



## IUPAC— Holding the International Chemistry Family Together

by Qifeng Zhou

A recent survey conducted by British scientists shows that, though the public has a positive impression of chemistry's role in social development and the improvement of human welfare, many people are not very sure about what chemists actually do (*C/* May 2016, pp16-19). In some ways, IUPAC's influence on chemists is like that of chemistry on the general public. From the very start of our careers, chemists benefit from IUPAC, its periodic table, naming systems, standards, data, etc.. But many chemists are not familiar with IUPAC's daily work. This situation reminds me of an aphorism of the ancient Chinese philosopher Lao Zi in his *Tao Te Ching*: "[The ubiquitous Tao is like] a loud but inaudible sound, a great but indiscernible semblance."

As I see it, IUPAC needs to be heard and become more discernible. As its vision states: IUPAC is an indispensable worldwide resource for chemistry. A former bureau member once said to me, "If there was no such organization as IUPAC, somebody would have to create one."

Every chemist benefits from IUPAC, just as everyone benefits from chemistry itself. Having been in this area for more than 50 years, I'm grateful for how I have benefitted from the Union's work throughout my career. It is of vital importance that we acknowledge the necessity of re-feeding this almost 100-year old organization, especially when the Union is operated on a voluntary basis. It has been, and will continue to be, volunteers who help realize IUPAC's vision and goals.

IUPAC is a voluntary, nongovernmental, nonprofit organization working effectively in areas of nomenclature, terminology, symbols, standards, critically evaluated data, conferences, workshops, and publications. However, only its secretariat has fulltime staff members: all other works have been accomplished by more than 4000 dedicated volunteers from the international chemistry community. There are nearly 1500 volunteers engaged in committees and projects, almost 2000 affiliate members, and about the same number of fellows.

The fact that an international organization with a tremendous amount of work covering global issues that involve every aspect of chemistry has been run smoothly with these few employees and thousands of dedicated volunteers, is a living legend itself.

The past president, Professor Jung-II Jin (Korea), was my tutor for post graduate study at the University of Massachusetts-Amherst. It was he who encouraged me to volunteer for IUPAC. I am grateful that such connections have continued to develop in my career. I believe it's a common experience for many IUPAC members that our mentors, alumni, and workmates participating

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in IUPAC activities have encouraged us to follow their lead and contribute to IUPAC. IUPAC brings together people with similar interests and diverse professional skills, nurtures new professional connections, broadens our perspectives, and strives to make advancements.

While drafting this article, I first used the title “a voluntary organization offering an international stage”. Later I felt that “stage” was probably not the most suitable word since our volunteers do not come here to represent themselves, but to contribute to the development of chemistry, which we cherish as a lifelong career. We unite in an international family.

To make this point clearer, I would like to quote the president of the Polymer Division, Gregory Russell, from his report to the 98th Bureau Meeting: “IUPAC has to stand for quality, rigor and consensus. If one has good people, then all this will follow. By good people I not only mean intelligent, knowledgeable, personable and passionate people, but perhaps even more importantly I mean selfless people who are given to serving others,

rather than being people seeking self-gain, be it financial or reputational. IUPAC strategy must be underpinned by an understanding of this, in which context it is also important to remember without fail that IUPAC work is ‘for love not money’.”

I’m very glad to hear this resonance with the union founders’ ideal. I also believe that, with such selfless dedication from our volunteers, IUPAC will continue to prosper for a second century. Many thanks to our volunteers.

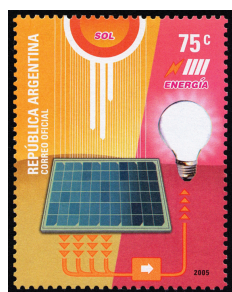
Prepared with the assistance of Ms. Minjie Huang. Qifeng Zhou <qfzhou@iupac.org> has been vice-president of IUPAC since January 2016. Previously, he has been an Elected Member of the Bureau since 2010. Prof. Zhou has served as vice president of the Chinese Chemical Society since 2010 and is the former President of Jilin University and Peking University. He served as the executive dean of the Graduate School of Peking University for six years, and the Director General of the Office of Academic Degrees Committee of the State Council and Director General of Department of Postgraduate Education of the Ministry of Education.



## Stamps International

### Reaching Out for the Sun

According to a report released in 2011 by the International Energy Agency, enough sunlight hits the earth every 90 minutes to fulfill the world’s energy needs for an entire year. Only a small portion of the global energy supply for electricity generation, heating, and transportation is derived from solar energy, an unfortunate situation since the Sun is a virtually inexhaustible source of energy. This is essentially a technological problem that deals with the cost and conversion efficiency of solar cells and the development of new materials for batteries, both of which are areas of intense research today for chemists, physicists, and other scientists and engineers.



Dozens of postage stamps, including the two illustrated in this note, have been issued worldwide to underscore the importance and value of renewable energy resources, including sunlight, wind, waves, biomass, and geothermal heat. It is interesting to note that even oil-rich countries like Iraq and

Saudi Arabia have released stamps dedicated to solar energy, perhaps tacitly acknowledging that the future energy needs of the planet will not be primarily satisfied with fossil fuels.

The Solar Army, a multi-layered outreach project led by Professor Harry Gray, a beloved inorganic chemist at CalTech, aims to promote the understanding of key aspects of solar energy conversion and storage. Relatively inexpensive kits that can be used to screen metal oxides capable of water oxidation activity or to build dye-sensitized solar cells and explain photosynthetic processes have been widely demonstrated to the general public and distributed to secondary school and undergraduate students and their teachers. The hope is that training a new generation of scientists and engineers will help make solar energy utilization one of the cornerstones of a sustainable, efficient, and safe world for many generations to come.



Written by Daniel Rabinovich <drabinov@uncc.edu>.