



## Biophotonics: Spectroscopy, Imaging, Sensing, and Manipulation (Paperback)

By -

Springer, Netherlands, 2011. Paperback. Condition: New. Language: English . Brand New Book. This volume describes an impressive array of the current photonic-related technologies being used in the investigation of biological systems. The topics include various types of microscopy (fluorescence correlation microscopy, two-photon microscopy), sensitive detection of biological molecules, nano-surgery techniques, fluorescence resonance energy transfer, nano-plasmonics, terahertz spectroscopy, and photosynthetic energy conversion. The emphasis is on the physical principles behind each technique, and on examining the advantages and limitations of each. The book begins with an overview by Paras Prasad, a leader in the field of biophotonics, of several important optical techniques currently used for studying biological systems. In the subsequent chapters these techniques are discussed in depth, providing the reader with a detailed understanding of the basic physical principles at work. An excellent treatment of terahertz spectroscopy demonstrates how photonics is being extended beyond the visible region. Recent results in the use of femtosecond lasers as a tool to porate cell walls demonstrate that the manipulation of light can be used as a tool for the study and the treatment of biological systems. The field of Bio-photonics is broad and still growing, so cannot be covered comprehensively in one volume. But...



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