Contents

Part I	Kinetics of Large Reaction Systems	
Modeling By M. Fre	of Large Reaction Systems nklach (With 3 Figures)	2
By C.K. E	Studies of RNA Replication and Viral Infection liebricher, M. Eigen, W.C. Gardiner, Jr., Y. Husimi, reloh, and A. Obst (With 19 Figures)	17
n-Heptane	odeling of Autoignition of Higher Hydrocarbons: , n-Octane, and iso-Octane Vestbrook and W.J. Pitz (With 4 Figures)	39
Unified Mo By A. Koi	odeling of Acetaldehyde Autoignition chi Hayashi, Y. Ohta, T. Fujiwara, and H. Takahashi igures)	55
A Shock T	tube Study of High Temperature Reaction Rates for 3. By P. Frank and M. Braun-Unkhoff (With 6 Figures)	69
Systems B	of High Temperature Gas-Phase Chemical Reaction ehind Shock Waves arajan and P. Roth (With 4 Figures)	80
Modelling By J.E. Do	Studies of Elementary Chemical Reactions. ove and S. Raynor (With 4 Figures)	90
Part II	Stability of Reaction Systems	
A Graphic States in C	al Determination of the Possibility of Multiple Steady	
	chlosser and M. Feinberg (With 11 Figures)	102
Oscillatory	Chemical Reactions. By I.R. Epstein (With 8 Figures)	116

Χì

Modeling Micromixing Effects in a Temporal Chemical Dissipative Structure: Bistability of the $(ClO_{\frac{1}{2}}, I^-, H^+)$ Reaction By J. Boissonade and P. De Kepper (With 6 Figures)	133	
Modelling Temperature and Reaction-Rate Oscillations Accompanying Simple Exothermic Decomposition in a Closed Vessel. By P. Gray, S.R. Kay, and S.K. Scott (With 4 Figures)		
The Interpretation of Oscillatory Ignition During Hydrogen Oxidation in an Open System. By P. Gray, J.F. Griffiths, A.J. Pappin, and S.K. Scott (With 6 Figures)		
Bistability and Oscillations in the Oxidation of Hydrazine By M. Markus, E. Liefke, and U. Onken (With 8 Figures)	160	
Multistability, Scaling, and Oscillations By B. Fiedler and P. Kunkel (With 2 Figures)		
Syntrophic Cocultures in Nature and in Model Systems By E. Bohl and R. Kreikenbohm (With 2 Figures)	181	
Part III Laminar Reactive Flow		
A Structured Approach to the Computational Modeling of Chemical Kinetics and Molecular Transport in Flowing Systems By R.J. Kee and J.A. Miller (With 7 Figures)	196	
On the Use of Adaptive Moving Grid Methods in Combustion Problems. By J.M. Hyman and B. Larrouturou (With 7 Figures)	222	
Simulation of Premixed Flames with Mixed Fuels of Methane and Carbon Monoxide. By S. Fukutani and H. Jinno (With 7 Figures)	233	
Time-Dependent Simulations of Laminar Flames in Hydrogen-Air Mixtures. By K. Kailasanath and E.S. Oran (With 4 Figures)	243	
Calculated Dependence of Flame Speed and Flame Width on Pressure. By R.J. Blint (With 7 Figures)		
Towards a Quantitatively Consistent Scheme for the Oxidation of Hydrogen, Carbon Monoxide, Formaldehyde and Methane in Flames. By G. Dixon-Lewis (With 4 Figures)		
of Hydrogen, Carbon Monoxide, Formaldehyde and Methane in Flames. By G. Dixon-Lewis (With 4 Figures)	265	
of Hydrogen, Carbon Monoxide, Formaldehyde and Methane in	265 281	

Extinction Behavior of a Tubular Flame for Small Lewis Numbers By T. Takeno, S. Ishizuka, M. Nishioka, and J.D. Buckmaster (With 6 Figures)	302	
The Asymptotic Structure of Methane Flames. Part I: Stoichiometric Flames By N. Peters and F.A. Williams (With 2 Figures)	310	
A Model for Chemical Reactions in Porous Media By U. Hornung and W. Jäger (With 16 Figures)		
Computer Model for Tubular High-Pressure Polyethylene Reactors By B. Tilger and G. Luft (With 3 Figures)		
Simulation of Diffusion and Chemical Reactions with a Cell-Mixing Stochastic Model By Y. Karni, M. Goldstein, and E. Bar-Ziv (With 3 Figures)	346	
Part IV Turbulent Reactive Flow		
Methods of Including Realistic Chemical Reaction Mechanisms in Turbulent Combustion Models. By K.N.C. Bray	356	
Modeling of Turbulent CO/Air Diffusion Flames with Detailed Chemistry. By F. Behrendt, H. Bockhorn, B. Rogg, and J. Warnatz (With 3 Figures)		
Coherent Flame Modelling of Chemical Reactions in a Turbulent Mixing Layer By D. Veynante, S.M. Candel, and J.P. Martin (With 10 Figures)	386	
pdf Models for Turbulent Mixing with Application to Autoignition By B. Hakberg (With 10 Figures)		
Index of Contributors	409	