

## Myrtil KAHN

Chargée de Recherche

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### Research area:

« Synthesis via organometallic method and physical properties of metal oxide nanoparticles »

My research activity is devoted to the synthesis and the study of the physical properties (optic, magnetism, and conductivity) of metal oxide nanoparticles. My research field pursues basic objectives but also the development of applications, as new devices for optic and electronic applications.

Several research axes are developed. The first one concerns the synthesis of zinc oxide nanoparticles and the study of its optical and conductivity properties (Figure 1). The second one is devoted to the development of magnetic oxide nanoparticles and the study of their magnetic properties (Figure 2). Finally, the third one consists in the study of the mechanisms responsible for the control in size and shape of the nanoparticles in a molecular level.

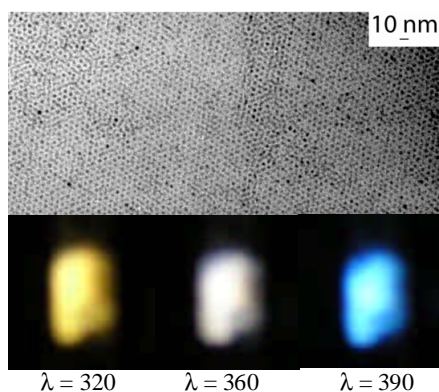


Figure 1

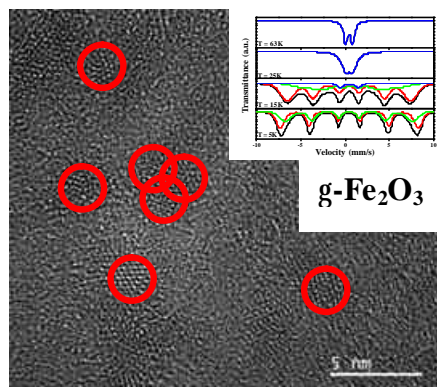
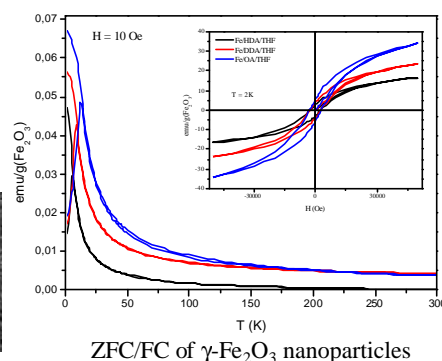


Figure 2



ZFC/FC of  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> nanoparticles

### Patent:

*Procédé de préparation d'une composition de nanoparticules d'au moins un oxyde métallique cristallin*, M. L. Kahn, M. Monge, A. Maisonnat, B. Chaudret, Dépôt français N° Fr 03 04.285 (April 7<sup>th</sup> 2003) ; (PCT/FR/04/00850, April 6<sup>st</sup> 2004)

### Recent publications:

- 1- *Room Temperature Organometallic Synthesis of Soluble and Crystalline ZnO Nanoparticles of Controlled Size and Shape*, Miguel Monge, Myrtil L. Kahn, André Maisonnat and Bruno Chaudret, *Angew. Chem. Int. Ed.*, **2003**, 42, 5321-5324.
- 2- *Spontaneous formation of ordered 2-D and 3-D superlattices of ZnO nanocrystals*, Myrtil L. Kahn, Miguel Monge, Etienne Snoeck, André Maisonnat, Bruno Chaudret, *Small*, **2005**, 1, 221-224
- 3- *Size and shape control of crystalline-zinc-oxide nanoparticles: a new organometallic synthetic method* Myrtil L. Kahn, Miguel Monge, Vincent Collière, François Senocq, André Maisonnat, Bruno Chaudret, *Adv. Func. Mater.*, **2005**, 15, 458-468.
- 4- *Experimental study of LO phonons and excitons in ZnO nanoparticles produced by room temperature organometallic synthesis* F. Demangeot, V. Paillard, P.M. Chassaing, C. Pagès, M.L. Kahn, A. Maisonnat, B. Chaudret, *Appl. Phys. Lett.*, **2006**, 88,