doi:10.2533/chimia.2026.648 Chimia 80 (2026) 648–649 © Swiss Chemical Society

Conference Report

International Summer School on Electrocatalysis and Organic Electrosynthesis

Stoos Lodge, Stoos, August 30th – September 3rd, 2026

Peter Broekmann[a], Siegfried Waldvogel[b], and Matthias Arenz[a]

*Correspondence: P. Broekmann, E-mail: peter.broekmann@unibe.ch; S. Waldvogel, E-mail: siegfried.waldvogel@cec.mpg.de; M. Arenz, E-mail: matthias.arenz@unibe.ch [a]University of Bern, Department of Chemistry, Biochemistry and Pharmaceutical Sciences, Freiestrasse 3, CH-3012 Bern; [b]Max-Planck-Institut für Chemische Energiekonversion, Mülheim a.d.R., Germany.

From August 30th to September 3rd, 2026, around ninety PhD students, postdoctoral researchers, and senior scientists gathered at the Stoos Lodge, high above the Muota Valley in Central Switzerland, for the International Summer School on *Electrocatalysis and Organic Electrosynthesis 2026*. The event was jointly organized by ***Peter Broekmann*** and ***Matthias Arenz*** (both University of Bern), ***Siegfried Waldvogel*** (MPI CEC, Mülheim), and ***Marie-Françoise Lagadec*** (NCCR Catalysis), under the umbrella of the **Swiss Chemical Society** (SCS), which celebrates its 125th anniversary this year. Continuing a long-standing tradition of this series of Summer Schools, experts from academia and industry shared their perspectives on the role of electrocatalysis and electrosynthesis in advancing sustainable chemistry. A central vision of the event was to strengthen international exchange by connecting researchers from major initiatives working in closely related fields: **NCCR *Catalysis*** in Switzerland (www.nccr-catalysis.ch), **CHEAC** in Denmark (chem.ku.dk/research_sections/cheac), **ETOS** in Germany (www.zukunftscluster-etos.de), and **GETCO$_2$** in Australia (www.getco2.org) (Fig. 1).

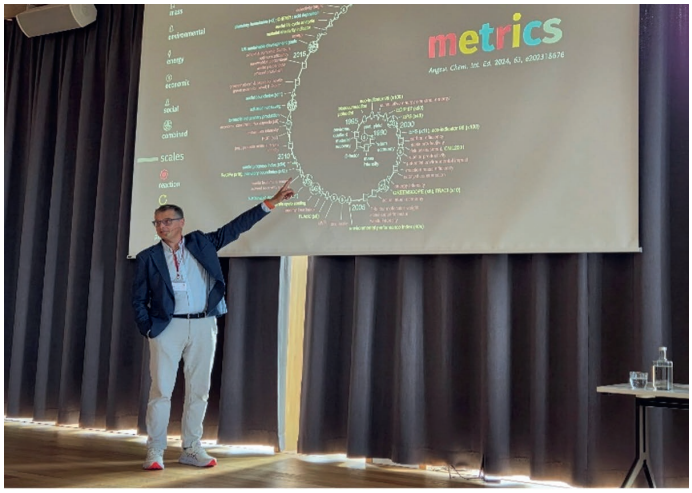

Fig. 1. Opening talk by Javier Pérez-Ramírez.

Over the five days, the program featured invited lectures, two sessions of student short communications, two poster sessions, and practical demonstrations of advanced electrolysis techniques, while providing ample opportunities for scientific exchange and informal discussion, including a hike up the Fronalpstock.

The Summer School opened on Sunday evening with a plenary lecture by ***Javier Pérez-Ramírez*** (ETH Zurich). Spanning the atomic to the planetary scale, his presentation outlined a broad vision for advancing sustainable chemistry across different branches of the field and highlighted the contributions of NCCR *Catalysis* toward this goal. The lecture set the stage for scientific discussions throughout the week.

Monday was largely devoted to electrochemical CO_2 valorization. ***Fengwang Li*** (University of Sydney) opened the scientific program with a lecture on engineering the interfacial microenvironment for CO_2 electrocatalysis, followed by ***Boon Siang Yeo*** (National University of Singapore) on the electrosynthesis of long-chain hydrocarbons and oxygenates. After the coffee break, ***Alessandro Senocrate*** (Empa, Dübendorf) addressed key experimental aspects of CO_2 electrocatalysis, including methodology, data analysis, and reproducibility, while ***Pierluigi Moimare*** (Versalis S.p.A.) offered an industrial perspective on the conversion of CO_2 into platform chemicals. Following lunch and time for individual discussions, Short Communications Session A, chaired by ***Soma Vesztergom*** (Eötvös Loránd University), gave junior researchers the opportunity to present their work. The day concluded with Poster Session A and practical demonstrations of advanced electrochemical analysis techniques.

Fig. 2. Climb to the Fronalpstock *via* the Stoos Ridgeline Route.

