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KEY=QUALITY - MARSHALL PATRICK

Handbook of X-ray Imaging Physics and Technology

CRC Press Containing chapter contributions from over 130 experts, this unique publication is the first handbook dedicated to the physics and technology of X-ray imaging, offering extensive coverage of the field. This highly comprehensive work is edited by one of the world's leading experts in X-ray imaging physics and technology and has been created with guidance from a Scientific Board containing respected and renowned scientists from around the world. The book's scope includes 2D and 3D X-ray imaging techniques from soft-X-ray to megavoltage energies, including computed tomography, fluoroscopy, dental imaging and small animal imaging, with several chapters dedicated to breast imaging techniques. 2D and 3D industrial imaging is incorporated, including imaging of artworks. Specific attention is dedicated to techniques of phase contrast X-ray imaging. The approach undertaken is one that illustrates the theory as well as the techniques and the devices routinely used in the various fields. Computational aspects are fully covered, including 3D reconstruction algorithms, hard/software phantoms, and computer-aided

diagnosis. Theories of image quality are fully illustrated. Historical, radioprotection, radiation dosimetry, quality assurance and educational aspects are also covered. This handbook will be suitable for a very broad audience, including graduate students in medical physics and biomedical engineering; medical physics residents; radiographers; physicists and engineers in the field of imaging and non-destructive industrial testing using X-rays; and scientists interested in understanding and using X-ray imaging techniques. The handbook's editor, Dr. Paolo Russo, has over 30 years' experience in the academic teaching of medical physics and X-ray imaging research. He has authored several book chapters in the field of X-ray imaging, is Editor-in-Chief of an international scientific journal in medical physics, and has responsibilities in the publication committees of international scientific organizations in medical physics. Features: Comprehensive coverage of the use of X-rays both in medical radiology and industrial testing The first handbook published to be dedicated to the physics and technology of X-rays Handbook edited by world authority, with contributions from experts in each field

Digital Breast Tomosynthesis

A Practical Approach

Springer This book provides a comprehensive description of the screening and clinical applications of digital breast tomosynthesis (DBT) and offers straightforward, clear guidance on use of the technique. Informative clinical cases are presented to illustrate how to take advantage of DBT in clinical practice. The importance of DBT as a diagnostic tool for both screening and diagnosis is increasing rapidly. DBT improves upon mammography by depicting breast tissue on a video clip made of cross-sectional images reconstructed in correspondence with their mammographic planes of acquisition. DBT results in markedly reduced summation of overlapping breast tissue and offers the potential to improve mammographic breast cancer surveillance and diagnosis. This book will be an excellent practical teaching guide for beginners and a useful reference for more experienced radiologists.

Grating-Based X-Ray Phase-Contrast Mammography

Springer This thesis offers an accessible guide to biomedical phase-contrast imaging with over 20 radiographic illustrations. It focuses on research to improve radiography, and particularly mammography applications, by using a novel X-ray imaging modality that exploits the wave-nature of X-rays, rather than just their absorption in tissue. Further, it explores a broad range of potential applications - from the assessment of breast cancer and the evaluation of microcalcification clusters, to the examination of renal stones. X-ray imaging is an indispensable tool in modern medical diagnostics, and ranges from simple radiography applications to advanced CT imaging protocols. This novel phase-contrast approach has the potential to deliver significantly improved diagnostic information, also and especially in cases where mammography is used for screening purposes. The thesis is based on several studies conducted by the author - working in close interdisciplinary cooperation with medical doctors at two university clinics in Munich - and successfully demonstrates this diagnostic potential in pre-clinical experiments.

Breast Imaging

11th International Workshop, IWDM 2012, Philadelphia, PA, USA, July 8-11, 2012, Proceedings

Springer This book constitutes the refereed proceedings of the 11th International Workshop on Digital Mammography, IWDM 2012, held in Philadelphia, PA, USA, in July 2012. The 42 revised full papers and 58 revised poster papers presented were carefully reviewed and selected from numerous initial submissions. The papers are organized in topical sections on contrast-enhancing imaging, digital mammography methods, tomosynthesis system design, tomosynthesis - image quality and dose, clinical tomosynthesis, functional breast imaging, breast computed tomography, computer-aided diagnosis and image processing, tomosynthesis reconstruction, and breast density.

