

Immobilized Ionic Liquid on Hybrid MCM-41 for Cycloaddition of Carbon Dioxide to Allyl Glycidyl Ether

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The cycloaddition of CO₂ to epoxides producing cyclic carbonates is one of the few industrial processes that utilize CO₂ as a raw material. Cyclic carbonates are widely used as aprotic polar solvents, chemical intermediates and monomers. Recently, a new synthesis has been reported for the preparation of hybrid inorganic-organic mesoporous materials containing ionic liquid (IL). These materials are of particular interest on account of their regular, ordered architecture allowing high accessibility of the immobilized imidazolium units. This study examined the synthesis of IILs by two step immobilization on CP-MS41 and its use as a catalyst for the cycloaddition of CO₂ to allylglycidyl ether. The efficiency of immobilization of activated materials was investigated by XRD, BET, ¹³C NMR, ²⁹Si NMR, FT-IR and EA. The catalytic performance of immobilized IL was tested in the cycloaddition of CO₂ and allylglycidyl ether.