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A Student's Guide to Maxwell's Equations - Daniel Fleisch 2008-01-10
Gauss's law for electric fields, Gauss's law for magnetic fields, Faraday's law, and the Ampere–Maxwell law are four of the most influential equations in science. In this guide for students, each equation is the subject of an entire chapter, with detailed, plain-language explanations of the physical meaning of each symbol in the equation, for both the integral and differential forms. The final chapter shows how Maxwell's equations may be combined to produce the wave equation, the basis for the electromagnetic theory of light. This book is a wonderful resource for undergraduate and graduate courses in electromagnetism and electromagnetics. A website hosted by the author at www.cambridge.org/9780521701471 contains interactive solutions to every problem in the text as well as audio podcasts to walk students through each chapter.

Millionaire by Thirty - Douglas R. Andrew 2008-04-30
Most people know that there are 70 million Baby Boomers in America today....but what is less known is that there are approximately 100 million people in America between the ages of 16 and 30. This generation has just entered, or will soon be entering the work force. And they have no idea how to invest, save, or handle their money. Young people today come out of school having had little or no formal education on the basics of money management. Many have large debts from student loans looming over their heads. And many feel confused and powerless when their pricey educations don't translate into high paying jobs. They feel that their $30,000-$40,000 salary is too meager to bother with investing, and they constantly fear that there will be "too much month left at the end of their money." Douglas R. Andrew has shown the parents of this generation a different pathway to financial freedom. Now Doug and his sons, Emron and Aaron - both of whom are in their mid-20s - show the under-30 crowd how they can break from traditional 401k investment plans and instead can find a better way by investing in real estate, budgeting effectively, avoiding unnecessary taxes and using life insurance to create tax-free income. With the principles outlined in Millionaire by Thirty, recent graduates will be earning enough interest on their savings to meet their basic living expenses by the time they're 30. And by the time they're 35, their investments will be earning more money than they are, guaranteeing them a happy, wealthy future.

Continuum Electromechanics - James R. Melcher 1981-01
Designed to be used as a graduate-level text and as an engineering reference work, "Continuum Electromechanics" presents a comprehensive development of its subject--the interaction of electromagnetic forces and ponderable media, the mechanical responses to electromagnetic fields, and the reciprocal effects of the material motions produced by those fields. The author's approach is highly interdisciplinary, and he introduces fundamental concepts from such subjects as electrohydrodynamics, magnetohydrodynamics, plasma physics, electron beam engineering, fluid mechanics,

heat transfer, and physical chemistry.The applications of continuum electromechanics are also remarkably diverse, and many of them are treated in the book, both because of their intrinsic engineering importance and as a means of illustrating basic principles. Among these applications are the design of rotating machines and synchronous generators, polymer processing, magnetic melting and pumping in metallurgical operations, the processing of plastics and glass, the manufacture of synthetic fibers, inductive and dielectric heating, thermal-to-electrical energy conversion, the control of air pollution, the design of controlled-fusion devices, image processing and printing, the magnetic levitation and propulsion of vehicles, the study of films and membranes, and the analysis of the complex electrokinetic and physicochemical processes that underlie the sensing and motor functions of biological systems. Many of these applications are presented in the form of problems.The book consists of eleven chapters, entitled Introduction to Continuum Electromechanics; Electrodynamic Laws; Approximations, and Relations; Electromagnetic Forces, Force Densities, and Stress Tensors; Electromechanical Kinematics; Energy-Conversion Models and Processes; Charge Migration, Convection, and Relaxation; Magnetic Diffusion and Induction Interactions; Laws, Approximations, and Relations of Fluid Mechanics Statics and Dynamics of Systems Having a Static Equilibrium; Electromechanical Flows; Electromechanics with Thermal and Molecular Diffusion; and Streaming Interactions.

