

# Conference Call

## Solubility Phenomena

by Heinz Gamsjäger

The IUPAC-sponsored **14th International Symposium on Solubility Phenomena and Related Equilibrium Processes** was held 25–30 July 2010 at the Montanuniversität Leoben in Austria. The symposium included a workshop entitled “From Chemical Equilibrium to Process Modeling, Inclusion of Kinetics into Thermodynamic Reasoning.” The Subcommittee on Solubility & Equilibrium Data (SSED) of the IUPAC Analytical Chemistry Division met on 24 July, with Clara Magalhães of Portugal as the chair.

Ninety participants, including accompanying persons, from these 24 countries attended the annual meeting of SSED and the symposium: Algeria, Australia, Austria, Bulgaria, Canada, China, Croatia, Czech Republic, Finland, Germany, Great Britain, Iran, Ireland, Japan, Libya, Luxembourg, Nepal, Poland, Portugal, Russia, Serbia, Spain, Switzerland, and USA.

The opening ceremony was presided over by Wolfhard Wegscheider, the rector of Montanuniversität Leoben. Attendees were welcomed by IUPAC Representative Filomena Camões, vice president of the Analytical Chemistry Division, Heinz Gamsjäger, symposium co-chair, and Clara Magalhães.

Six plenary and four invited lectures highlighted the wide scientific spectrum covered by this conference, which successfully integrated the traditional theme of solubility in and between solids, liquids, and gases with process modelling and inclusion of kinetics into thermodynamic reasoning emphasized by the workshop. Filomena Camões (Portugal) delivered the opening plenary address on “Analytical Chemistry and Solubility Phenomena: Interdisciplinary Methods, Concepts, and Projects,” which described how progress in special topics of chemistry is dependant upon interdisciplinary approaches. Prominent examples she used were Svante Arrhenius' ionic theory (1884) and Walther Nernst's solubility study on silver acetate (1889) which led him to formulate a concept later named the “solubility product.”

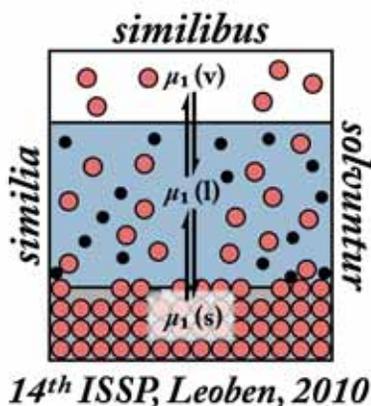
The first plenary lecture of the workshop was given by Klaus Hack, Germany, on “Computational Thermochemistry: A Tool for Daily Use in Industry and Academia,” which provided a comprehensive over-

view of the history, theory, and scientific, as well as industrial, applications of Gibbs energy minimization. Among the other keynote lectures were the following:

- recovery of pure magnesium oxide and other products by hydrometallurgical processing of ultramafic rock (M. Grill, Austria)
- applications of the constrained free energy minimization method (P. Koukkari, Finland), solubility phenomena of calcium sulphate and its hydrates in the hydrometallurgical process of heavy metals (D. Zeng, China)
- tidying up the environment: a journey from exponential curves to hydrodynamics in environmental dissolutions (V. W. Truesdale, Great Britain)

The authors of the keynote lectures and the authors of two excellent oral communications (“Stabilities of Sampleite and Lavendulan and the Formation of Sampleite in the Northparkes Copper-Gold Ore System” by M. Clissold, P. Leverett, and P.A. Williams, and “Melt Corrosion of Refractories in the Non-Ferrous Industry and the Electric Arc Furnace: A Thermochemical Approach” by V. Reiter and H. Harmuth) have been invited to submit their papers to *Pure and Applied Chemistry*.

Jitka Eysseltova and Stanislav Frančičkovič-Bilinski were each honored with the 2010 Franzosini awards, and each delivered a Franzosini lecture. For more details, see page 18 in



the Wire section.

Twenty eight short communications and thirty five posters were presented during afternoon and morning sessions. The oral and poster contributions ranged from solubility phenomena discussed on an interdisciplinary basis emphasizing industrial applications to thermodynamic peculiarities of liquid-liquid systems and solubility aspects of diseases and medical drugs. The delegates continued their scientific discussions over lunch in the university cafeteria, thus providing a scientifically stimulating and socially friendly atmosphere throughout the conference.

