

2025

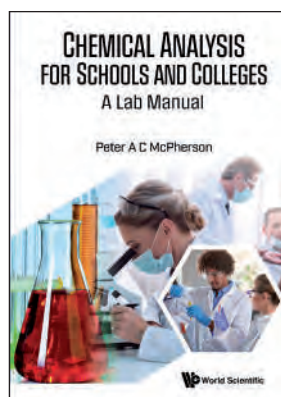
CHEMISTRY



Highlights

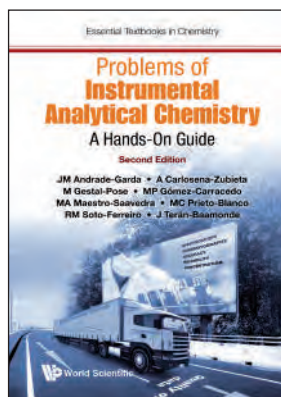
Chemistry Catalogue 2025

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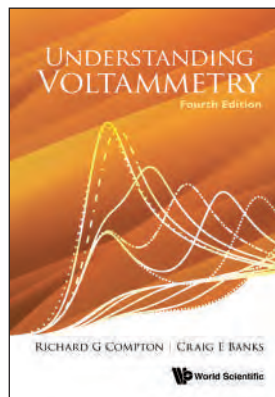
by **Peter A C McPherson**
(Ulster University, UK)

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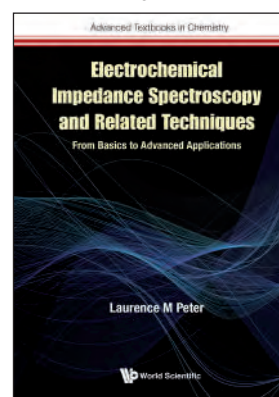
by **JM Andrade-Garda, A Carlosena-Zubieta, MP Gómez-Carracedo, MA Maestro-Saavedra, MC Prieto-Blanco, RM Soto-Ferreiro, & J Terán-Baamonde**
(University of A Coruña, Spain)

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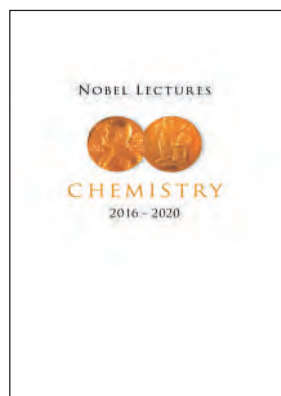
by **Richard G Compton**
(Oxford University, UK) & **Craig E Banks**
(Manchester Metropolitan University, UK)

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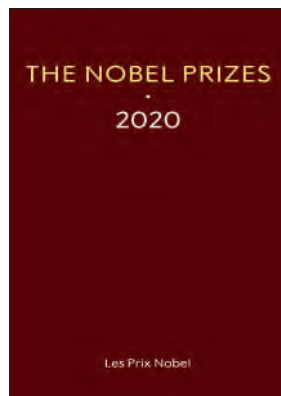
by **Laurence M Peter**
(University of Bath, UK)

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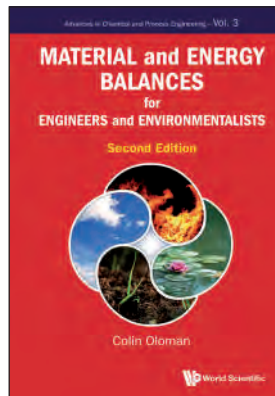
edited by **Sven Lidin**
(Lund University, Sweden)

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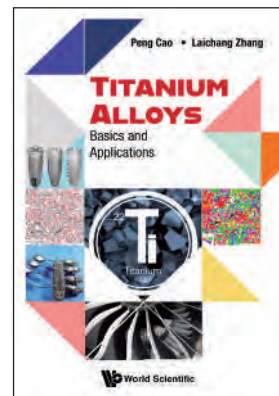
edited by **Karl Grandin**
(The Royal Swedish Academy of Sciences, Stockholm, Sweden)

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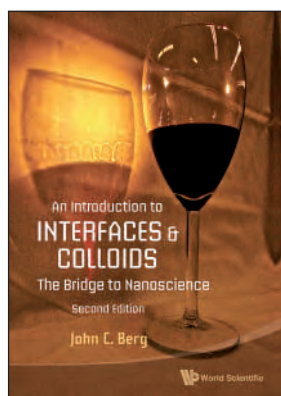
by **Colin Oloman**
(University of British Columbia, Canada)

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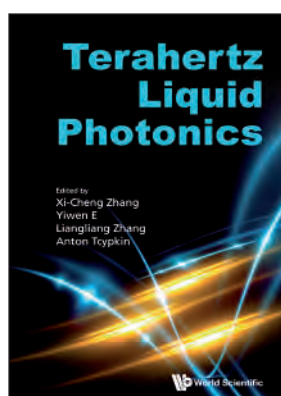
by **Peng Cao** (The University of Auckland, New Zealand) & **Laichang Zhang** (Edith Cowan University, Australia)

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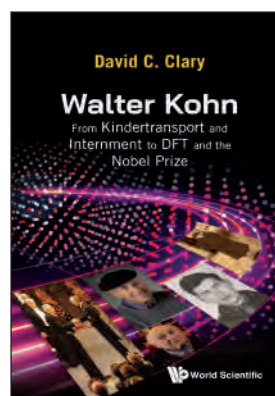
by **John C Berg**
(University of Washington, USA)

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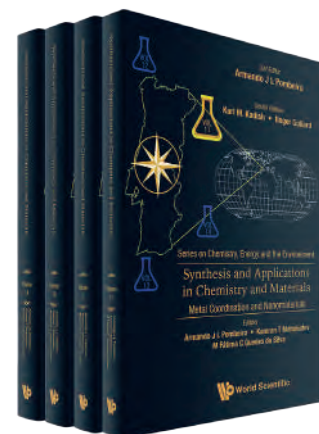
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(University of Rochester, USA), **Yiwen E**
(University of Rochester, USA), **Liangliang Zhang**
(Capital Normal University, China) & **Anton Tcyppkin**
(ITMO University, Russia)

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by **David C Clary**
(University of Oxford, UK)

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edited by **Armando J L Pombeiro**, **Kamran T Mahmudov** & **M Fátima C Guedes da Silva**
(Universidade de Lisboa, Portugal)

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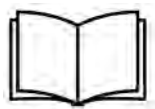
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ANALYTICAL CHEMISTRY

CHEMICAL ANALYSIS FOR SCHOOLS AND COLLEGES

A Lab Manual

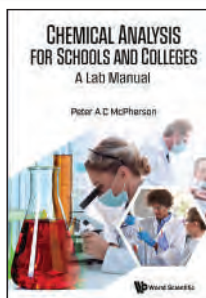
by **Peter A C McPherson** (Ulster University, UK)

"This would be really useful for chemistry teachers who often find these experiments difficult to track down when a student is absent and needs to join in a post-practical teaching session and carry out the data analysis/calculation."

Kristy Turner
University of Manchester, UK

Readership: Chemistry instructors, students and technicians at the high school, community college, and early undergraduate level.

220pp	Feb 2025	
978-981-128-269-0(pbk)	US\$38	£35
978-981-128-170-9	US\$78	£70
978-981-128-171-6(ebook)	US\$125	£115



Series on Chemistry, Energy and the Environment - Vol 15

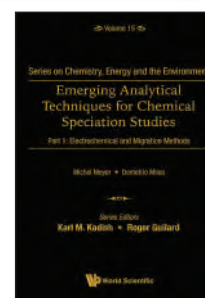
EMERGING ANALYTICAL TECHNIQUES FOR CHEMICAL SPECIATION STUDIES

Part 1: Electrochemical and Migration Methods

edited by **Michel Meyer** (Université de Bourgogne, France) & **Demetrio Milea** (Università degli Studi di Messina, Italy)

This book is intended to be a valuable introduction to newcomers, while being at the same time a helpful companion to more experienced users of each instrumental techniques. It provides an up-to-date overview with useful tips and hints on the application of selected cutting-edge analytical methods that allow unravelling and modelling intricate complex formation equilibria. So far, there has been no such book focusing specifically on the measurement of thermodynamic parameters, while covering such a wide panel of techniques.

250pp	Aug 2024	
978-981-127-962-1	US\$98	£90
978-981-128-109-9(ebook)	US\$157	£145



Series on Chemistry, Energy and the Environment - Vol 16

EMERGING ANALYTICAL TECHNIQUES FOR CHEMICAL SPECIATION STUDIES

Part 2: Spectroscopic Methods

edited by **Michel Meyer** (Université de Bourgogne, France) & **Demetrio Milea** (Università degli Studi di Messina, Italy)

This book is intended to be a valuable introduction to newcomers, while being at the same time a helpful companion to more experienced users of each instrumental techniques. It provides an up-to-date overview with useful tips and hints on the application of selected cutting-edge analytical methods that allow unravelling and modelling intricate complex formation equilibria.

Readership: Advanced undergraduate and graduate students, researchers and practitioners in the fields of chemical speciation, solution equilibrium chemistry, complex formation and inorganic chemistry.

250pp	Jan 2025	
978-981-129-673-4	US\$98	£90
978-981-129-674-1(ebook)	US\$157	£145

RAMAN SPECTROSCOPY IN HUMAN HEALTH AND BIOMEDICINE

edited by **Hidetoshi Sato** (Kwansei Gakuin University, Japan), **Jürgen Popp** (Friedrich-Schiller University Jena, Germany), **Bayden R Wood** (Monash University, Australia) & **Yukihiro Ozaki** (Kwansei Gakuin University, Japan)

"The book is very interesting and will provide a different scope as compared with other books in the literature. It will be a good general book for people working on Raman spectroscopy of biomedical and health sciences. The Editors are top scientists in their own fields."

Zexiang Shen, Professor
Nanyang Technological University, Singapore

Readership: Academics, researchers, lecturers, and graduate students in spectroscopy and data science. Doctors and allied health professionals will also be interested.

656pp	Oct 2023	
978-981-126-460-3	US\$178	£165
978-981-126-461-0(ebook)	US\$285	£260



Textbook

Essential Textbooks in Chemistry

PROBLEMS OF INSTRUMENTAL ANALYTICAL CHEMISTRY

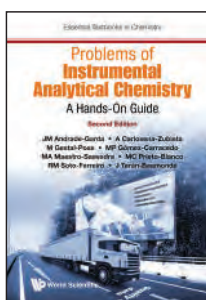
A Hands-On Guide

(2nd Edition)

by **JM Andrade-Garda**, **A Carlosena-Zubieta**, **M Gestal-Pose**, **MP Gómez-Carracedo**, **MA Maestro-Saavedra**, **MC Prieto-Blanco**, **RM Soto-Ferreiro** & **J Terán-Baamonde** (University of A Coruña, Spain)

This book is intended as a tool for undergraduate students, building upon the first edition of *Problems of Instrumental Analytical Chemistry* with new, updated detailed content. The exercises will provide standard protocols that students can follow to address the most common calculation steps required in laboratory daily work.

