

Successful TransCon2010

http://www.eawag.ch/medien/veranstaltungen/events/transcon2010/index_EN



TransCon2010 was an international conference on the topic of environmental transformations of organic compounds. It addressed the possible formation of stable, environmentally relevant transformation products with different sessions covering experimental and model-based scientific methods to investigate and predict transformation processes, and to assess the environmental fate and toxicity of transformation products. The conference's aim was to develop a better scientific understanding of how much transformation products contribute to the overall chemical risk in the environment and of how to integrate this knowledge into chemical risk assessment procedures.

Wide range of participants

About 75 participants from all over the world and with diverse scientific backgrounds came together at Monte Verità to discuss the importance of transformation products of organic micropollutants. Researchers from university, regulators, representatives of industry, and various other stakeholders discussed and defined the importance of transformation products and different approaches of how to examine and regulate these compounds.

Protection of environment as overall goal

The conference started on Sunday evening with John Sumpter's (Brunel University) opening keynote lecture pointing out that our overall goal of research should always be to protect the environment and therefore the emphasis should lie on the transformation products with most ecotoxicological concern. Analytical approaches to identify transformation products in terms of exposure assessment were pointed out by Thomas Ternes (BAFG) and Juliane Hollender (Eawag). We heard three keynote lectures on transformation products of specific groups of compounds including: photodegradation of triclosan to toxic products (Kris McNeill, ETH Zurich); drinking water disinfection by-products linked to carcinogenic effects in humans (Susan Richardson, U.S. EPA); and environmental transformation of nanoparticles (Joel Pedersen, University of Wisconsin).

From process understanding to risk assessment

Perry McCarty (Stanford University) discussed the historical perspective of microbial transformations of chlorinated solvents and enumerated some challenges in predicting these transformations considering general principles of microbiology. Jason Snape (Astra Zeneca) provided an industry perspective and discussed the current experimental methodologies required for transformation product identification during the pharmaceutical registration process. Finally, Mark Bonnell (Environment Canada) gave us all his regulatory perspective and emphasized the wide uncertainty concerning transformation product data and the resulting difficulties in their inclusion in chemical risk assessment.

Model-based approaches and effects

For an efficient risk assessment of many compounds including their transformation products, a model approach is necessary. In his keynote lecture, Gerrit Schüürmann (UFZ) evaluated the performance of a variety of *in silico* tools for predicting biotransformation pathways and products. Our own Kathrin Fenner (Eawag) additionally provided examples of how experimental and model-based approaches can be integrated to enable exposure assessment of soil-applied compounds and compounds entering sewage treatment plants. On the effect side, Beate Escher (University of Queensland) explained the two approaches of effect-driven and exposure-driven risk assessment and emphasized that even from few effect data, a lot of information can be obtained.

In conclusion, many subjects including analytics, effect studies, modeling, and risk assessment with regard to transformation products were covered in this conference and participants from different disciplines could learn from each other.

Four workshops on specific topics

Besides the lectures, there were four concurrently run workshops aimed at discussing specified topics in their research field. The four groups included analytics, transformation processes, effects, and risk assessment. The outcome of each workshop was a short summary presented by the assigned chair (Michael Radke, University of Bayreuth; Christian Zwiener, University of Tübingen; Martin Hansen, University of Copenhagen, and Carla Ng, ETH Zürich). An article about these findings is anticipated for an upcoming issue of *SETAC Globe*.



Young scientist award winner Arne Wick (BAFG) (Photo: Liliana Cantoreggi)

The first prize of the young scientist award was given to Arne Wick (BAFG) for his oral presentation on the elucidation of transformation products from opium alkaloids, the two second prizes went to Judith Neuwöhner (Eawag, poster presentation) and Carla Ng (ETH Zurich, oral presentation).

Pleasant conference activities

We had beautiful weather during the whole week of the conference which allowed for pleasant walks down to Ascona, refreshing swims in Lago Maggiore, or invigorating early morning jogs.



View from Monte Verità (Photo: Susanne Kern)



Hike to Verscio (Photo: Susanne Kern)



Dimitri show (Photo: Junho Jeon)

The conference excursion consisted of a two hour hike from Monte Verità to Verscio, followed by a dinner at the Theatre of Dimitri and the show of Dimitri the Clown.