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Thermodynamics of Materials Qing Jiang 2011-05-30 "Thermodynamics of Materials" introduces the basic underlying principles of thermodynamics as well as their applicability to the behavior of all classes of materials, while providing an integrated approach from macro- (or classical) thermodynamics to meso-and nanothermodynamics, and microscopic (or statistical) thermodynamics. The book is intended for scientists, engineers and graduate students in all fields involving materials science-related disciplines. Both Dr. Qing Jiang and Dr. Zi Wen are professors at Jilin University.

Permanent Magnet Synchronous Machines Sandra Eriksson 2019-08-20 Interest in permanent magnet synchronous machines (PMSMs) is continuously increasing worldwide, especially with the increased use of renewable energy and the electrification of transports. This book contains the successful submissions of fifteen papers to a Special Issue of Energies on the subject area of "Permanent Magnet Synchronous Machines". The focus is on permanent magnet synchronous machines and the electrical systems they are connected to. The presented work represents a wide range of areas. Studies of control systems, both for permanent magnet synchronous machines and for brushless DC motors, are presented and experimentally verified. Design studies of generators for wind power, wave power and hydro power are presented. Finite element method simulations and analytical design methods are used. The presented studies represent several of the different research fields on permanent magnet machines and electric drives.

Industrial Sprays and Atomization Ghasem G. Nasr 2002-07-24 An extensive critical compilation of the wide range of manufacturing processes that involve the application of spray technology, this book covers design of atomizers as well as the performance of plant and their corresponding spray systems. The needs of practising engineers from different disciplines: project managers, and works, maintenance and design engineers are catered for. Of interest to researchers in the field of liquid sprays, the book includes outlines of the contemporary and possible future research and challenges in the different fields of application and deals with: • sprays and their production; • sprays in industrial production processes; • processes involving vaporisation and cooling or cleaning of gases; • spray-surface impact processes; • fuel sprays for fixed plant; • spraying of hot surfaces for steel making and other metals; • spraying of molten metals. Guidance is given for the analysis and interpretation of experimental data obtained using different measurement techniques.

The Electric Motor and Its Applications Thomas Commerford Martin 1888

Pneumatic Handbook A. Barber 1997-12-19 Accepted as the standard reference work on modern pneumatic and compressed air engineering, the new edition of this handbook has been completely

revised, extended and updated to provide essential up-to-date reference material for engineers, designers, consultants and users of fluid systems.

Control of Power Inverters in Renewable Energy and Smart Grid Integration Qing-Chang Zhong 2012-11-16 Integrating renewable energy and other distributed energysources into smart grids, often via power inverters, is arguablythe largest "new frontier" for smart grid advancements. Inverters should be controlled properly so that their integration does not jeopardize the stability and performance of power systems and a solid technical backbone is formed to facilitate other functions and services of smart grids. This unique reference offers systematic treatment of important control problems in power inverters, and different general converter theories. Starting at a basic level, it presents conventional power conversion methodologies and then 'non-conventional' methods, with a highly accessible summary of the latest developments in power inverters as well asinsight into the grid connection of renewable power. Consisting of four parts - Power Quality Control, NeutralLine Provision, Power Flow Control, and Synchronisation –this book fully demonstrates the integration of control and powerelectronics. Key features include: the fundamentals of power processing and hardware design innovative control strategies to systematically treat the control of power inverters extensive experimental results for most of the controlstrategies presented the pioneering work on "synchronverters" which hasgained IET Highly Commended Innovation Award Engineers working on inverter design and those at power systemutilities can learn how advanced control strategies could improve system performance and work in practice. The book is a usefulreference for researchers who are interested in the area of controlengineering, power electronics, renewable energy and distributedgeneration, smart grids, flexible AC transmission systems, and power systems for more-electric aircraft and all-electric ships. This is also a handy text for graduate students and university professors in the areas of electrical power engineering, advanced control engineering, power electronics, renewable energy and smartgrid integration.

