

# **In-situ polymerized superhydrophobic and superoleophilic nanofibrous membranes for gravity driven oil–water separation**

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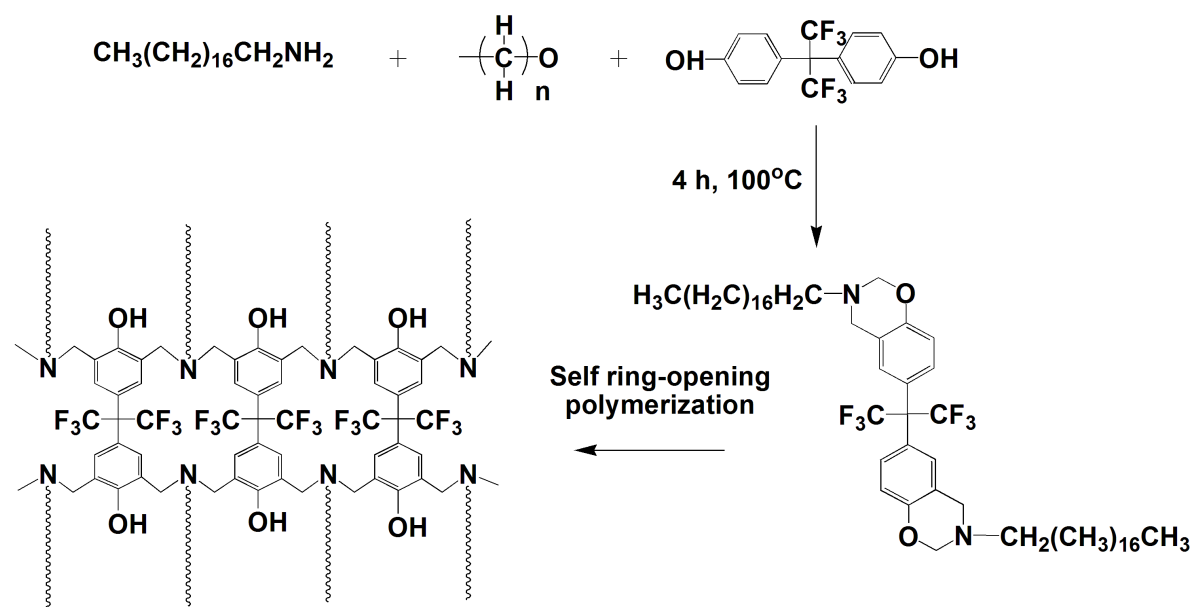
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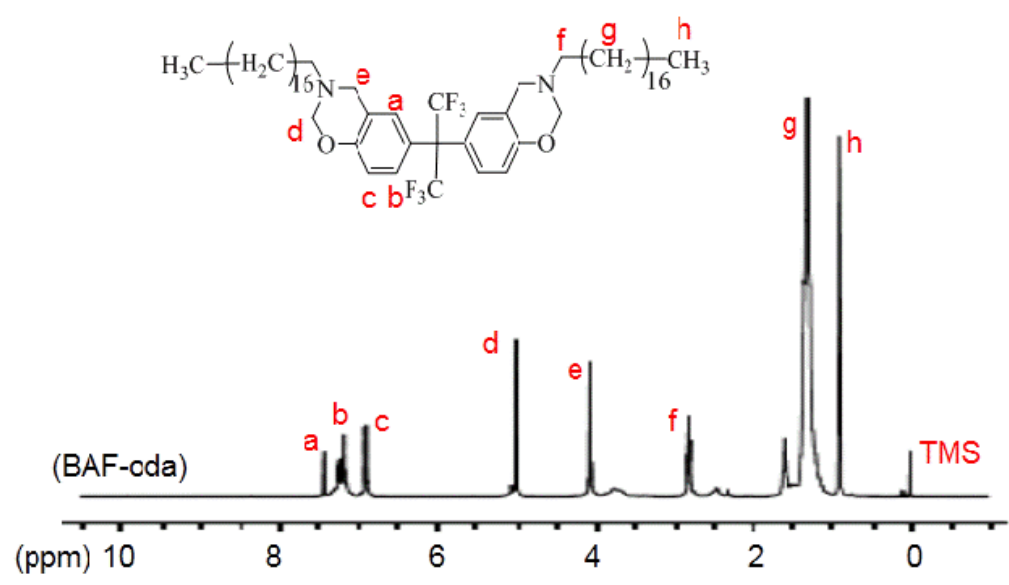
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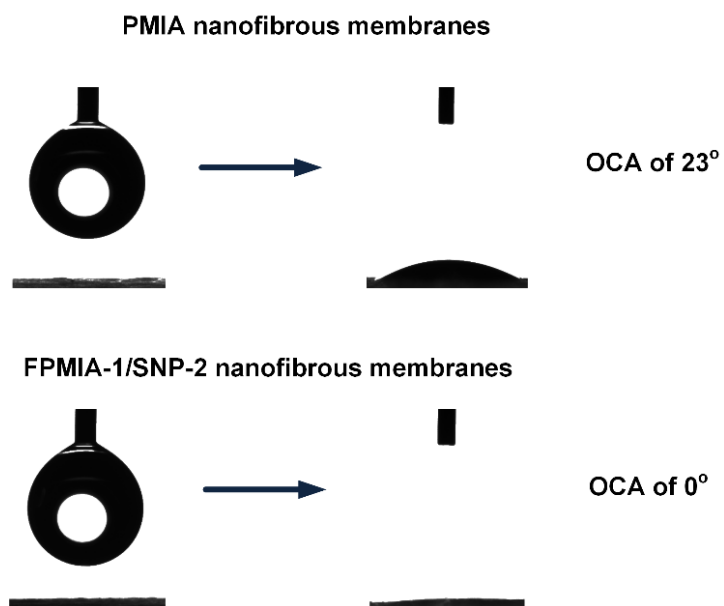
## Supporting Information



