

# 35<sup>th</sup> International Conference on Solution Chemistry

## Scientific Programme

26<sup>th</sup> of August, Sunday

**12.00** Registration commences at the hall of the *Hotel Forrás*

**17.00 Opening** (*Room 1*)

**17.15 - 18.00 Plenary session** (keynote lecture given by the representatives of the organisers of ICSC2019, Xining, People's Republic of China)

*Chair: Ingmar Persson*

17.15 – 18.00 **KN-1**

**Zhiwu Yu** (Tsinghua University, Beijing, People's Republic of China)

Excess spectroscopy, a new approach to study the structures of liquid mixtures

**19.00 – 21.00** Welcome reception at the Town Hall (Szeged, Széchenyi tér 10., *ca.* 15-20 min walk from the venue of the conference; guided walk starts at 18.30 from the foyer and the main entrance of the *Hotel Forrás*)

**27<sup>th</sup> of August, Monday**

**8.30 - 10.30 Plenary session (Room 1)**

*Chair: Toshio Yamaguchi*

8.30 – 9.30 **PL-1**

**Kenneth N. Raymond** (University of California, Berkeley, USA)

Solution thermodynamic and kinetic Studies of Host/Guest Supramolecular Clusters

9.30 – 10.30 **PL-2**

**Ingmar Persson** (Swedish University of Agricultural Sciences, Uppsala, Sweden)

Solution chemistry in the surface region of aqueous solutions

**10.30 – 10.50 Coffee break**

**10.50 – 12.35 Plenary session (Room 1)**

*Chair: István Szilágyi*

10.50 – 11.35 **KN-2**

**Johannes Hunger** (Max Planck Institute for Polymer Research, Mainz, Germany)

Interaction and dynamics of organo-catalysts in solution

11.35 – 11.55 **O-1**

**Toshio Yamaguchi** (Fukuoka University, Japan)

Ion hydration and association in aqueous MgCl<sub>2</sub>, CaCl<sub>2</sub>, and SrCl<sub>2</sub> solutions in the gigapascal range

11.55 – 12.15 **O-2**

**Glenn Hefter** (Murdoch University, Australia)

The sulfate ion: a perfect protonation paradigm?

12.15 – 12.35 **O-3**

**Imre Tóth** (University of Debrecen, Hungary)

Dimeric or monomeric species? <sup>203/205</sup>Tl NMR homo- and heteronuclear spin-spin couplings of Tl-containing heteropolyoxometallates in solution

**12.35 – 14.00 Lunch**

**14.00 – 15.40 Concurrent session 1 (Room 1)**

*Chair: Johannes Hunger*

14.00 – 14.20 **O-4**

**István Szilágyi** (University of Szeged, Hungary)

**Ion specific effects on the colloidal stability of particle dispersions**

14.20 – 14.40 **O-5**

**Jalel M'halla** (University of Monastir, Tunisia)

Some new contribution to the theory of polyelectrolyte solutions

14.40 – 15.00 **O-6**

**Magdalena Ocwieja** (Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences, Krakow, Poland)

Cytotoxicity of silver nanoparticles synthesized with the use of common antioxidants: gallic acid and ascorbic acid

15.00 – 15.20 **O-7**

**Khizar Hussain Shah** (COMSATS Institute of Information Technology, Abbottabad, Pakistan)

Native and magnetic oxide nanoparticles ( $\text{Fe}_3\text{O}_4$ ) impregnated bentonite clays as economic adsorbents for Cr(III) removal

15.20 – 15.40 **O-8**

**George Horvai** (Budapest University of Technology and Economics, Hungary)

Geometry in liquid structures

**15.40 – 16.00 Coffee break**

**14.00 – 15.40 Concurrent session 2 (Room 2)**

*Chair: Glenn Hefter*

14.00 – 14.20 **O-9**

**Silvia Imberti** (ISIS Neutron and Muon Source, Rutherford Appleton Laboratory, UKRI, United Kingdom)

Understanding the molecular origin of cononsolvency

14.20 – 14.40 **O-10**

**Bence Kutus** (University of Szeged, Hungary)

The hydration and sodium ion-pairing of citrate

14.40 – 15.00 **O-11**

**Rastislav Šipoš** (Slovak University of Technology, Bratislava, Slovakia)

ESI-MS study of Fe(III) complexes with fluorosalicylic acids in water/methanol solutions

15.00 – 15.20 **O-12**

**Masahide Terazima** (University of Kyoto, Japan)

Time resolved diffusion technique to probe dynamics of protein-DNA interaction

15.20 – 15.40 **O-13**

**Nikolay Kotov** (Institute of Macromolecular Chemistry, Czech Academy of Sciences, Prague, Czech Republic)

Vibrational spectroscopic investigation of cellulose structural transitions upon its dissolution in two different solvent systems

