

The preparation and gas permeation properties of Poly(ether-block-amide)-silica nanocomposite membranes

이근철, 신호민, 김현준\*  
경기대학교  
(hjkim68@kyonggi.ac.kr\*)

The use of polymeric membranes for CO<sub>2</sub>/CH<sub>4</sub> separations has increased for a variety of industrial applications, including enhanced oil recovery, the treatment of landfill gases and the sweetening of natural gases. For the membrane processes to be successful, new polymeric materials with higher permeability and selectivity are required. It is generally known that polymeric membrane that has high gas permeability exhibits low selectivity and vice versa. The object of this study is development of Poly(ether-block-amide)(PEBA, PEBAX®) based silica nanocomposite membrane materials for enrichment of methane in biogas from various sources and environments. This research on chemical and physical structure of nanocomposite membranes, their separation properties, mechanical properties as well as optimization of new membrane preparation will lead to the development of new membrane materials with outstanding permeation properties.