

### Optimization of VMD process with Ammoniumbicarbonate as Draw Solution in FO Process

김도연, 양대륙\*, 박기호  
고려대학교  
(dryang@korea.ac.kr\*)

Forward osmosis (FO) process is one of promising processes for seawater desalination in next generation. However, there are problems to be solved for commercialization of the FO process. The development of the draw solution and its recovery process are regarded as the most urgent problems. In this study, Ammonium-bicarbonate (AB) was used as draw solute and vacuum membrane distillation process was suggested for the draw solution recovery. In order to optimize the VMD process with AB, modeling with considering phase equilibrium and reaction kinetics was carried out and then the model was verified using experimental data. Operation and design parameters were optimized for the lowest energy consumption and cost.