

Materials Science

Solid State Physics & Engineering

2015/1

Bioceramics Volume 26

Eds. Maria-Pau Ginebra, Cristina Canal, Montserrat Espanol et al
Key Engineering Materials Vol. 631

Collection of selected, peer reviewed papers from the 26th Symposium and Annual Meeting of the International Society for Ceramics in Medicine (BIOCERAMICS 26), November 6-8, 2014, Barcelona, Spain. The 76 papers are grouped as follows: I. Biostable Ceramics and Tough Ceramics; II. Glasses and Glass-ceramics; III. Calcium Phosphates; IV. Cements; V. Composites and Hybrid Materials; VI. Nanoparticles and Nanostructured Ceramics; VII. Coatings, Surface Engineering and Interfaces; VIII. Additive Manufacturing of Ceramics and Composites; IX. Scaffolds; X. Ceramics for Drug Delivery; XI. Cell-Material Interactions; XII. Preclinical Models: Animal Studies; XIII. Clinical Applications

978-3-03835-282-2 (hardcover), 472 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-978-7) and eBook (978-3-03826-666-2) at same price.

Eco-Materials Processing and Design XV

Eds. Bahn Tian Long, Hyungsun Kim, Jien Feng Yang et al..
Materials Science Forum Vol. 804

Collection of selected, peer reviewed papers from the 15th International Symposium on Eco-Materials Processing and Design, (ISEPD), January 12-15, 2014, Hanoi, Vietnam. The 74 papers are grouped as follows: I. Materials for Environment Preservation, Energy Conservation/Harvesting and New Energy, II. Materials Cutting and Processing Technologies for Reduction of Environmental Impact, III. Eco-Processing and Design on Polymer, Ceramics, Metals, Semiconductors, IV. High Performance Materials Including Nano-Materials for the Environment, and Coating/Corrosion, V. Hybrid Materials and Composites for ECO Society, VI. Photocatalysis for a Better Environment and Clean Energy, VII. Bio-Inspired Materials for a Better Life and Other Novel Bio-Materials, VIII. Light Metals and Alloys of Mg, Al, Ti, Be, and Porous Materials, IX. Steel and Alloy, X. Manufacturing and Mechanical Technology.

978-3-03835-238-9 (paperback), 346 pages, 2015, US\$207.00/€150.00, also available on CD (978-3-03795-934-3) and eBook (978-3-03826-622-8) at same price.

HeteroSiC & WASMPE 2013

Ed. Marcin Zielinski
Materials Science Forum Vol. 806

Collection of selected, peer reviewed papers from the 2013 HeteroSiC-WASMPE, June 17-19, 2013, Nice, France. The 25 papers are grouped as follows: Chapter 1: 3C-SiC – Epitaxy, Characterization and Devices; Chapter 2: 4H-SiC and 15R-SiC – Growth and Characterization; Chapter 3: Related Materials – Gallium Nitride, Graphene and Silicon; Chapter 4: SiC Devices and Device Processing.

978-3-03835-294-5 (paperback), 156 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03795-990-9) and eBook (978-3-03826-678-5) at same price.

Monte Carlo Diffusion Studies

Ed. D.J. Fisher
Defect and Diffusion Forum Vol. 358

The Monte Carlo method, largely the brainchild of Stanislaw Ulam and first implemented by John von Neumann, depends upon the use of digital computers and is therefore very much a product of post-WW2 technological developments; even though one could argue that the Buffon's Needle estimate was an ancestor of the technique. The probabilistic nature of the method makes it a good choice for modeling those physical phenomena which involve similarly random motions at the atomic scale; a particularly good example being that of mass diffusion. The present volume comprises a compilation of selected Monte Carlo studies of diffusion in borides, carbides, diamond, graphene, graphite, hydrides, ice, metals, oxides, semiconductors, sulfides, zeolites and other materials. General aspects of diffusion are also covered. The 516 entries cover the period from 1966 to 2014.

978-3-03835-266-2 (paperback), 266 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03795-962-6) and eBook (978-3-03826-650-1) at same price.

Multi-Functional Nanoscale Materials and their Potential Applications

Eds. Alagarsamy Pandikumar, Huang Nay Ming and Lim Hong Ngee
Materials Science Forum Vol. 807

Nanotechnology is now ubiquitous and deeply embedded in our day-to-day lives. Unknowingly, it has weaved seamlessly into various applications, making it impossible to look passed its importance. This volume is a compendium of review as well as research articles, providing a wide spectrum of bottom-up fabrication approaches and their utilization on multiple fronts. This volume will be valuable to scientists, academicians, engineers and students who are keen to discover the advances in nanotechnology for favorable materials construction techniques and applications in relation to human health, environment and engineering.

