

Fundamentals Of Shaped Charges

In the past few decades, Magnetic Resonance Imaging (MRI) has become an indispensable tool in modern medicine, with MRI systems now available at every major hospital in the developed world. But for all its utility and prevalence, it is much less commonly understood and less readily explained than other common medical imaging techniques. Unlike optical, ultrasonic, X-ray (including CT), and nuclear medicine-based imaging, MRI does not rely primarily on simple transmission and/or reflection of energy, and the highest achievable resolution in MRI is orders of magnitude smaller than the smallest wavelength involved. In this book, MRI will be explained with emphasis on the magnetic fields required, their generation, their concomitant electric fields, the various interactions of all these fields with the subject being imaged, and the implications of these interactions to image quality and patient safety. Classical electromagnetics will be used to describe aspects from the fundamental phenomenon of nuclear precession through signal detection and MRI safety. Simple explanations and illustrations combined with pertinent equations are designed to help the reader rapidly gain a fundamental understanding and an appreciation of this technology as it is used today, as well as ongoing advances that will increase its value in the future. Numerous references are included to facilitate further study with an emphasis on areas most directly related to electromagnetics.

Decades of research have demonstrated that the parent-child dyad and the environment of the familyâ€™ which includes all primary caregiversâ€™ are at the foundation of children's well-being and healthy development. From birth, children are learning and rely on parents and the other caregivers in their lives to protect and care for them. The impact of parents may never be greater than during the earliest years of life, when a child's brain is rapidly developing and when nearly all of her or his experiences are created and shaped by parents and the family environment. Parents help children build and refine their knowledge and skills, charting a trajectory for their health and well-being during childhood and beyond. The experience of parenting also impacts parents themselves. For instance, parenting can enrich and give focus to parents' lives; generate stress or calm; and create any number of emotions, including feelings of happiness, sadness, fulfillment, and anger. Parenting of young children today takes place in the context of significant ongoing developments. These include: a rapidly growing body of science on early childhood, increases in funding for programs and services for families, changing demographics of the U.S. population, and greater diversity of family structure. Additionally, parenting is increasingly being shaped by technology and increased access to information about parenting. Parenting Matters identifies parenting knowledge, attitudes, and practices associated with positive developmental outcomes in children ages 0-8; universal/preventive and targeted strategies used in a variety of settings that have been effective with parents of young children and that support the identified knowledge, attitudes, and practices; and barriers to and facilitators for parents' use of practices that lead to healthy child outcomes as well as their participation in effective programs and services. This report makes recommendations directed at an array of stakeholders, for promoting the wide-scale adoption of effective programs and services for parents and on areas that warrant further research to inform policy and practice. It is meant to serve as a roadmap for the future of parenting policy, research, and practice in the United States.

In recent years there has been an explosion of interest in the production of nanoscale fibres for drug delivery and tissue engineering. Nanofibres in Drug Delivery aims to outline to new researchers in the field the utility of nanofibres in drug delivery, and to explain to them how to prepare fibres in the laboratory. The book begins with a brief discussion of the main concepts in pharmaceutical science. The authors then introduce the key techniques that can be used for fibre production and explain briefly the theory behind them. They discuss the experimental implementation of fibre production, starting with the simplest possible set-up and then moving on to consider more complex arrangements. As they do so, they offer advice from their own experience of fibre production, and use examples from current literature to show how each particular type of fibre can be applied to drug delivery. They also consider how fibre production could be moved beyond the research laboratory into industry, discussing regulatory and scale-up aspects.

We have conducted several studies on the interaction of efp, hemi, and shaped charge jets with concrete targets. Our studies have investigated various liner geometries, liner materials, liner angle variations, liner thickness variations, charge diameter effects, charge standoff effects, high explosive variations, point and wave shaped initiation, monolithic and finite thickness targets, and target obliquity. We describe several relations that correlate the concrete target damage to the warhead and target configuration.

