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Conference Report

PCC Christmas Symposium Basel 2022

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The PCC

The PhD Chemistry Community (PCC) was founded in 2012 in the Chemistry Department of the University of Basel. Our activity includes representation of all graduate students and post-doctoral researchers throughout the department. We aim to bring the members of our department closer together and bridge differences between the research groups. By organizing scientific and social events, we enable the researchers within our department to network and exchange. Early on, we started organizing chemistry symposia with a yearly event since 2013.[1]

Every year on the first Friday of December the PCC Christmas Symposium is held with a plethora of chemistry-related topics.

Fig. 1. Current PCC board members. Back, from left to right: Andreas Ostertag, John Coats, Werner Jauslin, Björn Pfund, Adriano D'Addio, Anton Kudashev and Annika Huber. Front, from left to right: Dorothee Wagner, Simona Capomolla, Carlotta Seno, Pascal S. Rieder, Charlotte Kress, Joël Wellauer, Jiaming Peng, Salome Heim and Maryame Bina. Missing Giacomo Persiani.

Christmas Symposium Basel 2022

After two years of virtual symposia, we returned to a live meeting just in time to celebrate the 10th anniversary of the PCC. As a treat, the symposium was carried out the first time to span the entire day. Therefore, seven international and national keynote speakers were invited. The program was completed by four short talks from graduate students and a vivid poster session. The 138 participants were composed from doctoral and post-doctoral researchers, professors and undergraduate students which engaged actively in discussions after all talks. The symposium was chaired by C. Kress, W. Jauslin, J. Coats, A. Kudashev, D. Wagner, B. Pfund, C. Seno, J. Peng, P. S. Rieder, M. Bina and A. D'Addio.

Prof. Dr. Irená Stara (IOCB Prag) opened the symposium by showing new synthetic strategies for the synthesis of helicenes.[2–4] The introduction of chiral centers for the enantioselective synthesis of such structures was highlighted while optical as well as electronic properties were revealed and placed into context for possible applications.

Prof Dr. Markus Kalberer (University of Basel) was invited to give a talk about analytical enviromental sciences. The basics of particle pollutants of different origin, the complex influence of aerosols to the climate and the analytical tools developed in his group to quantify them were presented.[5]

Prof. Dr. Ben Davis (University of Oxford) provided an insight on traceless modifications of proteins, allowing for selective transformation of specified amino acid residues (cysteine) inside a protein into a variety of other amino acid residues, both natural and unnatural.[6–8]

Prof. Dr. Christoph Kerzig (University of Mainz) opened the afternoon session by presenting blue-to-UV upconversion and its applications for challenging photoredox catalysis.[9] Applying the sensitized triplet–triplet annihilation upconversion mechanism, his group achieved UVB upconversion. Additionally, the sensitized singlet excited state was further employed as an energy donor in subsequent FRET activations of aliphatic carbonyls using blue light.[10,11]

Prof. Dr. Rebecca Buller (ZHAW) gave a talk on enzyme engineering and how direct evolution along with follow-up optimization can be used to turn residual activity to the dominant activity of an enzyme.[12] The methodology was demonstrated on two classes of enzymes and has been applied to synthesize challenging compounds that serve for medical and agricultural purposes.

Prof. Dr. Malte Oppermann (University of Basel) introduced a novel time-resolved circular dichroism (CD) spectrometric method combining ultra-sensitive broadband detection in the deep-UV (250–370 nm) with sub-picosecond time-resolution.[13] This enables the measurement of CD spectra of photoexcited chiral molecules in solution with ultrafast time-resolution. Two recent studies were presented which illustrated the new experimental capabilities.[14,15]

Prof. Dr. Peter Chen (ETH Zurich) closed the symposium with a vivid talk entitled 'What we find when we look for catalysts'. Not only the mechanism of cyclopropanation using N-ylides was unraveled,[16] but also the story of Volker Franzen.[17]

The short talks were presented by ***Xiaojin Wen***,[18] ***Jasmin Kübler***,[19] ***Dietger van den Eynden***[20] and ***Elinor Morris***. In an engaging manner they shared their recent work in enzyme catalysis, photochemistry, controlled nanocrystal synthesis, and artificial metalloenyzmes.

Poster Session and Prizes

During lunch, the poster session kicked off with 31 active presenters. With contributions from different research groups within the entire Department of Chemistry Basel and a contribution from each of the University of Mainz, FHNW Muttenz, and the University of Girona, the session was truly interdisciplinary and accompanied by lively discussions. Three poster prizes were awarded to ***Felix Glaser***, ***Lukas Schneider*** and ***Maria***

Fig. 2. Impression from the poster session – graduate students and PIs in active discussion.

Tsitopoulou. The winners were chosen by a jury composed of Prof. J. de Roo, Prof. D. Gillingham, Prof. S. Willitsch, Dr. J. Toscano and A. Ostertag.

Since 2021 a departmental PhD prize is awarded during the Christmas Symposium, for the most excellent doctoral theses from the previous year. Congratulations to the winners ***Dr. Daniel B. Joss*** and ***Dr. Zhaowei Liu*** for their outstanding work.

Fig. 3. Anton Kudashev (right) announced the poster prize winners Lukas Schneider, Maria Tsitopoulou and Felix Glaser (from left to right).

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