978-3-03835-338-6 (paperback), 212 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-038-5) and eBook (978-3-03826-722-5) at same price.

Nanomaterials

Basic Concepts and Applications

Ed. Hardev Singh Virk
Solid State Phenomena Vol. 222

The present volume "Nanomaterials: Basic Concepts and Applications", as the title suggests, deals with basic concepts and applications of nanomaterials, a buzz word in the modern world of Science and Technology. Because of advanced characterization and new fabrication techniques, nanomaterials are now central to multiple disciplines, including materials science, chemistry, physics, engineering and medicine. This special volume under Solid State Phenomena series will present an overview of recent research developments, including synthesis, characterization, and applications, in Nanoelectronics, Luminescence, Drug Delivery, Memristors, Solar Cells and Semiconductors.

978-3-03835-337-9 (paperback), 212 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-037-8) and eBook (978-3-03826-721-8) at same price.

Shape Memory Alloys: Properties, Technologies, Opportunities

Eds. Natalia Resnina and Vasili Rubanik
Materials Science Foundations Vols. 81-82

The collective monograph consists of five parts: Theory and modeling of martensitic transformation and functional properties; Martensitic transformations and shape memory effects; Controlling the functional properties of shape memory alloys; Shape memory alloys with complex structure; Application of shape memory alloys) covering of all aspects of shape memory alloys from theory and modelling to applications. It presents the scientific results obtained by leading scientific teams studying shape memory alloys in the former Soviet Republics together with their colleagues from other countries during the last decade.

978-3-03835-357-7 (paperback), 640 pages, 2015, US\$262.00/€190.00, also available on CD (978-3-03859-059-0) and eBook (978-3-03826-742-3) at same price.

Ultra Clean Processing of Semiconductor Surfaces XII

Eds. Paul Mertens, Marc Meuris and Marc Heyns
Solid State Phenomena Vol. 219

Collection of selected, peer reviewed papers from the 12th International Symposium on Ultra Clean Processing of Semiconductor Surfaces (UCPSS), September 21-24, 2014, Brussels, Belgium. The 71 papers are grouped as follows: Chapter 1: Cleaning for FEOL Applications, Chapter 2: Cleaning for FEOL Applications: Beyond-Si Active Area, Chapter 3: Wet Etching for FEOL Applications, Chapter 4: Wet Processing of High Aspect Ratio Structures, Chapter 5: Fluid Dynamics, Cleaning Mechanics, Chapter 6: Photo Resist Performance and Rework, Chapter 7: Cleaning for BEOL Interconnect Applications, Chapter 8: Cleaning for 3D Applications, Chapter 9: Contamination Control and AMC, Chapter 10: Cleaning and Wet Etching for Semiconductor Photo-Voltaic Cells.

978-3-03835-242-6 (paperback), 350 pages, 2015, US\$207.00/€150.00, also available on CD (978-3-03795-938-1) and eBook (978-3-03826-626-6) at same price.

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2014 China Functional Materials Technology and Industry Forum

Eds. Guangming Zhao, Lixin Chen, Yu Tang, Lang He, Bin Long, Zunyu Nie and Haohua Chen
Materials Science Forum Vols. 809-810

Collection of selected, peer reviewed papers from the 2014 China Functional Material Technology and Industry Forum (CFMTIF 2014), August 26-28, 2014, Xi'an, China. The 149 papers are grouped as follows: Chapter 1: Nanoscale Materials and Nanocomposites; Chapter 2: Microscale Materials and Thick Films; Chapter 3: Polymer Materials; Chapter 4: Metallic Materials and Alloys; Chapter 5: Composites; Chapter 6: Biomaterials; Chapter 7: Thin Film and Coating Materials; Chapter 8: Optical, Electrical and Sensing Material Properties; Chapter 9: Energy Materials; Chapter 10: Natural and Environmental Materials.

978-3-03835-352-2 (paperback), 948 pages, 2015, US\$366.00/€265.00, also available on CD (978-3-03859-054-5) and eBook (978-3-03826-737-9) at same price.

