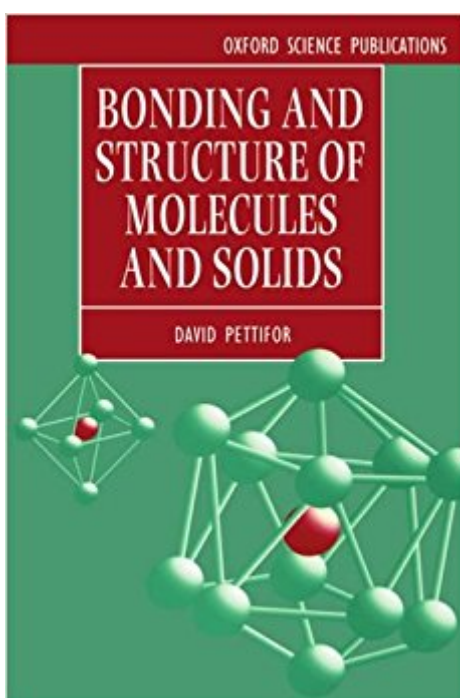


The book was found

Bonding And Structure Of Molecules And Solids (Oxford Science Publications)



Synopsis

This book explains the observed trends in the bonding and structure of molecules and solids within the models of the electronic structure. Emphasis is placed throughout on recent theoretical developments that link structural stability to the local topology or connectivity of the lattice through the moments of the electronic density of states. The chemically-intuitive Tight Binding approximation provides a unified treatment of the covalent bond in small molecules and extended solids, while the physically-intuitive Nearly-Free Electron approximation provides a natural description of the metallic bonds in sp-valent metals. Unlike the conventional reciprocal-space formulation of band theory, this modern real-space approach allows an immediate understanding of the origin of structural trends within the periodic table for the elements and the AB structure map for binary compounds. Although this unique book is aimed primarily at postgraduates in physics, chemistry, and materials science, a chapter on basic quantum mechanical concepts is included for those readers with little or no basic knowledge of the subject.

Book Information

Series: Oxford Science Publications

Paperback: 272 pages

Publisher: Clarendon Press; 1 edition (December 7, 1995)

Language: English

ISBN-10: 0198517866

ISBN-13: 978-0198517863

Product Dimensions: 9.1 x 0.6 x 6.1 inches

Shipping Weight: 13.8 ounces (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #935,887 in Books (See Top 100 in Books) #120 in [Books > Science & Math > Physics > Nuclear Physics > Atomic & Nuclear Physics](#) #320 in [Books > Science & Math > Physics > Solid-State Physics](#) #717 in [Books > Science & Math > Chemistry > Physical & Theoretical](#)

Customer Reviews

"The author explains the observed trends in the bonding and structure of molecules and solids within the framework of simple but predictive models of electronic structure. . . .Emphasis is placed throughout on recent theoretical developments that link structural stability to the local topology or connectivity of the lattice through the moments of the electronic density of states. . . .This modern

real-space approach allows an immediate understanding of the origin of the structural trends within the periodic table for the elements and the AB structure map for binary compounds." --Zeitschrift für Kristallographie

D. G. Pettifor is at University of Oxford.

[Download to continue reading...](#)

Bonding and Structure of Molecules and Solids (Oxford Science Publications) The Electronic Structure and Chemistry of Solids (Oxford Science Publications) Conduction of Heat in Solids (Oxford Science Publications) Quantum Physics of Atoms, Molecules, Solids, Nuclei, and Particles Atoms, Molecules and Optical Physics 2: Molecules and Photons - Spectroscopy and Collisions (Graduate Texts in Physics) Molecules of Murder: Criminal Molecules and Classic Cases Structure and Bonding in Crystalline Materials High Energy Density Materials (Structure and Bonding) Chemical Structure and Bonding Structure and Bonding (Basic Concepts In Chemistry) Atomic and Electronic Structure of Solids Electronic Structure and the Properties of Solids: The Physics of the Chemical Bond (Dover Books on Physics) Structure-based Design of Drugs and Other Bioactive Molecules: Tools and Strategies The Nature of the Chemical Bond and the Structure of Molecules and Crystals: An Introduction to Modern Structural Chemistry Oxford Handbook of Dialysis (Oxford Medical Publications) Oxford Handbook of Tropical Medicine (Oxford Medical Publications) Oxford Dictionary of Medical Quotations (Oxford Medical Publications) Electrons and Phonons: The Theory of Transport Phenomena in Solids (Oxford Classic Texts in the Physical Sciences) Band Theory and Electronic Properties of Solids (Oxford Master Series in Physics) The Friction and Lubrication of Solids (Oxford Classic Texts in the Physical Sciences)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)