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Database on Ionic Liquids Solubilities in Molecular Solvents: Progress and Prospects.

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109 - Database on ionic liquids solubilities in molecular solvents: Progress and prospects

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Since ionic liquids are classified as novel designer and green solvents, an evaluation of their mutual solubilities with traditionally used solvents is of particular interest in the design and optimization of numerous industrial processes, such as separations, as well as in environmental remediation. Due to the increasing number of published datasets, which range significantly in their quality and robustness, a critical evaluation of this data is needed urgently for the field to move into practical application. The IUPAC Project # 2011-065-3-500 Database on liquid-liquid equilibria of binary mixtures of ionic liquids and molecular compounds is aimed at compiling available literature data on solubility and liquid phase equilibria in binary systems ionic liquid + molecular solvent, critical review of the apparatuses used to measure the solubility data, and evaluation of the data with the respect to the experimental techniques used as well as to the purity of the ionic liquid/solvent measured. Critical evaluation of the compiled data will be carried out using a robust gnostic method as well as UNIFAC model parameters to provide a statistical analysis and in view of presenting eventually a set of recommended values. Data will be stored in a web-based interface that may readily be made public later for general use. In the present contribution, a report on the progress of the project will be given, along with examples of how the database is created and administrated. The individual stages of data addition and of their approval by the database administrators will be explained. An example of a critical evaluation of a selected dataset will equally be given to justify the choice of methods based on mathematical gnostics for this task.

Wednesday, August 13, 2014 02:55 PM

The IUPAC Solubility Data Series: 100 Volumes of Solubility Data Online (01:30 PM - 05:10 PM)

Location: Palace Hotel

Room: Marina

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