

The Physics And Technology Of Tennis

The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide (Second Edition)

Vacuum and Ultravacuum

From Arrows to Atoms

Cardiovascular and Neurovascular Imaging

Physics, Technology, and Device Concepts

The Physics and Technology of Submicron Mos Devices

The Physics of War

The Physics and Technology of Laser Resonators

Physics for Technology, Second Edition

Handbook of X-ray Imaging

An Introduction to the Essential Physics Every World Leader Needs to Know

With Applications in Industrial Control Electronics

The Physics and Technology of Xerographic Processes

Physics and Technology

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AXEL CHAMBERS

The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide (Second Edition)

Anchor

This fascinating blend of popular science and military history examines the science of war, demonstrating the close connection between the discovery of basic physical principles and the development of weaponry over the ages. Physics has played a critical role in warfare since the earliest times. Barry Parker highlights famous battles of the past as well as renowned scientists and inventors such as Leonardo, Galileo, Newton, Maxwell, and Einstein whose work had an impact on the technology of combat. Mechanics and the laws of motion led to improved shell

trajectories; gas dynamics proved important to the interior ballistics of rifles and cannons; and space exploration resulted in intercontinental missiles, spy satellites, and drone aircraft. Parker emphasizes the special discoveries that had revolutionary effects on the art of warfare: the Chinese invention of gunpowder, the development of firearms, the impact of the Industrial Revolution, the deployment of the airplane in the First World War, and in our era the unleashing of the enormous power inherent in nuclear fission and fusion.

Vacuum and Ultravacuum Oxford University Press

Cardiovascular and Neurovascular Imaging: Physics and Technology explains the underlying physical and technical principles behind a range of cardiovascular and neurovascular imaging modalities, including radiography, nuclear medicine,

ultrasound, and magnetic resonance imaging (MRI). Examining this interdisciplinary branch of medical imaging from a [From Arrows to Atoms](#) CRC Press Description: This Study Guide is a companion to the popular ultrasound physics textbook "The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide". It contains over 120 short questions and provides model answers for each. It has been designed for both students and teachers. Students will find it valuable as a learning aid and as a resource to test their knowledge and understanding. Teachers, supervisors and tutors will find it a useful teaching asset and an excellent starting point for writing quiz and exam questions.

Cardiovascular and Neurovascular Imaging Princeton University Press

NOTE: This edition features the same

content as the traditional text in a convenient, three-hole-punched, loose-leaf version. Books a la Carte also offer a great value—this format costs significantly less than a new textbook. Before purchasing, check with your instructor or review your course syllabus to ensure that you select the correct ISBN. Several versions of Pearson's MyLab & Mastering products exist for each title, including customized versions for individual schools, and registrations are not transferable. In addition, you may need a CourseID, provided by your instructor, to register for and use Pearson's MyLab & Mastering products. Built from the ground up for optimal learning; refined to help students focus on the big picture College Physics: A Strategic Approach Technology Update applies the best results from educational research, extensive user feedback and metadata to all design and content, helping more students understand the big picture, gain crucial problem-solving skills and confidence, and better prepare for class. College Physics: A Strategic Approach Technology Update, Third Edition is accompanied by a significantly more robust MasteringPhysics before, during, and after class. New Dynamic Study Modules focused on fundamental math and physics concepts help students better prepare before class while new Prelecture Videos address common misconceptions students have when learning physics for the first time while reinforcing class preparation. Now, more than 200 new QR codes appear throughout the textbook, enabling students to use their smartphone or tablet to instantly watch interactive videos about relevant demonstrations, new Dynamic Figure Videos, problem-solving strategies, and solutions explained by the authors. Newly Enhanced End-of-Chapter Questions offer students instructional support right when they need it, including wrong-answer specific feedback, links to the eText, and math remediation when completing homework assignments.

