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This comprehensive introduction to the essentials of radiology is designed to enable readers to excel at ordering the appropriate examination and reliably interpreting basic imaging findings. Organized around the major organ systems, it situates imaging within the larger context of the patient's clinical presentation, the pathophysiology of the disease or injury, the analysis and differential diagnosis of imaging findings, and the integration of each into patient management. Special features include: Concise reviews of key anatomic and physiologic principles Full integration of pathophysiology and imaging findings More than 600 exquisite illustrations demonstrating important concepts Mini-atlas of essential cross-sectional anatomy of the brain, chest, and abdomen Essential Radiology is an invaluable reference for learning how to make full use of radiology's extraordinary promise in diagnosing disease and enhancing patient care. Instructors will find this an ideal book for course adoption.

This new edition of the methods and instrumentation used in the detection of ionizing radiation has been revised and updated to reflect recent advances. It covers modern engineering practice, provides useful design information and contains an up-to-date review of the literature.

This concise, user-oriented and up-to-date desk reference offers a broad introduction to the fascinating world of medical technology, fully considering today's progress and further development in all relevant fields. The Springer Handbook of Medical Technology is a systemized and well-structured guideline which distinguishes itself through simplification and condensation of complex facts. This book is an indispensable resource for professionals working directly or indirectly with medical systems and appliances every day. It is also meant for graduate and post graduate students in hospital management, medical engineering, and medical physics. Atlas of Clinical Imaging and Anatomy of the Equine Head presents a clear and complete view of the complex anatomy of the equine head using cross-sectional imaging. Provides a comprehensive comparative atlas to structures of the equine head Pairs gross anatomy with radiographs, CT, and MRI images Presents an image-based reference for understanding anatomy and pathology Covers radiography, computed tomography, and magnetic resonance imaging

X-ray computed tomography (CT) continues to experience rapid growth, both in basic technology and new clinical applications. Seven years after its first edition, *Computed Tomography: Principles, Design, Artifacts, and Recent Advancements*, Second Edition, provides an overview of the evolution of CT, the mathematical and physical aspects of the technology, and the fundamentals of image reconstruction algorithms. Image display is examined from traditional methods used through the most recent advancements. Key performance indices, theories behind the measurement methodologies, and different measurement phantoms in image quality are discussed. The CT scanner is broken down into components to provide the reader with an understanding of their function, their latest advances, and their impact on the CT system. General descriptions and different categories of artifacts, their causes, and their corrections are considered at length. Given the high visibility and public awareness of the impact of x-ray radiation, the second edition features a new chapter on x-ray dose and presents different dose reduction techniques ranging from patient handling, optimal data acquisition, image reconstruction, and post-process. Based on the advancements over the past five years, the second edition added new sections on cone beam reconstruction algorithms, nonconventional helical acquisition and reconstruction, new reconstruction approaches, and dual-energy CT. Finally, new to this edition is a set of problems for each chapter, providing opportunities to enhance reader comprehension and practice the application of covered material.

Widely praised for its conversational tone and clear advice, *Practically Speaking* is the public speaking textbook your students will actually read. Filled with engaging stories and examples, sound scholarship and recent research, and useful tips and tricks, *Practically Speaking* shows students how to get started, practice thinking critically, and ultimately develop their own voice.

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 to-

mography, 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

Fosters a thorough understand of radiation dosimetry concepts: detailed solutions to the exercises in the textbook "Fundamentals of Ionizing Radiation Dosimetry"!

This book offers a single publication to be utilised comprehensively as a reference manual within current mammographic clinical practice for use by assistant practitioners and practitioners as well as trainees in radiography and related disciplines. In recent years mammographic clinical practice and technology have evolved rapidly and become increasingly sophisticated, this book will cover these issues. The public feel increasingly empowered to 'have a say' in their care and expectations of their mammography experience is high. Consequently a well-trained, well-informed practitioner is of paramount importance in clinical practice today. This book addresses patient/client-related issues in the form of psychological and emotional support they may require. This will enable the reader to gain insight into the patient/client perspective and thereby assist in meeting their needs.

