Acoustics Analysis Of Speaker Cadfem

Integration of Practice-Oriented Knowledge Technology: Trends and ProspectivesArchitecture in the Digital AgeDesigning Quiet StructuresAeroacustic and Vibroacoustic Advancement in Aerospace and Automotive SystemsAcoustics & Vibration of Mechanical StructuresSheet Metal 2013Acoustics and Vibration of Mechanical Structures—AVMS-2017Technology in Mathematics TeachingLaboratory AstrochemistryInorganic BiomaterialsIntroduction to the Ansys Parametric Design Language (Apdl)Scientific Computing in Electrical EngineeringModel Order Reduction: Theory, Research Aspects and ApplicationsFunctional Tissue Engineering3D Printed Microfluidic DevicesFinite Element Simulations with ANSYS Workbench 19Mesh Processing in Medical Image Analysis 2012High-Performance Elastomeric Materials Reinforced by Nano-CarbonsDigital Human ModelingFluid-structure InteractionsComputational AcousticsLe CorbusierAdvances in Product Family and Product Platform DesignBioseparation EngineeringThe Optimal Homotopy Asymptotic MethodModern Electric, Hybrid Electric, and Fuel Cell VehiclesFinite Element Modeling and Simulation with ANSYS Workbench, Second EditionNumerical Modeling in Micromechanics via Particle MethodsSensor Systems SimulationsWoven CompositesThe First Outstanding 50 Years of "Università Politecnica delle Marche"Biomechanical SystemsAkustik und SchallschutzComputational Acoustics of Noise Propagation in Fluids - Finite and Boundary Element MethodsIntelligent Automation and Systems EngineeringAdvanced Finite Element Contact BenchmarksThe Particle OdysseyThe Duffing EquationBiomimetic Research for Architecture and Building ConstructionProgress in Modelling and Simulation

Integration of Practice-Oriented Knowledge Technology: Trends and Prospectives

This book emphasizes in detail the applicability of the Optimal Homotopy Asymptotic Method to various engineering problems. It is a continuation of the book "Nonlinear Dynamical Systems in Engineering: Some Approximate Approaches", published at Springer in 2011 and it contains a great amount of practical models from various fields of engineering such as classical and fluid mechanics, thermodynamics, nonlinear oscillations, electrical machines and so on. The main structure of the book consists of 5 chapters. The first chapter is introductory while the second chapter is devoted to a short history of the development of homotopy methods, including the basic ideas of the Optimal Homotopy Asymptotic Method. The last three chapters, from Chapter 3 to Chapter 5, are introducing three distinct alternatives of the Optimal Homotopy Asymptotic Method with illustrative applications to nonlinear dynamical systems. The third chapter deals with the first alternative of our approach with two iterations. Five applications are presented from fluid mechanics and nonlinear oscillations. The Chapter 4 presents the Optimal Homotopy Asymptotic Method with a single iteration and solving the linear equation on the first approximation. Here are treated 32 models from different fields of engineering such as fluid mechanics, thermodynamics, nonlinear damped and undamped oscillations, electrical machines and even from physics and biology. The last chapter is devoted to the Optimal Homotopy Asymptotic Method with a single iteration but without solving

the equation in the first approximation.

Architecture in the Digital Age

This book constitutes the refereed proceedings of the International Workshop on Mesh Processing in Medical Image Analysis, MeshMed 2012, held in Nice, France, in October 2012 in conjunction with MICCAI 2012, the 15th International Conference on Medical Image Computing and Computer Assisted Intervention. The book includes 16 submissions, 8 were selected for presentation along with the 3 plenary talks representative of the meshing, and 8 were selected for poster presentations. The papers cover a broad range of topics, including statistical shape analysis and atlas construction, novel meshing approaches, soft tissue simulation, quad dominant meshing and mesh based shape descriptors. The described techniques were applied to a variety of medical data including cortical bones, ear canals, cerebral aneurysms and vascular structures.

Designing Quiet Structures

Progress in modelling; Defined system modelling; Large-scale system modelling; Experimentation with models; Modelling systems; Graphical techniques in modelling; Progress in simulation; Large-scale system simulation; Simulation software design; Simulation systems.

