

JOB DESCRIPTION

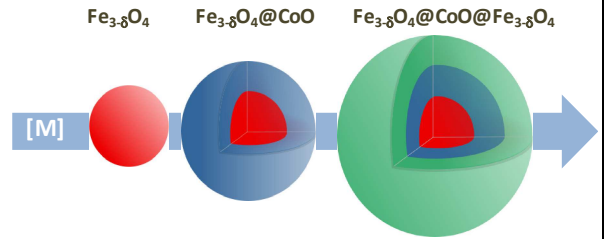
Job Title : **Post-doctoral position**  
**Design of rare-earth-free magnetic nanoparticles**

Job Summary :

The project will focus on the design of multi-component magnetic nanoparticles. 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

Job Description :

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 (China produces more than 90% of the world's rare earths), it is imperative to reduce the EU's dependence on their supply. 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 candidate will focus on the design of multi-component nanoparticles (NPs) in order to tune their magnetic properties. 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 also be considered.

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 post-doctoral researcher will be supervised by Prof. Benoit P. Pichon.

Main research field :

Chemistry / Physics / Material Chemistry / Magnetic nanoparticles

Offer Requirements :

The applicant must hold a PhD in Material Chemistry after January 1st 2017.  
 In case the PhD thesis was defended in the University of Strasbourg or University of Haute Alsace, a previous post-postdoctoral position for 2 years in a foreign country is required.

Eligibility criteria :

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.

JOB DETAIL

Type of contract : IdeX
Status : Postdoc
Company / Institute : Institut de Physique et Chimie des Matériaux de Strasbourg
Country : France
City : Strasbourg
Postal Code : 67034
Street : 23 rue du Loess – BP43

**APPLICATION DETAILS (mandatory)**

Provisional start date : 01/12/2021
Application deadline : 15/10/2021
Application e-mail : benoit.pichon@unistra.fr