

Connecting Great Minds

CHEMISTRY

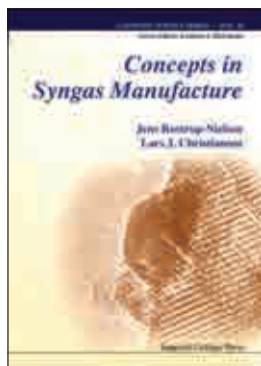
2012 Catalogue



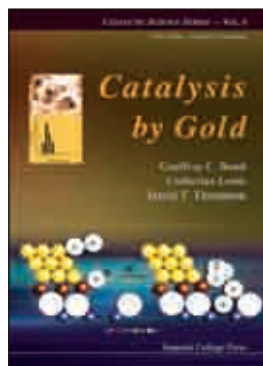
Highlights

Chemistry Catalogue 2012

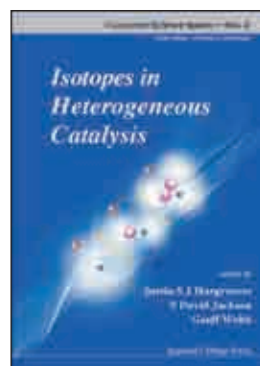
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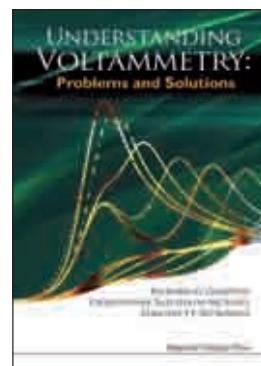
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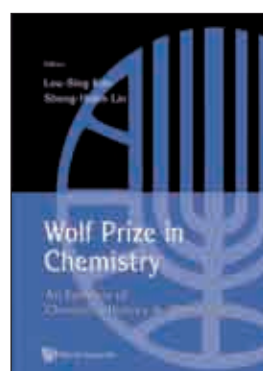
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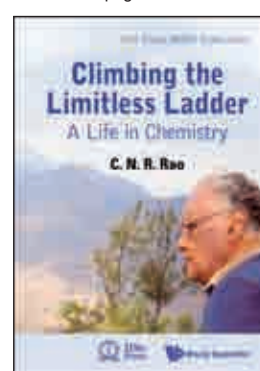
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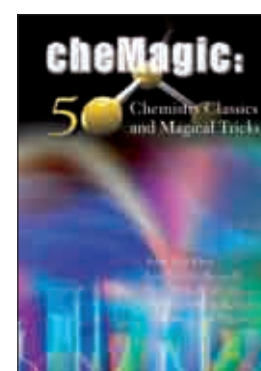
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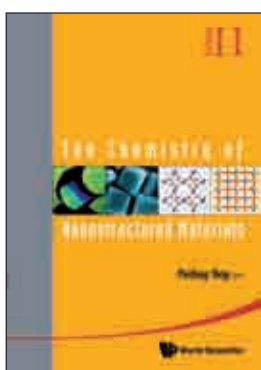
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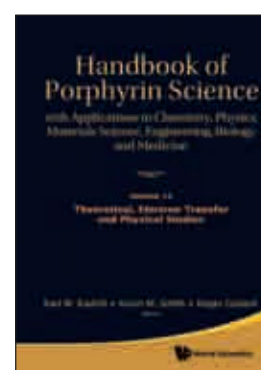
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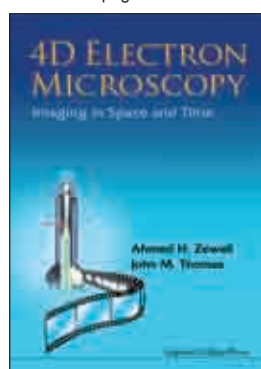
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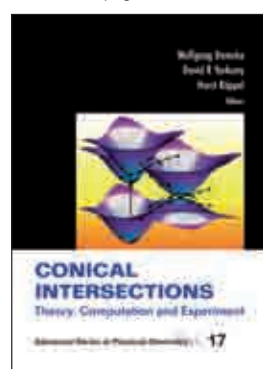
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HIGHLIGHTS

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- Computer Science
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- Environmental Science
- Mathematics
- Mechanical Engineering
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Analytical Chemistry

:: Textbook

MODERN MASS SPECTROMETRY AND ITS APPLICATIONSby **Chung-Hsuan (Winston) Chen** (*Academia Sinica, Taiwan*)

This book is intended for graduate students and researchers working in fields related to mass spectrometry. It covers the basic principles of key components of various types of mass spectrometry, recent developments and applications in different fields including material analysis, pollutant measurements for environmental applications, biomedical applications, disease diagnosis and drug developments.

400pp	Feb 2012	
978-981-283-740-0	US\$75	£50
978-981-283-741-7(pbk)	US\$45	£30

EXTENDED-NANO FLUIDIC SYSTEMS FOR CHEMISTRY AND BIOTECHNOLOGY

by **Kazuma Mawatari** (*The University of Tokyo, Japan*), **Takehiko Tsukahara** (*Tokyo Institute of Technology, Japan*), **Yo Tanaka**, **Yutaka Kazoe**, **Philip Dextras** & **Takehiko Kitamori** (*The University of Tokyo, Japan*)



In this book, we describe the fundamental technologies for extended-nano space and show the unique liquid properties found in this space and applications for single molecule or cell analysis. The research area is very new and hence, exciting. Researchers or students new to the field need a new book covering these fields including recent research topics, applications and problems to be solved in the future. Our motivation is to summarize the state-of-the-art technologies for research and demonstrate new chemistry and fluidics in extended-nano space for students and researchers in academia or industry. We also emphasize the potential large impact microfluidic technologies have on chemistry and biochemistry.

230pp	Dec 2011	
978-1-84816-801-5	US\$85	£56
978-1-84816-802-2(ebook)	US\$111	

MATERIALS UNDER EXTREME CONDITIONSby **Vincenzo Schettino** & **Roberto Bini** (*University of Florence, Italy*)

The variety of the phenomena observed in these extreme conditions and of the materials involved provides a common ground bridging scientific communities with different cultural and experimental backgrounds. This monograph will provide a timely opportunity to report on recent progress in the field.

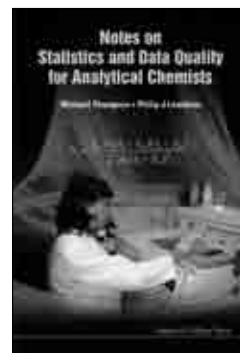
Readership: Academics, postgraduates and researchers in analytical chemistry, condensed matter physics and physical chemistry.

300pp	Oct 2011	
978-1-84816-305-8	US\$96	£66
978-1-84816-306-5(ebook)	US\$125	

NOTES ON STATISTICS AND DATA QUALITY FOR ANALYTICAL CHEMISTSby **Michael Thompson** & **Philip J Lowthian** (*Birkbeck University of London, UK*)

This book is intended to help analytical chemists feel comfortable with more commonly used statistical operations and help them make effective use of the results. Emphasis is put upon computer-based methods that are applied in relation to measurement and the quality of the resulting data. The book is intended for analytical chemists working in industry but is also appropriate for students taking first degrees or an MSC in analytical chemistry.

260pp	Feb 2011	
978-1-84816-616-5	US\$90	£56
978-1-84816-617-2(pbk)	US\$49	£30
978-1-84816-618-9(ebook)	US\$117	



Methods in Chromatography - Vol. 2

HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY AND MASS SPECTROMETRY OF PORPHYRINS, CHLOROPHYLLS AND BILINSby **Chang Kee Lim** (*University of London, UK*)

The porphyrins, chlorophylls, bilins and related tetrapyrroles are vital for all living organisms. Methods for their separation and characterization have a very wide area of applications. Yet, there is a dearth of books dedicated to HPLC and HPLC/MS of tetrapyrroles. Lim addresses this problem admirably by providing practical HPLC and HPLC/MS protocols coupled with in-depth chromatographic and mass spectrometric reference data.

Readership: Analytical biochemists, clinical biochemists, researchers in tetrapyrrole chemistry and biochemistry, plant scientists, pharmaceutical chemists.

244pp	Jul 2009	
978-981-02-3068-5	US\$108	£72
978-981-4277-19-8(ebook)	US\$140	



:: Bestseller

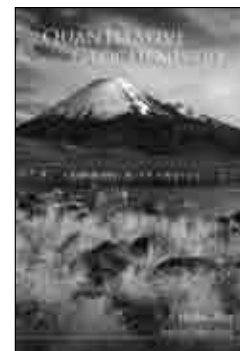
QUANTITATIVE GEOCHEMISTRYby **Haibo Zou** (*University of California, Los Angeles, USA & Auburn University, USA*)

"What 'Quantitative Geochemistry' offers is the most complete compendium of analytical solutions to mass balance and transport models relevant to igneous petrology ... this is a book that is well worth your money if what you want is a compilation of mass balance and box model equations for mantle melting ... In this regard, this is a valuable and highly recommended book."

Geochemical Society

Readership: Scientists in geochemistry, geology, geophysics, materials science, analytical chemistry, mathematical modeling; graduate students in geochemistry and geology.

304pp	Feb 2007	
978-1-86094-646-2	US\$86	£52
978-1-86094-820-6(ebook)	US\$112	



:: Evergreen

Series on Neutron Techniques and Applications - Vol. 3

VIBRATIONAL SPECTROSCOPY WITH NEUTRONS

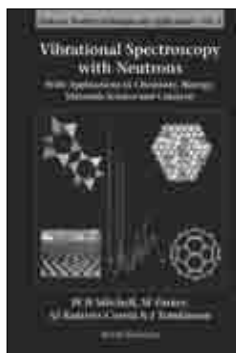
With Applications in Chemistry, Biology, Materials Science and Catalysis

by **Philip C H Mitchell** (University of Reading, UK), **Stewart F Parker**, **Anibal J Ramirez-Cuesta** & **John Tomkinson** (Rutherford Appleton Laboratory, UK)

"This book provides a very good account of the principles and applications of Inelastic Neutron Scattering (INS) as a vibrational spectroscopic technique, without assuming a high level of background knowledge... meets the needs of graduate students as well as both users and potential users of inelastic neutron spectroscopy at academic and research institutions..."

Notiziario Neutroni e Luce di Sincrotrone

668pp Jun 2005
 978-981-256-013-1 US\$199 £131
 978-981-256-783-3(ebook) US\$259

**SELECTIVE MULTICOMPONENT REACTIONS INVOLVING CATALYTIC GENERATION OF ORGANOBORONATES**by **Kálmán J Szabó** (Stockholm University, Sweden)

This book focuses on the one-pot approach to organoboronate synthesis and the most important new applications of these reagents. It also highlights the possibilities for integration of synthesis and applications of organoboronates, thus improving the accessibility of these reagents for organic synthesis.

Readership: Post-graduates, academics and researchers involved in organic synthesis and catalysis. Pharmaceutical manufacturing and chemical industry professionals.

