



Ultrafast Dynamics Driven by Intense Light Pulses

By Markus Kitzler

Springer-Verlag GmbH Aug 2015, 2015. Buch. Book Condition: Neu. 23.5x15.5x cm. Neuware - This book documents the recent vivid developments in the research field of ultrashort intense light pulses for probing and controlling ultrafast dynamics. The recent fascinating results in studying and controlling ultrafast dynamics in ever more complicated systems such as (bio-)molecules and structures of meso- to macroscopic sizes on ever shorter time-scales are presented. The book is written by some of the most eminent experimental and theoretical experts in the field. It covers the new groundbreaking research directions that were opened by the availability of new light sources such as fully controlled intense laser fields with durations down to a single oscillation cycle, short-wavelength laser-driven attosecond pulses and intense X-ray pulses from the upcoming free electron lasers. These light sources allowed the investigation of dynamics in atoms, molecules, clusters, on surfaces and very recently also in nanostructures and solids in new regimes of parameters which, in turn, led to the identification of completely new dynamics and methods for controlling it. Example topics covered by this book include the study of ultrafast processes in large molecules using attosecond pulses, control of ultrafast electron dynamics in solids with shaped femtosecond...



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