In print since 1972, this seventh edition of *Radiobiology for the Radiologist* is the most extensively revised to date. It consists of two sections, one for those studying or practicing diagnostic radiology, nuclear medicine and radiation oncology; the other for those engaged in the study or clinical practice of radiation oncology--a new chapter, on radiologic terrorism, is specifically for those in the radiation sciences who would manage exposed individuals in the event of a terrorist event. The 17 chapters in Section I represent a general introduction to radiation biology and a complete, self-contained course especially for residents in diagnostic radiology and nuclear medicine that follows the Syllabus in Radiation Biology of the RSNA. The 11 chapters in Section II address more in-depth topics in radiation oncology, such as cancer biology, retreatment after radiotherapy, chemotherapeutic agents and hyperthermia. Now in full color, this lavishly illustrated new edition is replete with tables and figures that underscore essential concepts. Each chapter concludes with a "summary of pertinent conclusions" to facilitate quick review and help readers retain important information.

Widely regarded as the cornerstone text in the field, the successful series of editions continues to follow the tradition of a clear and comprehensive presentation of the physical principles and operational aspects of medical imaging. The *Essential Physics of Medical Imaging*, 4th Edition, is a coherent and thorough compendium of the fundamental principles of the physics, radiation protection, and radiation biology that underlie the practice and profession of medical imaging. Distinguished scientists and educators from the University of California, Davis, provide up-to-date, readable information on the production, characteristics, and interactions of non-ionizing and ionizing radiation, magnetic fields and ultrasound used in medical imaging and the imaging modalities in which they are used, including radiography, mammography, fluoroscopy, computed tomography, magnetic resonance, ultrasound, and nuclear medicine. This vibrant, full-color text is enhanced by more than 1,000 images, charts, and graphs, including hundreds of new illustrations. This text is a must-have resource

for medical imaging professionals, radiology residents who are preparing for Core Exams, and teachers and students in medical physics and biomedical engineering.

Developed from the authors' highly successful annual imaging physics review course, this new Second Edition gives readers a clear, fundamental understanding of the theory and applications of physics in radiology, nuclear medicine, and radiobiology. The *Essential Physics of Medical Imaging*, Second Edition provides key coverage of the clinical implications of technical principles--making this book great for board review. Highlights of this new edition include completely updated and expanded chapters and more than 960 illustrations. Major sections cover basic concepts, diagnostic radiology, nuclear medicine, and radiation protection, dosimetry, and biology. A Brandon-Hill recommended title.

Computed tomography (CT) is a powerful technique providing precise and confident diagnoses. The burgeoning use of CT has resulted in an exponential increase in collective radiation dose to the population. Despite investigations supporting the use of lower radiation doses, surveys highlight the lack of proper understanding of CT parameters that affect radiation dose. Dynamic advances in CT technology also make it important to explain the latest dose-saving strategies in an easy-to-comprehend manner. This book aims to review all aspects of the radiation dose from CT and to provide simple rules and tricks for radiologists and radiographers that will assist in the appropriate use of CT technique. The second edition includes a number of new chapters on the most up-to-date strategies and technologies for radiation dose reduction while updating the outstanding contents of the first edition. Vendor perspectives are included, and an online image gallery will also be available to readers.

