

Application of NaA zeolite membrane prepared by clear solution method to vapor-permeation of alcohol-water system

김근수, B. Ramachandra¹, 최정식, 추고연, 김태환*
한국에너지기술연구원;

¹Department of Chemistry, NITK(INDIA)
(thkim@kier.re.kr*)

NaA zeolite membrane was synthesized on a porous alumina support from a homogeneous clear solution. The characterization of the membrane was done by XRD and SEM analysis. The XRD of the synthesized membrane showed peak at 7.18 was confirmed with the NaA zeolite crystal. A uniform crystals with less than 0.5 μm size was deposited on the alumina support. The evaluation of the perfection of the as-synthesized membrane by vapor permeance was investigated using the methanol/water system. The membrane displayed excellent water-perm selective performance for water/methanol solution in VP. The vapor permeance was carried out at 573 K. The maximum separation performance of vapor permeance of 99% water was observed. The flux was reported as 20 $\text{g}/\text{m}^2\cdot\text{h}$.