

Physiological Measurements With Radionuclides In Clinical Practice

[#radionuclide imaging](#) [#physiological monitoring](#) [#nuclear medicine diagnostics](#) [#radioactive tracers](#) [#clinical physiological assessment](#)

Explore the critical role of radionuclide imaging for precisely assessing physiological functions within clinical practice. This advanced technique utilizes radioactive tracers to provide invaluable insights into organ performance and metabolic pathways, enabling accurate diagnosis, monitoring, and effective patient management, making it a cornerstone of modern nuclear medicine diagnostics for comprehensive clinical physiological assessment.

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Physiological Measurements with Radionuclides in Clinical Practice

In straightforward language for the clinician, this book integrates the principles and mathematics of measurement with the physiological systems to which the quantitative problems are applied.

Physiological Measurements with Radionuclides in Clinical Practice

As functional imaging becomes increasingly important in radiology, practitioners in a wide range of disciplines need to understand more about the quantitative aspects of physiology and pathophysiology. In straightforward language, this book integrates the principles and mathematics of measurements with physiological systems to which the quantitative problems are applied. Although there is an emphasis on clinical management with radionuclides and quantitative procedures in nuclear medicine, this book has been written with all practitioners in mind and also therefore embraces techniques based on non-radioactive indicators, including contrast agents used in CT, MRI, and ultrasound. Starting from basic mathematics, the book describes the measurement of fundamental physiological variables, like transit time, clearance, and blood flow, and goes on to cover the peripheral circulation and microvascular solute transfer, the pharmacokinetics of agents routinely used in nuclear medicine, as well as scintillation detectors, data processing, and quantification. In separate chapters, measurements in the heart, lung, gastrointestinal tract, liver, blood, genitourinary tract, brain, and skeleton are discussed, and the book finishes with a chapter on questions and worked answers.

Advancing Nuclear Medicine Through Innovation

Nearly 20 million nuclear medicine procedures are carried out each year in the United States alone to diagnose and treat cancers, cardiovascular disease, and certain neurological disorders. Many of the advancements in nuclear medicine have been the result of research investments made during the past 50 years where these procedures are now a routine part of clinical care. Although nuclear medicine plays an important role in biomedical research and disease management, its promise is only beginning to be realized. *Advancing Nuclear Medicine Through Innovation* highlights the exciting emerging opportunities in nuclear medicine, which include assessing the efficacy of new drugs in development, individualizing treatment to the patient, and understanding the biology of human diseases. Health care and pharmaceutical professionals will be most interested in this book's examination of the challenges the field faces and its recommendations for ways to reduce these impediments.

Targeted Radionuclide Therapy

Radioimmunotherapy, also known as systemic targeted radiation therapy, uses antibodies, antibody fragments, or compounds as carriers to guide radiation to the targets. It is a topic rapidly increasing in importance and success in treatment of cancer patients. This book represents a comprehensive amalgamation of the radiation physics, chemistry, radiobiology, tumor models, and clinical data for targeted radionuclide therapy. It outlines the current challenges and provides a glimpse at future directions. With significant advances in cell biology and molecular engineering, many targeting constructs are now available that will safely deliver these highly cytotoxic radionuclides in a targeted fashion. A companion website includes the full text and an image bank.

Diagnostic Nuclear Medicine

In the development of many medical technologies the beginning is characterised by an emphasis on the basic scientific principles of the technology and the optimisation of the functional aspects of the technology. As a technology matures there is a tendency for the underlying principles to be forgotten as the clinical applications begin to develop and the focus moves to an understanding of the clinical application. This maturity brings with it new challenges for those involved in the use of the technology. An acceptance of the methodology may lead to a scaling back of the basic training of staff into the fundamentals of the techniques and lead to a lack of questioning as to those issues which lead to the optimisation in clinical applications. This lack of basic training may ultimately lead to a stifling of research and development of the technology as a whole as trained staff becomes a scarce commodity. Nuclear medicine is no exception to this development cycle. As a medical specialty the discipline has matured. The basic imaging technology has become more reliable in everyday use requiring less input from scientific staff. Clinical procedures have become protocols which are often followed without due understanding of the basic principles underlying the imaging procedure. This is clearly demonstrated when new radiopharmaceuticals are introduced into the marketplace.

