

## Microwaves as the heating mode for the synthesis of cyclic carbonate from phenyl glycidyl ether and CO<sub>2</sub> using ionic liquid catalyst

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CO<sub>2</sub> one of the green house gas responsible for the climatic changes, its effective fixation has achieved much attention from both economical and environmental point of view. Reaction with epoxides has been considered as a useful method for its utilization by chemical processes. Due to the rapid heating methods, microwave assisted organic synthesis gained much attention for the past few years. Even though there was a tremendous improvement in the reactor designs, pressurized reactions by microwaves are still under its nascent stage. Due to its low vapor pressure and high thermal stability, ionic liquids have the characteristics of catalyst as well as reaction medium. The rapid heating nature of ionic liquids under microwave made it good candidate for microwave assisted reactions. In the present study we utilized ionic liquid as catalyst for the cycloaddition reaction of phenyl glycidyl ether (PGE) with CO<sub>2</sub> by microwave dielectric heating. By conventional heating the reaction produced very low molecular weight polycarbonate, whereas microwaves promoted the cyclic carbonate formation in a very selective way.