Organic Synthesis

Davor Margetic Ruder Boškovic Research Institute, Zagreb, Croatia
Vjekoslav Štrukil Ruder Boškovic Research Institute, Zagreb, Croatia

ELSEVIER

A comprehensive survey of current literature in this emerging area of green chemistry, which shows promise for circumventing the use of toxic solvents and reagents and increasing energy efficiency

ISBN: 978-0-12-802184-2
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 288

AUDIENCE

chemists (organic, physical) working in research and industry; chemical engineers; graduate-level students in these disciplines; scientists interested in sustainable methods

KEY FEATURES

- Features cutting-edge research in the field of mechanochemical organic synthesis for more sustainable reactions
- Integrates advances in green chemistry research into industrial applications and process development
- Focuses on designing techniques in organic synthesis directed toward mild reaction conditions
- Includes global coverage of mechanochemical synthetic protocols for the generation of organic compounds

DESCRIPTION

Mechanochemical Organic Synthesis is a comprehensive reference that not only synthesizes the current literature but also offers practical protocols that industrial and academic scientists can immediately put to use in their daily work. Increasing interest in green chemistry has led to the development of numerous environmentally-friendly methodologies for the synthesis of organic molecules of interest. Amongst the green methodologies drawing attention, mechanochemistry is emerging as a promising method to circumvent the use of toxic solvents and reagents as well as to increase energy efficiency.

The development of synthetic strategies that require less, or the minimal, amount of energy to carry out a specific reaction with optimum productivity is of vital importance for large-scale industrial production. Experimental procedures at room temperature are the mildest reaction conditions (essentially required for many temperature-sensitive organic substrates as a key step in multi-step sequence reactions) and are the core of mechanochemical organic synthesis. This green synthetic method is now emerging in a very progressive manner and until now, there is no book that reviews the recent developments in this area.

CHEMISTRY

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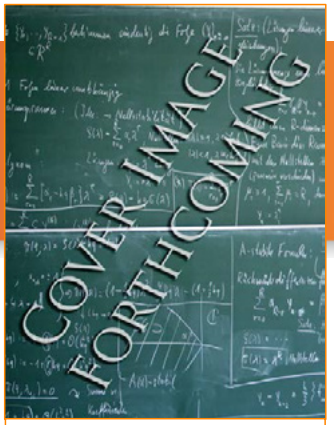


Biflavonoids

Chemical and Pharmacological Aspects

Shabir Hussain Lone

ISBN: 978-0-08-101030-3

PUB DATE: May 2016

FORMAT: Paperback

PAGES: c. 50

A concise guide to the chemistry and biological potential of this important class of natural product-sourced compounds

KEY FEATURES

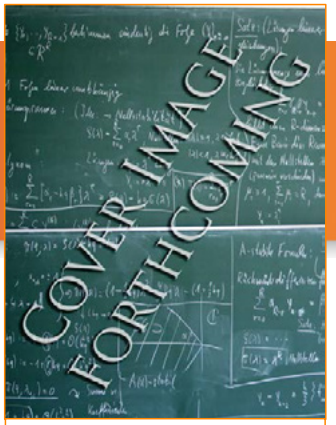
- Focused coverage of techniques for the isolation, identification, and synthesis of Biflavonoids
- Practical tool for researchers working with these flavonoid compounds
- Real-world expertise from the authors provides support for further developments in the growing field of natural product drug discovery
- Useful, clear illustrations of key structures throughout the text

DESCRIPTION

Biflavonoids are an important class of plant metabolites offering a range of activities, good availability and relatively low toxicity. Long thought to hold possible therapeutic potential, the recent surge in interest for natural product drug discovery has further highlighted the possibility of using them in the discovery of new drugs, and *Biflavonoids: Chemical and Pharmacological Aspects* provides a quick reference to the area in a focused manner, to support and encourage further research.

Beginning with a focus on the structural features and occurrence of biflavonoids, Chapter 1 reviews key background information including notes on nomenclature and natural distribution. Chapter 2 then goes on to discuss methods for identification and isolation, with separation and purification using various chromatography methods reviewed, followed by identification via UV spectroscopy, NRM spectroscopy and mass spectrometry. Synthesis is the focus of Chapter 3, with a broad range of synthetic methods outlined, before the book concludes in Chapter 4 by describing the biochemical pharmacology of Biflavonoids and their anticancer, antimicrobial, antiviral, anti-inflammatory and analgesic activity.

With its discussion of both the underlying chemistry and biological activity of Biflavonoids, *Biflavonoids: Chemical and Pharmacological Aspects* is a concise guide to this important class of compounds for all those working in the fields of medicinal chemistry and natural products drug discovery.



Transition Metal-Catalyzed Pyridine Synthesis

Transition Metal-Catalyzed Heterocycle Synthesis Series

Xiao-Feng Wu Leibniz-Institut für Katalyse (LIKAT), Universität Rostock, Germany and Zhejiang Sci-Tech University, Hangzhou, China

ISBN: 978-0-12-809379-5

PUB DATE: March 2016

FORMAT: Paperback

PAGES: c. 82

AUDIENCE

Short, focused work on properties and synthetic methods of heterocycle compound Pyridine

Short, focused work on properties and synthetic methods of heterocycle compound Pyridine

KEY FEATURES

- Brief, focused review of this active research area, Pyridine synthesis via transition metal catalysis
- Useful coverage of Pyridine properties and both intermolecular and intramolecular cyclization
- Volume Two in Elsevier's short work series, "Transition Metal-Catalyzed Heterocycles Synthesis"

DESCRIPTION

Transition Metal-Catalyzed Pyridine Synthesis provides an overview of pyridines, describing properties of these heterocycle compounds and describing traditional synthetic procedures for them. The book then explores catalyzed procedures for pyridine synthesis in greater detail and depth than is currently available in published Review articles.

The short series *Transition Metal-Catalyzed Heterocycles Synthesis*, authored by Xiao-Feng Wu, summarizes recent achievements on heterocycles synthesis with transition metal as the catalysts, with each volume dedicated to one heterocycle compound.

CHEMISTRY

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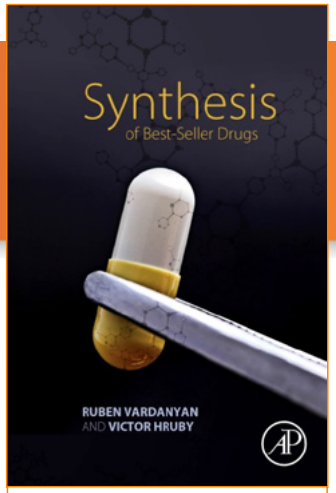

Synthesis of Best-Seller Drugs

Ruben Vardanyan University of Arizona, Tucson, AZ, USA
Victor Hruby University of Arizona, Tucson, AZ, USA

This key reference guide reviews hundreds of the best-selling pharmaceutical drugs organized by key drug groups, highlighting their metabolic action, novel structural features, related drugs and chemical synthesis

ISBN: 978-0-12-411492-0

PUB DATE: January 2016

FORMAT: Paperback

PAGES: c. 846

AUDIENCE

All those researching the design, development and application of drugs, including medicinal, organic, process and bio chemists, pharmacologists, medical researchers, pharmacists, doctors and students

KEY FEATURES

- Describes methods of synthesis, bioactivity and related drugs in key therapeutic areas
- Reviews the main drugs in each of nearly 40 key therapeutic areas, also examining their classification, novel structural features, models of action, and more
- Presents a practical layout designed for use as a quick reference tool by those working in drug design, development and implementation

DESCRIPTION

Synthesis of Best-Seller Drugs is a key reference guide for all those involved with the design, development, and use of the best-selling drugs. Designed for ease of use, this book provides detailed information on the most popular drugs, using a practical layout arranged according to drug type.

Each chapter reviews the main drugs in each of nearly 40 key therapeutic areas, also examining their classification, novel structural features, models of action, and synthesis. Of high interest to all those who work in the captivating areas of biologically active compounds and medicinal drug synthesis, in particular medicinal chemists, biochemists, and pharmacologists, the book aims to support current research efforts, while also encouraging future developments in this important field.

CHEMISTRY

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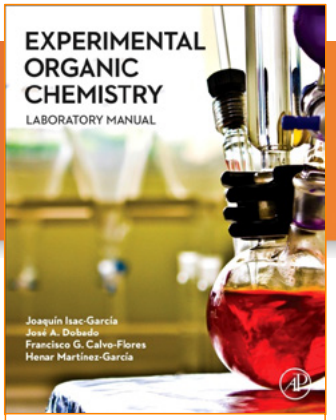


Experimental Organic Chemistry

Laboratory Manual

Joaquín Isac-García Universidad de Granada, Spain
José A. Dobado Universidad de Granada, Spain
Francisco G. Calvo-Flores Universidad de Granada, Spain
Henar Martínez-García Universidad de Valladolid, Spain

Develops student skills in the Organic Chemistry Lab through accessible coverage, including Green Chemistry, and a logical progression through topics of increasing complexity

ISBN: 978-0-12-803893-2
PUB DATE: October 2015
FORMAT: Paperback
PAGES: c. 492

AUDIENCE

Upper level undergraduate students in organic chemistry lab courses

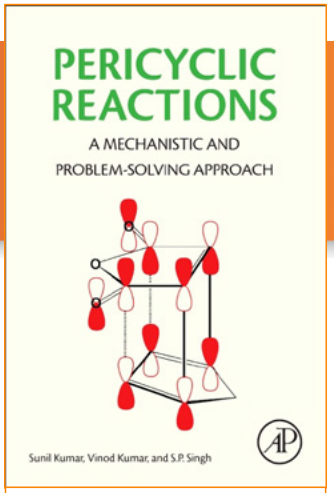
KEY FEATURES

- Organizes lab course coverage in a logical and useful way
- Features a valuable chapter on Green Chemistry Experiments
- Includes 84 experiments arranged according to increasing complexity

DESCRIPTION

Experimental Organic Chemistry: Laboratory Manual is designed as a primer to initiate students in Organic Chemistry laboratory work. Organic Chemistry is an eminently experimental science that is based on a well-established theoretical framework where the basic aspects are well established but at the same time are under constant development. Therefore, it is essential for future professionals to develop a strong background in the laboratory as soon as possible, forming good habits from the outset and developing the necessary skills to address the challenges of the experimental work.

This book is divided into three parts. In the first, safety issues in laboratories are addressed, offering tips for keeping laboratory notebooks. In the second, the material, the main basic laboratory procedures, preparation of samples for different spectroscopic techniques, Microscale, Green Chemistry, and qualitative organic analysis are described. The third part consists of a collection of 84 experiments, divided into 5 modules and arranged according to complexity. The last two chapters are devoted to the practices at Microscale Synthesis and Green Chemistry, seeking alternatives to traditional Organic Chemistry.



Pericyclic Reactions

A Mechanistic and Problem-Solving Approach

Sunil Kumar F.G.M. Govt. College, Mandi, Adampur, Haryana, India
Vinod Kumar M.M.University, Mullana, Ambala, Haryana, India
S.P. Singh Kurukshetra University, Kurukshetra, Haryana, India

Thorough introduction with engaging examples and both worked and unworked problems

KEY FEATURES

- Comprehensive coverage of important topics such as 1,3 dipolar, pyrolytic, and cycloaddition reactions
- Problem-solving approach with clear figures and many worked and unworked problems
- Contents are applicable to advanced students and researchers in organic chemistry

DESCRIPTION

Pericyclic Reactions: A Mechanistic and Problem-Solving Approach provides complete and systematic coverage of pericyclic reactions for researchers and graduate students in organic chemistry and pharmacy programs. Drawing from their cumulative years of teaching in the area, the authors use a clear, problem-solving approach, supplemented with colorful figures and illustrative examples.

Written in an accessible and engaging manner, this book covers electrocyclic reactions, sigmatropic reactions, cycloaddition reactions, 1,3-dipolar reactions, group transfer, and ene reactions. It offers an in-depth study of the basic principles of these topics, and devotes equal time to problems and their solutions to further explore those principles and aid reader understanding. Additional practice problems are provided for further study and course use.

ISBN: 978-0-12-803640-2
PUB DATE: September 2015
FORMAT: Paperback
PAGES: c. 370

AUDIENCE

Organic Chemistry researchers and students

CHEMISTRY

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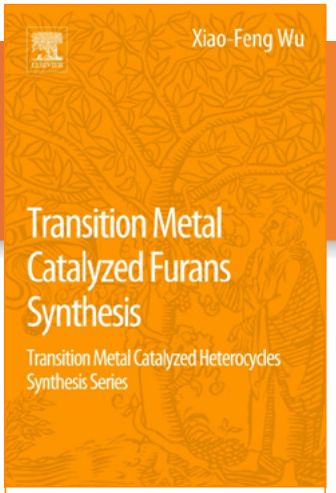

Transition Metal-Catalyzed Furans Synthesis

Transition Metal-Catalyzed Heterocycle Synthesis Series

Xiao-Feng Wu Leibniz-Institut für Katalyse (LIKAT), Universität Rostock, Germany and Zhejiang Sci-Tech University, Hangzhou, China

ELSEVIER

Short, focused work on properties and synthetic methods of heterocycle compound Furans

KEY FEATURES

- Brief, focused review of this active research area, Furans synthesis via transition metal catalysis
- Useful coverage of furans properties and procedures, as well as relevant Furan-containing natural products
- First volume in short work series, "Transition Metal-Catalyzed Heterocycles Synthesis"

DESCRIPTION

Transition Metal Catalyzed Furans Synthesis provides an overview of Furans, describing properties of these heterocycle compounds and covering traditional synthetic procedures for them. This book then explores catalyzed procedures for Furans synthesis in greater detail and depth then is currently available in published Reviews. Finally, this useful short work discusses natural products and bio-active compounds containing Furans, information of particular interest for their applications to medicinal and pharmaceutical chemistry.

The short series *Transition Metal Catalyzed Heterocycles Synthesis Series*, authored by Xiao-Feng Wu, summarizes recent achievements on heterocycles synthesis with transition metal as the catalysts, with each volume dedicated to one heterocycle compound.

ISBN: 978-0-12-804034-8

PUB DATE: September 2015

FORMAT: Paperback

PAGES: c. 108

AUDIENCE

Researchers focused on synthesis (organic and organometallic chemistry), transition metal catalysis, heterocycle chemistry, and applications in medicinal chemistry

CHEMISTRY

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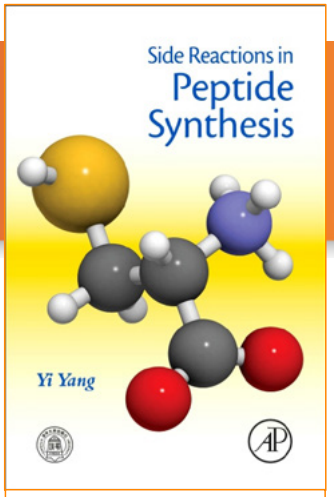

Side Reactions in Peptide Synthesis

Yi Yang PhD, Senior Research Scientist, Chemical Development, Global Pharmaceutical R&D, Ferring Pharmaceuticals A/S, Copenhagen, Denmark

A systematic analysis of the most frequently occurring side reactions in peptide synthesis, ideal for research and process chemists working in diverse settings across academic, biotech, and pharmaceutical research and development

ISBN: 978-0-12-801009-9

PUB DATE: September 2015

FORMAT: Hardback

PAGES: c. 362

AUDIENCE

Pharmaceutical and process chemists at CMO and CRO companies, research/R&D chemists at universities, institutes,

KEY FEATURES

- Provides a systematic examination on how to troubleshoot and minimize the most frequent side reactions in peptide synthesis
- Gives chemists the background information and the practical tools they need to successfully troubleshoot and improve results
- Includes optimization-oriented analysis of side reactions in peptide synthesis for improved industrial process development in peptidyl API (active pharmaceutical ingredient) production
- Answers the growing, global need for improved, replicable processes to avoid impurities and maintain the integrity of the end product.
- Presents a thorough discussion of critical factors in peptide synthesis which are often neglected or underestimated by chemists
- Covers solid phase and solution phase methodologies, and provides abundant references for further exploration

DESCRIPTION

Side Reactions in Peptide Synthesis, based on the author's academic and industrial experience, and backed by a thorough review of the current literature, provides analysis of, and proposes solutions to, the most frequently encountered side reactions during peptide and peptidomimetic synthesis.

This valuable handbook is ideal for research and process chemists working with peptide synthesis in diverse settings across academic, biotech, and pharmaceutical research and development.

While peptide chemistry is increasingly prevalent, common side reactions and their causes are often poorly understood or anticipated, causing unnecessary waste of materials and delay.

Each chapter discusses common side reactions through detailed chemical equations, proposed mechanisms (if any), theoretical background, and finally, a variety of possible solutions to avoid or alleviate the specified side reaction.

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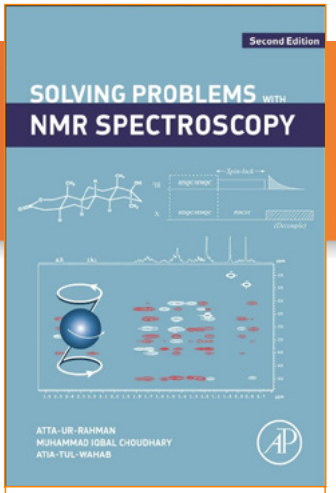


Solving Problems with NMR Spectroscopy, 2e

Atta-ur-Rahman Professor Emeritus, International Center for Chemical and Biological Sciences, University of Karachi, Karachi, Pakistan
Muhammad Iqbal Choudhary Professor, International Center for Chemical and Biological Sciences, University of Karachi, Karachi, Pakistan
Atia-tul- Wahab Assistant Professor, Dr. Panjwani Center for Molecular Medicine and Drug Research (International Center for Chemical and Biological Sciences), University of Karachi, Karachi, Pakistan

Clearly presents the basic principles and applications of NMR spectroscopy and demonstrates how to solve chemical structures with NMR by giving clear examples and solutions

ISBN: 978-0-12-411589-7
PREVIOUS EDITION ISBN: 97801206633200
PUB DATE: October 2015
FORMAT: Paperback
PAGES: c. 524

AUDIENCE
Senior and graduate chemistry students and organic, medicinal, and pharmaceutical chemists.

KEY FEATURES

- Explains and presents the most important NMR techniques used for structural determinations
- Offers a unique problem-solving approach for readers to understand how to solve structure problems
- Uses questions and problems, including discussions of their solutions and interpretations, to help readers understand the fundamentals and applications of NMR
- Avoids use of extensive mathematical formulas and clearly explains how to implement NMR structure analysis
- Foreword by Nobel Prize winner Richard R. Ernst

New to This Edition

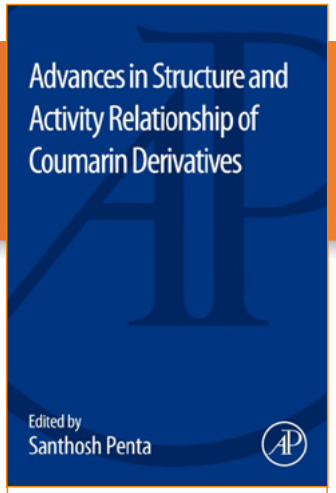
- Key developments in the field of NMR spectroscopy since the First Edition in 1996
- New chapter on sensitivity enhancement, a key driver of development in NMR spectroscopy
- New concepts such as Pulse Field Gradients, shaped pulses, and DOSY (Diffusion Order Spectroscopy) in relevant chapters
- More emphasis on practical aspects of NMR spectroscopy, such as the use of Shigemi tubes and various types of cryogenic probes
- Over 100 new problems and questions addressing the key concepts in NMR spectroscopy
- Improved figures and diagrams
- More than 180 example problems to solve, with detailed solutions provided at the end of each chapter

DESCRIPTION

Solving Problems with NMR Spectroscopy, Second Edition, is a fully updated and revised version of the best-selling book. This new edition still clearly presents the basic principles and applications of NMR spectroscopy with only as much math as is necessary. It shows how to solve chemical structures with NMR by giving many new, clear examples for readers to understand and try, with new solutions provided in the text.

It also explains new developments and concepts in NMR spectroscopy, including sensitivity problems (hardware and software solutions) and an extension of the multidimensional coverage to 3D NMR. The book also includes a series of applications showing how NMR is used in real life to solve advanced problems beyond simple small-molecule chemical analysis.

This new text enables organic chemistry students to choose the most appropriate NMR techniques to solve specific structures. The problems provided by the authors help readers understand the discussion more clearly and the solution and interpretation of spectra help readers become proficient in the application of important, modern 1D, 2D, and 3D NMR techniques to structural studies.



Advances in Structure and Activity Relationship of Coumarin Derivatives

Edited by: ***Santhosh Penta*** National Institute of Technology, Raipur, India

Valuable focused work to support structural understanding and drug design in coumarin derivatives

ISBN: 978-0-12-803797-3

PUB DATE: August 2015

FORMAT: Paperback

PAGES: c. 182

AUDIENCE

Organic, Medicinal, Heterocycle, and Natural Products Chemists; secondarily interest in the general Pharma Sci market

KEY FEATURES

- Accessible and current coverage of coumarin derivatives from structure to potential applications
- Application of SAR technology to predict bioactivity of the derivatives based on its chemical structure
- Information for researchers in medicinal chemistry, pharmaceutical sciences, and related fields

DESCRIPTION

Advances in Structure and Activity Relationship of Coumarin Derivatives covers the structural behavior of various coumarin derivatives for various potential pharmaceutical applications. Based on substitution targeted for active sites, the book takes a rational approach for designing new and specific potent drugs, optimizing existing ones, and developing novel reactions. This focused primer describes the chemical structure and activity of coumarin derivatives to explore the effects of different substituents at specific positions, and their properties for effective bioactivity.

CHEMISTRY

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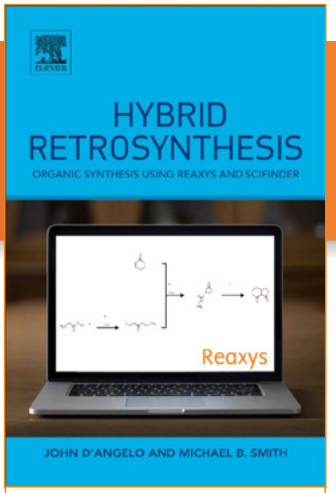

Hybrid Retrosynthesis

Organic Synthesis using Reaxys and SciFinder

Michael B. Smith Department of Chemistry, University of Conneticut, Mansfield, CT, USA
John D'Angelo Alfred University, Alfred, NY, USA

ELSEVIER

A practical guide to key organic synthesis and retrosynthesis skills, supported by Reaxys and SciFinder

ISBN: 978-0-12-411498-2
PUB DATE: July 2015
FORMAT: Paperback
PAGES: c. 136

AUDIENCE
Graduate and post-graduate organic chemists in academic or industry

KEY FEATURES

- Ideal revision and hands on learning guide for organic synthesis
- Clearly explains the principles and practice of retrosynthesis, which is often not covered in other books
- Encourages readers to practice their synthetic knowledge supported by real life examples

DESCRIPTION

Designed to supplement existing organic textbooks, *Hybrid Retrosynthesis* presents a relatively simple approach to solving synthesis problems, using a small library of basic reactions along with the computer searching capabilities of Reaxys and SciFinder. This clear, concise guide reviews the essential skills needed for organic synthesis and retrosynthesis, expanding reader knowledge of the foundational principles of these techniques, whilst supporting their use via practical methodologies.

Perfect for both graduate and post-graduate students, *Hybrid Retrosynthesis* provides new applied skills and tools to help during their organic synthesis courses and future careers, whilst simultaneously acting as useful resource for those setting tutorial and group problems, and as a helpful go-to guide for organic chemists involved in either industry or academia.

CHEMISTRY

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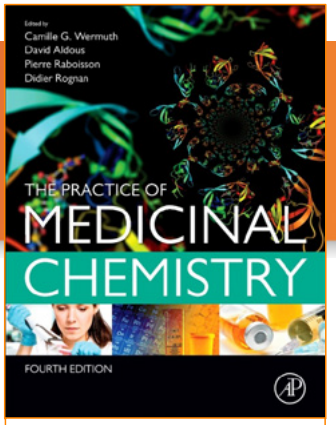


The Practice of Medicinal Chemistry, 4e

Edited by: ***Camille Georges Wermuth*** Prestwick Chemical, Illkirch, France
David Aldous Head, LGCR Boston, Sanofi, Boston, MA
Pierre Raboisson Senior Director, Fellow and Head of Infectious Diseases and Vaccines Medicinal Chemistry, Janssen, Pharmaceutical Companies of Johnson & Johnson, Beerse, Belgium
Didier Rognan Research Director, Laboratoire d'Innovation Thérapeutique, Université de Strasbourg, France

ISBN: 978-0-12-417205-0
PREVIOUS EDITION ISBN: 978-0-12-744481-9
PUB DATE: July 2015
FORMAT: Hardback
PAGES: c. 878

AUDIENCE
Professors of medicinal chemistry, medicinal chemistry students and pharmaceutical researchers engaged in drug discovery

Nicknamed "The Bible" by medicinal chemists shortly after the first edition was published in 1996, this updated text provides a comprehensive overview of the daily issues facing medicinal chemists and pharmaceutical researchers

Praise for the Third Edition of *The Practice of Medicinal Chemistry:*

"The third edition of this book, useful to seasoned medicinal chemists as well as to chemists entering the academic or industrial laboratories, provides a hands-on overview of the drug discovery process. This edition differs from the previous two editions by having been updated to reflect developments in the past 5 years, and it includes 11 new chapters.

I found this book to be unique, well organized, and overall a useful addition to the medicinal chemistry literature. Having favorably reviewed the first edition, I still highly recommend this third edition to all chemists who are involved in the drug discovery process."
- John L. Neumeyer, Harvard Medical School, in JOURNAL OF MEDICINAL CHEMISTRY from the American Chemical Society

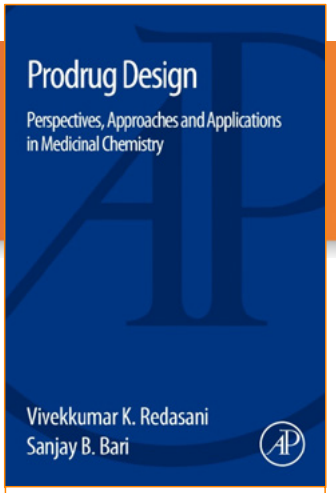
KEY FEATURES

- Includes updated and expanded material on systems biology, chemogenomics, computer-aided drug design, and other important recent advances in the field
- Incorporates extensive color figures, case studies, and practical examples to help users gain a further understanding of key concepts
- Provides high-quality content in a comprehensive manner, including contributions from international chapter authors to illustrate the global nature of medicinal chemistry and drug development research
- An image bank is available for instructors at www.textbooks.elsevier.com

DESCRIPTION

The Practice of Medicinal Chemistry, Fourth Edition provides a practical and comprehensive overview of the daily issues facing pharmaceutical researchers and chemists. In addition to its thorough treatment of basic medicinal chemistry principles, this updated edition has been revised to provide new and expanded coverage of the latest technologies and approaches in drug discovery.

With topics like high content screening, scoring, docking, binding free energy calculations, polypharmacology, QSAR, chemical collections and databases, and much more, this book is the go-to reference for all academic and pharmaceutical researchers who need a complete understanding of medicinal chemistry and its application to drug discovery and development.



Prodrug Design

Perspectives, Approaches and Applications in Medicinal Chemistry

Vivekkumar K Redasani Patel Institute of Pharmaceutical Education & Research, Shirpur, India
Sanjay B Bari Patel Institute of Pharmaceutical Education & Research, Shirpur, India

Valuable primer to support innovation for pharmaceutical and medicinal chemistry researchers

ISBN: 978-0-12-803519-1
PUB DATE: July 2015
FORMAT: Paperback
PAGES: c. 74

AUDIENCE
Medicinal and pharmaceutical chemistry researchers

KEY FEATURES

- Offers unique, detailed overview of Prodrug research and literature
- Provides detailed chemical structures
- Includes Prodrug listing by therapeutic area

DESCRIPTION

Prodrug Design: Perspectives, Approaches and Applications in Medicinal Chemistry provides a focused overview of this critical area of drug discovery, as that continuous process strives not only to discover new drug compounds but also to modify the existing ones. This valuable primer supports this mission of drug development and its goal of reducing undesired effects and improving therapeutic effectiveness of drug compounds. Providing a unique compilation of data, insightful case studies, and review of existing literature in the area, the book will promote innovation in medicinal and pharmaceutical chemistry research, exploring the limitations of existing drugs and their improvement. *Prodrug Design* reviews marketed compounds, the safety of promoieties, and a detailed classification of prodrugs organized by therapeutic area for easy reference.

