

CHAPTER OVERVIEW

30: Gas-Phase Reaction Dynamics

30.1: The Rate of Bimolecular Gas-Phase Reaction Can Be Estimated Using Hard-Sphere Collision Theory and an Energy-Dependent Reaction Cross Section

30.2: A Reaction Cross Section Depends Upon the Impact Parameter

30.3: The Rate Constant for a Gas-Phase Chemical Reaction May Depend on the Orientations of the Colliding Molecules

30.4: The Internal Energy of the Reactants Can Affect the Cross Section of a Reaction

30.5: A Reactive Collision Can Be Described in a Center-of-Mass Coordinate System

30.6: Reactive Collisions Can be Studied Using Crossed Molecular Beam Machines

30.7: Reactions Can Produce Vibrationally Excited Molecules

30.8: The Velocity and Angular Distribution of the Products of a Reactive Collision

30.9: Not All Gas-Phase Chemical Reactions are Rebound Reactions

30.10: The Potential-Energy Surface Can Be Calculated Using Quantum Mechanics

30.E: Gas-Phase Reaction Dynamics (Exercises)

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