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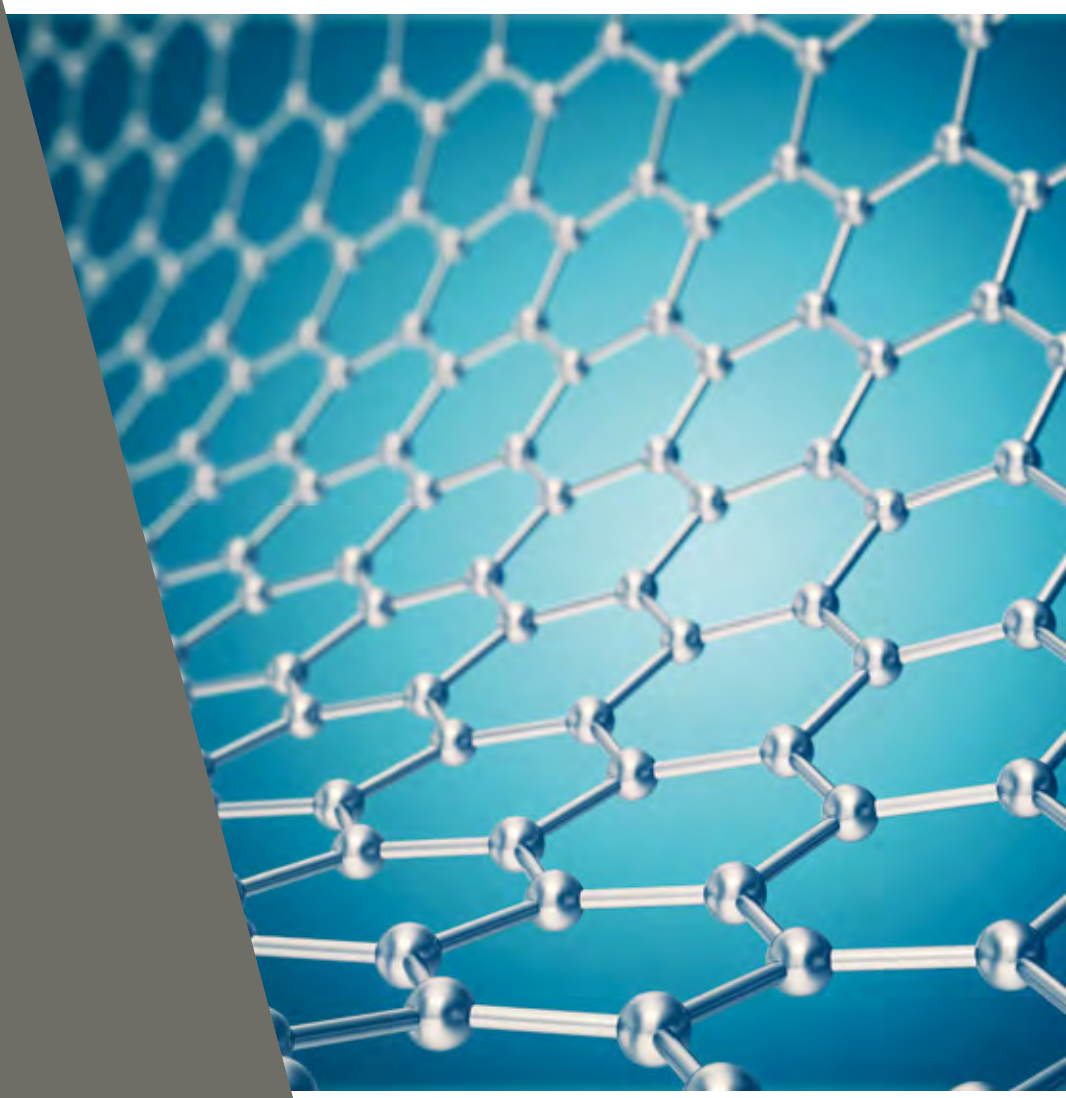

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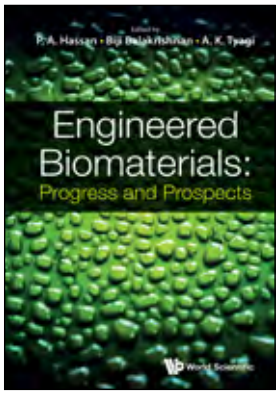

edited by **P A Hassan** *(Bhabha Atomic Research Centre, India)*, **Biji Balakrishnan** *(Bhabha Atomic Research Centre, India)* & **A K Tyagi** *(Bhabha Atomic Research Centre, India)*

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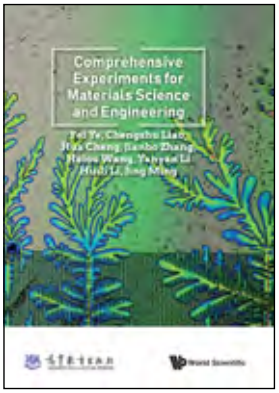

by **Fei Ye**, **Chengzhu Liao**, **Hua Cheng**, **Jianbo Zhang**, **Haiou Wang**, **Yanyan Li**, **Huili Li** & **Jing Ming** *(Southern University of Science and Technology, China)*

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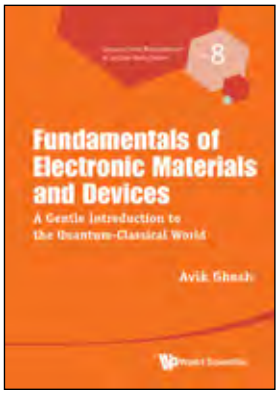

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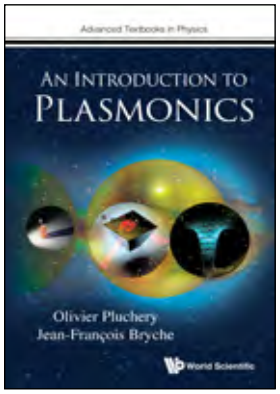

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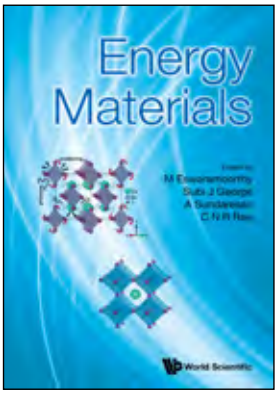

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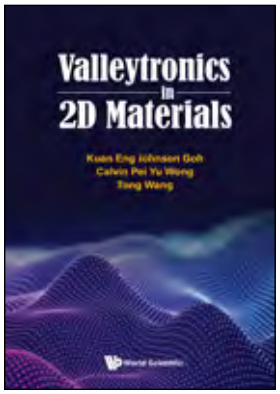

