

● *Book Review*

DIAGNOSTIC ULTRASOUND IMAGING: INSIDE OUT (SECOND EDITION)

Thomas L. Szabo. Academic Press, Kidlington, Oxford, UK, 2014. 832 pages. ISBN number 978 012 396487 8.

In 2014, ten years after publishing the first edition of this book, Dr. Thomas L. Szabo has updated the text and produced this second edition. The printed version is approximately one-third thicker and comes with a new cover image; there is also an e-book version available. A lot of different items in ultrasound imaging are explained, starting with an introduction of imaging modalities, basic ultrasound wave propagation and interactions aspects with materials, as well as technological aspects as transducer models and various beam forming methods or clinical applications for ultrasound imaging and therapy.

The MATLAB-files (query) from the first edition are still available to download. These files complement the explanations in the text and are useful for practical lessons in underpinning the theory with examples of various beam-plots, Fourier transforms or for deepening the self-study.

In this second edition, most chapters were revised and topics that have been published or introduced into clinical practice within the last decade were added. To comply with the technological developments in this field, two new chapters were introduced. The first one covers modern therapeutic applications, *e.g.*, sonothrombolysis, transcranial or cosmetic ultrasound, while the second covers the topic of elastographic methods like acoustic radiation force impulse, strain or shear Imaging.

The main strength of this book is its inclusion of an introduction and state-of-the-art review of physics and

signal processing techniques used in ultrasound imaging and therapy in a single volume. The same topics can be found in different chapters as well, but including an explanation from another point of view that helps to clarify the complexity involved and understanding of the topics.

Unfortunately, this new printed edition is available with black-and-white images only, while in the digital e-book, colored images are available. This is a disadvantage, as images like modern Doppler images or velocity scales are less useful to the reader when printed in black-and-white. However, the publishers have recognized this drawback and have made full-color images available for download from the book's website.

The book is now 17 chapters long and, for both physicists and physicians, is a rich source of information regarding basic physics and signal processing methods, covering a broad range of topics in medical ultrasound. It is an essential book to have on your tablet or bookshelf.

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