

## Book Review

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**Mössbauer Spectroscopy Applied to Inorganic Chemistry, Vol. 1.** Edited by G. J. Long, Plenum Press, New York/London, 1984, 667 pp., US \$92.50.

This volume belongs to the new series 'Modern Inorganic Chemistry', edited by J. P. Fackler, Jr. It contains an Introduction followed by 17 chapters written by well-known experts. Fundamentals of Mössbauer spectroscopy are expounded by G. J. Long and T. E. Cranshaw. A survey of the characteristics of computer programs for data reduction is given by G. Longworth. Isomer shift is treated phenomenologically by G. K. Shenoy, while H. Spiering treats in depth the quadrupole interaction from a theoretical point of view. The nuclear Zeeman effect and the spectroscopy of magnetic materials is discussed by T. E. Cranshaw and G. Longworth, also in connection with a number of recent experimental results, and G. R. Hoy presents a very interesting report on relaxation phenomena. Scattering techniques and related experimental studies are treated by G. Longworth. In the field of iron spectroscopy three chapters by W. Reiff and G. J. Long, P. Gutlich, and by D. P. E. Dickson, deal with coordination compounds (with particular emphasis on phase transitions), spin transition in complexes, and biological

systems, respectively. F. J. Berry presents an ample report on heterogeneous catalysis, J. M. D. Coey on silicate minerals, and G. Longworth on archaeological research. Tin and gold spectroscopy are treated by R. V. Parish in two separate chapters, where each particular topic is presented and discussed on the basis of the results of up-to-date research; it seems worthy of mention that studies on recoil-free fraction and lattice dynamics of tin and gold compounds appear for the first time in a volume devoted to Mössbauer spectroscopy. The last chapter, by C. E. Johnson, deals with one-dimensional magnetism.

The reviewer feels that this book has to be addressed to readers already acquainted with both Mössbauer spectroscopy and the problematics of the various specialistic fields. Also the different level of the treatment in the individual chapters, ranging from purely theoretical to colloquial, descriptive, or phenomenological should be taken into account. People interested in a particular topic find useful and up-to-date reviews and unifying interpretation; going through all chapters certainly contributes to a better mutual understanding between researchers in different fields. Hopefully, misprints will be corrected in a successive edition.

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