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www.elsevier.com/locate/memsci

PII: S0376-7388(17)33284-2
DOI: https://doi.org/10.1016/j.memsci.2018.03.025
Reference: MEMSCI16019

To appear in: *Journal of Membrane Science*

Received date: 16 November 2017
Revised date: 7 March 2018
Accepted date: 10 March 2018

Cite this article as: Mengqi Shi, Zhi Wang, Song Zhao, Jixiao Wang, Peng Zhang and Xingzhong Cao, A novel pathway for high performance RO membrane: preparing active layer with decreased thickness and enhanced compactness by incorporating tannic acid into the support, *Journal of Membrane Science,* https://doi.org/10.1016/j.memsci.2018.03.025

A novel pathway for high performance RO membrane: preparing active layer with decreased thickness and enhanced compactness by incorporating tannic acid into the support

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Abstract

We report a novel pathway for preparing polyamide (PA) thin-film composite (TFC) reverse osmosis (RO) membrane with high permselectivity by incorporating tannic acid (TA) into the polysulone (PSf) support. The support and RO membrane were characterized systematically. The results showed that (1) the support surface was enriched with TA due to the high hydrophilcity of TA and (2) TA endowed the RO membrane with a thinner and more compact PA active layer. The influencing mechanism of TA on the PA layer formation was discussed. TA affected the formation

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