Electromagnetic Field Theory - Markus Zahn 2003-01-01

Electromagnetism - Tamer Becherrawy 2013-05-21
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 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, 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.
Classical Electromagnetic Theory - Jack Vanderlinde 2006-01-17
In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual. Galileo Galilei, physicist and astronomer (1564-1642) This book is a second edition of "Classical Electromagnetic Theory" which derived from a set of lecture notes compiled over a number of years of teaching elect- magnetic theory to fourth year physics and electrical engineering students. These students had a previous exposure to electricity and magnetism, and the material from the ?rst four and a half chapters was presented as a review. I believe that the book makes a reasonable transition between the many excellent elementary books such as Gri?th's Introduction to Electrodynamics and the obviously graduate level books such as Jackson's Classical Electrodynamics or Landau and Lifshitz' Elect-dynamics of Continuous Media. If the students

have had a previous exposure to Electromagnetictheory, allthematerialcanbereasonablycoveredintwosemesters. Neophytes should probable spend a semester on the ?rst four or ?ve chapters as well as, depending on their mathematical background, the Appendices B to F. For a shorter or more elementary course, the material on spherical waves, waveguides, and waves in anisotropic media may be omitted without loss of continuity.

Intermediate Accounting - Donald E. Kieso 2018

Understanding Machine Learning - Shai Shalev-Shwartz 2014-05-19
Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.
The Anatomy of the Gyroscope - Frank W. Cousins 1988

Problems and Solutions on Electromagnetism - Yung-kuo Lim 1993
Electrostatics - Magnetostatic field and quasi-stationary electromagnetic fields - Circuit analysis - Electromagnetic waves - Relativity, particle-field interactions.
Electromagnetism - Paul Lorrain 1990
Covers vectors, stationary electric charges, direct currents, dielectrics, magnetic fields, alternating currents, and electromagnetic waves
Electromagnetic Fields and Waves - Magdy F. Iskander 2000-04-01

Jones Strain-Counterstrain - Lawrence H. Jones 1995-01-01

Mathematical Methods for Physicists - Tai L. Chow 2000-07-27
This text is designed for an intermediate-level, two-semester undergraduate course in mathematical physics. It provides an accessible account of most of the current, important mathematical tools required in physics these days. It is assumed that the reader has an adequate preparation in general physics and calculus. The book bridges the gap between an introductory physics course and more advanced courses in classical mechanics, electricity and

magnetism, quantum mechanics, and thermal and statistical physics. The text contains a large number of worked examples to illustrate the mathematical techniques developed and to show their relevance to physics. The book is designed primarily for undergraduate physics majors, but could also be used by students in other subjects, such as engineering, astronomy and mathematics.
Physiological and Pharmacological Aspects of the Reticulo-Rumen - L.A.A. Ooms 2012-12-06
The success of a scientific workshop depends on a delicate blend of many types of ingredients. Most important is to select a provocative topic which is at the forefront of a current investigative study. Coupled together with a relatively small but distinguished group of active research scientists known for their continued record of contributing significant findings, one has the firm foundation for an exciting and rewarding investment of time and effort. This was the setting for the first workshop organized by the European Association for Veterinary Pharmacology and Toxicology. Ruminants have been domesticated for many centuries and have served mankind as a source of dairy products, meat, wool and power. The ruminant stomach has long been - and still is - a major concern for physiologists, pathologists, clinicians and pharmacologists. This workshop was organized and convened in an attempt to strengthen the basic science of the ruminant stomach, as it applies to an economically important group of mammals. To achieve this, various topics were covered by specialists which ensured presentation of new data, followed by discussions. In this book, reviews are presented on the different topics: motility (control and regulation, neurotransmitters and endogenous substances involved); flow of digesta (comparative aspects, role of content and metabolites); food intake; rumen metabolism (chemical manipulation, metabolism of xenobiotics and drugs); pharmacology of forestomach motility and, the reticulo-rumen as a pharmacokinetic compartment.
Elements of Electromagnetics - Matthew N. O. Sadiku 1995
The basic objective of this highly successful text--to present the concepts of electromagnetics in a style that is clear and interesting to read--is

more fully-realized in this Second Edition than ever before.Thoroughly updated and revised, this two-semester approach to fundamental concepts and applications in electromagnetics begins with vector analysis--which is then applied throughout the text. A balanced presentation of time-varying fields and static fields prepares students for employment in today's industrial and manufacturing sectors.Mathematical theorems are treated separately from physical concepts.Students, therefore, do not need to review any more mathematics than their level of proficiency requires. Sadiku is well-known for his excellent pedagogy, and this edition refines his approach even further. Student-oriented pedagogy comprises: chapter introductions showing how the forthcoming material relates to the previous chapter, summaries, boxed formulas, and multiple choice review questions with answers allowing students to gauge their comprehension. Many new problems have been added throughout the text.

