Book review

Physics for diagnostic radiology. 3rd edition. Dendy PP, Heaton B (editors). London: CRC Press; 2011. 720 pp. £49.99

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This is the third edition of a well-established textbook on the physics of medical imaging which was first published in 1987. Over the intervening years, the textbook has been revised to keep up with the developments in imaging technology. In this third edition there has been a major revision which includes new material on digital detectors and the differences between analogue and digital imaging. The chapter on CT has been updated to include recent developments such as multislice CT, three-dimensional resolution, the application of dual energy CT scanning and cone beam CT. The chapters on radiographical imaging have been extended to include, among other topics, subtraction techniques and interventional radiology. Nuclear medicine benefits from a new chapter on positron emission tomography (PET) including multimodal imaging (e.g. PET/CT). The impact of European legislation and new developments in radiation protection have been included as well as an extended treatment of radiation doses and risks. Finally, there is a new chapter on the handling of digital image data in radiology departments which includes picture archiving and communication systems, teleradiology, computer networks and the archiving/storage of digital images.

Readers of the previous editions of this book will recognise that the layout of the educational material has

been updated. In particular, there is a summary at the beginning of each chapter to indicate the key learning points. There are also additional notes in the form of insight sections which cover the more technical points of the subject. Another change is that the number of contributors to the textbook has increased.

The main reason why this textbook has been so popular over the years is that the science and technology of diagnostic imaging has always been described in a manner which the typical trainee radiologist, radiographer or medical physicist could easily understand. This edition remains true to that ethos. For example, the chapter on digital image storage and handling by Geoff Cusick covers difficult-to-understand techniques such as sampling and aliasing. The figures illustrating bit depth complement the text and bring the subject alive. The other new sections are also written in the same style.

In summary, this is the third edition of a textbook on the science and technology of diagnostic radiology, which has served numerous trainee radiologists, radiographers and medical physicists well over the years. It is written in a clear and concise style and covers the basic subject of physics in diagnostic radiology and the recent technological advances. It is recognised by the International Organisation for Medical Physics as part of an official book series. The textbook can be recommended to trainee medical physicists, radiographers and radiologists.

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