Expand your understanding of the physics and practical clinical applications of advanced radiation therapy technologies with Khan's *The Physics of Radiation Therapy*, 5th edition, the book that set the standard in the field. This classic full-color text helps the entire radiation therapy team—radiation oncologists, medical physicists, dosimetrists, and radiation therapists—develop a thorough understanding of 3D conformal radiotherapy (3D-CRT), stereotactic radiosurgery (SRS), high dose-rate remote afterloaders (HDR), intensity modulated radiation therapy (IMRT), image-guided radiation therapy (IGRT), Volumetric Modulated Arc Therapy (VMAT), and proton beam therapy, as well as the physical concepts underlying treatment planning, treatment delivery, and dosimetry. In preparing this new Fifth Edition, Dr. Kahn and new co-author Dr. John Gibbons made chapter-by-chapter revisions in the light of the latest developments in the field, adding new discussions, a new chapter, and new color illustrations throughout. Now even more precise and relevant, this edition is ideal as a reference book for practitioners, a textbook for students, and a constant companion for those preparing for their board exams. Features Stay on top of the latest advances in the field with new sections and/or discussions of Image Guided Radiation Therapy (IGRT), Volumetric Modulated Arc Therapy (VMAT), and the Failure Mode Event Analysis (FMEA) approach to quality assurance. Deepen your knowledge of Stereotactic Body Radiotherapy (SBRT) through a completely new chapter that covers SBRT in greater detail. Expand your visual understanding with new full color illustrations that reflect current practice and depict new procedures. Access the authoritative information you need fast through the new companion website which features fully searchable text and an image bank for greater convenience in studying and teaching. This is the tablet version which does not include access to the supplemental content mentioned in the text.

This textbook is a practical guide to the use of small animal imaging in preclinical research that will assist in the choice of imaging modality and contrast agent and in study design, experimental setup, and data evaluation. All established imaging modalities are discussed in detail, with the assistance of numerous informative illustrations. While the focus of the new edition remains on practical basics, it has been updated to encompass a variety of emerging imaging modalities, methods, and applications. Additional useful hints are also supplied on the installation of a small animal unit, study planning, animal handling, and cost-effective performance of small animal imaging. Cross-calibration methods and data postprocessing are considered in depth. This new edition of *Small Animal Imaging* will be an invaluable aid for researchers, students, and technicians involved in research into and applications of small animal imaging.

Publisher's Note: Products purchased from 3rd Party sellers are not guaranteed by the Publisher for quality, authenticity, or access to any online entitlements included with the product. *Computed Tomography for Technologists: Exam Review*, Second Edi-

tion, is intended to be used as a companion to *Computed Tomography for Technologists: A Comprehensive Text, Second Edition*, and as a review of computed tomography on its own. This is an excellent resource for students preparing to take the advanced level certification exam offered by The American Registry of Radiologic Technologists (ARRT).

From a distinguished author comes this new edition for technologists, practitioners, residents, and students in radiology and nuclear medicine. Encompassing major topics in nuclear medicine from the basic physics of radioactive decay to instrumentation and radiobiology, it is an ideal review for Board and Registry examinations. The material is well organized and written with clarity. The book is supplemented with tables and illustrations throughout. It provides a quick reference book that is concise but comprehensive, and offers a complete discussion of topics for the nuclear medicine and radiology physician in training.

Written by the chief physicist at Johns Hopkins University Hospital, this easy-to-read short textbook explains the physics behind multi-detector CT technology, particularly newer, more complex technology. The focus is on principles of physics, effects of scan parameters on image quality, and optimum radiation dosage. The book includes numerous key points summaries and questions to assist in exam preparation.

This is the second edition of a well-received book that enriches the understanding of radiographers and radiologic technologists across the globe, and is designed to meet the needs of courses (units) on radiographic imaging equipment, procedures, production, and exposure. The book also serves as a supplement for courses that address digital imaging techniques, such as radiologic physics, radiographic equipment and quality control. In a broader sense, the purpose of the book is to meet readers' needs in connection with the change from film-based imaging to film-less or digital imaging; today, all radiographic imaging worldwide is based on digital imaging technologies. The book covers a wide range of topics to address the needs of members of various professional radiologic technology associations, such as the American Society of Radiologic Technologists, the Canadian Association of Medical Radiation Technologists, the College of Radiographers in the UK, and the Australian and New Zealand Societies for Radiographers.

Rev. ed. of: *Principles of radiological physics* / Donald T. Graham, Paul Cloke, Martin Vosper. 5th ed. 2007.