Quality Assurance Programme for Digital Mammography

This manual provides a harmonized approach to quality assurance (QA) in the emerging area of digital mammography. It outlines the principles of, and specific instructions that can be used for, a QA programme for the optimal detection of early stage breast cancer within a digital environment. Intended for use by Member States that are now using digital mammography or that are assessing the implications of using digital mammography, it addresses major areas such as considerations concerning the transition from screen film to digital mammography, basic principles of QA, clinical image quality, quality control tests for radiographers, and quality control tests for medical physicists, including dosimetry assessment. Instructional materials to supplement the knowledge of professionals already working in the field of diagnostic radiology, as well as quality control worksheets, are also provided.

Mammography Quality Control Manual

Amer College of Radiology The Mammography Quality Control Manual, developed by the ACR Committee on Quality Assurance in Mammography, is designed to help mammography facilities establish and maintain a quality control program. Included in the set are four sections, one each for radiologists, radiologic technologists, medical physicists, and a new section on clinical image quality. Each section describes step-by-step instructions on equipment testing, performance criteria, and patient positioning. All tests comply with the new MQSA regulations, which went into effect April, 1999. The manual also seeks to define the areas of responsibility for each of the professionals involved in this important health care field. (1999 Revised edition)

LANGE Q&A: Mammography Examination, 4th Edition

McGraw Hill Professional MORE THAN 450 EXAM-STYLE QUESTIONS PLUS HIGH-QUALITY ILLUSTRATIONS HELP YOU ACHIEVE YOUR HIGHEST SCORE POSSIBLE QUESTIONS AND MORE QUESTIONS PREPARE YOU FOR SUCCESS ON THE ARRT® ADVANCED LEVEL MAMMOGRAPHY CERTIFICATION EXAM! •Practice exams (more than 200 questions) familiarize you with the test-taking experience and reduce pre-exam jitters •More than 250 chapter-ending questions assure that you understand the material and are ready for test day •All questions have detailed answer explanations

•This reader-friendly review of exam essentials focuses on what you really need to know and enables you to make the most of your study time •High-quality illustrations, including radiographs, illustrate pathology, enable image comparison, and detail various types of lesions such as benign and malignant calcifications Here's why this is the ultimate review for the ARRT® Advance Level Mammography Certification Exam: •Updated to reflect the latest ARRT mammography exam blueprint •Includes coverage of the latest in digital technology •Written by an experienced radiography instructor who knows exactly what it takes to pass SPECIAL FOR FACULTY: PowerPoint™ lesson plans available online, include objectives, teaching points, review questions and images to support classroom use.

The Handbook of Medical Image Perception and Techniques

Cambridge University Press A state-of-the-art review of key topics in medical image perception science and practice, including associated techniques, illustrations and examples. This second edition contains extensive updates and substantial new content. Written by key figures in the field, it covers a wide range of topics including signal detection, image interpretation and advanced image analysis (e.g. deep learning) techniques for interpretive and computational perception. It provides an overview of the key techniques of medical image perception and observer performance research, and includes examples and applications across clinical disciplines including radiology, pathology and oncology. A final chapter discusses the future prospects of medical image perception and assesses upcoming challenges and possibilities, enabling readers to identify new areas for research. Written for both newcomers to the field and experienced researchers and clinicians, this book provides a comprehensive reference for those interested in medical image perception as means to advance knowledge and improve human health.

