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Advanced Materials for Magnetic Cooling

Guest Editor:

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Deadline for manuscript submissions:
closed (31 May 2022)

Message from the Guest Editor

Dear Colleagues,

Magnetic refrigeration has the potential to mitigate long-standing refrigeration challenges, low system performance, and the impact on climate due to the refrigerant greenhouse effect. Magnetic cooling systems have better performance when operating under low temperatures and high magnetic fields, which negatively impacts its wide adoption to replace conventional refrigeration systems. Magnetic materials, in general, exhibit a magnetocaloric effect; however, this effect is normally weak at room temperature. Recent advancements in MCE have focused on introducing a phase transition within the room temperature range to ensure large isothermal magnetic entropy at room temperature. Despite the possibility of observing a reasonably high MCE at room temperature, the requirement to apply a high magnetic field to induce such an effect significantly limits its applicability.

In this Special Issue, we invite you to submit papers that discuss synthesis and structure combined with investigations of the chemical and physical properties of bulk forms, single crystals, thin films, and nanomaterials, contributing to the development of areas of current scientific interest.

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Editor-in-Chief

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Message from the Editor-in-Chief

Magnetochemistry constitutes a multidisciplinary field where chemists and physicists not only study magnetic properties but also design and synthesize chemical compounds with desired magnetic properties. *Magnetochemistry* is inviting contributions in any field related with this area, such as theoretical models, crystal engineering, molecular magnetism, SMM, SIM, SCM, SCO, magnetic nanostructures, magnetic MOFs, magnetic recording, qubits, magneto-caloric materials, etc. Our goal is to share your contribution in a timely fashion and in a manner that will be valued by the scientific community.

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