

Unprecedented catalytic activity as a result of direct heterogenization of a homogeneous catalyst for epoxide carbonylation

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The synthesis of a unique heterogeneous catalyst that combines the functionality of a homogeneous catalyst and the advantages of a heterogeneous catalytic process is a continuing goal in catalysis for the various reaction which applicable in industries. The recent results on direct heterogenization of homogeneous catalyst for lactone production from epoxide carbonylation through a facile polymerization using Friedel-Crafts alkylation will be presented. The synthesized single-site heterogeneous catalysts are produced *n*-butyrolactone with a remarkable turnover frequency (TOF) of 400 h⁻¹, and recycled experiments of this catalyst demonstrate it as a possible candidature for industrial applications.