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Diagnostic Ultrasound: Physics and Equipment, 3rd edition - Book Review

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The publication of the first edition in 2002, followed by the second edition in 2009, of this book has been a resounding success. These books enhanced the ultrasound market by providing a detailed, succinct and applicable account of the physics and technology underpinning diagnostic ultrasound. Both books have become the standard introductory text for academics, clinicians, students and trainees throughout the world.

After nearly a decade, the need for a text to stretch the mind and imagination of medical and non-medical ultrasound practitioners (undergraduate and postgraduate students; and academics and clinicians), in the fundamental principles and 'technological advances', remains. This third edition fits the brief admirably and is also available as an e-book. It allows the reader to gain a deep and broad understanding of the physics and technological perspectives. This is probably best represented by the addition of a new chapter on advanced techniques for imaging flow, which incorporates and expands upon the previous section on tissue Doppler.

All chapters have been re-visited and updated successfully, either through the addition of new figures or updating the bibliography. As before, all chapters include clear subheadings; ultrasound images of diagnostic quality, in grey-scale and colour; schematic diagrams; appropriate equations and a comprehensive bibliography. The editors have written with clarity and brevity on topics such as 'developments in

transducer technology' and 'recent developments in beam forming of array probes'. While the chapters on 3D ultrasound, contrast agents and elastography now describe the state of the art technology for clinical practice and the future potential for these modalities. A valuable learning aid is all chapters include questions and the model answers are provided at the end of the book. The appendices provide useful material on general topics integral to the field of ultrasound such as the decibel, the binary system, along with updated British Medical Ultrasound Society (BMUS) scanning guidelines. Multimedia elements might benefit from supplementary online materials particularly in the form of videos to capture the fourth dimension of ultrasound imaging: time.

This excellent textbook serves as a reference volume, which fulfils a major role in the diagnostic ultrasound field. This book is an important contribution to the education and instruction of any ultrasound practitioner. Continuing education is necessary given the type of professions and disciplines who will use this textbook, for the next ten years and beyond. We recommend you use this source in your educational programs.