CHEMISTRY
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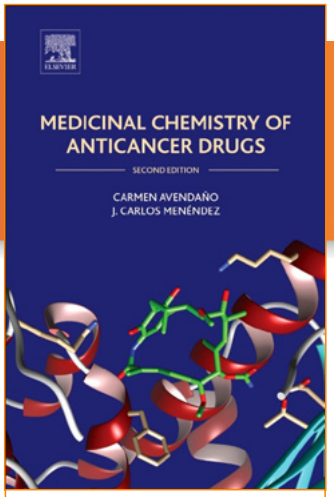

Medicinal Chemistry of Anticancer Drugs, 2e

Carmen Avendano Department of Organic Chemistry, Farmaceutica, Facultad de Farmacia, Madrid, Spain
J. Carlos Menendez Department of Organic Chemistry, Farmaceutica, Facultad de Farmacia, Madrid, Spain

ELSEVIER

A concise, intermediate level book which bridges the gap between elementary sources and primary literature

"Through a mechanistic approach, this valuable guide provides the reader with the principles of modern drug design methods and their application in the cancer field."--**Anticancer Research, *Medicinal Chemistry of Anticancer Drugs. Second Edition***

KEY FEATURES

- Presents information in a clear and concise way using a large number of figures
- Historical background provides insights on how the process of drug discovery in the anticancer field has evolved
- Extensive references to primary literature

DESCRIPTION

Medicinal Chemistry of Anticancer Drugs, Second Edition, provides an updated treatment from the point of view of medicinal chemistry and drug design, focusing on the mechanism of action of antitumor drugs from the molecular level, and on the relationship between chemical structure and chemical and biochemical reactivity of antitumor agents.

Antitumor chemotherapy is a very active field of research, and a huge amount of information on the topic is generated every year. Cytotoxic chemotherapy is gradually being supplemented by a new generation of drugs that recognize specific targets on the surface or inside cancer cells, and resistance to antitumor drugs continues to be investigated. While these therapies are in their infancy, they hold promise of more effective therapies with fewer side effects.

Although many books are available that deal with clinical aspects of cancer chemotherapy, this book provides a sorely needed update from the point of view of medicinal chemistry and drug design.

ISBN: 978-0-444-62649-3
PREVIOUS EDITION ISBN: 9780444528247
PUB DATE: July 2015
FORMAT: Paperback
PAGES: c. 742

AUDIENCE

For researchers in pharmaceutical, medicinal and organic chemistry departments in both academia and industry. Practitioners requiring an understanding of structure-activity relationships in oncology / cancer research. Advanced undergraduate and graduate students in medicinal chemistry and pharmacology.

CHEMISTRY

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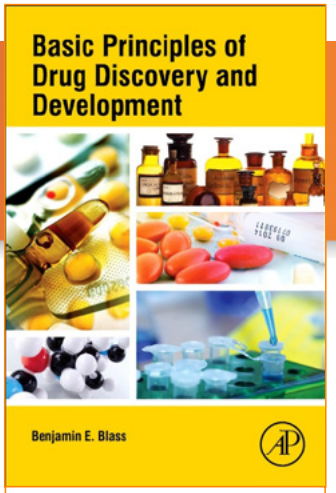


Basic Principles of Drug Discovery and Development

Benjamin Blass Temple University School of Pharmacy, Philadelphia, PA, USA

Clearly explains the complete drug discovery and development process from a multidisciplinary standpoint

KEY FEATURES

- Provides a clear explanation of how the pharmaceutical industry works
- Explains the complete drug discovery process, from obtaining a lead, to testing the bioactivity, to producing the drug, and protecting the intellectual propertyIdeal for anyone interested in learning about the drug discovery process and those contemplating careers in the industry
- Explains the transition process from academia or other industries

DESCRIPTION

Basic Principles of Drug Discovery and Development presents the multifaceted process of identifying a new drug in the modern era, providing comprehensive explanations of enabling technologies such as high throughput screening, structure based drug design, molecular modeling, pharmaceutical profiling, and translational medicine, all areas that have become critical steps in the successful development of marketable therapeutics.

The text introduces the fundamental principles of drug discovery and development, also discussing important drug targets by class, in vitro screening methods, medicinal chemistry strategies in drug design, principles in pharmacokinetics and pharmacodynamics, animal models of disease states, clinical trial basics, and selected business aspects of the drug discovery process. It is designed to enable new scientists to rapidly understand the key fundamentals of drug discovery, including pharmacokinetics, toxicology, and intellectual property."

ISBN: 978-0-12-411508-8

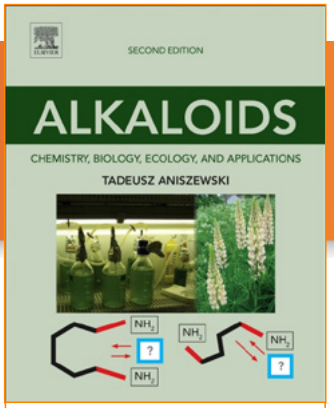
PUB DATE: April 2015

FORMAT: Paperback

PAGES: c. 570

AUDIENCE

upper undergraduates/graduate students interested in drug discovery research, chemistry, biology, pharmacology, biochemistry, toxicology, formulations, discovery/development of new therapeutic agents; pharmaceutical industry; FDA, public policy groups interested in influencing the pharmaceuticals industry; business analysts, entrepreneurs, venture capitalist interested in investing in the pharmaceuticals industry



Alkaloids, 2e

Chemistry, Biology, Ecology, and Applications

Tadeusz Aniszewski Department of Biology, University of Eastern Finland, Joensuu, Finland

ELSEVIER

Reviews the chemical, biological and ecological explanations for the alkaloids class of natural products that occur widely in nature and have important medical applications

ISBN: 978-0-444-59433-4

PREVIOUS EDITION ISBN: 9780444527363

PUB DATE: April 2015

FORMAT: Hardback

PAGES: c. 478

AUDIENCE

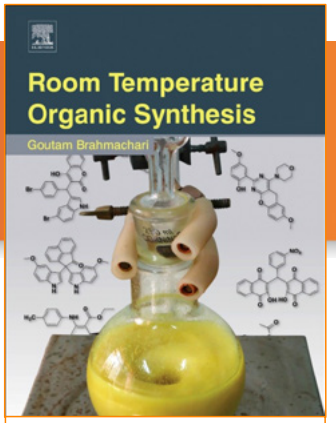
Chemists, biologists and ecologists also serves as a source of knowledge for anyone interested in alkaloids

KEY FEATURES

- Presents the ecological role of alkaloids in nature and ecosystems interdisciplinary
- Examines alkaloids from chemistry, biology and ecology viewpoints
- A single handy reference volume comprehensively reviews the origin of alkaloids and their biological uses
- Over 80% new information, including new chapters on the ecological role of alkaloids in nature and ecosystems and extraction of alkaloids

DESCRIPTION

Alkaloids - Secrets of Life: Alkaloid Chemistry, Biological Significance, Applications and Ecological Role, Second Edition provides knowledge on structural typology, biosynthesis and metabolism in relation to recent research work on alkaloids, considering an organic chemistry approach to alkaloids using biological and ecological explanation. The book approaches several questions and unresearched areas that persist in this field of research. It provides a beneficial text for academics, professionals or anyone who is interested in the fascinating subject of alkaloids. Each chapter features an abstract. Appendices, a listing of alkaloids, and plants containing alkaloids are all included, as are basic protocols of alkaloid analysis.



Room Temperature Organic Synthesis

Goutam Brahmachari Visva-Bharati University, Santiniketan, West Bengal, India

ELSEVIER

Reviews more than 300 important synthetic strategies/methodologies with particular emphasis on useful reactions for organic synthesis at room temperature

ISBN: 978-0-12-801025-9

PUB DATE: March 2015

FORMAT: Hardback

PAGES: c. 372

AUDIENCE

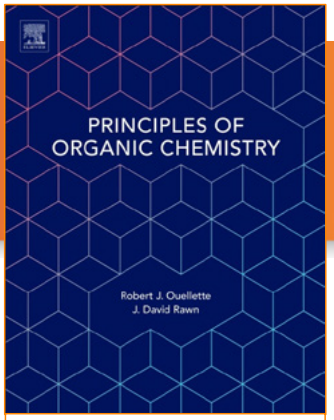
Chemists (organic, natural product, researchers involved in drug discovery and development); biochemists; pharmacologists; researchers interested in green/sustainable methods

KEY FEATURES

- Includes more than 300 protocols for a green approach to organic synthesis
- Provides specific detail about experimental conditions
- Increases efficiency in the laboratory by eliminating time-consuming literature searches

DESCRIPTION

Filling a gap in the scientific literature, *Room Temperature Organic Synthesis* is unique in its authoritative, thorough, and applied coverage of a wide variety of "green" organic synthetic methodologies. The book describes practical, feasible protocols for room temperature reactions to produce carbon-carbon and carbon-heteroatom bond formations including aliphatic, aromatic, alicyclic, heterocycles, and more. Consistently organized for easy access, each selected reaction is discussed in a very compact and structured manner including: reaction type, reaction condition, reaction strategy, catalyst, keywords, general reaction scheme, mechanism (in selected cases), representative entries, experimental procedure, characterization data of representative entries, and references. This book will be a valuable resource for synthetic organic, natural products, medicinal, and biochemists as well as those working in the pharmaceutical and agrochemical industry.



Principles of Organic Chemistry

Robert J. Ouellette Emeritus Professor, The Ohio State University, Columbus, OH, USA
J. David Rawn Towson University, Baltimore, MD, USA

ELSEVIER

Accessible introduction for a short course with biological and pharmaceutical applications

Please see the author's website at www.davidrawn.com for more information.

ISBN: 978-0-12-802444-7
PUB DATE: January 2015
FORMAT: Paperback
PAGES: c. 490

AUDIENCE

Students and researchers in need of core content in Organic Chemistry, particularly pre-meds

KEY FEATURES

- Incorporates valuable and engaging applications of the content to biological and industrial uses
- Includes a wealth of useful figures and problems to support reader comprehension and study
- Provides a high quality chapter on stereochemistry as well as advanced topics such as synthetic polymers and spectroscopy for class customization

DESCRIPTION

Class-tested and thoughtfully designed for student engagement, *Principles of Organic Chemistry* provides the tools and foundations needed by students in a short course or one-semester class on the subject. This book does not dilute the material or rely on rote memorization. Rather, it focuses on the underlying principles in order to make accessible the science that underpins so much of our day-to-day lives, as well as present further study and practice in medical and scientific fields. This book provides context and structure for learning the fundamental principles of organic chemistry, enabling the reader to proceed from simple to complex examples in a systematic and logical way.

Utilizing clear and consistently colored figures, *Principles of Organic Chemistry* begins by exploring the step-by-step processes (or mechanisms) by which reactions occur to create molecular structures. It then describes some of the many ways these reactions make new compounds, examined by functional groups and corresponding common reaction mechanisms. Throughout, this book includes biochemical and pharmaceutical examples with varying degrees of difficulty, with worked answers and without, as well as advanced topics in later chapters for optional coverage.

CHEMISTRY

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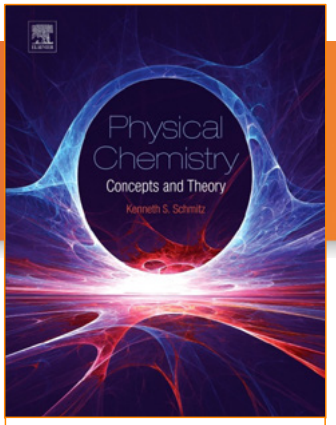


Physical Chemistry

Concepts and Theory

Kenneth S Schmitz University of Missouri, Kansas City, MO, USA

ELSEVIER

This new comprehensive reference covers the concepts, theories, and applications of physical chemistry as they relate to both the physical and biological sciences, helping the reader unite the sub-disciplines in the field

ISBN: 978-0-12-800514-9

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 668

AUDIENCE

Researchers and advanced students in the physical and biological sciences: chemistry, physics, geosciences, bio-chemistry, biophysics, life science, materials science, and environmental studies

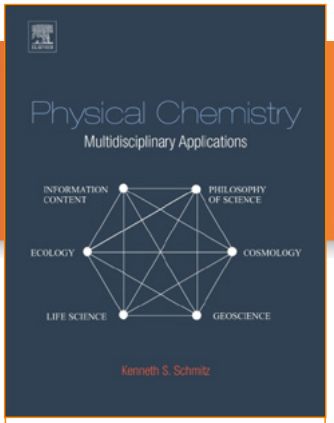
KEY FEATURES

- Describes how materials behave and chemical reactions occur at the molecular and atomic levels
- Uses theoretical constructs and mathematical computations to explain chemical properties and describe behavior of molecular and condensed matter
- Demonstrates the connection between math and chemistry and how to use math as a powerful tool to predict the properties of chemicals
- Emphasizes the intersection of chemistry, math, and physics and the resulting applications across many disciplines of science

DESCRIPTION

Physical Chemistry: Concepts and Theory provides a comprehensive overview of physical and theoretical chemistry while focusing on the basic principles that unite the sub-disciplines of the field. With an emphasis on multidisciplinary, as well as interdisciplinary applications, the book extensively reviews fundamental principles and presents recent research to help the reader make logical connections between the theory and application of physical chemistry concepts.

Also available from the author: *Physical Chemistry: Multidisciplinary Applications* (ISBN 9780128005132)



Physical Chemistry

Multidisciplinary Applications

Kenneth S Schmitz University of Missouri, Kansas City, MO, USA

ISBN: 978-0-12-800513-2

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 668

AUDIENCE

Researchers and advanced students in the physical and biological sciences: chemistry, physics, geosciences, bio-chemistry, biophysics, life science, materials science, and environmental studies

This new reference covers the concepts, theories, and applications of physical chemistry as they relate to other areas of study including life and environmental sciences, geosciences, cosmology, and philosophy

KEY FEATURES

- Emphasizes the intersection of chemistry, math, and physics and the resulting applications across many disciplines of science
- Explores applied physical chemistry principles in six specific areas including life sciences, environmental sciences, geosciences, cosmology, information content (knowledge), and philosophy
- Uses applications from a diverse range of fields to illustrate methods for modeling physical processes, designing new products, and finding solutions to challenging problems
- Provides scientists with the interdisciplinary knowledge to remain competitive in a diverse and rapidly changing job market

DESCRIPTION

Physical Chemistry: Multidisciplinary Applications demonstrates the many ways in which the core concepts of physical chemistry impact other areas of study, including life sciences, environmental sciences, geosciences, cosmology, information content, and philosophy. The applications from these diverse fields illustrate methods that can be used to model physical processes, design new products, find solutions to challenging problems, and become more competitive in a dynamic employment market.

Also available from the author: *Physical Chemistry: Concepts and Theory* (ISBN 9780128005149)

CHEMISTRY

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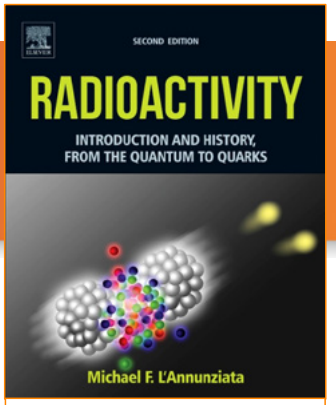


Radioactivity, 2e

Introduction and History, From the Quantum to Quarks

Michael F. L'Annunziata Oceanside, CA, USA

ELSEVIER

As a comprehensive review of radioactivity from natural and artificial sources on earth and radiation of cosmic origins, this book provides users with a chronological account of the significant historical events on the topic dating from 1895 to the present, along with an introduction to the atom and its nucleus

ISBN: 978-0-444-63489-4

PREVIOUS EDITION ISBN: 9780444527158 (hardback) and 9780444562791 (paperback)

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 880

AUDIENCE

Chemists (especially physical and nuclear); physicists; scientists interested in radioactivity and nuclear energy; upper division undergraduates through graduate-level students

KEY FEATURES

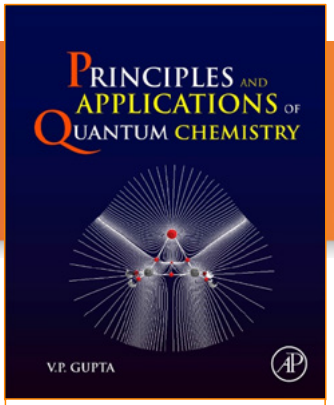
- Provides a detailed account of nuclear radiation – its origin and properties, the atom, its nucleus, and subatomic particles including quarks, leptons, and force carriers (bosons)
- Includes fascinating biographies of the pioneers in the field, including captivating anecdotes and insights
- Presents meticulous accounts of experiments and calculations used by pioneers to confirm their findings

DESCRIPTION

Radioactivity: Introduction and History, From the Quantum to Quarks, Second Edition provides a greatly expanded overview of radioactivity from natural and artificial sources on earth, radiation of cosmic origins, and an introduction to the atom and its nucleus. The book also includes historical accounts of the lives, works, and major achievements of many famous pioneers and Nobel Laureates from 1895 to the present.

These leaders in the field have contributed to our knowledge of the science of the atom, its nucleus, nuclear decay, and subatomic particles that are part of our current knowledge of the structure of matter, including the role of quarks, leptons, and the bosons (force carriers).

Users will find a completely revised and greatly expanded text that includes all new material that further describes the significant historical events on the topic dating from the 1950s to the present.



Principles and Applications of Quantum Chemistry

V.P. Gupta University of Lucknow, India

Provides useful introduction to the foundations and recent advances in Quantum Chemistry as well as valuable guidance to utilizing quantum chemistry tools

ISBN: 978-0-12-803478-1

PUB DATE: October 2015

FORMAT: Paperback

PAGES: c. 460

AUDIENCE

High-level students and researchers in chemistry, material science, biochemistry, chemical engineering

KEY FEATURES

- Simplified mathematical content and derivations for reader understanding
- Useful overview of advances in the field such as Density Functional Theory (DFT) and Time-Dependent DFT (TD-DFT)
- Accessible level for students and researchers interested in the use of quantum chemistry tools

DESCRIPTION

Principles and Applications of Quantum Chemistry offers clear and simple coverage based on the author's extensive teaching at advanced universities around the globe. Where needed, derivations are detailed in an easy-to-follow manner so that you will understand the physical and mathematical aspects of quantum chemistry and molecular electronic structure. Building on this foundation, this book then explores applications, using illustrative examples to demonstrate the use of quantum chemical tools in research problems. Each chapter also uses innovative problems and bibliographic references to guide you, and throughout the book chapters cover important advances in the field including: Density functional theory (DFT) and time-dependent DFT (TD-DFT), characterization of chemical reactions, prediction of molecular geometry, molecular electrostatic potential, and quantum theory of atoms in molecules.

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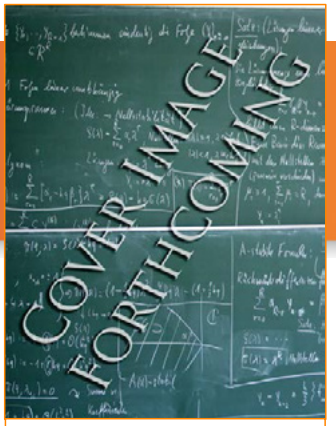

Catalytic Kinetics, 2e

Chemistry and Engineering

Dmitry Yu Murzin Professor, Chemical Technology, Åbo Akademi University, Turku, Finland
Tapio Salmi Professor, Chemical Reaction Engineering, Åbo Akademi University, Turku, Finland

ELSEVIER

A unique monograph bridging the gaps between hetero-, homo- and enzymatic-catalysis, treating both the kinetics and mass transfer phenomena in catalysis

ISBN: 978-0-444-63753-6

PREVIOUS EDITION ISBN: 978-0-444-56053-7

PUB DATE: June 2016

FORMAT: Paperback

PAGES: c. 650

AUDIENCE

Researchers and postgraduate students in academia and industry working in catalysis, kinetics, and chemical engineering

KEY FEATURES

- Fully revised and expanded, providing the latest developments in catalytic kinetics
- Bridges the gaps that exist between hetero-, homo- and enzymatic-catalysis
- Provides necessary tools and new concepts for researchers already working in the field of catalytic kinetics
- Written by internationally renowned experts in the field

DESCRIPTION

Catalytic Kinetics: Chemistry and Engineering, 2nd Edition, offers a unified view of homogeneous, heterogeneous, and enzymatic catalysis that form the cornerstone of practical catalysis. This resource has an integrated, cross-disciplinary approach to kinetics and transport phenomena in catalysis, but still recognizes the fundamental differences between different types of catalysis. The book focuses on a quantitative chemical understanding and links the mathematical approach to kinetics with chemistry. A diverse group of catalysts is covered, including catalysis by acids, organometallic complexes, solid inorganic materials, and enzymes.

This second edition is fully updated, revised, and expanded. New to this edition is a chapter on the concepts of cascade catalysis. Expanded content provides more in depth coverage of several areas, including organocatalysis, enzymatic kinetics, nonlinear dynamics, solvent effects, nanokinetics, kinetic isotope effects, and polynomial kinetics. Further, a substantial number of examples and exercises on homogeneous, heterogeneous, and enzymatic catalysis covering various types of reactions have been added at the end of each chapter.

CHEMISTRY

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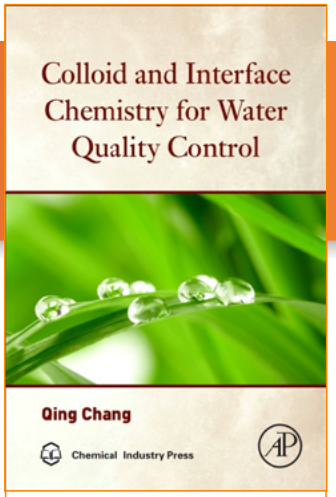

Colloid and Interface Chemistry for Water Quality Control

Qing Chang Professor in the School of Environmental and Municipal Engineering at Lanzhou Jiaotong University, Lanzhou, Gansu, China

Addresses all the important physical-chemistry theories, links colloid and surface chemistry to water treatment applications

KEY FEATURES

- Concise content makes this suitable for both teaching and learning
- Focuses on water treatment technology and methods, links colloid and surface chemistry to water treatment applications
- Not only addresses all the important physical-chemistry principles and theories, but also presents new developed knowledge on water treatment
- Includes exercises, problems and solutions, which are very helpful for testing learning and understanding

DESCRIPTION

Colloid and Interface Chemistry for Water Quality Control provides basic but essential knowledge of colloid and interface science for water and wastewater treatment. Divided into two sections, chapters 1 to 8 presents colloid chemistry including simple history and basic concepts, diffusion and Brown Motion, sedimentation, osmotic pressure, optical properties, rheology properties, electric properties, emulsion, foam and gel, and so on; chapters 9 to provides interface chemistry theories including the surface of liquid, the surface of solution, and the surface of solid.
This valuable book is the only one that presents colloid and interface chemistry from the water quality control perspective. This book was written for graduate students in the area of water treatment and environmental engineering, and it could be used as the reference for researchers and engineers in the same area.

ISBN: 978-0-12-809315-3
PUB DATE: May 2016
FORMAT: Hardback
PAGES: c. 286

AUDIENCE

Graduate students, researchers, and engineers who are working on water supply and drainage, environmental science and environmental engineering. It also can be used as a reference book by graduate students majoring in chemical engineering, biosystems engineering, or physical chemistry.

CHEMISTRY

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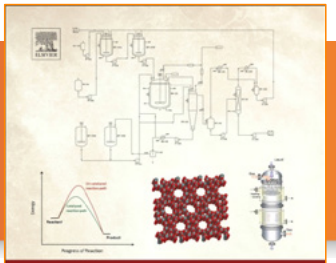


Industrial Catalytic Processes for Fine and Specialty Chemicals

Edited by: ***Sunil S Joshi*** Senior Principal Scientist, Chemical Engineering & Process Development Division, CSIR-National Chemical Laboratory, Pune, India
Vivek V. Ranade Deputy Director & Chair, Chemical Engineering & Process Development Division, CSIR-National Chemical Laboratory, Pune, India

ISBN: 978-0-12-801457-8
PUB DATE: April 2016
FORMAT: Hardback
PAGES: c. 416

AUDIENCE

Industrial and academic chemists, and chemical engineers and technologists working in the area of process development using catalysis

Through a comprehensive approach, this book brings out important catalytic reactions for green and sustainable technologies covering catalyst characterization and performance, as well as catalyst stability and recyclability

KEY FEATURES

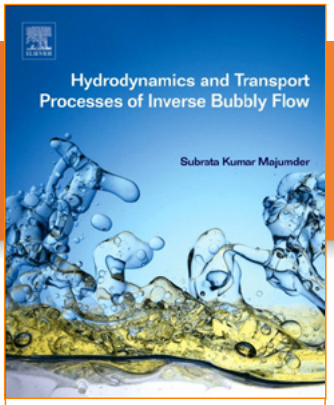
- Discusses the fundamentals of catalytic processes, catalyst preparation and characterization, and reaction engineering
- Outlines the homogeneous catalytic processes as they apply to specialty chemicals
- Introduces industrial catalysis and catalytic processes for fine chemicals
- Includes a number of case studies to demonstrate the various processes and methods for designing green catalysts

DESCRIPTION

Industrial Catalytic Processes for Fine and Specialty Chemicals provides a comprehensive methodology and state-of-the art toolbox for industrial catalysis. The book begins by introducing the reader to the interesting, challenging, and important field of catalysis and catalytic processes.

The fundamentals of catalysis and catalytic processes are fully covered before delving into the important industrial applications of catalysis and catalytic processes, with an emphasis on green and sustainable technologies. Several case studies illustrate new and sustainable ways of designing catalysts and catalytic processes.

The intended audience of the book includes researchers in academia and industry, as well as chemical engineers, process development chemists, and technologists working in chemical industries and industrial research laboratories.



Hydrodynamics and Transport Processes of Inverse Bubbly Flow

Subrata Kumar Majumder Indian Institute of Technology, Guwahati, India

ELSEVIER

With its important coverage of the science and fundamentals behind hydrodynamic characteristics, this concise reference helps researchers in academia and industry understand the phenomena involved in multiphase flow systems in chemical and biochemical engineering

ISBN: 978-0-12-803287-9

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 300

AUDIENCE

Graduate students and researchers in academia and industry working in chemical and biochemical engineering

KEY FEATURES

- Presents the first book in the market dedicated to the hydrodynamics of inverse bubble flows
- Provides a comparison between conventional and inverse bubble columns for each hydrodynamic parameter
- Includes recommendations for future applications of bubble flows

DESCRIPTION

Hydrodynamics and Transport Processes of Inverse Bubbly Flow provides the science and fundamentals behind hydrodynamic characteristics, including flow regimes, gas entrainment, pressure drop, holdup characteristics mixing, bubble size distribution, and interfacial area of inverse bubble flow regimes, with special attention given to mass and heat transfer.

This monograph is an indispensable reference for researchers in academia and industry working in chemical and biochemical engineering that helps facilitate a better understanding of the phenomena of multiphase flow systems as used in chemical and biochemical industries.

CHEMISTRY

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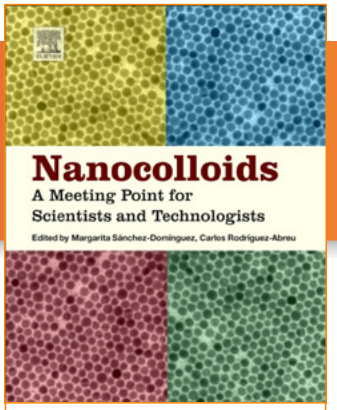


Nanocolloids

A Meeting Point for Scientists and Technologists

Edited by: ***Margarita Sanchez Dominguez*** Centro de Investigacion en Materiales Avanzados, S.C. (CIMAV-Unidad Monterrey), Nuevo Leon, Mexico

Carlos Rodriguez Abreu INL-International Iberian Nanotechnology Laboratory, Braga, Portugal

ISBN: 978-0-12-801578-0

PUB DATE: March 2016

FORMAT: Hardback

PAGES: c. 450

AUDIENCE

Researchers in academia and industry and chemical engineers working in the fields of chemistry, physics, materials science, pharmacology, cosmetics, food science

Provides a current, comprehensive overview of nanotechnology and its role in colloid and interface chemistry by explaining the fundamentals, demonstrating various applications and detailing experimental techniques and methods

KEY FEATURES

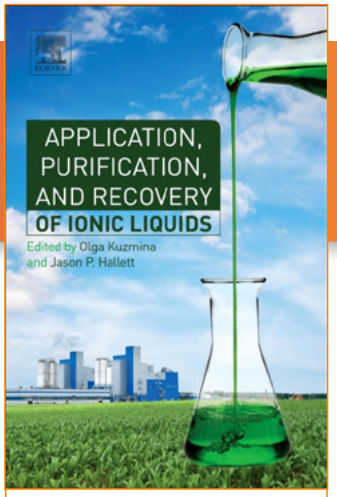
- Edited by leading academics with over ten years of experience in the field of colloid and surfactant science
- Authored by recognized and respected worldwide experts in the field of nanocolloids
- Outlines the underlying fundamental science behind nanocolloids
- Provides comprehensive coverage of current topics and potential applications in nanocolloid science
- Presents a multidisciplinary approach to help chemical engineers, chemists, physicists, materials scientists, pharmacologists, and food scientists gain an in-depth understanding of nanocolloid science

DESCRIPTION

Nanocolloids: A Meeting Point for Scientists and Technologists presents an easy-to-read approach to current trends in nanoscale colloid chemistry, offering relatively simple, scalable, and economically feasible ways to produce nanomaterials, a series of products that have been the subject of major development in modern technology because of their varying current and future applications.

