

Where To Download David K Cheng  
Fundamentals Of Engineering Electromagnetics

# David K Cheng Fundamentals Of Engineering Electromagnetics

*This textbook takes a unified view of the fundamentals of wireless communication and explains cutting-edge concepts in a simple and intuitive way. An abundant supply of exercises make it ideal for graduate courses in electrical and computer engineering and it will also be of great interest to practising engineers.*

*This book deals with electromagnetic theory and its applications at the level of a senior-level undergraduate course for science and engineering. The basic concepts and mathematical analysis are*

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*clearly developed and the important applications are analyzed. Each chapter contains numerous problems ranging in difficulty from simple applications to challenging. The answers for the problems are given at the end of the book. Some chapters which open doors to more advanced topics, such as wave theory, special relativity, emission of radiation by charges and antennas, are included. The material of this book allows flexibility in the choice of the topics covered. Knowledge of basic calculus (vectors, differential equations and integration) and general physics is assumed. The required mathematical techniques are gradually introduced. After a detailed revision of time-independent phenomena in electrostatics and magnetism in vacuum, the electric and magnetic properties of matter are discussed. Induction, Maxwell equations and electromagnetic waves, their reflection,*

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*refraction, interference and diffraction are also studied in some detail. Four additional topics are introduced: guided waves, relativistic electrodynamics, particles in an electromagnetic field and emission of radiation. A useful appendix on mathematics, units and physical constants is included. Contents 1. Prologue. 2. Electrostatics in Vacuum. 3. Conductors and Currents. 4. Dielectrics. 5. Special Techniques and Approximation Methods. 6. Magnetic Field in Vacuum. 7. Magnetism in Matter. 8. Induction. 9. Maxwell's Equations. 10. Electromagnetic Waves. 11. Reflection, Interference, Diffraction and Diffusion. 12. Guided Waves. 13. Special Relativity and Electrodynamics. 14. Motion of Charged Particles in an Electromagnetic Field. 15. Emission of Radiation.*

*Java for Web with Servlets, JSP and EJB is the one book you need to master Java web programming. It covers all the technologies*

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*needed to program web applications in Java using Servlets 2.3, JSP 1.2, EJB 2.0 and client-side programming with JavaScript. These technologies are explained in the context of real-world projects, such as an e-commerce application, a document management program, file upload and programmable file download, and an XML-based online book project. In addition to excellent content, this book includes licenses to two Java web components from BrainySoftware.com. You receive a full license of the Programmable File Download component for commercial and non-commercial deployment. You are also granted to a license to deploy the author's popular File Upload bean for non-commercial use, which has been licensed by the Fortune 500 company Commerce One and purchased by major corporations such as Saudi Business Machine, Ltd. and Baxter Healthcare Corporation.*

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*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 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*

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*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.*

*Electromagnetic Waves*

*Fundamentals of Electromagnetics with Engineering Applications*

*Electromagnetism*

*Electromagnetic Field Theory*

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*Chemical Engineering in the Pharmaceutical Industry, Active  
Pharmaceutical Ingredients*

Usually called the "fourth state of matter," plasmas make up more than 99% of known material. In usual terminology, this term generally refers to partially or totally ionized gas and covers a large number of topics with very different characteristics and behaviors. Over the last few decades, the physics and engineering of plasmas was experiencing a renewed interest, essentially born of a series of important applications such as thin-layer deposition, surface treatment, isotopic separation, integrated circuit etchings,

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medicine, etc. Plasma Science

Field and wave electromagnetics (World Student S.)

Guru and Hizirolu 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



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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](http://www.cambridge.org/9780521830164).

Mathematical Physics

A Path Forward

Movement and Place in the Asian American

Imaginary

Finite Element Analysis in Geotechnical Engineering

Fundamentals of Spacecraft Attitude Determination

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and Control

Interconnect Technology and Design for Gigascale  
Integration

The gold standard in analytical chemistry, Dan Harris' Quantitative Chemical Analysis provides a sound physical understanding of the principles of analytical chemistry and their applications in the disciplines.

