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Corrosion and Corrosion Control - Herbert Henry Uhlig 1971

Internet of Things and Big Data Analytics Toward Next-Generation Intelligence - Nilanjan Dey 2017-08-14

This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

ENGINEERING PHYSICS. - PALANISAMY. 2018

Springer Handbook of Ocean Engineering - Manhar R. Dhanak 2016-07-23

This handbook is the definitive reference for the interdisciplinary field that is ocean engineering. It integrates the coverage of fundamental and applied material and encompasses a diverse spectrum of systems, concepts and operations in the maritime environment, as well as providing a comprehensive update on contemporary, leading-edge ocean technologies. Coverage includes an overview on the fundamentals of ocean science, ocean signals and instrumentation, coastal structures, developments in ocean energy technologies and ocean vehicles and automation. It aims at practitioners in a range of offshore industries and naval establishments as well as academic researchers and graduate students in ocean, coastal, offshore and marine engineering and naval architecture. The Springer Handbook of Ocean Engineering is organized in five parts: Part A: Fundamentals, Part B: Autonomous Ocean Vehicles, Subsystems and Control, Part C: Coastal Design, Part D: Offshore Technologies, Part E: Energy Conversion

World Congress on Medical Physics and Biomedical Engineering September 7 - 12, 2009 Munich, Germany - Olaf Dössel 2010-01-01

Present Your Research to the World! The World Congress 2009 on Medical Physics and Biomedical Engineering - the triennial scientific meeting of the IUPESM - is the world's leading forum for presenting the results of current scientific work in health-related physics and technologies to an international audience. With more than 2,800 presentations it will be the biggest conference in the fields of Medical Physics and Biomedical Engineering in 2009! Medical physics, biomedical engineering and bioengineering have been driving forces of innovation and progress in medicine and healthcare over the past two decades. As new key technologies arise with significant potential to open new options in diagnostics and therapeutics, it is a multidisciplinary task to evaluate their benefit for medicine and healthcare with respect to the

quality of performance and therapeutic output. Covering key aspects such as information and communication technologies, micro- and nanosystems, optics and biotechnology, the congress will serve as an inter- and multidisciplinary platform that brings together people from basic research, R&D, industry and medical application to discuss these issues. As a major event for science, medicine and technology the congress provides a comprehensive overview and in-depth, first-hand information on new developments, advanced technologies and current and future applications. With this Final Program we would like to give you an overview of the dimension of the congress and invite you to join us in Munich! Olaf Dössel Congress President Wolfgang C.

Intelligent Medical Technologies and Biomedical Engineering: Tools and Applications - Shukla, Anupam 2010-06-30

Intelligent Medical Technologies and Biomedical Engineering: Tools and Applications helps young researchers and developers understand the basics of the field while highlighting the various developments over the last several years. Broad in scope and comprehensive in depth, this volume serves as a base text for any project or work into the domain of medical diagnosis or other areas of medical engineering.

Bioelectronics and Medical Devices - Garima Srivastava 2021-12-16

This new volume provides an abundance of information on new biomedical applications being used today. The book covers a wide range of concepts and technologies, discussing such modern technological methods as the Internet of Things, e-pills, biomedical sensors, support vector machines, wireless devices, image and signal processing in e-health, and machine learning. It also includes a discussion on software implementation for the devices used in biomedical applications. The different types of antennas, including antennas using RF energy harvesting for biomedical applications, are covered as well.

ENGINEERING PHYSICS (CUSAT). - P. K. PALANISAMY 2013

World Congress on Medical Physics and Biomedical Engineering 2018 - Lenka Lhotska 2018-05-29

This book (vol. 1) presents the proceedings of the IUPESM World Congress on Biomedical Engineering and Medical Physics, a triennially organized joint meeting of medical physicists, biomedical engineers and adjoining health care professionals. Besides the purely scientific and technological topics, the 2018 Congress will also focus on other aspects of professional involvement in health care, such as education and training, accreditation and certification, health technology assessment and patient safety. The IUPESM meeting is an important forum for medical physicists and biomedical engineers in medicine and healthcare learn and share knowledge, and discuss the latest research outcomes and technological advancements as well as new ideas in both medical physics and biomedical engineering field.