The book helps scientists with a background in chemical engineering or related fields understand the different aspects of modern nanocolloid science by outlining the underlying fundamental principles of nanocolloid science and covering applications ranging from emulsions, foams, and suspensions, to aerosols.

Users will find details on experimental techniques and methods for the synthesis and characterization of nanocolloids, including the latest developments in nanoemulsions, liquid crystals, and lipid membranes.



Application, Purification, and Recovery of Ionic Liquids

Edited by: ***Olga Kuzmina*** Research Associate, Department of Chemistry, Imperial College London, London, UK
Jason Hallett Senior Lecturer, Faculty of Engineering, Department of Chemical Engineering, Imperial College London, London, UK

ELSEVIER

A comprehensive overview of the methods used for the purification and recovery of ionic liquids, giving users a description of the methods used for recovery and purification of ILs, a summary of the economic aspects of using ILs, and a review on the toxicity data of ILs

ISBN: 978-0-444-63713-0
PUB DATE: March 2016
FORMAT: Paperback
PAGES: c. 350

AUDIENCE
Researchers and scientists in chemical engineering, organic and physical chemistry, electrochemistry, and technical staff working with ionic liquids

KEY FEATURES

- Chapters written by scientists in academia and researchers in industry, ensuring coverage of both the scientific fundaments and industrial applications
- A single source of information for a broad collection of recovery and purification methods
- Provides information on using ionic liquids as green solvents
- Includes economic aspects of recovery and reuse of ionic liquids

DESCRIPTION

Application, Purification, and Recovery of Ionic Liquids provides a comprehensive overview of the usage of ionic liquids (IL). The book gives a description of the methods used for recovery and purification of ILs, a summary of the economic aspects of using ILs, and a review on the toxicity data of ILs.

It is written for researchers, scientists, and engineers working with ILs, their properties, and usages. The book not only describes the chemical aspects, but the economic and environmental aspects as well, making it of particular interest to professionals applying this technology.

CHEMISTRY
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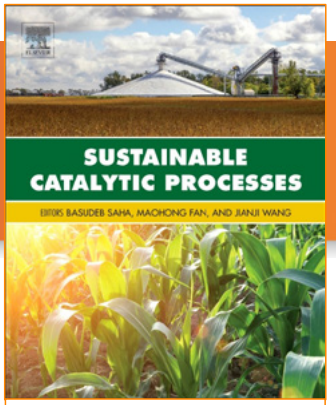


Sustainable Catalytic Processes

Edited by: ***Basudek Saha*** Department of Chemistry, University of Dehli, India
Maohong Fan University of Wyoming, Laramie, WY, USA
Jianji Wang School of Chemical and Environmental Sciences, Henan Key Laboratory of Environmental Pollution Control, Henan Normal Laboratory, Xinxiang, People's Republic of China

ELSEVIER

Presents the progress of developing catalytic processes to eliminate toxic chemical and by-products formation in new and existing chemical manufacturing

ISBN: 978-0-444-59567-6
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 208

AUDIENCE

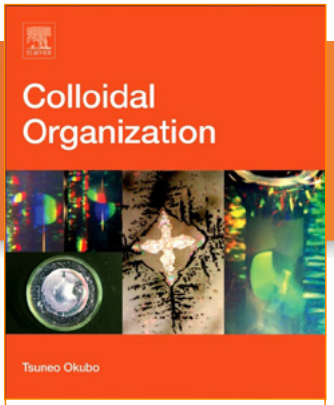
Chemical Engineers, Chemists, Physical Chemists,. Graduate and Post graduate students in Catalysis and Reaction Engineering

KEY FEATURES

- Reports the most recent developments in catalysis with a focus on environmentally friendly commercial processes, such as waste water treatment, alternate energy, etc
- Bridges the theory, necessary for the development of environmentally friendly processes, and their implementation through pilot plant and large scale
- Contains mainly laboratory scale data and encourages industrial scientists to test these processes on a pilot scale
- Includes work examples featuring the development of the new catalysts/processes using bio-renewable feedstock satisfactorily addressing environmental concerns
- Includes one chapter demonstrating real industrial examples motivating the industrial and academic researchers to pursue similar research

DESCRIPTION

The development of catalysts is the most sophisticated art in chemical sciences. It can be read like a story book when the critical scientific contents are presented in a chronological manner with short and simple sentences. This book will meets these criteria. To address the sustainability issues of existing chemical manufacturing processes or producing new chemicals, researchers are developing alternate catalysts to eliminate toxic chemicals use and by-products formation. *Sustainable Catalytic Processes* presents critical discussions of the progress of such catalytic development. This book of contemporary research results in sustainable catalysis area will benefit scientists in both industries and academia, and students to learn recent catalysts/process development.



Colloidal Organization

Tsuneo Okubo Institute for Colloidal Organization, Gifu University, Kyoto, Japan

A full color illustrated study of the chemistry and physics of colloidal organization phenomena

ISBN: 978-0-12-802163-7

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 434

AUDIENCE

Students, scientists and researchers in academia and industry and chemical engineers working in the fields of colloid and surface chemistry, biological chemistry, physical chemistry, physics, chemical technology, and polymer technology

KEY FEATURES

- Written by world leading expert in the field of colloids and surface chemistry
- Outlines the underlying fundamental science behind colloidal organization phenomena
- Written in an easy and accessible style, utilizing full color and minimal usage of mathematical equations

DESCRIPTION

Colloidal Organization presents a chemical and physical study on colloidal organization phenomena including equilibrium systems such as colloidal crystallization, drying patterns as an example of a dissipative system and similar sized aggregation. This book outlines the fundamental science behind colloid and surface chemistry and the findings from the author's own laboratory. The text goes on to discuss in-depth colloidal crystallization, gel crystallization, drying dissipative structures of solutions, suspensions and gels, and similar-sized aggregates from nanosized particles. Special emphasis is given to the important role of electrical double layers in colloidal suspension. Written for students, scientists and researchers both in academia and industry and chemical engineers working in the fields of colloid and surface chemistry, biological chemistry, physical chemistry, physics, chemical technology, and polymer technology this book will help them to exploit recent developments recognizing the potential applications of colloid science in enhancing the efficiency of their processes or the quality and range of their products.

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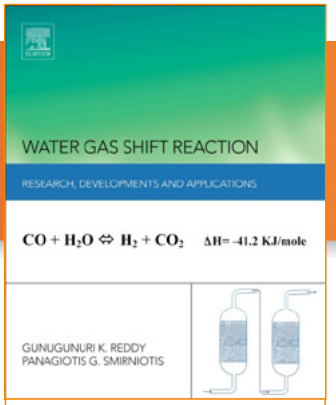

Water Gas Shift Reaction

Research Developments and Applications

Panagiotis Smirniotis Department of Chemical Engineering, School of Energy, Environmental, Biological and Medical Engineering, Universtiy of Cincinnati, Cincinnati, OH, USA

Krishna Gunugunuri Department of Chemical Engineering, School of Energy, Environmental, Biological and Medical Engineering, University of Cincinnati, Cincinnati, OH, USA

ISBN: 978-0-12-420154-5

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 270

AUDIENCE

Chemical Engineers, Chemists, Industrialists, Analytical Chemists, Scientists/Engineers working on energy, Catalysts Manufacturers, Material science engineers

This book provides a unique reference on the Water Gas Shift (WGS) reaction process and its use for the production of hydrogen, applications in fuel cells, and important information on topics such temperature reactions, steam/CO ratios, and characterization of modified ferrite catalysts.

KEY FEATURES

- Outlines the importance of the Water Gas Shift Reaction and its application for hydrogen production
- Provides detailed information on potential catalysts, their development, and their pros and cons, giving the reader insights on how modified ferrite catalysts work at different temperatures and different steam to CO ratios
- Reviews hydrogen technology, its current importance, and production methods
- Presents a clear presentation of the topics with many graphics and tables
- Offers basic and advanced knowledge of catalysts characterization instrumental techniques

DESCRIPTION

Water Gas Shift Reaction: Research Developments and Applications outlines the importance of hydrogen as a future fuel, along with the various hydrogen production methods. The book explains the development of catalysts for Water Gas Shift (WGS) reaction at different temperatures and steam/CO ratios, and also discussing the effect of different dopants on the WGS activity of iron oxide and the promotion and inhibition roles of the dopants on the WGS activity of iron oxide are explained.

In addition, the book describes extensive characterization of modified ferrite catalysts, especially with Mossbauer spectroscopy and its advantage in understanding properties of metal doped ferrite catalysts, the exact dopant location, and its effect on electron hopping capability and WGS activity of Fe redox couple.

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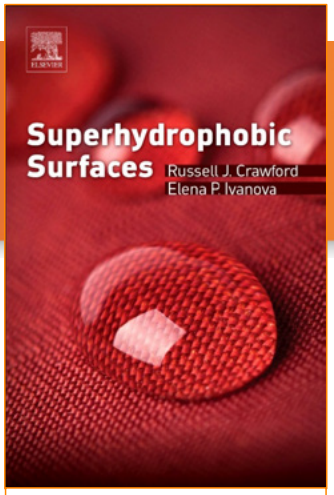

Superhydrophobic Surfaces

Russell Crawford Dean of the Faculty of Life & Social Sciences, Swinburne University of Technology, Melbourne, Australia
Elena Ivanova Professor of Chemistry and Biotechnology, Swinburne University of Technology, Melbourne, Australia

ELSEVIER

Comprehensive but concise analysis of superhydrophobic surfaces serving as a reference for manufacturing of materials with superior water-repellency, self-cleaning, and corrosion resistance

ISBN: 978-0-12-801109-6
PUB DATE: February 2015
FORMAT: Hardback
PAGES: c. 166

AUDIENCE

Researchers in academia and industry and chemical engineers working in surface chemistry, physical chemistry, biochemistry, materials science, (micro)biology, nanotechnology, medicine, and dentistry

KEY FEATURES

- Provides an adequate blend of complex engineering concepts with in-depth explanations of biological principles guiding the advancement of these technologies
- Describes complex ideas in simple scientific language, avoiding overcomplicated equations and discipline-specific jargon
- Includes practical information for manufacturing superhydrophobic surfaces
- Written by experts with complementary skills and diverse scientific backgrounds in engineering, microbiology and surface sciences

DESCRIPTION

Superhydrophobic Surfaces analyzes the fundamental concepts of superhydrophobicity and gives insight into the design of superhydrophobic surfaces. The book serves as a reference for the manufacturing of materials with superior water-repellency, self-cleaning, anti-icing and corrosion resistance. It thoroughly discusses many types of hydrophobic surfaces such as natural superhydrophobic surfaces, superhydrophobic polymers, metallic superhydrophobic surfaces, biological interfaces, and advanced/hybrid superhydrophobic surfaces.

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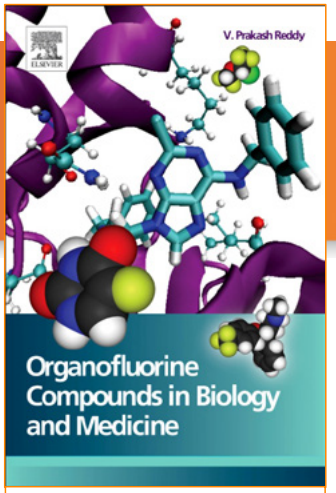

Organofluorine Compounds in Biology and Medicine

Prakash V Reddy Missouri University of Science and Technology, Rolla, MO, USA

ELSEVIER

This book covers the synthesis and biochemical and therapeutic applications of organofluorine compounds, making it an essential source for researchers interested in fluorine chemistry and its biomedical applications.

ISBN: 978-0-444-53748-5

PUB DATE: January 2015

FORMAT: Hardback

PAGES: c. 320

AUDIENCE

This book suits a wide audience, including chemists, organic chemists, physical organic chemists, synthetic chemists, medicinal and pharmaceutical chemists, organometallic chemists, medicinal chemists, biologists, and graduate and post graduate students.

KEY FEATURES

- Covers the synthesis, biochemical, and therapeutic applications of organofluorine compounds
- Offers a complete text on biochemically relevant organofluorine compounds and their synthesis and mechanistic pathways
- Provides one of the first major reference books on the biological and medicinal applications of organofluorine chemistry

DESCRIPTION

This book covers topics on biochemically relevant organofluorine compounds and their synthesis and biochemical pathways. Organofluorine compounds have renewed interest in pharmaceutical industry, and therefore a concise book on this topic is highly relevant to the scientific community involved in this area.

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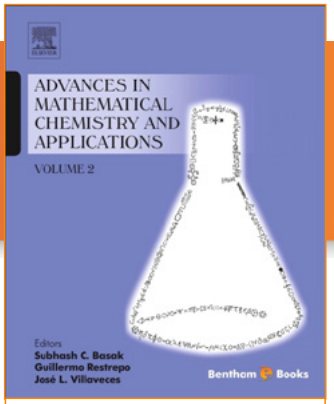


Advances in Mathematical Chemistry and Applications: Volume 2

Edited by: ***Subhash C. Basak*** University of Minnesota Duluth, USA
Guillermo Restrepo Universidad de Pamplona, Colombia
Jose L Villaveces Universidad de los Andes, Colombia

ELSEVIER

A clear and concise depiction of the "state of the art" of the fundamental concepts of mathematical chemistry and their relevant applications by a large number of reputed contributors of the scientific discipline

ISBN: 978-1-68108-053-6
PUB DATE: January 2016
FORMAT: Paperback
PAGES: c. 334

AUDIENCE

MSc and PhD students, academic personnel and researchers seeking updated and critically important information on the fundamental concepts of mathematical chemistry and their applications; Scientists working in new drug discovery and hazard assessment of chemicals

KEY FEATURES

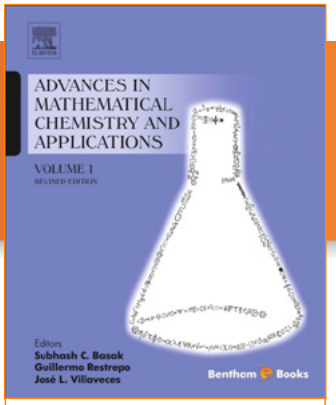
- Brings together both the theoretical and practical aspects of the fundamental concepts of mathematical chemistry
- Covers applications in different fields such as drug discovery, protection of human as well as ecological health, chemoinformatics, bioinformatics, toxicoinformatics, and computational biology, to name just a few
- About half of the book focuses primarily on current work, new applications, and emerging approaches for the mathematical characterization of essential aspects of molecular structure, while the other half describes applications of structural approach to new drug discovery, virtual screening, protein folding, predictive toxicology, DNA structure, and systems biology

DESCRIPTION

Advances in Mathematical Chemistry and Applications highlights the recent progress in the emerging discipline of discrete mathematical chemistry. Editors Subhash C. Basak, Guillermo Restrepo, and Jose Luis Villaveces have brought together 27 chapters written by 68 internationally renowned experts in these two volumes.

Each volume comprises a wise integration of mathematical and chemical concepts and covers numerous applications in the field of drug discovery, bioinformatics, chemoinformatics, computational biology, mathematical proteomics, and ecotoxicology.

Volume 2 explores deeper the topics introduced in Volume 1, with numerous additional topics such as topological approaches for classifying fullerene isomers; chemical reaction networks; discrimination of small molecules using topological molecular descriptors; GRANCH methods for the mathematical characterization of DNA, RNA and protein sequences; linear regression methods and Bayesian techniques; *in silico* toxicity prediction methods; drug design; integration of bioinformatics and systems biology, molecular docking, and molecular dynamics; metalloenzyme models; protein folding models; molecular periodicity; generalized topologies and their applications; and many more.



Advances in Mathematical Chemistry and Applications: Volume 1

Edited by: ***Subhash C. Basak*** University of Minnesota Duluth, USA
Guillermo Restrepo Universidad de Pamplona, Colombia
Jose L Villaveces Universidad de los Andes, Colombia

ELSEVIER

A clear and concise depiction of the "state of the art" of the fundamental concepts of mathematical chemistry and their relevant applications by a large number of reputed contributors of the scientific discipline

ISBN: 978-1-68108-198-4
PUB DATE: January 2016
FORMAT: Paperback
PAGES: c. 360

AUDIENCE

MSc and PhD students, academic personnel and researchers seeking updated and critically important information on the fundamental concepts of mathematical chemistry and their applications; Scientists working in new drug discovery and hazard assessment of chemicals

KEY FEATURES

- Brings together both the theoretical and practical aspects of the fundamental concepts of mathematical chemistry
- Covers applications in diverse areas of physics, chemistry, drug discovery, predictive toxicology, systems biology, chemoinformatics, and bioinformatics
- Revised 2015 edition includes a new chapter on the current landscape of hierarchical QSAR modeling
- About half of the book focuses primarily on current work, new applications, and emerging approaches for the mathematical characterization of essential aspects of molecular structure, while the other half describes applications of structural approach to new drug discovery, virtual screening, protein folding, predictive toxicology, DNA structure, and systems biology

DESCRIPTION

Advances in Mathematical Chemistry and Applications highlights the recent progress in the emerging discipline of discrete mathematical chemistry. Editors Subhash C. Basak, Guillermo Restrepo, and Jose Luis Villaveces have brought together 27 chapters written by 68 internationally renowned experts in these two volumes.

Each volume comprises a wise integration of mathematical and chemical concepts and covers numerous applications in the field of drug discovery, bioinformatics, chemoinformatics, computational biology, mathematical proteomics, and ecotoxicology.

Volume 1 includes chapters on mathematical structural descriptors of molecules and biomolecules, applications of partially ordered sets (posets) in chemistry, optimal characterization of molecular complexity using graph theory, different connectivity matrices and their polynomials, use of 2D fingerprints in similarity-based virtual screening, mathematical approaches to molecular structure generation, comparability graphs, applications of molecular topology in drug design, density functional theory of chemical reactivity, application of mathematical descriptors in the quantification of drug-likeness, utility of pharmacophores in drug design, and much more.

Frontiers in Computational Chemistry: Volume 1

Computer Applications for Drug Design and Biomolecular Systems

Zaheer Ul-Haq University of Karachi, Pakistan
Jeffry D. Madura Duquesne University, Pittsburgh, PA, USA

ELSEVIER

The latest advances in computational chemistry, bringing together a collection of articles detailing the application of computational methods towards drug design

ISBN: 978-1-60805-865-5
PUB DATE: November 2015
FORMAT: Paperback
PAGES: c. 356

AUDIENCE

professionals and students in experimental and computational chemistry, biochemistry, biophysics, and computer science studying drug design methods

KEY FEATURES

- Brings together a wide range of research into a single collection to help researchers keep up with new methods
- Uniquely focuses on computational chemistry approaches that can accelerate drug design
- Makes a solid connection between experiment and computation and the novel application of computational methods in the fields of biology, chemistry, biochemistry, physics, and biophysics, with particular focus on the integration of computational methods with experimental data

DESCRIPTION

Frontiers in Computational Chemistry, originally published by Bentham and now distributed by Elsevier, presents the latest research findings and methods in the diverse field of computational chemistry, focusing on molecular modeling techniques used in drug discovery and the drug development process. This includes computer-aided molecular design, drug discovery and development, lead generation, lead optimization, database management, computer and molecular graphics, and the development of new computational methods or efficient algorithms for the simulation of chemical phenomena including analyses of biological activity. In Volume 1, the leading researchers in the field have collected eight different perspectives in the application of computational methods towards drug design to provide an up-to-date rendering of the current field. This volume covers a variety of topics from G protein-coupled receptors, to the use of cheminformatics and bioinformatics, computational tools such as Molecular Mechanics Poisson-Boltzmann Surface Area, protein-protein interactions, the use of computational methods on large biological data sets, various computational methods used to identify pharmaceutically relevant targets, and more.

Frontiers in Computational Chemistry: Volume 2

Computer Applications for Drug Design and Biomolecular Systems

Zaheer Ul-Haq University of Karachi, Pakistan
Jeffry D. Madura Duquesne University, Pittsburgh, PA, USA

ELSEVIER

The latest advances in computational chemistry, featuring a collection of articles covering topics such as antibacterial drug discovery, high throughput screening, computational biochemistry with deMon2k, lipid bilayer analysis, and more

ISBN: 978-1-60805-979-9
PUB DATE: November 2015
FORMAT: Paperback
PAGES: c. 436

AUDIENCE

professionals and students in experimental and computational chemistry, biochemistry, biophysics, and computer science studying drug design methods

KEY FEATURES

- Brings together a wide range of research into a single collection to help researchers keep up with new methods
- Uniquely focuses on computational chemistry approaches that can accelerate drug design
- Makes a solid connection between experiment and computation, and the novel application of computational methods in the fields of biology, chemistry, biochemistry, physics, and biophysics

DESCRIPTION

Frontiers in Computational Chemistry, originally published by Bentham and now distributed by Elsevier, presents the latest research findings and methods in the diverse field of computational chemistry, focusing on molecular modeling techniques used in drug discovery and the drug development process. This includes computer-aided molecular design, drug discovery and development, lead generation, lead optimization, database management, computer and molecular graphics, and the development of new computational methods or efficient algorithms for the simulation of chemical phenomena including analyses of biological activity. In Volume 2, the authors continue the compendium with nine additional perspectives in the application of computational methods towards drug design. This volume covers an array of subjects from modern hardware advances that accelerate new antibacterial peptide identification, electronic structure methods that explain how singlet oxygen damages DNA, to QSAR model validation, the application of DFT and DFRT methods on understanding the action of nitrogen mustards, the design of novel prodrugs using molecular mechanics and molecular orbital methods, computational simulations of lipid bilayers, high throughput screening methods, and more.

CHEMISTRY

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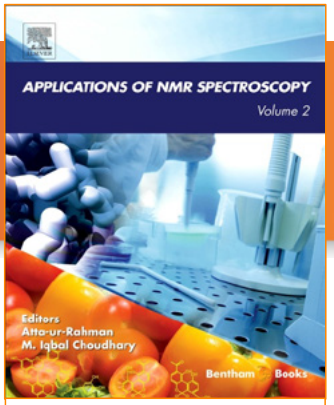


Applications of NMR Spectroscopy: Volume 2

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
M. Iqbal Choudhary International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Pakistan

ISBN: 978-1-60805-999-7
PUB DATE: November 2015
FORMAT: Paperback
PAGES: c. 240

AUDIENCE

Analytical and medicinal chemists; food scientists, pharmaceutical scientists; students taking related coursework at the upper undergraduate or graduate level

Presents NMR spectroscopy's role in the analysis of plant polyphenols, neuroradiology, and NMR–based sensors as well as studies on protein structure and function, nucleic acid structure and function, and mathematical formations in structural biology

KEY FEATURES

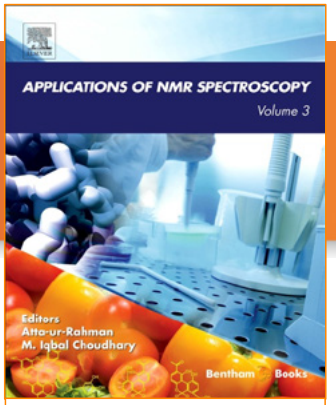
- Consolidates the latest developments in NMR spectroscopy into a single volume
- Authored and edited by world-leading experts in spectroscopy
- Features comprehensive references to the most recent related literature
- More than 65 illustrations aid in the retention of key concepts

DESCRIPTION

Applications of NMR Spectroscopy, Volume 2, originally published by Bentham and now distributed by Elsevier, presents the latest developments in the field of NMR spectroscopy, including the analysis of plant polyphenols, the role of NMR spectroscopy in neuroradiology, NMR–based sensors, studies on protein and nucleic acid structure and function, and mathematical formations for NMR spectroscopy in structural biology.

The fully illustrated chapters contain comprehensive references to the recent literature. The applications presented cover a wide range of the field, such as drug development, medical imaging and diagnostics, food science, mining, petrochemical, process control, materials science, and chemical engineering, making this resource a multi-disciplinary reference with broad applications.

The content is ideal for readers who are seeking reviews and updates, as it consolidates scientific articles of a diverse nature into a single volume. Sections are organized based on disciplines, such as food science and medical diagnostics. Each chapter is written by eminent experts in the field.



Applications of NMR Spectroscopy: Volume 3

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
M. Iqbal Choudhary International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Pakistan

ISBN: 978-1-68108-063-5
PUB DATE: November 2015
FORMAT: Paperback
PAGES: c. 270

AUDIENCE

Analytical and medicinal chemists; food scientists, pharmaceutical scientists; students taking related coursework at the upper undergraduate or graduate level

Presents NMR spectroscopy methods and roles in the analysis of the structure-property relationship of polyphenols, breast cancer diagnosis, drug discovery and formulation, protein confirmation analysis using Fluorine NMR, and enaminone studies

KEY FEATURES

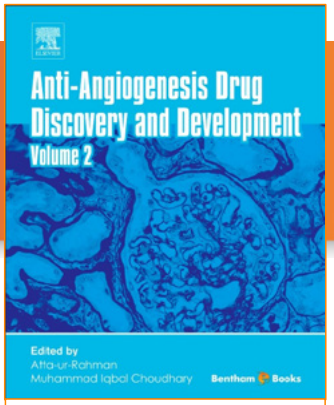
- Consolidates the latest developments in NMR spectroscopy into a single volume
- Authored and edited by world-leading experts in spectroscopy
- Features comprehensive references to the most recent related literature
- More than 75 illustrations aid in the retention of key concepts

DESCRIPTION

Applications of NMR Spectroscopy, Volume 3 presents the latest developments in the field of NMR spectroscopy, including the analysis of the structure-property relationship of polyphenols, breast cancer diagnosis, drug discovery and formulation, protein confirmation analysis using Fluorine NMR, and enaminone studies.

The well-illustrated chapters contain comprehensive references to the recent literature. The content is ideal for readers who are seeking reviews and updates, as it consolidates scientific articles of a diverse nature into a single volume. The book is organized into sections based on disciplines such as food science and medical diagnostics, with each chapter written by eminent experts in the field.

The applications presented cover a wide range of the field, such as drug development, medical imaging and diagnostics, food science, mining, petrochemical, process control, materials science, and chemical engineering, making this resource a multi-disciplinary reference.



ISBN: 978-0-12-803963-2

PUB DATE: June 2015

FORMAT: Paperback

PAGES: c. 316

AUDIENCE

Medicinal Chemistry and Pharmaceutical researchers

Anti-Angiogenesis Drug Discovery and Development

Volume 2

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
Muhammad Iqbal Choudhary Professor, International Center for Chemical and Biological Sciences, (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

Recent developments reviewed by leading experts in cancer and cardiovascular medicinal chemistry

KEY FEATURES

- Edited and written by leading experts in angiogenesis drug development
- Reviews recent advances in the field, such as coverage of anti-angiogenetic drugs in ovarian cancer
- Reports current strategies and future outlook for anti-angiogenic therapy and cardiovascular diseases

DESCRIPTION

The inhibition of angiogenesis is an effective mechanism of slowing down tumor growth and malignancies. The process of induction or pro-angiogenesis is highly desirable for the treatment of cardiovascular diseases, wound healing disorders, and more. Efforts to understand the molecular basis, both for inhibition and induction, have yielded fascinating results.

Originally published by Bentham and now distributed by Elsevier, *Anti-Angiogenesis Drug Discovery and Development, Volume 2* is an compilation of well-written reviews on various aspects of the anti-angiogenesis process. These reviews have been contributed by leading practitioners in drug discovery science and highlight the major developments in this exciting field in the last two decades. These reader-friendly chapters cover topics of great scientific importance, many of which are considered significant medical breakthroughs, making this book excellent reading both for the novice as well as for expert medicinal chemists and clinicians.

