

In April 2017, KIT, in collaboration with Offenburg University of Applied Sciences and the Helmholtz Institute Ulm, will launch the *DFG Research Training Group ("Graduiertenkolleg") SiMET – Simulation of Mechanical, Electrical, and Thermal Processes in Lithium-ion Batteries, financed by DFG using federal funds*. 30 doctoral researchers from several scientific disciplines will study the closely linked mechanical, electrical and thermal processes in lithium-ion batteries and, for this purpose, jointly develop suitable models and numerical simulation methods.

Batteries are considered key components for future technologies such as electric mobility or power supply from fluctuating sources. Today some 7,000 million lithium-ion battery cells are produced worldwide each year, yet there remains a significant need for research. Theoretical understanding and model-based simulation of the battery's mechanical, electrical, and thermal properties represent important tools for the further success of this technology. SiMET research of processes in battery cells extends from particles in microporous electrodes to the complete cell, with sizes ranging from a few nanometers to some centimeters. Research activities combine various disciplines, such as *process technology, electrical engineering, mechanical engineering, materials sciences, chemistry, physics, and mathematics*. Complementing model-based simulation, SiMET offers direct access to cutting-edge experimental methods, including computer tomography and complex electrochemical & thermal measurement techniques.

We

- offer you challenging, exciting and highly up-to-date topics in SiMET for your doctoral research
- provide a superbly equipped research environment
- supervise you in interdisciplinary "tandem" teams
- design, together with you, a structured education of individual character, but also extending beyond the research training group right up to the international level
- open up a broad professional and interdisciplinary course program to you
- actively prepare you for participating in scientific conferences and promote your participation
- enable you to spend national and international research stays in industry and in research
- actively support equal opportunity for men and women
- offer you a salary according to E13 TV-L (100 %).

You

- have successfully completed your Master studies in one of the above-mentioned disciplines or are on the brink of doing so?
- have studied quickly and with above-average results?
- are willing to bring in your energy and enthusiasm with respect to the scientific subject into SiMET and are – ideally – able to substantiate your readiness by suitable fields of study, subjects or theses?

We are then looking forward to your application. It should include a letter of motivation, your CV, certificates etc. Please do not hand in any originals. Please have a look at the SiMET homepage (www.simet.kit.edu) and in your application refer to one or two doctoral thesis subjects listed there, which are of particular interest to you.

Please send your application in paper form to the speaker of the Research Training Group

Prof. Dr.-Ing. Thomas Wetzel, Karlsruhe Institute of Technology, Institute of Thermal Process Engineering, Kaiserstr. 12, 76131 Karlsruhe/Germany

and at the same time via e-mail with PDF file attached to bewerbung@simet.kit.edu. Severely disabled applicants are given preferential consideration in the event of equal qualification.