Engineering Materials By Surendra Singh

This book highlights the complexity of spinel nanoferrites, their synthesis, physio-chemical properties and prospective applications in the area of advanced electronics, microwave devices, biotechnology as well as biomedical sciences. It presents an overview of spinel nanoferrites: synthesis, properties and applications for a wide audience: from beginners and graduate-level students up to advanced specialists in both academic and industrial sectors. There are 15 chapters organized into four main sections. The first section of the book introduces the readers to spinel ferrites and their applications in advanced electronics industry including microwave devices, whereas the second section mainly focus on the synthesis strategy and their physio-chemical properties. The last sections of the book highlight the importance of this class of nanomaterials in the field of biotechnology and biomedical sector with a special chapter on water purification.

The revised and updated second edition of this book gives an in-depth presentation of the basic principles and operational procedures of general manufacturing processes. It aims at assisting the students in developing an understanding of the important and often complex interrelationship among various technical and economical factors involved in manufacturing. The book begins with a discussion on material properties while laying emphasis on the influence of materials and processing parameters in understanding manufacturing processes and operations. This is followed by a detailed description of various manufacturing processes commonly used in the industry. With several revisions and the addition of four new chapters, the new edition also includes a detailed discussion on mechanics of metal cutting, features and working of machine tools, design of molds and gating systems for proper filling and cooling of castings. Besides, the new edition provides the basics of solid-state welding processes, weldability, heat in welding, residual stresses and testing of weldments and also of non-conventional machining methods, automation and transfer machining, machining centres, robotics, manufacturing of gears, threads and jigs and fixtures. The book is intended for undergraduate students of mechanical engineering, production engineering and industrial engineering. The diploma students and those preparing for AMIE, Indian Engineering Services and other competitive examinations will also find the book highly useful. New to This Edition : Includes four new chapters Non-conventional Machining Methods; Automation: Transfer Machining, Machining Centres and Robotics; Manufacturing Gears and Threads; and Jigs and Fixtures to meet the course requirements. Offers a good number of worked-out examples to help the students in mastering the concepts of the various manufacturing processes. Provides objective-type questions drawn from various competitive examinations such as Indian Engineering Services and GATE.

This book contains 18 papers from the Next Generation Biomaterials and Surface Properties of Biomaterials symposia held during the 2010 Materials Science and Technology (MS&T'10) meeting, October 17-21, 2010, Houston, Texas. Topics include: Biocompatible Coatings; Drug Delivery and Anti-Microbial Coatings;

Ceramic and Metallic Biomaterials; Biomaterials for Tissue Engineering; and Surface Modification.
Indian Books in Print
Select Papers from AIMTDR 2016
Synthesis, Properties and Applications
Spinel Nanoferrites
(for the Architecture and Civil Engineering Students Preparing for Degree, Diploma and Other Competitive Examinations)

A bulky document on cement science and manufacturing technology is difficult for a college junior to easily understand. Thus, it is better to write a short and precise book that contains only the necessary basic content. This introductory book is designed as a short and concise resource for undergraduate university students studying chemical science (chemistry and chemical engineering), material science, geology, and construction technology. It emphasizes different types of cement, admixtures, and how to analyze the chemical compositions of cement in the laboratory. Technical procedures of cement analysis are very important for determining and comparing chemical compositions. This book describes the detailed procedures for different test parameters.
This book covers nanomaterials in tissue engineering for regenerative therapies of heart, skin, eye, skeletal muscle, and the nervous system. The book emphasizes fundamental design concepts and emerging forms of nanomaterials in soft- and hard-tissue engineering. FEATURES Fills a gap in the literature related to the application of nanomaterials in hard- and soft-tissue regeneration, repair, and restructure Discusses a variety of applications, including cardiac, kidney, liver, bone, wound healing, artificial organs, and dental Presents advantages and limitations of various nanomaterials alongside future challenges Functional Nanomaterials for Regenerative Tissue Medicines is essential for academics and industry professionals working in tissue engineering, biomedicine, biopharmaceuticals, and nanotechnology. It is primarily intended for materials researchers (to develop the platforms related to tissue regeneration) as well as clinicians (to learn and apply nanomaterials in their practice) and industrial scientists (to develop commercial blood substitute products).
This book covers the recent developments in the production of micro and nano size products, which cater to the needs of the industry. The processes to produce the miniature sized products with unique characteristics are addressed. Moreover, their application in areas such as micro-engines, micro-heat exchangers, micro-pumps, micro-channels, printing heads and medical implants are also highlighted. The book presents such microsystem-based products as important contributors to a sustainable economy. The recent research in this book focuses on the development of new micro and nano manufacturing platforms while integrating the different technologies to manufacture the micro and nano components in a high throughput and cost effective manner. The chapters contain original theoretical and applied research in the areas of micro- and nano-manufacturing that are related to process innovation, accuracy, and precision, throughput enhancement, material utilization, compact equipment development, environmental and life-cycle analysis, and predictive modeling of manufacturing