Contrast-Enhanced Digital Mammography (CEDM)

Springer This book offers a comprehensive, practical resource entirely devoted to Contrast-Enhanced Digital Mammography (CEDM), a state-of-the-art technique that has emerged as a valuable addition to conventional imaging modalities in the detection of primary and recurrent breast cancer, and as an important preoperative staging tool for women with breast cancer. CEDM is a relatively new breast imaging technique based on dual energy acquisition,

combining mammography with iodine-based contrast agents to display contrast uptake in breast lesions. It improves the sensitivity and specificity of breast cancer detection by providing higher foci to breast-gland contrast and better lesion delineation than digital mammography. Preliminary results suggest that CEDM is comparable to breast MRI for evaluating the extent and size of lesions and detecting multifocal lesions, and thus has the potential to become a readily available, fast and cost-effective examination. With a focus on the basic imaging principles of CEDM, this book takes a practical approach to breast imaging. Drawing on the editors' and authors' practical experience, it guides the reader through the basics of CEDM, making it especially accessible for beginners. By presenting the key aspects of CEDM in a straightforward manner and supported by clear images, the book represents a valuable guide for all practicing radiologists, in particular those who perform breast imaging and have recently incorporated or plan to incorporate CEDM into their diagnostic arsenal.

Digital Mammography

A Holistic Approach

Springer 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.

Digital Mammography

Springer Science & Business Media Digital Radiography has been firmly established in diagnostic radiology during the last decade. Because of the special requirements of high contrast and spatial resolution needed for roentgen

mammography, it took some more time to develop digital mammography as a routine radiological tool. Recent technological progress in detector and screen design as well as increased experience with computer applications for image processing have now enabled Digital Mammography to become a mature modality that opens new perspectives for the diagnosis of breast diseases. The editors of this timely new volume Prof. Dr. U. Bick and Dr. F. Diekmann, both well-known international leaders in breast imaging, have for many years been very active in the frontiers of theoretical and translational clinical research, needed to bring digital mammography naturally into the sphere of daily clinical radiology. I am very much indebted to the editors as well as to the other internationally recognized experts in the field for their outstanding state of the art contributions to this volume. It is indeed an excellent handbook that covers in depth all aspects of Digital Mammography and thus further enriches our book series Medical Radiology. The highly informative text as well as the numerous well-chosen superb illustrations will enable certified radiologists as well as radiologists in training to deepen their knowledge in modern breast imaging.

Neural Approaches to Dynamics of Signal Exchanges

Springer Nature The book presents research that contributes to the development of intelligent dialog systems to simplify diverse aspects of everyday life, such as medical diagnosis and entertainment. Covering major thematic areas: machine learning and artificial neural networks; algorithms and models; and social and biometric data for applications in human-computer interfaces, it discusses processing of audio-visual signals for the detection of user-perceived states, the latest scientific discoveries in processing verbal (lexicon, syntax, and pragmatics), auditory (voice, intonation, vocal expressions) and visual signals (gestures, body language, facial expressions), as well as algorithms for detecting communication disorders, remote health-status monitoring, sentiment and affect analysis, social behaviors and engagement. Further, it examines neural and machine learning algorithms for the implementation of advanced telecommunication systems, communication with people with special needs, emotion modulation by computer contents, advanced sensors for tracking changes in real-life and automatic systems, as well as the development of advanced human-computer interfaces. The book does not focus on solving a particular problem, but instead describes the results of research that has positive effects in different fields and applications.

Digital Radiography

Physical Principles and Quality Control

Springer 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.

Digital Mammography

Lippincott Williams & Wilkins Bogen er en grundlæggende lærebog om digital mammografi, hvori digital mammografi og traditionel mammografi også sammenlignes i forhold til screening, diagnoser og radiografisk billedteknik. Der er en komplet billedsamling af cases indenfor digital mammografi.

