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Nota di contenuto	Preface; CONTENTS; 1. Vibrational and Electronic Wavepackets Driven by Strong Field Multiphoton Ionization; 1.1 Introduction; 1.2 Theoretical Concepts; 1.2.1 The time-independent Schrodinger equation and its implications on dynamics; 1.2.2 Spin-orbit coupling and diabatic vs. adiabatic states; 1.2.3 Nuclear time-dependent Schrodinger equation; 1.2.3.1 Second-order differentiator; 1.2.3.2 Split-operator method; 1.2.4 Stark shifts; 1.2.5 Multi- vs. single-photon transitions; 1.2.6 Laser-dressed states; 1.2.7 Photon locking; 1.2.8 Hole burning; 1.2.9 Strong-field ionization 1.3 Computational and experimental details 1.4 Vibrational Wavepackets Created by Multiphoton Ionization; 1.4.1 Phase-dependent dissociation; 1.4.1.1 Photon locking; 1.4.1.2 Hole burning; 1.4.2 Ionization to different ionic states; 1.4.2.1 Preparing electronic wavepackets via SFI; 1.4.2.2 VMI measurements to identify dissociation pathways following SFI; 1.5 Conclusion and Outlook; References; 2. Orientation-Selective Molecular Tunneling Ionization by Phase-Controlled Laser Fields; 1 Introduction; 2 Photoionization Induced by Intense Laser Fields; 2.1 MPI in standard perturbation theory 2.2 Keldysh theory: From MPI to TI2.3 Characteristics of TI; 2.4

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Sommario/riassunto

This volume presents recent progress and perspectives in multi-photon processes and spectroscopy of atoms, ions, molecules and solids. The subjects in the series cover the experimental and theoretical investigations in the interdisciplinary research fields of natural science including chemistry, physics, bioscience and material science. This volume is the latest volume in a series that is a pioneer in compiling review articles of nonlinear interactions of photons and matter. It has made an essential contribution to the development and promotion of the related research fields. In view of the ra