processes with feature sizes less than one hundred micrometers.
Whitaker's Cumulative Book List
Pakistan Journal of Agricultural Sciences
A Classified List of Publications...together with an Index to Authors and Titles
Handbook of Materials Characterization

This book focuses on numerical simulations of manufacturing processes, discussing the use of numerical simulation techniques for design and analysis of the components and the manufacturing systems. Experimental studies on manufacturing processes are costly, time consuming and limited to the facilities available. Numerical simulations can help study the process at a faster rate and for a wide range of process conditions. They also provide good prediction accuracy and deeper insights into the process. The simulation models do not require any pre-simulation, experimental or analytical results, making them highly suitable and widely used for the reliable prediction of process outcomes. The book is based on selected proceedings of AIMTDR 2016. The chapters discuss topics relating to various simulation techniques, such as computational fluid dynamics, heat flow, thermo-mechanical analysis, molecular dynamics, multibody dynamic analysis, and operational modal analysis. These simulation techniques are used to: 1) design the components, 2) to investigate the effect of critical process parameters on the process outcome, 3) to explore the physics of the process, 4) to analyse the feasibility of the process or design, and 5) to optimize the process. A wide range of advanced manufacturing processes are covered, including friction stir welding, electro-discharge machining, electro-chemical machining, magnetic pulse welding, milling with MQL (minimum quantity lubrication), electromagnetic cladding, abrasive flow machining, incremental sheet forming, ultrasonic assisted turning, TIG welding, and laser sintering. This book will be useful to researchers and professional engineers alike.

Handbook of Biomedical Engineering covers the most important used systems and materials in biomedical engineering. This book is organized into six parts: Biomedical Instrumentation and Devices, Medical Imaging, Computers in Medicine, Biomaterials and Biomechanics, Clinical Engineering, and Engineering in Physiological Systems Analysis. These parts encompassing 27 chapters cover the basic principles, design data and criteria, and applications and their medical and/or biological relationships. Part I deals with the principles, mode of operation, and uses of various biomedical instruments and devices, including transducers, electrocardiograph, implantable electrical devices, biotelemetry, patient monitoring systems, hearing aids, and implantable insulin delivery systems. Parts II and III describe the basic principle of medical imaging devices and the application of computers in medicine, particularly in the fields of data management, critical care, clinical laboratory, radiology, artificial intelligence, and research. Part IV focuses on the application of biomaterials and biomechanics in orthopedic and accident investigation, while Part V considers the major functions of clinical engineering. Part VI provides the principles and application of mathematical models in physiological systems analysis. This book is valuable as a general reference for courses in a biomedical engineering curriculum.

