

عنوان مقاله:

Orientation of magnetic particles in mixed matrix membrane using external magnetic field for gas permeability enhancement

محل انتشار:

ششمین کنفرانس بین المللی شیمی و مهندسی شیمی (سال: 1398)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Saba Raveshiyan - *Membrane Science and Technology Research Group, Department of Chemical Engineering
Tarbiat Modares University, Jalal-Ale-Ahmad, Tehran, Iran*

Seyed Saeid Hosseini - *Nanotechnology and Water Sustainability Research Unit, College of Science, Engineering
and Technology, University of South Africa, Johannesburg, South Africa*

Javad Karimi-Sabet - *Material and Nuclear Fuel Research School (MNFRS), Nuclear Science and Technology
Research Institute (NSTRI), Tehran, Iran*

خلاصه مقاله:

In this research, magnetic mixed matrix membranes (MMMs) containing 3 wt.% neodymium (Nd) are prepared for oxygen/nitrogen separation. To create preferential permeation pathways for oxygen molecules across the MMMs, the membrane preparation is conducted under an external magnetic field (MF) and the required magnetic force to arrange the particle dispersion in a polymer matrix is determined with the aid of ANSYS Maxwell software. Optical microscope images reveal that Nd particles are aligned in the membrane matrix according to the direction of applied MF. The MF-aligned Nd/PSf membranes present higher permeability and lower selectivity than the un-aligned membranes and .PSf

کلمات کلیدی:

Polysulfone; magnetic mixed matrix membranes; gas separation; Orientation

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1005779>

