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Methane Molecules
Sudden Birth and Sudden Death of Entanglement Two-photon-Excitation Fluorescence Depolarization in Solutions and Nano-Scale-Organized (Macro)Molecular Media: Application of the Wide-Angular Detection-Aperture Technique; Molecular Dynamics Calculation of Infra-Red Spectra of Ultra-Dispersed Atmospheric Moisture; Linear Dielectric Relaxation of Dipolar, Rigid, Non-Interacting and Asymmetric-Top Molecules in Smoluchowski-Debye Approach; Intermolecular Covalent Interaction: 20-Center-2-Electron Covalent pi/pi Bonding in Tetrathiafulvalene Radical-Cation Dimer TTF.+-TTF.+ The Anisotropic Polarizability of Pairs of Hydrogen Molecules and the Depolarized Collision-Induced Roto-Translational Raman Light Scattering Spectra Stimulated Thermal Scattering Induced by Two-Photon Absorption and Experimental Observation of Genuine Stimulated Brillouin Scattering in the Near-Ultraviolet Region; Modulation of Stimulated Brillouin Scattering and Stimulated Temperature Scattering Spectral Components by two-Photon Heating; Exciting Field Phase Effect on the Entanglement Death and Birth Phenomena for Nonlinear Coupler System
Temperature Effect on the Optical Spectra of Iron (III) Metal Complexes Exhibiting Spin Crossover and Potential Nonlinear Optical Properties Dynamics of Collapse of Optical Pulses in Kerr Medium; Elongation-CIS Method: Describing Excited States of Large Molecular Systems in Regionally Localized Molecular Orbital Basis; On Magnet c Field of Ring Current; Nonlinear Optical Properties of Solvated Molecules; Paradoxes of Measures of Quantum Entanglement and Bell's Inequality Violation in Two-Qubit Systems
Comparative Study between ONIOM, Ab Initio and DFT Methods, Application: alpha and beta L-Fucopyranose

Sommario/riassunto

The papers collected in this volume in honor of the late Stanislaw Kielich cover an impressive range of modern subjects in molecular science. These subjects include, among others, the nonlinear optics of molecules, new approaches to the electronic structure of large molecules, the properties of carbon nanotubes, fluorescence polarization spectroscopy, computational studies of systems of fundamental interest to collision-induced spectroscopy, the simulation of fluids, NLO materials, chemical bonding in complex molecules, the NLO properties of functionalized DNA and the magnetic properties of mo