

## **POSTDOC POSITION FOR OPERANDO NANOSCALE CHARACTERIZATION OF ZERO-EXCESS SOLID-STATE BATTERIES**

The OPERA project (<https://horizon-opera.eu/consortium>) funded by the HORIZON Europe program (GA n. 101103834) aims to tackle important bottlenecks for the development of next generation energy storage, specifically zero-excess solid-state batteries. Within the project we develop novel operando techniques and multiscale modelling tools to investigate the anode formation in zero-excess solid-state batteries at the nanoscale. The OPERA consortium is formed by 11 world leading research organizations and companies across Europe. The node at the Spanish synchrotron ALBA is working at the combined Low-Energy and Photo Emission Electron Microscope station (LEEM-PEEM) of the CIRCE beamline. ALBA is a 3rd generation Synchrotron Light facility located in Cerdanola del Vallés (Barcelona, Spain), a 3 GeV energy synchrotron with 11 state-of-the-art beamlines devoted to studies of condensed matter, material science and biosciences.

Within the framework of OPERA project, we offer a PostDoc position to conduct research in nanoscale material characterization, focusing on solid state electrolytes and the growth of the anode layer. The research project will be developed at CIRCE-PEEM station which is a multi-technique surface science tool combining Synchrotron X-ray spectroscopies with nanometer spatial resolution. The candidate, under the guidance of experienced researchers, will apply these techniques to perform operando characterization of zero-excess solid-state battery interfaces. She/he will participate in the refinement of these techniques for the specific case; perform experiments and data analysis that will allow to track and map the surface chemical and morphological changes in the lithium and sodium anode formation during battery operation. She/he will apply through proposals for beamtime at European large scale facilities and present the project results in scientific community. State of the art samples are provided by the partners in the consortium. There will be the opportunity to collaborate with international leading groups in the development of Li and Na batteries involved in the OPERA project, getting experience to develop a scientific career in the field of batteries, using a unique experimental approach.

### **Candidate profile**

- PhD degree in physics, chemistry, material science or equivalent
- Research experience in materials (Li, Na,...) for batteries, electrochemistry or energy storage.
- Knowledge of surface science analysis techniques (XPS, XAS, PEEM, LEEM, electron microscopies...), or similar.
- Knowledge and/or experience of experiments with synchrotron radiation applied to Surface Science.
- Good knowledge of English, both written and spoken.

### **Dates**

Application deadline: 14.04.2024

Job: from May/June 2024 until 31.12.2025

### **For more details contact**

[mnino@cells.es](mailto:mnino@cells.es)

[mfoerster@cells.es](mailto:mfoerster@cells.es)

### **To apply**

Please upload your full application to: <https://public.cells.es/jobs/#!/jobs>

- Cover letter outlining your motivation
- CV