



PhD student position

Control of Surfaces and Interfaces of single-layer materials

Controlled monolayer growth of van der Waals bonded 2D materials like hexagonal boron nitride and graphene by chemical vapour deposition onto metal surfaces under ultra-high vacuum (UHV) conditions leads to large-area and high-quality material. For exploiting their unique physical properties, e.g. in graphene based electronics or optoelectronics, they have to be separated from their metallic growth templates. In this project, electrochemical delamination methods will be developed and optimized by ex-situ characterization of the resulting single-layer material using standard surface science techniques (XPS, ARPES, STM, LEED), optical microscopy and Raman spectroscopy, but also by in-situ monitoring of the process using ambient pressure XPS at the solid-liquid interface. In a second step, controlled stacks of such samples will be prepared and characterized. The goal of this project is to produce heterostacks of single-layer materials with well defined interfaces in a scalable fashion. Information of the group's research activities in this field can be found at <http://www.physik.uzh.ch/groups/osterwalder>.

We are looking for a highly motivated student with a Master degree in Experimental Physics or Physical Chemistry. Preference will be given to candidates who have conducted a Master project involving either extensive hands-on experience with surface science techniques and UHV, or in Electrochemistry.

The position can be filled immediately. Candidates should send their CV, a pdf of their Master Thesis, the names of two references as well as a short statement (one paragraph) of their research interests to Prof. J. Osterwalder (osterwal@physik.uzh.ch).