Heat Capacities of $[C_nC_1im][PF_6]$ Ionic Liquids Series by Drop Method Calorimetry

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Recently, we reported the first experimental quantitative evidence of the structural percolation phenomenon in the extended series of ILs $[C_nC_1im][Ntf_2]$ with n = 2 – 8, 10 and 12.[1,2] In the previous work, it was possible to detect the percolation limit for this ILs family at the $[C_6C_1im][Ntf_2]$ species. The question that we are trying to answer is: what is the anion effect on the percolation limit of imidazolium based ionic liquids? For that propose, the heat capacity data, at T = 298.15 K, for the extended alkyl series of the imidazolium based ionic liquids, $[C_nC_1im][PF_6]$, n = 2 – 12, were measured by means of a high precision drop heat capacity calorimeter developed by Wadsö. [3-5] The obtained data will be used to detect and understand the heat capacity trend changes along the alkyl side chain length and to evaluate the effect of the identity, size and shape of the anion in the percolation limit.

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