460pp	Jan 2025	
978-1-80061-443-7(pbk)	US\$68	£65
978-1-80061-440-6	US\$128	£120
978-1-80061-441-3(ebook)	US\$205	£190



PYROLYSIS – GAS CHROMATOGRAPHY/ MASS SPECTROMETRY OF POLYMERIC MATERIALS

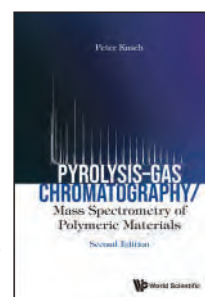
(2nd Edition)

by **Peter Kusch** (Bonn-Rhein-Sieg University of Applied Sciences, Germany)

"The instrumentation and equipment summary information was comprehensive and thorough, without becoming bogged down in technical specification and theoretical detail. I particularly liked the summary format which the author applied to each of the referenced pristine and blended polymer types. Presenting an overview of polymer structure, characteristics, synthesis routes and application in addition to the pyrolytic fragmentation pattern information, this book should be extremely useful to anyone working in the field of analytical characterization of polymeric materials."

Don Wright, Manager/Consultant
Georgetown, Texas

384pp	Sep 2023	
978-1-80061-298-3	US\$138	£125
978-1-80061-299-0(ebook)	US\$221	£205

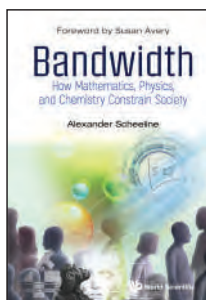


BANDWIDTH

How Mathematics, Physics, and Chemistry Constrain Society

by **Alexander Scheeline** (University of Illinois at Urbana-Champaign, USA)

"In Bandwidth, Alex Scheeline describes how we get trapped in wells of information while struggling to perceive the universe. Science is only one of many possible wells, he argues, while agreeing that spiritual understandings of the universe are also valid. Scheeline makes a persuasive argument that certain core insights from science constrain how society functions, despite one's spiritual beliefs. As he puts it, 'gravity can be resented, but it can't be ignored.'"



Raima Larter

Former Professor of Chemistry, Indiana University – Purdue University Indianapolis, USA

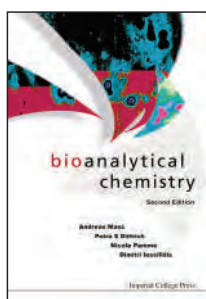
448pp	Jun 2023		
978-981-123-854-3(pbk)	US\$48	£45	
978-981-123-787-4	US\$108	£100	
978-981-123-788-1(ebook)	US\$173	£160	

Textbook**BIOANALYTICAL CHEMISTRY**

(2nd Edition)

by **Andreas Manz** (KIST Europe, Germany), **Petra S Dittrich** (ETH Zürich, Switzerland), **Nicole Pamme** (University of Hull, UK) & **Dimitri Iossifidis** (AMalva S.A., Athens, Greece)

"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

Readership: Undergraduate students in chemistry and engineering.

256pp	Jul 2015		
978-1-78326-672-2(pbk)	US\$48	£40	
978-1-78326-671-5	US\$84	£70	
978-1-78326-673-9(ebook)	US\$134	£110	

BIOCHEMISTRY**IRON-SULFUR CLUSTERS AND PROTEINS**

Molecular Biology and Applications

by **Huangen Ding** (Louisiana State University, USA)

This book will summarize the significance of iron-sulfur clusters in evolution, healthy metabolic function and dysfunction, and the exciting discoveries of iron-sulfur proteins in diverse physiological pathways. The text, written by one of the world's leading experts on iron-sulfur science, is designed for advanced students and professionals in biochemistry, molecular biology and physiology.

Readership: Upper undergraduate/graduate students, researchers and lecturers/professors involved in the fields of Biochemistry, Molecular Biology, Physiology and Bioinorganic Chemistry.

250pp	Jan 2025		
978-981-126-477-1	US\$98	£90	
978-981-126-478-8(ebook)	US\$157	£145	

Textbook**MATHEMATICS FOR BIOSCIENCES**

From Theory to Worked Examples and Applications

by **Elsbeth F Garman** & **Nicola Laurieri** (University of Oxford, UK)

This textbook is not simply a compendium of the necessary mathematical tools: where appropriate, the material will be developed beyond the level needed just to 'get by', in order to extend the students' mathematical skills to a working knowledge of some of the more advanced concepts of the topic under consideration.

Importantly, this textbook utilises a tried-and-tested pedagogical philosophy that the authors have developed over 25 years of 'on the job' experience in successfully teaching mathematics to nearly 3,000 undergraduate students reading for Molecular and Cellular Biochemistry at the University of Oxford (UK).

350pp	Nov 2024		
978-1-80061-608-0(pbk)	US\$58	£55	
978-1-80061-603-5	US\$128	£120	
978-1-80061-604-2(ebook)	US\$205	£190	

BIOMATERIALS FOR MODERN CANCER IMAGING AND THERAPIES

Methylene Blue for Fluorescence and Photoacoustic Imaging and Light-Induced Cancer Therapy

by **Maoquan Chu** (Tongji University, China)

Methylene blue (MB) is a biocompatible and environmentally friendly material that has been widely used in clinical and biomedical research fields for over a century. In addition, it also has wide applications in other fields, such as dyeing and finishing industry, aquaculture industry, photocatalysis and food industry.

This landmark publication is unique as it covers MB-mediated in vivo fluorescence, photoacoustic imaging and light-induced cancer therapy. The optical properties and photothermal effect of MB are also systematically described.

Readership: Undergraduate and postgraduate students, clinical doctors and basic research personnels.

176pp	May 2024		
978-981-127-769-6	US\$88	£80	
978-981-127-770-2(ebook)	US\$141	£130	

**COPPER BIOINORGANIC CHEMISTRY**

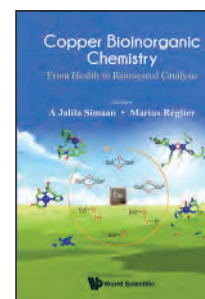
From Health to Bioinspired Catalysis

edited by **A Jilila Simaan**, **Marius Réglier** (Centre Nationale de la Recherche Scientifique, France & Aix Marseille Université, France)

The seven chapters in this book, contributed by internationally recognized authors cover recent developments on these aspects illustrated by interdisciplinary fields from biology, chemistry, spectroscopy to bioinspired catalysis. It contains aspects ranging from human health issues (copper homeostasis in bacteria and the development of molecules as anticancer or antibacterial agents) to bioinspired catalysis.

Readership: Masters students, graduate students and researchers in copper bioinorganic chemistry and biological chemistry.

272pp	Aug 2023		
978-981-126-948-6	US\$98	£90	
978-981-126-949-3(ebook)	US\$157	£145	



PEPTIDE AND PROTEIN ENGINEERING FOR BIOTECHNOLOGICAL AND THERAPEUTIC APPLICATIONS

edited by **Pierre Rousselot-Pailley & Olga Iranzo** (Aix Marseille Université, France)

This book aims to give an overview of the last developments in the field of peptide and protein engineering. It comprises a collection of chapters that span from the production of simple non-proteinogenic building blocks and peptidic scaffolds of different sizes and structures to more complex systems including peptide-based nanomaterials, enzymes and artificial metalloenzymes.

Readership: Students and researchers in peptide and protein engineering, peptide-based nanotubes and nanomaterials, proteins, denovo peptide and protein design, artificial metalloenzymes and molecular dynamics simulations.

520pp	Jan 2023	
978-981-126-165-7	US\$158	£145
978-981-126-166-4(ebook)	US\$253	£235



Catalytic Science Series - Vol 22

MECHANISMS IN HETEROGENEOUS CATALYSIS

by **Rutger A van Santen** (Eindhoven University of Technology, The Netherlands)

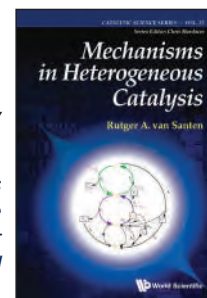
"This new book by Rutger van Santen approaches the subject of heterogeneous catalysis from the understanding that can be gained from molecular physical chemistry. It is unique in this respect and will rapidly be adopted as the 'must read' text."

Graham J Hutchings CBE FRS

Regius Professor of Chemistry, Cardiff University, UK

Readership: Researchers, academics, instructors, engineers, graduate and undergraduate students in catalysis, surface science, chemistry (inorganic, physical, computational) and chemical engineering.

716pp	Jul 2023	
978-1-80061-400-0	US\$188	£175
978-1-80061-401-7(ebook)	US\$301	£275



Bestseller

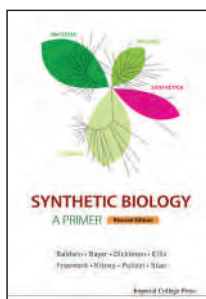
SYNTHETIC BIOLOGY — A PRIMER

Revised Edition

Contributions by: **Geoff Baldwin, Travis Bayer, Robert Dickinson, Tom Ellis, Paul S Freemont, Richard I Kitney, Karen Polizzi & Guy-Bart Stan** (Imperial College London, UK)

The book introduces readers to fundamental concepts in molecular biology and engineering and then explores the two major themes for synthetic biology, namely 'bottom-up' and 'top-down' engineering approaches. 'Top-down' engineering uses a conceptual framework of systematic design and engineering principles focused around the Design-Build-Test cycle and mathematical modelling. The 'bottom-up' approach involves the design and building of synthetic protocells using basic chemical and biochemical building blocks from scratch exploring the fundamental basis of living systems.

