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Nota di contenuto	Dynamics at Solid State Surfaces and Interfaces; Contents; Preface; List of Contributors; Color Plates; Part One: Quasiparticle Dynamics; 1 Nonlinear Terahertz Studies of Ultrafast Quasiparticle Dynamics in Semiconductors; 2 Higher Order Photoemission from Metal Surfaces; 3 Electron Dynamics in Image Potential States at Metal Surfaces; 4 Relaxation Dynamics in Image Potential States at Solid Interfaces; 5 Dynamics of Electronic States at Metal/Insulator Interfaces; 6 Spin-Dependent Relaxation of Photoexcited Electrons at Surfaces of 3d Ferromagnets; 7 Electron-Phonon Interaction at Interfaces Part Two: Collective Excitations 8 Low-Energy Collective Electronic Excitations at Metal Surfaces; 9 Low-Dimensional Plasmons in Atom Sheets and Atom Chains; 10 Excitation and Time-Evolution of Coherent Optical Phonons; 11 Photoinduced Coherent Nuclear Motion at Surfaces: Alkali Overlayers on Metals; 12 Coherent Excitations at Ferromagnetic Gd(0001) and Tb(0001) Surfaces; Part Three: Heterogeneous Electron Transfer; 13 Studies on Auger Neutralization of He <sup>+</sup> Ions in Front of Metal Surfaces; 14 Electron Transfer Investigated by X-Ray Spectroscopy

15 Exciton Formation and Decay at Surfaces and Interfaces; 16 Electron Dynamics at Polar Molecule-Metal Interfaces: Competition between Localization, Solvation, and Transfer; Part Four: Photoinduced Modification of Materials and Femtochemistry; 17 Theory of Femtochemistry at Metal Surfaces: Associative Molecular Photodesorption as a Case Study; 18 Time-Resolved Investigation of Electronically Induced Diffusion Processes; 19 Laser-Induced Softening of Lattice Vibrations; 20 Femtosecond Time- and Angle-Resolved Photoemission as a Real-time Probe of Cooperative Effects in Correlated Electron Materials; Part Five: Recent Developments and Future Directions; 21 Time-Resolved Photoelectron Spectroscopy at Surfaces Using Femtosecond XUV Pulses; 22 Attosecond Time-Resolved Spectroscopy at Surfaces; 23 Simultaneous Spatial and Temporal Control of Nanooptical Fields; 24 Coherently Controlled Electrical Currents at Surfaces; 25 Ultrabroadband Terahertz Studies of Correlated Electrons; Index

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Sommario/riassunto

This two-volume work covers ultrafast structural and electronic dynamics of elementary processes at solid surfaces and interfaces, presenting the current status of photoinduced processes. Providing valuable introductory information for newcomers to this booming field of research, it investigates concepts and experiments, femtosecond and attosecond time-resolved methods, as well as frequency domain techniques. The whole is rounded off by a look at future developments.

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