

Postdoc position

AG Prof. M. Morgenstern



Scanning Tunneling Spectroscopy of Exfoliated 2D Materials

We are looking for someone to lead the subgroup of the institute working on 2D materials. The group consists of 2-3 Ph.D. students and 1-2 master students and is embedded in the European Consortium Graphene Flagship.

Experiments can be performed at several UHV scanning tunnelling microscopes operating down to 400 mK and partially in magnetic fields up to 14 T with sample holders enabling up to 5 contacts. Samples are partially prepared in the institute's cleanroom (Fig.1,2) and partially provided by cooperation partners such as Manchester University or Technion Haifa (Fig.4).

Central topics are the quantum Hall physics of graphene, ferromagnetic 2D materials, spin-orbit interaction in stacked materials and superconducting interfaces.

The candidate should preferably provide hands-on experience in low-temperature ultra-high-vacuum scanning tunneling microscopy and/or in preparation and experimental investigation of exfoliated 2D materials. Moreover, she/he should have a strong interest in emerging quantum mechanical properties.

We offer a full position (TVL-13) that enables qualification for a scientific career. A Ph.D. in Physics or a closely related subject is required.

If you are interested, please submit your CV, list of publications, talks and instrumental skills, short summary of your Ph.D. thesis (~1 page), a statement of scientific interest (~1 page) and a list of references (e.g. your former supervisors) to Prof. M. Morgenstern mmorgens@physik.rwth-aachen.de (questions to the same adress)

more info on the group:

<http://www.institut2b.physik.rwth-aachen.de/>



Fig. 1: Sketch of a typical graphene device

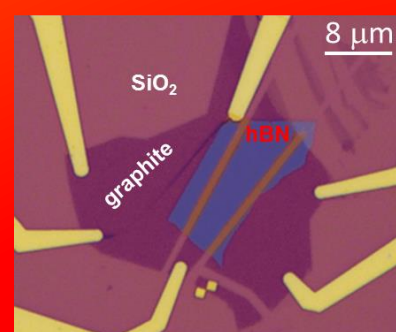


Fig. 2: Left: optical image of the device Right: STM head made of the ceramics Shapal

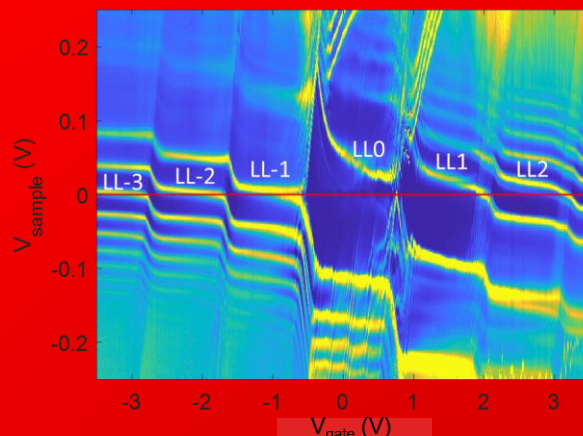


Fig. 3: Graphene Landau levels probed by STM

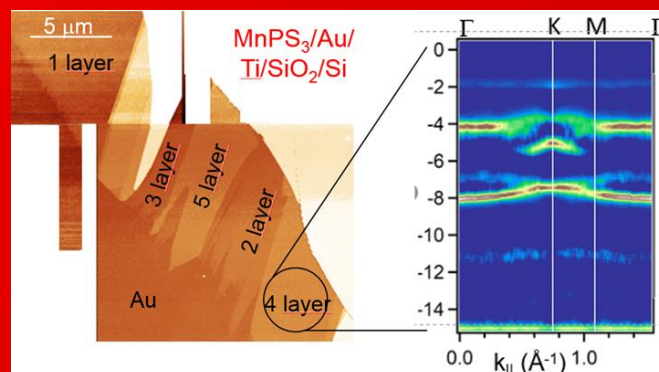


Fig. 4: Left: exfoliated MnPS₃ flakes Right: bandstructure probed by μ-ARPES