Physics in Nuclear Medicine - by Drs. Simon R. Cherry, James A. Sorenson, and Michael E. Phelps - provides current, comprehensive guidance on the physics underlying modern nuclear medicine and imaging using radioactively labeled tracers. This revised and updated fourth edition features a new full-color layout, as well as the latest information on instrumentation and technology. Stay current on crucial developments in hybrid imaging (PET/CT and SPECT/CT), and small animal imaging, and benefit from the new section on tracer kinetic modeling in neuroreceptor imaging. What's more, you can reinforce your understanding with graphical animations online at www.expertconsult.com, along with the fully searchable text and calculation tools. Master the physics of nuclear medicine with thorough explanations of analytic equations and illustrative graphs to make them accessible. Discover the technologies used in state-of-the-art nuclear medicine imaging systems Fully grasp the process of emission computed tomography with advanced mathematical concepts presented in the appendices. Utilize the extensive data in the day-to-day practice of nuclear medicine practice and research. Tap into the expertise of Dr. Simon Cherry, who contributes his cutting-edge knowledge in nuclear medicine instrumentation. Stay current on the latest developments in nuclear medicine technology and methods New sections to learn about hybrid imaging (PET/CT and SPECT/CT) and small animal imaging. View graphical animations online at www.expertconsult.com, where you can also access the fully searchable text and calculation tools. Get a better view of images and line art and find information more easily thanks to a brand-new, full-color layout. The perfect reference or textbook to comprehensively review physics principles in nuclear medicine.

Master the critical physics content you need to know with this new title in the popular Case Review series. *Imaging Physics Case Review* offers a highly illustrated, case-based preparation for board review to help residents and recertifying radiologists succeed on exams and demonstrate a clinical understanding of physics, patient safety, and improvement of imaging accuracy and interpretation. Presents 150 high-yield case studies organized by level of difficulty, with multiple-choice questions, answers, and rationales that mimic the format of certification exams. Uses short, easily digestible chapters and high-quality illustrations for efficient, effective learning and exam preparation. Discusses current advances in all modalities, ensuring that your study is up-to-date and clinically useful. Covers today's key physics topics including radiation safety and methods to prevent patient harm; how to reduce artifacts; basics of radiation doses including dose reduction strategies; cardiac CT physics; advanced ultrasound techniques; and how to optimize image quality using physics principles. Enhanced eBook version included with purchase, which allows you to access all of the text, figures, and references from the book on a variety of devices

This title is directed primarily towards health care professionals outside of the United States. The new edition has been fully updated to reflect the latest advances in technology and legislation and the needs of today's radiology trainees. Invaluable reading, particularly for those sitting the primary and final examinations of the Royal College of Radiology, UK, the book will also be of value to radiographers and personnel interested in medical imaging. The concise text is also accompanied by clear line drawings and sample images to illustrate the principles discussed. Closely matches needs of FRCR examination candidates. Updated to reflect changes to FRCR examination. More medically orientated. Covers new legislation concerning radiological safety etc. 'Must-know' summaries at end of each chapter. Completely new design.

From basic physics principles to the actual process of producing diagnostic-quality x-rays, *Essentials of Radiographic Physics and Imaging* effectively guides you through the physics and imaging information you need to excel on your ARRT exam and as a professional radiographer. The text's clear language and logical organization help you easily master physics principles as they apply to imaging, plus radiation production and characteristics, imaging equipment, film screen image acquisition and processing, digital image acquisition and display, basics of computed tomography, image analysis, and more. Theory to Practice discussions help you link these principles to real-world applications and practice. An emphasis on practical information provides just what you need to know to pass the ARRT exam and to be a competent practitioner. Integrated coverage of digital radiography describes how to acquire, process, and display digital images, and explains the advantages and limitations of digital vs. conventional imaging processes. Theory to Practice succinctly explains the application of the concept being discussed and helps you understand how to use the information in clinical practice. Make the Connection links physics and imaging concepts to help you fully appreciate the importance of both subjects. Math applications demonstrate how mathematical concepts and formulas are applied in the clinical setting. Critical Concepts further explain and emphasize key points in the chapters. Learning features highlight important information with an outline, key terms, and objectives at the beginning of each chapter and a chapter summary at the end. A glossary of key terms provides a handy reference.