Physics, Technology, and Device Concepts
CRC Press

Comprehensive yet concise, *The Physics and Technology of Laser Resonators* presents both the fundamentals and latest developments in laser resonator technology, including specific case studies. The book covers various types of resonators, including unstable, ring laser, and multifold laser. It also discusses numerical resonator calculations and laser beam analysis. This reference will be of value and interest both to newcomers to the field and to professional engineers wishing to update their knowledge.

The Physics and Technology of Submicron Mos Devices CRC Press
Physics and Technology of Nuclear Materials presents basic information regarding the structure, properties, processing methods, and response to irradiation of the key materials that fission and fusion nuclear reactors have to rely upon. Organized into 12 chapters, this book begins with selectively several fundamentals of nuclear physics. Subsequent chapters focus on the nuclear materials science; nuclear fuel; structural materials; moderator materials employed to "slow down" fission neutrons; and neutron highly absorbent materials that serve in reactor's power control. Other chapters explore the cooling agents; fluids carrying the energy to its final stage of conversion into electric power; thermal and biological shielding materials; some outstanding reactor components; and irradiated fuel reprocessing. The last two chapters deal with nuclear material quality inspection by destructive and non-destructive methods, and specific materials envisaged for use in future thermonuclear reactors. This monograph will be helpful for a wide range of specialists wishing to gear their research and development, education, and other activities toward the field of nuclear power and nuclear technology.

The Physics of War Elsevier

This textbook explores the science and technologies needed for renewable energy. It examines the properties of the earth's atmosphere for transmitting light in from the sun and mediating outflow of infrared energy from the ground, a role that has an effect on the temperature of the earth. It begins by explaining how the sun works, that is by nuclear fusion, and the basic concepts of quantum tunnelling needed are later expanded to allow a competent treatment of semiconductor physics, the discipline behind solar cells. The book covers wind turbine technology, hydroelectric power and pumped-hydro energy storage. It also talks about the history of the Earth's climate and discusses the effects that the present fossil fuel burning, leading to large emission of greenhouse gas, may have on the future temperature of the earth. The sustainable energy discussed in this book will be available in the long term, past the remaining availability of carbon energy, and is also energy that will not tip the climate into warmer conditions. In connection to this, the action of the atmosphere is analyzed both for its transmission of sunlight to the surface for use in solar power, and in secondary forms such as wind, waves and hydroelectricity.

Greenhouse gas impurities, such as carbon dioxide, are also examined for their effects on the atmosphere. Building on this analysis, prospects for sustainable energy and moderate climate are assessed.

The Physics and Technology of Laser Resonators Ann Arbor Science Publishers
Containing chapter contributions from over 130 experts, this unique publication is the first handbook dedicated to the physics and technology of X-ray imaging, offering extensive coverage of the field. This highly comprehensive work is edited by one of the world's leading experts in X-ray imaging physics and technology and has been created with guidance from a Scientific Board containing respected and renowned scientists from around the world. The book's scope includes 2D and 3D X-ray imaging techniques from soft-X-ray to megavoltage energies, including computed tomography, fluoroscopy, dental imaging and small animal imaging, with several chapters dedicated to breast imaging techniques. 2D and 3D industrial imaging is incorporated, including imaging of artworks. Specific attention is dedicated to techniques of phase contrast X-ray imaging. The approach undertaken is one that illustrates the theory as well as the techniques and the devices routinely used in the various fields. Computational aspects are fully covered, including 3D reconstruction algorithms, hard/software phantoms, and computer-aided diagnosis. Theories of image quality are fully illustrated. Historical, radioprotection, radiation dosimetry, quality assurance and educational aspects are also covered. This handbook will be suitable for a very broad audience, including graduate students in medical physics and biomedical engineering; medical physics residents; radiographers; physicists and engineers in the field of imaging and non-destructive industrial testing using X-rays; and scientists interested in understanding and using X-ray imaging techniques. The handbook's editor, Dr. Paolo Russo, has over 30 years' experience in the academic teaching of medical physics and X-ray imaging research. He has authored several book chapters in the field of X-ray imaging, is Editor-in-Chief of an international scientific journal in medical physics, and has responsibilities in the publication committees of international scientific organizations in medical physics. Features: Comprehensive coverage of the use of X-rays both in medical radiology and industrial testing The first handbook published to be dedicated to the physics and technology of X-rays Handbook edited by world authority, with contributions from experts in each field