Aeroacustic and Vibroacoustic Advancement in Aerospace and Automotive Systems

Inorganic biomaterials include materials for e.g. dental restorations, biocompatible materials for orthopedic appliances and bioactive materials. However, inorganic biomaterials are also developed for use in tissue regeneration, e.g. wound healing. These products either consist of crystalline phases, such as Al_2O_3 or ZrO_2, which makes them suitable for use in hip bone replacement or they are composed of tricalcium phosphate and used as resorbable biomaterials. Or, they contain glassy phases, such as BIOGLASS®, and are employed as bioactive biomaterials to bond to living bone. Inorganic biomaterials are also used to develop inorganic – organic composites which are suitable for use as bioactive products or to produce dental filling materials. In general, the development of composites is state of the art. However, it is also a future technology. Biomaterials for dental restorations consist of glassy or crystalline phases. Glass-ceramics represent a special group of inorganic biomaterials for dental restorations. Glass-ceramics are composed of at least one inorganic glassy phase and at least one crystalline phase. These products demonstrate a combination of properties, which include excellent aesthetics and the ability to mimic the optical properties of natural teeth, as well as high strength and toughness. They can be processed using special processing procedures, e.g. machining, moulding and sintering, to fabricate high quality products. Sintered oxide ceramics, such as Al_2O_3 or ZrO_2, are also used for the fabrication of dental restorations. These products can be veneered with other biomaterials, or they can be polished to achieve the best possible surface quality. The manuscripts dealing with inorganic biomaterials should focus on the development of the products, especially on their chemical nature, the phase formation processes and all the

details related to their processing. Very important are the mechanisms of phase formation. The reader of the manuscript should understand all of these reactions in detail. As far as application is concerned, it is important to describe the main properties of the developed products based on the valid standards, e.g. the ISO standards. The papers published should show that the products comply with these standards. It is very important to understand the relationship between biomass and biomaterials. This will help young scientists to follow the development of biomaterials with new, unexpected properties. He manuscripts published in "Frontiers" should also focus on the application of the biomaterials. Every manuscript should show the most important application of the material presented. There are different journals that deal with specific product categories, eg "Dental Materials". However, "Frontiers" should allow young scientists to publish their research results using all kinds of inorganic biomaterials. On the other hand, fundamental discussion and analysis of the findings should be encouraged and conclusions about possible applications in the field of medicine and dentistry should be drawn.

Acoustics & Vibration of Mechanical Structures

"Each day of my life has been dedicated in part to drawing. I have never stopped drawing and painting, seeking, where I could find them, the secrets of form."--Le Corbusier Charles-Édouard Jeanneret, known as Le Corbusier (1887-1965), is famous for transforming 20th-century architecture and urbanism. Less attention has been paid to his artistic production, although he began his career as a painter. Le Corbusier indeed studied under Charles L'Éplattenier and, together with the artist Amédée Ozenfant, founded the Purist movement in the manifesto After Cubism. Even after Le Corbusier turned to architecture, he continued to paint and draw. His thousands of drawings, rarely exhibited but meticulously stored in two watch cabinets from his family home, were particularly significant; he considered his work as a draftsman to be fundamental to his creative process. Beautifully illustrated with more than 300 drawings that have never before been published for an English readership, this revealing book charts the evolution of Le Corbusier's process from his youthful travels abroad to his arrival and maturation in Paris. Danièle Pauly shows how his drawings functioned within an intimate zone of private reflection and situates his work within the broader artistic and intellectual currents of Cubism, Purism, Primitivism, and Surrealism. In addition to providing a crucial new background against which to comprehend Le Corbusier's architecture and urbanism, this important volume advocates for understanding him alongside leading modern artists including Pablo Picasso and Fernand Léger.

Sheet Metal 2013

Intelligent systems are required to facilitate the use of information provided by the internet and other computer based technologies. This book describes the state-of-the-art in Intelligent Automation and Systems Engineering. Topics covered include Intelligent decision making, Automation, Robotics, Expert systems, Fuzzy systems, Knowledge-based systems, Knowledge extraction, Large database management, Data analysis tools, Computational biology, Optimization algorithms, Experimental designs, Complex system identification, Computational modeling, Systems simulation, Decision modeling, and industrial applications.