250pp Jun 2012
 978-1-84816-673-8 US\$96 £60
 978-1-84816-674-5(ebook) US\$125

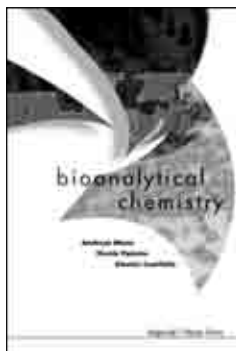
:: Evergreen Textbook

BIOANALYTICAL CHEMISTRYby **Andreas Manz**, **Nicole Pamme** & **Dimitri Iossifidis** (Imperial College London)

"The book is well written and easy to read ... It will complement any lecture courses on modern analytical chemistry as it focuses on one of the most topical areas in the field of analysis — that of bioanalysis ... this first edition is an excellent foundation from which to build as the new techniques become accepted. I would highly recommend it to any student (or indeed other scientists) with interest in bioanalysis."

Chemistry World

220pp May 2004
 978-1-86094-370-6 US\$110 £72
 978-1-86094-371-3(pbk) US\$42 £28



Catalytic Science Series

SUPPORTED METALS IN CATALYSIS (2nd Edition)by **James A Anderson** (University of Aberdeen, UK)

With contributions from experts in supported metal catalysis from both the industry and academia, this book presents the latest developments in characterization and application of supported metals in heterogeneous catalysis. In addition to thorough and updated coverage of the traditional aspects of heterogeneous catalysis, the book also includes emerging areas where supported metal catalysis will make significant contributions to future developments, such as fuel cells and fine chemicals synthesis.

The second edition of *Supported Metals in Catalysis* comes complete with new and updated chapters containing important summaries of research in a rapidly evolving field. Very few other books deal with this highly pertinent subject matter, and as such, it is a must-have for anyone working in the field of heterogeneous catalysis.

350pp Oct 2011
 978-1-84816-677-6 US\$98 £61
 978-1-84816-678-3(ebook) US\$127

Catalyst Chemistry

Catalytic Science Series - Vol. 12

ADVANCED PROCESSES IN OXIDATION CATALYSIS

From Laboratory to Industry

edited by **Daniel Duprez** (University of Poitiers, France) & **Fabrizio Cavani** (Università di Bologna, Italy)

This book offers a comprehensive overview of the most recent developments in both total oxidation and combustion and also in selective oxidation. For each topic, fundamental aspects are paralleled with industrial applications. The book covers oxidation catalysis, one of the major areas of industrial chemistry, outlining recent achievements, current challenges and future opportunities. One distinguishing feature of the book is the selection of arguments which are emblematic of current trends in the chemical industry, such as miniaturization, use of alternative, greener oxidants, and innovative systems for pollutant abatement. Topics outlined are described in terms of both catalyst and reaction chemistry, and also reactor and process technology.

Readership: Researchers from academic laboratories and also from research departments in the chemical industry.

500pp Jul 2012
 978-1-84816-750-6 US\$150 £98
 978-1-84816-751-3(ebook) US\$195

Catalytic Science Series - Vol. 10

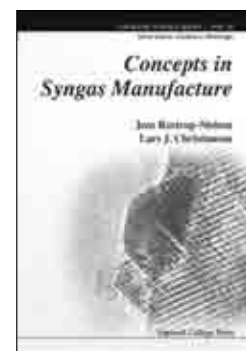
CONCEPTS OF SYNGAS MANUFACTUREby **Jens Rostrup-Nielsen** &**Lars J Christiansen**

(Haldor Topsøe A/S, Denmark)

Concepts of Syngas Preparation aims to provide a comprehensive introduction to this complex field of growing importance and gives a detailed analysis of the catalyst and process problems. This book also serves as an important link between science and industry by illustrating how the basic principles can be applied to solve design issues and operational problems.

Readership: Graduates and postgraduates in the field of catalysis chemistry, as well as researchers and chemical engineers.

380pp Jun 2011
 978-1-84816-567-0 US\$123 £80
 978-1-84816-568-7(ebook) US\$160



:: Bestselling Textbook

Catalytic Science Series - Vol. 9

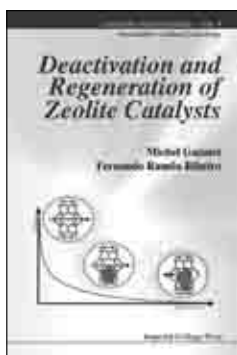
DEACTIVATION AND REGENERATION OF ZEOLITE CATALYSTS

edited by **Michel Guisnet** & **Fernando Ramôa Ribeiro** (Technical University of Lisbon, Portugal)

This book covers the fundamental and applied aspects of solid catalyst deactivation in a comprehensive way and encompasses the state of the art in the field of reactions catalyzed by zeolites. The aim of this book is to be a critical review in the field of zeolite deactivation and regeneration by collecting contributions from experts in the field.

Readership: Graduates and postgraduates in chemistry or chemical engineering, researchers and professionals in refining, petrochemical, fine chemicals and pollution abatement.

360pp **Feb 2011**
978-1-84816-637-0 **US\$90** **£56**



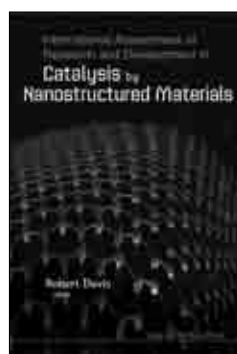
INTERNATIONAL ASSESSMENT OF RESEARCH AND DEVELOPMENT IN CATALYSIS BY NANOSTRUCTURED MATERIALS

edited by **Robert Davis** (University of Virginia, USA)

In this book, a World Technology Evaluation Center (WTEC) panel of eight experts in the field assesses the current state of research and development in catalysis by nanostructured materials, its sources of funding, and discusses the state of the field with respect to productivity and leadership in various nations around the world.

Readership: Graduates and researchers in chemical engineering, chemistry and economics. Professionals in related industries and governments.

328pp **Jan 2011**
978-1-84816-689-9 **US\$99** **£61**
978-1-84816-690-5(ebook) **US\$129**



Catalytic Science Series - Vol. 7

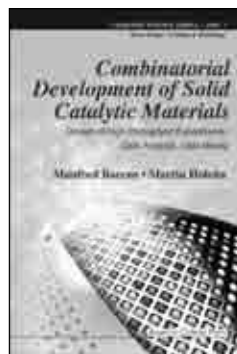
COMBINATORIAL DEVELOPMENT OF SOLID CATALYTIC MATERIALS

Design of High-Throughput Experiments, Data Analysis, Data Mining
 by **Manfred Baerns** (Fritz-Haber Institute of Max-Planck Society, Berlin, Germany) & **Martin Holeňa** (Academy of Sciences, Czech Republic)

The book is unique in that it describes evolutionary optimization in a broader context of methods of searching for optimal catalytic materials, including statistical design of experiments, as well as presents neural networks in a broader context of data analysis. It is the first book that demystifies the attractiveness of artificial neural networks, explaining its rational fundamental — their universal approximation capability.

Readership: Chemists, chemical engineers and graduate students.

192pp **Nov 2009**
978-1-84816-343-0 **US\$87** **£57**
978-1-84816-344-7(ebook) **US\$113**



:: Fastmoving Textbook

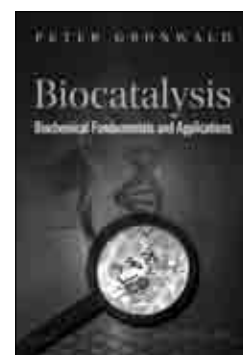
BIOCATALYSIS

Biochemical Fundamentals and Applications
 by **Peter Grunwald** (University of Hamburg, Germany)

The book covers the fundamentals of the field of biocatalysis that are not treated in such detail (or even not at all) in existing biocatalysis books or biochemistry textbooks. It of course does not substitute existing biochemistry textbooks but will serve a suitable supplement as it discusses biochemical fundamentals in connection with the respective topics.

Readership: Advanced undergraduate and graduate students in biology, chemistry, biochemistry and medicine. Biochemists, biologists and chemists.

1052pp **Mar 2009**
978-1-86094-744-5 **US\$180** **£112**
978-1-86094-771-1(pbk) **US\$98** **£61**



:: Bestseller

Catalytic Science Series - Vol. 6

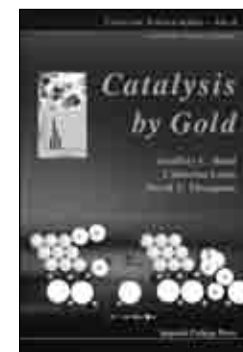
CATALYSIS BY GOLD

by **Geoffrey C Bond** (Brunel University, UK), **Catherine Louis** (Université Pierre et Marie Curie, France) & **David T Thompson** (Consultant, World Gold Council, UK)

"Catalysis by Gold is a book of great cultural relevance combined with a simple and pleasant reading. Certainly, it is an appropriate time in the remarkable progress of gold catalysis for the first comprehensive review of the subject. This excellent book should be essential reading for all those working in gold catalysis or seeking to exploit it — research students, industrialists, etc. — as well as for those working generally in the catalysis field."

Gold Bulletin

384pp **Aug 2006**
978-1-86094-658-5 **US\$170** **£112**
978-1-86094-895-4(ebook) **US\$221**



NOTABLE BACKLIST

ATOMS, MOLECULES AND CLUSTERS IN ELECTRIC FIELDS: THEORETICAL APPROACHES TO THE CALCULATION OF ELECTRIC POLARIZABILITY
MAROULIS GEORGE (UNIVERSITY OF PATRAS, GREECE)

OVERVIEWS OF RECENT RESEARCH ON ENERGETIC MATERIALS
SHAW ROBERT W ET AL (ARMY RESEARCH OFFICE, USA)

MODERN TRENDS IN CHEMICAL REACTION DYNAMICS - PART II: EXPERIMENT AND THEORY
YANG XUEMING ET AL (CHINESE ACADEMY OF SCIENCES, P R CHINA)

:: Bestseller

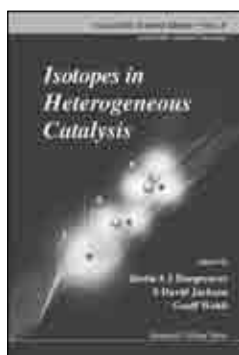
Catalytic Science Series - Vol. 4

ISOTOPES IN HETEROGENEOUS CATALYSISedited by **Justin S J Hargreaves, S David Jackson & Geoff Webb** (University of Glasgow, UK)

The purpose of this book is to review the current, state-of-the-art application of isotopic methods to the field of heterogeneous catalysis. Isotopic studies are arguably the ultimate technique in *in situ* methods for heterogeneous catalysis.

Readership: Academic and researchers, as well as postgraduate students in catalysis.

308pp **Apr 2006**
978-1-86094-584-7 **US\$153** **£101**
978-1-86094-808-4(ebook) **US\$199**



:: Evergreen

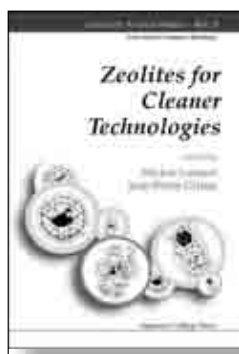
Catalytic Science Series - Vol. 3

ZEOLITES FOR CLEANER TECHNOLOGIESedited by **Michel Guisnet** (Université de Poitiers, France) & **Jean-Pierre Gilson** (ENSICAEN & Université de CAEN, France)

"Chapter authors have provided a teaching text that gives excellent introductory chapters to zeolites, and to the nature and significance of the processes that they can catalyse ... This excellent book should be required reading for all scientists who have an interest in improving the environment."

