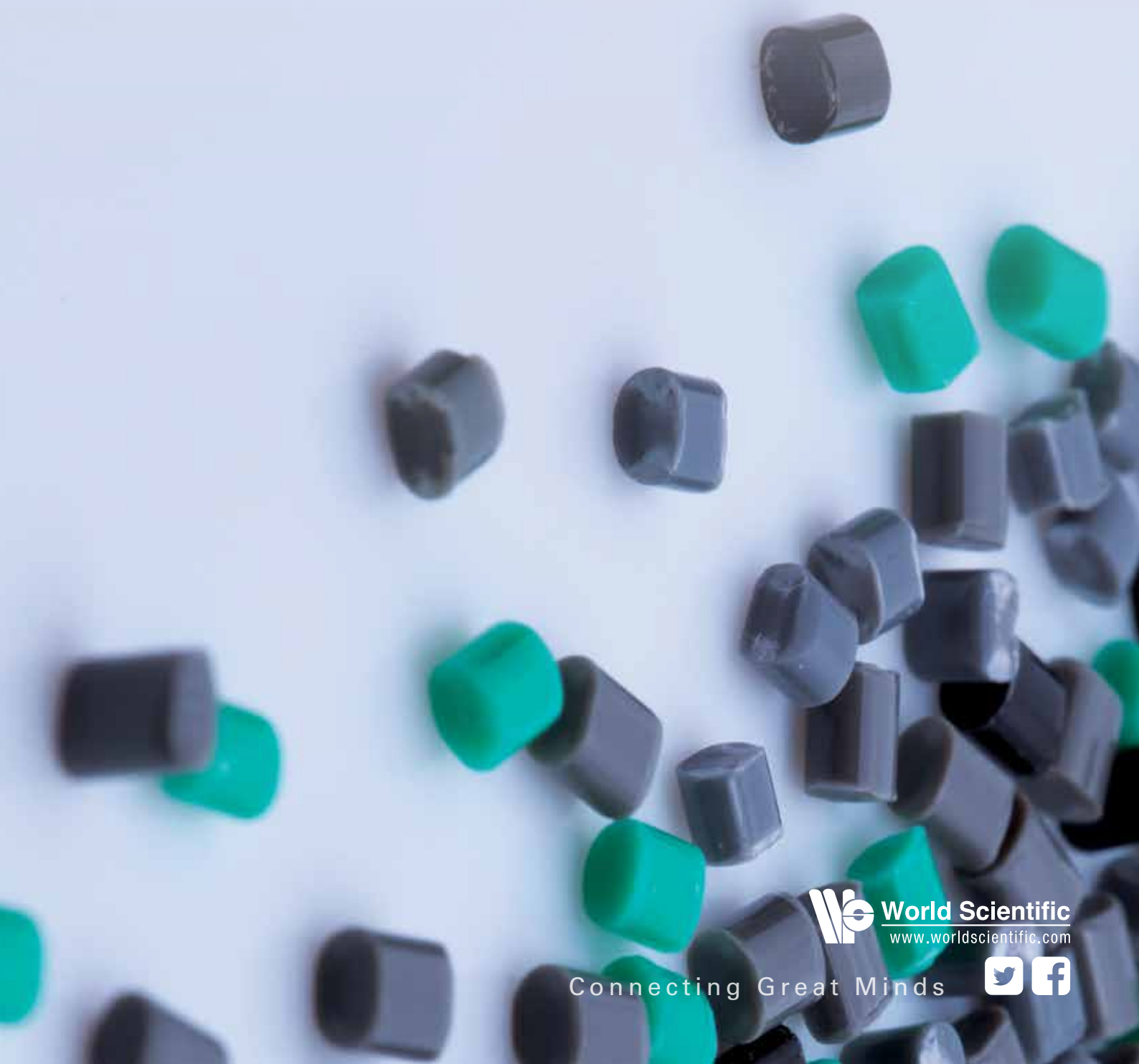




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Catalogue

MATERIALS SCIENCE & NANOSCIENCE



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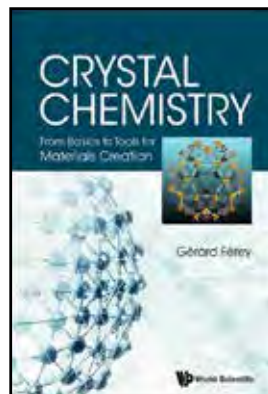
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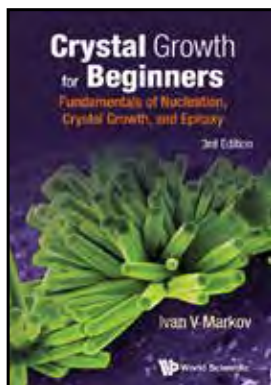
Materials Science and Nanoscience 2017

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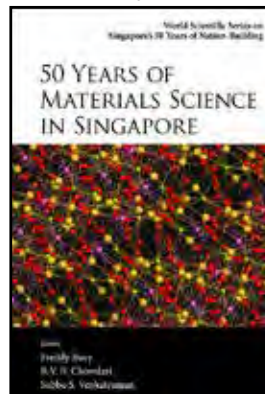
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by **Markov Ivan Vesselinov** (*Bulgarian Academy Of Sciences, Bulgaria*)

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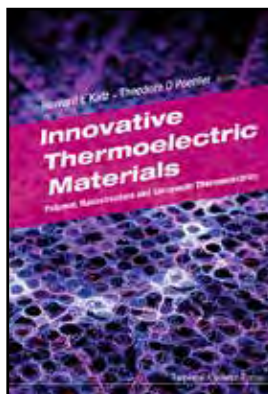
edited by **Freddy Boey, B V R Chowdari & Subbu S Venkatraman** (*NTU, Singapore*)

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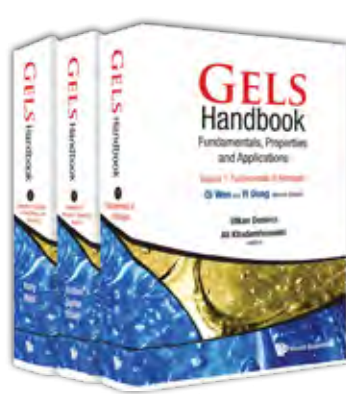
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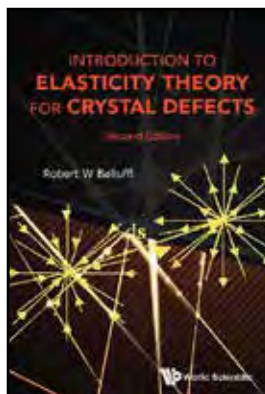
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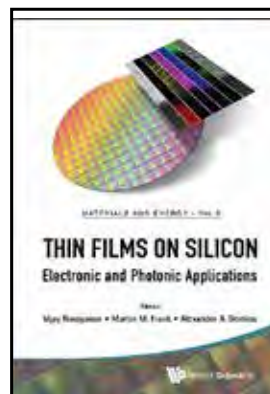
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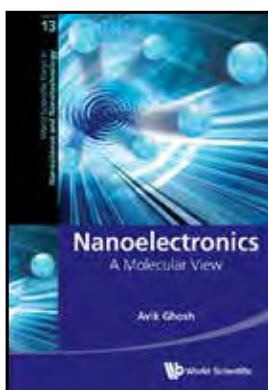
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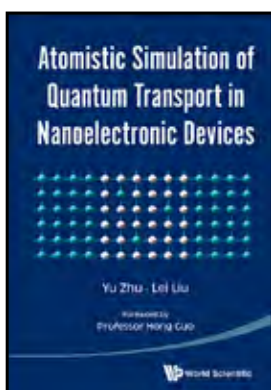
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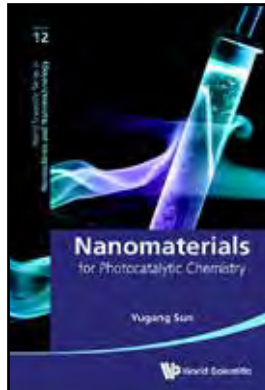
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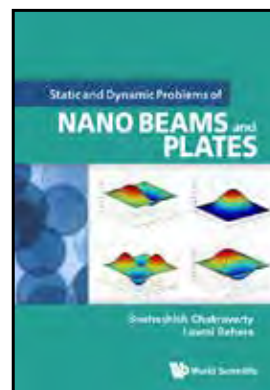
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by **Chakraverty Snehashish & Behera Laxmi** (*National Inst Of Technology Rourkela, India*)

