Mesoporous Zeolites Templated by Imidazolium-based Dicationic Ionic Liquids

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Zeolites are used in many fields, such as oil refining, gas adsorption, and heterogeneous catalysis. It is well known that physicochemical properties of zeolite are strongly depends on Si/Al ratio and pore structure derived from templates. By controlling pore size and pore volume of zeolite, it is possible to enhance catalytic activity as well as selectivity toward target products selectively. In this work, various imidazolium-based dicationic ionic liquids with different chain length were used as template for the synthesis of mesoporous zeolite with an aim of controlling pore size. The prepared mesoporous zeolites were characterized by using TEM, SEM, BET, XRD, FT-IR and then were applied to acid-catalyzed dehydration of fructose into 5-HMF. This work was supported by Basic Science Research Program through the NRF funded by Ministry of Education (NRF-2013R1A1A2060638).