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Note generali	Includes index.
Nota di contenuto	Introduction -- Hydrogen and The Alkali Metals -- The Alkali Earth Metals -- The 3d Transition Metals -- The 4d Transition Metals -- The 5d Transition Metals -- Free-Electron-Like Metals of Groups III and IV -- The Diamond Structure -- Group 15 Elements: Pnictogens -- Group 16 Elements: Chalcogens -- Group 17 Elements: Halogens -- The Noble Gases -- Lanthanides -- Actinides -- Transactinides -- AI: Spin-

Orbit Coupling -- AII: Modifications and Extensions to Harrison's Theory -- AIII: Alternative Structures -- AIV: Computer Programs.

Sommario/riassunto

This handbook presents electronic structure data and tabulations of Slater-Koster parameters for the whole periodic table. This second edition presents data sets for all elements up to Z = 112, Copernicium, whereas the first edition contained only 53 elements. In this new edition, results are given for the equation of state of the elements together with the parameters of a Birch fit, so that the reader can regenerate the results and derive additional information, such as Pressure-Volume relations and variation of Bulk Modulus with Pressure. For each element, in addition to the equation of state, the energy bands, densities of states, and a set of tight-binding parameters is provided. For a majority of elements, the tight-binding parameters are presented for both a two- and three-center approximation. For the hcp structure, new three-center tight-binding results are given. Other new material in this edition include: energy bands and densities of states of all rare-earth metals, a discussion of the McMillan-Gaspari-Gyorffy theories, and a tabulation of the electron-ion interaction matrix elements. The evaluation of the Stoner criterion for ferromagnetism is examined and results are tabulated. This edition also contains two new appendices discussing the effects of spin-orbit interaction and a modified version of Harrison's tight-binding theory for metals which puts the theory on a quantitative basis.