Electromagnetic Force Coupling In Electric Machines Ansys

This book is devoted to the development of the local gradient theory of dielectrics. It presents a brief description of the known approaches to the construction of generalized (integral- and gradient-type) continuous theories of dielectrics. It describes a new continuum–thermodynamic approach to the construction of nonlinear high-order gradient theory of thermoelastic non-ferromagnetic polarized media. This approach is based on accounting for non-diffusive and non-convective mass fluxes associated with the changes in the material microstructure. Within the linear approximation, the theory has been applied to study transition modes of the formation of near-surface inhomogeneity of coupled fields in solids, disjoining pressure in thin films, etc. The theory describes a number of observable phenomena (including the surface, size, flexoelectric, pyroelectric, and thermopolarization effects in centrosymmetric crystals, the Meads anomaly, the high frequency dispersion of elastic waves, etc.) that cannot be explained within the framework of the classical theory of dielectrics.

Fracture Mechanics of Electromagnetic Materials provides a comprehensive overview of fracture mechanics of conservative and dissipative materials, as well as a general formulation of nonlinear field theory of fracture mechanics and a rigorous treatment of dynamic crack problems involving coupled magnetic, electric, thermal and mechanical field quantities. Thorough emphasis is placed on the physical interpretation of fundamental concepts, development of theoretical models and exploration of their applications to fracture characterization in the presence of magneto-electro-thermo-mechanical coupling and dissipative effects. Mechanical, aeronautical, civil, biomedical, electrical and electronic engineers interested in application of the principles of fracture mechanics to design analysis and durability evaluation of smart structures and devices will find this book an invaluable resource. Contents:Fundamentals of Fracture MechanicsElements of Electrodynamics of ContinuaIntroduction to ThermoviscoelasticityOverview on Fracture of Electromagnetic MaterialsCrack Driving Force in Electro-Thermo-Elastodynamic FractureDynamic Fracture Mechanics of Magneto-Electro-Thermo-Elastic SolidsDynamic Crack Propagation in Magneto-Electro-Elastic SolidsFracture of Functionally Graded MaterialsMagneto-Thermo-Viscoelastic Deformation and FractureElectro-Thermo-Viscoelastic Deformation and FractureNonlinear Field Theory of Fracture Mechanics for Paramagnetic and Ferromagnetic MaterialsNonlinear Field Theory of Fracture Mechanics for Piezoelectric and Ferroelectric MaterialsApplications to Fracture Characterization Readership: Graduate students, academic researchers and engineering specialists in fracture mechanics. Keywords:Fracture Mechanics;Electromagnetic Materials;Nonlinear Field Theory;Dynamic Crack Propagation;Driving Force;Coupling;Dissipation;Combined Magnetic, Electric, Thermal and Mechanical Loadings;Energy Release Rate;Essential Work of FractureKey Features:Offers an overview of the current status and prospects of some most recent research outcomes based on the authors' workSelf-contained and unified in presentation, it includes introductory chapters, carefully prepared details and the latest technical advances. It may be used as an essential source of reference for those who wish to have an overview of classical and modern models on this important subject

Calculations in Fundamental Physics, Volume II: Electricity and Magnetism focuses on the processes, methodologies, and approaches involved in electricity and magnetism. The manuscript first takes a look at current and potential difference, including flow of charge, parallel conductors, ammeters, electromotive force and potential difference, and voltmeters. The book then discusses resistance, networks, power, resistivity and temperature, and electrolysis. Topics include shunts and multipliers, resistors in series, distribution circuits, balanced potentiometers, heating, resistance thermometry, and thermistors. The text explains electrolysis and thermoelectricity, including electroplating, Avogadro's number, and thermoelectric power. The manuscript describes magnetic fields and circuits and inductors. Concerns include straight conductors, series circuits, magnetic moments, stored energy, and mutual inductance. The book also takes a look at electric fields, transients, and direct current generators and motors. The manuscript is a dependable reference for readers wanting to be familiar with electricity and magnetism.