Physics for Technology, Second Edition CRC Press

This text provides an introduction to the important physics underpinning current technologies, highlighting key concepts in areas that include linear and rotational motion, energy, work, power, heat, temperature, fluids, waves, and magnetism. This revision reflects the latest technology advances, from smart phones to the Internet of Things, and all kinds of sensors. The author also provides more modern worked examples with useful appendices and laboratories for hands-on practice. There are also two brand new chapters covering sensors as well as electric fields and electromagnetic radiation as applied to current technologies.

Handbook of X-ray Imaging Springer Science & Business Media

The first edition of this title has become a well-known reference book on ion sources. The field is evolving constantly and rapidly, calling for a new, up-to-date version of the book. In the second edition of this significant title, editor Ian Brown, himself an authority in the field, compiles yet again articles written by renowned experts covering various aspects of ion source physics and technology. The book contains full chapters on the plasma physics of ion sources, ion beam formation, beam transport, computer modeling, and treats many different specific kinds of ion sources in sufficient detail to serve as a valuable reference text.

An Introduction to the Essential Physics Every World Leader Needs to Know Prometheus Books

This book describes the application of c-axis aligned crystalline In-Ga-Zn oxide (CAAC-IGZO) technology in large-scale integration (LSI) circuits. The applications include Non-volatile Oxide Semiconductor Random Access Memory (NOSRAM), Dynamic Oxide Semiconductor Random Access Memory (DOSRAM), central processing unit (CPU), field-programmable gate array (FPGA), image sensors, and etc. The book also covers the device physics (e.g., off-state characteristics) of the CAAC-IGZO field effect transistors (FETs) and process technology for a hybrid structure of CAAC-IGZO and Si FETs. It explains an extremely low off-state current technology utilized in the LSI circuits, demonstrating reduced power consumption in LSI prototypes fabricated by the hybrid process. A further two books in the series will describe the fundamentals; and the specific application of CAAC-IGZO to LCD and OLED displays. Key features: • Outlines the physics and

characteristics of CAAC-IGZO FETs that contribute to favorable operations of LSI devices. • Explains the application of CAAC-IGZO to LSI devices, highlighting attributes including low off-state current, low power consumption, and excellent charge retention. • Describes the NOSRAM, DOSRAM, CPU, FPGA, image sensors, and etc., referring to prototype chips fabricated by a hybrid process of CAAC-IGZO and Si FETs.

With Applications in Industrial Control Electronics Anchor

This book provides an overview of compound semiconductor materials and their technology. After presenting a theoretical background, it describes the relevant material preparation technologies for bulk and thin-layer epitaxial growth. It then briefly discusses the electrical, optical, and structural properties of semiconductors, complemented by a description of the most popular characterization tools, before more complex hetero- and low-dimensional structures are discussed. A special chapter is devoted to GaN and related materials, owing to their huge importance in modern optoelectronic and electronic devices, on the one hand, and their particular properties compared to other compound semiconductors, on the other. In the last part of the book, the physics and functionality of optoelectronic and electronic device structures (LEDs, laser diodes, solar cells, field-effect and heterojunction bipolar transistors) are discussed on the basis of the specific properties of compound semiconductors presented in the preceding chapters of the book. Compound semiconductors form the back-bone of all opto-electronic and electronic devices besides the classical Si electronics. Currently the most important field is solid state lighting with highly efficient LEDs emitting visible light. Also laser diodes of all wavelength ranges between mid-infrared and near ultraviolet have been the enabler for a huge number of unprecedented applications like CDs and DVDs for entertainment and data storage, not to speak about the internet, which would be impossible without optical data communications with infrared laser diodes as key elements. This book provides a concise overview over this class of materials, including the most important technological aspects for their fabrication and characterisation, also covering the most relevant devices based on compound semiconductors. It presents therefore an excellent introduction into this subject not only for students, but also for engineers and scientist who intend to put their focus on this field of science.