Acoustics and Vibration of Mechanical Structures—AVMS-2017

This unique volume presents the latest developments in the field of advanced woven and braided textile composites, with particular emphasis on computational approaches (finite elements, meshfree). Advanced textile composites such as woven, braided, knitted and stitched fabrics are increasingly being used as structural materials in industrial applications due to their efficiency at reinforcing more directions within a single layer and their ability to conform to surfaces with complex curvatures. Furthermore, textile composites provide improved impact resistance, exceptional thermal, fatigue and corrosion resistance, as well as being easier and cheaper to handle and fabricate compared to UD composites.Topics covered in this book include: 2D and 3D plain, twill, satin woven and braided composites, micro-level and macro-level modelling, failure mechanisms, theoretical studies on cryogenic crack behaviour and the specific deformation modes of textile reinforcements, which include the kinematic and hypoelastic models.This book will be particularly relevant to professional engineers, graduate students and researchers interested in composite materials.

Technology in Mathematics Teaching

This book starts by introducing the fundamental concepts of mathematical continuum mechanics for fluids and solids and their coupling. Special attention is given to the derivation of variational formulations for the subproblems describing fluid- and solid-mechanics as well as the coupled fluid-structure interaction problem. Two monolithic formulations for fluid-structure interactions are described in detail: the well-established ALE formulation and the modern Fully Eulerian formulation, which can effectively deal with problems featuring large deformation and contact. Further, the book provides details on state-of-the-art discretization schemes for fluid- and solid-mechanics and considers the special needs of coupled problems with interface-tracking and interface-capturing techniques. Lastly, advanced topics like goal-oriented error estimation, multigrid solution and gradient-based optimization schemes are discussed in the context of fluid-structure interaction problems.

Laboratory Astrochemistry

The book covers a broad range of topics related to acoustics and vibration problems encountered in various fields of engineering. It presents some analytical, numerical and experimental techniques applicable to analyze linear and non-linear noise and vibration problems. Volume is indexed by Thomson Reuters CPCI-S (WoS). The 58 papers are grouped as follow: Chapter 1: Analytical Approaches to Nonlinear Vibrations; Chapter 2: Damage Assessment of Structures; Chapter 3: Modeling and Simulation Techniques with Applications; Chapter 4: Biomechanics; Chapter 5: Environmental and Occupational Noise and Vibrations; Chapter 6: Structural Vibration, Attenuators and Isolation.

Inorganic Biomaterials

Schallschutz und Akustik vermittelt allen Fachplanern, Architekten, aber auch

interesierten Bauherren praxisnahe Kenntnisse zum Thema Akustik im Hochbau, angefangen von normativen Regelungen über Planungs- und Prognosemethoden bis hin zu den Bereichen Raumakustik, Bauakustik und Schallschutz im Städtebau. Typologische Kapitel erläutern beispielhaft den richtigen Umgang mit der Thematik an verschiedenen Gebäudearten wie beispielsweise Wohn- und Bürogebäuden, Schulen, Kindergärten, Hörsälen, Veranstaltungsräumen etc. Der Band soll das Bewußtsein schärfen, wie angemessene akustische Bedingungen zum Erfolg eines Projektes beitragen können. Ideale Raumgestaltungen für eine optimale Akustik

Introduction to the Ansys Parametric Design Language (Apdl)

Scientific Computing in Electrical Engineering

The Duffing Equation: Nonlinear Oscillators and their Behaviour brings together the results of a wealth of disseminated research literature on the Duffing equation, a key engineering model with a vast number of applications in science and engineering, summarizing the findings of this research. Each chapter is written by an expert contributor in the field of nonlinear dynamics and addresses a different form of the equation, relating it to various oscillatory problems and clearly linking the problem with the mathematics that describe it. The editors and the contributors explain the mathematical techniques required to study nonlinear dynamics, helping the reader with little mathematical background to understand the text. The Duffing Equation provides a reference text for postgraduate and students and researchers of mechanical engineering and vibration / nonlinear dynamics as well as a useful tool for practising mechanical engineers. Includes a chapter devoted to historical background on Georg Duffing and the equation that was named after him. Includes a chapter solely devoted to practical examples of systems whose dynamic behaviour is described by the Duffing equation. Contains a comprehensive treatment of the various forms of the Duffing equation. Uses experimental, analytical and numerical methods as well as concepts of nonlinear dynamics to treat the physical systems in a unified way.

