



# A Perspective on Chemistry and Society

A Column on the Occasion of the 75<sup>th</sup> Anniversary of CHIMIA

Division of Fundamental Research of the Swiss Chemical Society

## Fundamental Research in Chemistry and the SCS: Past, Present, Future

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**Stefan Willitsch** graduated from ETH Zurich in 2000 and received his PhD from the Laboratory of Physical Chemistry at ETH in 2004. From 2004–07, he held a Junior Research Fellowship at the University of Oxford. He was appointed lecturer in physical chemistry at University College London in 2007 and joined the faculty at the Department of Chemistry at

the University of Basel in 2008. His research interests focus on translationally cold molecules and ions and their applications in chemistry, spectroscopy and quantum technologies. Since 2020, he acts as the president of the Division of Fundamental Research of the Swiss Chemical Society.

The 75<sup>th</sup> anniversary of CHIMIA offers not only an opportunity to reflect on the colourful history of the journal itself,<sup>[1]</sup> but also on its publisher, the Swiss Chemical Society (SCS), and the venerable scientific discipline it represents. Like CHIMIA, chemistry has evolved enormously over the past three quarters of a century and has advanced its scope, its methods, its relationship to other scientific disciplines and its role in society. In the middle of the past century, chemistry still broadly articulated into three core domains inorganic, organic and physical chemistry. For sure, these disciplinary categories have always been fluid and always needed to be taken with a grain of salt. Nonetheless, the topical diversity into which chemistry has expanded over the past decades is remarkable. Although chemistry departments at many universities are still largely organised along the traditional sub-disciplinary lines, the scope of topics covered has broadened significantly and now includes chemical biology, material science, computational chemistry, nanoscience, energy research, molecular physics and biophysics, to name only a few. Much of the scientific progress in modern chemistry occurs at the boundaries to other disciplines like biology, physics, computer science, materials science and even mathematics. Chemistry has become one of the most interdisciplinary academic disciplines. In the economic domain, many traditional Swiss chemical companies have transformed and merged into pharmaceutical companies. Classical chemical industries have largely relocated to Asia.<sup>[2]</sup> These paradigm shifts also did not leave the SCS unaffected, as a glance at its new website confirms. Today, the SCS branches into an increasing variety of divisions, sections and thematic networks which form its atomic constituents and are a reflection of the broad thematic scope of modern chemistry.

### Quo vadis, Chemistry ?

An outside spectator might get a bit dizzy in the face of all this diversity and may well ask us: “What is chemistry today?” In fact, I had to address this question many times myself during my

tenure as my department’s study counselor when I tried to explain to prospective students why studying chemistry is a worthwhile enterprise to build a career on. Clearly, it is the duty of every academic discipline to constantly question and renew itself in order to find its role in a changing environment of scientific questions, societal challenges and evolving technologies. It is thus rewarding to every now and then reflect on what defines us and on what can be undertaken to foster our community and advance our discipline.

Modern definitions of chemistry often refer to the ‘science of molecules’. Indeed, it is molecular concepts that have radiated out into other disciplines and have led to their ‘molecularisation’. Biology, material science and the modern nanosciences are maybe among the most prominent examples. This development is a success story for chemistry which has put it centre stage within the canon of sciences. However, this also means that for everyone aiming to unravel molecular phenomena, in whatever discipline, a solid education in the core chemistry subjects is, and remains, indispensable in order to be able to understand the structure, properties and transformations of molecules. I would thus argue that teaching chemistry has lost nothing of its topicality over the past 75 years. On the contrary, it has gained importance in a much wider context.

### The Role of the DFR

Within the SCS, the Division of Fundamental Research (DFR) has traditionally represented the voice of academic science in the core chemistry disciplines. It constitutes the largest division of the SCS comprising around 1300 members. Its role is to promote and support chemistry and its community in Switzerland. It does so with a wide range of initiatives.

The DFR organises the annual Spring and Fall Meetings. The former is a focused event on varying topics held at a different Swiss institution every year. The latter represents the largest recurring chemistry conference in Switzerland with close to a thousand participants. Both meetings serve as focal points for the Swiss chemistry community spanning both academia and industry. Another important function of the Division is the financial support of scientific conferences related to chemical topics in Switzerland. These are typically international meetings of sizes varying from small workshops to large signature congresses which are held in Switzerland on a one-term basis. These events form an important element for showcasing Swiss chemistry on the world stage and for strengthening the international ties of the Swiss community. On the order of five such meetings are supported every year, including leading events like the ‘Bürgenstock Conference’. Moreover, in recent years the DFR introduced the ‘SCS Lectureship Awards’ inaugurated by the late Prof. Thomas Bally. Within this framework, internationally renowned chemists, usually from overseas, are invited each year on a one-week lecture tour to Swiss universities and companies. The lecturers are nominated and selected in a democratic process by the entire Swiss community. This programme not only further strengthens our exchange with the international chemistry scene, but it also fulfils an important function in offering our young generation of chemists<sup>[3]</sup> teaching and networking opportunities with outstanding scientists which they otherwise would not have the

chance to meet. The scheme has been an outstanding success, as the vivid participation from all over Switzerland demonstrates.

I would argue that it is precisely thanks to the momentous changes which chemistry has witnessed over the past 75 years that the discipline thrives and remains as vibrant as ever in Switzerland. The SCS, and the DFR as one of its central parts, May 21, 2021 take it as their mission to ensure that this success story will continue. It will do so by fostering our human capital, by promoting the education of our next generation of scientists, by nurturing scientific exchange within Switzerland and on the international level and by providing a focal point for our community. CHIMIA will continue to play an integral part in this endeavour, and it will be fascinating to see where the journal,

and indeed chemistry in Switzerland, will stand at its next big anniversary.

#### **Acknowledgement**

The author thanks Prof. Florian Seebeck for stimulating discussions and his comments on the manuscript.

Received: May 21, 2021

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  - [3] S. M. Linker, C. Papadimou, M. Lederbauer, C. Schellhaas, D. Miladinov, E. Vandaele, *Chimia* **2021**, 75, 345, <https://doi.org/10.2533/chimia.2021.345>.