

Contents

Preface	ix
1. Smelling Sulfur: Discovery of a Sulfur-Sensing Olfactory Receptor that Requires Copper	1
Eric Block and Hanyi Zhuang	
2. Chemical Tools for Studying Biological Hydrogen Sulfide	15
Michael D. Pluth, T. Spencer Bailey, Matthew D. Hammers, and Leticia A. Montoya	
3. Thione- and Selone-Containing Compounds, Their Late First Row Transition Metal Coordination Chemistry, and Their Biological Potential	33
Bradley S. Stadelman and Julia L. Brumaghim	
4. Sulfur Oxygenation Enhances Ligand Exchange in Nitrile-Hydratase-Inspired Ruthenium(II) Complexes	71
César A. Masitas, Mark S. Mashuta, and Craig A. Grapperhaus	
5. Biochemistry of Nucleic Acids Functionalized with Sulfur, Selenium, and Tellurium: Roles of the Single-Atom Substitution	89
Manindar Kaur, Abdur Rob, Julianne Caton-Williams, and Zhen Huang	
6. ⁷⁷Se NMR Spectroscopy of Selenoproteins	127
Sharon Rozovsky	
7. Investigations of New Types of Glutathione Peroxidase Mimetics	143
Thomas G. Back	
8. Emulating Antioxidative Functions of Glutathione Peroxidase Using Selenopeptides	163
Michio Iwoka	
9. Modeling of Mechanisms of Selenium Bioactivity Using Density Functional Theory	179
Craig A. Bayse	
10. Selenotrisulfide as a Metabolic Intermediate in Biological Systems	201
Mamoru Haratake, Katsuyoshi Fujimoto, Hongoh Masafumi, Sakura Yoshida, Takeshi Fuchigami, and Morio Nakayama	
Editors' Biographies	213

Indexes

Author Index	217
Subject Index	219