

Effect of Aryl Imidazolium Ionic Liquids as Asphaltene Dispersants

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Abstract : Oil spills are one of the most serious environmental issues that have occurred during the production and transportation of petroleum crude oil. Chemical asphaltene dispersants are hazardous to the marine environment, so Ionic liquids (ILs) as asphaltene dispersants are a critical area of study. In this work, different aryl imidazolium ionic liquids were synthesized with high yield and elucidated via tools of analysis (Elemental analysis, FT-IR, and ¹H-NMR). Thermogravimetric analysis confirmed that the prepared ILs possess high thermal stability. The critical micelle concentration (CMC), surface tension, and emulsification index were investigated. Evaluation of synthesized ILs as asphaltene dispersants were assessed at various concentrations, and data reveals high dispersion efficiency.

Keywords : ionic liquids, oil spill, asphaltene dispersants, CMC, efficiency

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