This book is the collection of the contributions offered at the International Symposium on Electromagnetic Fields in Electrical Engineering, ISEF '87, held in Pavia, Italy, in September 1987. The Symposium was attended by specialists engaged in both theoretical and applied research in low-frequency electromagnetism. The charming atmosphere of Pavia and its ancient university provided a very effective environment to discuss the latest results in the field and, at the same time, to enjoy the company or colleagues and friends coming from over 15 countries. The contributions have been grouped into 7 chapters devoted to fundamental problems, computer programs, transformers, rotating electrical machines, mechanical and thermal effects, various applications and synthesis, respectively. Such a classification is merely to help the reader because a few papers could be put in several chapters. Over the past two decades electromagnetic field computations have received a big impulse by the large availability of digital computers with better and better performances in speed and capacity. Many various methods have been developed but not all of them appear convenient enough for practical engineering use. In fact, the technical and industrial challenges set some principal attributes and criteria for good computation methods. They should be relatively easy to use, fit into moderately sized computers, yield useful design data, maintain flexibility with m1n1mum cost in time and effort.

Mechatronics has evolved into a way of life in engineering practice, and indeed pervades virtually every aspect of the modern world. As the synergistic integration of mechanical, electrical, and computer systems, the successful implementation of mechatronic systems requires the integrated expertise of specialists from each of these areas. De

The first comprehensive and up-to-date reference on mechatronics, Robert Bishop's The Mechatronics Handbook was quickly embraced as the gold standard for the field. With updated coverage on all aspects of mechatronics, The Mechatronics Handbook, Second Edition is now available as a two-volume set. Each installment offers focused coverage of a particular area of mechatronics, supplying a convenient and flexible source of specific information. This seminal work is still the most exhaustive, state-of-the-art treatment of the field available. Mechatronics Systems, Sensors, and Actuators: Fundamentals and Modeling presents an overview of mechatronics, providing a foundation for those new to the field and authoritative support for seasoned professionals. The book introduces basic definitions and the key elements and includes detailed descriptions of the mathematical models of the mechanical, electrical, and fluid subsystems that comprise mechatronic systems. New chapters include Mechantronics Engineering Curriculum Design and Numerical Simulation. Discussion of the fundamental physical relationships and mathematical models associated with commonly used sensor and actuator technologies complete the coverage. Features Introduces the key elements of mechatronics and discusses new directions Presents the underlying mechanical and electronic mathematical models comprising many mechatronic systems Provides a detailed discussion of the process of physical system modeling Covers time, frequency, and sensor and actuator characteristics

This book explores the application of external physical fields to the solidification processing of metallic alloys. Leading academics from around the world present comprehensive and critical reviews on state-of-the-art research and discuss possible future directions. Major physical fields, including electromagnetic, electric, acoustic, and thermal, are considered. In addition, the most advanced synchrotron X-ray based real-time and in-situ studies and numerical modeling methodologies are reviewed and discussed, with a special emphasis on their applications to the solidification processes. Throughout, all chapters are illustrated with both historical and very recent research cases, including typical examples of in-situ studies, modeling, and simulation. This book contains essential knowledge and information suitable for a wide audience, from undergraduate and postgraduate students to academics, practicing researchers, and engineers in materials, metallurgy, and manufacturing.

The Light Metals symposia are a key part of the TMS Annual Meeting & Exhibition, presenting the most recent developments, discoveries, and practices in primary aluminum science and technology. Publishing the proceedings from these important symposia, the Light Metals volume has become the definitive reference in the field of aluminum production and related light metal technologies. Light Metals 2011 offers a mix of the latest scientific research findings and applied technology, covering alumina and bauxite, aluminum reduction technology, aluminum rolling, cast shop for aluminum production, electrode technology, and furnace efficiency.

Modern communications technology demands smaller, faster and more efficient circuits. This book reviews the fundamentals of electromagnetism in passive and active circuit elements, highlighting various effects and potential problems in designing a new circuit. The author begins with a review of the basics - the origin of resistance, capacitance, and inductance - then progresses to more advanced topics such as passive device design and layout, resonant circuits, impedance matching, high-speed switching circuits, and parasitic coupling and isolation techniques. Using examples and applications in RF and microwave systems, the author describes transmission lines, transformers, and distributed circuits. State-of-the-art developments in Si based broadband analog, RF, microwave, and mm-wave circuits are reviewed. With up-to-date results, techniques, practical examples, illustrations and worked examples, this book will be valuable to advanced undergraduate and graduate students of electrical engineering, and practitioners in the IC design industry. Further resources for this title are available at www.cambridge.org/9780521853507.

