



Seminarankündigung

Dienstag, 12. Dezember 2017
17:15 Uhr

WSI, Seminarraum S 101

“Synthesis and chemical manipulation of nanoparticles for a magnetic improvement”

Nanoparticles of magnetic materials are very useful in different applications, on which the combination of chemistry and magnetic performance will determine their final purpose. Different examples of magnetic nanoparticles synthesized and manipulated by wet-chemistry methods will be detailed to demonstrate how to exert control over the final magnetic behavior and over the possible diversity of the ultimate functionalities.

Thus, for example, the metal cation chemical potential at the interface between two antiferromagnetic and ferrimagnetic oxides, captured as the dynamic variable, causes the effective magnetic anisotropy to increase and modify the final magnetic behavior.

Alternatively, two examples of magnetic nanoparticles synthesized and manipulated by wet-chemistry methods will be detailed to demonstrate how to exert control over the final magnetic behavior and over their ultimate functionalities, considering bio-related applications based on heat delivery or magnetic guidance of self-propelled swimmers.

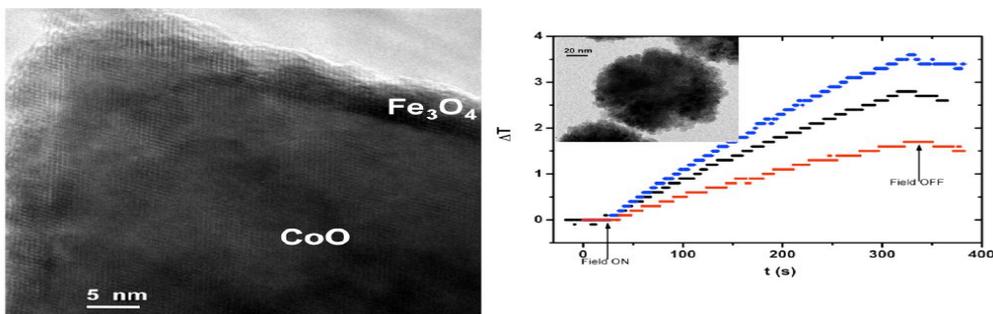


Figure 1. High resolution TEM image of a magnetic core-shell CoO-Fe₃O₄ nanoparticle and temperature kinetics of aqueous dispersions of colloidal clusters of manganese ferrite nanoparticles during the application of an alternating magnetic field.

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