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(54) **IMIDAZOLIUM IONIC LIQUIDS MADE USING CARDANOL EXTRACTED FROM CASHEW NUTSHELL OIL TO ENHANCE CRUDE OIL RECOVERY IN OILFIELDS**

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See application file for complete search history.

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(57) **ABSTRACT**

Modified chemical structures of cardanol extracted from cashew nut shell oil, and the use of the same to prepare imidazolium ionic liquids (IILs). The IILs can be used to prepare different types of silica, magnetite and calcium carbonate nanoparticles (NPs) as multifunctional oilfield chemicals for use in various oil spill collection, de-emulsification, viscosity improvement, asphaltene dispersant, and enhanced oil recovery applications.

7 Claims, 13 Drawing Sheets

