

Materials Science

Solid State Physics & Engineering

2011/V

Application of Diamond and Related Materials

Ed. Xipeng Xu

Solid State Phenomena Vol. 175

This volume presents 70 papers selected from over 100 papers submitted by university and industrial researchers. All of the papers were peer-reviewed by carefully chosen experts. This volume provides readers with a broad overview of recent advances in the field of the application of diamond and related materials, as well as brazing super-abrasives.

Available as paperback (978-3-03785-190-6), 372 pages, 2011, US\$166.00/€120.00, also available on CD (978-3-03795-015-9) and as eBook, sold separately

Functional and Electronic Materials

Eds. Chengming Li, Chengbao Jiang, Zhiyong Zhong and Yichun Zhou

Materials Science Forum Vol. 687

These 146 peer-reviewed papers cover the current understanding of researchers working in the fields of electronic materials and devices, ferroelectric, piezoelectric and dielectric materials, smart materials, the science and advanced technology of gels and aggregates, and thin-film materials and technology. A useful source of the latest information.

Available as paperback (978-3-03785-169-2), 840 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03785-170-8) and as eBook, sold separately

Green Building Materials and Energy-Saving Construction

Eds. Zhenyu Du and Zheng Wang

Advanced Materials Research Vol. 280

This collection of peer-reviewed papers, on new research results in green building materials and energy-saving construction, brings together industrial and academic researchers, developers and users from around the world to - in effect - share their state-of-the-art results, to explore new areas of research and development and to discuss the emerging issues facing green building materials and energy-saving construction.

Available as paperback (978-3-03785-189-0), 268 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-014-2) and as eBook, sold separately

Light Metals and their Alloys I

Technology, Microstructure and Properties

Eds. Agnieszka Botor-Probierz and Andrzej Kielbus

Solid State Phenomena Vol. 176

The aim of this work is to present the latest results of scientific research carried out by staff, in the Faculty of Materials Engineering and Metallurgy at the Silesian University of Technology in Gliwice, who are working in the area of light-metal alloys. The 20 papers are divided into three chapters: Aluminum Alloys, Magnesium Alloys and Titanium Alloys. This will be essential reading matter for anyone working in the same field.

Available as paperback (978-3-03785-198-2), 184 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-023-4) and as eBook, sold separately

Nano-Scale and Amorphous Materials

Eds. Rongming Wang, Ying Wu and Xiaofeng Wu

Materials Science Forum Vol. 688

These 76 peer-reviewed papers cover the current understanding of researchers working in the fields of nano-materials and technology, bulk metallic glasses and high-entropy alloys. This is a handy guide to a field of ever-growing importance.

Available as paperback (978-3-03785-171-5), 455 pages, 2011, US\$218.00/€158.00, also available on CD (978-3-03785-172-2) and as eBook, sold separately

MEMS/NEMS Nano Technology

Ed. Xiaohao Wang

Key Engineering Materials Vol. 483

This book brings together over 153 peer-reviewed papers, grouped into 6 chapters: Micro-/Nano-Fabrication and Measurement Technologies, Micro-Sensors and Actuators, Microfluidic Devices and Systems, MEMS/NEMS and Applications, Nano-Material Research / Nanotubes / Nanowire Devices, Micropower Technology, Theories in Micro-/Nano-Technologies. Most of the papers are authored by Chinese researchers, and the volume thus offers a good overview of the research on MEMS and nano-technology being conducted in China. The work will be of great interest to researchers, graduate students and engineers who are working in the fields of MEMS and nano-technology.

Available as paperback (978-3-03785-175-3), 830 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03795-000-5) and as eBook, sold separately

Metastable and Nanostructured Materials IV

J. Federico Chávez Alcalá, Alejandro Cruz Ramírez and Ma. de los Angeles

Hernández Pérez

Materials Science Forum Vol. 691

These 24 peer-reviewed papers cover a wide range of topics and are grouped into 3 sections: Alloys and Ceramics, Nanomaterials and Synthesis and Properties. They offer a succinct review of the subject matter.

Available as paperback (978-3-03785-183-8), 178 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-008-1) and as eBook, sold separately

Soft Magnetic Materials

Eds. Tianbiao Zhang and Jerry Tian

Advanced Materials Research Vol. 298

The objective of this special collection was to provide a forum for researchers, educators, engineers and government officials, involved in the general areas of soft magnetic materials, soft ferrites, powder cores, composite materials, thin films, metamaterials, magnetic measurements and instrumentation, to disseminate their latest research results and to exchange views on the future research directions of these fields.

