

Supporting Information

Nanoporous block copolymer membranes immobilized with gold nanoparticles for continuous flow catalysis

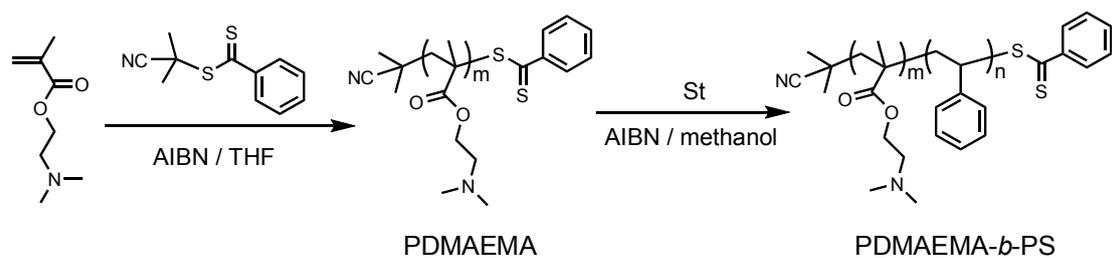
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Scheme S1. Synthesis of PDMAEMA-*b*-PS by two-step RAFT polymerization.

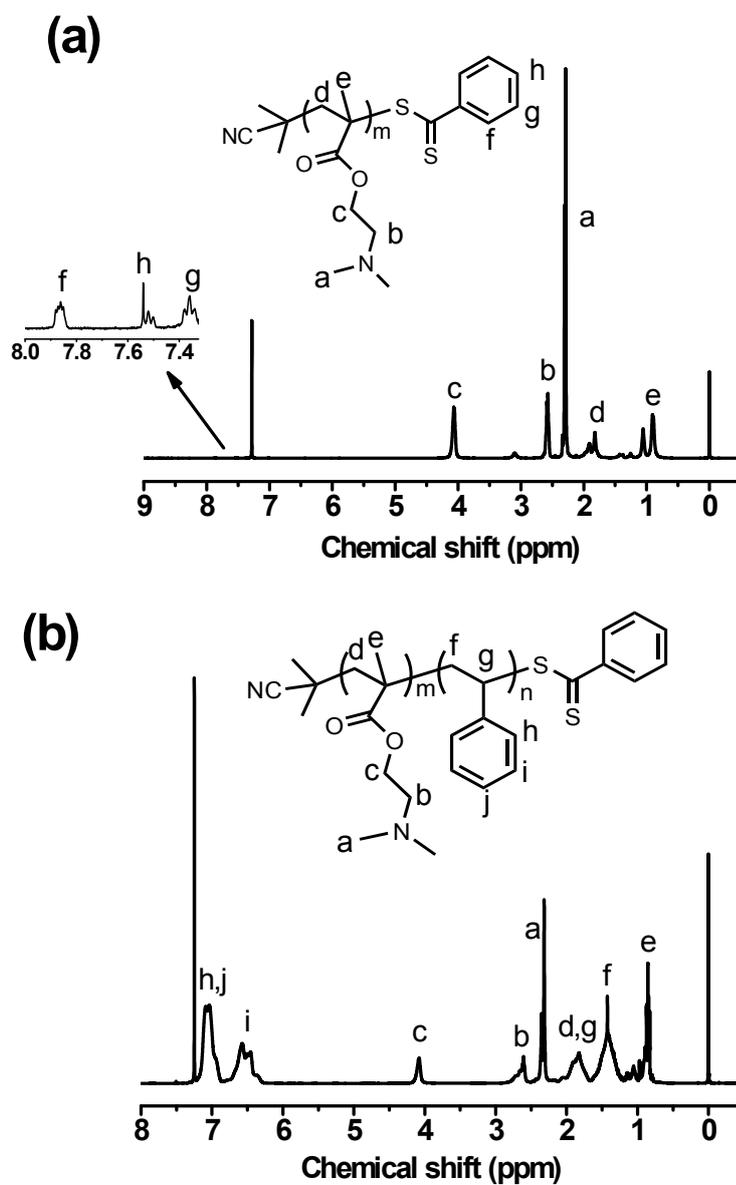


Figure S1. ^1H NMR spectra of PDMAEMA (a) and PDMAEMA-*b*-PS (b) in CDCl_3 .

$$DP_{PDMAEMA} = \frac{I_{4.07}}{I_{7.32+7.90}} \times \frac{5}{2} \quad (S1)$$

$$DP_{PS} = \frac{I_{6.20+7.21}}{I_{4.07}} \times \frac{2}{5} \times DP_{PDMAEMA} \quad (S2)$$

Here, refers to the integral value of corresponding signal.

