This book focuses on molecular shapes, molecular symmetry, application of molecular orbital concepts to the compounds of main-group and transition elements of varied symmetry, metal-metal bonding, organometallic compounds such as ferrocene, fundamentals of redox properties, and spectroscopic term symbols. For compounds of d-block elements, it delves into discussions on structures and bonding theories (valence bond, crystal field, and molecular orbital), properties (magnetic, spectral, and redox), and reactivities. Basics and applications of organometallic compounds of d-block elements in catalysis and selected topics of bioinorganic chemistry have also been included. An attempt has been made to integrate selected focused topics, which is expected to help both the students and instructors, reducing the need to consult other specialized books.

For the convenience of the instructors and students, the book highlights in each chapter take home messages. Examples in each subtopic, and at the end of any chapter a list of further reading and exercises to critically think about the concepts are discussed. Almost every chapter lists references to the literature and reviews that has been found to be particularly useful in the advanced Inorganic Chemistry courses. At the end of the book an appendix that gives hints/full answers of the exercises is included.