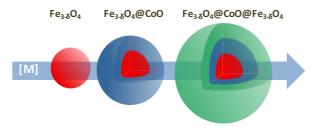


Post-doctoral position

Design of rare-earth-free magnetic nanoparticles

By now, rare earths (RE) and noble metals have been used for technological applications which require permanent magnets such as magnetic data storage or sensors. These elements being produced by an extremely limited number of countries; it is imperative to reduce avoid supply shortage. Iron oxide – a cheap, abundant and non-toxic, material – represents a nice alternative to RE. However, iron oxide nanoparticles are superparamagnetic (no permanent magnetization) at room temperature.



The project will focus on the design of multi-component magnetic nanoparticles based on iron oxide. The main purpose will be the study of interfacial exchange coupling as a function of the nanoparticle structure in order to enhance the magnetic anisotropy energy. The role of interparticle interactions as a function of the structure of nanoparticle assemblies will be also considered.

The candidate should have experience in nanoparticle synthesis and related characterization techniques. Experience in synchrotron facilities will be particularly appreciated. High motivation, willingness to develop new synthetic procedures and to learn about magnetism are highly desirable. The candidate is expected to conduct research, write reports and articles, give conferences. The applicant must hold a PhD in Material Chemistry after January 1st 2017.

The project will be conducted in the Institut de Physique et Chimie des Matériaux de Strasbourg, a research center in the field of nanomaterials and nanoscience. Our group focuses on the chemical engineering of functional nanoparticles for applications related to biomedicine, energy production, information storage, sensors and pollutant removal.

The postdoctoral position (18 months) is funded from the University of Strasbourg's idEx program. It has to start before January 1st 2022. The salary range is defined by the University of Strasbourg and depends on the experience of the candidate.

A CV and a cover letter describing background and interest in the project should be sent to Prof. Benoit P. Pichon via email to benoit.pichon@unistra.fr before the 25th of October.