Available as paperback (978-3-03785-187-6), 308 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-012-8) and as eBook, sold separately

Dynamics of the Structures and Non Destructive Testing

Ed. Moussa Karama

Key Engineering Materials Vol. 482

With energy costs increasing, the gains to be made from weight-saving are most significant in the aerospace domain, but such gains are clearly also advantageous for road transport and this is even beginning to be recognised in shipbuilding. Consequently, improved reliability and resistance to degradation and durability in severe environments are always important requirements. Thus the development of composites, nano-composites and refractory alloys having specific properties has become a key factor in industrial and technological progress. Another challenge is the recyclability of advanced materials, as reflected by the emergence of projects involving thermoplastic-matrix composite fuselages. Moreover, the incorporation of biopolymers extracted from diverse raw materials can be an interesting alternative route to attaining the objective of 100% biodegradability. The purpose of these topics is to bring together researchers and specialists from universities and industry who are working on new composites and nano-composites, titanium alloys, etc., as well as structural characterisation using destructive or non-destructive testing, numerical analysis and composite processes.

Available as paperback (978-3-03785-165-4), 110 pages, 2011, US\$124.00/€90.00, also available on CD (978-3-03785-166-1) and as eBook, sold separately



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Advanced Building Materials

Eds. Guangfan Li, Yong Huang and Chaohe Chen
Advanced Materials Research Vols. 250-253

This collection of papers, which was subjected to strict peer-review by 2 to 4 expert referees, aims to collect together the latest advances in, and applications of, traditional constructional materials, advanced constructional materials and green building materials. It cannot fail to suggest new ideas and strategies to be tried in this field.

Available as paperback (978-3-03785-127-2), 4260 pages, 2011, US\$552.00/€400.00, also available on CD (978-3-03785-128-9) and as eBook, sold separately

Advanced Computational Engineering and Experimenting

Eds. Andreas Öchsner, Lucas F.M. da Silva and Holm Altenbach
Key Engineering Materials Vol. 478

The goal of this special collection was to provide an unique opportunity to exchange information, to present the latest results as well as to review relevant issues concerning contemporary research in mechanical engineering. Young scientists in particular were encouraged to submit their latest research results, and this is reflected in the final result.

Available as paperback (978-3-03785-135-7), 126 pages, 2011, US\$110.00/€80.00, also available on CD (978-3-03785-136-4) and as eBook, sold separately

Advanced Materials and Information Technology Processing

Ed. Junqiao Xiong
Advanced Materials Research Vols. 271-273

The objective of this collection was to bring together researchers from academia and industry, as well as end-users, in order to share ideas, problems and solutions related to the multitudinous aspects of Advanced Materials and Information Technology Processing. The 387 peer-reviewed papers are presented under the chapter headings: 1 Machine Vision and Materials Science, 2 Information Technology and Materials Science, 3 Education Engineering. This makes the book a useful guide to those subjects.

Available as paperback (978-3-03785-157-9), 2080 pages, 2011, US\$552.00/€400.00, also available on CD (978-3-03785-158-6) and as eBook, sold separately

Advanced Structural Materials

Eds. Yafang Han, Fusheng Pan, Jianmao Tang, Chungun Zhou
Materials Science Forum Vol. 686

These 136 peer-reviewed papers cover the current understanding of researchers working in the fields of magnesium alloy use, structural composite materials, advanced materials processing technologies, high-temperature coatings, surface protection and aerospace materials. The result is a uniquely helpful guide to the subject.

Available as paperback (978-3-03785-167-8), 840 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03785-168-5) and as eBook, sold separately

Advances in Building Materials

Ed. Jingying Zhao
Advanced Materials Research Vols. 261-263

This collection of 367 peer-reviewed papers covers the latest advances in Concrete Materials, Green Building Materials, Nanotechnology and Nano-Materials, Experimental Studies of Materials Properties, New Building Materials, Steel and Alloy Materials, Applied Mechanics and Materials, Geotechnical Engineering and Geosynthetics. Taken together with its coverage of their applications, this collection will be welcomed by anyone interested in these topics.

