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Conference Report

*CH*analysis 2022 – Back to the Future of Analytical Excellence

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In the stunning mountain scenery of Beatenberg, the Division of Analytical Sciences (DAS) of the Swiss Chemical Society hosted its annual event face-to-face after a forced two-year interruption owing to the pandemic. About 70 participants attended *CH*analysis on May 19–20, 2022, which was made possible by the generous sponsorship of Anton-Paar, Merck, Mettler-Toledo, Novartis, Roche, Shimadzu, Thermo, Brechbühler, Tofwerk and Springer Nature. Indeed, many participating company representatives enjoyed meeting a wide range of scientists and engaged in fruitful discussions.

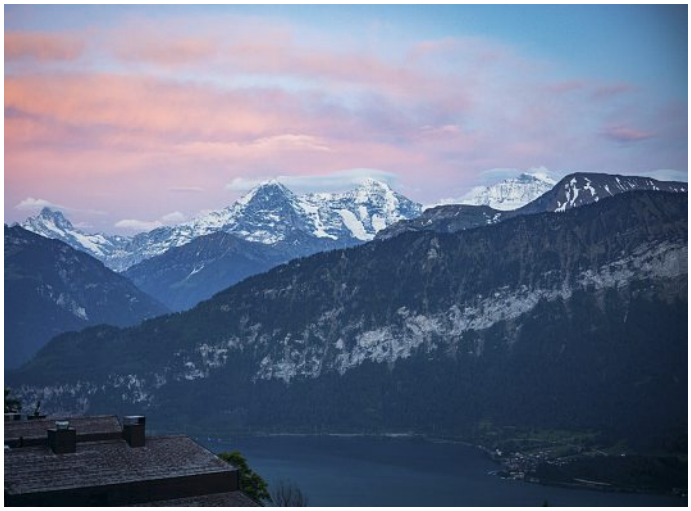

Fig. 1. The Bernese Mountains forming a spectacular backdrop of *CH*analysis.

Lenny Winkel (Eawag and ETH Zurich) kicked off the scientific program by showing how analytical science is crucial in gathering insights into the biogeochemical cycle of selenium. The first session was devoted to advanced surface science methods, such as HAXPES (hard X-ray photoemission spectroscopy, Emanuel Billeter, Filippo Longo, Empa), which permits the analysis of buried interfaces while being less affected by surface contamination than X-ray photoemission spectroscopy, and XAFS (X-ray absorption fine structure, Carlos Triana, University of Zurich), which is now commercially available as a benchtop instrument and not only possible at synchrotron beamlines. This was followed by approaches on how to increase the sensitivity of potentiometric sensors by using a controlled potential capacitive readout method (Pitchnaree Kraikaew, University of Geneva).

Behnam Ahmadian Baghbaderani from Lonza lectured on the challenges for the commercialization of analytical methods used for Cell and Gene therapies. Analytical methods for Cell and Gene Therapies, be it autologous, allogenic or viral vectors have to undergo the same stringent authority requirements as conventional medical treatments when it comes to measuring the critical quality attributes of the product (Safety, Identity, Strength, Purity, Quality).

Contributed talks showed how the analysis of endotoxins may finally be brought into the realm of modern analytical science by HPLC (Anika Hoffmann, HES SO-Sion). Further, chromatographic talks focused on the analysis of tea samples (María Fernanda Cifuentes Girard, University of Geneva) and PAHs and Hg in food (Siliva Mallia, METAS) and the use of sophisticated methods for sweat analysis (Christian Berchtold, FHNW). We also heard how nanoscale optical sensors can be optimized to reliably detect the anticoagulant heparin in human serum samples (Yoshiki Soda, University of Geneva) while electrochemical probes that rely on symmetry for signal stability were developed for the freshwater analysis of nutrients (Tara Forrest, University of Geneva).

It was inspiring to hear from Detlef Günther (ETH Zurich) how flow cytometric analysis can be combined with droplet microfluidics for direct detection by atomic spectrometry to offer a more powerful alternative to traditional fluorescence. As the highlight of the event, Andrew DeMello (ETH Zurich) was the recipient of the Simon-Widmer Award 2021. The award was presented this year by the DAS president Eric Bakker (University of Geneva), delayed because of the pandemic. Andrew DeMello showed the audience the many capabilities of microfluidics for analytical science and showed himself to be a perfect fit for the Award as microfluidics was pioneered by Michael Widmer and his team. Nominations for the 2023 Simon-Widmer Award are accepted until 30 November 2022 (https://scg.ch/component/page/simon-widmer).

Fig. 2. Eric Bakker (left) presents the Simon-Widmer Award to Andrew de Mello.

We all know that the pandemic gave a significant boost to the digital transformation. A few lectures provided concrete examples, including new ways to process complex mass spectral data of mixtures (Marco C. Knobloch, Empa and Eawag), using machine-learning to predict the toxicity of chemicals (Marco Baity Jesi, Eawag), or to complement classic lectures with videos and/or teleconferencing (Gunnar Schwarz, ETH Zurich).

The poster session was lively and interesting and gave an excellent opportunity for all researchers to engage in scientific discussions with a glass of wine. Poster prizes were sponsored by Springer Nature and the jury choose Di Qu (Empa, first prize) and Pascal Becker (ETH Zurich, runner-up).

Fig. 3. The lively poster session gave a welcome opportunity to discuss progress in analytical science face-to-face.

Finally, the DAS and the *CH*analysis participants thanked Marc Suter (Eawag) for his efforts over many years to organize this annual event for Swiss-based analytical scientists, which has helped to forge a strong identity of the Swiss analytical community.

Fig. 4. Marc Suter introducing a speaker at *CH*analysis 2022.

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