Handbook of Automotive Power Electronics and Motor Drives Ali Emadi 2017-12-19 Initially, the only electric loads encountered in an automobile were for lighting and the starter motor. Today, demands on performance, safety, emissions, comfort, convenience, entertainment, and communications have seen the working-in of seemingly innumerable advanced electronic devices. Consequently, vehicle electric systems require larger capacities and more complex configurations to deal with these demands. Covering applications in conventional, hybrid-electric, and electric vehicles, the Handbook of Automotive Power Electronics and Motor Drives provides a comprehensive reference for automotive electrical systems. This authoritative handbook features contributions from an outstanding international panel of experts from industry and academia, highlighting existing and emerging technologies. Divided into five parts, the Handbook of Automotive Power Electronics and Motor Drives offers an overview of automotive power systems, discusses semiconductor devices, sensors, and other components, explains different power electronic converters, examines electric machines and associated drives, and details various advanced electrical loads as well as battery technology for automobile applications. As we seek to answer the call for safer, more efficient, and lower-emission vehicles from regulators and consumer insistence on better performance, comfort, and entertainment, the technologies outlined in this book are vital for engineering advanced vehicles that will satisfy these criteria.

Computer Controlled Urban Transportation Horst Strobel 1982

Introduction to Power Electronics D. Fewson 1998-03-27 Building on solid state device and electromagnetic contributions to the series, this text book introduces modern power electronics, that is the application of semiconductor devices to the control and conversion of electrical power. The increased availability of solid state power switches has created a very rapid expansion in applications, from the

relatively low power control of domestic equipment, to high power control of industrial processes and very high power control along transmission lines. This text provides a comprehensive introduction to the entire range of devices and examines their applications, assuming only the minimum mathematical and electronic background. It covers a full year's course in power electronics. Numerous exercises, worked examples and self assessments are included to facilitate self study and distance learning.

Electric Machinery and Transformers Bhag S. Guru 1995 For this revision of their bestselling junior-and senior-level text, Guru and Hiziroglu have incorporated eleven years of cutting-edge developments in the field since Electric Machinery and Transformers was first published. Completely re-written, the new Second Edition also incorporatessuggestions from students and instructors who have used the First Edition, making it the best text available for junior- and senior-level courses in electric machines. The new edition features a wealth of new and improved problems and examples, designed to complement the authors' overall goal ofencouraging intuitive reasoning rather than rote memorization of material. Chapter 3, which presents the conversion of energy, now includes: analysis of magnetically coupled coils, induced emf in a coil rotating in a uniform magnetic field, induced emf in a coil rotating in a time-varying magneticfield, and the concept of the revolving field. All problems and examples have been rigorously tested using Mathcad.

<u>Handbook of Electric Power Calculations</u> H. Wayne Beaty 2000-10-18 A bestselling calculations handbook that offers electric power engineers and technicians essential, step-by-step procedures for solving a wide array of electric power problems. This edition introduces a complete electronic book on CD-ROM with over 100 live calculations--90% of the book's calculations. Updated to reflect the new National Electric Code advances in transformer and motors; and the new system design and operating procedures in the electric utility industry prompted by deregulation.

Electric Machinery A. E. Fitzgerald 1988

Wire Ropes Klaus Feyrer 2014-11-01 The main goal of this book is to present the methods used to calculate the most important parameters for ropes, and to explain how they are applied on the basis of numerous sample calculations. The book, based on the most important chapters of the German book DRAHTSEILE, has been updated to reflect the latest developments, with the new edition especially focusing on computational methods for wire ropes. Many new calculations and examples have also been added to facilitate the dimensioning and calculation of mechanical characteristics of wire ropes. This book offers a valuable resource for all those working with wire ropes, including construction engineers, operators and supervisors of machines and installations involving wire ropes.

Potash D.E. Garrett 2012-12-06 Potash is the term generally given to potassium chloride, but it is also loosely applied to the various potassium compounds used in agriculture: po tassium sulfate, potassium nitrate or double salts of potassium and magne sium sulfate (generally langbeinite, K SO • 2MgSO). Sometimes the var 2 4 4 ious compounds are differentiated by the terms muriate of potash, sulfate of potash, etc. When referring to ores, or in geology, all of the naturally found potassium salts are called "potash ores". However, originally potash referred only to crude potassium carbonate, since its sole source was the leaching of wood ashes in large pots. This "pot ash" product was generally recovered from near-seacoast plants, such as the saltwort bush, whose ashes were richer in potassium than sodium carbonate. Inland plant's ashes were generally higher in sodium carbonate, giving rise to the word alkali from the Arabic word for soda ash, al kali. The term was then carried over after potassium was discovered to form the latin word for it, kalium. The recovery of potash from ashes became a thriving small cottage industry throughout the world's coastal areas, and developing economies, such as the early

set tlers in the United States were able to generate some much-needed income from its recovery and sale. This industry rapidly phased out with the advent of the LeBanc process for producing soda ash in 1792, and the discovery about the same time of the massive sodium-potassium nitrate deposits in the Atacama Desert of Chile.