**15.40 – 16.00 Coffee break**

**16.00 – International Steering Committee, committee meeting**

**16.00 – 18.00 Poster session**

*Chair: Earle Waghorne*

**28<sup>th</sup> of August, Tuesday**

**8.30 - 10.00 Plenary session (Room 1)**

*Chair: Kenneth Raymond*

8.30 – 9.15 **KN-3**

**Mitsuhiro Kanakubo** (National Institute of Advanced Industrial Science and Technology, Sendai, Japan)

Gas absorption properties of ionic liquids and their applications to separation processes

9.15 – 10.00 **KN-4**

**Gyula Tircsó** (University of Debrecen, Hungary)

MRI imaging and solution chemistry

**10.00 – 10.30 Coffee break**

**10.30 - 12.15 Plenary session (Room 1)**

*Chair: Chun-hui Fang*

10.30 – 11.30 **PL-3**

**Peter Tremaine** (University of Guelph, Canada)

Formation constants and transport properties of aqueous complexes in hydrothermal solutions by Raman spectroscopy and A.C. conductivity

11.30 – 12.15 **KN-5**

**Éva Anna Enyedy** (University of Szeged, Hungary)

Comparative solution studies on complexation of antitumor thiosemicarbazones with copper(II) and iron(II/III): relationship between stability and cytotoxicity

**12.15-14.00 Lunch**

**14.00 – 15.20 Concurrent session 1A (Room 1)**

*Chair: Nick Gerasimchuk*

14.00 – 14.20 **O-14**

**Sandi Brudar** (University of Ljubljana, Slovenia)

The influence of the solution conditions on the formation of hen egg-white lysozyme fibrils

14.20 – 14.40 **O-15**

**Marina Katkova** (G.A. Razuvaev Institute of Organometallic Chemistry, Nizhny Novgorod, Russia)

Structural diversity of anion binding at lanthanide center of water-soluble 15-MC-5 metallacrowns

14.40 – 15.00 **O-16**

**Ferenc K. Kálmán** (University of Debrecen, Hungary)

Mn(II)-based “smart” MRI contrast agent candidate for angiographic investigation

15.00 – 15.20 **O-17**

**Enikő Tóth-Molnár** (University of Debrecen, Hungary)

The effect of ligands backbone rigidity on the physicochemical parameters of the complexes formed with DTPA-type ligands

**15.20 – 16.00 Coffee break**

**16.00 – 17.20 Concurrent session 1B (Room 1)**

*Chair: Gyula Tircsó*

16.00 – 16.20 **O-18**

**Anton Shushakov** (Voevodsky Institute of Chemical Kinetics and Combustion, Novosibirsk, Russia)

Photophysics and photochemistry of diazide platinum metal complexes prospective for anti-cancer photodynamic therapy

16.20 – 16.40 **O-19**

**Orsolya Dömötör** (University of Szeged, Hungary)

Solution chemistry studies of hypoxia-activated cobalt complexes of EGFR inhibitors and their interaction with human serum albumin

16.40 – 17.00 **O-20**

**Natasha H. Rhys** (University of Oxford, United Kingdom)

On the role of the solvent environment in the folding of amphipathic helices

17.00 – 17.20 **O-21**

**Nick Gerasimchuk** (Missouri State University, USA)

Self-assembled cytotoxic NIR luminescent Pt-nanowires for theranostic applications

**14.00 – 15.20 Concurrent session 2A (Room 2)**

*Chair: Peter Tremaine*

14.00 – 14.20 **O-22**

**Valeria J. Eslava** (Universidad de los Andes, Bogotá, Columbia)

Thermodynamic properties of a sulphonated resorcin[4]arene in water and DMSO

14.20 – 14.40 **O-23**

**Jean-Francois Dufreche** (University of Montpellier, France)

Osmotic ensemble for the calculation of activity coefficients: a molecular dynamics approach for concentrated solutions

14.40 – 15.00 **O-24**

**Kazuhiro Fuchiaki** (Ehime University, Matsuyama, Japan)

A critical-point scenario for the liquid-liquid transition of tin tetraiodide

15.00 – 15.20 **O-25**

**Kavosh Majlesi** (Islamic Azad University, Tehran, Iran)

Protonation and complexation of nicotinic acid with calcium and magnesium at different ionic strengths and temperatures

**15.20 – 15.50 Coffee break**

**15.50 – 17.10 Concurrent session 2B (Room 2)**

*Chair: Mitsuhiro Kanakubo*

15.50 – 16.10 **O-26**

**Hikari Watanabe** (Niigata University, Japan)

Imidazole and acetic acid equimolar mixture as a *pseudo*-protic ionic liquids; toward new proton conductors

