

### Cycloaddition of Aziridine with CO<sub>2</sub> Using Hydroxyl Functional Pyridinium Halides as Catalysts

Amal Cherian Kathalikkattil, 석한글, 이선명, Tharun Jose,  
박대원\*  
부산대학교  
(dwpark@pusan.ac.kr\*)

Chemical fixation of CO<sub>2</sub> to useful products is undergoing extensive research owing to the potential of CO<sub>2</sub> as a cheap, abundant, non-toxic and inflammable C1 feedstock. Cycloaddition of CO<sub>2</sub> with aziridine to produce oxazolidinone forms one of the potential routes for chemical fixation of CO<sub>2</sub>. Oxazolidinones, are an important class of heterocyclic compounds possessing wide applications as in chemical and pharmaceutical industries. The present work focuses on the conversion of 2-methylaziridine to methyloxazolidinone employing a series of hydroxyl functional pyridinium halide salt as catalyst. The role of anions as well as the synergistic effect of hydroxyl functional groups on cycloaddition are discussed. The investigation also includes the effect of reaction parameters like catalyst amount, temperature, CO<sub>2</sub> pressure and reaction time. Recyclability of the catalysts also was conducted.