Military Metallurgy

The Craft and Science of Coffee

Introduction to Hydrocodes

Collision Phenomena in Liquids and Solids

Molecular Biology of the Cell

Balanchine the Teacher

(Black & White version) Fundamentals of Business was created for Virginia Tech's MGT 1104 Foundations of Business through a collaboration between the Pamplin College of Business and Virginia Tech Libraries. This book is freely available at: <http://hdl.handle.net/10919/70961> It is licensed with a Creative Commons-NonCommercial ShareAlike 3.0 license.

Presented here is an introduction to the art and science of developing shaped charges. The authors describe the history of shaped charges and the principles governing their design, and give a variety of example applications. The book includes the discussion of Gurney and Taylor methods, jet formation, the visco-plastic model, jet penetration, fabrication, computational aspects, as well as showing the reader how to design shaped charges for different applications.

This book by Lisa Tauxe and others is a marvelous tool for education and research in Paleomagnetism. Many students in the U.S. and around the world will welcome this publication, which was previously only available via the Internet. Professor Tauxe has performed a service for teaching and research that is utterly unique.~Neil D. Opdyke, University of Florida

The Janeway's Immunobiology CD-ROM, Immunobiology Interactive, is included with each book, and can be purchased separately. It contains animations and videos with voiceover narration, as well as the figures from the text for presentation purposes.

Principles and Applications of Membrane Bioreactors for Water and Wastewater Treatment

Organic Electronics

Structural change, fundamentals, and growth : a framework and case studies

Explosive Effects and Applications

Ambipolar Materials and Devices

An Introduction for Scientists and Engineers, Second Edition

The essential introduction to the principles and applications of feedback systems—now fully revised and expanded This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of Feedback Systems is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems. Karl Åström and Richard Murray use techniques from physics, computer science, and operations research to introduce control-oriented modeling. They begin with state space tools for analysis and design, including stability of solutions, Lyapunov functions, reachability, state feedback observability, and estimators. The matrix exponential plays a central role in the analysis of linear control systems, allowing a concise development of many of the key concepts for this class of models. Åström & Murray then develop and explain tools in the frequency domain, including transfer functions, Nyquist analysis, PID control, frequency domain design, and robustness. Features a new chapter on design principles and tools, illustrating the types of problems that can be solved using feedback Includes a new chapter on fundamental limits and new material on the Routh-Hurwitz criterion and root locus plots Provides exercises at the end of every chapter Comes with an electronic solutions manual An ideal textbook for undergraduate and graduate students Indispensable for researchers seeking a self-contained resource on control theory

Learn 2 dimensional and 3 dimensional shapes through fun shape characters. See examples of everyday objects that reflect the shapes. Colorful illustrations and basic words. The ideal learning book for toddlers, children in preschool, kindergarten or a higher grade, for ages 2 through to 7.

Bridging the gap between basic theoretical texts and specific system recommendations, Fundamentals of Dispersive Optical Spectroscopy Systems addresses the definition, design, justification, and verification of instrumentation for optical spectroscopy, with an emphasis on the application and realization of the technology. The optical spectroscopy solutions discussed within use dispersive spectrometers that primarily involve diffraction gratings. Topics include dispersive elements, detectors, illumination, calibration, and stray light. This book is suitable for students and for professionals looking for a comprehensive text that compares theoretical designs and physical reality during installation.

How we raise young children is one of today's most highly personalized and sharply politicized issues, in part because each of us can claim some level of "expertise." The debate has intensified as discoveries about our development-in the womb and in the first months and years-have reached the popular media. How can we use our burgeoning knowledge to assure the well-being of all young children, for their own sake as well as for the sake of our nation? Drawing from new findings, this book presents important conclusions about nature-versus-nurture, the impact of being born into a working family, the effect of politics on programs for children, the costs and benefits of intervention, and other issues. The committee issues a series of challenges to decision makers regarding the quality of child care, issues of racial and ethnic diversity, the integration of children's cognitive and emotional development, and more. Authoritative yet accessible, From Neurons to Neighborhoods presents the evidence about "brain wiring" and how kids learn to speak, think, and regulate their behavior. It examines the effect of the climate-family, child care, community-within which the child grows.