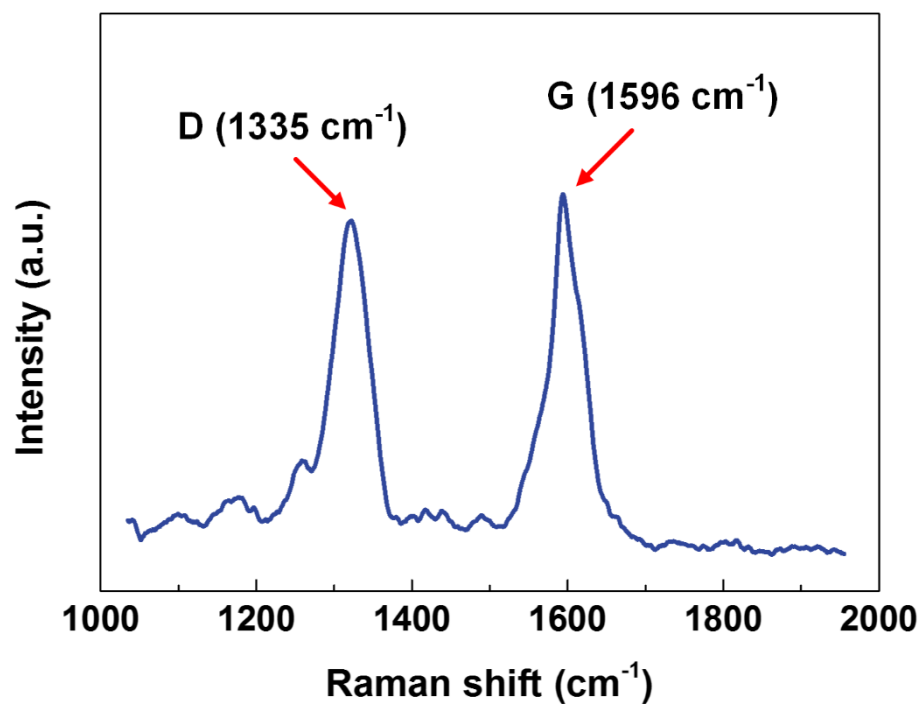
**Fig. S1** Chemical synthetic and polymerization route of BAF-oda.



**Fig. S2** <sup>1</sup>H NMR spectrograph of BAF-oda



**Fig. S3** Photographs showing the OCAs of PMIA and FPMIA-1/SNP2 nanofibrous membranes.



**Fig. S4** Raman spectrum of as-prepared FPMIA-1/SNP-2 membranes. The two characteristic peaks at 1335 and 1596 cm<sup>-1</sup> indicated the disorder induced mode (D band) and tangential mode (G band) of CNTs.

## Supplementary Discussion

The determination of liquid retention force was based on the previous study (C. G. L. Furmidge, J. Colloid Sci., 1962, 17, 309 and T. S. Wong et al., Nature, 2011, 477, 443.). The liquid retention force  $F$  could be estimated according to the equation:  $F = \theta_M [\gamma_{AL}(\cos\theta_R - \cos\theta_A)/\rho]^{0.5}$ , where  $\theta_A$  is the advancing contact angle,  $\theta_R$  is the receding contact angle;  $\theta_M$  is the arithmetic mean of  $\theta_A$  and  $\theta_R$ ;  $\gamma_{AL}$  is the air/liquid surface tension; and  $\rho$  is the density of the spray liquid.