

정삼투식 담수 공정기술 개발을 위한 파일럿 설계

김영*, 오동욱, 홍승택, 이공훈, 이정호, 허필우
한국기계연구원
(ykim@kimm.re.kr*)

A pilot-scale forward-osmosis (FO) desalination system is designed to produce 3 ton per day of fresh water. In the front part of the system, fresh water is permeated from the feed, or seawater, to the draw solution in FO membrane modules. In the rear part, the draw solute is separated from water to produce the potable water in membrane or column distillation systems. The concentration of draw solution entering the FO membrane modules is determined by the capability of the separation systems, while the capacity of the separation systems is determined to treat the required amount of draw solution for target production quantity of fresh water. The designed system will be manufactured and tested in the near future. This study will significantly contribute to assessing the feasibility of forward-osmosis desalination systems.