The first in a three-volume set exploring Problems and Solutions in Medical Physics, this volume explores common questions and their solutions in Diagnostic Imaging. This invaluable study guide should be used in conjunction with other key textbooks in the field to provide additional learning opportunities. It contains key imaging modalities, exploring X-ray, mammography, and fluoroscopy, in addition to computed tomography, magnetic resonance imaging, and ultrasonography. Each chapter provides examples, notes, and references for further reading to enhance understanding. Features: Consolidates concepts and assists in the understanding and applications of theoretical concepts in medical physics Assists lecturers and instructors in setting assignments and tests Suitable as a revision tool for postgraduate students sitting medical physics, oncology, and radiology sciences examinations

This money-saving package includes Mosby's Radiography Online: Physics, 2e, Mosby's Radiography Online: Imaging, 2e, Mosby's Radiography Online: Radiobiology and Radiation Protection, 2e, Bushong: Radiologic Science for Technologists, 9e, and Bushong: Workbook and Lab Manual for Radiologic Science for Technologists, 9e. Please note that due to special assembly requirements, this package may take up to 10 business days for shipping. If you need immediate assistance, please call customer service at 1-800-545-2522.

This comprehensive guide provides a uniquely practical, application-focused introduction to medical image analysis. This fully updated new edition has been enhanced with material on the latest developments in the field, whilst retaining the original focus on segmentation, classification and registration. Topics and features: presents learning objectives, exercises and concluding remarks in each chapter; describes a range of common imaging techniques, reconstruction techniques and image artifacts, and discusses the archival and transfer of images; reviews an expanded selection of techniques for image enhancement, feature detection, feature generation, segmentation, registration, and validation; examines analysis methods in view of image-based guidance in the operating room (NEW); discusses the use of deep convolutional networks for segmentation and labeling tasks (NEW); includes appendices on Markov random field optimization, variational calculus and principal component analysis.

Written specifically for dentists, *White and Pharoah's Oral Radiology: Principles and Interpretation* 8th Edition incorporates over 1,500 high-quality radiographic images and illustrations to demonstrate core concepts and essential principles and techniques of oral and maxillofacial radiology. The new edition of this best-selling book delivers with state-of-the-art information on oral radiology principles and techniques, and image interpretation. Dental student will gain a solid foundation in radiation physics, radiation biology, and radiation safety and protection before introducing including specialized techniques such as MRI and CT. As well, students will learn how to recognize the key radiographic features of pathologic conditions and interpret radiographs accurately. The 8th edition also includes new chapters on Radiologic Anatomy, Be-

yond 3D Imaging, and Diseases Affecting the Structure of Bone. A practical guide to using today's technology, this unique text helps your students provide state-of-the-art care! Over 1,500 high quality dental radiographs, full color photos, and illustrations clearly demonstrate core concepts and reinforce the essential principles and techniques of oral and maxillofacial radiology. Updated Extensive coverage of all aspects of oral and maxillofacial radiology includes the entire predoctoral curriculum. A wide array of radiographic images including advanced imaging such as MRI and CT. An easy-to-follow format simplifies the key radiographic features of each pathologic condition, including location, periphery, shape, internal structure, and effects on surrounding structures — placed in context with clinical features, differential diagnosis, and management. Expert contributors include many authors with worldwide reputations. Case studies apply imaging concepts to real-world scenarios. NEW! New editors Sanjay Mallya and Ernest Lam along with new contributors bring a fresh perspective on oral radiology. NEW! Chapter! Beyond 3D Imaging introduces applications of 3D imaging such as stereolith models. NEW! Chapter Radiological Anatomy includes all radiological anatomy content allowing you to better visualize and understand normal appearances of structures on conventional and contemporary imaging, side-by-side. NEW! Coverage of Diseases Affecting the Structure of Bone consolidated into one chapter to simplify foundational basic science information and its applications to radiologic interpretation.