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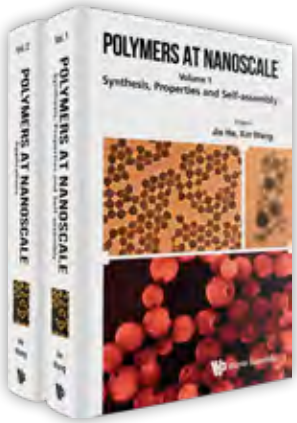

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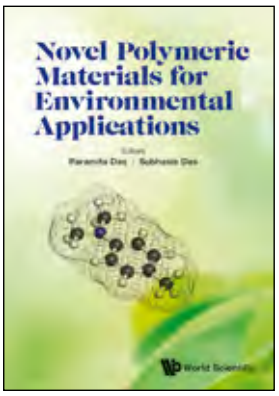

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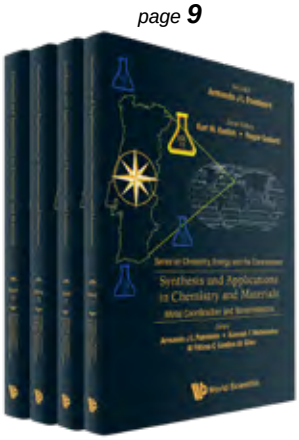

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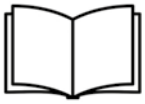

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Biomaterials

BIOMATERIALS FOR MODERN CANCER IMAGING AND THERAPIES

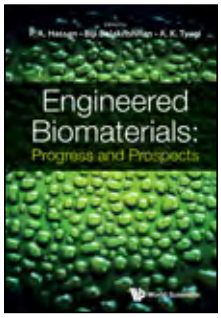
by **Maoquan Chu** *(Tongji University, China)*

Methylene blue (MB) is a biocompatible and environmentally friendly material. MB has been widely used in clinical and biomedical research fields. The book covers Methylene blue (MB)-mediated in vivo fluorescence, photoacoustic imaging and light-induced cancer therapy. The optical properties and photothermal effect of MB are also systematically described. It introduce the properties and biomedical applications of MB.

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

280pp	**Sep 2023**	
978-981-127-769-6	**US$108**	**£95**
978-981-127-770-2(ebook)	**US$173**	**£150**

ENGINEERED BIOMATERIALS: PROGRESS AND PROSPECTS



edited by **P A Hassan** *(Bhabha Atomic Research Centre, India)*, **Biji Balakrishnan** *(Bhabha Atomic Research Centre, India)* & **A K Tyagi** *(Bhabha Atomic Research Centre, India)*

The book presents the developments in the area of biomaterials research exemplified by experts in the fields of tissue engineering, wound healing, bio-diagnostics, novel therapeutics and advanced drug delivery systems. It provides a comprehensive account of preparation, characterisation, properties, processing, biological and clinical evaluation of a large variety of materials for specific biomedical applications. This book also discusses various advanced therapeutic and diagnostic systems such as magnetic nanoparticle based hyperthermia and their surface functionalization techniques.

Readership: Graduate students and researchers in Biomedical Engineering and Materials Science.

400pp	**Aug 2023**	
978-981-127-200-4	**US$138**	**£120**
978-981-127-201-1(ebook)	**US$221**	**£195**

Sustainable Chemistry Series - Vol 6

DENSIFICATION IMPACT ON RAW, CHEMICALLY AND THERMALLY PRETREATED BIOMASS

Physical Properties and Biofuels Production

edited by **Jaya Shankar Tumuluru** *(Southwestern Cotton Ginning Research Laboratory, USA)*

This book focus on understanding how the densification process variables, biomass types and their blends, mechanical preprocessing, and thermal and chemical pretreatment methods impact the quality of the densified products produced for biofuel production. It explores the conversion performance of densified biomass for biofuel production.

Readership: Undergraduate and graduate students, university professors, researchers, process engineers,

348pp	**Jun 2023**	
978-1-80061-378-2	**US$118**	**£105**
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EMERGING TECHNOLOGIES IN BIOPHYSICAL SCIENCES: A WORLD SCIENTIFIC REFERENCE

(In 3 Volumes)
Volume 1: Emerging Technologies for Biofabrication and Biomanufacturing
Volume 2: Emerging Technologies for Fertility
Volume 3: Emerging Technologies for Diagnostics

edited by **Utkan Demirci** *(Stanford University, USA)*, **Rami El Assal** *(Stanford University, USA)*, **Pu Chen** *(Wuhan University, China)*, **Waseem Asghar** *(Florida Atlantic University, USA)*, **Fatih Inci** *(Bilkent University-UNAM, Turkey & Stanford University, USA)* & **Shuqi Wang** *(Sichuan University, China)*

Editor-in-chief: **Utkan Demirci** *(Stanford University, USA)*

Volume 1:

Biofabrication aims to produce artificially manufactured tissues and organs, potentially revolutionizing conventional paradigm of clinical practice in treating diseases and extending the life span and quality of human beings. In this volume, we invite notable experts in the field of biofabrication and biomanufacturing to summarize recent rapid progress in this field from multifaceted aspects covering biofabrication techniques and building materials such as scaffold and living cells. Specifically, a focus is placed on a variety of techniques derived from 3D bioprinting and bioassembly strategies, such as acoustic assembly and electrofabrication. Moreover, principles and strategies for choosing hydrogels and polymers for biofabrication are also heavily discussed.

Volume 2:

Infertility has become a significant psychosocial burden affecting the lives of couples who cannot reproduce naturally. Advanced reproductive technologies (ARTs) are being developed to treat infertility. This handbook explores significant development of ARTs for fertility testing, selection of sperm, oocyte and embryo, reproductive monitors, automation in embryology, and fertility preservation. This volume provides a comprehensive overview of the myriad of emerging technologies and systems that are being utilized or will be utilized in near future in reproductive clinics.

Volume 3:

Healthcare industry has a notable paradigm transition from centralized care to the point-of-care (POC). During this metamorphosis, a number of new technologies and strategies have been adapted to the current practice, addressing the existing challenges in the fields of medicine and biology. In contrast to the existing diagnostic strategies employing bulky-sized tools, expensive infrastructure, laborious protocols, and lengthy processing steps, the contribution of biosensors to current healthcare system, especially to diagnostics, is paramount. The unprecedented and admirable characteristics of biosensing strategies have expanded our knowledge on medicine and biology by harmonizing materials science, chemistry, physics, and engineering. Biosensors applied to disease diagnostics will not only garner more attention in clinical research to decipher disease biology and mechanism, and also, stimulate innovative perspectives in artificial intelligence (AI) and internet of things (IoT) synergistically, thereby their more facile adaptation to daily-use.

