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Book review

Tissue Optics: Light Scattering Methods and Instruments for Medical Diagnostics, V. Tuchin. 2nd ed. SPIE Press, Bellingham, WA (2007) Hardbound, ISBN 0-8194-6433-3, xl+841pp

Although being allegedly a second edition of the volume published by the SPIE Press in 2000, this book can be safely said to be new in terms of both much larger size and much more comprehensive and systematic coverage. The main objective of the book is to summarize the entire area of tissue optics: theory, measurement techniques, analysis techniques, and medical diagnostics applications, with a special (and highly appreciated) emphasis on the electromagnetic (vector) nature of light. This objective is accomplished, albeit in a particular way.

Indeed, the book can hardly be recommended as an undergraduate or a graduate textbook since some basic material is assumed to be known to the reader and is largely skipped. This is especially true of the fundamentals of electromagnetics and electromagnetic scattering, both single and multiple. In this respect "Tissue Optics" cannot replace classical treatises on the subject of light scattering by particles and particulate media such as the renowned books by van de Hulst, Chandrasekhar, and Ishimaru as well as several more recent and more specialized textbooks.

However, the new book by Tuchin is truly unique in terms of its coverage. In this respect it is an ideal supplement to various undergraduate and graduate courses. Especially useful are the two detailed and substantial glossaries (the first one is on physics, statistics and engineering; the second one is on medicine, biology, and chemistry), the nomenclature section, the list of acronyms, and the 1283-entry reference list.

Besides this unquestionably worthy role, "Tissue Optics" is an everyday must for all postdoctoral fellows, researchers, and medical practitioners dealing with some or all of the aspects of light scattering by tissues. This handbook belongs on the scientist's office table rather than on a library bookshelf.

In summary, the title of the book is provocatively ambitious, yet the result is a valuable and comprehensive encyclopedia of the subject of tissue optics written on a high professional level. The book is nicely printed using the 11 pt font much appreciated by the aging eyes of this reviewer. This inexpensive book has a durable, sturdy binding and is a great bargain for its size, coverage, and scientific quality.

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