Transformer and Inductor Design Handbook, Third Edition Colonel Wm. T. McLyman 2004-03-31 Extensively revised and expanded to present the state-of-the-art in the field of magnetic design, this third edition presents a practical approach to transformer and inductor design and covers extensively essential topics such as the area product, Ap, and core geometry, Kg. The book provides complete information on magnetic materials and core characteristics using step-by-step design examples and presents all the key components for the design of lightweight, high-frequency aerospace transformers or low-frequency commercial transformers. Written by a specialist with more than 47 years of experience in the field, this volume covers magnetic design theory with all of the relevant formulas.

Nuclear Hydrogen Production Handbook Xing L. Yan 2016-04-19 Written by two leading researchers from the world-renowned Japan Atomic Energy Agency, the Nuclear Hydrogen Production Handbook is an unrivalled overview of current and future prospects for the effective production of hydrogen via nuclear energy. Combining information from scholarly analyses, industrial data, references, and other resources, this h

Optics, Light and Lasers Dieter Meschede 2017-06-06 This new, updated and enlarged edition of the successful and exceptionally well-structured textbook features new chapters on such hot topics as optical angular momentum, microscopy beyond the resolution limit, metamaterials, femtocombs, and quantum cascade lasers. It provides comprehensive and coherent coverage of fundamental optics, laser physics, and important modern applications, while equally including some traditional aspects for the first time, such as the Collins integral or solid immersion lenses. Written for newcomers to the topic who will benefit from the author's ability to explain difficult theories and effects in a straightforward and readily comprehensible way.

April 2022 - Surplus Record Machinery & Equipment Directory Surplus Record 2022-04-01 SURPLUS RECORD, is the leading independent business directory of new and used capital equipment, machine tools, machinery, and industrial equipment, listing over 95,000 industrial assets; including metalworking and fabricating machine tools, chemical and process equipment, cranes, air compressors, pumps, motors, circuit breakers, generators, transformers, turbines, and more. Over 1,100 businesses list with the SURPLUS RECORD. April 2022 issue. Vol. 99, No. 4

Ultrasonic Flaw Detection 1958

Integration of Alternative Sources of Energy Felix A. Farret 2006-04-20 A unique electrical engineering approach to alternative sources of energy from a mechanical point of view, Integration of Alternative Sourcesof Energy takes an electrical engineering perspective. Moreover, the authors examine the full spectrum of alternative and renewableenergy with the goal of developing viable methods of integratingenergy sources and storage efficiently. Readers become thoroughlyconversant with the principles, possibilities, and limits ofalternative and renewable energy. The book begins with a general introduction and then reviewsprinciples of thermodynamics. Next, the authors explore both commonand up-and-coming alternative energy sources, including hydro, wind, solar, photovoltaic, thermosolar, fuel cells, and biomass. Following that are discussions of microturbines and inductiongenerators, as well as a special

chapter dedicated to energystorage systems. After setting forth the fundamentals, the authorsfocus on how to integrate the various energy sources for electricalpower production. Discussions related to system operation, maintenance, and management, as well as standards forinterconnection, are also set forth. Throughout the book, diagrams are provided to demonstrate theelectrical operation of all the systems that are presented. Inaddition, extensive use of examples helps readers better grasp howintegration of alternative energy sources can beaccomplished. The final chapter gives readers the opportunity to learn about the HOMER Micropower Optimization Model. This computer model, developedby the National Renewable Energy Laboratory (NREL), assists in the design of micropower systems and facilitates comparisons of powergeneration techniques. Readers can download the software from the NREL Web site. This book is a must-read for engineers, consultants, regulators, and environmentalists involved in energy production and delivery, helping them evaluate alternative energy sources and integrate theminto an efficient energy delivery system. It is also a superior textbook for upper-level undergraduates and graduate students.

