

Supporting information

Green coating by coordination of tannic acid and iron ions for antioxidant nanofiltration membranes

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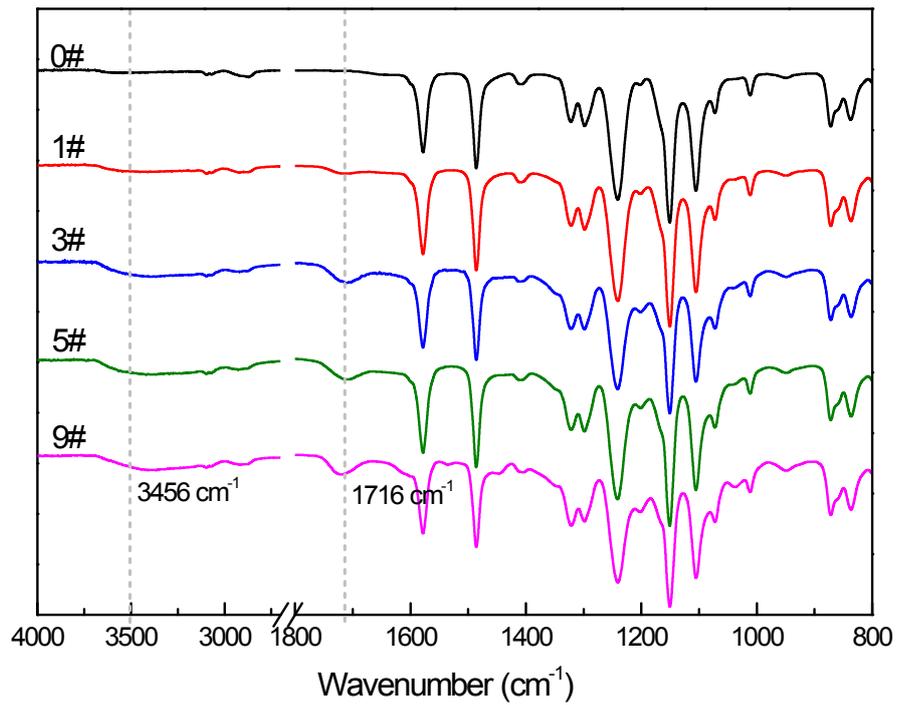
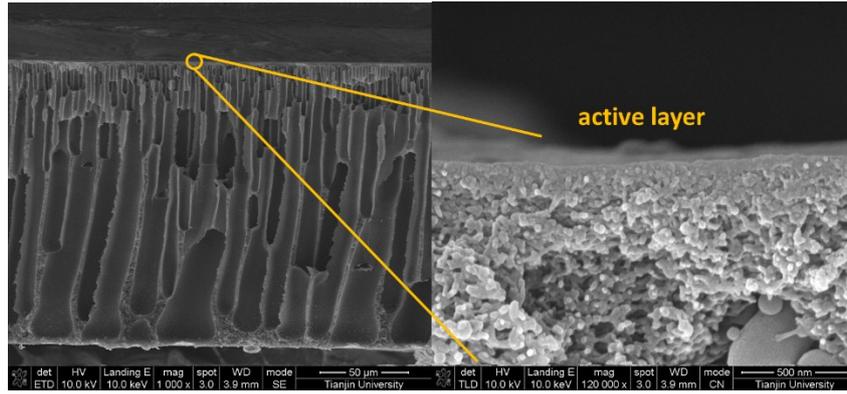
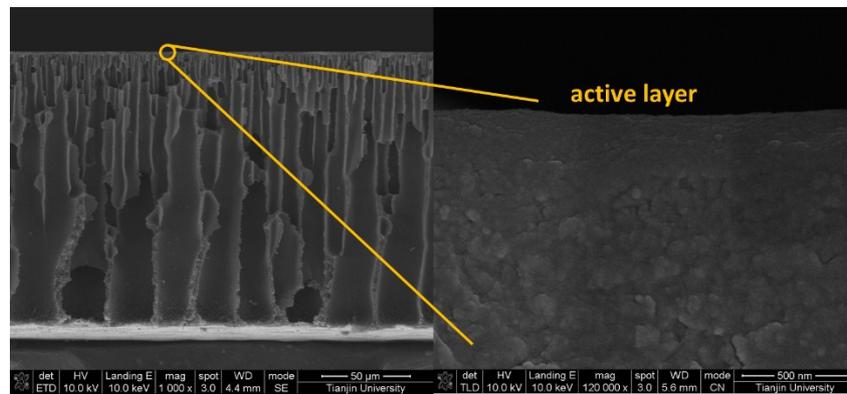


Fig. S1 ATR-FTIR spectra of PES substrate (0# membrane) and TA-Fe^{III}/PES composite NF membranes (1, 3, 5 and 9# membranes).



(a)



(b)

Fig. S2 SEM images of the cross section of the virgin PES membrane (a) and TA-Fe^{III}/PES composite NF membrane (b, 3#).

