

Fundamentals Of Applied Electromagnetics Document

Applied Electromagnetics Transformers and Inductors for Power Electronics Counseling Assessment and Evaluation Fundamentals of Electric Circuits Bioelectromagnetism Fundamentals of Physics II Electromagnetic Metasurfaces Fundamentals of Electromagnetics Applied Electromagnetism Electromagnetic Wave Propagation, Radiation, and Scattering Fundamentals of Electric Power Engineering Strengthening Forensic Science in the United States Electromagnetic Field Theory Fundamentals of Electromagnetics with MATLAB Field and Wave Electromagnetics Fundamentals of Applied Electromagnetics Electromagnetics in Magnetic Resonance Imaging An Introduction To Electromagnetic Wave Propagation And Antennas Handbook of Farm, Dairy, and Food Machinery Mathematical Foundations of Computational Electromagnetism Human Interaction with Electromagnetic Fields ENGINEERING ELECTROMAGNETICS Digital Information and Communication Technology and Its Applications Fundamentals of Physics, Solutions Manual Fundamentals of Applied Electromagnetics, Global Edition Electromagnetic Field Theory Fundamentals Fast Techniques for Integrated Circuit Design Electromagnetics For Engineers (With Cd) Fundamentals of Engineering Electromagnetics: Pearson New International Edition The Finite Difference Time Domain Method for

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Electromagnetics
Electromagnetic Field Theory for Engineers and Physicists
RFID Design Fundamentals and Applications
Analytical Modeling in Applied Electromagnetics
Pragmatic Electrical Engineering
Fundamentals of Plasma Physics
Applied Electromagnetics and Electromagnetic Compatibility
Numerical Techniques in Electromagnetics, Second Edition
Fundamentals of Electromagnetics with Engineering Applications
Satellite Communications
Engineering Electromagnetics

Applied Electromagnetics

Transformers and Inductors for Power Electronics

Counseling Assessment and Evaluation

Designed to help students learn how to assess clients, conduct treatment planning, and evaluate client outcomes, Counseling Assessment and Evaluation addresses specific CACREP competencies. Incorporating case studies and examples, authors Joshua C. Watson and Brandé Flamez provide foundational knowledge for sound formal and informal assessments, cover ethical and legal considerations in

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assessment, describe basic statistical concepts, highlight the domains in which assessments are commonly used (intelligence, aptitude, achievement, personality, career, etc.), and provide strategies for integrating assessment data when working with clients. “Watson and Flamez have captured the essence of the assessment process in their new book. Through rich case illustrations and the authors’ deep knowledge of the subject, readers are provided the most current trends and reflections on the assessment process.” —Bill McHenry, Texas A&M

University–Texarkana “The text is very straightforward and easy to read. It encourages students to apply what they are learning through case illustrations and guided practice exercises.” —Wendy Killam, Stephen F. Austin State University

“Watson and Flamez provide the reader with an engaging discussion of the fundamentals of counseling assessment and evaluation. ?—Mark W. Dewalt, Winthrop University “The case illustrations and the practice exercises are exceptional and go a long way toward making the material accessible. Case examples in the body of the text are also well done.” —Patricia Andersen, Midwestern State University

Fundamentals of Electric Circuits

This book presents an in-depth treatment of various mathematical aspects of electromagnetism and Maxwell's equations: from modeling issues to well-posedness results and the coupled models of plasma physics (Vlasov-Maxwell and

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Vlasov-Poisson systems) and magnetohydrodynamics (MHD). These equations and boundary conditions are discussed, including a brief review of absorbing boundary conditions. The focus then moves to well-posedness results. The relevant function spaces are introduced, with an emphasis on boundary and topological conditions. General variational frameworks are defined for static and quasi-static problems, time-harmonic problems (including fixed frequency or Helmholtz-like problems and unknown frequency or eigenvalue problems), and time-dependent problems, with or without constraints. They are then applied to prove the well-posedness of Maxwell's equations and their simplified models, in the various settings described above. The book is completed with a discussion of dimensionally reduced models in prismatic and axisymmetric geometries, and a survey of existence and uniqueness results for the Vlasov-Poisson, Vlasov-Maxwell and MHD equations. The book addresses mainly researchers in applied mathematics who work on Maxwell's equations. However, it can be used for master or doctorate-level courses on mathematical electromagnetism as it requires only a bachelor-level knowledge of analysis.