Chemistry & Industry

388pp **Sep 2002**
978-1-86094-329-4 **US\$136** **£89**
978-1-86094-955-5(ebook) **US\$177**

**Journal****SPIN**<http://www.worldscinet.com/spin>

Spin electronics is a rapidly emerging field which is based on taking advantage of the unique properties of the spin of the electron, the nucleus and other fundamental particles, as well as that of the photon. Spin electronics has special importance as conventional electronics reaches its physical limitations. Novel sensing, memory and logic devices, which rely on generating, manipulating and detecting the electron's spin, as well as using currents of spin-polarized electrons to manipulate magnetization in the form of magnetic nanoelements and magnetic domain walls, have emerged in recent years. Spin electronics encompasses a multidisciplinary research effort involving magnetism, semiconductor electronics, materials science, chemistry and biology. *SPIN* aims to provide a forum for the presentation of research and review articles of interest to all researchers in the field.

**Chief Editor****Stuart Parkin**, IBM, USA**Managing Editors****Ching-Ray Chang**, National Taiwan University, Taiwan
Roy Chantrell, The University of York, UK**Computational Chemistry**

Recent Advances in Computational Chemistry - Vol. 7

RECENT ADVANCES IN COMPUTATIONAL CHEMISTRY SOFTWAREedited by **Roger Amos & Rika Kobayashi** (Australian National University, Australia)

There are many chemistry software packages in existence today encompassing a variety of theoretical methods and computational techniques. Many of the programs currently used are well established but evolving constantly and it is believed the time is right to revisit the state of the software in light of major developments in functionality and computer hardware. This book is a reference for computational software, not as a series of user manuals, but as an update on new developments in the major program packages highlighting what is unique to these packages and also fundamental techniques that are common to all.

Readership: Academicians, researchers and postgraduate students in computational chemistry and theoretical/quantum chemistry.

400pp **Nov 2011**
978-981-4289-32-0 **US\$118** **£82**
978-981-4289-33-7(ebook) **US\$153**

HANDBOOK OF PI AND PID CONTROLLER TUNING RULES (3rd Edition)by **Aidan O'Dwyer** (Dublin Institute of Technology, Ireland)**Highlights:**

- Addresses the needs of a niche market where no comparable book is available
- A comprehensive compilation of PI and PID controller tuning rules
- Highlights the marked increase in the number of tuning rules compiled, from 600 in the first edition to 1,134 in the second edition to 1,730 in this third edition



The vast majority of automatic controllers used to compensate industrial processes are PI or PID type. This book comprehensively compiles, using a unified notation, tuning rules for these controllers proposed from 1935 to 2008. The tuning rules are carefully categorized and application information about each rule is given. The book discusses controller architecture and process modeling issues, as well as the performance and robustness of loops compensated with PI or PID controllers. This unique publication brings together in an easy-to-use format material previously published in a large number of papers and books.

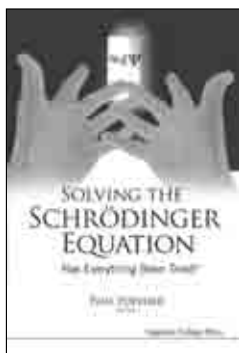
624pp **Jun 2009**
978-1-84816-242-6 **US\$227** **£150**
978-1-84816-243-3(ebook) **US\$295**

SOLVING THE SCHRÖDINGER EQUATION

Has Everything Been Tried?
edited by **Paul Popelier**
(University of Manchester, UK)

This book focuses on non-mainstream methods to solve the molecular electronic Schrödinger equation. Each method is based on a set of core ideas and this volume aims to explain these ideas clearly so that they become more accessible. By bringing together these non-standard methods, the book intends to inspire graduate students, postdoctoral researchers and academics to think of novel approaches.

400pp Sep 2011
978-1-84816-724-7 US\$130 £81
978-1-84816-725-4(ebook) US\$169



Recent Advances in Computational Chemistry - Vol. 5 RECENT ADVANCES IN RELATIVISTIC MOLECULAR THEORY

edited by **Kimihiko Hirao** (The University of Tokyo, Japan) & **Yasuyuki Ishikawa** (University at Puerto Rico, USA)

"One chapter in the book (by A Wolf, M Reiher and B Hess) is an elegantly written overview, which in 55 pages takes us from quantum electrodynamics to the quasi-relativistic formulations. It was a pleasure to read this chapter, in my opinion the best part of the book ... Most of the chapters are well written and easy to read. I found it quite instructive and can recommend it to all who are interested to learn about the subject and get inspiration for further reading."



Björn O Roos
Professor of Theoretical Chemistry
University of Lund, Sweden

344pp Jan 2004
978-981-238-709-7 US\$165 £109
978-981-279-490-1(ebook) US\$215

:: Bestseller

Computational Chemistry: Reviews of Current Trends - Vol. 10

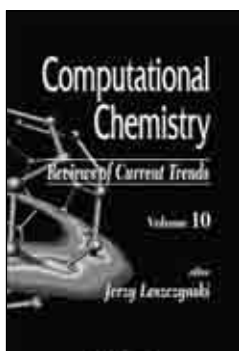
COMPUTATIONAL CHEMISTRY: REVIEWS OF CURRENT TRENDS

edited by **Jerzy Leszczynski**
(Jackson State University, USA)

"A good balance between chapters that focus on theory and chapters that focus on applications. The theoretical developments discussed here are of general interest to practitioners of computational chemistry."

Professor Kang Hway Chuan
National University of Singapore

344pp Jun 2006
978-981-256-742-0 US\$185 £122
978-981-277-387-6(ebook) US\$241



:: Bestseller

Computational Chemistry: Reviews of Current Trends - Vol. 8

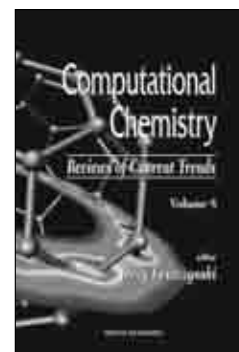
COMPUTATIONAL CHEMISTRY: REVIEWS OF CURRENT TRENDS

edited by **Jerzy Leszczynski**
(Jackson State University, USA)

The gap between experimental objects and models for calculations in chemistry is being bridged. The size of experimental nano-objects is decreasing, while reliable calculations are feasible for larger and larger molecular systems. However, there are still significant challenges for computational methods. This series of books presents reviews of current advances in computational methodologies and applications.

Readership: Graduate students and researchers in computational chemistry.

360pp Dec 2003
978-981-238-702-8 US\$198 £131
978-981-256-436-8(ebook) US\$257



:: Bestseller

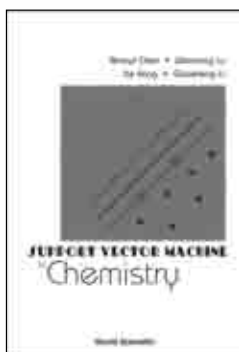
SUPPORT VECTOR MACHINE IN CHEMISTRY

by **Nianyi Chen, Wencong Lu** (Shanghai University, China), **Jie Yang & Guozheng Li** (Shanghai Jiao Tong University, China)

This book provides a systematic approach to the principles and algorithms of SVM, and demonstrates the application examples of SVM in QSAR/QSPR work, materials and experimental design, phase diagram prediction, modeling for the optimal control of chemical industry, and other branches in chemistry and chemical technology.

Readership: Undergraduates, graduate students, and researchers in computational chemistry.

344pp Aug 2004
978-981-238-922-0 US\$140 £92
978-981-279-471-0(ebook) US\$182



Journal

Journal of Theoretical and Computational Chemistry (JTCC)

<http://www.worldscinet.com/jtcc>

The *Journal of Theoretical and Computational Chemistry* (JTCC) is an international interdisciplinary journal, aimed at providing comprehensive coverage on the latest developments of research in the ever-expanding area of theoretical and computational chemistry and their applications to broad scientific fields spanning physics, chemistry, biology, materials, and so on.

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Associate Editors
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Tucker Carrington, Jr, Queen's University, Canada

Zhenyang Lin, The Hong Kong University of Science and Technology, Hong Kong

Peter Saalfrank, University of Potsdam, Germany



Electrochemistry

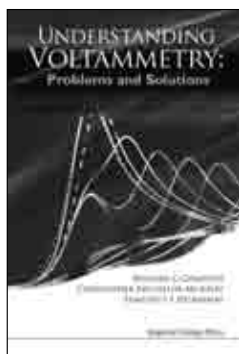
:: Textbook

UNDERSTANDING VOLTAMMETRY

Problems and Solutions

by **Richard G Compton**,
Christopher Batchelor-McAuley &
Edmund J F Dickinson (*University of Oxford, UK*)

There is huge interest in the experimental procedure of voltammetry at present, and yet no dedicated question and answer book with exclusive voltammetric focus exists, in spite of the inherent challenges of the subject. This book aims to fill that niche.



Readership: Senior undergraduates, graduates and researchers interested or specialising in electrochemistry and especially, voltammetry.

250pp	Dec 2011	
978-1-84816-730-8	US\$85	£53
978-1-84816-731-5(pbk)	US\$48	£30

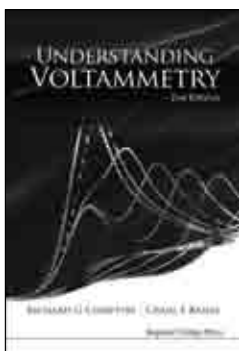
:: Bestselling Textbook

UNDERSTANDING VOLTAMMETRY (2nd Edition)

by **Richard G Compton** (*University of Oxford, UK*)
& **Craig E Banks** (*Manchester Metropolitan University, UK*)

In comparison to the first edition, two new chapters — transport via migration and nanoelectrochemistry — are added. Minor changes and updates are also made throughout the textbook to facilitate enhanced understanding and greater clarity of exposition.

Readership: Graduate students pursuing electrochemistry and electroanalytical studies, as well as researchers and industrialists working in the area.



444pp	Nov 2010	
978-1-84816-585-4	US\$115	£71
978-1-84816-586-1(pbk)	US\$64	£40

:: Bestseller

LITHIUM-ION BATTERIES

Solid-Electrolyte Interphase

edited by **Perla B Balbuena** & **Yixuan Wang**
(*University of South Carolina, USA*)

This invaluable book focuses on the mechanisms of formation of a solid-electrolyte interphase (SEI) on the electrode surfaces of lithium-ion batteries. The SEI film is due to electrochemical reduction of species present in the electrolyte. This book carefully analyzes and discusses the most recent findings and advances on this topic.

Readership: Upper-level undergraduates, graduate students, academics and industrial researchers interested in lithium-ion battery technology; academics in electrochemistry, surface chemistry and computational chemistry.



