



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

## PhD position / PostDoc position

for

### Advanced Electron Microscopy of Non-Fullerene Organic Solar Cells.

Organic solar cells (OSCs) based on fullerene acceptors (FA) demonstrated significant growth over the past two decades with power conversion efficiencies exceeding 13%. Recently, the non-fullerene acceptors (NFA) have seen rapid development due to the tunability in energy levels, absorption characteristics, and morphologies, which resulted in superior optoelectronic properties and demonstrated even higher efficiencies in single junction and over 17% in tandem OSCs. Due to the anisotropic character of NFA, the interfaces and orientation relationships between donor and acceptor, and the nanomorphology play an even more critical role in the charge transport, thus requiring detailed structural characterization to develop knowledge-driven design of devices and processing routines.

The IMN ([www.em.tf.fau.de](http://www.em.tf.fau.de)) has long-term collaborations with the Institute of Materials for Electronics and Energy Technology ([www.i-meet.wv.uni-erlangen.de](http://www.i-meet.wv.uni-erlangen.de)), one of the world-wide leading groups in OSC research and development. Within the Collaborative Research Center SFB 953 on “Synthetic Carbon Allotropes” ([www.sfb953.research.fau.eu](http://www.sfb953.research.fau.eu)), we have successfully developed and applied advanced electron microscopy methods to study the nanomorphology of bulk-heterojunction OSC, including high-resolution imaging, EFTEM, STEM-EELS, low-voltage imaging, as well as crystal structure analysis based on low-dose diffraction techniques.

To further strengthen our activities in this field, we are seeking a highly motivated PhD student or PostDoc for advanced TEM investigations of NFA OSCs. The applicants should have a master's degree/PhD in materials science, chemistry, physics or a related discipline. PostDoc applicants are expected to have several years of experience in the application of advanced (S)TEM techniques for materials characterization. Moreover, applicants with a strong background in OSC research and the willingness to learn the abovementioned microscopy techniques are encouraged to apply.

The IMN, a research institute of the Materials Science Department, explores the advanced capabilities of CENEM ([www.cenem.fau.de](http://www.cenem.fau.de)), a well-established microscopy center and user facility at the University of Erlangen-Nürnberg. The CENEM hosts a number of state-of-the-art electron microscopes, among these a double-corrected monochromated (S)TEM Titan Themis<sup>3</sup> 60-300 equipped with a Super-X detector and a GIF Quantum ERS system for advanced nanoanalytics as well as a FIB Helios Nanolab 660 equipped with versatile add-ons for sophisticated sample preparation and *in situ* studies.

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, 100% E13 TV-L for PostDoc). The PostDoc position will be for initially 2 years. **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 until 30 November 2019 by e-mail to Prof. Erdmann Spiecker ([Erdmann.Spiecker@fau.de](mailto:Erdmann.Spiecker@fau.de)) and Dr. Stefanie Rechberger ([Stefanie.Rechberger@fau.de](mailto:Stefanie.Rechberger@fau.de)).