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**Chair of Inorganic Active Materials for
Electrochemical Energy Storage**

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At the chair of Inorganic Active Materials for Electrochemical Energy Storage (Prof. Dr. Matteo Bianchini) the following position is available, starting in **October 2024** or soon thereafter:

PhD Student

German salary scale TV-L E13, 67%,

funded for 3 years on the topic:

“Development of layered positive electrode materials for Na-ion and Na-solid state batteries”

I am looking for an excellent PhD student to integrate our group at the Bavarian Center for Battery Technology (BayBatt, University of Bayreuth) and in particular the team working on Na-ion batteries and on the ERC-funded project 4SBATT. We aim at developing both Na-ion batteries and sustainable Na-based solid state batteries as a post Li-ion technology addressing the main issues related to the current Li-ion technology, i.e. safety, energy-density, cost and sustainability. In this context, I am looking for a student motivated to work on the development of positive electrode materials. Students with a background in inorganic/physical chemistry or materials science are hence particularly welcome to apply. Knowledge of batteries and electrochemistry, as well as programming skills, are a plus.

The PhD deals with the synthesis and characterization (structural, electronic, electrochemical) of novel Na-based cathode materials with a layered structure. These are inorganic compounds that should possess several properties including high specific capacity, high working potential and fast Na⁺ diffusion. Moreover, the materials need to be stable during cycling and as stable as possible in the atmosphere. All these requirements, often conflicting, require careful materials' optimization but also in-depth understanding. We will therefore revisit many of the known compositions, before setting

for more advanced multi-component ones. These challenges will be faced with a combination of inorganic synthesis, design criteria based on ab initio simulations (in cooperation with other group members and collaborators), as well as with advanced characterization tools including electrochemistry, EIS, in situ/operando XRD, SEM, TGA-DSC-MS, XPS, Raman, and various advanced methods available at large-scale scientific facilities.

I am striving to build a diverse and inclusive research group, hence open-minded and free-thinking individuals are welcome. 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.

Please apply with your CV, transcript of academic records and cover letter specific to this position by **June 30th 2024** via email or using the keyword "NA_CAM" via the online 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 matteo.bianchini@uni-bayreuth.de or visit www.bianchini.uni-bayreuth.de.