



## ▶ OPEN MASTER THESIS TOPIC

Electrochemical energy storage is a key technological challenge of the 21<sup>st</sup> century. To meet the growing demand for rapid and high capacity energy storage, we explore the fabrication and performance of nanosized hybrid metal oxide / carbon electrodes. For this work, the INM Program Division Energy Materials is looking for a Master Student:

### > MASTER THESIS IN HYBRID FIBER BATTERY ELECTRODES<

The student will work in an interdisciplinary team of international scientists at the interface of chemistry, materials science, and physics, at the INM - Leibniz Institute for New Materials. The master thesis focusses on the synthesis and characterization of **hybrid metal oxide/ carbon nanofibers as electrodes for Li and Na-ion batteries**. The synthesis of the nanofibers employs electrospinning of molecular precursors, followed by controlled thermal treatment for transformation to hybrid electrodes. These free-standing nanofiber mats are tested as continuous and polymer-binder free electrodes for EES devices, presenting an enhanced power performance compared to commercial polymer-bound powder electrodes. The aim of the project is to understand the effect of the metal oxide crystal structure and the content of carbon on the electrochemical performance.

Interested candidates should submit their complete application including a CV, transcript of records and publication list, before March 15<sup>th</sup>, 2018. The Master thesis can start immediately or at a later time. Please send us your application electronically (single pdf file, smaller than 5 MB) to Prof. Volker Presser under [volker.presser@leibniz-inm.de](mailto:volker.presser@leibniz-inm.de). The INM is an equal-opportunity employer with a certified family-friendly policy. We promote the professional opportunities for women and strongly encourage them to apply.

### Qualifications required

We are seeking a master student in physics, chemistry, materials science, or another related science field. Previous experience in either material synthesis, material characterization or electrochemistry is of advantage. Candidates must be highly self-motivated, have excellent interpersonal, communication, and presentation skills, and a demonstrated ability to interact effectively with staff at all levels. The ability to work as a member of a multi-disciplinary and international team is a critical asset and proficiency in English is mandatory.

### About us

The INM - Leibniz Institute for New Materials is an internationally leading center for materials research. It is a scientific partner to national and international research institutions and a provider of research and development for companies throughout the world. As an institute of the Leibniz Association, the INM has about 250 employees working in the three main research fields nanocomposite technology, interface materials, and bio interfaces. Prof. Dr. Volker Presser is Professor for Energy Materials at Saarland University.



### CONTACT

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