

Conference Report

CHanalysis 2019, Beatenberg, April 10.–11., 2019

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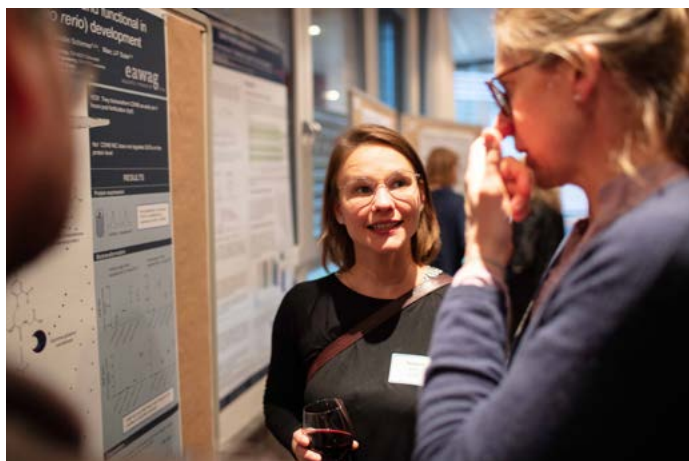
Beatenberg greeted the 80 participants of the fifth edition of CHanalysis with fog and no view of the spectacular scenery, and unfortunately, this only changed right after the meeting on Friday noon. On the other hand, this also meant that the attendees could fully concentrate on the presentations given by the four invited and fourteen selected speakers. Fully one half of the attendees were PhD students, thus meeting one of the goals of CHanalysis, which is to connect young scientists from different analytical fields. The breadth of the field was illustrated by the fact that 4 groups from ETHZ, 3 groups from the University of Geneva, 3 departments from Eawag, 3 groups from Agroscope were represented, as well as Empa, PSI, the Universities of Bern and Zurich, the Universities of Applied Sciences (FHNW, HES-SO, ZHAW), the Functional Genomics Center Zurich (FGCZ), and Industry (Agilent, Novartis, PAL System, Roche, Sandoz, Sotax, Waters).

The first lecture was given by **Francesco Pomati** (Eawag) who talked about his efforts to predict algal blooms in lakes. He demonstrated the dynamics of the phytoplankton by converting the composition of the plankton obtained by online monitoring to sound, resulting in a psychedelic and spherical composition. **Barbara Günthardt** (Agroscope, Eawag, ETHZ), using target and suspect screening, then showed that natural phytotoxins indeed reach surface waters. She identified estrogenic isoflavones and pyrrolizidine alkaloids, highly relevant for food and feed safety, in Swiss surface waters at up to 100 ng/L concentrations, indicating their environmental risk. **Christine Egli** (Eawag, ETHZ) mapped photochemically induced damage and inactivation of extracellular enzymes in surface waters, while **Wei Liu** (University of Geneva) investigated the interaction of silver nanoparticles with key antioxidant enzymes. **Kamyar Mehrabi** (ETHZ) then presented an online microdroplet calibration strategy to size and count single nanoparticles using ICP-MS, and its application to wastewater treatment plant effluent. **Michael Sander** (ETHZ) then opened the second session, by introducing quartz crystal microbalances and their application to the study of solid–water interfaces, among others, sorption processes of bacteriophage viruses and natural dissolved organic matter, and transformation reactions of synthetic polyesters by extracellular microbial esterases. **Stefan Kradolfer** (ETHZ) presented the complementary use of XRF- and FT-IR/Raman spectroscopy, together with ^{14}C dating, and ICP-MS for elemental composition, to narrow down age and geographical location of an oil painting. **Akkapol Suea-Ngam** (ETHZ) introduced a paper-based analytical device for the rapid and cost-effective detection for methicillin-resistant *Staph aureus*. **Yoshiki Soda** (University of Geneva) then presented a microfluidic paper-based analytical device for the highly sensitive and exhaustive detection of K^+ in serum samples. This was then followed by the Simon-Widmer award lecture, given by Wilhelm Simon's former PhD student and now Professor at the University of Geneva, **Eric Bakker** (see Community News in this issue, p. A432). He gave a platform presentation on the history and future of ionophore-based sensors.



Following Eric's presentation the poster session with apéro started. 26 posters were registered plus 5 sponsors, which was double the number from previous years. The day concluded with a sumptuous buffet dinner and discussions in the Muh-Bar.