1080pp	**Jan 2023**	
978-981-122-565-9(Set)	**US$1200**	**£1055**
978-981-122-568-0(Set)(ebook)	**US$1920**	**£1690**

General Materials Science

COMPREHENSIVE EXPERIMENTS FOR MATERIALS SCIENCE AND ENGINEERING

by **Fei Ye** *(Southern University of Science and Technology, China)*, **Chengzhu Liao** *(Southern University of Science and Technology, China)*, **Hua Cheng** *(Southern University of Science and Technology, China)*, **Jianbo Zhang** *(Southern University of Science and Technology, China)*, **Haiou Wang** *(Southern University of Science and Technology, China)*, **Yanyan Li** *(Southern University of Science and Technology, China)*, **Huili Li** *(Southern University of Science and Technology, China)* & **Jing Ming** *(Southern University of Science and Technology, China)*

This book covers the main contents of experimental courses of materials science and engineering (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**	**£130**
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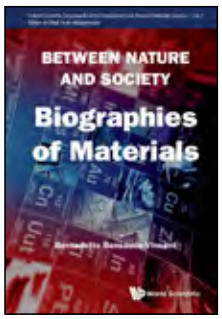
BETWEEN NATURE AND SOCIETY

Biographies of Materials



edited by **Bernadette Bensaude-Vincent** *(University of Paris 1 Pantheon-Sorbonne, France)*

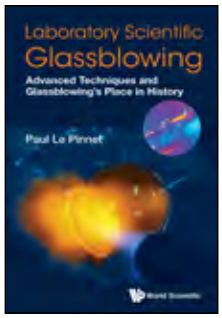
This volume opens the readers' eyes to the central role of 15 materials in human societies and in the environment by telling the life stories of fifteen materials. In this rich collection of stories, materials are found at the complex interface between nature and society. They are not just atomic structures with a set of properties and behaviors. They capture the attention of nations worldwide because materials have major impacts on our welfare and can affect international peace and security.

This volume brings together materials scientists, historians, and STS scholars, developing unique interdisciplinary perspectives on materials.

292pp	**May 2022**	
978-981-125-174-0	**US$98**	**£80**
978-981-125-175-7(ebook)	**US$157**	**£125**

LABORATORY SCIENTIFIC GLASSBLOWING

Advanced Techniques and Glassblowing's Place in History



edited by **Paul Le Pinnet** *(British Society of Scientific Glassblowers, UK)*

This book pushes back the boundaries of Scientific Glassblowing, emphasizing the possibilities of the material.This book has gathered Scientific Glassblowers from around the world to describe advanced glassblowing techniques in addition to the historical background of its development.

304pp	**Apr 2022**	
978-981-124-787-3	**US$98**	**£80**
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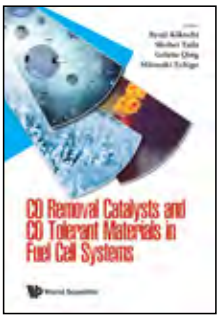
CO REMOVAL CATALYSTS AND CO TOLERANT MATERIALS IN FUEL CELL SYSTEMS



edited by **Ryuji Kikuchi** *(The University of Tokyo, Japan)*, **Shohei Tada** *(Seikei University, Japan)*, **Geletu Qing** *(Michigan State University, USA)* & **Mitsuaki Echigo** *(Osaka Gas Co., Ltd, Japan)*

This book analyses the vast existing research on CO and and CO^2 methanation to find key issues to perform CO methanation selectively and demonstrates the process experimentally in an actual reactor scaleIn addition, related CO removal techniques and current fuel cell systems are presented. The book is ideal for graduate students, fuel cell researchers, chemical engineers and chemists with an interest in the field.

200pp	**Feb 2024**	
978-1-78634-502-8	**US$98**	**£86**
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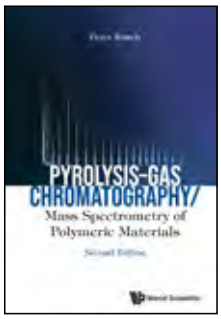
(2nd Edition)



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

Review of the First Edition:

"... I particularly liked the summary format which the author applied to each of the referenced pristine and blended polymer types. Presenting an overview summary of polymer structure, characteristics, synthesis routes and application in addition to the pyrolytic fragmentation pattern information should be extremely useful to anyone working in the field of analytical characterization of polymeric materials."

Don Wright
Manager / Consultant
Georgetown, Texas

Readership: Students of chemistry and materials science.

350pp	**Aug 2023**	
978-1-80061-298-3	**US$138**	**£110**
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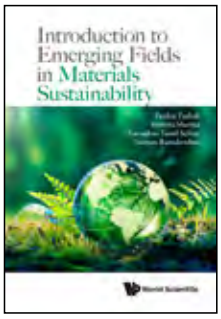
INTRODUCTION TO EMERGING FIELDS IN MATERIALS SUSTAINABILITY



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

"This excellent new book covers important concepts of sustainability focusing on materials and their waste streams. The impressive team of authors use their insight to explore water management, food, waste management, plastics, electronics, and construction sectors, complementing this with a general introduction to the basic concepts of sustainability and the role of different materials..."

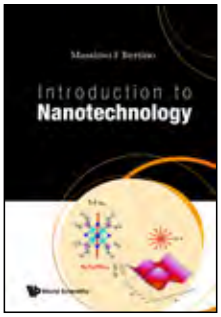
Paul Hogg
Professor, Royal Holloway University of London, UK

200pp	**Apr 2024**	
978-981-124-764-4	**US$78**	**£70**
978-981-124-765-1(ebook)	**US$125**	**£100**

General Nanoscience

INTRODUCTION TO NANOTECHNOLOGY

by **Massimo F Bertino**
(Virginia Commonwealth University, USA)



The book was written with the fact that nanotechnology is a vast field where the applications range from paint to nanomedicine, through plasmonics and catalysis. This textbook focuses on the key physical and chemical principles and uses many formulas and equations within with the one-semester time constraint.

Readership: Academia; graduate students and advanced undergraduates in nanotechnology and materials science.