A guide to the development and manufacturing of pharmaceutical products written for professionals in the industry, revised second edition The revised and

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updated second edition of Chemical Engineering in the Pharmaceutical Industry is a practical book that highlights chemistry and chemical engineering. The book's regulatory quality strategies target the development and manufacturing of pharmaceutically active ingredients of pharmaceutical products. The expanded second edition contains revised content with many new case studies and additional example calculations that are of interest to chemical engineers. The 2nd Edition is divided into two separate books: 1)

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Active Pharmaceutical Ingredients (API's) and  
2) Drug Product Design, Development and  
Modeling. The active pharmaceutical  
ingredients book puts the focus on the  
chemistry, chemical engineering, and unit  
operations specific to development and  
manufacturing of the active ingredients of the  
pharmaceutical product. The drug substance  
operations section includes information on  
chemical reactions, mixing, distillations,  
extractions, crystallizations, filtration, drying,  
and wet and dry milling. In addition, the book

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includes many applications of process modeling and modern software tools that are geared toward batch-scale and continuous drug substance pharmaceutical operations. This updated second edition: □ Contains 30 new chapters or revised chapters specific to API, covering topics including: manufacturing quality by design, computational approaches, continuous manufacturing, crystallization and final form, process safety □ Expanded topics of scale-up, continuous processing, applications of thermodynamics and

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thermodynamic modeling, filtration and drying  
□ Presents updated and expanded example calculations  
□ Includes contributions from noted experts in the field  
Written for pharmaceutical engineers, chemical engineers, undergraduate and graduate students, and professionals in the field of pharmaceutical sciences and manufacturing, the second edition of Chemical Engineering in the Pharmaceutical Industry focuses on the development and chemical engineering as well as operations specific to the design,

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formulation, and manufacture of drug substance and products.

Written by a leading expert in the field, this practical new resource presents the fundamentals of electromagnetics and antenna technology. This book covers the design, electromagnetic simulation, fabrication, and measurements for various types of antennas, including impedance matching techniques and beamforming for ultrawideband dipoles, monopoles, loops, vector sensors for direction finding, HF curtain

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arrays, 3D printed nonplanar patch antenna arrays, waveguides for portable radar, reflector antennas, and other antennas. It explores the essentials of phased array antennas and includes detailed derivations of important field equations, and a detailed formulation of the method of moments. This resource exhibits essential derivations of equations, providing readers with a strong foundation of the underpinnings of electromagnetics and antennas. It includes a complete chapter on the details of antenna



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and electromagnetic test and measurement. This book explores details on 3D printed non-planar circular patch array antenna technology and the design and analysis of a planar array-fed axisymmetric gregorian reflector. The lumped-element impedance matched antennas are examined and include a look at an analytic impedance matching solution with a parallel LC network. This book provides key insight into many aspects of antenna technology that have broad applications in radar and communications.

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This book is jointly authored by leading academic and industry researchers. The material is unique in that it spans IC interconnect topics ranging from IBM's revolutionary copper process to an in-depth exploration into interconnect-aware computer architectures.

Drug Product Design, Development, and Modeling

Field and Wave Electromagnetics

Plasma Science and Technology

Basic Fundamentals and Modern Applications

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Mathematics for Machine Learning

California Dreaming is a multi-genre collection featuring works by Asian American artists based in California. Exploring the places of "Asian America" through the migration and circulation of the art, this volume highlights creative processes and the flow of objects to understand the rendering of California's imaginary. Here, "California" is interpreted as both a specific locale and an identity marker that moves, linking the state's cultural imaginary, labor, and economy with Asia Pacific, the Americas, and the world. Together, the works in this collection shift previous models and studies of the "Golden State" as the embodiment of "frontier mentality" and the discourse of exceptionality to a translocal, regional, and archipelagic understanding of place and cultural production. The poems, visual essays, short stories, critical essays

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interviews, artist statements, and performance text excerpts featured in this collection expand notions of where knowledge is produced, directing our attention to the particularity of California's landscape and labor in the production of arts and culture. An interdisciplinary collection, *California Dreaming* foregrounds "sensing" and "imagining" place, vividly, as it hopes to inspire further creative responses to the notion of emplacement. In doing so, *California Dreaming* explores the possibilities imagined by and through Asian American arts and culture today, paving the way for what is yet to be.