Emilio Yángüez (FGCZ) started the first session on Friday talking about single cell gene expression analysis. This technique provides snap-shots of the genes that are active at a given time in a specific cell. Current technologies allow generation of gene expression profiles of thousands of cells in parallel with high resolution, allowing the characterization of tumors, developing organs or even whole organisms. **Jens Sobek** (FGCZ) then introduced single-molecule analytics for monitoring chemical reactions using a fluorescent dye. This was followed by **Christian Berchtold** (FHNW) describing a single-cell picker that, in a proof of concept, allows metabolite and protein quantification in a single cell. **Maria Girard** (University of Geneva) then presented an automated parallel derivatization strategy that allows profiling multifunctional metabolites during a single LC run, and **Charlotte Driesen** (Empa) analyzed and modelled PCB concentration in cattle feeding on PCB-polluted soils, in view of mitigating PCB contamination in food of bovine origin. **Markus Mieth** (Sandoz GmbH) then informed the mostly academic attendees about how difficult it is to implement a new analytical technique, in this case Transition Raman for Content Uniformity Testing, into a GLP/GMP environment. This was followed by **Andrea Sterzi**'s (Empa) evaluation of deep UV Raman spectroscopy for online water monitoring. **Teresa Mairinger** (Eawag) then dis-



Pictures: M J-F Suter (Eawag), E Bakker (Geneva)

cussed the challenges when analyzing water-soluble synthetic polymers in wastewater and *Saša Bjelić* (PSI) finally presented data mining and machine learning strategies for non-targeted interpretation of high resolution MS data from complex biofuel samples. This last presentation ended a very interesting and enjoyable scientific meeting. The next edition of *CHanalysis* will take place May 7.–8., 2010.

Financial support by six sponsors (Agilent, Anton Paar, Merck, PAL System, Roche, Waters) is greatly acknowledged.



General Assembly of the DAS

The president of the DAS, Marc Suter, informed that the Simon-Widmer Award 2019 was awarded to Eric Bakker (University of Geneva) at this year's *CHanalysis*. He also advertised the fact that METAS has launched an award honoring outstanding contributions to the field of metrology in chemistry and/or biology.

He reported that last year's *CHanalysis* had 50 attendees and an expected financial loss of roughly 7'500 CHF, while in 2019 there were 80 attendees and 6 sponsors, which should re-

sult in no net loss for the meeting. Changes in the DAS course administration were the retirement of the two longtime assistants Verena Schmid and Lilo Weisshaupt who were succeeded by Esther Wolff, who is warmly welcomed aboard. The president advertised the 'Highlights of Analytical Sciences in Switzerland' published in each CHIMIA issue, for which Veronika Meyer is responsible and greatly acknowledged.

Götz Schlotterbeck, treasurer of the DAS, reported on the finances and stated that the DAS has the financial means to continue supporting the analytical community in Switzerland by organizing scientific events like *CHanalysis* and handing out travel money and the Simon-Widmer Award. The division is currently well positioned with assets over 100 kFr.

The president then informed that Urban Frey, board member since 2002, has decided to leave the board. He is greatly acknowledged for his support during the years. On the other hand the president proposed the election of Kathrin Fenner (Eawag, UZH) and Christof Finkler (Hoffmann-La Roche) as new members of the board, representing the 'Section of Chemistry and the Environment', and Industry, respectively. The board and the new members were collectively accepted by the members present.

Kathrin Fenner then presented the new 'Section of Chemistry and the Environment' (SCE) that will be part of the DAS. Eight board members have been selected: Kathrin Fenner (lead), Tamar Kohn (EPFL), Vera Slaveykova (University of Geneva), Lukas Emmenegger (Empa), Heike Laue (Givaudan), Stefan Hoeger (IES Ltd), Imelda Stamp (Syngenta) and Jutta Hellstern (Novartis).

The goals of the Section are to leverage high quality environmental chemistry & (eco-)toxicology research in Switzerland, to generate innovative research ideas in chemistry and environment in academia and chemical industry, and to act as platform and network opportunity for young environmental chemists.

Short-term plans:

- SCS spring meeting on 'Chemistry and the Environment', April 3rd, 2020, FHNW Muttenz
- CHIMIA issue on 'Chemistry and the Environment' (3/2020)

Long-term plans:

- SCE session at the SCS fall meeting (or jointly with DAS)
- round tables on specific topics of interest
- opportunities for industry lab visits and internships for students
- initiating joint research projects
- joint teaching initiatives (e.g. Massive Open Online Courses – MOOC)

The president concluded by advertising the SCS Fall Meeting 6.9.2019, University of Zurich (Analytical Session organized by H Andres – Metas, and S Schürch – University of Bern), the NATO Advanced Study Institute on Detection, Diagnosis, and Health Concerns of Toxic Chemical and Biological Agents 29.9. to 5.10.2019, Cetraro, Italy (Co-directors: G Sindona – University of Calabria, M Suter – Eawag), and the Meeting of the Swiss Metabolomics Society, 6.11.2019, Bern (Ch Berchtold – FHNW)

The meeting ended at 13:00.

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