

Electromagnetic Foundations Of Electrical Engineering By J A Brand O Faria

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Boundary Element Methods for Electrical Engineers

Foundations of Electromagnetic Compatibility

Foundations of Analog and Digital Electronic Circuits

Electromagnetic Field Theory Fundamentals

A Technology for Sustainability

Electrical Engineering 101

ELECTROMAGNETISM Volume 2 —Applications

Proceedings of the 3rd International Conference C2E2, Mankundu, West Bengal, India, 15th-16th January, 2016.

Engineering Electromagnetics

Circuit Oriented Electromagnetic Modeling Using the PEEC Techniques

FOUNDATIONS FOR MICROWAVE ENGINEERING, 2ND ED

Mathematical Foundations for Electromagnetic Theory

Fundamentals of Electrical Engineering

Foundational Questions in Power Theory

Fundamentals

Transmission and Distribution Electrical Engineering

The Foundations of Signal Integrity

Everything You Need to Know to Choose the Right Major

Foundations of Electrical Engineering

Advanced Engineering Electromagnetics

The Foundations of Electric Circuit Theory

Foundations of Pulsed Power Technology

Magnetic Diffusion and Electromagnetic Waves

Electrical Engineering

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CARTER ADALYNN

Boundary Element Methods for Electrical Engineers John Wiley & Sons

Examines the foundation of pulse power technology in detail to optimize the technology in modern engineering settings Pulsed power technologies could be an answer to many cutting-edge applications. The challenge is in how to develop this high-power/high-energy technology to fit current market demands of low-energy consuming applications. This book provides a comprehensive look at pulsed power technology and shows how it can be improved upon for the world of today and tomorrow. Foundations of Pulsed Power Technology focuses on the design and construction of the building blocks as well as their optimum assembly for synergetic high performance of the overall pulsed power system. Filled with numerous design examples throughout, the book offers chapter coverage on various subjects such as: Marx generators and Marx-like circuits; pulse transformers; pulse-forming lines; closing switches; opening switches; multi-gigawatt to multi-terawatt systems; energy storage in capacitor banks; electrical breakdown in gases; electrical breakdown in solids, liquids and vacuum; pulsed voltage and current measurements; electromagnetic interference and noise suppression; and EM topology for interference control. In addition, the book: Acts as a reference for practicing engineers as well as a teaching text Features relevant design equations derived from the fundamental concepts in a single reference Contains lucid presentations of the mechanisms of electrical breakdown in gaseous, liquid, solid and vacuum dielectrics Provides extensive illustrations and references Foundations of Pulsed Power Technology will be an invaluable companion for professionals working in the fields of relativistic electron beams, intense bursts of light and heavy ions, flash X-ray systems, pulsed high magnetic fields, ultra-wide band electromagnetics, nuclear electromagnetic pulse simulation, high density fusion plasma, and high energy- rate metal forming techniques.

Foundations of Electromagnetic Compatibility Elsevier

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 nonelectrical engineers amass power system information quickly by imparting tools and tradeticks 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 nonelectrical 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/>

Foundations of Analog and Digital Electronic Circuits Springer

Presents Boundary Element Method (BEM) in a simple fashion in order to help the beginner to understand the very basic principles of the method. This book initially derives BEM for the simplest potential problems, and subsequently builds on these to formulate BEM for a wide range of applications in electromagnetics.

Electromagnetic Field Theory Fundamentals John Wiley & Sons

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

A TECHNOLOGY FOR SUSTAINABILITY

Walter de Gruyter GmbH & Co KG

Filled with illustrations, examples and approximately 300 homework problems, this accessible and informative text provides an extensive treatment of electromagnetism and microwave engineering with particular emphasis on microwave and telecommunications applications. Also stresses computational electromagnetics through the use of MathCad and finite element methods to elucidate design problems, analysis and applications. Tutorials on the use of MathCad and PSpice are included. An accessible textbook for students and valuable reference for engineers already in the field.

Electrical Engineering 101 John Wiley & Sons

Electromagnetic Foundations of Electrical Engineering John Wiley & Sons

Butterworth-Heinemann

This book is a sequel to *Electromagnetism: Theory (Volume I)*. It has been updated to cover some additional aspects of theory and nearly all modern applications. The semi-historical approach is unchanged, but further historical comments have been introduced at various places in the book to give a better insight into the development of the subject as well as to make the study more interesting and palatable to the students. • Emphasis on practical aspects of wave guidance and radiation • Sections on analysis of cylindrical dielectric waveguide (e.g. of optical fibres) in Chapters 18 and 22 • Tensor formulation of Maxwell’s Stresses • Extension of Principle of Duality to time varying field problems as well as to non electrical systems • Extrapolation of the method of images from partially embedded conduction current elements to discontinuous current elements with displacement currents in antennae problems • Explanation of the physical basis of the mechanism of electromagnetic radiation • Analysis of wave polarization including complete and partial polarization • Effects of finite geometrical dimensions of the conducting media on the skin-effect phenomenon • Types of apertures in receiving antennae The book is designed to serve as a core text for students of electrical engineering. Besides, it will be useful to postgraduate physics students as well as research engineers and design and development engineers in industries.