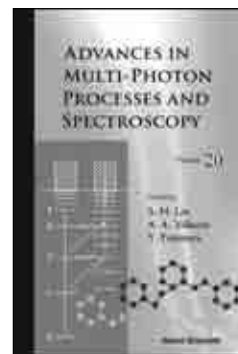
424pp	May 2004	
978-1-86094-362-1	US\$198	£131
978-1-86094-644-8(ebook)	US\$257	

Environmental / Atmospheric and Fullerene Chemistry

Advances in Multi-Photon Processes and Spectroscopy - Vol. 20

ADVANCES IN MULTI-PHOTON PROCESSES AND SPECTROSCOPY (Volume 20)

edited by **S H Lin** (*National Chiao-Tung University, Taiwan, Institute of Atomic and Molecular Sciences, Taiwan & Arizona State University, USA*), **A A Villaeys** (*Institute de Physique et Chimie des Matériaux de Strasbourg, France*) & **Y Fujimura** (*Tohoku University, Japan*)



This book presents the latest developments and issues in both experimental and theoretical studies of multi-photon processes and the spectroscopy of atoms, molecules and nanomaterials in Physics, Chemistry, Biology and Material Science.

Readership: Chemists, physicists, biologists, material scientists and postgraduates studying the multiphoton processes and multiphoton spectroscopy of atoms, molecules and ions.

260pp	May 2011	
978-981-4343-98-5	US\$109	£71
978-981-4343-99-2(ebook)	US\$142	

World Scientific Series on Carbon Nanoscience

HANDBOOK OF CARBON NANO MATERIALS (In 2 Volumes)

Volume 1: Synthesis and Supramolecular Systems
Volume 2: Electron Transfer and Applications

edited by **Francis D'Souza**
(*University of North Texas, USA*)
& **Karl M. Kadish** (*University of Houston, USA*)

A hands on reference guide for scientists working in the fields of chemistry, physics, materials science, polymer science, solid-state physics, devices, nanotechnology or supramolecular science of carbon nanomaterials. An invaluable reference source essential for both beginning and advanced researchers in the field.

Readership: Academics, researchers and industry professionals in the fields of fullerenes and all-carbon nanomaterials.

972pp	Jan 2011	
978-981-4327-81-7	US\$380	£247
978-981-4327-82-4(ebook)	US\$494	

The Only Handbook on Carbon Nano Materials

NOTABLE BACKLIST

LIQUID CRYSTALS, LAPTOPS AND LIFE
FISCH MICHAEL R (*KENT STATE UNIV, USA*)

BASIC CHEMICAL THERMODYNAMICS (FIFTH EDITION)
SMITH E BRIAN (*CARDIFF UNIVERSITY, UK*)

MODERN TRENDS IN CHEMICAL REACTION DYNAMICS - PART I: EXPERIMENT AND THEORY
YANG XUEMING & LIU KOPIN (*ACADEMIA SINICA, TAIWAN & CHINESE ACADEMY OF SCIENCES, PRC*)

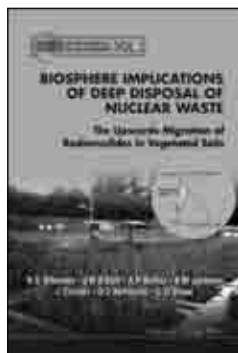
INTRODUCTION TO DYNAMIC SPIN CHEMISTRY: MAGNETIC FIELD EFFECTS ON CHEMICAL AND BIOCHEMICAL REACTIONS
HAYASHI HISAHARU (*THE INST OF PHYSICAL & CHEMICAL RESEARCH, JAPAN*)

Series on Environmental Science and Management - Vol. 5

BIOSPHERE IMPLICATIONS OF DEEP DISPOSAL OF NUCLEAR WASTE

The Upwards Migration of Radionuclides in Vegetated Soils

by **H S Wheater, J N B Bell, A P Butler, B M Jackson, L Ciciani** (*Imperial College London, UK*), **D J Ashworth** (*Imperial College London, UK & US Salinity Laboratory, California, Riverside, USA*) & **G G Shaw** (*Imperial College London, UK & University of Nottingham, UK*)



This monograph brings together for the first time the accumulated results and experience from almost two decades of research. The results have important implications for the safety assessment of nuclear waste worldwide and provide new insights into related topics.

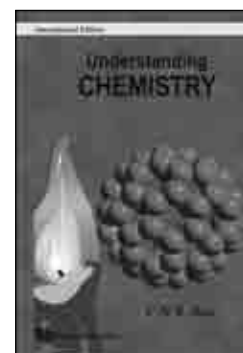
Readership: Professionals/academics/postgraduates of nuclear waste management industry, environmental science, soil science, environmental risk assessment, pollution and hydrology.

420pp Jul 2007
 978-1-86094-743-8 US\$165 £109
 978-1-86094-948-7(ebook) US\$215

:: Fast Moving

UNDERSTANDING CHEMISTRY

by **C N R Rao** (*Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India & Indian Institute of Science, Bangalore, India*)



The book covers essential aspects of chemistry, features of the modern periodic table, bonding between atoms in molecules and substances, shapes and structures of molecules, metals and materials, alkalis and acids, carbon compounds, electronic structure of atoms, classification of elements, simple chemical reactions, biopolymers and man-made polymers and aspects of energy.

Readership: Science students and teachers.

312pp Jul 2009
 978-981-283-603-8(pbk) US\$49 £32
 978-981-283-604-5(ebook) US\$64

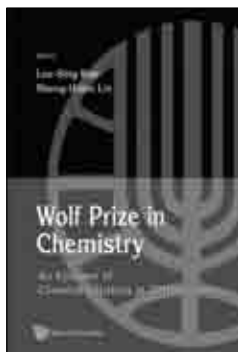
General Chemistry

WOLF PRIZE IN CHEMISTRY

An Epitome of Chemistry in 20th Century and Beyond

edited by **Lou-Sing Kan & Sheng-Hsien Lin** (*Academia Sinica, Taiwan*)

This book is the epitome of important developments in chemistry in the 20th century and beyond. It provides a historical account of the Wolf Prize in Chemistry and includes the biographies and selected papers of the distinguished recipients from 1978 to 2008 (no prize was awarded in 2009 or 2010). Many of the recipients have extensive publication lists. This invaluable volume provides readers with in-depth knowledge of all the major fields in chemistry, and will also inspire readers with the unique accounts of the prize winners.

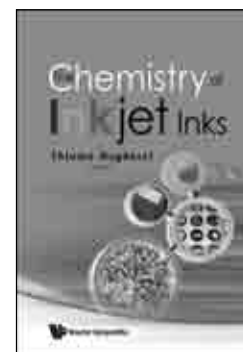


604pp Mar 2011
 978-981-4280-39-6 US\$180 £117

:: Fast Moving

THE CHEMISTRY OF INKJET INKS

edited by **Shlomo Magdassi** (*The Hebrew University of Jerusalem, Israel*)



This book provides basic and essential information on the important parameters which determine ink performance. It covers not only the conventional use of inkjet technology on graphic applications, but also the extension of this method to print various functional materials, such as the use of conductive inks to print light-emitting diodes (LEDs) and three-dimensional structures.

Readership: Companies making inkjet printers (Epson, HP, Lexmark, Canon), chemists, chemical engineers and material scientists.

356pp Jul 2009
 978-981-281-821-8 US\$121 £80
 978-981-281-822-5(ebook) US\$157

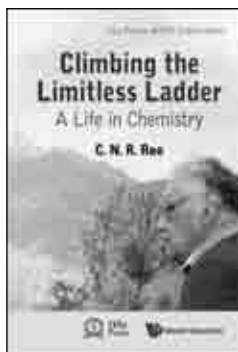
:: Fast Moving

CLIMBING THE LIMITLESS LADDER

A Life in Chemistry

by **C N R Rao** (*Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India & Indian Institute of Science, Bangalore, India*)

"This book presents an interesting personal voyage and seems to have been written, in part, to inspire young people to take up careers in science ... this is an absorbing autobiography of a man who has inspired many young chemists around the world as well as his beloved India."

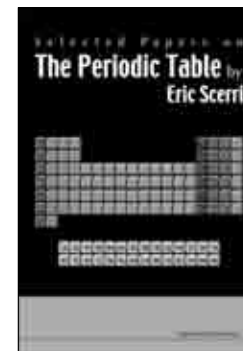


Chemistry World

232pp Jun 2010
 978-981-4307-85-7 US\$54 £37
 978-981-4307-86-4(pbk) US\$29 £20
 978-981-4307-87-1(ebook) US\$70

SELECTED PAPERS ON THE PERIODIC TABLE BY ERIC SCERRI

edited by **Eric Scerri** (*University of California, Los Angeles, USA*)



"It bundles some of his most brilliant papers into one volume, and it provides the reader with a thorough overview of Scerri's cutting edge research on the periodic table. Scerri has tackled all of these periodic table related problems by approaching them both scientifically, historically and philosophically. Every chemist, philosopher and educator with an interest in the periodic table of chemical elements should definitely add a copy of this volume to his personal library!"

Foundations of Chemistry

156pp Jul 2009
 978-1-84816-425-3 US\$112 £74
 978-1-84816-426-0(ebook) US\$146

:: Bestseller

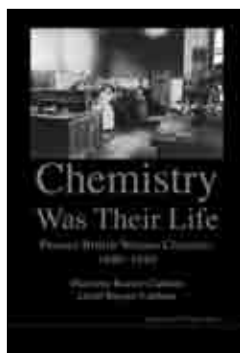
CHEMISTRY WAS THEIR LIFE

Pioneer British Women Chemists,

1880–1949

by **Marelene Rayner-Canham &****Geoff Rayner-Canham***(Memorial University of Newfoundland, Canada)*

"Chemistry was their life has been very well researched and is extensively referenced ... It is of great interest also to read of the battle which these women had to obtain recognition by professional societies."



Chemistry World

560pp

Oct 2008

978-1-86094-986-9

US\$108 £72

978-1-86094-987-6(ebook)

US\$140

:: Bestselling Textbook

cheMagic

50 Chemistry Classics and Magical Tricks

by **Wee Khee Seah, Mingjie Lim,****Kenneth, Cheng Feng Lee, Gary, Tien Sheng****Ong, Royston, & Wei Xiong Yeo, Nicholas***(NUS High School of Math and Science, Singapore)*

"The authors provide an excellent introduction which focuses on maximising dramatic effect ... an excellent variety of demonstrations are described. The layout is clear and tricks are easy to find ... I would recommend to all science educators interested in inspiring and entertaining."



Chemistry World China

Find chemistry boring in the classrooms? Cannot remember or understand the concepts? Never thought that it can be used outside the classroom? Now, *cheMagic* brings together the intelligent use of chemistry concepts, methods and techniques to entertain and captivate your audience while enhancing your understanding of chemistry. From preparation to presentation, no stone is left unturned and no question left unanswered. Learn how to make Pyrex glassware shine, make steam rise from a teapot, and even start a fire that does not burn! Learn while you play! This book will kickstart your learning journey in chemistry and develop you into a true *cheMagician*!

An innovative book developed by NUS High School of Math and Science, Singapore, this book showcases the quality of work and the brand name of a specialist school in science. The book will attract many readers from other schools who want to understand how students experiment, explore and excel in this research-focused environment.

Readership: Students and educators of chemistry, science outreach programs, institutions and schools.

