

## CONTENTS

<b>Introduction</b>	v
<b>Preface</b>	vii
<b>1. Multiple Channel Reaction Dynamics Using Universal Crossed Molecular Beam Techniques</b>	1
Xueming Yang	
<b>2. Ion Imaging Applied to the Study of Chemical Dynamics</b>	61
David W. Chandler and Joseph I. Cline	
<b>3. The Dynamics of Hydrogen Atom Abstraction from Polyatomic Molecules</b>	105
Xianghong Liu and Arthur G. Suits	
<b>4. <i>Ab Initio</i> Potential Energy Surfaces of Large Reaction Systems</b>	145
A. M. Mebel	
<b>5. Theoretical Dynamics Treatment of Chemical Reactions</b>	209
J. Z. H. Zhang, Yi M. Li, Ming L. Wang and Yun Xiang	

<b>6. Quasiclassical Trajectory Studies of Four-Atom Reactions</b>	249
Diego Troya, Matthew J. Lakin, and George C. Schatz	
<b>7. Recent Developments in Statistical Rate Theory for Unimolecular and Complex-Forming Reactions</b>	291
Sean C. Smith	
<b>8. Non-Born–Oppenheimer Chemistry: Potential Surfaces, Couplings, and Dynamics</b>	329
Ahren W. Jasper, Brian K. Kendrick, C. Alden Mead and Donald G. Truhlar	
<b>9. Semiclassical Theory of Nonadiabatic Transition and Tunneling</b>	393
Chaoyuan Zhu, Gennady Mil’Nikov and Hiroki Nakamura	
<b>10. Transition State Spectroscopy</b>	453
Daniel M. Neumark	
<b>11. Coincidence Imaging Techniques</b>	475
Robert E. Continetti and Carl C. Hayden	
<b>12. Time-Resolved Photoelectron Spectroscopy and Imaging</b>	529
Toshinori Suzuki	
<b>13. Manipulating Cold Molecules with Nonresonant Fields</b>	579
Bretislav Friedrich	
<b>Index</b>	633