Clinical Nuclear Medicine

The fourth edition of *Clinical Nuclear Medicine* highlights the continued growth in clinical applications for PET and other aspects of molecular imaging. With its problem-oriented clinical approach, the book presents relevant topics of current importance to the practicing clinician rather than providing a comprehensive review of all technical aspects.

Medical Imaging Physics

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.

Radiation in Medicine

Does radiation medicine need more regulation or simply better-coordinated regulation? This book addresses this and other questions of critical importance to public health and safety. The issues involved are high on the nation's agenda: the impact of radiation on public safety, the balance between federal and state authority, and the cost-benefit ratio of regulation. Although incidents of misadministration

are rare, a case in Pennsylvania resulting in the death of a patient and the inadvertent exposure of others to a high dose of radiation drew attention to issues concerning the regulation of ionizing radiation in medicine and the need to examine current regulatory practices. Written at the request from the Nuclear Regulatory Commission (NRC), *Radiation in Medicine* reviews the regulation of ionizing radiation in medicine, focusing on the NRC's Medical Use Program, which governs the use of reactor-generated byproduct materials. The committee recommends immediate action on enforcement and provides longer term proposals for reform of the regulatory system. The volume covers Sources of radiation and their use in medicine. Levels of risk to patients, workers, and the public. Current roles of the Nuclear Regulatory Commission, other federal agencies, and states. Criticisms from the regulated community. The committee explores alternative regulatory structures for radiation medicine and explains the rationale for the option it recommends in this volume. Based on extensive research, input from the regulated community, and the collaborative efforts of experts from a range of disciplines, *Radiation in Medicine* will be an important resource for federal and state policymakers and regulators, health professionals involved in radiation treatment, developers and producers of radiation equipment, insurance providers, and concerned laypersons.

Instructional Process and Concepts in Theory and Practice

This book offers an accessible, practical and engaging guide that provides sample instructional activities supported by theoretical background information, with a focus on the nature of the instructional process in relation to several variables. It approaches instructional models, strategies, methods, techniques, tactics and planning from a new perspective and shares effective tips to help readers better understand the instructional process and its theoretical elements. The book addresses the following questions: What is the nature of the instructional process? What are the classifications of contemporary models and strategies developed within the instructional process? Which groups yield the most effective methods and techniques, and how can they best be practically implemented? What are the instructional tactics teachers need to take into consideration, in which groups are they collected, and which tips can help us employ each tactic? Additionally, readers can adapt the book's ready-to-use sample activities to their own educational settings. Overall, this book offers an enlightening discussion on contemporary practices related to the teaching process, a broad and holistic theoretical framework, and an ideal reference source for all students and scholars who are interested in the educational sciences.

Therapeutic Nuclear Medicine

The recent revolution in molecular biology offers exciting new opportunities for targeted radionuclide therapy. This up-to-date, comprehensive book, written by world-renowned experts, discusses the basic principles of radionuclide therapy, explores in detail the available treatments, explains the regulatory requirements, and examines likely future developments. The full range of clinical applications is considered, including thyroid cancer, hematological malignancies, brain tumors, liver cancer, bone and joint disease, and neuroendocrine tumors. The combination of theoretical background and practical information will provide the reader with all the knowledge required to administer radionuclide therapy safely and effectively in the individual patient. Careful attention is also paid to the role of the therapeutic nuclear physician in coordinating a diverse multidisciplinary team, which is central to the safe provision of treatment.

Molecular Nuclear Medicine

Biochemical transparency of the human body is at the doorstep of advanced technology. Toward this goal the book describes relevant isotopic tracer techniques of nuclear medicine. It deals with quantitatively measuring in vivo biochemical reactions as they occur within homeostatic circuits under control by genes and protein interactions. The text indicates how nuclear medicine can aid clinical researchers and practitioners, human geneticists and pharmacologists in understanding (and affecting) gene-phenotype relationships. Experts give background, techniques and examples in an interdisciplinary approach to regional imaging and in vitro analyses of biochemical reactions.

Essentials of Nuclear Medicine and Molecular Imaging E-Book

Covering both the fundamentals and recent developments in this fast-changing field, *Essentials of Nuclear Medicine and Molecular Imaging*, 7th Edition, is a must-have resource for radiology residents, nuclear medicine residents and fellows, nuclear medicine specialists, and nuclear medicine technicians.

