

IONANOFLUIDS – WILL THEY BE USEFUL?

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Abstract:

Ionanofluids are complex systems of ionic liquids and nanomaterials, which have proved to have very interesting physical properties, capable of revolutionizing many engineering applications, both for low environmental impact and efficiency gains. Since the term was proposed by us several years ago, extending the word nanofluids to systems where the base is a ionic liquid, related with enhanced thermal properties of some systems with carbon nanotubes, several other applications were developed by our group that justify the current paper.

In this lecture the state of art of applications of ionanofluids will be reviewed, by using several ionic liquids and several nanomaterials, from synthetic to natural sources. Applications will cover the production of ionanofluids, their stability, the enhancement of thermal conductivity and heat capacity, and their applications to new heat transfer fluids, boiling and condensation, pigments for selective spectral paints for solar applications, heat insulation panels and supported ionic liquid phase (SILP) catalysts. Brief reference to economic advantages of possible derived new products for industrial and domestic applications will be made, whenever applicable.

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