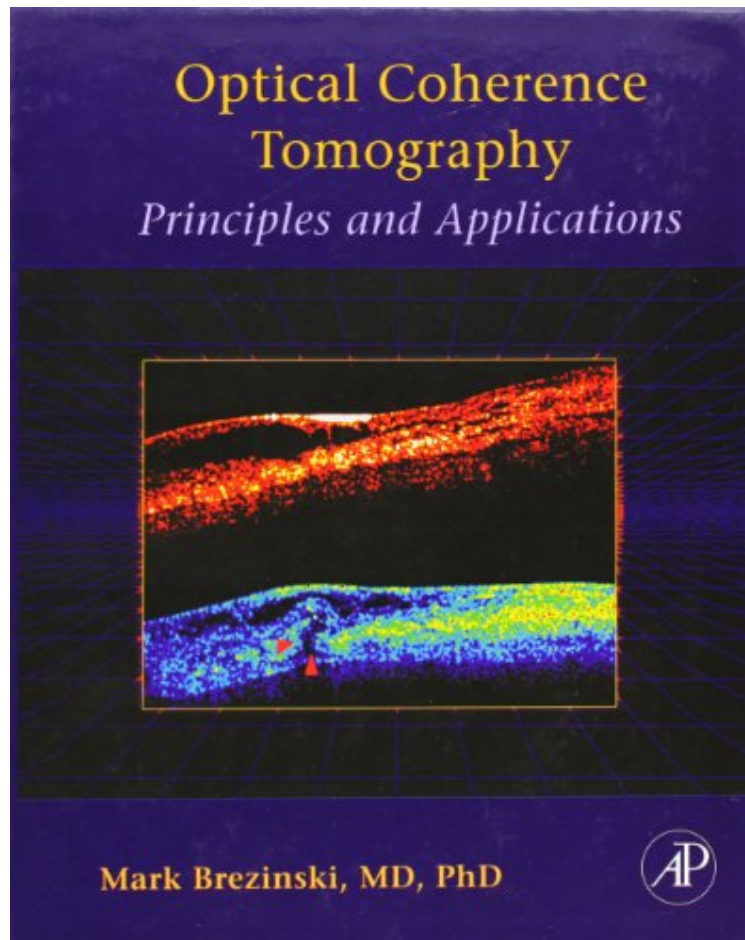


(Download) Optical Coherence Tomography: Principles and Applications

Optical Coherence Tomography: Principles and Applications

Mark E. Brezinski

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#2041931 in Books 2006-09-08 Format: Illustrated Original language: English PDF # 1 9.56 x 1.26 x 7.60l, 3.24 #File Name: 0121335704480 pages | File size: 30.Mb

Mark E. Brezinski : Optical Coherence Tomography: Principles and Applications before purchasing it in order to gage whether or not it would be worth my time, and all praised Optical Coherence Tomography: Principles and Applications:

3 of 3 people found the following review helpful. Still THE text on OCT By Seasoned Scientist This has been since it was introduced and continues to be THE text on OCT. The author is a pioneer in the physics, engineering, experimentation, and commercialization of OCT in addition to having been a practicing physician. It shows in the content. The book really has four sections which are each books in and of themselves. The first section is the basic physics and mathematics concepts, for those who want a better feel for OCT technical literature. The second section is technical, primarily OCT for those with a background in engineering and physics. However, by reading the introductory and concluding paragraphs of each subsection, the central points are clear for the non-physical scientists and clinician. The first addition was written at a time when OCT was approximately 15 year old, so since it's publication no major paradigm shifts in the technology occur. While the book emphasize slightly more time domain

over spectral domain in chapter 5, it does deal with both and is the only book seriously addressing the limitations of the spectral domain techniques, so often ignored in the literature. The third section is on how to do basic and clinical studies, as well as potentially completing technologies. It is, in my opinion, extremely useful for those entering these research areas. The final section deals with the different clinical areas of OCT application, discussed in detail. It begins with the pathophysiology of each disease, then how OCT proves to be a utility, and finally studies which need to be done. As a frequent grant reviewer, it is routine to see quotes and references to this text in applications. It's funny the two negative reviews on this book were trainee's, whose other reviews included swim goggles and a fitness ball respectively. 0 of 0 people found the following review helpful. An excellent resource for anyone interested in a deeper understanding of OCT. By J. Barton. OCT: Principles and Applications is a cohesive text written by an investigator who understands the field from Maxwell's equations to clinical practice. Readers with a solid electromagnetics background will appreciate the detailed derivations and thorough coverage of OCT theory in Section II, including speckle, noise, common and uncommon variants of OCT, and practical instrument considerations. A comprehensive but brief introduction to basic mathematics and electromagnetics is given in Section I, which serves as a good review for those rusty on basic principles. Readers without a technical background may have difficulty with the equations in Section I and II, fortunately enough descriptive text is provided to enable anyone to follow the substance of derivations. Section III provides valuable information to engineers and physicians alike regarding the advantages and limitations of OCT for a variety of important applications. Typographical errors are a minor distraction. Overall this is an excellent first text for anyone wishing to delve beyond a superficial understanding of OCT, and a strong compliment to other available books on clinical applications and instrumentation developments in OCT. 1 of 1 people found the following review helpful. This is the bible reference in the field of OCT. By OCT researcher. This is a tour de force by a pioneer in the field. The book has several features which make it an outstanding work, not the least of which is that almost all chapters are written by a single author. First, the book reviews applications and potential applications in great detail, allowing investigators in these areas to have a better appreciation of advantages and limitations. Second, chapters 12 and 14 focus on how to effectively perform hypothesis driven basic and clinical studies, ideal for those with a limited background in biomedical experimentation. Third, OCT theory is derived in considerable detail, illuminating assumptions and limitations of equations frequently used in the literature. This is particularly true of chapters 5, 7, and 8. Finally, basic underlying physics is introduced in early chapters for those new to the field. In summary, this represents an outstanding text covering essentially all major areas of OCT research and will likely be one of the most utilized works in the field for many years to come.

Optical Coherence Tomography gives a broad treatment of the subject which will include 1) the optics, science, and physics needed to understand the technology 2) a description of applications with a critical look at how the technology will successfully address actual clinical need, and 3) a discussion of delivery of OCT to the patient, FDA approval and comparisons with available competing technologies. The required mathematical rigor will be present where needed but be presented in such a way that it will not prevent non-scientists and non-engineers from gaining a basic understanding of OCT and the applications as well as the issues of bringing the technology to the market. Optical Coherence Tomography is a new medical high-resolution imaging technology which offers distinct advantages over current medical imaging technologies and is attracting a large number of researchers. Provides non-scientists and non-engineers basic understanding of Optical Coherence Tomography applications and issues.

About the Author By Dr. Mark E. Brezinski