Bioelectromagnetism

RFID is an increasingly pervasive tool that is now used in a wide range of fields. It is employed to substantiate adherence to food preservation and safety standards, combat the circulation of counterfeit pharmaceuticals, and verify authenticity and

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history of critical parts used in aircraft and other machinery—and these are just a few of its uses. Goes beyond deployment, focusing on exactly how RFID actually works RFID Design Fundamentals and Applications systematically explores the fundamental principles involved in the design and characterization of RFID technologies. The RFID market is exploding. With new and enhanced applications becoming increasingly integral to government and industrial chain supply and logistics around the globe, professionals must be proficient in the evaluation and deployment of these systems. Although manufacturers provide complete and extensive documentation of each individual RFID component, it can be difficult to synthesize and apply this complex information—and users often must consult and integrate data from several producers for different components. This book covers topics including: Types of antennas used in transponders Components of the transponder, memory structure and logic circuits Antennae for RFID interrogators Types of modulation Organization and characteristics of commercial transponders Communication links Modes of operation for transponders operating at different frequencies Principles of arbitration and anti-collision Commands used by transponders This powerful reference helps to resolve this dilemma by compiling a systematic overview of the different parts that make up the whole RFID system, helping the reader develop a clear and understanding of its mechanisms and how the technology actually works. Most books on RFID focus on commercial use and deployment of the technology, but this volume takes a different and extremely useful approach. Directed toward both professionals and students in electronics,

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telecommunications, and new technologies, it fills the informational void left by other books, illustrating specific examples of available semiconductors and integrated circuits to clearly explain how RFID systems are configured, how they work, and how different system components interact with each other.

Fundamentals of Physics II

Human Interaction with Electromagnetic Fields: Computational Models in Dosimetry presents some highly rigorous and sophisticated integral equation techniques from computational electromagnetics (CEM), along with practical techniques for the calculation and measurement of internal dosimetry. Theory is accompanied by numerical modeling algorithms and illustrative computational examples that range from academic to full real-world scenarios. Covers both deterministic and stochastic modeling Presents implementations of integral equation approaches, overcoming the limitations of the FDTD approach Presents various biomedical applications

Electromagnetic Metasurfaces

This second edition comes from your suggestions for a more lively format, self-learning aids for students, and the need for applications and projects without being

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distracted from EM Principles. Flexibility Choose the order, depth, and method of reinforcing EM Principles—the PDF files on CD provide Optional Topics, Applications, and Projects. Affordability Not only is this text priced below competing texts, but also the topics on CD (and downloadable to registered users) provide material sufficient for a second term of study with no additional book for students to buy. MATLAB This book takes full advantage of MATLAB's power to motivate and reinforce EM Principles. No other EM books is better integrated with MATLAB. The second edition is even richer and easier to incorporate into course use with the new, self-paced MATLAB tutorials on the CD and available to registered users.

Fundamentals of Electromagnetics

Guru and Hiziroglu have produced an accessible and user-friendly text on electromagnetics that will appeal to both students and professors teaching this course. This lively book includes many worked examples and problems in every chapter, as well as chapter summaries and background revision material where appropriate. The book introduces undergraduate students to the basic concepts of electrostatic and magnetostatic fields, before moving on to cover Maxwell's equations, propagation, transmission and radiation. Chapters on the Finite Element and Finite Difference method, and a detailed appendix on the Smith chart are additional enhancements. MathCad code for many examples in the book and a comprehensive solutions set are available at www.cambridge.org/9780521830164.

Applied Electromagnetism

Electromagnetic Wave Propagation, Radiation, and Scattering

Fundamentals of Electric Power Engineering

In the past few decades, Magnetic Resonance Imaging (MRI) has become an indispensable tool in modern medicine, with MRI systems now available at every major hospital in the developed world. But for all its utility and prevalence, it is much less commonly understood and less readily explained than other common medical imaging techniques. Unlike optical, ultrasonic, X-ray (including CT), and nuclear medicine-based imaging, MRI does not rely primarily on simple transmission and/or reflection of energy, and the highest achievable resolution in MRI is orders of magnitude smaller than the smallest wavelength involved. In this book, MRI will be explained with emphasis on the magnetic fields required, their generation, their concomitant electric fields, the various interactions of all these fields with the subject being imaged, and the implications of these interactions to image quality and patient safety. Classical electromagnetics will be used to describe aspects from the fundamental phenomenon of nuclear precession through

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signal detection and MRI safety. Simple explanations and Illustrations combined with pertinent equations are designed to help the reader rapidly gain a fundamental understanding and an appreciation of this technology as it is used today, as well as ongoing advances that will increase its value in the future. Numerous references are included to facilitate further study with an emphasis on areas most directly related to electromagnetics.

