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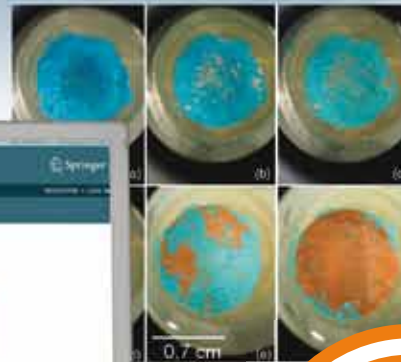
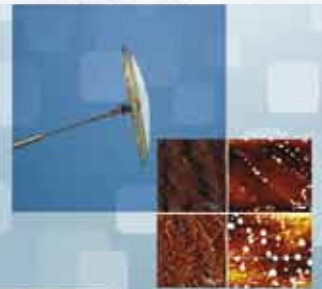


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A. A. Asea, Scott & White Memorial Hospital, Texas, USA. The Texas A&M University, Temple, TX, USA;  
A. De Maio, University of California, San Diego, CA, USA (Eds)

## Heat Shock Proteins: Potent Mediators of Inflammation and Immunity

Heat Shock Proteins: Potent Mediators of Inflammation and Immunity currently provides the most up-to-date review on new mechanisms and provides exciting insights into how heat shock proteins modulates the hosts immune response.

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S. Bauer, Philipps-Universität Marburg, Germany;  
G. Hartmann, Universitätsklinikum Bonn, Germany (Eds)

## Toll-Like Receptors (TLRs) and Innate Immunity

With contributions by numerous experts

Overall recent research on TLRs has led to tremendous increase in our understanding of early steps in pathogen recognition and will presumably lead to potent TLR targeting therapeutics in the future. This book reviews and highlights our recent understanding on the function and ligands of TLRs as well as their role in autoimmunity, dendritic cell activation and target structures for therapeutic intervention.

2008. XII, 240 p. 25 illus., 4 in color. (Handbook of Experimental Pharmacology, Volume 183) Hardcover  
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9 783540 721666

J. D. Blaustein, University of Massachusetts, Amherst, MA, USA (Ed.)

## Handbook of Neurochemistry and Molecular Neurobiology

Behavioral Neurochemistry, Neuroendocrinology and Molecular Neurobiology

Editor-in-chief: A. Lajtha, Nathan S.Kline Institute for Psychiatric Research, Orangeburg, NY, USA

The Handbook is intended to be a service to the neuroscience community, to help in finding available and useful information, to point out gaps in our knowledge, and to encourage continued studies. It represents the valuable contributions of the many authors of the chapters and the guidance of the editors and most important, it represents support for research in this discipline. Based on the rapid advances in the years since the second edition.

3rd ed. 2007. XIV, 954 p. 130 illus.

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Y. Chernajovsky, A. Nissim, Queen Mary's School of Medicine & Dentistry, London, UK (Eds)

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With contributions by numerous experts

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A. Galoyan, National Academy of Sciences, Yerevan, Republic of Armenia; H. Besedovsky, Institute of Normal and Pathological Physiology, Marburg, Germany (Eds)

## Handbook of Neurochemistry and Molecular Neurobiology

Neuroimmunology

Editor-in-chief: A. Lajtha, Center for Neurochemistry, Orangeburg, NY, USA

Required reading for neuroscientists and neurochemists, this third edition of the authoritative work contains data on multiple immunomodulators. With contributions from dozens of researchers worldwide, and edited by two leading authorities in the field, this is information you can trust.

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G. E. Gibson, Weill Medical College of Cornell University, White Plains, NY, USA; G. A. Dienel, University of Arkansas for Medical Sciences, Little Rock, AR, USA (Eds)

## Handbook of Neurochemistry and Molecular Neurobiology

### Brain Energetics. Integration of Molecular and Cellular Processes

Editor-in-chief: A. Lajtha, Nathan S. Kline Institute for Psychiatric Research, Orangeburg, NY, USA

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C. López-Larrea, R. Díaz-Peña, Hospital Universitario Central de Asturias, Oviedo, Spain (Eds)

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## Handbook of Neurochemistry and Molecular Neurobiology

### Degenerative Diseases of the Nervous System

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### Volume 207

W. Binder, University of Southern California, Los Angeles, CA, USA (Ed.)

## Hydrogen Bonded Polymers

With contrib. by: W. Binder, L. Bouteiller, G. t. Brinke, O. Ikkala, V. Rotello, J. Ruokolainen, S. Srivastava, H. Xu, R. Zirbs

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V. Cabuil, P. Levitz, C. Treiner (Eds)

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## Colloids for Nano- and Biotechnology

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M. W. Hosseini, Université de Strasbourg, France (Ed.)

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2nd Mediterranean Conference on Intelligent Systems and Automation (CISA'09)  
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## Leveraging Knowledge for Innovation in Collaborative Networks

10th IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2009, Thessaloniki, Greece, October 7-9, 2009, Proceedings

This book constitutes the refereed proceedings of the 10th IFIP WG 5.5 Working Conference on Virtual Enterprises, PRO-VE 2009, held in Thessaloniki, Greece, in October 2009. The 84 revised papers were carefully selected from numerous submissions.

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First IFIP WG 5.5/SOCOLNET Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2010, Costa de Caparica, Portugal, February 22-24, 2010, Proceedings

This book constitutes the refereed proceedings of the First IFIP WG 5.5/SOCOLNET Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2010, held in Costa de Caparica, Portugal, in February 2010. The 62 revised full papers were carefully selected from numerous submissions.

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Proceedings of the 30th Annual Conference of the Gesellschaft für Klassifikation e.V., Freie Universität Berlin, March 8-10, 2006

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## System Modeling and Optimization

23rd IFIP TC 7 Conference, Cracow, Poland, July 23-27, 2007, Revised Selected Papers

This book is a collection of extended versions of papers presented at the 23rd IFIP TC 7 Conference on System Modeling and Optimization, held in Cracow, Poland, in July 2007. The 29 revised papers were carefully selected from numerous submissions.

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## Education and Technology for a Better World

9th IFIP TC 3 World Conference on Computers in Education, WCCE 2009, Bento Gonçalves, Brazil, July 27-31, 2009, Proceedings

This book constitutes the refereed proceedings of the 9th IFIP TC 3 World Conference on computers in Education, WCCE 2009, held in Bento Gonçalves, Brazil, in July 2009. The 48 revised full papers were carefully reviewed and selected from 146 full papers accepted for the conference during two rounds of reviewing and improvement. The conference received 289 initial submissions in total.

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## Emerging Challenges for Security, Privacy and Trust

24th IFIP TC 11 International Information Security Conference, SEC 2009, Pafos, Cyprus, May 18-20, 2009, Proceedings

This book constitutes the refereed proceedings of the 24th IFIP TC 11 International Information Security Conference, SEC 2009, held in Pafos, Cyprus, in May 2009. The 38 revised full papers presented were carefully reviewed and selected from 176 submissions.

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M. Bos, NLR, Amsterdam, The Netherlands (Ed.)

## ICAF 2009, Bridging the Gap between Theory and Operational Practice

### Proceedings of the 25th Symposium of the International Committee on Aeronautical Fatigue, Rotterdam, The Netherlands, 27-29 May 2009

The 31st Conference and the 25th Symposium of the International Committee on Aeronautical Fatigue will be hosted in Rotterdam, The Netherlands, by the National Aerospace Laboratory NLR, under the auspices of the Netherlands Association of Aeronautical Engineers NVvL, the Technical University of Delft and Stork Fokker AESP B.V. These Proceedings will consist of reviews of aeronautical fatigue activities presented by the national delegates of the 14 member nations of ICAF.

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B.-Y. Cao, Guangzhou University, China; G. Wang, Shaanxi Normal University, China; S. Chen, Jimei University, Xiamen, China; S. Guo, Fuxin, Liaoning, China (Eds)

## Fuzzy Information and Engineering 2010

### Vol 1

This book is the proceedings of the 5th Annual Conference on Fuzzy Information and Engineering (ACFIE2010) from Sep. 23-27, 2010 in Huludao, China. This book contains 89 papers, divided into five main parts: - In Section I, we have 15 papers on "the mathematical theory of fuzzy systems". - In Section II, we have 15 papers on "fuzzy logic, systems and control". - In Section III, we have 24 papers on "fuzzy optimization and decision-making".

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## Fuzzy Information and Engineering

### Volume 1

2009. XVIII, 662 p. 70 illus. (Advances in Intelligent and Soft Computing, Volume 54) Softcover  
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## Fuzzy Information and Engineering Volume 2

This book is the proceedings of the Third International Conference on Fuzzy Information and Engineering (ICFIE 2009) held in the famous mountain city Chongqing in Southwestern China, from September 26-29, 2009. Only high-quality papers are included. The ICFIE 2009, built on the success of previous conferences, the ICFIE 2007 (Guangzhou, China), is a major symposium for scientists, engineers and practitioners in the world to present their updated results, ideas, developments and applications in all areas of fuzzy information and engineering.

