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KEY=ENGINEERING - HICKS SHEPPARD

AN INTRODUCTION TO MATERIALS ENGINEERING AND SCIENCE FOR CHEMICAL AND MATERIALS ENGINEERS

John Wiley & Sons An Introduction to Materials Engineering and Science for Chemical and Materials Engineers provides a solid background in materials engineering and science for chemical and materials engineering students. This book: Organizes topics on two levels; by engineering subject area and by materials class. Incorporates instructional objectives, active-learning principles, design-oriented problems, and web-based information and visualization to provide a unique educational experience for the student. Provides a foundation for understanding the structure and properties of materials such as ceramics/glass, polymers, composites, bio-materials, as well as metals and alloys. Takes an integrated approach to the subject, rather than a "metals first" approach.

INTRODUCTION TO MATERIALS SCIENCE FOR ENGINEERS

Pearson Education India This Text Provides A Balanced And Current Treatment Of The Full Spectrum Of Engineering Materials, Covering All The Physical Properties, Applications And Relevant Properties Associated With The Subject. It Explores All The Major Categories Of Materials While Offering Detailed Examinations Of A Wide Range Of New Materials With High-Tech Applications.

MATERIALS SCIENCE AND ENGINEERING

AN INTRODUCTION

HYDROGEN SCIENCE AND ENGINEERING

MATERIALS, PROCESSES, SYSTEMS AND TECHNOLOGY, 2 VOLUME SET

John Wiley & Sons Authored by 50 top academic, government and industry researchers, this handbook explores mature, evolving technologies for a clean, economically viable alternative to non-renewable energy. In so doing, it also discusses such broader topics as the environmental impact, education, safety and regulatory developments. The text is all-encompassing, covering a wide range that includes hydrogen as an energy carrier, hydrogen for storage of renewable energy, and incorporating hydrogen technologies into existing technologies.

MATERIALS FOR ENGINEERING

Woodhead Publishing This third edition of what has become a modern classic presents a lively overview of Materials Science which is ideal for students of Structural Engineering. It contains chapters on the structure of engineering materials, the determination of mechanical properties, metals and alloys, glasses and ceramics, organic polymeric materials and composite materials. It contains a section with thought-provoking questions as well as a series of useful appendices. Tabulated data in the body of the text, and the appendices, have been selected to increase the value of Materials for engineering as a permanent source of reference to readers throughout their professional lives. The second edition was awarded Choice's Outstanding Academic Title award in 2003. This third edition includes new information on emerging topics and updated reading lists.

TITANIUM

Springer Science & Business Media The authors were motivated to prepare this book by the absence of any recent comprehensive book on titanium. The intent of this book is to provide a modern compendium that addresses both the physical metallurgy as well as the applications of titanium. Until now the only book on this subject is that by Zwicker which was written in German and published almost 30 years ago. Chapter 1 is an introduction to the subject including some historical aspects of titanium. Chapter 2 is a summary of the Fundamental Aspects of Titanium. Chapter 3 is a summary of the Technological Aspects of Titanium and Chapters 4 through 9 address the specifics of the various classes of titanium ranging from CP Titanium to Titanium Matrix Composites. Finally, Chapter 10 covers "special" properties and applications of titanium. Our intent has been to address the subject conceptually rather than provide quantities of data of the sort that would be found in a Handbook. It is our intent that this book is useful for materials scientists and engineers interested in using titanium and for students either as a sourcebook or as a textbook. We have - tempted to include a representative set of references which provide additional detail for readers interested in specific aspects of titanium. Because of the relatively recent growth of the technological importance of titanium, there is a voluminous literature on titanium. While our references span this literature it has proven impossible to mention every contribution.

