

Experimental analysis of water flux and draw solute permeation in closed-loop, batch mode forward osmosis and reverse osmosis processes.

허 환, 박기호, 양대륙†
고려대학교
(dryang@korea.ac.kr†)

RO process requires high applied pressure, which leads to high energy requirement and thus, high operational cost. FO-Cry-RO hybrid process makes up for the weakness of RO process. Performance of the Forward osmosis desalination process was measured in the lab by determining the permeate water flux. Experiments were carried out for water flux using three solute in draw solution of varying concentration and a sodium chlorid feed solution with high temperature(333.15K) . Water permeability coefficient A, Solute permeability coefficient B and Membrane structure parameter S were determined in experiments. And then, Reverse Osmosis experiments were conducted to measure water flux in room temperature(298.15K). Using Optimization function to minimize result of experimental and the result compared with Simulation.