

Special Issue Reprint

Synthesis and Applications of New Spin Crossover Compounds

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Edited by
Takafumi Kitazawa

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The crystal chemistry of spin crossover (SCO) behavior in coordination compounds can potentially be in association with smart materials—promising materials for applications as components of memory devices, displays, sensors and mechanical devices and, especially, actuators, such as artificial muscles. This Special Issue is devoted to various aspects of SCO and related research, comprising 18 interesting original papers on valuable and important SCO topics. Significant and fundamental scientific attention has been focused on the SCO phenomena in a wide research range of fields of fundamental chemical and physical and related sciences, containing the interdisciplinary regions of chemical and physical sciences related to the SCO phenomena. Coordination materials with bistable systems between the LS and the HS states are usually triggered by external stimuli, such as temperature, light, pressure, guest molecule inclusion, soft X-ray, and nuclear decay. Since the first Hofmann-like spin crossover (SCO) behavior in $\{Fe(py)_2[Ni(CN)_4]\}_n$ ($py = \text{pyridine}$) was demonstrated, this crystal chemistry motif has been frequently used to design Fe(II) SCO materials to enable determination of the correlations between structural features and magnetic properties.

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