

Experimental analysis of osmotic pressure, water flux and draw solute permeation using adipic acid in forward osmosis process

_____, _____*, _____,

(dryang@korea.ac.kr*)

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 the Adipic acid draw solution of varying concentration and a sodium chloride feed solution. Linear regression was then used to determine the draw solution concentration when water flux was zero. Osmotic Pressure of draw solution was obtained from Osmotic pressure was equal draw solution and feed solution. The water permeability coefficient A was also determined in experiments. And then other experiments were conducted to draw solute flux. Feed solution reservoir was filled with DI instead of NaCl solution. The adipic acid concentration in the feed was monitored by submerging the conductivity meter. The draw solute permeability coefficient was estimated by experimental results. Strong agreement between experimental results and empirically derivate equations was observed.