148pp

Oct 2008

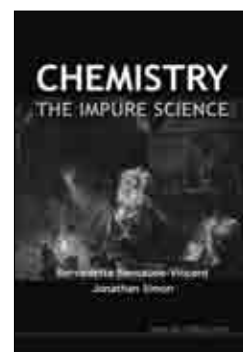
978-981-283-707-3(pbk)

US\$28 £19

:: Bestseller

CHEMISTRY — THE IMPURE SCIENCEby **Bernadette Bensaude-Vincent***(Université Paris X, France) &***Jonathan Simon** *(Université Lyon 1, France)*

This book uses history to introduce central issues in the philosophy of chemistry. Mobilizing the theme of impurity, it explores the tradition of chemistry's negative image. The book concludes with some ethical reflections concerning chemistry's orientations in the twenty-first century.



Readership: Undergraduate, graduate of chemistry and philosophy.

280pp

Oct 2008

978-1-84816-225-9

US\$97 £64

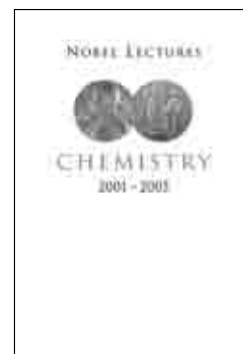
978-1-84816-226-6(ebook)

US\$126

:: Bestseller

NOBEL LECTURES IN CHEMISTRY 2001 – 2005edited by **Per Ahlberg***(Göteborg University, Sweden)*

This volume is a collection of the Nobel Lectures delivered by the prizewinners, together with their biographies and the presentation speeches at the award ceremonies in Stockholm for the period 2001 – 2005. Each Nobel Lecture is based on the work for which the laureate was awarded the prize. This volume of inspiring lectures by outstanding chemists and biochemists should be on the bookshelf of every keen student, teacher and professor of chemistry as well as of those in related fields.



492pp

Jul 2008

978-981-279-444-4

US\$120 £79

978-981-279-445-1(pbk)

US\$73 £48

:: Bestseller

COLLECTED PAPERS ON PHILOSOPHY OF CHEMISTRYby **Eric R Scerri** *(University of California in**Los Angeles, USA)*

"Eric Scerri brings sound chemical, historical, and philosophic scholarship to bear on the many aspects of chemical teaching that concern long-standing philosophical puzzles. Such work illuminates chemical education in interesting and unexpected ways, and also may well contribute to resolving problems in academic philosophy that have resisted other approaches."

Science & Education

Readership: Philosophers, historians and students of science, science educators, physicists and chemists.

248pp

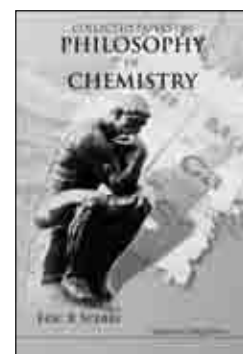
Jun 2008

978-1-84816-137-5

US\$137 £90

978-1-84816-138-2(ebook)

US\$178



:: Bestselling Textbook

CHEMISTRY FOR ENGINEERS

by **Teh Fu Yen**

(University of Southern California, USA)

This book aims at bridging the concepts and theory of chemistry with examples from fields of practical application, thus reinforcing the connection between science and engineering. It deals with the basic principles of various branches of chemistry. Written primarily for use as a textbook for a university-level course, the topics covered here provide the fundamental tools necessary for an accomplished engineer.



576pp Jan 2008
 978-1-86094-774-2 US\$108 £56
 978-1-86094-775-9(pbk) US\$61 £33

:: Evergreen

CANDID SCIENCE III

More Conversations with Famous Chemists

by **István Hargittai** (Budapest University of Technology and Economics, Hungary) & edited by **Magdolna Hargittai**

"I recommend this useful volume, suitable for complete reading or browsing, not only to historians of chemistry and science but also to practicing chemists and students, who will benefit from these inspiring stories by some of chemistry's most eminent contributors."



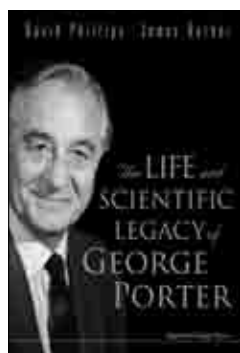
Chemical Heritage

520pp Mar 2003
 978-1-86094-336-2 US\$140 £92
 978-1-86094-337-9(pbk) US\$66 £43
 978-1-84816-134-4(ebook) US\$182

THE LIFE AND SCIENTIFIC LEGACY OF GEORGE PORTER

edited by **David Phillips & James Barber**
 (Imperial College London, UK)

"This book will be of interest to his colleagues and contemporaries in physical chemistry, and indirectly to historians via the first-hand attributions of Porter's influence. Between the lines, this book is a catalogue of the credentials of the great and the good of two generations in British chemistry."



AMBIX

652pp Jul 2006
 978-1-86094-660-8 US\$208 £137
 978-1-86094-695-0(pbk) US\$113 £75
 978-1-86094-893-0(ebook) US\$270

Industrial and Materials Chemistry

THIOPHENE IN MATERIALS CHEMISTRY

by **Giovanna Barbarella** (Consiglio Nazionale Ricerche — Istituto per la Sintesi Organica e la Fotoreattività (CNR ISOF), Italy)

This book covers the most important developments in synthesis, properties, processing and applications of thiophene-based compounds in materials chemistry. In the last few years, thiophene-based materials have acquired increasing importance in nanoscience and nanotechnology, owing to their multiple functional properties, chemical robustness, and versatility. Research involving thiophene-based materials is highly interdisciplinary and spans from electronics to diagnostics, in which the light absorption and emission properties of the same compounds are exploited to monitor biological events involving proteins and DNA. Since all fields are concerned with the synthesis of new molecular structures, the book also deals with the most recent advances in synthetic methodologies.

Readership: Chemists, materials scientists, researchers in academia and industry, and graduate students in chemistry and materials science.

200pp April 2012
 978-981-283-418-8 US\$85 £58
 978-981-283-609-0(ebook) US\$111

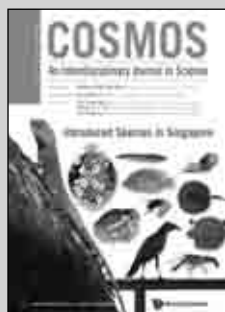
Journal

COSMOS

<http://www.worldscinet.com/cosmos>

Aims & Scope

COSMOS, the Journal of the Singapore National Academy of Science, publishes invited review articles with the aim of promoting interdisciplinary research in Science and Mathematics. Each volume, published twice a year, focuses on a specific topic or field and should be accessible to researchers from other scientific disciplines. Interested contributors should contact the Managing Editors regarding the topics to be featured in the coming issues. Proposals to serve as issue editor of specific topics will also be considered. Previous issues have covered the areas of Statistics, Quantum Information and Nanoscience.



Editor-in-Chief

Andrew Wee Thye Shen
 National University of Singapore

Sequel to Bestselling First Edition!

THE CHEMISTRY OF NANOSTRUCTURED MATERIALS Volume II

edited by **Peidong Yang** (University of California, Berkeley, USA)

It covers the most exciting developments in the nanostructured materials field for the past five to ten years, with a particular focus on their applications in energy conversion and energy storage. Prominent authors of recognized authority in the field contribute their expertise in the review chapters.

Readership: Undergraduate and graduate students in nanochemistry.

336pp Jan 2011
 978-981-4313-05-6 US\$94 £62
 978-981-4313-06-3(pbk) US\$52 £34
 978-981-4313-07-0(ebook) US\$122



Catalytic Science Series - Vol. 8

PETROCHEMICAL ECONOMICS

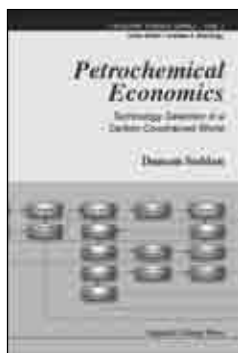
Technology Selection in a Carbon Constrained World

by **Duncan Seddon** (*Duncan Seddon & Associates Pty Ltd, Australia*)

This compendium gives an overview of the technologies and economics in the production of olefins in the petrochemical industries. It highlights the options and costs for producing olefins using different technologies and different feedstocks at a time when the cost of carbon dioxide emissions are set to be included in the production cost. Industry professionals, engineers, research scientists and financiers will find this title a valuable resource.

268pp
978-1-84816-534-2
978-1-84816-535-9(ebook)

May 2010
US\$93 £64
US\$121

**MATERIALS, MATTER AND PARTICLES**

A Brief History

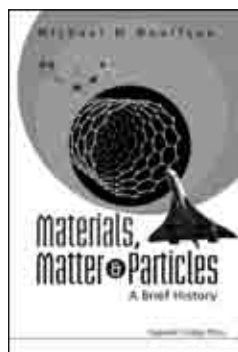
by **Michael M Woolfson** (*University of York, UK*)

This book traces the history of ideas about the nature of matter and also the way that mankind has used material resources that the world offers. Starting with the ideas of ancient civilizations that air, earth, fire and water were the basic ingredients of all matter, it traces the development of the science of chemistry beginning within the ranks of the alchemists.

Readership: Accessible to a wide audience including the educated layperson and undergraduates taking science as a subsidiary subject.

328pp
978-1-84816-459-8
978-1-84816-460-4(pbk)
978-1-84816-461-1(ebook)

Oct 2009
US\$77 £51
US\$44 £29
US\$100

**CHEMISTRY OF NANOCRYSTALLINE OXIDE MATERIALS**

Combustion Synthesis, Properties and Applications

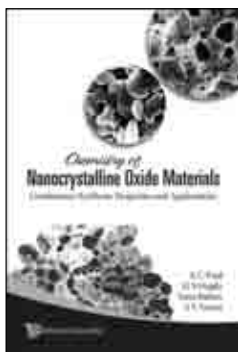
by **K C Patil, M S Hegde, Tanu Rattan** (*Nunano Solutions, India*) & **ST Aruna** (*National Aerospace Laboratories, India*)

"The book which contains ready recipes for the SCS of a large number and wide variety of nano-phase oxides will prove to be a handy guide for the practicing solid state chemists, solid state physicists, materials scientists and technologists, and these include students, teachers and active researchers. It will also be a valuable addition to the libraries concerned with the books on nano-materials science and nano-technology."

Professor G V Subba Rao
National University of Singapore

364pp
978-981-279-314-0
978-981-279-315-7(ebook)

Sep 2008
US\$153 £101
US\$199

**Inorganic Chemistry**

Catalytic Science Series

THE PINCER LIGAND

Its Chemistry and Applications

edited by **Preston A Chase & Gerard van Koten** (*Utrecht University, The Netherlands*)

This book gives an account of the various facets of the development and use of organometallic complexes supported by the pincer group. Unlike other books that concentrate on specific classes of pincer metal complexes, this volume presents this large body of pincer chemistry by focusing on applications and reaction types.

Readership: Advanced undergraduate and graduate students as well as researchers.

350pp
978-1-84816-384-3
978-1-84816-385-0(ebook)

Sep 2012
US\$124 £86
US\$161

World Scientific Series in Nanoscience and Nanotechnology

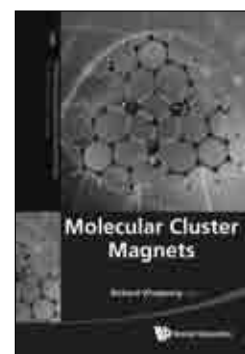
MOLECULAR CLUSTER MAGNETSedited by **Richard Winpenny**(*The University of Manchester, UK*)

This work covers new developments in the field of molecular nanomagnetism, complementing previous books in this area (for example the volume by Gatteschi, Sessoli and Villain on Single Molecule Magnets). The book is written by experts in the field and is intended as a compilation of critical reviews of new areas rather than a comprehensive text.