MATERIALS

ENGINEERING, SCIENCE, PROCESSING AND DESIGN; NORTH AMERICAN EDITION

Butterworth-Heinemann Materials, Third Edition, is the essential materials engineering text and resource for students developing skills and understanding of materials properties and selection for engineering applications. This new edition retains its design-led focus and strong emphasis on visual communication while expanding its inclusion of the underlying science of materials to fully meet the needs of instructors teaching an introductory course in materials. A design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications. Highly visual full color graphics facilitate understanding of materials concepts and properties. For instructors, a solutions manual, lecture slides, online image bank, and materials selection charts for use in class handouts or lecture presentations are available at <http://textbooks.elsevier.com>. The number of worked examples has been increased by 50% while the number of standard end-of-chapter exercises in the text has been doubled. Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology. The text meets the curriculum needs of a wide variety of courses in the materials and design field, including introduction to materials science and engineering, engineering materials, materials selection and processing, and materials in design. Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications. Highly visual full color graphics facilitate understanding of materials concepts and properties. Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process. For instructors, a solutions manual, lecture slides, online image bank and materials selection charts for use in class handouts or lecture presentations are available at <http://textbooks.elsevier.com>. Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information. NEW TO THIS EDITION: Text and figures have been revised and updated throughout. The number of worked examples has been increased by 50%. The number of standard end-of-chapter exercises in the text has been doubled. Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology.

AN INTRODUCTION TO ELECTRICAL ENGINEERING MATERIALS

S. Chand Publishing A Textbook for the students of B.Sc.(Engg.), B.E., B.Tech., AMIE and Diploma Courses. A new chapter on "Semiconductor Fabrication Technology and Miscellaneous Semiconductor Devices" had been included and additional self-assessment questions with answers and additional worked examples had been provided at the end of the BOOK.

NEWNES ENGINEERING SCIENCE POCKET BOOK

Elsevier Newnes Engineering Science Pocket Book provides a readily available reference to the essential engineering science formulae, definitions, and general information needed during studies and/or work situation. This book consists of three main topics— general engineering science, electrical engineering science, and mechanical engineering science. In these topics, this text specifically discusses the atomic structure of matter, standard quality symbols and units, chemical effects of electricity, and capacitors and capacitance. The alternating currents and voltages, three phase systems, D.C. machines, and A.C. motors are also elaborated. This compilation likewise covers the linear momentum and impulse, effects of forces on materials, and pressure in fluids. This publication is useful for technicians and engineers, as well as students studying for technician certificates and diplomas, GCSE, and A levels.

ESSENTIALS OF MATERIALS SCIENCE & ENGINEERING - SI VERSION

Cengage Learning This text provides students with a solid understanding of the relationship between the structure, processing, and properties of materials. Authors Donald Askeland and Pradeep Fulay teach the fundamental concepts of atomic structure and materials behaviors and clearly link them to the materials issues that students will have to deal with when they enter the industry or graduate school (e.g. design of structures, selection of materials, or materials failures). While presenting fundamental concepts and linking them to practical applications, the authors emphasize the necessary basics without overwhelming the students with too much of the underlying chemistry or physics. The book covers fundamentals in an integrated approach that emphasizes applications of new technologies that engineered materials enable. New and interdisciplinary developments in materials field such as nanomaterials, smart materials, micro-electro-mechanical (MEMS) systems, and biomaterials are also discussed. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

ADVANCES IN MATERIALS SCIENCE AND ENGINEERING

SELECT PROCEEDINGS OF ICFMMP 2019

Springer Nature This book presents the select proceedings of the International Conference on Functional Material, Manufacturing and Performances (ICFMMP) 2019. The book provides the state-of-the-art research, development, and commercial prospective of recent advances in materials science and engineering. The contents cover various synthesis and fabrication routes of functional and smart materials for applications in mechanical engineering, manufacturing, metrology, nanotechnology, physics, chemical and biological sciences, civil engineering, food science among others. It also provides the evolutionary behavior of materials science for industrial applications. This book will be a useful resource for researchers as well as professionals interested in the highly interdisciplinary field of materials science.

