Super selective dual nature GO bridging PSF-GO-Pebax thin film nanocomposite membrane for IPA dehydration

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ABSTRACT
In this work, Graphene Oxide (GO) is embedded in both selective hydrophilic layer and porous hydrophobic substrate creating a mutual bridge between the two surfaces. Pristine 1–3 µm microporous PSF prepared via dry/wet phase inversion techniques with contact angle of 74.12° has been further study with GO embedded Pebax dense selective layer. This dual nature thin film nano composite TFNC membranes managed to reduce the water contact angle down to 37.18°. As for the IPA dehydration study, the total flux up to 1.19 $kgm^{-2}h^{-1}$ and 0 wt% IPA detected in permeate was achieved with 20 wt% water feed at 30°C.

KEYWORDS
Thin film; Nanomaterials; Composites film; Hydrophilic enhancement; IPA dehydration

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