

Topics in Water Chemistry and Water Technology

2017

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

ENGLER-BUNTE-INSTITUT



Dear colleagues and friends,

As every year, the last 12 months have been accompanied by a certain fluctuation within the group. Three PhD studies have been finished with a defense. Three new PhD students started to work at the Institute on biofilm mechanics, membrane technology and decision support systems for the water management in the North of Chile. The latter is a new topic for us and we cooperate with the Institute for Technology Assessment and Systems Analysis (ITAS) at KIT.

The next pages will show the research conducted in Water Chemistry and Water Technology at the Engler-Bunte-Institut. Without no doubt, the measurement of the concentration boundary layer thickness in a fully operated reverse osmosis/nanofiltration cell with Raman microspectroscopy is one of the major breakthroughs of this year. The use of the liquid chromatography coupled with different online detection systems (C, N, UV) for water quality on the one side and waste water treatment on the other side has been intensified as you can see from the two PhD projects. Especially in waste water treatment, the method has been underestimated within the last decade. We really made a step forward in identifying on how antibiotic resistance genes (ARG) do find their way into the river sediments. This research is possible thanks to a very fruitful cooperation with Thomas Schwartz (Institute of Functional Interfaces, IFG).

Senior researchers from Australia and China joined our group in 2017. Both colleagues will stay until 2018. Prof. Guihua Xu is using optical coherence tomography (OCT) for the characterization of activated sludge flocs and the Alexander von Humboldt scholarship holder Dr. Yiwen Liu is working on the enrichment of ammonium oxidizing archaea (AOA) in biomass from different waste water treatment systems.

The Advanced Biofilm Course (ABC) took place at the University of Copenhagen in Helsingør this year. It was combined with an autumn school for the EU project EVOBLISS. The number of applicants is still very high and we cannot provide enough places for all.

Since October 2016, I have been appointed as Dean of the Faculty of Chemical and Process Engineering. The work is accompanied by more or less fruitful meetings at the KIT level and with an insight into a research institution, which is still debating the best way to make the merge of the Universität Karlsruhe (TH) and the Helmholtz Research Center a successful story.

As you can see from the report of Ulrike Scherer, the Water Research Network organized several workshops and meetings in 2017. The intention of the network, to bring together researchers from different research institutions in Baden-Württemberg, proved to be a good idea as we could experience extremely valuable discussions.

I wish you all the best for 2018

Harald Horn