POLYMER ENGINEERING SCIENCE AND VISCOELASTICITY

AN INTRODUCTION

Springer This book provides a unified mechanics and materials perspective on polymers: both the mathematics of viscoelasticity theory as well as the physical mechanisms behind polymer deformation processes. Introductory material on fundamental mechanics is included to provide a continuous baseline for readers from all disciplines. Introductory material on the chemical and molecular basis of polymers is also included, which is essential to the understanding of the thermomechanical response. This self-contained text covers the viscoelastic characterization of polymers including constitutive modeling, experimental methods, thermal response, and stress and failure analysis. Example problems are provided within the text as well as at the end of each chapter. New to this edition: · One new chapter on the use of nano-material inclusions for structural polymer applications and applications such as fiber-reinforced polymers and adhesively bonded structures · Brings up-to-date polymer production and sales data and equipment and procedures for evaluating polymer characterization and classification · The work serves as a comprehensive reference for advanced seniors seeking graduate level courses, first and second year graduate students, and practicing engineers

HIGH SENSITIVITY MOIRÉ

EXPERIMENTAL ANALYSIS FOR MECHANICS AND MATERIALS

Springer Science & Business Media A description of both the theory and practice of physical measurements that use high-sensitivity moiré - principally moiré interferometry. The focus here is on the mechanics and micromechanics of materials and structural elements and the book includes new studies published for the first time. Diverse fields are addressed: advanced composite materials, thermal stresses, electronic packaging, fracture, metallurgy, time-dependence, strain gage calibration. All the methods can be applied for whole-field measurements on nearly and solid bodies. This reader-friendly book will serve engineers and scientists who are concerned with measurements of real phenomena, while also stimulating students to pursue the treasures of experimental analysis.

COMPOSITE MATERIALS ENGINEERING, VOLUME 1

FUNDAMENTALS OF COMPOSITE MATERIALS

Springer This book is the first of two volumes providing comprehensive coverage of the fundamental knowledge and technology of composite materials. It covers a variety of design, fabrication and characterization methods as applied to composite materials, particularly focusing on the fiber-reinforcement mechanism and related examples. It is ideal for graduate students, researchers, and professionals in the fields of Materials Science and Engineering, and Mechanical Engineering.

INNOVATIONS IN EVERYDAY ENGINEERING MATERIALS

Springer Nature This book provides an invaluable reference of materials engineering written for a broad audience in an engaging, effective way. Several stories explain how perseverance and organized research helps to discover new processes for making important materials and how new materials with unmatched properties are theoretically conceived, tested in the laboratory, mass produced and deployed for the benefit of all. This book provides a welcome introduction to how advances are made in the world of materials that sustain and define our contemporary standard of living. Suitable for trained materials scientists and the educated layman with an appreciation of engineering, the book will be especially appealing to the young materials engineer, for whom it will serve as a long-term reference due to its clear and rigorous illustration of the field's essential features.

CHEMICAL ENGINEERING DESIGN

PRINCIPLES, PRACTICE AND ECONOMICS OF PLANT AND PROCESS DESIGN

Elsevier Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES

A PATH FORWARD

National Academies Press Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

APPLIED STRENGTH OF MATERIALS FOR ENGINEERING TECHNOLOGY

Createspace Independent Publishing Platform This algebra-based text is designed specifically for Engineering Technology students, using both SI and US Customary units. All example problems are fully worked out with unit conversions. Unlike most textbooks, this one is updated each semester using student comments, with an average of 80 changes per edition.

CALLISTER'S MATERIALS SCIENCE AND ENGINEERING

John Wiley & Sons Callister's Materials Science and Engineering: An Introduction promotes student understanding of the three primary types of materials (metals, ceramics, and polymers) and composites, as well as the relationships that exist between the structural elements of materials and their properties. The 10th edition provides new or updated coverage on a number of topics, including: the Materials Paradigm and Materials Selection Charts, 3D printing and additive manufacturing, biomaterials, recycling issues and the Hall effect.

