

Conference Report

The 40th Swiss Group for Mass Spectrometry Meeting

Nadine Bohni, Elisabeth Janssen, Susanne Kern, Sonja Klee, Richard Knochenmuss, Jean-Christophe Prost, Bertran Rubi, and Yury O. Tsybin*

*Correspondence: Dr. Y. O. Tsybin, E-Mail: info@sgms.ch
Swiss Group for Mass Spectrometry (SGMS) Board

sgms
4+0

The Swiss Group for Mass Spectrometry (SGMS) is a society dedicated to fostering collaboration among scientists across diverse mass spectrometry fields, ranging from gas-phase ion chemistry to life sciences. SGMS has a strong commitment to edu-

cating and supporting the next generation of mass spectrometrists pursuing MSc and PhD degrees. Our membership comprises about two hundred individuals, predominantly from Switzerland, representing academia, industry, and regulatory bodies.^[1] SGMS is an Associate Member Society of the Swiss Chemical Society (SCS).

Our society's roots trace back to its foundation during the inaugural general assembly held in 1982 at the University of Bern.^[2] The first SGMS meeting convened in October 1983 at Rigi, marking the beginning of our annual (except in 2020) gatherings. On 25–27 October 2023, SGMS celebrated its 40th meeting, marked by an extensive program of scientific and social events. For the 21st consecutive time, the meeting was hosted at the Dorint Resort Blüemlisalp in Beatenberg, Switzerland.



The 40th SGMS meeting participants outside the Dorint Resort Blüemlisalp in Beatenberg, Switzerland, on October 25, 2023. The SGMS cowbell was presented by the Dorint Resort to SGMS in 2022 for 20 years of partnership and friendship.

The Scientific Program

The 40th SGMS meeting's extended scientific program boasted an impressive lineup of six plenary invited talks, ten regular talks, two full poster sessions, and a dozen flash talks from our trusted sponsors. Thank you to all the plenary speakers for accepting our invitation and traveling to Beatenberg from Chicago, Chapel Hill, New York, Münster, Strasbourg, and Vers-chez-les-blanc!

The scientific journey of the meeting was alternating between large and small molecules analysis. The legendary **Brian Chait** (Rockefeller University, USA), initiated it by describing the use of mass spectrometry for analyzing the cellular machinery and sharing his vision on the future of mass spectrometry *via* massive parallel ion manipulation and detection approaches. The scientific torch was further taken over by **Erin Baker** (University of North Carolina, USA), who brilliantly showcased how mass spectrometry of small molecules, including the forever chemicals (per- and

polyfluorinated alkyl substances, PFAS), helps us to link chemical exposure to human health, as well as how to (safely) collect biological samples from alligators in the real-life. In the next plenary talk, **Sarah Cianferani** (University of Strasbourg, France), provided a very detailed overview and recent results on the use of native structural mass spectrometry to dissect therapeutic antibody structure, functions, and interactions.

To follow the large and small molecule pattern, our own **Thierry Delatour** (Nestlé Research and Development, Switzerland), expertly delivered the next plenary on the pivotal role of mass spectrometry in chemical food safety and quality. The next plenary, given by **Jaroslav Minář** (University of Münster, Germany), was a welcomed outlier regarding the small/large molecule pattern and, perhaps, to our general usage of mass spectrometry as it covered the use of mass spectrometry for the aging investigations of lithium-ion battery electrolytes. In the final plenary talk, the energetic **Neil Kelleher** (Northwestern University, USA), covered the fundamentals, the most recent advances, and the vision of exploiting individual ions in Fourier transform mass spectrometry and on the enabling proteoform systems in biology and medicine.

The plenary talks were complemented by the regular talks, which were given at a similarly high level by mass spectrometrists from the academic and industrial institutions in and outside Switzerland, including **Valérie Gabelica** (IECB, France), **Ri Wu** (ETHZ), **Oscar Mendo Diaz** (Empa), **Cedric Wüthrich** (ETHZ), **Patrick Schindler** (Novartis), **Marek Polák** (Institute of Microbiology, Czechia), **Anne Dax** (Eawag), **Vera van der Velpen** (University of Bern), **Oleg Boyarkine** (EPFL), and **Guido Vogel** (Mabtec). The scientific exchange was continued at the two enthusiastic poster sessions that included 32 presentations, of which half were given by MSc and PhD students. The expert committee composed of the SGMS Board members had a tough time selecting the best student presentations (talk and poster) due to the overall high level of all presentations. The agreement was reached anyway, and the winners of the SGMS Best Student Presentation Awards for the year 2023 were announced: **Franziska Elsässer** (ETHZ) and **Oscar Mendo Diaz** (Empa). Thank you to all the presenters, and warm congratulations to the winners!



The SGMS Best Student Presentation Award winners for the year 2023: (left) Franziska Elsässer from ETHZ (poster on the in-cell limited proteolysis mass spectrometry applications) and (right) Oscar Mendo Diaz from Empa (talk on the analysis of chlorinated paraffins and their transformation products). The certificates and allied cash prizes were presented by the SGMS President, Yury Tsybin.

The excellent scientific program was accompanied by networking and engaging social events, briefly described below.

