Synthesis of cyclic carbonate from allyl glycidyl ether and carbon dioxide using silica-supported ionic liquid catalysts

안지연, 이미경, 심혜림, 만주, 김경훈, 박대원*
부산대학교
(dwpark@pusan.ac.kr*)

Ionic liquids, a kind of novel green media composed entirely of cations and anions, have recently attracted considerable attention due to their unique properties such as non-volatility, tunable polarity, and high stability. Supported ionic liquid catalysis is a concept which combines the advantages of ionic liquid with those of heterogeneous support materials. We used silica-supported ionic liquid catalyst for the coupling of carbon dioxide and allyl glycidyl ether (AGE) to form cyclic carbonate. The reaction was carried out in an autoclave at 80-140 ℃ under carbon dioxide pressure of 60-240 psig. The conversion of AGE was found to be over 98% using the silica-supported imidazolium ionic liquid catalyst at 140 psig and 110oC temperature for 6 h.