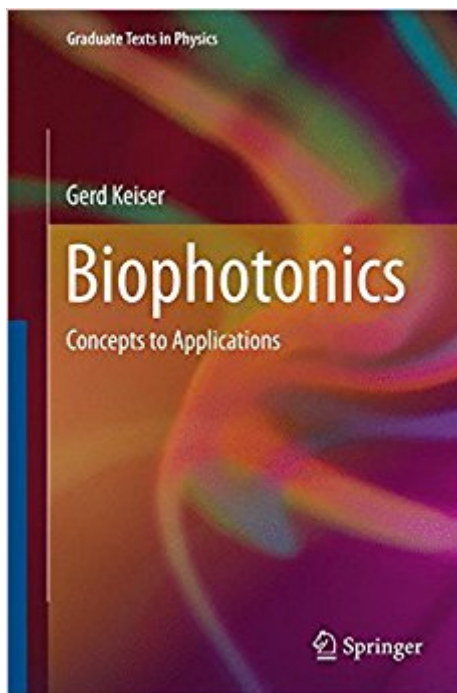




Ebook Directory
the best source of ebook

The book was found

Biophotonics: Concepts To Applications (Graduate Texts In Physics)



Synopsis

This book introduces senior-level and postgraduate students to the principles and applications of biophotonics. It also serves as a valuable reference resource or as a short-course textbook for practicing physicians, clinicians, biomedical researchers, healthcare professionals, and biomedical engineers and technicians dealing with the design, development, and application of photonics components and instrumentation to biophotonics issues. The topics include the fundamentals of optics and photonics, the optical properties of biological tissues, light-tissue interactions, microscopy for visualizing tissue components, spectroscopy for optically analyzing the properties of tissue, and optical biomedical imaging. It also describes tools and techniques such as laser and LED optical sources, photodetectors, optical fibers, bioluminescent probes for labeling cells, optical-based biosensors, surface plasmon resonance, and lab-on-a-chip technologies. Among the applications are optical coherence tomography (OCT), optical imaging modalities, photodynamic therapy (PDT), photobiostimulation or low-level light therapy (LLLT), diverse microscopic and spectroscopic techniques, tissue characterization, laser tissue ablation, optical trapping, and optogenetics. Worked examples further explain the material and how it can be applied to practical designs, and the homework problems help test readers' understanding of the text.

Book Information

Series: Graduate Texts in Physics

Hardcover: 345 pages

Publisher: Springer; 1st ed. 2016 edition (July 21, 2016)

Language: English

ISBN-10: 9811009430

ISBN-13: 978-9811009433

Product Dimensions: 6.1 x 0.9 x 9.2 inches

Shipping Weight: 12.8 ounces (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #410,589 in Books (See Top 100 in Books) #5 in Books > Science & Math > Biological Sciences > Bioelectricity #48 in Books > Science & Math > Physics > Light #81 in Books > Science & Math > Biological Sciences > Biophysics

Customer Reviews

This book is designed to introduce senior-level and postgraduate students to the principles and applications of biophotonics. It also will serve well as a working reference to practicing physicians,

