

Report on the 20th International Symposium on Homogeneous Catalysis

11.07.2016 – 15.07.2016, Kyoto, Japan



The International Symposium on Homogeneous Catalysis (ISHC) is the leading conference in homogeneous catalysis. The presented advances covered range from new catalyzed reactions and processes, to ligand and catalyst design, and new mechanistic insights that can change implementation into practice.

Participants included scientists involved in catalysis, organometallic chemistry, organic synthesis, and polymer synthesis, from both academia and industry. The ISHC has an unmatched reputation for excellence and highly engaged discussion. The single-session format for oral presentations promoted discussion and debate, as did the rather small conference size. Two very interesting and communicative poster sessions, always a highlight of the meeting, completed the scientific program.

The German Catalysis Society (GeCatS) granted 3 young scientists the opportunity to participate on the 20th International Symposium on Homogeneous Catalysis this year and to meet specialists across catalysis from all over the world in Kyoto, Japan.

These were the personal impressions of the 3 awardees:

Individual Statements



Alexander Weiß – *Institute of Chemical Reaction Engineering at the Friedrich-Alexander University of Erlangen-Nuremberg*

First of all I want to gratefully thank the German Catalysis Society for their studentship and the possibility to attend such a reputable conference like the International Symposium on Homogeneous Catalysis in Kyoto.

Arriving in Kyoto, we were directly welcomed with open arms by the conference organization team at the conference opening buffet on Sunday evening. The spirit of the conference, namely scientific communication on a familiar basis, was pointed out and engaged by Prof. Kyoko Nozaki, the organizing chair of the conference.

The conference opening talk on Monday morning was held by Prof. Marks from Northwestern University about tandem catalytic strategies for processing biofeedstocks. As it has been common practice on previous ISHC conferences, no parallel sessions were held during the talks. Since I am working in the field of chemical reaction engineering, I was personally interested in the keynote lecture from Dr. Alsters from DSM, who described the process of palladium-catalyzed aerobic cross-dehydrogenative coupling of unactivated arenes. The poster session with around 350 presenters was divided into two parts, one held on Tuesday and one on Thursday. Very interesting research was presented with a lot of fruitful discussion and scientific exchange during the sessions. One of my favorite keynote lectures was given by Prof. Daniel G. Nocera from Harvard. The inventor of the so called artificial leaf, whose name is often mentioned when it comes to recent Nobel Prize nominees, gave an interesting presentation about their latest scientific development in the field of renewable energy. By using a bacteria – artificial leaf hybrid system the group is able to produce biomass from solar energy with an efficiency of around 10 %.

Besides the interesting podium presentations, a lot of different activities were offered during the conference week. On Tuesday, a so called student mixer was organized, where PhD's and industry could come together in a casual atmosphere and discuss science or the job market. On Wednesday afternoon, an excursion was organized, which offered the unique opportunity to visit the most significant sights of the beautiful city Kyoto with all its temples and Japanese gardens. The following party, where brought drinks from all participants were shared during a buffet, again showed the interest of the organizing committee to bring everybody from all over the world together in a friendly ambiance.

Overall, the 20th International Symposium on Homogeneous Catalysis was a perfectly organized conference with a lot of interesting lectures and persons to discuss the latest research in their fields.



Tobias Pogrzeba – *Department of Chemistry at the Technische Universität Berlin*

The ISHCXX has been no doubt my personal highlight of all the conferences during my PhD so far. I was impressed by the high level of organization and quality of contributions. It was a great experience for me to speak and listen to so many competent scientists across catalysis. In particular, it was highly interesting to talk to several scientists from the field of ligand and catalyst design since their approaches and working focuses appeared to be very different from mine (for me as a chemical engineer). Thus, the keynote lecture of Prof. Matt L. Clarke from University of St. Andrews was one of my highlights. In his lecture, he discussed how to expand synthetic utility and mechanistic understanding of asymmetric hydroformylation and transfer hydroformylation. Another very interesting contribution was the lecture of Dr. Jessica L. Klinkenberg from Dow Chemical, who gave a nice example how to embed a new designed ligand into an already existing process for the Pd-catalyzed synthesis of 1-octene. The two poster sessions were what I've enjoyed the most on this conference, since they have been relaxed and pleasantly talkative. And despite the fact that nearly every participant of this conference was working on his very own scientific topic, the interest on the posters has been very high.

Apart from the conference, I've really enjoyed my stay in Japan as well. It has been a unique experience to visit this wonderful country with its very nice and friendly people, gorgeous nature and delicious food. With that, I'd like to thank the German Catalysis Society for granting me this great opportunity to visit the 20th International Symposium on Homogeneous Catalysis in Kyoto.



Johannes Ernst – *Organic Chemistry Institute at the University of Münster*

First of all, I would like to thank the German Catalysis Society for giving me the opportunity to attend the 20th International Symposium in Homogeneous Catalysis in Kyoto.

Throughout the conference, there were a variety of excellent scientific talks dealing with many different research topics from academia and industry. Furthermore, scientific discussions with professors, industrial scientists, post-docs and PhD-students from all over the world allowed for a deeper understanding of each topic. I was especially impressed and inspired by the talks from Prof. Yu from the Scripps Research Institute and Prof. Sigman from the University of Utah. Employing chemical library analysis to develop and improve chemical reactions, as presented by Prof. Sigman, and understanding the important effect of pyridine π - H-C -activations, as shown by Prof. Yu, represent two different approaches for rational method development. Other outstanding highlights were the two poster sessions on Tuesday and Thursday. Getting in touch with so many different scientists in such a pleasant atmosphere was the cornerstone for a scientifically and socially impressive conference.

Not only the science but also the social events made this conference outstanding. The members of the organizing committee were great hosts and allowed to learn so many things about Japanese culture. The welcoming reception, the student events, the excursion and, finally, the conference dinner were perfectly organized and gave everyone the opportunity to interact and discuss with everyone and to make friends all over the world.

All in all, this year's ISHC in Kyoto was, for me, an excellent scientific conference and a perfect opportunity to get in touch with Japan and learn more about Japanese culture.
