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ENGINEERING PHYSICS.

Amer Society for Nondestructive Engineering Physics has been written keeping in mind the first year engineering students of all branches of various Indian universities. The second edition provides more examples with

solution. It also offers university question papers of recent years with model solutions.

Handbook of Food Nanotechnology

Academic Press

Engineering Physics is designed as a textbook for first year undergraduate engineering students. The book comprehensively covers all relevant and important topics in a simple and lucid manner. It explains the principles as well as the applications of a given topic using numerous solved examples and self-explanatory figures.

Engineering Physics-I

Academic Press

This book presents the latest research in the fields of computational intelligence, ubiquitous computing models, communication intelligence, communication security, machine learning, informatics, mobile computing, cloud computing, and big data analytics. The best selected papers, presented at the International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2021), are included in the book. The book focuses on the theory, design, analysis, implementation, and application of distributed systems and networks.

Bioprocess Engineering for a Green Environment

Elsevier

Food Nanotechnology: Applications and Approaches is the definitive guide on all aspects of nano-sized ingredients and devices for the

food sector. The book brings science and applications together on the nano-scale into nano-structured food materials, with an emphasis on their production, processing, engineering, characterization, and applications of food materials containing true nano-sized dimensions or nano-structures that enable novel/enhanced properties or functions. All chapters emphasize original results relating to experimental, theoretical, computational, and/or applications of nano-materials in food. Topics such as the application of nanotechnology in food processing operations, functional ingredients, quality control, nutraceutical delivery, and packaging of food products are very attractive and beneficial to both academics and practitioners. Finally, the safety of applying nano ingredients and nano devices is covered. Brings novel applications of nanotechnology in processing food products Shows how to improve the formulation of food products with nano-structured ingredients Explores new opportunities in food packaging through nano-structured materials

Eddy-Current Characterization of Materials and Structures CRC Press

Biomedical Engineering II: Recent Developments covers some progress made in biochemical engineering, which have some useful application in dentistry, medical instrumentation, and orthopedics. The book provides a detailed testing and analysis of the use of hydroxylapatite as an effective substance for mandibular augmentation of the atrophic ridge. An in-depth report about the technique called the tendon reroute surgery is also given. The book includes a

discussion on cardiology hemodynamics, which is about the determination of blood flow by monitoring the speed of blood cell. Another topic covered is the effects of stresses on the vertebral body. A separate section of the book is focused on the modeling and creation of simulation to test the movement of transmicrovascular fluid and protein exchanges. Some topics in the field of bioelectricity, biomechanics, and biocontrol systems are thoroughly discussed. The text will be a useful tool for dentists, orthopedics, doctors, and people in the field of medical physiology.

Who's Who in Science and Engineering 2008-2009

Engineering Physics

IiENGINEERING PHYSICS.APPLIED PHYSICS (JNTU-HYD R18).Biomedical Engineering 2: Recent Developments

This textbook fosters information exchange and discussion on all aspects of introductory matters of modern mechanical engineering from a number of perspectives including: mechanical engineering as a profession, materials and manufacturing processes, machining and machine tools, tribology and surface engineering, solid mechanics, applied and computational mechanics, mechanical design, mechatronics and robotics, fluid mechanics and heat transfer, renewable energies, biomechanics, nanoengineering and nanomechanics. At the end of each chapter, a list of 10 questions (and answers) is provided.

Sensing of Deadly Toxic Chemical Warfare Agents, Nerve Agent Simulants, and their Toxicological Aspects CRC Press

Microbially derived surfactants, called biosurfactants, provide a promising alternative to synthetic surfactants, displaying better availability and being generally nontoxic and biodegradable. Biosurfactants also have the

advantage of diverse chemical properties and the potential to be less expensive. They demonstrate properties such as reducing surface tension, stabilizing emulsions, and promoting foaming. With many promising research results, a consolidated resource of biosurfactant knowledge is needed to build a framework for further development of applications. Biosurfactants: Research Trends and Applications fills this need, covering the latest research and development on relevant aspects of biological, biochemical, and physical processes and applications of biosurfactants. This book reviews current knowledge and the latest advances, strategies for improving production processes, and the status of biosynthetic and genetic regulation mechanisms for microbial surfactants. Chapters present research findings on specific biosurfactants, such as high surface activity rhamnolipids, yeast-derived sophorolipids, lipopeptides, and trehalose lipids that have potential for environmental, industrial, and medical uses. The book also describes sources and characteristics of marine microbial biosurfactants, biosurfactants made from food processing by-products and biosurfactants used in the food industry, and biosurfactants for green synthesis of nanoparticles. The text presents applications of biosurfactants in environmental industries and examines interactions between metals and various classes of biosurfactants and related metal remediation technologies. The final chapter reviews the state of the art of biosurfactants and their applications, and proposes approaches to overcome any challenges.