196pp	Oct 2015	
978-1-78326-879-5(pbk)	US\$36	£30
978-1-78326-878-8	US\$70	£58
978-1-78326-880-1(ebook)	US\$112	£95



MODERN DEVELOPMENTS IN CATALYSIS

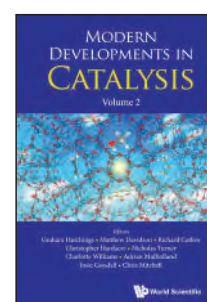
(Volume 2)

edited by **Graham Hutchings** (Cardiff University, UK), **Matthew Davidson** (University of Bath, UK), **Richard Catlow** (University College London, UK & Cardiff University, UK), **Christopher Hardacre, Nicholas Turner** (University of Manchester, UK), **Charlotte Williams** (University of Oxford, UK), **Adrian Mulholland** (University of Bristol, UK), **Josie Goodall** (UK Catalysis Hub, UK & Cardiff University, UK) & **Chris Mitchell** (SABIC UK Petrochemicals Ltd, UK)

This book provides insight into one of the most important areas of modern chemistry — it represents a unique learning opportunity for students and professionals studying and working towards speeding up, improving and increasing the rate of catalytic reactions in science and industry.

Readership: Undergraduate and graduate students, researchers and professors interested in the work of the UK Catalysis Hub, professionals working in chemical catalysis.

640pp	Mar 2023	
978-1-80061-200-6	US\$188	£175
978-1-80061-201-3(ebook)	US\$301	£275



CATALYST CHEMISTRY

Catalytic Science Series - Vol 21

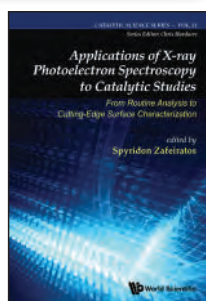
APPLICATIONS OF X-RAY PHOTOELECTRON SPECTROSCOPY TO CATALYTIC STUDIES

From Routine Analysis to Cutting-Edge Surface Characterization

edited by **Spyridon Zafeirotos** (CNRS, France & University of Strasbourg, France)

The objective of this book is to provide a comprehensive overview of the current status and future perspectives of X-ray photoelectron spectroscopy dedicated to catalytic applications, including thermal catalysis, electrocatalysis, and photo(electro)catalysis. The book contains 13 chapters, starting with the necessary introduction of the technique background, including basic phenomena and instrumentation aspects. The second part of the book focuses on the presentation of long-established applications of the technique, such as XPS studies of model catalysts. Finally, the book describes relatively recent developments of this method for cutting-edge surface characterization mainly using synchrotron X-ray radiation.

548pp	Jul 2023	
978-1-80061-328-7	US\$168	£155
978-1-80061-329-4(ebook)	US\$269	£245



COMPUTATIONAL CHEMISTRY

SEMICLASSICAL MOLECULAR DYNAMICS SIMULATION METHOD

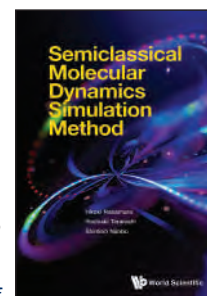
by **Hiroki Nakamura** (National Institutes of Natural Sciences, Japan & Graduate University for Advanced Studies, Japan), **Yoshiaki Teranishi** (National Yang Ming Chiao Tung University, Taiwan) & **Shinkoh Nanbu** (Sophia University, Japan)

"Hiroki Nakamura is one of the world leaders of quantum dynamics in molecules. While he published many significant works, the most important is the Zhu-Nakamura theory, which is unique, gives one of the last complete solutions to the Schrödinger equations, and overcomes the defects of the Landau-Zener theory. Since it was developed in 1994, Nakamura and his collaborators have been continuously expanding the realm of its applicability to various quantum dynamics problems. This new book will summarize the many fruits of his lifework. I strongly recommend it."

Yuko Okamoto

Professor Emeritus, Nagoya University, Japan

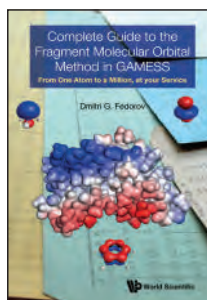
200pp	Jan 2025	
978-981-126-634-8	US\$88	£80
978-981-126-635-5(ebook)	US\$141	£130



**COMPLETE GUIDE TO THE
FRAGMENT MOLECULAR
ORBITAL METHOD IN GAMESS**

From One Atom to a Million, at your Service
by **Dmitri G Fedorov** (*National Institute of
Advanced Industrial Science and Technology
(AIST), Japan*)

"Dr Fedorov is one of the leading developers of both FMO and GAMESS. I have been a user of GAMESS for many years and find that the existing manual is very hard to read for common users. This book can provide necessary information for many users of FMO in particular and GAMESS in general."



Alexander Heifetz
Senior Principal Scientist, Evotec, UK

Readership: Research groups in the fundamental fields of computational chemistry, biology, physics and applied fields of catalysis, drug discovery, materials science, both in academia and in industry.

328pp	Mar 2023	
978-981-126-362-0	US\$118	£110
978-981-126-363-7(ebook)	US\$189	£175

ELECTROCHEMISTRY**Textbook****PRECISE ENERGY**

A Missing View on Batteries
edited by **Kai Peter Birke** (*University of Stuttgart, Germany*),
Sabri Baazouz & Julian Grimm (*Fraunhofer Institute for
Manufacturing Engineering and Automation, Germany*)

This book deduces in detail the future options for energy density enhancement of rechargeable battery cells and complete batteries. It connects rechargeability to energy density limits and gives a detailed argumentation on how and when battery energy densities will achieve their inherent limits.

Readership: Researchers, postgraduate and advanced undergraduate students, industry professionals, specialising in battery cell R&D and manufacturing, as well as governments and civil servants who wish to understand the topic.

250pp	Apr 2025	
978-981-128-204-1	US\$88	£80
978-981-128-205-8(ebook)	US\$141	£130

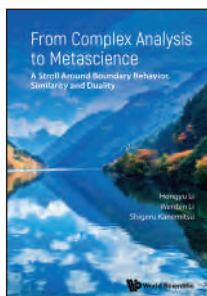
**FROM COMPLEX ANALYSIS
TO METASCIENCE**

A Stroll Around Boundary Behavior,
Similarity and Duality
by **Hongyu Li**, **Wenbin Li** (*Sanmenxia Suda
New Energy Research Institute, China*) &
Shigeru Kanemitsu (*Shandong University, China*)

This book covers complex analysis (the study of boundary behaviors of analytic functions) and its applications with engineering problems, especially control theory from the viewpoint of boundary functions. The metascience part is rather unique and illustrates a metascientific way of thinking engineering problems by examples of batteries which are cores of electric vehicles. This book gives a way of looking at the phenomena from a higher and brighter point of view through the windows of boundary behavior.

Readership: Researchers, Postgraduate students and engineers working with batteries and electricity storage device.

260pp	Feb 2025	
978-981-127-211-0	US\$88	£80
978-981-127-212-7(ebook)	US\$141	£130



Sustainable Chemistry Series

SUSTAINABLE BATTERIES

Green Technology in Electrochemical Energy Storage
edited by **Guanjie He** (*University College London, UK*)

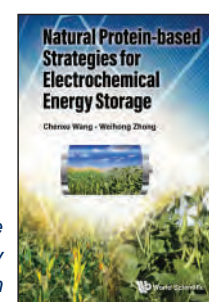
This book is a comprehensive exploration of the synergy between green chemistry principles and electrochemical energy storage (EES) technologies and the importance of this relationship. It provides an in-depth analysis of mega-trends in the renewable energy industry and the imperative for advanced EES solutions with a particular focus on sustainable solutions for lithium-ion batteries (LIBs).

Readership: Targeted towards graduate and upper undergraduate students. Combining two very topical areas, it is also suitable for professionals engaged in research and practice in the fields of environmental engineering, physics, materials science, energy storage device technology, and new energy technologies.

200pp	Jan 2025	
978-1-80061-609-7	US\$78	£70
978-1-80061-610-3(ebook)	US\$125	£115

**NATURAL PROTEIN-
BASED STRATEGIES FOR
ELECTROCHEMICAL ENERGY
STORAGE**

by **Chenxu Wang, Weihong Zhong**
(*Washington State University, USA*)



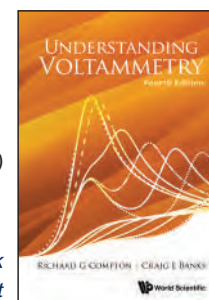
"This is a timely publication to introduce the recent progress of protein applications in energy storage devices. Protein engineering has been used in the biomedical and tissue engineering fields but is still novel in energy storage applications. Such a summary of the global research on engineered proteins for energy storage benefits academia and industry alike and would help to propel further development of the field."

Long Jiang
Associate Professor
North Dakota State University, USA

300pp	Jan 2025	
978-981-128-384-0	US\$108	£100
978-981-128-385-7(ebook)	US\$173	£160

Textbook**UNDERSTANDING
VOLTAMMETRY**

(4th Edition)
by **Richard G Compton** (*Oxford University, UK*)
& **Craig E Banks** (*Manchester Metropolitan
University, UK*)



"There is excellent detail throughout the book making it a rich source of information or point of reference for anyone wishing to gain a deep understanding of voltammetry. Furthermore, the book is peppered with some enigmatically presented fascinating historical asides and short biographies of eminent scientists who have contributed to the understanding of voltammetry. I strongly recommend this book to any PhD student or PDRA who plan to use voltammetry in their work."

Daren Caruana
University College London, UK

500pp	Nov 2024	
978-1-80061-607-3(pbk)	US\$78	£70
978-1-80061-597-7	US\$138	£125
978-1-80061-598-4(ebook)	US\$221	£205

Textbook

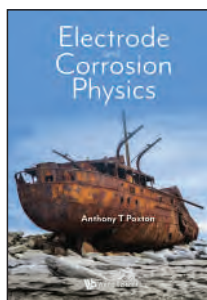
ELECTRODE AND CORROSION PHYSICS

by **Anthony T Paxton** (*Imperial College London, UK & King's College London, UK*)

This textbook fills a gap in providing a course of learning from first principles for the student, researcher and industrialist who has an undergraduate-level education in physics but only high school chemistry. The author will take you through simple electrochemical cells and the rigorous description of the many confusing "potentials" that arise across their interfaces, to what can and cannot be measured in an experiment.

Readership: Material scientists, corrosion engineers, electrochemists, physical chemists, metal physicists, fuel cell and battery designers. Academia, graduate and final year undergraduate, research, industry; libraries.

288pp	Jun 2024	
978-1-80061-553-3(pbk)	US\$58	£55
978-1-80061-548-9	US\$98	£90
978-1-80061-549-6(ebook)	US\$157	£142

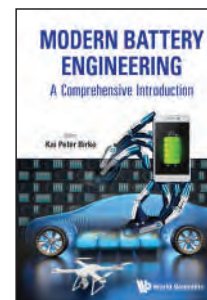


MODERN BATTERY ENGINEERING

A Comprehensive Introduction edited by **Kai Peter Birke** (*University of Stuttgart, Germany*)

"Users of battery system will find information of recycling of battery systems, power-to-x and battery-state-determination very useful. The book is also very useful to students learning advanced concepts of battery systems engineering."