Understand the theory, design and applications of the two principal candidates for the next mainstream semiconductor-industry device with this concise and clear guide to FD/UTB transistors. • Describes FD/SOI MOSFETs and 3-D FinFETs in detail • Covers

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short-channel effects, quantum-mechanical effects, applications of UTB devices to floating-body DRAM and conventional SRAM • Provides design criteria for nanoscale FinFET and nanoscale thin and thick-BOX planar FD/SOI MOSFET to help reduce technology development time • Projects potential nanoscale UTB CMOS performances • Contains end-of-chapter exercises. For professional engineers in the CMOS IC field who need to know about optimal non-classical device design and integration, this is a must-have resource.

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

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number of innovative pedagogical features. Each chapter begins with an overview which serves to offer qualitative guidance to subject matter and motivate the student. Review questions and worked examples throughout each chapter reinforce the student understanding of the material. Remarks boxes following the review questions and margin notes throughout the book serve as additional pedagogical aids.

This text examines applications and covers statics with an emphasis on the dynamics of engineering electromagnetics. This edition features a new chapter on electromagnetic principles for photonic devices and sections on cylindrical metallic waveguides and losses in waveguides and resonators.

Envisioning Religion, Race, and Asian Americans  
Chemical Engineering in the Pharmaceutical Industry

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Principles, Techniques, and Applications

Fundamentals of Management

Strengthening Forensic Science in the United States

***An insight into the use of the finite method in geotechnical engineering. The first volume covers the theory and the second volume covers the applications of the subject. The work examines popular constitutive models, numerical techniques and case studies.***

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

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***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***



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***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.***

***Efficient Query Processing for Scalable Web Search will be a valuable reference for researchers and developers working on This***

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***tutorial provides an accessible, yet comprehensive, overview of the state-of-the-art of Neural Information Retrieval.***

***A guide to the important chemical engineering concepts for the development of new drugs, revised second edition The revised and updated second edition of Chemical Engineering in the Pharmaceutical Industry offers a guide to the experimental and computational methods related to drug product design and development. The second edition has been greatly expanded and covers a range of topics related to formulation***

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***design and process development of drug products. The authors review basic analytics for quantitation of drug product quality attributes, such as potency, purity, content uniformity, and dissolution, that are addressed with consideration of the applied statistics, process analytical technology, and process control. The 2nd Edition is divided into two separate books: 1) Active Pharmaceutical Ingredients (API's) and 2) Drug Product Design, Development and Modeling. The contributors explore technology transfer and scale-up of batch processes that are***

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***exemplified experimentally and computationally. Written for engineers working in the field, the book examines in-silico process modeling tools that streamline experimental screening approaches. In addition, the authors discuss the emerging field of continuous drug product manufacturing. This revised second edition: Contains 21 new or revised chapters, including chapters on quality by design, computational approaches for drug product modeling, process design with PAT and process control, engineering challenges and solutions Covers***

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***chemistry and engineering activities related to dosage form design, and process development, and scale-up Offers analytical methods and applied statistics that highlight drug product quality attributes as design features Presents updated and new example calculations and associated solutions Includes contributions from leading experts in the field Written for pharmaceutical engineers, chemical engineers, undergraduate and graduation students, and professionals in the field of pharmaceutical sciences and manufacturing, Chemical***

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***Engineering in the Pharmaceutical Industry, Second Edition contains information designed to be of use from the engineer's perspective and spans information from solid to semi-solid to lyophilized drug products.***

***Probability, Statistics, and Random Processes for Engineers***

***An Introduction to Neural Information Retrieval  
Fundamentals of Wireless Communication***

***Transmission Lines for Communications***

***Schwartz's Principles of Surgery, 10th edition***

***In this work, the reliability of HfO<sub>2</sub> (hafnium oxide)***

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*with poly gate and dual metal gate electrode (Ru-Ta alloy, Ru) was investigated. Hard breakdown and soft breakdown, particularly the Weibull slopes, were studied under constant voltage stress. Dynamic stressing has also been used. It was found that the combination of trapping and detrapping contributed to the enhancement of the projected lifetime. The results from the polarity dependence studies showed that the substrate injection exhibited a shorter projected lifetime and worse soft breakdown behavior, compared to the gate injection. The origin of soft breakdown (first breakdown) was studied and the results suggested that the soft breakdown may be due to one layer breakdown in the bilayer structure*

