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Titolo	Modern Optical Spectroscopy : From Fundamentals to Applications in Chemistry, Biochemistry and Biophysics // by William W. Parson, Clemens Burda
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Descrizione fisica	1 online resource (653 pages)
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Soggetti	Biochemistry Spectrum analysis Biophysics Biomolecules Biology - Technique Lasers Spectroscopy Molecular Biophysics Biological Chemistry Biological Techniques Laser
Lingua di pubblicazione	Inglese
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1: Introduction -- Chapter 2: Basic Concepts Of Quantum Mechanics -- Chapter 3: Light -- Chapter 4: Electronic Absorption -- Chapter 5: Fluorescence -- Chapter 6: Vibrational Absorption -- Chapter 7: Resonance Energy Transfer -- Chapter 8: Exciton Interactions -- Chapter 9: Circular Dichroism -- Chapter 10: Coherence And Dephasing -- Chapter 11: Pump-Probe Spectroscopy, Photon Echoes And Vibrational Wavepackets -- Chapter 12: Raman Scattering And Other Two-Photon Processes.
Sommario/riassunto	The 3rd edition of this textbook offers clear explanations of optical

spectroscopic phenomena and shows how spectroscopic techniques are used in modern chemistry, biochemistry and biophysics. Topics included are: electronic and vibrational absorption fluorescence symmetry operations and normal-mode calculations electron transfer from excited molecules energy transfer exciton interactions electronic and vibrational circular dichroism coherence and dephasing ultrafast pump-probe and photon-echo spectroscopy single-molecule and fluorescence-correlation spectroscopy Raman scattering multiphoton absorption quantum optics and non-linear optics entropy changes during photoexcitation electronic and vibrational Stark effects studies of fast processes in single molecules two-dimensional electronic and vibrational spectroscopy This revised and updated edition provides expanded discussions of laser spectroscopy, crystal symmetry, birefringence, non-linear optics, solar cells and light-emitting diodes. The explanations are sufficiently thorough and detailed to be useful for researchers, graduate students and advanced undergraduates in chemistry, biochemistry and biophysics. They are based on time-dependent quantum mechanics, but are developed from first principles so that they can be understood by readers with little prior training in the field. Additional topics and highlights are presented in special boxes in the text. The book is richly illustrated with color figures throughout. Each chapter ends with a section of questions for self-examination. .
