

Thermophysical Properties of Some Ionic Liquids

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Ionic liquids are a class of fluids that requires the attentions of experimentalist and theoreticians. In a new project on synthesis and characterization of new and not-so-new ionic liquids, our group started to study several thermophysical properties of these liquids, namely binary diffusion, electrical conductivity, heat capacity, viscosity and thermal conductivity. Among others we will study are the IUPAC liquid 1-n-hexyl-3-methyl-imidazoliumbis(trifluoromethanesulfonilimide)([C₆mim][NTf₂]), 1-n-butyl-3-methyl-imidazoliumbis(trifluoromethanesulfonilimide)

([C₄mim][NTf₂]), 1-n-butyl-3-methyl-imidazolium dicyanamide, ([C₄mim][dca]) and 1-n-ethyl-3-methyl-imidazolium ethylsulphate; ([C₂mim][EtOSO₃]), and in the case of diffusion, their mixtures with water and n-alcohols. It is the purpose of this paper to report data on the binary diffusion coefficients, using the Taylor dispersion method, as well as the heat capacity, using our DSC equipment.