Special Issue

Novel Magnetic Nanomaterials: from Fundamental Sciences to Applications

Message from the Guest Editor

Magnetic materials are widely spread in our daily life. Commercially available magnetic materials are inherently nanostructured materials and are usually prepared following classical metallurgy processes. Difficulties are however encountered when one wants to reduce the size of the final magnetic material, because of process incompatibilities. Indeed, the recent developments in nanochemistry have yielded an infinite richness of nano-crystals with tuneable sizes and shapes, which could be succesfully used as optimized building blocks.

The conception and realization of novel magnetic nanomaterials rely on several scientific challenges : i) the synthesis of optimized magnetic nanoparticles, ii) the fine characterization of their magnetic performances, iii) their controlled assembly into new metamaterials, and iv) their final integration into functionnal devices.

Research efforts in these four key challenges are essential to design the next generation of magnetic materials, combining reduced sizes and optimal performances. Therefore, it is my pleasure to invite you to submit a manuscript for this Special Issue.

Guest Editor

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