PCAS WG Minutes

Present:

Andre Anderko (Chair)	aanderko@olisystems.com
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Dave Guzonas	david.guzonas@cnl.ca
Masaru Nakahara	nakahara@scl.kyoto-u.ac.jp
Ken Yoshida	yoshida.ken@tokushima-u.ac.jp
Kaj Thomsen	kth@kt.dtu.dk
James Bellows (Clerk of minutes)	jcbellows2@aol.com

Andre Anderko opened the meeting. The agenda was approved with addition of David Guzonas' presentation. James Bellows was appointed clerk of minutes.

Minutes of 2014 were approved.

A short round-table of scientific work of attendees was held.

The committee read through the IAPWS Guidelines list and found that we should possibly examine: Guideline: "Solubility of Sodium Sulfate in Aqueous Mixtures of Sodium Chloride and Sulfuric Acid from Water to Concentrated Solutions, from 250°C to 350°C" (September 1994) (This is a revision of the 1990 Guideline). PCC considers this topic low priority.

Some of the antimony and lead work report by Dave Guzonas potentially leads to guidelines. Peter Tremaine is working on D_2O effects, which might also be possible guidelines.

We will maintain a list of long term projects, which includes matters that were not quite ready for action at the time.

Presentations were made:

- Ken Yoshida: Recent research trends in the conversion of carbohydrate biomass into value-added compounds in aqueous solutions
- Jim Bellows: Amine Project Progress Report
- Andre Anderko: Thermodynamic Modeling of Aqueous Systems Containing Amines and Hydrochlorides
- Dave Guzonas: Water Chemistry of Supercritical Water-cooled Reactors

Presentations at the joint TPWS-PCAS workshop:

- Andre Anderko, Report of Task Group on Transport Properties of Seawater
- R. Pawlowicz, Report of Evaluation Task Group for Seawater Thermal Conductivity
- J. Hruby, Progress toward improved ideal-gas properties of ordinary and heavy water
- A. Harvey, Development of first-principles data to extend knowledge of the second virial coefficient of ordinary and heavy water
- H. Miyamoto, Modeling thermodynamic properties of mixtures of natural substances used as working fluids for heat pumps and organic Rankine cycle.

Joint TPWS-PCAS Guideline on the Thermal Conductivity of Seawater is formally submitted to the Executive Committee for approval

Ken Yoshida will be working on a self-diffusion guideline.

Jim Bellows will be working on the amine guideline project; ethanolamine is the first one

Professor Kaj Thomsen was elected member of the working group.

Long term list

- Antimony solubility guideline
- Lead solubility guideline
- Solubility and deposition of corrosion products (to be split up into specific materials later)
- Review of sodium sulfate guideline of 1994
- Self-diffusion in high temperature and supercritical water
- Free energy of gases and organic materials
- Hydration of gases and other solutes—following work of Jana Ehlerova
- Reactivity of hydrogen, carbon dioxide, carbon monoxide, organic compounds etc. in high temperature and supercritical water—invited paper at next ICPWS

(Do we have presentations from previous meetings that should become guidelines?)