

—Book Review—

MAGNETISM: A SUPRAMOLECULAR FUNCTION

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This book contains the proceedings of the NATO Advanced Research Workshop held in France in 1995. The topics covered in thirty contributions included in the book deal with organic supramolecular chemistry, molecular-based magnets, molecular bi-stability and metal-organic and coordination magnetic materials.

Molecular magnetism is an interdisciplinary area of research with contributions from organic and inorganic chemists, physicists and material scientists. Of particular interest to the reviewer and to the readers of this journal are seven papers dealing with new magnetic materials. A paper "Organic cations in molecular recognition and molecular magnetism" by D.A. Dougherty et al. describes the cationic interactions that lead to structural ordering, and possibly to new magnetic materials.

Progress that has been made towards making organic magnetic polymers and prospects for future developments are described in a paper "Organic magnetic polymers" by R.J. Bushby et al. An intriguing area of coexistence of electrical and magnetic properties of molecular materials, with a possibility of obtaining molecular conducting ferromagnet is reviewed in a paper "The design of molecular materials with coexistence of magnetic and conducting properties" by E. Coronado et al.

A paper "Assembling magnetic blocks or how long does it take to reach infinity?" by D. Gatteschi and R. Sessoli deals with a very interesting field of large magnetic molecular clusters. Such clusters can provide unique information on the mechanisms by which the magnetic properties of small particles cross over from paramagnetic to bulk magnetic.

P. Day in his paper "What is special about molecular magnets?" discusses those features of molecular magnets that distinguish them from conventional continuous-lattice solid magnetic materials.

A paper "Magnetic properties of metal cluster compounds. Model systems for nano-sized metal particles" by L.J. de Jongh et al. gives a review of magnetic properties of atoms, molecules, bulk metals and bulk magnetic insulators.

Although the book covers a very specialised and rather exotic field of molecular magnetism, several papers are important for better understanding of industrially-relevant materials. The quality of production is standard for Kluwer Publishers: high-grade paper, printing, binding and meticulous editing. The book is available from Kluwer Academic Publishers, P.O. Box 322, 3300 AZ Dordrecht, The Netherlands, or 101 Philip Drive, Norwell, MA 02061, USA (for customers and the USA and Canada). The publication will be a useful addition to any collection of literature on magnetism. It supplements other previously published books on related subjects, e.g. Nuclear Magnetic Resonance of Paramagnetic Macromolecules (1995) and Molecular Engineering for Advanced Materials.

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