A Special Issue in Memory of Dr. Lucio Salgado

Ed. Lucio Salgado (in Memory)
Materials Science Forum Vol. 805

Collection of selected, peer reviewed papers from the 56 Brazilian ceramic conference (CBC), June 3-6, 2012, COLAQB, Latin American Cong. Of Artificial Organs and Biomaterials August 22-25, 2012, TTT VI (VI Brazil conf. on Heat Treatments), June 17-22, 2012. The 120 papers are grouped as follows: I. 7 th Latin American Congress of Artificial Organs and Biomaterials (COLAQB), II. Brazilian Surface Treatments and Exhibition (EBRATS), III. VI Brazilian Conference on Heat Treatment (T.T.T.), IV. 7 th International Conference on Intelligent Processing and Manufacturing of Materials (IPMM), V. 56 Brazilian Ceramic Conference (CBC), VI. Eighth International Latin Conference on Powder Technology (PTECH)

978-3-03835-236-5 (paperback), 776 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-932-9) and eBook (978-3-03826-620-4) at same price.

Advanced Materials and Engineering Materials IV

Ed. Katsuyuki Kida
Advanced Materials Research Vol. 1082

Collection of selected, peer reviewed papers from the 2014 4th International Conference on Advanced Materials and Engineering Materials (4th ICAMEM2014), October 16-17, 2014, Ningbo, China and October 19-20, Hong Kong, China. The 115 papers are grouped as follows: Chapter 1: Behavior and Characterization of Materials, Chapter 2: Material Processing, Chapter 3: Heat Treatment of Metals, Chapter 4: Concrete, Rock, Civil Engineering, Chapter 5: Fluid Mechanics, Heat Transfer, Chapter 6: Strength of Materials, Accidents, Corrosion, Chapter 7: Films, Surface Analysis, FPGA and ROM, Chapter 8: Machine Parts and Mechanisms of Technological Equipment, Control and Automation, Chapter 9: Sensors and Measurement.

978-3-03835-367-6 (paperback), 598 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03859-069-9) and eBook (978-3-03826-752-2) at same price.

Advanced Measurement and Test IV

Eds. Ankrew Parvel and Andy Wu
Advanced Materials Research Vol. 1083

Collection of selected, peer reviewed papers from the 2014 4th International Conference on Advanced Measurement and Test, (AMT 2014), November 1-2, 2014, Wuhan, China. The 37 papers are grouped as follows: Chapter 1: Materials Science; Chapter 2: Material Processing and Testing Technology; Chapter 3: Monitoring, Detection, Testing and Measurement Systems and Technologies.

978-3-03835-374-4 (paperback), 230 pages, 2015, US\$124.00/€90.00, also available on CD (978-3-03859-076-7) and eBook (978-3-03826-759-1) at same price.

Advanced Powder Technology IX

Eds. Francisco Ambrozio Filho and Aloisio Nelmo Klein
Materials Science Forum Vol. 802

Collection of selected, peer reviewed papers from the Ninth International Latin American Conference on Powder Technology (PTECH 2013), October 27 – 29, 2013, São Paulo, Brazil. The 114 papers are grouped as follows: Chapter 1: Synthesis; Chapter 2: Processing; Chapter 3: Properties; Chapter 4: Applications.

978-3-03835-354-6 (paperback), 720 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03859-056-9) and eBook (978-3-03826-739-3) at same price.

Advanced Research in Materials and Engineering Applications

Eds. Nor Azwadi Che Sidik and Syahrullail Samion
Applied Mechanics and Materials Vol. 695

Collection of selected, peer reviewed papers from the World Virtual Conference on Advanced Research in Materials and Engineering Applications, September 22-26, 2014, Kuala Lumpur, Malaysia. The 196 papers are grouped as follows: Chapter 1: Material Science; Chapter 2: Thermo, Fluid and Flow Research; Chapter 3: Applied Mechanics, Mathematical Modelling, Algorithms, Numerical Methods and Simulation; Chapter 4: Power and Energy Applications, Electrical

Research; Chapter 5: Detection, Measurement, Instrumentation, Assessment.

978-3-03835-339-3 (paperback), 890 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03859-040-8) and eBook (978-3-03826-724-9) at same price.

