

<<基础化学动力学>>

图书基本信息

书名：<<基础化学动力学>>

13位ISBN编号：9787506234030

10位ISBN编号：7506234033

出版时间：2003-1

出版时间：世界图书出版公司

作者：S.R.Logan

页数：264

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<基础化学动力学>>

内容概要

When teaching chemical kinetics to successive cohorts of undergraduates I have often wished that there existed an inexpensive textbook possessing all the conceivable virtues. It should, as far as possible, treat all aspects of kinetics, rather than leave important topics unmentioned. It should do justice to both experiment and theory, putting the role of each in context. It should explain concepts in ways that students might be expected to understand, aiming for the merits of lucidity and simplicity rather than for excessive erudition. In December 1993, I was invited to prepare my own undergraduate text on kinetics. In doing this I have started at the beginning since I believe that many difficulties about kinetics are derived from an incomplete understanding of the basics. Technological advances have resulted in the widespread use of many kinetic techniques, not merely by physical chemists, but by organic (and not simply physical organic) chemists, inorganic chemists and biochemists. A growing proportion of the ever-expanding chemical literature contains some kinetic component. For all such workers, the fundamentals of the subject are vitally important. To avoid too large a compendium, in regard to various aspects I have had to make my selection. In so doing, my central aim has been to illustrate the principles involved.

<<基础化学动力学>>

书籍目录

Preface Acknowledgements
 1 THE EMPIRICAL FRAMEWORK OF CHEMICAL KINETICS
 1.1 Introduction
 1.2 The rate equation
 1.3 Integrated rate equations
 1.4 Reaction half-life and mean lifetime
 1.5 The determination of reaction order
 1.6 Effect of temperature on reaction rates
 Suggested reading
 Problems
 2 THE EXPERIMENTAL STUDY OF REACTION KINETICS
 2.1 Minimum requirements for the study of chemical kinetics
 2.2 The evolution of techniques for monitoring reaction progress
 2.3 The application of spectrophotometry to chemical kinetics
 2.4 Electrical conductivity and dilatometry
 2.5 Techniques for the gas phase
 2.6 Modern experimental techniques
 2.7 The evaluation of the rate constant
 Suggested reading
 Problems
 3 REACTION MECHANISM AND REACTION ORDER
 3.1 An elementary reaction and the molecularity
 3.2 Consecutive reaction processes
 3.3 Formation of an intermediate complex
 3.4 The "third body" effect in atom recombination
 3.5 Parallel reactions
 3.6 Reactant participating in equilibria
 3.7 Opposing reactions
 3.8 Isotopic exchange reactions
 Suggested reading
 Problems
 4 THEORIES OF BIMOLECULAR REACTIONS
 4.1 The Collision Theory
 4.2 Transition State Theory
 4.3 The theory of diffusion-controlled reactions in solution
 Suggested reading
 Problems
 5 THE INTERPRETATION OF BIMOLECULAR REACTIONS IN SOLUTION
 5.1 Solvent effects on reaction rates
 5.2 Applied hydrostatic pressure
 5.3 Dielectric permittivity
 5.4 Ionic strength
 5.5 Linear free energy relationships
 5.6 Kinetic isotope effects
 5.7 Electron transfer reactions in solution
 Suggested reading
 Problems
 6 UNIMOLECULAR GAS PHASE REACTIONS
 6.1 The kinetic results
 6.2 The Lindemann mechanism
 6.3 The RRK (or Kassel) theory
 6.4 The RRKM theory
 Suggested reading
 Problems
 7 CHAIN REACTIONS
 7.1 Linear chain reactions
 7.2 Pyrolysis reactions involving chain mechanisms
 7.3 Chain polymerisation: free radical processes
 7.4 Chain polymerisation: ionic processes
 7.5 Less simple linear chain reactions
 7.6 Branching chains and explosion phenomena
 Suggested reading
 Problems
 8 HETEROGENEOUS CATALYSIS
 8.1 Introduction
 8.2 Chemisorption and the chemisorbed state
 8.3 The Langmuir adsorption isotherm
 8.4 Reactions on a catalyst surface
 8.5 Catalytic exchange of alkanes with deuterium.....
 9 HOMOGENEOUS CATALYSIS
 10 RELAXATION AND OTHER ADVANCED TECHNIQUES
 11 PHOTOCHEMISTRY AND RADIATION CHEMISTRY
 12 REACTION DYNAMICS
 APPENDIX A
 APPENDIX B
 ANSWERS TO THE PROBLEMS
 INDEX
 INDEX OF CHEMICAL REACTIONS

<<基础化学动力学>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介, 请支持正版图书。

更多资源请访问:<http://www.tushu007.com>