



L'Orme des Merisiers, Saint-Aubin

Post-doctoral position	Last update : 26/04/2021	Reference : Postdoc- BIG-MAP	Division : EXP
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Advanced Synchrotron Characterization of Lithium-ion Batteries

SOLEIL is the French national synchrotron facility, located on the Saclay Plateau near Paris. It is a multi-disciplinary instrument and research laboratory whose mission is to conduct research using synchrotron radiation, to develop state-of-the-art instrumentation on the beamlines, and to make these developments available to the scientific community. SOLEIL synchrotron, a unique tool for both academic research and industrial applications across a wide range of disciplines including physics, biology, chemistry etc., is used by over 5 000 researchers coming from France and abroad. SOLEIL is based on a synchrotron source that is cutting-edge both in terms of brilliance and stability. This large scale facility, a partner of the Université Paris Saclay, is a “publically owned” private company, founded by the CNRS and the CEA and counts about 500 staff members.

A postdoc position in Materials Science is available at SOLEIL synchrotron in the south of Paris, France. This project has received funding from the European Union’s Horizon 2020 research and innovation program under grant agreement No 957189. The Postdoc position starts at the latest in September 2021 for duration of 12 months renewable by up to 12 additional months.

The Postdoc position is opened in the framework of the Battery Interface Genome Materials Accelerated Platform ([BIG-MAP](http://www.big-map.eu), www.big-map.eu) which is a three-year European Horizon 2020 project (grant agreement No 957189) that develops within the [Battery 2030+](http://www.battery2030.eu) large-scale European initiative (www.battery2030.eu). The applicant will be part of a task force on the characterization of battery materials and interfaces during the charge and discharge processes.

The Postdoc position is dedicated to the development of versatile electrochemical cells and set-ups for operando experiments using spectroscopic and scattering techniques such as synchrotron X-ray absorption spectroscopy (XAS), X-ray emission spectroscopy (XES), X-ray diffraction (XRD), and small-angle X-ray scattering (SAXS), combined with conventional laboratory techniques, such as Raman scattering.

A special emphasis will be put on the electrochemical performance and reproducibility of the electrochemical cell. Some targeted electrode materials for Li-ion batteries (LIBs) will be investigated in the framework of BIG-MAP project, with a special focus on the evolution of their structural and electronic properties upon cycling.

Hosting team and partners.

The postdoctoral research fellow will be recruited at [SOLEIL synchrotron](http://www.synchrotron-soleil.fr) (Paris-Saclay Campus, Gif-sur-Yvette, www.synchrotron-soleil.fr). The candidate will strongly interact with the beamline scientists and the



beamline assistant engineer at ROCK; with beamline scientists of other associated beamlines (GALAXIES, CRISTAL and SWING); and team of researchers and engineers at [PHENIX laboratory](http://www.phenix.cnrs.fr) at Sorbonne University (Paris, www.phenix.cnrs.fr) and [RS2E](http://www.energie-rs2e.com) (www.energie-rs2e.com). The applicant will further have the opportunity to interact with other BIG-MAP partners, in particular CEA, ESRF and ILL which are located in Grenoble.

The postdoctoral research fellow will thus evolve in a collaborative multidisciplinary research environment and benefit from the available expertise in electrochemistry, materials science, synchrotron research and operando characterization of batteries.

Specific features of the position.

The successful candidate is expected to participate in experiments at various beamlines and sources. The candidate may have the opportunity to spend longer research stays in other BIG-MAP partner laboratories, to participate in schools and to present research results in meetings, workshops and conferences. National and international travel should thus be expected.

Applicant profile.

You will contribute to the design and commissioning of electrochemical cells for operando synchrotron X-ray scattering and spectroscopy, planning/realizing experiments and analyzing generated datasets.

You are materials scientist and/or (electro-)chemist who is highly motivated by advanced characterization techniques at large scale facilities? You are highly motivated, enthusiastic and hard-working with the ambition to gain new insights and to present the results in leading, international journals? So join us!

Previous working experience in electrochemical energy storage research, instrumental development and/or operando experiments would be a strong asset. A good command - written and oral - of English is required. Knowledge of the French language is an advantage.

How to apply?

Please submit your [application](#) on our website www.synchrotron-soleil.fr/en/job-offers and enclose the following documents:

- Cover letter including a description of scientific interests and the motivation for applying for the position (max. 2 pages).
- CV (summarizing education, positions and academic work - scientific publications).
- Copies of the original PhD and Master's degree diploma in physics, chemistry or materials science and letters of recommendation.
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number).

The closing date for sending applications is 15/06/2021.

Contacts (for questions only):

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