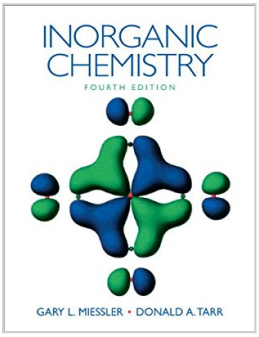

Inorganic Chemistry (4th Edition)

By Gary L. Miessler, Donald A. Tarr

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This highly readable text provides the essentials of Inorganic Chemistry at a level that is neither too high nor too low. Praised for its coverage of theoretical inorganic chemistry, it discusses molecular symmetry earlier than other texts and builds on this foundation in later chapters. Plenty of supporting book references encourage you to further explore topics of interest.

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Inorganic Chemistry (4th Edition) By Gary L. Miessler, Donald A. Tarr Bibliography

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Editorial Review

From the Publisher
This introduction to inorganic chemistry emphasizes the use of bonding theories to explain the structures and reactions of inorganic compounds.

From the Inside Flap
Preface

A new edition of a text can mean many things. To authors, it is a chance to try again to get it right and readable, and to revise outdated sections. To teachers and students, the new edition is potentially a more readable and useful text. For the author's family and friends, it is a chance to reclaim the attention that was devoted to the revising process. And finally, it means that the first edition was successful enough that a revision is necessary. We hope potential users will agree that this second edition retains the best features of the first edition and corrects any flaws.

As in the first edition of Inorganic Chemistry, we have chosen to emphasize molecular orbitals and symmetry in many aspects of bonding and reactivity. For example, we have devoted an early chapter, Chapter 4, to a discussion of molecular symmetry and introductory group theory, with examples of applications to molecular vibrations and chirality. In later chapters, we have used group theory in a variety of other applications, including molecular orbitals of main group compounds (Chapter 5) and coordination complexes (Chapter 10), and infrared spectra of organometallic compounds (Chapter 13). Additional applications of group theory are included in problems at the end of these and other chapters.

The early chapters provide a review of atomic theory (Chapter 2) and simple concepts of chemical bonding (Chapter 3). Following the introduction to group theory in Chapter 4, this theory is applied to the construction of molecular orbitals in Chapter 5. Chapter 6 provides a discussion of various acid-base concepts, emphasizing applications of molecular orbitals to acid-base interactions. Following the advice of many, we have added a chapter on solid state inorganic chemistry (Chapter 7). Chapter 8 summarizes some of the most important aspects of main group elements and their compounds. The rapid development of chemistry of the fullerenes has been recognized in a discussion of these molecules in Chapter 8 and of fullerene complexes in Chapter 13.

Chapters 9 through 14 are directed to the chemistry of the transition elements. The first four of these chapters deal, respectively, with the structures, bonding, electronic spectra, and reactions of classical transition metal complexes. We have followed reviewers' advice in reorganizing these chapters into this sequence. For this edition we have moved the discussion of terms and microstates into Chapter 11 so it immediately precedes its most common use, interpretation of spectra of coordination complexes. We have written the section on terms and microstates so it can still be used with the discussion of atomic spectra (Chapter 2) for those who might wish to follow the organization of the first edition.

Chapters 13 and 14 provide an introduction to organometallic compounds, their spectra, and reactions. Special attention has been given to catalytic cycles and their application to problems of chemical and industrial significance.

We believe that seeking similarities in the chemistry of different types of compounds can be an extremely valuable exercise, and we have therefore discussed some of these important parallels in Chapter 15, placing

particular emphasis on the isolobal analogy developed by Roald Hoffmann and on similarities between main group and transition metal clusters.

Finally, no text would be complete without a discussion of the role of inorganic compounds in biological processes and in the environment. We have therefore devoted the final chapter, Chapter 16, to selected aspects of bioinorganic and environmental inorganic chemistry.

We have chosen the topics and the level of treatment that works well for us. Every teacher has favorite topics, as well as least-favorite ones. We hope that our choice of topics allows potential users to tailor the contents to their own courses. We welcome suggestions for improvements in future editions.

In addition to selecting the most appropriate topics, we have attempted to make our text as accessible to students as possible. We have therefore increased the number of examples and exercises within the chapters, with answers to examples included in the chapters and answers to exercises in Appendix A. To encourage use of the literature in inorganic chemistry, we have retained the extensive references in the first edition and have also increased the number of end-of-chapter problems taken from the chemical literature. We hope that these will be useful to both faculty and students using this text. At the end of each chapter is a list of suggested supplemental readings, with brief comments on each.

We want to express special appreciation to our students, who have submitted many suggestions for improving the clarity and accuracy of this edition. We especially appreciate one student, Beth Truesdale (now a Rhodes Scholar), who reviewed every chapter in detail and made hundreds of valuable suggestions. Thanks also to those from other schools who reviewed this book in preparation and offered many helpful suggestions:

Christopher W. Allen, University of Vermont
E. Joseph Billo, Boston College
Shelby Boardman, Carleton College
J. K. Burdett, University of Chicago
Robert L. Carter, University of Massachusetts, Boston
Michael Crowder, Miami University of Ohio
Edward Gillan, University of Iowa
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Roy P. Planalp, University of New Hampshire
John Sheridan, Rutgers University
Joshua Telser, Roosevelt University
Ray Trautman, San Francisco State University
Steve Watton, Virginia Commonwealth University
John C. Woolcock, Indiana University of Pennsylvania

We are responsible for the final result, but it has been improved by their comments, even when we did not follow their suggestions.

At Prentice Hall, John Challice was instrumental in starting the revision and Matthew Hart in keeping it moving. And Celeste Clingan at Accu-color, Inc. shepherded us through the production process with grace and understanding.

Most of all, we thank Becky, Naomi, Rachel, and Marge for their patience, help, and love throughout this process.

Gary L. Miessler
Donald A. Tarr
Northfield, Minnesota

From the Back Cover
A brief, reader-friendly survey of inorganic chemistry. Uses a molecular-orbital approach to explain structure and reactivity. Features strong coverage of molecular symmetry/group theory. Includes special topics such as bioinorganic, environmental inorganic, organometallic, and solid-state chemistry. Applications show the relevance of core material to problems of contemporary interest. For anyone needing a brief introduction to inorganic chemistry.

Users Review

From reader reviews:

Mary Fleeman:

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Kathy Donnelly:

A lot of people always spent all their free time to vacation as well as go to the outside with them loved ones or their friend. Do you know? Many a lot of people spent many people free time just watching TV, or maybe playing video games all day long. In order to try to find a new activity that's look different you can read

some sort of book. It is really fun in your case. If you enjoy the book which you read you can spent 24 hours a day to reading a guide. The book Inorganic Chemistry (4th Edition) it doesn't matter what good to read. There are a lot of people that recommended this book. These people were enjoying reading this book. If you did not have enough space to deliver this book you can buy the particular e-book. You can m0ore quickly to read this book through your smart phone. The price is not to fund but this book features high quality.

Douglas Brim:

People live in this new day of lifestyle always aim to and must have the time or they will get wide range of stress from both lifestyle and work. So , if we ask do people have free time, we will say absolutely without a doubt. People is human not really a huge robot. Then we inquire again, what kind of activity have you got when the spare time coming to you actually of course your answer may unlimited right. Then do you ever try this one, reading publications. It can be your alternative within spending your spare time, the actual book you have read is Inorganic Chemistry (4th Edition).

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