MATERIALS

ENGINEERING, SCIENCE, PROCESSING AND DESIGN

Elsevier Materials: Engineering, Science, Processing and Design, Second Edition, was developed to guide material selection and understanding for a wide spectrum of engineering courses. The approach is systematic, leading from design requirements to a prescription for optimized material choice. This book presents the properties of materials, their origins, and the way they enter engineering design. The book begins by introducing some of the design-limiting properties: physical properties, mechanical properties, and functional properties. It then turns to the materials themselves, covering the families, the classes, and the members. It identifies six broad families of materials for design: metals, ceramics, glasses, polymers, elastomers, and hybrids that combine the properties of two or more of the others. The book presents a design-led strategy for selecting materials and processes. It explains material properties such as yield and plasticity, and presents elastic solutions for common modes of loading. The remaining chapters cover topics such as the causes and prevention of material failure; cyclic loading; fail-safe design; and the processing of materials. * Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications * Highly visual full color graphics facilitate understanding of materials concepts and properties * Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design

process * Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information NEW TO THIS EDITION: "Guided Learning" sections on crystallography, phase diagrams and phase transformations enhance students' learning of these key foundation topics Revised and expanded chapters on durability, and processing for materials properties More than 50 new worked examples placed throughout the text

EXTRUSION PROCESSING TECHNOLOGY

FOOD AND NON-FOOD BIOMATERIALS

John Wiley & Sons The only up-to-date book on this important technology, Extrusion Processing Technology: Food and Non-Food Biomaterials bridges the gap between the principles of extrusion science and the practical "know how" of operational engineers and technicians. Written by internationally renowned experts with over forty years of experience between them, this valuable reference for food scientists, food engineers, chemical engineers, and students includes coverage of new, greener technologies as well as case studies to illustrate the practical, real-world application of the principles in various settings.

ART OF DOING SCIENCE AND ENGINEERING

LEARNING TO LEARN

CRC Press Highly effective thinking is an art that engineers and scientists can be taught to develop. By presenting actual experiences and analyzing them as they are described, the author conveys the developmental thought processes employed and shows a style of thinking that leads to successful results is something that can be learned. Along with spectacular successes, the author also conveys how failures contributed to shaping the thought processes. Provides the reader with a style of thinking that will enhance a person's ability to function as a problem-solver of complex technical issues. Consists of a collection of stories about the author's participation in significant discoveries, relating how those discoveries came about and, most importantly, provides analysis about the thought processes and reasoning that took place as the author and his associates progressed through engineering problems.

DATA-DRIVEN SCIENCE AND ENGINEERING

MACHINE LEARNING, DYNAMICAL SYSTEMS, AND CONTROL

Cambridge University Press Data-driven discovery is revolutionizing the modeling, prediction, and control of complex systems. This textbook brings together machine learning, engineering mathematics, and mathematical physics to integrate modeling and control of dynamical systems with modern methods in data science. It highlights many of the recent advances in scientific computing that enable data-driven methods to be applied to a diverse range of complex systems, such as turbulence, the brain, climate, epidemiology, finance, robotics, and autonomy. Aimed at advanced undergraduate and beginning graduate students in the engineering and physical sciences, the text presents a range of topics and methods from introductory to state of the art.

