

# of Book: Many-Particle Quantum Dynamics in Atomic and Molecular Fragmentation

Review Status: not specified

External Publication Status: published

Copyright: Springer Verlag

Audience: Experts Only

Title of Book: Many-Particle Quantum Dynamics in Atomic and Molecular Fragmentation

Date of Publication (YYYY-MM-DD): 2003

Abstract / Description: This is the first comprehensive treatment of the interactions of atoms and molecules with charged particles, photons and laser fields. Addressing the subject from a unified viewpoint, the volume reflects our present understanding of many-particle dynamics in rearrangement and fragmentation reactions such as electron capture, target and projectile ionisation, photoabsorption and Compton scattering, collisional breakup in Coulomb systems, and dissociative ionisation. The individual chapters, each written by leading experts, give a concise picture of the advanced experimental and theoretical methods. The book also describes experimental methods such as recoil-ion momentum spectroscopy (RIMS), electron microscopy (REMI), and many-particle time-of-flight and imaging techniques. Theoretical approaches treated include the three-body Coulomb problem, R- and S-matrix as well as classical approaches, close-coupling methods, and density-functional theory.

Title of Series: Springer Series on Atomic, Optical, and Plasma Physics

Place of Publication: Berlin, Heidelberg

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