The Social Program

Social interaction was promoted from the start of the meeting by encouraging all participants to answer the '21 tough questions on mass spectrometry', which comprised the MS Quiz. The answers to these questions were 'hidden' in the talks given by the plenary, regular, and industrial speakers. The MS Quiz was taken seriously by many and the competition for the main prize was fierce. As a result, we had not one but two winners who received all the recognition and valuable presents: **Jakob Lang** (University of Zürich) and **Gabriel Streun** (Swissmedic). Congratulations!



The MS Quiz (left) and the winners of the competition: Jakob Lang from the University of Zürich (center) and Gabriel Streun from Swissmedic (right).

Our past special meetings have left us with unforgettable memories – from the elegance of Grand Hotel Giessbach in 2007 (the 25th SGMS meeting) to the insightful tour of Tropenhaus Frutigen in 2017 (the 35th SGMS meeting). This year, we opted to root our celebrations *in situ* at the Dorint Resort Blüemlisalp. In addition to the MS Quiz, and to the Schweizer gastronomy of chef Sascha Przybyl and his team, the Gala Dinner was enlightened by several festive activities to make this meeting even more memorable. These included a fun Photo Booth, an authentic Swiss Whisky Tasting, and a reimagined Muh Bar with old favorites and fresh beats.

The Swiss Whisky Tasting was organized as a mass spectrometry experiment around a selected producer of modern and innovative Swiss whisky. Prior to the 40th SGMS meeting, the samples of three whisky varieties were measured in the analytical laboratory of one of our sponsors using gas chromatography/gas chromatography mass spectrometry (GC/GC-MS). The obtained results were analyzed following state-of-the-art data processing and analysis approaches, and the main results were presented at the Gala Dinner. Significant differences were revealed by statistical analysis of the volatile organic compounds, as expected. The three samples were clearly distinguished on the principal component analysis (PCA) plot, once again confirming the power of mass spectrometry. Equipped with the mass spectra of the corresponding whiskies, the participants eagerly engaged in the tasting and added personal impressions to the mass spectrometry-specified signatures of these flavorful samples.

Organizing such an event demands resources – both financial and personal. We owe a debt of gratitude to our long-standing and new sponsors. Their consistent backing allows us to invite world-class plenary speakers and offer enticing student registration fees. The SGMS Board's commitment and creativity in organizing this special meeting have been unparalleled. We also used the opportunity to acknowledge three departing SGMS Board members who have immensely contributed to the society's development and success over the past years and are now stepping down to let the younger colleagues drive the SGMS society forward: Jean-Luc Wolfender (University of Geneva), Matthias Herzog (Wa-

ters), and Michael Affolter (Nestlé Research and Development). You all will be greatly missed on the Board!



The departing SGMS Board members: (left) Jean-Luc Wolfender, 2003–2023 member and Vice-President; (center) Matthias Herzog, 2009–2023 member and Secretary; and (right) Michael Affolter, 2011–2023 member and Event Organizer.

At the same time, we warmly welcomed two new members to the SGMS Board: Susanne Kern (Zürich University of Applied Sciences, ZHAW) as responsible for the Awards and Sonja Klee (Tofwerk AG) to lead the Education activities. The other current SGMS Board members are: Nadine Bohni (Zürich Cantonal Laboratory, Digital Communication), Elisabeth Janssen (Eawag, Vice-President), Richard Knochenmuss (RKResearch GmbH, Secretary), Jean-Christophe Prost (University of Bern, Treasurer), Bertran Rubi (Lonza AG, Event Organization), and Yury Tsybin (Spectroswiss Sàrl, President). Several other young colleagues expressed interest in joining the SGMS Board, confirming the bright future of our society.

The 2024 SGMS Meeting and Awards

The 41st SGMS meeting will be held in the usual two-day format on 24–25 October 2024 in the same location in Beatenberg. The meeting is expected to be preceded by the 5th SGMS School on a topic of common interest (to be announced in due time) on 22–23 October 2024. See you soon in Beatenberg!

The SGMS Board reminds all the members and other mass spectrometrists about the society awards: the Student Travel Awards and the SGMS Award. The SGMS Award is the highest SGMS recognition. It is awarded to a promising scientist working in Switzerland or a promising Swiss scientist working abroad for outstanding independent research in the field of mass spectrometry. At the time of the award nomination deadline, the candidate should be younger than 45. The SGMS Award was established in 2014 and, since then, four awards have been given: Pablo Sinues (2020, University of Basel, Bernd Bodenmiller (2018, University of Zurich), Paola Picotti (2016, ETHZ) and Yury Tsybin (2014, EPFL).

We welcome nominations for the 2024 SGMS Award and encourage you to spread the word, nominate your colleagues, and submit self-nominations. All details on the submission procedures, as well as on the history of our society, the past and future meetings and schools, and the upcoming mass spectrometry events and exciting job opportunities, are on the www.sgms.ch website. Welcome!

Photographs were taken and provided by the co-authors.

Received: November 14, 2023

[1] a) D. Günther, G. Hopfgartner, *CHIMIA* **2014**, 68, 109; b) R. Zenobi, U. Schaltegger, *CHIMIA* **2022**, 76, 8.

[2] L. Fay, J. Hau, *CHIMIA* **1998**, 52, 96