Readership: Graduate students and researchers in molecular nanomagnetism.

300pp
978-981-4322-94-2
978-981-4322-95-9(ebook)

Aug 2011
US\$95 £59
US\$124

**Journal****International Journal of Nanoscience (IJN)**<http://www.worldscinet.com/ijn>**Aims & Scope**

This inter-disciplinary, internationally-reviewed research journal covers all aspects of nanometer scale science and technology. Articles in any contemporary topical areas are sought, from basic science of nanoscale physics and chemistry to applications in nanodevices, quantum engineering and quantum computing.

Managing Editors**J G Hou**

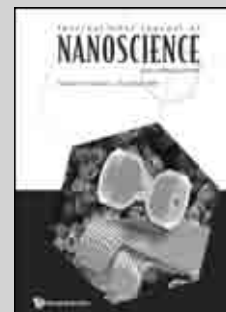
University of Science and Technology of China, China

C H Sow

National University of Singapore

A Zakhidov

UTD-Nanotech Institute, University of Texas at Dallas, USA

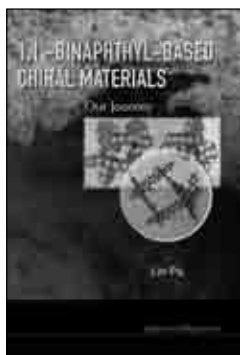


1,1'-BINAPHTHYL-BASED CHIRAL MATERIALS

Our Journey
by **Pu Lin** (University of Virginia, USA)

In this book, both the fundamental knowledge about the 1,1'-binaphthyl molecules and the synthesis of the structurally diverse 1,1'-binaphthyl-based materials are described. The applications of these materials in various fields are also discussed. This book will serve as a reference for graduate students as well as other professionals working in the related fields.

368pp **Aug 2009**
978-1-84816-411-6 **US\$125** **£83**
978-1-84816-412-3(ebook) **US\$163**



:: Bestseller

World Scientific Series in 20th Century Chemistry - Vol. 11

ACROSS CONVENTIONAL LINES

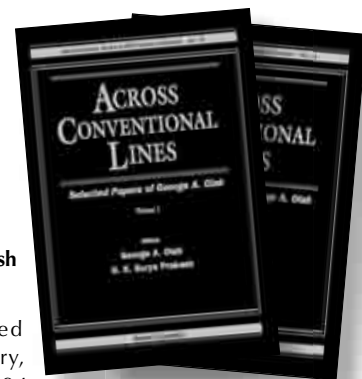
Selected Papers of George A Olah
(In 2 Volumes)

edited by **George A Olah** & **G K Surya Prakash**
(University of Southern California)

In the course of his distinguished career spanning about half a century, George A Olah, winner of the 1994 Nobel Prize for Chemistry, has been exceedingly prolific and has published more than 1000 scientific papers and 15 books and holds more than 100 patents. This invaluable volume contains about 250 papers selected for their breadth and current importance.

Readership: Chemists, especially organic chemists.

1504pp **Jan 2003**
978-981-02-2769-2 **US\$257** **£169**
978-981-279-140-5(ebook) **US\$334**



:: Bestseller

CHEMISTRY AND BIOLOGY OF ELLAGITANNINS

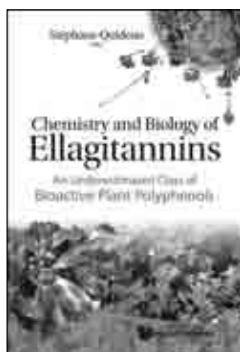
An Underestimated Class of Bioactive Plant Polyphenols
edited by **Stéphane Quideau**
(University of Bordeaux, France)

"This comprehensive and well-illustrated book, which gathers contributions from leading teams in the chemistry and biology of ellagitannins, deserves a wide success."

Chemistry World

Readership: Research scientists in natural products chemistry, university undergraduates/graduates, and professionals in the pharmaceutical, food and beverage field/industry.

396pp **Jan 2009**
978-981-279-740-7 **US\$170** **£112**
978-981-279-741-4(ebook) **US\$221**



:: Evergreen

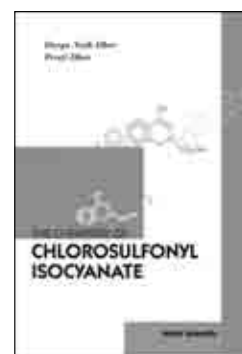
THE CHEMISTRY OF CHLOROSULFONYL ISOCYANATE

by **Durga Nath Dhar** (Indian Institute of Technology, Kanpur, India) & **Preeti Dhar**
(State University of New York, New Paltz, USA)

Numerous articles have been published on chlorosulfonyl isocyanate (CSI), but no book compiling research on this versatile reagent has been available up to now. This book fills that gap. It provides an overview of the research on CSI, including information about commercially exploitable patented products involving the use of CSI.

The Chemistry of Chlorosulfonyl Isocyanate is an important book that should serve as a one-stop ready reference for researchers interested in the study of CSI.

396pp **Oct 2002**
978-981-238-081-4 **US\$136** **£89**
978-981-277-702-7(ebook) **US\$177**



:: Bestseller

SELECTED TOPICS IN THE CHEMISTRY OF NATURAL PRODUCTS

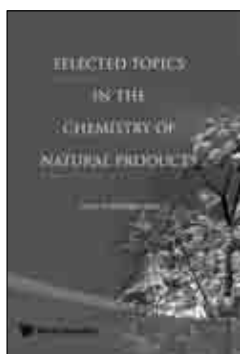
edited by **Raphael Ikan**
(Emeritus Professor, Hebrew University of Jerusalem, Israel)

"... most of the chapters in this book view natural products in a holistic manner from the point of view of their biological activity. This book therefore complements the conventional structure-based natural product texts, providing examples of their diverse biological activities for use in lectures and providing inspiration for synthetic targets."

Chemistry World

Readership: Academics, professionals and graduates in chemistry.

624pp **Dec 2007**
978-981-270-569-3 **US\$225** **£148**
978-981-279-078-1(ebook) **US\$293**



Journal

Journal of Porphyrins and Phthalocyanines (JPP)

<http://www.worldscinet.com/jpp>

The *Journal of Porphyrins and Phthalocyanines* (JPP) covers research in the chemistry, physics, biology and technology of porphyrins, phthalocyanines and related macrocycles. Research papers, review articles and short communications deal with the synthesis, spectroscopy, processing and applications of these compounds.

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Professor Kevin M. Smith, Louisiana State University, USA
Professor Tomas Torres, Universidad Autonoma de Madrid, Spain



Physical Chemistry

ELECTRON DYNAMICS IN MOLECULAR INTERACTIONSby **Frank Hagelberg** (*East Tennessee State University, USA*)

This volume provides a comprehensive introduction into the theory of electronic motion in molecular processes — an increasingly relevant and rapidly expanding segment of molecular quantum dynamics. Emphasis is placed on describing and interpreting transitions between electronic states in molecules, as they occur typically in cases of reactive scattering between molecules, photoexcitation or nonadiabatic coupling between electronic and nuclear degrees of freedom.

Readership: Graduate students and researchers in physical chemistry and computational physics; industrial chemists and physicists interested in the field.

500pp Jun 2012
 978-1-84816-487-1 US\$135 £93
 978-1-84816-488-8(ebook) US\$176

FUNDAMENTALS OF POLYMERIZATIONby **Broja Mohan Mandal** (*Indian Association for the Cultivation of Science, India*)

Over the last twenty years, the field of the chemistry of polymerization witnessed enormous growth through the development of new concepts, catalysts, processes etc. Apart from the developments in the chemistry of polymerization, methods have been developed for the evaluation of highly reliable rate constants of propagation in radical as well as cationic polymerization. All these have revolutionized the field of synthetic polymer chemistry.

In the book, fundamentals of both the new and old polymerization chemistry have been dealt with. The new chemistry has been given nearly equal space along with the old.

Readership: Academics and professionals in polymer chemistry.

600pp Feb 2012
 978-981-4322-46-1 US\$128 £79
 978-981-4322-85-0(ebook) US\$166

NONADIABATIC TRANSITIONConcepts, Basic Theories and Applications
(2nd Edition)by **Hiroki Nakamura** (*Institute for Molecular Science, National Institutes of Natural Sciences, Japan & The Graduate University for Advanced Studies, Japan*)

In this new edition, the original chapters are updated to facilitate enhanced understanding of the concept and applications. Three new chapters — nonadiabatic chemical dynamics, control of chemical dynamics, and manifestation of molecular functions — are also added.

Readership: Graduate Students and researchers in molecular science, physical chemistry, chemical dynamics, atomic and molecular physics, theoretical chemistry and physics, condensed matter and statistical physics, organic- and biochemistry.

500pp Dec 2011
 978-981-4329-77-4 US\$148 £92
 978-981-4329-78-1(ebook) US\$192

:: Textbook

UNDERSTANDING ADVANCED PHYSICAL INORGANIC CHEMISTRY

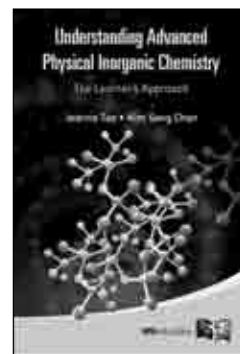
The Learner's Approach

by **Jeanne Tan & Kim Seng Chan**
(*Raffles Institution, Singapore*)

Written for students taking the A-level examinations, this textbook covers essential topics under the University of Cambridge stipulated A-level chemistry syllabus. It is written in such a way as to guide the reader through the understanding and applications of essential chemical concepts by introducing a discourse feature — the asking and answering of questions — that stimulates coherent thinking and hence, elucidates ideas.

Readership: Junior college students and teachers.

488pp Dec 2010
 978-981-4317-26-9(pbk) US\$28 £17

**ELEMENTARY PHYSICAL CHEMISTRY**by **Bruno Linder** (*Florida State University, USA*)

This book is designed for a one-semester course, for undergraduates, not necessarily chemistry majors, who need to know something about physical chemistry. It covers the essential topics in physical chemistry, including the state of matter, thermodynamics, chemical kinetics, phase and chemical equilibria, introduction to quantum theory, and molecular spectroscopy. Supplementary materials are available upon request for all instructors who adopt this book as a course text. Please send your request to sales@wspc.com.

Readership: Undergraduates including chemistry and non-chemistry majors, who need or want to study physical chemistry but have limited time.

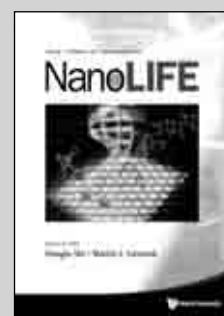
160pp Sep 2010
 978-981-4299-66-4 US\$42 £26
 978-981-4299-68-8(ebook) US\$55



Journal

NanoLIFE<http://www.worldscinet.com/nl>**Aims & Scope**

Nano LIFE is a quarterly international journal publishing peer-reviewed research in all fields of nano and biomedical sciences. The emphasis of this journal is based on its originality, importance, and interdisciplinary nature between nano and life sciences. *Nano LIFE* also provides current news and interpretations of critical issues in nanomedicine that caters to scientific communities and the general public.

