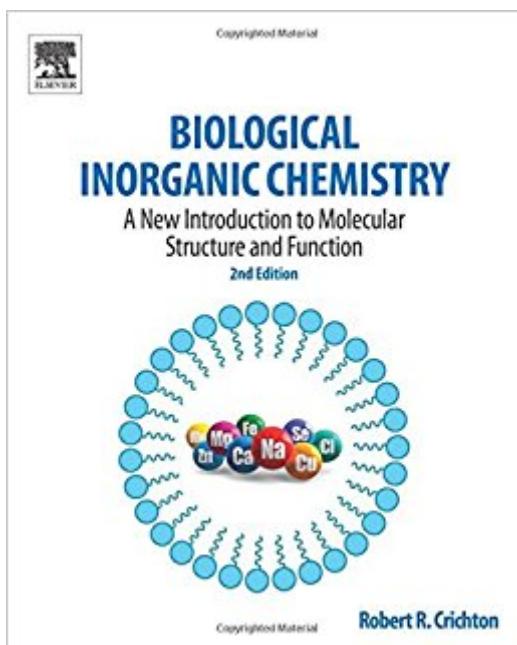


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# Biological Inorganic Chemistry, Second Edition: A New Introduction To Molecular Structure And Function



## Synopsis

Biological Inorganic Chemistry: A New Introduction to Molecular Structure and Function, Second Edition, provides a comprehensive discussion of the biochemical aspects of metals in living systems. Beginning with an overview of metals and selected nonmetals in biology, the book then discusses the following concepts: basic coordination chemistry for biologists; structural and molecular biology for chemists; biological ligands for metal ions; intermediary metabolism and bioenergetics; and methods to study metals in biological systems. The book also covers metal assimilation pathways; transport, storage, and homeostasis of metal ions; sodium and potassium channels and pumps; magnesium phosphate metabolism and photoreceptors; calcium and cellular signaling; the catalytic role of several classes of mononuclear zinc enzymes; the biological chemistry of iron; and copper chemistry and biochemistry. In addition, the book discusses nickel and cobalt enzymes; manganese chemistry and biochemistry; molybdenum, tungsten, vanadium, and chromium; non-metals in biology; biominerilization; metals in the brain; metals and neurodegeneration; metals in medicine and metals as drugs; and metals in the environment. Winner of a 2013 Textbook Excellence Awards (Texty) from the Text and Academic Authors Association. Readable style, complemented by anecdotes and footnotes. Enables the reader to more readily grasp the biological and clinical relevance of the subject. Color illustrations enable easy visualization of molecular mechanisms.

## Book Information

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## Customer Reviews

"A fine scholarly text written in a reader-friendly style to describe the various roles of metals

in biological systems, human health, and the environment. It also considers the mechanisms and experimental methods for studying biological processes involving metals. All would highly recommend it to all interested biology, and biochemistry students and researchers."--*Science Progress*, vol 97, issue 1, 2014 "A fine scholarly text written in a reader-friendly style to describe the various roles of metals in biological systems, human health, and the environment. The material of the second edition of this book has been updated, and new chapters have been included. All would highly recommend it to all interested biology, and biochemistry students and researchers."--*Science Progress*, February 18, 2014

"Crichton offers this detailed and extensively illustrated text on inorganic components of biochemistry. Three introductory chapters explain the basic importance of metals in biology and orient biologists to coordination chemistry and chemists to molecular biology, respectively. General features of metal function are covered, including common ligands, their role in metabolism, assimilation and transport, and methods of study."--*Reference & Research Book News*, December 2013 "At first blush, inorganic biochemistry might sound like an oxymoron, but that is not the case here. Crichton's book will be useful resource for students or researchers who want to understand the exciting world of inorganic biochemistry."--*CHOICE*, October 2012, Vol. 50, No. 02 "Robert Crichton has blended an element-centric approach to the subject with a biological thread that is engaging and helpful in exploring the topics in detail. The text is both accessible and detailed, but pitched at undergraduate level."--*Chemistry World*

Robert Crichton is Emeritus Professor, Faculty of Science, Université Catholique de Louvain in Belgium. He has some forty years experience in teaching the subject, and published over 200 scientific articles and a number of books. Since 1985 he has organized a series of over twenty advanced courses on Metals in Biology in Louvain-la-Neuve, which have trained over 1300 doctoral and post-doctoral students, many of whom are today leaders in the field. The Second Edition of *Biological Inorganic Chemistry: An Introduction to Molecular Structure and Function* received the 2013 TEXTY Textbook Excellence Award in Physical Sciences from the Text and Academic Authors Association.

This book is an essential source for anyone teaching the biological side of chemistry. It's also a very good textbook for any biology student interested in non-carbon chemistry. Whereas, some parts of this book (ion channels, Ca-signaling) are discussed in several other textbooks several metal and non-metal element are usually completely ignored in an average biochemistry books. This book

offers a easy to read source for not only finding a list of essential elements for life but also their role in several biologically important molecules. Moreover each element have separate chapter which makes this book much easier to read then the first edition.

Good textbook

I like it, the book is very modern and tidy, it have many information. the chapters are correct and simple. excellent

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