Magnetic Susceptibility of Superconductors and Other Spin Systems T.L. Francavilla 2013-11-11 The workshop entitled Magnetic Susceptibility of Superconductors and other Spin Systems (S4) was held at Coolfont Resort and Health Spa. located near Berkley Springs West Virginia on May 20-23. 1991. There were over sixty attendees, approximately half from the United States, the remainder representing over twelve different countries. The international character of the workshop may be gleaned form the attendee list, included in this volume. The intent of the workshop was to bring together those experimentalists and theoreticians whose efforts have resulted in significant recent contributions to the development and use of the ac susceptibility technique as well as to the interpretation of data obtained from these measurements. Many spirited discussions occurred during and after the presentations. These are reflected in the manuscripts contained in these proceedings. Although camera ready manuscripts were required from all participants at registration, all manuscripts were revised and reflect the lively exchanges that followed each presentation. The small size of the workshop allowed the participants a high degree of flexibility. Consequently when a controversial topic such as "the irreversibility line" emerged, a special session was organized on the spot. At the suggestion of Ron Goldfarb, participants were invited to contribute a one page summary containing their thoughts on the topic. These stand alone contributions were retyped and included as submitted, with only minor editorial changes. These proceedings are intended for those experienced scientists new to the field and graduate students just beginning their research.

<u>Smart Structures and Materials</u> B. Culshaw 1996 This book introduces the enabling concepts that make up the so-called smart structure and presents a number of brief case studies to illustrate the applications of these concepts. It examines the domains of the individual technologies and defines the challenges faced by the integrator. The book is particularly effective for the potential system user who needs a good technical general background on the subject and is also useful for students and researchers in contributory technologies who want to better understand the context of their work. Consultants in civil and structural engineering will also find it of interest.

Plasma Processes and Polymers Riccardo d'Agostino 2006-03-06 This volume compiles essential contributions to the most innovative fields of Plasma Processes and Polymers. High-quality contributions cover the fields of plasma deposition, plasma treatment of polymers and other organic compounds, plasma processes under partial vacuum and at atmospheric pressure, biomedical, textile, automotive, and optical applications as well as surface treatment of bulk materials, clusters, particles and powders. This unique collection of refereed papers is based on the best contributions presented at the 16th International Symposium on Plasma Chemistry in Taormina, Italy (ISPC-16, June 2003). A high class

reference of relevance to a large audience in plasma community as well as in the area of its industrial applications.

<u>Evolving IP Marketplace</u> Suzanne Michael 2011-05-01 This report recommends improvements to two areas of patent law policies affecting how well a patent gives notice to the public of what technology is protected and remedies for patent infringement. The report provides valuable insights on how courts can reform the patent system to best serve consumers. It recognizes that patents play a critical role in encouraging innovation, but it also observes that some strategies by patent holders risk distorting competition and deterring innovation. This is especially true for activity driven by poor patent notice, and by remedies that do not align the compensation received by patent holders for infringement with the economic value of their patented inventions. This is a print on demand report.

Electrical Power Transmission System Engineering Turan Gonen 2009-05-27 Although many textbooks deal with a broad range of topics in the power system area of electrical engineering, few are written specifically for an in-depth study of modern electric power transmission. Drawing from the author's 31 years of teaching and power industry experience, in the U.S. and abroad, Electrical Power Transmission System Engineering: Analysis and Design, Second Edition provides a wide-ranging exploration of modern power transmission engineering. This self-contained text includes ample numerical examples and problems, and makes a special effort to familiarize readers with vocabulary and symbols used in the industry. Provides essential impedance tables and templates for placing and locating structures Divided into two sections—electrical and mechanical design and analysis—this book covers a broad spectrum of topics. These range from transmission system planning and in-depth analysis of balanced and unbalanced faults, to construction of overhead lines and factors affecting transmission line route selection. The text includes three new chapters and numerous additional sections dealing with new topics, and it also reviews methods for allocating transmission line fixed charges among joint users. Uniquely comprehensive, and written as a self-tutorial for practicing engineers or students, this book covers electrical and mechanical design with equal detail. It supplies everything required for a solid understanding of transmission system engineering.