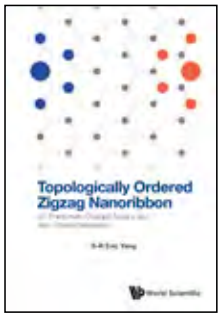
236pp	**Feb 2022**	
978-981-123-303-6(pbk)	**US$58**	**£50**
978-981-123-160-5	**US$118**	**£95**
978-981-123-161-2(ebook)	**US$189**	**£150**

Textbook

TOPOLOGICALLY ORDERED ZIGZAG NANORIBBON

e/2 Fractionally Charged Anyons and Spin-Charge Separation

by **S-R Eric Yang** *(Korea University, South Korea)*



This is the first graduate level textbook of topologically ordered phases with emphasis on graphene zigzag nanoribbons. It also explains common properties of several other topologically ordered phases as well as the e/2 fractional charge quantization and spin-charge separation of an electron.

Readership: Graduate level students and researchers.

564pp	**May 2023**	
978-981-126-189-3	**US$168**	**£150**
978-981-126-190-9(ebook)	**US$269**	**£235**

Textbook

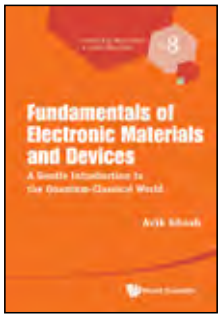
Nanoelectronics

Lessons 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)*



"... contains well-crafted and advanced problems that help solidify understanding of the subjects."

Philip Kim
Professor, Harvard University
Winner, Oliver E Buckley Prize (2014)

"... addresses the critical need to bring bottom-up quantum physics and top-down device engineering together. Students will find in this book a unique combination of clearly-presented fundamental science and the device engineering principles needed to advance electronics in the nanoscale era."

Mark Lundstrom
Don and Carol SciFres Distinguished Professor,
Purdue University
Winner, IEEE Kirchmayer Graduate Teaching Award (2018)

348pp	**Feb 2023**	
978-981-126-657-7(pbk)	**US$38**	**£35**
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978-981-126-596-9(ebook)	**US$173**	**£150**

Textbook

New Era Electronics: A Lecture Notes Series - Vol 1

TRANSISTORS!

by **Mark Lundstrom** *(Purdue University, USA)*

The book discusses all the most used transistors: silicon MOSFETS, III-V heterostructure FETs and HBTs, and power MOSFETs. This is the first introductory transistor textbook that seamlessly treats MOSFETs from long-channel square-law devices to short channel ballistic and quasi-ballistic devices. This volume rearranges the familiar topics and distills the most essential among them, while adding most recent approaches which have become crucial to the discussion.

Readership: Advanced undergraduates and graduates in electronic engineering, semiconductors, microelectronics and nanoelectronics, as well as professional engineers.

280pp	**Jan 2023**	
978-981-126-768-0(pbk)	**US$58**	**£50**
978-981-126-726-0	**US$108**	**£95**
978-981-126-727-7(ebook)	**US$173**	**£150**

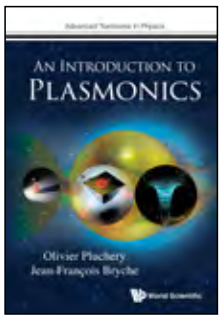
Textbook

Nanophotonics

Advanced Textbooks in Physics

AN INTRODUCTION TO PLASMONICS

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



This book starts with the concepts of wave and the electromagnetic description of light when it interacts with metals and then 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. Each chapter ends with a set of exercises that will help the reader revise the concepts and go deeper into the world of plasmonics. More than 70 exercises are included.

Readership: Academia,researcher, graduate and undergraduate students.

334pp	**Sep 2023**	
978-1-80061-339-3	**US$88**	**£75**
978-1-80061-340-9(ebook)	**US$141**	**£125**

Textbook

Optical Materials and Applications - Vol 1

NOVEL OPTICAL MATERIALS

edited by **Iam Choon Khoo** *(The Pennsylvania State University, USA)*, **Francesco Simoni** *(Università Politecnica delle Marche, Italy)* & **Cesare Umeton** *(Università della Calabria, Italy)*

This book comprises timely contributions from active research groups covering several classes of materials and processes including nano-structured plasmonic and photonic materials, 2-D materials, photo-polymers, liquid crystals, photo-sensitive and opto-thermal, and other specially engineered materials.

Readership: Graduate students, researchers, engineers, and optical and materials scientists.

350pp	**Dec 2023**	
978-981-128-059-7	**US$128**	**£115**
978-981-128-060-3(ebook)	**US$205**	**£180**

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Nanothermodynamics

NANOTHERMODYNAMICS

Theory and Applications

by **Dick Bedeaux** *(Norwegian University of Science and Technology, Norway)*, **Signe Kjelstrup** *(Norwegian University of Science and Technology, Norway)* & **Sondre K Schnell** *(Norwegian University of Science and Technology, Norway)*

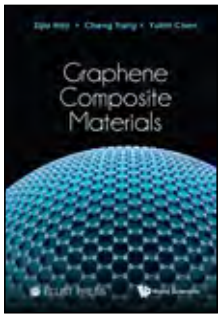
The book explains a general, systematic procedure on how to include size and shape dependent temperature, pressure and chemical potentials in thermodynamics. In the first part, the authors highlight the basic idea of the theory and provide a more systematic method, than used before. In the second part, the authors demonstrate the power of the theory in a set of central applications of nanoscience in and away from equilibrium.

Readership: Graduate students and professionals in Nanoscience.

382pp	**Sep 2023**	
978-981-127-499-2	**US$148**	**£130**
978-981-127-500-5(ebook)	**US$237**	**£210**

New Materials

GRAPHENE COMPOSITE MATERIALS



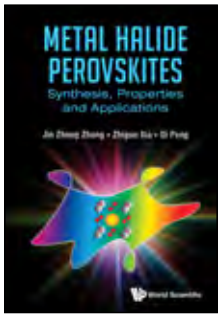
by **Sijia Hao** *(Beijing Institute of Aeronautical Materials, China & Beijing Institute of Graphene Technology Co. Ltd., China)*, **Cheng Yang** *(Beijing Institute of Aeronautical Materials, China & Beijing Institute of Graphene Technology Co. Ltd., China)* & **Yubin Chen** *(Beijing Institute of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

This book 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. The useful reference text focuses on four categories of graphene composite materials based on the matrix materials, metal, resin, rubber composites, and composite coatings.