MATERIALS SCIENCE AND ENGINEERING

A FIRST COURSE

PHI Learning Pvt. Ltd. This well-established and widely adopted book, now in its Sixth Edition, provides a thorough analysis of the subject in an easy-to-read style. It analyzes, systematically and logically, the basic concepts and their applications to enable the students to comprehend the subject with ease. The book begins with a clear exposition of the background topics in chemical equilibrium, kinetics, atomic structure and chemical bonding. Then follows a detailed discussion on the structure of solids, crystal imperfections, phase diagrams, solid-state diffusion and phase transformations. This provides a deep insight into the structural control necessary for optimizing the various properties of materials. The mechanical properties covered include elastic, anelastic and viscoelastic behaviour, plastic deformation, creep and fracture phenomena. The next four chapters are devoted to a detailed description of electrical conduction, superconductivity, semiconductors, and magnetic and dielectric properties. The final chapter on 'Nanomaterials' is an important addition to the sixth edition. It describes the state-of-art developments in this new field. This eminently readable and student-friendly text not only provides a masterly analysis of all the relevant topics, but also makes them comprehensible to the students through the skillful use of well-drawn diagrams, illustrative tables, worked-out examples, and in many other ways. The book is primarily intended for undergraduate students of all branches of engineering (B.E./B.Tech.) and postgraduate students of Physics, Chemistry and Materials Science. KEY FEATURES • All relevant units and constants listed at the beginning of each chapter • A note on SI units and a full table of conversion factors at the beginning • A new chapter on 'Nanomaterials' describing the state-of-art information • Examples with solutions and problems with answers • About 350 multiple choice questions with answers

ELECTROSPUN NANOFIBERS

PRINCIPLES, TECHNOLOGY AND NOVEL APPLICATIONS

Springer Nature This book presents the development of electrospun materials, fundamental principles of electrospinning process, controlling parameters, electrospinning strategies, and electrospun nanofibrous structures with specific properties for applications in tissue engineering and regenerative medicine, textile, water treatment, sensor, and energy fields. This book can broadly be divided into three parts: the first comprises basic principles of electrospinning process, general requirements of electrospun materials and advancement in electrospinning technology, the second part describes the applications of electrospun materials in different fields and future prospects, while the third part describes applications that can be used in advanced manufacturing based on conjoining electrospinning and 3D printing. Electrospinning is the most successful process for producing functional nanofibers and nanofibrous membranes with superior chemical and physical properties. The unique properties of electrospun materials including high surface to volume ratio, flexibility, high mechanical strength, high porosity, and adjustable nanofiber and pore size distribution make them potential candidates in a wide range of applications in biomedical and engineering areas. Electrospinning is becoming more efficient and more specialized in order to produce particular fiber types with tunable diameter and morphology, tunable characteristics, having specific patterns and 3D structures. With a strong focus on fundamental materials science and engineering, this book provides systematic and comprehensive coverage of the recent developments and novel perspectives of electrospun materials. This comprehensive book includes chapters that discuss the latest and emerging applications of nanofiber technology in various fields, specifically in areas such as wearable textile, biomedical applications, energy generation and storage, water treatment and environmental remediation, and sensors such as biomarkers in healthcare and biomedical engineering. Despite all these advancements, there are still challenges to be addressed and overcome for nanofiber technology to move towards maturation.

THE MATERIALS SCIENCE OF THIN FILMS

Academic Press Prepared as a textbook complete with problems after each chapter, specifically intended for classroom use in universities.

HANDBOOK OF RESEARCH ON RECENT DEVELOPMENTS IN MATERIALS SCIENCE AND CORROSION ENGINEERING EDUCATION

IGI Global The latest research innovations and enhanced technologies have altered the discipline of materials science and engineering. As a direct result of these developments, new trends in Materials Science and Engineering (MSE) pedagogy have emerged that require attention. The Handbook of Research on Recent Developments in Materials Science and Corrosion Engineering Education brings together innovative and current advances in the curriculum design and course content of MSE education programs. Focusing on the application of instructional strategies, pedagogical frameworks, and career preparation techniques, this book is an essential reference source for academicians, engineering practitioners, researchers, and industry professionals interested in emerging and future trends in MSE training and education.