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*(HfO<sub>2</sub>/SiO<sub>2</sub>: 4 nm/4 nm). Low Weibull slope was in part attributed to the lower barrier height of HfO<sub>2</sub> at the interface layer. Interface layer optimization was conducted in terms of mobility, swing, and short channel effect using deep submicron MOSFET devices.*

*This book explores topics that are central to the field of spacecraft attitude determination and control. The authors provide rigorous theoretical derivations of significant algorithms accompanied by a generous amount of qualitative discussions of the subject matter. The book documents the development of the important concepts and methods in a manner accessible to practicing engineers, graduate-level*



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*engineering students and applied mathematicians. It includes detailed examples from actual mission designs to help ease the transition from theory to practice and also provides prototype algorithms that are readily available on the author's website. Subject matter includes both theoretical derivations and practical implementation of spacecraft attitude determination and control systems. It provides detailed derivations for attitude kinematics and dynamics and provides detailed description of the most widely used attitude parameterization, the quaternion. This title also provides a thorough treatise of attitude dynamics including Jacobian elliptical functions. It is the first known book to provide*

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*detailed derivations and explanations of state attitude determination and gives readers real-world examples from actual working spacecraft missions. The subject matter is chosen to fill the void of existing textbooks and treatises, especially in state and dynamics attitude determination. MATLAB code of all examples will be provided through an external website.*

*Aerosol Measurement: Principles, Techniques, and Applications Third Edition is the most detailed treatment available of the latest aerosol measurement methods. Drawing on the know-how of numerous expert contributors; it provides a solid grasp of measurement fundamentals and practices a wide variety of aerosol applications. This new edition*

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*is updated to address new and developing applications of aerosol measurement, including applications in environmental health, atmospheric science, climate change, air pollution, public health, nanotechnology, particle and powder technology, pharmaceutical research and development, clean room technology (integrated circuit manufacture), and nuclear waste management.*

*The book Electromagnetic Field Theory caters to the students of BE/BTech Electronics and Communication Engineering, Electrical and Electronics Engineering, and Electronic Instrumentation Engineering, as electromagnetics is an integral part of their curricula. It covers a wide range of topics that deal with various*

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*physical and mathematical concepts, including vector functions, coordinate systems, integration and differentiation, complex numbers, and phasors. The book helps in understanding the electric and magnetic fields on different charge and current distributions, such as line, surface, and volume. It also explains the electromagnetic behaviour of waves, fields in transmission lines, and radiation in antennas. A number of electromagnetic applications are also included to develop the interest of students.*

**SALIENT FEATURES**

- *Simple and easy-to-follow text*
- *Complete coverage of the subject as per the syllabi of most universities*
- *Lucid, well-explained concepts with clear examples*
- *Relevant illustrations for better*

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*understanding and retention • Some of the illustrations provide three-dimensional view for in-depth knowledge • Numerous mathematical examples for full clarity of concepts • Chapter objectives at the beginning of each chapter for its overview • Chapter-end summary and exercises for quick review and to test your knowledge*

*Essential Concepts and Applications*

*Application*

*California Dreaming*

*Spacecraft Attitude Determination and Control*

*Aerosol Measurement*

**In Envisioning Religion, Race, and Asian Americans,  
David K. Yoo and Khyati Y. Joshi put together a wide-**

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ranging and important collection of essays documenting the intersections of race and religion and Asian American communities—a combination so often missing both in the scholarly literature and in public discourse. Issues of religion and race/ethnicity undergird current national debates around immigration, racial profiling, and democratic freedoms, but these issues, as the contributors document, are longstanding ones in the United States. The essays included in the volume feature dimensions of traditions such as Islam, Hinduism, Sikhism as well as how religion engages with topics such as religious affiliation (or lack thereof), the legacy of the Vietnam War, and popular culture. The contributors also address the role of survey data, pedagogy, methodology,