Prof Dr Hans-Georg Schweiger
CARISSMA - Sichere Energiespeicher, Germany



304pp	Apr 2019	
978-981-121-598-8(pbk)	US\$58	£55
978-981-3272-15-6	US\$138	£125
978-981-3272-16-3(ebook)	US\$221	£205

Textbook

Advanced Textbooks in Chemistry

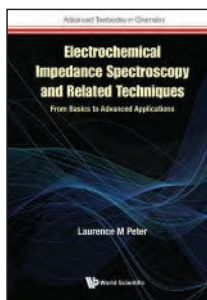
ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY AND RELATED TECHNIQUES

From Basics to Advanced Applications by **Laurence M Peter** (*University of Bath, UK*)

This book begins by introducing the basic concepts of impedance to non-specialist readers, who may have only an elementary knowledge of physics and mathematics. Topics covered include not only conventional electrochemical systems, such as the rotating disc electrode and ultramicroelectrodes, but also unconventional solar cells and the application of frequency-resolved techniques in spectroelectrochemistry

Readership: Postgraduate students and professionals in the industries of chemistry, physics, materials science.

304pp	Jan 2024	
978-1-80061-450-5	US\$98	£90
978-1-80061-451-2(ebook)	US\$157	£145



Textbook

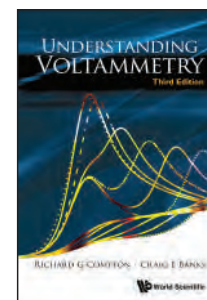
UNDERSTANDING VOLTAMMETRY

(3rd Edition) by **Richard G Compton** (*Oxford University, UK*) & **Craig E Banks** (*Manchester Metropolitan University, UK*)

"There is excellent detail throughout the book making it a rich source of information or point of reference for anyone wishing to gain a deep understanding of voltammetry. Furthermore, the book is peppered with some enigmatically presented fascinating historical asides and short biographies of eminent scientists who have contributed to the understanding of voltammetry. I strongly recommend this book to any PhD student or PDRA who plan to use voltammetry in their work."

Daren Caruana
University College London, UK

456pp	Aug 2018	
978-1-78634-529-5(pbk)	US\$68	£65
978-1-78634-526-4	US\$128	£120
978-1-78634-527-1(ebook)	US\$205	£190



ENVIRONMENTAL / ATMOSPHERIC CHEMISTRY

Textbook

INTRODUCTION TO EMERGING FIELDS IN MATERIALS SUSTAINABILITY

by **Pankaj Pathak** (*SRM University Andhra Pradesh, India*), **Susmita Sharma** (*National Institute of Technology Meghalaya, India*), **Ramadoss Tamil Selvan** & **Seeram Ramakrishna** (*National University of Singapore, Singapore*)

This book provides a comprehensive and detailed analysis of the aspects of sustainability for both natural and synthetic materials. It takes on a unique and realistic approach by undertaking assessments of the sustainable use of materials within the context of the business practices associated with the target industries.

Readership: Emerging entrepreneurs, academics/researchers, industry professionals, and companies working on sustainable development and/or waste management will also be interested.

200pp	Jul 2025	
978-981-124-764-4	US\$78	£70
978-981-124-765-1(ebook)	US\$125	£115



AQUEOUS ZINC BATTERIES

edited by **Hong Jin Fan** (*Nanyang Technological University, Singapore*)

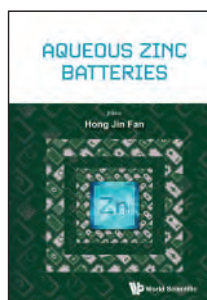
"Aqueous Zn-based batteries due to their low cost, long life and high safety have received a lot of attention in recent years. However, they suffer from low energy due to the nature of the electrolytes used. This book collects the most updated opinions in the field. It is important and timely."

Lu Li

Professor, National University of Singapore
Singapore

Readership: For academics, researchers and graduate students working in the field of battery science and, more generally, energy storage.

336pp	Jan 2024	
978-981-127-831-0	US\$118	£110
978-981-127-832-7(ebook)	US\$189	£175



Textbook**WEATHER DYNAMICS**

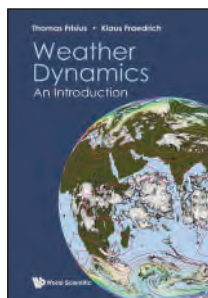
An Introduction

by **Thomas Frisius** (*Climate Service Center Germany (GERICS), Germany*) & **Klaus Fraedrich** (*Max Planck Institute of Meteorology, Germany*)

This book is intended for students and laypersons interested in understanding weather activity in the atmosphere. A rigorous mathematical derivation of all results and numerous figures are also included in the book to help illustrate and interpret weather maps, weather forecasts, atmospheric data and the output of atmospheric models.

Readership: Undergraduate, graduate students and laypersons with solid basic knowledge in mathematics and physics, researchers in meteorology and oceanography.

580pp	Dec 2024	
978-981-127-723-8(pbk)	US\$78	£70
978-981-127-628-6	US\$168	£155
978-981-127-629-3(ebook)	US\$269	£245



Analysis: Historical Cases in Chemistry - Vol 1

GREEN CHEMISTRY AVANT LA LETTRE

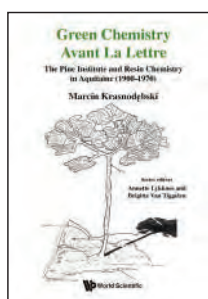
Pine Institute and Resin Chemistry in Aquitaine (1900 – 1970)

by **Marcin Krasnodębski** (*Polish Academy of Sciences, Poland*)

This unique book constitutes an original and pioneering work on the origins of some of the ideas that are being labeled today as green or sustainable chemistry. It establishes a bridge between two worlds, explaining in detail the history of a sustainable scientific discipline in its institutional and economic setting accounting for the complexity of the relations between stakeholders and of the knowledge circulation patterns. In other words, the book fills a gap in the emerging field of social studies of scientific sustainability.

Readership: Undergraduate, graduate students and researchers of resin chemistry. Historians, teachers and general public interested in the topic.

350pp	Aug 2024	
978-981-125-285-3	US\$128	£120
978-981-125-286-0(ebook)	US\$205	£190

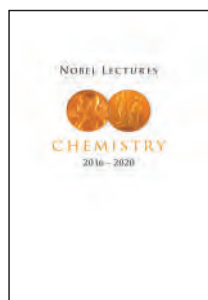
**GENERAL CHEMISTRY****NOBEL LECTURES IN CHEMISTRY (2016 – 2020)**

edited by **Sven Lidin** (*Lund University, Sweden*)

Mentioned as the second prize category in his will, Chemistry was the most important science for Alfred Nobel's own work. The development of Nobel's inventions as well as the industrial processes he employed were based upon chemical knowledge. This volume is a collection of the Nobel lectures delivered by the Nobel laureates, together with their biographies and the presentation speeches for the period 2016 – 2020. Each Nobel lecture is based on the work for which the laureate was awarded the Nobel Prize

Readership: Chemists and scientists.

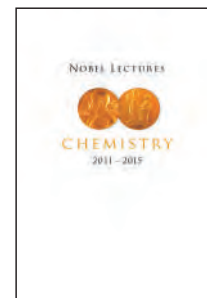
536pp	Jun 2024	
978-981-126-057-5	US\$158	£145
978-981-126-058-2(ebook)	US\$253	£235

**NOBEL LECTURES IN CHEMISTRY (2011 – 2015)**

edited by **Sven Lidin** (*Lund University, Sweden*)

Mentioned as the second prize category in his will, Chemistry was the most important science for Alfred Nobel's own work. The development of Nobel's inventions as well as the industrial processes he employed were based upon chemical knowledge. This volume is a collection of the Nobel lectures delivered by the Nobel laureates, together with their biographies and the presentation speeches for the period 2011 – 2015. Each Nobel lecture is based on the work for which the laureate was awarded the Nobel Prize.

544pp	Apr 2022	
978-981-124-681-4(pbk)	US\$98	£90
978-981-124-555-8	US\$158	£145
978-981-124-556-5(ebook)	US\$253	£235

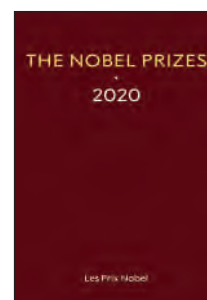
**THE NOBEL PRIZES 2020**

edited by **Karl Grandin** (*The Royal Swedish Academy of Sciences, Stockholm, Sweden*)

The Nobel Prizes is the official yearbook of the Nobel Foundation. This edition provides extensive information about the 2020 laureates: their Nobel Prize lectures and their autobiographies, as well as presentation speeches and background about the Nobel festivities.

Published on behalf of the Nobel Foundation.

404pp	Apr 2024	
978-981-129-026-8(pbk)	US\$58	£55
978-981-129-010-7	US\$148	£135
978-981-129-011-4(ebook)	US\$237	£220

**NAVIGATING IN A PATHOGENIC WORLD**

edited by **Lorie Karnath** (*SAB Molecular Frontiers Foundation, Germany*)

The book considers the challenges of navigating in a pathogenic world. It includes articles and reviews from top scientists from around the world who weigh in with their perspectives on the global pandemic, comparing this to other disease outbreaks and modes of treatment. It also offers insight into new breakthroughs in combatting the current pandemic and future disease. The combination of these varied approaches offer a unique consideration of the current challenges that the world now faces as well as for those that lie ahead.

Readership: Researchers in the field of molecular biology/genetics/nanoscience/cosmology/neuroscience/structural biology/biological, organic and water chemistry; climatologists; general public interested in the transformative areas of science.

320pp	Apr 2025	
978-981-124-306-6	US\$118	£110
978-981-124-307-3(ebook)	US\$189	£175

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ELECTRICAL AND GEOMETRICAL PROPERTIES OF ORGANIC MONOLAYERS

by Mitsumasa Iwamoto (Tokyo Institute of Technology, Japan), Tetsuya Yamamoto (Hokkaido University, Japan) & Zhong-Can Ou-Yang (Chinese Academy of Science, China)

This book addresses the physical mechanisms involved in the characteristic electrical properties and the geometrical structures that are observed from dipolar monolayers composed of organic molecules by using dielectric physics, electrostatics, the physics of liquid crystal, and soft matter physics. The orientational order parameters, introduced to quantify the orientational structures of monolayers, guide us towards this goal.

Readership: This book would be useful for physicists, chemists, biologists and electronic engineers of the field to understand their experimental results and to develop new theories.

