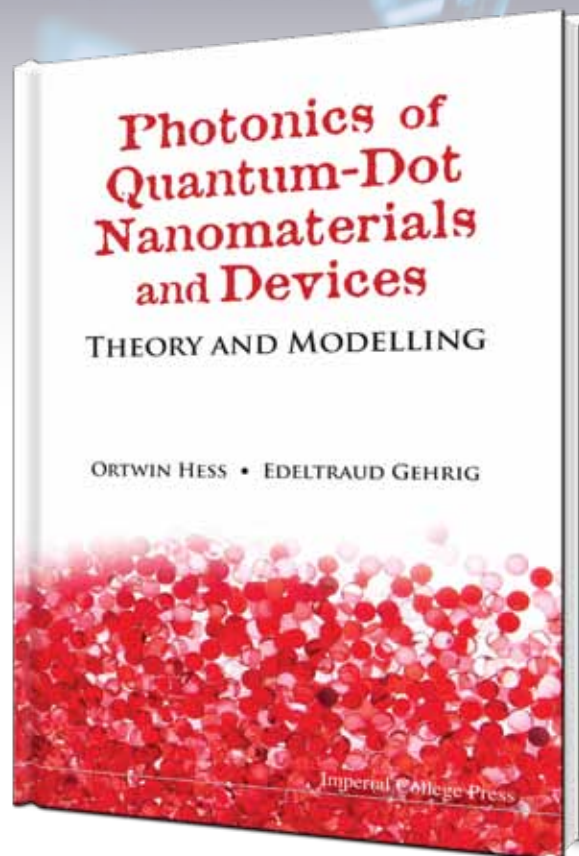
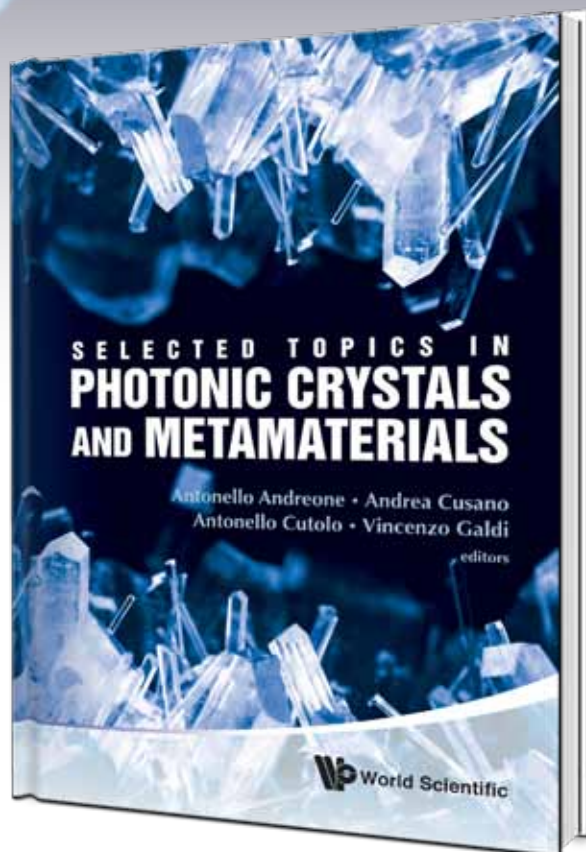


# New and Notable Titles in New Materials



## SELECTED TOPICS IN PHOTONIC CRYSTALS AND METAMATERIALS

edited by **Antonello Andreone** (*University of Naples "Federico II", Italy*), **Andrea Cusano** (*University of Sannio, Italy*), **Antonello Cutolo** (*University of Sannio, Italy*), & **Vincenzo Galdi** (*University of Sannio, Italy*)

This volume focuses on a research field that has emerged in the last decade as one of the most promising and rapidly advancing. The interest towards photonic crystals and metamaterials and their strategic importance are evident in the steadily growing rate of topical publications, the recent creation of topical journals, conferences and workshops promoted by several scientific societies, the research efforts at international level, and the number of proposed novel applications based on them.

The various contributions, by renowned scientists from academia and industry, address wide-ranging topics, including aspects pertaining to modeling, phenomenologies, experiments, technologies and applications.

**Readership:** Graduate students, researchers and academics interested in electromagnetics, optics, information and communication technologies.

548pp	Jun 2011	
978-981-4355-18-6	US\$150	£98
978-981-4355-19-3(ebook)	US\$195	

## PHOTONICS OF QUANTUM-DOT NANOMATERIALS AND DEVICES

**Theory and Modelling**

by **Ortwin Hess** (*Imperial College London, UK*) & **Edeltraud Gehrig** (*Hochschule Heilbronn, Germany*)

Quantum dot nano structures are interesting for applications in information technology and play a growing role in data storage, medical and biological applications. Understanding quantum nanomaterials is thus the key for the conception and optimization of novel structures.

This monograph gives an overview of the theory and introduces the concepts of advanced computational modelling of quantum dot nanomaterials and devices ranging from phenomenological models up to fully quantum theoretical description.