This book provides an overview of the different aspects of microbial bioconversion methodologies for valorization of underutilized wastes of varied nature. It covers microbiological/biotechnological aspects, environmental concerns, bioprocess development, scale-up aspects, challenges, and opportunities in microbial valorization at commercial scale. It explains sustainable microbiological processes for bioconversion and valorization of the wastes for production of various products of commercial interests, including biofuels, bioenergy, and other platform chemicals. The book • presents potential biotechnological topics and strategies for the valuation of agricultural waste materials; •provides technical concepts on the production of various commercially significant bioproducts; •introduces various microbial bioprocesses to sustainably valorize various potential wastes as renewable feedstocks for production of biofuels and biochemicals; •explores the relevant scale-up opportunities, commercialization aspects, and critical technological advances; and •

explains concepts and recent trends in life cycle analyses in waste valorization. It is aimed at researchers and graduate students in bioengineering, biochemical engineering, microbial technology/microbiology, environmental engineering, and biotechnology.

Innovative Applications of Nanowires for Circuit Design

Concepts in Quantum Mechanics

Active Electrical Distribution Network

Books in Print

Strength of Materials

This book presents select proceedings of the international conference on Innovations in Clean Energy Technologies (ICET 2020) and examines a range of durable, energy efficient and next-generation smart green technologies for sustainable future by reflecting on the trends, advances and development taking place all across the globe. The topics covered include smart technologies based product, energy efficient systems, solar and wind energy, carbon sequestration, green transportation, green buildings, energy material, biomass energy, smart cites, hydro power, bio-energy and fuel cell. The book also discusses various performance attributes of these clean energy technologies and their workability and carbon footprint. The book will be a valuable reference for beginners, researchers and professionals interested in clean energy technologies.

Silicon Anode Systems for Lithium-Ion Batteries is an introduction to silicon anodes as an alternative to traditional graphite-based anodes. The book provides a comprehensive overview including abundance, system voltage, and capacity. It provides key insights into the basic challenges faced by the materials system such as new configurations and concepts for overcoming the expansion and contraction related problems. This book has been written for the practitioner, researcher or developer of commercial technologies. Provides a thorough explanation of the advantages, challenge, materials science, and commercial prospects of silicon and related anode materials for lithium-ion batteries Provides insights into practical issues including processing and performance of advanced Si-based materials in battery-relevant materials systems Discusses suppressants in electrolytes to minimize adverse effects of solid electrolyte interphase (SEI) formation and safety limitations associated with this technology

?ABOUT THE BOOK: feel proud in issuing the Seventh Edition of the book "Building Construction and Materials". The subject " Building Construction and Materials" is a very vastand tedious subject of Civil Engineering. Author has tried to explain all the aspects of this subject in a very simple and lucid language. The Book is entirely in SI Units. The book covers the syllabi prescribed by all the Indian universities, State Technical Boards and A.M.I.E. (India) examinations. The book is also very useful for Engineers involved in construction industry. All the relevant I.S.I. Recommendations and other useful data have been incorporated in the book. Author has tried to explain all the aspects with the help of lot of neat drawings. It is hoped that the book will satisfy all the needs of the students and practising engineers in regard to this subject. In order to increase the usefulness of the book basic engineering materials have been added in this revised 17th edition. Basic engineering material like stone, bricks, lime, cement, timber and iron has been added in this edition. ?RECOMMENDATIONS: A textbook for all Engineering Branches, Competitive Examination, ICS, and AMIE Examinations In S.I Units For Degree, Diploma and A.I.M.E. (India) Students and Practicing Civil Engineers. ?ABOUT THE AUTHOR: Dr. Gurcharan Singh Joint Director (Retd.) Directorate of Technical Education Rajasthan, Jodhpur ?BOOK DETAILS: ISBN : 978-81-89401-21-4 Pages: 933 + 26 Edition: 17th,Year-2019 Size(cms): L-23.7, B-15.8, H-3.7 ?For more Offers visit our Website: www.standardbookhouse.com

Recent Developments

Sustainable Microbial Technologies for Valorization of Agro-Industrial Wastes

Issues, Solution Techniques, and Applications
Books in Print Supplement
Bulletin of the Institution of Engineers (India).