Model Order Reduction: Theory, Research Aspects and Applications

Particle methods have seen increasing use in several engineering and scientific fields, both because of their unique modelling capabilities and the availability of the necessary computational power. This title focuses on their theory and application.

Functional Tissue Engineering

This book comprises a first survey of the Collaborative Research Center SFB-TRR 141 'Biological Design and Integrative Structures – Analysis, Simulation and Implementation in Architecture', funded by the Deutsche Forschungsgemeinschaft since October 2014. The SFB-TRR 141 provides a collaborative framework for architects and engineers from the University of Stuttgart, biologists and physicists from the University of Freiburg and geoscientists and evolutionary biologists from

the University of Tübingen. The programm is conceptualized as a dialogue between the disciplines and is based on the belief that that biomimetic research has the potential to lead everyone involved to new findings far beyond his individual reach. During the last few decades, computational methods have been introduced into all fields of science and technology. In architecture, they enable the geometric differentiation of building components and allow the fabrication of porous or fibre-based materials with locally adjusted physical and chemical properties. Recent developments in simulation technologies focus on multi-scale models and the interplay of mechanical phenomena at various hierarchical levels. In the natural sciences, a multitude of quantitative methods covering diverse hierarchical levels have been introduced. These advances in computational methods have opened a new era in biomimetics: local differentiation at various scales, the main feature of natural constructions, can for the first time not only be analysed, but to a certain extent also be transferred to building construction. Computational methodologies enable the direct exchange of information between fields of science that, until now, have been widely separated. As a result they lead to a new approach to biomimetic research, which, hopefully, contributes to a more sustainable development in architecture and building construction.

3D Printed Microfluidic Devices

This book is a collection of selected papers presented at the last Scientific Computing in Electrical Engineering (SCEE) Conference, held in Sinaia, Romania, in 2006. The series of SCEE conferences aims at addressing mathematical problems which have a relevance to industry, with an emphasis on modeling and numerical simulation of electronic circuits, electromagnetic fields but also coupled problems and general mathematical and computational methods.

Finite Element Simulations with ANSYS Workbench 19

This book is a printed edition of the Special Issue "3D Printed Microfluidic Devices" that was published in Micromachines

Mesh Processing in Medical Image Analysis 2012

This book is the first of its kind. It provides the reader with a logical and highly quantitative means of including noise as a parameter in the early design stages of a machine or structure. The unique and unified methodology builds upon the familiar disciplines of acoustics, structural dynamics and optimization. It also exemplifies the art of simplification - the essence of all good engineering design. Strategies for designing quiet structures require extensive analytical and experimental tools. For computing the sound power from complex structures the authors recommend a new 3-D, lumped parameter formulation. This fully developed, user-friendly program can be applied generally to noise-control-by-design problems. Detailed instructions for running the application are given in the appendix as well as several sample problems to help the user get started. The authors also describe a new instrument: a specially developed resistance probe used to measure a structure=92s acoustic surface resistance. As an example, the procedure is outlined for measuring the valve cover of an internal combustion

engine. Indeed, throughout the book the reader is presented with actual experiments, numerical and physical that they can replicate in their own laboratory. This is a must-have book for engineers working in industries that include noise control in the design of a product. Its practical and didactic approach also makes it ideally suited to graduate students. First text covering the design of quiet structures Written by two of the leading experts in the world in the area of noise control Strong in its integration of structural dynamics, acoustics, and optimization theory Accompanied by a computer program that allows the computation of sound power Presents numerous applications of noise-control-by-design methods as well as methods for enclosed and open spaces Each chapter is supported by homework problems and demonstration experiments

High-Performance Elastomeric Materials Reinforced by Nano-Carbons

The book provides a survey of numerical methods for acoustics, namely the finite element method (FEM) and the boundary element method (BEM). It is the first book summarizing FEM and BEM (and optimization) for acoustics. The book shows that both methods can be effectively used for many other cases, FEM even for open domains and BEM for closed ones. Emphasis of the book is put on numerical aspects and on treatment of the exterior problem in acoustics, i.e. noise radiation.

