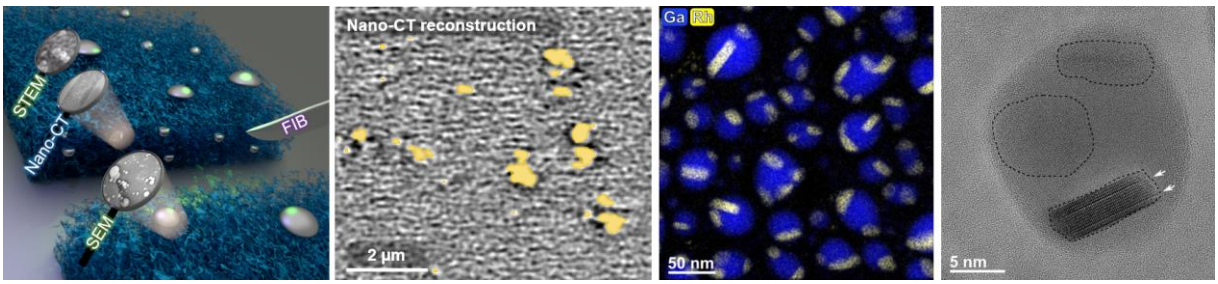
Institute of Micro- and Nanostructure Research

CENEM Center for Nanoanalysis and Electron Microscopy

FRIEDRICH-ALEXANDER UNIVERSITÄT ERLANGEN-NÜRNBERG

TECHNISCHE FAKULTÄT



The Institute of Micro- and Nanostructure Research (IMN) & Center for Nanoanalysis and Electron Microscopy (CENEM) at the Friedrich-Alexander-Universität (FAU) Erlangen-Nürnberg offer a

PhD position

for

Correlative Tomography and Advanced TEM of Novel Catalysts

Supported Catalytically Active Liquid Metal Solutions (SCALMS) have shown excellent performance for alkane dehydrogenation, especially in terms of resistance against coking. SCALMS consists of a porous support containing catalytically active low-melting alloy particles (e.g. Ga-Pd, Ga-Pt) which are liquid at reaction temperature. In the newly established Collaborative Research Center CRC1452 “Catalysis at liquid interfaces (CLINT)” (www.sfb1452.research.fau.eu/) an interdisciplinary group of scientists at FAU develop such novel catalytic materials that combine selectivity, productivity, robustness, and ease of processing at the highest possible level. High-resolution and 3D characterization of these catalysts at various length scales is required to reveal the complex pore and particle morphology, (crystal) structure, chemical composition and the location of the catalytically active sites, which is indispensable to derive a fundamental understanding of the catalytic processes. At IMN (www.em.tf.fau.de), we already started exploring the structural properties of SCALMS systems using state-of-the-art electron microscopy and nano-CT instruments available at CENEM (www.cenem.fau.de).

To systematically explore the new SCALMS concept with advanced correlative microscopy, we are seeking a highly motivated PhD student for Nano-CT, electron tomography (ET), analytical and *in situ* TEM studies. The applicants should have a master’s degree in materials science, chemistry, physics or a related discipline and, if possible, experience in X-ray and/or electron microscopy. The candidate is expected to further apply and develop the correlative workflow for 3D characterization of SCALMS systems and work closely with the collaboration partners in CLINT.

The IMN, a research institute of the Materials Science Department, explores the advanced capabilities of CENEM, a well-established microscopy center and user facility at the FAU Erlangen-Nürnberg. The CENEM hosts a number of state-of-the-art electron microscopes, among these a Zeiss Xradia 810 Ultra X-ray microscope, a double-corrected monochromated (S)TEM Titan Themis^3 60-300, a probe-corrected (S)TEM Cold-FEG Spectra 30-200 and a FIB-SEM Helios Nanolab 660. Our equipment further includes specific holders for EDXS tomography, 360° ET, rotational dual-axis ET and *in situ* heating TEM/ET.

We offer working in a great team and expanding electron microscopy group within a vibrant scientific environment. Scientific discussion, the process of creating own ideas and the possibility to implement them are key elements of our research philosophy.

The salary is according to German standard (75% E13 TV-L for PhD). **The position will be filled as soon as possible**.

The FAU Erlangen-Nürnberg is interested in increasing the share of women in research and teaching positions and therefore explicitly encourages female candidates to apply.

Physically disabled applicants receive favorable consideration when equally qualified.

Please send your application until 15. Mai 2021 by e-mail to Prof. Erdmann Spiecker (Erdmann.Spiecker@fau.de) and Dr. Johannes Will (Johannes.Will@fau.de).