This book provides a comprehensive overview of the field of Higgs boson physics. It offers the first in-depth review of the complete results in connection with the discovery of the Higgs boson at CERN's Large Hadron Collider and based on the full dataset for the years 2011 to 2012. The fundamental concepts and principles of Higgs physics are introduced and the important searches prior to the advent of the Large Hadron Collider are briefly summarized. Lastly, the discovery and first mensuration of the observed particle in the course of the CMS experiment are discussed in detail and compared to the results obtained in the ATLAS experiment.

RFID is a method of remotely storing and receiving data using devices called RFID tags. RFID tags can be small adhesive stickers containing antennas that receive and respond to transmissions from RFID transmitters. RFID tags are used to identify and track everything from Exxon EZ pass to dogs to beer kegs to library books. Major companies and countries around the world are adopting or considering whether to adopt RFID technologies. Visa and Wells Fargo are currently running tests with RFID, airports around the world are using RFID to track cargo and run customs departments, universities such as Slippery Rock are providing RFID-enabled cell phones for students to use for campus charges. According to the July 9 CNET article, RFID Tags: Big Brother in Small Packages?, "You should become familiar with RFID technology because you'll be hearing much more about it soon. Retailers adore the concept, and CNET News.com's own Alorie Gilbert wrote last week about how Wal-Mart and the U.K.-based grocery chain Tesco are starting to install "smart shelves" with networked RFID readers. In what will become the largest test of the technology, consumer goods giant Gillette recently said it would purchase 500 million RFID tags from Alien Technology of Morgan Hill, CA." For security professionals needing to get up and running fast with the topic of RFID, this How to Cheat approach to the topic is the perfect "just what you need to know" book! * For most business organizations, adopting RFID is a matter of when * The RFID services market is expected to reach $4 billion by 2008 * Covers vulnerabilities and personal privacy--topics identified by major companies as key RFID issues

The present theme concerns the forces of nature, and what investigations of these forces can tell us about the world we see about us. The story of these forces is long and complex, and contains many episodes that are not atypical of the bulk of scientific research, which could have achieved greater acclaim 'if only...'. The intention of this book is to introduce ideas of how the visible world, and those parts of it that we cannot observe, either because they are too small or too large for our scale of perception, can be understood by consideration of only a few fundamental forces. The subject in these pages will be the authority of the commonly termed, laws of physics, which arise from the forces of nature, and the corresponding constants of nature (for example, the speed of light, c, the charge of the electron, e, or the mass of the electron, me).

The light metal symposia are a key part of the TMS Annual Meeting & Exhibition, presenting the most recent developments, discoveries, and practices in primary aluminum science and technology. Publishing the proceedings from these important symposia, the Light Metals Series has become the definitive reference in the field of aluminum production and related light metal technologies. Light Metals 2011 offers a mix of the latest scientific research findings and applied technology, covering alumina and bauxite, aluminum reduction technology, aluminum rolling, cast shop for aluminum production, electrode technology, and furnace efficiency. These proceedings will help you take advantage of the latest technologies in order to produce high-quality materials while cutting costs and improving profitability at the same time.

Unlike any other source in the field, this valuable reference clearly examines key aspects of the finite element method (FEM) for electromagnetic analysis of low-frequency electrical devices. The authors examine phenomena such as nonlinearity, mechanical force, electrical circuit coupling, vibration, heat, and movement for applications in the elect

For over three decades now, silicon capacity has steadily been doubling every year and a half with equally staggering improvements continuously being observed in operating speeds. This increase in capacity has allowed for more complex systems to be built on a single silicon chip. Coupled with this functionality increase, speed improvements have fueled tremendous advancements in computing and have enabled new multi-media applications. Such trends, aimed at integrating higher levels of circuit functionality are tightly related to an emphasis on compactness in consumer electronic products and a widespread growth and interest in wireless communications and products. These trends are expected to persist for some time as technology and design methodologies continue to evolve and the era of Systems on a Chip has definitely come of age. While technology improvements and spiraling silicon capacity allow designers to pack more functions onto a single piece of silicon, they also highlight a pressing challenge for system designers to keep up with such amazing complexity. To handle higher operating speeds and the constraints of portability and connectivity, new circuit techniques have appeared. Intensive research and progress in EDA tools, design methodologies and techniques is required to empower designers with the ability to make efficient use of the potential offered by this increasing silicon capacity and complexity and to enable them to design, test, verify and build such systems.

