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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1 Absorption Spectroscopy: What can we learn on conformational changes of Biomolecules? -- 2 Circular Dichroism Spectroscopy: Principle and Application -- 3 Protein/Ligand Interaction using Steady-State Fluorescence Spectroscopy -- 4 Fluorescence Anisotropy: Probing Rotational Dynamics of Biomolecules -- 5 Fluorescence Lifetime: A Multifaceted Tool for Exploring Biological Systems -- 6 From Ensemble FRET to Single-molecule Imaging: Monitoring individual cellular machinery in action -- 7 Nanosecond Time- Resolved Fluorescence Assays -- 8 Fluorescence Correlation Spectroscopy: A highly sensitive tool for probing intracellular molecular dynamics and disease diagnosis -- 9 Principles and applications of Fluorescence microscopy -- 10 Analysis of biomolecular dynamics under Fourier-transform infrared spectroscopy -- 11 Raman Spectroscopy in Biology: Perspectives and Emerging Frontiers.

Sommario/riassunto

This book illustrates the significance of various optical spectroscopy and microscopy techniques, including absorption spectroscopy, fluorescence spectroscopy, infrared spectroscopy, and Raman spectroscopy for deciphering the nature of biological molecules. The content of this book chiefly focuses on (1) the principle, theory, and instrumentation used in different optical spectroscopy techniques, and (2) the application of these techniques in exploring the nature of different biomolecules (e.g., proteins, nucleic acids, enzymes, and carbohydrates). It emphasizes the structural, conformational and dynamic, and kinetic including the changes in biomolecules under a range of conditions. In closing, the book summarizes recent advances in the field of optical spectroscopic and microscopic techniques.
