

Laser Chemistry: Spectroscopy, Dynamics and Applications

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Wiley, 2007. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: Preface.About the authors.Chapter 1 Introduction.1.1 Basic concepts in laser chemistry.1.2 Organization of the book.Part 1 Principles of lasers and laser systems.Chapter 2 Atoms and molecules, and their interaction with light waves.2.1 Quantum states, energy levels and wave functions.2.2 Dipole transitions and transition probabilities.2.3 Einstein coefficients and excited-state lifetimes.2.4 Spectroscopic line shapes.2.5 The polarization of light waves.2.6 Basic concepts of coherence.2.7 Coherent superposition of quantum states and the concept of wave packets.Chapter 3 The basics of lasers.3.1 Fundamentals of laser action.3.2 Laser resonators.3.3 Frequency and spatial properties of laser radiation.3.4 Gain in continuous-wave and pulsed lasers.3.5Q-switching and the generation of nanosecond pulses.3.6 Mode locking and the generation of picosecond and femtosecond pulses. Chapter 4 Laser systems. 4.1 Fixed-wavelength gas lasers: helium-neon, rare-gas ion and excimer lasers.4.2 Fixed-wavelength solid-state lasers: the Nd:YAG laser.4.3 Tuneable dye laser systems.4.4 Tuneable Ti:sapphire laser systems.4.5 Semiconductor diode lasers.4.6 Quantum cascade lasers.4.7 Non-linear crystals and frequencymixing processes.4.8 Three-wave mixing processes: doubling, sum and difference frequency generation.4.9 Optical parametric oscillation.Part 2 Spectroscopic techniques in laser chemistry.Chapter 5 General concepts of laser spectroscopy.5.1 Spectroscopy based on photon detection.5.2 Spectroscopy based on charged particle detection.5.3 Spectroscopy...



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