**Readership:** Academics and researchers in new materials, quantum physics, applied physics and computational physics.

184pp	Sep 2011	
978-1-84816-521-2	US\$82	£54
978-1-84816-522-9(ebook)	US\$107	

# New and Notable Titles in New Materials

## J-AGGREGATES :: Forthcoming

### Volume 2

edited by **Takayoshi Kobayashi** (*University of Electro-Communications, Japan*)

This work deals with J-aggregates, which have a long history of research. The volume covers electronic states, linear and nonlinear optical properties. Various properties and processes of J-aggregates, such as super-radiance, excitons, photon echo, geometrical structure, electron transfer and femtosecond spectroscopy, are discussed.

**Readership:** Researchers and students in materials science.

**325pp** **Jan 2012**  
**978-981-4365-74-1** **US\$112** **£74**  
**978-981-4365-79-6(ebook)** **US\$146**

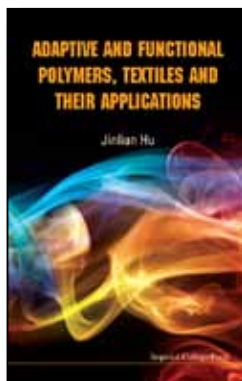
## ADAPTIVE AND FUNCTIONAL POLYMERS, TEXTILES AND THEIR APPLICATIONS

by **Jinlian Hu** (*The Hong Kong Polytechnic University, Hong Kong*)

Adaptive polymers include those which are responsive to different stimuli — namely physical, mechanical, chemical and biological — with controlled and/or predictable behavior. Many technological breakthroughs and scientific advances have been made in the last few decades and this volume aims to cover the most up-to-date studies and achievements in some adaptive polymers, in terms of principles of adaptiveness, properties, structure design and characterization with an emphasis on their applications, particularly in textiles, skin care, medicine and other related areas. Some versatile functional polymers, such as Chitosan, cyclodextrin and dendrimer, and hyper-branched polymers are also introduced in order to provide a source for people in different professions when searching for knowledge and inspiration in the field of adaptive and functional polymers. One of the key features of this book is the fact that it is multi-disciplinary in nature, and so accessible to a wide variety of readers.

**Readership:** Chemists, graduate students and researchers involved in polymers and textiles.

**416pp** **Feb 2011**  
**978-1-84816-475-8** **US\$118** **£73**  
**978-1-84816-476-5(ebook)** **US\$153**

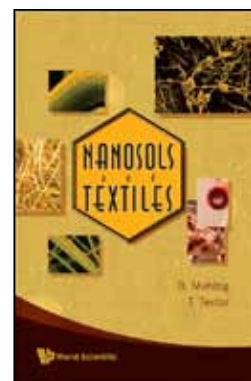


## NANOSOLS AND TEXTILES

by **B Mahltig** (*GMBU, Germany*) & **T Textor** (*DTNW, Germany*)

The book provides a short introduction to the sol-gel process, principles in modification of the sols and technical details of the application on textiles, covering in particular the chemical content of the topic. New properties of textiles gained from nanosols are summarized and explained in a broad range, focusing on the mechanical and thermal stability, repellent properties, optical properties, antistatic coatings and bioactive coatings. An active discussion is held on the bioactive modifications, because this wide and interesting field offers a high potential for many new applications, e.g. in medicine. Besides basic research, this book will also provide examples on the transition of academic research to customer products.

**236pp** **Oct 2008**  
**978-981-283-350-1** **US\$97** **£64**  
**978-981-283-351-8(ebook)** **US\$126**



Book Series on Complex Metallic Alloys - Vol. 2

## PROPERTIES AND APPLICATIONS OF COMPLEX INTERMETALLICS

edited by **Esther Belin-Ferré** (*Université Pierre et Marie Curie, France*)

This book is the second of a series of books issued yearly as a deliverable to the European Community of the School established within the European Network of Excellence CMA. Written by reputed experts in the fields of metal physics, surface physics, surface chemistry, metallurgy, and process engineering, this book brings together expertise found inside as well as outside the network to provide a comprehensive overview of the current state of knowledge in CMAs.

**460pp** **Aug 2009**  
**978-981-4261-63-0** **US\$133** **£88**  
**978-981-4261-64-7(ebook)** **US\$173**



## COMPUTATIONAL STUDIES OF NEW MATERIALS II

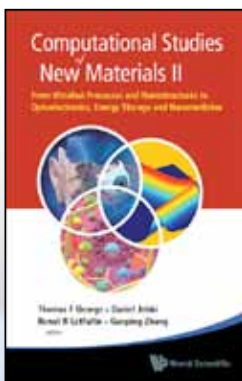
### From Ultrafast Processes and Nanostructures to Optoelectronics, Energy Storage and Nanomedicine

edited by **Thomas F George** (*University of Missouri, St Louis, USA*), **Daniel Jelski** (*State University of New York, New Paltz, USA*), **Renat R Letfullin** (*Rose-Hulman Institute of Technology, USA*), & **Guoping Zhang** (*Indiana State University, USA*)

Computational Studies of New Materials was published by World Scientific in 1999 and edited by Daniel Jelski and Thomas F George. Much has happened during the past decade. Advances have been made on the same materials discussed in the 1999 book, including fullerenes, polymers and nonlinear optical processes in materials, which are presented in this 2010 book. In addition, different materials and topics are comprehensively covered, including nanomedicine, hydrogen storage materials, ultrafast laser processes, magnetization and light-emitting diodes.