ELECTROMAGNETISM VOLUME 2 —APPLICATIONS

CRC Press

The 3rd International Conference on Foundations and Frontiers in Computer, Communication and Electrical Engineering is a notable event which brings together academia, researchers, engineers and students in the fields of Electronics and Communication, Computer and Electrical Engineering making the conference a perfect platform to share experience, f

PROCEEDINGS OF THE 3RD INTERNATIONAL CONFERENCE C2E2, MANKUNDU, WEST BENGAL, INDIA, 15TH-16TH JANUARY, 2016.

John Wiley & Sons

Guru and Hizioglu 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.

Engineering Electromagnetics Wiley-IEEE Press

The applications of electromagnetic phenomena within electrical engineering have been evolving and progressing at a fast pace. In contrast, the underlying principles have been stable for a long time and are not expected to undergo any changes. It is these electromagnetic field fundamentals that are the subject of discussion in this book with an emphasis on basic principles, concepts and governing laws that apply across the electrical engineering discipline. *Electromagnetic Foundations of Electrical Engineering* begins with an explanation of Maxwell’s equations, from which the fundamental laws and principles governing the static and time-varying electric and magnetic fields are derived. Results for both slowly- and rapidly-varying electromagnetic field problems are discussed in detail. Key aspects: Offers a project portfolio, with detailed solutions included on the

companion website, which draws together aspects from various chapters so as to ensure comprehensive understanding of the fundamentals. Provides end-of-chapter homework problems with a focus on engineering applications. Progresses chapter by chapter to increasingly more challenging topics, allowing the reader to grasp the more simple phenomena and build upon these foundations. Enables the reader to attain a level of competence to subsequently progress to more advanced topics such as electrical machines, power system analysis, electromagnetic compatibility, microwaves and radiation. This book is aimed at electrical engineering students and faculty staff in sub-disciplines as diverse as power and energy systems, circuit theory and telecommunications. It will also appeal to existing electrical engineering professionals with a need for a refresher course in electromagnetic foundations.

Circuit Oriented Electromagnetic Modeling Using the PEEC Techniques Elsevier
FOUNDATIONS FOR MICROWAVE ENGINEERING, Second Edition, covers the major topics of microwave engineering. Its presentation defines the accepted standard for both advanced undergraduate and graduate level courses on microwave engineering. An essential reference book for the practicing microwave engineer, it features: Planar transmission lines, as well as an appendix that describes in detail conformal mapping methods for their analysis and attenuation characteristics Small aperture coupling and its application in practical components such as directional couplers and cavity coupling Printed circuit components with an emphasis on techniques such as even and odd mode analysis and the use of symmetry properties Microwave linear amplifier and oscillator design using solid-state circuits such as varactor devices and transistors
FOUNDATIONS FOR MICROWAVE ENGINEERING, Second Edition, has extensive coverage of transmission lines, waveguides, microwave circuit theory, impedance matching and cavity resonators. It devotes an entire chapter to fundamental microwave tubes, in addition to chapters on periodic structures, microwave filters, small signal solid-state microwave amplifier and oscillator design, and negative resistance devices and circuits. Completely updated in 1992, it is being reissued by the IEEE Press in response to requests from our many members, who found it an invaluable textbook and an enduring reference for practicing microwave engineers. Sponsored by: IEEE Antennas and Propagation Society, IEEE Microwave Theory and Techniques Society An Instructor's Manual presenting detailed solutions to all the problems in the book is available upon request from the Wiley Marketing Department.

FOUNDATIONS FOR MICROWAVE ENGINEERING, 2ND ED PHI Learning Pvt. Ltd.
 Divided into four parts: circuits, electronics, digital systems, and electromagnetics, this text provides an understanding of the fundamental principles on which modern electrical engineering is based. It is suitable for a variety of electrical engineering courses, and can also be used as a text for an introduction to electrical engineering.

Mathematical Foundations for Electromagnetic Theory Cambridge University Press
 The first book to focus on the electromagnetic basis of signal integrity The Foundations of Signal Integrity is the first of its kind—a reference that examines the physical foundation of system integrity based on electromagnetic theory derived from Maxwell's Equations. Drawing upon the cutting-edge research of Professor Paul Huray's team of industrial engineers and graduate students, it develops the physical theory of wave propagation using methods of solid state and high-energy physics, mathematics, chemistry, and electrical engineering before addressing its application to modern high-speed systems. Coverage includes: All the necessary electromagnetic theory needed for a complete understanding of signal integrity Techniques for obtaining analytic solutions to Maxwell's Equations for ideal materials and boundary conditions Plane electromagnetic waves Plane waves in compound media Transmission lines and waveguides Ideal models vs. real-world systems Complex permittivity of propagating media Surface roughness Advanced signal integrity Signal integrity simulations Problem sets for each chapter With its thorough coverage of this relatively new discipline, the book serves as an ideal textbook for senior undergraduate and junior graduate students, as well as a resource for practicing engineers in this burgeoning field. At the end of each section, it typically stimulates the reader with open-ended questions that might lead to future theses or dissertation research.