Breast Tomosynthesis E-Book

Elsevier Health Sciences The use of tomosynthesis in breast imaging is growing rapidly due to its superior ability to identify and characterize normal findings, benign lesions, and breast cancer, as well as its optimal performance with dense breast tissue. Providing unparalleled coverage of this breakthrough breast imaging modality, **Breast Tomosynthesis** explains how this new modality can lead to enhanced interpretation and better patient outcomes. This new reference is an indispensable guide for today's practitioner looking to keep abreast of the latest developments

with correlative findings, practical interpretation tips, physics, and information on how tomosynthesis differs from conventional 2D FFDM mammography. Over 900 high-quality images offer visual guidance to effectively reading and interpreting this key imaging modality. Includes over 900 high-quality tomosynthesis and mammography images representing the spectrum of breast imaging. Features the latest Breast Imaging Reporting and Data System (or BI-RADS) standards updated in February 2014. Highlights practical tips to interpreting this new modality and how it differs from 2D mammography. Details how integration of tomosynthesis drastically changes lesion work-up and overall workflow in the department. "Tomo Tips" boxes offer tips and pitfalls for expert clinical guidance.

Three-Dimensional Digital Tomosynthesis

Iterative Reconstruction, Artifact Reduction and Alternative Acquisition Geometry

Springer Yulia Levakhina gives an introduction to the major challenges of image reconstruction in Digital Tomosynthesis (DT), particularly to the connection of the reconstruction problem with the incompleteness of the DT dataset. The author discusses the factors which cause the formation of limited angle artifacts and proposes how to account for them in order to improve image quality and axial resolution of modern DT. The addressed methods include a weighted non-linear back projection scheme for algebraic reconstruction and novel dual-axis acquisition geometry. All discussed algorithms and methods are supplemented by detailed illustrations, hints for practical implementation, pseudo-code, simulation results and real patient case examples.

Digital Mammography

9th International Workshop, IWDM 2008 Tucson, AZ, USA, July 20-23, 2008 Proceedings

Springer Science & Business Media This volume (5116) of Springer's Lecture Notes in Computer Science contains the th proceedings of the 9 International Workshop on Digital Mammography (IWDM) which was held July 20 - 23, 2008 in Tucson, AZ in the USA. The IWDM meetings traditionally bring together a diverse set of researchers (physicists, mathematicians, computer scientists, engineers), clinicians (radiologists, surgeons) and representatives of industry, who are jointly committed to developing technologies to support clinicians in the early detection and subsequent patient management of breast cancer. The IWDM conference series was initiated at a 1993 meeting of the SPIE Medical Imaging Symposium in San Jose, CA, with subsequent meetings hosted every two years at sites around the world. Previous meetings were held in York, England; Chicago, IL USA; Nijmegen, Netherlands; Toronto, Canada; Bremen, Germany; Durham, NC USA and Manchester, UK. th The 9 IWDM meeting was attended by a very international group of participants, and during the two and one-half days of scientific sessions there were 70 oral presentations, 34 posters and 3 keynote addresses. The three keynote speakers discussed some of the "hot" topics in breast imaging today. Karen Lindfors spoke on "Dedicated Breast CT: Initial Clinical Experiences. " Elizabeth Rafferty asked the question is "Breast Tomosynthesis: Ready for Prime Time?" Finally, Martin Tornai discussed "3D Multi-Modality Molecular Breast Imaging.

Recovery-stress Questionnaire for Athletes

User Manual

Human Kinetics Provides athletic specialists, trainers, and coaches with resources for monitoring athletes to avoid over-training, burnout, and decreased performance. The questionnaire is based on the hypothesis that an accumulation of stress in different areas of life, with insufficient opportunity for recovery, leads to a compromised psychophysical state. Stress states are based on 12 nonspecific and seven sports-specific scales. The questionnaire

package offers tools to measure and track an athlete's recovery, including two complete questionnaires (72- and 56-item forms), manual scoring keys, profile sheets, and a user manual that describes questionnaire development and data and profile interpretation.c. Book News Inc.

