

Civil Engineering Materials Surendra Singh

Engineering Materials(for the Architecture and Civil Engineering Students Preparing for Degree, Diploma and Other Competitive Examinations)Vikas PubConstruction Science and MaterialsJohn Wiley & Sons

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,

An attempt is made to place before students (degree and post-degree) and professionals in the fields of Civil and Agricultural Engineering, Geology and Earth Sciences, this important branch of Hydrosience, i.e., Hydrology. It deals with all phases of the Hydrologic cycle and related topics in a lucid style and in metric system. There is a departure from empiricism, with emphasis on collection of hydrological data, processing and analysis of data, and hydrological design on sound principles and matured judgement. Large number of hydrological design problems are worked out at the end of each article, to illustrate the principles involved and the design procedure. Problems for assignment are given at the end of each chapter, along with objective type and intelligence questions.

This book seeks to reconstruct the past of undivided Panjab during five medieval centuries. It opens with a narrative of the efforts of Turkish warlords to achieve control in the face of tribal resistance, internal dissensions and external invasions. It examines the linkages of the ruling class with Zamindars and Sufis, paving the way for canal irrigation and agrarian expansion, thus strengthening the roots of the state in the region. While focusing on the post-Timur phase, it tries to make sense of the new ways of acquiring political power. This work uncovers the perpetual attempts of Zamindars to achieve local dominance, particularly in the context of declining presence of the state in the countryside. In this ambitious enterprise, they resorted to the support of their clans, adherence to hallowed customs and recurrent use of violence, all applied through a system of collective and participatory decision-making. The volume traces the growth of Sufi lineages built on training disciples, writing books, composing poetry and claiming miraculous powers. Besides delving into the relations of the Sufis with the state and different sections of the society, it offers an account of the rituals at a prominent shrine. Paying equal attention to the southeastern region, it deals with engagement of the Sabiris, among other exemplars, with the Islamic spirituality. Inclusive in approach and lucid in expression, the work relies on a wide range of evidence from Persian chronicles, Sufi literature and folklore, some of which have been used for the first time. Please note: Taylor & Francis does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka

This book provides state of the art description of various approaches, techniques and some basic fundamentals of bioremediation to manage a variety of organic and inorganic wastes and pollutants present in our environment. A comprehensive overview of recent advances and new development in the field of bioremediation research are provided within relevant theoretical framework to improve our understanding for the cleaning up of polluted water and contaminated land. The book is easy to read and language can be readily comprehended by aspiring newcomer, students, researchers and anyone else interested in this field. Renowned scientists around the world working on the above topics have contributed chapters. In this edited book, we have addressed the scope of the inexpensive and energy neutral bioremediation technologies. The scope of the book extends to environmental/agricultural scientists, students, consultants, site owners, industrial stakeholders, regulators and policy makers.

Construction Science & Materials is designed to cover topics studied at levels 2 – 5 on Construction HND courses and is also suitable for first year undergraduates on construction courses as well as Building surveying, Architectural Technology and Quantity Surveying. It is an essential text for those who have done no science since their GCSEs. Divided into 17 chapters, each with written explanations supplemented by solved examples and relevant diagrams to substantiate the text. Chapters end with numerical questions covering a range of problems and their answers are given at the end of the book and on the book's website.

This fourth edition focuses on the basics and advanced topics in strength of materials. This is an essential guide to students, as several chapters have been rewritten and their scope has expanded. Four new chapters highlighting combined loadings, unsymmetrical bending and shear centre, fixed beams, and rotating rings, discs and cylinders have been added. New solved examples, multiple choice questions and short answer questions have been added to augment learning. The entire text has been thoroughly revised and updated to eliminate the possible errors left out in the previous editions of the book. This textbook is ideal for the students of Mechanical and Civil Engineering. ^

Building Materials and Construction covers the detailed discussion on materials required for building construction along with construction methodology and will be useful for students and teachers as well as for architects and practicing civil engineers. The book will cater to their needs at every stage, i.e., from initial planning to selection of construction materials, construction practices, and even the post-construction stage. Apart from covering the traditional materials and construction details, the book also contains many latest and contemporary topics including newer and advanced materials such as composites, geosynthetics, recycled aggregate, paper as building material, bacterial concrete, nano concrete, geopolymer concrete and more. Salient Features : - Covers both building materials and construction practices in one volume. - Extensive coverage of traditional and modern building materials and construction practices. - Excellent pedagogy: • Figures: 227 • Tables: 117 • Review Questions: 449 • Multiple-Choice Questions: 250.

