Clinical 3D Dosimetry in Modern Radiation Therapy - Ben Mijnheer - 2017-10-31

This book provides a comprehensive overview of the current status of clinical 3D dosimetry in modern radiation therapy. It is intended as an essential guide for those involved in the design and implementation of new technology and its application in advanced radiation therapy, and will enable readers to select the most suitable equipment and methods for their application. Chapters include numerical data, examples, and case studies.

Radiotherapy and Brachytherapy - Yves Lemogne - 2009-08-14

This book offers a comprehensive overview of recent developments in brachytherapy and radiation therapy. It is intended as an essential guide for those involved in the design and implementation of new technology and its application in advanced radiation therapy, and will enable readers to select the most suitable equipment and methods for their application. Chapters include numerical data, examples, and case studies.

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Encyclopaedia of Medical Physics - Slavik Tabakov - 2021-07-19

This encyclopaedia is the first international attempt to provide an authoritative and evidence-based guide to the understanding and implementation of quality and safety procedures in radiation oncology. Alongside the rapid growth of technology and radiation therapy treatment options for cancer in recent years, quality and safety standards are not only of the utmost importance but best practices ensuring quality and safety are crucial aspects of modern radiation oncology training. Detailed exploration and review of these standards is a necessary part of radiation oncologist's professional competency, both in the clinical setting and at the table while preparing for board review and MOE exams. Each chapter is carefully selected to cover the spectrum of current knowledge and is written by recognized experts and key opinion leaders from around the world. The main topics covered are: treatment planning, patient care, practice management, outcomes of radiation oncology, etc. This unique, full-color reference offers a total team approach to radiation oncology treatment planning, incorporating the newest imaging techniques and offering a comprehensive approach to the scientific foundations of radiation oncology and general oncology as well as state-of-the-art techniques and modalities. It is divided into six broad sections: Section I: Physics of Brachytherapy Section II: Imaging for Brachytherapy Section III: Medical Physics Section IV: Practice Management Section V: Outcomes of Radiation Oncology Section VI: Cancer Control.
About ten years after the first edition comes this second edition of Monte Carlo Techniques in Radiation Therapy. In this update, the authors have significantly expanded on the basics of Monte Carlo simulation for radiation therapy, including the latest developments in the field. The book provides a comprehensive introduction to the principles of Monte Carlo simulation, its applications in radiation therapy, and the latest developments in the field.

Clinical 3D Dosimetry in Modern Radiation Therapy - Ben Nijmegen - 2017-10-03
This book provides a comprehensive summary of the basic principles, instrumentation, methods, and clinical applications of three-dimensional dosimetry in modern radiation therapy treatment. It presents an overview of the principles and techniques used in modern radiation therapy, with an emphasis on the development of improved radiation therapy treatments.

Biological and Medical Aspects of Electromagnetic Fields, Fourth Edition - Jacob Van Dyk - 2005
This book provides the reader with the scientific background necessary to understand the basic principles of the electromagnetic spectrum and how it interacts with living systems. The book emphasizes the principles of bioelectromagnetics and discusses the applications of this knowledge to modern medical technology.

Practical Radiotherapy: Introduction to Physics, Equipment and Techniques - Sun I. Kim - 2007-07-05
This book provides a comprehensive overview of the physics and equipment that is central to radiotherapy practice. It covers the fundamentals of radiation physics, including the nature and behavior of radiation, and describes the principles of radiation equipment and techniques.

This book provides a comprehensive overview of the principles, techniques, and instruments used in radiation therapy. It includes a detailed discussion of the physics of radiation, the principles of radiation therapy, and the tools and equipment used in radiation therapy.

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biophysics. This Work will be valuable to students working in all aspects of medical biophysics, including medical imaging and biomedical radiation science.

Achieving Quality in Brachytherapy - Faiz M. Khan - 2014-04-03

This publication is aimed at students and teachers involved in teaching programs in medical radiation physics, and it covers the basics of medical physics knowledge required in the form of a syllabus for modern radiation therapy. The information will be useful to those preparing for professional certification exams in radiation oncology, medical physics, dosimetry or radiation therapy.

Radiation Oncology Physics - International Atomic Energy Agency - 2005

This publication is aimed at students and teachers involved in teaching programs in medical radiation physics, and it covers the basics of medical physics knowledge required in the form of a syllabus for modern radiation therapy. The information will be useful to those preparing for professional certification exams in radiation oncology, medical physics, dosimetry or radiation therapy.

SHIELDING TECHNIQUES FOR RADIATION ONCOCY RU RADIATION THERAPY FACILITIES - MELISSA, MCGINLEY MARTIN (PATTON H.) - 2020

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The Physics of Radiation Therapy - Faiz M. Khan - 2014-04-03

This publication is aimed at students and teachers involved in teaching programs in medical radiation physics, and it covers the basics of medical physics knowledge required in the form of a syllabus for modern radiation therapy. The information will be useful to those preparing for professional certification exams in radiation oncology, medical physics, dosimetry or radiation therapy.