Advancement in Manufacturing Processes

Ed. Rupinder Singh
Materials Science Forum Vol. 808

The manufacturing processes have been in evidence for the past hundred years and are being widely used in diverse areas. Among various manufacturing processes, casting, welding, forging, non-traditional manufacturing processes etc are commercially used as manufacturing solutions. This special issue provides an overview of emerging technologies to the areas of Rapid tooling, Rapid moulding, Rapid casting, Die castings, In-process measurement and monitoring for precision/ultra-precision processes, Surface characterisation, Metrology applied to precision/ultra-precision processes and Traditional and Non-Traditional machining processes. The readers from academics, researchers, industrial practitioners and university students specialising in castings, rapid prototyping, manufacturing processes, and related fields may get benefit from these specialized papers.

978-3-03835-350-8 (paperback), 134 pages, 2015, US\$90.00/€124.00, also available on CD (978-3-03859-052-1) and eBook (978-3-03826-735-5) at same price.

Advances in Fracture and Damage Mechanics XIII

Eds. J. Alfaiate and M.H. Aliabadi
Key Engineering Materials Vol. 627

Collection of selected, peer reviewed papers from the 13th International Conference on Fracture and Damage Mechanics (FDM 2014), September 23-25, 2014, São Miguel Island, Azores, Portugal. The FDM2014 proceedings cover a wide range of topics: Failure analysis, Fracture Mechanics, Composites, Multiscale Modelling, Micromechanics, Structural Health Monitoring, Damage Tolerance, Corrosion, Creep, Non-linear problems, Dynamic Fracture, Residual Stress, Environmental effects, Crack Propagation, Metallic and Concrete Materials, Probabilistic Aspects, Computer Modelling Methods (Finite Elements, Boundary Elements and Meshless), Microstructural and Multiscale Aspects.

978-3-03835-235-8 (paperback), 510 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-931-2) and eBook (978-3-03826-619-8) at same price.

Advances in Manufacturing Engineering

Eds. Tomasz Giesko, Jerzy Smolik and Andrzej Zbrowski
Solid State Phenomena Vol. 223

Collection of selected, peer reviewed papers from the Conference on Future Engineering, September 25-26, 2014, Korytnica, Poland. The 43 papers are grouped as follows: Chapter 1: Materials Synthesis and Preparation, Chapter 2: Material Properties, Characterisation and Application, Chapter 3: Composites and Ceramics, Chapter 4: Films and Coatings, Chapter 5: Cathode Materials Research, Chapter 6: Biomedical Material Research.

978-3-03835-335-5 (paperback), 404 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-035-4) and eBook (978-3-03826-719-5) at same price.

Corrosion in Power Industry

Eds. Maroś Halama and Jan Stoullil
Materials Science Forum Vol. 811

Nowadays trend in application of eco policy, more strict legislative and globalisation in economy together with research and development in emerging technologies such as nanotechnology bringing also new corrosion challenges into the power industry sector. New alloys and composite materials, eco-friendly energy systems, effective monitoring techniques and sophisticated prediction methods contribute on safer and more reliable operation of energy units. All up-mentioned circumstances required interdisciplinary approach to build perspective solutions with aim to minimize degradation process of components made from different materials used in power industry. In this special issue You can find papers dealing with application of nanotechnologies, corrosion monitoring techniques, materials characterisation but also several case studies from corrosion failures in power industry. All these information contribute on expansion of knowledge database, which is highly sufficient in the area with main aim to prevent against corrosion failures.

978-3-03835-361-4 (paperback), 112 pages, 2015, US\$124.00/€90.00, also available on CD (978-3-03859-063-7) and eBook (978-3-03826-746-1) at same price.

Environmentally Assisted Wear Processes

Eds. Ellina Łunarska, Jarosław Chmiel, Alexander Balitskii and Małgorzata Szyszko
Solid State Phenomena Vol. 225

This volume contains a collection of papers from International Conference „Wear Processes 2012” which were held in Świnoujście, Poland, from 12 to 14 of September 2012. The Conference is organized periodically and is a continuation of the seminars series concerning “Testing and modelling of complex wear processes”, that are organized since 2003. The Initiator of the Conference is Jarosław Chmiel, PhD. Eng. from Maritime University of Szczecin. The aim of the Conference is a creating a forum of information exchange for researchers dealing with issues of wear phenomena caused by more as one process acting on a material simultaneously, the subject somewhat neglected at most conferences focusing on wear problems. The main topics of the Conference are as

follows:- fundamental problems of deterioration and wear of materials.- simple and complex deterioration processes.- hydrogen degradation of materials.- wear processes accelerated by the hydrogen degradation and corrosion.- modeling of wear processes.- causes of abnormally rapid of wear. Since 2010, the Conference is held under the auspices of the European Structural Integrity Society, Technical Committee TC10 "Environmentally Assisted Cracking".

