

Conference Report

Symposium in the Context of the EuChemS Historical Landmark Award 2021

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The European Chemical Society (EuChemS) Historical Landmarks programme aims at designating sites in Europe where:

- events in chemistry (be it social, theoretical, experimental, pedagogic, industrial...) occurred that
- have been important to the European or local (regional) chemical community and/or
- have inspired a sense of European or local (regional) belonging.

Annually, one historic site is selected and awarded during an official ceremonial act:

<https://www.euchems.eu/awards/euchems-historical-landmarks/>

2021 EuChemS Historical Landmark Award to the Jungfrauoch High Altitude Research Station

The Jungfrauoch High Altitude Research Station, Switzerland, was awarded the EuChemS Historical Landmark Award in recognition of the pioneering work and exceptional 'liaison réussie' between the research group of Prof. Marcel Migeotte (1912–1992) with collaborators from the University of Liège, Belgium, and the International Foundation of the High Altitude Research Stations Jungfrauoch and Gornergrat (HFSJG), Switzerland. History was made at this alpine site in terms of the first fundamental measurements and early identification of harmful atmospheric constituents, such as anthropogenic greenhouse gases, and evidence of how their presence in our atmosphere has changed over the last 70 years. Our current understanding of atmospheric chemistry and physics in the context of Earth's climate system would not be possible without the visionary approach of asking the right questions, developing cutting-edge instrumentation and forging strong coalitions at a seminal time for atmospheric chemistry.

As part of the celebration activities of the EuChemS Historical Landmark Award, the Swiss Chemical Society (<https://scg.ch/>) and the International Foundation High Altitude Research Stations Jungfrauoch & Gornergrat organized a one-day symposium (<https://ehla23.scg.ch/>) on February 16, 2023 in Bern, with national and international experts as lecturers and guests.

The symposium was opened by Prof. Dr. Silvio Decurtins, President of the International Foundation HFSJG, Prof. Dr. Floris Rutjes, President of EuChemS, and Prof. Dr. Anne-Sophie Nyssen, Rectrice Université de Liège and President F.R.S.-FNRS (video welcome address).

There were nine presentations divided into three sessions. The first session was dedicated to column integrated measurements. Prof. Dr. Justus Notholt from the University of Bremen gave an introductory lecture on Fourier Transform Spectroscopy. That was setting the scene for the result-based talk given by Dr. Emmanuel Mahieu. He also presented historical milestones achieved during the last 70 years of Migeotte-activities at Jungfrauoch. The third talk was given by Prof. Dr. Bertrand Calpini from MeteoSwiss,



Prof. Silvio Decurtins, President International Foundation HFSJG, opened the one-day symposium at University of Bern.

highlighting – besides the importance of meteorological parameters – the link to the Migeotte-group. He also mentioned the long-lasting support of MeteoSwiss to the Belgium group.

The second session was more on *in situ* observations related to either gas or aerosol measurements. The first presentation was given by Prof. Dr. Stefan Brönnimann from Bern University on ozone observations. Dr. Stephan Henne from Empa presented measurements of halogenated compounds related to the Montreal protocol, highlighting the present status of the fourth generation of substitutes. These substitutes are no longer stratospheric-ozone destructive nor have a strong greenhouse effect potential. The last presentation of the second session was shared between Prof. Dr. Urs Baltensperger and Dr. Nora Nowak from the Paul Scherrer Institute. They presented the history of the PSI aerosol observations since the late 1980s, followed by the latest measurements based on state-of-the-art time-of-flight mass-spectrometry.

The third session was dedicated to water cycle observations. Prof. Dr. Margit Schwikowski informed the audience about the importance of preserving endangered glacier-ice, the ICE MEMORY project. The second talk was given by Prof. Dr. Hans-Werner Jacobi from the University of Grenoble on the interaction between the atmosphere and snow-surface. The last talk of this session was given by Dr. Franziska Aemisegger from the ETH Zurich on water isotope observation using cavity ring-down spectroscopy.

These scientific talks were followed by a ceremony with the presentation of the Historical Landmark Award Plaque. The ceremony was opened by Dr. Ir. Véronique Halloin, secretary-general of the F.R.S.-FNRS, followed by the presentation of a text by Dr. Ginette Roland read by Dr. Emmanuel Mahieu. The participants highly appreciated the anecdotes of Dr. Roland, who has been going to Jungfrauoch for 61 years. Dr. Brigitte van Tiggelen, representative of the Historical Landmark Committee of the European Chemical Society, informed about the recent initiation of this award and mentioned the former awardees. She addressed the reasons why Jungfrauoch was chosen. Dr. Yves Auberson, Vice President of the Swiss Chemical Society, congratulated the International Foundation HFSJG for the liaison réussie that



Dr. Emmanuel Mahieu, University of Liege, gave a talk about the Belgian research at the Jungfrauoch.

founded the bases for the award. Then the plaque was revealed and presented to the audience.

On February 17, 2023, invited guests travelled to Jungfrauoch to reveal the original plaque, which can be marveled at the Sphinx-observatory next to the entrance door to the laboratories.

History of the Research Station

In the early 20th century, pioneering scientists in Switzerland set up an international research center initiative for atmospheric and environmental science issues, combining chemical and physical measurements in an innovative manner. After having finished the railway from Kleine Scheidegg to the Jungfrauoch, which is still the highest railway station in Europe, the conditions for the construction of the station were met.

Influenced not least by the events of World War I, it took almost 10 years until 1922 for the project to be officially approved and implemented with the establishment of the international foundation. Another 10 years later, in 1931, the research station was officially inaugurated. From the very beginning, international cooperation was given high priority, so it is not surprising that the Kaiser-Wilhelm-Gesellschaft (now Max Planck Society) from Germany and the Austrian Academy of Sciences, among others, were founding members of the foundation. Based on this 100-year cooperation, both the Gesellschaft Deutscher Chemiker (GDCh) and the Gesellschaft Österreichischer Chemiker (GÖCh) supported this nomination. The cooperation



The award plaque was unveiled at Jungfrauoch by Prof. Markus Leuenberger, Director HFSJG, Prof. Silvio Decurtins, President HFSJG, Prof. Floris Rutjes, President EuChemS, and Dr. Brigitte Van Tiggelen, Chair of the Landmark Selection Committee (from left to right)



Prof. Angela Agostiano, designated President EuChemS, Dr. Nineta Hrastelj, Secretary General EuChemS, Prof. Floris Rutjes, President EuChemS, David Spichiger, Executive Director Swiss Chemical Society, Dr. Brigitte Van Tiggelen, Chair of the Landmark Selection Committee (from left to right)



Floris Rutjes, President EuChemS, and Prof. Markus Leuenberger, Director HFSJG, with the EuChemS Historical Landmarks Plaque.



Group photo on the Sphinx-terrace at the Jungfrauoch

of the three Alpine countries as well as seven other European countries is underlined by the Virtual Alpine Observatory (VAO) initiative and the regular symposia that guarantee scientific exchange throughout the community.

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