2009. XXVI, 1758 p. 675 illus. (Advances in Intelligent and Soft Computing, Volume 62) Softcover  
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O. Castillo, P. Melin, Tijuana Institute of Technology, Tijuana, Mexico; O. Montiel Ross, R. Sepúlveda Cruz, CITEDI-IPN, Tijuana, Mexico; W. Pedrycz, University of Manitoba, Winnipeg, MB, Canada (Eds)

## Theoretical Advances and Applications of Fuzzy Logic and Soft Computing

This book comprises a selection of papers from the IFSA 2007 World Congress on theoretical advances and applications of fuzzy logic and soft computing. These papers were selected from over 400 submissions and constitute an important contribution to the theory and applications of fuzzy logic and soft computing methodologies.

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9 783540 724339

H. Choi, H. G. Choi, J. Y. Yoo, Seoul National University, Korea (Eds)

## Computational Fluid Dynamics 2008

This volume presents the proceedings of the ICCFD 5 - The Fifth International Conference on Computational Fluid Dynamics, held July 07 - 11, 2008 in Seoul, South Korea. The contributions were chosen out of three categories of research: Innovative modeling of flow physics, Innovative algorithm development for flow simulation, optimization and control, and Advanced multidisciplinary applications using the abovementioned innovative technologies.

2009. XX, 824 p. Hardcover  
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9 783642 012723

J. M. Corchado, D. Tapia, Universidad de Salamanca, Spain; J. Bravo, University of Castilla-La Mancha, Ciudad Real, Spain (Eds)

## 3rd Symposium of Ubiquitous Computing and Ambient Intelligence 2008

2009. XII, 354 p. 131 illus. (Advances in Intelligent and Soft Computing, Volume 51) Softcover  
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## International Symposium on Distributed Computing and Artificial Intelligence 2008 (DCAI'08)

2009. XVIII, 760 p. 277 illus. (Advances in Intelligent and Soft Computing, Volume 50) Softcover  
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9 783540 485827

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## Computational Fluid Dynamics 2006

Proceedings of the Fourth International Conference on Computational Fluid Dynamics, ICCFD4, Ghent, Belgium, 10-14 July 2006

The International Conference on Computational Fluid Dynamics (ICCFD) is the merger of the International Conference on Numerical Methods in Fluid Dynamics, ICNMF (since 1969) and International Symposium on Computational Fluid Dynamics, ISCFD (since 1985). It is held every two years and brings together physicists, mathematicians and engineers to review and share recent advances in mathematical and computational techniques for modeling fluid dynamics.

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2007. XII, 642 p. (Lecture Notes in Control and Information Sciences, Volume 358) Softcover  
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E. Gdoutos, Democritus University of Thrace, Xanthi, Greece (Ed.)

## Experimental Analysis of Nano and Engineering Materials and Structures

Proceedings of the 13th International Conference on Experimental Mechanics, Alexandroupolis, Greece, July 1-6, 2007

ICEM13 focused on all aspects of experimental mechanics of solids with emphasis on mechanical characterization and testing at the micro and nano scale levels. The technical program of ICEM13 was the product of hard work and devotion of more than 100 world leading experts. This volume contains two-page abstracts of the 482 papers presented at ICEM13. The accompanying CD contains the full length papers.

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Technology, Trondheim, Norway; Y. Liang, University  
at Buffalo, NY, USA (Eds)

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Philadelphia, PA, USA (Eds)

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Wroclaw University of Technology, Wroclaw, Poland  
(Eds)

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**B. Bhushan**, The Ohio State University, Columbus, OH, USA; **S. Kawata**, Osaka City University, Osaka, Japan (Eds)

## Applied Scanning Probe Methods VI

### Characterization

The volumes V, VI and VII examine the physical and technical foundation for recent progress in applied scanning probe techniques. The first volume came out in January 2004 and the second to fourth volumes in early 2006. The field is progressing so fast that there is a need for a set of volumes every 12 to 18 months to capture latest developments. These volumes constitute a timely comprehensive overview of SPM applications. After introducing scanning probe microscopy, including sensor technology and tip characterization, chapters on use in various industrial applications are presented.

2007. XLVI, 338 p. 195 illus. (NanoScience and Technology) Hardcover  
ISBN 978-3-540-37318-6

▶ € 169,95 | £153,00  
▶ \*€ (D) 181,85 | € (A) 186,95 | sFr 244,00

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9 783540 373186

**B. Bhushan**, Ohio State University, Columbus, OH, USA; **H. Fuchs**, University of Münster, Germany (Eds)

## Applied Scanning Probe Methods II

### Scanning Probe Microscopy Techniques

Volumes II, III and IV examine the physical and technical foundation for recent progress in applied near-field scanning probe techniques, and build upon the first volume published in early 2004. The field is progressing so fast that there is a need for a second set of volumes to capture the latest developments. It constitutes a timely comprehensive overview of SPM applications, now that industrial applications span topographic and dynamical surface studies of thin-film semiconductors, polymers, paper, ceramics, and magnetic and biological materials.

2006. XLIV, 420 p. 270 illus., 7 in color. (NanoScience and Technology) Hardcover  
ISBN 978-3-540-26242-8

▶ € 169,95 | £153,00  
▶ \*€ (D) 181,85 | € (A) 186,95 | sFr 244,00

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9 783540 262428

**B. Bhushan**, The Ohio State University, Columbus, OH, USA; **H. Fuchs**, University of Münster, Germany; **S. Kawata**, Osaka City University, Osaka, Japan (Eds)

## Applied Scanning Probe Methods V

### Scanning Probe Microscopy Techniques

The volumes V, VI and VII examine the physical and technical foundation for recent progress in applied scanning probe techniques. The first volume came out in January 2004 and the second to fourth volumes in early 2006. The field is progressing so fast that there is a need for a set of volumes every 12 to 18 months to capture latest developments. These volumes constitute a timely comprehensive overview of SPM applications. After introducing scanning probe microscopy, including sensor technology and tip characterization, chapters on use in various industrial applications are presented.

2007. XLVI, 344 p. 199 illus., 5 in color. (NanoScience and Technology) Hardcover  
ISBN 978-3-540-37315-5

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9 783540 373155

**M. S. Blanter**, Moscow State Academy of Instrumental Engineering and Information Science, Moscow, Russia; **I. S. Golovin**, Tula State University, Tula, Russia; **H. Neuhäuser**, **H.-R. Sinning**, Technical University of Braunschweig, Germany

## Internal Friction in Metallic Materials

A Handbook

This book is a unique collection of experimental data in the field of internal friction, anelastic relaxation, and damping properties of metallic materials. It reviews virtually all anelastic relaxation phenomena ever published, and also most of the internal friction effects based on other types of dissipation of mechanical (elastic) energy.

2007. XVIII, 542 p. 65 illus. (Springer Series in Materials Science, Volume 90) Hardcover  
ISBN 978-3-540-68757-3

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► \* € (D) 176,50 | € (A) 181,45 | sFr 256,00

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9 783540 687573

**P. Boisseau**, Commissariat à l'Énergie Atomique, France; **M. Lahmani**, Université d'Evry, Evry Cedex, France (Eds)

## Nanoscience

Nanobiotechnology and Nanobiology

Nanobiotechnology is a rapidly developing field of research. This book covers major developments in nanobiophysics, nanobiology, and nanomethods in medicine. It presents the basics, fundamental results and latest achievements of nanobiotechnological research.

2009. XXXVIII, 1202 p. 530 illus., 30 in color. Hardcover  
ISBN 978-3-540-88632-7

► € 199,95 | £ 181,50  
► \* € (D) 213,95 | € (A) 219,95 | sFr 287,00

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9 783540 886327

**A. D'Amore**, The Second University of Naples-SUN, Naples, Italy; **D. Acierno**, University of Naples Federico II, Naples, Italy; **L. Grassia**, The Second University of Naples-SUN, Naples, Italy (Eds)

## Times of Polymers (TOP) and Composites

Fourth International Conference  
Ischia, Italy, 21-24 September 2008

The International Conference on "Times of Polymers (TOP) and Composites" was held in September, 2008 (Ischia-Italy). This was the fourth of a series of biennial work shops on "polymers timescales" resulting from a joint initiative of the Second University of Naples-SUN and the University of Naples Federico II.