Rowlands offers researchers in quantum, theoretical and high energy physics immediate access to simple but powerful techniques.

The second edition provides an update of the recent developments in classical and computational solid mechanics. The structure of the book is also updated to include five new areas: Fundamental Principles of Thermodynamics and Coupled Thermoelastic Constitutive Equations at Large Deformations, Functional Thermodynamics and Thermoviscoelasticity, Thermodynamics with Internal State Variables and Thermo-Elasto-Viscoplasticity, Electro-Thermo-Viscoelasticity/Viscoplasticity, and Meshless Method. These new topics are added as self-contained sections or chapters. Many books in the market do not cover these topics. This invaluable book has been written for engineers and engineering scientists in a style that is readable, precise, concise, and practical. It gives the first priority to the formulation of problems, presenting the classical results as the gold standard, and the numerical approach as a tool for obtaining solutions. Request Inspection Copy

The book reviews recent research activities in applied mechanics and applied mathematics such as the fields of solid & fluid constitutive modeling for coupled fields, applications of geophysical & environmental context in judicious numerical-computational implementations. The book aims to merge foundation aspects of continuum mechanics with modern technological applications, notably on reviewing recent advances in the treated subjects in an attractive presentation accessible to a wide readership of engineering and applied sciences. Contents:Waves:Lamb Waves in Phononic Band Gap Structures (T T Wu)On Generalization of the Phase Relations in the Method of Reverberation-Ray Matrix (W Q Chen)Surface-Wave Nonlinearity Measured with Emat for Fatigued Steels (M Hirao)Acoustoelastic Lamb Waves and Implications for Structural Health Monitoring (J E Michaels)Source Synthesis for Inverse Problems in Wave Propagation (W W Symes)Numerical Mathematics/Time Series Analysis:An Introduction to an Adaptive Data Analysis Method (N E Huang)Computational Fluid Dynamics Based on the Unified Coordinates — A Brief Review (W H Hui)Towards Green's Function Retrieval from Imperfectly Partitioned Ambient Wave Fields: Travel Times, Attenuations, Specific Intensities, and Scattering (R L Weaver)Study on Two Scale Design Optimization for Structure and Material with Periodic Microstructure (G D Cheng)Continuum Mechanical Theories:A Continuum Formulation of Lava Flows — From Fluid Ejection to Solid Deposition (K Hutter)Rigorous Mechanics and Elegant Mathematics on the Formulation of Constitutive Laws for Complex Materials: An Example from Biomechanics (V Mow)Professor Pao's Influence on Research in Coupled Field Problems, Chirality and Acoustic and Electromagnetic Metamaterials and their Applications (V V Varadan)Transient Response of an Elastic Half Space by a Moving Concentrated Torque (C-S Yeh)Magnetic Force Model for Magnetizable Elastic Body in the Magnetic Field (Z J Zheng)Wind Energy:Principles of Nonlinear Vibro-Wind Energy Conversion (F Moon) Readership: Researchers, professionals, and graduate students in applied mechanics, and mathematics, energy studies, solid & fluid mechanics, and complex systems. Keywords:Meta & Nano Mechanics;Numerics (Fluids and Solids);Contact Mechanics;Coupled Fields;Elastic Waves;Lava Gravity FlowsKey Features:Covers waves and dynamics in complex continuous systems with applications to modern engineering and environmental-geophysical processesPresents the topics with fundamental understanding of the foundations of mathematics and physicsPushes the presented subjects into forms allowing immediate transposition that are relevant to engineering and applied sciences

The "European Yearbook" promotes the scientific study of European organisations and the Organisation for Economic Co-operation and Development. Each volume contains a detailed survey of the history, structure and yearly activities of each organisation and an up-to-date chart providing a clear overview of the member states of each organisation. In addition, a number of articles on topics of general interest are included in each volume. A general index by subject and name, and a cumulative index of all the articles which have appeared in the "Yearbook," are included in every volume and provide direct access to the "Yearbook"'s subject matter. Each volume contains a comprehensive bibliography covering the year's relevant publications. This is an indispensable work of reference for anyone dealing with the European institutions.