Nuclear medicine is an ever changing subject, and the emphasis and utility of one type of study is often abruptly supplanted by another. In this unstable environment, there is a set of circumstances that offers a basic unifying structure to the activities encountered in nuclear medicine. The pivotal importance of radio pharmaceuticals in these activities makes a thorough understanding of them paramount for all who would prescribe, dispense, or in any way utilize such materials. In this volume, the author has distilled an awesome body of literature on nuclear pharmacy into a concise and readily understandable textbook. It is written from the viewpoint of one who not only has broad experience and knowledge in nuclear pharmacy, who daily guides and instructs a variety of students in the discipline, but who also directs a clinical nuclear medicine radiopharmacy program. In this book he has avoided the esoteric and maintained an emphasis on the practical. The approach is not encyclopedic in nature, as adequate references refer the more interested reader to appropriate sources of detailed information, but one which ensures that the students will be able to absorb the essentials of nuclear pharmacy and practice it effectively with a broad understanding of the subject. At the end of each chapter a set of questions provokes the reader to assess the sufficiency of the knowledge gained.

Now revised to reflect the new, clinically-focused certification exams, *Review of Radiological Physics, Fourth Edition*, offers a complete review for radiology residents and radiologic technologists preparing for certification. This new edition covers x-ray production and interactions, projection and tomographic imaging, image quality, radiobiology, radiation protection, nuclear medicine, ultrasound, and magnetic resonance - all of the important physics information you need to understand the factors that improve or degrade image quality. Each chapter is followed by 20 questions for immediate self-assessment, and two end-of-book practice exams, each with 100 additional questions, offer a comprehensive review of the full range of topics.

This book summarizes basic knowledge of atomic, nuclear, and radiation physics that professionals need for efficient and safe use of ionizing radiation. Concentrating on the underlying principles of radiation physics, it covers prerequisite knowledge for medical physics courses on the graduate and post-graduate levels, providing the link between elementary physics on the one hand and the intricacies of the medical physics specialties on the other.

The Fourth Edition of this text provides a clear understanding of the physics principles essential to getting maximum diagnostic value from the full range of current and emerging imaging technologies. Updated material added in areas such as x-ray generators (solid-state devices), xerography (liquid toner), CT scanners (fast-imaging technology) and ultrasound (color Doppler).

This comprehensive publication covers all aspects of image formation in modern medical imaging modalities, from radiography, fluoroscopy, and computed tomography, to magnetic resonance imaging and ultrasound. It addresses the techniques and instrumentation used in the rapidly changing field of medical imaging. Now in its fourth edition, this text provides the reader with the tools necessary to be comfortable with the physical principles, equipment, and procedures used in diagnostic imaging, as well as appreciate the capabilities and limitations of the technologies.

Describes the most common imaging technologies and their diagnostic applications so that pharmacists and other health professionals, as well as imaging researchers, can understand and interpret medical imaging science This book guides pharmacists and other health professionals and researchers to understand and interpret medical imaging. Divided into two sections, it covers both fundamental principles and clinical applications. It describes the most common imaging technologies and their use to diagnose diseases. In addition, the authors introduce the emerging role of molecular imaging including PET in the diagnosis of cancer and to

assess the effectiveness of cancer treatments. The book features many illustrations and discusses many patient case examples. *Medical Imaging for Health Professionals: Technologies and Clinical Applications* offers in-depth chapters explaining the basic principles of: X-Ray, CT, and Mammography Technology; Nuclear Medicine Imaging Technology; Radionuclide Production and Radiopharmaceuticals; Magnetic Resonance Imaging (MRI) Technology; and Ultrasound Imaging Technology. It also provides chapters written by expert radiologists in well-explained terminology discussing clinical applications including: Cardiac Imaging; Lung Imaging; Breast Imaging; Endocrine Gland Imaging; Abdominal Imaging; Genitourinary Tract Imaging; Imaging of the Head, Neck, Spine and Brain; Musculoskeletal Imaging; and Molecular Imaging with Positron Emission Tomography (PET). Teaches pharmacists, health professionals, and researchers the basics of medical imaging technology. Introduces all of the customary imaging tools—X-ray, CT, ultrasound, MRI, SPECT, and PET—and describes their diagnostic applications. Explains how molecular imaging aids in cancer diagnosis and in assessing the effectiveness of cancer treatments. Includes many case examples of imaging applications for diagnosing common diseases. *Medical Imaging for Health Professionals: Technologies and Clinical Applications* is an important resource for pharmacists, nurses, physiotherapists, respiratory therapists, occupational therapists, radiological or nuclear medicine technologists, health physicists, radiotherapists, as well as researchers in the imaging field.