**Readership:** Graduate students and researchers in academy, industry and governmental labs who are interested in computational studies of materials.

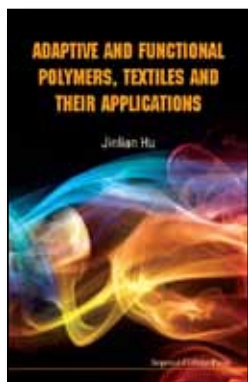
**540pp** **Jan 2011**  
**978-981-4287-18-0** **US\$155** **£101**  
**978-981-4287-19-7(ebook)** **US\$202**



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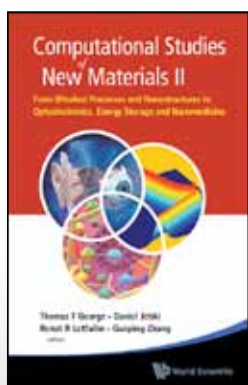


**416pp** **Feb 2011**  
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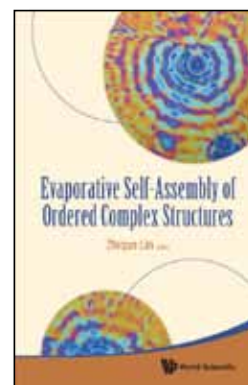
**540pp** **Jan 2011**  
**978-981-4287-18-0** **US\$155** **£101**  
**978-981-4287-19-7(ebook)** **US\$202**

## Other Titles of Interest

### EVAPORATIVE SELF-ASSEMBLY OF ORDERED COMPLEX STRUCTURES

edited by **Zhiqun Lin** (*Iowa State University, USA*)

This book is unique in providing a wide spectrum of recent experimental and theoretical advances in evaporative self-assembly techniques. The ability to engineer an evaporative self-assembly process that yields a broad range of complex, well-ordered and intriguing structures with small feature sizes composed of polymers of nanocrystals of different size and shapes as well as DNA over large areas offers tremendous potential for applications in electronics, optoelectronics, photonics, sensors, information processing and data storage devices, nanotechnology, high-throughput drug discovery, chemical detection, combinatorial chemistry, and biotechnology.



**300pp** **Oct 2011**  
**978-981-4304-68-9** **US\$99** **£68**  
**978-981-4304-69-6(ebook)** **US\$129**

### GIANT MOLECULES

**Here, There, and Everywhere**  
**(Second Edition)**

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

**:: Bestseller**

This book describes the basic facts, concepts and ideas of polymer physics in simple, yet scientifically accurate, terms. The book shows how the subject of polymers is fascinating, as it is behind most of the wonders of living cell machinery as well as most of the newly developed materials. No mathematics is used in the book beyond modest high school algebra and a bit of freshman calculus, yet very sophisticated concepts are introduced and explained, ranging from scaling and reptations to protein folding and evolution. The new edition includes an extended section on polymer preparation methods, discusses knots formed by molecular filaments, and presents new and updated materials on such contemporary topics as single molecule experiments with DNA or polymer properties of proteins and their roles in biological evolution.

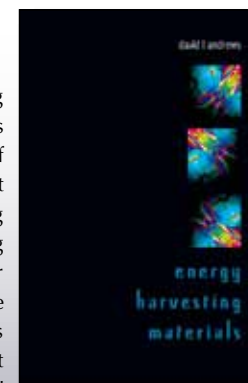


**348pp** **Sep 2010**  
**978-981-283-922-0** **US\$75** **£47**  
**978-981-283-923-7(ebook)** **US\$98**

### ENERGY HARVESTING MATERIALS

edited by **David L Andrews** (*University of East Anglia, UK*)

The science of energy harvesting materials is experiencing phenomenal growth and attracting huge interest. In this comprehensive treatment of energy harvesting, a team of internationally acclaimed scientists at the forefront of the subject paint a state-of-the-art picture of modern energy harvesting materials science. Covering all aspects of the subject, ranging from natural plant and bacterial photosystems, through their biologically inspired synthetic analogs, to other photoactive molecular materials such as dendrimers, the book also establishes the theory and underlying principles across the full range of light harvesting systems. With an authoritative, comprehensive and well-referenced content, it will appeal to all students, researchers and technologists interested or involved in solar energy, photobiology and photoactive materials science.



**400pp** **Oct 2005**  
**978-981-256-412-2** **US\$140** **£92**  
**978-981-270-095-7(ebook)** **US\$182**

