

Post-doctoral Position

Electron tomography on new materials for energy



The INAC research institute (Nanoscience and Cryogeny), at CEA-Grenoble, France, has a post-doctoral position available for a scientist with a background in transmission electron microscopy and focused ion beam. This position is open on November 1st, 2010.

The objective will be to develop new techniques for 3D characterization at a nanometric scale of new organic and hybrid materials for energy applications, mainly as active layers in plastic solar cells and cathode materials in fuel cells. Such materials and samples will be provided via existing collaborations within the CEA, e.g. with the French National Institute for Solar Energy INES (Chambéry, www.ines-solaire.com).

Two techniques will mainly be considered during the project, namely:

- 1) 3D focused ion beam (FIB) for doing "slice and view" reconstruction. These experiments will be done on a new Zeiss NVision 40 FIB, with the aim to push the technique at higher resolution compared to the current state-of-the-art.
- 2) Electron tomography in TEM and STEM. Two microscopes will be used for that: a FEI Titan and an Hitachi S5500 which offer the possibility to work at low accelerating voltage, and to increase contrast.

The selected candidate will be in charge of performing the measurements as well as the detailed analysis of the images.

Within INAC, the postdoc will be based in the SP2M laboratory - Service de physique des matériaux et microstructures - where a hundred scientists are engaged in fundamental experimental or theoretical research on nano-scale semiconductor and magnetic materials. The electron microscopy group of SP2M (Lemma) is also part of the nanocharacterization platform created in 2006 at Minatec, a centre for nanoscience and nanotechnology research. This centre brings together a large range of facilities such as 6 TEMs, 5 SEMs and 2 dual-beam FIBs as well as a dedicated lab for specimen preparation. Our activity is mainly dedicated to nanoscale research (physics and chemistry of materials down to atomic scale) using advanced instrumentation.

The candidate should have a PhD and an expertise in electron microscopy techniques and related image analysis techniques. Some experience on electron microscopy analysis of polymer based materials would be appreciated. The candidate must be dynamic and motivated to work in a multidisciplinary project. Grenoble and Minatec, situated in the French Alps offer a fantastic quality of life combined with excellent research facilities and competitive rates of salary.

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