2008. 372 p. (AIP Conference Proceedings / Materials Physics and Applications, Volume 1042) Softcover  
ISBN 978-0-7354-0570-7

► € 178,00 | £ 160,00  
► \* € (D) 190,46 | € (A) 195,80 | sFr 255,50

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9 780735 405707

**A. D'Amore**, Second University of Naples-SUN, Aversa, Italy; **D. Acierno**, University of Naples Federico II, Italy; **L. Grassia**, Second University of Naples-SUN, Aversa, Italy (Eds)

## V International Conference on Times of Polymers (TOP) and Composites

Conference Location and Date: Ischia, Italy, 20-23 June 2010

The conference addressed the main topics of Polymer Science. Scientists from different areas were involved and the covered topics may excite a wide range of scientists from PhD students to research group leaders. People working in any of the research fields of Polymer Timescales, Polymer based Composites and Nano-composites, Polymer chemistry and physics.

2010. 440 p. (AIP Conference Proceedings / Materials Physics and Applications, Volume 1255) Softcover  
ISBN 978-0-7354-0804-3

► € 199,95 | £ 149,50  
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**I. M. Daniel**, Northwestern University, Evanston, IL, USA; **E. Gdoutos**, Democritus University of Thrace, Xanthi, Greece; **Y. D. Rajapakse**, Office of Naval Research (ONR), USA (Eds)

## Major Accomplishments in Composite Materials and Sandwich Structures

An Anthology of ONR Sponsored Research

This book collects major research contributions in composite materials and sandwich structures supported by the U.S. Office of Naval Research. It contains over thirty chapters written by experts and serves as a reference and guide for future research.

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**R. v. Dongen**, Eindhoven University of Technology, Eindhoven, The Netherlands (Ed.)

## Shock Wave Science and Technology Reference Library, Vol. 1

Multiphase Flows I

Shock waves in multiphase flows refers to a rich variety of phenomena of interest to physicists, chemists, and fluid dynamicists, as well as mechanical, biomedical and aeronautical engineers. This volume treats shock and expansion waves in: - complex, bubbly liquids (L. van Wijngaarden, Y. Tomita, V. Kedrinskii) and - cryogenic liquids (M. Murakami) and examines the relationship of shock waves with - phase transitions (A. Guha, C.F. Delale, G. Schnerr, M.E.H.

2007. XVI, 366 p. 194 illus., 6 in color. (Shock Wave Science and Technology Reference Library, Volume 1) Hardcover  
ISBN 978-3-540-35845-9

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M. Fanciulli, G. Scarel, Laboratorio Nazionale MDM CNR-INFM, Agrate Brianza, Italy (Eds)

## Rare Earth Oxide Thin Films

Growth, Characterization, and Applications

Thin rare earth (RE) oxide films are emerging materials for microelectronic, nanoelectronic, and spintronic applications. The state-of-the-art of thin film deposition techniques as well as the structural, physical, chemical, and electrical properties of thin RE oxide films and of their interface with semiconducting substrates are discussed. The aim is to identify proper methodologies for the development of RE oxides thin films and to evaluate their effectiveness as innovative materials in different applications.

2007. XVI, 426 p. 209 illus. (Topics in Applied Physics, Volume 106) Hardcover  
ISBN 978-3-540-35796-4

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► \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50



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A. Haldar, Tata Steel Ltd, Jamshedpur, India; S. Suwas, Indian Institute of Science, Bangalore, India; D. Bhattacharjee, Tata Steel Ltd, Jamshedpur, India (Eds)

## Microstructure and Texture in Steels

and Other Materials

Microstructure and Texture in Steels and Other Materials comprises a collection of articles pertaining to experimental and theoretical aspects of the evolution of crystallographic texture and microstructure during processing of steels and some other materials. Among the topics covered is the processing-microstructure-texture-property relationship in various kinds of steels, including the latest grade.

2009. XIX, 488 p. 325 illus. With CD-ROM. Hardcover  
ISBN 978-1-84882-453-9

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► \*€ (D) 266,43 | € (A) 273,90 | sFr 357,00

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► \*€ (D) 133,70 | € (A) 137,45 | sFr 166,50



9 781848 824539

H. Janocha, Universität des Saarlandes, Saarbrücken, Germany (Ed.)

## Adaptronics and Smart Structures

Basics, Materials, Design, and Applications

Adaptronic structures and systems can adapt automatically to variable operating and environmental conditions through the use of feedback control. But in contrast to conventional control loops, in which each function is fulfilled by a separate component, adaptronics is characterized by multifunctional components that are preferably integrated into the structure or the system. The goal is a lightweight and simple construction for conserving material and energy resources. The authors of this book have taken on the task of displaying the current state of the art in this highly modern and strongly interdisciplinary field.

2nd, rev. ed. 2007. XVIII, 544 p. 432 illus. Hardcover  
ISBN 978-3-540-71965-6

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G. Mansoori, University of Illinois at Chicago, IL, USA; T. F. George, University of Missouri-St Louis, MO, USA; L. Assoufid, Argonne National Laboratory, Argonne, IL, USA; G. Zhang, Indiana State University, Terre Haute, IN, USA (Eds)

## Molecular Building Blocks for Nanotechnology

From Diamondoids to Nanoscale Materials and Applications

This book deals with a „bottom-up“ approach to building nanostructured systems, where one starts with atoms and molecules, which constitute the molecular building blocks (MBBs), and assembles them to build a nanostructured material. Nanotechnology MBBs are distinguished for their unique properties. They include, for example, graphite, fullerene, carbon nanotubes, diamondoids, nanowires, nanocrystals and amino acids.

2007. XII, 428 p. 299 illus. (Topics in Applied Physics, Volume 109) Hardcover  
ISBN 978-0-387-39937-9

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9 780387 399379

C. Mei, J. Zhou, X. Peng, N. Zhou, P. Zhou, Central South University, Changsha, Hunan, China

## Simulation and Optimization of Furnaces and Kilns for Nonferrous Metallurgical Engineering

„Simulation and Optimization of Furnaces and Kilns for Nonferrous Metallurgical Engineering“ is based on advanced theories and research methods for fluid flow, mass and heat transfer, and fuel combustion. A hologram simulation and examples are included.

2010. 450 p. 132 illus. Hardcover  
ISBN 978-3-642-00247-2

► € 199,00 | £179,50  
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D. A. Puleo, University of Kentucky, Lexington, KY, USA; R. Bizios, The University of Texas at San Antonio, San Antonio, TX, USA (Eds)

## Biological Interactions on Materials Surfaces

Understanding and Controlling Protein, Cell, and Tissue Responses

This book presents the latest developments and state-of-the-art knowledge regarding protein, cell, and tissue interactions with both conventional and nanophase materials. It contains two hundred color illustrations.

2009. XX, 429 p. 200 illus. in color. Hardcover  
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K. E. Sickafus, Los Alamos National Laboratory, NM, USA; E. A. Kotomin, Institute for Transuranium Elements, Karlsruhe, Germany; B. P. Uberuaga, Los Alamos National Laboratory, NM, USA (Eds)

## Radiation Effects in Solids

Proceedings of the NATO Advanced Study Institute on Radiation Effects in Solids, held in Erice, Sicily, Italy, 17-29 July 2004

The purpose of this book is to provide students with a comprehensive overview of fundamental principles and relevant technical issues associated with the behavior of solids exposed to high-energy radiation.

2007. X, 592 p. With CD-ROM. (NATO Science Series II: Mathematics, Physics and Chemistry, Volume 235) Hardcover  
ISBN 978-1-4020-5293-4

► € 179,95 | £142,50

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## Molecular Materials with Specific Interactions - Modeling and Design

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9 781402 053719

K. Takahashi, Nippon EMC Ltd., Tokyo, Japan; A. Yoshikawa, Chiba University, Chiba, Tokyo, Japan; A. Sandhu, Tokyo Institut of Technology, Tokyo, Japan (Eds)

## Wide Bandgap Semiconductors

Fundamental Properties and Modern Photonic and Electronic Devices

This book offers a comprehensive overview of the development, current state and future prospects of wide bandgap semiconductor materials and related optoelectronics devices. It includes an overview of recent developments in III-V nitride semiconductors, SiC, diamond, ZnO, II-VI materials and related devices including AlGaIn/GaN FET, UV LEDs, white light LEDs, and cold electron emitters. With 901 references, 333 figures and 21 tables, this book will serve as a one-stop source of knowledge on wide bandgap semiconductors and related optoelectronics devices.

2007. XXVI, 460 p. 394 illus., 15 in color. Hardcover  
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9 783540 472346

Q. Yin, B. Zhu, H. Zeng, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China

## Microstructure, Property and Processing of Functional Ceramics

Illustrated with 550 photographs, this book describes the preparation, property and local structure microscopy of functional ceramics. Both authors are professors at the Shanghai Institute of Ceramics, Chinese Academy of Sciences.