Fundamentals of Electrical Engineering John Wiley & Sons
 The Newnes Know It All Series takes the best of what our authors have written to create hard-working desk references that will be an engineer's first port of call for key information, design techniques and rules of thumb. Guaranteed not to gather dust on a shelf! Electrical engineers need to master a wide area of topics to excel. The Electrical Engineering Know It All covers every angle including Real-World Signals and Systems, Electromagnetics, and Power systems. A 360-degree view from our best-selling authors Topics include digital, analog, and power electronics, and electric circuits The ultimate hard-working desk reference; all the essential information, techniques and tricks of the trade in one volume

Foundational Questions in Power Theory Elsevier
 Co-published with Oxford University Press. This highly technical and thought-provoking book stresses the development of mathematical foundations for the application of the electromagnetic model to problems of research and technology. Features include in-depth coverage of linear spaces, Green's functions, spectral expansions, electromagnetic source representations, and electromagnetic boundary value problems. This book will be of interest graduate-level students in engineering, electromagnetics, physics, and applied mathematics as well as to research engineers,

physicists, and scientists.

FUNDAMENTALS

Wiley

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Transmission and Distribution Electrical Engineering Elsevier

Teaching Electromagnetics: Innovative Approaches and Pedagogical Strategies is a guide for educators addressing course content and pedagogical methods primarily at the undergraduate level in electromagnetic theory and its applications. Topics include teaching methods, lab experiences and hands-on learning, and course structures that help teachers respond effectively to trends in learning styles and evolving engineering curricula. The book grapples with issues related to the recent worldwide shift to remote teaching. Each chapter begins with a high-level consideration of the topic, reviews previous work and publications, and gives the reader a broad picture of the topic before delving into details. Chapters include specific guidance for those who want to implement the methods and assessment results and evaluation of the effectiveness of the methods. Respecting the limited time available to the average teacher to try new methods, the chapters focus on why an instructor should adopt the methods proposed in it. Topics include virtual laboratories, computer-assisted learning, and MATLAB® tools. The authors also review flipped classrooms and online teaching methods that support remote teaching and learning. The end result should be an impact on the reader represented by improvements to his or her practical teaching methods and curricular approach to electromagnetics education. The book is intended for electrical engineering professors, students, lab instructors, and practicing engineers with an interest in teaching and learning. In summary, this book: Surveys methods and tools for teaching the foundations of wireless communications and electromagnetic theory Presents practical experience and best practices for topical coverage, course sequencing, and content Covers virtual laboratories, computer-assisted learning, and MATLAB tools Reviews flipped classroom and online teaching methods that support remote teaching and learning Helps instructors in RF systems, field theory, and wireless communications bring their teaching practice up to date Dr. Krishnasamy T. Selvan is Professor in the Department of Electronics & Communication Engineering, SSN College of Engineering, since June 2012. Dr. Karl F. Warnick is Professor in the Department of Electrical and Computer Engineering at BYU.

The Foundations of Signal Integrity Elsevier

Modern technology is rapidly developing and for this reason future engineers need to acquire advanced knowledge in science and technology, including electromagnetic phenomena. This book is a contemporary text of a one-semester course for junior electrical engineering students. It covers a broad spectrum of electromagnetic phenomena such as, surface waves, plasmas, photonic crystals, negative refraction as well as related materials including superconductors. In addition, the text brings together electromagnetism and optics as the majority of texts discuss electromagnetism disconnected from optics. In contrast, in this book both are discussed. Seven labs have been developed to accompany the material of the book.

Everything You Need to Know to Choose the Right Major John Wiley & Sons

Foundations of Electrical Engineering covers the fundamental ideas and basic laws in electrical engineering. This book is organized into five parts encompassing 24 chapters. Part I provides an overview of the Maxwell's equation and its significance in electrical engineering. Part II deals first with the determination of static and steady electric fields. This part also discusses the solution of Laplace's equation, boundary value problems, the concept of capacity, and magnetic field. Parts III and IV explore the laws of network analysis and synthesis, as well as the basic principles and applications of electromagnetic waves. These parts also describe the main features of classical electrodynamics and its application to problems of electrical engineering. Part V highlights the combined contributions of Maxwell's equations and the laws of mechanics in the subject field. Electrical engineers, and electrical engineering teachers and students will find this book invaluable.

FOUNDATIONS OF ELECTRICAL ENGINEERING

CRC Press

Fundamentals of Electrical Engineering is an excellent introduction into the areas of electricity, electronic devices and electrochemistry. The book covers aspects of electrical science including Ohm and Kirchoff's laws, P-N junctions, semiconductors, circuit diagrams, magnetic fields, electrochemistry, and devices such as DC motors. This text is useful for students of electrical, chemical, materials, and mechanical engineering.

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