Known for its clear and easily understood writing style, superb illustrations, and self-assessment features, this updated classic is an ideal reference for all diagnostic imaging and therapeutic patient care related to nuclear medicine, as well as an excellent review tool for certification or MOC preparation. Provides comprehensive, clear explanations of everything from principles of human physiology, pathology, physics, radioactivity, radiopharmaceuticals, radiation safety, and legal requirements to hot topics such as new brain and neuroendocrine tumor agents and hybrid imaging, including PET/MR and PET/CT. Covers the imaging of every body system, as well as inflammation, infection and tumor imaging; pearls and pitfalls for every chapter; and pediatric doses and guidelines in compliance with the Image Gently and Image Wisely programs. Features a separate self-assessment section on differential diagnoses, imaging procedures and artifacts, and safety issues with unknown cases, questions, answers, and explanations. Includes new images and illustrations, for a total of 430 high-quality, multi-modality examples throughout the text. Reflects recent advances in the field, including updated nuclear medicine imaging and therapy guidelines • Updated dosimetry values and effective doses for all radiopharmaceuticals with new values from the 2015 International Commission on Radiological Protection • Updated information regarding advances in brain imaging, including amyloid, dopamine transporter and dementia imaging • Inclusion of Ga-68 DOTA PET/CT for neuroendocrine tumors • Expanded information on correlative and hybrid imaging with SPECT/CT • New myocardial agents • and more. Contains extensive appendices including updated comprehensive imaging protocols for routine and hybrid imaging, pregnancy and breastfeeding guidelines, pediatric dosages, non-radioactive pharmaceuticals used in interventional and cardiac stress imaging, and radioactivity conversion tables.

National Library of Medicine Current Catalog

The decay product of the medical isotope molybdenum-99 (Mo-99), technetium-99m (Tc-99m), and associated medical isotopes iodine-131 (I-131) and xenon-133 (Xe-133) are used worldwide for medical diagnostic imaging or therapy. The United States consumes about half of the world's supply of Mo-99, but there has been no domestic (i.e., U.S.-based) production of this isotope since the late 1980s. The United States imports Mo-99 for domestic use from Australia, Canada, Europe, and South Africa. Mo-99 and Tc-99m cannot be stockpiled for use because of their short half-lives. Consequently, they must be routinely produced and delivered to medical imaging centers. Almost all Mo-99 for medical use is produced by irradiating highly enriched uranium (HEU) targets in research reactors, several of which are over 50 years old and are approaching the end of their operating lives. Unanticipated and extended shutdowns of some of these old reactors have resulted in severe Mo-99 supply shortages in the United States and other countries. Some of these shortages have disrupted the delivery of medical care. Molybdenum-99 for Medical Imaging examines the production and utilization of Mo-99 and associated medical isotopes, and provides recommendations for medical use.

Molybdenum-99 for Medical Imaging

This publication reviews the current state of the art of image quantification and provides a solid background of tools and methods to medical physicists and other related professionals who are faced with quantification of radionuclide distribution in clinical practice. It describes and analyses the physical effects that degrade image quality and affect the accuracy of quantification, and describes methods to compensate for them in planar, single-photon emission computed tomography (SPECT) and positron emission tomography (PET) images.

Quantitative Nuclear Medicine Imaging

This state-of-the-art handbook, the third and final in a series that provides medical physicists with a comprehensive overview into the field of nuclear medicine, focuses on highlighting the production and application of radiopharmaceuticals. With this, the book also describes the chemical composition of these compounds, as well as some of the main clinical applications where radiopharmaceuticals may be used. Following an introduction to the field of radiopharmacy, three chapters in this book are dedicated towards in-depth descriptions of common radionuclides and radiopharmaceuticals used during diagnostic studies utilizing planar/Single Photon Emission Computed Tomography (SPECT) imaging, in addition to during Positron Emission Tomography (PET) imaging, and, finally, radiotherapy. These chapters are followed by those describing procedures relating to quality control and manufacturing (good manufacturing practices) also encompassing aspects such as environmental compliance. Furthermore, this volume illustrates how facilities handling these chemicals should be designed to comply with set regulations. Like many pharmaceuticals, the development of radiopharmaceuticals

