Open position as a research scientist with the opportunity to acquire a doctoral degree

Understanding the stepwise structural evolution of printed semiconductors: from ex-situ to complex in-situ studies

A position as a doctoral researcher is available in the Functional Particles and Interfaces group (Prof. Tobias Unruh) at the Institute for Crystallography and Structural Physics (ICSP, Friedrich-Alexander-Universität Erlangen-Nürnberg), starting October 2025.

Your duties

We work on the preparation and structural characterization of thin semiconductor films for electronic and optoelectronic applications. The successful candidate will develop strategies for deposition of semiconductor layers from the liquid phase on self-assembled-monolayers on solid substrates with atomic precision. The deposition process will be observed in-situ by X-ray reflectometry (XRR) and grazing incidence wide and small angle scattering (GIWAXS, GISAXS). These methods will be supported by complementary techniques such as contact angles (CA) measurements, Raman spectroscopy and X-ray photoelectron spectroscopy (XPS). You will apply for beamtime and prepare and perform the corresponding measurements at large scale facilities such as DESY (Hamburg) and ESRF (Grenoble) to perform the in-situ X-ray studies.

Your profile

Required qualifications:

We are looking for a highly motivated candidate with an excellent master's degree in physics or a closely related field of study. The interest in an interdisciplinary research habit and ability to communicate and coordinate efficiently within a collaborative scientific environment are a requirement. Experience in chemistry lab work is expected. Fluent oral and written English language skills are required.

Additional desirable qualifications:

Practical experience in performing X-ray scattering experiments and in python programming would be highly advantageous.

About the Collaborative Research Center 1719 "ChemPrint"

The project is part of the Collaborative Research Center 1719 "ChemPrint — Next-generation printed semiconductors: Atomic level engineering via molecular surface chemistry", funded by the German Research Foundation (DFG). The doctoral researcher in this position will be a member of the integrated Research Training Group (iRTG) of CRC 1719 within the Graduate School "Engineering of Advanced Materials". The iRTG offers to its young scientists excellent scientific training, an interdisciplinary network, dual supervision, the opportunity to spend a research period at an international institution and further opportunities for their own personal and professional development.

Application

Please submit the following documents as a single PDF file (maximum size 10 MB) to Tobias.Unruh@fau.de: (1) Letter of motivation including a short summary of research experience and the master's project, (2) Curriculum vitae, (3) Transcript of records or educational certificates, (4) List of publications (if applicable).

Further information available: https://www.icsp.nat.fau.eu/