

Preparation and characterization TiO_2 -NF composite membrane and the effect of photocatalytic degradation

이현수, 이승윤, 임세준, 민병렬*
연세대학교 화학공학과
(minbr345@yonsei.ac.kr*)

TiO-NF composite membrane has some unique characteristics such as high water flux, semiconducting properties, photocatalysis and chemical resistances over other membranes. Most of photocatalyst used as a pure powder form has the problems of withdrawal and light shield by particles. therefore the manufactured NF composite membrane can perform photocatalytic reaction and separation simultaneously by means of TiO photocatalyst attached to NF composite membrane surface.

In this work, TiO photocatalyst were added to Polyethersulfone(PES) when we made UF membranes as the substrates of TiO-NF composite membrane. TiO-NF composite membranes were modified by different manufacturing conditions and varying the ratio of TiO.

We've been studying the performance for photocatalytic decomposition under UV light for the purpose of a high water flux and the rejection of bivalent anion salt.

The characterization of membranes were applied on conductivity, FT-IR, NMR, XRD, SEM and so on.