Available as paperback (978-3-03785-141-8), 2006 pages, 2011, US\$483.00/€350.00, also available on CD (978-3-03785-142-5) and as eBook, sold separately

Advances in Magnetic Shape Memory Materials

Ed. V.A. Chernenko
Materials Science Forum Vol.684

This second Special Topic edition follows the success of the first one: edited and published by TTP in 2008. It is intended to communicate the latest progress and research advances made in the theory, research and development of MSMMs. It comprises a collection of fifteen invited peer-reviewed papers; each detailing a particular aspect of fundamental and/or practical investigations of MSMMs and related phenomena. The comprehensive overview provided by these contributions strikingly reflects the diverse facets of this materials science field. The papers show how research is continuing to evolve and to address new challenges, and are a source of the most up-to-date information on ongoing studies of MSMMs.

Available as paperback (978-3-03785-147-0), 242 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03785-148-7) and as eBook, sold separately

Advances in Materials and Processing Technologies

Eds. M.S.J. Hashmi, S. Mridha and S. Naher
Advanced Materials Research Vols. 265-266

A large proportion of the present papers addressed current scientific research and provided solutions to industrial problems; thereby creating an environment of mutual interest to industry and academia. The papers are grouped into 10 chapters: 1. Forming Processes, 2. Casting, Joining and Related Processes, 3. Materials, 4. Materials Removal Processes, 5. High Energy Beam Removal Process, 6. Precision Engineering and Nano-Technology, 7. Surface Engineering, 8. Computer-Aided Engineering, 9. Green Manufacturing and Management, 10. Others.

Available as paperback (978-3-03785-053-4), 2000 pages, 2011, US\$509.00/€369.00, also available on CD (978-3-03785-054-1) and as eBook, sold separately

Advances in Structures Analysis

Ed. Moussa Karama
Applied Mechanics and Materials Vol. 61

Various research topics fall under the rubric of Structure: e.g. material damage leading to crack growth and/or fatigue of structures under dynamic loading or impact, durability and reliability of structures, numerical simulation and experimental work involving large deformations and impact associated with various experimental techniques. With regard to experimental studies, many non-destructive tests have been developed during recent years in order to deliver more accurate data. Therefore, papers dealing with the processing, characterization and physical properties determination of materials and structures fall under this heading. Finally, it also covers aspects of computer software, numerical models and advanced simulation algorithms. Specific applications of modeling and simulation in science and engineering, together with the relevant applied mathematical techniques, are also covered.

Available as paperback (978-3-03785-159-3), 112 pages, 2011, US\$123.00/€90.00, also available on CD (978-3-03785-160-9) and as eBook, sold separately

Computational Materials Science

Ed. Feng Xiong
Advanced Materials Research Vols. 268-270

The goal of this collection was to gather together up-to-date knowledge from researchers in academia and industry, as well as end-users, and also give them the opportunity to share ideas, problems and solutions related to the divers aspects of Computational Materials Science, Mechanical, Industrial and Manufacturing Engineering. The result is an up-to-date survey which should be essential reading for those interested in thesetopics.

Available as paperback (978-3-03785-155-5), 2370 pages, 2011, US\$690.00/€500.00, also available on CD (978-3-03785-156-2) and as eBook, sold separately

Coupled Problems and Multi-Physics

Ed. Moussa Karama
Advanced Materials Research Vol. 274

The objective of Coupled Problems is to present and discuss the state-of-the-art mathematical models, numerical methods and computational techniques used for solving coupled problems of a multidisciplinary nature in science and engineering. The goal of the conference was to take a step forward, in the formulation and solution of real-life problems, with a multidisciplinary vision; accounting for all of the complex couplings involved in the physical description of the problem. Simulation of multifaceted physics problems is a common task in applied research and industry. Often a suitable solver is built by connecting together several single-aspect solvers into a network. In this special issue, research in various fields was selected for consideration: adaptive methodology for multi-physics solvers, multi-physics phenomena and coupled-field problems leading to computationally intensive structural analysis. The strategies which are used to keep these problems computationally affordable are of special interest, and make this an essential reference-work.

Available as paperback (978-3-03785-163-0), 140 pages, 2011, US\$124.00/€90.00, also available on CD (978-3-03785-164-7) and as eBook, sold separately

Defects and Diffusion in Ceramics XII

An Annual Retrospective XII
Ed. D.J. Fisher
Defect and Diffusion Forum Vols. 316-317

This twelfth volume in the series includes 589 abstracts of ceramics research papers, together with original papers on other major material groups, and theory.