Editors-in-Chief*Physical Sciences***Donglu Shi, Ph.D.**, University of Cincinnati, USA*Medical Sciences***L. Yarmush**, Rutgers University, USA, Harvard Medical School, USA

:: Textbook

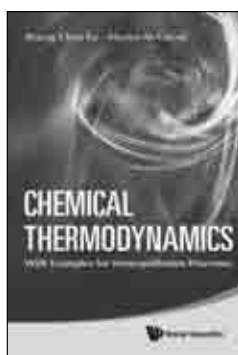
CHEMICAL THERMODYNAMICS

With Examples for Nonequilibrium Processes

by **Byung Chan Eu** (*McGill University, Canada*) & **Mazen Al-Ghoul** (*American University of Beirut, Lebanon*)

This book aims to introduce to advanced undergraduate students and graduate students the fundamental ideas and notions of the first and second laws of thermodynamics in a manner unavailable in the usual textbooks on the subject of thermodynamics.

468pp **Aug 2010**
978-981-4295-11-6 **US\$90** **£56**



:: Bestselling Textbook

INVITATION TO PHYSICAL CHEMISTRY (With CD-ROM)

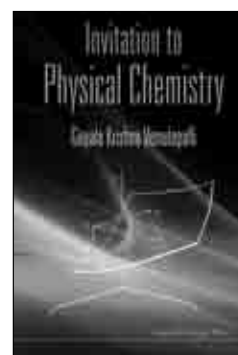
by **Gopala Krishna Vemulapalli** (*University of Arizona, USA*)



This is a unique book with a different aim from other books on the subject. The idea is to provide readers with the "big picture" first, yet at a level that helps further the study of physical chemistry. The text covers all the important topics in physical chemistry.

Readership: Instructors and students in chemistry and materials science, and readers interested in important ideas in physical science.

240pp **Mar 2010**
978-1-84816-301-0 **US\$61** **£40**



:: Bestselling Textbook

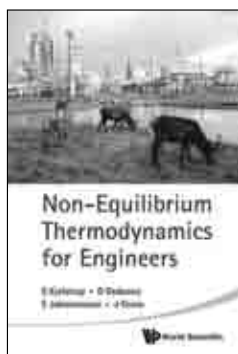
NON-EQUILIBRIUM THERMODYNAMICS FOR ENGINEERS

by **S Kjelstrup, D Bedeaux** (*Norwegian University of Science and Technology, Norway*), **E Johannessen** (*Statoil ASA, Norway*) & **J Gross** (*University of Stuttgart, Germany*)

The book describes in a simple and practical way what non-equilibrium thermodynamics is and how it can add to engineering fields. It explains how to describe proper equations of transport, more precise than used so far, and how to use them to understand the waste of energy resources in central unit processes in the industry.

Readership: Senior undergraduate and graduate students in physics, chemistry, chemical engineering and mechanical engineering.

272pp **Jun 2010**
978-981-4322-15-7 **US\$68** **£42**



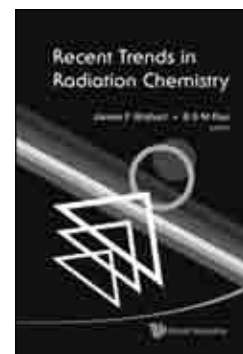
:: Bestseller

RECENT TRENDS IN RADIATION CHEMISTRY

edited by **James F Wishart** (*Brookhaven National Laboratory, USA*) & **BSM Rao** (*University of Pune, India*)

Recent Trends in Radiation Chemistry is a state-of-the-art review of the present status and future trends in the field of radiation chemistry research. The book is unique in that it covers a wide spectrum of topics that will be of great interest to beginners as well as experts. Recent data on ultrafast phenomena from the recently established world-class laser-driven accelerators facilities in the US, France and Japan are reviewed.

636pp **Feb 2010**
978-981-4282-07-9 **US\$112** **£74**
978-981-4282-09-3(ebook) **US\$146**



Advances in Multi-Photon Processes and Spectroscopy - Vol. 19

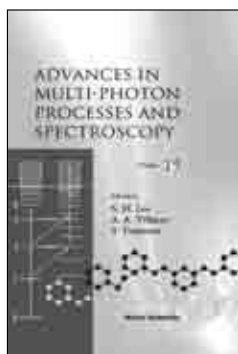
ADVANCES IN MULTI-PHOTON PROCESSES AND SPECTROSCOPY (Volume 19)

edited by **S H Lin** (*National Chiao-Tung University, Taiwan, Institute of Atomic and Molecular Sciences, Taiwan & Arizona State University, USA*), **A A Villaeys** (*Institute de Physique et Chimie des Matériaux de Strasbourg, France*) & **Y Fujimura** (*Tohoku University, Japan*)

This present volume attempts to serve this purpose. Each chapter is written in a self-contained manner by experts in their own area of expertise so that general readers can grasp the knowledge in that area without too much preparation.

Readership: Chemists, physicists, biologists, material scientists and postgraduates.

284pp **Mar 2010**
978-981-4293-58-7 **US\$99** **£66**
978-981-4293-59-4(ebook) **US\$129**



:: Fast Moving

BIOINSPIRED INTELLIGENT NANOSTRUCTURED INTERFACIAL MATERIALS

by **Lei Jiang** (*The Chinese Academy of Sciences, China*) & **Lin Feng** (*Tsinghua University, China*)

This book gives a complementary introduction about natural and artificial micro/nanoscale interfacial materials, devoting largely to the intelligent materials with special wettabilities. Inspired by nature, the authors proposed a concept of "binary cooperative complementary micro/nanoscale interfacial materials". This book combines popular science and professional knowledge, which will be suitable for not only researchers but also science lovers.

364pp **Jan 2010**
978-981-4280-31-0 **US\$153** **£101**



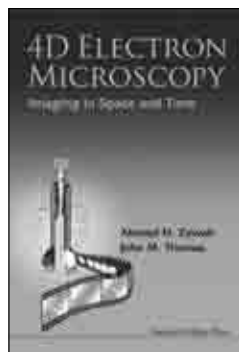
:: Fast Moving**4D ELECTRON MICROSCOPY**

Imaging in Space and Time
by **Ahmed H Zewail** (California Institute of Technology, USA) & **John M Thomas** (University of Cambridge, UK)

"Researchers using electron microscopy will find this book fascinating and very helpful for learning about the latest advances in electron microscopy imaging technology."

IEEE Electrical Insulation Magazine

360pp Dec 2009
978-1-84816-390-4 US\$88 £66
978-1-84816-400-0 (pbk) US\$48 £36
978-1-84816-391-1 (ebook) US\$114

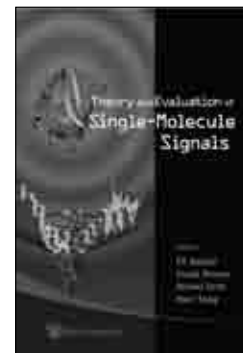
**THEORY AND EVALUATION OF SINGLE-MOLECULE SIGNALS**

edited by **Eli Barkai** (Bar Ilan University, Israel), **Frank L H Brown** (University of California at Santa Barbara, USA), **Michel Orrit** (Leiden University, Netherlands) & **Haw Yang** (University of California at Berkeley, USA)

This book reviews recently developed theoretical and numerical approaches to deal with optical and mechanical signals from individual molecules. With contributions mainly from participants of the "Theory, Modeling and Evaluation of Single-Molecule Measurements" workshop held in Leiden, the Netherlands, on April 16-20, 2007, this book is an authoritative compendium on the subject.

Readership: Researchers, academics and industry practitioners; suitable for graduate courses on single-molecule spectroscopy and microscopy.

416pp Oct 2008
978-981-279-348-5 US\$170 £112
978-981-279-349-2 (ebook) US\$221

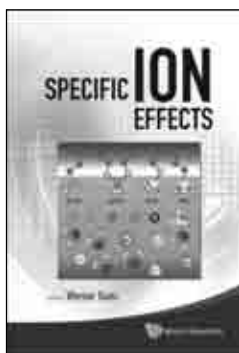
**SPECIFIC ION EFFECTS**

edited by **Werner Kunz** (University of Regensburg, Germany)

In this book, the efforts of theoreticians are substantially supported by the experimental results stemming from new and exciting techniques. Both the new theoretical concepts and the experimental landmarks are collected and critically discussed by eminent scientists and well-known specialists in this field.

Readership: Graduate students and researchers in physical chemistry, biological chemistry and chemical engineering; colloidal scientists.

348pp Dec 2009
978-981-4271-57-8 US\$121 £80
978-981-4271-58-5 (ebook) US\$157

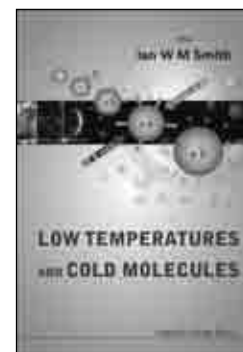
**LOW TEMPERATURES AND COLD MOLECULES**

edited by **Ian W M Smith** (Universities of Birmingham & Cambridge, UK)

This book brings together, for the first time, the results of recent research in areas ranging from the chemistry of cold interstellar clouds (10-20 K), through laboratory studies of the spectroscopy and kinetics of ions, radicals and molecules, to studies of molecules in liquid helium droplets, to attempts to create molecular (as distinct from atomic) Bose-Einstein condensates.

Readership: Physical chemistry researchers in universities and national laboratories, graduates in physics and chemistry.

580pp Sep 2008
978-1-84816-209-9 US\$183 £121
978-1-84816-210-5 (ebook) US\$238

**:: Fast Moving****MOLECULAR THEORY OF WATER AND AQUEOUS SOLUTIONS**

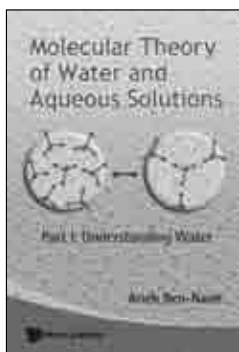
Part 1: Understanding Water
by **Arieh Ben-Naim** (The Hebrew University of Jerusalem, Israel)

"This volume is an elegant presentation of a statistical mechanical approach to liquid water."

Journal of the American Chemistry Society

Readership: Anyone who is interested in the outstanding properties of water and its role in biological systems. It is addressed to both students and researchers in chemistry, physics and biology.

660pp Jul 2009
978-981-283-760-8 US\$125 £83
978-981-4327-71-8 (pbk) US\$68 £42
978-981-283-761-5 (ebook) US\$163

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JEAN Y C ET AL (UNIV OF MISSOURI-KANSAS CITY, USA)

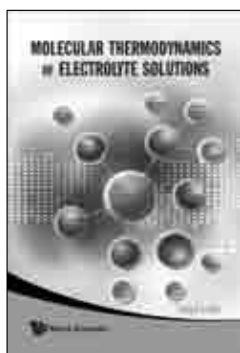
PROBLEMS IN CHEMICAL THERMODYNAMICS, WITH SOLUTIONS
ALEKSISHVILI MAKHA & SIDAMONIDZE SHOTA (TBILISI STATE UNIV, GEORGIA)

:: Bestselling Textbook

MOLECULAR THERMODYNAMICS OF ELECTROLYTE SOLUTIONS

by **Lloyd L Lee** (*California State Polytechnic University, USA*)

The introductory textbook provides an update on electrolyte thermodynamics with a molecular perspective. It is eminently suited as an introduction to the solution thermodynamics of ionic mixtures at the undergraduate and graduate level. It is also invaluable for the understanding and design in the engineering of natural gas treating and adsorption refrigeration with electrolytes.