Digital Human Modeling

1. The world of particle physics 2. Voyage into the atom 3. The structure of the atom 4. The extraterrestrials 5. The cosmic rain 6. The challenge of the big machines 7. The particle explosion 8. Colliders and image chambers 9. From charm to top 10. The 'whys' of particle physics 11. Futureclash 12. Particles at work Table of particles Further reading/acknowledgements Picture credits Index

Fluid-structure Interactions

Advances in Product Family and Product Platform Design: Methods & Applications highlights recent advances that have been made to support product family and product platform design along with successful applications in industry. This book provides not only motivation for product family and product platform design (i.e., address questions about "why and when should we platform") but also methods and tools to support the design and development of families of products based on shared platforms (i.e. address the "how" and "what" questions about platforming). It begins with a general overview of product family design to introduce the general reader to the topic and then progress to more advanced topics and design theory to help designers, engineers, and project managers plan, architect, and implement platform-based product development strategies for their company. Finally, successful industry applications provide readers and practitioners with case studies and "talking points" to become platform advocates and leaders within their organization.

Computational Acoustics

Finite Element Modeling and Simulation with ANSYS Workbench 18, Second Edition, combines finite element theory with real-world practice. Providing an introduction to finite element modeling and analysis for those with no prior experience, and written by authors with a combined experience of 30 years teaching the subject, this text presents FEM formulations integrated with relevant hands-on instructions for using ANSYS Workbench 18. Incorporating the basic theories of FEA, simulation case studies, and the use of ANSYS Workbench in the modeling of engineering problems, the book also establishes the finite element method as a powerful numerical tool in engineering design and analysis. Features Uses ANSYS WorkbenchTM 18, which integrates the ANSYS SpaceClaim Direct ModelerTM into common simulation workflows for ease of use and rapid geometry manipulation, as the FEA environment, with full-color screen shots and diagrams. Covers fundamental concepts and practical knowledge of finite element modeling and simulation, with full-color graphics throughout. Contains numerous simulation case studies, demonstrated in a step-by-step fashion. Includes web-based simulation files for ANSYS Workbench 18 examples. Provides analyses of trusses, beams, frames, plane stress and strain problems, plates and shells, 3-D design components, and assembly structures, as well as analyses of thermal and fluid problems.

Le Corbusier

The book describes significant multidisciplinary research findings at the Università Politecnica delle Marche and the expected future advances. It addresses some of the most dramatic challenges posed by today's fast-growing, global society and the changes it has caused, while also discussing solutions to improve the wellbeing of human beings. The book covers the main research achievements made in the social sciences and humanities, and includes chapters that focus on understanding mechanisms that are relevant to all aspects of economic and social interactions among individuals. In line with Giorgio Fuà's contribution, the interdisciplinary research being pursued at the Faculty of Economics of Università Politecnica delle Marche is aimed at interpreting the process of economic development in all of its facets, both at the national and local level, with a particular focus on profit and non-profit organizations. Various disciplines are covered, from economics to sociology, history, statistics, mathematics, law, accounting, finance and management.

Advances in Product Family and Product Platform Design

This book is a printed edition of the Special Issue "Advances in Vibroacoustics and Aeroacustics of Aerospace and Automotive Systems" that was published in Applied Sciences

Bioseparation Engineering

The book presents a state-of-art overview of numerical schemes efficiently solving the acoustic conservation equations (unknowns are acoustic pressure and particle velocity) and the acoustic wave equation (pressure of acoustic potential formulation). Thereby, the different equations model both vibrational- and flow-induced sound generation and its propagation. Latest numerical schemes as higher

order finite elements, non-conforming grid techniques, discontinuous Galerkin approaches and boundary element methods are discussed. Main applications will be towards aerospace, rail and automotive industry as well as medical engineering. The team of authors are able to address these topics from the engineering as well as numerical points of view.

