Record Nr. UNINA9910449884803321 Modern trends in chemical reaction dynamics [[electronic resource]]. **Titolo** Part I: experiment and theory // editors, Xueming Yang, Kopin Liu Pubbl/distr/stampa River Edge, N.J.; Hong Kong,: World Scientific, c2004 **ISBN** 1-281-87698-4 9786611876982 981-256-542-6 Edizione [14th ed.] Descrizione fisica 1 online resource (539 p.) Collana Advanced series in physical chemistry;; vol. 14 Altri autori (Persone) YangXueming <1964-> LiuKopin Disciplina 541/.394 Soggetti Chemical kinetics Reactivity (Chemistry) 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 and indexes. Nota di contenuto Introduction; Preface; CONTENTS; 1. Doppler-Selected Time-of-Flight Technique: A Versatile Three-Dimensional Velocity Mapping Approach Shih-Huang Lee and Kopin Liu; 2. The Effect of Reactive Resonance on Collision Observables Sheng Der Chao and Rex T. Skodie; 3. State-to-State Dynamics of Elementary Chemical Reactions Using Rydberg H-Atom Translational Spectorscopy Xueming Yang; 4. Multimass Ion Imaging - A New Experimental Method and Its Application in the Photodissociation of Small Aromatic Molecules Cheng-Liang Huang, Yuan T. Lee and Chi-Kung Ni 5. Reactions of Neutral Transition Metal Atoms with Small Molecules in the Gas Phase Jonathan J. Schroden and H. Floyd Davis 6. Photodissociation Dynamics of Ozone in the Hartley Band Paul L. Houston: 7. Crossed Molecular Beam Reactive Scattering: Towards Universal Product Detection by Soft Electron-Impact Ionization Piergiorgio Casavecchia, Giovanni Capozza and Enrico Segoloni; 8.

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The field of chemical reaction dynamics has made tremendous progress during the last decade or so. This is due largely to the development of many new, state-of-the-art experimental and theoretical techniques during that period. It is beneficial to present these advances, both theoretical and experimental, in a review volume published in two parts (Parts I and II). The primary purpose of this review volume is to provide graduate students and experts in the field with a rather detailed picture of the current status of advanced experimental and theoretical research in chemical reaction dynamics.