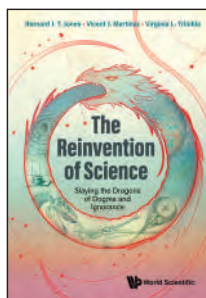
250pp	Jan 2025	
978-981-4602-97-6	US\$106	£100
978-981-4602-98-3(ebook)	US\$170	£155

THE REINVENTION OF SCIENCE

Slaying the Dragons of Dogma and Ignorance

by Bernard J T Jones (University of Groningen, The Netherlands), Vicent J Martinez (University of Valencia, Spain) & Virginia L Trimble (University of California, Irvine, USA)

"This is a compelling account of some of the most important questions in science, both historical and contemporary, showing how understanding develops, how wrong ideas can halt progress, and how the wrong people sometimes get the credit. Written by experts in a thoroughly engaging style, it is a great read.



Alan Heavens
Professor of Astrostatistics, ICIC,
Imperial College London

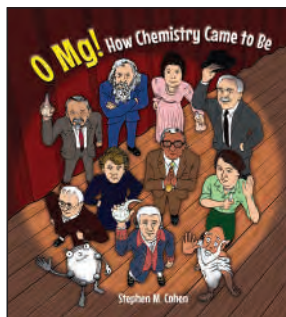
Readership: General audience with an interest in Science, History of Science, Astronomy and Physical Science.

504pp	Dec 2023	
978-1-80061-360-7(pbk)	US\$48	£45
978-1-80061-336-2	US\$88	£80
978-1-80061-337-9(ebook)	US\$141	£130

O MG! HOW CHEMISTRY CAME TO BE

by Stephen M Cohen

"I recommend this book. Every secondary school library should have a copy and every chemistry teacher should consider purchasing one, particularly if their grasp of the historical context of their subject is a bit sketchy. Besides, it will provide a lot of anecdotes for lessons and the odd cartoon to brighten up a PowerPoint slide show. It should also be popular among students, particularly reluctant readers.



School Science Review

This book is a graphic introduction to how chemistry developed, from ancient times to now. Led by cartoon host, Ben Zene — with occasional interjections by eccentric Greek philosopher Democritus — readers learn about ancient Greek and Chinese elements, alchemists, and the development of chemistry as we know it today, from Robert Boyle and Antoine Lavoisier, from Elizabeth Fulhame and John Dalton, to Jöns Jakob Berzelius and Friedrich Wöhler, to Rosalind Franklin, Linus Pauling, and Mario Molina.

Readership: Chemistry students, teachers and general public.

224pp	Jul 2022	
978-981-126-223-4(pbk)	US\$39.95	£35
978-981-125-040-8	US\$78	£70
978-981-125-041-5(ebook)	US\$125	£115

ENTROPY DEMYSTIFIED

The Second Law Reduced to Plain Common Sense (2nd Edition)

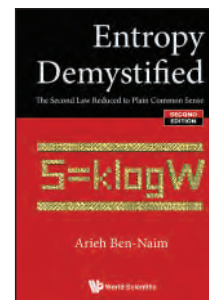
by Arieh Ben-Naim (The Hebrew University of Jerusalem, Israel)

"It can be used as a supplementary material for teaching thermodynamics and statistical physics at an undergraduate or postgraduate level and can be a great read for undergraduate and postgraduate students of Sciences and Engineering."

Contemporary Physics

Readership: General readers interested in science; a useful companion for a course in thermodynamics.

276pp	Jul 2016	
978-981-3100-12-1(pbk)	US\$29	£24
978-981-3100-11-4	US\$58	£48



INFORMATION, ENTROPY, LIFE AND THE UNIVERSE

What We Know and What We Do Not Know

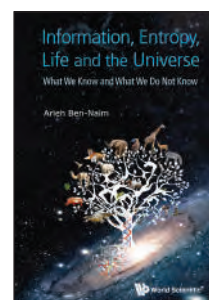
by Arieh Ben-Naim (The Hebrew University of Jerusalem, Israel)

"This is indeed a welcome and long needed addition to the literature dealing with the connection between entropy and information theory. Ben-Naim's book serves as a cautionary statement on a bottle of medicine warning the avid reader not to swallow all that is fed him in the pseudo-scientific popular literature that has grown up around the words entropy and information.

Professor Lavenda Bernard
University of Camerino

Readership: Interested lay public in information theory, thermodynamics, biology and cosmology.

492pp	May 2015	
978-981-4651-67-7(pbk)	US\$29	£24
978-981-4651-66-0	US\$62	£51



INDUSTRIAL CHEMISTRY

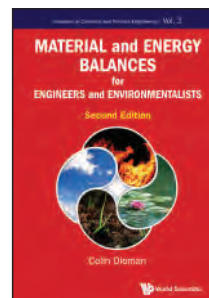
Textbook

Advances in Chemical and Process Engineering - Vol 3

MATERIAL AND ENERGY BALANCES FOR ENGINEERS AND ENVIRONMENTALISTS

(2nd Edition)

by Colin Oloman (University of British Columbia, Canada)



This comprehensive compendium presents the basic M&E balance concepts and calculations in a format easily digested by students, engineering professionals and those concerned with related environmental issues.

Readership: Researchers, professionals, academics, undergraduate and graduate students in chemical engineering, environmental engineering and industrial chemistry.

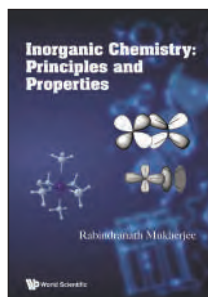
436pp	Jul 2023	
978-1-80061-324-9(pbk)	US\$78	£70
978-1-80061-310-2	US\$148	£135
978-1-80061-311-9(ebook)	US\$237	£220

INORGANIC CHEMISTRY**Textbook****INORGANIC CHEMISTRY:
PRINCIPLES AND
PROPERTIES**by **Rabindranath Mukherjee** (*Indian Institute of Technology Kanpur, India*)

This book focuses on molecular shapes, molecular symmetry, application of molecular orbital concepts to the compounds of main-group and transition elements of varied symmetry, metal-metal bonding, organometallic compounds such as ferrocene, fundamentals of redox properties, and spectroscopic term symbols.

Readership: This book covers material that could be included in Inorganic Chemistry course for postgraduate and research-level graduate (PhD) students.

392pp	May 2024		
978-981-128-176-1	US\$118	£110	
978-981-128-177-8(ebook)	US\$189	£175	

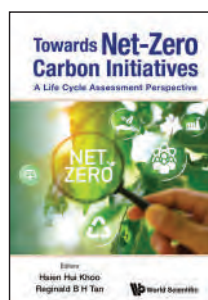
**TOWARDS NET-ZERO
CARBON INITIATIVES**A Life Cycle Assessment Perspective
edited by **Hsien Hui Khoo** (*A*STAR, Singapore*) & **Reginald B H Tan** (*A*STAR, Singapore & National University of Singapore, Singapore*)

As industrialized nations look into emerging new technologies focusing on renewable or efficient energy use — along with the move towards Sustainable Development Goals — challenges related to achieving low carbon economy projects have gained much attention. This book explores various initiatives and potential methods to achieve net-zero carbon targets and issues.

Life Cycle Assessment (LCA) will play an important role as an effective and comprehensive method to analyze potential greenhouse gas emissions and other environmental impacts of a technology or system.

Readership: Life Cycle Analysis Practitioners, Environmental Researchers/Scientists, and Professors.

392pp	Mar 2024		
978-981-127-620-0	US\$118	£110	
978-981-127-566-1(ebook)	US\$189	£175	



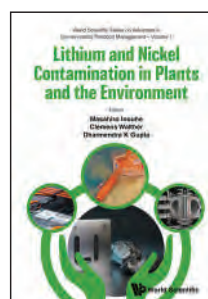
World Scientific Series on Advances in Environmental Pollution Management - Vol 1

**LITHIUM AND NICKEL
CONTAMINATION IN PLANTS
AND THE ENVIRONMENT**edited by **Masahiro Inouhe** (*Ehime University, Japan*), **Clemens Walther** (*Gottfried Wilhelm Leibniz University Hannover, Germany*) & **Dharmendra K Gupta** (*Ministry of Environment, Forest and Climate Change, India*)

This edited volume brings together a diverse group of environmental science, sustainability and health researchers to address the challenges posed by global mass poisoning caused by lithium and nickel contamination of soil and plants.

Readership: Teachers, and advanced undergraduate and graduate students in related fields, especially those specializing in the remediation of heavy metals and metalloids.

312pp	Mar 2024		
978-981-128-311-6	US\$128	£120	
978-981-128-312-3(ebook)	US\$205	£190	

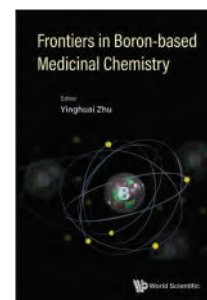
**FRONTIERS IN BORON-BASED
MEDICINAL CHEMISTRY**edited by **Yinghui Zhu** (*HEC Pharm Co. Ltd., China*)

"The author is an excellent and well-known researcher in the field of boron chemistry. Given the importance of boron chemistry in medicinal applications, and the scarcity of reviews on that field, this book is timely."

Weng Kee Leong FRSC
Professor of Chemistry,
Nanyang Technological University, Singapore

Readership: Industrial scientists, academics, and graduate students in medicinal/pharmaceutical chemistry, drug design/development, nanomedicine and cancer research. Chapter 4 will be of interests to radiologists and those in nuclear medicine, while Chapter 5 will appeal to biomedical engineers and medical physicists.

232pp	May 2023		
978-981-126-796-3	US\$88	£80	
978-981-126-803-8(ebook)	US\$141	£130	

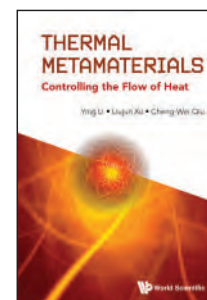
**MATERIALS CHEMISTRY /
NANOCHEMISTRY****THERMAL METAMATERIALS**Controlling the Flow of Heat
by **Ying Li** (*Zhejiang University, China*), **Liujun Xu** (*Graduate School of China Academy of Engineering Physics, China*) & **Cheng-Wei Qiu** (*National University of Singapore, Singapore*)

"The authors have played indispensable roles in highlighting the field's importance through their contributions to thermal metamaterials. This book provides a comprehensive and insightful overview of landmark contributions and is suitable for both experts and novices."

Jiping Huang
Professor and Vice-Dean, Department of Physics,
Fudan University, China

Readership: This book is suitable for undergraduate and graduate students in physics, materials science, mechanical engineering, and other majors related to thermal science and heat transfer.