IUPAC poster prizes were given to Oleg I. Silyukov (Department of Chemistry, Saint Petersburg State University, Saint Petersburg, Russia) for his poster “Behavior of Solids with Layered Type of Structures in Aqueous Systems”; Alexey N. Manin (Institute of Solution Chemistry, Russian Academy of Sciences,

Ivanovo, Russia) for his poster “Solubility, Solvation Processes of Hydroxyl- and Carboxy- Acetanilides”; and Melanie Oestreich (Institute of Inorganic Chemistry, TU Bergakademie Freiberg, Germany) for her poster “Determination of Solubilities in the System  $\text{MgO-MgCl}_2\text{-H}_2\text{O}$  at 25°C, 40°C and 120°C.”

Sponsorship was provided by Das Land Steiermark, the Stadtgemeinde Leoben, the RH I AG, the Gesellschaft von Absolventen und Freunden der Montanuniversität, and the Austrian Chemical Society GÖCH. IUPAC generously granted financial support for six young scientists from Eastern European Countries to attend, and the Organizing Committee waived their registration fees. The participation of a delegate from Nepal was financially supported by the Lion's Club Leoben. The symposium was chaired by Helmut Antrekowitsch and Heinz Gamsjäger, with assistance from Karin Schober and Bettina Hörmann, conference secretaries, and Harald Harmuth and Johannes Schenk, members of the local Organizing Committee.

Participants enjoyed a half-day excursion to Vordernberg and its blast furnace and finery museums. Herbert Hiebler and Gerhard Sperl guided the English-speaking visitors and A. Lampl guided the German-speaking visitors. At the Gasthof “Schwarzer Adler” a typical Styrian “Brettljause” (afternoon tea on a wooden plate) was served. Accompanying persons enjoyed guided tours to the cities of Leoben and Graz, and a tour through the Enns Valley.

The 15th ISSP will be held in July 2012 in Xining, China.

Heinz Gamsjäger <gamsjaeg@mu-leoben.at> was co-chair of the symposium; he is a professor in the Department of Physical Chemistry at Montanuniversitaet Leoben in Austria. He is a long-time member of the SSED. Input to this report was also provided by Clara Magalhães.



*Participants of the 9th Annual Meeting of the IUPAC Subcommittee on Solubility and Equilibrium Data, which met the day before the 14th ISSP.*

## Research and Education in the Middle East

*by Stanley Langer*

Scientists from 14 Middle East countries attended the Malta-IV conference on “**Frontiers of Chemical Science: Research and Education in the Middle East**” in Amman, Jordan, from 14–19 November 2009. This was the fourth in the biennial series of meetings known as the Malta conferences, designed to forge stronger relationships with, and establish collaborations between, scientists in the region. As with previous conferences, the intention of the organizers was to draw the attention of national governments to the notion that improving scientific cooperation could act as a spur to sustainable growth and in promoting peace and political reconciliation in a volatile region.

This was the first time that the conference had been held in a Middle East country, the previous three having taken place in Malta (2003, 2005) and Turkey (2007). It was attended by almost 80 invited people, with many more women than at previous conferences. Delegates came from Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, the Palestinian Authority, Qatar, Saudi Arabia, Turkey, and the United Arab Emirates. The conference was cosponsored by UNESCO, IUPAC, the Royal Society of Chemistry, the American Chemical Society, and the Gesellschaft Deutscher Chemiker.

As chair of the Organizing Committee, Zafra Lerman opened the meeting by welcoming HRH Prince Hassan bin Talal of Jordan, well-known internationally as a voice for global sustainability, reconciliation, and inter-religious understanding. His opening remarks reflected his ongoing interest in economic and social governance, and water and energy issues in the region. He noted that science cannot be project driven and that science for knowledge should mean science for citizenship, leadership, education, and inclusion. Critical thinking skills are required to address improvements in the lives of the people in the region concerning climate change, food, health, and sustainable development. He stressed the need to address many unpopular truths and the importance of raising awareness of these issues, charging attendees to develop the consciousness of science referred to in Roger Schank's thesis on what it means to have an educated mind in the 21st century. His presentation was extremely well received and he stayed on to talk to students during the morning break. Prince Hassan also expressed an interest in working with the organizers in the future,