978-3-03835-381-2 (paperback), 212 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-083-5) and eBook (978-3-03826-766-9) at same price.

Fatigue and Fracture Mechanics XXV

Ed. Dariusz Skibicki

Solid State Phenomena Vol. 224

Collection of selected, peer reviewed papers from the 25th Polish National Conference on „Fatigue and Fracture Mechanics”, May 20-23, 2014, Fojutowo, Poland. The 45 papers are grouped as follows: Chapter 1: Fatigue of Materials, Chapter 2: Fracture Behaviour of Materials, Chapter 3: Other Aspects of Material Strength.

978-3-03835-324-9 (paperback), 300 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-024-8) and eBook (978-3-03826-708-9) at same price.

Heat and Mass Transfer Processes: New Developments and Applications

Ed. J.M.P.Q. Delgado

Diffusion Foundations Vol. 3

The purpose of this Volume is to provide a collection of recent contributions in the field of heat and mass transfer in porous media. It includes a set of new developments in the field of basic and applied research work on the physical and chemical aspects of heat and mass transfer phenomena in a porous medium domain, as well as related material properties and their measurements. This volume contents include both theoretical and experimental developments, providing a self-contained major reference that is appealing to both the scientists and the engineers. The topics that will be presented in this Volume will be going to the encounter of a variety of scientific and engineering disciplines, such as chemical, civil, agricultural, mechanical engineering, etc.... The book is divided in several chapters that intend to be a resume of the current state of knowledge for benefit of professional colleagues, scientists, students, practitioners, lecturers and other interested parties to network.

978-3-03835-373-7 (paperback), 166 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-075-0) and eBook (978-3-03826-758-4) at same price.

High Performance Concrete – Innovation & Utilization

Eds. Gai-Fei Peng, Jun Zhang, Ting-Yu Hao and Fa-Guang Leng

Key Engineering Materials Vols. 629-630

Collection of selected, peer reviewed papers from the 10th International Symposium on High Performance Concrete – Innovation & Utilization (HPC 2014), September 16-18, 2014, Beijing, China. The 87 papers are grouped as follows: Chapter 1: High-Performance and Ultra-High Performance Concrete, Chapter 2: Concrete Durability and Mechanical Properties, Chapter 3: Fire Resistance, Chapter 4: Concrete Sustainability, Recycling and Utilization, Chapter 5: Mix Proportion Design and Hydration, Chapter 6: Self-Compacting Concrete, Chapter 7: Special Raw Materials, Concrete Composites and Additives, Chapter 8: Structural Performance and Modeling, Chapter 9: Testing Methods, Evaluation and Quality.

978-3-03835-276-1 (paperback), 658 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-972-5) and eBook (978-3-03826-660-0) at same price.

Innovative Research in Hot Stamping Technology

Eds. Mingtu Ma and Yisheng Zhang

Advanced Materials Research Vol. 1063

Collection of selected, peer reviewed papers from the 1st International Conference on Hot Stamping of UHSS (ICHSS 2014), August 21-24, 2014, Chongqing, China. The 66 papers are grouped as follows: Chapter 1: Material Technologies and Testing; Chapter 2: Forming and Stamping Technologies and Investigations; Chapter 3: Modeling, Simulation and Calculation Methods; Chapter 4: Equipments and Its Application.

978-3-03835-363-8 (paperback), 370 pages, 2015, US\$166.00/€120.00, also available on CD (978-3-03859-065-1) and eBook (978-3-03826-748-5) at same price.

Material Engineering Practice IX

Eds. Mária Mihaliková and Pavol Zubko

Key Engineering Materials Vol. 635

These are the proceedings of the 9th Scientific-Technical Conference on "Material in engineering practice, 2014". Its content was intended to present innovative materials on improving the properties of materials and quality of materials and, also on the degradation of properties during operation. Special attention was paid to the prediction of mechanical and technology materials properties as well as modern methods for testing the characteristics of materials.

978-3-03835-344-7 (paperback), 242 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-046-0) and eBook (978-3-03826-729-4) at same price.