clinicians, biomedical researchers, and biomedical engineers dealing with photonics-based tools and instruments. The book topics include the fundamentals of optics and photonics, the optical properties of biological tissues, various types of light-tissue interactions, microscopy for visualizing tissue components, spectroscopy for optically analyzing the properties of healthy and diseased tissue, and optical biomedical imaging. The tools and techniques described in the book include laser and LED optical sources, photodetectors, optical fibers, bioluminescent probes for labeling cells, optical-based biosensors, nanophotonics, surface plasmon resonance, and lab-on-a-chip technologies. Among the applications are optical coherence tomography (OCT), flow cytometry, photodynamic therapy (PDT), low-level light therapy (LLLT), tissue characterization, and laser ablation. To assist readers in learning the material and applying it to practical designs, the book will include worked out examples and drill problems throughout. A collection of homework problems is included to help test the reader's comprehension of the material covered, and to extend and elucidate the text. This book introduces senior-level and postgraduate students to the principles and applications of biophotonics. It also serves as a valuable reference resource or as a short-course textbook for practicing physicians, clinicians, biomedical researchers, healthcare professionals, and biomedical engineers and technicians dealing with the design, development, and application of photonics components and instrumentation to biophotonics issues. The topics include the fundamentals of optics and photonics, the optical properties of biological tissues, light-tissue interactions, microscopy for visualizing tissue components, spectroscopy for optically analyzing the properties of tissue, and optical biomedical imaging. It also describes tools and techniques such as laser and LED optical sources, photodetectors, optical fibers, bioluminescent probes for labeling cells, optical-based biosensors, surface plasmon resonance, and lab-on-a-chip technologies. Among the applications are optical coherence tomography (OCT), optical imaging modalities, photodynamic therapy (PDT), photobiostimulation or low-level light therapy (LLLT), diverse microscopic and spectroscopic techniques, tissue characterization, laser tissue ablation, optical trapping, and optogenetics. Worked examples further explain the material and how it can be applied to practical designs, and the homework problems help test readers' understanding of the text.

After obtaining his doctorate in physics from Northeastern University, Dr. Gerd Keiser worked in the telecommunications industry at Honeywell, GTE, General Dynamics, and PhotonicsComm Solutions, where his work involved research and application of optical networking technology and digital switch implementations for telecom systems. While he was at GTE, he was the recipient of

the prestigious Leslie Warner Award from GTE for ATM switch development. During this time he also was an Adjunct Professor of electrical engineering at Northeastern University, Tufts University, and Boston University. Since 2007, he has been with the National Taiwan University of Science and Technology in Taipei, Taiwan. He is a Fellow of the IEEE, a member of OSA and SPIE, and an Associate Editor of the journal Optical Fiber Technology. He has given numerous invited talks, papers, short courses, and keynote speeches at international conferences. In addition, he is the author of four graduate-level books: Optical Fiber Communications, Local Area Networks, Optical Communication Essentials, and FTTX Concepts and Applications. His professional experience and research interests are in the general areas of optical networking technology and biophotonics.

[Download to continue reading...](#)

Biophotonics: Concepts to Applications (Graduate Texts in Physics) Optofluidics: Fundamentals, Devices, and Applications (McGraw-Hill Biophotonics) Particles and Nuclei: An Introduction to the Physical Concepts (Graduate Texts in Physics) Time-Dependent Density-Functional Theory: Concepts and Applications (Oxford Graduate Texts) Particle Accelerator Physics (Graduate Texts in Physics) Atoms, Molecules and Optical Physics 2: Molecules and Photons - Spectroscopy and Collisions (Graduate Texts in Physics) Atoms, Molecules and Optical Physics 1: Atoms and Spectroscopy (Graduate Texts in Physics) Physics of Atoms and Ions (Graduate Texts in Contemporary Physics) Intermediate Algebra: Concepts & Applications (9th Edition) (Bittinger Concepts & Applications) Transmission Electron Microscopy and Diffractometry of Materials (Graduate Texts in Physics) Laser Cooling and Trapping (Graduate Texts in Contemporary Physics) Conformal Field Theory (Graduate Texts in Contemporary Physics) Geometry, Particles, and Fields (Graduate Texts in Contemporary Physics) Many-Body Quantum Theory in Condensed Matter Physics: An Introduction (Oxford Graduate Texts) Modern Geometry – Methods and Applications: Part I: The Geometry of Surfaces, Transformation Groups, and Fields (Graduate Texts in Mathematics) (Pt. 1) Matrices: Theory and Applications (Graduate Texts in Mathematics) Books of Breathing and Related Texts -Late Egyptian Religious Texts in the British Museum Vol.1 (Catalogue of the Books of the Dead and Other Religious Texts in the British Museum) Geometry, Topology and Physics, Second Edition (Graduate Student Series in Physics) Gauge Theories in Particle Physics, Second Edition (Graduate Student Series in Physics) Graduate Admissions Essays, Fourth Edition: Write Your Way into the Graduate School of Your Choice

[Contact Us](#)

[DMCA](#)

Privacy

FAQ & Help