Available as paperback (978-3-03785-153-1), 308 pages, 2011, US\$243.00/€176.00, also available on CD (978-3-03785-154-8) and as eBook, sold separately

Diffusion in Semiconductors, Other than Silicon: Compilation

Ed. David J. Fisher
Defect and Diffusion Forum Vol. 308

This volume contains a selection of the available data, on 'traditional' (e.g. GaAs,

Ge) and other (e.g. SiC, GaN) semiconductors, which have been reported over a period stretching from the 1950s to 2010. Only data on oxide semiconductors have been omitted. The full list of materials covered is: CdHgTe, CdMnTe, CdS, CdSe, CdTe, CuInSe₂, GaAlAs, GaAlN, GaAsP, GaInAs, GaInP, GaN, GaP, GaSb, GaSe, GaTe, Ge, HgTe, InAlAs, InAs, InAsSb, InP, InSb, InSe, PbSnTe, PbTe, SiC, ZnS, ZnSe and ZnTe. This will be a handy reference source for anyone requiring a guide to the order of magnitude of diffusivities when designing diffusion-dependent experiments or industrial processes.

Available as paperback (978-3-03785-093-0), 168 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03785-094-7) and as eBook, sold separately

Energy, Environment and Biological Materials

Eds. Kunyuan Gao, Shaoxiong Zhou, Xinqing Zhao
Materials Science Forum Vol. 685

These 64 peer-reviewed papers cover the latest data found by researchers working in the fields of solar cells, eco-materials and technologies related to climate change and bio-medical materials. As such, they will be essential reading for those involved in those fields.

Available as paperback (978-3-03785-115-9), 420 pages, 2011, US\$218.00/€158.00, also available on CD (978-3-03785-116-6) and as eBook, sold separately

Environment Materials and Environment Management

Eds. Zhenyu Du and Chengbin Li
Advanced Materials Research Vol. 281

This collection consists of new research results in advanced mechanical engineering. It brings together industrial and academic researchers, developers, and users from around the world in the form of their shared state-of-the-art results: exploring new areas of research and development, and discussing the emerging issues facing environmental materials and management. An invaluable guide to the topic.

Available as paperback (978-3-03785-188-3), 328 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-013-5) and as eBook, sold separately

Manufacturing Systems and Industry Application

Ed. Yanwen Wu
Advanced Materials Research Vol. 267

The 2011 International Conference on Materials Engineering for Advanced Technologies was held on May 5-6, 2011, in Singapore. The objective of the conference was to bring together researchers from academia and industry, as well as end-users, in order to share ideas, problems and solutions related to the multifaceted aspects of Materials Engineering for Advanced Technologies. The resultant timely overview will be appreciated by anyone involved in these fields.

Available as paperback (978-3-03785-151-7), 1110 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03785-152-4) and as eBook, sold separately

Materials and Design

Eds. Xiaoming Sang, Pengcheng Wang, Liqun Ai, Yungang Li and Jinglong Bu
Advanced Materials Research Vols. 284-286

The papers in this volume were subjected to peer and expert reviews, and cover the subjects of composites, micro-/nano-materials, iron and steel, ceramics, metallic alloy materials, biomaterials, high-performance elastomers and polymers, materials physics, materials chemistry, optical/electronic/magnetic materials and other related topics. The work offers valuable up-to-date coverage of the topics.

Available as paperback (978-3-03785-191-3), 2668 pages, 2011, US\$483.00/€350.00, also available on CD (978-3-03795-016-6) and as eBook, sold separately

Materials Engineering for Advanced Technologies

Ed. Yanwen Wu
Key Engineering Materials Vols. 480-481

The objective of this collection was to bring together researchers from academia and industry, as well as end-users, in order to share ideas, problems and solutions related to the multifaceted aspects of Materials Engineering for Advanced Technologies. The result is an up-to-date handbook guide to the subject.

Available as paperback (978-3-03785-131-9), 1690 pages, 2011, US\$414.00/€298.00, also available on CD (978-3-03785-132-6) and as eBook, sold separately

Materials Modeling, Simulation, and Characterization

Eds. Enhou Han, Guanghong Lu and Xiaolin Shu
Materials Science Forum Vol. 689

These 74 peer-reviewed papers cover the current understanding of researchers working in the fields of multi-scale modeling and simulation of materials, materi-

als characterization and evaluation. An invaluable source of new ideas.

