

Book Review



The Physics and Technology of Diagnostic Ultrasound: A Practitioner's Guide

Dr Robert Gill

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Reviewer: Prof Robert Gibson

The intent of this book is to help medical professionals gain an understanding of the physical and technical principles of diagnostic ultrasound. It has been written in such a way that it can be used either in self-study mode or as a resource within a formal university or professional program.

The book fulfils its aim in a simply outstanding way. The usual topics that are covered in other texts on this subject are described with the same clarity that has led the author to be one of the most valued teachers of ultrasound technology in Australia for a long period. Concepts are developed in a logical sequence with sufficient technical detail to allow understanding without overwhelming the reader with physics or equations. The text is rich in analogous descriptions to aid understanding and

similarly it is supplemented with numerous clear diagrams. Ultrasound images are used well to illustrate key ideas.

The chapters cover ultrasound tissue interaction, pulsed ultrasound and imaging, transducers, ultrasound instrumentation, image artifacts, Doppler ultrasound, Doppler artifacts, haemodynamic concepts, equipment performance, bioeffects and safety, and a final chapter on some of the more recent ultrasound modes and capabilities.

At the end of each chapter there is usually a summary, suggested activities or self-study exercise (with answers at the end of the book).

It is intended to be most relevant to general ultrasound practice and, as the author points out, practitioners in specialised areas such as echocardiography would need supplementary resources.

It is published in both print and electronic versions, which is appealing, and the pricing is very reasonable.

This book succeeds because the author is able to marry his sophisticated knowledge of ultrasound technology with simplicity and clarity of explanation. This is a highly recommended text for those learning ultrasound and would also be a valuable means of revisiting concepts for those who are more experienced. It is probably the best text of its type that I have seen.

Prof Rob Gibson is Consultant Radiologist in charge of ultrasound at the Royal Melbourne Hospital. Among his interests are undergraduate and postgraduate medical education. He has been chairman of ASUM's Education Board and was foundation editor of its journal.