ENGINEERING SCIENCE, 6TH ED

Routledge Comprehensive engineering science coverage that is fully in line with the latest vocational course requirements New chapters on heat transfer and fluid mechanics Topic-based approach ensures that this text is suitable for all vocational engineering courses Coverage of all the mechanical, electrical and electronic principles within one volume provides a comprehensive exploration of scientific principles within engineering Engineering Science is a comprehensive textbook suitable for all vocational and pre-degree courses. Taking a subject-led approach, the essential scientific principles engineering students need for their studies are topic-by-topic based in presentation. Unlike most of the textbooks available for this subject, Bill Bolton goes beyond the core science to include the mechanical, electrical and electronic principles needed in the majority of courses. A concise and accessible text is supported by numerous worked examples and problems, with a complete answer section at the back of the book. Now in its sixth edition, the text has been fully updated in line with the current BTEC National syllabus and will also prove an essential reference for students embarking on Higher National engineering qualifications and Foundation Degrees.

QUESTIONS AND ANSWERS FOR JOB INTERVIEW OFFSHORE DRILLING PLATFORMS

Petrogav International The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 271 questions and answers for job interview and as a BONUS 290 links to video movies. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

MATERIALS

ENGINEERING, SCIENCE, PROCESSING AND DESIGN; NORTH AMERICAN EDITION

Butterworth-Heinemann This is the essential materials engineering text and resource for students developing skills and understanding of materials properties and selection for engineering applications. Taking a unique design-led approach that is broader in scope than other texts, Materials 3e meets the curriculum needs of a wide variety of courses in the materials and design field, including introduction to materials science and engineering, engineering materials, materials selection and processing, and materials in design. This new edition retains its design-led focus and strong emphasis on visual communication while expanding its inclusion of the underlying science of materials to fully meet the needs of instructors teaching an introductory course in materials. Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications Highly visual full color graphics facilitate understanding of materials concepts

and properties Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process For instructors, a solutions manual, lecture slides, online image bank and materials selection charts for use in class handouts or lecture presentations are available at <http://textbooks.elsevier.com> Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information NEW TO THIS EDITION: Text and figures have been revised and updated throughout The number of worked examples has been increased by 50% The number of standard end-of-chapter exercises in the text has been doubled Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology

DESIGN AND MANUFACTURE OF FIBRE-REINFORCED COMPOSITES

Springer Nature This book presents an introduction to the design and manufacture of fibre-reinforced composites. The mechanical properties of unidirectional composites are considered in a structural design context. The use of woven and random fibres is also addressed. The accuracy of design estimates for unidirectional composites is benchmarked against test data, and the relevance of a factor of safety (FoS) is established. The importance of prototype testing is emphasised. This book illustrates how to make a fibre-reinforced composite. Wet layup, vacuum bagging and prepreg moulding are covered in detail. Some guidance on mould design and construction is also provided. Finally, an introduction to the manufacture of composite tubes is presented. Wherever possible, design and make examples are used to illustrate the content. Tutorial questions and problems are included at the end of each chapter. The reader is encouraged to use these questions and problems to assess their own level of understanding of the content.

STATISTICS AND PROBABILITY FOR ENGINEERING APPLICATIONS

Elsevier Statistics and Probability for Engineering Applications provides a complete discussion of all the major topics typically covered in a college engineering statistics course. This textbook minimizes the derivations and mathematical theory, focusing instead on the information and techniques most needed and used in engineering applications. It is filled with practical techniques directly applicable on the job. Written by an experienced industry engineer and statistics professor, this book makes learning statistical methods easier for today's student. This book can be read sequentially like a normal textbook, but it is designed to be used as a handbook, pointing the reader to the topics and sections pertinent to a particular type of statistical problem. Each new concept is clearly and briefly described, whenever possible by relating it to previous topics. Then the student is given carefully chosen examples to deepen understanding of the basic ideas and how they are applied in engineering. The examples and case studies are taken from real-world engineering problems and use real data. A number of practice problems are provided for each section, with answers in the back for selected problems. This book will appeal to engineers in the entire engineering spectrum (electronics/electrical, mechanical, chemical, and civil engineering); engineering students and students taking computer science/computer engineering graduate courses; scientists needing to use applied statistical methods; and engineering technicians and technologists. * Filled with practical techniques directly applicable on the job * Contains hundreds of solved problems and case studies, using real data sets * Avoids unnecessary theory