Proceedings of the Tiangong-2 Remote Sensing Application Conference Marquis Whos Who

Data Science and Engineering Volume 9: Proceedings of the 39th IMAC, A Conference and Exposition on Structural Dynamics, 2021, the ninth volume of nine from the Conference, brings together contributions to this important area of research and engineering. The collection presents early findings and case

studies on fundamental and applied aspects of Data Science in Engineering, including papers on: Data Science in Engineering Applications Engineering Mathematics Computational Methods in Engineering

Materials for Biomedical Engineering Springer Nature Industry wastewater is a major contributor to environmental pollution with chemicals such as dyes, acids, fungicides, and more creating a threat to the environment. Nanocomposites of heterogeneous photocatalysis can be used to cure such problems due to its efficiency and ease of use, as well as the fact that it turns toxic chemicals completely to carbon dioxide and inorganic acids. With toxic chemicals posing a tremendous threat to ecological wellbeing and human health, it is integral that a variety of nanocomposites are studied for their use in the degradation of toxic and hazardous chemicals. Innovative Nanocomposites for the Remediation and Decontamination of Wastewater describes the synthesis of nanomaterials and its application for the protection of the environment. It presents studies on the photodegradation of the various toxic and hazardous chemicals by different nanocomposites, as well as the decontamination of bodies of water through the use of various nanocomposites. Covering topics such as dye degradation, novel biomaterials, and structural modification, this premier reference source is a vital resource for environmental scientists, construction managers, compliance officers, biochemists, biophysicists, conservation scientists, hydrologists, microbiologists, libraries, students and educators of higher education, researchers, and academicians.

Materials Evaluation CRC Press This book gathers a selection of

peer-reviewed papers presented at the Tiangong-2 Data Utilization Conference, which was held in Beijing, China, in December 2018. As the first space laboratory in China, Tiangong-2 carries 3 new types of remote sensing payloads – the Wide-band Imaging Spectrometer (WIS), Three-dimensional Imaging Microwave Altimeter (TIMA), and Multi-band Ultraviolet Edge Imaging Spectrometer (MUEIS) – for observing the Earth. The spectrum of the WIS covers 18 bands, from visible to thermal infrared, with a swath of 300km. The TIMA is the first-ever system to use interferometric imaging radar altimeter (InIRA) technology to measure sea surface height and land topography at near-nadir angles with a wide swath. In turn, the MUEIS is the world ' s first large-field atmospheric detector capable of quasi-synchronously detecting the characteristics of ultraviolet limb radiation in the middle atmosphere. The Earth observation data obtained by Tiangong-2 has attracted many research groups and been applied in such diverse areas as land resources, water resources, climate change, environmental monitoring, agriculture, forestry, ecology, oceanography, meteorology and so on. The main subjects considered in this proceedings volume include: payload design, data processing, data service and application. It also provides a comprehensive introduction to the research results gleaned by engineers, researchers and scientists throughout the lifecycle of the Tiangong-2 Earth observation data, which will improve the payload development and enhance remote sensing data applications.

Smart Nanodevices for Point-of-Care Applications IGI Global

This book presents the select proceedings of International Conference on Innovations in Thermo-Fluid Engineering and Sciences (ICITFES 2020). It covers the theoretical and experimental research works carried out in the field of energy and power engineering. Various topics covered include fluid

mechanics, gas turbines and dynamics, heat transfer, humidity and control, multiphase flow, ocean engineering, power and energy, refrigeration and air conditioning, renewable energy, and thermodynamics. The book will be helpful for the researchers, scientists, and professionals working in the field of energy, power engineering, and thermal engineering.