Electromagnetic Fields - Roald K. Wangsness 1979-06-01

Bioeffects and Therapeutic Applications of Electromagnetic Energy - Riadh Habash 2007-11-19
From cell phones to treating cancer, EM energy plays a part in many of the innovations that we take for granted everyday. A basic force of nature, like nuclear energy or gravity, this energy can be harnessed and used, but still holds the potential to be harmful. The question remains, how safe are EM products? Bioeffects and Therapeutic Applications of Electromagnetic Energy provides a review of cutting-edge research in EM health effects and EM therapy along with emerging areas of bioengineering and biomedical engineering. The book allows you to · Understand the necessary EM theory in the context of its interaction with the human body · Review cutting-edge research on EM health effects and EM therapy · Explore techniques developed to ensure adequate EM and thermal dosimetry required for health effects and thermal therapy · Strengthen your understanding of the rapidly emerging areas of bioengineering and biomedical engineering Taking a transdisciplinary approach drawn from

several intellectual streams that include physics, epidemiology, medicine, environment, risk assessment, and various disciplines of engineering, this book ventures into the conflicting studies to access research on bioeffects and therapeutic applications of EM energy. It is the only resource currently available that covers bioeffects and risk assessment of both extremely low frequency (ELF) fields and radiofrequency radiation (RFR) along with the recent developments in thermal therapy and imaging techniques.

Modern Electrodynamics - Andrew Zangwill 2013
An engaging writing style and a strong focus on the physics make this graduate-level textbook a must-have for electromagnetism students.

Electromagnetic Fields and Energy - Hermann A. Haus 1989-01

Classical Electromagnetic Radiation - Mark A. Heald 2012-12-19
Newly corrected, this highly acclaimed text is suitable foradvanced physics courses. The authors present a very accessiblemacroscopic view of classical electromagnetics thatemphasizes integrating electromagnetic theory with physicaloptics. The survey follows the historical development ofphysics, culminating in the use of four-vector relativity tofully integrate electricity with magnetism.Corrected and emended reprint of the Brooks/Cole ThomsonLearning, 1994, third edition.

Electromagnetic Fields - Roald K. Wangsness 2000

Antenna Engineering Handbook - John Volakis 2018-11-05
The gold-standard reference on the design and application of classic and modern antennas—fully updated to reflect the latest advances and technologies This new edition of the "bible of antenna engineering" has been updated to provide start-to-finish coverage of the latest innovations in antenna design and application. You will find in-depth discussion of antennas used in modern communication systems, mobile and personal wireless technologies, satellites, radar deployments, flexible electronics, and other emerging

technologies, including 5G, terahertz, and wearable electronics. Antenna Engineering Handbook, Fifth Edition, is bolstered by real-world examples, hundreds of illustrations, and an emphasis on the practical aspects of antennas. Featuring 60 chapters and contributions from more than 80 renowned experts, this acclaimed resource is edited by one of the world's leading antenna authorities. This edition features all of the classic antenna types, plus new and emerging designs, with 13 all-new chapters and important updates to nearly all chapters from past editions. Antenna Engineering Handbook, Fifth Edition, clearly explains cutting-edge applications in WLANs, automotive systems, PDAs, and handheld devices, making it an indispensable companion for today's antenna practitioners and developers. Coverage includes: •Antenna basics and classic antennas•Design approaches for antennas and arrays•Wideband and multiband antennas•Antennas for mobile devices and PDAs, automotive applications, and aircraft•Base station and smart antennas•Beamforming and 5G antennas•Millimeter-wave and terahertz antennas•Flexible, wearable, thin film, origami, dielectric, and on-chip antennas•MIMO antennas and phased arrays•Direction-finding and GPS antennas•Active antennas•Low-profile wideband antennas•Nanoantennas•Reflectors and other satellite and radio-telescope antennas•Low-frequency, HF, VHF, UHF, ECM, and ESM antennas•Impedance-matching techniques and material characteristics•Metastructured and frequency selective surfaces•Propagation and guided structures•Computational techniques and toolsets•Indoor and outdoor measurements