Recent Advances in Medicinal Chemistry, Volume 1

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
Muhammad Iqbal Choudhary Professor, International Center for Chemical and Biological Sciences, (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
George Perry University of Texas, San Antonio, TX, USA

ELSEVIER

Current research developments in pharmaceutical drug design and development

ISBN: 978-0-12-803961-8
PUB DATE: June 2015
FORMAT: Paperback
PAGES: c. 476

AUDIENCE

Medicinal Chemistry and Pharma researchers

KEY FEATURES

- Edited and written by leading experts in medicinal chemistry research
- Reviews recent advances in the field, including the characterization of inorganic nanomaterials as therapeutic vehicles
- Covers a variety of topical areas, such as HPLC and in the analysis of tricyclic antidepressants in biological samples, and tannins and their influence on health

DESCRIPTION

Originally published by Bentham and now distributed by Elsevier, *Recent Advances in Medicinal Chemistry, Volume 1* covers leading-edge research and recent developments in rational drug design, synthetic chemistry, bioorganic chemistry, high-throughput screening, combinatorial chemistry, drug targets, and natural product research and structure-activity relationship studies. The fourteen updated reviews include unique experimental data and references, and each article highlights an important topic in current medicinal chemistry research. Topics covered include: aureolic acid group of anti-cancer antibiotics and non-steroidal anti-inflammatory drugs; aromatase inhibitors in adjuvant endocrine treatment of early-stage breast cancer in postmenopausal women; Rho GTPases and statins in targeting and developing therapies for tumors; and more.

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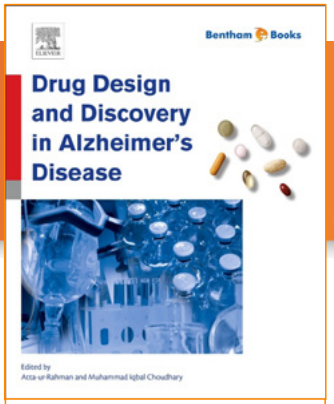


Drug Design and Discovery in Alzheimer's Disease

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan
Muhammad Iqbal Choudhary Professor, International Center for Chemical and Biological Sciences, (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ISBN: 978-0-12-803959-5
PUB DATE: June 2015
FORMAT: Paperback
PAGES: c. 762

AUDIENCE
Medicinal Chemistry and Pharma, and Neuro researchers

Reviews developments in drug design for Alzheimer's disease and related neurodegenerative disorders

"... comprehensive compilation of the current knowledge about Alzheimer's disease…recommended to anyone who will be working intensively on the subject…" (translated from German)--**MTA Dialog, *Drug Design and Discovery in Alzheimer's Disease***

KEY FEATURES

- Edited and written by leading experts in Alzheimer's disease (AD) and other neurodegenerative disease drug development
- Describes existing drugs for AD and current molecular understanding of the condition
- Reviews recent advances in the field, including coverage of cholinesterases, BACE-1, and other drug development targets

DESCRIPTION

Drug Design and Discovery in Alzheimer's Disease includes expert reviews of recent developments in Alzheimer's disease (AD) and neurodegenerative disease research. Originally published by Bentham as *Frontiers in Drug Design and Discovery, Volume 6*and now distributed by Elsevier, this compilation of the sixteen articles, written by leading global researchers, focuses on key developments in the understanding of the disease at molecular levels, identification and validation of molecular targets, as well as innovative approaches towards drug discovery, development, and delivery. Beginning with an overview of AD pharmacotherapy and existing blockbuster drugs, the reviews cover the potential of both natural and synthetic small molecules; the role of cholinesterases in the on-set and progression of AD and their inhibition; the role of beta-site APP clearing enzyme-1 (BACE-1) in the production of ?-amyloid proteins, one of the key reasons of the progression of AD; and other targets identified for AD drug discovery.

Oral Communication Skills for Scientific Presentations

William B. Krantz President's Teaching Scholar and Professor Emeritus, University of Colorado, Boulder, CO, USA;Rieveschl Ohio Eminent Scholar and Professor Emeritus, University of Cincinnati, Cincinnati,OH, USA

A practical, compact guidebook covering the 'nuts and bolts' of effective public speaking

ISBN: 978-0-12-805418-5

PUB DATE: April 2016

FORMAT: Paperback

PAGES: c. 160

AUDIENCE

Students and researchers across the sciences interested in improving their oral communication skills; in particular non-native English speakers

KEY FEATURES

- Discusses best practices in putting together an effective talk
- Focuses on leveraging the speaker's existing skill sets to develop the delivery style that works best for that individual
- Features one-page quick reference guides for giving formal oral and informal poster presentations
- Addresses cross-cultural communication as well as particular concerns for non-native English speakers
- Includes a companion site with tools and video examples of formal and informal presentations for further self-guidance

DESCRIPTION

Oral Communication Skills for Scientific Presentations is intended for inexperienced speakers as well as those aspiring to improve their communication skills in making either formal or informal presentations on a technical subject. A complement to having good organization for a technical presentation is to have an effective delivery style. This book provides a template for organizing a technical talk that will include a discussion of various ways to effectively develop each part of a technical presentation.

A special feature of *Oral Communication Skills for Scientific Presentations* is the focus on making presentations to a cross-cultural audience. This relates to relatively minor considerations such as how to list the names of the co-authors on your presentation as well as to more substantive considerations such as how to handle eye contact and use humor, both of which can differ across the global spectrum of cultures. The cross-cultural focus of this book relates not only to the audience, but also to the speaker. This book also includes helpful tips for non-native English speakers.

Graduate Research, 4e

A Guide for Students in the Sciences

Robert V. Smith Collaborative Brain Trust University Consulting (CBT UC), Sacramento, CA, USA
Llewellyn D. Densmore Department of Biological Sciences, Texas Tech University, Lubbock, TX, USA
Edward F. Lener University Libraries, Virginia Tech, Blacksburg, VA, USA

This newly revised go-to resource is for graduate researchers at all stages of study and covers a range of topics including writing and preparation of research proposals, developing and refining teaching skills, and ethics and compliance areas such as research involving human subjects and animals

ISBN: 978-0-12-803749-2

PREVIOUS EDITION ISBN: 9780295977058

PUB DATE: February 2016

FORMAT: Paperback

PAGES: c. 288

AUDIENCE

Graduate student, graduate advisors, and mentors across the Sciences

KEY FEATURES

- Discusses a broad range of topics including time management, library and literature work, and grant support
- Includes a new chapter on career planning and development with advice on careers in academia, government, and the private sector
- Contains chapters that promote the development of a varied set of communication skills
- Greatly expanded treatment of graduate study and research in international settings

DESCRIPTION

Graduate Research is an all-in-one resource for prospective and matriculated graduate students in the sciences. The newly revised edition includes updates to every chapter. *Graduate Research* covers a range of topics including writing and preparation of research proposals, developing and refining teaching skills, and ethics and compliance areas such as research involving human subjects and animals.

Graduate Research helps readers navigate the multidimensional and interdisciplinary world of scientific research and it is an invaluable resource for graduate researchers as well as those in advising or mentoring roles.

Oral Exams

Preparing For and Passing Candidacy, Qualifying, and Graduate Defenses

Lee A Foote Professor and Director, Devonian Botanic Garden, University of Alberta, Edmonton, AB, Canada

This book provides students with a great resource to help them prepare for oral comprehensive and viva voca exams, and is also valuable for faculty as they prepare new questions.

ISBN: 978-0-12-802578-9

PUB DATE: September 2015

FORMAT: Paperback

PAGES: c. 192

AUDIENCE

Graduate students, postdoctoral fellows and faculty in every discipline

KEY FEATURES

- Describes in detail the general format of oral comprehensive exams, viva voce examinations and defenses, what to expect, and what the requirements are that students need to fulfill to pass.
- Includes appendices with numerous practice questions sourced from a range of disciplines and countries for individual or group learning
- Useful for Early Career academics that are supervising, supporting, and examining PhD students

DESCRIPTION

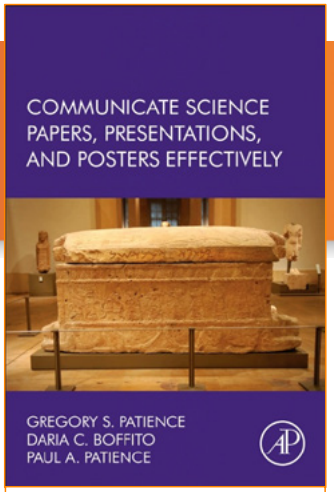
Oral Exams: Preparing For and Passing Candidacy, Qualifying, and Graduate Defenses provides guidance on how to prepare for oral comprehensive and viva voce exams.

Topics discussed include the supervisory committee, preparing the seminar, arranging content, mental preparation, question framing, and the types of questions to expect.

At its core, the book prepares students to be the best they can be by offering insights into how to interpret and appropriately respond to explicit and implied oral comps questions.

This book benefits faculty by helping them prepare new questions, also providing tips on how to mentor their students in preparation for exams.

The training included can be used to prepare for intensive qualifying or certification exams, job interviews, and presentations.



Communicate Science Papers, Presentations, and Posters Effectively

Gregory S Patience Department of Chemical Engineering, Ecole Polytechnique de Montreal, Canada
Daria C. Boffito Department of Chemical Engineering, Ecole Polytechnique de Montreal, Canada
Paul Patience Ecole Polytechnique de Montreal, Canada

The tools readers need to become better writers, presenters, and communicators

ISBN: 978-0-12-801500-1
PUB DATE: August 2015
FORMAT: Paperback
PAGES: c. 264

AUDIENCE
Graduate students, research fellows, post-docs, professors, scientists and researchers in STEM fields.

KEY FEATURES

- Covers how to accurately and clearly exhibit results, ideas, and conclusions
- Identifies phrases common in scientific literature that should never be used
- Discusses the theory of presentation, including “before and after” examples highlighting best practices
- Provides concrete, step-by-step examples on how to make camera ready graphs and tables

DESCRIPTION

Communicate Science Papers, Presentations, and Posters Effectively is a guidebook on science writing and communication that professors, students, and professionals in the STEM fields can use in a practical way. This book advocates a clear and concise writing and presenting style, enabling users to concentrate on content.

The text is useful to both native and non-native English speakers, identifying best practices for preparing graphs and tables, and offering practical guidance for writing equations. It includes content on significant figures and error bars, and provides the reader with extensive practice material consisting of both exercises and solutions.

LIFE SCIENCES
PROFESSIONAL AND CAREER DEVELOPMENT
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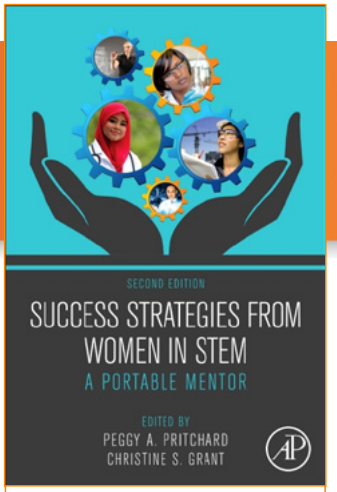


Success Strategies From Women in STEM, 2e

A Portable Mentor

Edited by: ***Peggy A. Pritchard*** Associate Librarian, Learning and Curriculum Support Team, University of Guelph, Guelph, ON, Canada
Christine Grant PhD, Full Professor of Chemical and Biomolecular Engineering and Associate Dean of Faculty Advancement, North Carolina State University, College of Engineering, Raleigh, NC, USA

A comprehensive and accessible manual that provides valuable strategies, tools, and sucess tips for women pursuing and involved in STEM careers

"...we need women to fully participate in this industry...morally and ethically, it's simply the right thing to do. This book will undoubtedly help."--**Network Security,** ***Success Strategies from Women in STEM, Second Edition***

ISBN: 978-0-12-397181-4
PREVIOUS EDITION ISBN: 978-0-12-088411-7
PUB DATE: June 2015
FORMAT: Paperback
PAGES: c. 460

AUDIENCE
Women pursuing careers or involved in careers in science, technology, engineering and mathematics

KEY FEATURES

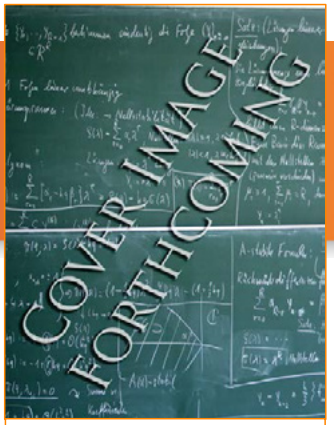
- Preserves the style and tone of the first edition by bringing together mentors, trainees and early-career professionals in a series of conversations about important topics related to careers in STEM fields, such as leadership, time stress, negotiation, networking, social media and more
- Identifies strategies that can improve career success along with stories that elucidate, engage, and inspire
- Companion website provides authoritative information from successful women engaged in STEM careers, including annotated links to key organizations, associations, granting agencies, teaching support materials, and more

DESCRIPTION

Success Strategies from Women in Stem: A Portable Mentor, Second Edition, is a comprehensive and accessible manual containing career advice, mentoring support, and professional development strategies for female scientists in the STEM fields.

This updated text contains new and essential chapters on leadership and negotiation, important coverage of career management, networking, social media, communication skills, and more. The work is accompanied by a companion website that contains annotated links, a list of print and electronic resources, self-directed learning objects, frequently asked questions, and more.

With an increased focus on international relevance, this comprehensive text contains shared stories and vignettes that will help women pursuing or involved in STEM careers develop the necessary professional and personal skills to overcome obstacles to advancement.



Nanosized Tubular Clay Minerals

Edited by: ***Peng Yuan*** CAS Key Laboratory of Mineralogy and Metallogeny, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, China
Antoine Thill Laboratoire Interdisciplinaire sur l'Organisation Nanométrique et Supramoléculaire, CEA Saclay, Gif sur Yvette, France
Faïza Bergaya Centre National de la Recherche Scientifique, Centre de Recherche sur la Matière Divisée, Orléans, France

ISBN: 978-0-08-100293-3
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 600

AUDIENCE
Research scientists, university teachers, industrial chemists, physicists, graduate students, as well as environmental engineers and technologists

Provides the latest coverage from leading scientists on a wide field of expertise regarding the current state of knowledge about nanosized tubular clay minerals, bringing a clear view of the fundamental properties of clay materials and how their properties vary in chemical composition, structure, and the ways in which their modes of occurrence affect their engineering applications

A Volume in the Developments in Clay Science Series.

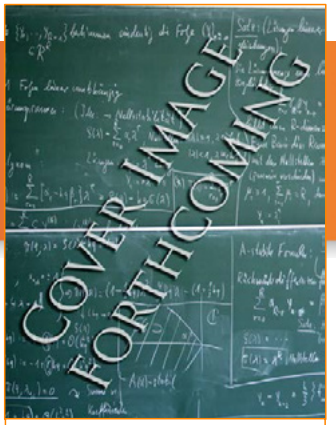
KEY FEATURES

- Examines clay properties from the molecular to the macroscopic scale
- Addresses experimental and modeling issues
- Authored by experts who are well-versed in the properties of nanosized tubular clay minerals

DESCRIPTION

Nanosized Tubular Clay Minerals provides the latest coverage from leading scientists on a wide field of expertise regarding the current state of knowledge about nanosized tubular clay minerals. All chapters have been carefully edited and coordinated, and readers will find a resource that provides a clear view of the fundamental properties of clay materials and how their properties vary in chemical composition, structure, and the ways in which their modes of occurrence affect their engineering applications.

Besides being a great reference, the book provides research scientists, university teachers, industrial chemists, physicists, graduate students, and environmental engineers and technologists with the ability to analyze and characterize clays and clay minerals to improve selectivity, along with techniques on how they can apply clays in ceramics in all aspects of industrial, geotechnical, agricultural, and environmental use.



Studies in Natural Products Chemistry

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

As an essential resource for researchers and engineers working in natural products and medicinal chemistry, this book presents current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products and their exciting new applications in the field of new drug development

A Volume in the Studies in Natural Products Chemistry Series.

ISBN: 978-0-444-63602-7

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 483

AUDIENCE

Natural product chemists, medicinal chemists, pharmacologists as well as researchers, particularly those in academia and in the pharmaceutical industry

KEY FEATURES

- Provides the latest on the use of natural products from the plant and animal kingdom and the ways in which they can offer a huge diversity of chemical structures
- Focuses on the chemistry of bioactive natural products and their exciting new applications in the pharmaceutical industry
- Presents current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products
- Contains contributions by leading authorities in the field

DESCRIPTION

Studies in Natural Products Chemistry, Volume 48, provides the latest on the use of natural products from the plant and animal kingdom and the ways in which they can offer a huge diversity of chemical structures, which are the result of biosynthetic processes that have been modulated over the millennia through genetic effects.

With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening techniques, it has become possible to isolate and then rapidly determine the structures and biological activity of natural products, thus opening up exciting opportunities in the field of new drug development.

The series covers all aspects of the science, along with the synthesis, testing, and recording of the medicinal properties of natural products. With articles written by leading authorities in their respective fields of research, the book presents current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products. It is a valuable resource for all those working in natural product and medicinal chemistry.

SERIALS

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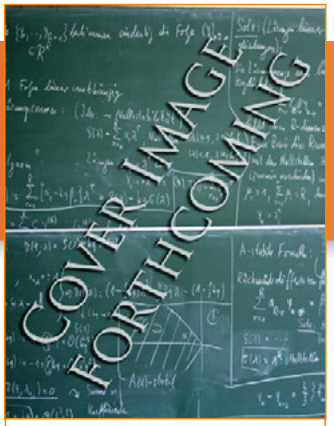


26th European Symposium on Computer Aided Process Engineering

Edited by: ***Zdravko Kravanja*** University of Maribor, Slovenia

ELSEVIER

Presents findings and discussions from the 26th European Society of Computer-Aided Process Engineering (ESCAPE) Event held in Portorož, Slovenia, with coverage of process product synthesis, design integration, modeling, and more

A Volume in the Computer Aided Chemical Engineering Series.

ISBN: 978-0-444-63428-3

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 2400

AUDIENCE

Chemical engineers, chemical process engineers, researchers in industry and academia, students, and consultants for chemical industries

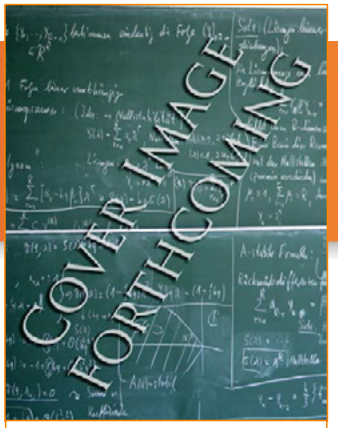
KEY FEATURES

- Presents findings and discussions from the 26th European Society of Computer-Aided Process Engineering (ESCAPE) Event

DESCRIPTION

26th *European Symposium on Computer Aided Process Engineering* contains the papers presented at the 26th European Society of Computer-Aided Process Engineering (ESCAPE) Event held at Portorož Slovenia, from June 12th to June 15th, 2016.

Themes discussed at the conference include Process-product Synthesis, Design and Integration, Modelling, Numerical analysis, Simulation and Optimization, Process Operations and Control and Education in CAPE/PSE.



Studies in Natural Products Chemistry

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

As an essential resource for researchers and engineers working in natural products and medicinal chemistry, this book presents current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products

A Volume in the Studies in Natural Products Chemistry Series.

ISBN: 978-0-444-63603-4

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 440

AUDIENCE

Natural product chemists, medicinal chemists, pharmacologists as well as researchers, particularly those in academia and in the pharmaceutical industry

KEY FEATURES

- Focuses on the chemistry of bioactive natural products
- Contains contributions by leading authorities in the field
- Presents sources of new pharmacophores

DESCRIPTION

Studies in Natural Products Chemistry contains the latest articles written by leading authorities in their respective fields of research, presenting current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products. It is an invaluable resource for anyone working in natural product and medicinal chemistry.

SERIALS

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Neutron Scattering - Magnetic and Quantum Phenomena

Edited by: ***David L Price*** CEMHTI, Orléans, France
Felix Fernandez-Alonso Rutherford Appleton Laboratory, Chilton, Didcot, UK

ELSEVIER

This book presents the breadth of opportunities and advancements provided by contemporary neutron science, detailing coverage of the application of neutron scattering in condensed matter research, and enabling researchers in a particular area to identify the aspects of their work where neutron scattering techniques might contribute

A Volume in the Experimental Methods in the Physical Sciences Series.

ISBN: 978-0-12-802049-4
PUB DATE: December 2015
FORMAT: Hardback
PAGES: c. 506

AUDIENCE
Professionals at all levels, from early-career researchers to mature scientists, working in contemporary neutron science

KEY FEATURES

- Covers the application of neutron scattering techniques in the study of quantum and magnetic phenomena, including superconductivity, multiferroics, and nanomagnetism
- Presents up-to-date reviews of recent results, aimed at enabling the reader to identify new opportunities and plan neutron scattering experiments in their own field
- Provides a good balance between theory and experimental techniques
- Provides a complement to Price and Fernandez-Alonso (Eds.), Neutron Scattering - Fundamentals published in November 2013

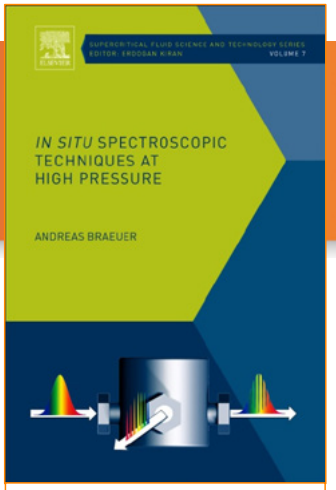
DESCRIPTION

Neutron Scattering - Magnetic and Quantum Phenomena provides detailed coverage of the application of neutron scattering in condensed matter research. The book's primary aim is to enable researchers in a particular area to identify the aspects of their work where neutron scattering techniques might contribute, conceive the important experiments to be done, assess what is required to carry them out, write a successful proposal for one of the major user facilities, and perform the experiments under the guidance of the appropriate instrument scientist.

An earlier series edited by Kurt Sköld and David L. Price, and published in the 1980s by Academic Press as three volumes in the series *Methods of Experimental Physics*, was very successful and remained the standard reference in the field for several years.

This present work has similar goals, taking into account the advances in experimental techniques over the past quarter-century, for example, neutron reflectivity and spin-echo spectroscopy, and techniques for probing the dynamics of complex materials of technological relevance.

This volume complements Price and Fernandez-Alonso (Eds.), *Neutron Scattering - Fundamentals* published in November 2013.



In situ Spectroscopic Techniques at High Pressure

Andreas Braeuer Erlangen Graduate School in Advanced Optical Technologies (SAOT) and Lehrstuhl für Technische Thermodynamik (LTT), Friedrich-Alexander Universitaet Erlangen-Nuernberg (FAU), Germany

ELSEVIER

This book showcases the enormous potential provided by the in-situ application of spectroscopic techniques at high pressures in supercritical fluid science and technology making it an ideal text for graduate level courses in the field.

A Volume in the Supercritical Fluid Science and Technology Series.

ISBN: 978-0-444-63422-1

PUB DATE: December 2015

FORMAT: Hardback

PAGES: c. 376

AUDIENCE

Chemical engineers, graduate students and spectroscopists interested in high pressure applications

KEY FEATURES

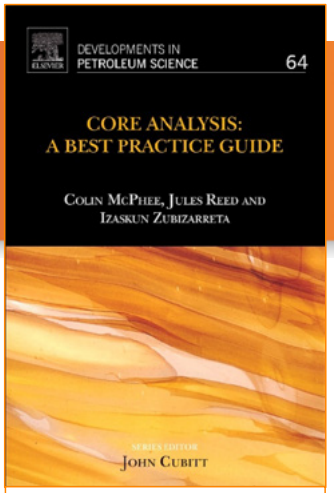
- Bridges the gap between supercritical fluid science/technology and in-situ spectroscopic techniques
- Provides a powerful guide to applying spectroscopic techniques as gainful sensors at high pressure
- Highlights the influence of a high pressure environment and high pressure equipment on spectroscopic techniques
- Presents a deep understanding of which measurements are accessible with each technique, what their limitations are, and for which application each technique is best suited

DESCRIPTION

In situ Spectroscopic Techniques at High Pressure provides a comprehensive treatment of in-situ applications of spectroscopic techniques at high pressure and their working principles, allowing the reader to develop a deep understanding of which measurements are accessible with each technique, what their limitations are, and for which application each technique is best suited.

Coverage is also given to the instrumental requirements for these applications, with respect to the high pressure instrumentation and the spectroscopic components of the equipment.

The pedagogical style of the book is supplemented by the inclusion of "study questions" which aim to make it useful for graduate-level courses.



Core Analysis: A Best Practice Guide

Colin McPhee LR Senergy Ltd., UK
Jules Reed LR Senergy Ltd., UK
Izaskun Zubizarreta LR Senergy Ltd., UK

ELSEVIER

Provides essential information on planning, designing, managing, and interpreting core analysis programs

A Volume in the Developments in Petroleum Science Series.

KEY FEATURES

- Provides a practical overview of core analysis, from coring at the well site to laboratory data acquisition and interpretation
- Defines current best practice in core analysis preparation and test procedures, and the diagnostic tools used to quality control core data
- Provides essential information on design of core analysis programs and to judge the quality and reliability of core analysis data ultimately used in reservoir evaluation
- Of specific interest to those working in core analysis, porosity, relative permeability, and geomechanics

DESCRIPTION

Core Analysis: A Best Practice Guide is a practical guide to the design of core analysis programs. Written to address the need for an updated set of recommended practices covering special core analysis and geomechanics tests, the book also provides unique insights into data quality control diagnosis and data utilization in reservoir models.

The book's best practices and procedures benefit petrophysicists, geoscientists, reservoir engineers, and production engineers, who will find useful information on core data in reservoir static and dynamic models. It provides a solid understanding of the core analysis procedures and methods used by commercial laboratories, the details of lab data reporting required to create quality control tests, and the diagnostic plots and protocols that can be used to identify suspect or erroneous data.

ISBN: 978-0-444-63533-4
PUB DATE: December 2015
FORMAT: Hardback
PAGES: c. 830

AUDIENCE

Petrophysicists, geoscientists, reservoir engineers and production engineers

SERIALS

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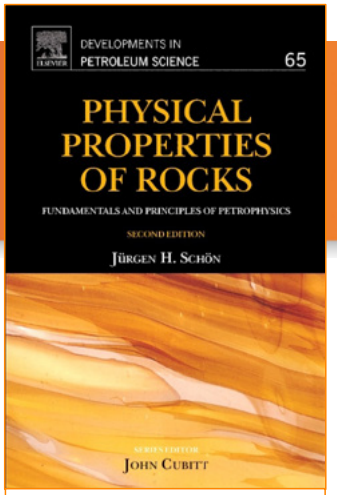


Physical Properties of Rocks, 2e

Fundamentals and Principles of Petrophysics

Juergen H. Schön Montanuniversität, Leoben, Austria

ELSEVIER

Describes the physical fundamentals of rock properties, based on typical experimental results and relevant theories and models

A Volume in the Developments in Petroleum Science Series.

KEY FEATURES

Physical Properties of Rocks, Second Edition, guides readers through a systematic presentation of all relevant physical properties and their interrelationships in parallel with experimental and theoretical basic knowledge and a guide for handling core models and theories.

DESCRIPTION

The interpretation of geophysical data in exploration geophysics, well logging, engineering, mining and environmental geophysics requires knowledge of the physical properties of rocks and their correlations. Physical properties are a "key" for combined interpretation techniques. The study of rock physics provides an interdisciplinary treatment of physical properties, whether related to geophysical, geotechnical, hydrological or geological methodology.

Physical Properties of Rocks, 2nd Edition, describes the physical fundamentals of rock properties, based on typical experimental results and relevant theories and models. It provides readers with all relevant rock properties and their interrelationships in one concise volume. Furthermore, it guides the reader through experimental and theoretical knowledge in order to handle models and theories in practice.

Throughout the book the author focuses on the problems of applied geophysics with respect to exploration and the expanding field of applications in engineering and mining geophysics, geotechnics, hydrology and environmental problems, and the properties under the conditions of the upper Earth crust.

ISBN: 978-0-08-100404-3

PREVIOUS EDITION ISBN: 9780080443461

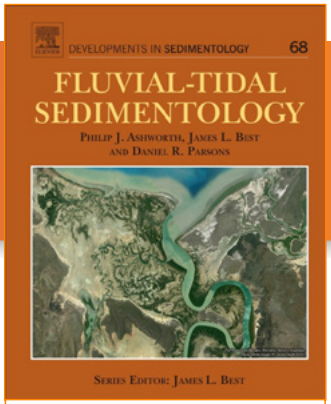
PUB DATE: December 2015

FORMAT: Hardback

PAGES: c. 498

AUDIENCE

Students and professionals working in the areas of applied geophysics, well-log analysis, and reservoir engineering as well as geophysicists in engineering, geotechnics, hydrogeology, and geothermal applications



Fluvial-Tidal Sedimentology

Edited by: ***Philip J Ashworth*** University of Brighton, UK
James L. Best University of Illinois, Champaign IL, USA
Daniel R Parsons University of Hull, UK

ELSEVIER

This unique reference on tidal fluvial transition includes valuable reference material for the sedimentology of the tidal-fluvial transition zone, presenting the latest research on the processes and deposits of the tidal-fluvial transition and documenting recent major field programs that have quantified the flow.

