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Nota di contenuto	Cover -- Summary of contents -- Contents -- Guided tour -- Preface to the fourth edition -- Acknowledgements -- Basic concepts: atoms -- Introduction -- Inorganic chemistry: it is not an isolated branch of chemistry -- The aims of Chapters 1 and 2 -- Fundamental particles of an atom -- Atomic number, mass number and isotopes -- Nuclides, atomic number and mass number -- Relative atomic mass -- Isotopes -- Successes in early quantum theory -- Some important successes of classical quantum theory -- Bohr's theory of the atomic spectrum of hydrogen -- An introduction to wave mechanics -- The wave-nature of electrons -- The uncertainty principle -- The Schrodinger wave equation -- Atomic orbitals -- The quantum numbers n, l and ml -- The radial part of the wavefunction, R(r) -- The radial distribution function, 4r2R(r)2 -- The angular part of the wavefunction, A(,) -- Orbital energies in a hydrogen-like species -- Size of orbitals -- The spin quantum number and the magnetic spin quantum number -- The ground state of the hydrogen atom -- Many-electron atoms -- The helium atom: two electrons -- Ground state electronic configurations: experimental data -- Penetration and shielding -- The periodic table -- The aufbau principle -- Ground state electronic configurations -- Valence and core electrons -- Diagrammatic representations of electronic configurations -- Ionization energies and electron affinities -- Ionization energies -- Electron affinities -- Basic concepts:

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electrostatic model -- Coulombic attraction within an isolated ion-pair -- Coulombic interactions in an ionic lattice -- Born forces -- The Born-Lande´ equation.
Madelung constants.

Sommario/riassunto

Now in its fourth edition, Housecroft & Sharpe's Inorganic Chemistry is a well-respected and leading international textbook. Inorganic Chemistry is primarily designed to be a student text but is well-received as a reference book for those working in the field of inorganic chemistry. Inorganic Chemistry provides both teachers and students with a clearly written and beautifully-illustrated introduction to core physical-inorganic principles. It introduces the descriptive chemistry of the elements and the role played by inorganic chemistry in our everyday lives. Chapters on catalysis and industrial processes, bioinorganic chemistry, and inorganic materials and nanotechnology include many of the latest advances in these fields. There is a new chapter on experimental techniques, and the large number of worked examples, exercises and end-of-chapter problems illustrate a broad range of their applications in inorganic chemistry. The striking full-colour design includes a wealth of three-dimensional molecular and protein structures and photographs, enticing students to delve into the world of inorganic chemistry. Throughout its four editions, Inorganic Chemistry has successfully given both teachers and students the tools with which to approach the subject confidently and with enjoyment. Environmental issues linked to inorganic chemistry, topics relating inorganic chemistry to biology and medicine, and the applications of inorganic chemicals in the laboratory, industry and daily life form the basis of a wide range of topic boxes in the book, helping students to appreciate the importance and relevance of the subject. A strong pedagogic approach is at the heart of Inorganic Chemistry. While worked examples take students through calculations and exercises step by step, the sets of self-study exercises and end-of-chapter problems reinforce learning and develop subject knowledge and skills. The end-of-chapter problems include sets of 'overview problems', and problems entitled 'inorganic chemistry matters' which use everyday material to illustrate the relevance of the material in each chapter. Definitions panels and end-of-chapter checklists offer students excellent revision aids. Further reading suggestions, from topical articles to recent literature papers, encourage students to explore topics in more depth.