

1. Record Nr.	UNINA9910454357803321
Titolo	Advances in multi-photon processes and spectroscopy . Volume 15 [[electronic resource] /] edited by S. H. Lin, A. A. Villaeys, Y. Fujimura
Pubbl/distr/stampa	Singapore, : World Scientific, c2003
ISBN	1-281-93577-8 9786611935771 981-279-537-5
Descrizione fisica	1 online resource (383 p.)
Collana	Advances in multi-photon processes and spectroscopy ; v. 15
Altri autori (Persone)	LinS. H <1937-> (Sheng Hsien) VillaeysA. A FujimuraY (Yuichi)
Disciplina	543.0858
Soggetti	Laser spectroscopy Molecular spectra Multiphoton processes Spectrum analysis Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Preface; Contents; Part One: Polarizabilities and Hyperpolarizabilities of Dendritic Systems; Polarizabilities and Hyperpolarizabilities of Dendritic Systems; Abstract; 1. Introduction; 2. Polarizabilities and Hyperpolarizabilities of Dendritic Aggregate Systems; 2.1. Aggregate Models; 2.2. Density Matrix Formalism for Molecular Aggregate under Time-Dependent Electric Field; 2.3. Nonperturbative (Hyper) polarizabilities and Their Partition into the Contribution of Exciton Generation; 2.4. Off-Resonant Polarizabilities of Dendritic Aggregates 2.5. Off-Resonant Second Hyperpolarizabilities of Dendritic Aggregates 2.6. Near-Resonant Second Hyperpolarizabilities of Dendritic Aggregates; 2.7. Summary; 3. Polarizabilities and Hyperpolarizabilities of Dendrimers; 3.1. Cayley-Tree-Type Dendrimers with TT-Conjugation; 3.2. Finite-Field Approach to Static (Hyper)polarizabilities; 3.3. Hyperpolarizability Density Analysis; 3.4. Size Dependencies of a and yof Oligomer Models for Dendron Parts; 3.5. Second

Hyperpolarizabilities of Cayley-Tree-Type Phenylacetylene Dendrimers; 3.6. Summary; 4. Extensions of Models and Analysis  
4.1. Master Equation Approach Involving Explicit Exciton-Phonon Coupling 4.2. Analytical Expression of Hyperpolarizability Density; 4.3. Summary; 5. Concluding Remarks; Acknowledgments; References; Part Two: Molecules in Intense Laser Fields: Nonlinear Multiphoton Spectroscopy and Near-Femtosecond To Sub-Femtosecond (Attosecond) Dynamics; Molecules In Intense Laser Fields: Nonlinear Multiphoton Spectroscopy And Near-Femtosecond To Sub-Femtosecond (Attosecond) Dynamics; 1 Introduction; 2 Numerical Methods; 3 Charge Resonance Enhanced Ionization and Quasistatic Models: One-Electron Systems  
4 Two-Electron Systems 5 Adiabatic State Formalism; 6 Adiabatic State Population Analysis; 7 Transfer Matrix Formalism; 8 High-Frequency Limit; 9 Conclusion; Acknowledgments; References; Part Three: Ultrafast Dynamics and non-Markovian Processes in Four-Photon Spectroscopy; Ultrafast Dynamics and non-Markovian Processes in Four-Photon Spectroscopy; 1 Introduction; 2 Hamiltonian of chromophore molecule in solvent and basic methods of the resonance four-photon spectroscopy; 3 Calculation of nonlinear polarization; 4 Stochastic models in transient RFPS  
4.1 Non-Markovian relaxation effects in two-pulse RFPS with Gaussian random modulation of optical transition frequency 4.2 Transient four-photon spectroscopy of near or overlapping resonances in the presence of spectral exchange; 4.3 Non-Markovian relaxation effects in three-pulse RFPS; 5 Non-Markovian theory of steady-state RFPS; 5.1 Introduction and the cubic susceptibility in the case of Gaussian-Markovian random modulation of an electronic transition; 5.2 Model for frequency modulation of electronic transition of complex molecule in solution  
5.3 Cubic susceptibility for detunings larger than reciprocal correlation time

---

#### Sommario/riassunto

In view of the rapid growth in both experimental and theoretical studies of multi-photon processes and multi-photon spectroscopy of atoms, ions and molecules in chemistry, physics, biology, materials science, etc., it is desirable to publish an advanced series of volumes containing review papers that can be read not only by active researchers in these areas, but also by those who are not experts but who intend to enter the field. The present series aims to serve this purpose. Each review article is written in a self-contained manner by the expert(s) in the area, so that the reader can grasp

---