relies heavily on the use of mouse models. Thus, the translation of radiopharmaceuticals (i.e., the process undertaken to assure that the functionality and safety of a newly developed drug is maintained also in a human context), is covered in a later chapter. This is followed by a chapter emphasizing the importance of safe waste disposal and how to assure that these procedures meet the requirements set for the disposal of hazardous waste. Several chapters have also been dedicated towards describing various medical procedures utilizing clinical nuclear medicine as a tool for diagnostics and therapeutics. As physicists may be involved in clinical trials, a chapter describing the procedures and regulations associated with these types of studies is included. This is followed by a chapter focusing on patient safety and another on an imaging modality not based on ionizing radiation – ultrasound. Finally, the last chapter of this book discusses future perspectives of the field of nuclear medicine. This text will be an invaluable resource for libraries, institutions, and clinical and academic medical physicists searching for a complete account of what defines nuclear medicine. The most comprehensive reference available providing a state-of-the-art overview of the field of nuclear medicine Edited by a leader in the field, with contributions from a team of experienced medical physicists, chemists, engineers, scientists, and clinical medical personnel Includes the latest practical research in the field, in addition to explaining fundamental theory and the field's history

Handbook of Nuclear Medicine and Molecular Imaging for Physicists

First multi-year cumulation covers six years: 1965-70.

Current Catalog

One in three of the 30 million Americans who are hospitalized are diagnosed or treated with nuclear medicine techniques. This text provides a succinct overview and detailed set of procedures and considerations for patient therapy with unsealed radioactivity sources. Serving as a complete literature reference for therapy with radiopharmaceuticals c

Nuclear medicine

First multi-year cumulation covers six years: 1965-70.

Library of Congress Subject Headings

Radiopharmaceuticals and Other Compounds Labelled with Short-Lived Radionuclides covers through both review and contributed articles the potential applications and developments in labeling with short-lived radionuclides whose use is restricted to institutions with accelerators. The book discusses the current and potential use of generator-produced radionuclides as well as other short-lived radionuclides, and the problems of quality control of such labeled compounds. The book is useful to nuclear medicine physicians.

Library of Congress Subject Headings

physieal and mental can distort thyroid func Thyroid diseases are common. They indude hyper- and hypothyroidism, enlargement of tion tests so that thyroid dysfunction is dia the gland both diffuse and nodular, solitary gnosed inappropriately. This is addressed in nodules both benign and malignant, in Chapter 12 with adviee that should de crease this occurrence. Because radiation flammatory diseases, rare congenital defects to the thyroid can cause dinieally relevant in structure and inborn errors in function. thyroid disease and because some of the Many are simple to diagnose and treat, others are not. The literature often com diagnostic tests and treatments involve plicates rather than simplifies issues. My in administration of radioactive iodine to the tention is to use personal experience, the patient, Chapter 13 brings together some teaching of others and distillation of the aspects of radiation biology in relation the literature as the basis for a text which will the thyroid.

Library of Congress Subject Headings: P-Z

Information on employment outlook, career advancement, education and training needs, and salary.

Library of Congress Subject Headings

Long recognized as the standard general reference in the field, this completely revised edition of Grainger and Allison?s Diagnostic Radiology provides all the information that a trainee needs to master

to successfully take their professional certification examinations as well as providing the practicing radiologist with a refresher on topics that may have been forgotten. Organized along an organ and systems basis, this resource covers all diagnostic imaging modalities in an integrated, correlative fashion and focuses on those topics that really matter to a trainee radiologist in the initial years of training. "...the latest edition ... continues the fine tradition set by its predecessors.... help young radiologists to prepare for their examinations and continue to be a source of information to be dipped in and out of ... senior radiologists will also find the book useful ..." Reviewed by: RAD Magazine March 2015 "I am sure the current edition will be successful and help young radiologists to prepare for their examinations and continue to be a source of information to be dipped in and out of..." Reviewed by RAD Magazine, March 2015 Master the field and prepare for certification or recertification with a succinct, comprehensive account of the entire spectrum of imaging modalities and their clinical applications. Effectively apply the latest techniques and approaches with complete updates throughout including 4 new sections (Abdominal Imaging, The Spine, Oncological Imaging, and Interventional Radiology) and 28 brand new chapters. Gain the fresh perspective of two new editors—Jonathan Gillard and Cornelia Schaefer-Prokop -- eight new section editors -- Michael Maher, Andrew Grainger, Philip O'Connor, Rolf Jager, Vicky Goh, Catherine Owens, Anna Maria Belli, Michael Lee -- and 135 new contributors. Stay current with the latest developments in imaging techniques such as CT, MR, ultrasound, and coverage of hot topics such as: Image guided biopsy and ablation techniques and Functional and molecular imaging. Solve even your toughest diagnostic challenges with guidance from nearly 4,000 outstanding illustrations. Quickly grasp the fundamentals you need to know through a more concise, streamlined format. Access the full text online at Expert Consult.

