

MSc Thesis & BSc Projects:

The metal organic interface: formation and electronic structure

Apart from scientific interest, an understanding of the growth of organic thin films is important for the function of organic devices. The initial stages of formation of an organic film, that is the interface at the contacts, is important for charge injection, while both charge transport and optical properties will strongly depend on the molecular orientation due to the highly anisotropic charge carrier mobility in these organic crystals and the anisotropic absorption and luminescence behavior of the molecules.

Within BSc and MSc projects the geometric and electronic structure of thin molecular films grown on metal and oxide substrates will be investigated applying a range of modern surface science methods.

In specific, the student will both prepare and investigate the molecule/metal interfaces in ultra high vacuum systems. The measurements will mainly include UV and x-ray photoelectron spectroscopy (UPS and XPS) in addition to LEED. The projects will be embedded in a collaboration with the orbital tomography projects and the theory group of Peter Puschnig.

The possibility of 6-month research grant of 440 € / month is given.

Contact georg.koller@uni-graz.at for further details.

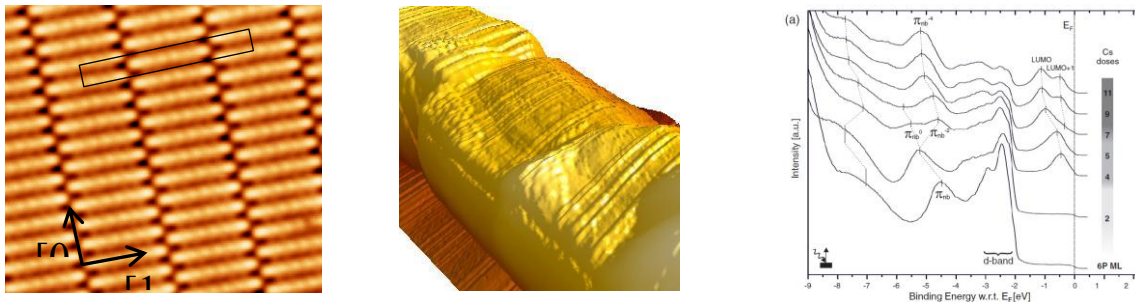


Fig. (1) (2) From Monolayers to molecular nano-crystals. (3) UV-Photoemission spectra showing the development of gap states upon alkali metal doping