Janeway's Immunobiology

Leading Change, Advancing Health

An Introduction to Neural Networks

Electronics Simplified

Physics Principles, Related Applications, and Ongoing Developments

Fundamentals of Business (black and White)

The Craft and Science of Coffee follows the coffee plant from its origins in East Africa to its current role as a global product that influences millions of lives though sustainable development, economics, and consumer desire. For most, coffee is a beloved beverage. However, for some it is also an object of scientifically study, and for others it is approached as a craft, both building on skills and experience. By combining the research and insights of the scientific community and expertise of the crafts people, this unique book brings readers into a sustained and inclusive conversation, one where academic and industrial thought leaders, coffee farmers, and baristas are quoted, each informing and enriching each other. This unusual approach guides the reader on a journey from coffee farmer to roaster, market analyst to barista, in a style that is both rigorous and experience based, universally relevant and personally engaging. From on-farming processes to consumer benefits, the reader is given a deeper appreciation and understanding of coffee's complexity and is invited to form their own educated opinions on the ever changing situation, including potential routes to further shape the coffee future in a responsible manner. Presents a novel synthesis of coffee research and real-world experience that aids understanding, appreciation, and potential action. Includes contributions from a multitude of experts who address complex subjects with a conversational approach. Provides expert discourse on the coffee value chain, from agricultural and production practices, sustainability, post-harvest processing, and quality aspects to the economic analysis of the consumer value proposition. Engages with the key challenges of future coffee production and potential solutions.

This work is a technical explanation of the stylistic approach that George Balanchine taught in New York City between 1940 and 1960, as recorded by two prominent dancers who studied with him at the time.

Though mathematical ideas underpin the study of neural networks, the author presents the fundamentals without the full mathematical apparatus. All aspects of the field are tackled, including artificial neurons as models of their real counterparts; the geometry of network action in pattern space; gradient descent methods, including back-propagation; associative memory and Hopfield nets; and self-organization and feature maps. The traditionally difficult topic of adaptive resonance theory is clarified within a hierarchical description of its operation. The book also includes several real-world examples to provide a concrete focus. This should enhance its appeal to those involved in the design, construction and management of networks in commercial environments and who wish to improve their understanding of network simulator packages. As a comprehensive and highly accessible introduction to one of the most important topics in cognitive and computer science, this volume should interest a wide range of readers, both students and professionals, in cognitive science, psychology, computer science and electrical engineering.

The experimental results show that the details of the motion are not in agreement with the theoretical calculations because the tube does not behave as an incompressible fluid, but is accelerated in a step-wise fashion characteristics of motion produced by shock waves. Nevertheless, the data are in agreement with terminal velocities calculated from the theory.

