**18 months Post-doctoral Position**

**"Chemical and Physical Reactivity of Solids (oxides, MOFs) Studied by *in situ* Diffraction"**

Laboratory Chemical Sciences of Rennes (UMR N°6226 CNRS-University of Rennes 1-ENSCR-INSA)
Group "Solid State and Materials Chemistry", Bât. 10B, Campus de Beaulieu, 35042 Rennes, France
http://www.scienceschimiques.univ-rennes1.fr

The post-doctoral researcher will be involved into the study of chemical and physical reactivity of oxides and metal-organic hybrid compounds through *in situ* and real time diffraction/total scattering experiments. The materials of interest are i) non-stoichiometric perovskite-related oxides (for use as fuel cells components, sensors, membranes…) that exhibit redox activity under controlled temperature and gas conditions and ii) metal-organic hybrid compounds (MOFs or related materials) with physical and chemical sorption properties (for use as heterogeneous catalyst or storage systems). The researcher will design and develop specific reactivity cells and participate to experiments at synchrotron or neutron sources. The multi-scale (micro)structural transformations will be tracked in real time under different operating conditions and studied by Rietveld or PDF analysis techniques, and supported by physical and chemical characterizations (TGA-DTA, DSC, conductivity, IR, BET sorption).

Period:

The post-doctoral fellowship will begin between January and June 2012 for a 18 months period. The post-doctorate will be attended to stay at synchrotron SOLEIL (close to Paris, at Gif-sur-Yvette, France) for scheduled experiments and development of set-up related to the *in situ* studies.

Salary:

The net salary (funds from the Brittany region) will be ~1900 euros per month.

Required skills: **The applicant (whatever his/her nationality) should have worked less than 6 months in France between April 2010 and April 2011.** Strong skills in crystallography and X-ray or neutron diffraction techniques, knowledge in solid state chemistry, ability to work in a team in collaboration on various materials and experience in large scale facilities and PDF studies will be appreciated.

Applications:

Interested applicants should send **before the 15th of April 2012** their curriculum vitae and a cover letter describing research interests and research accomplishments by email to:

- Dr. Olivier HERNANDEZ (+33223235635; olivier.hernandez@univ-rennes1.fr)
- Dr. Nathalie AUDEBRAND (+33223235714; nathalie.audebrand@univ-rennes1.fr)