Tuesday morning broadened the focus from specific CO_2-reduction processes to fundamental principles of electrocatalysis and their application to increasingly complex catalytic systems. ***Yogesh Surendranath*** (MIT, Cambridge) demonstrated how electrochemical approaches can help elucidate and control thermochemical catalysis, while ***Jan Rossmeisl*** (University of Copenhagen) explored the catalytic behavior of high-entropy alloys. Building on these fundamental and materials-oriented perspectives, ***Christina Roth*** (University of Bayreuth) introduced techniques for analyzing catalysts at work under *operando* conditions. Using synchrotron X-ray absorption spectroscopy as an example, she demonstrated how such methods can reveal the dynamic behavior of catalysts during CO_2 reduction. ***Mehtap Oezaslan*** (University of Hamburg) then shifted the focus toward practical operating conditions by discussing how contaminants affect proton-exchange-membrane water electrolyzers (PEMWE) and alkaline electrolyzers (AEL). In the afternoon, the participants exchanged the lecture hall for hiking boots and climbed the Fronalpstock (Fig. 2), taking advantage of the spectacular Alpine setting before reconvening for dinner and Poster Session B (Fig. 3).

Fig. 3. Impressions from the poster presentations.

Wednesday's program shifted the attention from fundamental catalyst behavior towards system integration, sector-specific applications, and industrial implementation. ***Iryna Zenyuk*** (UC Irvine) opened the morning with an analysis of iridium dissolution in membrane-electrode assemblies during water electrolysis, highlighting the importance of catalyst stability under realistic operating conditions. Moving from individual components to integrated systems, ***Frédéric Hasché*** (University of Hamburg) presented the Hydrogen Terminal Braunschweig, a German research and demonstration facility encompassing the entire hydrogen value chain. After the coffee break, ***Bertrand Morel*** (University of Lille 1 and ORANO Group) illustrated the potential of electrolysis and electrosynthesis in the nuclear industry, thereby extending the discussion to specialized industrial applications. ***Robert Francke*** (LIKAT Rostock) then broadened the scope beyond hydrogen technologies by introducing concepts for sustainable organic electrosynthesis.

Following an afternoon reserved for individual discussions, two lectures focused on translating electrochemical synthesis into industrial practice. ***Siegfried Waldvogel*** presented approaches to the electrochemical production of fine chemicals, while ***Martin Klein*** (Merck KGaA) discussed the associated challenges and opportunities in process development. The day concluded with the conference dinner.

The Summer School concluded on Thursday morning with the Short Communications Session B, chaired by ***Matthias Arenz*** and ***Peter Broekmann***, which provided a final opportunity for participants to present and discuss their research. The session was followed by an awards ceremony and closing remarks delivered by Arenz, Broekmann, and Waldvogel. Two Best Poster Awards were presented in recognition of the outstanding contributions from the two poster sessions (Fig. 4). Participants then collected their lunch bags before beginning their journeys home.

A group photograph was taken at the closing moments of the Summer School against the late-summer Alpine scenery, with the Fronalpstock and the village of Stoos in the background (Fig. 5). It provided a fitting conclusion to a week that combined cutting-edge research in electrocatalysis and electrosynthesis with stimulating scientific exchange and warm Alpine hospitality.

The organizers thank all speakers and participants for making this joint Summer School on *Electrocatalysis and Organic Electrosynthesis* such a success and gratefully acknowledge the support of ***Céline Wittwer*** and ***David Spichiger*** from the Swiss Chemical Society (SCS) and the Stoos Lodge team for their readiness and strong support, which were indispensable for the successful realization of the school. Financial support from the Metrohm Stiftung, the NCCR *Catalysis*, SNSF, SCNAT, SCS, EFCATS, and Casale is sincerely appreciated.

Fig. 4. Winners of the best poster award, Ahmad Tirmidzi, University of Bern, and Dominika Bednarz, RWTH Aachen, presented at the closing session on Thursday, September 3rd.

Fig. 5. Group Picture with participants outside the Stoos Lodge.

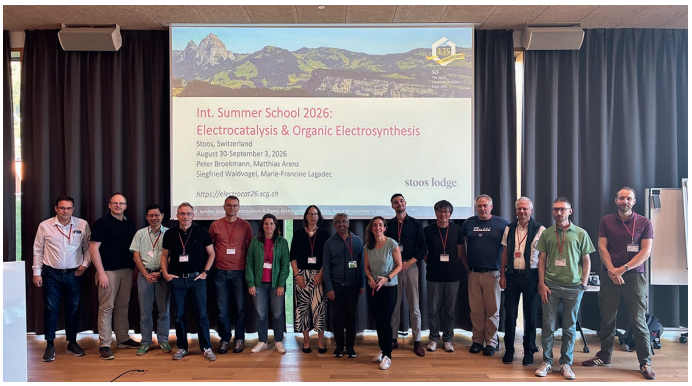

Fig. 6. Group Picture with speakers and organizers

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Received: September 11, 2026