

HETEROGENIZATION OF CHLOROALUMINATE IONIC LIQUIDS ON MESOCELLULAR FOAM SILICA(MCF)

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The ionic liquids have rendered a new class of solvents with nonmolecular, ionic character. This unique property of ionic liquids is attractive for the development of environmentally friendly catalytic processes. The chloroaluminate ionic liquid is well known to be not only a versatile solvent but also an effective Lewis acid catalyst. The ionic liquids, if heterogenized, yield the so-called supported liquid phase useful in organic synthesis. In this study we report our efforts on the synthesis of MCF and 1-butyl-3-methylimidazolium chloride- AlCl_3 ionic liquid, the heterogenization of the ionic liquid, and their catalytic application. Heterogenization of ionic liquid was performed by using two different methods; i.e., the grafting method and the impregnation method. The two heterogenized ionic liquid catalysts prepared in this work showed high activities for the Friedel-Crafts alkylation reaction, a Lewis acid catalyzed reaction, and one of these catalysts, the ionic liquid grafted catalyst, exhibited higher catalytic activity than that of the ionic liquid impregnated catalyst. According to the structural data, the difference in the catalytic activity is attributed to the different structures. In conclusion, the grafting method appears to be more suitable for the heterogenization of ionic liquids.