Nuclear Medicine Therapy

To continue the support for the growing trend of chemistry involvement in nuclear medicine, the Division of Nuclear Chemistry and Technology (DNCT) of the American Chemical Society (ACS) planned for a symposium to cover this aspect. This was expressed in a request to me, as a member of the Program Committee, to organize a symposium on topics related to nuclear and radiochemistry applications to nuclear medicine. Realizing the growing interest in imaging, specially with positron emitting radioisotopes, I invited several colleagues to study with me the idea of imaging centers and the involvement of chemists in their structure and function. The formulated Organizing Committee supported this idea which evolved in proposing an extended international symposium to be held in conjunction with the 206th ACS National meeting in Chicago, Illinois, U. S. A. on August 22-27, 1993. The following are the members of the Organizing Committee: Jorge R. Barrio, Ph. D. Thomas E. Boothe, Ph. D. J. Robert Dahl, Ph. D. Robert F. Dannals, Ph. D. Bruce R. Erdal, Ph. D. Mark M. Goodman, Ph. D. George W. Kabalka, Ph. D. James F. Lamb, Ph. D. Ronald G. Manning, Ph. D. Henry C. Padgett, Ph. D. Roy S. Tilbury, Ph. D. Steven W. Yates, Ph. D. and Ali M. Emran, Ph. D.

Current Catalog

Radionuclide Tracer Techniques in Haematology present an extensive examination of the use of radionuclides in diagnostic medicine and in haematology. It discusses the fundamental structure of radionuclides. It addresses the mechanism of using radionuclides for diagnosis. Some of the topics covered in the book are the analysis of ionization chambers; radionuclide imaging equipment; measurement of red cell and plasma volume; description of Geiger-Muller counter, scintillation counter, and whole body counters; utilization of gamma camera; use of hybrid imaging system. The procedure for blood volume determination is fully covered. An in-depth account of the plasma clearance and plasma iron turnover are provided. The evaluation of iron utilization is completely presented. A chapter is devoted to the use of physiological models and external counting equipment. Another section focuses on the applications of quantitative imaging. The analysis of spleen imaging, bone marrow imaging, and vitamin B12 are briefly covered. The book can provide useful information to radiologists, doctors, students, and researchers.

P-Z

Written at the technologist level, this book focuses on instruments essential to the practice of nuclear medicine. Covering everything from Geiger counters to positron emission tomography systems, this text provides students with an understanding of the practical aspects of these instruments and their uses in nuclear medicine.

Radiopharmaceuticals and Other Compounds Labelled with Short-Lived Radionuclides

Medical Imaging in Clinical Practice is a compendium of the various applications of imaging modalities in specific clinical conditions. It captures in an easy to read manner, the experiences of various experts drawn from across the globe. It explores the conventional techniques, advanced modalities and on going research efforts in the ever widening horizon of medical imaging. The various topics would be relevant to residents, radiologists and specialists who order and interpret various medical imaging procedures. It is an essential for the inquisitive mind, seeking to understand the scope of medical imaging in clinical practice.

People of Today

Radiotherapy remains a major non-surgical treatment modality for malignant disease, and an understanding of how this treatment works is essential in ensuring optimum practice. Trainees in oncology learn about ionising radiation, but to understand it fully they must also understand the physics relevant to its use in therapy. This book is written specifically for the oncology and radiation team, supporting clinical oncologists in their understanding of the science which underpins radiotherapy. It begins with basic concepts and then explores the principles and practice of physics as it relates to radiotherapy, including discussion of specific types of therapy. Written by authors chosen for their expertise in their respective fields, and aligned to the Royal College of Radiologists FRCR Curriculum in Oncology, this volume will provide an excellent source of information for trainee and practicing oncologists, and wider radiotherapy teams. This second edition has been fully updated to reflect advances in technology and the increased complexity in modern radiotherapy, including two new chapters on imaging and a new brachytherapy chapter.