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MATERIALS SCIENCE

CRYSTALLOGRAPHY & LIQUID CRYSTALS

:: Textbook

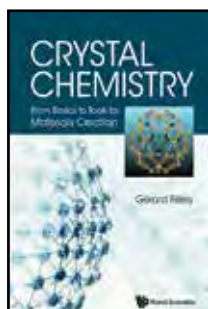
**Crystal Chemistry
From Basics to Tools for
Materials Creation**by **Gerard Ferey** (University of Versailles, France)

Devoted to a diverse group of solid state scientists, the book has two objectives, both relating to structural chemistry:

(i) a progressive analytic familiarization with the main parameters that govern the organization of crystallized matter and related crystal structures, (ii) a study of what are the various ways to 'read' a structure far beyond its representation in scientific articles. Hence, the reader will, from numerous examples illustrated in color, analyze what are the main characteristics of these structures, from their geometric characteristics, their coordination polyhedra, their connections with the resulting dimensionalities of these solids, including also the defects they exhibit, before looking at possibilities to classify structures, within which recurrence laws can emerge.

Readership: Undergraduate and graduate students in solid state sciences, coordination chemists and physicists.

200pp	Jan 2017	
978-981-3144-18-7	US\$85	£61
978-981-3144-19-4(pbk)	US\$45	£32



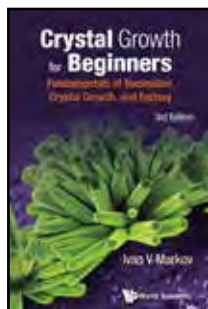
:: Textbook

**Crystal Growth for
Beginners
Fundamentals of Nucleation,
Crystal Growth and Epitaxy
3rd Edition**by **Ivan V Markov** (Bulgarian Academy of Sciences, Bulgaria)

The book covers, in practice, all fundamental questions and aspects of nucleation, crystal growth, and epitaxy. The third edition brings existing chapters up to date, and includes new chapters on the growth of nanowires by the vapor – liquid – solid mechanism, as well as illustrated short biographical texts about the scientists who introduced the basic ideas and concepts into the fields of nucleation, crystal growth and epitaxy.

Readership: Professionals and graduate students in materials science, dealing with crystals; with some basic knowledge of mathematics, physics and thermodynamics.

484pp	Nov 2016	
978-981-3143-42-5	US\$148	£107
978-981-3143-85-2(ebook)	US\$192	£139



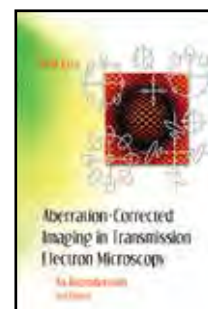
ELECTRON MICROSCOPY, SCANNING, TUNNELING

**Aberration-Corrected Imaging in Transmission
Electron Microscopy****An Introduction****2nd Edition**by **Rolf Erni** (Swiss Federal Laboratories for Materials Science and Technology (Empa), Switzerland)**Key Features:**

- Uniform notation and concept throughout the book
- Comprehensive but concise: covers the basics of the imaging modes, electron optics and aberration correction
- Contains tables and equations that often need to be looked up, but cannot be found in a single source

Readership: Advanced undergraduate and graduate students in materials science and related fields.

432pp	May 2015	
978-1-78326-528-2	US\$110	£73

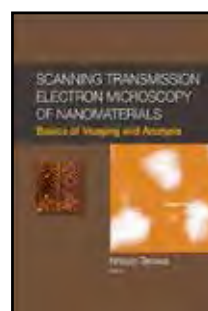
**Scanning Transmission Electron Microscopy of
Nanomaterials****Basics of Imaging and Analysis**edited by **Nobuo Tanaka** (Nagoya University, Japan)

"This is written in a very readable style, packed with information and helpful explanations, and above all, very up to date. The book is generously illustrated, with many nice line-drawings, historic photographs, micrographs and spectra and, as a bonus, it has a name index as well as a subject index."

Ultramicroscopy

Readership: Graduate students and researchers in the field of nanomaterials and nanostructures.

616pp	Oct 2014	
978-1-84816-789-6	US\$155	£102
978-1-84816-790-2(ebook)	US\$202	£133

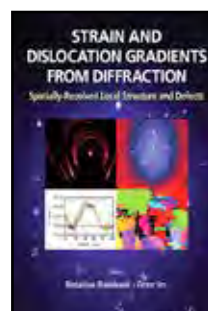
**Strain and Dislocation Gradients from Diffraction
Spatially-Resolved Local Structure and Defects**edited by **Rozaliya Barabash, Gene Ice** (Oak Ridge National Laboratory, USA)

"The scientific level of the book is excellent. I recommend this book to scientists interested in understanding the state of the art in characterizing local crystal structures and defects using X-ray micro-diffraction."

Journal of Applied Crystallography

Readership: Researchers in X-ray science, materials science, applied physics, and mechanical engineering.

480pp	May 2014	
978-1-908979-62-9	US\$158	£104
978-1-908979-63-6(ebook)	US\$205	£135



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SCANNING PROBE MICROSCOPY FOR ENERGY RESEARCH
BONNELL DAWN ET AL (THE UNIV OF PENNSYLVANIA, USA)

IN-SITU ELECTRON MICROSCOPY AT HIGH RESOLUTION
BANHART FLORIAN (UNIV DE STRASBOURG, FRANCE)

GENERAL MATERIALS SCIENCE

World Scientific Series on Singapore's 50 Years of Nation-Building

50 Years of Materials Science in Singapore

edited by **Freddy Boey**, **B V R Chowdari** & **Subbu S Venkatraman** (NTU, Singapore)

"This volume begins with a great overview of the history and choices made by Singapore over the last decades to bring the country to the forefront of science, technology and innovation. The contents truly demonstrate the tremendous growth in cutting edge materials science and technologies research using case studies taken from Singapore's finest contributions. Combining science history and science politics with research reports of great intellectual depth, it is also a very pleasant read. This volume is useful and highly recommended for scientists, science decision makers, technologists, and managers alike."

Prof G. Julius Vancso FRSC, MHUS
University of Twente, The Netherlands



Readership: General public, people interested in history of Singapore, people interested in materials science.

244pp	Aug 2016	
978-981-4730-69-3	US\$58	£42
978-981-3147-55-3(pbk)	US\$28	£20
978-981-4730-70-9(ebook)	US\$75	£55

Series on Archaeology and History of Science in China - Vol 2

Recent Advances in the Scientific Research on Ancient Glass and Glaze

edited by **Qinghui Li** (Chinese Academy of Sciences, China) & **Julian Henderson** (University of Nottingham, UK)

The scope of this book includes the new archaeological findings of ancient glass and faience in the world, the relationship of glassmaking with glazing technology, the development and application of modern techniques used for the characterization of ancient glass and glaze, compound colorants/opacifiers among ancient glass, the early exchanges of culture and techniques used between China and elsewhere along the Silk and Steppe Roads, and so on.

572pp	Apr 2016	
978-981-4630-27-6	US\$135	£89
978-981-4630-28-3(pbk)	US\$65	£43
978-981-4630-29-0(ebook)	US\$176	£116



Computational and Experimental Methods in Structures - Vol 6

Woven Composites

edited by **M H Aliabadi** (Imperial College London, UK)

This unique volume presents the latest developments in the field of advanced woven and braided textile composites, with particular emphasis on computational approaches (finite elements, meshfree). Topics covered in this book include: 2D and 3D plain, twill, satin woven and braided composites, micro-level and macro-level modelling, failure mechanisms, theoretical studies on cryogenic crack behaviour and the specific deformation modes of textile reinforcements, which include the kinematic and hypoelastic models.

Readership: Engineers, graduate students and researchers interested in composite materials.



