

KIDS TALK

“Formation of 2- and 3- dimensional virus structures on different surfaces”

Speaker: Veronika Rink, AG Ziegler

Abstract: Nowadays biohybrid materials, which are consisting of synthetic materials and biomolecules, are used in many fields of Nanotechnology, ranging from biosensors to implant materials. Thus, there is a permanent demand of new nano biomaterials. In Nanotechnology, fabrication technologies based on a “top-down” approach reach physical and technical limits. Therefore, “bottom-up” approaches are of increasing interest. They use small elementary building blocks (e.g. plant viruses) of matter to form larger elements through self-assembly.

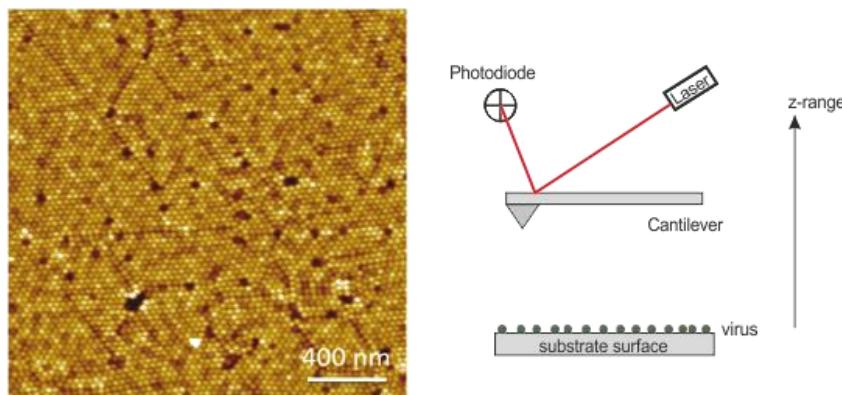


Figure 1: Scanning force microscopy image of the self-assembly of tomato bushy stunt viruses

Plant viruses are promising candidates for the use as such nano biomaterials because of their small size, their simple icosahedral or rod-shaped structure and the possibility to extend the capsid (virus shell) by genetic modification, for example by including different amino acid residues and thereby creating new functionalities.

In my work I investigated the self-assembly of genetic modified tomato bushy stunt viruses on different surfaces by scanning force and scanning electron microscopy. Firstly, I investigated unspecific interactions between the viruses and the substrate surface (for example coulomb interactions) and afterwards I even create a pattern of viruses by exploiting specific interactions (for example histidine-nickel-interactions). This now enables me to exploit the self-assembly of plant viruses to systematically construct systems which are structured in all three dimensions.

When: Friday, July 14th 2017, 10:00 am

Where: Room 46-387/388

All undergraduate and graduate students as well as postdocs are welcome and encouraged to join our discussion!

***** COFFEE, TEA AND COOKIES WILL BE SERVED *****

For questions, comments or suggestions: cjoerg@physik.uni-kl.de

