

Topics in Water Chemistry and Water Technology

2014

Annual Report of the Chair of Water Chemistry and Water Technology
and the DVGW Research Laboratory at the Engler-Bunte-Institut

ENGLER-BUNTE-INSTITUT



Dear colleagues and friends,

2014 has been an exciting year with a huge number of running research projects, new PhD students and the first PhD thesis, which has been successfully defended in October. Eva M. Gilbert finished her excellent thesis on mainstream deammonification within a remarkably short time period of two years and 10 months. At the same time her supervisor Susanne Lackner received a professorship in Biotechnology for Wastewater Treatment at the Engler-Bunte-Institut. Our group is very proud that Gudrun Abbt-Braun was elected as Vice President of the International Humic Substances Society (IHSS) this year.

As already reported in 2013, I moved from building 40.11 to 40.04. My new office is perfectly located close to technicians, PhD students, Postdocs and the laboratories. The reconstruction of building 40.11 will take a little bit longer as expected.

In 2014, the research scope and interest of the chair of water chemistry and water technology has been sharpened by the research team. We bought a new confocal laser scanning microscope (CLSM) and thereby increased our competence in imaging of microbial communities living at interfaces. More than one third of the running projects deal with desired and undesired microbial activity at interfaces. A highlight in 2014 is the approach introduced by Florian Blauert and Michael Wagner. They used optical coherence tomography (OCT) to visualize the deformation of biofilms two-dimensionally and temporally resolved, which in the end might enable us to calculate mechanical biofilm properties. Not only CLSM and OCT have been used to image structures and dynamic behavior of biofilm systems. This year, the collaboration with Gisela Guthausen from Pro²NMR at KIT was also successful as biofilm dynamics could be visualized by magnetic resonance imaging (MRI).

Our PhD students and Postdocs visited international conferences, workshops and summer schools in 2014. We are now running our Advanced Biofilm Course together with TU Delft, University of Copenhagen and UFZ for 10 years, this year the organizer was Thomas Neu at the UFZ in Magdeburg. Our PhD students were abroad and researchers from Spain, Israel and Poland worked at the Engler-Bunte-Institut and ran their experiments in our labs.

Within the scope of our current collaborative projects with more than two partners we had project meetings in Denmark, England, Italy, and in Israel. The exchange of results and ideas with other groups was very extensive and this year we do have a very high number of publications together with researchers from other groups at KIT, in Germany, North and South America, Asia and Europe.

I would be glad if you enjoy this report or find some nice ideas for your own research.

My best wishes for 2015

Harald Horn