ENGINEERING MATERIALS 2

AN INTRODUCTION TO MICROSTRUCTURES AND PROCESSING

Butterworth Heinemann Engineering Materials 2 is a best-selling stand-alone text in its own right for more advanced students of materials science and mechanical engineering, and is the follow-up to its renowned companion text, Engineering Materials 1: An Introduction to Properties, Applications & Design. This book develops a detailed understanding of the fundamental properties of engineering materials, how they are controlled by processing, formed, joined and finished, and how all of these factors influence the selection and design of materials in real-world engineering applications. * One of the best-selling materials properties texts; companion text to Ashby & Jones' 'Engineering Materials 1: An Introduction to their Properties and Applications' book * New student friendly format, with enhanced pedagogy including more case studies, worked examples, student questions and a full instructor's manual * World-renowned author team

HOW TO FIND A JOB ON OFFSHORE DRILLING RIGS

Petrogav International This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry. The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. As a BONUS this eBook contains web addresses to 301 video movies for a better understanding of the technological process and 205 web addresses to recruitment companies where you may apply for a job.

MODELING AND SIMULATION IN ENGINEERING SCIENCES

BoD - Books on Demand This book features state-of-the-art contributions in mathematical, experimental and numerical simulations in engineering sciences. The contributions in this book, which comprise twelve chapters, are organized in six sections spanning mechanical, aerospace, electrical, electronic, computer, materials, geotechnical and chemical engineering. Topics include metal micro-forming, compressible reactive flows, radio frequency circuits, barrier infrared detectors, fiber Bragg and long-period fiber gratings, semiconductor modelling, many-core architecture computers, laser processing of materials, alloy phase decomposition, nanofluids, geo-materials and rheo-kinetics. Contributors are from Europe, China, Mexico, Malaysia and Iran. The chapters feature many sophisticated approaches including Monte Carlo simulation, FLUENT and ABAQUS computational modelling, discrete element modelling and partitioned frequency-time methods. The book will be of interest to researchers and also consultants engaged in many areas of engineering simulation.

MATERIALS FOR CONSTRUCTION AND CIVIL ENGINEERING

SCIENCE, PROCESSING, AND DESIGN

Springer This expansive volume presents the essential topics related to construction materials composition and their practical application in structures and civil installations. The book's diverse slate of expert authors assemble invaluable case examples and performance data on the most important groups of materials used in construction, highlighting aspects such as nomenclature, the properties, the manufacturing processes, the selection criteria, the products/applications, the life cycle and recyclability, and the normalization. Civil Engineering Materials: Science, Processing, and Design is ideal for practicing architects; civil, construction, and structural engineers, and serves as a comprehensive reference for students of these disciplines. This book also: · Provides a substantial and detailed overview of traditional materials used in structures and civil infrastructure · Discusses properties of natural and synthetic materials in construction and materials' manufacturing processes · Addresses topics important to professionals working with structural materials, such as corrosion, nanomaterials, materials life cycle, not often covered outside of journal literature · Diverse author team presents expert perspective from civil engineering, construction, and architecture · Features a detailed glossary of terms and over 400 illustrations

MATERIALS SCIENCE AND ENGINEERING FOR THE 1990S

MAINTAINING COMPETITIVENESS IN THE AGE OF MATERIALS

National Academies Press Materials science and engineering (MSE) contributes to our everyday lives by making possible technologies ranging from the automobiles we drive to the lasers our physicians use. Materials Science and Engineering for the 1990s charts the impact of MSE on the private and public sectors and identifies the research that must be conducted to help America remain competitive in the world arena. The authors discuss what current and future resources would be needed to conduct this research, as well as the role that industry, the federal government, and universities should play in this endeavor.