Materials and Technologies for Green Construction

Ed. Mohammad Arif Kamal

Key Engineering Materials Vol. 632

The need of today is to have energy efficient buildings materials and construction technologies that cater to this rising need. Hence, selecting construction and finishing materials that have low embodied energy and have less operational and maintenance cost is the most powerful tool for the architects, designers and the constructors to achieve high energy efficiency in buildings. This special volume on 'Materials and Technologies for Green Construction' contains Ten chapters which address a wide range of issues pertaining to building materials and technologies with reference to energy efficiency. This volume demonstrates that alternatives to modern building materials are available and that today it is possible to produce building materials and select raw materials from an ecological perspective.

978-3-03835-329-4 (paperback), 150 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-029-3) and eBook (978-3-03826-713-3) at same price.

Materials for Energy and Nano Convergence Convergent Nanotechnologies

Advanced Materials Research Vol. 1086

As an integral part of the NBIC technologies paradigm, nanotechnologies in their turn are rather convergent. Convergence of nanotechnologies leads to creation of new materials and technologies which are needed in almost all fields of human activity. A vivid example of the convergence of nanotechnology is this collection of papers, which includes materials of scientific and experimental research from different disciplines, but which are united by one concept – convergent nanotechnologies.

978-3-03835-076-7 (paperback), 300 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03795-771-4) and eBook (978-3-03826-457-6) at same price.

Materials Science and Advanced Technologies in Manufacturing II

Eds. X.Q. Liu, Ali I. Al-Mosawi and B. Li

Advanced Materials Research Vol. 1081

Collection of selected, peer reviewed papers from the 4th International Conference on Materials Science and Engineering (ICMSE2014), December 27-28, 2014, Jiujiang, China. The 71 papers are grouped as follows: Chapter 1: Materials Science and Technologies; Chapter 2: Nanomaterials and Technologies; Chapter 3: Metal Materials and Alloys; Chapter 4: Polymer Materials; Chapter 5: Composites and Construction Materials; Chapter 6: Physical Properties of Materials.

978-3-03835-371-3 (paperback), 380 pages, 2015, US\$166.00/€120.00, also available on CD (978-3-03859-073-6) and eBook (978-3-03826-756-0) at same price.

Materials Science and Technology

Eds. Ping He and Jongee Park

Advanced Materials Research Vol. 1064

Collection of selected, peer reviewed papers from the 2014 2nd International Conference on Advances in Materials Science and Engineering (AMSE 2014), October 1-2, 2014, Dubai, UAE. The 37 papers are grouped as follows: Chapter 1: Materials Science and Technology; Chapter 2: Applied Mechanics; Chapter 3: Materials Processing and Manufacturing, Coating Engineering; Chapter 4: Advanced Materials and Manufacturing Design, Modelling, Simulation Technologies.

978-3-03835-346-1 (paperback), 238 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-048-4) and eBook (978-3-03826-731-7) at same price.

Mechanics of Masonry Structures Strengthened with Composite Materials

Eds. A. Di Tommaso, C. Gentilini and G. Castellazzi

Key Engineering Materials Vol. 624

The aim of this book is to present and review the latest achievements in modeling, testing and controlling masonry structures strengthened with composite materials. The innovative strengthening apparatus here considered consists in composites with continuous fibres (carbon, aramid, glass, ...) reinforcing polymer or inorganic matrices. The special problems regarding the strengthening of monumental historic constructions, considering appropriate techniques in the domain of Structural Architecture and Architecture Conservation, are focused in many scientific articles.

978-3-03835-203-7 (paperback), 690 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-899-5) and eBook (978-3-03826-586-3) at same price.

Mechatronic Systems and Materials VI

Eds. Algirdas V. Valiulis, Olegas Černašėjus and Vadim Mokšin

Solid State Phenomena Vols. 220-221

Collection of selected, peer reviewed papers from the 9th International Conference on Mechatronic Systems and Materials (MSM 2013), July 1-3, 2013, Vilnius, Lithuania. The 170 papers are grouped as follows: Chapter 1: Mechatronic Systems I: (Industrial Robotics; Microrobotics; Mobile Robots; Analysis of

Vibration), Chapter 2: Mechatronic Systems II: (Optimization; Optimal Design; Integrated Diagnostics; Failure Analysis; Tribology in Mechatronics Systems; Analysis of Signals), Chapter 3: Mechatronic Systems III: (Applications of Artificial Intelligence; Sensors and Actuators in Mechatronics; Control of Mechatronics Systems), Chapter 4: Materials: (Multifunctional and Smart Materials; Metallic Alloys; Piezoelectric Materials; Nanomaterials; Ceramics and Glasses; Biomaterials and Technology; Coatings and Properties), Chapter 5: Engineering Technologies: (Advanced and Digital Manufacturing; Systems Engineering; Micro and Nano Technologies; Materials Joining Technologies; Modeling and Optimization of Processes), Chapter 6: Education: (New Trends and Curricula for BSC and MSC in Two Tier Higher Education in the Fields of Mechatronic Systems and Materials Science).