6th European Conference of the International Federation for Medical and Biological Engineering - Igor Lacković 2014-09-02

This volume presents the Proceedings of the 6th European Conference of the International Federation for Medical and Biological Engineering (MBEC2014), held in Dubrovnik September 7 - 11, 2014. The general theme of MBEC 2014 is "Towards new horizons in biomedical engineering" The scientific discussions in these conference proceedings include the following themes: - Biomedical Signal Processing - Biomedical Imaging and Image Processing - Biosensors and Bioinstrumentation - Bio-Micro/Nano Technologies - Biomaterials - Biomechanics, Robotics and Minimally Invasive Surgery - Cardiovascular, Respiratory and Endocrine Systems Engineering - Neural and Rehabilitation Engineering - Molecular, Cellular and Tissue Engineering - Bioinformatics and Computational Biology - Clinical Engineering and Health Technology Assessment - Health Informatics, E-Health and Telemedicine - Biomedical Engineering Education

Semiconductor Gas Sensors - Raivo Jaanisoo 2019-09-24

Semiconductor Gas Sensors, Second Edition, summarizes recent

research on basic principles, new materials and emerging technologies in this essential field. Chapters cover the foundation of the underlying principles and sensing mechanisms of gas sensors, include expanded content on gas sensing characteristics, such as response, sensitivity and cross-sensitivity, present an overview of the nanomaterials utilized for gas sensing, and review the latest applications for semiconductor gas sensors, including environmental monitoring, indoor monitoring, medical applications, CMOS integration and chemical warfare agents. This second edition has been completely updated, thus ensuring it reflects current literature and the latest materials systems and applications. Includes an overview of key applications, with new chapters on indoor monitoring and medical applications Reviews developments in gas sensors and sensing methods, including an expanded section on gas sensor theory Discusses the use of nanomaterials in gas sensing, with new chapters on single-layer graphene sensors, graphene oxide sensors, printed sensors, and much more

Mathematics Of Physics And Engineering - Blum Edward K
2006-07-07

Aimed at scientists and engineers, this book is an exciting intellectual journey through the mathematical worlds of Euclid, Newton, Maxwell, Einstein, and Schrodinger-Dirac. While similar books present the required mathematics in a piecemeal manner with tangential references to the relevant physics and engineering, this textbook serves the interdisciplinary needs of engineers, scientists and applied mathematicians by unifying the mathematics and physics into a single systematic body of knowledge but preserving the rigorous logical development of the mathematics. The authors take an unconventional approach by integrating the mathematics with its motivating physical phenomena and, conversely, by showing how the mathematical models predict new physical phenomena.

Artificial Intelligence in Asset Management - Söhnke M. Bartram
2020-08-28

Artificial intelligence (AI) has grown in presence in asset management and has revolutionized the sector in many ways. It has improved portfolio management, trading, and risk management practices by increasing efficiency, accuracy, and compliance. In particular, AI techniques help construct portfolios based on more accurate risk and return forecasts and more complex constraints. Trading algorithms use AI to devise novel trading signals and execute trades with lower transaction costs. AI also improves risk modeling and forecasting by generating insights from new data sources. Finally, robo-advisors owe a large part of their success to AI techniques. Yet the use of AI can also create new risks and challenges, such as those resulting from model opacity, complexity, and reliance on data integrity.

Laser Additive Manufacturing - Milan Brandt 2016-09-01

Laser Additive Manufacturing: Materials, Design, Technologies, and Applications provides the latest information on this highly efficient method of layer-based manufacturing using metals, plastics, or composite materials. The technology is particularly suitable for the production of complex components with high precision for a range of industries, including aerospace, automotive, and medical engineering. This book provides a comprehensive review of the technology and its range of applications. Part One looks at materials suitable for laser AM processes, with Part Two discussing design strategies for AM. Parts Three and Four review the most widely-used AM technique, powder bed fusion (PBF) and discuss other AM techniques, such as directed energy deposition, sheet lamination, jetting techniques, extrusion techniques, and vat photopolymerization. The final section explores the range of applications of laser AM. Provides a comprehensive one-volume overview of advances in laser additive manufacturing Presents detailed coverage of the latest techniques used for laser additive manufacturing Reviews both established and emerging areas of application

