DESCRIPTION

The field of Bioinorganic Chemistry has grown significantly in recent years; now one of the major sub-disciplines of Inorganic Chemistry, it has also pervaded other areas of the life sciences due to its highly interdisciplinary nature.

*Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, Second Edition* provides a detailed introduction to the role of inorganic elements in biology, taking a systematic element-by-element approach to the topic. The second edition of this classic text has been fully revised and updated to include new structure information, emerging developments in the field, and an increased focus on medical applications of inorganic compounds. New topics have been added including materials aspects of bioinorganic chemistry, elemental cycles, bioorganometallic chemistry, medical imaging and therapeutic advances.

Topics covered include:

- Metals at the center of photosynthesis
- Uptake, transport, and storage of essential elements
- Catalysis through hemoproteins
- Biological functions of molybdenum, tungsten, vanadium and chromium
- Function and transport of alkaline and alkaline earth metal cations
• Biomineralization

• Biological functions of the non-metallic inorganic elements

• Bioinorganic chemistry of toxic metals

• Biochemical behavior of radionuclides and medical imaging using inorganic compounds

• Chemotherapy involving non-essential elements

This full color text provides a concise and comprehensive review of bioinorganic chemistry for advanced students of chemistry, biochemistry, biology, medicine and environmental science.

ABOUT THE AUTHOR

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Wolfgang Kaim was born in 1951 near Frankfurt am Main, Germany, and studied chemistry at the universities of Frankfurt and Konstanz. After obtaining his PhD with H. Bock in 1978 he spent a postdoctoral year with F.A. Cotton at the University of Texas A&M University. In 1987 he moved from the University of Frankfurt to a Full Professorship at the University of Stuttgart. His main research interests focus on the charge and electron transfer reactivity of molecular compounds and various aspects of coordination chemistry.

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Brigitte Schwederski was born in 1959 in Recklinghausen, Germany. From 1977 to 1983 she studied chemistry and biology at the University of Bochum and in 1988 completed her PhD in the research group of Dale W. Margerum at Purdue University, Indiana. Since 1988 she has been a Research Assistant at the University of Stuttgart. Her main research interests include inorganic model complexes of bioinorganic systems, their characteristics and reactivity.

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Axel Klein is a Professor of Inorganic Chemistry at the University of Cologne, Germany. His research interests lie in the preparation and investigation of novel coordination compounds including organometallic derivatives, aiming at the rational design, preparation and use of coordination units with specific properties in mononuclear or oligonuclear complexes or as part of materials.
FEATURES

• Systematic element-by-element approach

• Provides full references for further reading

• Includes a glossary of key terms

• Figures are presented in colour to aid comprehension

SERIES

Inorganic Chemistry: A Textbook Series

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