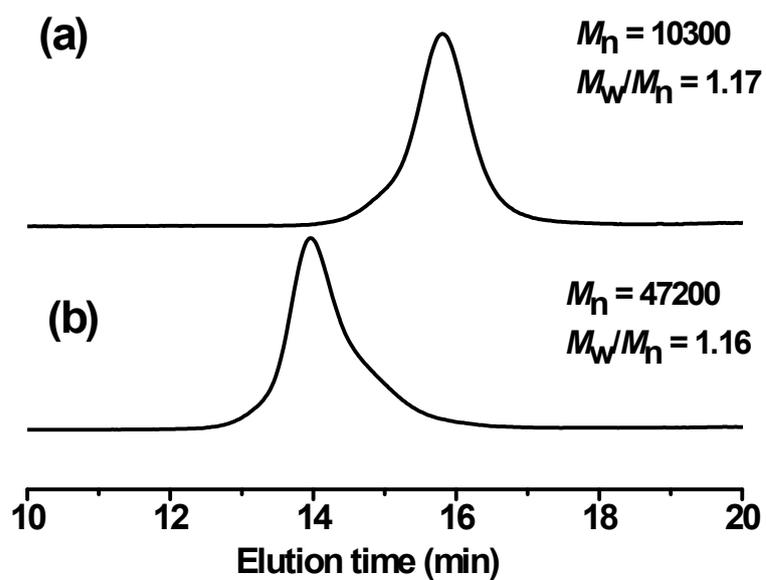


Figure S2. GPC traces of PDMAEMA (a) and PDMAEMA-*b*-PS (b).

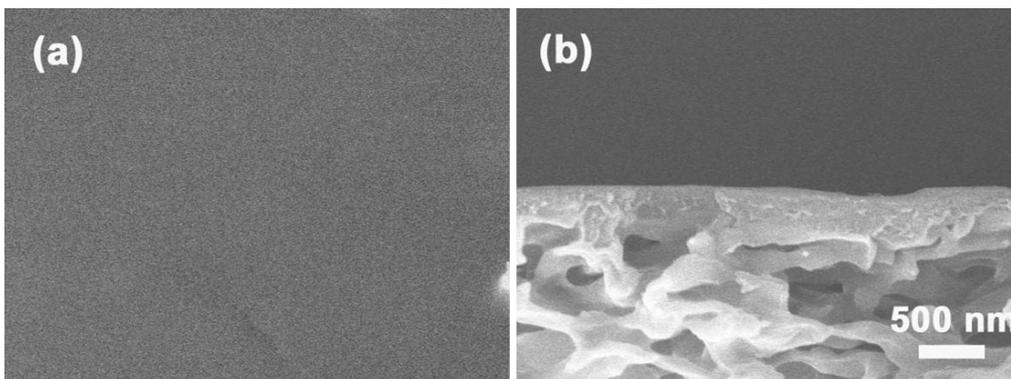


Figure S3. SEM images of the as-coated BCP composite membrane: (a) surface and (b) cross-sectional SEM image. The SEM images have the same magnification and the scale bar corresponding to 500 nm is given in (b).

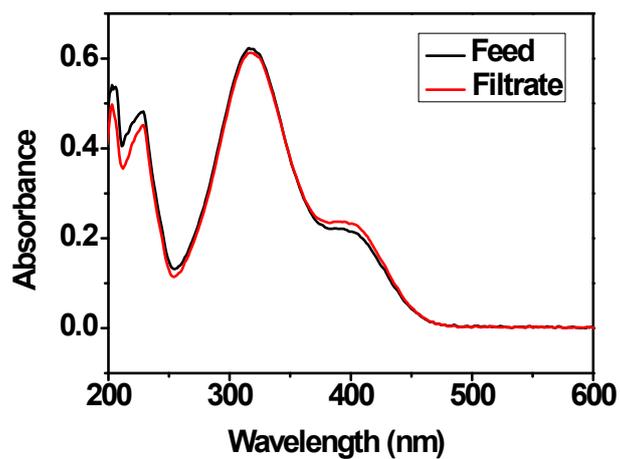


Figure S4. UV-vis absorption spectra of 10 ppm 4-NP solution without NaBH_4 , before and after flowing through the AuNP-immobilized BCP membranes.

