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Chair of Inorganic Active Materials for Electrochemical Energy Storage

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The University of Bayreuth is a research-oriented university with internationally competitive and interdisciplinary profile fields in research and teaching. At the chair of Inorganic Active Materials for Electrochemical Energy Storage (Prof. Dr. Matteo Bianchini) the following temporary position is available, starting in **October 2025** or soon thereafter:

Postdoctoral Researcher (m/f/d)

German salary scale TV-L E13

"Developing simultaneous In situ X-ray Absorption, Diffraction and Emission capabilities @ ID26 (ESRF, Grenoble)"

We are looking for an excellent postdoctoral researcher to integrate our group at the Bavarian Center for Battery Technology (BayBatt, University of Bayreuth).

The project:

This project, funded by the BMBF, will be **mostly based at beamline ID26 of the ESRF (Grenoble, France)**. The objective of the research work is the development and application of **simultaneous in situ X-ray Absorption, Emission and Diffraction capabilities**. ID26 is currently dedicated to X-ray absorption (XAS) and emission spectroscopy (XES) in the applied sciences. The beamline is optimized for *in situ/operando* XAS/XES studies with two high detection efficiency X-ray emission spectrometers in the hard and tender X-ray range. X-ray diffraction (XRD) is currently not carried out at ESRF ID26. Recently, it has become increasingly clear how the (semi-)simultaneous combination of different methods bring added value to materials´ characterization and is able to provide much more information than the sum of different methods carried out sequentially on different beamlines. For this reason, we aim at upgrading ID26 to obtain the capability to measure simultaneously x-ray diffraction (XRD) with high angular resolution and spectroscopic information.

Your tasks:

The postdoc hired will work in collaboration with Dr. Pieter Glatzel and the ID26 team, the ESRF mechanical engineering group, the detector and electronics group and the beamline software control unit to install a new detector for x-ray diffraction and demonstrate the ability to acquire diffraction

spectra with the expected resolution at the beamline. After demonstrating that XRD data can be acquired, we will demonstrate the acquisition of simultaneous XRD and XAS/XES datasets for regular powder samples and composite battery electrodes (in air or sealed in Kapton, but not within an electrochemical cell). Various electrode materials can be provided by the Bianchini group for this purpose. The postdoc will work with the ID26 staff to test the various modalities for switching between the different X-ray wavelengths suitable for XRD and XAS/XES. Lastly, the postdoc will collaborate with a PhD student hired in the same project and with the whole Bianchini group to tackle pressing questions related to the structural and electronic changes occurring in layered oxide positive electrode materials during cycling, which will be probed simultaneously (in situ) with a newly developed electrochemical cell to exploit the new beamline capabilities.

Your profile:

PhD holders (m/f/d) with a background in inorganic/physical chemistry, materials science or physics are particularly welcome to apply. Engineering backgrounds may also be considered. A priori knowledge of battery materials is not needed, however some specific experience with large-scale instruments and especially spectroscopic or diffraction methods is expected.

The aim is to build a diverse and inclusive research group, hence open-minded and free-thinking individuals are welcome.

The initial contract is for 2 years.

The University of Bayreuth values the diversity of its employees and is expressly committed to the goal of gender equality. Women are strongly encouraged to apply. Applicants with children are very welcome. The University of Bayreuth is a member of the Best Practice Network "Familie in der Hochschule e.V.", and has successfully participated in the HRK audit "Internationalization of the University". Persons with severe disabilities will be given preferential consideration if equally qualified.

Your application:

Please apply **online** with your CV, BsC/MsC transcripts and cover letter specific to this position **by 7th September 2025** using the key word **"ID26"** via the **application portal** of the University of Bayreuth. The documents will be deleted in accordance with data protection requirements once the position has been filled.

For further information about the position, about our group or about the chair, please contact **Prof. Dr. Matteo Bianchini** (matteo.bianchini@uni-bayreuth.de or visit www.bianchini.uni-bayreuth.de).