Available as paperback (978-3-03785-173-9), 500 pages, 2011, US\$218.00/€158.00, also available on CD (978-3-03785-174-6) and as eBook, sold separately

Mechanical, Materials and Manufacturing Engineering

Ed. Honghua Tan
Applied Mechanics and Materials Vols. 66-68

Proceedings of the 2011 International Conference on Mechanical Materials and Manufacturing Engineering (ICMMME 2011), June 20-22, 2011, Nanchang, China. The objective of ICMMME 2011, with its more than 427 papers, was to provide a forum for researchers, educators, engineers and government officials involved in the general areas of mechanical materials and manufacturing engineering; thus permitting them to disseminate their latest research results and to exchange views on the future research directions of these fields.

Available as paperback (978-3-03785-185-2), 2510 pages, 2011, US\$552.00/€400.00, also available on CD (978-3-03795-010-4) and as eBook, sold separately

Mechanics, Solid State and Engineering Materials

Eds. Fei Hu and Beibei Wang
Advanced Materials Research Vol. 279

During the past few years, mechanics, solid-state phenomena and engineering materials have played important roles in the progress of human society, and scholarly research in the related fields has accumulated a treasury of accomplishments and has promoted the development of academic studies. Meanwhile, researchers are faced with many problems. This collection of 84 peer-reviewed papers is divided into sections on solid materials, solid mechanics and related topics. The volume will be essential reading for those working in the related areas and will provide the inspiration for future studies and advances.

Available as paperback (978-3-03785-186-9), 615 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03795-011-1) and as eBook, sold separately

Mechatronic Systems and Automation Systems

Eds. Zhenyu Du and Bin Liu
Applied Mechanics and Materials Vol. 65

This collection gathers together new research results on mechatronic and automation systems; bringing together worldwide industrial and academic researchers, developers and users and their state-of-the-art results. This work will help to lead to the exploration of new areas of research and development, and to discussions of the emerging issues facing mechatronic and automation systems.

Available as paperback (978-3-03785-184-5), 660 pages, 2011, US\$276.00/€200.00, also available on CD (978-3-03795-009-8) and as eBook, sold separately

New Approaches in the Manufacturing Processes

Ed. Moussa Karama
Applied Mechanics and Materials Vol. 62

Original contributions to the experimental, analytical and numerical modelling of processes related to advanced materials. Research work may investigate the interactions between the manufacture (machining, forming ...) and behaviour or structures of advanced materials. For damage analysis using non-destructive testing (NDT), new measurement techniques, with or without contact, and the development of new means of process control are always welcome. Improvements in the integrity of structures, cost reduction in manufacturing and increases in productivity lead, for instance, to the substitution of welding and bonding processes for mechanical assembly processes.

Available as paperback (978-3-03785-161-6), 180 pages, 2011, US\$124.00/€90.00, also available on CD (978-3-03785-162-3) and as eBook, sold separately

Solid-Solid Phase Transformations in Inorganic Materials

Eds. Emmanuel Clouet, Alexis Deschamps, Alphonse Finel and Frédéric Soisson
Solid State Phenomena, Vols. 172-174

The main objective of this special collection was to present state-of-the-art advances in the field of solid-solid phase transformations. The 204 peer-reviewed papers were divided into 10 chapters: 1: Displacive Transformations, 2: Diffusional Transformations, 3: Transition by Interface Migration, 4: Order-Disorder Transitions, 5: Phase Transitions and Size Effect, 6: Driven Systems and Phase Transformations, 7: Phase Transformations during Industrial Processing, 8: Amorphous Alloys, Quasicrystals and other Complex Phases, 9: Advances in the Theory and Modeling of Phase Transitions, 10: Advances in Experimental Techniques. The present work will be a useful supplement to the classic textbooks on the subject.

Available as paperback (978-3-03785-143-2), 1463 pages, 2011, US\$483.00/€350.00, also available on CD (978-3-03785-144-9) and as eBook, sold separately

Advanced Materials Research QiR 12

Ed. Bondan Tiara Sofyan
Advanced Materials Research Vol. 277

The development of new engineering materials and technologies continues at a rapid pace. However, the application and dissemination of many of these materials and technologies is especially limited with regard to their incorporation into integrated design in urban eco-technologies, their market perspectives and their timely contribution to the existing and future requirements of mankind. The topics covered in this volume include: nanomaterials, materials for energy, metals, polymers, ceramics, composites, biomaterials, thin films and materials processing. The work is sure to have a stimulating effect in the development of new ideas.

