Basics of Biomedical Ultrasound for Engineers

Haim Azhari
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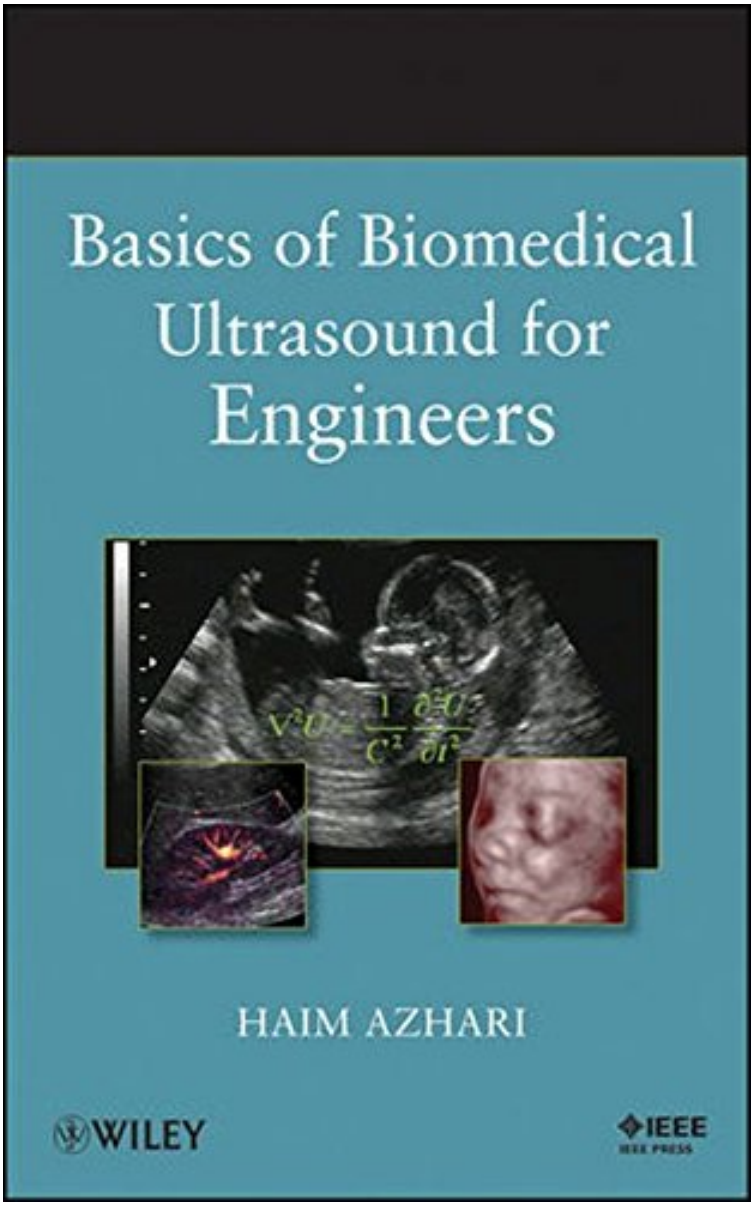

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Haim Azhari : Basics of Biomedical Ultrasound for Engineers before purchasing it in order to gage whether or not it would be worth my time, and all praised Basics of Biomedical Ultrasound for Engineers:

2 of 2 people found the following review helpful. A highschool textbook for people that want to create an appearance of being informed.By sshzp4Generally books that have titles like 'for Engineers' or 'for Scientists' are heavier on the implementation details that books without.This book is exactly the opposite. Azhari's text is a very, very loose

collection of undergraduate 101 level notes (if that) on topics that have little to do with actual diagnostic imaging or hardware engineering or even system design. I would literally describe it as a highschool textbook. The textbook contains 15 different ways to think about wave equations across multiple chapters and does not get into transmission line models/ABCD matrix descriptions at all. In the chapter on transducers for example, it finishes the description by describing the matching layer, the crystal layer and the rear acoustic block - As a practicing engineer, let me tell you that NO. That's not how scan heads are made, in fact they were never made that way.My primary reference text is Szabo's book. But that book leans way too heavily into really, really old research making it somewhat difficult/unwieldy to read. I thought it had poor engineering details - but this book really makes Szabo's book look like a spec/tech manual. Szabo has more details by a factor of 1000 over this text, I would definitely recommend that text over this even though it has a confusing presentation of material that doesn't typically get used.I am still waiting to receive my Cobbold text, and I hope that turns out better than this.0 of 0 people found the following review helpful. Perfect book for students.By Raja Sekhar BandaruPerfect book for beginners or bachelor students. I liked the flow of content in the book in a very smooth way.

A practical learning tool for building a solid understanding of biomedical ultrasound Basics of Biomedical Ultrasound for Engineers is a structured textbook that leads the novice through the field in a clear, step-by-step manner. Based on twenty years of teaching experience, it begins with the most basic definitions of waves, proceeds to ultrasound in fluids and solids, explains the principles of wave attenuation and reflection, then introduces to the reader the principles of focusing devices, ultrasonic transducers, and acoustic fields, and then delves into integrative applications of ultrasound in conventional and advanced medical imaging techniques (including Doppler imaging) and therapeutic ultrasound. Demonstrative medical applications are interleaved within the text and exemplary questions with solutions are provided on every chapter. Readers will come away with the basic toolkit of knowledge they need to successfully use ultrasound in biomedicine and conduct research. Encompasses a wide range of topics within biomedical ultrasound, from attenuation and eflection of waves to the intricacies of focusing devices, transducers, acoustic fields, modern medical imaging techniques, and therapeutics Explains the most common applications of biomedical ultrasound from an engineering point of view Provides need-to-know information in the form of physical and mathematical principles directed at concrete applications Fills in holes in knowledge caused by ever-increasing new applications of ultrasonic imaging and therapy Basics of Biomedical Ultrasound for Engineers is designed for undergraduate and graduate engineering students; academic/research engineers unfamiliar with ultrasound; and physicians and researchers in biomedical disciplines who need an introduction to the field. This book is meant to be my first book on biomedical ultrasound for anyone who is interested in the field.

About the AuthorHAIM AZHARI, DSc, conducts research in medical imaging, including the application of ultrasound and MRI in medical imaging, image tomographic reconstruction, image processing, and information extraction from medical images. Professor Azhari received his doctorate in biomedical engineering from the TechnionIsrael Institute of Technology in 1987. From 1987 to 1990, he was on the staff of the Technion Department of Biomedical Engineering in a postdoctoral position. Azhari then received a double appointment as an International Research Fellow in both the Department of Radiology and the Division of Cardiology at the Johns Hopkins School of Medicine in Baltimore, Maryland. Upon his return to Israel in 1992, he joined the Department of Biomedical Engineering at the Technion-IIT as a staff member, where he is currently an associate professor. From 1999-2000, Azhari was at Harvard Medical School in the Beth-Israel Radiology Department.