Special Issue

Perspective in Antiferromagnetic Spintronics

Message from the Guest Editor

Antiferromagnetic materials have experienced an accelerating interest motivated by the possibility for overcoming the limitations of ferromagnet-based devices. Their macroscopic zero-net magnetization and ultrafast dynamics in the picosecond time scale enables new robust, ultrafast, and scalable memory and computing technologies. In the last years, several works have demonstrated that antiferromagnets fulfill the two main requirements to develop these new technologies and devices: the electric control of their magnetic order, by extrinsic and intrinsic Spin Orbit Torques or Magnetoelectric effects among others; and its read out by Magnetoresistive effects such as anisotropic and anomalous magnetoresistances. Beyond memory applications, their fast-dynamics make them a suitable candidate for nanoscale Terahertz sources and detectors. Moreover, their low magnon dissipation and large spin coherence length makes possible to implement new systems for information transmission in quantum computing. This Special Issue of *Magnetochemistry* is a good opportunity to publish your innovative research works in antiferromagnetic spintronics, and more specifically, in the fields listed below.

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