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**and literature that is richly complementary and necessary for understanding the scope and range of the subject of Asian American religions. These essays attest to the vibrancy and diversity of Asian American religions, while at the same time situating these conversations in a scholarly lineage and discourse. This collection will certainly serve as an invaluable resource for scholars, students, and general readers with interests in Asian American religions in fields such as ethnic and Asian American studies, religious studies, American studies, and related fields that focus on immigration and race. This book contains selected peer-reviewed papers that were presented at the Fourth International Symposium on Transportation Network Reliability (INSTR)**

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**Conference held at the University of Minnesota July 22-23, 2010. International scholars, from a variety of disciplines--engineering, economics, geography, planning and transportation—offer varying perspectives on modeling and analysis of the reliability of transportation networks in order to illustrate both vulnerability to day-to-day and unpredictability variability and risk in travel, and demonstrates strategies for addressing those issues. The scope of the chapters includes all aspects of analysis and design to improve network reliability, specifically user perception of unreliability of public transport, public policy and reliability of travel times, the valuation and economics of reliability, network reliability modeling and estimation,**



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**travel behavior and vehicle routing under uncertainty, and risk evaluation and management for transportation networks. The book combines new methodologies and state of the art practice to model and address questions of network unreliability, making it of interest to both academics in transportation and engineering as well as policy-makers and practitioners.**

**A review of the fundamental theory for the transverse electromagnetic mode (TEM) on transmission lines, with emphasis on communications applications. The coverage includes transient performance of relevance for digital systems as well as the more traditional steady-state sinusoidal performance.**

**For courses in Probability and Random Processes.**

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**Probability, Statistics, and Random Processes for Engineers, 4e is a comprehensive treatment of probability and random processes that, more than any other available source, combines rigor with accessibility. Beginning with the fundamentals of probability theory and requiring only college-level calculus, the book develops all the tools needed to understand more advanced topics such as random sequences, continuous-time random processes, and statistical signal processing. The book progresses at a leisurely pace, never assuming more knowledge than contained in the material already covered. Rigor is established by developing all results from the basic axioms and carefully defining and discussing such advanced notions**

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**as stochastic convergence, stochastic integrals and resolution of stochastic processes.**

**Maxwell Equations, Wave Propagation and Emission  
Fundamentals of Electromagnetics 2**

**Selected Papers from the Fourth International  
Symposium on Transportation Network Reliability**

**Mathematical Physics**

**Hf-Based High-k Dielectrics**

The 1988 Nobel Prize winner establishes the subject's mathematical background, reviews the principles of electrostatics, then introduces Einstein's special theory of relativity and applies it to topics

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throughout the book.

The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the

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mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every

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chapter includes worked examples and exercises to test understanding.

Programming tutorials are offered on the book's web site.

THE WORLD'S #1 SURGERY TEXT--UPDATED TO INCLUDE STATE-OF-THE-ART EVIDENCE-BASED SURGICAL CARE AND LEADERSHIP GUIDANCE FOR TRAINEES AND PRACTICING SURGEONS The Tenth Edition of Schwartz's Principles of Surgery maintains the book's unmatched coverage of the foundations of surgery while bringing into sharper focus new and emerging technologies. We have entered a

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new era of surgery in which minimally invasive surgery, robotic surgery, and the use of computers and genomic information have improved the outcomes and quality of life for patients. With these advances in mind, all chapters have been updated with an emphasis on evidence-based, state-of-the-art surgical care. An exciting new chapter, "Fundamental Principles of Leadership Training in Surgery," expands the scope of the book beyond the operating room to encompass the actual development of surgeons. This edition is also enriched

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by an increased number of international chapter authors and a new chapter on Global Surgery. More than ever, Schwartz's Principles of Surgery is international in scope--a compendium of the knowledge and technique of the world's leading surgeons. Features More clinically relevant than ever, with emphasis on high-yield discussion of diagnosis and treatment of surgical disease, arranged by organ system and surgical specialty Content is supported by boxed key points, detailed anatomical figures, diagnostic and



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management algorithms, and key references  
Beautiful full-color design

How will we meet rising energy demands?

