



## 18 months post-doctoral position

### Operando characterizations at large scale facilities applied to Li-ion batteries investigations

An 18-month post-doctoral position is available at the Institute of Grenoble Interdisciplinary Research (IRIG, France). IRIG is a joint CEA-UGA research institute ([www.irig.cea.fr](http://www.irig.cea.fr)). It is a major actor in fundamental research on materials for energy conversion and storage.

The Postdoctoral position develops within the Battery 2030+ large-scale European initiative ([www.battery2030.eu](http://www.battery2030.eu)) which gathers several academic and industrial partners. The project is dedicated to developing artificial intelligence for the design of battery interfaces (BIGMAP). The applicant will become part of a task force (TF) on the characterization of battery materials and interfaces during the charging and discharging processes. The TF aims at developing novel analytical tools making use of advanced techniques at world-class Large-Scale Facilities. The work will be carried out in collaboration with several partners in France: ESRF, ILL, SOLEIL, RS2E and CEA (TF coordinator). The PhD and Post-Doctoral Fellows of the TF will work closely together and be part of a collaborative interdisciplinary team composed of chemists/electrochemists, materials scientists, physicists and beam-line scientists.

The postdoctoral position at CEA-IRIG is dedicated to the development of specific electrochemical cells and set-ups for synchrotron/neutron operando experiments covering from bulk to surface investigations. The systems to be investigated are Li-ion batteries (Si/graphite anodes ; NMC/LNO cathodes) where a deep understanding using tomography, imaging, scattering techniques is foreseen.

**Hosting team and partners.** The post doctorate fellow will benefit from the know-how gained at IRIG over the past years on *operando* characterization of batteries<sup>1,2</sup>. The applicant will also interact with CEA-LITEN researchers, and other Battery 2030+ partners. The Postdoctoral Fellow will thus evolve in a multidisciplinary research environment and benefit from the available expertise in electrochemistry, materials science, synchrotron/neutron research and operando characterization of batteries.

**Applicant profile.** The post doctorate fellow will be in charge of designing/testing the electrochemical cells for X-rays/neutron experiments, planning/realizing selected scattering experiments and analyzing selected sets of data. Therefore, we are looking for a **materials scientist and/or an electrochemist highly motivated by advanced characterization techniques at large scale facilities**. Previous working experience in energy storage (e.g. Li-ion batteries) research would be a strong asset.

**Application:** Please join a CV, a cover letter and two recommendation letters. Dead-line: 30<sup>th</sup> Nov 2021

#### Contacts :

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<sup>1</sup> C. Berhault, S. Lyonnard et al. *ACS Nano* 2019, 13, 10, 11538 ; C. Berhault, S. Lyonnard et al. *Energy Storage Materials*, 2020, 16 (11), 1906812 ; Tardif S. et al, J. Chem. Mat. A 2021.

