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and Migration; B. Energy Transfer in the Excited Triplet State; C. Interaction of Excited Molecules; 1.4.4 Photochemical Processes; 1.4.5 Scattering Phenomena; 1.4.6 The Laser Principle
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2 Photochemical Reactions; 2.1 Characteristics of Photochemical Reactions; 2.1.1 Photochemical Reactions and Thermal Reactions; 2.1.2 Electronically-Excited States and Reactivity; 2.1.3 Photochemical Reactions in the Solid State; 2.2 Photochemical Reactions and Physical Property Control; 2.2.1 Photosensitive Polymers; 2.2.2 Photochromism; 2.2.3 Photoresponsive Molecules; 2.2.4 Photochemistry and Biotechnology; 2.2.5 Photochemical Hole Burning; A. Principle of Photochemical Hole Burning; B. Hole Profiles and Electron-Phonon Interactions
C. Efficiency of Hole Formation and Temperature Dependence
D. Applications of Photochemical Hole Burning; References; 3 Photophysical Processes; 3.1 Energy Transfer and Electron Transfer Processes; 3.1.1 Excitation Energy Transfer; 3.1.2 Photoinduced Electron Transfer: Theoretical Background; 3.1.3 Photoconductivity and Organic Photoconductors; 3.1.4 Photoinduced Electron Transfer Membranes; 3.2 Photophysical Molecular Probes; 3.2.1 Luminescence Probes; 3.2.2 Molecular Motion Probes; 3.2.3 Microstructural Probes; 3.3 Chemiluminescence and Electroluminescence; 3.3.1 Chemiluminescence
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5.1.3 Nonlinear Susceptibility

Sommario/riassunto

New organic compounds with interesting and improved electronic and photonic properties are being reported on a daily basis, with new light-triggered materials being designed for molecular and bioelectronic devices. The relatively new concept of molecular photonics embraces photochemistry and photophysics, dealing with light-induced changes in materials and their electronic states as well as the field of optics. This volume begins with a background and survey of current light-related research fields, moving on to the fundamentals of molecular photonics. Subsequent chapters deal with the c