2010. 400 p. 212 illus. Hardcover  
ISBN 978-3-642-01693-6

► € 199,95 | £180,00

► \*€ (D) 213,95 | € (A) 219,95 | sFr 287,00

### Sale Price

► € 99,95 | £90,00

► \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50



9 783642 016936

I. Bárány, Alfred Rényi Institute, Budapest, Hungary; J. Solymosi, University of British Columbia, Vancouver, BC, Canada (Eds)

## An Irregular Mind

Szemerédi is 70

Endre Szemerédi's influence on today's mathematics, especially in combinatorics, additive number theory, and theoretical computer science, is enormous. This volume is a celebration of his achievements and personality, on the occasion of his 70th birthday.

2010. X, 740 p. (Bolyai Society Mathematical Studies, Volume 21) Hardcover  
ISBN 978-3-642-14443-1

► € 159,95 | £144,00

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A. D. Fitt, University of Southampton, UK; J. Norbury, University of Oxford, UK; H. Ockendon, University of Warwick, UK; E. Wilson, University of Bristol, UK (Eds)

## Progress in Industrial Mathematics at ECMI 2008

This volume is the Proceedings of the European Conference on Mathematics for Industry held in London in June 2008. The aim of the meeting was to reinforce the role of mathematics as an overarching resource for industry and business. Contributions cover a wide range of mathematical techniques and the applications include manufacturing and technology, finance and policy-making, networks, medicine, and sport.

2010. XXI, 1083 p. (Mathematics in Industry / The European Consortium for Mathematics in Industry, Volume 15) Hardcover  
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P. M. Goggans, C.-Y. Chan, University of Mississippi, University, MS, USA (Eds)

## Bayesian Inference and Maximum Entropy Methods in Science and Engineering

The 29th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering Oxford, Mississippi, 5-10 July 2009

Like all previous MaxEnt Workshops, this meeting encompassed all aspects of probabilistic inference including foundations, computational methods, and applications. The topics represented included probability theory and information theory, decision theory, Bayesian computation, model comparison, quantum mechanics, and applications in engineering, physics, and medicine.

2009. 452 p. (AIP Conference Proceedings, Volume 1193) Hardcover

ISBN 978-0-7354-0729-9

▶ € 297,85 | £268,00

▶ \*€ (D) 318,70 | € (A) 327,64 | sFr 427,00

### Sale Price

▶ € 149,95 | £135,00

▶ \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00



9 780735 407299

J. Horvath, University of Maryland, College Park, MD, USA (Ed.)

## A Panorama of Hungarian Mathematics in the Twentieth Century, I

A glorious period of Hungarian mathematics started in 1900 when Lipót Fejér discovered the summability of Fourier series. This was followed by the discoveries of his disciples in Fourier analysis and in the theory of analytic functions. At the same time Frederic (Frigyes) Riesz created functional analysis and Alfred Haar gave the first example of wavelets. Later the topics investigated by Hungarian mathematicians broadened considerably, and included topology, operator theory, differential equations, probability, etc.

2006. II, 639 p. (Bolyai Society Mathematical Studies, Volume 14) Hardcover

ISBN 978-3-540-28945-6

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▶ € 76,95 | £69,99

▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 289456

W. Jäger, R. Rannacher, J. Warnatz, Universität Heidelberg, Germany (Eds)

## Reactive Flows, Diffusion and Transport

From Experiments via Mathematical Modeling to Numerical Simulation and Optimization  
Final Report of SFB (Collaborative Research Center) 359

The articles in this volume summarize the research results obtained in the former SFB 359 „Reactive Flow, Diffusion and Transport“ which has been supported by the DFG over the period 1993-2004. The main subjects are physical-chemical processes sharing the difficulty of interacting diffusion, transport and reaction which cannot be considered separately.

2007. X, 676 p. 493 illus., 200 in color. Hardcover  
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9 783540 283799

A. S. Alexandrov, Loughborough University, Loughborough, UK (Ed.)

## Polarons in Advanced Materials

Polarons in Advanced Materials will lead the reader from single-polaron problems to multi-polaron systems and finally to a description of many interesting phenomena in high-temperature superconductors, ferromagnetic oxides, conducting polymers and molecular nanowires. The book divides naturally into four parts. Part I introduces a single polaron and describes recent achievements in analytical and numerical studies of polaron properties in different electron-phonon models. Part II and Part III describe multi-polaron physics, and Part IV describes many key physical properties of high-temperature superconductors, colossal magnetoresistance oxides, conducting polymers and molecular nanowires, which were understood with polarons and bipolarons.

1st Edition 2007. XVIII, 672 p. 223 illus. (Springer Series in Materials Science, Volume 103) Hardcover  
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9 781402 063473

G. Alvenson, P. Nath, B. D. Nelson, Northeastern University, Boston, Massachusetts (Eds)

## SUSY09

7th International Conference on Supersymmetry and the Unification of Fundamental Interactions  
Boston, Massachusetts, 5-10 June 2008

This 17th in the SUSY conference series brought together large numbers of both experimental and theoretical physicists interested in presenting their predictions for the anticipated results for the first data from the Large Hadron Collider. Experimentalists gave talks on what they should be able to measure while theorists gave talks on how their own favorite model might be tested with the new data.

2009. 1184 p. (AIP Conference Proceedings / High Energy Physics, Volume 1200) Hardcover

ISBN 978-0-7354-0737-4

▶ € 340,05 | £306,00

▶ \*€ (D) 363,85 | € (A) 374,06 | sFr 487,50

### Sale Price

▶ € 169,95 | £153,00

▶ \*€ (D) 181,85 | € (A) 186,94 | sFr 226,50



9 780735 407374

A. Angelopoulos, University of Athens, Athens, Greece; T. Fildisis, Hellenic Physical Society, Athens, Greece (Eds)

## 7th International Conference of the Balkan Physical Union

Conference Location and Date:  
Alexandroupolis, Greece, 9-13 September 2009

The BPU7 conference is a conference which takes place every three years organized by the Balkan Physical Union and its National Societies members. The purpose of these conferences is to bring together the scientists of the Balkan Countries, to publish the scientific achievements of Balkan physicists and to discuss and find solutions to the common problems these countries have in research and education.

2010. 1510 p. (AIP Conference Proceedings, Volume 1203) Hardcover

ISBN 978-0-7354-0740-4

▶ € 369,00 | £286,50

▶ \*€ (D) 394,83 | € (A) 405,90 | sFr 493,00

### Sale Price

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▶ \*€ (D) 197,90 | € (A) 203,44 | sFr 246,50



9 780735 407404

J. W. Baars, European Southern Observatory, Swisttal, Germany

## The Paraboloidal Reflector Antenna in Radio Astronomy and Communication

Theory and Practice

Reflector antennas are widely used in the microwave and millimeter wavelength domain. Radio astronomers have developed techniques of calibration of large antennas with radio astronomical methods. These have not been comprehensively described. This text aims to fill this gap. It takes a practical approach to the characterisation of antennas. All calculations and results in the form of tables and figures have been made with Mathematica by Wolfram Research.

2007. XVIII, 254 p. With CD-ROM. (Astrophysics and Space Science Library, Volume 348) Hardcover ISBN 978-0-387-69733-8

▶ € 149,95 | £135,00

▶ \*€ (D) 160,45 | € (A) 164,95 | sFr 215,50

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▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



F. Barlat, Pohang University of Science and Technology, Gyeongbuk, Korea; Y. Moon, Pusan National University, Busan, Korea; M. Lee, Pohang University of Science and Technology, Korea (Eds)

## NUMIFORM 2010

Proceedings of the 10th International Conference on Numerical Methods in Industrial Forming Processes Dedicated to Professor O. C. Zienkiewicz (1921-2009) Conference Location and Date: Pohang, Republic of Korea, 13-17 June 2010

This international conference was held to provide a forum where recent advances and future directions in the numerical simulations of manufacturing processes were discussed by engineers and scientists from industry and academia worldwide.

2010. 1394 p. (AIP Conference Proceedings / Materials Physics and Applications, Volume 1252) Softcover

ISBN 978-0-7354-0800-5

▶ € 439,00 | £333.00

▶ \*€ (D) 469,73 | € (A) 482,90 | sFr 573,50

Sale Price

▶ € 229,00 | £206.50

▶ \*€ (D) 245,03 | € (A) 251,90 | sFr 305,00



C. Bassa, Z. Wang, A. Cumming, V. Kaspi, McGill University, Montreal, QC, Canada (Eds)

## 40 Years of Pulsars

Millisecond Pulsars, Magnetars and More McGill University, Montreal, Canada, 12-17 August 2007

This conference was in celebration of the 40th anniversary of the discovery of radio pulsars in the summer of 1967. The conference highlighted the important discoveries of the last 40 years and addressed the most interesting and topical areas of neutron star astrophysics today.