NorFor - - Harald Volden 2011-10-05
NorFor is a semi-mechanistic feed evaluation system for cattle, which is used by advisors in Denmark, Iceland, Norway and Sweden. This book describes in detail the system and it covers five main sections. The first is concerned with information on feed characteristics, feed analysis and feed digestion methods. The second section describes the digestion and metabolism in the gastrointestinal tract and the supply and requirement of energy and metabolizable amino acids. The third section considers the prediction

of feed intake and physical structure of the diet. The fourth section focuses on model evaluation and the final section provides information on the IT solutions and feed ration formulation by a non-linear economical optimization procedure. This book will be of significant interest to researchers, students and advisors of cattle nutrition and feed evaluation.

Potential Theory in Applied Geophysics - Kalyan Kumar Roy 2007-11-15
This book introduces the principles of gravitational, magnetic, electrostatic, direct current electrical and electromagnetic fields, with detailed solutions of Laplace and electromagnetic wave equations by the method of separation of variables. Discussion includes behaviours of the scalar and vector potential and the nature of the solutions of these boundary value problems, along with the use of complex variables and conformal transformation, Green's theorem, Green's formula and Green's functions.

Electromagnetic Fields and Waves - Paul Lorrain 1972

Field-cycling NMR Relaxometry - Rainer Kimmich 2018-10-11
Field-cycling NMR relaxometry is evolving into a methodology of widespread interest with recent technological developments resulting in powerful and versatile commercial instruments. Polymers, liquid crystals, biomaterials, porous media, tissue, cement and many other materials of practical importance can be studied using this technique. This book summarises the expertise of leading scientists in the area and the editor is well placed, after four decades of working in this field, to ensure a broad ranging and high quality title. Starting with an overview of the basic principles of the technique and the scope of its use, the content then develops to look at theory, instrumentation, practical limitations and applications in different systems. Newcomers to the field will find this book invaluable for successful use of the technique. Researchers already in academic and industrial settings, interested in molecular dynamics and magnetic resonance, will discover an important addition to the literature.

Principles of Electrodynamics - Melvin Schwartz 2012-04-24
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 throughout the book.

Magnetization Oscillations and Waves - A.G. Gurevich 2020-12-18
Written by two well-known researchers in the field, this useful reference takes an applied approach to high frequency processes including oscillations and waves in ferromagnets, antiferromagnets, and ferrimagnets. Problems evaluated include ferromagnetic and antiferromagnetic resonances, spin waves, nonlinear processes, and high frequency manifestations of interactions between the magnetic system and other systems of magnetically ordered substances as elastic waves and charge carriers. Unlike previous monographs on this subject, which are highly theoretical and written for very advanced readers, this book requires only an average college background in mathematics and experimental physics. It will be a valuable addition to the library of engineers and scientists in research and development for communications applications, and scientists interested in nonlinear magnetic phenomena. It also serves as an excellent introduction to the topic for newcomers in the field. Magnetization Oscillations and Waves not only presents results but also shows readers how to obtain them; most formulas are derived with so many details that readers can reproduce them. The book includes many summaries and tables and detailed references to significant work in the area by European researchers.

Field and Wave Electromagnetics - Cheng 1989-09

Handbook of Linear Algebra, Second Edition - Leslie Hogben 2013-11-26
With a substantial amount of new material, the Handbook of Linear Algebra, Second Edition provides comprehensive coverage of linear algebra concepts, applications, and computational software packages in an easy-to-use format. It guides you from the very elementary aspects of the subject to the frontiers of current research. Along with revisions and updates throughout, the second edition of this bestseller includes 20 new chapters. New to the Second Edition Separate chapters on Schur complements, additional types of canonical forms, tensors, matrix polynomials, matrix equations, special types of matrices, generalized inverses, matrices over finite fields, invariant subspaces, representations of quivers, and spectral sets New chapters on combinatorial matrix theory topics, such as tournaments, the minimum rank problem, and spectral graph theory, as well as numerical linear algebra topics, including algorithms for structured matrix computations, stability of structured matrix computations, and nonlinear eigenvalue problems More chapters on applications of linear algebra, including epidemiology and quantum error correction New chapter on using the free and open source software system Sage for linear algebra Additional sections in the chapters on sign pattern matrices and applications to geometry Conjectures and open problems in most chapters on advanced topics Highly praised as a valuable resource for anyone who uses linear algebra, the first edition covered virtually all aspects of linear algebra and its applications. This edition continues to encompass the fundamentals of linear algebra, combinatorial and numerical linear algebra, and applications of linear algebra to various disciplines while also covering up-to-date software packages for linear algebra computations.

