

Study of Intermolecular Interactions in Binary Mixtures of 1-Butyl-3-Methyl Imidazolium Bis (Trifluoro Methyl Sulfonyl) Imide and 1-Ethyl-3-Methyl Imidazolium Ethyl Sulphate at Different Temperature from 293.18 to 342.15 K

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Abstract : The densities of pure and its binary mixtures of 1-Butyl-3-methyl imidazolium bis (trifluoro methyl sulfonyl) imide and 1-Ethyl-3-methyl imidazolium ethyl sulphate at different temperature, over the entire composition range were measured at 293.15, 298.15, 303.15, 308.15, 313.15, 318.15, 323.15, 328.15, 333.15, 338.15, 343.15 K. In this study, the liquid-liquid extraction procedure was used. From this experimental data, the excess molar volumes, apparent molar volume, partial molar volumes and the excess partial molar volumes have been calculated for over the whole composition range. Hence, the effect of temperature and composition on all derived thermodynamic properties of this binary mixture will be discussed in terms of intermolecular interactions.

Keywords : ionic liquid, interaction energy, effect of temperature, effect of composition

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