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

352pp	**Jul 2023**	
978-981-127-678-1	**US$138**	**£120**
978-981-127-679-8(ebook)	**US$221**	**£195**

METAL HALIDE PEROVSKITES



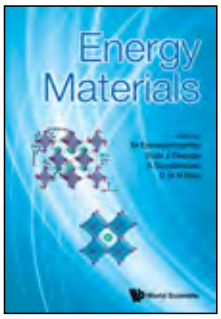
Synthesis, Properties and Applications

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

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

260pp	**Apr 2023**	
978-981-125-741-4	**US$98**	**£85**
978-981-125-742-1(ebook)	**US$157**	**£140**

ENERGY MATERIALS



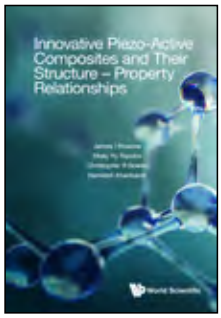
edited by **M Eswaramoorthy** *(Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India)*, **Subi J George** *(Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India)*, **A Sundaresan** *(Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India)* & **C N R Rao** *(Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), India)*

This book covers various sections that are currently exploring energy solutions through materials.The various aspects of energy include electrical power, comprising batteries, supercapacitors, thermoelectric energy conversion, photovoltaics, etc. Hydrogen is available in abundance, but catalysts are needed for the catalysis, so catalysts or porous solids have universal appeal in usage and applications.

Readership: Graduate students and researchers in energy materials.

384pp	**Feb 2023**	
978-981-127-094-9	**US$138**	**£120**
978-981-127-095-6(ebook)	**US$221**	**£195**

INNOVATIVE PIEZO-ACTIVE COMPOSITES AND THEIR STRUCTURE – PROPERTY RELATIONSHIPS

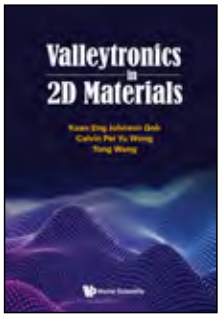


by **James I Roscow** *(University of Bath, UK)*, **Vitaly Yu Topolov** *(Southern Federal University, Russia)*, **Christopher R Bowen** *(University of Bath, UK)* & **Hamideh Khanbareh** *(University of Bath, UK)*

This monograph provides researchers, engineers, postgraduates and lecturers working in the field of ferroelectric or piezoelectric and related materials with features of the structure – property relationships in modern piezo-active composites. The book summarises and generalises authors' works on the problem of the effective properties and related parameters of modern two- and three-component piezo-active composites wherein the microgeometric factor plays the dominating role.

256pp	**Oct 2022**	
978-981-126-159-6	**US$98**	**£80**
978-981-126-160-2(ebook)	**US$157**	**£125**

VALLEYTRONICS IN 2D MATERIALS



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

"... the field of 2D materials has advanced beyond pure research and entered the engineering and technology areas. It will serve as a practical guide for students, researchers, and entrepreneurs interested in understanding and working in this rapidly developing research field ... The book structure is well-thought and comprehensive ... I totally recommend this book!"

Artem Mishchenko
National Graphene Centre,
University of Manchester, UK

Readership: Applied researchers, engineers, undergraduate students and postgraduate students and general readers.

360pp	**Jul 2023**	
978-981-122-909-1	**US$138**	**£120**
978-981-122-910-7(ebook)	**US$221**	**£175**

Polymers

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 covers the basics and recent advances in polymer nanoparticles, including polymer synthesis, self-assembly, properties, and applications. It encompasses the various preparation methods of polymer nanoparticles, broadly ranged from single chain collapse to polymerization methods and solution self-assembly. It showcases a wide range of advanced applications of polymer nanoparticles in several fields that include pharmaceutics (drug and nucleotide delivery), biomedicals (bioimaging, diagnosis, and therapeutics), energy (batteries and solar cells) and environmental (catalysis and water purification).

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.

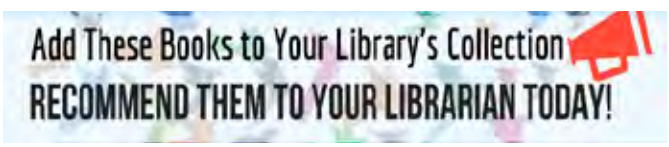
642pp	**Nov 2023**	
978-981-126-298-2(Set)	**US$248**	**£220**
978-981-125-916-6(Set)(ebook)	**US$397**	**£350**

ADVANCED COMPOSITES ENGINEERING AND ITS NANO-BRIDGING TECHNOLOGY

Applied Research for Polymer Composites and Nanocomposites
by **Yun-Hae Kim** *(Korea Maritime and Ocean University, South Korea)*, **Ri-Ichi Murakami** *(Chengdu University, China)* & **Soo-Jeong Park** *(Korea Maritime and Ocean University, South Korea)*

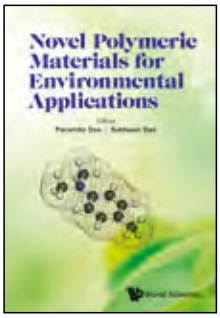
This book applies various concepts based on practical experimental considerations to industrial fields: aerospace structure, shipbuilding and marine engineering, automotive, and elevator composites. This book deals with applied research from the basics of a rare nanomaterial called halloysite nanotube, which is environmentally friendly and leads nanomaterials in advanced industrial composite materials and functional, structural materials with high practical value. This book includes practical nano-bridging techniques on nanostructures, manufacturing, analysis, and advanced composites' applications using the research know-how accumulated over the years by prominent experts in these areas.

328pp	**Apr 2021**	
978-981-123-531-3	**US$98**	**£85**
978-981-123-532-0(ebook)	**US$157**	**£135**



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)*



Polymeric materials play an essential and ubiquitous role in many fields including structural and packaging materials, drug development, tissue engineering, wastewater treatment, pollutant removal, separation, water purification, smart agriculture, and even road and building construction. 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. Such information is valuable and accelerates technological progress. Each chapter further gives the current fabrication methodology, challenges, and future scope of these materials related to their environmental applications. Thus anyone working on polymer-based materials will benefit from the comprehensive knowledge presented in this book on novel polymeric materials and their various environmental applications.

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

496pp	**May 2023**	
978-981-126-592-1	**US$148**	**£130**
978-981-126-593-8(ebook)	**US$237**	**£210**

Materials and Energy - Vol 12

WORLD SCIENTIFIC HANDBOOK OF ORGANIC OPTOELECTRONIC DEVICES

(Volumes 3 & 4)
Volume 3: OLEDs
Volume 4: Flexible Bioelectronics
edited by **Dongge Ma** *(South China University of Technology, China)* & **Tae-Woo Lee** *(Seoul National University, South Korea)*
Editor-in-chief: **Franky So** *(North Carolina State University, USA)*

Organic (opto)electronic materials have received considerable attention due to their applications in perovskite and flexible electronics, OPVs and OLEDs and many others. Reflecting the rapid growth in research and development of organic (opto)electronic materials over the last few decades, World Scientific Handbook of Organic Optoelectronic Devices provides a comprehensive coverage of the state-of-the-art in an accessible format. It presents the most widely recognized fundamentals, principles, and mechanisms along with representative examples, key experimental data, and over 200 illustrative figures.

