

عنوان مقاله:

Improvement of Water Permeation in Nanofiltration Membranes by Increase of Hydrophilicity in Support Layer

محل انتشار:

دومین همایش ملی غشا و فرایندهای غشایی (سال: 1394)

تعداد صفحات اصل مقاله: 5

نویسندگان:

n Askari - *Institute of Chemical Technologies, Iranian Research Organization for Science and Technology (IROST), Tehran, Iran*

s Shokrollahzadeh - *Institute of Chemical Technologies, Iranian Research Organization for Science and Technology (IROST), Tehran, Iran*

v Vatanpour - *Faculty of Chemistry, Kharazmi University, Tehran, Iran*

خلاصه مقاله:

A polysulfone support layer was synthesized for thin film composite (TFC) nanofiltration (NF) membrane by phase inversion in this research. The surface of the polysulfone (psf) support layer was modified by polydopamine (PDA) by self-polymerization. The thin film nanocomposite (TFN) membranes were prepared by interfacial polymerization reaction using trimesoylchloride (TMC) and m-phenylenediamine (MPD) as the monomers on a modified polysulfone substrate. Graphene oxide (GO) nanosheets were added to the aqueous solution to improve the NF hydrophilicity and the water flux. The water flux and salt rejection of TFC and TFN nanofiltration membranes were measured in a dead-end stirred cell filtration device. The TFN-PDA membrane showed higher pure water flux than TFN membrane. The addition of PDA and GO in TFN membrane increased the water flux from 6 to 14.5 L/m²h in polyamide(PA)/GO and 7 to 15L/m²h in PDA-PA/GO. The rejection in TFN-PDA was decreased from 97% to 80%.

کلمات کلیدی:

Nanofiltration, Thin film Nanocomposite Membrane, Polydopamine, Graphene oxide

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/390374>