248pp	Apr 2015	
978-1-78326-617-3	US\$114	£82
978-1-78326-618-0(ebook)	US\$148	£107

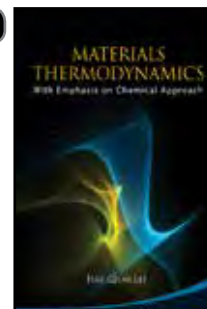
:: Bestselling Textbook

Materials

Thermodynamics

With Emphasis on Chemical Approach (With CD-ROM)

by **Hae-Geon Lee** (POSTECH, Korea)



"This book provides clear explanations with easy-to-follow mathematical derivations and clear connections to the physical significance of each derived equation. This is an interesting book, especially for students interested in learning about thermodynamics or for researchers wanting a refresher."

IEEE Electrical Insulation Magazine

Key Features:

- This book is essentially based on classical thermodynamics but it is also supported by statistical treatments with molecular-level models
- This book adopts a two-dimensional approach in which the mathematical derivation flows in two ways: vertically and horizontally. This flowchart-like format should provide readers with clear reasoning of the derivation flow.

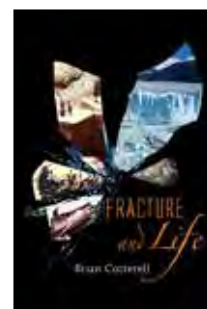
Readership: Students in materials engineering and chemical engineering.

476pp	Feb 2012	
978-981-4368-05-6	US\$78	£51

:: Bestseller

Fracture and Life

by **Brian Cotterell** (University of Sydney, Australia)



This book is an interdisciplinary review of the effect of fracture on life, following the development of the understanding of fracture written from a historical perspective. After a short introduction to fracture, the first section of the book covers the effects of fracture on the evolution of the Earth, plants and animals, and man. The second section of the book covers the largely empirical control of fracture from ancient times to the end of the nineteenth century. The final section reviews the development of fracture theory as a discipline and its application during the twentieth century through to the present time.

Readership: Advanced undergraduates, graduates, post-doctoral fellows and professionals engaged in any discipline that entails an understanding of fracture.

500pp	Mar 2010	
978-1-84816-282-2	US\$133	£87
978-1-84816-283-9(ebook)	US\$172	£114

NEW MATERIALS

World Scientific Series on Carbon Nanoscience - Vol 7 & 8

Handbook of Carbon Nano Materials (In 2 Volumes)

Vol 7: Synthetic Developments of Graphene and Nanotubes
Vol 8: Characterization, Conducting Polymer and Sensor Applications

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



"This is a very timely and important book which provides a useful catalogue of ideas and an invaluable source of up-to-date information, whether for the researcher who aims to make electronic devices, sensors, or materials for energy storage or biomedical applications, or indeed for those scientists and engineers who are simply intrigued by the properties of carbon nanomaterials and would like to learn more. The book serves as an essential guide to the synthesis, properties and applications of nanocarbons, which undoubtedly will appeal to a wide cross section of the research community."

Journal of Applied Crystallography

The seventh and eighth volumes of Handbook of Carbon Nano Materials focus on novel properties and applications of nanocarbons, viz., graphene, nanotube and fullerene. The books provide a comprehensive overview of the author's work, and significant discoveries and pioneering contributions from other groups. Specific applications cover latest developments in graphene synthesis, CVD of carbon nanomaterials, multifunctional carbon nanostructures, chemical manipulation, energy conversion and storage, nanotube micellar surface chemistry, and biosensor development.

Readership: Physicists, chemists and material scientists.

600pp	Oct 2015	
978-981-4678-90-2(Set)	US\$320	£211
978-981-4678-91-9(Set)(ebook)	US\$416	£274

World Scientific Series on Carbon Nanoscience - Vol 5 & 6

Handbook of Carbon Nano Materials (In 2 Volumes)

Vol 5: Graphene — Fundamental Properties
Vol 6: Graphene — Energy and Sensor Applications

The fifth and sixth volumes of the Handbook of Carbon Nano Materials focus on fundamental properties and key applications of graphene. Graphene, the thinnest known material made of a single atom thick sheet of carbon atoms arranged hexagonally, offers great opportunities for application development in nanotechnology. This handbook covers fundamental properties, characterization, chemical manipulation, and applications of graphene. Specific applications cover latest developments in chemical manipulation, thermodynamic characterization, energy conversion and storage, and biosensor development.

552pp	Mar 2014	
978-981-4566-69-8	US\$330	£218
978-981-4566-70-4(ebook)	US\$429	£283

Materials and Energy - Vol 4

Materials for Biofuels

edited by **Arthur J Ragauskas** (Georgia Institute of Technology, USA)

"This is the most thorough and well explained book on biofuels. It passes through all the stages of biofuel production, it clearly discusses the challenges and how they could be surpassed, and it is very well structured. Every chapter starts with a clear introduction, builds on, and then draws some conclusions, all based on scientific, peer reviewed paper."



ZME Science

Key Features:

- Detailed description of the key challenge: recalcitrance in biomass conversion into biofuel
- Interpreting leading bioconversion technologies and in-depth reaction mechanism to resolve this issue

Readership: Scientists and researchers who are interested in the study of materials and environmental science.

356pp	Mar 2014	
978-981-4513-27-2	US\$135	£89
978-981-4513-28-9(ebook)	US\$176	£116

:: Bestselling Textbook

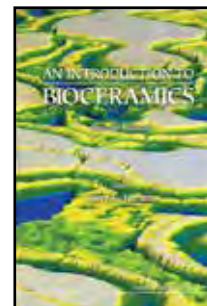
An Introduction to Bioceramics

2nd Edition

edited by **Larry L Hench** (University of Florida, USA)

Key Features:

- 21 new chapters have been added to make this title the most comprehensive book on the use of ceramic and glass materials in medicine and dentistry, including chapters that describe important developments in bringing new materials into the medical and dental marketplace
- Ethical issues and economic factors are also addressed in this second edition



Readership: Undergraduates, graduate students and researchers in the field of bioceramics.

620pp	Jul 2013	
978-1-908977-15-1	US\$89	£59

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PROPERTIES AND APPLICATIONS OF COMPLEX INTERMETALLICS
BELIN-FERRE ESTHER (UNIV PIERRE ET MARIE CURIE, FRANCE)

NANOSOLS AND TEXTILES
MAHLTIG BORIS ET AL (GMBU, GERMANY)

MATERIALS DEGRADATION AND ITS CONTROL BY SURFACE ENGINEERING (3RD EDITION)
BATCHELOR ANDREW W ET AL (ARAMCO, SAUDI ARABIA)



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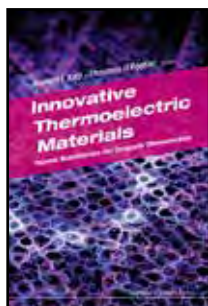
POLYMERS

Innovative Thermoelectric Materials Polymer, Nanostructure and Composite Thermoelectrics

edited by **Howard E Katz & Theodore O Poehler**
(Johns Hopkins University, USA)

Key Features:

- First book that highlights the potential of polymers in thermoelectrics
- Substantial theoretical analysis included to justify the experimental approaches reported and proposed at a level of detail that is both comprehensive and accessible



Power generation from environmentally friendly sources has led to surging interest in thermoelectrics. There has been a move toward alternative thermoelectric materials with enhanced performance through materials and structures that utilize common and safer elements and alternative mechanistic approaches while increasing processing latitude and decreasing cost. This wide-ranging volume examines this progress and future prospects with the new technologies, ease of processing and cost as major considerations, and will benefit active researchers, students and others interested in cutting-edge work in thermoelectric materials.

Readership: Researchers and post-graduate students in the field of thermoelectrics.

292pp	Apr 2016	
978-1-78326-605-0	US\$130	£94
978-1-78326-606-7(ebook)	US\$169	£122

:: Bestseller

Giant Molecules Here, There, and Everywhere 2nd Edition

by **Alexander Y Grosberg** (New York University, USA), **Alexei R Khokhlov** (Moscow State University, Russia)

"This book, affectionately written, still offers much for a new generation to enjoy."

Choice



Review of the First Edition

"Who would have thought a pair of theorists would produce a very readable and perceptive monograph of polymer physics? Yet this is exactly what Alexander Y Grosberg and Alexei R Khokhlov have done in this attractive book ... The explanations ... are about clearest I have read anywhere."