Co-authored by an international research group with a long-standing cooperation, this book focuses on engineering-oriented electromagnetic and thermal field modeling and application. It presents important contributions, including advanced and efficient finite element analysis used in the solution of electromagnetic and thermal field problems for large and multi-scale engineering applications involving application script development; magnetic measurement of both magnetic materials and components under various, even extreme conditions, based on well-established (standard and non-standard) experimental systems; and multi-level validation based on both industrial test systems and extended TEAM P21 benchmarking platform. Although these are challenging topics, they are useful for readers from both academia and industry.

The second edition of the Handbook of Induction Heating reflects the number of substantial advances that have taken place over the last decade in theory, computer modeling, semi-conductor power supplies, and process technology of induction heating and induction heat treating. This edition continues to be a synthesis of information, discoveries, and technical insights that have been accumulated at Inductoheat Inc. With an emphasis on design and implementation, the newest edition of this seminal guide provides numerous case studies, ready-to-use tables, diagrams, rules-of-thumb, simplified formulas, and graphs for working professionals and students.

Presents a comprehensive reference to astronomy and space exploration, with articles on space technology, astronauts, stars, planets, key theories and laws and more.

This volume contains eleven contributions on boundary integral equation and boundary element methods. Beside some historical and more analytical aspects in the formulation and analysis of boundary integral equations, modern fast boundary element methods are also described and analyzed from a mathematical point of view. In addition, the book presents engineering and industrial applications that show the ability of boundary element methods to solve challenging problems from different fields.

The study of electromagnetic field theory is required for proper understanding of every device wherein electricity is used for operation. The proposed textbook on electromagnetic fields covers all the generic and unconventional topics including electrostatic boundary value problems involving two- and three-dimensional Laplacian fields and one- and two- dimensional Poissonion fields, magnetostatic boundary value problems, eddy currents, and electromagnetic compatibility. The subject matter is supported by practical applications, illustrations to supplement the theory, solved numerical problems, solutions manual and Powerpoint slides including appendices and mathematical relations. Aimed at undergraduate, senior undergraduate students of electrical and electronics engineering, it: Presents fundamental concepts of electromagnetic fields in a simplified manner Covers one two- and three-dimensional electrostatic boundary value problems involving Laplacian fields and Poissonion fields Includes exclusive chapters on eddy currents and electromagnetic compatibility Discusses important aspects of magneto static boundary value problems Explores all the basic vector algebra and vector calculus along with couple of two- and three-dimensional problems

Howard Georgi is the co-inventor (with Sheldon Glashow) of the SU(5) theory. This extensively revised and updated edition of his classic text makes the theory of Lie groups accessible to graduate students, while offering a perspective on the way in which knowledge of such groups can provide an insight into the development of unified theories of strong, weak, and electromagnetic interactions.

Metamaterials, artificial electromagnetic media achieved by structuring on the subwave-length-scale were initially suggested for the negative index and superlensing. They became a paradigm for engineering electromagnetic space and controlling propagation of waves. The research agenda is now shifting on achieving tuneable, switchable, nonlinear and sensing functionalities. The time has come to talk about the emerging research field of metadevices employing active and tunable metamaterials with unique functionalities achieved by structuring of functional matter on the subwave-length scale. This book presents the first systematic and comprehensive summary of the reviews written by the pioneers and top-class experts in the field of metamaterials. It addresses many grand challenges of the cutting edge research for creating smaller and more efficient photonic structures and devices.

Fracture Mechanics of Electromagnetic Materials provides a comprehensive overview of fracture mechanics of conservative and dissipative materials, as well as a general formulation of nonlinear field theory of fracture mechanics and a rigorous treatment of dynamic crack problems involving coupled magnetic, electric, thermal and mechanical field quantities. Thorough emphasis is placed on the physical interpretation of fundamental concepts, development of theoretical models and exploration of their applications to fracture characterization in the presence of magneto-electro-thermo-mechanical coupling and dissipative effects. Mechanical, aeronautical, civil, biomedical, electrical and electronic engineers interested in application of the principles of fracture mechanics to design analysis and durability evaluation of smart structures and devices will find this book an invaluable resource.