Readership: Advanced graduate students and researchers in the field of electrical and electronic engineering specifically in polymers, semiconductors and related areas.

1144pp	**Jul 2022**	
978-981-124-029-4(Set)	**US$890**	**£785**
978-981-124-030-0(Set)(ebook)	**US$1424**	**£1255**

Featured Major Reference Works (MRW)

Materials and Energy - Vol 18

HYBRID ORGANIC INORGANIC PEROVSKITES

Physical Properties and Applications
(In 4 Volumes)
Volume 1: Hybrid Organic Inorganic Perovskites: Physical Properties
Volume 2: Hybrid Organic Inorganic Perovskites: Optical Properties
Volume 3: Spin Response of Hybrid Organic Inorganic Perovskites
Volume 4: Hybrid Organic Inorganic Perovskite Applications
edited by **Zeev Valy Vardeny** *(University of Utah, USA)* & **Matt C Beard** *(National Renewable Energy Laboratory, USA)*

Editors-in-chief: **Zeev Valy Vardeny** *(University of Utah, USA)* & **Matt C Beard** *(National Renewable Energy Laboratory, USA)*

This handbook gives an overview of hybrid organic inorganic perovskites, both two dimensional (2D) and three dimensional (3D), from synthesis and characterization and simulation to optoelectronic devices, spintronics devices and catalysis application.

Volume 1: Material physical properties- structure, deposition characteristic and the structure of the electronic bands.

Volume 2: Hybrid perovskite optical properties- ultrafast optical response, photoluminescence and laser action.

Volume 3: Spin response - application such as spin valves, photogalvanic effect, and magnetic response of light emitting diodes and solar cell devices.

Volume 4: Physics and device properties of the relevant applications - photovoltaic solar cells.

Readership: Physicists, chemists, materials scientists, advanced graduate students, and professional scientists.

860pp	**Mar 2022**	
978-981-124-098-0(Set)	**US$880**	**£705**
978-981-124-099-7(Set)(ebook)	**US$1408**	**£1130**

Materials and Energy - Vol 15

THE WORLD SCIENTIFIC REFERENCE OF AMORPHOUS MATERIALS

Structure, Properties, Modeling and Main Applications
(In 3 Volumes)
Volume 1: Structure, Properties, Modeling and Applications of Amorphous Chalcogenides
Volume 2: Structure, Properties and Applications of Oxide Glasses
Volume 3: Structure, Properties, and Applications of Tetrahedrally Bonded Thin-Film Amorphous Semiconductors
edited by **Alexander V Kolobov** *(Herzen State Pedagogical University of Russia, Russia)*, **Koichi Shimakawa** *(Gifu University, Japan)*, **Ivar E Reimanis** *(Colorado School of Mines, USA)*, **Nikolas J Podraza** *(University of Toledo, USA)* & **Robert W Collins** *(University of Toledo, USA)*

Editor-in-chief: **P Craig Taylor** *(Colorado School of Mines, USA)*

This three-volume set covers the vast majority of the important concepts needed to understand these materials and their principal practical applications. One volume discusses the most important subset of amorphous insulators, namely oxide glasses; the other two volumes discuss the most important subsets of amorphous semiconductors.

The topics covered in these three volumes include (1) concepts for understanding the structures of amorphous materials, (2) techniques to characterize the structural, electronic, and optical properties of amorphous materials, (3) the roles of defects in affecting the electronic and optical properties of amorphous materials, and (4) the concepts for understanding practical devices and other applications of amorphous materials. Applications discussed in these volumes include transistors, solar cells, displays, bolometers, fibers, non-volatile memories, vidicons, photoresists, and optical disks.

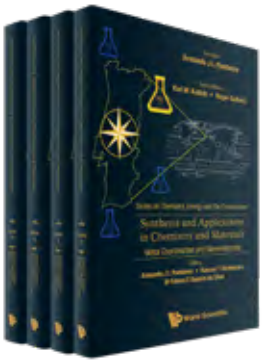
Readership: Physicists, chemists, materials scientists, advanced graduate students, professional scientists looking to change specialties.

1548pp	**Feb 2021**	
978-981-121-555-1(Set)	**US$990**	**£870**
978-981-121-593-3(Set)(ebook)	**US$1584**	**£1390**

Series on Chemistry, Energy and the Environment - Vol 11 – 14

SYNTHESIS AND APPLICATIONS IN CHEMISTRY AND MATERIALS

(In 4 Volumes)
Volume 1: Metal Coordination and Nanomaterials
Volume 2: Enzymatic and Organic Systems
Volume 3: Metal Complex Catalytic Systems and Materials
Volume 4: Biomass and Waste Valorisation, Functional Materials, Energy Conversion and Supercritical Systems
edited by **Armando J L Pombeiro** *(Universidade de Lisboa, Portugal)*, **Kamran T Mahmudov** *(Universidade de Lisboa, Portugal)* & **Maria de Fátima Costa Guedes da Silva** *(Universidade de Lisboa, Portugal)*



Chemistry and Material Sciences naturally depend greatly on Synthesis as the initial stage for the existence of compounds and materials with desired behaviors, within the overall streamline of Design/Synthesis — Properties — Application/Function, and their relations. Such a general approach is of a too wide scope to be properly treated in a single set of publications, but this one on "Synthesis and Applications in Chemistry and Materials" restricts itself by aiming to show the strength and international character of the current research in synthetic chemistry that is being developed in Portugal or abroad by teams that cooperate with this country. Hence, it gathers representative contributions of main Portuguese research groups and foreign collaborating ones.

Readership: Graduate students and researchers nanomaterials, enzymatic/organic systems, metal complex catalytic systems and materials, biomass and waste valorisation, energy conversion and supercritical systems.