Principles of Neural Coding - Rodrigo Quiñan Quiroga 2013-05-06

Understanding how populations of neurons encode information is the challenge faced by researchers in the field of neural coding. Focusing on the many mysteries and marvels of the mind has prompted a prominent team of experts in the field to put their heads together and fire up a book on the subject. Simply titled Principles of Neural Coding, this book covers the complexities of this discipline. It centers on some of the major developments in this area and presents a complete assessment of how neurons in the brain encode information. The book collaborators contribute various chapters that describe results in different systems (visual, auditory, somatosensory perception, etc.) and different species (monkeys, rats, humans, etc). Concentrating on the recording and analysis of the firing of single and multiple neurons, and the analysis and

recording of other integrative measures of network activity and network states—such as local field potentials or current source densities—is the basis of the introductory chapters. Provides a comprehensive and interdisciplinary approach Describes topics of interest to a wide range of researchers The book then moves forward with the description of the principles of neural coding for different functions and in different species and concludes with theoretical and modeling works describing how information processing functions are implemented. The text not only contains the most important experimental findings, but gives an overview of the main methodological aspects for studying neural coding. In addition, the book describes alternative approaches based on simulations with neural networks and in silico modeling in this highly interdisciplinary topic. It can serve as an important reference to students and professionals.

Self-Sensing Concrete in Smart Structures - Baoguo Han 2014-07-30

Concrete is the second most used building material in the world after water. The problem is that over time the material becomes weaker. As a response, researchers and designers are developing self-sensing concrete which not only increases longevity but also the strength of the material. Self-Sensing Concrete in Smart Structures provides researchers and designers with a guide to the composition, sensing mechanism, measurement, and sensing properties of self-healing concrete along with their structural applications Provides a systematic discussion of the structure of intrinsic self-sensing concrete Compositions of intrinsic self-sensing concrete and processing of intrinsic self-sensing concrete Explains the sensing mechanism, measurement, and sensing properties of intrinsic self-sensing concrete

Corrosion Engineering - Volkan Cicek 2014-04-03

Corrosion costs billions of dollars to each and every single economy in the world. Corrosion is a chemical process, and it is crucial to understand the dynamics from a chemical perspective before proceeding with analyses, designs and solutions from an engineering aspect. The opposite is also true in the sense that scientists should take into consideration the contemporary aspects of the issue as it relates to the daily life before proceeding with specifically designed theoretical solutions. Corrosion Engineering is advised to both theoreticians and practitioners of corrosion alike. Corrosion engineering is a joint discipline associated primarily with major engineering sciences such as chemical engineering, civil engineering, petroleum engineering, mechanical engineering, metallurgical engineering, mining engineering among others and major fundamental sciences such as sub-disciplines of physical, inorganic and analytical chemistry as well as physics and biology, such as electrochemistry, surface chemistry, surface physics, solution chemistry, solid state chemistry and solid state physics, microbiology, and others. Corrosion Engineering is a must-have reference book for the engineer in the field that covers the corrosion process with its contemporary aspects with respect to both of its scientific and engineering aspects. It is also a valuable textbook that could be used in an engineering or scientific course on corrosion at the university level.

Uhlig's Corrosion Handbook - R. Winston Revie 2011-04-12

This book serves as a reference for engineers, scientists, and students concerned with the use of materials in applications where reliability and resistance to corrosion are important. It updates the coverage of its predecessor, including coverage of: corrosion rates of steel in major river systems and atmospheric corrosion rates, the corrosion behavior of materials such as weathering steels and newer stainless alloys, and the corrosion behavior and engineering approaches to corrosion control for nonmetallic materials. New chapters include: high-temperature oxidation of metals and alloys, nanomaterials, and dental materials, anodic protection. Also featured are chapters dealing with standards for corrosion testing, microbiological corrosion, and electrochemical noise.

