

Book Reviews

Mixed-Valence Compounds. Editor David B. Brown. NATO Advanced Study Institutes Series, Reidel, The Netherlands, 1980, pp. 519, Dfl. 115.00.

This is a multi-author, manuscript photo-offset, volume based on a NATO study institute. It provides an excellent over-view of the area of mixed-valence compounds. An initial introduction to the field is provided by Peter Day and this is followed by general descriptive introductions and methods of synthesis by Ludi, and by Brown and Wroblewski, respectively.

Models for the mixed-valence systems are provided by acknowledged leaders in the field. Specifically these are Tom Meyer, discussing electron transfer, Paul Schatz considering vibronic coupling, and Hush presenting delocalisation, structure and dynamics. These three chapters provide a comprehensive quantum dynamical introduction to modern methods of understanding mixed-valence systems.

There follows chapters dealing with experimental data. Hatfield discusses primarily magnetic methods for obtaining information. Brown and Wroblewski provide applications of the Mossbauer effect, while Robin Clark brings his mastery to an analysis of resonance Raman studies.

In the final section, eight chapters deal with the various types of material where mixed-valence phenomena occur. Burns and co-workers provide a rare and valuable view into mixed-valence systems occurring in the natural minerals, while McCarley discusses cluster systems. Keller deals with linear chain mixed-valence materials, while Goodenough revisits the Verwey transition. Lippard presents a most interesting account of mixed-valence systems in biological molecules, Mayerle deals with organic examples, and Cox, Egdel and Orchard discuss photoelectron studies.

This is a most interesting and valuable book which should certainly be on the shelves of anyone expressing an interest in this field.

The Editor's Desk