

Magnetocaloric materials: tackling hysteresis to enhance applicability

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Magnetocaloric refrigeration has increased its popularity in the recent years. From a time where mostly academic prototypes were the ones available, we have reached the moment when companies are already exhibiting demonstrators in actual operating conditions and systems start to be commercialized. From the materials science point of view, this advance has been possible due to a deeper understanding of the phase transformations that accompany the magnetocaloric effect, which has been instrumental in the design of new magnetocaloric materials. This talk will present an overview of the current status of research in magnetocaloric materials, paying special attention to hysteresis and cyclability, and providing insights into new families of alloys that could facilitate the reliability and sustainability of future magnetocaloric devices.