ENGINEERING PHYSICS (JNTU-HYD). - P. K. PALANISAMY 2013

Sleep Apnea - 1995

Theory Of Superconductivity - J. Robert Schrieffer 2018-03-05

Theory of Superconductivity is primarily intended to serve as a background for reading the literature in which detailed applications of the microscopic theory of superconductivity are made to specific problems.

APPLIED PHYSICS (JNTU-HYD R18). - P. K. PALANISAMY 2018

ECG Time Series Variability Analysis - Herbert F. Jelinek 2017-09-11

Divided roughly into two sections, this book provides a brief history of

the development of ECG along with heart rate variability (HRV) algorithms and the engineering innovations over the last decade in this area. It reviews clinical research, presents an overview of the clinical field, and the importance of heart rate variability in diagnosis. The book then discusses the use of particular ECG and HRV algorithms in the context of clinical applications.

Physics for Engineers - M. R. Srinivasan 2009

Textbook of Applied Physics - A. K. Jha 2013-12-30

Intended to serve as a textbook of Applied Physics / Physics paper of the undergraduate students of B.E., B.Tech and B.Sc. Exhaustive treatment of topics in optics, mechanics, relativistic mechanics, laser, optical fibres and holography have been included.

Dissertation Abstracts International - 2008

Biomedical Engineering and Information Systems: Technologies, Tools and Applications - Shukla, Anupam 2010-07-31

"Bridging the disciplines of engineering and medicine, this book informs researchers, clinicians, and practitioners of the latest developments in diagnostic tools, decision support systems, and intelligent devices that impact and redefine research in and delivery of medical services"-- Provided by publisher.

Liquid Crystal Elastomers - Mark Warner 2007-04-05

This text is a primer for liquid crystals, polymers, rubber and elasticity. It is directed at physicists, chemists, material scientists, engineers and applied mathematicians at the graduate student level and beyond.

Water Wave Mechanics For Engineers And Scientists - Robert A Dalrymple 1991-01-23

This book is intended as an introduction to classical water wave theory for the college senior or first year graduate student. The material is self-contained; almost all mathematical and engineering concepts are presented or derived in the text, thus making the book accessible to practicing engineers as well. The book commences with a review of fluid mechanics and basic vector concepts. The formulation and solution of the governing boundary value problem for small amplitude waves are developed and the kinematic and pressure fields for short and long waves are explored. The transformation of waves due to variations in depth and their interactions with structures are derived. Wavemaker theories and the statistics of ocean waves are reviewed. The application of the water particle motions and pressure fields are applied to the calculation of wave forces on small and large objects. Extension of the linear theory results to several nonlinear wave properties is presented. Each chapter concludes with a set of homework problems exercising and sometimes extending the material presented in the chapter. An appendix provides a description of nine experiments which can be performed, with little additional equipment, in most wave tank facilities.

15th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics - Kim Dremstrup 2011-06-17

This volume presents the Proceedings of the 15th Nordic-Baltic Conference on Biomedical Engineering and Medical Physics. NBC 2011 brought together science, education and business under the motto "Cooperation for health". The topics covered by the Conference Proceedings include: Imaging, Biomechanics, Neural engineering, Sport Science, Cardio-pulmonary engineering, Medical Informatics, Ultrasound, Assistive Technology, Telemedicine, and General Biomedical Engineering.

Engineering Physics - Mani Naidu

Engineering Physics is designed to cater to the needs of first year undergraduate engineering students. Written in a lucid style, this book assimilates the best practices of conceptual pedagogy, dealing at length with various topics such as crystallography, principles of quantum mechanics, free electron theory of metals, dielectric and magnetic properties, semiconductors, nanotechnology, etc.

Intelligent Patient Management - Sally McClean 2009-03-20

Healthcare approaches with origins in Artificial Intelligence and Operational Research can greatly improve the diagnosis, treatment and overall care of patients. This book focuses on the use of such Intelligent Patient Management for healthcare professionals.