Nature

Readership: Undergraduate and graduate students in physics, chemistry and biophysics, chemical and biomedical engineering; advanced high school students; non-experts interested in the physics of polymers and biopolymers.

348pp	Sep 2010	
978-981-283-922-0	US\$58	£38
978-981-283-923-7(ebook)	US\$75	£49

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POLYMER TRIBOLOGY
SINHA SUJEET K ET AL (NUS, S'PORE)

POLYMER THIN FILMS
TSUI OPHELIA K C ET AL (BOSTON UNIV, USA)

Materials and Energy - Vol 5 Handbook of Green Materials Processing Technologies, Properties and Applications (In 4 Volumes)

edited by **Kristina Oksman** (Luleå University of Technology, Sweden), **Aji P Mathew** (Luleå University of Technology, Sweden), **Alexander Bismarck** (Vienna University of Technology, Austria), **Orlando Rojas** (North Carolina State University, USA) & **Mohini Sain** (University of Toronto, Canada)



The Handbook of Green Materials serves as reference literature for undergraduates and graduates studying materials science and engineering, composite materials, chemical engineering, bioengineering and materials physics; and for researchers, professional engineers and consultants from polymer or forest industries who encounter biobased nanomaterials, bionanocomposites, self- and direct-assembled nanostructures and green composite materials in their lines of work.

This four-volume set contains material ranging from basic, background information on the fields discussed, to reports on the latest research and industrial activities, and finally the works by contributing authors who are prominent experts of the subjects they address in this set. The four volumes comprise of:

- Vol. 1. Bionanomaterials: separation processes, characterization and properties
- Vol. 2. Bionanocomposites: processing, characterization and properties
- Vol. 3. Self- and direct-assembling of bionanomaterials
- Vol. 4. Biobased composite materials, their processing properties and industrial applications

This four-volume set is a must-have for anyone keen to acquire knowledge on novel bionanomaterials — including structure-property correlations, isolation and purification processes of nanofibers and nanocrystals, their important characteristics, processing technologies, industrial up-scaling and suitable industry applications.

The handbook is a useful reference not only for teaching activities but also for researchers who are working in this field.

Readership: Undergraduate and graduate students studying materials science and engineering, composite materials, chemical engineering, bioengineering and materials physics, researchers, professional engineers, polymer industries, consultants, forest industries, green tech expertise, etc.

1124pp	Jun 2014	
978-981-4566-45-2(Set)	US\$1580	£1043
978-981-4566-46-9(Set)(ebook)	US\$2054	£1356



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visit [http://www.worldscientific.com/
worldscibooks/10.1142/8975](http://www.worldscientific.com/worldscibooks/10.1142/8975)



Gels Handbook

Fundamentals, Properties and Applications
(In 3 Volumes)

Vol 1: Fundamentals of Hydrogels

Vol 2: Applications of Hydrogels in Regenerative Medicine

Vol 3: Application of Hydrogels in Drug Delivery and Biosensing

edited by **Utkan Demirci** (Stanford) & **Ali Khademhosseini** (Harvard)

Hydrogels are made from a three-dimensional network of cross linked hydrophilic polymers or colloidal particles that contain a large fraction of water. In recent years, hydrogels have attracted significant attention for a variety of applications in biology and medicine. This has resulted in significant advances in the design and engineering of hydrogels to meet the needs of these applications. This handbook explores significant development of hydrogels from characterization and applications.

Volume 1 covers state-of-art knowledge and techniques of fundamental aspects of hydrogel physics and chemistry with an eye on bioengineering applications. Topics include the types and chemistry of natural and synthetic hydrogels, hydrogels formation via photo-crosslink and self-assembly, the methods of tuning hydrogel mechanical properties and architecture, the techniques of tailoring hydrogel adhesiveness and biodegradability, and the development of environmental responsive hydrogels.

Volume 2 explores the use of hydrogels in the interdisciplinary field of tissue engineering, presenting the design and application of various types of hydrogels in engineering of tissues and organs, including the skin, eye, bone and cartilage, heart, blood vessels, lung, liver, pancreas and urological organs. The role of hydrogels in stem cell differentiation and creation of biological niches mimicking native tissues is also discussed.

Volume 3 focuses on two important aspects of hydrogels, that is, drug delivery and biosensing. For drug delivery, the authors present their work on synthetic, natural and supramolecular hydrogels. Injectable hydrogels and environment-responsive hydrogels are discussed in separate chapters due to their unique properties. For biosensing, topics including protein and cell laden hydrogels are discussed. Also included are biomolecular arrays patterning and cancer testing. In addition, as a special topic, the application of hydrogels in conjunction with microfluidic devices is discussed.

Readership: Pharmaceutical researchers and bioengineers, material scientists, biologists, physicians and students with an interest in the field of tissue engineering and regenerative medicine.

1172pp
978-981-4656-10-8(Set) Apr 2016 US\$1100 £726
978-981-4656-11-5(Set)(ebook) US\$1430 £944

Contents:

Volume 1: Fundamentals of Hydrogels

Volume Editors: **Qi Wen** (Worcester Polytechnic Institute, USA) and **Yi Dong** (OPKO Diagnostics, LLC, OPKO Health, Inc., USA)

Chapter 1: Natural Hydrogels

Chapter 2: Types and Chemistry of Synthetic Hydrogels

Chapter 3: Computational Nanomechanics of Hydrogels

Chapter 4: Mechanical Properties of Hydrogels

Chapter 5: Hydrogel Architecture

Chapter 6: Controlling Hydrogel Biodegradability

Chapter 7: Tailoring Hydrogel Adhesiveness to Cells, Proteins, and Bacteria

Chapter 8: Photo-Cross-Linking Methods to Design Hydrogels

Chapter 9: Self-Assembling Hydrogels

Chapter 10: Environment Responsive Hydrogels

Volume 2: Applications of Hydrogels in Regenerative Medicine

Volume Editors: **Mohammad Reza Abidian** (Pennsylvania State University (University of Houston, USA (as of Sep 2015)), **Umut Atakan Gurkan** (Case Western Reserve University, USA) and **Faramarz Edalat** (Emory University, USA)

Chapter 1: Hydrogels in Regenerative Medicine

Chapter 2: Determining Stem Cell Fate with Hydrogels

Chapter 3: Applications of Hydrogels in 3D Functional Tissue Models

Chapter 4: Engineering Regenerative Dextran Hydrogels for Acute Skin Wound Healing

Chapter 5: Application of Hydrogels in Ocular Tissue Engineering

Chapter 6: Hydrogels in Bone Tissue Engineering: A Multi-Parametric Approach

Chapter 7: Hydrogels in Intervertebral Disk (IVD) Repair

Chapter 8: Hydrogels in Cartilage Tissue Engineering

Chapter 9: Applications of Hydrogels for Tendon and Ligament Repair and Tissue Engineering

Chapter 10: Hydrogels in Bone Tissue Engineering

Chapter 11: Hydrogels in Cardiac Tissue Engineering

Chapter 12: Application of Hydrogels in Heart Valve Tissue Engineering

Chapter 13: Hydrogels in Vascular Tissue Engineering

Chapter 14: Use of Hydrogels in the Engineering of Lung Tissue

Chapter 15: Hydrogels for Hepatic Tissue Engineering

Chapter 16: Agarose Hydrogel Beads for Treating Diabetes

Chapter 17: Hydrogels in Urogenital Applications

Volume 3: Application of Hydrogels in Drug Delivery and Biosensing

Volume Editors: **Lifeng Kang** (NUS, Singapore) and **Sheereen Majid** (Pennsylvania State University (University of Houston, USA (as of Sep 2015))

Chapter 1: Modeling Drug Release from Synthetic Hydrogels

Chapter 2: Natural Polysaccharide-Based Hydrogels for Controlled Localized Drug Delivery

Chapter 3: In Situ Crosslinked Hydrogels for Drug Delivery

Chapter 4: Supramolecular Hydrogels for Drug Delivery

Chapter 5: BioHybrid Hydrogels as Environment-Sensitive Materials for Systematic Delivery of Therapeutics

