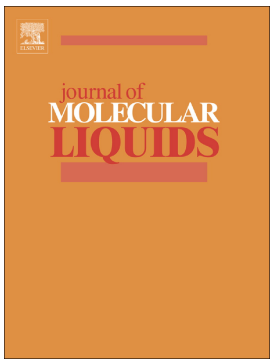

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Understanding the Heat Capacity Enhancement in Ionic Liquid-Based Nanofluids (Ionanofluids)

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Nanofluids, systems consisting of a base fluid and dispersed nanoparticles, have attained a large scientific interest recently, mainly due to unusual enhancement in their thermal properties like the thermal conductivity and heat capacity. Whilst both molecular solvents and ionic liquids have been examined, ionic liquids are known for the specific properties caused by the interactions occurring in these systems. Physical properties of very mixtures containing an ionic liquid and nanoparticles still remain not fully investigated and analyzed in the literature, to date. One of the possible issues which limits the fundamental understanding of such systems is related to the determination of the mechanism explaining the unusual enhancement of the thermal properties, in particular the heat capacity. The aim of this work is to discuss the mechanism of heat capacity enhancement of several ionic liquid-based nanofluids doped with carbon nanotubes, boron nitride and graphite, based on the experimental data of density and heat capacity determined as the function of the nanofluid composition and temperature from (298.15 to 363.15) K at 0.1 MPa.