Thyroid Disease in Clinical Practice

The use of neuroimaging studies in psychiatry is exploding -- and offers tremendous potential for practicing clinicians. Yet if you're like many psychiatrists, you're sometimes uncertain about which studies to use in specific situations. Until now, you've had to sort through the only information available -- technical reviews in the literature -- for guidance. But no more. Essentials of Neuroimaging for Clinical Practice is an all-in-one resource that explains how to use these powerful techniques to improve outcomes. It demystifies neuroimaging with clear, concise, and practical advice on using today's most advanced applications in the diagnostic workup of patients. This practical clinical guide will help you achieve a solid understanding of the full range of neuroimaging modalities: Structural techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) Functional techniques such as positron emission tomography (PET), single photon emission computed tomography (SPECT), functional magnetic resonance imaging (fMRI), and magnetic resonance spectroscopy (MRS) Other techniques such as electroencephalography (EEG) -- including quantitative EEG and event-related potentials -- and magnetoencephalography. For each modality, you'll find: A basic review of the technique -- trace the development of each modality, and become familiar with its underlying technology. Guidance on when to use it -- learn which techniques are best to use in specific clinical situations. Tips for ordering studies -- discover how to write up orders to obtain the most accurate and detailed information from each study, including when to use contrast and how to determine the best acquisition parameters. A look at its future potential in practice and research -- explore the current capabilities of each modality and the most promising strategies for improving diagnostic results. Filled with examples of real-life imaging studies, Essentials of Neuroimaging for Clinical Practice is a must-have tool for all practicing psychiatrists and psychologists. In addition, it will serve as an excellent clinical guide for residents -- and an outstanding text for courses in clinical neuroimaging for psychiatrists.

Opportunities in Medical Imaging Careers

Although its underlying concept is a relatively simple one—the measurement of the human body and its parts—anthropometry employs a myriad of methods and instruments, and is useful for a variety of purposes, from understanding the impact of disease on individuals to tracking changes in populations over time. The first interdisciplinary reference on the subject, the Handbook of Anthropometry brings this wide-ranging field together: basic theory and highly specialized topics in normal and abnormal anthropometry in terms of health, disease prevention, and intervention. Over 140 self-contained chapters cover up-to-date indices, the latest studies on computerized methods, shape-capturing systems, and bioelectrical impedance, data concerning single tissues and whole-body variables, and reports from different areas of the world. Chapters feature helpful charts and illustrations, cross-references to

related chapters are included, and key points are presented in bullet form for ease of comprehension. Together, the Handbook's thirteen sections entail all major aspects of anthropometrical practice and research, including: Tools and techniques. Developmental stages, from fetus to elder. Genetic diseases, metabolic diseases, and cancer. Exercise and nutrition. Ethnic, cultural, and geographic populations. Special conditions and circumstances. The Handbook of Anthropometry is an invaluable addition to the reference libraries of a broad spectrum of health professionals, among them health scientists, physicians, physiologists, nutritionists, dieticians, nurses, public health researchers, epidemiologists, exercise physiologists, and physical therapists. It is also useful to college-level students and faculty in the health disciplines, as well as to policymakers and ergonomists.

Grainger & Allison's Diagnostic Radiology E-Book

An up-to-date edition of the authoritative text on the physics of medical imaging, written in an accessible format The extensively revised fifth edition of Hendee's Medical Imaging Physics, offers a guide to the principles, technologies, and procedures of medical imaging. Comprehensive in scope, the text contains coverage of all aspects of image formation in modern medical imaging modalities including radiography, fluoroscopy, computed tomography, nuclear imaging, magnetic resonance imaging, and ultrasound. Since the publication of the fourth edition, there have been major advances in the techniques and instrumentation used in the ever-changing field of medical imaging. The fifth edition offers a comprehensive reflection of these advances including digital projection imaging techniques, nuclear imaging technologies, new CT and MR imaging methods, and ultrasound applications. The new edition also takes a radical strategy in organization of the content, offering the fundamentals common to most imaging methods in Part I of the book, and application of those fundamentals in specific imaging modalities in Part II. These fundamentals also include notable updates and new content including radiobiology, anatomy and physiology relevant to medical imaging, imaging science, image processing, image display, and information technologies. The book makes an attempt to make complex content in accessible format with limited mathematical formulation. The book is aimed to be accessible by most professionals with lay readers interested in the subject. The book is also designed to be of utility for imaging physicians and residents, medical physics students, and medical physicists and radiologic technologists perpetrating for certification examinations. The revised fifth edition of Hendee's Medical Imaging Physics continues to offer the essential information and insights needed to understand the principles, the technologies, and procedures used in medical imaging.

The Cumulative Book Index

Chemists' Views of Imaging Centers