Chapter 6: Application of PEG in Drug Delivery System

Chapter 7: Hydrogels as Actuators for Biological Applications

Chapter 8: Advances in Smart Hydrogels for Biosensing Applications

Chapter 9: 3-D Cancer Models on Hydrogels

Chapter 10: Hydrogel-Mediated Patterning of Cellular and Biomolecular Microarrays for Screening Assays and Biosensing

Chapter 11: Protein-Immobilized Hydrogel Microstructures for Optical Biosensing

Chapter 12: Cell-Encapsulating Hydrogels for Biosensing



Full contents and sample chapters:

<http://www.worldscientific.com/worldscibooks/10.1142/9490>

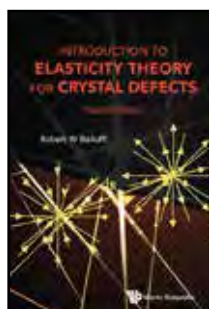
SEMICONDUCTORS & RELATED AREAS

:: Textbook

Introduction to Elasticity Theory for Crystal Defects

2nd Edition

by Robert W Balluffi (MIT)



Key Features:

- It is the only text in its field that provides, in one place, a complete introduction to the anisotropic theory of elasticity theory for the full range of crystal defects, i.e., point, line, planar and volume-type defects
- It is written in a pedagogical and reader-friendly style suitable for both students and working professionals entering the field

The book presents a unified and self-sufficient and reader-friendly introduction to the anisotropic elasticity theory necessary to model a wide range of point, line, planar and volume type crystal defects (e.g., vacancies, dislocations, interfaces, inhomogeneities and inclusions).

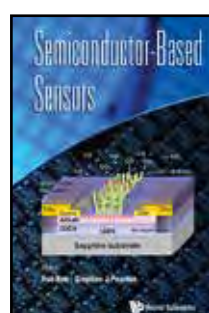
In the 2nd edition an additional chapter has been added which treats the important topic of the self-forces that are experienced by defects that are extended in more than one dimension. A considerable number of exercises have been added which expand the scope of the book and furnish further insights. Numerous sections of the book have been rewritten to provide additional clarity and scope.

Readership: Graduate students and professionals in materials science and condensed matter physics

500pp	Sep 2016	
978-981-4749-71-8	US\$115	£76
978-981-4749-72-5(pbk)	US\$68	£45

Semiconductor-Based Sensors

edited by Fan Ren & Stephen J Pearton (University of Florida, USA)



Key Features:

- This book brought together experts in a wide variety of sensors to provide a state-of-the-art summary for those already involved in these fields or just entering them
- This book provides a comprehensive summary of the status of emerging sensor technologies and provides a framework for future advances in the field
- Chemical sensors have gained in importance in the past decade for applications that include homeland security, medical and environmental monitoring and also food safety

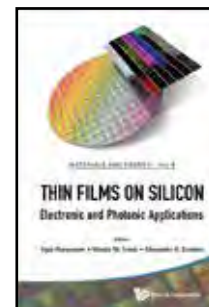
Readership: Advanced undergraduate, professionals and researchers in materials science, nanomaterials and energy studies.

350pp	Oct 2016	
978-981-3146-72-3	US\$148	£107
78-981-3146-73-0(ebook)	US\$192	£139

Materials and Energy Thin Films on Silicon

Electronic and Photonic Applications

edited by Vijay Narayanan, Martin M Frank (IBM Thomas J. Watson Research Center, USA) & Alexander A Demkov (The University of Texas at Austin, USA)



This volume provides a broad overview of the fundamental materials science of thin films that use silicon as an active substrate or passive template, with an emphasis on opportunities and challenges for practical applications in electronics and photonics. It covers three materials classes

on silicon: Semiconductors such as undoped and doped Si and SiGe, SiC, GaN, and III-V arsenides and phosphides; dielectrics including silicon nitride and high-k, low-k, and electro-optically active oxides; and metals, in particular silicide alloys. The impact of film growth and integration on physical, electrical, and optical properties, and ultimately device performance, is highlighted.

Readership: Graduate students and researchers in the fields of materials science, applied physics, and electrical engineering

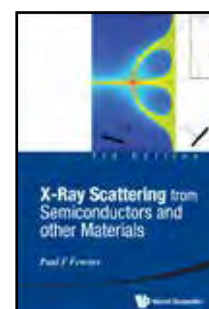
350pp	Aug 2016	
978-981-4740-47-0	US\$156	£112
978-981-4740-48-7(ebook)	US\$203	£146

:: Textbook

X-Ray Scattering from Semiconductors and Other Materials

3rd Edition

by Paul F Fewster (PANalytical Research Centre, UK)



This third edition has been extended considerably to incorporate more information on instrument influences on the interpretation of X-ray scattering profiles and reciprocal space maps. Another significant inclusion is on the scattering from powder samples, covering a new theoretical approach that explains features that conventional theory cannot. The new edition includes some of the latest methodologies and theoretical treatments, including the latest thinking on dynamical theory and diffuse scattering.

Readership: Students and professionals in semiconductors research and related areas (materials science, condensed matter).

512pp	Apr 2015	
978-981-4436-92-2	US\$119	£86
978-981-4436-93-9(ebook)	US\$155	£112

:: Bestselling Textbook

Energy Futures - Vol 1

Materials Concepts for Solar Cells

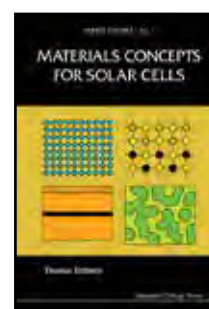
by Thomas Dittrich (Helmholtz Center Berlin for Materials and Energy, Germany)

"The book is of good pedagogical value. Students as well as teachers can make use of this either as a main textbook or as a support for their lessons. In general, the book is well-written and provides a solid basis for studying solar cells."

MRS Bulletin

Readership: Advanced undergraduates and graduate students in photovoltaics.

552pp	Nov 2014	
978-1-78326-444-5	US\$118	£78
978-1-78326-445-2(pbk)	US\$65	£43

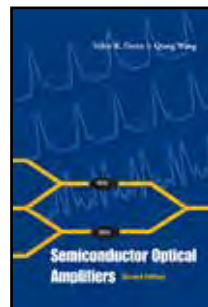


<http://www.facebook.com/worldscientific>

:: Bestseller**Semiconductor Optical Amplifiers****2nd Edition**by **Niloy K Dutta** (*University of Connecticut, USA*),
Qiang Wang (*Indiana University, USA*)

Several chapters and sections representing new developments in the chapters of the first edition have been added. The new chapters cover quantum dot semiconductor optical amplifiers (QD-SOA), reflective semiconductor optical amplifiers (RSOA) for passive optical network applications, two-photon absorption in amplifiers, and, applications of SOA as broadband sources. They represent advances in research, technology and commercial trends in the area of semiconductor optical amplifiers. It can be used as an advanced text by graduate students and by practicing engineers. It is also suitable for non-experts who wish to have an overview of optical amplifiers.

452pp	Sep 2013	
978-981-4489-03-4	US\$98	£65
978-981-4489-04-1(ebook)	US\$127	£85

**:: Bestselling Textbook**

Engineering Materials for Technological Needs - Vol 2

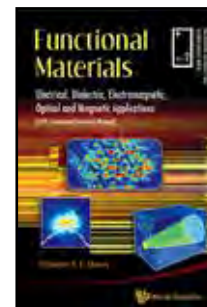
Functional Materials**Electrical, Dielectric, Electromagnetic, Optical and Magnetic Applications**by **Deborah D L Chung** (*State University of New York at Buffalo, USA*)

This book provides a comprehensive and up-to-date treatment of functional materials, which are needed for electrical, dielectric, electromagnetic, optical, and magnetic applications. Materials concepts covered are strongly linked to applications.

The book features hundreds of illustrations to help explain concepts and provide quantitative information. The style is general towards tutorial. Most chapters include sections on example problems, review questions and supplementary reading.

Readership: Undergraduate students, graduate students and professionals in most branches of engineering, specifically materials, electrical, mechanical, aerospace, chemical and civil engineering. Relevant professionals include engineers, scientists, researchers, technicians and technology managers.

