



The Common Language of Chemistry¹

by Greta Heydenrych

Every two years, IUPAC partners with one of our member associations to host chemists from all over the world and to organise the World

Chemistry Congress. In the August 2023, I had the extraordinary privilege to attend IUPACICHAINS in The Hague, organized by the Royal Netherlands Chemical Society. The Congress was accompanied by the IUPAC General Assembly and Council Meeting, two key events on the IUPAC biennial calendar, and I was present at both for the very first time.

What became plain in almost every conversation I had, and every meeting or talk that I attended was that the entire field of chemistry is in the midst of an upheaval, spurred on by the digital revolution in all spheres of our lives. Most, if not all, chemists have heard of FAIR data and digital standards, many of us already apply this in their own work, but to many of us this is still a rather intimidating and abstract notion.

And this is exactly where IUPAC can contribute and support your work. IUPAC is the global organisation for standards in chemistry. Traditionally associated with chemistry naming conventions, IUPAC is undergoing a revolution to develop tools, standards and guidelines to enable chemists to not only make their own data FAIR, but to be able to contribute to the digitalisation of chemistry with their own applications. One key endeavour in this area is the WorldFAIR project, initiated by the CODATA Committee of the International Science Council. IUPAC represents the chemical sciences and, with scientists from other scientific fields, such as physics, geology, and biology, is looking to not only develop a sound approach for digital standards within chemistry itself but is also taking care that those standards align and overlap properly with those developed in adjacent subject areas.

IUPAC is also cooperating directly with organisations that are developing standards applications. Most well-known is probably the International Chemical Identifier (InChI), which started off as a IUPAC project. Since launch, InChI has developed a life of its own and is now

maintained by the InChI Trust. More recently, IUPAC has also been cooperating closely with NFDI4Chem, which in turn forms part of a Germany-wide network of scientists from all fields of research to develop a coherent digital infrastructure for research data generated by scientists in Germany and beyond. (see CI Jan 2023, p.8, <https://doi.org/10.1515/ci-2023-0103>)

All of IUPAC's work on standards, symbols, terminology and, yes, nomenclature is freely available for anyone to apply in their own work. You may consult the online version of the IUPAC Gold Book or read about the latest recommendations in IUPAC's journal, *Pure and Applied Chemistry*. At this point, you might ask yourself, "Who is doing all of this work?". And the simple answer to this is: You! IUPAC is a community-driven organisation. Our work is done by generous volunteers recruited from the chemistry community at large and supported by a small staff of four people comprising IUPAC's Secretariat. This also means that anyone who is interested can get involved in IUPAC's activities. You need not be a nomenclature expert or a data scientist. Anyone with a chemistry background can contribute to IUPAC's work, as we need chemical expertise to underpin any work that we do in the realm of standards. If you enjoy teaching and outreach, IUPAC has many programmes in this area as well, ranging from safety training for industrial chemists to outreach activities for schoolteachers in emerging economies. If you have a social streak, you can organise a GWB event—the 2024 event will be on 27 February and is themed "Catalysing Diversity in Science." GWB stands for Global Women's Breakfast, but this is not a women-only event, it is an event for anyone interested in building bridges within the global chemistry community.

So, in a nutshell—the chemistry world is amid a digitalisation upheaval. IUPAC is the global organisation for data standards. IUPAC is embedded in the chemistry community and invites anyone to become involved in our work—whether as a data expert, a standards nerd, an education advocate or a bridge-builder between areas of expertise, regions of our world or subjects within, and adjacent to, our own field of chemistry. To learn more, visit our website, or be in touch with me anytime at gheydenrych@iupac.org. I look forward to hearing from you! 🍷

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