Brachytherapy: Principles and Practice - Phillip Devlin - 2006-01-01

This publication is aimed at students and teachers involved in teaching programs in medical radiation physics, and it covers the basics of medical physics knowledge required in the form of a syllabus for modern radiation therapy. The information will be useful to those preparing for professional certification exams in radiation oncology, medical physics, dosimetry or radiation therapy.

Primer on Radiation Oncology Physics - 2014-07-25

This publication is aimed at students and teachers involved in teaching programs in medical radiation physics, and it covers the basics of medical physics knowledge required in the form of a syllabus for modern radiation therapy. The information will be useful to those preparing for professional certification exams in radiation oncology, medical physics, dosimetry or radiation therapy.
rapid advances in nanotechnology have enabled the fabrication of nanoparticles from various materials with different shapes, sizes, and properties, and efforts are ongoing to exploit these materials for practical clinical applications. Nanotechnology is particularly relevant in the field of oncology, as the leaky and chaotic vasculature of tumors—a hallmark of unrestrained growth—results in the passive accumulation of nanoparticles within tumors. Cancer Nanotechnology: Principles and Applications in Radiation Oncology is a compilation of research in the arena of nanoparticles and radiation oncology, which lies at the intersection of disciplines as diverse as clinical radiation oncology, radiation physics and biology, nanotechnology, materials science, and biomedical engineering. The book provides a comprehensive, cross-disciplinary survey of basic principles, research techniques, and outcomes with the goals of eventual clinical translation. Coverage includes a general introduction to fabrication, preferential tumor targeting, and imaging of nanoparticles The specific applications of nanomaterials in the realms of radiation therapy, hyperthermia, thermal therapy, and normal tissue protection from radiation exposure Outlines for future research and clinical translation including regulatory issues for ultimate use of nanomaterials in humans Reflecting profound advances in the application of nanotechnology to radiation oncology, this comprehensive volume demonstrates how the unique physicochemical properties of nanoparticles lead to novel strategies for cancer treatment and detection. Along with various computational and experimental techniques, each chapter highlights the most promising approaches to the use of nanoparticles for radiation response modulation.

Cancer Nanotechnology - Sang Hyun Cho - 2016-04-19

Rapid advances in nanotechnology have enabled the fabrication of nanoparticles from various materials with different shapes, sizes, and properties, and efforts are ongoing to exploit these materials for practical clinical applications. Nanotechnology is particularly relevant in the field of oncology, as the leaky and chaotic vasculature of tumors—a hallmark of unrestrained growth—results in the passive accumulation of nanoparticles within tumors. Cancer Nanotechnology: Principles and Applications in Radiation Oncology is a compilation of research in the arena of nanoparticles and radiation oncology, which lies at the intersection of disciplines as diverse as clinical radiation oncology, radiation physics and biology, nanotechnology, materials science, and biomedical engineering. The book provides a comprehensive, cross-disciplinary survey of basic principles, research techniques, and outcomes with the goals of eventual clinical translation. Coverage includes a general introduction to fabrication, preferential tumor targeting, and imaging of nanoparticles The specific applications of nanomaterials in the realms of radiation therapy, hyperthermia, thermal therapy, and normal tissue protection from radiation exposure Outlines for future research and clinical translation including regulatory issues for ultimate use of nanomaterials in humans Reflecting profound advances in the application of nanotechnology to radiation oncology, this comprehensive volume demonstrates how the unique physicochemical properties of nanoparticles lead to novel strategies for cancer treatment and detection. Along with various computational and experimental techniques, each chapter highlights the most promising approaches to the use of nanoparticles for radiation response modulation.

World Congress on Medical Physics and Biomedical Engineering September 7 - 12, 2009 Munich, Germany - Olf Dössel - 2010-01-01

Present Your Research to the World! The World Congress 2009 on Medical Physics and Biomedical Engineering - the triennial scientific meeting of the IUPESM - is the world's leading forum for presenting the results of current scientific work in health-related physics and technologies to an international audience. With more than 2,800 presentations it will be the biggest conference in the fields of Medical Physics and Biomedical Engineering in 2009: Medical physics, biomedical engineering and bioengineering have been driving forces of innovation and progress in medicine and healthcare over the past two decades. As new key technologies arise with significant potential to open new options in diagnostics and therapeutics, it is a multidisciplinary task to evaluate their benefit for medicine and healthcare with respect to the quality of performance and therapeutic output. Covering key aspects such as information and communication technologies, micro- and nanosystems, optics and biotechnology, the congress will serve as an inter- and multidisciplinary platform that brings together people from basic research, R&D, industry and medical application to discuss these issues. As a major event for science, medicine and technology the congress provides a comprehensive overview and in-depth, first-hand information on new developments, advanced technologies and current and future applications. With this Final Program we would like to give you an overview of the dimension of the congress and invite you to join us in Munich! Olf Dössel Congress President Wolfgang C.

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