Radiation Exposure and Image Quality in X-Ray Diagnostic Radiology

Physical Principles and Clinical Applications

Springer Science & Business Media Diagnostic X-rays are the largest contributor to radiation exposure. Protecting the patient from radiation is a major aim of modern health policy, and an understanding of the relationship between radiation dose and image quality is pivotal to optimising medical diagnostic radiology. In this volume the data provided for exploring these concerns are partly based on X-ray spectra, measured on diagnostic X-ray tube assemblies, and are supplemented by the results of measurements on phantoms and simulation calculations. X-ray mammography data makes up the main part of this book. The book also features an extremely useful CD-ROM containing a comprehensive database in the form of Excel-files.

Space Antenna Handbook

John Wiley & Sons This book addresses a broad range of topics on antennas for space applications. First, it introduces the fundamental methodologies of space antenna design, modelling and analysis as well as the state-of-the-art and anticipated future technological developments. Each of the topics discussed are specialized and contextualized to the space sector. Furthermore, case studies are also provided to demonstrate the design and implementation of antennas in actual applications. Second, the authors present a detailed review of antenna designs for some popular applications such as satellite communications, space-borne synthetic aperture radar (SAR), Global Navigation Satellite Systems (GNSS) receivers, science instruments, radio astronomy, small satellites, and deep-space applications. Finally it presents the reader with a comprehensive path from space antenna development basics to specific individual

applications. **Key Features:** Presents a detailed review of antenna designs for applications such as satellite communications, space-borne SAR, GNSS receivers, science instruments, small satellites, radio astronomy, deep-space applications Addresses the space antenna development from different angles, including electromagnetic, thermal and mechanical design strategies required for space qualification Includes numerous case studies to demonstrate how to design and implement antennas in practical scenarios Offers both an introduction for students in the field and an in-depth reference for antenna engineers who develop space antennas This book serves as an excellent reference for researchers, professionals and graduate students in the fields of antennas and propagation, electromagnetics, RF/microwave/millimetrewave systems, satellite communications, radars, satellite remote sensing, satellite navigation and spacecraft system engineering, It also aids engineers technical managers and professionals working on antenna and RF designs. Marketing and business people in satellites, wireless, and electronics area who want to acquire a basic understanding of the technology will also find this book of interest.

Handbook of Glandular Tissue Doses in Mammography Medical Electrical Equipment. Particular Requirements for Basic Safety and Essential Performance of Surgical Luminaires and Luminaires for Diagnosis

Medical equipment, Electrical medical equipment, Electrical equipment, Electronic equipment and components, Safety engineering, Electrical safety, Safety measures, Surgical equipment, Clinical investigation instruments, Luminaires, Lighting equipment

PACS

A Guide to the Digital Revolution

Springer Science & Business Media This textbook reviews the technological developments associated with the transition of radiology departments to filmless environments. Each chapter addresses the key topics in current literature with regard to the generation, transfer, interpretation and distribution of images to the medical enterprise. As leaders in the field of computerized medical imaging, the editors and contributors will provide insight into emerging technologies for physicians, administrators, and other interested groups. As health care organizations throughout the world begin to generate filmless implementation strategies, this exhaustive review has proven to be a vital aid to leaders in the development of health care.

Contrast-Enhanced Mammography

Springer This book is a comprehensive guide to contrast-enhanced mammography (CEM), a novel advanced mammography technique using dual-energy mammography in combination with intravenous contrast administration in order to increase the diagnostic performance of digital mammography. Readers will find helpful information on the principles of CEM and indications for the technique. Detailed attention is devoted to image interpretation, with presentation of case examples and highlighting of pitfalls and artifacts. Other topics to be addressed include the establishment of a CEM program, the comparative merits of CEM and MRI, and the roles of CEM in screening populations and monitoring of response to neoadjuvant chemotherapy. CEM became commercially available in 2011 and is increasingly being used in clinical practice owing to its superiority over full-field digital mammography. This book will be an ideal source of knowledge and guidance for all who wish to start using the technique or to learn more about it.