Design of Polymeric Platforms for Selective Biorecognition Academic Press

A Txtbook of Engineering Physics is written with two distinct objectives:to provied a single source of information for engineering undergraduates of different specializations and provied them a solid base in physics.Successivs editions of the book incorporated topic as required by students pursuing their studies in various universities.In this new edition the contents are fine-tuned,modeinized and updated at various stages.

Innovations in Energy, Power and Thermal Engineering Springer Nature

Solid State Physics: An Introduction to Theory presents an intermediate quantum approach to the properties of solids. Through this lens, the text explores different properties, such as lattice, electronic, elastic, thermal, dielectric, magnetic, semiconducting, superconducting and optical and transport properties, along with the structure of crystalline solids. The work presents the general theory for most of the properties of crystalline solids, along with the results for one-, two- and three-dimensional solids in particular cases. It also includes a brief description of emerging topics, such as the quantum hall effect and high superconductivity. Building

from fundamental principles and requiring only a minimal mathematical background, the book includes illustrative images and solved problems in all chapters to support student understanding. Provides an introduction to recent topics, such as the quantum hall effect, high-superconductivity and nanomaterials Utilizes the Dirac' notation to highlight the physics contained in the mathematics in an appropriate and succinct manner Includes many figures and solved problems throughout all chapters to provide a deeper understanding for students Offers topics of particular interest to engineering students, such as elasticity in solids, dislocations, polymers, point defects and nanomaterials

Physics for Engineers Springer Nature

Bioprocess Engineering for a Green Environment examines numerous bioprocesses that are crucial to our day-to-day life, specifically the major issues surrounding the production of energy relating to biofuels and waste management. The nuance of this discussion is reflected by the text's chapter breakdown, providing the reader with a fulsome investigation of the energy sector; the importance of third-generation fuels; and the application of micro- and macroalgae for the production of biofuels. The book also provides a detailed exploration of biocatalysts and their application to the food industry; bioplastics production; conversion of agrowaste into polysaccharides; as well as the importance of biotechnology

in bio-processing. Numerous industries discharge massive amounts of effluents into our rivers, seas, and air systems. As such, two chapters are dedicated to the treatment of various pollutants through biological operation with hopes of achieving a cleaner, greener, environment. This book represents the most comprehensive study of bioprocessing—and its various applications to the environment—available on the market today. It was furthermore written with various researchers in mind, ranging from undergraduate and graduate students looking to enhance their knowledge of the topics presented to scholars and engineers interested in the bioprocessing field, as well as members of industry and policy-makers. Provides a comprehensive overview of bioprocesses that apply to day-to-day living. Is learner-centered, providing detailed diagrams for easy understanding. Explores the importance of biocatalysts and their applications to the food industry, as well as bioplastics production. Examines the unique capabilities of bioprocess engineering and its ability to treat various pollutants. .

Engineering Physics Springer This comprehensive handbook gives a fully updated guide to lasers and laser technologies, including the complete range of their technical applications. This third volume covers modern applications in engineering and technology, including all new and updated case studies spanning telecommunications and data storage to medicine, optical measurement, defense

and security, nanomaterials processing and characterization. Key Features: • Offers a complete update of the original, bestselling work, including many brand-new chapters. • Deepens the introduction to fundamentals, from laser design and fabrication to host matrices for solid-state lasers, energy level diagrams, hosting materials, dopant energy levels, and lasers based on nonlinear effects. • Covers new laser types, including quantum cascade lasers, silicon-based lasers, titanium sapphire lasers, terahertz lasers, bismuth-doped fiber lasers, and diode-pumped alkali lasers. • Discusses the latest applications, e.g., lasers in microscopy, high-speed imaging, attosecond metrology, 3D printing, optical atomic clocks, time-resolved spectroscopy, polarization and profile measurements, pulse measurements, and laser-induced fluorescence detection. • Adds new sections on laser materials processing, laser spectroscopy, lasers in imaging, lasers in environmental sciences, and lasers in communications. This handbook is the ideal companion for scientists, engineers, and students working with lasers, including those in optics, electrical engineering, physics, chemistry, biomedicine, and other relevant areas.

Innovative Nanocomposites for the Remediation and Decontamination of Wastewater CRC Press Publishes papers reporting on research and development in optical science and engineering and the practical

applications of known optical science, engineering, and technology.

