

Conference Call

On the New Definition of the Mole

by *Roberto Marquardt*

The CCQM (**Comité Consultatif pour la Quantité de Matière**) held its 19th meeting on 18–19 April 2013, at the Bureau international des poids et mesures (BIPM) in Sèvres, Paris. One point of the agenda included a discussion about the new definition of the mole. I was invited to represent IUPAC Interdivisional Committee on Nomenclature, Terminology and Symbols (ICTNS) Chair Ron Weir. Ales Fajgelj was also present representing IUPAC.

Martin Milton, director of BIPM, gave a short update on the subject. He mentioned the CCQM12-27 document that contains CCQM internal information regarding the mise-en-pratique and potential assessment methods of the numerical value of the Avogadro constant. It was mentioned that the Consultative Committee for Units of the International Committee for Weights and Measures would hold a meeting in June 2013 where further discussion on the issue would continue.

The general impression was that the urgency of fixing the new definition of the unit mole has given way to a broader discussion on this subject. It seems that CCQM is not hurrying for a new definition now. The ideas regarding the mise-en-pratique are not untested among members of the meeting.

Bernd Güttler from PTB (Physikalisch-Technische Bundesanstalt, Braunschweig, Germany) made a suggestion to include results of the so-called Avogadro project into the mise-en-pratique of the mole. The international Avogadro project aims at the redetermination of the Avogadro constant and is based on measurements of a single crystal sphere of Si enriched in 28-silicon [*Phys. Rev. Lett.* 106, 030801 (2011); <http://dx.doi.org/10.1103/PhysRevLett.106.030801>]. This approach allows for a description of a practical realization of the mole based on counting atoms in a crystal and a fixed Avogadro constant. The exact wording of the proposal is currently further discussed. This presentation received quite a broad support from the participants who found it elegant and adequate for teaching.

Willie May, president of CCQM, said that chemists were not sufficiently consulted prior to the publication

of the proposal of a new definition of the mole. He suggested that a symposium should be organized on one of next CCQM meetings, where opponents to the proposed redefinition could express their concerns.

I reiterated the position of ICTNS/IUPAC in the form expressed under point 11 of the 141th meeting of the Executive Committee in October 2009 (see www.iupac.org/fileadmin/user_upload/standing/ec/141_ec.pdf and also Jan-Feb 2010 *CI*, p. 6, www.iupac.org/publications/ci/2010/3201/2_lorimer.html). I said that IUPAC should be involved in further discussions of CCQM regarding the new definition of the mole, and that the official representative of IUPAC should be invited to attend the symposium, if it takes place. I finally asked on behalf of IUPAC to have a copy of the sentence formulated by Bernd Güttler.

The report of the 19th Meeting of the CCQM is now available at www.bipm.org/utills/common/pdf/CCQM19.pdf.



Macromolecules and Materials

The **12th Annual UNESCO/IUPAC Workshop and Conference on Macromolecules and Materials** was held in Stellenbosch, South Africa, 24–28 March 2013. The organizing committee comprised of H Pasch (Chair), L Klumperman, AJ van Reenen, PE Mallon and Aneli Fourie (University of Stellenbosch, Department of Chemistry & Polymer Science, South Africa).

The conference drew 151 attendees, including 53 students, representing 32 countries other than South Africa. Other western countries represented were Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Egypt, France, Germany, Hungary, Iran, Iraq, Israel, Italy, Japan, Saudi Arabia, Malaysia, Nepal, Nigeria, Poland, Republic of Korea, Russia, South Korea, Spain, Switzerland, Thailand, The Netherlands, Turkey, United Kingdom, USA, and Venezuela.

The conference was opened by T.E. Cloete, vice rector, research and innovation, University of Stellenbosch and H. Pasch, IUPAC Representative, Department of Chemistry and Polymer Science, University of Stellenbosch, South Africa.

The workshop featured 6 talks and the conference offered 47, of which 6 were plenary speakers, 17 invited speakers, and 32 oral submissions, by experts in their