Multi-Modality Imaging

Applications and Computational Techniques

Springer This book presents different approaches on multi-modality imaging with a focus on biomedical applications. Medical imaging can be divided into two categories: functional (related to physiological body measurements) and anatomical (structural) imaging modalities. In particular, this book covers imaging combinations coming from the usual popular modalities (such as the anatomical modalities, e.g. X-ray, CT and MRI), and it also includes some promising and new imaging modalities that are still being developed and improved (such as infrared thermography (IRT) and photoplethysmography imaging (PPGI)), implying potential approaches for innovative biomedical applications. Moreover, this book includes a variety of tools on computer vision, imaging processing, and computer graphics, which led to the generation and visualization of 3D models, making the most recent advances in this area possible. This is an ideal book for students and biomedical engineering researchers covering the biomedical imaging field.

Lectures on Materials Science for Architectural Conservation

This book is based on Dr. Torraca's 2002 publication, *Lezioni di scienza e tecnologia dei materiali per restauro dei monumenti*. The English-language Lectures includes new and updated material. An excellent resource for architectural conservators, engineers, and conservation scientists.

Dosimetry in Diagnostic Radiology

An International Code of Practice

This publication is intended to support those working in the field of diagnostic radiology dosimetry, both in standards laboratories involved in the calibration of dosimeters and those in clinical centres and hospitals where patient dosimetry and quality assurance measurements are of vital concern. This code of practice covers diverse dosimetric situations corresponding to the range of examinations found clinically, and includes guidance on dosimetry for general radiography, fluoroscopy, mammography, computed tomography and dental radiography. The material is presented in a practical way with guidance worksheets and examples of calculations. A set of appendices is also included with background and detailed discussion of important aspects of diagnostic radiology dosimetry.

Diseases of the Chest, Breast, Heart and Vessels 2019-2022

Diagnostic and Interventional Imaging

Springer This open access book focuses on diagnostic and interventional imaging of the chest, breast, heart, and vessels. It consists of a remarkable collection of contributions authored by internationally respected experts, featuring the most recent diagnostic developments and technological advances with a highly didactical approach. The chapters are disease-oriented and cover all the relevant imaging modalities, including standard radiography, CT, nuclear medicine with PET, ultrasound and magnetic resonance imaging, as well as imaging-guided interventions. As such, it presents a comprehensive review of current knowledge on imaging of the heart and chest, as well as thoracic interventions and a selection of "hot topics". The book is intended for radiologists, however, it is also of interest to clinicians in oncology, cardiology, and pulmonology.

Radar Handbook

McGraw-Hill Professional Publishing This edition is the most comprehensive and informative available on radar systems and technology. Thoroughly revised and updated to reflect the advances made in radar over the past two decades. Charts/graphs.

Supply Chain Integration Challenges in Commercial Aerospace

A Comprehensive Perspective on the Aviation Value Chain

Springer This book presents firsthand insights into strategies and approaches for the commercial aerospace supply chain in response to the numerous changes that airlines, aircraft OEMs and their suppliers have experienced over the past few decades. In doing so, it investigates the entire product value chain. Accordingly, the chapters address the challenges of configuration and demand, and highlight the specificities of customization in the aviation industry. They analyze component manufacturing, share valuable insights into assembly and integration activities, and describe aftermarket business models. In order to ensure more varied and balanced coverage, the book includes contributions by researchers, suppliers, and experts and practitioners from consulting companies and the aircraft industry. Taken together, they provide a holistic perspective on the transformation drivers and the innovations that have either been implemented or will be adopted in the near future. The book introduces and describes new concepts and innovations such as 3D printing, E2E demand management, digital production, predictive maintenance and open innovation in general, supplementing them with sample industrial applications from the aviation sector.

