



Karlsruhe Institute of Technology

PhD Position

“Development of new electrolytes and interfaces for Aluminium batteries.”

Project description

The goal of this PhD project, in the framework of the Cluster of Excellence (POLiS), is to push the research frontiers on Aluminum batteries by developing a system based on non-corrosive electrolytes and tailored interfaces.

The Cluster of Excellence POLiS develops the necessary new battery materials and technology concepts for efficient and sustainable storage of electrical energy. Sustainable alternatives that no longer rely on lithium and other critical materials have been identified: POLiS focuses on batteries based on sodium, magnesium, calcium, aluminium and chloride ions. These so-called post-lithium batteries have the potential to store more energy, be safer, and offer a more cost-effective, long-term option for mass applications such as stationary and mobile electrochemical storage. In this context, you will design novel Aluminium-based electrolytes and tune the interphase of the Aluminium negative electrode. You will perform electrochemical studies on electrodes and electrolytes, and analyze the electrode interphases through various techniques like SEM, EDX and XPS. Your work will also involve the presentation of the results at national and international conferences and publication in peer-reviewed international journals.

We offer a wide range of advanced training options and an attractive and modern work environment with access to the excellent research infrastructure at KIT. You will have the advantage to collaborate with a multidisciplinary research team and a top-level class of scientists in POLiS.

Personal qualification

We are looking for a highly motivated and excellent candidate with a Master degree in Chemistry, Material Science or related disciplines. The candidate is expected to have a background in electrochemistry and good communication skills. Fluent English is required.

Organizational unit

Institute for Applied Materials – Energy Storage Systems (IAM-ESS)

Starting date: as soon as possible

Contract duration: limited to 3 years

Application up to: 30.03.2020

Contact person in line-management

For further information, please contact Dr. Sonia Dsoke, Email: sonia.dsoke@kit.edu

Application

Complete applications should be sent by email (in one PDF file) to **Dr. Sonia Dsoke**
Email: sonia.dsoke@kit.edu