364pp	Apr 2010	
978-981-4287-15-9	US\$85	£56
978-981-4287-16-6(pbk)	US\$45	£30

**:: Bestseller****Compound Semiconductor Bulk Materials and Characterizations****Volume 2**by **Osamu Oda** (*Nagoya Institute of Technology, Japan*)**Key Features:**

- A comprehensive review of bulk semiconductor materials from their beginnings to the latest technologies
- A review of new materials such as GaN, SiC, ZnO and chalcopyrite compounds
- An insight into various crystal growth methods aimed to inspire new methods and technologies

Readership: Material scientists, applied physicists and engineers working on compound semiconductor materials and devices.

408pp	Dec 2012	
978-981-283-505-5	US\$145	£96
978-981-283-506-2(ebook)	US\$188	£125

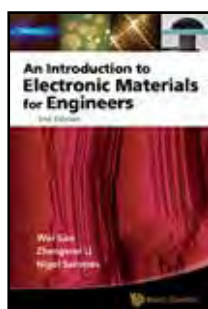
**:: Bestselling Textbook****An Introduction to Electronic Materials for Engineers****2nd Edition**by **Wei Gao** (*University of Auckland, New Zealand*),
Zhengwei Li (*University of Auckland, New Zealand*) &
Nigel Sammes (*Colorado School of Mines, USA*)

"It is so well written that it is hard to stop reading! Concise descriptions along with theoretical equations provide the reader with a very good insight into materials science and materials properties. If you are interested in learning more about various aspects of materials science and want a basic understanding of the theory behind material behavior, then this is definitely a worthwhile purchase."

IEEE Electrical Insulation Magazine

Readership: Students, professionals (engineering), non-experts interested in electronic materials.

564pp	May 2011	
978-981-4293-69-3	US\$98	£65

**:: Bestseller**

Materials and Energy - Vol 6

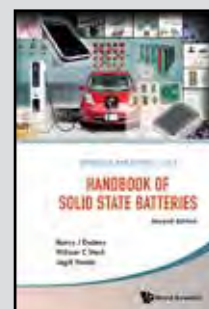
Handbook of Solid State Batteries**2nd Edition**edited by **Nancy J Dudney** (*Oak Ridge National Laboratory, USA*), **William C West** (*Nagoya University, Japan*) & **Jagjit Nanda** (*Oak Ridge National Laboratory, USA*)

This comprehensive handbook covers a wide range of topics related to solid-state batteries, including advanced enabling characterization techniques, fundamentals of solid-state systems, novel solid electrolyte systems, interfaces, cell-level studies, and three-dimensional architectures. It is directed at physicists, chemists, materials scientists, electrochemists, electrical engineers, battery technologists, and evaluators of present and future generations of power sources.

This handbook serves as a reference text providing state-of-the-art reviews on solid-state battery technologies, as well as providing insights into likely future developments in the field.

Readership: Scientists, technologists, and students in the fields of electrochemistry, condensed matter physics, chemistry, and materials science.

836pp	Sep 2015	
978-981-4651-89-9	US\$235	£155
978-981-4651-90-5(ebook)	US\$306	£202



TRIBOLOGY

Materials for Total Joint Arthroplasty

Biotribology of Potential Bearings

edited by **Robert Sonntag & Jan Philippe Kretzer** (Heidelberg University Hospital, Germany)



This invaluable book provides a broad introduction to the boundary conditions, developments and latest research activities already available to the surgeon and offers an insight into solutions being developed for new high performance bearings in joint replacements. The contributors are leading experts in their field and this is the first complete volume to bring together such unique insights. Orthopaedic engineers, surgeons and researchers concerned with new biomaterials would find this a vital reference volume to evaluate the latest state of research in the area.

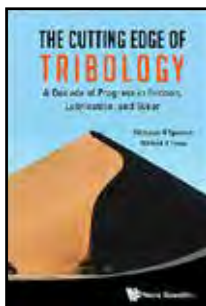
Readership: Orthopaedic engineers and surgeons in the field of biotribology.

484pp	Dec 2015	
978-1-78326-716-3	US\$178	£128
978-1-78326-717-0(ebook)	US\$231	£166

The Cutting Edge of Tribology

A Decade of Progress in Friction, Lubrication and Wear

by **Nicholas D Spencer** (ETH Zürich, Switzerland) & **Wilfred T Tysoe** (University of Wisconsin-Milwaukee, USA)



"The book covers a pretty wide variety of topics for a small book, thus providing the reader with a cognizant perspective on subjects that the reader might have only encountered in passing but about which he might yet be curious. This book makes for a delightful read and, while certainly technical in nature, a person with a minimal knowledge of the world of tribology can readily follow and understand the particular subject being discussed. Eddy and Nic are masters of simple, clear explanations as exhibited in their columns and often with a little humor, interjected for good measure."

Society of Tribologists and Lubrication Engineers

Readership: Researchers, scientists and students in tribology, materials study, friction and lubrication research.

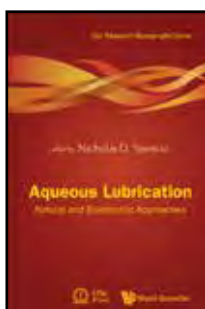
300pp	Jun 2015	
978-981-4656-55-9	US\$68	£45
978-981-4656-56-6(ebook)	US\$88	£59

IISc Research Monographs Series

Aqueous Lubrication

Natural and Biomimetic Approaches

edited by **Nicholas D Spencer** (ETH Zurich, Switzerland)



This book is the first of its kind. It brings together the latest research in biological and biomimetic, water-based lubrication and is authored by the world's experts in the field.

Readership: Academic and industrial tribologists, materials scientists, biomechanics professionals, and physicists and chemists with an interest in tribology.

284pp	May 2014	
978-981-4313-76-6	US\$115	£76
978-981-4313-77-3(ebook)	US\$150	£99



Frontiers in Nanobiomedical Research

The World Scientific Encyclopedia of Nanomedicine and Bioengineering I

Nanotechnology for Translational Medicine: Tissue Engineering, Biological Sensing, Medical Imaging, and Therapeutics (A 4-Volume Set)

Volume 1: Noble Metal Nanoparticles for Biomedical Applications

Volume 2: Application of Nano-structured Materials and Devices in Chemical and Biological Sensing

Volume 3: Nanotechnology in Gene Delivery

Volume 4: Nano Imaging: From Fundamental Principles to Translational Medical Applications

Editor-in-chief: **Donglu Shi** (University of Cincinnati, USA)

edited by **Yu Cheng** (University of Chicago, USA), **Jia Huang** (Tongji University School of Medicine, China), **Yarong Liu** (University of Southern California, USA) & **Bingbo Zhang** (Tongji University School of Medicine, China)

The World Scientific Encyclopedia of Nanomedicine and Bioengineering II

Bioimplants, Regenerative Medicine, and Nano-Cancer Diagnosis and Phototherapy (A 4-Volume Set)

Volume 1: Biomaterial Implants for Tissue Regeneration and Engineering

Volume 2: Graphene Quantum Dots for Biomedical Applications

Volume 3: Advanced Nanomaterials for Bioimaging and Cancer Therapy

Volume 4: Design of Bioactive Materials for Bone Repair and Regeneration

Editor-in-chief: **Donglu Shi** (University of Cincinnati, USA)

edited by **Vibhor Chaswal** (University of Cincinnati, USA), **Maoquan Chu** (Tongji University, China) & **Jiang Chang** (Chinese Academy of Sciences, China)

This two-part multivolume set provides a comprehensive overview of current achievements in biomedical applications of nanotechnology, including stem cell based regenerative medicine, medical imaging, cell targeting, drug delivery, and photothermal/photodynamic cancer therapy. New approaches in early cancer diagnosis and treatment are introduced with extensive experimental results. In particular, some novel materials have been synthesized with new properties that are most effective in cancer therapy. Some of the key issues are also addressed with these recent discoveries such as bio safety and bio degradability, that are essential in the success of nano medicine.

The World Scientific Encyclopedia of Nanomedicine and Bioengineering I

1158pp	Nov 2016	
978-981-4667-65-4	US\$1100	£792
Introductory Offer till Jan 31, 2017	US\$980	£706
978-981-4667-66-1(Set)(ebook)	US\$1430	£1030

The World Scientific Encyclopedia of Nanomedicine and Bioengineering II

1200pp	Jan 2017	
978-981-4667-58-6(Set)	US\$990	£653
Introductory Offer till Mar 31, 2017	US\$940	£620
978-981-4667-59-3(Set)(ebook)	US\$1287	£849

Functional Materials Letters (FML)

<http://www.worldscientific.com/fml>

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 journal seeks to provide a rapid forum for the communication of novel research of high quality and with an interdisciplinary flavor. The journal is an ideal forum for communication amongst materials scientists and engineers, chemists and chemical engineers, and physicists in the dynamic fields associated with functional materials.

