

Electromagnetics 5th Edition Kraus

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Engineering Electromagnetics
Microwave Engineering
Introduction to Electromagnetic Waves with Maxwell's Equations
RADIO ASTRONOMY.
Concepts and Applications of MICROWAVE ENGINEERING
Theory and Computation of Electromagnetic Fields
Frequency Selective Surfaces
Noise Reduction Techniques in Electronic Systems
Electromagnetic Fields
Wireless Power Transfer
Engineering Electromagnetics
Antennas
Our Cosmic Universe
Electromagnetics Explained
Genetic Algorithms in Electromagnetics
Electromagnetic Field Theories for Engineering
Modelling and Control of Switched Reluctance Machines
Big Ear Two
Electromagnetic Analysis and Design in Magnetic Resonance Imaging
Electromagnetics
Carbon Black
A Universe from Nothing

Electromagnetics 5th Edition Kraus

OMB No. 3294928748501 edited by

ELLISON BRYAN

Engineering Electromagnetics John Wiley & Sons

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

MICROWAVE ENGINEERING

Cambridge University Press

ElectromagneticsMcGraw-Hill Publishing Company

Introduction to Electromagnetic Waves with Maxwell's Equations John Wiley & Sons

The Second Edition of this book, while retaining the contents and style of the first edition, continues to fulfil the require-ments of the course curriculum in Electromagnetic Theory for the undergraduate students of electrical engineering, electronics and telecommunication engineering, and electro-nics and communication engineering. The text covers the modules of the syllabus corresponding to vectors and fields, Maxwell's equations in integral form and differential form, wave propagation in free space and material media, transmission line analysis and waveguide principles. It explains physical and mathematical aspects of the highly complicated electromagnetic theory in a very simple and lucid manner. This new edition includes : • Two separate chapters on Transmission Line and Waveguide • A thoroughly revised chapter on Plane Wave Propagation • Several new solved and unsolved numerical problems asked in various universities' examinations

RADIO ASTRONOMY. Phlogiston Press

Evolution of Knowledge Science: Myth to Medicine: Intelligent Internet-Based Humanist Machines explains how to design and build the next generation of intelligent machines that solve social and environmental problems in a systematic, coherent, and optimal fashion. The book brings together principles from computer and communication sciences, electrical engineering, mathematics, physics, social sciences, and more to describe computer systems that deal with knowledge, its representation, and how to deal with knowledge centric objects. Readers will learn new tools and techniques to measure, enhance, and optimize artificial intelligence strategies for efficiently searching through vast knowledge bases, as well as how to ensure the security of information in open, easily accessible, and fast digital networks. Author Syed Ahamed joins the basic concepts from various disciplines to describe a robust and coherent knowledge sciences discipline that provides readers with tools, units, and measures to evaluate the flow of knowledge during course work or their research. He offers a unique academic and industrial perspective of the concurrent dynamic changes in computer and communication industries based upon his research. The author has experience both in industry and in teaching graduate level telecommunications and network architecture courses, particularly those dealing with applications of networks in education. Presents a current perspective of developments in central, display, signal, and graphics processor-units as they apply to designing knowledge systems Offers ideas and methodologies for systematically extending data and object processing in computing into other disciplines such as economics, mathematics, and management Provides best practices and designs for engineers alongside case studies that illustrate practical implementation ideas across multiple domains

CONCEPTS AND APPLICATIONS OF MICROWAVE ENGINEERING

Wiley-Interscience

Clear explanations and supportive online material develop an intuitive understanding of the meaning and use of Laplace.

Theory and Computation of Electromagnetic Fields CRC Press

This book is aimed to provide the basic preparatory material to the students who wish to study the electromagnetism as part of their course study. In the discussion of different concepts of electromagnetism, use of vectors and coordinates systems are unavoidable. Most of the books avoid details of these topics due to scope of the book or the syllabus. Most of the students take it for granted the formulae stated in the book. Some students when try to understand the three dimensional aspects of the coordinate systems they find some confusion. To help student clear their concepts on these aspects and to answer how different readily given expressions are derived we have come forward to write this book. The book starts discussion from very basic definitions of vector terminology and then relates this with the coordinate systems. Most needed coordinate systems are Cartesian, cylindrical and spherical coordinate systems. These systems are discussed from the basic level and culminate into the derivations of the longer expressions. As problems are already available in the books of similar nature authors have not included them in this book. It is hoped that this book would clear most of the concepts needed to study the electromagnetism.

Frequency Selective Surfaces John Wiley & Sons

Shares provocative and revelatory answers to such philosophical conundrums as the origins of the universe and how it will end, offering scientific explanations about the immense process through which life evolved.

