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

PostDoc Position

for

High-resolution X-ray microscopy / Nano-CT of functional nanomaterials

A state-of-the-art high resolution X-ray microscope Zeiss Xradia Ultra 810 has been recently installed at IMN/CENEM providing unique opportunities for 3D analysis of functional nanomaterials (www.em.tf.fau.de/). The microscope uses Fresnel zone plate optics for imaging and tomography of materials down to < 50 nm resolution. Beside absorption contrast, phase contrast can be achieved (with Zernike phase ring) enabling 3D analysis of both high and low Z materials. An *in situ* load stage offers unique opportunities for studying the 3D deformation mechanisms of materials under applied load.

Three-dimensional (3D) characterization techniques play a key role as cross-sectional topic in IMN/CENEM's research activities and are embedded in a number of collaborative research projects, including the Research Training Group GRK1896 "In situ microscopy with electrons, X-rays and scanning probes" (www.grk1896.fau.de) and the Cluster of Excellence "Engineering of Advanced Materials" (www.eam.fau.de). Applications range from the optimization of porous structures for catalytic applications, defects and failure mechanisms in high temperature superalloys to structure and properties of nanowire electrodes for flexible electronics, and even include the investigation of natural photonic crystals in butterfly wing scales (www.em.tf.fau.de/2017/05/12/high-resolution-x-ray-tomography-reveals-mystery). The Nano-CT activities will be closely connected to complementary tomography techniques available at CENEM, including 3D-FIB (with FEI Helios Nanolab 660), 360° electron tomography (with double-corrected TEM/STEM FEI Titan^3 Themis 300) and atom probe tomography (with Cameca LEAP 4000X HR). A major focus of research with the new X-ray microscope / Nano-CT will be on in situ studies of materials properties and processes including the development of novel types of in situ cells. Complementary investigations at synchrotron sources are envisioned.

We are seeking a highly motivated **PostDoc** with a PhD in physics, materials science, chemistry, mineralogy or a related discipline and several years of experience in advanced X-ray microscopy and/or μ/Nano-CT applied to materials.

We offer working in a great team and an expanding 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 (100% E13 TL-V). The PostDoc position will be for 3 years (with potential extension) with evaluation after 1 year. **The position will be filled as soon as possible**.

The University of 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 by e-mail to Prof. Erdmann Spiecker (Erdmann.Spiecker@fau.de).