2008. XIX, 654 p. (AIP Conference Proceedings, Volume 983) Hardcover

ISBN 978-0-7354-0502-8

▶ € 232,90 | £209.50

▶ \*€ (D) 249,20 | € (A) 256,19 | sFr 334,00

Sale Price

▶ € 119,95 | £108.00

▶ \*€ (D) 128,35 | € (A) 131,95 | sFr 160,00



V. Bobkov, J.-M. Noterdaeme, Max-Planck-Institute for Plasmaphysics, Garching, Germany (Eds)

## Radio Frequency Power in Plasmas

Proceedings of the 18th Topical Conference Gent, Belgium, 24-26 June 2009

Plasmas are the fourth state of matter (beyond solids, fluids, and gases). In these plasmas, electromagnetic waves can be launched, propagate and be absorbed. With this, a number of effects, such as heating, production of current, inducement of rotation, diagnostic, profile tailoring, etc. can be achieved.

2009. 696 p. (AIP Conference Proceedings, Volume 1187) Hardcover

ISBN 978-0-7354-0753-4

▶ € 303,40 | £273.00

▶ \*€ (D) 324,64 | € (A) 333,74 | sFr 435,00

Sale Price

▶ € 149,95 | £135.00

▶ \*€ (D) 160,45 | € (A) 164,94 | sFr 200,00



A. Bussmann-Holder, Max-Planck-Institut für Festkörperforschung, Stuttgart, Germany; H. Keller, Universität Zürich, Switzerland (Eds)

## High Tc Superconductors and Related Transition Metal Oxides

Special Contributions in Honor of K. Alex Müller on the Occasion of his 80th Birthday

The book will consist of approximately 30 to 40 separate articles where the main focus is on recent new results in high temperature superconductivity. The contributions are theoretical as well as experimental ones. All scientists who contribute are high rank experts in this field and have done major work which has enhanced the understanding of this phenomenon. A smaller part of the articles deals with ferroelectricity and their applications.

2007. XXII, 320 p. 134 illus., 19 in color. Hardcover ISBN 978-3-540-71022-6

▶ € 164,95 | £148.50

▶ \*€ (D) 176,50 | € (A) 181,45 | sFr 256,00

Sale Price

▶ € 79,95 | £72.00

▶ \*€ (D) 85,55 | € (A) 87,95 | sFr 106,50



S. A. Cetin, I. Hikmet, Dogus University, Istanbul, Turkey (Eds)

## Sixth International Conference of the Balkan Physical Union Istanbul, Turkey, 22-26 August 2006

The BPU-6 Conference belongs to a series of triennial general physics conferences organized under the auspices of the Balkan Physical Union (BPU). The previous conferences were organized in Thessaloniki, Greece (1991), Izmir, Turkey (1994), Cluj-Napoca, Romania (1997), Veliko Trnovo, Bulgaria (2000), and Vrnjacka Banja, Serbia and Montenegro (2003). The BPU conferences are usually attended by about 80 scientists, educators and engineers involved in research, education and applications of physics. The Conference is open to all scientists from the Balkan countries working in physics and related areas.

2007. XLII, 868 p. With CD-ROM. (AIP Conference Proceedings, Volume 899) Hardcover

ISBN 978-0-7354-0404-5

▶ € 274,15 | £211.00

▶ \*€ (D) 293,34 | € (A) 301,57 | sFr 449,50

Sale Price

▶ € 139,95 | £126.00

▶ \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50



T. Chakraborty, University of Manitoba, Winnipeg, MB, Canada (Ed.)

## Charge Migration in DNA

Perspectives from Physics, Chemistry, and Biology

Charge migration through DNA has been the focus of considerable interest in recent years. A deeper understanding of the nature of charge transfer and transport along the double helix is important in fields as diverse as physics, chemistry and nanotechnology. It has also important implications in biology, in particular in DNA damage and repair. This book presents contributions from an international team of researchers active in this field.

2007. XVIII, 288 p. 143 illus., 13 in color. (NanoScience and Technology) Hardcover

ISBN 978-3-540-72493-3

► € 159,95 | £144,00

► \*€ (D) 171,15 | € (A) 175,95 | sFr 229,50

### Sale Price

► € 79,95 | £72,00

► \*€ (D) 85,55 | € (A) 87,95 | sFr 106,50



9 783540 724933

C.-h. Chen, Academia Sinica, Taipei, Taiwan, China; A. Unwin, University of Augsburg, Germany (Eds)

## Handbook of Data Visualization

This book gives an overview of modern data visualization methods, both in theory and practice. It details modern graphical tools, graphical methodology for particular areas of statistics, as well software for graphics.

2008. XIV, 936 p. 569 illus. (Springer Handbooks of Computational Statistics) Hardcover

ISBN 978-3-540-33036-3

► € 279,00 | £251,00

► \*€ (D) 298,53 | € (A) 306,90 | sFr 400,00

### Sale Price

► € 139,95 | £126,00

► \*€ (D) 149,75 | € (A) 153,94 | sFr 186,50



9 783540 330363

J.-Y. Choi, S. Rah, Pohang Accelerator Laboratory, Pohang, Republic of Korea (Eds)

## Synchrotron Radiation Instrumentation

Ninth International Conference on Synchrotron Radiation Instrumentation Daegu, Korea, 28 May - 2 June 2006

All papers were peer-reviewed. The SRI2006 Proceedings features the most recent developments in present synchrotron radiation sources and up-to-date free electron lasers and photon energies from the infrared to hard X-rays, beamline instrumentation to transport the radiation to the experiments, as well as experimental techniques to utilize it. Also included are recent experimental results in synchrotron radiation sciences.

2007. LXVII, 3116 p. (AIP Conference Proceedings, Volume 879) (In 2 volumes, not available separately) Hardcover

ISBN 978-0-7354-0373-4

► € 338,80 | £260,50

► \*€ (D) 362,52 | € (A) 372,68 | sFr 573,00

### Sale Price

► € 169,95 | £153,00

► \*€ (D) 181,85 | € (A) 186,94 | sFr 226,50



9 780735 403734

P. Corkum, National Research Council of Canada, Ottawa, ON, Canada; D. M. Jonas, University of Colorado at Boulder, CO, USA; D. R. Miller, University of Toronto, ON, Canada; A. M. Weiner, Purdue University, West Lafayette, IN, USA (Eds)

## Ultrafast Phenomena XV

Proceedings of the 15th International Conference, Pacific Grove, USA, July 30 - August 4, 2006

Ultrafast Phenomena XV presents the latest advances in ultrafast science, including both ultrafast optical technology and the study of ultrafast phenomena. It covers picosecond, femtosecond, and attosecond processes relevant to applications in physics, chemistry, biology, and engineering.

2007. XXXII, 842 p. 539 illus. (Springer Series in Chemical Physics, Volume 88) Hardcover

ISBN 978-3-540-68779-5

► € 249,00 | £224,00

► \*€ (D) 266,43 | € (A) 273,90 | sFr 357,50

### Sale Price

► € 124,95 | £112,50

► \*€ (D) 133,70 | € (A) 137,45 | sFr 166,50



9 783540 687795

P. Corkum, National Research Council of Canada, Ottawa, ON, Canada; S. d. Silvestri, Politecnico di Milano, Italy; K. A. Nelson, Massachusetts Institute of Technology, Cambridge, MA, USA; E. Riedle, Ludwig-Maximilians-Universität, München, Germany; R. W. Schoenlein, Lawrence Berkeley National Laboratory, Berkeley, CA, USA (Eds)

## Ultrafast Phenomena XVI

Proceedings of the 16th International Conference, Palazzo dei Congressi Stresa, Italy, June 9-13, 2008

Ultrafast Phenomena XVI presents the latest advances in ultrafast science, including both ultrafast optical technology and the study of ultrafast phenomena. The book provides an up-to-date view of this important and rapidly advancing field.

2009. XXX, 1031 p. 667 illus. (Springer Series in Chemical Physics, Volume 92) Hardcover

ISBN 978-3-540-95945-8

► € 199,95 | £180,00

► \*€ (D) 213,95 | € (A) 219,95 | sFr 287,00

### Sale Price

► € 99,95 | £90,00

► \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50



9 783540 959458

S.-H. Dong, Escuela Superior de Física y Matemáticas, México

## Factorization Method in Quantum Mechanics

This work introduces the factorization method in quantum mechanics at an advanced level with an aim to put mathematical and physical concepts and techniques like the factorization method, Lie algebras, matrix elements and quantum control at the reader's disposal. For this purpose a comprehensive description is provided of the factorization method and its wide applications in quantum mechanics which complements the traditional coverage found in the existing quantum mechanics textbooks. Related to this classic method are the supersymmetric quantum mechanics, shape invariant potentials and group theoretical approaches.

2007. XX, 305 p. (Fundamental Theories of Physics, Volume 150) Hardcover

ISBN 978-1-4020-5795-3

► € 149,95 | £135,00

► \*€ (D) 160,45 | € (A) 164,95 | sFr 215,00

### Sale Price

► € 76,95 | £69,99

► \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 781402 057953

J. Dowden, University of Essex, Colchester, UK (Ed.)

## The Theory of Laser Materials Processing

Heat and Mass Transfer in Modern Technology

The purpose of this book is to show how general principles afford insight into laser processes. The principles may be from fundamental physical theory or from direct observation, but understanding of the general characteristics of a process is essential.