Electric Machinery - A. E. Fitzgerald 1988

Cross-relaxation and Cross-correlation Parameters in NMR - Daniel Canet 2017-10-18
Spin relaxation parameters, although difficult to interpret, are attracting interest in NMR as these parameters are capable of yielding both structural and dynamic information. Cross-relaxation and cross-correlation parameters afford a non-ambiguous approach to molecular structure and dynamics although they require some special skills for their experimental determination and for their exploitation. This work will start with an introduction to nuclear spin cross-relaxation and cross-correlation phenomena in liquids then look in more detail at molecules in soft matter and large biomolecules. Providing a detailed, timely account, the authors are filling a gap in the present NMR literature for the analytical scientist.

Electricity and Magnetism - Edward M. Purcell 2013-01-21
For 50 years, Edward M. Purcell's classic textbook has introduced students to the world of electricity and magnetism. The third edition has been brought up to date and is now in SI units. It features hundreds of new examples, problems, and figures, and contains discussions of real-life applications. The textbook covers all the standard introductory topics, such as electrostatics, magnetism, circuits, electromagnetic waves, and electric and magnetic fields in matter. Taking a nontraditional approach, magnetism is derived as a relativistic effect. Mathematical concepts are introduced in parallel with the physics topics at hand, making the motivations clear. Macroscopic phenomena are derived rigorously from the underlying microscopic physics. With worked examples, hundreds of illustrations, and nearly 600 end-of-chapter problems and exercises, this textbook is ideal for electricity and magnetism courses. Solutions to the exercises are available for instructors at www.cambridge.org/Purcell-Morin.

Life Skills Education for Youth - Joan DeJaeghere 2021-11-24
This open access volume critically reviews a diverse body of scholarship and practice that informs the conceptualization, curriculum, teaching and measurement of life skills in education settings around the world. It discusses life skills as they are implemented in schools and non-formal education, providing both qualitative and quantitative evidence of when, with whom, and how life skills do or do not impact young women's and men's lives in various contexts. Specifically, it examines the nature and importance of life skills, and how they are taught. It looks at the synergies and differences between life skills educational programmes and the way in which they promote social and emotional learning, vocational/employment education, and health and sexuality education. Finally, it explores how life skills may be better incorporated into education and how such education can address structures and relations of power to help youth achieve desired future outcomes, and goals set out in the Sustainable Development Goals (SDGs). Life skills education has gained considerable attention by education policymakers, researchers and educators as being the sine qua non for later achievements in life. It is nearly ubiquitous in global and national education policies, including the SDGs, because life skills are regarded as essential for a diverse set of purposes: reducing poverty, achieving gender equality, promoting economic growth, addressing climate change, fostering peace and global citizenship, and creating sustainable and healthy communities. Yet, to achieve these broad goals, questions persist as to which life skills are important, who needs to learn them, how they can be taught, and how they are best measured. This book addresses these questions.

A World of Imagination - Danielle Van Alst 2017-10-25
What would you do on a day off from school? Go on an adventure, of course! Meet Charlie, an eight-year-old boy with a flare for using his imagination. Join him as he turns his snow day into a day filled with fun, excitement, and fantasy. Travel with Charlie to the Wild West, the Amazon jungle, and into outer space. Ride along for the thrills as he becomes a race car driver, a pirate, a cowboy, and even a superhero! With a little creativity (and a basement full of junk), there is no limit to where your imagination can take you!