Featured Articles:

A novel high color purity yellow luminescent material $\text{NaBaBO}_3\cdot\text{Sm}^{3+}$

DOI: 10.1142/S1793604715500423

Effects of hydrothermal temperature on the morphology and photoelectrocatalytic performance of TiO_2 -based nanomaterials photoelectrode

DOI: 10.1142/S1793604715500344

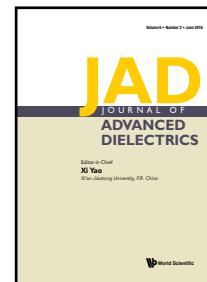
Effects of flow rate of atmosphere gases on the characteristics of Zn-doped ITO (ZITO) thin films for organic light emitting diodes

DOI: 10.1142/S179360471540007X

**Journal of Advanced Dielectrics (JAD)**

<http://www.worldscientific.com/jad>

JAD is an international peer-reviewed journal for original contributions on the understanding and applications of dielectrics in modern electronic devices and systems. The journal seeks to provide an interdisciplinary forum for the rapid communication of novel research of high quality.

**International Journal of Computational Materials Science and Engineering (IJCMSE)**

<http://www.worldscientific.com/ijcmse>

The objective of IJCMSE 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. The journal will also serve as an effective platform for the promotion of scientific exchange between active materials scientists and engineers.

**Journal of Molecular and Engineering Materials (JMEM)**

<http://www.worldscientific.com/jmem>

JMEM 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 in (1) materials design, synthesis and growth; (2) materials analysis and characterization; (3) materials properties and functions; (4) materials fabrication and device manufacturing; and (5) system integration and applications of materials.

**Surface Review and Letters (SRL)**

<http://www.worldscientific.com/SRL>

SRL 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. Representative areas include surface and interface structures; their electronic, magnetic and optical properties; dynamics and energetics; chemical reactions at surfaces; phase transitions, reconstruction, roughening and melting; defects, nucleation and growth; and new surface and interface characterization techniques.

**Featured Articles:**

Hydrodynamic Testing of A Biological Sharkskin Replica Manufactured Using The Vacuum Casting Method

DOI: 10.1142/S0218625X15500304

Characterization of Fly Ash From Coal-fired Power Plant And Their Properties Of Mercury Retention

DOI: 10.1142/S0218625X15500183

Characteristic Significance Of Magnetic Relaxations On Copper Oxide Thin Film Using The Bloch Nmr

DOI: 10.1142/S0218625X14500759

TECHNOLOGY

<http://www.worldscientific.com/technology>

Fashioned as a high-impact, high-visibility, top-echelon publication, this new ground-breaking journal - TECHNOLOGY - will feature the development of cutting-edge new technologies in a broad array of emerging fields of science and engineering. The content will have an applied science and technological slant with a focus on both innovation and application to daily lives. It will cover diverse disciplines such as health and life science, energy and environment, advanced materials, technology-based manufacturing, information science and technology, and marine and transportations technologies.

**Featured Articles:**

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DOI: 10.1142/S2339547815300012

A microfluidic biochip for complete blood cell counts at the point-of-care

DOI: 10.1142/S2339547815500090

Modulating electrolytic tissue ablation with reversible electroporation pulses

DOI: 10.1142/S233954781550003X

NANO

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

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.

Most Read Articles:

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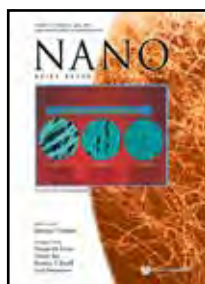
DOI: 10.1142/S1793292015300030

Simple, Fast and Cost-Effective Electrochemical Synthesis of Few Layer Graphene Nanosheets

DOI: 10.1142/S1793292015500198

Cellular Injection Using Carbon Nanotube: A Molecular Dynamics Study

DOI: 10.1142/S1793292015500253



SPIN

<http://www.worldscientific.com/spin>

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.

Most Read Articles:

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DOI: 10.1142/S2010324715400111

Molecular Dynamics Simulation of Iron — A Review

DOI: 10.1142/S201032471540007X



International Journal of Nanoscience (IJN)

<http://www.worldscientific.com/ijn>

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

Most Read Articles:

Electrochemical Sensing of Dopamine and Antibacterial Properties of ZnO Nanoparticles Synthesized from Solution Combustion Method

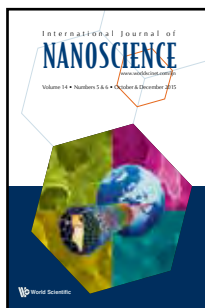
DOI: 10.1142/S0219581X15500052

Removal of Methylene Blue and Orange-G from Waste Water Using Magnetic Biochar

DOI: 10.1142/S0219581X1550009X

Well-Aligned Graphene Oxide Nanosheets Decorated with Zinc Oxide Nanocrystals for High Performance Photocatalytic Application

DOI: 10.1142/S0219581X15500076



Nano LIFE (NL)

<http://www.worldscientific.com/nl>

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

Most Read Articles:

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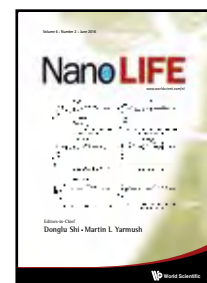
DOI: 10.1142/S179398441550004X

The Potential of Nucleic Acid-Based Nanoparticles for Biomedical Application

DOI: 10.1142/S1793984415410044

Effects of Size, Shape, Surface Charge and Functionalization on Cytotoxicity of Gold Nanoparticles

DOI: 10.1142/S1793984415400036



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NANOTECHNOLOGY & NANOSCIENCE

NANOELECTRONICS

:: Textbook

World Scientific Series in Nanoscience and Nanotechnology
Nanoelectronics

A Molecular View

by **Avik Ghosh** (University of Virginia, USA)

Key Features:

- The book connects 'top-down' concepts in solid-state devices taught in electrical engineering classes (e.g. MOSFETs, mobility, drift-diffusion) with 'bottom-up' approaches taught in physics and chemistry such as quantum transport, strong correlation effects, decoherence, hopping, Mott transitions and orbital chemistry
- The book illustrates a lot of topics through hands-on exercises called 'case-studies'. This extends to emerging materials like 2D, and emerging concepts like spintronics, nano-magnetic memory and logic

Readership: Advanced undergraduate students, graduate students and researchers interested in nanoelectronics.

500pp	Sep 2016	
978-981-3144-49-1	US\$148	£107
978-981-3146-22-8(pbk)	US\$78	£56



:: Bestselling Textbook

Current at the Nanoscale
An Introduction to
Nanoelectronics

2nd Edition

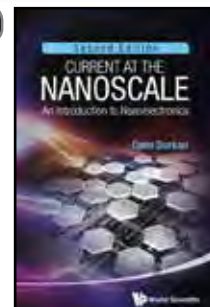
by **Colm Durkan** (Cambridge)

"This book is a great way for those familiar with traditional solid-state electronics to become familiar with nanoelectronic theory. It bridges the gap between the electrical conduction in the macroscopic world to the atomic world by comparing theories and using practical examples to illustrate effects. It is a great way to introduce yourself to quantum mechanics."

Electrical Insulation Magazine

Readership: Advanced undergraduates, graduate students and researchers in nanotechnology.

244pp	Nov 2013	
978-981-4383-73-8	US\$78	£51



:: Bestselling Textbook

Lessons from Nanoscience: A
Lecture Notes Series - Vol 1

Lessons from
Nanoelectronics
A New Perspective on
Transport

by **Supriyo Datta** (Purdue University, USA)

These lecture notes are about a less appreciated by-product of the microelectronics revolution, namely the deeper understanding of current flow, and device operation that it has enabled, which forms the basis for a new approach to transport problems. The book assumes very little background beyond linear algebra and differential equations, and is intended to be accessible to anyone in any branch of science or engineering.