Foundations to Applications

Explosives Engineering

The Science of Early Childhood Development

Essentials of Paleomagnetism

Ryan's Ballistic Trauma

Parenting Matters

*The Insane-Series Presents "Instant Genius" How to Think Like a Genius to Be One Instantly! When you hear the word "genius" - what immediately pops into your mind? Perhaps, people like Albert Einstein, Isaac Newton, Leonardo da Vinci, and Thomas Edison just to name a few. What did all these folks have? What was the common factor that made them a genius? And is possible for you to also be like them? Now what is a genius? Geniuses are, first and foremost, extraordinary individuals... They are always somewhat ahead of their time, and their contributions to the world have shaped society into what we know it as of today with all the remarkable fleets of advanced achievements unheard of in the past - just look at how far we have come with modern medicine, science, technologies, etc. And geniuses have helped mankind evolved into more intelligent beings - pushing us to all strive for even greater possibilities. So how to become a genius? The widely-accepted notion is, you're either born with a genius IQ or not; however, being a genius does not do with your level of intelligence. Everybody has their own form of genius. The key is how to unleash that inner genius of yours. Within "Instant Genius" * How to easily create a custom "genius trigger button" *step-by-step, so you can activate it to turn on your full-intellectual mental capacity at will, at anywhere, and at anytime. * How to channel your inner genius through the power of your subconscious mind, by doing the "subconscious self-session" technique to open doors to new ways of thinking. * How to use personalized "visual mental imprints" as your sources of inspirations and motivations to spark your creativity to generate unlimited innovative ideas. * How to develop genius reflexes to handle any complex problem and come up with ingenious solution to have people look up to you, always wanting to hear what you have to say. * How to optimize your mind to work in relentless genius mode with full concentration and inexhaustible energy where obstacles no longer exist, through an in-depth "4-stages process" you can implement whenever you want. * Plus, custom practical "how-to" strategies, techniques, applications and exercises on how to think like a genius...and much more. All of us has the potential to be our own geniuses. You just only need to be guided on how to unleash that genius brain power within you - to finally realize what you're truly capable of. You will be amazed and even surprised yourself.*

This graduate text, and Cooper's companion introductory text (Introduction to the Technology of Explosives), serve the same markets as the successful explosives reference by Meyer, now in its 4th edition. VCH also published the International Journal of Propellants, Explosives, and Pyrotechnics. The resulting package would give VCH the major presence in the field. This text presents the basic technologies used in the engineering of explosives and explosive systems, i.e., chemistry, burning, detonation, shock waves, initiation theories, scaling. The book is written for upper-division undergraduate or graduate-level scientists and engineers, and assumes a good grasp of basic physics, chemistry, mechanics and mathematic through calculus. It is based on lecture notes used for graduate courses at the Dept. of Energy Laboratories, and could serve as a core text for a course at schools of mining or military engineering. The intent of the book is to provide the engineer or scientist in the field with an understanding of the phenomena involved and the engineering tools needed to solve design/analyze a broad range of real problems.

*Electrochemistry plays a key role in a broad range of research and applied areas including the exploration of new inorganic and organic compounds, biochemical and biological systems, corrosion, energy applications involving fuel cells and solar cells, and nanoscale investigations. The Handbook of Electrochemistry serves as a source of electrochemical information, providing details of experimental considerations, representative calculations, and illustrations of the possibilities available in electrochemical experimentation. The book is divided into five parts: Fundamentals, Laboratory Practical, Techniques, Applications, and Data. The first section covers the fundamentals of electrochemistry which are essential for everyone working in the field, presenting an overview of electrochemical conventions, terminology, fundamental equations, and electrochemical cells, experiments, literature, textbooks, and specialized books. Part 2 focuses on the different laboratory aspects of electrochemistry which is followed by a review of the various electrochemical techniques ranging from classical experiments to scanning electrochemical microscopy, electrogenerated chemiluminescence and spectroelectrochemistry. Applications of electrochemistry include electrode kinetic determinations, unique aspects of metal deposition, and electrochemistry in small places and at novel interfaces and these are detailed in Part 4. The remaining three chapters provide useful electrochemical data and information involving electrode potentials, diffusion coefficients, and methods used in measuring liquid junction potentials. * serves as a source of electrochemical information * includes useful electrochemical data and information involving electrode potentials, diffusion coefficients, and methods used in measuring liquid junction potentials * reviews electrochemical techniques (incl. scanning electrochemical microscopy, electrogenerated chemiluminescence and spectroelectrochemistry)*

Ryan's Ballistic Trauma 3rd Edition provides a concise guide to the clinical and operational issues surrounding the management of the ballistic casualty. This book crystallizes the knowledge and experience accrued by those dealing with ballistic trauma on a regular basis and extends this to those who have to manage these patients on an occasional basis only. Ryan's Ballistic Trauma 3rd Edition is a valuable reference tool for all medical and paramedical personnel involved in the care of patients with ballistic injury. It is especially relevant for consultants and senior trainees in surgery, anaesthesia and emergency medicine who are likely to be involved in the management of these unique injuries. This book is essential reading for pre-hospital care providers and nurses working in the emergency room, as well as military surgeons and medical and nursing staff on deployment in regions of conflict.