This book focuses on the widely used experimental techniques available for the structural, morphological, and spectroscopic characterization of materials. Recent developments in a wide range of experimental techniques and their application to the quantification of materials properties are an essential side of this book. Moreover, it provides concise but thorough coverage of the practical and theoretical aspects of the analytical techniques used to characterize a wide variety of functional nanomaterials. The book provides an overview of widely used characterization techniques for a broad audience: from beginners and graduate students, to advanced specialists in both academia and industry.

Taking a conceptual approach to the subject, Concepts in Quantum Mechanics provides complete coverage of both basic and advanced topics. Following in the footsteps of Dirac's classic work Principles of Quantum Mechanics, it explains all themes from first principles.The authors present alternative ways of representing the state of a physical system,

Nanowires are an important sector of circuit design whose applications in very-large-scale integration design (VLSI) have huge impacts for bringing revolutionary advancements in nanoscale devices, circuits, and systems due to improved electronic properties of the nanowires. Nanowires are potential devices for VLSI circuits and system applications and are highly preferred in novel nanoscale devices due to their high mobility and high-driving capacity. Although the knowledge and resources for the fabrication of nanowires is currently limited, it is predicted that, with the advancement of technology, conventional fabrication flow can be used for nanoscale devices, specifically nanowires. Innovative Applications of Nanowires for Circuit Design provides relevant theoretical frameworks that include device physics, modeling, circuit design, and the latest developments in experimental fabrication in the field of nanotechnology. The book covers advanced modeling concepts of nanowires along with their role as a key enabler for innovation in GLSI devices, circuits, and systems. While highlighting topics such as design, simulation, types and applications, and performance analysis of nanowires, this book is ideally intended for engineers, practitioners, stakeholders, academicians, researchers, and students interested in electronics engineering, nanoscience, and nanotechnology.

Scientific and Technical Books and Serials in Print
Cement Types, Admixtures, and Technical Procedures of Cement Analysis
ASEE Directory of Engineering Education Leaders
Handbook of Biomedical Engineering
Engineering Materials

Although green innovation and technology is not new, so far very limited information is available regarding the diversified approaches for green technologies and engineering. This book

highlights the challenges and opportunities, offering a roadmap for using various approaches in the most cost effective way. The book discusses the interrelationship between a circular economy and green technologies. It presents the dimensions of green innovations and illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes. It covers the current environmental and health challenges of societies and describes the role of stakeholders in developing sustainable societies and industries. This book provides a line of approach to core and interdisciplinary students, academicians, research scientists, and various industry personnel to present their ideas of green innovations with a common vision of sustainable development of community and industries in mind. Features Discusses the interrelationship between a circular economy and green technologies Presents the dimensions of green innovations Illustrates the challenges of industrialization, especially in terms of material synthesis and utilized processes Covers the current environmental and health challenges of societies Offers the identification and role of stakeholders in the sustainable development of societies and industries

This book presents the select proceedings of the second International Conference on Recent Advances in Mechanical Engineering (RAME 2020). The topics covered include aerodynamics and fluid mechanics, automation, automotive engineering, composites, ceramics and polymers processing, computational mechanics, failure and fracture mechanics, friction, tribology and surface engineering, heating and ventilation, air conditioning system, industrial engineering, IC engines, turbomachinery and alternative fuels, machinability and formability of materials, mechanisms and machines, metrology and computer-aided inspection, micro- and nano-mechanics, modelling, simulation and optimization, product design and development, rapid manufacturing technologies and prototyping, solid mechanics and structural mechanics, thermodynamics and heat transfer, traditional and non-traditional machining processes, vibration and acoustics. The book also discusses various energy-efficient renewable and non-renewable resources and technologies, strategies and technologies for sustainable development and energy & environmental interaction. The book is a valuable reference for beginners, researchers, and professionals interested in sustainable construction and allied fields.