Updated with the 2000 rules, the Fourth Edition provides shipyard electricians and electrical designers with the step-by-step instruction they need to design and install electrical systems on marine installations, whether shipboard or offshore. Written for novices, this workbook offers three modules of skill level: Fundamentals, Intermediate, and Advanced. Within each module, the author provides five lessons filled with detailed outlines, diagrams, charts, formulas, examples, solutions, blank worksheets, and study guides for increased understanding. Suitable for use as either a course text or as a self-help guide, this workbook examines current rules and regulations of the American Bureau of Shipping, United States Coast Guard, National Electronic Code, and Institute of Electrical and Electronic Engineers 45. Using this information, readers will acquire a basic knowledge of task requirements, including basic ship construction as well as power-and-lighting-system building and installation. Featuring the editorial revisions of the "ABS Rules for Building and Classing Steel Vessels," this edition addresses changes made to the American Bureau of Shipping's (ABS) rules, including the re-numbering and re-organization of all section numbers. For ease-of-reference, the author includes a chart of both the new ABS rules and the old ABS rules used throughout the workbook.

The Physics of Energy provides a comprehensive and systematic introduction to the scientific principles governing energy sources, uses, and systems. This definitive textbook traces the flow of energy from sources such as solar power, nuclear power, wind power, water power, and fossil fuels through its transformation in devices such as heat engines and electrical generators, to its uses including transportation, heating, cooling, and other applications. The flow of energy through the Earth's atmosphere and oceans, and systems issues including storage, electric grids, and efficiency and conservation are presented in a scientific context along with topics such as radiation from nuclear power and climate change from the use of fossil fuels. Students, scientists, engineers, energy industry professionals, and concerned citizens with some mathematical and scientific background who wish to understand energy systems and issues quantitatively will find this textbook of great interest.

An introduction to the analysis of electric machines, power electronic circuits, electric drive performance, and power systems This book provides students with the basic physical concepts and analysis tools needed for subsequent coursework in electric power and drive systems with a focus on Tesla's rotating magnetic field. Organized in a flexible format, it allows instructors to select material as needed to fit their school's power program. The first chapter covers the fundamental concepts and analytical methods that are common to power and electric drive systems. The subsequent chapters offer introductory analyses specific to electric machines, power electronic circuits, drive system performance and simulation, and power systems. In addition, this book: Provides students with an analytical base on which to build in advanced follow-on courses Examines fundamental power conversions (dc-dc, ac-dc and dc-ac), harmonics, and distortion Describes the dynamic computer simulation of a brushless dc drive to illustrate its performance with both a sinusoidal inverter voltage approximation and more realistic stator six-step drive applied voltages Includes in-chapter short problems, numerous worked examples, and end-of-chapter problems to help readers review and more fully understand each topic

This book presents two analyses, the first of which involves the search for a new heavy charged gauge boson, a so-called W' boson. This new gauge boson is predicted by some theories extending the Standard Model gauge group to solve some of its conceptual problems. Decays of the W' boson in final states with a lepton ($l\pm = e\pm$, ?$\pm$) and the corresponding (anti-)neutrino are considered. Data collected by the ATLAS experiment in 2015 at a center of mass energy of ?s =13 TeV is used for the analysis. In turn, the second analysis presents a measurement of the double-differential cross section of the process pp->Z/gamma^* + X -> l^+l^- + X, including a gamma gamma induced contribution, at a center of mass energy of sqrt{s} = 8 TeV. The measurement is performed in an invariant mass region of 116 GeV to 1500 GeV as a function of invariant mass and absolute rapidity of the l^+l^-- pair, and as a function of invariant mass and pseudorapidity separation of the l^+l^-- pair. The data analyzed was recorded by the ATLAS experiment in 2012 and corresponds to an integrated luminosity of 20.3/fb. It is expected that the measured cross sections are sensitive to the PDFs at very high values of the Bjorken-x scaling variable, and to the photon structure of the proton.