The Optimal Homotopy Asymptotic Method

This book comprises chapters featuring a state of the art of research on digital technology in mathematics education. The chapters are extended versions of a selection of papers from the Proceedings of the 13th International Conference on Technology in Mathematics Teaching (ICTMT-13), which was held in Lyon, France, from July 3rd to 6th. ICTMT-13 gathered together over one hundred participants from twenty countries sharing research and empirical results on the topical issues of technology and its potential to improve mathematics teaching and learning. The chapters are organised into 4 themed parts, namely assessment in mathematics education and technology, which was the main focus of the conference, innovative technology and approaches to mathematics education, teacher education and professional development toward the technology use, and mathematics teaching and learning experiences with technology. In 13 chapters contained in the book, prominent mathematics educators from all over the world present the most recent theoretical and practical advances on these themes This book is of particular interest to researchers, teachers, teacher educators and other actors interested in digital technology in mathematics education.

Modern Electric, Hybrid Electric, and Fuel Cell Vehicles

The idea for this book originated during the workshop "Model order reduction, coupled problems and optimization" held at the Lorentz Center in Leiden from S-tember 19–23, 2005. During one of the discussion sessions, it became clear that a book describing the state of the art in model order reduction, starting from the very basics and containing an overview of all relevant techniques, would be of great use for students, young researchers starting in the ?eld, and experienced researchers. The observation that most of the theory on model order reduction is scattered over many good papers, making it dif?cult to ?nd a good starting point, was supported by most of the participants. Moreover, most of the speakers at the workshop were willing to contribute to the book that is now in front of you. The goal of this book, as de?ned during the discussion sessions at the workshop, is three-fold: ?rst, it should describe the basics of model order reduction. Second, both general and more specialized model order reduction techniques for linear and nonlinear systems should be covered, including the use of several related numerical techniques. Third, the use of model order reduction techniques in practical appli- tions and current research aspects should be discussed. We have organized the book according to these goals. In Part I, the rationale behind model order reduction is explained, and an overview of the most common methods is described.

Finite Element Modeling and Simulation with ANSYS Workbench, Second Edition

Finite Element Simulations with ANSYS Workbench 19 is a comprehensive and easy to understand workbook. Printed in full color, it utilizes rich graphics and step-by-step instructions to guide you through learning how to perform finite element simulations using ANSYS Workbench. Twenty seven real world case studies are used throughout the book. Many of these case studies are industrial or research projects that you build from scratch. Prebuilt project files are available for download should you run into any problems. Companion videos, that demonstrate exactly how to perform each tutorial, are also available. Relevant background knowledge is reviewed whenever necessary. To be efficient, the review is conceptual rather than mathematical. Key concepts are inserted whenever appropriate and summarized at the end of each chapter. Additional exercises or extension research problems are provided as homework at the end of each chapter. A learning approach emphasizing hands-on experiences is utilized though this entire book. A typical chapter consists of six sections. The first two provide two step-by-step examples. The third section tries to complement the exercises by providing a more systematic view of the chapter subject. The following two sections provide more exercises. The final section provides review problems. Who this book is for This book is designed to be used mainly as a textbook for undergraduate and graduate students. It will work well in: a finite element simulation course taken before any theory-intensive coursesan auxiliary tool used as a tutorial in parallel during a Finite Element Methods coursean advanced, application oriented, course taken after a Finite Element Methods course

Numerical Modeling in Micromechanics via Particle Methods

Written by leading scientists in the field and intended for a broader readership, this is an ideal starting point for an overview of current research and developments. As such, the book covers a broad spectrum of laboratory astrophysics and chemistry, describing recent advances in experiments, as well as theoretical work, including fundamental physics and modeling chemical networks. For researchers as well as students and newcomers to the field. From the contents: The Astrophysical Background Molecular Spectroscopy Gas Phase Chemistry Molecular Photodissociation Surface Science Dust and Nanoparticle Spectroscopy Formation of Nanoparticles and Solids

Sensor Systems Simulations

This book constitutes the refereed proceedings of the First International Conference on Digital Human Modeling, DHM 2007, held in Beijing, China in July 2007. The papers thoroughly cover the thematic area of digital human modeling, addressing the following major topics: shape and movement modeling and anthropometry, building and applying virtual humans, medical and rehabilitation applications, as well as industrial and ergonomic applications.