1200pp	**Feb 2024**	
978-981-127-993-5(Set)	**US$1100**	**£970**
978-981-127-994-2(Set)(ebook)	**US$2061**	**£1815**

Featured Major Reference Works (MRW)

World Scientific Series in Nanoscience and Nanotechnology - Vol 22

WORLD SCIENTIFIC REFERENCE ON PLASMONIC NANOMATERIALS

Principles, Design and Bio-applications
(In 5 Volumes)
Volume 1: Principles of Nanoplasmonics
Volume 2: Plasmonic Nanoparticles: Synthesis and (Bio) functionalization
Volume 3: Self-Assembly of Plasmonic Nanostructures
Volume 4: Nanoparticle-Cell Interactions
Volume 5: Plasmonics in Diagnostics and Therapy

edited by **Jwa-Min Nam** *(Seoul National University, Korea)*, **Jianfang Wang** *(The Chinese University of Hong Kong, China)*, **Zhihong Nie** *(Fudan University, China)*, **Kimberly Hamad-Schifferli** *(University of Massachusetts Boston, USA & Massachusetts Institute of Technology, USA)* & **Sebastian Schlücker** *(University of Duisburg-Essen, Germany)*

Editor-in-chief: **Luis M Liz-Marzán** *(CIC biomaGUNE, Spain)*

Ths is a book collection that encompasses multiple aspects of the exciting and timely field of nanoplasmonics. Given the breadth of the materials, phenomena and applications related to plasmonics, this reference set offers a collection of chapters within dedicated volumes, focusing on the description of selected phenomena, with an emphasis in chemistry as an enabling tool for the fabrication of, often sophisticated, plasmonic nanoarchitectures and biomedicine as the target application.

Basic principles of surface plasmon resonances are described, as well as those mechanisms related to related phenomena such as surface-enhanced spectroscopies or plasmonic chirality. All such nanomaterials can find applications in various biomedical aspects, most often in relation to diagnosis, through either the detection of disease biomarkers at extremely low concentrations or the design of bioimaging methods for in vivo monitoring.

Readership: Specialized researchers who aim at updated information and broadening their activity in nanoplasmonics and their applications.

2328pp	**May 2022**	
978-981-123-513-9(Set)	**US$1950**	**£1715**
978-981-123-514-6(Set)(ebook)	**US$3120**	**£2745**

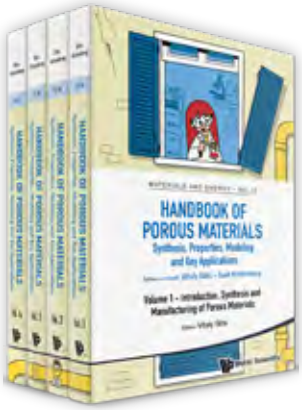
Materials and Energy - Vol 16

HANDBOOK OF POROUS MATERIALS

Synthesis, Properties, Modeling and Key Applications
(In 4 Volumes)
Volume 1: Introduction, Synthesis and Manufacturing of Porous Materials
Volume 2: Characterisation and Simulation of Porous Materials
Volume 3: Separations Using Porous Materials
Volume 4: Porous Materials for Energy Conversion and Storage

edited by **Vitaly Gitis** *(Ben Gurion University of the Negev, Israel)*, **Gadi Rothenberg** *(University of Amsterdam, The Netherlands)*, **Anton A Kiss** *(The University of Manchester, UK)* & **David Eisenberg** *(Technion — Israel Institute of Technology, Israel)*

Editor-in-chiefs: **Vitaly Gitis** *(Ben Gurion University of the Negev, Israel)* & **Gadi Rothenberg** *(University of Amsterdam, The Netherlands)*



This four-volume handbook gives an overview of porous materials, from synthesis and characterization and simulation all the way to manufacturing and industrial applications.

Volumes 1 and 2 cover the fundamentals of preparation, characterisation, and simulation of porous materials. Working from the fundamentals all the way to the practicalities of industrial production processes, the subjects include hierarchical materials, in situ and operando characterisation using NMR, X-Ray scattering and tomography, state-of-the-art molecular simulations of adsorption and diffusion in crystalline nanoporous materials, as well as the emerging areas of bio-artificing and drug delivery.

Volume 3 focuses on porous materials in industrial separation applications, including adsorption separation, membrane separation, and osmotic distillation.

Volume 4 explains the energy engineering aspects of applying porous materials in supercapacitors, fuel cells, batteries, electrolysers and sub-surface energy applications.

Readership: University libraries, technical institutes, industrial R&D departments and national and key laboratories. Researchers, graduate students and engineers working in materials science, the energy transition, chemistry and chemical engineering.

1492pp	**Jan 2021**	
978-981-122-322-8(Set)	**US$1580**	**£1390**
978-981-122-323-5(Set)(ebook)	**US$2528**	**£2225**

Journals

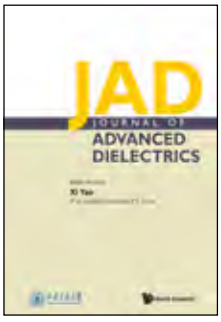
JOURNAL OF ADVANCED DIELECTRICS (JAD)

https://www.worldscientific.com/jad

Indexed in Web of Science & Scopus

Impact Factor: 3.1

OPEN ACCESS



Journal of Advanced Dielectrics is an inter-national peer-reviewed journal for original contributions on the understanding and applications of dielectrics in modern electronic devices and systems.

WORLD SCIENTIFIC ANNUAL REVIEW OF FUNCTIONAL MATERIALS (WSARFM)

https://www.worldscientific.com/wsarfm

It aims to publish authoritative and state-of-the-art reviews on recent breakthroughs in the current research on functional materials and their technological applications. The publication aims to cover both theoretical and experimental aspects of functional materials, including their synthesis and characterization.

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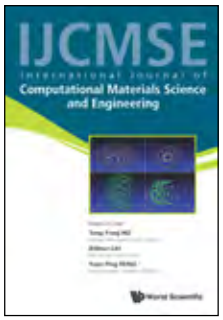
Journals

INTERNATIONAL JOURNAL OF COMPUTATIONAL MATERIALS SCIENCE AND ENGINEERING (IJCMSE)



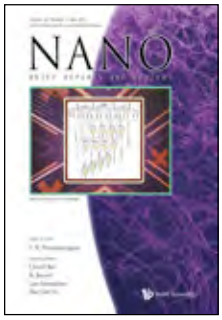
https://www.worldscientific.com/ijcmse

Indexed in Web of Science

Impact Factor: 1.3

The objective of the journal is the publication and wide electronic dissemination of innovative and consequential research in all aspects computational materials science and engineering, featuring the most advanced mathematical modeling and numerical methodology developments. It will aim to attract and solicit high-quality original research papers in all aspects of computational materials science and engineering with special emphasis on the most current topics of interest to the associated research communities.

NANO (NANO)



https://www.worldscientific.com/nano

Impact Factor: 1.2

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.

Research areas of interest include: nanomaterials including nano-related biomaterials, new phenomena and newly developed characterization tools, fabrication methods including by self-assembly, device applications, and numerical simulation, modeling, and theory.

