

IUPAC Project on Thermodynamics of Ionic Liquids, Ionic Liquid Mixtures, and Standardized Systems

Notes from an informal meeting at the 1st International Congress on Ionic Liquids
June 21, 2005, Salzburg, Austria

In attendance: Joseph Magee, Joan Brennecke, Andreas Heintz, Cornelis Peters, Luis Rebelo, Jason Widegren, Agilio Padua (representing Margarida Costa Gomes), Yauheni Paulechka (representing Gennady J. Kabo), Mark Muldoon, Edward Maginn, Sergey Verevkin, Urszula Domanska-Zelazna, Jose Nuno Canongis Lopes (some of those listed are not participating in the project)

Summary of discussion: The main topic of discussion was how to handle publication of data. The consensus plan had three parts. First, as originally decided at the 2004 meeting in Beijing, participants in the project are allowed to publish their own data without restriction. Second, for each property, an intercomparison paper will be published that evaluates all of the data collected for that property. When needed, this paper can be a vehicle to present new data with information that identifies its origin, the underlying methods and their uncertainties. It was suggested that the coordinator for each property lead the publication of the intercomparison paper. Third, a single paper containing recommended values for the physical properties of [hmim][Tf₂N] will be published. A brief discussion about what was meant by “recommended” values for physical properties did not yield a consensus.

The deadline for project completion will have to be moved back. The new deadline suggested for project completion is July 2006, in time for the Thermo International conference in Boulder. It was suggested that the coordinator for each property collect the extant data this July. Part of the motivation for this is to determine if there is a need for further measurements or for the participation of more laboratories. It was pointed out that participants have begun to share data. It was decided that this is appropriate in cases where the participants receiving data have already completed their own measurements.

Margarida Costa Gomes' group has observed the presence of a fine white precipitate in the [hmim][Tf₂N] following gas solubility experiments. No one else involved in the project has observed anything similar. Agilio Padua said that the precipitate is believed to be particles of glass formed by the stirring mechanism of the gas solubility apparatus. In support of this hypothesis it was noted that the precipitate formed during an experiment in which decane was stirred in the apparatus. Investigation of the nature of the precipitate is ongoing.