Strengthening Forensic Science in the United States

As the availability of powerful computer resources has grown over the last three decades, the art of computation of electromagnetic (EM) problems has also grown - exponentially. Despite this dramatic growth, however, the EM community lacked a comprehensive text on the computational techniques used to solve EM problems. The first edition of Numerical Techniques in Electromagnetics filled that gap and became the reference of choice for thousands of engineers, researchers, and students. The Second Edition of this bestselling text reflects the continuing increase in awareness and use of numerical techniques and incorporates advances and refinements made in recent years. Most notable among these are the improvements made to the standard algorithm for the finite difference time domain (FDTD) method and treatment of absorbing boundary conditions in FDTD, finite element, and transmission-line-matrix methods. The author also added a chapter on the method of lines. Numerical Techniques in Electromagnetics

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continues to teach readers how to pose, numerically analyze, and solve EM problems, give them the ability to expand their problem-solving skills using a variety of methods, and prepare them for research in electromagnetism. Now the Second Edition goes even further toward providing a comprehensive resource that addresses all of the most useful computation methods for EM problems.

Electromagnetic Field Theory

STUDENT COMPANION SITE Every new copy of Stuart Wentworth's Applied Electromagnetics comes with a registration code which allows access to the Student's Book Companion Site. On the BCS the student will find: * Detailed Solutions to Odd-Numbered Problems in the text * Detailed Solutions to all Drill Problems from the text * MATLAB code for all the MATLAB examples in the text * Additional MATLAB demonstrations with code. This includes a Transmission Lines simulator created by the author. * Weblinks to a vast array of resources for the engineering student. Go to www.wiley.com/college/wentworth to link to Applied Electromagnetics and the Student Companion Site. ABOUT THE PHOTO Passive RFID systems, consisting of readers and tags, are expected to replace bar codes as the primary means of identification, inventory and billing of everyday items. The tags typically consist of an RFID chip placed on a flexible film containing a planar antenna. The antenna captures radiation from the reader's signal to power the tag electronics, which then responds to the reader's query. The PENI Tag (Product

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Emitting Numbering Identification Tag) shown, developed by the University of Pittsburgh in a team led by Professor Marlin H. Mickle, integrates the antenna with the rest of the tag electronics. RFID systems involve many electromagnetics concepts, including antennas, radiation, transmission lines, and microwave circuit components. (Photo courtesy of Marlin H. Mickle.)

Fundamentals of Electromagnetics with MATLAB

Analytical Modeling in Applied Electromagnetics encompasses the most complete treatment on the subject published to date, focusing on the nature of models in radio engineering. This leading-edge resource brings you detailed coverage of the latest topics, including metamaterials, photonic bandgaps and artificial impedance surfaces, and applies these concepts to a wide range of applications. The book provides you with working examples that are mainly directed to antenna applications, but the modeling methods and results can be used for other practical devices as well.

Field and Wave Electromagnetics

The Finite-Difference Time-domain (FDTD) method allows you to compute electromagnetic interaction for complex problem geometries with ease. The

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simplicity of the approach coupled with its far-reaching usefulness, create the powerful, popular method presented in The Finite Difference Time Domain Method for Electromagnetics. This volume offers timeless applications and formulations you can use to treat virtually any material type and geometry. The Finite Difference Time Domain Method for Electromagnetics explores the mathematical foundations of FDTD, including stability, outer radiation boundary conditions, and different coordinate systems. It covers derivations of FDTD for use with PEC, metal, lossy dielectrics, gyrotropic materials, and anisotropic materials. A number of applications are completely worked out with numerous figures to illustrate the results. It also includes a printed FORTRAN 77 version of the code that implements the technique in three dimensions for lossy dielectric materials. There are many methods for analyzing electromagnetic interactions for problem geometries. With The Finite Difference Time Domain Method for Electromagnetics, you will learn the simplest, most useful of these methods, from the basics through to the practical applications.

Fundamentals of Applied Electromagnetics

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

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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.

Electromagnetics in Magnetic Resonance Imaging

Respected for its accuracy, its smooth and logical flow of ideas, and its clear presentation, 'Field and Wave Electromagnetics' has become an established textbook in the field of electromagnetics. This book builds the electromagnetic model using an axiomatic approach in steps: first for static electric fields, then for

static magnetic fields, and finally for time-varying fields leading to Maxwell's equations.