ISBN: 978-0-444-63529-7
PUB DATE: November 2015
FORMAT: Hardback
PAGES: c. 634

AUDIENCE
Academic and industrial geoscientists, as well as researchers in the global hydrocarbon industry

A Volume in the Developments in Sedimentology Series.

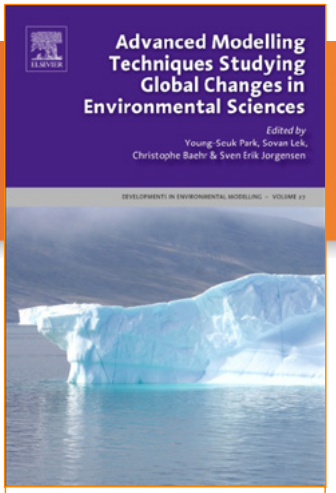
KEY FEATURES

- Presents the latest outcomes from recent, large, integrated field programs in estuaries around the world
- Gives detailed field descriptions (outcrop, borehole, core, contemporary sediments) of tidal-fluvial deposits
- Accesses new models and validation datasets for estuarine processes and deposits
- Presents descriptions of contemporary environments and ancient outcrop analogues to characterize the facies change through the tidal-fluvial transition

DESCRIPTION

Fluvial-Tidal Sedimentology provides information on the 'Tidal-Fluvial Transition', the transition zone between river and tidal environments, and includes contributions that address some of the most fundamental research questions, including how the morphology of the tidal-fluvial transition zone evolves over short (days) and long (decadal) time periods and for different tidal and fluvial regimes, the structure of the river flow as it varies in its magnitude over tidal currents and how this changes at the mixing interface between fresh and saline water and at the turbidity maximum, the role of suspended sediment in controlling bathymetric change and bar growth and the role of fine-grained sediment (muds and flocs), whether it is possible to differentiate between 'fluvial' and 'tidally' influenced bedforms as preserved in bars and within the adjacent floodplain and what are the diagnostic sedimentary facies of tidal-fluvial deposits and how are these different from 'pure' fluvial and tidal deposits, amongst other topics.

The book presents the latest research on the processes and deposits of the tidal-fluvial transition, documenting recent major field programs that have quantified the flow, sediment transport, and bed morphology in tidal-fluvial zones. It uses description of contemporary environments and ancient outcrop analogues to characterize the facies change through the tidal-fluvial transition.



Advanced Modelling Techniques Studying Global Changes in Environmental Sciences

Edited by: ***Young-Seuk Park*** Kyung Hee University, Seoul, Republic of Korea
Sovan Lek University of Toulouse, France
Christophe Baehr Météo-France, Toulouse, France
Sven Erik Jørgensen Emeritus Professor, Copenhagen University, Denmark

ISBN: 978-0-444-63536-5
PUB DATE: October 2015
FORMAT: Hardback
PAGES: c. 360

AUDIENCE
Environmental scientists and engineers, ecologists, environmental modellers and scientists studying climate change

This book provides overviews and perspectives on advanced modeling techniques in ecology and the environmental sciences as presented at the 2013 conference of the International Society for Ecological Modeling (ISEM), an important and active research community contributing to this arena.

A Volume in the Developments in Environmental Modelling Series.

KEY FEATURES

- Presents state-of-the-art modeling techniques
- Drawn from the 2013 conference of the International Society for Ecological Modeling (ISEM), an important and active research community contributing to this arena
- Integrates knowledge of advanced modeling techniques in ecological and environmental sciences
- Describes new applications for sustainability

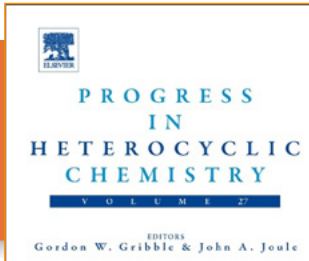
DESCRIPTION

Advanced Modelling Techniques Studying Global Changes in Environmental Sciences discusses the need for immediate and effective action, guided by a scientific understanding of ecosystem function, to alleviate current pressures on the environment.

Research, especially in Ecological Modeling, is crucial to support the sustainable development paradigm, in which the economy, society, and the environment are integrated and positively reinforce each other.

Content from this book is drawn from the 2013 conference of the International Society for Ecological Modeling (ISEM), an important and active research community contributing to this arena.

Some progress towards gaining a better understanding of the processes of global change has been achieved, but much more is needed. This conference provides a forum to present current research using models to investigate actions towards mitigating and adapting to change.



Progress in Heterocyclic Chemistry

Edited by: ***Gordon W. Gribble*** Department of Chemistry, Dartmouth College, Hanover, NH, USA
John A. Joule Emeritus Professor, The University of Manchester, UK

A comprehensive annual survey of both original material published in the literature of heterocyclic chemistry in 2014 and developing topics of interest

A Volume in the Progress in Heterocyclic Chemistry Series.

KEY FEATURES

- Recognized as the premiere review of heterocyclic chemistry
- Includes contributions from leading researchers in the field
- Provides a systematic survey of the important 2014 heterocyclic chemistry literature
- Includes articles on new developing topics of interest to heterocyclic chemists

DESCRIPTION

Progress in Heterocyclic Chemistry (PHC), Volume 27, is an annual review series commissioned by the International Society of Heterocyclic Chemistry (ISHC). Volumes in the series contain both highlights of the previous year's literature on heterocyclic chemistry and articles on new developing topics of particular interest to heterocyclic chemists.

The highlight chapters in Volume 27 are all written by leading researchers and these chapters constitute a systematic survey of the important original material reported in the literature of heterocyclic chemistry in 2014. Additional articles in this volume are "The Use of Propargyl Vinyl Ethers in Heterocycle Synthesis" and "Recent Progress of Phosphonium Coupling in Heterocyclic and Medicinal Chemistry."

As with previous volumes in the series, Volume 27 will enable academic and industrial chemists, and advanced students, to keep abreast of developments in heterocyclic chemistry in a convenient way.

ISBN: 978-0-08-100024-3
PUB DATE: October 2015
FORMAT: Hardback
PAGES: c. 624

AUDIENCE

Organic chemists, academic and industrial chemists, as well as advanced students

SERIALS
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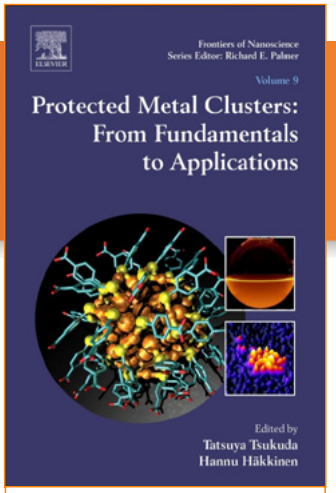


Protected Metal Clusters: From Fundamentals to Applications

Edited by: ***Tatsuya Tsukuda*** The University of Tokyo, Japan
Hannu Häkkinen University of Jyväskylä, Finland

ISBN: 978-0-08-100086-1
PUB DATE: September 2015
FORMAT: Hardback
PAGES: c. 358

AUDIENCE

Researchers working in the field of nanoscience as well as graduate students in chemistry and physics

The first reference on protected metal clusters explains their formation and important role in the future of molecular electronics, catalysis, sensing, biological imaging, and medical diagnosis and therapy

A Volume in the Frontiers of Nanoscience Series.

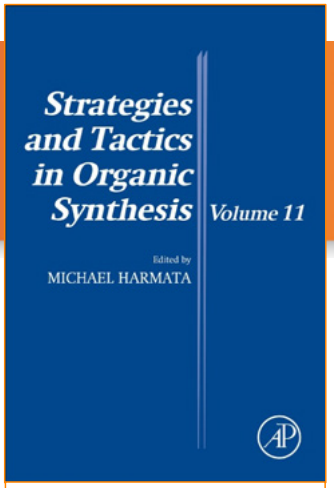
KEY FEATURES

- Surveys the fundamental concepts and potential applications of atomically precise metal clusters protected by organic ligands.
- Provides well-organized, tutorial style chapters that are ideal for teaching and self-study
- In-depth descriptions by top scientists in the field
- Presents the state-of-the art of protected metal clusters and their future prospects

DESCRIPTION

Protected Metal Clusters: From Fundamentals to Applications surveys the fundamental concepts and potential applications of atomically precise metal clusters protected by organic ligands.

As this class of materials is now emerging as a result of breakthroughs in synthesis and characterization that have taken place over the last few years, the book provides the first reference with a focus on these exciting novel nanomaterials, explaining their formation, and how, and why, they play an important role in the future of molecular electronics, catalysis, sensing, biological imaging, and medical diagnosis and therapy.



Strategies and Tactics in Organic Synthesis

Edited by: ***M. Harmata*** University of Missouri, USA

ELSEVIER

This inspirational classic uses firsthand narrative accounts to illustrate how to overcome challenges and advance the field of organic synthesis.

A Volume in the Strategies and Tactics in Organic Synthesis Series.

KEY FEATURES

- Presents state-of-the-art developments in organic synthesis
- Provides insight and offers new perspective to problem-solving
- Written by leading experts in the field
- Uses firsthand narrative accounts to illustrate vividly the challenges and joys involved in advancing the science of organic synthesis

DESCRIPTION

Strategies and Tactics in Organic Synthesis provides a forum for investigators to discuss their approach to the science and art of organic synthesis. Rather than a simple presentation of data or a secondhand analysis, this classic provides stories that vividly demonstrate the power of the human endeavor known as organic synthesis and the creativity and tenacity of its practitioners.

Firsthand accounts of each project tell of the excitement of conception, the frustration of failure, and the joy experienced when either rational thought or good fortune gives rise to the successful completion of a project. This book series shows how synthesis is really done. Readers will be educated, challenged, and inspired by these accounts, which portray the idea that triumphs do not come without challenges.

This innovative approach also helps illustrate how challenges to further advance the science and art of organic synthesis can be overcome, driving the field forward to meet the demands of society by discovering new reactions, creating new designs, and building molecules with atom and step economies that provide functional solutions to create a better world.

ISBN: 978-0-08-100023-6
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 422

AUDIENCE

Organic chemists; academic libraries; chemical and pharmaceutical companies

SERIALS

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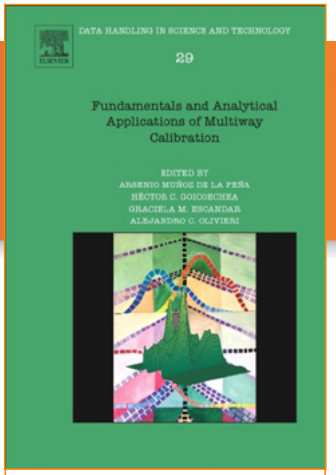


Fundamentals and Analytical Applications of Multi-way Calibration

Edited by: ***Alejandro C Olivieri*** University of Rosario, Argentina
Graciela M. Escandar University of Rosario, Argentina
Héctor C. Goicoechea University of Litoral, Santa Fe, Argentina
Arsenio Muñoz de la Peña University of Extramadura, Spain

An updated resource written by well-known experts which includes data generation and data processing algorithms for multi-way analytical calibration

A Volume in the Data Handling in Science and Technology Series.

ISBN: 978-0-444-63527-3
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 598

AUDIENCE
Chemometricians, analytical chemists and laboratory chemists

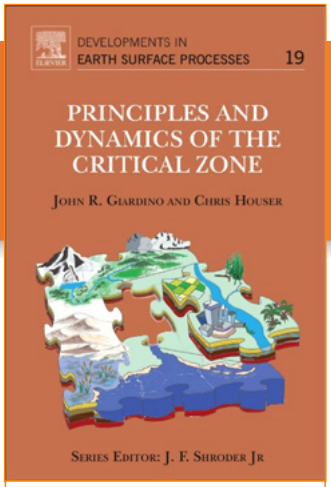
KEY FEATURES

- Includes the most advanced techniques, methods, and algorithms related to multi-way calibration and the ways they can be applied to solve actual analytical problems
- Presents researchers with a set of effective tools they can use to obtain the maximum information from instrumental data
- Provides comprehensive coverage of the main aspects of multi-way analysis, including fundamentals and selected applications of chemometrics

DESCRIPTION

Fundamentals and Analytical Applications of Multi-Way Calibration presents researchers with a set of effective tools they can use to obtain the maximum information from instrumental data. It includes the most advanced techniques, methods, and algorithms related to multi-way calibration and the ways they can be applied to solve actual analytical problems.

This book provides a comprehensive coverage of the main aspects of multi-way analysis, including fundamentals and selected applications of chemometrics that can resolve complex analytical chemistry problems through the use of multi-way calibration.



Principles and Dynamics of the Critical Zone

Edited by: ***John R. Giardino*** Professor of Geology & Geophysics and Water Management and Hydrological Science, Texas A&M University, College Station, TX, USA
Chris Houser Associate Professor of Geography and Geology and Geophysics, Texas A&M University, College Station, TX, USA

ELSEVIER

A process-based description of the critical zone in a wide range of environments

A Volume in the Developments in Earth Surface Processes Series.

KEY FEATURES

- The first text to address the principles and concepts of the Critical Zone
- A comprehensive approach to the processes responsible for the development and structure of the Critical Zone in a number of environments
- An essential tool for undergraduate and graduate students, and researchers developing cutting-edge proposals

DESCRIPTION

Principles and Dynamics of the Critical Zone is an invaluable resource for undergraduate and graduate courses and an essential tool for researchers developing cutting-edge proposals. It provides a process-based description of the Critical Zone, a place that The National Research Council (2001) defines as the "heterogeneous, near surface environment in which complex interactions involving rock, soil, water, air, and living organisms regulate the natural habitat and determine the availability of life-sustaining resources."

This text provides a summary of Critical Zone research and outcomes from the NSF funded Critical Zone Observatories, providing a process-based description of the Critical Zone in a wide range of environments with a specific focus on the important linkages that exist amongst the processes in each zone.

This book will be useful to all scientists and students conducting research on the Critical Zone within and outside the Critical Zone Observatory Network, as well as scientists and students in the geosciences – atmosphere, geomorphology, geology and pedology.

ISBN: 978-0-444-63369-9
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 14

AUDIENCE

Scientists and students conducting research on the Critical Zone within and outside the Critical Zone Observatory Network, as well as scientists and students in the geosciences: atmosphere, geomorphology, geology and pedology

SERIALS
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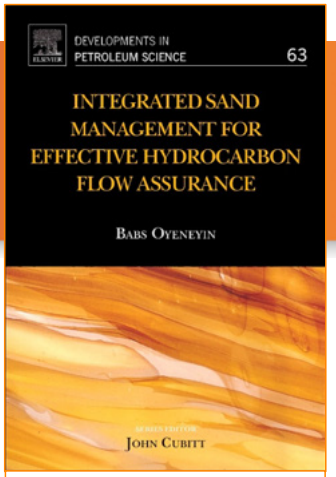


Integrated Sand Management For Effective Hydrocarbon Flow Assurance

Edited by: ***Babs Oyeneyin*** Intelligent Flow Solutions Ltd., Edinburgh, UK

ELSEVIER

Offers a solutions strategy to fundamental issues associated with wells/reservoirs experiencing sanding problems, especially in deepwater environments

A Volume in the Developments in Petroleum Science Series.

ISBN: 978-0-444-62637-0

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 268

AUDIENCE

Reservoir, Subsea and Pipeline Engineers, Well Engineers, Production Engineers, Asset Managers, R&D and non-Technical personnel supporting the offshore upstream oil and gas industry.

KEY FEATURES

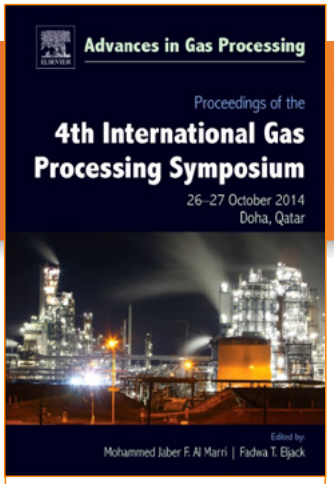
- Reference for knowledge transfer and skills development in sand management for effective flow assurance
- Emphasis on HP-HT and deepwater environments
- Meets the needs of new and practising engineers alike as well as non-technical personnel supporting the offshore industry

DESCRIPTION

This *Handbook* provides solutions to the fundamental issues associated with wells and reservoirs experiencing sanding problems, especially in deepwater environments.

Sand Management is a massive challenge for the petroleum industry as it extends its exploration activities to new frontiers. Challenging ultra deepwater, High Pressure-High Temperature (HP-HT) and Arctic environments require engineers to drill more complex wells and manage more complex reservoirs, the majority of which are prone to massive sand production.

Covering such fundamentals as how to maximize individual wells and field development performance, as well as how to minimize operational cost, non-productive time and guarantee flow assurance across the entire composite production system from reservoirs through the wellbore to the topside and flow lines, this handbook explains that the biggest challenge facing operators is the shortage of sand management personnel and helps companies realize the value of their assets.



Proceedings of the 4th International Gas Processing Symposium

Qatar, October 2014

Edited by: ***Mohammed Jaber F Al Marri*** Qatar University, Doha, Qatar
Fadwa ElJack Gas Processing Center, Dohar, Qatar

ELSEVIER

Covering themes closely related to natural gas utilization, sustainability and excellence in gas processing

A Volume in the Advances in Gas Processing Series.

KEY FEATURES

- Provides state-of-the-art contributions in the area of gas processing
- Covers solutions to technical and environmental problems
- Input from academia and industry

DESCRIPTION

Natural gas continues to be the fuel of choice for power generation and feedstock for a range of petrochemical industries. This trend is driven by environmental, economic and supply considerations with a balance clearly tilting in favor of natural gas as both fuel and feedstock. Despite the recent global economic uncertainty, the oil and gas industry is expected to continue its growth globally, especially in emerging economies. The expansion in LNG capacity coupled with recently launched and on-stream GTL plants poses real technological and environmental challenges. These important developments coupled with a global concern on green house gas emissions provide a fresh impetus to engage in new and more focused research activities aimed at mitigating or resolving the challenges facing the industry. Academic researchers and plant engineers in the gas processing industry will benefit from the state of the art papers published in this collection that cover natural gas utilization, sustainability and excellence in gas processing.

ISBN: 978-0-444-63461-0
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 410

AUDIENCE

Process engineers and technology developers in the oil and gas industry; researchers in the field of energy, chemical engineering, petroleum engineering, mechanical engineering

SERIALS

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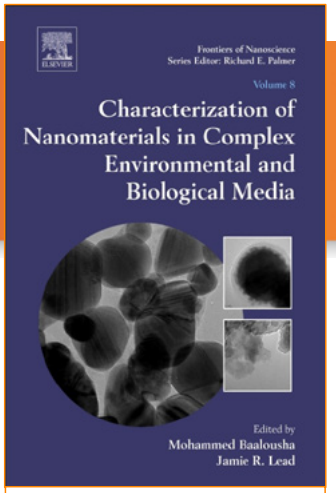


Characterization of Nanomaterials in Complex Environmental and Biological Media

Edited by: ***Mohammed Baalousha*** University of South Carolina, USA
Jamie Lead University of South Carolina, Columbia, USA

ELSEVIER

Presents the novel properties and consumer and industrial applications of nanomaterials plus their relevance to environmental and toxicological studies

A Volume in the Frontiers of Nanoscience Series.

ISBN: 978-0-08-099948-7

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 304

AUDIENCE

Academics, professionals and researchers in all scientific disciplines, especially the fields of environmental nanoscience, nanotoxicology and nanotechnology; postgraduate students at MSc and PhD levels in environmental nanoscience, nanotoxicology and nanotechnology; regulatory bodies; government agencies and those working in the nanotechnology industry.

KEY FEATURES

- Addresses the requirements, challenges, and solutions for nanomaterial characterization in environmentally complex media
- Focuses on technique limitations, appropriate data collection, data interpretation, and analysis
- Aids in understanding and comparing nanomaterial characterization data reported in the literature using different analytical tools
- Includes case studies of characterization relevant complex media to enhance understanding

DESCRIPTION

Characterization of Nanomaterials in Complex Environmental and Biological Media covers the novel properties of nanomaterials and their applications to consumer products and industrial processes.

The book fills the growing gap in this challenging area, bringing together disparate strands in chemistry, physics, biology, and other relevant disciplines. It provides an overview on nanotechnology, nanomaterials, nano(eco)toxicology, and nanomaterial characterization, focusing on the characterization of a range of nanomaterial physicochemical properties of relevance to environmental and toxicological studies and their available analytical techniques.

Readers will find a multidisciplinary approach that provides highly skilled scientists, engineers, and technicians with the tools they need to understand and interpret complicated sets of data obtained through sophisticated analytical techniques.

SERIALS

Please contact your Elsevier Sales or Customer Service Representative

12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering

Edited by: ***Krist V. Gernaey*** Technical University Denmark, Lyngby, Denmark
Jakob K. Huusom CAPEC, Technical University of Denmark, Lyngby, Denmark
Rafiqul Gani CAPEC, Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark

ELSEVIER

Defining the new frontiers of process engineering to stimulate collaboration between academia and industry towards sustainability

A Volume in the Computer Aided Chemical Engineering Series.

ISBN: 978-0-444-63429-0
PUB DATE: May 2015
FORMAT: Hardback
PAGES: c. 2550

AUDIENCE

Chemical engineers, chemical process engineers, researchers in industry and academia, students, and consultants for chemical industries

KEY FEATURES

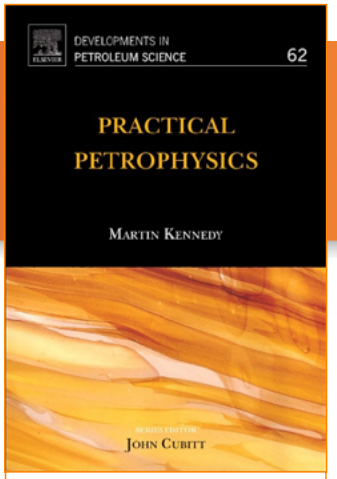
- Highlights how the Process Systems Engineering/Computer-Aided Process Engineering community contributes to the sustainability of modern society
- Presents findings and discussions from both the 12th Process Systems Engineering (PSE) and 25th European Society of Computer-Aided Process Engineering (ESCAPE) Events
- Establishes the core products of Process Systems Engineering/Computer Aided Process Engineering
- Defines the future challenges of the Process Systems Engineering/Computer Aided Process Engineering community

DESCRIPTION

25th European Symposium on Computer-Aided Process Engineering contains the papers presented at the *12th Process Systems Engineering (PSE) and 25th European Society of Computer Aided Process Engineering (ESCAPE)* Joint Event held in Copenhagen, Denmark, 31 May - 4 June 2015.

The purpose of these series is to bring together the international community of researchers and engineers who are interested in computing-based methods in process engineering. This conference highlights the contributions of the PSE/CAPE community towards the sustainability of modern society.

Contributors from academia and industry establish the core products of PSE/CAPE, define the new and changing scope of our results, and future challenges. Plenary and keynote lectures discuss real-world challenges (globalization, energy, environment, and health) and contribute to discussions on the widening scope of PSE/CAPE versus the consolidation of the core topics of PSE/CAPE.



Practical Petrophysics

Edited by: ***Martin Kennedy*** Nautilus/IHRDC, Australia

A guide to the principles and practice of petrophysics in understanding petroleum reservoirs

A Volume in the Developments in Petroleum Science Series.

KEY FEATURES

- Principles and practice are given equal emphasis
- Simple models and concepts explain the underlying principles
- Extensive use of contemporary, real-life examples

DESCRIPTION

Practical Petrophysics looks at both the principles and practice of petrophysics in understanding petroleum reservoirs. It concentrates on the tools and techniques in everyday use, and addresses all types of reservoirs, including unconventionals.

The book provides useful explanations on how to perform fit for purpose interpretations of petrophysical data, with emphasis on what the interpreter needs and what is practically possible with real data. Readers are not limited to static reservoir properties for input to volumetrics, as the book also includes applications such as reservoir performance, seismic attribute, geo-mechanics, source rock characterization, and more.

ISBN: 978-0-444-63270-8

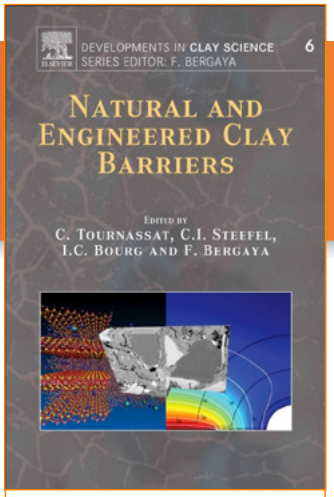
PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 406

AUDIENCE

All sub-surface professionals who are users of petrophysical interpretations. Graduate petroleum engineers and geologists, operations geologists, and drilling engineers



Natural and Engineered Clay Barriers

Edited by: ***Christophe Tournassat*** Bureau de Recherches Géologiques et Minières, Orléans, France
Carl I. Steefel Lawrence Berkeley National Laboratory, Berkeley, CA, USA
Ian C. Bourg Lawrence Berkeley National Laboratory, Berkeley, CA, USA
Faïza Bergaya Centre National de la Recherche Scientifique, Centre de Recherche sur la Matière Divisée, Orléans, France

ELSEVIER

Provides the basis to clay and non-clay scientists for the identification of recent breakthroughs and the remaining challenges in the field of clay barriers

A Volume in the Developments in Clay Science Series.

KEY FEATURES

- Examines clay properties from the molecular to the macroscopic scale
- Addresses experimental and modeling issues
- Authored by experts in the properties of clay barriers

DESCRIPTION

Clays are used as barriers for the isolation of landfills and contaminated sites. They are envisioned as long-term storage media for hazardous materials and radioactive wastes, and as seals in the case of geological CO2 sequestration or energy storage. Clay properties greatly influence the integrity, efficiency, and safety of these applications.

Natural and Engineered Clay Barriers provides a clear view of the fundamental properties of clay materials and how these properties affect their engineering applications. This volume focuses on how the mass transfer properties (hydraulic permeability, gas fluxes, molecular diffusion, semi-permeable membrane properties), geochemical reactivity (adsorption, dissolution) and mechanical properties of clay barriers at the macroscale are influenced by phenomena that occur at clay mineral - water interfaces.

ISBN: 978-0-08-100027-4
PUB DATE: May 2015
FORMAT: Hardback
PAGES: c. 430

AUDIENCE

Scientists, researchers, and graduate students in the areas of clay science, hazardous waste management, high-level radioactive waste management, and geologic carbon sequestration

SERIALS
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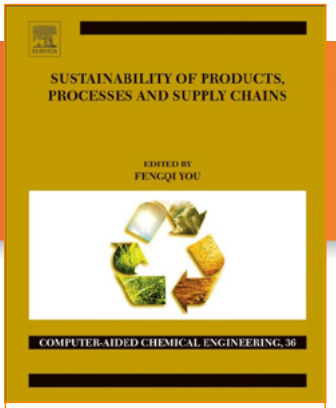


Sustainability of Products, Processes and Supply Chains: Theory and Applications

Edited by: ***Fengqi You*** Northwestern University, Evanston, IL, USA

ELSEVIER

An international perspective on sustainability in the chemical industry, drawing on relevant case studies and applications

A Volume in the Computer Aided Chemical Engineering Series.

ISBN: 978-0-444-63472-6

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 662

AUDIENCE

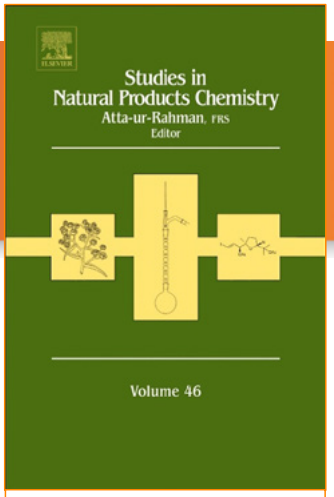
Researchers of sustainability, product design, process and energy systems modeling, and supply chain optimization industrial professionals working on sustainability analysis, product development, process design and supply chain management

KEY FEATURES

- Presents recent theoretical developments and applications on the interface between sustainability engineering and process engineering
- Offers cutting-edge, holistic analyses of key challenges associated with computer-aided tools for incorporating sustainability principles and approaches into the design and operations of multi-scale process systems
- Brings together the perspectives of leading researchers to stimulate innovative thinking in terms of sustainability

DESCRIPTION

Sustainability of Products, Processes and Supply Chains: Theory and Applications presents the recent theoretical developments and applications on the interface between sustainability and process systems engineering. It offers a platform for cutting-edge, holistic analyses of key challenges associated with computer-aided tools for incorporating sustainability principles and approaches into the design and operations of multi-scale process systems, ranging from molecular and products systems, to energy and chemical processes, and supply chains.



