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Quantum Mechanics; 7.4 Postulates of Quantum Mechanics; 7.5 Conclusions; CHAPTER 8. ATOMIC SPECTROSCOPY; 8.1 Introduction; 8.2 The One-Electron Atom; 8.3 Multi-Electron Atoms; 8.4 Conclusion; CHAPTER 9. MOLECULAR SPECTROSCOPY; 9.1 Introduction; 9.2 Diatomic Molecules; 9.3 Polyatomic Molecules; 9.4 Conclusions; CHAPTER 10. RESONANCE RESPONSE; 10.1 Einstein Coefficients; 10.2 Oscillator Strengths  
10.3 Absorption Cross-sections  
10.4 Band Oscillator Strengths; 10.5 Conclusions; CHAPTER 11. LINE BROADENING; 11.1 Introduction; 11.2 A Spectral Formalism; 11.3 General Description of Optical Spectra; 11.4 Homogeneous Broadening; 11.5 Inhomogeneous Broadening; 11.6 Combined Mechanisms: the Voigt Profile; 11.7 Conclusions; CHAPTER 12. POLARIZATION; 12.1 Introduction; 12.2 Polarization of the Resonance Response; 12.3 Absorption and Polarization; 12.4 Polarized Radiant Emission; 12.5 Photons and Polarization; 12.6 Conclusions; CHAPTER 13. RAYLEIGH AND RAMAN SCATTERING; 13.1 Introduction  
13.2 Polarizability  
13.3 Classical Molecular Scattering; 13.4 Rayleigh Scattering; 13.5 Raman Scattering; 13.6 Conclusions; CHAPTER 14. THE DENSITY MATRIX EQUATIONS; 14.1 Introduction; 14.2 Development of the DME; 14.3 Interaction with an Electromagnetic Field; 14.4 Multiple Levels and Polarization in the DME; 14.5 Two-level DME in the Steady-state Limit; 14.6 Conclusions; Appendix A. Units; Appendix B. Constants

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Sommario/riassunto

Electromagnetism, quantum mechanics, statistical mechanics, molecular spectroscopy, optics and radiation form the foundations of the field. On top of these rest the techniques applying the fundamentals (e.g. Emission Spectroscopy, Laser Induced Fluorescence, Raman Spectroscopy). This book contains the basic topics associated with optical spectroscopic techniques. About 40 major sources are distilled into one book, so researchers can read and fully comprehend specific optical spectroscopy techniques without visiting many sources. Optical diagnostics are widely used in combustion research

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2. Record Nr.	UNISALENTO991004381431407536
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