An Introduction To Electromagnetic Wave Propagation And Antennas

For use in an introductory circuit analysis or circuit theory course, this text presents circuit analysis in a clear manner, with many practical applications. It demonstrates the principles, carefully explaining each step.

Handbook of Farm, Dairy, and Food Machinery

Discussed is the electromagnetic field theory and its mathematical methods. Maxwell's equations are presented and explained. It follows a detailed discussion of electrostatics, flux, magnetostatics, quasi stationary fields and electromagnetic fields. The author presents how to apply numerical methods like finite differences, finite elements, boundary elements, image charge methods, and Monte-Carlo methods to field theory problems. He offers an outlook on fundamental issues in physics including quantum mechanics. Some of these issues are still unanswered questions. A chapter dedicated to the theory of special relativity, which allows to simplify a number of field theory problems, complements this book. A book whose

usefulness is not limited to engineering students, but can be very helpful for physicists and other branches of science.

Mathematical Foundations of Computational Electromagnetism

This text applies engineering science and technology to biological cells and tissues that are electrically conducting and excitable. It describes the theory and a wide range of applications in both electric and magnetic fields.

Human Interaction with Electromagnetic Fields

This two-volume set CCIS 166 and 167 constitutes the refereed proceedings of the International Conference on Digital Information and Communication Technology and its Applications, DICTAP 2011, held in Dijon, France, in June 2010. The 128 revised full papers presented in both volumes were carefully reviewed and selected from 330 submissions. The papers are organized in topical sections on Web applications; image processing; visual interfaces and user experience; network security; ad hoc network; cloud computing; Data Compression; Software Engineering; Networking and Mobiles; Distributed and Parallel processing; social networks; ontology; algorithms; multimedia; e-learning; interactive environments and emergent technologies for e-learning; signal processing; information and data

management.

ENGINEERING ELECTROMAGNETICS

Learn how to use estimation techniques to solve real-world IC design problems and accelerate design processes with this practical guide.

Digital Information and Communication Technology and Its Applications

Fundamentals of Plasma Physics is a general introduction designed to present a comprehensive, logical and unified treatment of the fundamentals of plasma physics based on statistical kinetic theory, with applications to a variety of important plasma phenomena. Its clarity and completeness makes the text suitable for self-learning and for self-paced courses. Throughout the text the emphasis is on clarity, rather than formality, the various derivations are explained in detail and, wherever possible, the physical interpretations are emphasized. The mathematical treatment is set out in great detail, carrying out the steps which are usually left to the reader. The problems form an integral part of the text and most of them were designed in such a way as to provide a guideline, stating intermediate steps with answers.

Fundamentals of Physics, Solutions Manual

This book serves as a tool for any engineer who wants to learn about circuits, electrical machines and drives, power electronics, and power systems basics. From time to time, engineers find they need to brush up on certain fundamentals within electrical engineering. This clear and concise book is the ideal learning tool for them to quickly learn the basics or develop an understanding of newer topics. *Fundamentals of Electric Power Engineering: From Electromagnetics to Power Systems* helps non-electrical engineers amass power system information quickly by imparting tools and trade tricks for remembering basic concepts and grasping new developments. Created to provide more in-depth knowledge of fundamentals—rather than a broad range of applications only—this comprehensive and up-to-date book: Covers topics such as circuits, electrical machines and drives, power electronics, and power system basics as well as new generation technologies. Allows non-electrical engineers to build their electrical knowledge quickly. Includes exercises with worked solutions to assist readers in grasping concepts found in the book. Contains “in-depth” side bars throughout which pique the reader’s curiosity. *Fundamentals of Electric Power Engineering* is an ideal refresher course for those involved in this interdisciplinary branch. For supplementary files for this book, please visit <http://booksupport.wiley.com/>

Fundamentals of Applied Electromagnetics, Global Edition

This text should serve as an introduction to the application of electromagnetics EM, following an initial course in basic EM theory. A particular feature of the book is that it examines time domain rather than frequency domain methods in depth.; This book is intended for advanced undergraduate and graduates in electrical and electronic engineering. Research and practitioners in electromagnetics in electrical and electronic engineering and physics.

Electromagnetic Field Theory Fundamentals

CD-ROM contains: Demonstration exercises -- Complete solutions -- Problem statements.