Introduction to Electromagnetic Theory and the Physics of Conducting Solids - Costas J. Papachristou 2019-11-13
This book consists of two parts. Part A (Chapters 1-3) is an introduction to the physics of conducting solids, while Part B (Chapters 4-10) is an introduction to the theory of electromagnetic fields and waves. The book is intended to introduce the student to classical electrodynamics and, at the same time, to explain in simple terms the quantum theory of conducting substances – in particular, the solid ones. Excessive mathematical proof is avoided as much as possible, in favor of pedagogical efficiency at an introductory level. The theory of vector fields is briefly discussed in a separate chapter, helping the student cope with the mathematical challenges of Maxwell's theory. The book serves as a primary source for a sophomore-level electromagnetics course in an electronics-oriented engineering program, but it can also be used as a secondary (tutorial) source for an intermediate-level course in

electrodynamics for physicists and engineers. The content is based on the author's lecture notes for his sophomore-level Physics course at the Hellenic Naval Academy.

Public Policy in the United States - Mark E Rushefsky 2014-12-18
The fifth edition of this well-regarded text covers the period up through the 2012 elections. It has been revised to make it sleeker, more concise, and up-to-date with a clear organisational structure. This edition accomplishes these three important goals: First, it introduces readers to the American approach to public policy making as it has been shaped by our political institutions, changing circumstances, and ideology. Second, it surveys American public policy and policymaking in all the major policy areas from economic policy to health care policy to environmental policy, and does so clearly and even-handedly, with well-selected illustrations, case studies, terms, and study questions. Finally, in addition to providing analytical tools and empirical information, the book challenges readers to come to terms with the widely shared but often competing values that must be balanced and rebalanced in the ongoing policy making process, affecting issues of the highest concern to the American public.

Intermediate Accounting - Donald E Kieso, Ph.D., CPA 2004-06-01
Intermediate Accounting by Kieso, Weygandt, and Warfield is, quite simply, the standard by which all other intermediate texts are measured. Throughout the thirty years, and ten best-selling editions, the text has built a reputation for accuracy, comprehensiveness, and student success. This Updated Edition features and incorporates the 2005 FASB key accounting standards that have been updated since the original publication of "Intermediate Accounting, 11th Edition." The Updated Eleventh Edition maintains the qualities for which the text is globally recognized, and continues to be your students' gateway to the profession! Included in the package is the "Problem-Solving Survival Guide."

Spin Dynamics - Malcolm H. Levitt 2008-07-31
Spin Dynamics: Basics of Nuclear Magnetic Resonance, Second Edition is a comprehensive and modern introduction which focuses on those essential principles and concepts needed for a thorough understanding of the subject, rather than the practical aspects. The quantum theory of nuclear magnets is presented within a strong physical framework, supported by figures. The book assumes only a basic knowledge of complex numbers and matrices, and provides the reader with numerous worked examples and exercises to encourage understanding. With the explicit aim of carefully developing the subject from the beginning, the text starts with coverage of quarks and nucleons and progresses through to a detailed explanation of several important NMR experiments, including NMR imaging, COSY, NOESY and TROSY. Completely revised and updated, the Second Edition features new material on the properties and distributions of isotopes, chemical shift anisotropy and quadrupolar interactions, Pake patterns, spin echoes, slice selection in NMR imaging, and a complete new chapter on the NMR spectroscopy of quadrupolar nuclei. New appendices have been included on Euler angles, and coherence selection by field gradients. As in the first edition, all material is heavily supported by graphics, much of which is new to this edition. Written for undergraduates and postgraduate students taking a first course in NMR spectroscopy and for those needing an up-to-date account of the subject, this multi-disciplinary book will appeal to chemical, physical, material, life, medical, earth and environmental scientists. The detailed physical insights will also make the book of interest for experienced spectroscopists and NMR researchers. • An accessible and carefully written introduction, designed to help students to fully understand this complex and dynamic subject • Takes a multi-disciplinary approach, focusing on basic principles and concepts rather than the more practical aspects • Presents a strong pedagogical approach throughout, with emphasis placed on individual spins to aid understanding • Includes numerous worked examples, problems, further reading and additional notes Praise from the reviews of the First Edition: "This is an excellent book... that many teachers of NMR spectroscopy will cherish... It deserves to be a 'classic' among NMR spectroscopy texts." NMR IN BIOMEDICINE "I strongly recommend this book to everyone...it is probably the best modern

comprehensive description of the subject." ANGEWANDTE CHEMIE, INTERNATIONAL EDITION