Available as paperback (978-3-03785-179-1), 205 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-004-3) and as eBook, sold separately

Applications of Engineering Materials

Eds. Jinglong Bu, Pengcheng Wang, Liqun Ai, Xiaoming Sang, Yungang Li
Advanced Materials Research Vols. 287-290

This book covers the subject areas of new functional materials, building materials, new energy materials, environmental catalysis and environment-friendly materials, earthquake-resistant structures, materials and design, biomaterials, chemical materials, thin films, hydrogen and fuel cell science, engineering and technology, textile materials, smart/intelligent materials/intelligent systems and other related topics. An invaluable guide to the topics.

Available as paperback (978-3-03785-192-0), 3283 pages, 2011, US\$552.00/€400.00, also available on CD (978-3-03795-017-3) and as eBook, sold separately

Electroceramics in Japan XIV

Eds. Chazono Hirokazu, Fujihara Shinobu, Katayama Keiichi et al.
Key Engineering Materials Vol. 485

The major topics covered by this special collection include dielectrics, piezoelectric ceramics, ferroelectrics, lead-free piezoelectric ceramics, Li-ion battery-related materials, secondary batteries, solid oxide fuel cells, dye-sensitized solar cells, the properties and processing of thin films, magnetic ceramics, semiconducting ceramics, sensors and ceramic science and processing. The microstructures of the materials considered also ranged from single crystals to bulk ceramics, to thin films and finally to nanocrystals; thus providing a complete overview of the subject.

Available as paperback (978-3-03785-182-1), 343 pages, 2011, US\$216.00/€156.00, also available on CD (978-3-03795-007-4) and as eBook, sold separately

Structural Integrity and Failure

Eds. George Ferguson, Ashvin Thambyah, Michael A Hodgson and Kelly Wade
Advanced Materials Research Vol. 275

This special collection of 59 peer-reviewed papers covers topics related to the fracture and fatigue of all types of materials and structures, including biological tissues, metals, ceramics, polymers, composites and thin films. This wide range of coverage will make this work of interest to those studying almost any sort of material.

Available as paperback (978-3-03785-176-0), 268 pages, 2011, US\$166.00/€120.00, also available on CD (978-3-03795-001-2) and as eBook, sold separately

Latest Trends in Condensed Matter Physics

Ed. R. K. Singhal
Solid State Phenomena Vol. 171

This special issue of "Solid State Phenomena" documents some novel experimental and theoretical approaches applied to fascinating materials. Motivated by the increasing need to synthesize and understand the properties of technologically important materials, this issue represents an important step forward in improving our understanding of how modern materials can be optimized for technology and industry. The issue comprises 9 original review papers covering experimental approaches and theoretical modeling. The contributions will be very useful to researchers working in various areas of CMP and will contribute significantly to the understanding of rapidly developing materials with regard to their synthesis, characterization and properties.

Available as paperback (978-3-03785-177-7), 130 pages, 2011, US\$124.00/€90.00, also available on CD (978-3-03795-002-9) and as eBook, sold separately

Nanoscaled Semiconductor-on-Insulator Materials, Sensors and Devices

Eds. Alexei N. Nazarov and Jean-Pierre Raskin
Advanced Materials Research Vol. 276

This special collection covers: 1. the technology of semiconductor-on-insulator structures and devices; 2. the physics of new SOI devices; 3. SOI sensors and MEMS; 4. nanodots, nanowires and nanofilms. The first part covers a wide variety of SemOI-based structures such as ZnO-on-Insulators, a-SiC-on-Si oxide, graphite inner films fabricated by ion implantation, and others. The second part presents new devices based upon impact ionization near to the source junction, the modeling of charge transport in nano-scale SOI MOSFETs, the electrical properties of SOI MOSFETs with LaLuO₃ high-k gate dielectric and the study of neutron effects upon the behavior of nanometer-scale SOI devices. The third part considers various types of SOI sensors and MEMS, together with their characteristics and applications. The fourth part describes the fabrication and properties of quantum-dimensional structures such as nanowires and nanodots. This book will therefore be useful to a wide readership.

Available as paperback (978-3-03785-178-4), 200 pages, 2011, US\$138.00/€100.00, also available on CD (978-3-03795-003-6) and as eBook, sold separately

New Frontiers in Materials Processing Training and Learning II

Ed. M. Marcos
Materials Science Forum Vol. 692

This special collection, New Frontiers in Materials Processing Learning and Training, reports the latest developments and original applications, theoretical research and case studies in the innovative education field, as applied to Materials Processing Engineering and Technology. This work will favour the future development of new learning and training techniques in other disciplines.

Available as paperback (978-3-03785-206-4), 150 pages, 2011, US\$124.00/€90.00, also available on CD (978-3-03795-031-9) and as eBook, sold separately

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