2009. XII, 446 p. (Springer Series in Materials Science, Volume 119) Hardcover  
ISBN 978-1-4020-9339-5

► € 149,95 | £ 135,00  
► \* € (D) 160,45 | € (A) 164,95 | sFr 215,50

### Sale Price

► € 76,95 | £ 69,99  
► \* € (D) 82,34 | € (A) 84,65 | sFr 102,50



9 781402 093395

C. Dupas, Ecole Normale Supérieure de Caen, France; M. Lahmani, Club Nano-Micro-Technologie de Paris, Evry, France (Eds)

## Nanoscience

Nanotechnologies and Nanophysics

Nanotechnologies and nanosciences are a fast-developing field of research, which sit at the point of convergence of several disciplines (physics, chemistry, biology, mechanics, etc.). This practically-oriented overview is designed to provide students and researchers with essential information on both the tools of manufacture and specific features of the nanometric scale, as well as applications within the most active fields (electronics, magnetism, information storage, biology). Specific applications and techniques covered include nanolithography, STM and AFM, nanowires and supramolecules, molecular electronics, optronics, and simulation.

2007. XXXIV, 823 p. 502 illus., 8 in color. Hardcover  
ISBN 978-3-540-28616-5

► € 219,00 | £ 197,00  
► \* € (D) 234,33 | € (A) 240,90 | sFr 314,50

### Sale Price

► € 109,95 | £ 99,00  
► \* € (D) 117,65 | € (A) 120,95 | sFr 146,50



9 783540 286165

J. L. Feng, University of California, Irvine, CA, USA (Ed.)

## SUSY06

The 14th International Conference on Supersymmetry and the Unification of Fundamental Interactions  
Irvine, California, 12-17 June 2006

The SUSY conferences are the premier annual international meetings devoted to new ideas and results in theoretical particle physics, experimental particle physics, and cosmology. SUSY06 took place just before the start of the Large Hadron Collider widely anticipated to yield profound new results, and provided a focus for the growing excitement in high energy physics through over 250 plenary and parallel talks.

2007. XVII, 724 p. (AIP Conference Proceedings, Volume 903) Hardcover  
ISBN 978-0-7354-0410-6

► € 226,40 | £ 174,00  
► \* € (D) 242,25 | € (A) 249,04 | sFr 371,00

### Sale Price

► € 114,95 | £ 103,50  
► \* € (D) 123,00 | € (A) 126,45 | sFr 153,50



9 780735 404106

P. G. Flesch, OSRAM GmbH, Berlin, Germany

## Light and Light Sources High-Intensity Discharge Lamps

Light and Light Sources gives an introduction to the working principles of high-intensity discharge (HID) lamps and points out challenges and problems associated with the development and operation of HID lamps. The state-of-the-art in electrode and plasma diagnostics as well as numerical methods used for the understanding of HID lamps are described. This volume addresses students as well as scientists and researchers at universities and in industry.

2006. XIII, 344 p. 226 illus., 5 in color. Hardcover  
ISBN 978-3-540-32684-7

► € 159,95 | £ 144,00  
► \* € (D) 171,15 | € (A) 175,95 | sFr 229,50

### Sale Price

► € 79,95 | £ 72,00  
► \* € (D) 85,55 | € (A) 87,95 | sFr 106,50



9 783540 326847

K. B. Fournier, Lawrence Livermore National Laboratory, Livermore, CA, USA (Ed.)

## Atomic Processes in Plasmas

Proceedings of the 16th International Conference on Atomic Processes in Plasmas  
Monterey, California, 22-26 March 2009

The Atomic Processes in Plasmas Conference is a bi-annual international conference on topics covering high-energy-density plasmas, magnetically confined fusion plasmas, astrophysical plasmas, fundamental atomic data and advanced modeling and plasma diagnostics. The conference lets international researchers share cutting-edge results in plasma creation, plasma experiments and plasma modeling.

2009. 318 p. With CD-ROM. (AIP Conference Proceedings / Atomic, Molecular, Chemical Physics, Volume 1161) Hardcover  
ISBN 978-0-7354-0698-8

► € 186,65 | £ 168,00  
► \* € (D) 199,72 | € (A) 205,32 | sFr 268,00

### Sale Price

► € 94,95 | £ 85,50  
► \* € (D) 101,60 | € (A) 104,45 | sFr 126,50



9 780735 406988

T. Fujimoto, A. Iwamae, Kyoto University, Kyoto, Japan (Eds)

## Plasma Polarization Spectroscopy

Plasma Polarization Spectroscopy (PPS) is now becoming a standard diagnostic technique for working with laboratory plasmas. This new area needs a comprehensive framework, both experimental and theoretical. This book reviews the historical development of PPS, develops a general theoretical formulation to deal with this phenomenon, along with an overview of relevant cross sections, and reports on laboratory experiments so far performed. It also includes various facets that are interesting from this standpoint, e.g. X-ray lasers and effects of microwave irradiation.

2008. XIV, 384 p. 180 illus., 2 in color. (Springer Series on Atomic, Optical, and Plasma Physics, Volume 44) Hardcover

ISBN 978-3-540-73586-1  
► € 149,95 | £ 135,00  
► \* € (D) 160,45 | € (A) 164,95 | sFr 215,00

### Sale Price

► € 76,95 | £ 69,99  
► \* € (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 735861

M. A. Gigos, M. A. Gonzalez (Eds)

**Spectral Line Shapes**

Volume 15 - 19th International Conference on Spectral Line Shapes

Valladolid, Spain, 15-20 June 2008

This biennial conference is the main international forum for both fundamental and applied works dealing with processes related to the formation of the spectral line profiles and with their use for diagnostic purposes. On the fundamental side, the study of the line profiles reveals the underlying atomic and molecular interactions.

2009. 410 p. (AIP Conference Proceedings / Atomic, Molecular, Chemical Physics, Volume 1058)

Hardcover

ISBN 978-0-7354-0588-2

▶ € 186,00 | £167,50

▶ \*€ (D) 199,02 | € (A) 204,60 | sFr 267,00

**Sale Price**

▶ € 94,95 | £85.50

▶ \*€ (D) 101,60 | € (A) 104,45 | sFr 126,50



9 780735 405882

A. N. Gorban, University of Leicester, UK;

N. Kazantzis, Worcester Polytechnic Institute,

Worcester, MA, USA; I. G. Kevrekidis, Princeton

University, Princeton, NJ, USA; H. C. Öttinger, ETH

Zurich, Schweiz; K. Theodoropoulos, University of Manchester, UK (Eds)

**Model Reduction and Coarse-Graining Approaches for Multiscale Phenomena**

Model reduction and coarse-graining are important in many areas of science and engineering. How does a system with many degrees of freedom become one with fewer? How can a reversible micro-description be adapted to the dissipative macroscopic model? These crucial questions, as well as many other related problems, are discussed in this book.

2006. XII, 560 p. 50 illus. Hardcover

ISBN 978-3-540-35885-5

▶ € 179,95 | £162,00

▶ \*€ (D) 192,55 | € (A) 197,95 | sFr 258,00

**Sale Price**

▶ € 89,95 | £81.00

▶ \*€ (D) 96,25 | € (A) 98,95 | sFr 120,00



9 783540 358855

Y. Horie, AFRL/NMNE Munitions Directorate, Eglin AFB, FL, USA (Ed.)

**Shock Wave Science and Technology Reference Library, Vol. 2****Solids I**

This book is the first of several volumes on solids in the Shock Wave Science and Technology Reference Library. These volumes are primarily concerned with high-pressure shock waves in solid media, including detonation, high-velocity impact, and penetration. Of the eight chapters in this volume three chapters survey recent, exciting experimental advances in: - Ultra-short shock dynamics at the atomic and molecular scale (D.S. More, S.D. Mcgrane, and D.J.

2007. XVIII, 363 p. 143 illus., 12 in color. (Shock Wave Science and Technology Reference Library, Volume 2) Hardcover

ISBN 978-3-540-22364-1

▶ € 169,95 | £153,00

▶ \*€ (D) 181,85 | € (A) 186,95 | sFr 244,00

**Sale Price**

▶ € 86,95 | £78.50

▶ \*€ (D) 93,04 | € (A) 95,65 | sFr 116,00



9 783540 223641

K. Hynnen, Sunnybrook Health Sciences Centre, Toronto, ON, Canada; J. Souquet, SuperSonic Imagine, Aix-en-Provence, France (Eds)

**9th International Symposium on Therapeutic Ultrasound**

ISTU - 2009

Conference Location and Date: Aix-en-Provence, France, 24-26 September 2009

The 9th edition of the International Symposium on Therapeutic Ultrasound was held in Aix-en-Provence, from September 24 to 26, 2009. This book gathers the fundamental scientific and more applied clinical research works that were presented during this conference by all actors in the field of therapeutic ultrasound.