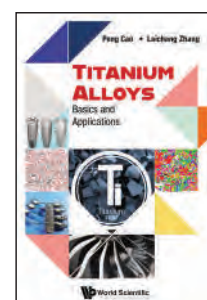
400pp	Apr 2025		
978-981-129-440-2	US\$148	£135	
978-981-129-441-9(ebook)	US\$237	£220	

**TITANIUM ALLOYS**Basics and Applications
by **Peng Cao** (*The University of Auckland, New Zealand*) & **Laichang Zhang** (*Edith Cowan University, Australia*)

At just half the weight of steel and nickel-based superalloys, titanium and its alloys stand out primarily due to their excellent corrosion resistance, high strength, and low density. Such distinctive properties make titanium attractive for a variety of applications, including aerospace, sports and leisure, and industrial uses. The book aims to cover important aspects of titanium metallurgy, from the basic characteristics of titanium to its advanced applications.

Readership: The main audience of this book are industry practitioners and post-graduate students who want to gain advanced knowledge on titanium materials.

340pp	Jun 2024		
978-981-129-147-0	US\$118	£110	
978-981-129-148-7(ebook)	US\$189	£175	



Textbook

AN INTRODUCTION TO INTERFACES AND COLLOIDS

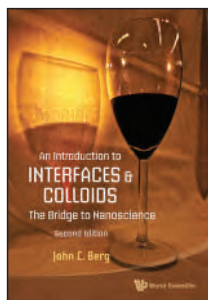
The Bridge to Nanoscience (2nd Edition)
by **John C Berg** (University of Washington, USA)

"Born of decades of diverse experience performing research and teaching in the field of surface and colloid science, Prof. Berg's new textbook is a must buy for students just entering the field, as well as for experts. I find myself frequently referring to the book as a reference when writing grants. Prof. Berg's organization of the subject matter, combined with his exquisitely clear descriptions that provide a molecular level understanding of phenomena, have set a new standard for textbooks in the field."

Journal of Colloid and Interface Science

Readership: Senior undergraduate and graduate students in chemistry, physics and materials science.

884pp	May 2024	
978-981-128-640-7(pbk)	US\$78	£70
978-981-128-572-1	US\$198	£180
978-981-128-573-8(ebook)	US\$317	£290



World Scientific Series in Nanoscience and Nanotechnology - Vol 24

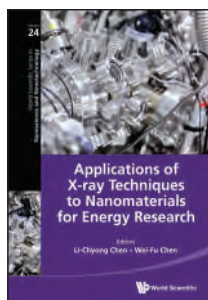
APPLICATIONS OF X-RAY TECHNIQUES TO NANOMATERIALS FOR ENERGY RESEARCH

edited by **Li-Chyong Chen** (National Taiwan Univ., Taiwan) & **Wei-Fu Chen** (Lyten Inc, USA)

Nanomaterials have become a key component for energy-related applications. Their design principle, synthesis and applications are well discussed in various scientific and engineering books, but a gap remains in discussions regarding the application of cutting-edge X-ray techniques to these materials. This volume provides insights from the latest development of X-ray techniques to investigate nanomaterials in specific energy fields, bridging the gap between X-ray analytical scientists and material researchers.

Readership: Advanced undergraduates, graduate students, researchers and scientists in chemical, material, battery and energy industries.

300pp	Feb 2024	
978-981-128-463-2	US\$108	£100
978-981-128-464-9(ebook)	US\$173	£160



VALLEYTRONICS IN 2D MATERIALS

edited by **Kuan Eng Johnson Goh**, **Calvin Pei Yu Wong** & **Tong Wang** (Agency for Science, Technology and Research (A*STAR), Singapore)

"This is a timely book — the field of valleytronics is emerging and I have yet to see a book on this topic; and the field of 2D materials is just publishing its first books. Valleytronics in 2D Materials introduces the brief history of valleytronics, the valley physics of 2D semiconductors, and recent attempts to engineer valley devices for practical purposes. The field is still developing, and this book will provide a useful reference for researchers in the field."

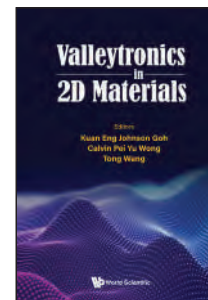
Andrew Wee

Professor of Physics, National University of Singapore

Driven by the advent of two-dimensional materials, valleytronics is emerging as the next hot field of research in materials science. While the use of charge or spin degrees of freedom in electronic materials as information carriers is familiar and well-appreciated, employment of the valley degree of freedom as an information carrier has remained elusive for many decades.

Readership: Applied researchers, engineers, and postgraduate students working in the fields of valleytronics, 2D materials, solid-state chemistry and semiconductors.

360pp	Jul 2023	
978-981-122-909-1	US\$138	£125
978-981-122-910-7(ebook)	US\$221	£205



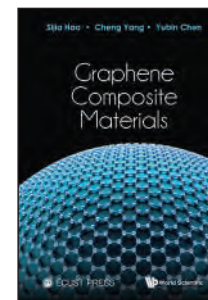
GRAPHENE COMPOSITE MATERIALS

by **Sijia Hao**, **Cheng Yang** & **Yubin Chen** (Beijing Institute of Aeronautical Materials, China & Beijing Institute of Graphene Technology Co. Ltd., China)

This unique compendium introduces in detail the basic theory, process methods, property evaluation, research progress, development trend, and basic scientific issues in the combination of graphene and its composite materials in recent years.

Readership: Researchers, professionals, academics, and graduate students in new materials, nanomaterials and nanostructures, and physical chemistry.

352pp	Jul 2023	
978-981-127-678-1	US\$138	£125
978-981-127-679-8(ebook)	US\$221	£205



Textbook

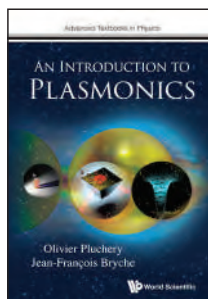
Advanced Textbooks in Physics
AN INTRODUCTION TO PLASMONICS

by **Olivier Pluchery** (Sorbonne University, France) & **Jean-François Bryche** (CNRS, France & Sherbrooke University, Canada)

This book begins by exploring the concepts behind waves, and the electromagnetic description of light when it interacts with metals; it dedicates every chapter thereafter to all aspects of plasmonics. In particular, the surface plasmon polariton wave is explained in full detail, as well as the localized surface plasmon resonance of metallic nanoparticles.

Readership: The book is intended for academia: university, college and engineering schools. Specially suited for graduate students in physics, materials science or chemistry.

356pp	Sep 2023	
978-1-80061-339-3	US\$98	£90
978-1-80061-340-9(ebook)	US\$157	£145



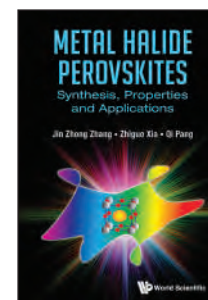
METAL HALIDE PEROVSKITES

Synthesis, Properties and Applications
by **Jin Zhong Zhang** (University of California Santa Cruz, USA), **Zhiguo Xia** (South China University of Technology, China) & **Qi Pang** (Guangxi University, China)

This unique compendium covers systematically the fundamental aspects of synthesis, properties, and applications of metal halide perovskites that exhibit unique properties and useful functionalities. Written for beginners and practitioners, this useful reference text provides a good balance between fundamental concepts/principles and related recent researches with many highlighted examples.

Readership: Researchers, professionals, academics, and graduate students in materials chemistry, physical chemistry and semiconductors.

260pp	Apr 2023	
978-981-125-741-4	US\$98	£90
978-981-125-742-1(ebook)	US\$157	£145

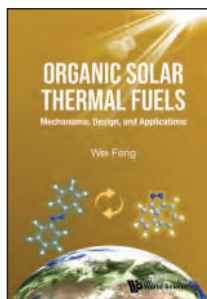


ORGANIC CHEMISTRY**ORGANIC SOLAR THERMAL FUELS**Mechanisms, Design, and Applications
by **Wei Feng** (Tianjin University, China)

This book explores the types, characteristics, preparation, testing, applications, and future trends of small organic molecules, polymers, and nanocomposites for solar heat storage.

Readership: Advanced undergraduate and graduate students, researchers and practitioners in the fields of materials science.

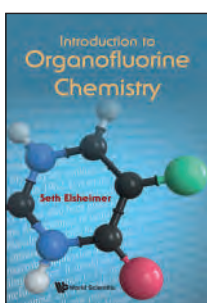
496pp	May 2024	
978-981-128-584-4	US\$158	£145
978-981-128-585-1(ebook)	US\$253	£230

**Textbook****INTRODUCTION TO ORGANOFLUORINE CHEMISTRY**by **Seth Elsheimer** (University of Central Florida, USA)

Readers are first introduced to the privileged role and landmark developments of the ninth element, its physical chemistry, and its fascinating effects on reactive intermediates. The second half of the text covers the synthesis, reactions and analysis of organofluorine compounds. The astonishing ability of fluoroorganics to exert their importance in a plethora of fields is sketched out in the final segment.

Readership: It can be used as a textbook for graduate students or advanced undergraduates in organic chemistry, as well as a reference book for academic and industrial researchers working in the interdisciplinary areas of pharmaceutical/medicinal chemistry, materials science, and agrochemicals.

300pp	Jan 2025	
978-981-127-633-0(pbk)	US\$58	£55
978-981-127-549-4	US\$108	£100
978-981-127-550-0(ebook)	US\$173	£160

**RESHAPING EXPERIMENTAL ORGANIC RESEARCH WITH SMART *IN SILICO* TOOLS**Invitation to Artificial Intelligence-Equipped Organic Lab
by **Anatoly M Belostotskii** (Bar-Ilan University, Israel)*"This book is quite comprehensive as it enables an organic chemist to carry out synthetic planning, structure elucidation and instrumental separation of organic compounds with the help of AI-based machine learning."*Irishi N N Namboothiri
Professor of Chemistry,
Indian Institute of Technology (IIT) Bombay, India

Artificial intelligence (AI) is extensively used in scientific research nowadays and has reshaped the practice in academia, industry, business, cybersecurity, etc. However, this revolution has not touched organic chemistry, the field appreciably frozen in its methods, until the last few years.

Readership: Academics, researchers, post-docs and graduate students working in organic, bioorganic and medicinal chemistry in universities, colleges, research institutes, and the industry (including pharmaceutical companies).