The Physics and Technology of Xerographic Processes Macmillan International Higher Education

A huge chasm has developed between modern science and undergraduate education. The result of this chasm is that students who are graduating from college are unable to exploit the many opportunities offered by modern science and technology. Modern science and technology widely uses the methods of classical physics, but these modern applications are not reflected in the physics problems often suggested to students. Solving practical problems is a very effective way to inform students about contemporary science, to illustrate the important relationships between modern and classical physics, and to prepare them for future activity in the modern technological environment. The aim of this book is to try to bridge this chasm between modern science and technology and an undergraduate course in physics. The first part of the book gives an overview of "hot" directions in modern physics and technology. The second part includes a brief review of undergraduate physics, followed by problems which are related to those directions. These problems, which are based on some of the latest developments in science and technology, can be solved using the classical physics accessible in a standard undergraduate program. Where necessary, the problems have detailed solutions. The second edition of *Modern Physics and Technology for Undergraduates* includes six new subsections dealing with the most recent developments in science, and a fully updated and expanded list of problems. **Physics and Technology** CRC Press Explore the laws and theories of physics in this accessible introduction to the forces that shape our universe, our planet, and our everyday lives. Using a bold, graphics-led approach, *The Physics Book* sets out more than 80 of the key concepts and discoveries that have defined the subject and influenced our technology since the beginning of time. With the focus firmly on unpacking the thought behind each theory-as well as exploring when and how each idea and breakthrough came about-five themed chapters examine the history and developments in specific areas such as Light, Sound, and Electricity. Eureka moments abound: from Archimedes' bathtub discoveries about displacement and density, and Galileo's experiments with spheres falling from the Tower of Pisa, to Isaac Newton's apple and his conclusions about gravity and the laws of motion. You'll also learn about Albert

Einstein's revelations about relativity; how the accidental discovery of cosmic microwave background radiation confirmed the Big Bang theory; the search for the Higgs boson particle; and why most of the universe is missing. If you've ever wondered exactly how physicists formulated-and proved-their abstract concepts, *The Physics Book* is the book for you. Series Overview: Big Ideas Simply Explained series uses creative design and innovative graphics along with straightforward and engaging writing to make complex subjects easier to understand. With over 7 million copies worldwide sold to date, these award-winning books provide just the information needed for students, families, or anyone interested in concise, thought-provoking refreshers on a single subject.

Physics and Technology for Future Presidents High Frequency Publishing
Physics for future world leaders Physics and Technology for Future Presidents contains the essential physics that students need in order to understand today's core science and technology issues, and to become the next generation of world leaders. From the physics of energy to climate change, and from spy technology to quantum computers, this is the only textbook to focus on the modern physics affecting the decisions of political leaders and CEOs and, consequently, the lives of every citizen. How practical are alternative energy sources? Can satellites really read license plates from space? What is the quantum physics behind iPods and supermarket scanners? And how much should we fear a terrorist nuke? This lively book empowers students possessing any level of scientific background with the tools they need to make informed decisions and to argue their views persuasively with anyone—expert or otherwise. Based on Richard Muller's renowned course at Berkeley, the book explores critical physics topics: energy and power, atoms and heat, gravity and space, nuclei and radioactivity, chain reactions and atomic bombs, electricity and magnetism, waves, light, invisible light, climate change, quantum physics, and relativity. Muller engages readers through many intriguing examples, helpful facts to remember, a fun-to-read text, and an emphasis on real-world problems rather than mathematical computation. He includes chapter summaries, essay and discussion questions, Internet research topics, and handy tips for instructors to make the classroom experience more rewarding. Accessible and entertaining, *Physics and Technology for Future Presidents* gives students the scientific

fluency they need to become well-rounded leaders in a world driven by science and technology. Leading universities that have adopted this book include: Harvard Purdue Rice University University of Chicago Sarah Lawrence College Notre Dame Wellesley Wesleyan University of Colorado Northwestern Washington University in St. Louis University of Illinois - Urbana-Champaign Fordham University of Miami George Washington University Some images inside the book are unavailable due to digital copyright restrictions.

