



Electron Density and Bonding in Crystals: Principles, Theory and X-ray Diffraction Experiments in Solid State Physics and Chemistry

By V.G Tsirelson, R.P Ozerov

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The book features the authors' own key contributions to the subject as well a thorough, critical summary of the extensive literature on electron density and bonding. Logically organized, coverage ranges from the theoretical and experimental basis of electron density determination to its impact on investigations of the nature of the chemical bond and its uses in determining electromagnetic and optical properties of crystals. The main text is supplemented by appendices that provide clear, concise guidance on aspects such as systems of units, quantum theory of atomic vibrations, atomic orbitals, and creation and annihilation operators. The result is a valuable compendium of modern knowledge on electron density distributions, making this reference a standard for crystallographers, condensed matter physicists, theoretical chemists, and materials scientists.

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