

1. Record Nr.	UNINA9910484835203321
Titolo	Handbook of photonics for biomedical engineering // Aaron Ho-Pui Ho, Donghyun Kim, Michael G. Somekh, editors
Pubbl/distr/stampa	Dordrecht, Netherlands : , : Springer, , 2017
ISBN	94-007-5052-8
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (491 illus., 395 illus. in color. eReference.)
Disciplina	621.36
Soggetti	Photonics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	3D optical trapping studies of motor proteins -- Adaptive optics for aberration correction in optical microscopy -- Advances in super-resolution microscopy -- Application of diffuse optical spectroscopies on therapy monitoring by blood flow and oxygenation quantification -- Application of ultrashort-pulsed lasers for optical manipulation of biological functions -- Applications of Imaging to Drug Development in the Pharmaceutical Industry -- Cadmium-free quantum dots for biophotonic imaging and sensing -- Development of extraordinary optical transmission based techniques for biomedical applications -- Exploiting complex media for biomedical applications -- Fiber optical tweezers for manipulation and sensing of bioparticles -- Fluorescence lifetime imaging -- Functional metal nanocrystals for biomedical applications -- High resolution optical microscopy for biological applications -- Highly sensitive sensing with high-Q whispering gallery microcavities -- In-vivo flow cytometry using near-infrared confocal microscopy -- Lab-on-a-chip device and system for point-of-care applications -- Laser Micromachining of Highly Functionalized Microcantilever Sensor Arrays -- Localized surface plasmon microanalysis -- Micro-Optical Sectioning Tomography -- Multifunctional Photoacoustic Tomography -- Multimodal multiphoton imaging and Raman spectral assessment of chronic liver diseases -- New approaches for high speed in-vitro cardiac imaging -- Nonlinear multi-modal optical imaging -- Optical and Optoacoustic Imaging in the Diffusive Regime -- Optical manipulation and sensing in a

microfluidic device -- Optical Tweezers-Based Microrheology of Soft Materials and Living Cells -- Optical vortices for biophotonics -- Optofluidic Biosensors -- Phase-Sensitive Optical Coherence Tomography -- Photodynamic therapy -- Photonic crystal fiber based biosensors -- Probing different biological length scales using photoacoustics: from 1-1000 MHz -- Rapid three dimensional imaging of living cells -- Retinal imaging -- SERS for Biosensing Applications -- SPR biosensors -- Surface plasmon enhanced super-localization microscopy -- Surface plasmon enhanced TIRF or full field imaging with supercritical angle fluorescence.

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### Sommario/riassunto

Nanophotonics has emerged rapidly into technological mainstream with the advent and maturity of nanotechnology available in photonics and enabled many new exciting applications in the area of biomedical science and engineering that were unimagined even a few years ago with conventional photonic engineering techniques. Handbook of Nanophotonics in Biomedical Engineering is intended to be a reliable resource to a wealth of information on nanophotonics that can inspire readers by detailing emerging and established possibilities of nanophotonics in biomedical science and engineering applications. This comprehensive reference presents not only the basics of nanophotonics but also explores recent experimental and clinical methods used in biomedical and bioengineering research. Each peer-reviewed chapter of this book discusses fundamental aspects and materials/fabrication issues of nanophotonics, as well as applications in interfaces, cell, tissue, animal studies, and clinical engineering. The organization provides quick access to current issues and trends of nanophotonic applications in biomedical engineering. All students and professionals in applied sciences, materials, biomedical engineering, and medical and healthcare industry will find this essential reference book highly useful.

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