Learn 2D and 3D Shapes Picture Book with Matching Objects, Ages 2-7 for Toddlers, Preschool and Kindergarten Kids

Ion and Hall Thrusters

Instant Genius

The Future of Nursing

A Practical Guide

From Neurons to Neighborhoods

This book gives a broad based view of metals in military service, covering several examples and rationales. It is useful for the militarist and for the metallurgist or materials scientist. The content of the book is based on course notes compiled for undergraduate and post-graduate students.

Fundamentals of Shaped ChargesWiley-Interscience

Throughout most of the twentieth century, electric propulsion was considered the technology of the future. Now, the future has arrived. This important new book explains the fundamentals of electric propulsion for spacecraft and describes in detail the physics and characteristics of the two major electric thrusters in use today, ion and Hall thrusters. The authors introduce an introduction to plasma physics in order to allow readers to understand the models and derivations used in determining electric thruster performance. They then go on to present detailed explanations of: Thruster principles Ion thruster plasma generators and accelerator grids Hollow cathodes Hall thrusters Ion and Hall thruster plumes Flight ion and Hall thrusters

Based largely on research and development performed at the Jet Propulsion Laboratory (JPL) and complemented with scores of tables, figures, homework problems, and references, Fundamentals of Electric Propulsion: Ion and Hall Thrusters is an indispensable textbook for advanced undergraduate and graduate students who are preparing to enter the aerospace industry. It also serves as an equally valuable resource for professional engineers already at work in the field.

This book comprehensively discusses essential aspects of terminal ballistics, combining experimental data, numerical simulations and analytical modeling. Employing a unique approach to numerical simulations as a measure of sensitivity for the major physical parameters, the new edition also includes the following features: new figures to better illustrate the problems discussed; improved explanations for the equation of state of a solid and for the cavity expansion process; new data concerning the Kolsky bar test; and a discussion of analytical modeling for the hole diameter in a thin metallic plate impacted by a shaped charge jet. The section on thick concrete targets penetrated by rigid projectiles has now been expanded to include the latest findings, and two new sections have been added: one on a novel approach to the perforation of thin concrete slabs, and one on testing the failure of thin metallic plates using a hydrodynamic ram.

Fundamentals of Dispersive Optical Spectroscopy Systems

Optimizing the User Experience

A Meshfree Particle Method

Convex Optimization

Fundamentals of Shaped Charge Penetration in Concrete

The use of membranes is increasing throughout industry, and particularly the water industry.The municipal water industry, which is concerned with the provision of clean drinking water to the population, is a big user and developer of membrane technology which helps it to provide water free of pathogens, chemicals, odours and unwanted tastes. Municipal authorities also have to process sewage and waste water, and membranes are used extensively in these processes. The MBR Book covers all important aspects of Membrane Bioreactors in water and waste water treatment, from the fundamentals of the processes via design principles to MBR technologies. Industrial case studies help interpret actual results and give pointers for best practice. Useful appendices provide data on commercial membranes and international membrane organisations. * Major growth area in the water industries * Internationally-known author * Principles and practice, backed by case studies

A comprehensive introduction to the tools, techniques and applications of convex optimization.

This is a broad-based text on the fundamentals of explosive behavior and the application of explosives in civil engineering, industrial processes, aerospace applications, and military uses.

Fundamentals of Light Microscopy and Electronic Imaging, Second Edition provides a coherent introduction to the principles and applications of the integrated optical microscope system, covering both theoretical and practical considerations. It expands and updates discussions of multi-spectral imaging, intensified digital cameras, signal colocalization, and uses of objectives, and offers guidance in the selection of microscopes and electronic cameras, as well as appropriate auxiliary optical systems and fluorescent tags. The book is divided into three sections covering optical principles in diffraction and image formation, basic modes of light microscopy, and components of modern electronic imaging systems and image processing operations. Each chapter introduces relevant theory, followed by descriptions of instrument alignment and image interpretation. This revision includes new chapters on live cell imaging, measurement of protein dynamics, deconvolution microscopy, and interference microscopy. PowerPoint slides of the figures as well as other supplementary materials for instructors are available at a companion website: www.wiley.com/go/murphy/lightmicroscopy

How to Think Like a Genius to Be One Instantly!

