

Chemistry—A Core Science with a Political Dimension

by Leiv K. Sydnes



Chemistry plays a key role everywhere in the world, irrespective of a particular country's level of development. Whether the issue is nutrition, crop production, water quality, pollution cleanup, pest control, drug development, fuel efficiency, or biofuels, chemistry is a central discipline for solving many of the crucial problems facing us today.

For our science, such a position is quite prestigious. However, since issues such as those listed above are also hot items on the political agenda, it is inevitable that chemistry, clearly or indirectly, becomes entangled in political processes and at times even ends up playing a major role in events that chemists cannot control. It is therefore no exaggeration to state that there is a significant political dimension associated with chemistry. Surprisingly enough, many chemists are astonished to discover this fact and they typically react by declining to interact with the public and refusing to become involved in any political process.

However, such a remote and isolated relationship with the public is not in accordance with the principles to which IUPAC adheres. This is clearly reflected in the Union's vision statement, "IUPAC advances the worldwide role of chemistry *for the benefit of Mankind*," and its mission statement, which includes the passage "IUPAC effectively contributes to the worldwide understanding and application of the chemical sciences, *to the betterment of the human condition*." To realize this goal, the Union is bound to interact with society and to address global issues of political importance.

If we browse through the list of IUPAC activities, we see that IUPAC is indeed supporting a lot of projects of political relevance. Of significant importance in this respect are the CHEMRAWN conferences, past and

present work related to the chemical weapons convention, and initiatives to contribute to capacity building in Africa. There are also a number of divisional projects, dealing with, for instance, green chemistry, water issues, endocrine disruptors, and a range of environmental problems, in the same category.

All IUPAC projects and activities, including those with a political dimension, have a firm scientific foundation, consisting of established IUPAC terminology, evaluated data, and standardized methods, which are applied in accordance with the norms, values, and ethics of science. However, the more practical the world need that is being addressed, the more likely individual participants will have opinions on the topic. Even though these opinions are not always supported by scientific proof, participants' decisions should always be based upon a thorough knowledge of chemistry applied with the best ethical standards. Therefore, when IUPAC projects apply chemistry in the service of Mankind, it is inevitable that political attitudes and personal taste will have to be acknowledged and taken into proper consideration.

For the Union, this nonscientific, but human influence is a challenge, which calls for adequate caution. However, in the long run it makes no sense whatsoever to avoid issues that are, or have the potential of becoming, politically controversial. When one takes a global perspective, it becomes obvious that a large number of international agreements, conventions, and treaties regulating international cooperation

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on, for instance, trade, pollution control, and industrial production, in fact are useless and cannot be implemented if the chemistry and the chemists involved are below standard, are unavailable, or have to work under unsatisfactory conditions from a scientific point of view. It is therefore extremely important that IUPAC, to the best of its ability, is visible when political issues involving the chemical sciences are on the agenda. If IUPAC is not engaged up front in issues of chemical importance, it is quite likely that no other organization will take an objective stand on behalf of the chemical sciences and the chemical enterprise and argue with authority and a global perspective.

Any organization that aspires to become an efficient, reliable, and objective nongovernmental organization (NGO) that takes on politically sensitive

international issues has to meet at least three requirements. First of all, the reputation has to be irreproachable. It gives me great satisfaction to repeat that IUPAC fulfils this requirement. However, we have to work hard to maintain our standing as an impartial and trustworthy NGO by 1) supporting and developing relevant activities of high scientific quality year after year, and 2) disseminating the results of our activities effectively, especially in emerging and developing countries.

Second, the organization has to be active and visible in international circles where science policy is discussed and worked out, and has to cooperate with other organizations in the implementation of the policies when approved. Here IUPAC has to improve, but significant improvements have been made in recent years. The cooperation between IUPAC and UNESCO in the field of chemistry education is well established, and the memorandum of understanding between the two organizations, signed in December 2005, has paved the way for collaboration in other areas as well. Furthermore, our cooperation with the Organization for the Prohibition of Chemical Weapons (OPCW) continues to grow and has enabled IUPAC to contribute to world peace. A more recent development is IUPAC's stronger involvement in the International Council for Science (ICSU), which was established in 1931 "to promote international scientific activity in the different branches of science and their applications for the benefit of humanity." At the ICSU general assembly in September 2005, our president, Bryan Henry, was appointed as chair of the Committee on Finance.


Finally, the organization has to maintain a productive relationship with the media. Here IUPAC has a major problem to tackle because the chemical enter-

prise suffers from a dubious public image: Chemicals are so often associated with bad things happening to people and in the environment that the presence of chemicals in products and processes is frequently denied, and the positive, daily contributions from chemistry and chemical engineering are barely communicated. How to turn this negative trend around is far from obvious, but work in progress, particularly within the Committee on Chemistry Education (CCE), will hopefully contribute to a change. That is one of the reasons why I am participating with keen anticipation in the 19th International Conference on Chemical Education in Seoul, Korea, where CCE has put together a two-day symposium/workshop on "Public Understanding of Chemistry."

From the preceding paragraphs it can be concluded that IUPAC will not be out of work in the future; on the contrary, it will be facing significant challenges that are both scientific and political in nature. However, the Union will be meeting these challenges on behalf of all of us, not first and foremost for our science, but for our common future and the benefit of Mankind. That is why the old plea is still valid: Find a niche that interests you and contribute to the application of chemistry for a better world, nationally, regionally, or globally! 🌍

Leiv K. Sydnes <leiv.sydnes@kj.uib.no> is IUPAC immediate past president; he is a member of the Norwegian Chemical Society and professor at the University of Bergen.

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