Studies in Natural Products Chemistry

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

An essential resource for researchers and engineers working in natural products and medicinal chemistry

A Volume in the Studies in Natural Products Chemistry Series.

KEY FEATURES

- Focuses on the chemistry of bioactive natural products
- Contains contributions by leading authorities in the field
- Presents sources of new pharmacophores

DESCRIPTION

Natural products present in the plant and animal kingdom offer a huge diversity of chemical structures, which are the result of biosynthetic processes that have been modulated over the millennia through genetic effects. With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening techniques, it has become possible to isolate and then determine the structures and biological activity of natural products rapidly, thus opening up to the pharmaceutical industry exciting opportunities in the field of new drug development. The series covers all of the above as well as the synthesis, testing and recording of the medicinal properties of natural products.

With articles written by leading authorities in their respective fields of research, **Studies in Natural Products Chemistry, Volume 46** presents current frontiers and future guidelines for research based on important discoveries made in the field of bioactive natural products. It is a valuable resource for all those working in natural product and medicinal chemistry.

ISBN: 978-0-444-63462-7

PUB DATE: April 2015

FORMAT: Hardback

PAGES: c. 554

AUDIENCE

Natural product chemists, medicinal chemists, pharmacologists as well as researchers, particularly those in academia and in the pharmaceutical industry

SERIALS

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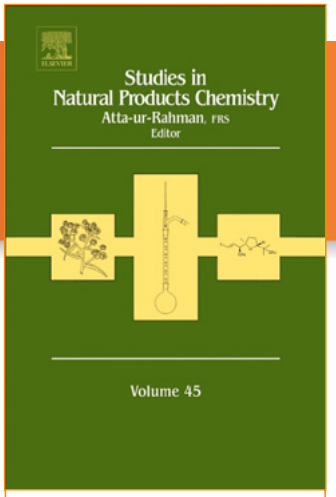

Studies in Natural Products Chemistry

Edited by: ***Atta-ur-Rahman*** Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

An essential resource for researchers and engineers working in natural products and medicinal chemistry

A Volume in the Studies in Natural Products Chemistry Series.

KEY FEATURES

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- Contains contributions by leading authorities in the field
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DESCRIPTION

Natural products in the plant and animal kingdom offer a huge diversity of chemical structures that are the result of biosynthetic processes that have been modulated over the millennia through genetic effects. With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening techniques, it has become possible to isolate and then determine the structures and biological activity of natural products rapidly, thus opening up exciting opportunities in the field of new drug development to the pharmaceutical industry.

The series also covers the synthesis or testing and recording of the medicinal properties of natural products, providing cutting edge accounts of the fascinating developments in the isolation, structure elucidation, synthesis, biosynthesis and pharmacology of a diverse array of bioactive natural products.

ISBN: 978-0-444-63473-3

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 538

AUDIENCE

Natural product chemists, medicinal chemists, pharmacologists as well as researchers, particularly those in academia and in the pharmaceutical industry

SERIALS

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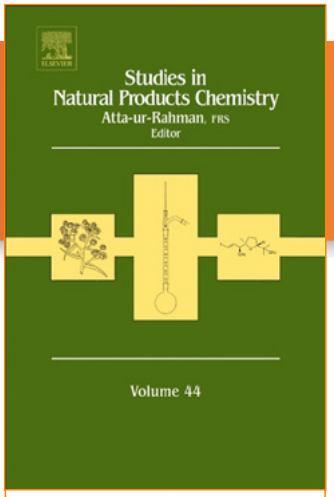

Studies in Natural Products Chemistry

Atta-ur-Rahman Professor Emeritus, International Center for Chemical and Biological Sciences (H. E. J. Research Institute of Chemistry and Dr. Panjwani Center for Molecular Medicine and Drug Research), University of Karachi, Karachi, Pakistan

ELSEVIER

An essential resource for researchers and engineers working in natural products and medicinal chemistry

A Volume in the Studies in Natural Products Chemistry Series.

KEY FEATURES

- Focuses on the chemistry of bioactive natural products
- Contains contributions by leading authorities in the field
- Presents sources of new pharmacophores

DESCRIPTION

Natural products in the plant and animal kingdom offer a huge diversity of chemical structures that are the result of biosynthetic processes that have been modulated over the millennia through genetic effects. With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening techniques, it has become possible to isolate and then determine the structures and biological activity of natural products rapidly, thus opening up exciting opportunities in the field of new drug development to the pharmaceutical industry.

The series also covers the synthesis or testing and recording of the medicinal properties of natural products, providing cutting edge accounts of the fascinating developments in the isolation, structure elucidation, synthesis, biosynthesis and pharmacology of a diverse array of bioactive natural products.

ISBN: 978-0-444-63460-3

PUB DATE: January 2015

FORMAT: Hardback

PAGES: c. 532

AUDIENCE

Natural product chemists, medicinal chemists, pharmacologists as well as researchers, particularly those in academia and in the pharmaceutical industry

SERIALS

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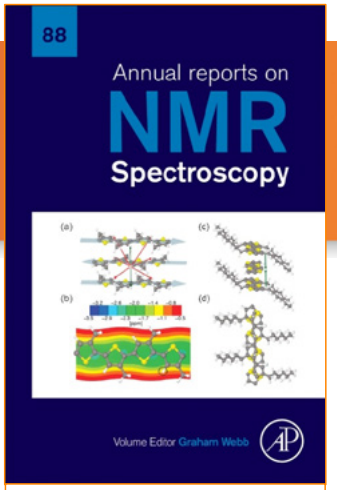

Annual Reports on NMR Spectroscopy, Vol 88

Annual Reports on NMR Spectroscopy

Edited by: ***Graham A. Webb*** Royal Society of Chemistry, Burlington House, London, UK

This established annual report provides a thorough accounting of the progress made in nuclear magnetic resonance (NMR) spectroscopy and its many applications for both specialists and nonspecialists alike

ISBN: 978-0-12-804713-2

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 300

AUDIENCE

Organic, inorganic, analytical and physical chemists, biochemists, structural biologists, physicists and all those studying and using NMR spectroscopy

KEY FEATURES

- Serves as the premier resource for learning the new techniques and applications of NMR spectroscopy
- Presents a thorough accounting of the progress made in nuclear magnetic resonance (NMR) spectroscopy and its many applications
- Provides a key reference for chemists and physicists using NMR spectroscopy to study the structure and dynamics of molecules

DESCRIPTION

Annual Reports on NMR Spectroscopy provides a thorough and in-depth accounting of the progress made in nuclear magnetic resonance (NMR) spectroscopy and its many applications. Nuclear magnetic resonance (NMR) is an analytical tool used by chemists and physicists to study the structure and dynamics of molecules. In recent years, no other technique has gained as much significance as NMR spectroscopy. It is used in all branches of science in which precise structural determination is required, and in which the nature of interactions and reactions in solution is being studied.

This book has established itself as a premier resource for both specialists and non-specialists alike who want to become familiar with the new techniques and applications of NMR spectroscopy.

Advances in Organometallic Chemistry, Vol 65

Advances in Organometallic Chemistry

Edited by: ***Pedro J. Pérez*** Homogeneous Catalysis Laboratory, Center for Research in Sustainable Chemistry, Universidad de Huelva, Huelva, Spain

This series continually publishes cutting-edge reviews in the field of organometallic chemistry, covering topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more

ISBN: 978-0-12-804710-1

PUB DATE: June 2016

FORMAT: Hardback

PAGES: c. 180

AUDIENCE

Researchers involved in Organometallic Chemistry from a wide perspective, including synthetic protocols, mechanistic studies and practical applications.

KEY FEATURES

- Contains contributions from leading authorities in the field of organometallic chemistry
- Covers topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more
- Informs and updates readers on all the latest developments in the field
- Carefully edited to provide easy-to-read material

DESCRIPTION

Advances in Organometallic Chemistry contains authoritative reviews on the field of organometallic chemistry, covering topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more. The book will benefit a wide range of researchers involved in organometallic chemistry, including synthetic protocols, mechanistic studies, and practical applications.

SERIALS

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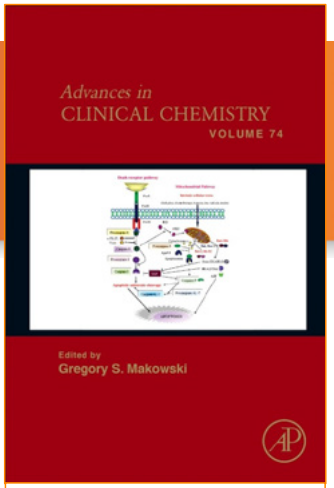

Advances in Clinical Chemistry, Vol 74

Advances in Clinical Chemistry

Edited by: ***Gregory S. Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This book, part of an internationally acclaimed series, continually publishes cutting-edge research and reviews in the field of clinical chemistry, and is the benchmark for novel analytical approaches in the clinical laboratory

KEY FEATURES

- Contains the expertise of international contributors
- Provides the latest cutting-edge technologies in the field
- Authored by world-renowned clinical laboratory scientists, physicians, and research scientists

DESCRIPTION

Advances in Clinical Chemistry, Volume 74, the latest installment in this internationally acclaimed series, contains chapters authored by world-renowned clinical laboratory scientists, physicians, and research scientists. This serial discusses the latest and most up-to-date technologies related to the field of clinical chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-804689-0

PUB DATE: May 2016

FORMAT: Hardback

PAGES: c. 222

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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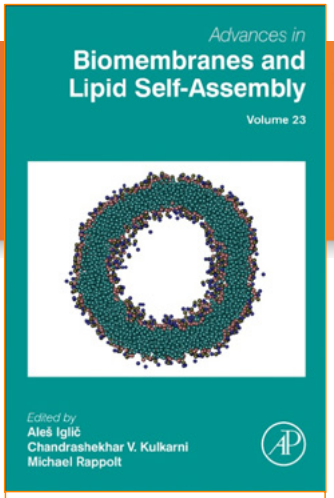

Advances in Biomembranes and Lipid Self-Assembly, Vol 23

Advances in Biomembranes and Lipid Self-Assembly

Edited by: ***Ales Iglic*** Faculty of Electrical Engineering, University of Ljubljana, Slovenia
Chandrashekhar V. Kulkarni University of Central Lancashire, UK
Michael Rappolt University of Leeds, UK

This evolving book series provides a platform for a broad community of experimental and theoretical researchers studying cell membranes, lipid model membranes, and lipid self-assemblies from the microscale to the nanoscale, presenting their potential for applications in diagnosis and therapy, biotechnology, pharmaceutical engineering, and food products

ISBN: 978-0-12-804715-6

PUB DATE: April 2016

FORMAT: Hardback

PAGES: c. 300

AUDIENCE

experts in the field of chemistry, physics and biology of lipid micro- and nano- structures and biological membranes, and a podium for non-specialists working on the interdisciplinary front

KEY FEATURES

- Surveys recent theoretical and experimental results on lipid micro- and nanostructures
- Presents potential uses of applications like clinically relevant diagnostic and therapeutic procedures, biotechnology, pharmaceutical engineering, and food products
- Provides both original research as well as comprehensive reviews written by world leading experts and young researchers
- Provides a global platform for a broad community of experimental and theoretical researchers studying cell membranes, lipid model membranes, and lipid self-assemblies from the micro- to the nanoscale.

DESCRIPTION

The Elsevier book series *Advances in Biomembranes and Lipid Self-Assembly* (previously titled *Advances in Planar Lipid Bilayers and Liposomes*), provides a global platform for a broad community of experimental and theoretical researchers studying cell membranes, lipid model membranes, and lipid self-assemblies from the micro- to the nanoscale. Planar lipid bilayers are widely studied due to their ubiquity in nature and find their application in the formulation of biomimetic model membranes and in the design of artificial dispersion of liposomes.

Moreover, lipids self-assemble into a wide range of other structures including micelles and the liquid crystalline hexagonal and cubic phases. Consensus has been reached that curved membrane phases do play an important role in nature as well, especially in dynamic processes such as vesicles fusion and cell communication. Self-assembled lipid structures have enormous potential as dynamic materials ranging from artificial lipid membranes to cell membranes, from biosensing to controlled drug delivery, from pharmaceutical formulations to novel food products to mention a few. An assortment of chapters in this volume represents both original research as well as comprehensive reviews written by world leading experts and young researchers.

SERIALS

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Advances in Clinical Chemistry, Vol 73

Advances in Clinical Chemistry

Edited by: ***Gregory S. Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This book, part of an internationally acclaimed series, continually publishes cutting-edge research and reviews in the field of clinical chemistry, and is the benchmark for novel analytical approaches in the clinical laboratory

KEY FEATURES

- Contains the expertise of international contributors
- Provides the latest cutting-edge technologies in the field
- Authored by world-renowned clinical laboratory scientists, physicians, and research scientists

DESCRIPTION

Advances in Clinical Chemistry, Volume 73, the latest installment in this internationally acclaimed series, contains chapters authored by world-renowned clinical laboratory scientists, physicians, and research scientists. The serial discusses the latest and most up-to-date technologies related to the field of clinical chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-804690-6

PUB DATE: March 2016

FORMAT: Hardback

PAGES: c. 222

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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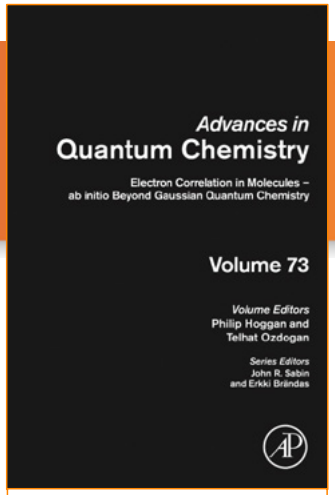

Advances in Quantum Chemistry, Vol 73

Electron Correlation in Molecules – ab initio Beyond Gaussian Quantum Chemistry

Edited by: ***Philip E. Hoggan*** CNRS, University Blaise Pascal, France
Telhat Ozdogan Amasya University, Turkey

Quantum chemistry has gone far beyond the Gaussian model. Details of progress on the exponential type orbitals and their applications are described. Electron correlation is a frontier for research and the state of the art in density functional and Quantum Monte Carlo approaches is described. This comprehensive series of articles presents the most timely and detailed information available on the latest developments in quantum chemistry

ISBN: 978-0-12-803060-8

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 424

AUDIENCE

Researchers and post-graduates in quantum chemistry and physics from molecular to solid state applications.

KEY FEATURES

- Presents surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology
- Features detailed reviews written by leading international researchers
- The volume includes review on all the topics treated by world renown authors and cutting edge research contributions.

DESCRIPTION

Electron Correlation in Molecules – ab initio Beyond Gaussian Quantum Chemistry presents a series of articles concerning important topics in quantum chemistry, including surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology.

SERIALS

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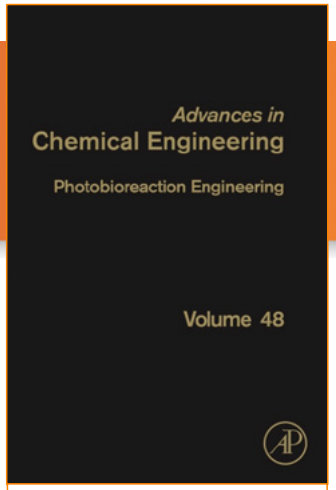

Advances in Chemical Engineering, Vol 48

Photobioreaction Engineering

Edited by: ***Jack Legrand*** Université de Nantes, France

This long running serial, established in 1960, is an important tool for organic chemists, polymer chemistry, and biological scientists who are studying the latest information on photobioreaction engineering

KEY FEATURES

- Presents reviews by leading authorities in their respective areas
- Includes up-to-date reviews of the latest techniques
- Provides a mix of US and European authors, as well as academic/industrial/research institute perspectives

DESCRIPTION

Photobioreaction Engineering, the latest edition in the *Advances in Chemical Engineering* series, a serial that was established in 1960, and remains one of great importance to organic chemists, polymer chemists, and many biological scientists, includes contributions from established authorities in the field who combine descriptive chemistry and mechanistic insight to create an understanding of how the chemistry drives the properties.

ISBN: 978-0-12-803661-7

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 332

AUDIENCE

Chemical engineers. Specialists in microalgae biotechnology.

SERIALS

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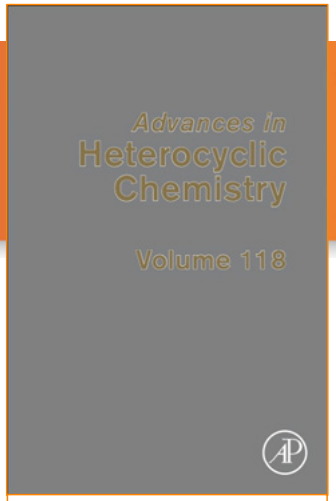

Advances in Heterocyclic Chemistry, Vol 118

Advances in Heterocyclic Chemistry

Edited by: ***Eric Scriven*** Portland, USA
Christopher A. Ramsden Keele University, Staffordshire, UK

This definitive serial publication provides the latest comprehensive reviews written by established, world-renowned authorities actively working in the field of heterocyclic chemistry

KEY FEATURES

- Considered the definitive serial in the field of heterocyclic chemistry
- Serves as the go-to reference for organic chemists, polymer chemists, and many biological scientists
- Provides the latest comprehensive reviews written by established authorities in the field
- Combines descriptive synthetic chemistry and mechanistic insight to enhance understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds

DESCRIPTION

Advances in Heterocyclic Chemistry is the definitive series in the field—one of great importance to organic chemists, polymer chemists, and many biological scientists. Because biology and organic chemistry increasingly intersect, the associated nomenclature also is being used more frequently in explanations. Written by established authorities in the field from around the world, this comprehensive review combines descriptive synthetic chemistry and mechanistic insight to yield an understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds.

ISBN: 978-0-12-804696-8
PUB DATE: February 2016
FORMAT: Hardback
PAGES: c. 314

AUDIENCE

Graduate students and research workers in academic and industrial laboratories, organic chemists, polymer chemists and biological scientists

SERIALS

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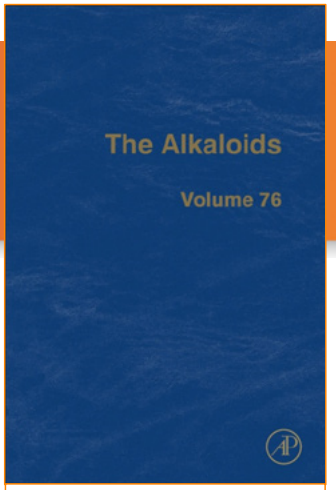

The Alkaloids, Vol 76

The Alkaloids

Edited by: ***Hans-Joachim Knolker*** Department of Chemistry, Technical University of Dresden, Germany

As the only regularly appearing publication series on the topic of alkaloids, this interesting serial covers their chemistry, biology, pharmacology, and medical applications

KEY FEATURES

- Contains the latest information on the study of alkaloids
- Covers their chemistry, biology, pharmacology, and medical applications
- Presents more than 70 volumes in this interesting field of study

DESCRIPTION

The Alkaloids, a series that has covered the topic for more than 60 years, is the leading book series in the field of alkaloid chemistry. In more than 70 volumes, all aspects of alkaloids, including chemistry, biology and pharmacology, are covered in high-quality, timeless reviews written by renowned experts in the field.

ISBN: 978-0-12-804682-1

PUB DATE: February 2016

FORMAT: Hardback

PAGES: c. 340

AUDIENCE

Chemists, biologists and biochemists working in research institutions as well as in industry

SERIALS

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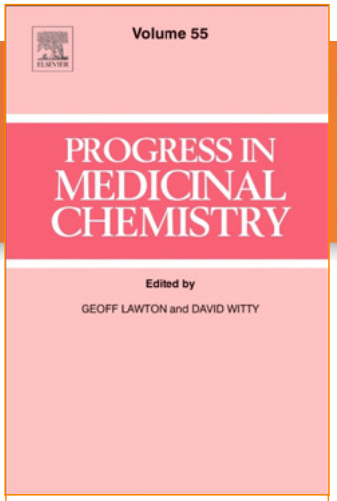

Progress in Medicinal Chemistry, Vol 55

Progress in Medicinal Chemistry

Edited by: ***Geoff Lawton*** St. Ippolyts, Herts, UK
David R. Witty Convergence Pharmaceuticals Ltd, Cambridge, UK

A review of eclectic developments in medicinal chemistry, with authoritative extended reviews of targets and technologies addressing new therapeutics

KEY FEATURES

- Extended timely reviews of topics in medicinal chemistry
- Targets and technologies relevant to the discovery of tomorrow's drugs.
- Analyses of successful drug discovery programmes

DESCRIPTION

Progress in Medicinal Chemistry provides a review of eclectic developments in medicinal chemistry. This volume includes chapters covering recent advances in cancer therapeutics, *f*luorine in medicinal chemistry, a perspective on the next generation of antibacterial agents derived by manipulation of natural products, a new era for Chagas Disease drug discovery? and imaging in drug development.

ISBN: 978-0-444-63715-4
PUB DATE: February 2016
FORMAT: Hardback
PAGES: c. 250

AUDIENCE

Everyone interested in the strategy and practice of the preclinical phases of the creation of new medicines. Those wishing to understand the drivers of drug design or expand their knowledge of therapeutic target classes

SERIALS

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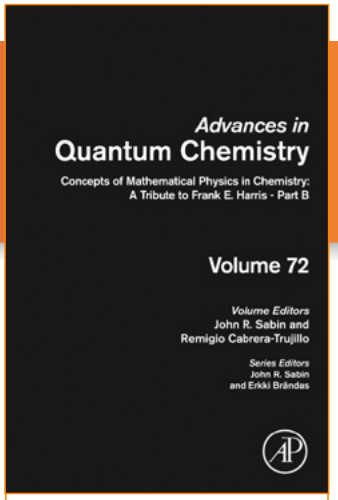

Advances in Quantum Chemistry, Vol 72

Concepts of Mathematical Physics in Chemistry: A Tribute to Frank E. Harris - Part B

Edited by: ***John R. Sabin*** Quantum Theory Project, University of Florida, Gainesville, FL, USA
Remigio Cabrera-Trujillo Universidad Nacional Autonoma de Mexico, Mexico

This comprehensive series of articles presents the most timely and detailed information available on the latest developments in quantum chemistry

KEY FEATURES

- Presents surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology
- Features detailed reviews written by leading international researchers

DESCRIPTION

Concepts of Mathematical Physics in Chemistry: A Tribute to Frank E. Harris - Part B, presents a series of articles concerning important topics in quantum chemistry, including surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology.

ISBN: 978-0-12-803984-7
PUB DATE: January 2016
FORMAT: Hardback
PAGES: c. 236

AUDIENCE

Quantum chemists, physical chemists, physicists

SERIALS

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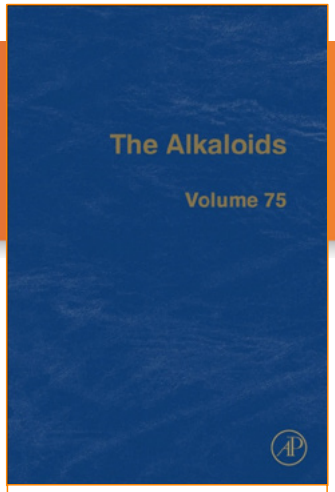

The Alkaloids, Vol 75

The Alkaloids

Edited by: ***Hans-Joachim Knolker*** Department of Chemistry, Technical University of Dresden, Germany

The only regularly appearing publication series which since 1950 has covered all aspects of alkaloids (chemistry, biology, pharmacology and medical applications)

KEY FEATURES

- *The Alkaloids* is the leading book series in the field of alkaloid chemistry.
- *In more than 70 volumes all aspects of alkaloids, including chemistry, biology and pharmacology, have been covered.*

DESCRIPTION

For more than 60 years, *The Alkaloids* has been the leading book series in the field of alkaloid chemistry. In more than 70 volumes all aspects of alkaloids, including chemistry, biology and pharmacology, have been covered in high-quality timeless reviews written by renowned experts in the field.

ISBN: 978-0-12-803434-7

PUB DATE: January 2016

FORMAT: Hardback

PAGES: c. 518

AUDIENCE

Chemists, biologists and biochemists working in research institutions as well as in industry

SERIALS

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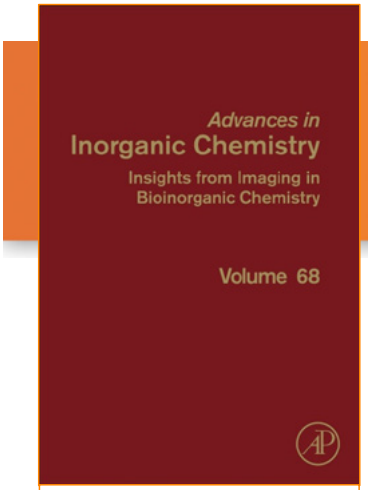

Advances in Inorganic Chemistry, Vol 68

Insights from Imaging in Bioinorganic Chemistry

Edited by: ***Rudi van Eldik*** University of Erlangen-Nurnberg, Germany
Colin Hubbard Oakham, Rutland, UK

This book continues a long-running series that describes recent advances in scientific research, in particular in the field of inorganic chemistry in a broad sense

KEY FEATURES

- Contains concise, informative accounts that are not too highly specialized, therefore appealing to a wide range of scientists and health professionals
- Presents contributions from highly qualified international experts
- Provides intrinsic scientific interest and applications, including important issues relating to the diagnosis and therapeutics that are relevant to public health

DESCRIPTION

Insights from Imaging in Bioinorganic Chemistry continues a long-running series that describes recent advances in scientific research, in particular, in the field of inorganic chemistry. Several highly regarded experts, mostly from academe, contribute on specific topics. The series editor chooses a sub-field within inorganic chemistry as the theme and focus of the volume, extending invitations to experts for their contributions; the current theme is insights from metal ion imaging in bioinorganic and medicinal chemistry.

ISBN: 978-0-12-803526-9

PUB DATE: January 2016

FORMAT: Hardback

PAGES: c. 510

AUDIENCE

It is anticipated that the audience will be other related practitioners and others involved in medical and health related research. The imaging technologies included have considerable relevance to a wider audience interested in diagnostic and therapeutic methods related to diseases of considerable public concern. Biomedical scientists are anticipated to be attracted to the subject matter.

SERIALS

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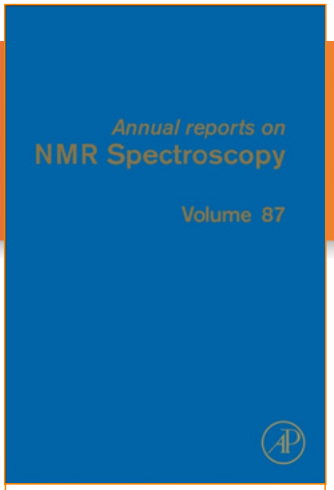

Annual Reports on NMR Spectroscopy, Vol 87

Annual Reports on NMR Spectroscopy

Edited by: ***Graham A. Webb*** Royal Society of Chemistry, Burlington House, London, UK

This established annual report provides a thorough accounting of progress in nuclear magnetic resonance (NMR) spectroscopy and its many applications for both specialists and nonspecialists alike

KEY FEATURES

- Serves as the premier resource for learning the new techniques and applications of NMR spectroscopy
- Provides a key reference for chemists and physicists using NMR spectroscopy to study the structure and dynamics of molecules

DESCRIPTION

Annual Reports on NMR Spectroscopy provides a thorough and in-depth accounting of the progress made in nuclear magnetic resonance (NMR) spectroscopy and its many applications. Nuclear magnetic resonance (NMR) is an analytical tool used by chemists and physicists to study the structure and dynamics of molecules. In recent years, no other technique has gained as much significance as NMR spectroscopy. It is used in all branches of science in which precise structural determination is required, and in which the nature of interactions and reactions in solution is being studied. *Annual Reports on NMR Spectroscopy* has established itself as a premier resource for both specialists and non-specialists alike who want to become familiar with the new techniques and applications of NMR spectroscopy.