Supporting Parents of Children Ages 0-8

Handbook of Electrochemistry

My Shapes Book

Terminal Ballistics

Fundamentals that Shaped the First Generation of New York City Ballet Dancers

Thoroughly rewritten for today's web environment, this bestselling book offers a fresh look at a fundamental topic of web site development: navigation design. Amid all the changes to the Web in the past decade, and all the hype about Web 2.0 and various "rich" interactive technologies, the basic problems of creating a good web navigation system remain. Designing Web Navigation demonstrates that good navigation is not about technology—it's about the ways people find information, and how you guide them. Ideal for beginning to intermediate web designers, managers, other non-designers, and web development pros looking for another perspective, Designing Web Navigation offers basic design principles, development techniques and practical advice, with real-world examples and essential concepts seamlessly folded in.

How does your web site serve your business objectives? How does it meet a user's needs? You'll learn that navigation design touches most other aspects of web site development. This book: Provides the foundations of web navigation and offers a framework for navigation design Paints a broad picture of web navigation and basic human information behavior Demonstrates how navigation reflects brand and affects site credibility Helps you understand the problem you're trying to solve before you set out to design Thoroughly reviews the mechanisms and different types of navigation Explores "information scent" and "information shape" Explains "persuasive" architecture and other design concepts Covers special contexts, such as navigation design for web applications Includes an entire chapter on tagging

While Designing Web Navigation focuses on creating navigation systems for large, information-rich sites serving a business purpose, the principles and techniques in the book also apply to small sites. Well researched and cited, this book serves as an excellent reference on the topic, as well as a superb teaching guide. Each chapter ends with suggested reading and a set of questions that offer exercises for experiencing the concepts in action.

Mentorship is a catalyst capable of unleashing one's potential for discovery, curiosity, and participation in STEMM and subsequently improving the training environment in which that STEMM potential is fostered. Mentoring relationships provide developmental spaces in which students' STEMM skills are honed and pathways into STEMM fields can be discovered. Because mentorship can be so influential in shaping the future STEMM workforce, its occurrence should not be left to chance or idiosyncratic implementation. There is a gap between what we know about effective mentoring and how it is practiced in higher education. The Science of Effective Mentorship in STEMM studies mentoring programs and practices at the undergraduate and graduate levels. It explores the importance of mentorship, the science of mentoring

relationships, mentorship of underrepresented students in STEMM, mentorship structures and behaviors, and institutional cultures that support mentorship. This report and its complementary interactive guide present insights on effective programs and practices that can be adopted and adapted by institutions, departments, and individual faculty members.

This is the first-ever book on smoothed particle hydrodynamics (SPH) and its variations, covering the theoretical background, numerical techniques, code implementation issues, and many novel and interesting applications. It contains many appealing and practical examples, including free surface flows, high explosive detonation and explosion, underwater explosion and water mitigation of explosive shocks, high velocity impact and penetration, and multiple scale simulations coupled with the molecular dynamics method. An SPH source code is provided and coupling of SPH and molecular dynamics is discussed for multiscale simulation, making this a friendly book for readers and SPH users.