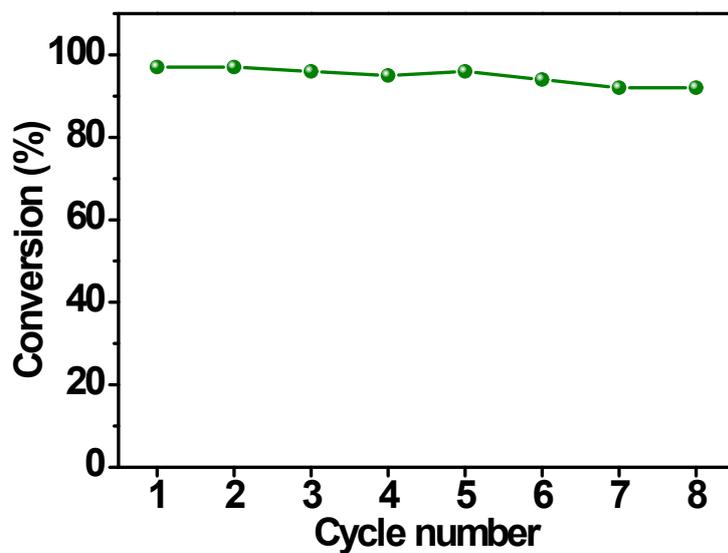


Figure S5. Recyclability performance of the AuNP-immobilized BCP membrane prepared with 5.0 mg/mL HAuCl₄ for the flow catalytic reduction of 4-NP to 4-AP at a flow rate of 0.5 mL/min.

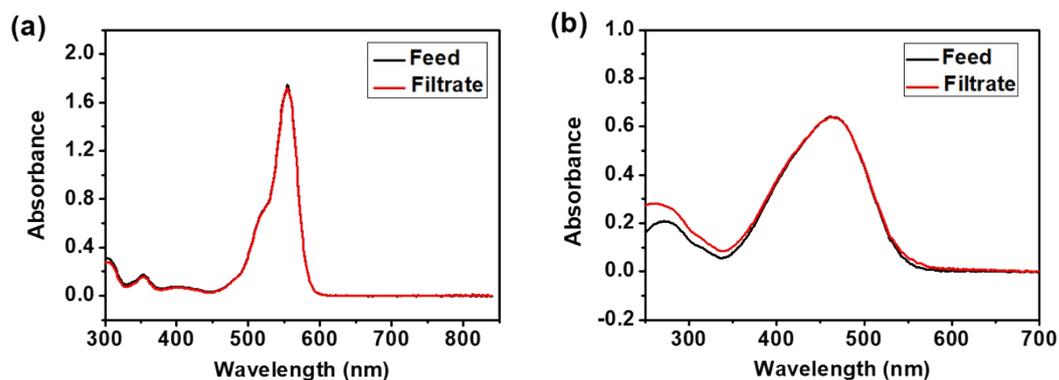


Figure S6. UV-vis absorption spectra of (a) 10 ppm RhB solution with 500 ppm NaBH₄, and (b) 10 ppm MO solution with 500 ppm NaBH₄ before and after flowing through the Au-free BCP membranes.

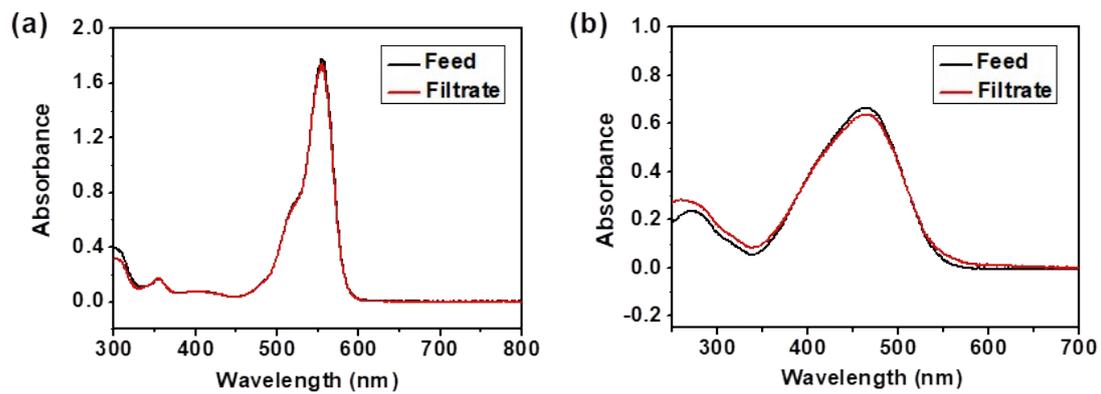


Figure S7. UV-vis absorption spectra of (a) 10 ppm RhB solution without NaBH_4 , and (b) 10 ppm MO solution without NaBH_4 before and after flowing through the AuNP-immobilized BCP membranes.