ISBN: 978-0-12-804711-8

PUB DATE: January 2016

FORMAT: Hardback

PAGES: c. 380

AUDIENCE

Organic, inorganic, analytical and physical chemists, biochemists, structural biologists, physicists and all those studying and using NMR spectroscopy

SERIALS

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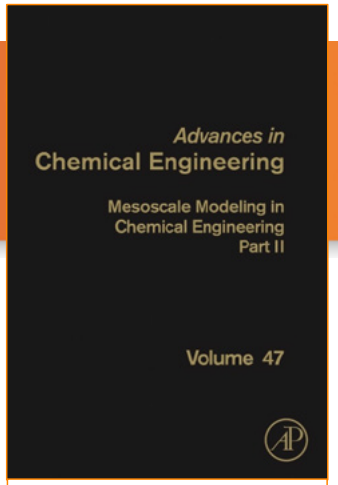


Advances in Chemical Engineering, Vol 47

Mesoscale Modeling in Chemical Engineering Part II

Edited by: ***Jinghai Li*** Chinese Academy of Sciences, Beijing, People's Republic of China
Guy B. Marin Department of Chemical Engineering and Technical Chemistry, Ghent University, Belgium

This book presents reviews on mesoscale modeling and discusses different mesoscale phenomena involved in different levels of chemical engineering, also connecting chemical engineering to related scientific fields, thus providing new ideas for additional thought

KEY FEATURES

- Contains reviews by leading authorities in the respective areas
- Presents Up-to-date reviews of latest techniques in modeling of catalytic processes
- Includes a mix of US and European authors, as well as academic/industrial/research institute perspectives
- Contains the critical connections between computation and experimental methods

DESCRIPTION

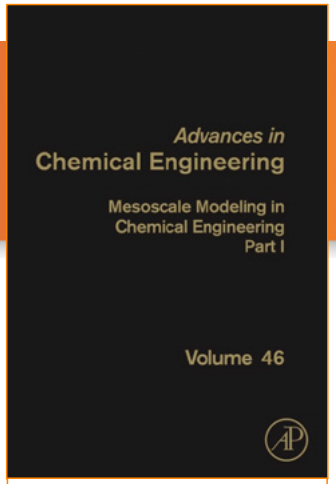
Mesoscale Modeling in Chemical Engineering, a volume in the Advances in Chemical Engineering series provides the reader with personal views of authorities in the field. Subjects covered are not limited to the classical chemical engineering disciplines, with contributions connecting chemical engineering to related scientific fields, thus providing new ideas for additional thought.

The book balances well developed areas such as process industry, transformation of materials, energy, and environmental issues with areas where applications of chemical engineering are more recent or emerging.

ISBN: 978-0-12-803845-1
PUB DATE: December 2015
FORMAT: Hardback
PAGES: c. 414

AUDIENCE

Chemical engineers in general, especially reaction engineers. University faculty, students and researchers as well as industrial researchers, mainly in chemical engineering/chemistry but also mechanical engineering (combustion engineers) and possibly some applied mathematicians.



Advances in Chemical Engineering, Vol 46

Mesoscale Modeling in Chemical Engineering Part I

Edited by: ***Jinghai Li*** Chinese Academy of Sciences, Beijing, People's Republic of China
Guy B. Marin Department of Chemical Engineering and Technical Chemistry, Ghent University, Belgium

This book explores different mesoscale problems in chemical engineering, providing readers with the personal views of recognized authorities who present assessments of the state-of-the-art in the field and help readers develop an understanding of its further evolution

ISBN: 978-0-12-801247-5
PUB DATE: December 2015
FORMAT: Hardback
PAGES: c. 376

AUDIENCE

Chemical engineers in general, especially reaction engineers. University faculty, students and researchers as well as industrial researchers, mainly in chemical engineering/chemistry but also mechanical engineering (combustion engineers) and possibly some applied mathematicians.

KEY FEATURES

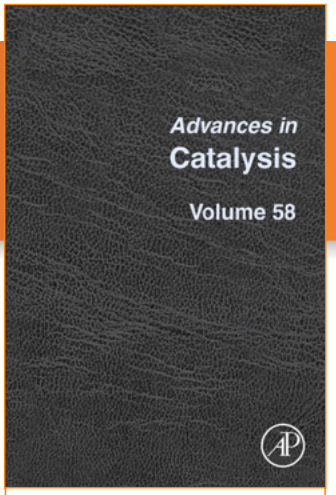
- Contains reviews by leading authorities in their respective areas
- Provides up-to-date reviews of the latest techniques in the modeling of catalytic processes
- Includes a broad mix of US and European authors, as well as academic/industrial/research institute perspectives
- Provides discussions on the connections between computation and experimental methods

DESCRIPTION

Focusing Mesoscales of Multiscale Problems in Chemical Engineering, a volume in the Advances in Chemical Engineering series provides readers with the personal views of recognized authorities who present assessments of the state-of-the-art in the field and help readers develop an understanding of its further evolution.

Subjects covered in the book are not limited to the classical chemical engineering disciplines. Contributions connecting chemical engineering to related scientific fields, either providing a fundamental basis or introducing new concepts and tools, are encouraged.

This volume aims to create a balance between well developed areas such as process industry, transformation of materials, energy, and environmental issues, and areas where applications of chemical engineering are more recent or emerging.



Advances in Catalysis, Vol 58

Advances in Catalysis

Edited by: ***Friederike C. Jentoft*** University of Massachusetts, Amherst, MA, USA

This book provides users with the latest information on the science and technology of catalysis, including such topics as catalyst synthesis, catalyst characterization, catalytic chemistry, reaction engineering, computational chemistry, and physics

KEY FEATURES

- Authoritative reviews written by experts in the field
- Topics selected reflect progress in the field and include catalyst synthesis, catalyst characterization, catalytic chemistry, reaction engineering, computational chemistry, and physics
- Insightful and critical articles, fully edited to suit various backgrounds

DESCRIPTION

Advances in Catalysis fills the gap between the journal papers and textbooks across the diverse areas of catalysis research. For more than 60 years, this series has been dedicated to recording progress in the field of catalysis, providing the scientific community with comprehensive and authoritative reviews. This series is an invaluable and comprehensive resource for chemical engineers and chemists working in the field of catalysis in both academia and industry.

ISBN: 978-0-12-802126-2

PUB DATE: December 2015

FORMAT: Hardback

PAGES: c. 320

AUDIENCE

Catalysis researchers and practitioners in academia and industry (mainly chemical engineers, and chemists but also physicists), experts as well as newcomers

SERIALS

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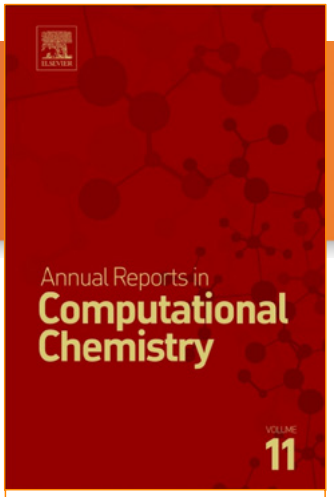

Annual Reports in Computational Chemistry, Vol 11

Annual Reports in Computational Chemistry

Edited by: ***David A. Dixon*** Robert Ramsey Chair, The University of Alabama, Tuscaloosa, AL, USA

ISBN: 978-0-444-63710-9

PUB DATE: November 2015

FORMAT: Hardback

PAGES: c. 422

AUDIENCE

Researchers and students interested in computational chemistry

Timely and critical reviews of important topics in computational chemistry

KEY FEATURES

- Quantum chemistry
- Molecular mechanics
- Force fields
- Chemical education and applications in academic and industrial settings

DESCRIPTION

Annual Reports in Computational Chemistry provides timely and critical reviews of important topics in computational chemistry as applied to all chemical disciplines. Topics covered include quantum chemistry, molecular mechanics, force fields, chemical education, and applications in academic and industrial settings. Focusing on the most recent literature and advances in the field, each article covers a specific topic of importance to computational chemists.

SERIALS

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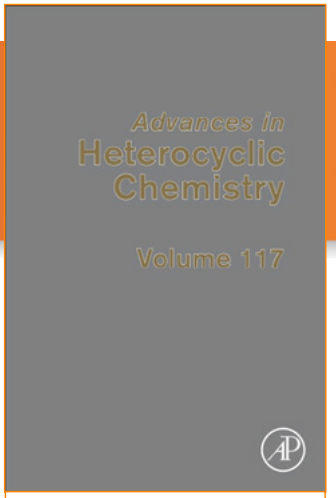


Advances in Heterocyclic Chemistry, Vol 117

Advances in Heterocyclic Chemistry

Edited by: ***Eric Scriven*** Portland, USA
Christopher A. Ramsden Keele University, Staffordshire, UK

This definitive serial publication provides the latest comprehensive reviews written by established, world-renowned authorities actively working in the field of heterocyclic chemistry

KEY FEATURES

- Considered the definitive serial in the field of heterocyclic chemistry
- Serves as the go-to reference for organic chemists, polymer chemists, and many biological scientists
- Provides the latest comprehensive reviews written by established authorities in the field
- Combines descriptive synthetic chemistry and mechanistic insight to enhance understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds

DESCRIPTION

Advances in Heterocyclic Chemistry is the definitive series in the field—one of great importance to organic chemists, polymer chemists, and many biological scientists. Because biology and organic chemistry increasingly intersect, the associated nomenclature also is being used more frequently in explanations. Written by established authorities in the field from around the world, this comprehensive review combines descriptive synthetic chemistry and mechanistic insight to yield an understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds.

ISBN: 978-0-12-804770-5

PUB DATE: November 2015

FORMAT: Hardback

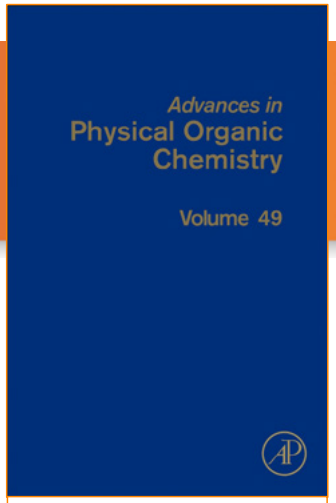
PAGES: c. 394

AUDIENCE

Graduate students and research workers in academic and industrial laboratories, organic chemists, polymer chemists and biological scientists

SERIALS

Please contact your Elsevier Sales or Customer Service Representative



Advances in Physical Organic Chemistry, Vol 49

Advances in Physical Organic Chemistry

Edited by: ***Ian Williams*** University of Bath, UK
Nick Williams University of Sheffield, UK

This series continually publishes cutting-edge reviews in the field of physical organic chemistry, containing results and methodologies that will have great implications for those studying fields ranging from biology to solid-state physics

ISBN: 978-0-12-802228-3

PUB DATE: November 2015

FORMAT: Hardback

PAGES: c. 302

AUDIENCE

Researchers at all levels and in all sectors who need access to definitive reviews of topics requiring a quantitative, molecular-level understanding of chemical phenomena

KEY FEATURES

- Reviews the application of quantitative and mathematical methods to help readers understand chemical problems
- Provides the chemical community with authoritative and critical assessments of the many aspects of physical organic chemistry
- Covers organic, organometallic, bioorganic, enzymes, and materials topics
- The only regularly published resource for reviews in physical organic chemistry
- Chapters are written by authoritative experts
- Wide coverage of topics requiring a quantitative, molecular-level understanding of phenomena across a diverse range of disciplines

DESCRIPTION

Advances in Physical Organic Chemistry series of volumes is the definitive resource for authoritative reviews of work in physical organic chemistry. It aims to provide a valuable source of information not only for physical organic chemists applying their expertise to both novel and traditional problems but also for non-specialists across diverse areas who identify a physical organic component in their approach to research. Its hallmark is quantitative, molecular level understanding of phenomena across a diverse range of disciplines.

SERIALS

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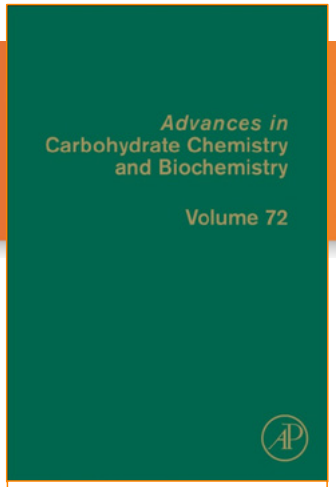

Advances in Carbohydrate Chemistry and Biochemistry, Vol 72

Advances in Carbohydrate Chemistry and Biochemistry

Edited by: ***David Baker*** University of Tennessee, Knoxville, USA
Derek Horton The American University, Washington, DC, USA

This book reviews the current status and future trends in carbohydrate chemistry and biochemistry, providing critical and informative articles written by research specialists that integrate the industrial, analytical, and technological aspects of biochemistry, organic chemistry, and instrumentation methodology in the study of carbohydrates

"A series that has established an enviable reputation for a consistently high quality of content and production, and that is of outstanding value."--JOURNAL OF AMERICAN CHEMICAL SOCIETY

ISBN: 978-0-12-802141-5
PUB DATE: November 2015
FORMAT: Hardback
PAGES: c. 230

AUDIENCE

Researchers in biochemistry, organic chemistry, medicinal chemistry and instrumentation methodology.

KEY FEATURES

- Features contributions from leading authorities and industry experts who specialize in carbohydrate chemistry, biochemistry, and research
- Integrates the industrial, analytical, and technological aspects of biochemistry, organic chemistry, and instrumentation methodology in the study of carbohydrates
- Informs and updates on all the latest developments in the field

DESCRIPTION

Advances in Carbohydrate Chemistry and Biochemistry, part of a long running serial that began in 1945, provides critical and informative articles written by research specialists that integrate the industrial, analytical, and technological aspects of biochemistry, organic chemistry, and instrumentation methodology in the study of carbohydrates. Each article provides a definitive interpretation of the current status and future trends in carbohydrate chemistry and biochemistry.

SERIALS

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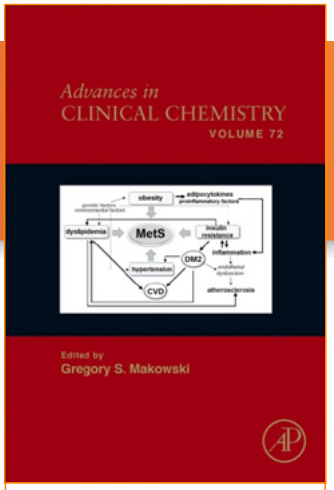

Advances in Clinical Chemistry, Vol 72

Advances in Clinical Chemistry

Edited by: ***Gregory Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This book, part of an internationally acclaimed series, continually publishes cutting-edge research and reviews in the field of clinical chemistry, and is the benchmark for novel analytical approaches in the clinical laboratory

KEY FEATURES

- Contains the expertise of international contributors
- Provides the latest cutting-edge technologies in the field
- Authored by world-renowned clinical laboratory scientists, physicians, and research scientists

DESCRIPTION

Advances in Clinical Chemistry, Volume 72, the latest installment in this internationally acclaimed series contains chapters authored by world-renowned clinical laboratory scientists, physicians, and research scientists. The serial discusses the latest and most up-to-date technologies related to the field of clinical chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-803314-2

PUB DATE: October 2015

FORMAT: Hardback

PAGES: c. 314

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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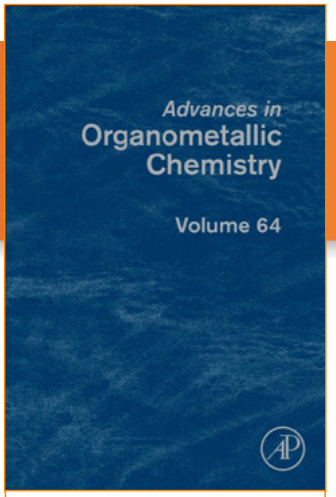

Advances in Organometallic Chemistry, Vol 64

Advances in Organometallic Chemistry

Edited by: ***Pedro Perez*** Homogeneous Catalysis Laboratory, Center for Research in Sustainable Chemistry, Universidad de Huelva, Huelva, Spain

This series continually publishes cutting-edge reviews in the field of organometallic chemistry, covering topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more

KEY FEATURES

- Contains contributions from leading authorities in the field of organometallic chemistry
- Covers topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more.
- Informs and updates readers on all the latest developments in the field
- Carefully edited to provide easy-to-read material

DESCRIPTION

Advances in Organometallic Chemistry contains authoritative reviews on the field of organometallic chemistry, covering topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more. The book will benefit a wide range of researchers involved in organometallic chemistry, including synthetic protocols, mechanistic studies, and practical applications.

ISBN: 978-0-12-802940-4

PUB DATE: October 2015

FORMAT: Hardback

PAGES: c. 124

AUDIENCE

Researchers involved in Organometallic Chemistry from a wide perspective, including synthetic protocols, mechanistic studies and practical applications.

SERIALS

Please contact your Elsevier Sales or Customer Service Representative

Advances in Clinical Chemistry, Vol 71

Advances in Clinical Chemistry

Edited by: ***Gregory Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This internationally acclaimed series continually publishes cutting-edge research and reviews in the field of clinical chemistry

KEY FEATURES

- Expertise of international contributors
- Latest cutting-edge technologies

DESCRIPTION

Advances in Clinical Chemistry, Volume 71, is the latest installment in this internationally acclaimed series. This latest volume contains chapters authored by world-renowned clinical laboratory scientists, physicians, and research scientists. The serial discusses the latest and most up-to-date technologies related to the field of clinical chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-802256-6

PUB DATE: September 2015

FORMAT: Hardback

PAGES: c. 210

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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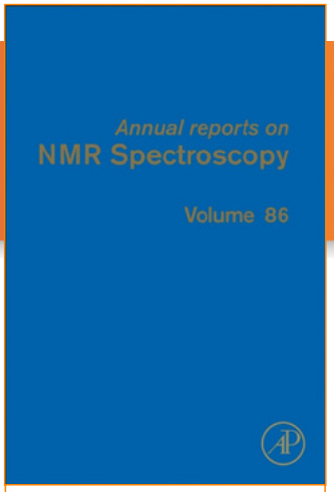


Annual Reports on NMR Spectroscopy, Vol 86

Annual Reports on NMR Spectroscopy

Edited by: ***Graham A. Webb*** Royal Society of Chemistry, Burlington House, London, UK

This established annual report provides a thorough accounting of progress in nuclear magnetic resonance (NMR) spectroscopy and its many applications for both the specialist and non-specialist alike.

"An eclectic and timely collection of reviews on recent advances and hot topics in nuclear magnetic resonance spectroscopy. ...faithful in citing seminal literature and past reviews, while including most, if not all, recent work in the past 10 years. For those who have an interest in NMR spectroscopy, this book would be an excellent resource."--Journal of the American Chemical Society

ISBN: 978-0-12-802123-1

PUB DATE: August 2015

FORMAT: Hardback

PAGES: c. 422

AUDIENCE

Organic, inorganic, analytical and physical chemists, biochemists, structural biologists, physicists and all those studying and using NMR spectroscopy.

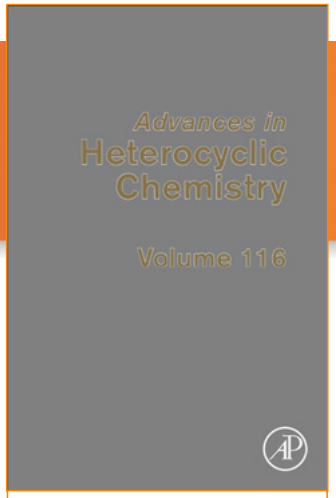
KEY FEATURES

- Serves as the premier resource for learning the new techniques and applications of NMR spectroscopy
- Provides a key reference for chemists and physicists using NMR spectroscopy to study the structure and dynamics of molecules

DESCRIPTION

Annual Reports on NMR Spectroscopy provides a thorough and in-depth accounting of progress in nuclear magnetic resonance (NMR) spectroscopy and its many applications. Nuclear magnetic resonance (NMR) is an analytical tool used by chemists and physicists to study the structure and dynamics of molecules.

In recent years, no other technique has gained as much significance as NMR spectroscopy. It is used in all branches of science in which precise structural determination is required and in which the nature of interactions and reactions in solution is being studied. *Annual Reports on NMR Spectroscopy* has established itself as a premier means for the specialist and non-specialist alike to become familiar with new techniques and applications of NMR spectroscopy.



Advances in Heterocyclic Chemistry, Vol 116

Advances in Heterocyclic Chemistry

Edited by: ***Eric F.V. Scriven*** University of Florida, Gainesville, FL, USA
Christopher A. Ramsden Keele University, Staffordshire, UK

This definitive serial publication provides the latest comprehensive reviews written by established, world-renowned authorities actively working in the field of heterocyclic chemistry.

KEY FEATURES

- Considered the definitive serial in the field of heterocyclic chemistry
- Serves as the go-to reference for organic chemists, polymer chemists, and many biological scientists
- Provides the latest comprehensive reviews written by established authorities in the field
- Combines descriptive synthetic chemistry and mechanistic insight to enhance understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds

DESCRIPTION

Advances in Heterocyclic Chemistry is the definitive series in the field—one of great importance to organic chemists, polymer chemists, and many biological scientists. Because biology and organic chemistry increasingly intersect, the associated nomenclature also is being used more frequently in explanations. Written by established authorities in the field from around the world, this comprehensive review combines descriptive synthetic chemistry and mechanistic insight to yield an understanding of how chemistry drives the preparation and useful properties of heterocyclic compounds.

ISBN: 978-0-12-802831-5
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 376

AUDIENCE

Graduate students and research workers in academic and industrial laboratories, organic chemists, polymer chemists and biological scientists

SERIALS

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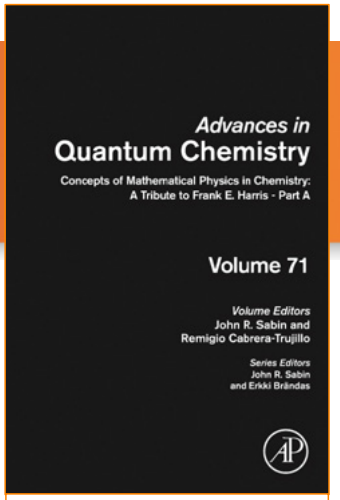


Advances in Quantum Chemistry, Vol 71

Concepts of Mathematical Physics in Chemistry: A Tribute to Frank E. Harris - Part A

Edited by: ***John R. Sabin*** Quantum Theory Project, University of Florida, Gainesville, FL, USA
Remigio Cabrera-Trujillo Universidad Nacional Autonoma de Mexico, Mexico

The only series that presents timely and important developments in quantum chemistry

KEY FEATURES

- Presents surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology
- Features detailed reviews written by leading international researchers

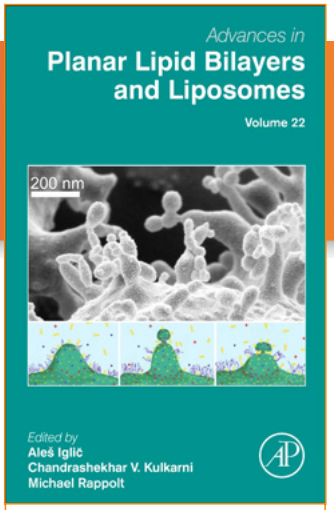
DESCRIPTION

This volume presents a series of articles concerning current important topics in quantum chemistry.

ISBN: 978-0-12-802824-7
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 382

AUDIENCE

Quantum chemists, physical chemists, physicists



Advances in Planar Lipid Bilayers and Liposomes, Vol 22

Advances in Planar Lipid Bilayers and Liposomes

Edited by: ***Ales Iglic*** Faculty of Electrical Engineering, University of Ljubljana, Slovenia
Michael Rappolt University of Leeds, UK
Chandrashekhar V. Kulkarni University of Central Lancashire, UK

Recent theoretical and experimental results on lipid micro- and nano-structures, presenting their potential for applications in diagnosis and therapy, biotechnology, pharmaceutical engineering, and food products

ISBN: 978-0-12-802878-0
PUB DATE: August 2015
FORMAT: Hardback
PAGES: c. 220

AUDIENCE

experts in the field of chemistry, physics and biology of lipid micro- and nano-structures and biological membranes, and a podium for non-specialists working on the interdisciplinary front

KEY FEATURES

- The APLBL book series gives a survey on recent theoretical as well as experimental results on lipid micro and nanostructures.
- In addition, the potential use of the basic knowledge in applications like clinically relevant diagnostic and therapeutic procedures, biotechnology, pharmaceutical engineering and food products is presented.
- An assortment of chapters in APLBL represents both an original research as well as comprehensives reviews written by world leading experts and young researchers.

DESCRIPTION

The Elsevier book-series *Advances in Planar Lipid Bilayers and Liposomes,* provides a global platform for a broad community of experimental and theoretical researchers studying cell membranes, lipid model membranes and lipid self-assemblies from the micro- to the nanoscale. Planar lipid bilayers are widely studied due to their ubiquity in nature and find their application in the formulation of biomimetic model membranes and in the design of artificial dispersion of liposomes. Moreover, lipids self-assemble into a wide range of other structures including micelles and the liquid crystalline hexagonal and cubic phases. Consensus has been reached that curved membrane phases do play an important role in nature as well, especially in dynamic processes such as vesicles fusion and cell communication. Self-assembled lipid structures have enormous potential as dynamic materials ranging from artificial lipid membranes to cell membranes, from biosensing to controlled drug delivery, from pharmaceutical formulations to novel food products to mention a few. An assortment of chapters in APLBL represents both an original research as well as comprehensives reviews written by world leading experts and young researchers.

Advances in Clinical Chemistry, Vol 70

Advances in Clinical Chemistry

Edited by: ***Gregory Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This series continually publishes cutting-edge reviews in the field of clinical chemistry

KEY FEATURES

- Expertise of international contributors
- Latest cutting-edge technologies

DESCRIPTION

Volume 70 in the internationally acclaimed *Advances in Clinical Chemistry* contains chapters authored by world renowned clinical laboratory scientists, physicians and research scientists. The serial provides the latest and most up-to-date technologies related to the field of clinical chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-803316-6

PUB DATE: July 2015

FORMAT: Hardback

PAGES: c. 326

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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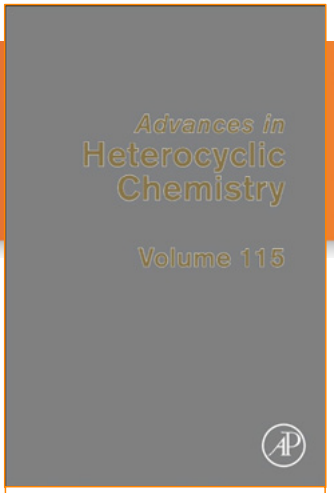

Advances in Heterocyclic Chemistry, Vol 115

Advances in Heterocyclic Chemistry

Edited by: ***Eric F.V. Scriven*** University of Florida, Gainesville, FL, USA
Christopher A. Ramsden Keele University, Staffordshire, UK

Provides the definitive serial in this area of specialty, including discussions on topics of great importance to organic chemists, polymer chemists, and many biological scientists

KEY FEATURES

- Represents the definitive resource available on heterocyclic chemistry
- Contains discussions of great importance to organic chemists, polymer chemists, and many biological scientists
- Provides new discussion material for topics including diels-alder of furans for synthesis, metal carbenoids, electron rich heterocycles, synthesis of heterocyclic natural products, viridin, wortmanin, and dihydropyridine intermediates
- Discusses how the nomenclature of the field is increasingly used in explanations across a variety of applications and areas of study

DESCRIPTION

Advances in Heterocyclic Chemistry is the definitive series in this area—one of great importance to organic chemists, polymer chemists, and many biological scientists.

As the disciplines of biology and organic chemistry increasingly intersect, the nomenclature of organic chemistry is increasingly used in explanations across a variety of applications and areas of study. Users will find this comprehensive update of the subject matter to be a valuable addition to their library of reference materials.

ISBN: 978-0-12-802129-3

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 368

AUDIENCE

Graduate students and research workers in academic and industrial laboratories, organic chemists, polymer chemists and biological scientists

SERIALS

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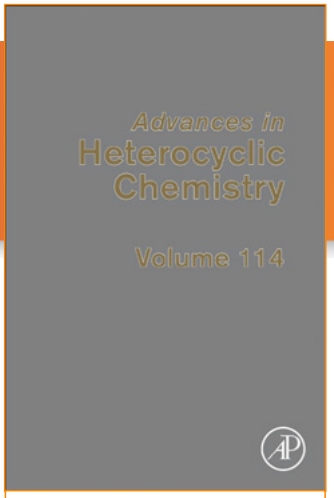

Advances in Heterocyclic Chemistry, Vol 114

Advances in Heterocyclic Chemistry

Edited by: ***Eric F.V. Scriven*** University of Florida, Gainesville, FL, USA
Christopher A. Ramsden Keele University, Staffordshire, UK

The definitive series in the area—one of great importance to organic chemists, polymer chemists and many biological scientists

KEY FEATURES

- A great resource for organic chemists, polymer chemists, and many biological scientists
- Written by established authorities in the field
- Comprehensive reviews combine descriptive synthetic chemistry and mechanistic insight, yielding an understanding of how the chemistry drives the preparation and useful properties of heterocyclic compounds

DESCRIPTION

Advances in Heterocyclic Chemistry is the definitive series in this area—one of great importance to organic chemists, polymer chemists and many biological scientists. As biology and organic chemistry increasingly intersect, the nomenclature of organic chemistry is increasingly used in explanations. This volume, number 114, covers topics including Diels-Alder of furans for synthesis, metal carbenoids, electron-rich heterocycles, synthesis of heterocyclic natural products, viridin and Wortmannin, and dihydropyridine intermediates.

