Physics of Diagnostic Imaging, The

Covers all technical aspects of diagnostic radiology, and remains an ideal companion during examination preparation and beyond

Over recent years there has been a vast expansion in the variety of imaging techniques available, and developments in machine specifications continue apace. If radiologists and radiographers are to obtain optimal image quality while minimizing exposure times, a good understanding of the fundamentals of the radiological science underpinning diagnostic imaging is essential.

Incorporating European and American perspectives on technology, guidelines and regulation, this second edition includes a review of basic science aspects of imaging, followed by a detailed explanation of radiological sciences, conventional x-ray image formation and other imaging techniques. The enormous technical advances in computed tomography, including multislice acquisition and 3D image reconstruction, digital imaging in the form of image plate and direct radiography, magnetic resonance imaging, colour flow imaging in ultrasound and positron radiopharmaceuticals in nuclear medicine, are all considered here. A chapter devoted to computers in radiology considers advances in radiology information systems. The text concludes with a series of general topics relating to diagnostic imaging. The content has been updated and revised throughout to ensure it remains in line with the Fellowship of the Royal College of Radiologists (FRCR) examination, while European and American perspectives on technology, guidelines and regulations ensure international relevance.