

## **Post Doctoral Associate Position on Modeling Magnetic Nanostructures**

We are looking for a highly motivated, experienced, and talented Post Doctoral Scholar to complement our team in the **Theoretical Study and Modeling of magnetic nanoparticles and their assemblies**. This project is related to the Research Program “Complex Magnetic Nanostructures - COMANA” funded by the Greek Ministry of Education and the European Commission under the action “ΑΡΙΣΤΕΙΑ”.

The scientific objective of COMANA is the design and study of complex magnetic nanostructures consisting of a central core and surrounded by one or various shells. A novel multi-scale theoretical approach will be developed that will model nanomagnetic systems all the way from the fundamental properties of the isolated nanoparticles through to the real behavior of interacting magnetic nanoparticle assemblies and their processes. An important component of the COMANA is experimental validation of the theoretical models. The expected outcomes of the project will be the development of experimentally tested theoretical models, which will predict conditions for the synthesis of materials with properties suitable for biomedical applications and magnetic storage and logic processing devices and will enable the interpretation of the mechanisms that are responsible for the observed behavior of the materials. The overall project addresses an increasingly important aspect of nanotechnology, that is, how to functionalize the properties of the individual building blocks.

### **Description of the project**

This 36-month project will focus on the design, modeling and study of complex nanoparticles with core/shell morphology in an atomic scale and of their random assemblies or arrays in a mesoscopic scale. The developed theoretical models will be used for the study of the produced magnetic nanostructures of COMANA. Both simulation and experimental results will be compared and the simulation parameters will be corrected in order to optimize the performance of the magnetic nanostructures for technological applications.

The successful candidate will be employed from October 2012 for 36 months.

Anticipated starting date: October 15<sup>th</sup> 2012

### **Qualifications**

Candidates must hold a Bachelors/Diploma and a PhD degree in Physics or Applied Physics and research experience on theoretical modeling, computational Physics and more specifically on simulations with stochastic techniques of Monte Carlo for magnetic nanoparticles and their assemblies.

The candidates also have to have excellent communication skills (extensive experience in papers as well as presentations in international conferences).

For application (deadline: 28/09/2012) send:

- 1) Your CV
- 2) Copies of your university degree(s)
- 3) A cover letter (up to 1 page) outlining your qualification for the project
- 4) The names and contact details of at least two referees

Applications have to be addressed to

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