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This book is a short survey of magnetochemistry as a promising method for revealing the electronic structure of inorganic substances, particularly solid oxide materials. Comprising five chapters, it describes materials with various structures and applications, showing how the method of magnetic dilution with the aid of other physical methods (electron spin resonance, magnetization, Raman and Mössbauer spectroscopy, and electrical conductivity) accompanied by thorough structural and quantum mechanical studies may be used for describing the states of atoms and interatomic interactions in multicomponent oxide systems. The book will serve as a guide for the researchers in the field of various oxide materials, since it shows the roots for selecting the best structures and qualitative and quantitative compositions of oxide materials on the basis of the knowledge about their electronic structure. It is devoted to some of the most popular structures of multicomponent oxides among modern materials (perovskites and pyrochlores) giving a unified approach to their chemical structure.



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