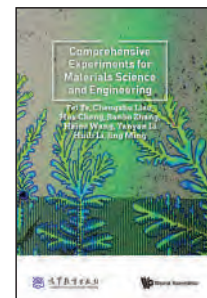
350pp	Jan 2025	
978-981-128-167-9	US\$128	£120
978-981-128-168-6(ebook)	US\$205	£190

Textbook**COMPREHENSIVE EXPERIMENTS FOR MATERIALS SCIENCE AND ENGINEERING**by **Fei Ye, Chengzhu Liao, Hua Cheng, Jianbo Zhang, Haiou Wang, Yanyan Li, Huili Li & Jing Ming** (Southern University of Science and Technology, China)

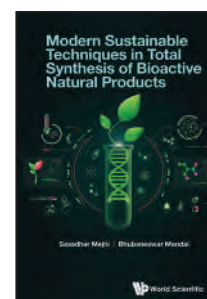
This book covers the main contents of experimental courses of MSE. The experiments cover the forefront of scientific research and the materials industry with appropriate modification. It intends to serve as a textbook for undergraduate students and aims to help teachers find a wide enough variety of experiments to construct in an experimental course.

Readership: Materials scientists, student and researchers in materials science.

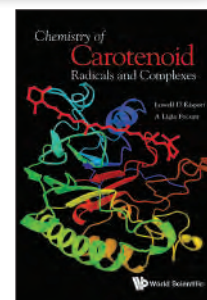
392pp	Jul 2023	
978-981-127-404-6	US\$148	£135
978-981-127-405-3(ebook)	US\$237	£220

**MODERN SUSTAINABLE TECHNIQUES IN TOTAL SYNTHESIS OF BIOACTIVE NATURAL PRODUCTS**by **Sasadhar Majhi** (Kazi Nazrul University, India) & **Bhubaneswar Mandal** (Indian Institute of Technology Guwahati, India)*Modern Sustainable Techniques in Total Synthesis of Bioactive Natural Products* comprises five parts for green tools, such as ultrasonic waves, microwave heating, visible-light photochemistry, organic electrochemistry, and flow chemistry, along with 72 chapters for each bioactive molecule of natural origin. Each chapter explores the natural source, structure, systematic name, structural features, compound class, biological activity, conventional approaches for their chemical synthesis, and demerit(s) of conventional approaches (where applicable).**Readership:** Medicinal chemists, Synthetic and semisynthetic chemists, Biochemists, Pharmacologists, Botanists, Green chemists, Phytochemists, and Researchers.

468pp	May 2023	
978-981-126-868-7	US\$158	£145
978-981-126-869-4(ebook)	US\$253	£235

**PHOTOCHEMISTRY****CHEMISTRY OF CAROTENOID RADICALS AND COMPLEXES**by **Lowell D Kispert** (University of Alabama, Tuscaloosa, USA) & **A Ligia Focsan** (Valdosta State University, USA)*"Prof. Lowell Kispert is the world's leading expert on carotenoid free radicals and their chemistry. Bar none, he is the most important person responsible for the current knowledge of carotenoid free radical chemistry and photoexcitation. This will be an excellent and important book."*James Norris
Distinguished Service Professor Emeritus,
University of Chicago, USA**Readership:** Academic and industrial scientists, graduate and senior undergraduate students in courses/research on photochemistry, phytochemistry, and pharmaceutical sciences.

188pp	Dec 2023	
978-981-127-834-1	US\$88	£80
978-981-127-835-8(ebook)	US\$141	£130



TERAHERTZ LIQUID PHOTONICS

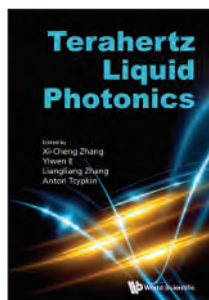
edited by **Xi-Cheng Zhang** (*University of Rochester, USA*), **Yiwen E** (*University of Rochester, USA*), **Liangliang Zhang** (*Capital Normal University, China*) & **Anton Tcypkin** (*ITMO University, Russia*)

"Terahertz liquid photonics is an emerging area, and this book will provide a comprehensive summary in both theories and experiments on the existing and promising technologies for terahertz wave generation and detection in liquids. It is timely and interesting."

Qijie Wang, Professor,
Nanyang Technological University, Singapore

Readership: Academics, researchers, lecturers, and graduate students in universities and institutes in terahertz photonics and spectroscopy, laser physics, AMO physics, ultrafast science, and related areas such as semiconductors, photochemistry and physical chemistry.

268pp	Sep 2023	
978-981-126-563-1	US\$98	£90
978-981-126-564-8(ebook)	US\$157	£145



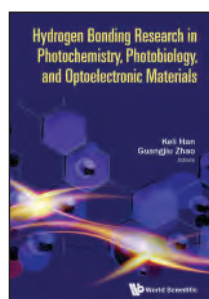
HYDROGEN-BONDING RESEARCH IN PHOTOCHEMISTRY, PHOTOBIOLOGY, AND OPTOELECTRONIC MATERIALS

edited by **Keli Han** (*Chinese Academy of Sciences, China*) & **Guangjiu Zhao** (*Tianjin University, China*)

This highly interdisciplinary book provides an overview of leading hydrogen bond research. It is essential reading for faculties and students in researching photochemistry, photobiology and photophysics, as well as novel optoelectronic materials, fluorescence probes and photocatalysts. It will also guide research beginners to getting a quick start within this field.

Readership: Hydrogen-bonding researchers, including faculties, post-doctors, and graduate students. It will serve as a good reference book for all researchers to gain knowledge about the excited-state hydrogen-bonding information.

456pp	Mar 2019	
978-1-78634-607-0	US\$164	£150
978-1-78634-608-7(ebook)	US\$262	£240



Textbook

IISc Lecture Notes Series - Vol 7

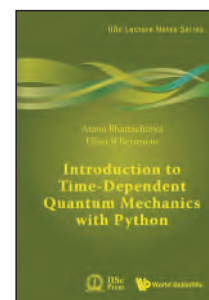
INTRODUCTION TO TIME-DEPENDENT QUANTUM MECHANICS WITH PYTHON

by **Atanu Bhattacharya** (*Gandhi Institute of Technology and Management, India*) & **Elliot R Bernstein** (*Colorado State University, USA*)

This book gives an introduction to the Time-Dependent Quantum Chemistry for use with any introductory college/university course in optics, spectroscopy, kinetics, dynamics, or experimental physical chemistry or chemical physics of the kind usually taken by undergraduate and graduate students in physical chemistry.

Readership: Advanced undergraduate and graduate students, researchers and practitioners in the fields of optics, physical chemistry, spectroscopy, molecular dynamics.

344pp	Nov 2023	
978-981-127-716-0	US\$108	£100
978-981-127-717-7(ebook)	US\$173	£160



POLYMER CHEMISTRY

POLYMERS AT NANOSCALE

(In 2 Volumes)

Volume 1: Synthesis, Properties and Self-assembly

Volume 2: Applications

edited by **Jie He** (*University of Connecticut, USA*) & **Xin Wang** (*Songshan Lake Materials Laboratory, China*)

This book is enriched with a comprehensive range of content, incorporating synthesis, properties and applications in polymeric nanoparticles that will serve as a suitable beginner guide and survey book in polymer nanomaterials, as well as a useful tool for graduate students, scientists and practitioners in related fields or industries such as chemistry, materials science and engineering, nanomaterials, energy storage and conversion devices, and biomedicine.

Readership: Academic researchers, postgraduate students, undergraduate students, industries/practitioners/clinicians in polymers, nanomaterials and nanostructures.

676pp	Dec 2023	
978-981-126-298-2(Set)	US\$248	£230
978-981-125-916-6(Set)(ebook)	US\$397	£365



PHYSICAL CHEMISTRY

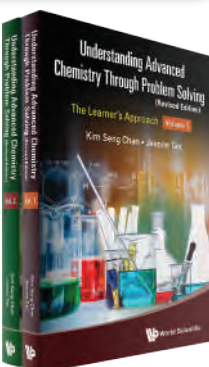
UNDERSTANDING ADVANCED CHEMISTRY THROUGH PROBLEM SOLVING

The Learner's Approach (In 2 Volumes)
Revised Edition
by **Kim Seng Chan**, **Jeanne Tan**

The book is written in such a way as to guide the reader through the understanding and applications of essential chemical concepts using the problem-solving approach. The authors have also retained the popular discourse feature from their previous two books — Understanding Advanced Physical Inorganic Chemistry and Understanding Advanced Organic and Analytical Chemistry — to help the learners better understand and see for themselves, how the concepts should be applied during solving problems.

Readership: Chemistry students taking O and A levels exam or IB exam or preparing for Singapore Junior Chemistry Olympiad.

724pp	Jan 2024	
978-981-128-979-8(Set)(pbk)	US\$68	£65
978-981-128-968-2(Set)	US\$158	£145



NOVEL POLYMERIC MATERIALS FOR ENVIRONMENTAL APPLICATIONS

edited by **Paramita Das** (*Indian Institute of Science Education and Research (IISER) Bhopal, India*) & **Subhasis Das** (*The Energy and Resources Institute, India*)

This book contains eleven comprehensive chapters covering topics from deriving polymers from natural resources or wastes to developing novel functional polymeric materials in the form of membranes, hydrogels, foams, nanocomposites for various environmental applications. This book also discusses the utilization of waste plastics and the challenges and progress made in recycling and reusing commercially viable polymers.

Readership: The academicians, students, researchers, technologists, and environmental professionals working on polymer-based materials.

496pp	May 2023	
978-981-126-592-1	US\$148	£135
978-981-126-593-8(ebook)	US\$237	£220



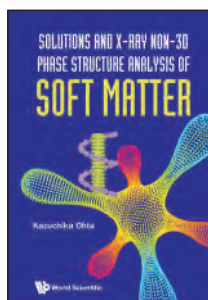
SUPRAMOLECULAR CHEMISTRY**SOLUTIONS AND X-RAY
NON-3D PHASE STRUCTURE
ANALYSIS OF SOFT MATTER**by **Kazuchika Ohta** (Shinshu University, Japan)

"I believe it is only Professor Ohta in the world who can provide correct answers for these exercises. This requires methods developed by him. In particular, the 'Golden Rules' and 'Reciprocal Lattice Method' introduced in Chapter 3 are substantially his original and useful for the structural analyses of all the molecular assemblies having two-dimensional and/or one-dimensional lattices not only in liquid crystals but also in all the other materials."

Professor Nagao Kobayashi
Shinshu University, Japan

Readership: Graduate students and researchers in physical chemistry, supramolecular chemistry, materials chemistry and nanochemistry.