Handbook of Magnetic Measurements Slawomir Tumanski 2016-04-19 While magnetic devices are used in a range of applications, the availability of up-to-date books on magnetic measurements is quite limited. Collecting state-of-the-art knowledge from information scattered throughout the literature, Handbook of Magnetic Measurements covers a wide spectrum of topics pertaining to magnetic measurements. It describes m

Fundamentals of Renewable Energy Processes Aldo V. da Rosa 2009-05-07 We are hearing a LOT about renewable energy these days! But unlike most available resources on alternative energy that focus on politics and economic impacts, da Rosa's practical guide, Fundamentals of Renewable Energy Processes, is dedicated to explaining the scientific and technological principles and processes that enable energy production from safe, renewable, clean sources. Advances in the renewable energy sphere are proceeding with an unprecedented speed, and in order for the world's alarming energy challenges to be solved, solid, up-to-date resources addressing the technical aspects of renewables are essential. This new, updated 2e of da Rosa's successful book continues to give readers all the background they need to gain a thorough understanding of the most popular types of renewable energy—hydrogen, solar power, biomass, wind power, and hydropower—from the ground up. The latest advances in all these technologies are given particular attention, and are carefully contextualized to help professionals and students grasp the "whys and hows" behind these breakthroughs. Discusses how and why the most popular renewable energy sources work, including wind, solar, bio and hydrogen Provides a thorough

technical grounding for all professionals and students investigating renewable energy The new 2e of a highly regarded guide written by an internationally renowned pioneer

Principles of Electric Machines and Power Electronics Paresh Chandra Sen 2021-02-25

Encyclopedia of Electronic Components Volume 1 Charles Platt 2012-10-26 Provides information about components, including batteries, capacitors, diodes, and switches.

Excellence in Warehouse Management Stuart Emmett 2011-03-10 Warehouses are often seen as a necessary evil: places that stop the flow of goods and thus increase costs without adding value. But the truth is that they have a critical part to play in supply chain management, and warehouse managers should be centrally involved in the strategic aspects of any business. Excellence in Warehouse Management covers everything you need to know to manage warehouse operations as part of a streamlined and holistic system, fine-tuned to serve the customer and drive the bottom-line. With thinking points, self-assessment exercises and case studies Stuart Emmett challenges you to consider your own operations in a new way, and plot a course into the future.

Permanent Magnet Motor Technology Jacek F. Gieras 2009-08-25 The importance of permanent magnet (PM) motor technology and its impact on electromechanical drives has grown exponentially since the publication of the bestselling second edition. The PM brushless motor market has grown considerably faster than the overall motion control market. This rapid growth makes it essential for electrical and electromechanical engineers and students to stay up-to-date on developments in modern electrical motors and drives, including their control, simulation, and CAD. Reflecting innovations in the development of PM motors for electromechanical drives, Permanent Magnet Motor Technology: Design and Applications, Third Edition demonstrates the construction of PM motor drives and supplies ready-toimplement solutions to common roadblocks along the way. This edition supplies fundamental equations and calculations for determining and evaluating system performance, efficiency, reliability, and cost. It explores modern computer-aided design of PM motors, including the finite element approach, and explains how to select PM motors to meet the specific requirements of electrical drives. The numerous examples, models, and diagrams provided in each chapter facilitate a lucid understanding of motor operations and characteristics. This 3rd edition of a bestselling reference has been thoroughly revised to include: Chapters on high speed motors and micromotors Advances in permanent magnet motor technology Additional numerical examples and illustrations An increased effort to bridge the gap between theory and industrial applications Modified research results The growing global trend toward energy conservation makes it quite possible that the era of the PM brushless motor drive is just around the corner. This reference book will give engineers, researchers, and graduate-level students the comprehensive understanding required to develop the breakthroughs that will push this exciting technology to the forefront.

Architectural Forensics Sam Kubba 2008-03-04 Successfully Conduct and Report on Any Architectural Forensic Investigation Architectural Forensics clearly defines the role, responsibilities, and essential work of forensic architects. This unique resource offers comprehensive coverage of building defects and failures, types of failure mechanisms, and job-critical tasks such as fieldwork, lab testing, formulating opinions, and providing expert testimony. Packed with 300 illustrations, in-depth case studies, and numerous sample documents, this vital reference takes you step-by-step through every phase of conducting investigations...diagnosing building failures... preventing and curing building defects...and reporting on findings. The book also includes strategies for avoiding liability and resolving disputes-potentially saving vast amounts of time and money. Authoritative and up-to-date, Architectural Forensics

