Job posting

Type of position
☑️ scientific  ☐ administrative

Target group
☑️ graduates  ☐ post docs  ☐ other

Title
1 PhD Position

Institution
The Fritz Haber Institute (FHI) in Berlin-Dahlem is one of the oldest and most renowned research institutes within the Max Planck Society (MPG), Germany's most successful scientific organization. At the FHI, researchers from all over the world are engaged in basic research in the field of chemical physics at interfaces and surfaces, catalysis research and molecular physics.

Position
The insatiable demand for computational power has driven the research for new materials. These nano-materials promise advanced functionalities and often unique properties that put novel computational concepts based on quantum computation or spintronics in reach. To exploit their exciting properties functionalization is carried out at the single molecular level. Key for the development of nano-devices is a profound understanding of the charge transport on the atomistic scale. For the investigation of nanostructures scanning probe microscopy (SPM) became a powerful tool.

Responsibilities
Your task will be to investigate charge transport at the nano-scale. You will fabricate atomically precise integrated circuits with a scanning tunneling microscope by using a novel sample systems with several electrodes just embedded below the surface. This setup is unique because the SPM tip can characterize the nano-device in-operando with sub-molecular resolution. You will be able to correlate the measurement signals to the precise chemical composition of the junction. Further you can position individual molecules with nm precision by STM manipulation and most importantly, the SPM tip can act as an additional electrode which can be placed with Angstrom precision. This tool box will allow you to study charge transport on a molecular level with highest control. In the framework of your PhD you will become an expert in scanning probe microscopy and clean room device processing. The PhD position is limited to three years with a starting salary corresponding to a 60% TVöD/E13 position.
**Requirements**
Potential PhD students should have a background in physics or related subject, solid-state physics, low temperature scanning probe microscopy and/or device fabrication.

**Application procedure (deadline etc.)**
Your application should include:
- a CV focusing on scientific aspects of your career.
- a motivation letter explaining why you apply for this position (one page at most).
- a list of publications.
- copies of academic certificates.
- names and email addresses of two referees.

Applications for this position are only accepted via our online application portal https://www.fhi.mpg.de/open-positions by March 31, 2020.

The Max-Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. Furthermore, the Max Planck Society seeks to increase the number of women in research and therefore explicitly encourages women to apply.

**Contact**
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