DESCRIPTION

The phenomenon of spin-crossover has a large impact on the physical properties of a solid material, including its colour, magnetic moment, and electrical resistance. Some materials also show a structural phase change during the transition. Several practical applications of spin-crossover materials have been demonstrated including display and memory devices, electrical and electroluminescent devices, and MRI contrast agents. Switchable liquid crystals, nanoparticles, and thin films of spin-crossover materials have also been achieved.

_Spin-Crossover Materials: Properties and Applications_ presents a comprehensive survey of recent developments in spin-crossover research, highlighting the multidisciplinary nature of this rapidly expanding field. Following an introductory chapter which describes the spin-crossover phenomenon and historical development of the field, the book goes on to cover a wide range of topics including

- Spin-crossover in mononuclear, polynuclear and polymeric complexes
- Structure: function relationships in molecular spin-crossover materials
- Charge-transfer-induced spin-transitions
- Reversible spin-pairing in crystalline organic radicals
- Spin-state switching in solution
- Spin-crossover compounds in multifunctional switchable materials and nanotechnology
• Physical and theoretical methods for studying spin-crossover materials

*Spin-Crossover Materials: Properties and Applications* is a valuable resource for academic researchers working in the field of spin-crossover materials and topics related to crystal engineering, solid state chemistry and physics, and molecular materials. Postgraduate students will also find this book useful as a comprehensive introduction to the field.

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Professor Halcrow's independent research has spanned different areas of synthetic inorganic chemistry, but with particular interests in switchable metal complexes, supramolecular chemistry and crystal engineering. The synthesis and structural chemistry of spin-crossover materials has been his most active research area in the past ten years; since his first paper in the field in 2001, Professor Halcrow has published 34 papers directly related to spin-crossover, including three journal reviews which are widely cited in the spin-crossover literature.

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