

Process Design of Glycerol to Glycerol Carbonate

임성수, 이상용, 홍기훈, 정재선, 이관영¹, 문동주*

한국과학기술연구원; ¹고려대학교

(djmoon@kist.re.kr*)

Glycerol, a byproduct obtained from biodiesel industry finds only limited applications as a chemical. Converting bio-glycerol to value added products by using heterogeneous catalysts is the challenging problem for chemists. One such reaction is glycerol carbonate can be obtained by carbonylation of glycerol with urea using base catalyst.

Part of the glycerol is converting into glycerol carbonate and after the reaction it is difficult to separate the reactants and products. We are design the simulation of the reactor to separate glycerol carbonate from unreacted glycerol for large scale industrial production. So for we achieved 90 % pure glycerol carbonate with batch reactor.

This research is more focused on the glycerol carbonate purification process. For example, how to design distillation column of this process, operating condition and actual number of trays. Research be progressed by using commercial simulation tools.