Comparative studies on microwave assisted catalytic performance of supported and un-supported ionic liquid on the cycloaddition reaction

만주, 최혜지, 유정인, 박상욱, 박대원*
부산대학교
(dwpark@pusan.ac.kr*)

Being an important constituent of greenhouse gases, carbon dioxide utilization became an interesting scope of research among scientists. Reaction with epoxide has been considered as a useful method for its utilization by chemical processes. The five-membered cyclic carbonates are important industrial chemicals by its application in various fields. Recently there has been a huge spate of interest in the catalytic applications of room temperature ionic liquids. Due to the rapid heating methods, microwave assisted organic synthesis gained much attention for the past few years. In this work a comparative study has been performed under microwave field using supported and pure ionic liquids catalyst for cyclic carbonate synthesis. Silica supported ionic liquids were synthesized and its catalytic activity was studied for the reaction under microwave irradiation. Under microwave irradiation, high selectivity for cyclic carbonate was achieved under moderate CO_2 pressure within a very short reaction time.