

At the University of Göttingen -Public Law Foundation-, Institut für Materialphysik, there is a position as

**PhD Position(all genders welcome)
Entgeltgruppe 13 TV-L/66%**

to be filled. Starting date is as soon as possible. The position is limited to 31.december 2027 .

A working time of 75% (29.85 hours) is planned for the 2-3rd year of the contract.

“Characterization of heterostructure interfaces for future solar cells with atomic scale methods”
as part of the ‘FuturePV’ - Graduiertenkolleg („Grundlagen für Photovoltaik-Technologien der Zukunft“) – funded by the Lower Saxony Ministry of Science and Culture. It is part of a joint project of the 4th Physical Institute – Solids and Nanostructures – (PI: Prof. Dr. Michael Seibt) and the Institute of Materials Physics (PI: Dr. Tobias Meyer) at Göttingen University.

Project:

Our project as part of ‘FuturePV’ aims to correlate interfacial processes with the photovoltaic performance of solar cells. In order to explore the underlying properties, i.e., the atomic structure, chemical compositions, and electric fields, well-established and advanced transmission electron microscopy techniques will be developed and applied including HR(S)TEM, 4D-STEM, EELS, and EDX. Furthermore, scanning transmission electron beam induced current (STEBIC) under laser illumination will be employed to map the photovoltaic performance in real space and identify regions and mechanisms responsible for energy conversion losses. A strong collaboration with other groups within the cooperative project ‘FuturePV’ will be established to extend our knowledge about promising solar cell materials such as halide and complex oxide perovskites (collaboration with Prof. **C. Jooss** / **Prof. J. Palakkal**, University of Göttingen, See Ph.D. advt. 74377) as well as their combination with silicon in tandem cells.

Your tasks and opportunities:

You will get trained as an advanced transmission electron microscopist with a strong background in semiconductor and materials physics. Application of state-of-the-art experimental methods to photovoltaic junctions follows the overarching goal to further optimize them to meet requirements of materials relevant for future solar cells. The optimization of existing methods will require sound understanding of electrical circuits, laser optics and computer programming. Physical model-based analysis, possibly in combination with finite element simulations, will be used to explain the experimental observations. Active collaboration with other project partners of ‘FuturePV’ from various research institutes in Lower Saxony is expected.

Your profile:

- Recently obtained Master’s degree in physics, materials sciences, or closely related subject areas
- Communication skills in English are required. Good German language skills are desirable
- You are a team worker and self-motivated to attain project goals

Preferred Experiences (experiments, data collection, and analysis):

- Semiconductor physics
- (Transmission) electron microscopy
- Electric signal amplification
- Programming / scripting
- Laser optics
- Model-based data analysis
- Finite element simulations

The University of Göttingen is an equal opportunities employer and places particular emphasis on fostering career opportunities for women. Qualified

women are therefore strongly encouraged to apply in fields in which they are underrepresented. The university has committed itself to being a family-friendly institution and supports their employees in balancing work and family life. The University is particularly committed to the professional participation of severely disabled employees and therefore welcomes applications from severely disabled people. In the case of equal qualifications, applications from people with severe disabilities will be given preference. A disability or equality is to be included in the application in order to protect the interests of the applicant.

Please upload your application in one pdf file including the usual documents until 3/11/2024 on the application portal of the university using this link: <http://obp.uni-goettingen.de/de-de/OBF/Index/74378>. For more information get in touch with Marco Brankovic directly via E-Mail: marco.brankovic@uni-goettingen.de, Tel. +495513925002 .

Please note:

With submission of your application, you accept the processing of your applicant data in terms of data-protection law. Further information on the legal basis and data usage is provided in the [Information General Data Protection Regulation \(GDPR\)](#)

