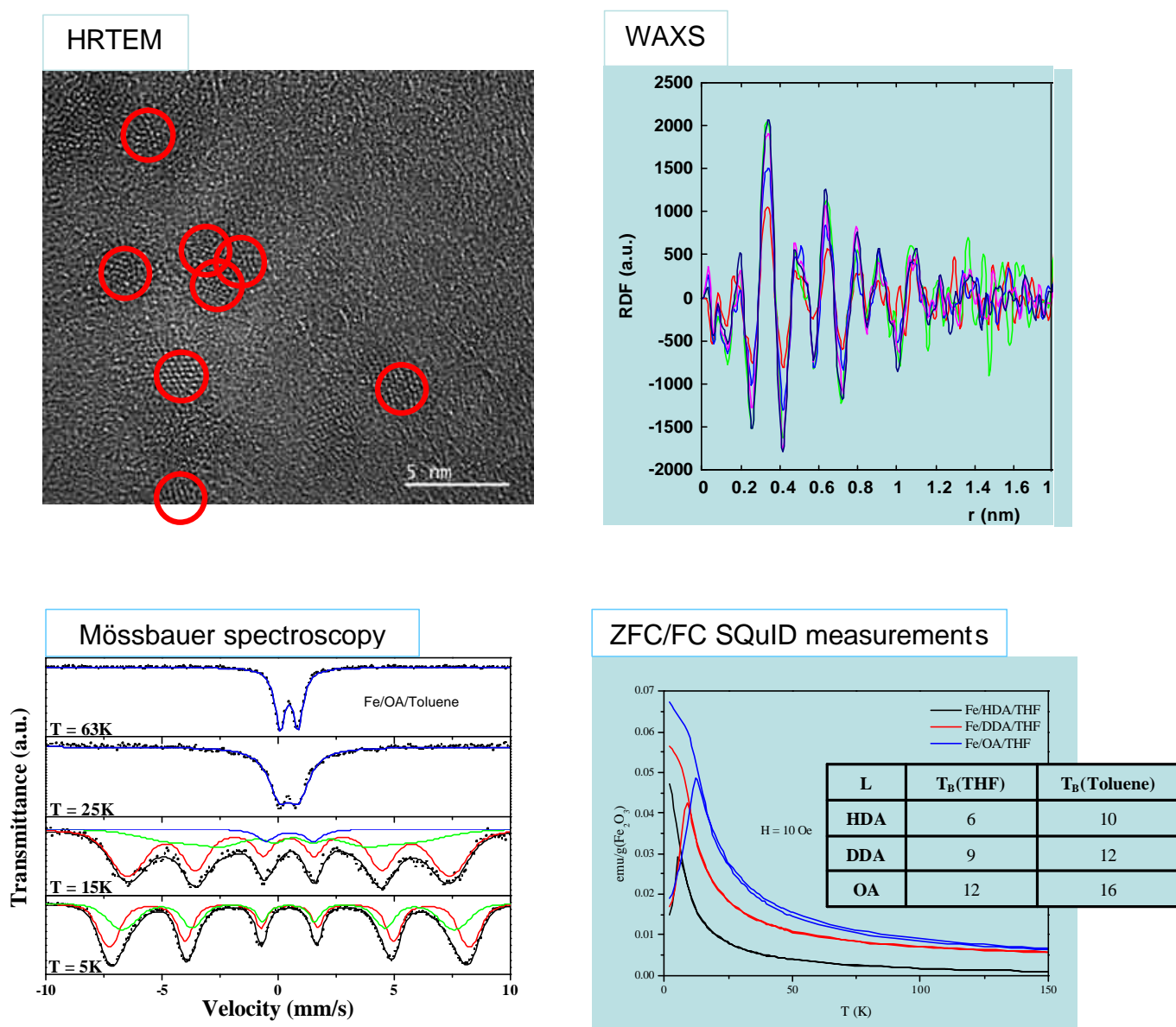


## Iron oxide nanoparticles

Recently, we have extended the organometallic synthetic method developed for the preparation *at room temperature* of crystalline ZnO nanoparticles<sup>[1-3]</sup> of controlled size and shape to the preparation of iron oxide nanoparticles. In this case the molecular precursor is the  $\{\text{Fe}[\text{N}(\text{SiMe}_3)_2]_2\}$  complex. Interestingly, we have obtained isotropic nanoparticles of less than 2 nm. The size of the nanoparticles depends on the experimental conditions (ligands, solvent). We have characterized the structural and magnetic properties of these nanoparticles using different techniques, namely WAXS, HRTEM, Mössbauer, and SQUID measurements (see Figures). Using this method we are able to tune the magnetic properties of the nanoparticles depending on the experimental synthetic conditions.



- [1] M. L. Kahn, M. Monge, V. Collière, F. Senocq, A. Maisonnat, B. Chaudret, *Adv. Func. Mater.* **2005**, *15*, 458.  
 [2] M. L. Kahn, M. Monge, A. Maisonnat, B. Chaudret, *French Patent CNRS*, Fr 03-042825 (April 7<sup>th</sup> 2003), PCT/FR/04/00850 (April 6<sup>th</sup> 2004).  
 [3] M. Monge, M. L. Kahn, A. Maisonnat, B. Chaudret, *Angew. Chem. Int. Ed.* **2003**, *42*, 5321.