What are our options? Are there viable  
long-term solutions for the future? Learn  
the fundamental physical, chemical and  
materials science at the heart of: •

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Future transportation systems • Energy

efficiency • Energy storage Whether you

are a student taking an energy course or a  
newcomer to the field, this textbook will  
help you understand critical relationships

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between the environment, energy and sustainability. Leading experts provide comprehensive coverage of each topic, bringing together diverse subject matter by integrating theory with engaging insights. Each chapter includes helpful features to aid understanding, including a historical overview to provide context, suggested further reading and questions for discussion. Every subject is beautifully illustrated and brought to life with full color images and color-coded sections for easy browsing, making

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this a complete educational package.  
Fundamentals of Materials for Energy and  
Environmental Sustainability will enable  
today's scientists and educate future  
generations.

Fundamentals of Applied Electromagnetics  
Quasistatics and Waves

Java for the Web with Servlets, JSP, and  
EJB

Fundamentals of Engineering  
Electromagnetics

Elements of Engineering Electromagnetics

***CD-ROM contains: Demonstration***

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***exercises -- Complete solutions --  
Problem statements.***

***Roger D. Werking Head, Attitude  
Determination and Control Section  
National Aeronautics and Space  
Administration/ Goddard Space Flight  
Center Extensive work has been done for  
many years in the areas of attitude  
determination, attitude prediction, and  
attitude control. During this time, it has  
been difficult to obtain reference  
material that provided a comprehensive***

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***overview of attitude support activities. This lack of reference material has made it difficult for those not intimately involved in attitude functions to become acquainted with the ideas and activities which are essential to understanding the various aspects of spacecraft attitude support. As a result, I felt the need for a document which could be used by a variety of persons to obtain an understanding of the work which has been done in support of spacecraft***

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***attitude objectives. It is believed that this book, prepared by the Computer Sciences Corporation under the able direction of Dr. James Wertz, provides this type of reference. This book can serve as a reference for individuals involved in mission planning, attitude determination, and attitude dynamics; an introductory textbook for students and professionals starting in this field; an information source for experimenters or others involved in spacecraft-related***

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***work who need information on spacecraft orientation and how it is determined, but who have neither the time nor the resources to pursue the varied literature on this subject; and a tool for encouraging those who could expand this discipline to do so, because much remains to be done to satisfy future needs.***

***"Fundamental of Engineering Electromagnetics" not only presents the fundamentals of electromagnetism in a***

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***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***



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***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. Back Cover Fundamentals of Engineering Electromagnetics is a shorter version of Dr. Cheng's best-selling Field and Wave Electromagnetics, Second Edition. Fundamentals has been written in summaries. Emphasizes examples and exercises that invite***

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***students to build their knowledge of electromagnetics by solving problems. Besides presenting electromagnetics in a concise and logical manner, the text covers application topics such as electric motors, transmission lines, waveguides, antennas, antenna arrays, and radar systems.***

***This book is the second of two volumes which have been created to provide an understanding of the basic principles and applications of electromagnetic***

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***fields for electrical engineering students. Fundamentals of Electromagnetics Vol 2: Quasistatics and Waves examines how the low-frequency models of lumped elements are modified to include parasitic elements. For even higher frequencies, wave behavior in space and on transmission lines is explained. Finally, the textbook concludes with details of transmission line properties and applications. Upon completion of this book and its companion***

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***Fundamentals of Electromagnetics Vol 1: Internal Behavior of Lumped Elements, with a focus on the DC and low-frequency behavior of electromagnetic fields within lumped elements, students will have gained the necessary knowledge to progress to advanced studies of electromagnetics.***

***Quantitative Chemical Analysis  
Electromagnetics and Antenna  
Technology***

***Fundamentals of Materials for Energy***

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Fundamentals Of Engineering Electromagnetics

***and Environmental Sustainability  
Principles of Electrodynamics***

Fundamentals of Engineering Electromagnetics Pearson New  
International Edition Pearson Higher Ed

Process Development, Performance Characterization, and  
Reliability

Network Reliability in Practice

Electromagnetic Field Theory Fundamentals

Fundamentals of Ultra-Thin-Body MOSFETs and FinFETs

Pearson New International Edition