Woven Composites

The bioseparation engineering of today includes downstream process engineering such as waste water, material and gas treatment. Taking this tendency into account, bioseparation engineers gathered in Japan as a special research group

under the main theme of "Recovery and Recycle of Resources to Protect the Global Environment". The scope of this book is based on the conference, and deals not only with recent advances in bioseparation engineering in a narrow sence, but also the environmental engineering which includes waste water treatment and bioremediation. The contributors of this book cover many disciplines such as chemical engineering, analytical chemistry, biochemistry, and microbiology. Bioseparation Engineering will stimulate young engineers and scientists who will develop bioseparation engineering further in the 21st century, and contribute to a world-wide attention to the global environment

The First Outstanding 50 Years of "Università Politecnica delle Marche"

Architecture in the Digital Age addresses contemporary architectural practice in which digital technologies are radically changing how buildings are conceived, designed and produced. It discusses the digitally-driven changes, their origins, and their effects by grounding them in actual practices already taking place, while simultaneously speculating about their wider implications for the future. The book offers a diverse set of ideas as to what is relevant today and what will be relevant tomorrow for emerging architectural practices of the digital age.

Biomechanical Systems

High-Performance Elastomeric Materials Reinforced by Nanocarbons: Multifunctional Properties and Industrial Applications provides detailed information on the latest techniques and state-of-the-art developments regarding elastomeric materials reinforced by nano-carbon. The book supports academic researchers and postgraduate students who are looking to further advance the research and study of high-performance, multifunctional materials. In addition, it enables those in industry to improve manufacture and end products by using these materials. Enables the reader to understand the latest advanced applications of high-performance elastomers reinforced by nano-carbons Unlocks the door to essential properties for harsh environments, such as thermal conductivity, oil resistance, permeability, de-icing, and cracking resistance Covers the processability of elastomers reinforced by nano-carbons, including extrusion, compression, molding methods and techniques

Akustik und Schallschutz

-Softcover reprint of a successful hardcover reference (370 copies sold) -Price to be accessible to the rapidly increasing population of students and investigators in the field of tissue engineering -Chapters written by well-known researchers discuss issues in functional tissue engineering as well as provide guidelines and a summary of the current state of technology

Computational Acoustics of Noise Propagation in Fluids - Finite and Boundary Element Methods

This book describes for readers various technical outcomes from the EU-project

IoSense. The authors discuss sensor integration, including LEDs, dust sensors, LIDAR for automotive driving and 8 more, demonstrating their use in simulations for the design and fabrication of sensor systems. Readers will benefit from the coverage of topics such as sensor technologies for both discrete and integrated innovative sensor devices, suitable for high volume production, electrical, mechanical, security and software resources for integration of sensor system components into IoT systems and IoT-enabling systems, and IoT sensor system reliability. Describes from component to system level simulation, how to use the available simulation techniques for reaching a proper design with good performance; Explains how to use simulation techniques such as Finite Elements, Multi-body, Dynamic, stochastics and many more in the virtual design of sensor systems; Demonstrates the integration of several sensor solutions (thermal, dust, occupancy, distance, awareness and more) into large-scale system solutions in several industrial domains (Lighting, automotive, transport and more); Includes state-of-the-art simulation techniques, both multi-scale and multi-physics, for use in the electronic industry.

Intelligent Automation and Systems Engineering

The Scientific Network of Integrated Systems, Design and Technology (ISDT) is an initiative that has been established to respond industrial needs for integration of "Knowledge Technology" (KT) with multi- and inter-disciplinary applications. In particular the objective of ISDT is to incorporate multilateral engineering disciplines i.e. Composite-, Automotive-, Industrial- , Control- and Micro-Electronics Engineering, and derive knowledge for design and development of innovative product and services. In this context, the discourse of KT is established to address effective use of Knowledge Management, Semantic Technology, Information Systems and Software Engineering towards evolution of adaptive and intelligent systems for industrial applications. This carefully edited book presents the results of the latest ISDT meeting with special involvement of leading researchers and industries whose contributions are presented in the book chapters. This book consists of three main chapters namely: · Chapter 1: Applied Knowledge Management in Practice · Chapter 2: Semantic Technologies for Industrial Management and Process Controlling · Chapter 3: Knowledge Driven Approaches for Product Engineering Each article presents a unique in-progress research with respect to the target goal of improving our common understanding of KT integration and promoting further researches and cooperation in future.