Fast Techniques for Integrated Circuit Design

Applied Electromagnetics and Electromagnetic Compatibility deals with Radio Frequency Interference (RFI), which is the reception of undesired radio signals originating from digital electronics and electronic equipment. With today's rapid development of radio communication, these undesired signals as well as signals due to natural phenomena such as lightning, sparking, and others are becoming

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increasingly important in the general area of Electro Magnetic Compatibility (EMC). EMC can be defined as the capability of some electronic equipment or system to be operated at desired levels of performance in a given electromagnetic environment without generating EM emissions unacceptable to other systems operating in the vicinity.

Electromagnetics For Engineers (With Cd)

This third edition of the famous introductory physics text has been thoroughly revised and updated. The new edition contains two entirely new chapters: "Relativity" as the concluding chapter of the regular version, and "Particles and the Cosmos" as the concluding chapter of the extended version. New also are 16 essays, distributed throughout the text, on applications of physics to "real world" topics of student interest. Each essay is self-contained and is written by an expert in the topic. The body of the text contains more help in problem-solving and the chapter sections are shorter, making the material more accessible. There are more photos and diagrams than before, including attention-getting chapter-head photos and captions. The number of worked examples has been increased, as has the number of questions, exercises, and problems. In addition, a thread of ideas from relativistic and quantum physics is weaved through the earlier chapters, preparing the way for the later chapters.

Fundamentals of Engineering Electromagnetics: Pearson New International Edition

Pragmatic Electrical Engineering: Fundamentals introduces the fundamentals of the energy-delivery part of electrical systems. It begins with a study of basic electrical circuits and then focuses on electrical power. Three-phase power systems, transformers, induction motors, and magnetics are the major topics. All of the material in the text is illustrated with completely-worked examples to guide the student to a better understanding of the topics. This short lecture book will be of use at any level of engineering, not just electrical. Its goal is to provide the practicing engineer with a practical, applied look at the energy side of electrical systems. The author's "pragmatic" and applied style gives a unique and helpful "non-idealistic, practical, opinionated" introduction to the topic. Table of Contents: Basic Stuff / Power of the Sine / Three-Phase Power Systems / Transformers / Machines / Electromagnetics

The Finite Difference Time Domain Method for Electromagnetics

With the rapid growth of wireless technologies, more and more people are trying to gain a better understanding of electromagnetics. After all, electromagnetic fields

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have a direct impact on reception in all wireless applications. This text explores electromagnetics, presenting practical applications for wireless systems, transmission lines, waveguides, antennas, electromagnetic interference, and microwave engineering. It is designed for use in a one- or two-semester electromagnetics sequence for electrical engineering students at the junior and senior level. The first book on the subject to tackle the impact of electromagnetics on wireless applications: Includes numerous worked-out example problems that provide you with hands-on experience in solving electromagnetic problems. Describes a number of practical applications that show how electromagnetic theory is put into practice. Offers a concise summary at the end of each chapter that reinforces the key points. Detailed MATLAB examples are integrated throughout the book to enhance the material.

Electromagnetic Field Theory for Engineers and Physicists

RFID Design Fundamentals and Applications

A beloved introductory physics textbook, now including exercises and an answer key, accessibly explains electromagnetism, optics, and quantum mechanics R. Shankar is a well-known physicist and contagiously enthusiastic educator, whose

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popular online introductory-physics video lectures have been viewed over a million times. In this second book based on his online courses, Shankar explains electromagnetism, optics, and quantum mechanics, developing the basics and reinforcing the fundamentals. With the help of problem sets and answer keys, students learn about the most interesting findings of today's research while gaining a firm foundation in the principles and methods of physics.

Analytical Modeling in Applied Electromagnetics

Fundamentals of Applied Electromagnetics is intended for use in one- or two-semester courses in Electromagnetics. Widely acclaimed both in the U.S. and abroad, this authoritative text bridges the gap between circuits and electromagnetics material. Coverage begins with transmission lines, leading students from familiar concepts into more advanced topics and applications. A student-friendly approach, full-color figures and images, and a set of interactive simulations will help students develop a deeper understanding of electromagnetic concepts and applications.

Pragmatic Electrical Engineering

Indispensable for food, chemical, mechanical, and packaging engineers, Handbook

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of Farm, Dairy, and Food Machinery covers in one comprehensive volume fundamental food engineering principles in the design of food industry machinery. The handbook provides broad, yet technically detailed coverage of food safety, regulations, product processing systems, packaging, facilities, waste management, and machinery design topics in a ôfarm to the forkö organization. The 22 chapters are contributed by leading experts worldwide with numerous illustrations, tables, and references. The book includes the new USDA regulations for ôcertified organicö processing, as well as state-of-the-art technologies for equipment both on the farm and in the plant.