264pp **Jul 2008**
 978-981-281-418-0 **US\$112 £74**
 978-981-281-419-7(pbk) **US\$82 £54**

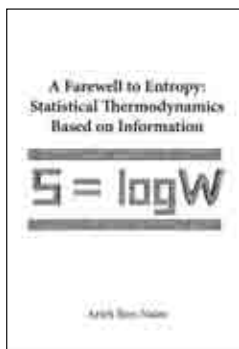
:: Bestseller

A FAREWELL TO ENTROPY

Statistical Thermodynamics Based on Information

by **Arieh Ben-Naim** (*The Hebrew University, Israel*)

The principal message of this book is that thermodynamics and statistical mechanics will benefit from replacing the unfortunate, misleading and mysterious term "entropy" with a more familiar, meaningful and appropriate term such as information, missing information or uncertainty.



Readership: Anyone interested in the sciences, students, researchers; as well as the layman.

412pp **Jan 2008**
 978-981-270-706-2 **US\$104 £74**
 978-981-270-707-9(pbk) **US\$65 £33**
 978-981-279-073-6(ebook) **US\$135**

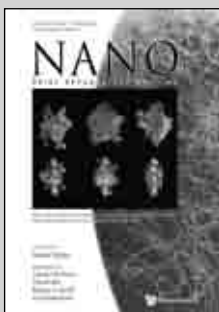
Journal

NANO

<http://www.worldscinet.com/nano>

Aims & Scope

NANO is an international peer-reviewed journal for nanoscience and nanotechnology that presents forefront fundamental research and new emerging topics. It features timely scientific reports of new results and technical breakthroughs and also contains interesting review articles about recent hot issues.



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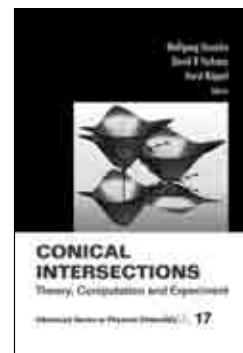
Photochemistry and Polymer Chemistry

Advanced Series in Physical Chemistry - Vol. 17

CONICAL INTERSECTIONS

Theory, Computation and Experiment
 edited by **Wolfgang Domcke** (*Technical University of Munich, Germany*), **David R Yarkony** (*Johns Hopkins University, USA*) & **Horst Köppel** (*Heidelberg University, Germany*)

This volume provides an up-to-date overview of the multi-faceted research on the role of conical intersections in photochemistry and photobiology, including basic theoretical concepts, novel computational strategies as well as innovative experiments. The contents and discussions will be of value to advanced students and researchers in photochemistry, molecular spectroscopy and related areas.

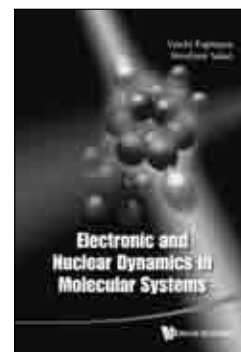


750pp **Jul 2011**
 978-981-4313-44-5 **US\$190 £131**
 978-981-4313-45-2(ebook) **US\$247**

ELECTRONIC AND NUCLEAR DYNAMICS IN MOLECULAR SYSTEMS

by **Yuichi Fujimura** (*Tohoku University, Japan*) & **Hirofumi Sakai** (*University of Tokyo, Japan*)

In this monograph, the fundamental theories and methods, as well as experimental methods and results, of real-time observation of both nuclear and electronic motions in molecular systems are described. It is suitable for researchers who want to make an active contribution to the new research field and for graduate students who are interested in ultra-fast nuclear and electron dynamics in molecular systems.



192pp **Jun 2011**
 978-981-283-722-6 **US\$75 £50**
 978-981-283-723-3(ebook) **US\$98**

:: Textbook

POLYMER MEMBRANES IN BIOTECHNOLOGY

Preparation, Functionalization and Application

by **Seeram Ramakrishna**, **Zuwei Ma** (*National University of Singapore*) & **Takeshi Matsuura** (*University of Ottawa, Canada*)

This book provides a concise and comprehensive introduction of polymer membranes' preparation, functionalization and applications in biotechniques including affinity membrane chromatography, membrane-based biosensor and membrane-based bioreactor.



A novel filter medium, i.e. nonwoven nanofiber membrane, and its preparation method, i.e. electrospinning technique, are also introduced in this book.

Readership: Undergraduates, graduates and researchers in membrane science, polymer membrane preparation, affinity membrane chromatography and theories, polymer surface modification and enzyme functionalized membrane.

300pp **Feb 2011**
 978-1-84816-379-9 **US\$88 £57**
 978-1-84816-380-5(pbk) **US\$45 £30**

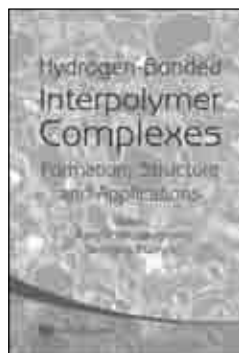
HYDROGEN-BONDED INTERPOLYMER COMPLEXES

Formation, Structure and Applications
 edited by **Vitaliy V Khutoryanskiy**
 (University of Reading, UK) &
Georgios Staikos (University of Patras, Greece)

"The book, although it is a collection of chapters written by different authors has a surprisingly uniform style. The text is lucid and provides the reader with an easy introduction to this fascinating topic. I can recommend this book to those wishing to gain a balanced overview of the interactions which can occur through hydrogen bonding in polymer systems."

Professor R A Pethrick
 University of Strathclyde, UK

376pp Mar 2009
 978-981-270-785-7 US\$155 £102
 978-981-270-977-6(ebook) US\$202

**Solid State and Supramolecular Chemistry****CUCURBITURILS**

Chemistry, Supramolecular Chemistry and Applications
 by **Kimoon Kim, Young Ho Ko & N Selvapalam**
 (Pohang University of Science and Technology (POSTECH), Korea)

This book provides the scientific community for the very first time, a comprehensive review on cucurbit[n]uril (CB[n], n = 5–10), a new family of molecular hosts, which has gained much attention in the new millennium for its exceptional molecular recognition ability. Full and up-to-date coverage of all the key issues in the area of CB chemistry are also provided, as are fresh perspectives.

Readership: Academics and professionals.

200pp Nov 2012
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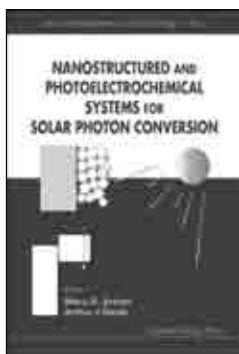
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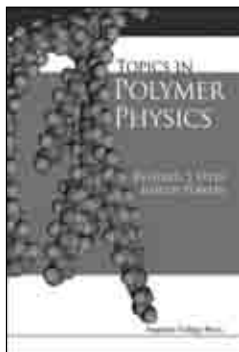
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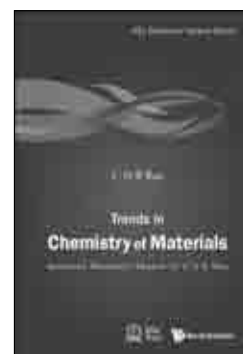
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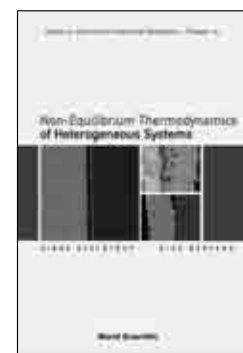
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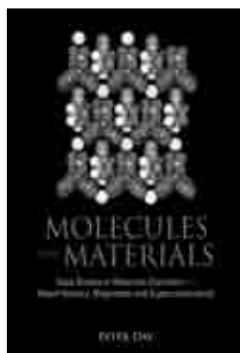
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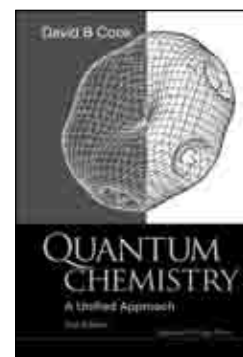
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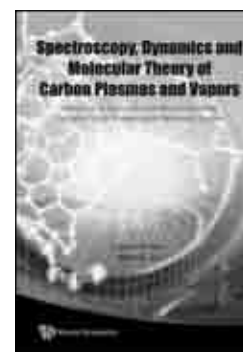
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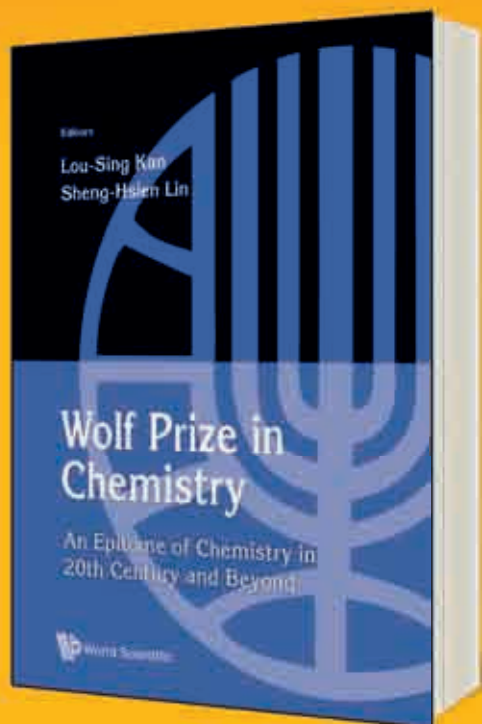
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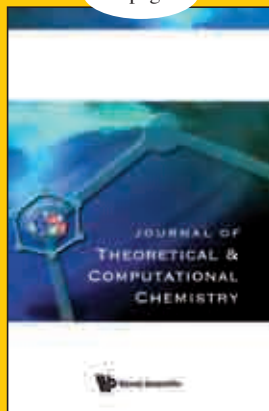
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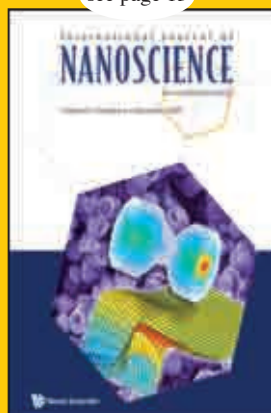
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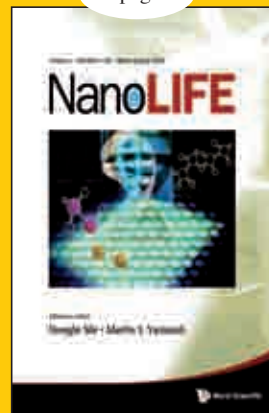
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