FUNCTIONAL MATERIALS LETTERS (FML)

https://www.worldscientific.com/fml

Impact Factor: **1.3**

Indexed in Web of Science & Scopus

Functional Materials Letters is an international peer-reviewed scientific journal for original contributions to research on the synthesis, behavior and characterization of functional materials. The scope of the journal covers theoretical and experimental studies of functional materials, characterization and new applications-related research on functional materials in macro-, micro- and nano-scale science and engineering. Among the topics covered are ferroelectric, multiferroic, ferromagnetic, magneto-optical, optoelectric, thermoelectric, energy conversion and energy storage, sustainable energy and shape memory materials

SPIN (SPIN)

https://www.worldscientific.com/spin

Impact Factor **1.8**

Indexed in Web of Science & Scopus

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.

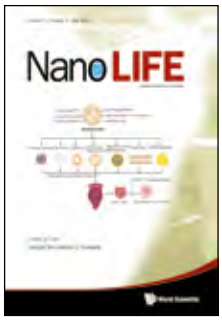
SURFACE REVIEW AND LETTERS (SRL)

https://www.worldscientific.com/srl

Impact Factor: 1.1

This international journal is devoted to the elucidation of properties and processes that occur at the boundaries of materials. The scope of the journal covers a broad range of topics in experimental and theoretical studies of surfaces and interfaces. Both the physical and chemical properties are covered. The journal also places emphasis on emerging areas of cross-disciplinary research where new phenomena occur due to the presence of a surface or an interface.

NANO LIFE (NL)



https://www.worldscientific.com/nl

Impact Factor: 0.8

Nano LIFE is a quarterly international journal publishing peer-reviewed research in the broad fields of nanoscience, biomedicine, and environmental health. This journal was first launched in 2010 by World Scientific Publishing. The journal has been listed in the ISI category of Multidisciplinary Science.

INNOVATION AND EMERGING TECHNOLOGIES (IET)

Formerly known as TECHNOLOGY

https://www.worldscientific.com/iet

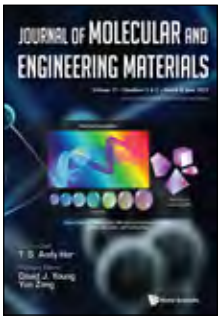
The journal provides a platform for the communication of technological advances that will potentially affect and even change our lives in a significant and palpable way; features articles that describe the use of fundamental science to create new and meaningful elements which ultimately can be applied to daily life and demonstrates how various scientific disciplines can be integrated to ensure technological success and seamless translation.

MOLECULAR FRONTIERS JOURNAL (MFJ)

https://www.worldscientific.com/mfj

The *Molecular Frontiers Journal* fosters exploration and discovery, helping to realize science's promise. By connecting scientists from a multitude of disciplines around matters of global significance, MFJ serves to encourage new perspectives on scientific quandaries that can lead to innovative breakthroughs. Its Scientific Advisory Board, including many Nobel Prize laureates, represents expertise from a wide range of scientific disciplines.

JOURNAL OF MOLECULAR AND ENGINEERING MATERIALS (JMEM)



Impact Factor: **1.5**

https://www.worldscientific.com/jmem

The journal targets at reviews, communications and regular papers in all areas under molecular materials and engineering materials. Molecular materials is an intersecting field of materials and molecular science, whereas engineering materials integrates materials research with the broad engineering field. The journal aims to publish novel, high-quality, and high-impact works.

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Rural Development

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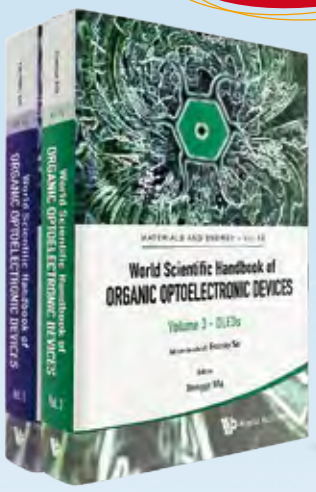

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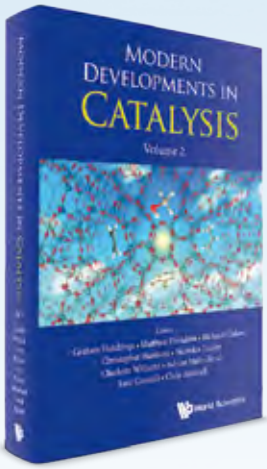

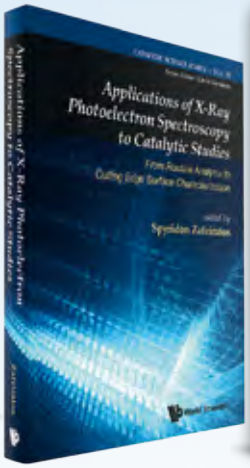

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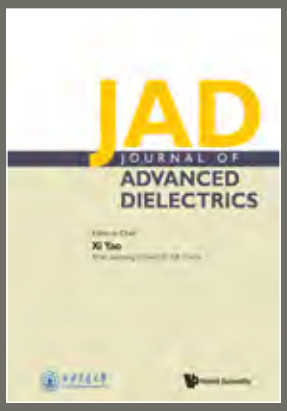

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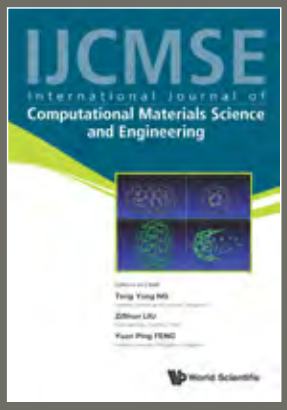

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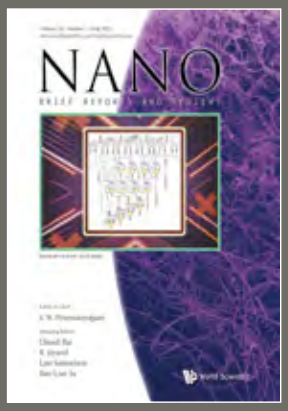

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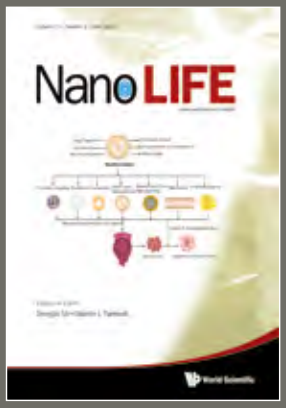

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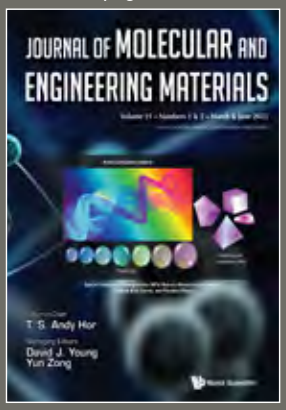

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