

1. Record Nr.	UNINA9910830829003321
Titolo	Nickel and its surprising impact in nature [[electronic resource] /] / edited by Astrid Sigel, Helmut Sigel, and Roland K.O. Sigel
Pubbl/distr/stampa	Chichester, West Sussex, England ; ; Hoboken, NJ, : Wiley, c2007
ISBN	1-280-83858-2 9786610838585 0-470-02813-0 0-470-02812-2
Descrizione fisica	1 online resource (730 p.)
Collana	Metal ions in life sciences, , 1559-0836 ; ; v. 2
Altri autori (Persone)	SigelAstrid SigelHelmut SigelRoland K. O
Disciplina	546.625 615.925625
Soggetti	Nickel in the body Nickel enzymes Organonickel compounds
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Metal Ions in Life Sciences; Historical Development and Perspectives of the Series; Preface to Volume 2; Contents; Contributors to Volume 2; Titles of Volumes 1-44 in the Metal Ions in Biological Systems Series; Contents of Volumes in the Metal Ions in Life Sciences Series; 1 Biogeochemistry of Nickel and Its Release into the Environment; 1. Introduction; 2. Chemistry of Nickel; 3. Ancient and Modern Uses of Nickel; 4. Sources of Atmospheric Nickel; 5. Deposition and Fate of Atmospheric Nickel; 6. Historical Records of Nickel Deposition 7. Bioavailability and Mobility of Nickel in Soils8. Summary and Conclusions; Abbreviations; References; 2 Nickel in the Environment and Its Role in the Metabolism of Plants and Cyanobacteria; 1. Introduction; 2. Nickel as a Micronutrient for Plants and Cyanobacteria; 3. Nickel as an Environmental Pollutant and Its Effects on Plants; 4. Nickel Hyperaccumulation; 5. Outlook; Acknowledgments; Abbreviations; References; 3 Nickel Ion Complexes of Amino Acids and

Peptides; 1. Introduction; 2. Complexes of Amino Acids and Derivatives; 3. Complexes of Peptides and Related Ligands
4. Formation of Nickel(II) Complexes under Biological Conditions: Model Calculations in Multicomponent Systems
5. Conclusions; Abbreviations; References; 4 Complex Formation of Nickel(II) and Related Metal Ions with Sugar Residues, Nucleobases, Phosphates, Nucleotides, and Nucleic Acids; 1. Introduction; 2. Nickel(II)-Sugar Interactions; 3. Interactions of Nickel(II) with Nucleobase Residues; 4. Complexes of Nickel(II) with Phosphates; 5. Nickel(II) Complexes of Nucleotides; 6. Complexes of Some Less Common Nucleotides; 7. Complexes of Some Nucleotide Derivatives and Analogs
8. Mixed Ligand Complexes Containing a Nucleotide
9. Nickel(II) Binding in Nucleic Acids; 10. Concluding Remarks; Acknowledgments; Abbreviations and Definitions; References; 5 Synthetic Models for the Active Sites of Nickel-Containing Enzymes; 1. Introduction; 2. Models for Cofactor F430; 3. Models for Sulfur-Rich Nickel Sites; 4. Models for the Urease Active Site; 5. Models for Acireductone Reductase; 6. Concluding Remarks; Acknowledgments; Abbreviations; References; 6 Urease: Recent Insights on the Role of Nickel; 1. Introduction: Urease and Its Biological Significance
2. The Biochemistry of Urease
3. Structural Studies on Bacterial Ureases; 4. The Structure-Based Mechanism of Urease; 5. Conclusions; Acknowledgments; Abbreviations; References; 7 Nickel Iron Hydrogenases; 1. Introduction to Hydrogenases; 2. Biochemistry and Molecular Biology; 3. Crystallization and X-Ray Structure Analysis; 4. Spectroscopic Investigations; 5. Electrochemistry; 6. Hydrogenase Function and the Catalytic Cycle; 7. Conclusions and Outlook; Acknowledgments; Abbreviations; References; 8 Methyl-Coenzyme M Reductase and Its Nickel Corphin Coenzyme F430 in Methanogenic Archaea
1. Introduction

Sommario/riassunto

Helmut Sigel, Astrid Sigel and Roland K.O. Sigel, in close cooperation with John Wiley & Sons, launch a new Series "Metal Ions in Life Sciences". The philosophy of the Series is based on the one successfully applied to a previous series published by another publisher, but the move from "biological systems" to "life sciences" will open the aims and scope and allow for the publication of books touching on the interface between chemistry, biology, pharmacology, biochemistry and medicine. Volume 2 focuses on the vibrant research area concerning nickel as well as its complexes and their ro
