# IPID4all Senior Research Exchange with University of Cyprus
## Feedback report

*Dr. Carsten Dosche*
*Universität Oldenburg*
*Institut für Chemie, Physikalische Chemie*
*Carl-von-Ossietzky-Str. 9-11, 26129 Oldenburg*
*Prof. Dr. Gunther Wittstock*
*3.-10. 2. 2017*
*Renewable Energy – Functionalization of Biochar Fibers*

*University of Cyprus*
*Department of Chemistry, University of Cyprus*
*P.O. Box 20537, Cy-1678 Nicosia*
*Prof. Dr. Ioannis Pashalidis*

### Activities / Contacts

During the stay of the host supervisor at Oldenburg in summer 2016, XPS and SEM measurements on activated biochar fibres have been performed. During these measurements, it became obvious that the biochar surface could be further functionalized by hydrolysis with KOH. Back at the University of Cyprus, these new findings have been systematically evaluated. During the actual stay, the new results have been summarized and integrated in the existing paper draft. The resulting paper “Surface characterization of oxidized biocher fibers derived from Luffa Cylindrica and lanthanide binding” has already been submitted to the Journal of molecular liquids.
In order to obtain further insight to the motivation of studying heavy metal adsorption on biochars, an old copper mine which is used for field studies has been visited. For future evaluation of adsorption of Lanthanides and Actinides on biochars, a scintillation counter was installed and optimized during the stay. Also, as most PhD and Master students at the University of Cyprus are not familiar with XPS, a lecture about XPS theory, measurement methods and data evaluation was given in the Advanced Analytical Chemistry seminar. Additional methods of surface modification, especially the introduction of amine groups for noble metal binding have been discussed. First amino-functionalized samples for surface characterization will be sent to Oldenburg in spring 2017.

### Future collaboration / Outlook

In future, functionalization of the biochars with amino groups for increased adsorption of Platinum ions for seeding nanoparticle growth is planned. First samples will sent to Oldenburg in spring 2017. If the first experiments are successful, a Postdoc will be sent to Nicosia in 2018.

DAAD
Federal Ministry of Education and Research