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.

This collection contains 16 papers presented at a symposium on condition monitoring of materials and structures at the Engineering Mechanics Conference, held in Austin, Texas, May 2000. Vols. 29-30 contain papers of the International Engineering Congress, Chicago, 1893; v. 54, pts. A-F, papers of the International Engineering Congress, St. Louis, 1904.

The book addresses the needs of researchers on the fundamentals as well as more advanced knowledge on microgrids and their evolution. This book covers newly emerging trends in fields

such as Computer Science, Energy, Electrical Engineering, and Electronics and brings the reader up-to-date on the new emerging fields that play an important role in the power infrastructure. This book provides knowledge on decision making for newly evolving trends in microgrid design. It discusses techniques on how to improve the existing power quality and reduce load shedding and power imbalances. The book presents the emerging fields that now play an important role in microgrid design such as Data Science, Machine Learning, AI, and IT. The readership includes researchers, academia, practicing engineers, consumers, power companies and policy makers located across the globe.

Presents a comprehensive and interdisciplinary review of the major cutting-edge technology research areas—especially those on new materials and methods as well as advanced structures and properties—for various sensor and detection devices. The development of sensors and detectors at macroscopic or nanometric scale is the driving force stimulating research in sensing materials and technology for accurate detection in solid, liquid, or gas phases; contact or non-contact configurations; or multiple sensing. The emphasis on reduced-scale detection techniques requires the use of new materials and methods. These techniques offer appealing perspectives given by spin crossover organic, inorganic, and composite materials that could be unique for sensor fabrication. The influence of the length, composition, and conformation structure of materials on their properties, and the possibility of adjusting sensing properties by doping or adding the side-groups, are indicative of the starting point of multifarious sensing. The role of intermolecular interactions, polymer and ordered phase formation, as well as behavior under pressure and magnetic and electric fields are also important factors for processing ultra-sensing materials. The 15 chapters written by senior researchers in Advanced Sensor and Detection Materials cover all these subjects and key features under three foci: 1) principles and perspectives, 2) new materials and methods, and 3) advanced structures and properties for various sensor devices.

This book presents selected papers from the International Conference on Advances in Materials Processing and Manufacturing Applications (iCADMA 2020), held on November 5-6, 2020, at Malaviya National Institute of Technology, Jaipur, India. iCADMA 2020 proceedings is divided into four topical tracks - Advanced Materials, Materials Manufacturing and Processing, Engineering Optimization and Sustainable Development, and Tribology for Industrial Application.

Composite Materials: Properties, Characterisation, and Applications provides an in-depth description of the synthesis, properties, and various characterisation techniques used for the study of composite materials. Covers applications and simulation tests of these advanced materials. Presents real-world examples for demonstration. Discusses surface, thermal, and electrical characterisation techniques. Covers composites for use as sensors. Aimed at industry professionals and researchers, this book offers readers thorough knowledge of the fundamentals as well as advanced level techniques involved in composite material characterisation, development, and applications.

This book presents select proceedings of the National Conference on Advances in Sustainable Construction Materials (ASCM 2019) held at the National Institute of Technology, Warangal, India. The book includes contributions from academics and practitioners on low-energy cement technologies, innovative materials and structural technologies towards cost-effective, environment friendly, durable, energy-efficient, and sustainable construction. The topics covered emphasize on cutting-edge, economically viable, and sustainable solutions with an aim to increase profitability, and decrease construction time and overall impact on the built environment. The book will be useful for researchers and practitioners interested in sustainable construction and allied fields.