Fundamentals of Plasma Physics

Applied Electromagnetics and Electromagnetic Compatibility

In their successful text, Shen and Kong cover fundamentals of static and dynamic electromagnetism fields and waves. The authors employ a unique approach, beginning with a study of Maxwell's equations and waves and covering electromagnetic fields later. This presentation allows students to work with electromagnetic concepts using relatively simple computational analysis, building in a logical progression to more complex topics and mathematical methods for

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analysis. The Third Edition provides computer-based problems, homework problems, end-of-chapter summaries, and a rich collection of real-world application examples that include discussion of cellular phone and microwave exposure limits set by IEEE; safety concerns about electromagnetic fields from power lines; new and powerful magnets; and single-mode optical fibers.

Numerical Techniques in Electromagnetics, Second Edition

Based on the fundamentals of electromagnetics, this clear and concise text explains basic and applied principles of transformer and inductor design for power electronic applications. It details both the theory and practice of inductors and transformers employed to filter currents, store electromagnetic energy, provide physical isolation between circuits, and perform stepping up and down of DC and AC voltages. The authors present a broad range of applications from modern power conversion systems. They provide rigorous design guidelines based on a robust methodology for inductor and transformer design. They offer real design examples, informed by proven and working field examples. Key features include: emphasis on high frequency design, including optimisation of the winding layout and treatment of non-sinusoidal waveforms a chapter on planar magnetic with analytical models and descriptions of the processing technologies analysis of the role of variable inductors, and their applications for power factor correction and solar power unique coverage on the measurements of inductance and transformer capacitance, as well

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as tests for core losses at high frequency worked examples in MATLAB, end-of-chapter problems, and an accompanying website containing solutions, a full set of instructors' presentations, and copies of all the figures. Covering the basics of the magnetic components of power electronic converters, this book is a comprehensive reference for students and professional engineers dealing with specialised inductor and transformer design. It is especially useful for senior undergraduate and graduate students in electrical engineering and electrical energy systems, and engineers working with power supplies and energy conversion systems who want to update their knowledge on a field that has progressed considerably in recent years.

Fundamentals of Electromagnetics with Engineering Applications

Fundamental of Engineering Electromagnetics not only presents the fundamentals of electromagnetism in a concise and logical manner, but also includes a variety of interesting and important applications. While adapted from his popular and more extensive work, Field and Wave Electromagnetics, this text incorporates a number of innovative pedagogical features. Each chapter begins with an overview which serves to offer qualitative guidance to the subject matter and motivate the student. Review questions and worked examples throughout each chapter

reinforce the student's understanding of the material. Remarks boxes following the review questions and margin notes throughout the book serve as additional pedagogical aids.

Satellite Communications

One of the most methodical treatments of electromagnetic wave propagation, radiation, and scattering—including new applications and ideas Presented in two parts, this book takes an analytical approach on the subject and emphasizes new ideas and applications used today. Part one covers fundamentals of electromagnetic wave propagation, radiation, and scattering. It provides ample end-of-chapter problems and offers a 90-page solution manual to help readers check and comprehend their work. The second part of the book explores up-to-date applications of electromagnetic waves—including radiometry, geophysical remote sensing and imaging, and biomedical and signal processing applications. Written by a world renowned authority in the field of electromagnetic research, this new edition of *Electromagnetic Wave Propagation, Radiation, and Scattering: From Fundamentals to Applications* presents detailed applications with useful appendices, including mathematical formulas, Airy function, Abel's equation, Hilbert transform, and Riemann surfaces. The book also features newly revised material that focuses on the following topics: Statistical wave theories—which have been extensively applied to topics such as geophysical remote sensing, bio-

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electromagnetics, bio-optics, and bio-ultrasound imaging Integration of several distinct yet related disciplines, such as statistical wave theories, communications, signal processing, and time reversal imaging New phenomena of multiple scattering, such as coherent scattering and memory effects Multiphysics applications that combine theories for different physical phenomena, such as seismic coda waves, stochastic wave theory, heat diffusion, and temperature rise in biological and other media Metamaterials and solitons in optical fibers, nonlinear phenomena, and porous media Primarily a textbook for graduate courses in electrical engineering, Electromagnetic Wave Propagation, Radiation, and Scattering is also ideal for graduate students in bioengineering, geophysics, ocean engineering, and geophysical remote sensing. The book is also a useful reference for engineers and scientists working in fields such as geophysical remote sensing, bio-medical engineering in optics and ultrasound, and new materials and integration with signal processing.

Engineering Electromagnetics

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