



The International Association for the Properties of Water and Steam

<http://www.iapws.org>

Working group “Physical chemistry of aqueous solutions” (PCAS)

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Memorandum to the members of the PCAS Working group

Preliminary agenda of the PCAS WG during the Annual meeting of IAPWS in Vejle (Denmark) August 24 - 29, 2003

1. Working group meeting, Monday, August 25 10:00 - 11:30

- Opening Remarks; Adoption of Agenda
- Appointment of Clerk of Minutes
- Approval of Minutes of PCAS WG in Buenos Aires, 2002
- Setting agenda for the week
- Head lines on the progress in PCAS WG priority areas (*pH of water*, output expected shortly D. Palmer + S. Lvov reporting, *Prediction of standard properties of aqueous nonelectrolytes*, V. Majer reporting; *Ion pairing in 1-1 electrolytes*, D. Palmer reporting)
- Status of the monograph *The Physical and Chemical Properties of Aqueous Systems at Elevated Temperatures and Pressures* (short information from D. Palmer on issues specifically regarding PCAS)
- *Commented compilation of experimental data for selected physico-chemical properties of binary aqueous systems at high temperatures (T>200°C)*, first information from V. Valyashko, possibilities of IAPWS involvement
- *Establishing recommended data on hydration properties for selected organic aqueous solutes*, first information from V. Majer on a potential for a project seeking joint support of IAPWS and IUPAC.
- International collaborations supported by IAPWS (ongoing projects and new proposals from PCAS)
- Membership (preliminary proposals for renewal of PCAS membership)

2. Joint workshop PCAS/PCC WGs Part 1 *pH Measurements at Different Temperatures* , Monday, August 25, 13:30 – 17:30

(in average 15 min contribution + 5 min discussion, 1 coffee break of 20 minutes)

- A. ZEIJSEINK: On the importance of pH measurements in power plant cycles
- J. BELLOWS: Calculation of pH from specific and cation conductivity
- E. MAUGHAN: Practical aspects of pH measurement
- D. PALMER, S. LVOV: Report on the pH of high temperature water
- S. LVOV: Can we measure the high temperature pH values outside a lab?”
- Y.V. ZHGENTI; D. PALMER ;P. BENEZETH; D. WESELOWSKI, L. ANOVITZ: An experimental investigation of borate/lithium adsorption from solution onto zirconium dioxide fuel-cladding surfaces: model of AOA phenomenon

- G. BIGNOLD: A spreadsheet for calculation of speciation, pH and conductivity from measured concentrations of a range of anions and cations
- H.D. PFLUG, E. MAUGHAN: Theoretical and practical aspects for the verification of carbon dioxide in the water-steam cycle of power plants
- S. UCHIDA: Development of high temperature water chemistry sensors
- H.D. PFLUG, E. MAUGHAN: Automatic on-line calibration method for pH of ammoniacal water circuits
- Need for future work– discussion of PCC and PCAS WGs memberships

3. Joint workshop PCAS/PCC WGs Part 2 Chemistry in Ultra Supercritical Plant (USC) and Other Issues, Tuesday, August 26, 8:30 – 11:30

(in average 15 min contribution + 5 min discussion, 1 coffee break of 20 minutes)

- A. ZEIJSEINK, K. DAUCIK: Issues and requirements for chemistry in USC plant from a European perspective.
- B.D. DOOLEY: EPRI's materials program for USC
- T. KOBAYASHI: Practical experiences with USC Kawagoe Power Plant in Japan
- J.P. JENSEN, L.S. PEDERSEN: Water Treatment at Avedøre 2 - a USC boiler
- K. DAUCIK: Chemistry of Water/Steam Cycle in ELSAM's USC Units - Intentions and real experience
- A. ZEIJSEINK: Development of water chemistry guidelines for the European AD-700 USC plant
- S. LVOV: Development of hydrothermal coating technology for corrosion mitigation in high temperature aqueous systems
- T. NEMEC, F. MARSIK, D. PALMER: Binary nucleation of selected power cycle and environmentally relevant water mixtures
- Development of an ICRN on USC-water technology – discussion of PCC and PCAS WGs memberships

4 Joint workshop PCAS/TPWS WGs, Tuesday, July 23 14:30 – 17:30

(in average 15 min contribution + 5 min discussion, 1 coffee break of 20 minutes)

- AUTHORS ??: Thermophysical properties of humid air and the
- AUTHORS??: Revised equation of state for aqueous ammonia
- HARVEY, R. FERNANDEZ-PRINI, J. ALVAREZ: Guideline on the Henry's law constant and vapor-liquid distribution constant for gases in H₂O and D₂O at high temperatures
- S. LVOV: Conductivity and permeability studies of proton conducting membranes for high temperature PEM fuel cells
- V. VALYASHKO : Commented compilation of experimental data for selected physico-chemical properties of binary aqueous systems at high temperatures (T>200°C), a progress report
- V. MAJER : Establishing recommended data on hydration properties for selected organic aqueous solutes
- Report from the molecular simulation task group (to be specified)
- M. NAKAHARA: Multinuclear NMR Spectroscopic Studies on Alkali Halides in Supercritical Water: Solubilities, Chemical Shifts, Ion-pair Formation, and Critical Temperatures
- M. UENO: Conductivities of 1:1 electrolytes in methanol along the liquid-vapor coexistence curve

5. Working group meetings on Thursday, July 25

Exact schedule will be announced on Tuesday afternoon: continuation of discussions started Monday morning, informal presentations can be also envisaged, membership, new international collaborations, future and restructuring of IAPWS, preparation of the Formal Motion to the EC, Kyoto Conference 2004.

All information regarding the 2003 Annual meeting (including this memo) is available on the WEB site: (<http://www.iapws.org>)