The present book Microbial Synthesis of Nanomaterials is written mainly for the public's acquaintance with the synthesis and characterisation of different types of nanomaterials (NMs) and

their sustainable applications in various fields. The nano-era began the late 1990s, after which the production of NMs increased rapidly and is expected to reach 1.663 million tons by the end of 2021. Recent findings have shown that NMs play a vital role in various fields like agriculture, food industries, environment, medicine and pharmaceutical, electronics, and so on. Microorganisms play a key role in the formation and transformation of nanoscale minerals in the environment. These natural processes can be harnessed for the green synthesis of nanomaterials for a diverse array of commercial, industrial and environmental applications, presenting a sustainable alternative to more traditional physiochemical synthesis routes. This new book consists of 15 chapters which provide comprehensive knowledge about the synthesis of NMs and offer a critical overview of the current understanding of nanoparticle synthesis using microbes, covering NMs' synthesis, characterisation and applications, and providing discussion on future prospects. The editors believe that this book will be helpful to researchers, the scientific community, academicians, business farmers and policy makers. The editors thankfully acknowledge the financial support of the Russian Foundation for Basic Research, project no. 19-05-50097 and of the Ministry of Science and Higher Education of the Russian Federation within the framework of the state task in the field of scientific activity (no. 0852-2020-0029).

Sales Tax Cases

An Architectural Renaissance

Building Construction and Materials

Micro and Nano Machining of Engineering Materials

Simulations for Design and Manufacturing

Contemporary Indian Houses discusses fifty-one architect-designed built-up houses selected from different parts of India. They display the diversity of needs, tastes and building materials in the context of different weather conditions and social trends. Different architectural appearances or external expressions have determined the classification of the houses into five sections. This grouping keeps the reader ' s growing interest in the external aspect of a residential structure. The emphasis is on the built-form rather than on the interior and its decor. Each house is accompanied by an explanatory text and supplemented by appropriate drawings and photographs to present a comprehensive picture of India's many-splendoured domestic architecture. Contemporary Indian Houses is a well illustrated document of changing trends in architectural tune. It is not only a reflection of contemporary Indian architecture but also source of reference material for architecture historians. Moreover, it fulfills the needs of architects and other professionals engaged in house construction activity along with those general readers who wish to keep themselves informed of what is happening in the field of creative design.

Active Electrical Distribution Network: Issues, Solution Techniques and Applications is a comprehensive reference that addresses the issues and opportunities across one of the most overlooked sectors of the electrical industry, electrical distribution. The book begins with an introduction to electrical distribution networks, and then explores both present and future

developments in the areas of smart grids, electric vehicles, micro grids, demand side response and active distribution networks. The ongoing transition of energy systems is also covered, providing recommendations for a higher penetration of renewable energy, utilization of new equipment and new network configurations, as well as development of new design and operation methods, and applications of new incentives and business models. The book closes with a section on optimizing operational issues, featuring guidance on optimal expansion planning of distribution systems in smart grids and optimization of photovoltaic (PV) systems. Active Electrical Distribution Network is an ideal reference for all those interested in the modeling, analysis, control, operation and planning techniques that are key to addressing the knowledge and information needs of the engineering and research audience. Includes different techniques under DSR concepts and solutions to address home area management system problems Features various smart reactive power compensation techniques used for reactive power support Discusses different smart technologies implemented globally to improve the performance of the active distribution network

Engineering MaterialsStosius Incorporated/Advent Books DivisionEngineering MaterialsEngineering MaterialsEngineering Materials(for the Architecture and Civil Engineering Students Preparing for Degree, Diploma and Other Competitive Examinations)Vikas PubStrength of MaterialsCement Types, Admixtures, and Technical Procedures of Cement AnalysisAn IntroductionSpringer Nature

Advances in Clean Energy Technologies

Key Engineering Materials

An Introduction

Biomaterials Science: Processing, Properties, and Applications

Functional Nanomaterials for Regenerative Tissue Medicines