

Fe-containing ionic liquids for the extractive deep desulfurization

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During the course of our study on the DDS of fuel oils. We have found that effective desulfurization of a model oil containin an aromatic sulfur compound, dibenzothiophene(DBT) was achieved using Fe-based ionic liquids(FeCl_3 -[imidazolium]Cl) as an extractant at an ambient condition. Fe(III)-containing ionic liquids(ILs) were synthesized by the reaction of anhydrous FeCl_3 and imidazolium chloride([imidazolium]Cl) at room temperature. The amount of DBT extracted increased with increasing molar ration of FeCl_3 /[imidazolium]Cl. The ability of the ILs to extract DBT seems to be largely attributed to the Lewis acidity of anionic Fe(III) species.