DESIGN ENGINEERING AND SCIENCE

Springer Nature Design Engineering and Science teaches the theory and practice of axiomatic design (AD). It explains the basics of how to conceive and deliver solutions to a variety of design problems. The text shows how a logical framework and scientific basis for design can generate creative solutions in many fields, including engineering, materials, organizations, and a variety of large systems. Learning to apply the systematic methods advocated by AD, a student can construct designs that lead to better environmental sustainability and to increased quality of life for the end-user at the same time reducing the overall cost of the product development process. Examples of previous innovations that take advantage of AD methods include: • on-line electric vehicle design for electric buses with wireless power supply; • mobile harbors that allow unloading of large ships in shallow waters; • microcellular plastics with enhanced toughness and lower weight; and • organizational changes in companies and universities resulting in more efficient and competitive ways of working. The book is divided into two parts. Part I provides detailed and thorough instruction in the fundamentals of design, discussing why design is so important. It explains the relationship between and the selection of functional requirements, design parameters and process variables, and the representation of design outputs. Part II presents multiple applications of AD, including examples from manufacturing, healthcare, and materials processing. Following a course based on this text students learn to create new products and design bespoke manufacturing systems. They will gain insight into how to create imaginative design solutions that satisfy customer needs and learn to avoid introducing undue complexity into their designs. This informative text provides practical and academic insight for engineering design students and will help instructors teach the subject in a novel and more rigorous fashion. Their knowledge of AD will stand former students in good stead in the workplace as these methods are both taught and used in many leading industrial concerns.

MATERIALS SCIENCE AND ENGINEERING: CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

CONCEPTS, METHODOLOGIES, TOOLS, AND APPLICATIONS

IGI Global The design and study of materials is a pivotal component to new discoveries in the various fields of science and technology. By better understanding the components and structures of materials, researchers can increase its applications across different industries. Materials Science and Engineering: Concepts, Methodologies, Tools, and Applications is a compendium of the latest academic material on investigations, technologies, and techniques pertaining to analyzing the synthesis and design of new materials. Through its broad and extensive coverage on a variety of crucial topics, such as nanomaterials, biomaterials, and relevant computational methods, this multi-volume work is an essential reference source for engineers, academics, researchers, students, professionals, and practitioners seeking innovative perspectives in the field of materials science and engineering.

TERI ENERGY & ENVIRONMENT DATA DIARY AND YEARBOOK (TEDDY) 2017/18

(WITH COMPLIMENTARY CD)

The Energy and Resources Institute (TERI) TERI Energy & Environment Data Diary and Yearbook (TEDDY) is an annual publication brought out by The Energy and Resources Institute (TERI) since 1986. It is the only comprehensive energy and environment yearbook in India that provides updated information on the energy supply sectors (coal and lignite, petroleum and natural gas, power, and renewable energy sources), energy demand sectors (agriculture, industry, transport, household), and local and global environment sectors (environment and climate change). The publication also provides a review of the government policies that have implications for the sectors of the Indian economy. In TEDDY, an account of India's commercial energy balances is given, which provide comprehensive information on energy flows within different sectors of the economy and how they have been changing over time. These energy balances and conversion factors are a valuable ready reckoner for researchers, scholars, and organizations working in the energy sector. After the introductory chapters, for the ease of readers, TEDDY has been divided into sections on energy supply, energy demand, and local and global environment. Interactive graphs, figures, maps, and tables have been used throughout the chapters to explain facts, which make the book an interesting read. In addition, detailed tables at the end of each chapter represent statistical data on each of the above-mentioned sectors. The publication is accompanied by a complimentary CD containing full text. The publication has more than 15,000 readers across the globe and is often cited in international peer-reviewed journals and policy documents.