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Descrizione fisica	1 online resource (XXV, 698 p.)
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Soggetti	Analytical chemistry Chemistry, Physical and theoretical Biophysics Analytical Chemistry Physical Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	1. Introduction to Fluorescence -- 2. Instrumentation for Fluorescence Spectroscopy -- 3. Fluorophores -- 4. Time-Domain Lifetime Measurements -- 5. Frequency-Domain Lifetime Measurements -- 6. Solvent Effects on Emission Spectra -- 7. Dynamics of Solvent and Spectral Relaxation -- 8. Quenching of Fluorescence -- 9. Advanced Topics in Fluorescence Quenching -- 10. Fluorescence Anisotropy -- 11. Time-Dependent Anisotropy Decays -- 12. Advanced Anisotropy Concepts -- 13. Energy Transfer -- 14. Time-Resolved Energy Transfer and Conformational Distributions of Biopolymers -- 15. Energy Transfer to Multiple Acceptors, in One, Two, or Three Dimensions -- 16. Protein Fluorescence -- 17. Time-Resolved Protein Fluorescence -- 18. Excited-State Reactions -- 19. Fluorescence Sensing -- 20. Long-Lifetime Metal-Ligand Complexes -- 21. DNA Technology -- 22. Phase-Sensitive and Phase-Resolved Emission Spectra -- Appendix I. Corrected Emission Spectra -- 1. β -Carboline Derivatives as Fluorescence Standards -- 2. Corrected Emission Spectra of 9,10-Diphenylanthracene, Quinine Sulfate, and Fluorescein -- 3. Long-Wavelength Standards -- 4. Ultraviolet Standards -- 5. Additional

Corrected Emission Spectra -- References -- Appendix II. Fluorescent Lifetime Standards -- 1. Nanosecond Lifetime Standards -- 2. Picosecond Lifetime Standards -- 3. Representative Frequency-Domain Intensity Decays -- 4. Time-Domain Lifetime Standards -- References -- Appendix III. Additional Reading -- 1. Lifetime Measurements -- 2. Which Molecules are Fluorescent Representative Emission Spectra, and Practical Advice -- 3. Theory of Fluorescence and Photophysics -- 4. Principles of Fluorescence Spectroscopy -- 5. Biochemical Fluorescence -- 6. Protein Fluorescence -- 7. Data Analysis and Nonlinear Least Squares -- 8. Photochemistry -- 9. Flow Cytometry -- 10. Phosphorescence -- 11. Polymer Science -- 12. Fluorescence Sensing -- 13. Immunoassays -- 14. Latest Applications of Fluorescence -- 15. Infrared and NIR Fluorescence -- 16. Lasers -- 17. Fluorescence Microscopy -- 18. Metal-Ligand Complexes and Unusual Luminophores -- Answers to Problems.

Sommario/riassunto

'In the second edition of Principles I have attempted to maintain the emphasis on basics, while updating the examples to include more recent results from the literature. There is a new chapter providing an overview of extrinsic fluorophores. The discussion of timeresolved measurements has been expanded to two chapters. Quenching has also been expanded in two chapters. Energy transfer and anisotropy have each been expanded to three chapters. There is also a new chapter on fluorescence sensing. To enhance the usefulness of this book as a textbook, most chapters are followed by a set of problems. Sections which describe advanced topics are indicated as such, to allow these sections to be skipped in an introduction course. Glossaries are provided for commonly used acronyms and mathematical symbols. For those wanting additional information, the final appendix contains a list of recommended books which expand on various specialized topics.'

from the author's Preface.
