



Permanent Research Fellow position

CEA-Saclay, France



MAGNETISM AND ELECTRONIC TRANSPORT IN NANOSTRUCURES

A permanent Research Fellow position (no teaching duties) is available in the theoretical group of “*Modélisation of Surfaces, Interfaces and Nanostructures*” (MSIN) of the laboratory “*Service de Physique et Chimie des Surfaces et Interfaces*” (SPCSI) (<http://iramis.cea.fr/spcsi/>) at CEA-Saclay , France.

Profile:

We are looking for an expert in the magnetic properties of materials (metals, oxides etc..) at the nanometer scale (clusters, surfaces, interfaces) with a strong expertise in electronic structure calculations (DFT-based and/or TB methods) and willing to apply them to realistic systems. Beyond the strict study of the electronic structure, essential to deal with nanomagnetism, a broader knowledge in spin-polarized electronic transport, magnetic interactions and anisotropy would be an advantage. In addition to electronic structure techniques the candidate should also be open to the use and development of (semi)empirical methods (Heisenberg Hamiltonian, interatomic potentials..) in order to study complex systems containing a large number of atoms.

The successful candidate will join the MSIN group and will interact with the members of the group, for example by:

- Implementing new theoretical approaches for the study of nanomagnetism.
- Using *ab-initio* calculations to extract relevant parameters for model Hamiltonians,
- Developing codes for nanoscale spin polarized electronic transport.

The successful candidate will then strengthen the existing research activities of our group and will also collaborate with experimental teams at the CEA on the following topics:

- Spin polarized transport in nanostructures and multilayers.
- Magnetic properties of surfaces and interfaces.
- Magnetic interactions in nanostructures.

Background:

The applicants should hold a PhD, have a postdoctoral research experience and should have a proven track-record of cutting-edge research (in theoretical condensed-matter physics or a related field), including an ability to interact effectively within a research team involving experimentalists as well as other theoreticians.

Interested candidates are expected to send:

- (1) Full CV
- (2) List of publications
- (3) 2 reference letters

To Dr C. Barreteau (cyrille.barreteau@cea.fr)

| Informal enquiries are welcome and may be addressed to [C. Barreteau](#).

Deadline for application: 1st May 2009.