2010. 422 p. (AIP Conference Proceedings / Materials Physics and Applications, Volume 1215) Softcover

ISBN 978-0-7354-0758-9

▶ € 199,95 | £149,50

▶ \*€ (D) 213,95 | € (A) 219,94 | sFr 257,50

**Sale Price**

▶ € 99,95 | £90.00

▶ \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50



9 780735 407589

A. Ide-Ekessabi, Kyoto University, Japan

**Applications of Synchrotron Radiation**

Micro Beams in Cell Micro Biology and Medicine

This book demonstrates the applications of synchrotron radiation in certain aspects of cell microbiology, specifically non-destructive elemental analyses, chemical-state analyses and imaging (distribution) of the elements within a cell. The basics for understanding and applications of synchrotron radiation are also described to make the contents easier to be understood for a wide group of researchers in medical and biological sciences who might not be familiar with the physics of synchrotron radiation.

2007. XIV, 218 p. 135 illus. (Biological and Medical Physics, Biomedical Engineering) Hardcover

ISBN 978-3-540-46424-2

▶ € 149,95 | £135,00

▶ \*€ (D) 160,45 | € (A) 164,95 | sFr 215,00

**Sale Price**

▶ € 76,95 | £69.99

▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 464242

Y. Itikawa, Tokyo, Japan

**Molecular Processes in Plasmas**

Collisions of Charged Particles with Molecules

A variety of plasmas include molecules rather than only ions or atoms. Examples are ionospheres of the Earth and other planets, stellar atmospheres, gaseous discharges for use in various devices and processes, and fusion plasmas in the edge region. This book describes the role of molecules in those plasmas by showing elementary collision processes involving those molecules. All possible processes are presented both for electron and ion collisions with the molecules. On the basis of the accumulated knowledge in atomic and molecular physics, a compact but informative description is given for each process.

2007. X, 196 p. 84 illus. (Springer Series on Atomic, Optical, and Plasma Physics, Volume 43) Hardcover

ISBN 978-3-540-72609-8

▶ € 149,95 | £135,00

▶ \*€ (D) 160,45 | € (A) 164,95 | sFr 215,00

**Sale Price**

▶ € 76,95 | £69.99

▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 726098

V. G. Ivancevic, Defence Science and Technology Organisation, Adelaide, SA, Australia; T. T. Ivancevic, The University of Adelaide, SA, Australia

## High-Dimensional Chaotic and Attractor Systems

A Comprehensive Introduction

This is a graduate-level monographic textbook devoted to understanding, prediction and control of high-dimensional chaotic and attractor systems of real life. The objective of the book is to provide the serious reader with a serious scientific tool that will enable the actual performance of competitive research in high-dimensional chaotic and attractor dynamics. The book has nine Chapters. The first Chapter gives a textbook-like introduction into the low-dimensional attractors and chaos.

2007. XVI, 704 p. (Intelligent Systems, Control and Automation: Science and Engineering, Volume 32) Hardcover

ISBN 978-1-4020-5455-6

▶ € 159,95 | £144,00

▶ \*€ (D) 171,15 | € (A) 175,95 | sFr 229,50

Sale Price

▶ € 79,95 | £72,00

▶ \*€ (D) 85,55 | € (A) 87,95 | sFr 106,50



9 781402 054556

F. Jegerlehner, Humboldt-Universität zu Berlin, Germany

## The Anomalous Magnetic Moment of the Muon

This book reviews the present state of knowledge of the anomalous magnetic moment  $a=(g-2)/2$  of the muon. The muon anomalous magnetic moment  $a_\mu$  is one of the most precisely measured quantities in elementary particle physics and provides one of the most stringent tests of relativistic quantum field theory as a fundamental theoretical framework. It allows for an extremely precise check of the standard model of elementary particles and of its limitations.

2008. XIV, 426 p. 172 illus. (Springer Tracts in Modern Physics, Volume 226) Hardcover

ISBN 978-3-540-72633-3

▶ € 199,95 | £180,00

▶ \*€ (D) 213,95 | € (A) 219,95 | sFr 287,00

Sale Price

▶ € 99,95 | £90,00

▶ \*€ (D) 106,95 | € (A) 109,95 | sFr 133,50



9 783540 726333

Y. Kanai, Y. Yamazaki, RIKEN, Atomic Physics Laboratory, Saitama, Japan (Eds)

## Proceedings of the Workshop on Cold Antimatter Plasmas and Application to Fundamental Physics

Okinawa, Japan, 20-22 February 2008

These proceedings contain various state-of-the-art research in the field of low energy antimatter science, which includes CPT symmetry, gravitational interaction, atomic collisions with antiprotons and positrons, syntheses and trapping of antihydrogen atoms, non-neutral plasma aspects of antimatter plasmas.

2009. 382 p. (AIP Conference Proceedings / Atomic, Molecular, Chemical Physics, Volume 1037) Hardcover

ISBN 978-0-7354-0561-5

▶ € 176,25 | £158,50

▶ \*€ (D) 188,59 | € (A) 193,88 | sFr 253,00

Sale Price

▶ € 89,95 | £81,00

▶ \*€ (D) 96,25 | € (A) 98,95 | sFr 120,00



9 780735 405615

P. G. Kevrekidis, University of Massachusetts, Amherst, MA, USA; D. J. Frantzeskakis, University of Athens, Greece; R. Carretero-González, San Diego State University, San Diego, CA, USA (Eds)

## Emergent Nonlinear Phenomena in Bose-Einstein Condensates

Theory and Experiment

This book, written by experts in the fields of atomic physics and nonlinear science, consists of reviews of the current state of the art at the interface of these fields, as is exemplified by the modern theme of Bose-Einstein condensates.

2008. XXII, 406 p. 108 illus., 7 in color. (Springer Series on Atomic, Optical, and Plasma Physics, Volume 45) Hardcover

ISBN 978-3-540-73590-8

▶ € 149,95 | £135,00

▶ \*€ (D) 160,45 | € (A) 164,95 | sFr 215,00

Sale Price

▶ € 76,95 | £69,99

▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 735908

P. Ko, Korea Institute for Advanced Study, Seoul, Korea; D. K. Hong, Pusan National University, Pusan, Korea (Eds)

## Supersymmetry and the Unification of Fundamental Interactions

Seoul, Korea, 16-21 June 2008

This annual SUSY conference has become the world's largest international meeting devoted to new ideas in high energy physics. The main subject of the conference is theoretical and phenomenological aspects of supersymmetric theories, and dark matter and dark energy, and other cosmological connections. New, interesting results from various experimental groups are increasingly presented at the conference as well.

2009. 660 p. (AIP Conference Proceedings / High Energy Physics, Volume 1078) Hardcover

ISBN 978-0-7354-0609-4

▶ € 247,05 | £222,50

▶ \*€ (D) 264,34 | € (A) 271,76 | sFr 354,50

Sale Price

▶ € 124,95 | £112,50

▶ \*€ (D) 133,70 | € (A) 137,45 | sFr 166,50



9 780735 406094

B. Krauskopf, H. M. Osinga, University of Bristol, UK; J. Galan-Vioque, University of Sevilla, Spain (Eds)

## Numerical Continuation Methods for Dynamical Systems

Path following and boundary value problems

Path following in combination with boundary value problem solvers has emerged as a continuing and strong influence in the development of dynamical systems theory and its application. It is widely acknowledged that the software package AUTO - developed by Eusebius J. Doedel about thirty years ago and further expanded and developed ever since - plays a central role in the brief history of numerical continuation. This book has been compiled on the occasion of Sebius Doedel's 60th birthday.

1st Edition 2007. XX, 400 p. 200 illus., 31 in color. (Understanding Complex Systems) Hardcover

ISBN 978-1-4020-6355-8

▶ € 174,95 | £157,50

▶ \*€ (D) 187,20 | € (A) 192,45 | sFr 251,00

Sale Price

▶ € 89,95 | £81,00

▶ \*€ (D) 96,25 | € (A) 98,95 | sFr 120,00



9 781402 063558

C. M. Krowne, Naval Research Laboratory, Washington DC, USA; Y. Zhang, National Renewable Energy Laboratory, Golden, CO, USA (Eds)

## Physics of Negative Refraction and Negative Index Materials

Optical and Electronic Aspects and Diversified Approaches

This book deals with the subject of optical and electronic negative refraction (NR) and negative index materials (NIM). Diverse approaches for achieving NR and NIM are covered, such as using photonic crystals, phononic crystals, split-ring resonators (SRRs) and continuous media, focusing of waves, guided-wave behavior, and nonlinear effects.

