LIQUID-LIQUID EQUILIBRIA OF IONIC LIQUIDS FOR FOR ABSORPTION REFRIGERATION SYSTEMS

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Abstract:

One of the methods to create a suitable pair for the absorption refrigeration systems is to employ a mixture of two or three ionic liquids. In order to make such a definite proposal, the liquid-liquid equilibria of many ionic liquids have been measured. The equilibrium data of several systems have been analysed in terms of a non-random two liquid mixing model with a fair success in predicting liquid compositions. The model requires two adjustable parameters to account for short-range interaction forces in addition to Debye-Huckel term accounting for long range interaction forces. A pattern in the evaluated adjustable parameters and the ionic size expresses the possibility of crating generalized treatment of a large number of ionic liquids. The compositions can be correlated to within the mole fraction of 0.0040 evaluated on the basis of 100 data points for ten systems containing ionic liquids and solvents.

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