Features: • Full details on conducting investigations and reporting on architectural forensics • Clear guidance on preventing and curing building defects and failures • In-depth coverage of field work, photogrammetry, and lab testing • Practical insights into litigation, dispute resolution, and expert testimony • Solid business advice on presentation methods, marketing, and setting up an office and website

A Course in Electrical Engineering ... Chester Laurens Dawes 1923

NFPA 20 Standard for the Installation of Stationary Pumps for Fire Protection National Fire Protection Association 2018-07-02

MEG Peter Hansen 2010-07-01 Magnetoencephalography (MEG) is an exciting brain imaging technology that allows real-time tracking of neural activity, making it an invaluable tool for advancing our understanding of brain function. In this comprehensive introduction to MEG, Peter Hansen, Morten Kringelbach, and Riitta Salmelin have brought together the leading researchers to provide the basic tools for planning and executing MEG experiments, as well as analyzing and interpreting the resulting data. Chapters on the basics describe the fundamentals of MEG and its instrumentation, and provide guidelines for designing experiments and performing successful measurements. Chapters on data analysis present it in detail, from general concepts and assumptions to analysis of evoked responses and oscillatory background activity. Chapters on solutions propose potential solutions to the inverse problem using techniques such as minimum norm estimates, spatial filters and beamformers. Chapters on combinations elucidate how MEG can be used to complement other neuroimaging techniques. Chapters on applications provide practical examples of how to use MEG to study sensory processing and cognitive tasks, and how MEG can be used in a clinical setting. These chapters form a complete basic reference source for those interested in exploring or already using MEG that will hopefully inspire them to try to develop new, exciting approaches to designing and analyzing their own studies. This book will be a valuable resource for researchers from diverse fields, including neuroimaging, cognitive neuroscience, medical imaging, computer modelling, as well as for clinical practitioners.

Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives Dr. Marius Rosu 2017-11-20 Presents applied theory and advanced simulation techniques for electric machines and drives This book combines the knowledge of experts from both academia and the software industry to present theories of multiphysics simulation by design for electrical machines, power electronics, and drives. The comprehensive design approach described within supports new applications required by technologies sustaining high drive efficiency. The highlighted framework considers the electric machine at the heart of the entire electric drive. The book also emphasizes the simulation by design concept—a concept that frames the entire highlighted design methodology, which is described and illustrated by various advanced simulation technologies. Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives begins with the basics of electrical machine design and manufacturing tolerances. It also discusses fundamental aspects of the state of the art design process and includes examples from industrial practice. It explains FEM-based analysis techniques for electrical machine design—providing details on how it can be employed in ANSYS Maxwell software. In addition, the book covers advanced magnetic material modeling capabilities employed in numerical computation; thermal analysis; automated optimization for electric machines; and power electronics and drive systems. This valuable resource: Delivers the multi-physics know-how based on practical electric machine design methodologies Provides an extensive overview of electric machine design optimization and its integration with power electronics and drives Incorporates case studies from industrial practice and research and development projects Multiphysics Simulation by Design for Electrical Machines, Power Electronics and Drives is an

incredibly helpful book for design engineers, application and system engineers, and technical professionals. It will also benefit graduate engineering students with a strong interest in electric machines and drives.

IRON MAKING AND STEELMAKING AHINDRA GHOSH 2008-02-29 This authoritative account covers the entire spectrum from iron ore to finished steel. It begins by tracing the history of iron and steel production, right from the earlier days to today's world of oxygen steelmaking, electric steelmaking, secondary steelmaking and continuous casting. The physicochemical fundamental concepts of chemical equilibrium, activity-composition relationships, and structure-properties of molten metals are introduced before going into details of transport phenomena, i.e. kinetics, mixing and mass transfer in ironmaking and steelmaking pro-cesses. Particular emphasis is laid on the understanding of the fundamental principles of the processes and their application to the optimisation of actual processes. Modern developments in blast furnaces, including modelling and process control are discussed along with an introduction to the alternative methods of ironmaking. In the area of steelmaking, BOF plant practice including pre-treatment of hot metal, metallurgical features of oxygen steelmaking processes, and their control form part of the book. It also covers basic open hearth, electric arc furnace and stainless steelmaking, before discussing the area of casting of liquid steel—ingot casting, continuous casting and near net shape casting. The book concludes with a chapter on the status of the ironmaking and steelmaking in India. In line with the application of theoretical principles, several worked-out examples dealing with fundamental principles as applied to actual plant situations are presented. The book is primarily intended for undergraduate and postgraduate students of metallurgical engineering. It would also be immensely useful to researchers in the area of iron and steel.

