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The eight chapters in this part of the book lay the foundation for inorganic chemistry. The first four chapters develop an understanding of the structure of atoms in terms of quantum theory and describes important fundamental properties. Chapter 2 develops molecular structure in terms of increasingly sophisticated models of covalent bonding and introduces band theory of solids. Chapter 3 shows how a systematic consideration of the symmetry of molecules can be used to enhance our understanding of the bond and structure of molecules and help interpret data from some of the techniques described in Chapter 8. Chapter 4 describes ionic bonding, the structures and properties of a range of typical solids. Chapter 5 explains how acid–base properties are defined, measured, and applied across a wide area of chemistry. Chapter 6 describes oxidation and reduction and demonstrates how electrochemical data can be used to predict and explain the outcomes of reactions in which electrons are transferred between molecules. Chapter 7 describes the coordination compounds of the elements. We discuss geometry, bonding, electronic structure, and reactions of complexes, and see how symmetry considerations can provide useful insight into this important class of compounds. Chapter 8 provides a toolbox for inorganic chemistry. It describes a wide range of the instrumental techniques that are used to identify and determine the structures and compositions of inorganic compounds.

an oxidized species	Ox
oxalato	ox
phenyl	Ph
phenanthroline	phen
pyridine	py
solvent, or a solvent molecule	Sol
nonaqueous solution species	soln
tertiary butyl	t-Bu
tetrahydrofuran	THF
N,N,N',N'-tetramethylethylenediamine	TMEDA
2,2',2''-triiminotriethylene	trien
generally halogen, also a leaving group or an anion	X
an entering group	Y