Handbook of Laser Technology and Applications Springer Science & Business Media

Materials for Biomedical Engineering: Inorganic Micro- and Nanostructures presents recent, specific insights in new progress, along with new perspectives for inorganic micro- and nano-particles. The main focus of this book is on biomedical applications of these materials and how their biological properties are linked to various synthesis methods and their source of raw materials. Recent information regarding optimized synthesis methods to obtain improved nano- and microparticles for biomedical use, as well as the most important biomedical applications of these materials, such as the diagnosis and therapy of cancer, are highlighted in detail. Provides a valuable resource of recent scientific progress, highlighting the most well-known applications of inorganic micro- and nanostructures in bioengineering Presents novel opportunities and ideas for developing or improving technologies in composites by companies, biomedical industries, and others Features at least 50% of its references from the last 2-3 years

Next Generation Wireless Network Security and Privacy Allied Publishers

Considered one of the most innovative research directions, computational intelligence (CI) embraces techniques that use global search optimization, machine learning, approximate reasoning, and connectionist systems to develop efficient, robust, and easy-to-use solutions amidst multiple decision variables, complex constraints, and tumultuous environments. CI techniques involve a combination of learning, adaptation, and evolution used for intelligent applications. Computational Intelligence Paradigms for Optimization Problems Using MATLAB ® /

Simulink ® explores the performance of CI in terms of knowledge representation, adaptability, optimality, and processing speed for different real-world optimization problems. Focusing on the practical implementation of CI techniques, this book: Discusses the role of CI paradigms in engineering applications such as unit commitment and economic load dispatch, harmonic reduction, load frequency control and automatic voltage regulation, job shop scheduling, multidepot vehicle routing, and digital image watermarking Explains the impact of CI on power systems, control systems, industrial automation, and image processing through the above-mentioned applications Shows how to apply CI algorithms to constraint-based optimization problems using MATLAB ® m-files and Simulink ® models Includes experimental analyses and results of test systems Computational Intelligence Paradigms for Optimization Problems Using MATLAB ® / Simulink ® provides a valuable reference for industry professionals and advanced undergraduate, postgraduate, and research students.

Engineering Physics Ii Springer

Smart Nanodevices for Point-of-Care Applications examines the latest trends on the capabilities of nanomaterials for point-of-care (PoC) diagnostics and explains how these materials can help to strengthen, miniaturize, and improve the quality of diagnostic devices. A thorough explanation of all-in-one nanosmart devices is included, incorporating all of the applications and fundamentals of these smart devices. This book provides practical information on the following: novel and effective smart materials, better-quality health management, effective management of a disease,

potential point-of-care devices, and mobile nanosensors.
Additional Features Includes in-depth research based collation of the latest trends of smart devices Provides practical information on all-in-one nanosmart devices Explains how nanomaterials can help to strengthen and improve the quality of diagnostic devices Emphasizes the development of smart nanodevices, especially the miniaturization aspect
ASTM Special Technical Publication CRC Press
1-D metal oxide nanostructures, especially those with semiconducting properties, have attracted much attention in recent years due to their potential and emerging applications, specifically in environment purification and energy devices. For these applications, there have been many efforts to grow 1-D nanostructures in the form of nanotubes, nanorods, and nanowires using processes that conserve energy, are cost effective, and can be scaled up for large-scale production. 1-Dimensional Metal Oxide Nanostructures gathers under one title the most recent development of oxide nanomaterials, especially those fabricated via oxidation process in the nanoscale field. Thermal and anodic oxidation processes are reviewed with an aim to offer an in-depth understanding of mechanisms of 1-D nanostructure formation, their characteristics, and limitations. Other more common methods are also discussed, including sol-gel, hydrothermal, and other templated methods. Important applications of 1-D nanostructures are then presented, focusing on oxides like zinc oxide, titanium oxide, zirconium oxide, copper oxide, and iron oxide. A chapter on carbon nanotubes hybrid with these oxides is also included as well as one on silicon oxide nanowires formation by local anodic oxidation process. Aimed at researchers, academics, and engineers working across the fields of nanotechnology, materials science, chemistry, physics, semiconductors, and environmental and biomedical engineering, this essential reference

enables readers to grasp the main concepts of nanomaterials in 1-D: formation technique, characteristics, and uses. It also encourages practical innovations in nanotechnology, especially in curbing pressing global issues related to energy, environment, and security.