Major Companies of the Arab World 1993/94 Giselle C Bricault 2012-12-06 This book represents the seventeenth edition of the leading IMPORTANT reference work MAJOR COMPANIES OF THE ARAB WORLD. All company entries have been entered in MAJOR COMPANIES OF THE ARAB WORLD absolutely free of ThiS volume has been completely updated compared to last charge, thus ensuring a totally objective approach to the year's edition. Many new companies have also been included information given. this year. Whilst the publishers have made every effort to ensure that the information in this book was correct at the time of press, no The publishers remain confident that MAJOR COMPANIES responsibility or liability can be accepted for any errors or OF THE ARAB WORLD contains more information on the omissions, or fqr the consequences thereof. major industrial and commercial companies than any other work. The information in the book was submitted mostly by the ABOUT GRAHAM & TROTMAN LTD companies themselves, completely free of charge. To all those Graham & Trotman Ltd, a member of the Kluwer Academic companies, which assisted us in our research operation, we Publishers Group, is a publishing organisation specialising in express grateful thanks. To all those individuals who gave us the research and publication of business and technical help as well, we are similarly very grateful. information for industry and commerce in many parts of the world.

Electric Vehicle Technology Explained James Larminie 2012-09-17 Fully updated throughout, Electric Vehicle Technology, Second Edition, is a complete guide to the principles, design and applications of electric vehicle technology. Including all the latest advances, it presents clear and comprehensive coverage of the major aspects of electric vehicle development and offers an engineering-based evaluation of electric motor scooters, cars, buses and trains. This new edition includes: important new chapters on types of electric vehicles, including pickup and linear motors, overall efficiencies and energy consumption, and power generation, particularly for zero carbon emissions expanded chapters updating the latest types of EV, types of batteries, battery technology and other rechargeable devices, fuel cells, hydrogen supply, controllers, EV modeling, ancillary system design, and EV and the environment brand

new practical examples and case studies illustrating how electric vehicles can be used to substantially reduce carbon emissions and cut down reliance on fossil fuels futuristic concept models, electric and high-speed trains and developments in magnetic levitation and linear motors an examination of EV efficiencies, energy consumption and sustainable power generation. MATLAB® examples can be found on the companion website www.wiley.com/go/electricvehicle2e Explaining the underpinning science and technology, this book is essential for practicing electrical, automotive, power, control and instrumentation engineers working in EV research and development. It is also a valuable reference for academics and students in automotive, mechanical, power and electrical engineering.

Biologically Inspired Robotics Yunhui Liu 2017-12-19 Robotic engineering inspired by biology—biomimetics—has many potential applications: robot snakes can be used for rescue operations in disasters, snake-like endoscopes can be used in medical diagnosis, and artificial muscles can replace damaged muscles to recover the motor functions of human limbs. Conversely, the application of robotics technology to our understanding of biological systems and behaviors—biorobotic modeling and analysis—provides unique research opportunities: robotic manipulation technology with optical tweezers can be used to study the cell mechanics of human red blood cells, a surface electromyography sensing system can help us identify the relation between muscle forces and hand movements, and mathematical models of brain circuitry may help us understand how the cerebellum achieves movement control. Biologically Inspired Robotics contains cutting-edge material—considerably expanded and with additional analysis—from the 2009 IEEE International Conference on Robotics and Biomimetics (ROBIO). These 16 chapters cover both biomimetics and biorobotic modeling/analysis, taking readers through an exploration of biologically inspired robot design and control, micro/nano bio-robotic systems, biological measurement and actuation, and applications of robotics technology to biological problems. Contributors examine a wide range of topics, including: A method for controlling the motion of a robotic snake The design of a bionic fitness cycle inspired by the jaquar The use of autonomous robotic fish to detect pollution A noninvasive brain-activity scanning method using a hybrid sensor A rehabilitation system for recovering motor function in human hands after injury Human-like robotic eye and head movements in human-machine interactions A state-of-the-art resource for graduate students and researchers.