Advanced Finite Element Contact Benchmarks

The definitive guide to the ANSYS Parametric Design Language (APDL), the command language for the ANSYS Mechanical APDL product from ANSYS, Inc. PADT has converted their popular "Introduction to APDL" class into a guide so that users can teach themselves the APDL language at their own pace. Its 12 chapters include reference information, examples, tips and hints, and eight workshops. Topics covered include: - Parameters - User Interfacing - Program Flow - Retrieving Database Information - Arrays, Tables, and Strings - Importing Data - Writing Output to Files - Menu Customization

The Particle Odyssey

The collection provides an outlet for both industry and academia alike to present their latest findings in the area of sheet metal forming. Volume is indexed by Thomson Reuters CPCI-S (WoS). There are 69 peer reviewed contributions from Industry and academia representing 23 Countries. The research presented covers a diverse field from the fundamental testing and characterisation of sheet metals to the development of new and innovative forming processes.

The Duffing Equation

Air pollution, global warming, and the steady decrease in petroleum resources continue to stimulate interest in the development of safe, clean, and highly efficient transportation. Building on the foundation of the bestselling first edition, Modern Electric, Hybrid Electric, and Fuel Cell Vehicles: Fundamentals, Theory, and Design, Second Edition updates and expands its detailed coverage of the vehicle technologies that offer the most promising solutions to these issues affecting the automotive industry. Proven as a useful in-depth resource and comprehensive reference for modern automotive systems engineers, students, and researchers, this book speaks from the perspective of the overall drive train system and not just its individual components. New to the second edition: A case study appendix that breaks down the Toyota Prius hybrid system Corrections and updates of the material in the first edition Three new chapters on drive train design methodology and control principles A completely rewritten chapter on Fundamentals of Regenerative Braking Employing sufficient mathematical rigor, the authors comprehensively cover vehicle performance characteristics, EV and HEV configurations, control strategies, modeling, and simulations for modern vehicles. They also cover topics including: Drive train architecture analysis and design methodologies Internal Combustion Engine (ICE)-based drive trains Electric propulsion systems Energy storage systems Regenerative braking Fuel cell applications in vehicles Hybrid-electric drive train design The first edition of this book gave practicing engineers and students a systematic reference to fully understand the essentials of this new technology. This edition introduces newer topics and offers deeper treatments than those included in the first. Revised many times over many years, it will greatly aid engineers, students, researchers, and other professionals who are working in automotive-related industries, as well as those in government and academia.

Biomimetic Research for Architecture and Building Construction

This book is a collection of papers presented at Acoustics and Vibration of Mechanical Structures 2017 – AVMS 2017 – highlighting the current trends and state-of-the-art developments in the field. It covers a broad range of topics, such as noise and vibration control, noise and vibration generation and propagation, the effects of noise and vibration, condition monitoring and vibration testing, modeling, prediction and simulation of noise and vibration, environmental and occupational noise and vibration, noise and vibration attenuators, as well as biomechanics and bioacoustics. The book also presents analytical, numerical and experimental

techniques for evaluating linear and non-linear noise and vibration problems (including strong nonlinearity). It is primarily intended for academics, researchers and professionals, as well as PhD students in various fields of the acoustics and vibration of mechanical structures.

Progress in Modelling and Simulation

Because of developments in powerful computer technology, computational techniques, advances in a wide spectrum of diverse technologies, and other advances coupled with cross disciplinary pursuits between technology and its greatly significant applied implications in human body processes, the field of biomechanics is evolving as a broadly significant area. The four volumes of Biomechanical Systems, Techniques, and Applications explore the many areas of significant advances, including dynamics of musculo-skeletal systems; mechanics of hard and soft tissues, muscles, bone remodeling, hard and soft tissue interfaces, blood flow, air flow, flow-prosthesis interfaces, and impact; cardiovascular and respiratory biomechanics; and dynamics of many machine interactions.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION