## Contents

Preface v Contributors ix

- 1 Thermodynamics of Cation-Macrocycle Complexation: Enthalpy-Entropy Compensation 1 Yoshihisa Inoue, Yu Liu, and Tadao Hakushi
- 2 Understanding Cation-Macrocycle Binding Selectivity in Single-Solvent, Extraction, and Liquid Membrane Systems by Quantifying Thermodynamic Interactions 111 R. L. Bruening, R. M. Izatt, and J. S. Bradshaw
- 3 Conductometric Behavior of Cation-Macrocycle Complexes in Solutions 133 Yasuyuki Takeda
- 4 Rates and Mechanisms of Complexation Reactions of Cations with Crown Ethers and Related Macrocycles 179 Edward M. Eyring and Sergio Petrucci
- 5 Electrostatic Ion Binding by Synthetic Receptors 203 Thomas M. Fyles
- 6 Cation Binding by Lariat Ethers 253 George W. Gokel and John E. Trafton
- 7 Crystallography of Cation Complexes of Lariat Ethers 311 Frank R. Fronczek and Richard D. Gandour
- 8 Redox Control of Cation Binding in Macrocyclic Systems 363 Angel E. Kaifer and Luis Echegoyen
- 9 Dynamic Control of Cation Binding 397 Seiji Shinkai

- 10 Application of Macrocycles to Ion-Selective Electrodes 429 Keiichi Kimura and Toshiyuki Shono
- 11 Complexation by Chromoionophores 465 Makoto Takagi
- 12 Cation Binding by Natural and Modified Ionophores: From Natural Ionophore to Synthetic Ionophore 497 Hiroshi Tsukube
- Unsaturated Crown Ethers: Synthesis, Cation Binding, and Reactions 523
  Yoshihisa Inoue and Tadao Hakushi
- 14 Complexation by Crown Ethers of Low Symmetry 549 Mikio Ouchi, Tadao Hakushi, and Yoshihisa Inoue
- 15 Cation Complexation by Calixarenes 581 Jerry L. Atwood
- 16 Mixed-Donor Macrocycles: Solution and Structural Aspects of Their Complexation with Transition and Post-Transition Ions 599 Leonard F. Lindoy
- Second-Sphere Coordination of Transition Metal Complexes by Crown Ethers 631
  J. Fraser Stoddart and Ryszard Zarzycki
- 18 Macrocyclic Complexes of Lanthanide Ions 701 Gin-ya Adachi and Yoshiyuki Hirashima

Index 743

## viii