NOISE REDUCTION TECHNIQUES IN ELECTRONIC SYSTEMS

Morgan Kaufmann

This is a textbook on electromagnetic fields and waves completely based on conceptual understanding of electromagnetics. The text provides operational knowledge and firm grasp of electromagnetic fundamentals aimed toward practical engineering applications by combining fundamental theory and a unique and comprehensive collection of as many as 888 conceptual questions and problems in electromagnetics. Conceptual questions are designed to strongly enforce and enhance both the theoretical concepts and understanding and problem-solving techniques and skills in electromagnetics.

Electromagnetic Fields SciTech Publishing

Accompanying CD-ROM contains a MATLAB tutorial.

Wireless Power Transfer Springer

Wireless Power Transfer is the second edition of a well received first book, which published in 2012. It represents the state-of-the-art at the time of writing, and addresses a unique subject of great international interest in terms of research. Most of the chapters are contributed by the main author, though as in the first edition several chapters are contributed by other authors. The authors of the various chapters are experts in their own right on the specific topics within wireless energy transfer. Compared to the first edition, this new edition is more comprehensive in terms of the concepts discussed, and the range of current industrial applications which are presented, such as those of magnetic induction. From the eleven chapters of the first edtion, this second edition has expanded to twenty chapters. More chapters on the theoretical foundations and applications have been included. This new edition also contains chapters which deal with techniques for reducing power losses in wireless power transfer systems. In this regard, specific chapters discuss impedance matching methods, frequency splitting and how to deploy systems based on frequency splitting. A new chapter on multi-dimensional wireless power transfer has also been added. The design of wireless power transfer systems based on bandpass filtering approach has been included, in addition to the two techniques using couple mode theory and electronic circuits.The book has retained chapters on how to increase efficiency of power conversion and induction, and also how to control the power systems. Furthermore, detailed techniques for power relay, including applications, which were also discussed in the first edition, have been updated and kept. The book is written in a progressive manner, with a knowledge of the first chapters making it easier to understand the later

chapters. Most of the underlying theories covered in the book are clearly relevant to inductive near field communications, robotic control, robotic propulsion techniques, induction heating and cooking and a range of mechatronic systems.

Engineering Electromagnetics Erlangga

A laboratory manual for high schools, colleges, and universities. The second edition contains more than 140 experiments and demonstrations presented in ten chapters: Introductory Experiments (30), Mechanics (11), Molecular Physics (11), Electricity and Magnetism (13), Optics and Atomic Physics (12), Condensed Matter Physics (11), Semiconductors (10), Applied Physics (11), Nobel Prize Experiments (10), and Student Projects (25). All the experiments are illustrated through the results of real measurements. New experiments developed by the author in 2007-2014 are added to this edition.

Antennas John Wiley & Sons

Introduction and Survey of the Electromagnetic Spectrum; Fundamentals of Electric Fields; Fundamentals of Magnetic Fields; Electrodynamics; Radiation; Relativity and Quantum Physics; The Hidden Schematic; Transmission Lines; Waveguides and Shields; Circuits as Guides for Waves and S-Parameters; Antennas: How to Make Circuits That Radiate; EMC (Part I: Basics, Part II: PCB Techniques, Part III: Cabling); Lenses, Dishes, and Antenna Arrays; Diffraction; Frequency Dependence of Materials, Thermal Radiation, and Noise; Electrical Engineering Book Recommendations; Index.

Our Cosmic Universe Cambridge University Press

A thorough and insightful introduction to using genetic algorithms to optimize electromagnetic systems. Genetic Algorithms in Electromagnetics focuses on optimizing the objective function when a computer algorithm, analytical model, or experimental result describes the performance of an electromagnetic system. It offers expert guidance to optimizing electromagnetic systems using genetic algorithms (GA), which have proven to be tenacious in finding optimal results where traditional techniques fail. Genetic Algorithms in Electromagnetics begins with an introduction to optimization and several commonly used numerical optimization routines, and goes on to feature: Introductions to GA in both binary and continuous variable forms, complete with examples of MATLAB(r) commands. Two step-by-step examples of optimizing antenna arrays as well as a comprehensive overview of applications of GA to antenna array design problems. Coverage of GA as an adaptive algorithm, including adaptive and smart arrays as well as adaptive reflectors and crossed dipoles. Explanations of the optimization of several different wire antennas, starting with the famous "crooked monopole". How to optimize horn, reflector, and microstrip patch antennas, which require significantly more computing power than wire antennas. Coverage of GA optimization of scattering, including scattering from frequency selective surfaces and electromagnetic band gap materials. Ideas on operator and parameter selection for a GA. Detailed explanations of particle swarm optimization and multiple objective optimization. An appendix of MATLAB code for experimentation.