Physics and Technology of Sustainable Energy Elsevier Health Sciences
 Today's solar cell multi-GW market is dominated by crystalline silicon (c-Si) wafer technology, however new cell concepts are entering the market. One very promising solar cell design to answer these needs is the silicon hetero-junction solar cell, of which the emitter and back surface field are basically produced by a low temperature growth of ultra-thin layers of amorphous silicon. In this design, amorphous silicon (a-Si:H) constitutes both „emitter“ and „base-contact/back surface field“ on both sides of a thin crystalline silicon wafer-base (c-Si) where the electrons and holes are photogenerated; at the same time, a-Si:H passivates the c-Si surface. Recently, cell efficiencies above 23% have been demonstrated for such solar cells. In this book, the editors present an overview of the state-of-the-art in physics and technology of amorphous-crystalline heterostructure silicon solar cells. The heterojunction concept is introduced, processes and resulting properties of the materials used in the cell and their heterointerfaces are discussed and characterization techniques and simulation tools are presented.

Fiber Optics John Wiley & Sons
 The awaited revision of *Semiconductor Devices: Physics and Technology* offers more than 50% new or revised material that reflects a multitude of important discoveries and advances in device physics and integrated circuit processing. Offering a basic introduction to physical principles of modern semiconductor devices and their advanced fabrication technology, the third edition presents students with theoretical and practical aspects of every step in device characterizations and fabrication, with an emphasis on integrated circuits. Divided into three parts, this text covers the basic properties of semiconductor materials, emphasizing silicon and gallium arsenide; the physics and characteristics of semiconductor devices bipolar, unipolar special microwave and photonic devices; and the latest processing technologies,

from crystal growth to lithographic pattern transfer.

Physics of the Impossible Addison-Wesley
 This second edition of a popular textbook is thoroughly revised with around 25% new and updated content. It provides an introduction to both plasma physics and fusion technology at a level that can be understood by advanced undergraduates and graduate students in the physical sciences and related engineering disciplines. As such, the contents cover various plasma confinement concepts, the support technologies needed to confine the plasma, and the designs of ITER as well as future fusion reactors. With end of chapter problems for use in courses.

Principles and Practice of Radiation Therapy Racquet Tech Publishing
The Physics of Conformal Radiotherapy: Advances in Technology provides a thorough overview of conformal radiotherapy and biological modeling, focusing on the underlying physics and methodology of three-dimensional techniques in radiation therapy. This carefully written, authoritative account evaluates three-dimensional treatment planning, optimization, photon multileaf collimation, proton therapy, transit dosimetry, intensity-modulation techniques, and biological modeling. It is an invaluable teaching guide and reference for all medical physicists and radiation oncologists/therapists that use conformal radiotherapy.

An Introduction to the Physics and Technology of Magnetic Confinement Fusion The Physics and Technology of Radiation Therapy
 Introducing the 2nd edition of our highly respected radiation therapy textbook. It covers the field of radiation physics with a perfect mix of depth, insight, and humor. The 2nd edition has been guided by the 2018 ASTRO core curriculum for radiation oncology residents. Novice physicists will find the book useful when studying for board exams, with helpful chapter summaries, appendices, and extra end-of-chapter problems and questions. It features new material on digital x-ray imaging, neutron survey meters, flattening-filter free and x-band linacs, biological dose indices, electronic brachytherapy, OSLD, Cerenkov radiation, FMEA, total body irradiation, and more. Also included: Updated graphics in full color for increased understanding. Appendices on board certifications in radiation therapy for ABR, AART, and Medical Dosimetrist Certification Board. Dosimetry Data A full index
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