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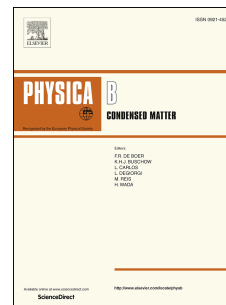
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Effect of potential attraction term on surface tension of ionic liquids

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Abstract

In this work, we have studied the effect of attraction term of molecular potential on surface tension of ionic liquids (ILs). For this purpose, we have introduced two different potential models to obtain analytical expressions for the surface tension of ILs. The introduced potential models have different attraction terms. The obtained surface tensions in this work have been compared with other theoretical methods and also experimental data. Using the calculated surface tension, the sound velocity is also estimated. We have studied the structural effects on the surface tensions of imidazolium-based ionic liquids. It is found that the cation alkyl chain length and the anion size play important roles to the surface tension of the selected ionic liquids. The calculated surface tensions show a good harmony with experimental data. It is clear that the attraction term of molecular potential has an important role on surface tension and sound velocity of our system.

Keywords: Surface tension, Ionic liquids, Potential model

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