

With about 20,000 students around 1,300 staff members - of which about 700 are scientists - the University of Siegen is an innovative and interdisciplinary-oriented university. With a broad range of subjects from humanities and social sciences to economic sciences to natural and engineering sciences, it offers an excellent teaching and research environment with a large number of inter- and transdisciplinary research projects. The University of Siegen offers diverse possibilities to reconcile career and family. Therefore, it has been certified as a family-friendly university since 2006 and offers a Dual Career Service.

The Micro- and Nanoanalytics and -Tomography Group (LMN) at the Faculty of Science and Technology is seeking a highly motivated PhD student as

Research Assistant (75% 13 TV-L) (f/m)

for

Advanced & *in situ* TEM of novel 2D materials.

The position is intended to facilitate your academic qualification, specifically a German doctorate (PhD equivalent). You will have the opportunity within the framework of your tasks. The position is offered for 3 years with the opportunity for extension. The confirmation period is subject to the provisions of the Act on Temporary Employment in Higher Education.

The LMN was recently established as a new chair in October 2017. We cover two major research foci, which are I) highly interdisciplinary research on energy-related and novel 2D-materials and II) the development and application of advanced electron microscopy (EM) for materials science. The group is closely related to the university's *Micro- and Nanoanalytics Facility* (MNaF) and the interdisciplinary *Center for Innovative Materials* (Cm). We operate two state-of-the-art microscopes, a new FEI Talos TEM and a FEI Helios FIB/SEM, with more (*in situ*) equipment including an AC-HR(S)TEM being available in the future. For advanced TEM the group currently utilizes AC-microscopes at renowned (inter)national research institutions.

About the Project & Duties

- Aims of this project are to study the relationship of the microstructure, the chemistry and the local properties of novel layered and 2D materials and devices by cutting-edge and *in situ* EM techniques. In particular, the structure of crystal defects and their impact on the material's band structure and optical properties will be addressed (see Nature 505 (2014) pp. 533, Nature Physics 11 (2015) pp. 650).
- Moreover, you will establish dedicated sample preparation routines for such materials.
- The project includes the design, acquisition and evaluation of new instrumentation and *in situ* TEM holders.
- Your duties will include the support of bachelor/master students in research as well as participation in administrative tasks. The teaching obligation is 3 hours per semester week (lab courses, tutorials).

Employment Requirements

- For this position, we are seeking an enthusiastic and highly motivated PhD student with a master degree/diploma in physics, chemistry, materials science or a related field.
- Applicants should have a genuine interest in interdisciplinary research. Experience in sample preparation, SEM/TEM, vacuum systems or experience in (computer-added) design of components are beneficial.
- Good English skills, flexibility and the ability for teamwork are required, good German skills are beneficial.

We offer a highly vibrant research environment and the exceptional opportunity to contribute to the development of a young research group with new cutting-edge equipment. Scientific exchange with renowned (inter)national research institutions for advanced TEM investigation will be strongly supported.

Applicants with children are highly welcome. The University of Siegen strives to increase the proportion of women in research and teaching. Women with relevant qualifications are asked to apply. Severely disabled persons with relevant qualifications are asked to apply for the position.

For further information please contact Prof. Benjamin Butz (benjamin.butz@uni-siegen.de, +49 271 740-3175).

Please send your application including your cover letter, CV with publication/presentation/teaching records (if available), copies of certificates and references with indication of the ad number **2018/IV/Maschinenbau/WM/79** to the University of Siegen, Micro- and Nanoanalytics Group/Prof. Butz, Paul-Bonatz-Str. 9-11, 57076 Siegen until **19.06.2018**.

For further information about the University of Siegen and our research activities please visit www.uni-siegen.de and www.mb.uni-siegen.de/lmn/.