**Tailored Synthesis of Magnetic Nanostructures**

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Nanostructured assemblies of functional materials have attracted much attention these days due to their novel chemical and physical properties that can potentially be used in various technological applications. In particular, magnetic nanoparticles coated onto carbon scaffolds such as carbon nanotubes and carbon microcoils as well as arrays of magnetic nanowires are of special interest as they allow us to construct 1D and 2D nanostructures toward novel magnetic/spintronic devices. Nanoscale magnetic materials often exhibit very unique characteristics owing to the finite size. In this talk, some aspects in tailored synthesis of magnetic nanostructures will be reported from our recent progress in this fields.