DICOM Structured Reporting

PixelMed Publishing

Psychology of Technology

Springer This unique treatise expands on the philosophy of technology to argue for a psychology of technology based on the complex relationships between psychology, biology and technology, especially in the light of our relationships with our digital devices, our online lives, and our human experience. Drawing from disciplines ranging from philosophy and evolution to cognition and neuroscience, it examines myriad aspects of the brain's creative development: the cognitive, sensory, and motor processes that enable technological progress and its resulting efficiencies and deficiencies along with our discomforts and pleasures. These experiences are key to behavioral and affective processes in technology, manifest in such diverse phenomena as multitasking, the shift in tech design from ergonomics to hedonomics, and the many types of online problem behaviors. Through these rich pages, readers can understand more deeply the history and future of human adjustment and adaptation in an environment intertwined with technology—and, with the ascendance of video games and virtual reality, new conceptions of the human self. Among the topics covered: Could we have remained a tech-devoid society? Technology, ergonomics and the non-executive functions of our body. New directions in brain-computer interface. From avatars and agents to virtual reality technology. On measuring affective responses to objects. Psychology, technology, ethics, and culture. A timely lens on a field that will grow in importance as it shapes our existence, *Psychology of Technology* will be read and discussed by not only psychologists, social scientists, and behavioral scientists, but also by technology designers and developers and those in biotechnology.

Breast Imaging Companion

LWW A pragmatic, common sense approach to the detection, evaluation and management of breast diseases and related imaging findings! The fourth edition of this best selling "how-to" book includes major revisions, including the expansion of the screening mammography and breast MRI chapters, as well as the addition of digital breast

tomosynthesis studies. Rather than having selected cropped images, the print and online versions of this book provide the reader with thousands of high quality images and complete imaging evaluations from the screening images, to the diagnostic mammogram and, when appropriate, images from ultrasound, MRI, imaging guided biopsy and preoperative wire localizations. Bulleted "key-facts" describe clinical, imaging and histological findings for a spectrum of breast diseases. With this book, breast-imaging radiologists are encouraged strongly to provide clinical, imaging and pathology concordance for optimal patient care as well as direct and clinically relevant communication with providers and patients. Key Features: Picture yourself in front of a screening mammogram or breast MRI... what now? How do you know if the study is interpretable? What are you looking for? Where do you look? If you detect something, what is the next appropriate step and how do you describe the finding? You will have access to hundreds of complete patient evaluations with thousands of images that include screening and diagnostic mammography, digital breast tomosynthesis, ultrasound, magnetic resonance studies and imaging guided breast related procedures with relevant pathology results and, when appropriate, the pathological stage. Develop appropriate differential considerations for the spectrum of breast imaging findings and appropriate management strategies. Review the indications for imaging guided procedures with step-by-step descriptions for each procedure illustrated with diagrams and images. Establish an optimal QA/QC program for your mammography practice, based on the concepts published by the ACR, regarding testing across digital platforms in the online version of the book. Test your knowledge and skills with a self-assessment chapter online. Now with the print edition, enjoy the bundled interactive eBook edition, offering tablet, smartphone, or online access to: Complete content with enhanced navigation A powerful search that pulls results from content in the book, your notes, and even the web Cross-linked pages, references, and more for easy navigation Highlighting tool for easier reference of key content throughout the text Ability to take and share notes with friends and colleagues Quick reference tabbing to save your favorite content for future use

An Introduction to Medical Physics

Springer This book begins with the basic terms and definitions and takes a student, step by step, through all areas of medical physics. The book covers radiation therapy, diagnostic radiology, dosimetry, radiation shielding, and nuclear medicine, all at a level suitable for undergraduates. This title not only describes the basics concepts of the field, but also emphasizes numerical and mathematical problems and examples. Students will find An Introduction to Medical Physics to be an indispensable resource in preparations for further graduate studies in the field.