Covers the most important imaging modalities in radiology: projection radiography, x-ray computed tomography, nuclear medicine, ultrasound imaging, and magnetic resonance imaging. Organized into parts to emphasize key overall conceptual divisions.

This renowned work is derived from the authors' acclaimed national review course ("Physics of Medical Imaging") at the University of California-Davis for radiology residents. The text is a guide to

the fundamental principles of medical imaging physics, radiation protection and radiation biology, with complex topics presented in the clear and concise manner and style for which these authors are known. Coverage includes the production, characteristics and interactions of ionizing radiation used in medical imaging and the imaging modalities in which they are used, including radiography, mammography, fluoroscopy, computed tomography and nuclear medicine. Special attention is paid to optimizing patient dose in each of these modalities. Sections of the book address topics common to all forms of diagnostic imaging, including image quality and medical informatics as well as the non-ionizing medical imaging modalities of MRI and ultrasound. The basic science important to nuclear imaging, including the nature and production of radioactivity, internal dosimetry and radiation detection and measurement, are presented clearly and concisely. Current concepts in the fields of radiation biology and radiation protection relevant to medical imaging, and a number of helpful appendices complete this comprehensive textbook. The text is enhanced by numerous full color charts, tables, images and superb illustrations that reinforce central concepts. The book is ideal for medical imaging professionals, and teachers and students in medical physics and biomedical engineering. Radiology residents will find this text especially useful in bolstering their understanding of imaging physics and related topics prior to board exams.

The book is an on-the-spot reference for residents and medical students seeking diagnostic radiology fast facts. Its question-and-answer format makes it a perfect quick-reference for personal review and studying for board examinations and re-certification. Readers can read the text from cover to cover to gain a general foundation of knowledge that can be built upon through practice or can use choice chapters to review a specific subspecialty before starting a new rotation or joining a new service. With hun-

dreds of high-yield questions and answer items, this resource addresses both general and subspecialty topics and provides accurate, on-the-spot answers. Sections are organized by subspecialty and body area, including chest, abdomen, and trauma, and chapters cover the anatomy, pathophysiology, differential diagnosis, hallmark signs, and image features of major diseases and conditions. Key example images and illustrations enhance the text throughout and provide an ideal, pocket-sized resource for residents and medical students.

This publication is aimed at students and teachers involved in programmes that train medical physicists for work in diagnostic radiology. It provides a comprehensive overview of the basic medical physics knowledge required in the form of a syllabus for the practice of modern diagnostic radiology. This makes it particularly useful for graduate students and residents in medical physics programmes. The material presented in the publication has been endorsed by the major international organizations and is the foundation for academic and clinical courses in both diagnostic radiology physics and in emerging areas such as imaging in radiotherapy.

This 5th Edition of *Textbook of Uroradiology* focuses on subject matter that will provide critical learning to radiology and urology residents preparing for their board examinations as well as practicing radiologists. Chapter-opener outlines and text boxes highlighting key points and differential diagnoses make this introductory textbook very user-friendly. The "Suggested Readings" at the end of each chapter are a valuable reference tool for those who desire additional information about a particular topic. **SPECIAL FEATURES**

- Integrates all aspects of adult uroradiology including additional discussion on incidental findings and how to handle them
- More than 1,000 illustrations
- More Hybrid imaging including PET/CT and SPECT/CT
- More MR imaging including MR urography and MR angiography
- More material on CT dose reduction and 3D CT imaging