ISBN: 978-0-12-802130-9

PUB DATE: June 2015

FORMAT: Hardback

PAGES: c. 410

AUDIENCE

Graduate students and research workers in academic and industrial laboratories, organic chemists, polymer chemists and biological scientists

SERIALS

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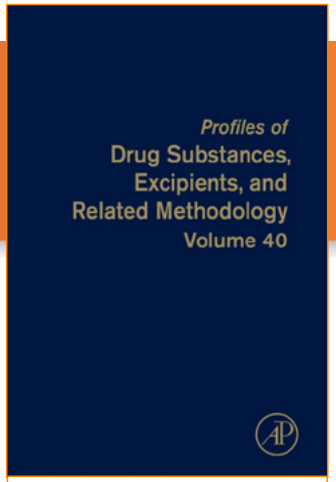

Profiles of Drug Substances, Excipients and Related Methodology, Vol 40

Profiles of Drug Substances, Excipients, and Related Methodology

Edited by: ***Harry G. Brittain*** Center for Pharmaceutical Physics, Milford, NJ, USA

This widely revered series presents comprehensive reviews of drug substances, excipients and additional materials, written by experts in the field

KEY FEATURES

- Contributions from leading authorities
- Informs and updates on all the latest developments in the field

DESCRIPTION

Volumes in this widely revered series present comprehensive reviews of drug substances and additional materials, with critical review chapters that summarize information related to the characterization of drug substances and excipients. This organizational structure meets the needs of the pharmaceutical community and allows for the development of a timely vehicle for publishing review materials on this topic.

The scope of the Profiles series encompasses review articles and database compilations that fall within one of the following six broad categories: Physical profiles of drug substances and excipients; Analytical profiles of drug substances and excipients; Drug metabolism and pharmacokinetic profiles of drug substances and excipients; Methodology related to the characterization of drug substances and excipients; Methods of chemical synthesis; and Reviews of the uses and applications for individual drug substances, classes of drug substances, or excipients.

ISBN: 978-0-12-803300-5

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 12

AUDIENCE

Medicinal, pharmaceutical, and analytical chemists; pharmacologists

SERIALS

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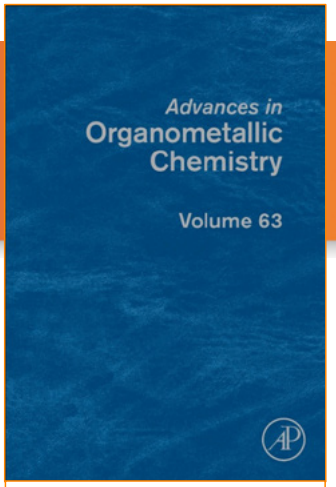

Advances in Organometallic Chemistry, Vol 63

Advances in Organometallic Chemistry

Edited by: ***Pedro J. Pérez*** Homogeneous Catalysis Laboratory, Center for Research in Sustainable Chemistry, Universidad de Huelva, Huelva, Spain

This series continually publishes cutting-edge reviews in the field of organometallic chemistry

KEY FEATURES

- Contributions from leading authorities
- Informs and updates on all the latest developments in the field
- Carefully edited to provide easy-to-read material

DESCRIPTION

This volume contains authoritative reviews regarding the field of organometallic chemistry. It covers topics in organometallic synthesis, reactions, mechanisms, homogeneous catalysis, and more, and will benefit a wide range of researchers involved in organometallic chemistry, including synthetic protocols, mechanistic studies, and practical applications.

ISBN: 978-0-12-802269-6

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 290

AUDIENCE

Researchers involved in Organometallic Chemistry from a wide perspective, including synthetic protocols, mechanistic studies and practical applications.

SERIALS

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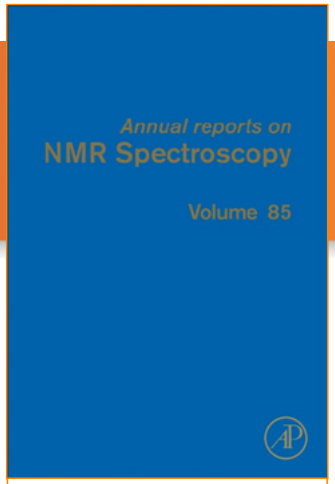

Annual Reports on NMR Spectroscopy, Vol 85

Annual Reports on NMR Spectroscopy

Edited by: ***Graham A. Webb*** Royal Society of Chemistry, Burlington House, London, UK

A premier means for the specialist and non-specialist alike to become familiar with new techniques and applications of NMR spectroscopy

"An eclectic and timely collection of reviews on recent advances and hot topics in nuclear magnetic resonance spectroscopy. ...faithful in citing seminal literature and past reviews, while including most, if not all, recent work in the past 10 years. For those who have an interest in NMR spectroscopy, this book would be an excellent resource."--Journal of the American Chemical Society

ISBN: 978-0-12-803090-5

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 250

AUDIENCE

Organic, inorganic, analytical and physical chemists, biochemists, structural biologists, physicists and all those studying and using NMR spectroscopy.

KEY FEATURES

This volume of *Annual Reports on NMR Spectroscopy* focuses on the analytical tools used by chemists and physicists, taken together with other volumes of this series, an excellent account of progress in NMR and its many applications is provided and anyone using NMR will find interest in this Serial.

DESCRIPTION

Nuclear magnetic resonance (NMR) is an analytical tool used by chemists and physicists to study the structure and dynamics of molecules. In recent years, no other technique has gained such significance as NMR spectroscopy. It is used in all branches of science in which precise structural determination is required and in which the nature of interactions and reactions in solution is being studied. *Annual Reports on NMR Spectroscopy* has established itself as a premier means for the specialist and non-specialist alike to become familiar with new techniques and applications of NMR spectroscopy.

Advances in Clinical Chemistry, Vol 69

Advances in Clinical Chemistry

Edited by: ***Gregory S. Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This series continually publishes cutting-edge reviews in the field of clinical chemistry

KEY FEATURES

- Expertise of international contributors
- Latest cutting-edge technologies
- Comprehensive in scope

DESCRIPTION

Volume 69 in the internationally acclaimed *Advances in Clinical Chemistry* contains chapters authored by world renowned clinical laboratory scientists, physicians and research scientists. The serial provides the latest and most up-to-date technologies related to the field of Clinical Chemistry and is the benchmark for novel analytical approaches in the clinical laboratory.

ISBN: 978-0-12-802265-8

PUB DATE: April 2015

FORMAT: Hardback

PAGES: c. 332

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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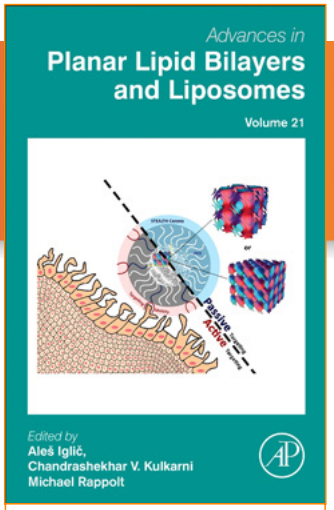

Advances in Planar Lipid Bilayers and Liposomes, Vol 21

Advances in Planar Lipid Bilayers and Liposomes

Edited by: ***Ales Iglic*** Faculty of Electrical Engineering, University of Ljubljana, Slovenia
Chandrashekhar V. Kulkarni University of Central Lancashire, UK
Michael Rappolt University of Leeds, UK

A survey of recent theoretical and experimental results on lipid micro- and nanostructures presenting their potential use in applications like clinically relevant diagnostic and therapeutic procedures, biotechnology, pharmaceutical engineering and food products

ISBN: 978-0-12-802116-3
PUB DATE: March 2015
FORMAT: Hardback
PAGES: c. 196

AUDIENCE

experts in the field of chemistry, physics and biology of lipid micro- and nanostructures and biological membranes, and a podium for non-specialists working on the interdisciplinary front

KEY FEATURES

- The APLBL book series gives a survey on recent theoretical as well as experimental results on lipid micro and nanostructures.
- In addition, the potential use of the basic knowledge in applications like clinically relevant diagnostic and therapeutic procedures, biotechnology, pharmaceutical engineering and food products is presented.
- An assortment of chapters in APLBL represents both an original research as well as comprehensives reviews written by world leading experts and young researchers.

DESCRIPTION

The Elsevier book-series "Adv*ances in Planar Lipid Bilayers and Liposomes*' (APLBL) provides a global platform for a broad community of experimental and theoretical researchers studying cell membranes, lipid model membranes and lipid self-assemblies from the micro- to the nanoscale. Planar lipid bilayers are widely studied due to their ubiquity in nature and find their application in the formulation of biomimetic model membranes and in the design of artificial dispersion of liposomes. Moreover, lipids self-assemble into a wide range of other structures including micelles and the liquid crystalline hexagonal and cubic phases. Consensus has been reached that curved membrane phases do play an important role in nature as well, especially in dynamic processes such as vesicles fusion and cell communication. Self-assembled lipid structures have enormous potential as dynamic materials ranging from artificial lipid membranes to cell membranes, from biosensing to controlled drug delivery, from pharmaceutical formulations to novel food products to mention a few. An assortment of chapters in APLBL represents both an original research as well as comprehensives reviews written by world leading experts and young researchers.

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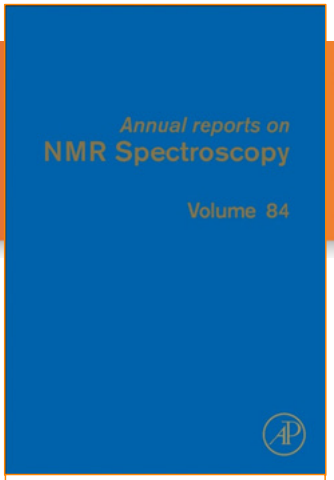


Annual Reports on NMR Spectroscopy, Vol 84

Annual Reports on NMR Spectroscopy

Edited by: ***Graham A. Webb*** Royal Society of Chemistry, Burlington House, London, UK

A premier means for the specialist and non-specialist alike to become familiar with new techniques and applications of NMR spectroscopy

"An eclectic and timely collection of reviews on recent advances and hot topics in nuclear magnetic resonance spectroscopy. ...faithful in citing seminal literature and past reviews, while including most, if not all, recent work in the past 10 years. For those who have an interest in NMR spectroscopy, this book would be an excellent resource."--Journal of the American Chemical Society

ISBN: 978-0-12-802124-8

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 300

AUDIENCE

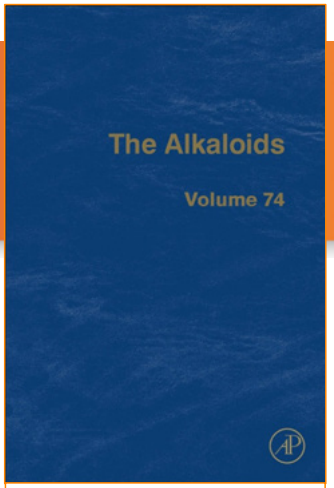
Organic, inorganic, analytical and physical chemists, biochemists, structural biologists, physicists and all those studying and using NMR spectroscopy.

KEY FEATURES

This volume of *Annual Reports on NMR Spectroscopy* focuses on the analytical tools used by chemists and physicists, taken together with other volumes of this series, an excellent account of progress in NMR and its many applications is provided and anyone using NMR will find interest in this Serial.

DESCRIPTION

Nuclear magnetic resonance (NMR) is an analytical tool used by chemists and physicists to study the structure and dynamics of molecules. In recent years, no other technique has gained such significance as NMR spectroscopy. It is used in all branches of science in which precise structural determination is required and in which the nature of interactions and reactions in solution is being studied. *Annual Reports on NMR Spectroscopy* has established itself as a premier means for the specialist and non-specialist alike to become familiar with new techniques and applications of NMR spectroscopy.



The Alkaloids, Vol 74

The Alkaloids

Edited by: ***Hans-Joachim Knolker*** Department of Chemistry, Technical University of Dresden, Germany

The only regularly appearing publication series which since 1950 has covered all aspects of alkaloids (chemistry, biology, pharmacology and medical applications)

KEY FEATURES

The Alkaloids is the leading book series in the field of alkaloid chemistry. In more than 70 volumes all aspects of alkaloids, including chemistry, biology and pharmacology, have been covered.

DESCRIPTION

For more than 60 years, *The Alkaloids* has been the leading book series in the field of alkaloid chemistry. In more than 70 volumes all aspects of alkaloids, including chemistry, biology and pharmacology, have been covered in high-quality timeless reviews written by renowned experts in the field.

ISBN: 978-0-12-802158-3

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 428

AUDIENCE

Chemists, biologists and biochemists working in research institutions as well as in industry

SERIALS

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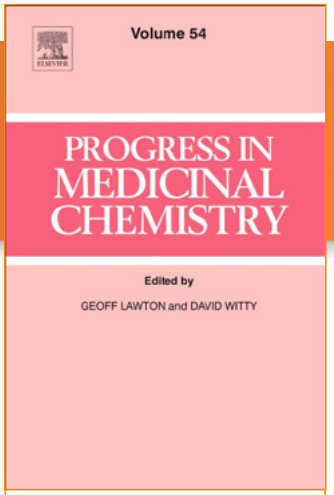

Progress in Medicinal Chemistry, Vol 54

Progress in Medicinal Chemistry

Edited by: ***Geoff Lawton*** St. Ippolyts, Herts, UK
David R. Witty Convergence Pharmaceuticals Ltd, Cambridge, UK

ELSEVIER

A review of eclectic developments in medicinal chemistry, with authoritative extended reviews of targets and technologies addressing new therapeutics

KEY FEATURES

- Extended timely reviews of topics in medicinal chemistry
- Targets and technologies relevant to the discovery of tomorrow's drugs.
- Analyses of successful drug discovery programmes

DESCRIPTION

Progress in Medicinal Chemistry provides a review of eclectic developments in medicinal chemistry. This volume includes chapters covering recent advances in cancer therapeutics, fluorine in medicinal chemistry, a perspective on the next generation of antibacterial agents derived by manipulation of natural products, a new era for Chagas Disease drug discovery? and imaging in drug development.

ISBN: 978-0-444-63480-1

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 302

AUDIENCE

Everyone interested in the strategy and practice of the preclinical phases of the creation of new medicines. Those wishing to understand the drivers of drug design or expand their knowledge of therapeutic target classes

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Advances in Clinical Chemistry, Vol 68

Advances in Clinical Chemistry

Edited by: ***Gregory Makowski*** Clinical Laboratory Partners, Newington; Hartford Hospital, Hartford; Department of Laboratory Medicine, University of Connecticut Health Center, Farmington, CT, USA

This series continually publishes cutting-edge reviews in the field of clinical chemistry

KEY FEATURES

- Expertise of international contributors
- Latest cutting-edge technologies
- Comprehensive in scope

DESCRIPTION

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ISBN: 978-0-12-802266-5

PUB DATE: February 2015

FORMAT: Hardback

PAGES: c. 210

AUDIENCE

Clinical Laboratory Professionals, Physicians and Research Scientists

SERIALS

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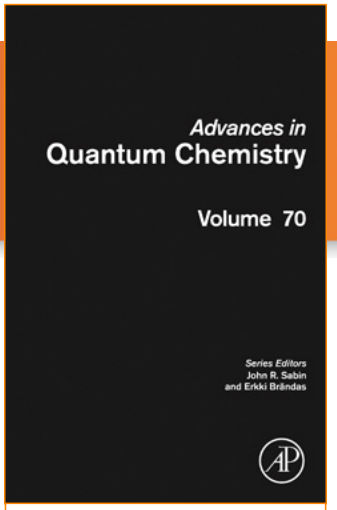


Advances in Quantum Chemistry, Vol 70

Advances in Quantum Chemistry

Edited by: ***John R. Sabin*** Quantum Theory Project, University of Florida, Gainesville, FL, USA
Erkki J. Brandas Uppsala University, Sweden

The only series available that presents timely and important developments in quantum chemistry

KEY FEATURES

- Presents surveys of current topics in this rapidly-developing field that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology
- Features detailed reviews written by leading international researchers

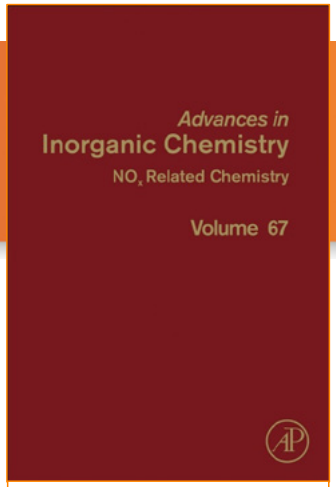
DESCRIPTION

Advances in Quantum Chemistry presents surveys of current topics in this rapidly developing field one that has emerged at the cross section of the historically established areas of mathematics, physics, chemistry, and biology. It features detailed reviews written by leading international researchers. In this volume the readers are presented with an exciting combination of themes.

ISBN: 978-0-12-801891-0
PUB DATE: January 2015
FORMAT: Hardback
PAGES: c. 426

AUDIENCE

Quantum chemists, physical chemists, physicists



Advances in Inorganic Chemistry, Vol 67

NOx Related Chemistry

Edited by: ***Rudi van Eldik*** University of Erlangen-Nurnberg, Germany
José A. Olabe Universidad de Buenos Aires, Argentina

Covers the latest advances in scientific studies related to NO and its bound metal-compounds

"These volumes continue the tradition of representing timely summaries of the current state of understanding on a wide variety of 'special topics'"--JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

KEY FEATURES

- Best-qualified scientists write on their own recent results dealing with basic fundamentals of NO-chemistry, with an eye into biological and environmental issues
- Editors and authors are recognized scientists in the field
- Features comprehensive reviews on the latest developments
- An indispensable reference to advanced researchers

DESCRIPTION

NOx Related Chemistry is a volume of a series that presents timely and informative summaries of the current progress in a variety of subject areas within inorganic chemistry, ranging from bio-inorganic to solid state studies. This acclaimed serial features reviews written by experts in the field and serves as an indispensable reference to advanced researchers. Each volume contains an index, and each chapter is fully referenced.

ISBN: 978-0-12-801735-7
PUB DATE: January 2015
FORMAT: Hardback
PAGES: c. 376

AUDIENCE

Bioinorganic, inorganic, supramolecular and organometallic chemists

Applications of Time-of-Flight and Orbitrap Mass Spectrometry in Environmental, Food, Doping, and Forensic Analysis

Edited by: ***Sandra Perez*** Inst. of Environmental Assessment and Water Research, Spain
Peter Eichhorn Inst. of Environmental Assessment and Water Research, Spain
Damia Barcelo Inst. of Environmental Assessment and Water Research, Spain

ELSEVIER

As a comprehensive reference, this book covers applications of time-of-flight and orbitrap mass spectrometry in environmental, food, doping, and forensic analysis, providing a diverse group of examples that will allow readers to discover not only the potential of high-resolution MS in their sector, but also allow insights into advances in other fields

A Volume in the Comprehensive Analytical Chemistry Series.

ISBN: 978-0-444-63572-3
PUB DATE: June 2016
FORMAT: Hardback
PAGES: c. 480

AUDIENCE
Analytical and environmental chemists, pharmaceutical and medicinal chemists, as well as forensic and doping analysts

KEY FEATURES

- Provides comprehensive coverage of applications of time-of-flight and orbitrap mass spectrometry in environmental, food, doping, and forensic analysis
- Explores a variety of specialized techniques, giving a balanced description of the strengths and weaknesses of each
- Presents a general overview of imaging techniques within analysis

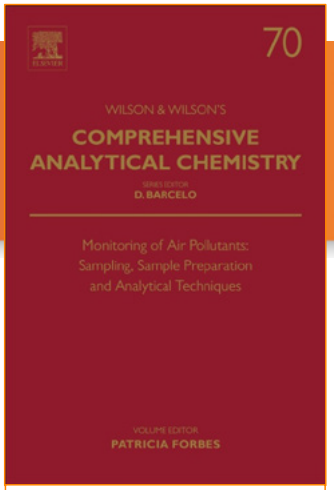
DESCRIPTION

Applications of Time-of-Flight and Orbitrap Mass Spectrometry in Environmental, Food, Doping, and Forensic Analysis deals with the use of high-resolution mass spectrometry (MS) in the analysis of small organic molecules. Over the past few years, time-of-flight (ToF) and Orbitrap MS have both experienced tremendous growth in a great number of analytical sectors and are now well established in many laboratories where high requirements are placed on analytical performance.

This book gives a head-to-head comparison of these two technologies that compete directly with each other. As users with hands-on experience in both techniques, the authors provide a balanced description of the strengths and weaknesses of both techniques. In the vast majority of cases, ToF-MS and Orbitrap-MS have been used for qualitative purposes, mainly identification of discrete molecular entities such as drug metabolites or transformation products of environmental contaminants.

This paradigm is now changing as quantitative capabilities are increasingly being explored, as are non-target approaches for unbiased broad-scope screening. In view of the continuous innovation of high-resolution MS instrument manufacturers in designing and developing more powerful machines, technological advances in both hardware and software are considerable, with many novel applications.

This book summarizes and analyzes these trends. The compilation of selected examples from diverse analytical fields will allow the readers to discover not only the potential of high-resolution MS in their sector, but also shows advances in other fields that rely on hi-res MS.



Monitoring of Air Pollutants

Sampling, Sample Preparation and Analytical Techniques

Edited by: ***Patricia Forbes*** University of Pretoria, South Africa

ELSEVIER

A useful resource for analytical and environmental chemists and environmental consultants who need guidance on the best approach for analyzing a target pollutant, including monitoring, sampling, sample preparation, and analysis

A Volume in the Comprehensive Analytical Chemistry Series.

ISBN: 978-0-444-63553-2

PUB DATE: November 2015

FORMAT: Hardback

PAGES: c. 400

AUDIENCE

Practitioners in the field of air quality monitoring, specifically analytical and environmental scientists; researchers and postgraduate students

KEY FEATURES

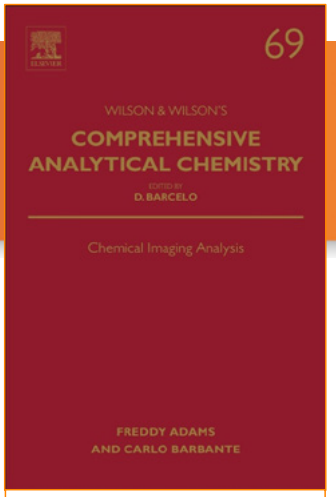
- Contains all the information needed for air pollutant monitoring from sampling, to sample preparation, to analysis
- Provides guidance on the best analytical approach for a target pollutant
- Presents the pros and cons of included techniques to enable informed decisions
- Includes case studies based on published practical applications

DESCRIPTION

Monitoring of Air Pollutants: Sampling, Sample Preparation and Analytical Techniques provides a comprehensive reference on air pollutant monitoring, addressing experimental approaches to sampling and sample preparation, as well as analytical technologies (instrumental methods) which are applicable to a wide range of topics.

The book's purpose is to provide an in-depth resource on the monitoring of ambient air pollutants that covers the basic principles, recent developments, and important applications in the field. Current trends and recent advances are discussed, both with respect to analytical techniques and target air pollutants.

All aspects of air pollutant monitoring, from sampling, to sample preparation, and analysis, are covered, making this the book of choice for consultation by air monitoring practitioners.



Chemical Imaging Analysis

Freddy Adams University of Antwerp, Belgium
Carlo Barbante University of Venice, Italy

ELSEVIER

Covers how different analytical imaging techniques link the composition and structure of materials at the nano/micro scale to the functional behavior at the macroscopic scale

A Volume in the Comprehensive Analytical Chemistry Series.

KEY FEATURES

- Provides comprehensive coverage of analytical techniques used in chemical imaging analysis
- Explores a variety of specialized techniques
- Provides a general overview of imaging techniques in diverse fields

DESCRIPTION

Chemical Imaging Analysis covers the advancements made over the last 50 years in chemical imaging analysis, including different analytical techniques and the ways they were developed and refined to link the composition and structure of manmade and natural materials at the nano/micro scale to the functional behavior at the macroscopic scale.

In a development process that started in the early 1960s, a variety of specialized analytical techniques was developed – or adapted from existing techniques – and these techniques have matured into versatile and powerful tools for visualizing structural and compositional heterogeneity.

This text explores that journey, providing a general overview of imaging techniques in diverse fields, including mass spectrometry, optical spectrometry including X-rays, electron microscopy, and beam techniques.

ISBN: 978-0-444-63439-9
PUB DATE: June 2015
FORMAT: Hardback
PAGES: c. 460

AUDIENCE

Specialised analytical chemists and users of imaging analysis techniques in various disciplines including material sciences, medicine, biology, art and archaeology

SERIALS
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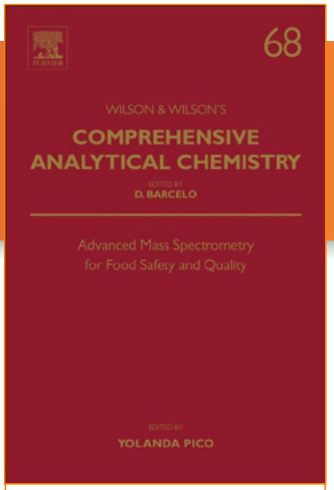


Advanced Mass Spectrometry for Food Safety and Quality

Edited by: ***Yolanda Picó*** Food and Environmental Safety Research Group, University of Valencia, Spain

ELSEVIER

Presents the recent advancements made in mass spectrometry-based techniques and their applications in food safety and quality, also discussing the challenges associated with implementation

A Volume in the Comprehensive Analytical Chemistry Series.

ISBN: 978-0-444-63340-8

PUB DATE: May 2015

FORMAT: Hardback

PAGES: c. 716

AUDIENCE

Food scientists, analytical chemists, microbiologists, toxicologists, post-graduate students, and all those who use mass spectrometry for evaluating food quality and safety

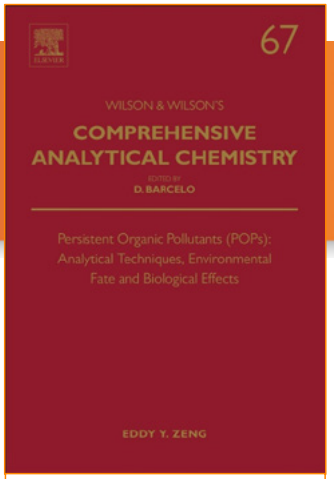
KEY FEATURES

- Presents critical applications for a sustainable, affordable and safe food supply
- Covers emerging problems in food safety and quality with many specific examples.
- Encompasses the characteristics, advantages, and limitations of mass spectrometry, and the current strategies in method development and validation
- Provides the most recent data on the important topic of food safety and quality

DESCRIPTION

Advanced Mass Spectrometry for Food Safety and Quality provides information on recent advancements made in mass spectrometry-based techniques and their applications in food safety and quality, also covering the major challenges associated with implementing these technologies for more effective identification of unknown compounds, food profiling, or candidate biomarker discovery.

Recent advances in mass spectrometry technologies have uncovered tremendous opportunities for a range of food-related applications. However, the distinctive characteristics of food, such as the wide range of the different components and their extreme complexity present enormous challenges. This text brings together the most recent data on the topic, providing an important resource towards greater food safety and quality.



Persistent Organic Pollutants (POPs): Analytical Techniques, Environmental Fate and Biological Effects

Edited by: ***Eddy Y Zeng*** Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, China

ELSEVIER

An integrated assessment of existing data for implementing pollution control measures for persistent organic chemicals.

A Volume in the Comprehensive Analytical Chemistry Series.

KEY FEATURES

- Comprehensive overview of recent advances in analyzing persistent organic pollutants (POPs)
- Covers input sources, fate and biological effects of POPs
- Contains essential information for environmental management

DESCRIPTION

This book focuses on those organic chemicals that are regulated by the Stockholm Convention on Persistent Organic Pollutants (POPs). as well as organic chemical with the attributes of being persistent, bioaccumulative, and toxic to ecosystem and human beings, criteria used by the Stockholm Convention for screening POP candidates. Because of the unfavourable properties of POPs, numerous research efforts have been directed toward investigating their input sources, fate, and effects, with the help of continuously improving analytical technologies. The contributors to this book provide an integrated assessment of existing data, which will benefit both the scientific and management communities in planning further research projects and/or pollution control measures.

ISBN: 978-0-444-63299-9

PUB DATE: March 2015

FORMAT: Hardback

PAGES: c. 660

AUDIENCE

Scientists engaged in research on the occurrence, fate and effects of persistent organic pollutants (POPs), teachers of advanced graduate level analytical and organic chemistry courses, environmental management and protection officers

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