This book presents select proceedings of the International Conference on Future Learning Aspects of Mechanical Engineering (FLAME 2020). This book, in particular, focuses on characterizing materials using novel techniques. It covers a variety of advanced materials, viz. composites, coatings, nanomaterials, materials for fuel cells, biomaterials among others. The book also discusses advanced characterization techniques like X-ray photoelectron, UV spectroscopy, scanning electron, atomic force, transmission electron and laser confocal scanning fluorescence microscopy, and gel electrophoresis chromatography. This book gives the readers an insight into advanced material processes and characterizations with special emphasis on nanotechnology.

Indexes materials appearing in the Society's Journals, Transactions, Manuals and reports, Special publications, and Civil engineering.

?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 vast and 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 Practising 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:

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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 comprises select proceedings of the Indian Geotechnical Conference 2020 (IGC2020) focusing on recent developments in the field of transportation geotechnics, scour and erosion, offshore geotechnics, and environmental geotechnology. The contents are useful to academicians, researchers, practitioners and policymakers to understand and tackle the challenges in an efficient manner and to adopt appropriate sustainable geotechnical engineering solutions.

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.

Nanotechnology has already demonstrated surprising potential for improving the performance of construction materials and many of these recent developments were facilitated by NICOM symposia. The NICOM5 proceedings will cover the emerging opportunities and future use of nanotechnology in construction and will illustrate the broad potential for application of nanotechnology to challenging problems involving materials and infrastructure.

The book has been thoroughly revised. Several new articles have been added, specifically, in chapters in mortar, Concrete, Paint: Varnishes, Distempers and Antitermite treatment to make the book to still more comprehensive and a useful unit for the students preparing for the examination in the subject.

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 text on building materials includes discussion of structural clay products, rocks and stones, wood, materials for making concrete, ferrous and non-ferrous metals, and miscellaneous materials.

This book gathers peer-reviewed contributions presented at the 3rd International Conference on Innovative Technologies for Clean and Sustainable Development, held in Chandigarh, India, on February 19-21, 2020. The respective papers focus on sustainable materials science and cover topics including the durability and sustainability of concrete, green materials in construction, economics of cleaner production, environmental impact mitigation, innovative materials for sustainable construction, performance and sustainability of special concrete, renewable energy infrastructure, sustainability in road construction, sustainable concrete, sustainable construction materials, waste minimization & management, prevention and management of water pollution, and zero-energy buildings.

This book, written by specialists in the area of solid mechanics, presents the fundamentals of deformable solids in a logical and cogent manner. Illustrative cases and worked examples are added to familiarize the student with problems encountered in engineering practice.

This book comprises select peer-reviewed proceedings of the International Conference on Recent Developments in Sustainable Infrastructure (ICRDSI) 2019. The topics span over all major disciplines of civil engineering with regard to sustainable development of infrastructure and innovation in construction materials, especially concrete. The book covers numerical and analytical studies on various topics such as composite and sandwiched structures, green building, groundwater modeling, rainwater harvesting, soil dynamics, seismic resistance and control of structures, waste management, structural health monitoring, and geo-environmental engineering. This book will be useful for students, researchers and professionals working in sustainable technologies in civil engineering.

Green Information and Communication Systems for a Sustainable Future covers the fundamental concepts, applications, algorithms, protocols, new trends, challenges, and research results in the area of Green Information and Communication Systems. This book provides the reader with up-to-date information on core and specialized issues, making it highly suitable for both the novice and the experienced researcher in the field. The book covers theoretical and practical perspectives on network design. It includes how green

ICT initiatives and applications can play a major role in reducing CO2 emissions, and focuses on industry and how it can promote awareness and implementation of Green ICT. The book discusses scholarship and research in green and sustainable IT for business and organizations and uses the power of IT to usher sustainability into other parts of an organization. Business and management educators, management researchers, doctoral scholars, university teaching personnel and policy makers as well as members of higher academic research organizations will all discover this book to be an indispensable guide to Green Information and Communication Systems. It will also serve as a key resource for Industrial and Management training organizations all over the world.

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