This text provides a basic treatment of modern electric machineanalysis that gives readers the necessary background forcomprehending the traditional applications and operatingcharacteristics of electric machines—as well as theiremerging applications in modern power systems and electric drives,such as those used in hybrid and electric vehicles. Through the appropriate use of reference frame theory,Electromagnetic Motion Devices, Second Edition introducesreaders to field-oriented control of induction machines,constant-torque, and constant-power control of dc, permanent-magnetac machines, and brushless dc machines. It also discussessteady-state and transient performance in addition to theirapplications. Electromagnetic Motion Devices, Second Editionpresents: The derivations of all machine models, starting with a commonfirst-principle approach (based upon Ohm's, Faraday's, Ampere's,and Newton's/Euler's laws) A generalized two-phase approach to reference frame theory thatcan be applied

to the ac machines featured in the book The influences of the current and voltage constraints in thetorque-versus-speed profile of electric machines operated with anelectric drive Complete with slides, videos, animations, problems &solutions Thoroughly classroom tested and complete with a supplementarysolutions manual and video library, Electromagnetic MotionDevices, Second Edition is an invaluable book for anyoneinterested in modern machine theory and applications. If youwould like access to the solutions manual and video library, pleasesend an email to: ahref="mailto:ieeeproposals@wiley.com"ieeeproposals@wiley.com/a.

"Institute of Electrical and Electronics Engineers."

Radio Frequency Identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags (also called transponders). This book is a guide to CompTIA's new RFID+ Security exam and includes the following study elements: Exam objectives covered in a chapter are clearly explained in the beginning of the chapter, Notes and Alerts highlight the crucial points, Exam's Eye View emphasizes the important points from the exam's perspective, Key Terms present definitions, Review Questions contain questions modeled after the real exam questions. Answers to these questions are presented with complete explanations in an appendix. Also included is a full practice exam modeled after the real exam. The answers to the exam questions are presented with full explanations. The only RFID+ study guide that provides 100% coverage of all exam objectives for the CompTIA RFID+ exam Packed full of special features and material to aid and reinforce learning

Fiber Optics Vocabulary Development In 1979, the National Communications System published Technical InfonnationBulle tin TB 79-1, Vocabulary for Fiber Optics and Lightwave Communications, written by this author. Based on a draft prepared by this author, the National Communications System published Federal Standard FED-STD-1037, Glossary of Telecommunications Terms, in 1980 with no fiber optics tenns. In 1981, the first edition of this dictionary was published under the title Fiber Optics and Lightwave Communications Standard Dictionary. In 1982, the then National Bureau of Standards, now the National Institute of Standards and Technology, published NBS Handbook 140, Optical Waveguide Communications Glossary, which was also published by the General Services Admin istration as PB82-166257 under the same title. Also in 1982, Dynamic Systems, Inc. , Fiberoptic Sensor Technology Handbook, co-authored and edited by published the this author, with an extensive Fiberoptic Sensors Glossary. In 1989, the handbook was republished by Optical Technologies, Inc. It contained the same glossary. In 1984, the Institute of Electrical and Electronic Engineers published IEEE Standard 812-1984, Definitions of Terms Relating to Fiber Optics. In 1986, with the assistance of this author, the National Communications System published FED-STD-1037A, Glossary of Telecommunications Terms, with a few fiber optics tenns. In 1988, the Electronics Industries Association issued EIA-440A, Fiber Optic Terminology, based primarily on PB82-166257. The International Electrotechnical Commission then pub lished IEC 731, Optical Communications, Terms and Definitions. In 1989, the second edition of this dictionary was published.

Light Metals 2011Springer

Electrical Machines primarily covers the basic functionality and the role of electrical machines in their typical applications. The effort of applying coordinate transforms is justified by obtaining a more intuitive, concise and easy-to-use model. In this textbook, mathematics is reduced to a necessary minimum, and priority is given to bringing up the system view and explaining the use and external characteristics of machines on their electrical and mechanical ports. Covering the most relevant concepts relating to machine size, torque and power, the author explains the losses and secondary effects, outlining cases and conditions in which some secondary phenomena are neglected. While the goal of developing and using machine mathematical models, equivalent circuits and mechanical characteristics persists through the book, the focus is kept on physical insight of electromechanical conversion process. Details such as the slot shape and the disposition of permanent magnets and their effects on the machine parameters and performance are also covered.

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