

PhD Student

Understanding the role of functional layers and interfaces in $\text{Cu}(\text{In,Ga})(\text{S,Se})_2$ thin film solar cells using atom probe tomography and correlative microscopy

The overall aim of the project is to investigate the influence of variations in the composition of host elements (such as Ga, Ag and S) and impurities (Cs and Rb) on the properties of functional layers and interfaces by atom probe tomography and correlative microscopy. In the past of couple decades, APT has emerged as one of the most promising nano-analytical techniques. A state-of-the-art Local Electrode Atom Probe (LEAP 4000X Si, Cameca) is available at the I. Physikalisches Institut (IA) and will be exploited for this project. This technique can be nicely combined with the electron backscatter diffraction, electron beam induced current or transmission electron microscopy in order to obtain a deeper understanding of the physical phenomenon taking place at the interfaces in chalcogenide materials.

This work is part of EFFCIS II BMWi project where 7 German research Institutes and companies are involved. Therefore, mastering German language will be an advantage, but not mandatory. Excellent English skills are mandatory.

We encourage candidates with a background in materials science or physics as well as solid educational background on semiconductor physics to apply (CV, motivation letter, reference letters) to cojocaru-miredin@physik.rwth-aachen.de .