Semiconductor Physics and Optoelectronics - 2010

Rheology and Processing of Polymer Nanocomposites - Sabu Thomas 2016-10-10

Rheology and Processing of Polymer Nanocomposites examines the current state of the art and new challenges in the characterization of

nanofiller/polymer interactions, nanofiller dispersion, distribution, filler-filler interactions and interfaces in polymer nanocomposites. A one-stop reference resource for important research accomplishments in this area, it benefits academics, researchers, scientists, and engineers in the field of polymer nanocomposites in their daily work.

Integrated Nematode Management - Richard A. Sikora 2021

"This book reviews in a systematic crop by crop approach the state-of-the-art management strategies that have been developed to reduce nematode impact, and outlines their limitations"--

Computational Intelligence in Biomedical Engineering - Rezaul Begg 2007-12-04

As in many other fields, biomedical engineers benefit from the use of computational intelligence (CI) tools to solve complex and non-linear problems. The benefits could be even greater if there were scientific literature that specifically focused on the biomedical applications of computational intelligence techniques. The first comprehensive field-specific reference, *Computational Intelligence in Biomedical Engineering* provides a unique look at how techniques in CI can offer solutions in modelling, relationship pattern recognition, clustering, and other problems particular to the field. The authors begin with an overview of signal processing and machine learning approaches and continue on to introduce specific applications, which illustrate CI's importance in medical diagnosis and healthcare. They provide an extensive review of signal processing techniques commonly employed in the analysis of biomedical signals and in the improvement of signal to noise ratio. The text covers recent CI techniques for post processing ECG signals in the diagnosis of cardiovascular disease and as well as various studies with a particular focus on CI's potential as a tool for gait diagnostics. In addition to its detailed accounts of the most recent research, *Computational Intelligence in Biomedical Engineering* provides useful applications and information on the benefits of applying computation intelligence techniques to improve medical diagnostics.

Material Science - S. L. Kakani 2006-12

The Book Has Been Designed To Cover All Relevant Topics In B.E. (Mechanical/Metallurgy / Material Science / Production Engineering), M.Sc. (Material Science), B.Sc. (Honours), M.Sc. (Physics), M.Sc. (Chemistry), Amie And Diploma Students. Students Appearing For Gate, Upsc, Net, Slet And Other Entrance Examinations Will Also Find Book Quite Useful. In Nineteen Chapters, The Book Deals With Atomic Structure, The Structure Of Solids; Crystal Defects; Chemical Bonding; Diffusion In Solids; Mechanical Properties And Tests Of Materials; Alloys, Phase Diagrams And Phase Transformations; Heat Treatment; Deformation Of Materials; Oxidation And Corrosion; Electric, Magnetic, Thermal And Optical Properties; Semiconductors; Superconductivity; Organic Materials; Composites; And Nanostructured Materials. Special Features: * Fundamental Principles And Applications Are Discussed With Explanatory Diagrams In A Clear Way. * A Full Coverage Of Background Topics With Latest Development Is Provided. * Special Chapters On Nanostructured Materials, Superconductivity, Semiconductors, Polymers, Composites, Organic Materials Are Given. * Solved Problems, Review Questions, Problems, Short-Question Answers And Typical Objective Type Questions Alongwith Suggested Readings Are Given With Each Chapter.

Basic Civil Engineering - M. S. Palanichamy 2005

Engineering Physics I - P.K. Palanisamy 2009

Corrosion Engineering and Cathodic Protection Handbook - Volkan Cicek 2017-02-28

The *Corrosion Engineering and Cathodic Protection Handbook* combines the author's previous three works, *Corrosion Chemistry*, *Cathodic Protection*, and *Corrosion Engineering* to offer, in one place, the most comprehensive and thorough work available to the engineer or student. The author has also added a tremendous and exhaustive list of questions and answers based on the text, which can be used in university courses or industry courses, something that has never been offered before in this format. The *Corrosion Engineering and Cathodic Protection Handbook* is a must-have reference book for the engineer in the field, covering the process of corrosion from a scientific and engineering aspect, along with the prevention of corrosion in industrial applications. It is also a valuable textbook, with the addition of the questions and answers section creating a unique book that is nothing short of groundbreaking. Useful in solving day-to-day problems for the engineer, and serving as a valuable learning tool for the student, this is sure to be an instant contemporary classic and belongs in any engineer's library.