16.10 – 16.30 **O-27**

**Selay Sert Cok** (Ege University, Bornova-Izmir, Turkey)

Investigating pore characteristics of silica ionogels based on different drying methods

16.30 – 16.50 **O-28**

**Yusuke Asakuma** (University of Hyogo, Japan)

Interfacial tension profiles between two liquids with different Triton series during microwave irradiation

16.50 – 17.10 **O-29**

**Yizhak Marcus** (The Hebrew University of Jerusalem, Israel))

Aqueous salt hydrates: unconventional deep eutectic solvents

**20.00 – 21.00 Organ concert in the Votive Church**

**29<sup>th</sup> of August, Wednesday**

**8.30 - 10.15 Plenary session (Room 1)**

*Chair: Jean-Francois Dufreche*

8.30 – 9.30 **PL-4**

**Hirofumi Sato** (Kyoto University, Kyoto, Japan)

Theoretical study of chemical reactions in solution phase using a variety of approaches

9.30 – 10.15 **KN-6**

**Gábor Laurency** (École Polytechnique Fédérale de Lausanne, Switzerland)

Practical applications of solution chemistry in energy/hydrogen storage and carbon dioxide utilization

**10.15 – 10.40 Coffee break**

**10.40 – 12.20 Plenary session (Room 1)**

*Chair: Hirofumi Sato*

10.40 – 11.00 **O-30**

**Earle Waghorne** (University College Dublin, Ireland)

Understanding Reichardt's  $E_T^N$  (**30**) – a computational chemistry approach

11.00 – 11.20 **O-31**

**Juan Luis Gómez-Estévez** (Universitat de Barcelona, Spain)

The virial theorem and its application to electrolyte solutions

11.20 – 11.40 **O-32**

**Seiji Tsuzuki** (National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan)

Intermolecular interactions of alkane and perfluoroalkane: relationship with their low miscibility

11.40 – 12.00 **O-33**

**Kenji Mochizuki** (Shinshu University, Japan)

Promotion of Homogeneous Ice Nucleation by Soluble Molecules

12.00 – 12.20 **O-34**

**Yongquan Zhou** (Qinghai Institute of Salt Lakes, Chinese Academy of Sciences, Xining, China)

Dihydrogen Bonds in Aqueous Solutions: X-ray/Neutron Diffraction, DFT and CPMD Study

**12.20– 14.00 Lunch**

**14.00 Conference excursion** (Ópusztaszer National Historical Memorial Park,

**19.00 Conference dinner** (*Hotel Forrás*)

**30<sup>th</sup> of August, Thursday**

**8.30 – 10.30 Plenary session (Room 1)**

*Chair: Gábor Laurenczy*

8.30 – 9.30 **PL-5**

**Steven P. Rosenberg** (Emirates Global Alumina, Dubai, United Arab Emirates)

The importance of solution chemistry in industrial hydrometallurgy

9.30 – 10.30 **PL-6**

**Andrej Skerencak-Frech** (Karlsruhe Institute of Technology, Germany)

Radionuclide chemistry in Nuclear Waste Disposal – application of modern spectroscopy for molecular process understanding and actinide thermodynamics

**10.30 – 11.00 Coffee break**

**11.00 – 12.00 Concurrent session 1 (Room 1)**

*Chair: Steven P. Rosenberg*

11.00 – 11.20 **O-35**

**Ágost Tasi** (Karlsruhe Institute of Technology, Germany)

Redox, solubility and sorption behavior of plutonium in the presence of  $\alpha$ -D-isosaccharinic acid and cement

11.20 – 11.40 **O-36**

**Eszter Orbán** (University of Szeged, Hungary)

Complexation between magnesium and D-gluconate ions in (hyper-) alkaline aqueous solutions

11.40 – 12.00 **O-37**

**Csilla Dudás** (University of Szeged, Hungary)

Complex formation between calcium and  $\alpha$ - and  $\beta$ -ketoglutarate in neutral to highly alkaline medium

**11.00 – 12.00 Concurrent session 2 (Room 2)**

*Chair: Andrei Skerencak-Frech*

11.00– 11.20 **O-38**

**Yasuhiro Umebayashi** (Graduate School of Science and Technology, Niigata University, Japan)

Anomalous  $\text{Li}^+$  transportation and Liquid Structure of the Super-Concentrated Lithium Salt Solutions

11.20 – 11.40 **O-39**

**Szilveszter Ziegenheim** (University of Szeged, Hungary)

The inhibiting effect of different types of additives on gypsum precipitation

11.40 – 12.00 **O-40**

**Attila Csicsor** (Hymato Products Ltd., Hungary)

Colloidal stability of different humic substances fractions: pH and salt concentration dependence

**12.00 – 12.20 Closing** (*Room 1*)

**12.20 – 14.00 Lunch and departure**