978-3-03835-227-3 (paperback), 1068 pages, 2015, US\$345.00/€250.00, also available on CD (978-3-03795-923-7) and eBook (978-3-03826-611-2) at same price.

Pharmaceutical Formulation and Development

Eds. Pomsak Sriamornsak, Sontaya Limmatvapirat and Suchada Piriayaprasart
Advanced Materials Research Vol. 1060

Collection of selected, peer reviewed papers from the 3rd International Conference and Exhibition on Pharmaceutical, Nutraceutical and Cosmeceutical Technology (PharmaTech 2014), December 1-2, 2014, Bangkok, Thailand. The 56 papers are grouped as follows: Chapter 1: Formulation, Manufacture and Fabrication, Characterization and Evaluation of Materials and Dosage Forms; Chapter 2: Drug and Material Design, Synthesis and Process Technologies; Chapter 3: Biomedical and Health Applications.

978-3-03835-340-9 (paperback), 254 pages, 2015, US\$138.00/€100.00, also available on CD (978-3-03859-041-5) and eBook (978-3-03826-725-6) at same price.

Precision Engineering and Nanotechnology V

Ed. Liang-Chia Chen
Key Engineering Materials Vol. 625

Collection of selected, peer reviewed papers from the 5th International Conference on Asian Society for Precision Engineering and Nanotechnology (ASPEN 2013), November 12-15, 2013, Taipei, Taiwan. The 124 papers are grouped as follows: Precision Metrology, Precision Machining, Optical Measurement, Manufacturing Systems and Machine Tools, Motion Control/ Polishing and Grinding, Advanced Moulding and Precision Forming/ Advanced Technologies, Non-Conventional Machining, Precision Machine Design & Mechatronics, High Precision Mechatronics / Robotics, Others.

978-3-03835-211-2 (paperback), 784 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03795-907-7) and eBook (978-3-03826-594-8) at same price.

Prospects of Fundamental Sciences Development

Eds. Irina Kurzina and Anna Godymchuk
Advanced Materials Research Vol. 1085

Collection of selected, peer reviewed papers from the XI International Conference Prospects of Fundamental Sciences Development (PFSD-2014), April 22-25, 2014, Tomsk, Russia. The 97 papers are grouped as follows: Chapter 1: Chemistry and Physics of Materials, Environmental Materials; Chapter 2: Structure Materials, Mechanics and Dynamics of Materials; Chapter 3: Material Science in Biology and Medicine; Chapter 4: Mathematical Methods in Materials Science.

978-3-03835-375-1 (paperback), 540 pages, 2015, US\$166.00/€120.00, also available on CD (978-3-03859-077-4) and eBook (978-3-03826-760-7) at same price.

Radiation and Nuclear Techniques in Material Science

Eds. Oleg Y. Dolmatov, Igor B. Stepanov and Sergey N. Liventsov
Advanced Materials Research Vol. 1084

Collection of selected, peer reviewed papers from the Conference on Physical-Technical Problems of Nuclear Science, Energy Generation and Power Industry, (PTPAI-2014), June 5-7, 2014, Tomsk, Russia. The 151 papers are grouped as follows: Chapter 1: Materials Science and Technologies; Chapter 2: Plasma, Microwave, Ion, Electron and Isotope Technologies; Chapter 3: Nuclear Engineering and Fuel Cycles; Chapter 4: Radiation Technologies in Medicine; Chapter 5: Computation, Automation, Information Technologies and Safety Systems in Nuclear Industry.

978-3-03835-376-8 (paperback), 776 pages, 2015, US\$276.00/€200.00, also available on CD (978-3-03859-078-1) and eBook (978-3-03826-761-4) at same price.

Recent Highlights in Advanced Functional Materials and Biomedical Research

Ed. Xinhua Yuan
Key Engineering Materials Vol. 636

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