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Titolo	Fluorescence lifetime spectroscopy and imaging : principles and applications in biomedical diagnostics / / edited by Laura Marcu, Paul M.W. French, Daniel S. Elson
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Descrizione fisica	1 online resource (554 p.)
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Soggetti	Diagnosis, Fluoroscopic Fluorescence spectroscopy
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; Contents; Preface; Editors; Contributors; Chapter 1: Overview of fluorescence lifetime imaging and metrology; Chapter 2: Photophysics of fluorescence; Chapter 3: Tissue fluorophores and their spectroscopic characteristics; Chapter 4: Pulse sampling technique; Chapter 5: Single-point probes for lifetime spectroscopy: Time-correlated single-photon counting technique; Chapter 6: Optical instrumentation design for fluorescence lifetime spectroscopy and imaging; Chapter 7: Fluorescence lifetime imaging techniques: Frequency-domain FLIM Chapter 8: Fluorescence lifetime imaging techniques: Time-gated fluorescence lifetime imagingChapter 9: Fluorescence lifetime imaging techniques: Time-correlated single-photon counting; Chapter 10: The phasor approach to fluorescence lifetime imaging: Exploiting phasor linear properties; Chapter 11: Analysis of time-domain fluorescence measurements using least-squares deconvolution; Chapter 12: Global analysis of FLIM-FRET data; Chapter 13: Fluorescence lifetime imaging in turbid media; Chapter 14: Oncology applications: Optical diagnostics of cancer; Chapter 15: Oncology applications: Brain Chapter 16: Oncology applications: Skin cancerChapter 17: Oncology

	applications: Gastrointestinal cancer; Chapter 18: Oncology applications: Intraoperative diagnosis of head and neck carcinoma; Chapter 19: Fluorescence lifetime techniques in cardiovascular disease diagnostics; Chapter 20: Ophthalmic applications of FLIM; Chapter 21: Fluorescence lifetime imaging applications in tissue engineering; Chapter 22: Tomographic fluorescence lifetime imaging; Chapter 23: Photosensitizers and PDT; Chapter 24: Fluorescence lifetime imaging of ions in biological tissues; Back Cover
Sommario/riassunto	This book reflects the remarkable advances in time-resolved fluorescence techniques and their role in a wide range of biological and clinical applications. Fluorescence lifetime approaches maximize contrast between different fluorophores for improved specificity of measurements, enabling characterization of intact tissue and disease diagnostics. The book offers a comprehensive treatment of fundamental principles, instrumentation, analytical methods, and applications. It covers the wide range of methods, including single channel (point) spectroscopy, fluorescence lifetime imaging microscopy,