Readership: Students and professionals in any branch of science or engineering.

492pp	Sep 2012	
978-981-4335-28-7	US\$84	£55
978-981-4335-29-4(pbk)	US\$42	£28



Atomistic Simulation of Quantum Transport in
Nanoelectronic Devices

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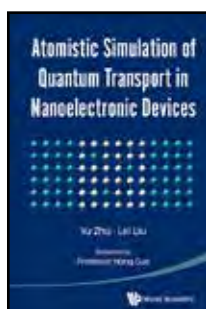
by **Yu Zhu & Lei Liu** (NanoAcademic Technologies Inc., Canada)

Key Features:

- The unique feature of the book is the affiliated source code, which not only provides a concrete example to understand the techniques but also constitutes an open platform
- The content of the book is based on the R&D experiences of the three authors with more than sixty years of experience in total. We wish to create a shortcut for new researchers by sharing those experiences and knowledge

Readership: Post-graduate students or professional researchers who are interested in computational physics, device physics, quantum transport, disorder systems, and overlap of the above.

436pp	Jul 2016	
978-981-3141-41-4	US\$145	£104
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Key Features:

- Part I of this book contains microelectronic processing and part II of the book gives details about semiconductor nanostructures and shows structure, band model and physics of about 12 basic nanostructures
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- Introduction to nanoscale science and technology

Readership: Advanced undergraduate, professionals and researchers in materials science and nanomaterials.

175pp	Dec 2016	
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Readership: Advanced undergraduate, professionals and researchers in materials science, nanomaterials and energy studies.

240pp	Nov 2016	
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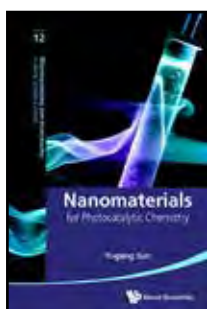
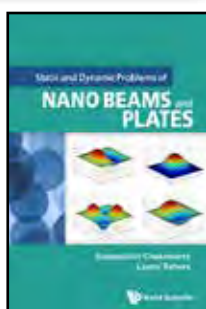
edited by **Chunli Bai** (Chinese Academy of Sciences, China) & **Chen Wang** (National Center for Nanoscience & Technology, China)

Key Features:

- Provides an overview of the principles and the development of molecular assembly
- Contains the latest research in molecular nanostructure and related nanotechnology

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332pp	May 2016	
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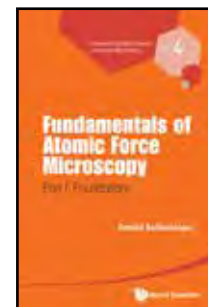
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MRS Bulletin

Readership: Advanced undergraduates and graduates in physics, chemistry, materials science and engineering disciplines with an interest in Atomic Force Microscopy and its applications in nanotechnology.

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Pore scale phenomena similarly play critical roles in the domain of materials science and biology. This book provides, for the first time, a comprehensive overview of the fascinating interrelationship between engineering and science. The authors and contributors are recognized experts from the faculty of the Colorado School of Mines, Northwestern and Stanford.

Readership: Book will appeal to industry, universities and national labs in areas of national importance. The book also will help to identify some of the knowledge gaps and areas where new research is needed.

492pp	Jun 2015	
978-981-4623-05-6	US\$166	£120
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Frontiers in Nanobiomedical Research - Vol 4

Bio-Inspired Nanomaterials and Applications

Nano Detection, Drug/Gene Delivery, Medical Diagnosis and Therapy

edited by **Donglu Shi** (University of Cincinnati, USA)

This book intends to provide an up-to-date information in the field of nanobiomedicine. The focus of the book is on the basic concepts and recent developments in the field of nanotechnology.

This book covers a broad spectrum of nanomaterials processing, structural characteristics, and related properties and will include bio-probes, medical imaging, drug delivery, and tumor diagnosis.

Readership: Undergraduate or graduate students, and researchers in nanomaterials, biochemistry, biomedical engineering.

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edited by **Richard Haight, Frances M Ross & James B Hannon**
(IBM TJ Watson Research Center, USA)

"... These volumes provide the very latest in this critical technology and are an invaluable resource for scientists in both academia and industry concerned with the semiconductor future and all of science."

Foreword by Leonard C Feldman
(Director Institute for Advanced Materials, Devices and Nanotechnology, Rutgers University, USA)

Key Features:

- First comprehensive handbook on instrumentation and techniques for semiconductor nanostructure characterization
- With over 260 illustrations

Readership: Advanced graduate students and professionals in physics, chemistry, materials science and nanoscience.

680pp	Mar 2012	
978-981-4322-80-5(Set)	US\$514	£339
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Introduction to Nanoscience and Nanomaterials

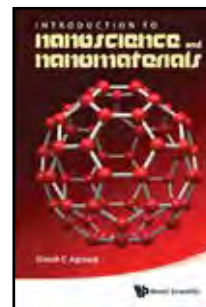
by **Dinesh C Agrawal**
(Indian Institute of Technology, India)

"The 14 chapters cover an impressive variety of topics with sufficient information on each to allow the reader to understand the important physical and chemical concepts involved. This book provides an excellent basis for learning about the wonders of nanoscience and nanomaterials."

MRS Bulletin

Readership: Senior undergraduate and graduate students in materials science and engineering.

572pp	Jul 2013	
978-981-4397-97-1	US\$89	£59



:: Bestselling Textbook

World Scientific Series in Nanoscience and Nanotechnology - Vol 2

Nanostructures and Nanomaterials Synthesis, Properties, and Applications 2nd Edition

by **Guozhong Cao** (University of Washington, USA), **Ying Wang** (Louisiana State University, USA)

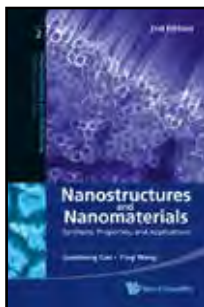
Review of the First Edition

"This book does an excellent job of assembling a wide variety of synthetic techniques and describing how they can be applied to a range of materials for design on the nanoscale. The references range from the classic to the very recent, giving a broad perspective of the area, and an index provides cross-referencing."

Journal of the American Chemical Society

Readership: Senior undergraduates, graduate students, academics and researchers in nanomaterials and nanostructures.

596pp	Jan 2011	
978-981-4322-50-8	US\$191	£126
978-981-4324-55-7(pbk)	US\$99	£65



An Introduction to Interfaces and Colloids The Bridge to Nanoscience

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

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Journal of Colloid and Interface Science

Readership: Senior undergraduate and graduate students in chemistry, physics, materials science, chemical engineering, civil engineering, mechanical engineering and related fields.

804pp	Mar 2010	
978-981-4293-07-5	US\$95	£63
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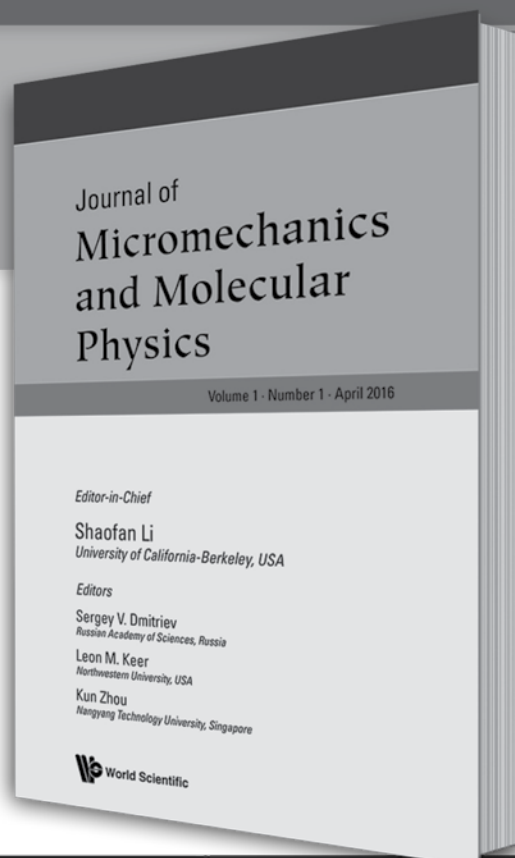
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