280pp	Oct 2023	
978-981-127-241-7	US\$98	£90
978-981-127-242-4(ebook)	US\$157	£145

**SURFACE / INTERFACE CHEMISTRY****SCANNING PROBE MICROSCOPY**

A Multidisciplinary Research Tool

by **Jayne C Garno** (Louisiana State University, USA), **Song Xu** (Park Systems Inc., USA) & **Jing-Jiang Yu** (Hitachi High-Technologies America Inc., USA)

This book provides a comprehensive and high-level guide to the operating principles of a wide array of scanning probe microscopy (SPM) instruments. While the well-known atomic force microscopy (AFM) is covered in-depth in 9 chapters, modern variants are also introduced, such as chemical force microscopy, magnetic force microscopy and scanning electrochemical microscopy.

Readership: Researchers, students and lecturers/professors involved in the fields of Surface Chemistry, Materials/Solid-State Chemistry, Analytical Chemistry, and Nanoscience.

300pp	Jan 2025	
978-981-126-474-0	US\$108	£100
978-981-126-475-7(ebook)	US\$173	£160

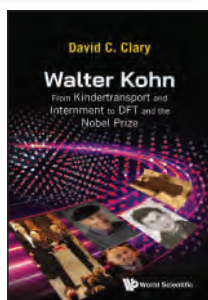
**THEORETICAL CHEMISTRY /
QUANTUM CHEMISTRY****WALTER KOHN**From Kindertransport and Internment to DFT and the Nobel Prize
by **David C Clary** (University of Oxford, UK)

"Walter Kohn's creation of density functional theory revolutionized the use of electronic structure calculations in chemical physics and materials physics. A book summarizing his life and how he developed as a scientist is of great interest to both chemists and physicists."

Donald G Truhlar FRSC
Regents Professor of Chemistry,
University of Minnesota, USA

Readership: The general public interested in science, history of science, and the lives of great scientists and Nobel Laureates. Historians of science. A must-have for libraries and archives.

250pp	Dec 2024	
978-981-129-251-4(pbk)	US\$38	£35
978-981-129-195-1	US\$98	£90
978-981-129-196-8(ebook)	US\$157	£145

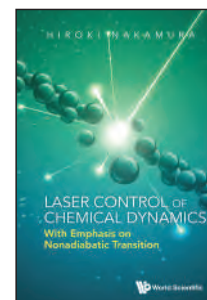
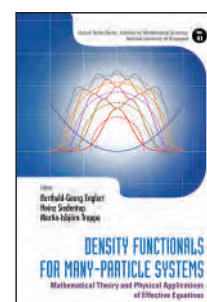
**LASER CONTROL OF
CHEMICAL DYNAMICS**With Emphasis on Nonadiabatic Transition
by **Hiroki Nakamura** (National Institutes of Natural Sciences, Japan & Graduate University for Advanced Studies, Japan)

"Prof. Nakamura is a well-known scientist who has worked extensively on theoretical studies related to laser control and nonadiabatic dynamics. While the topics here reflect Nakamura's contributions, they are very much at the leading edge of the field, and will be of great value to researchers in this area."

George C Schatz
Morrison Professor of Chemistry,
Northwestern University, USA

Readership: Academics, researchers, lecturers, and graduate students in theoretical/quantum/computational chemistry, quantum mechanics, molecular modelling, and laser control.

170pp	Jan 2025	
978-981-129-581-2	US\$88	£80
978-981-129-582-9(ebook)	US\$141	£130

Lecture Notes Series, Institute for
Mathematical Sciences, National University of
Singapore - Vol 41**DENSITY FUNCTIONALS FOR
MANY-PARTICLE SYSTEMS**Mathematical Theory and Physical
Applications of Effective Equations
edited by **Berthold-Georg Englert**,
Martin-Isbjörn Trappe (National University of
Singapore, Singapore), & **Heinz Siedentop**
(Ludwig-Maximilians-Universität München,
Germany)

This review volume, part of the IMS Lecture Notes Series, is a collection of contributions from the September 2019 Workshop on the topic, held in the Institute for Mathematical Sciences, National University of Singapore.

Readership: Physicists, Mathematicians, and Chemists interested in learning about/who are using Density Functional Theory.

396pp	Mar 2023	
978-981-127-214-1	US\$138	£125
978-981-127-215-8(ebook)	US\$221	£205

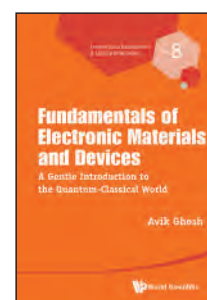
TextbookLessons from Nanoscience: A Lecture Notes
Series - Vol 8**FUNDAMENTALS OF
ELECTRONIC MATERIALS
AND DEVICES**A Gentle Introduction to the
Quantum-Classical World
by **Avik Ghosh** (University of Virginia, USA)

"... a wide-ranging book that brings together — all in one place — the physics of nanomaterials and quantum devices and is thus an essential resource for students in the field."

Andrew Kent
Professor of Physics and Director of the Center for
Quantum Phenomena, New York University

This book combines top-down classical device physics with bottom-up quantum transport in a single venue to provide the basis for such a scientific exploration.

348pp	Feb 2023	
978-981-126-657-7(pbk)	US\$38	£35
978-981-126-595-2	US\$108	£100
978-981-126-596-9(ebook)	US\$173	£160



FEATURED MAJOR REFERENCE WORK (MRW)

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edited by **Armando J L Pombeiro,**

Kamran T Mahmudov & M Fátima C

Guedes da Silva (Universidade de Lisboa, Portugal)



“With 50 chapters written by 168 international experts, this 4 volumes set is a ‘must read’ for anyone interested in coordination chemistry and nanomaterials, enzymatic and organic systems, catalytic systems and materials or biomass and waste valorisation. The editors and authors should be congratulated for their excellent coverage of these rapidly expanding fields presented in a very attractive manner.”

Pierre Braunstein

University of Strasbourg and CNRS

2100pp

Apr 2024

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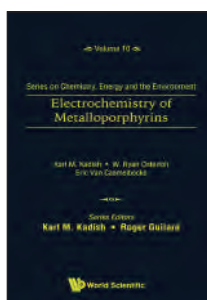
US\$2880

£2650

Series on Chemistry, Energy and the Environment - Vol 10

ELECTROCHEMISTRY OF METALLOPORPHYRINS

by **Karl M Kadish, W Ryan Osterloh & Eric Van Caemelbecke** (University of Houston, USA)



The first half of the book is aimed at non-experts in the field of electrochemistry who would like to begin studies on porphyrin electrochemistry or understand the literature on porphyrin electrochemistry and this is then followed by detailed examples of how changes in the central metal ion of a given metalloporphyrin will affect its redox properties.

Readership: Graduate students and researchers in porphyrin electrochemistry.

644pp

Jul 2023

978-981-126-761-1

US\$188

£175

978-981-126-762-8(ebook)

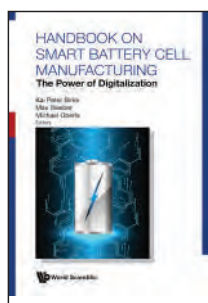
US\$301

£275

HANDBOOK ON SMART BATTERY CELL MANUFACTURING

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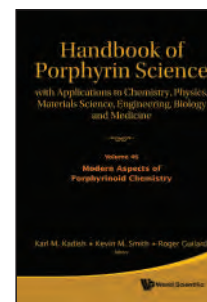
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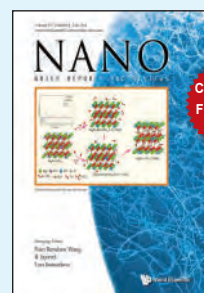


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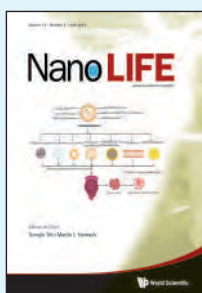
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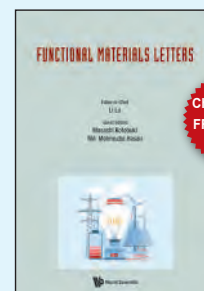


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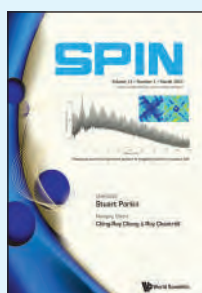
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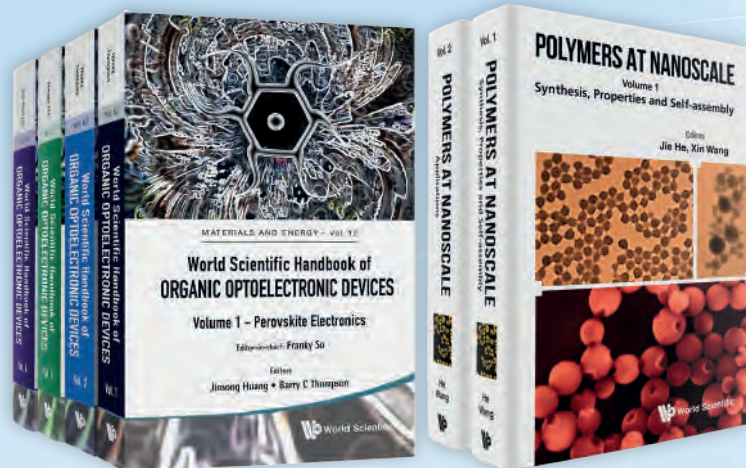
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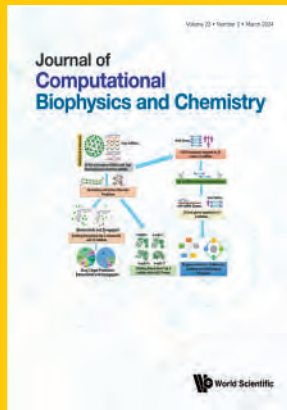


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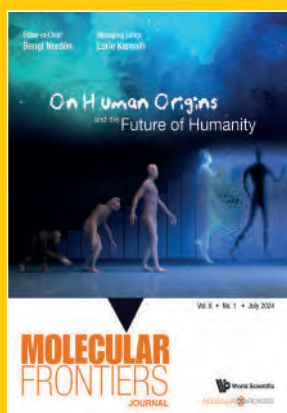
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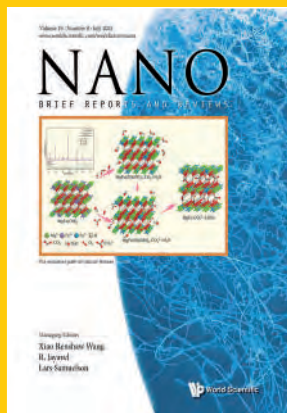
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