A hydrocode refers to a computer program used for the study of the dynamic response of materials and structures to impulse (primary blast), impact (involving everything from car and aircraft collisions to impacts of space structures by assorted debris). The understanding of hydrocodes requires knowledge of numerical methods in the code as well as a keen understanding of the physics of the problem being addressed. This can take many years to learn via codes. There are currently a number of titles addressing the physics of high pressure and high rate material but nothing introducing the novice to the fundamentals of this highly technical and complicated study. Introduction to Hydrocodes bridges the gap, bringing together the large body of literature, scattered through diverse journals, government and corporate reports and conference proceedings. As valuable as the text are the cited references and the combination will take years off the preparation time of future code users. Introduces complex physics essential for the understanding of hydrocodes Infused with over 30

years practical experience in the field Brings together a wide range of literature saving valuable research time

Fundamentals of Shaped Charges

Smoothed Particle Hydrodynamics

Fundamentals of Electric Propulsion

Electromagnetics in Magnetic Resonance Imaging

Feedback Systems

Designing Web Navigation

• Explains electronics from fundamentals to applications – no other book has such breadth of coverage • Approachable, clear writing style with minimal math – no previous knowledge of electronics required! • Now fully revised and updated to include coverage of the latest developments in electronics: Blu-ray, HD, 3D TV, digital TV and radio, miniature computers, robotic systems and more Electronics Simplified (previously published as Electronics Made Simple) is essential reading for students embarking on courses involving electronics, anyone whose job involves electronic technology or equipment, and anyone who wants to know more about the electronics revolution. No previous knowledge is assumed and by focusing on how systems work, rather than on details of circuit diagrams and calculations, this book introduces readers to the key principles and technology of modern electronics without needing access to expensive equipment or laboratories. This approach also enables students to gain a firm grasp of the principles they will be applying in the lab. Explains electronics from fundamentals to applications – No other book has such breadth of coverage Approachable, clear writing style, with minimal math – No previous knowledge of electronics required! Now fully revised and updated to include coverage of the latest developments in electronics: Blu-ray, HD, 3-D TV, digital TV and radio, miniature computers, robotic systems and more.

The Future of Nursing explores how nurses' roles, responsibilities, and education should change significantly to meet the increased demand for care that will be created by health care reform and to advance improvements in America's increasingly complex health system. At more than 3 million in number, nurses make up the single largest segment of the health care work force. They also spend the greatest amount of time in delivering patient care as a profession. Nurses therefore have valuable insights and unique abilities to contribute as partners with other health care professionals in improving the quality and safety of care as envisioned in the Affordable Care Act (ACA) enacted this year. Nurses should be fully engaged with other health professionals and assume leadership roles in redesigning care in the United States. To ensure its members are well-prepared, the profession should institute residency training for nurses, increase the percentage of nurses who attain a bachelor's degree to 80 percent by 2020, and double the number who pursue doctorates. Furthermore, regulatory and institutional obstacles -- including limits on nurses' scope of practice -- should be removed so that the health system can reap the full benefit of nurses' training, skills, and knowledge in patient care. In this book, the Institute of Medicine makes recommendations for an action-oriented blueprint for the future of nursing.

Ambipolar materials represent a class of materials where positive and negative charge carriers can both transport concurrently. In recent years, a diverse range of materials have been synthesized and utilized for implementing ambipolar charge transport, with applications in high-density data storage, field effect transistors, nanotransistors, photonic memory, biomaterial-based memories and artificial synapses. This book highlights recent development of ambipolar materials involving materials design, fundamental principles, interface modifications, device structures, ambipolar characteristics and promising applications. Challenges and prospects for investigating ambipolar materials in electronics and optoelectronics are also discussed. With contributions from global leaders in the field, this title will appeal to graduate students and researchers who want to understand the design, materials characteristics, device operation principles, specialized device application and mechanisms of the latest ambipolar materials.

This textbook provides a basic understanding of the principles of the field of organic electronics through to their applications in organic devices. Useful for the student and practitioner, it is both a teaching text and a resource that is a jumping-off point for learning, working and innovating in this rapidly growing field.

Introduction to Materials Science

Nanofibres in Drug Delivery

Fundamentals of Light Microscopy and Electronic Imaging

The MBR Book

The Science of Effective Mentorship in STEMM

A unique and in-depth discussion uncovering the unifying features of collision phenomena in liquids and solids, along with applications.