SPP2080 Status Colloquium 2021

The Status Colloquium organized by the SPP2080 Coordination Committee at KIT took place online on February 23-24, 2021. The event was an online meeting of more than 70 registered participants, including 10 scientists interested in the second SPP2080-round, many of whom were early-career researchers. The Colloquium was opened by Prof. Roger Gläser and Prof. Jan-Dierk Grunwaldt, followed by perspectives from the DFG by Dr. Simon Jörres on the requirements and review process of proposals for the second round.

The thematic focus of the colloquium was materials design. Highlights were two plenary lectures by Svetlana Mintova (Catalysis and Spectroschemistry Laboratory Caen, FR) with the talk "Metal incorporation in zeolite framework for catalysis" and Raffaela Buonsanti (EPFL, Lausanne, CH) with the talk "Colloidal chemistry for tunable and controlled heterogeneous catalyst for the electrochemical CO_2 reduction reaction".

All 12 Consortia presented updates of their work follwed by discussion. All sub-project as well as guests presented a total of 38 posters. The poster sessions took place in 3 virtual rooms via screen share and and could also be viewed on BW Sync & Share, which mostly worked well given the severe constraints of the online format. Many discussions took place during the coffee breaks and the poster session although the format was still new.

Awards have become a tradition during the status meetings: Also this year several poster awards were presented after they had been selected by all participants. The first prize was a Conference voucher for 2021, awarded to Ken Luca Abel (Leipzig University) for his poster "Preparation of Al_2O_3 and Ni/Al_2O_3 Xerogel Monoliths with Hierarchical Pore Structure". The second prize, the softcover 3rd edition of "Concepts of Modern Catalysis and Kinetics" edited by Chorkendorff and Niemantsverdriet was awarded to Antonia Herzog (FHI Berlin) for her poster "Operando Surface-enhanced Raman Spectroscopy of Cu-based Nanomaterials during CO_2 Electroreduction" and Sebastian Weber (KIT) for his poster "Imaging the evolution of the pore structure of a hierarchical porous Ni/Al_2O_3 catalyst during calcination". The third prize, limited SPP2080 memorablia, were awarded to Janis Geppert (KIT) for his poster "Microkinetic study of $Ir_xRu_{1-x}O_2$ catalysts for dynamic oxygen evolution reaction (OER)" and Ronny Zimmermann (Otto von Guericke University Magdeburg) for his poster "Load-Flexible Catalyst-Reactor Design for CO_2 Methanation". The second and third prizes were kindly sponsored by the coordinator. Congratulations to the awardees!

Alexey Boubnov

3rd SPP2080 PhD and Postdoc Workshop

The 3rd SPP2080 PhD and Postdoc Workshop was held consecutively to the Status Colloquium from February 24-25, 2021. The workshop was mainly organized by Gereon Behrendt, Aleks Arinchtein and Sebastian Weber and focused similar to the status colloquium on materials and their synthesis, as well as standardization of catalyst preparation and testing. In total 25 people attended the workshop.

The first day started with a talk by Hermann Behrens from the German Institute for Standardization (DIN e.V.). In his talk with the title "Today's idea - tomorrow's standard: Making scientific findings marketable via standardization", Mr. Behrens provided a general introduction into standardization and how DIN e.V. is working. Furthermore, he pointed out how researchers from academia, but also industry, can benefit from standardization. Mr. Behrens gave information how academic researchers could contribute and propose a standard and encouraged that the academic community becomes

more active in this direction. He highlighted some selected EU Horizons 2020 projects from which standards evolved. The lecture was an inspiration for the workshops on reference materials, reference conditions and dynamics for the second day. The first day finished with a get-together on the online platform gather.town, where the PhD and Postdocs could exchange and meet in small groups.

The second day began with three blocks of a student teach students format on different aspects of material synthesis. First, Aleks Arinchtein (TU Berlin) introduced into the topic of dip-coating, which was followed by a talk on sol-gel synthesis by Ken Luca Abel (Leipzig University). In the second block, Gereon Behrendt (University of Duisburg-Essen) provided some insights into synthesis of catalysts by co-precipitation, which was complemented by an introduction into flame spray pyrolysis by Jakob Stahl (University of Bremen). In the last session Phillip Röse (Karlsruhe Institute of Technology) informed about the general potential of electrochemistry in organic synthesis with a focus on large scale application possibilities. Finally, Daniel Escalera López gave a talk about electrodeposition and electroplating. All talks were accompanied with fruitful discussion on possible applications of the learned techniques.

The afternoon of the second day consisted on a combined workshop on possible reference materials, reference conditions and dynamic conditions, which are relevant for the sub-topics within the SPP2080. The PhDs and Postdocs from the three topics electrocatalysis, methanol/Fischer Tropsch synthesis and methanation teamed up in small groups in gather.town for discussion and group work. Each group provided at the end of the workshop a short update on potential reference materials, conditions or dynamics within their topic inside the SPP. All topic groups could agree on common dynamic scenarios that are of interest; however defining reference materials and conditions was challenging. Among the methanation consortia, additional options for extended collaboration were found and elaborated.

After this session, a short discussion on how to present a poster was held. Posters presented at the Status Colloquium were evaluated and used as examples to give an inspiration on do's and don'ts. The time was further used to discuss which trends in the way of presenting research results on conferences instead of the traditional poster format might evolve.

We are looking forward to the next SPP PhD and Postdoc Summer School within the 2080, which is planned for August/September 2021.

Sebastian Weber