

## Post-doctoral Position - CASSIOPEE

## Division Expériences

Position opens January 2012. Deadline for submission of application: **January 1<sup>st</sup> 2012**

SOLEIL is an optimized 2.75 GeV synchrotron light source located 25km south of Paris, France. A total of 26 beamlines, covering the whole energy range from IR to hard X-rays, provides an outstanding panel of experimental tools based on synchrotron radiation for physics, chemistry, biology and environmental sciences. The first 20 beamlines, several of which are using new concepts of undulator sources, are open to users. A permanent staff of 358 people operates the installation.

The CASSIOPEE beamline is a soft X-ray beamline specifically designed for high resolution ARPES, spin-resolved photoemission and resonant spectroscopies in the 8 eV-1500 eV photon energy range. This wide energy range allows both surface and bulk studies of condensed matter. The beamline is divided into two branches, supplying photons to two end stations (Spin-resolved Photoemission, and High Resolution Angle-resolved Photoemission), both connected to a Molecular Beam Epitaxy chamber for sample growth and characterisation. The beamline is dedicated to the study of the electronic and magnetic properties and is highly competitive in the field of :

Highly correlated systems: Complex oxides (Cobaltates, pnictides, cuprates, vanadates...)

Surfaces and interfaces (Sn/Ge, Sn/Si, Alkali/Si:B...)

Topological insulators

Materials for spintronics : Magnetic tunnel junctions, thin films of Heusler compounds

Surfaces/Interfaces/nanoobjects: metal/metal, metal/semiconductor, semiconductor/semiconductor

Molecules/surfaces, biological species/surfaces

Graphene

### 1. Mission

We are seeking a motivated young scientist with a background in Solid State Physics and a strong interest in electron spectroscopy. As a member of the CASSIOPEE beamline team, his/her mission will be to work on research projects developed by the in-house team related to the electronic structure of low dimensional systems but also to take part in the local contact duty, with the CASSIOPEE team, which consists in providing technical and scientific assistance to external users. He/She will have the opportunity of high level technical and scientific exchange with the in-house team and the users and will be able to develop his/her own research project. Among the projects that are currently of interest for the Cassiopée team, are, the study of spin polarisation and spin transfer in metallic alloys or interfaces that could be used as electrodes in magnetic tunnel junctions, the structure of different iron-based superconductors, the growth and study of diluted semiconductors, Rashba effect in surfaces, the electronic structure of multi-epitaxial graphene.

### 2. Qualifications & Experience

Candidates should hold a PhD. in physics, materials science or an equivalent in a relevant science or engineering field. A solid background in photoelectron spectroscopy and data analysis is desired. Any previous experience in UHV techniques and surface preparation would be advantageous.

The following attributes will be well-regarded: effective communication skills and ability to communicate with people at all levels, strong time organization proficiency, aptitude to work both unsupervised and as a part of a team.

### 3. General conditions

The offer concerns a post-doctoral contract (2-year).

The place of work will be the SOLEIL site at Saint-Aubin (Essonne-91)

Applications should include a motivation letter and CV with the addresses of two referees. Applications should be preferably registered directly on our WEB site:

<http://candidature.synchrotron-soleil.fr/VotreCandidature/> with the reference: Post-Doc Cassiopée

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