

## The chemistry of graphene

In January 2010 we initiated a study of graphene and graphene supported metal clusters. The project has now been running for 3 years and we successfully studied metal particles supported by graphene, CO-induced sintering of the metal particles, intercalation of molecules between graphene and its support material [1-3] together with the group of prof. Thomas Michely, University of Cologne. Currently, our research is focused on understanding: Simple reactions in the protected region between graphene and its support material, functionalization of graphene, and how doping affects the chemistry of graphene.

Currently, two PhD students at the Division of Synchrotron Radiation Research are involved in this project. As an Exjobb student on this project you will define your own graphene project together with the responsible scientist. Your project is expected to be linked to our other graphene related research. The main techniques you will use in this project will be high resolution X-ray photoelectron spectroscopy and scanning tunneling microscopy. The project will give you a unique chance to part of a real research project.

### Further information:

Responsible scientists: Jan Knudsen (jan.knudsen@sljus.lu.se)  
Prof. Jesper N. Andersen (jesper.andersen@sljus.lu.se)

PhD students: Elin Grånäs (elin.grånäs@sljus.lu.se)  
Mohammad Alif Arman (alif.arman@sljus.lu.se)

### References:

- [1] Knudsen, Feibelman *et al.*, *Phys. Rev. B*, **85**, 035407, (2012)
- [2] Grånäs, Knudsen *et al.*, *ACS Nano*, **6**, 9951 (2012)
- [3] Gerber, Knudsen *et al.*, *ACS Nano*, Online