

Preface

The 15th International Symposium on Solubility Phenomena and Related Equilibrium Processes (ISSP-15) was held at the Qinghai Institute of Salt Lakes, in Xining, China, 22–27 July 2012. The meeting was a marked success, with over 100 participants from around the world. Xining, located on the Tibetan plateau, provided an interesting glimpse of China, outside of the very large cities of the Chinese lowlands.

The Qinghai Institute was established in recognition of the great potential of China's upland salt lakes, where thousands of years of evaporation have resulted in huge bodies of brines with great commercial potential. For all those chemists who wondered why the thermodynamics and phase diagrams of electrolyte systems were part of their education, these huge, highly complex, aqueous electrolyte systems provide one of the answers, as Prof. Song's overview of studies related to the Qinghai Lakes systems made clear.

Concentrated electrolyte systems are found in other situations, including the winning of metals, such as aluminum, and in the processing of spent nuclear fuels; Prof. Altmaier's lecture on Np(VI) systems showed the complexities of such systems. More recently, the explosion of applications for room-temperature ionic liquids has added a new strand to this long-established field of research.

Dealing with all of these types of systems requires accurate experimental measurements, careful analysis of the thermodynamics, and, commonly, thermodynamic modeling; lectures by Profs. Gamsjäger, Hefter, Königsberger, and Wang gave insights into both the experimental and modeling challenges that these systems present. Of course, thermodynamics and solubility are not restricted to electrolyte or solid/liquid systems, as was clearly shown by Prof. De Vischer's lecture on the thermodynamics of CO₂ solubility, in the context of CO₂ capture and storage.

This was the 15th in the series of ISSPs, which are organized through the IUPAC Subcommittee on Solubility and Equilibrium Data (SSED). This series of symposia, which brings together some of the most eminent scientists working in the area of solubility, is traditionally one of the friendliest meetings one can attend, and the Xining meeting certainly maintained this tradition.

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