Electromagnetics Explained Newnes

Practical, concise and complete reference for the basics of modern antenna design. Antennas: from Theory to Practice discusses the basics of modern antenna design and theory. Developed specifically for engineers and designers who work with radio communications, radar and RF engineering, this book offers practical and hands-on treatment of antenna theory and techniques, and provides its readers the skills to analyse, design and measure various antennas. Key features: Provides thorough coverage on the basics of transmission lines, radio waves and propagation, and antenna analysis and design. Discusses industrial standard design software tools, and antenna measurement equipment, facilities and techniques. Covers electrically small antennas, mobile antennas, UWB antennas and new materials for antennas. Also discusses reconfigurable antennas, RFID antennas, Wide-band and multi-band antennas, radar antennas, and MIMO antennas. Design examples of various antennas are provided. Written in a practical and concise manner by authors who are experts in antenna design, with experience from both academia and industry. This book will be an invaluable resource for engineers and designers working in RF engineering, radar and radio communications, seeking a comprehensive and practical introduction to the basics of antenna design. The book can also be used as a textbook for advanced students entering a profession in this field.

Genetic Algorithms in Electromagnetics Simon and Schuster

For a one-semester senior or beginning graduate level course in power system dynamics. This text begins with the fundamental laws for basic devices and systems in a mathematical modeling context. It includes systematic derivations of standard synchronous machine models with their fundamental controls. These individual models are interconnected for system analysis and

simulation. Singular perturbation is used to derive and explain reduced-order models.

Electromagnetic Field Theories for Engineering John Wiley & Sons

Reviews the fundamental concepts behind the theory and computation of electromagnetic fields. The book is divided in two parts. The first part covers both fundamental theories (such as vector analysis, Maxwell's equations, boundary condition, and transmission line theory) and advanced topics (such as wave transformation, addition theorems, and fields in layered media) in order to benefit students at all levels. The second part of the book covers the major computational methods for numerical analysis of electromagnetic fields for engineering applications. These methods include the three fundamental approaches for numerical analysis of electromagnetic fields: the finite difference method (the finite difference time-domain method in particular), the finite element method, and the integral equation-based moment method. The second part also examines fast algorithms for solving integral equations and hybrid techniques that combine different numerical methods to seek more efficient solutions of complicated electromagnetic problems. Theory and Computation of Electromagnetic Fields, Second Edition: Provides the foundation necessary for graduate students to learn and understand more advanced topics. Discusses electromagnetic analysis in rectangular, cylindrical and spherical coordinates. Covers computational electromagnetics in both frequency and time domains. Includes new and updated homework problems and examples. Theory and Computation of Electromagnetic Fields, Second Edition is written for advanced undergraduate and graduate level electrical engineering students. This book can also be used as a reference for professional engineers interested in learning about analysis and computation skills.

Modelling and Control of Switched Reluctance Machines CRC Press

Written to complement course textbooks, this book focuses on the topics that undergraduates in physics and engineering find most difficult.

Big Ear Two John Wiley & Sons

Detailed descriptions of detection, direction-finding, and signal-estimation methods, using consistent formalisms and notation, emphasizing HF antenna array sensing applications. Adaptive antenna array technology encompasses many powerful interference suppression approaches that exploit spatial differences among signals reaching a radio receiver system. Today, worldwide propagation phenomenology occurring in the High Frequency (HF) radio regime has made such interference common. In this book, Jay Sklar, a longtime researcher at MIT Lincoln Laboratory, presents detailed descriptions of detection, direction-finding, and signal-estimation methods applicable at HF, using consistent formalisms and notation. Modern electronic system technology has made many of these techniques affordable and practical; the goal of the book is to offer practicing engineers a comprehensive and self-contained reference that will encourage more widespread application of these approaches. The book is based on the author's thirty years of managing MIT Lincoln Laboratory work on the application of adaptive antenna array technologies to the sensing of HF communication signals. After an overview of HF propagation phenomenology, communication signal formats, and HF receiver architectural approaches, Sklar describes the HF propagation environment in more detail; introduces important modulation approaches and signaling protocols used at HF; discusses HF receiver system architectural features; and addresses signal processor architecture and its implementation. He then presents the technical foundation for the book: the vector model for a signal received at an adaptive array antenna. He follows this with discussions of actual signal processing techniques for detection and direction finding, including specific direction-finding algorithms; geolocation techniques; and signal estimation.

Electromagnetic Analysis and Design in Magnetic Resonance Imaging MIT Press

A clear guide to the key concepts and mathematical techniques underlying the Schrödinger equation, including homework problems and fully worked solutions.

Electromagnetics World Scientific

Indoor Wireless Communications: From Theory to Implementation provides an in-depth reference for design engineers, system planners and post graduate students interested in the vastly popular field of indoor wireless communications. It contains wireless applications and services for in-building scenarios and knowledge of key elements in the design and implementation of these systems. Technologies such as Wireless Local Area Networks, Bluetooth, ZigBee, Indoor Optical Communications, WiMAX, UMTS and GSM for indoor environments are fully explained and illustrated with examples. Antennas and propagation issues for in-building scenarios are also discussed, emphasizing models and antenna types specifically developed for indoor communications. An exhaustive survey on indoor wireless communication equipment is also presented, covering all available technologies including antennas, distribution systems, transceivers and base stations.

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