

Academic employee (f/m/d) with completed doctorate Recycling of lithium-ion batteries (LIBs)



Organizational unit: Helmholtz Institute Ulm for Electrochemical Energy Storage (HIU)

Job description: The objective of the work is to develop novel hydrometallurgical and direct recycling methods, in particular using a mechanochemical approach (high energy ball milling). This includes the chemical decomposition of LIB electrodes and 'black mass', the characterization of the recyclate, and the fabrication and characterization of new electrodes from the recyclate.

You will collaborate with other groups and disciplines for several national and international projects and coordinate the contributions of the KIT. The research results will be published in relevant journals and be presented at national and international conferences.

Your scientific tasks in detail:

- Mechanochemical synthesis / treatment of battery materials
- Separation of individual components of LIB
- Wet chemical reactions for separation of lithium and 3d transition metals
- Characterization by X-ray, synchrotron, neutron diffraction and Rietveld methods
- Crystallographic phase determination
- Morphology determination
- Elemental analysis
- Production of battery electrodes
- Electrochemical characterization of electrodes by galvanometry, cyclovoltammetry, electrochemical impedance spectroscopy
- Collaboration and scientific exchange with project partners.

Your workplace will be at the Institute for Applied Materials - Energy Storage Systems (IAM-ESS) in Eggenstein-Leopoldshafen.

Starting date: 01.07.2023

Personal qualification:

- You have a university degree in engineering, chemistry, physics or materials science with a completed PhD.
- We expect an active and self-motivated person with sound knowledge of chemistry and deep understanding of lithium-ion batteries, their operation and current recycling technologies.
- In addition, knowledge and skills in materials synthesis and characterization (XRD, FTIR, DSC, TGA) are required.
- Experience in the acquisition of third-party funded projects and in the supervision of master and PhD students will be a benefit.
- Personally, you convince with a goal- and team-oriented way of working.
- We expect very good written and spoken English skills as well as good presentation skills.

Salary: Salary category 13, depending on the fulfillment of professional and personal requirements.

Contract duration: initially limited to 2 years

Application up to 05.06.2023

Contact person in line-management:

For further information, please contact Dr. Michael Knapp, phone +49 721 608-26871.

Vacancy number: 251/2023

Recognized severely disabled persons will be preferred if they are equally qualified.

Contact:**Personnel Support is provided by:**

Personalservice (PSE) – Human Resources

Mr Dolzinski

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