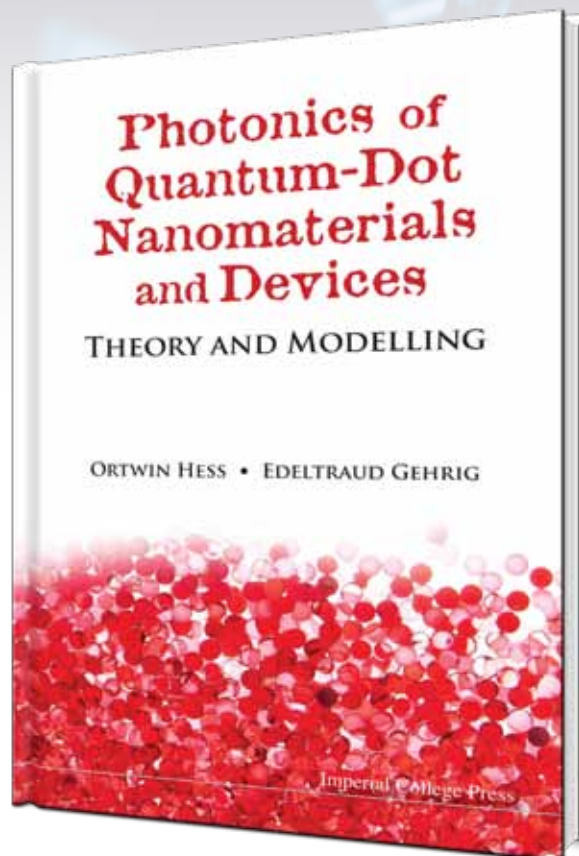
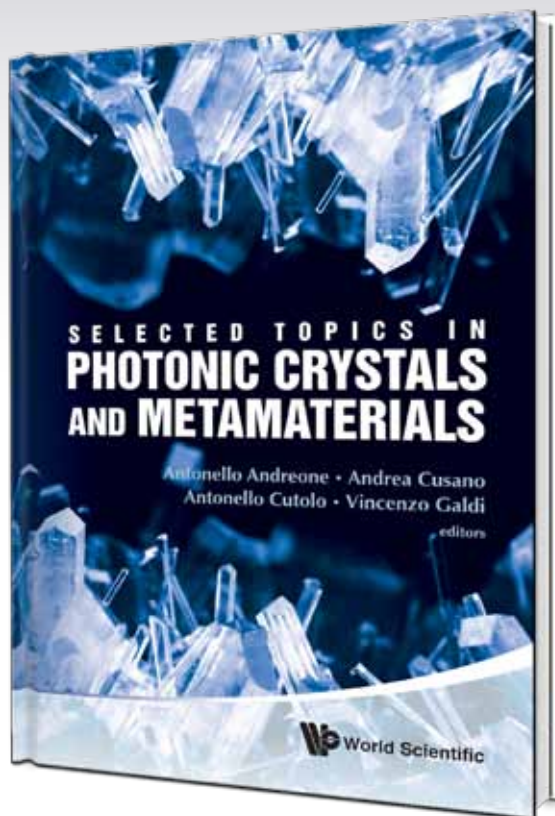


New and Notable Titles in New Materials



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

SELECTED TOPICS IN PHOTONIC CRYSTALS AND METAMATERIALS

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

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978-981-4355-18-6 Jun 2011 US\$150 £98
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New and Notable Titles in New Materials

J-AGGREGATES :: Forthcoming

Volume 2

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

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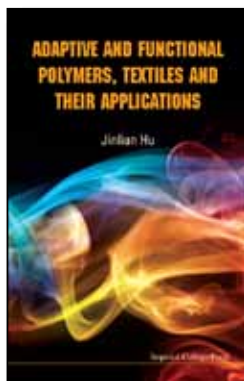
Readership: Researchers and students in materials science.

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978-981-4365-74-1 **US\$112** **£74**
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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**

COMPUTATIONAL STUDIES OF NEW MATERIALS II

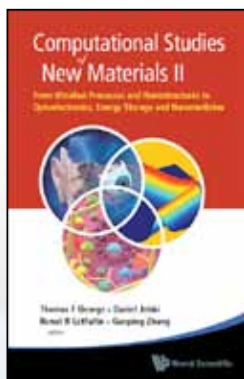
From Ultrafast Processes and Nanostructures to Optoelectronics, Energy Storage and Nanomedicine

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.

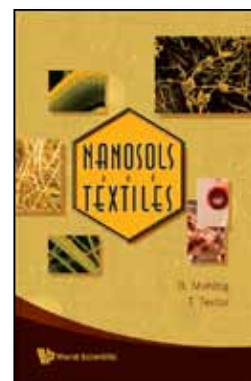
540pp **Jan 2011**
978-981-4287-18-0 **US\$155** **£101**
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NANOSOLS AND TEXTILES

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.



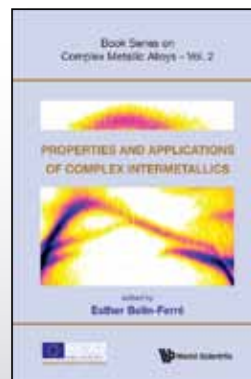
236pp **Oct 2008**
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edited by **Esther Belin-Ferré** (*Université Pierre et Marie Curie, France*)

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