The Relations between Defence and Civil Technologies

Springer Science & Business Media This book arises from a meeting held at Wiston House, Sussex, UK, in September 1987. The meeting brought together academic, governmental and industrial experts from eight countries to discuss the increasingly important subject of the relations between civil and defence technologies. It was primarily funded under the Advanced Research Workshops Programme of NATO's Scientific Affairs Division, and was the first science policy workshop funded by the Programme. Additional financial support came from the Leverhulme Trust. The choice of topic, of speakers and, finally, of papers to be published was entirely ours. The conclusions reached were our own and those of the participants. They were not in any way guided by NATO; nor do they represent NATO policy. We speak for all the participants in offering our thanks to the NATO Scientific Affairs Division, especially Secretary General Durand and Dr. Craig Sinclair, for their generosity and encouragement. Without them this book would not exist. We thank the Leverhulme Trust for enabling assistance to be provided to the Workshop Directors, in the form of Iain Bate, who himself played a major part in the success of the meeting. The staff of Wiston House must also be thanked for providing an admirable environment for the meeting. For secretarial support prior to the meeting we thank Gill Miller and Lesley Price. Finally, we offer special thanks to Mrs. Yvonne Aspinall for converting all the papers, in whatever state they were presented, into camera-ready copy with such professionalism and good humour.

Visual Computing for Medicine

Theory, Algorithms, and Applications

Newnes Visual Computing for Medicine, Second Edition, offers cutting-edge visualization techniques and their applications in medical diagnosis, education, and treatment. The book includes algorithms, applications, and ideas on achieving reliability of results and clinical evaluation of the techniques covered. Preim and Botha illustrate visualization techniques from research, but also cover the information required to solve practical clinical problems. They base the book on several years of combined teaching and research experience. This new edition includes six new chapters on treatment planning, guidance and training; an updated appendix on software support for visual computing

for medicine; and a new global structure that better classifies and explains the major lines of work in the field. Complete guide to visual computing in medicine, fully revamped and updated with new developments in the field Illustrated in full color Includes a companion website offering additional content for professors, source code, algorithms, tutorials, videos, exercises, lessons, and more

Proton and Carbon Ion Therapy

CRC Press Proton and Carbon Ion Therapy is an up-to-date guide to using proton and carbon ion therapy in modern cancer treatment. The book covers the physics and radiobiology basics of proton and ion beams, dosimetry methods and radiation measurements, and treatment delivery systems. It gives practical guidance on patient setup, target localization, and treatment planning for clinical proton and carbon ion therapy. The text also offers detailed reports on the treatment of pediatric cancers, lymphomas, and various other cancers. After an overview, the book focuses on the fundamental aspects of proton and carbon ion therapy equipment, including accelerators, gantries, and delivery systems. It then discusses dosimetry, biology, imaging, and treatment planning basics and provides clinical guidelines on the use of proton and carbon ion therapy for the treatment of specific cancers. Suitable for anyone involved with medical physics and radiation therapy, this book offers a balanced and critical assessment of state-of-the-art technologies, major challenges, and the future outlook of proton and carbon ion therapy. It presents a thorough introduction for those new to the field while providing a helpful, up-to-date reference for readers already using the therapy in clinical settings.

100 Years of Radar

Springer This book offers fascinating insights into the key technical and scientific developments in the history of radar, from the first patent, taken out by Hülsmeyer in 1904, through to the present day. Landmark events are highlighted and fascinating insights provided into the exceptional people who made possible the progress in the field, including the scientists and technologists who worked independently and under strict secrecy in various countries across the world in the 1930s and the big businessmen who played an important role after World War II. The book encourages multiple levels of reading. The author is a leading radar researcher who is ideally placed to offer a technical/scientific perspective as well as a historical one. He has taken care to structure and write the book in such a way as to appeal to

both non-specialists and experts. The book is not sponsored by any company or body, either formally or informally, and is therefore entirely unbiased. The text is enriched by approximately three hundred images, most of which are original and have been accessed by detailed searches in the archives.

Distributed Cooperative Laboratories: Networking, Instrumentation, and Measurements

Springer Science & Business Media This book is devoted to the investigation of the main issues related to the sustainable realization of tele-laboratories, where real and virtual instrumentation can be shared and used in a collaborative environment. The book contains peer reviewed chapters and each presents a self-contained treatment within a framework providing an up-to-date picture of the state-of-the-art and of the most recent developments of this multi-faceted topic.

Information Science and Applications

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