2007. XVIII, 380 p. 229 illus., 75 in color. (Springer Series in Materials Science, Volume 98) Hardcover ISBN 978-3-540-72131-4

▶ € 149,95 | £135,00  
▶ \*€ (D) 160,45 | € (A) 164,95 | sFr 215,00

### Sale Price

▶ € 76,95 | £69,99  
▶ \*€ (D) 82,34 | € (A) 84,65 | sFr 102,50



9 783540 721314

H. I. Ling, Columbia University, New York, NY, USA; L. Callisto, University of Rome „La Sapienza“, Rome, Italy; D. Leshchinsky, University of Delaware, Newark, DE, USA; J. Koseki, University of Tokyo, Japan (Eds)

## Soil Stress-Strain Behavior: Measurement, Modeling and Analysis

A Collection of Papers of the Geotechnical Symposium in Rome, March 16-17, 2006

This book is an outgrowth of the proceedings for the Geotechnical Symposium in Roma, which was held on March 16 and 17, 2006 in Rome, Italy. The Symposium was organized to celebrate the 60th birthday of Prof. Tatsuoka as well as honoring his research achievement.

2007. XXVI, 990 p. (Solid Mechanics and Its Applications, Volume 146) Hardcover ISBN 978-1-4020-6145-5

▶ € 184,95 | £166,50  
▶ \*€ (D) 197,90 | € (A) 203,45 | sFr 265,50

### Sale Price

▶ € 89,95 | £81,00  
▶ \*€ (D) 96,25 | € (A) 98,95 | sFr 120,00



9 781402 061455

A. K. Majumdar, LCRResearch, Inc., Agoura Hills, CA, USA; J. C. Ricklin, Army Research Laboratory, Adelphi, MD, USA (Eds)

## Free-Space Laser Communications

Principles and Advances

This book provides a comprehensive, unified tutorial covering the most recent advances in the emerging technology of free-space laser communications (FSLC), where interest and attention continue to grow along with the number of technical challenges. This book is intended as an all-inclusive source to serve the needs of those who require information about the basics of FSLC, as well as up-to-date advanced knowledge of the state-of-the-art in the technologies available today.

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A. A. Minai, University of Cincinnati, OH, USA; D. Braha, University of Massachusetts, North Dartmouth, MA, USA; Y. Bar-Yam, New England Complex Systems Institute, Cambridge, MA, USA (Eds)

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A. A. Minai, University of Cincinnati, Rhodes Hall, Cincinnati, OH, USA; Y. Bar-Yam, NECSI, Cambridge, MA, USA (Eds)

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2006. XXIV, 432 p. Softcover ISBN 978-3-540-35870-1

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M. I. Monastyrsky, Institute of Theoretical and Experimental Physics, Moscow, Russia (Ed.)

## Topology in Molecular Biology

The book presents a class of new results in molecular biology for which topological methods and ideas are important. These include: the large-scale conformation properties of DNA; computational methods (Monte Carlo) allowing the simulation of large-scale properties of DNA; the tangle model of DNA recombination and other applications of Knot theory; dynamics of supercoiled DNA and biocatalytic properties of DNA; the structure of proteins; and other very recent problems in molecular biology. The text also provides a short course of modern topology intended for the broad audience of biologists and physicists. The authors are renowned specialists in their fields and some of the new results presented here are documented for the first time in monographic form.

2007. XIV, 238 p. 118 illus., 6 in color. (Biological and Medical Physics, Biomedical Engineering) Hardcover ISBN 978-3-540-23407-4

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## Astrophysics and Space Science Proceedings

Advisory editor: W. Burton

A. F. Moorwood, European Southern Observatory, Garching bei München, Germany (Ed.)

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2009. XXVI, 514 p. Hardcover  
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K. P. O'Donnell, University of Strathclyde, Glasgow, Scotland UK; V. Dierolf, Lehigh University, Bethlehem, PA, USA (Eds)

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This book summarises recent progress in the science and technology of rare-earth doped nitrides, providing a snapshot of the field at a critical point in its development. It is the first book on rare-earth doped III-Nitrides and semiconductors.

2010. IV, 416 p. (Topics in Applied Physics, Volume 124) Hardcover  
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### Collective Dynamics: Topics on Competition and Cooperation in the Biosciences

A Selection of Papers in the Proceedings of the BIOCAMP2007 International Conference Vietri sul Mare, Italy, 24-28 September 2007

All papers have been peer-reviewed. The Conference was a program of invited lectures and selected contributed papers of interest to academic communities, educators and students both at graduate and undergraduate levels. Topics are centered on information processing and coding in the brain and in neuronal systems, on quantitative approaches to ecology and population dynamics, and on bioinformatics.

2008. 380 p. (AIP Conference Proceedings, Volume 1028) Hardcover

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### EMC 2008

Vol 2: Materials Science  
14th European Microscopy Congress 1-5 September 2008, Aachen, Germany

Proceedings of the 14th European Microscopy Congress, held in Aachen, Germany, 1-5 September 2008. Jointly organised by the European Microscopy Society (EMS), the German Society for Electron Microscopy (DGE) and the local microscopists from RWTH Aachen University and the Research Centre Jülich, the congress brings together scientists from Europe and from all over the world. The scientific programme covers all recent developments in the three major areas of instrumentation and methods, materials science and life science.

2008. XXXII, 870 p. Hardcover  
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J. R. Schrieffer, National High Magnetic Field Laboratory, Tallahassee, FL, USA (Ed.)

### Handbook of High-Temperature Superconductivity

Theory and Experiment  
Associate editor: J. Brooks

This treatise is a comprehensive review of the highly active field of superconductivity, with particular emphasis on materials where the transition temperature exceeds 40 degrees K. It serves as the authoritative, comprehensive reference work in this field.

2007. XXXII, 627 p. 388 illus. Hardcover  
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### New Trends in Mathematical Physics

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T. E. Simos, University of Peloponnese, Tripolis, Greece; G. Psihoyios, University of Buckingham, Buckingham, UK; C. Tsitouras, Technological Educational Institution of Chalkis, Psahna, Greece (Eds)

## Numerical Analysis and Applied Mathematics

International Conference on Numerical Analysis and Applied Mathematics 2008  
Psalidi, Kos, Greece, 16-20 September 2008

All papers have been peer-reviewed. The aim of the International Conference of Numerical Analysis and Applied Mathematics (ICNAAM 2008) is to bring together leading scientists of the international Numerical & Applied Mathematics community and to attract original research papers of very high quality.

2008. 1054 p. (AIP Conference Proceedings / Mathematical and Statistical Physics, Volume 1048) Hardcover

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► € 300,20 | £270,00

► \*€ (D) 321,21 | € (A) 330,22 | sFr 430,50

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R. K. Smith, Harvard Smithsonian Center for Astrophysics, Cambridge, MA, USA; S. L. Snowden, Goddard Space Flight Center, Greenbelt, MD, USA; K. D. Kuntz, Johns Hopkins University, Baltimore, MD, USA (Eds)

## The Local Bubble and Beyond II

Proceedings of the International Conference Philadelphia, Pennsylvania, 21-24 April 2008

This conference brought together astrophysicists and space physicists to determine whether the Local Hot Bubble contains hot gas or not, and to determine the extent to which previously disregarded heliospheric X-ray emission changes our understanding of the physics of the Local Hot Bubble.

2009. 326 p. (AIP Conference Proceedings / Astronomy and Astrophysics, Volume 1156) Softcover

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J. Sólyom, Research Institute for Solid State Physics, Budapest, Hungary

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Proceedings of Tokyo Tech-Hitotsubashi Interdisciplinary Conference + APFA7

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E. P. Tomasini, Polytechnic University of Marches, Ancona, Italy (Ed.)

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Conference Location and Date: Ancona, Italy, 22-25 June 2010

The 9th International Conference on Vibration Measurements by Laser and Noncontact Techniques, organised by A.I.V.E.L.A.

2010. 462 p. (AIP Conference Proceedings / Materials Physics and Applications, Volume 1253) Softcover  
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2nd, rev. ed. 2007. XX, 500 p. 368 illus., 40 in color. (Springer Series in Optical Sciences, Volume 87) Hardcover

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V. Trimble, University of California, Irvine, CA, USA; T. Williams, Rice University, Houston, TX, USA; K. Bracher, Whitman College, Walla Walla, WA, USA; R. Jarrell, York University, Toronto, ON, Canada; J. D. Marché, University of Wisconsin, Madison, WI, USA; F. J. Ragep, University of Oklahoma, Norman, OK, USA (Eds)

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2007. XXXII, 449 p. (Astrophysics and Space Science Library, Volume 350) Hardcover

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2008. XII, 267 p. 89 illus. (Springer Tracts in Modern Physics, Volume 228) Hardcover

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S. Watanabe, University of Tokyo, Chiba, Japan; K. Midorikawa, RIKEN, Saitama, Japan (Eds)

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