Preface

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Research Papers from the 17th International Symposium on Solubility Phenomena and Related Equilibrium Processes (ISSP17)

DOI 10.1515/pac-2017-0402

Keyword: ISSP-17.

The 17th International Symposium on Solubility Phenomena and Related Equilibrium Processes (ISSP17) was held from 24 to 29 July 2016 at the University of Geneva, Switzerland. Geneva is home to CERN, one of the world's largest centres for scientific research, as well as to over 300 international and non-governmental organisations and permanent missions. This multicultural, thrilling environment offered a perfect setting for ISSP17, a conference that entirely kept with the friendly and multicultural tradition of this well-established biennial series of symposia organised through the IUPAC Subcommittee on Solubility and Equilibrium Data (SSED).

For 6 days, the ISSP17 conference brought together over 100 scientists with a shared interest in solubility. Solubility-related processes are of fundamental importance in a large number of scientific disciplines and practical applications, ranging from ore processing and nuclear waste disposal to the use of medicines and the transport of pollutants. This variety was well reflected in Geneva where the different sessions of the conference dealt with: data evaluation and consistency, computer assisted modelling, ionic liquids, molten salts and high ionic strength solutions, solubility and nanoparticles, organics and mixed solvents. The opening lecture was given by Judith McKenzie, from ETH Zurich, on "Microbes as geologic agents in the sedimentary equation". The symposium was closed by Clara F. Magalhães, president of SSED, talking about "Stability and change in pieces of art".

ISSP17 included two applied workshops where invited speakers covered highly topical issues. The workshop on **Solubility in energy and waste issues of emerging concern** discussed water and drilling waste in unconventional shale gas production (Rosemary Capo), solubility issues in geothermal power plant operation (Julia Scheiber), CO_2 sequestration in basaltic rocks (Alexander Gysi) and long-term behaviour of waste materials (Wolfgang Hummel). In collaboration with the European Union COST action TD1470, a workshop on **Technology-critical elements prone to hydrolysis in biological and environmental systems** dealt with less-studied elements that are increasingly being used in new technologies in the fields of communication, mobility and green energy. Ann Valentine talked about "Learning from Ascidians about trafficking of hydrolysis-prone metals" and Chris Orvig on "Technology-critical elements Ga, In and La in medicinal inorganic chemistry".

This issue of *Pure and Applied Chemistry* contains three contributions presented at the symposium. They give a flavour of the quality but also of the diversity of the subjects discussed.

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