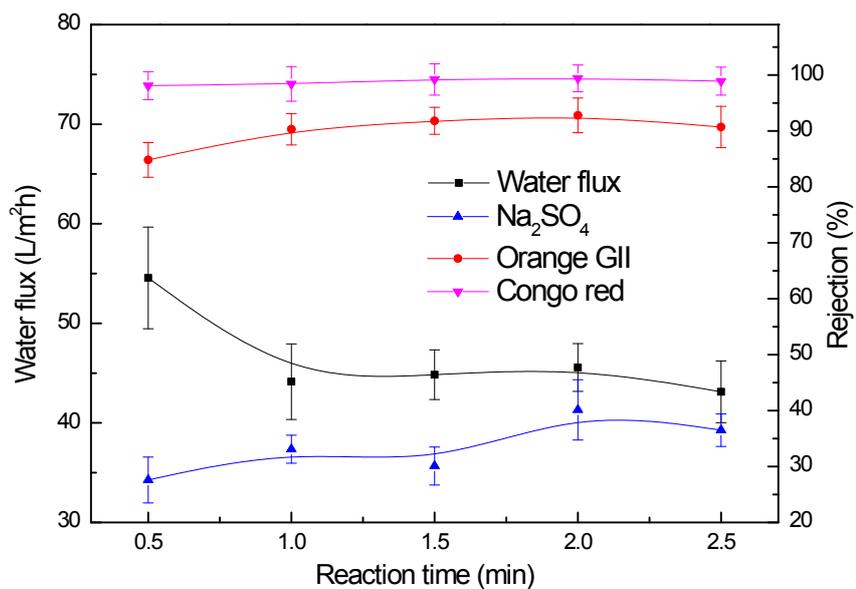


Fig. S3 The influence of reaction time on water flux and rejection of the nanofiltration membranes, the concentrations of TA and FeCl₃ were fixed at 1.5 and 1.0 g/L in solutions, respectively. The filtration operation was carried out at an operation pressure of 0.20 MPa.

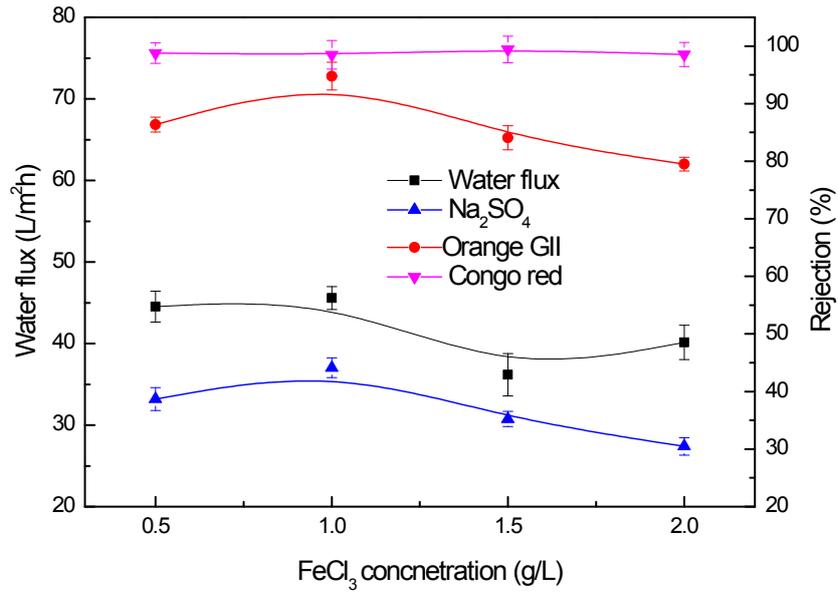


Fig. S4 The influence of FeCl₃ concentrations on water flux and rejection of the nanofiltration membranes, the concentration of TA was fixed at 1.5g/L and reaction time was fixed at 1 min. The filtration operation was carried out at an operation pressure of 0.20 MPa.

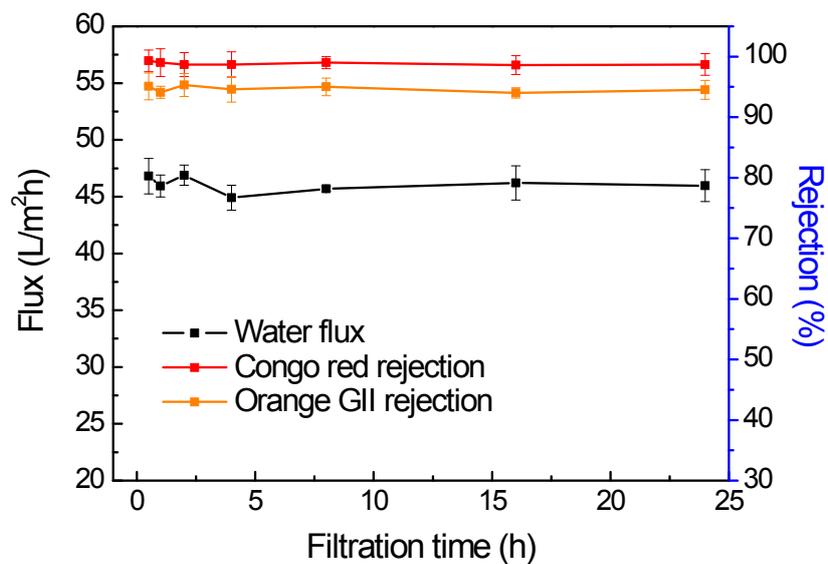


Fig. S5 The influence of filtration time on the water flux and dye rejection of the prepared TA-Fe^{III}/PES composite NF membrane (3#). The filtration operation was carried out at an operation pressure of 0.20 MPa.

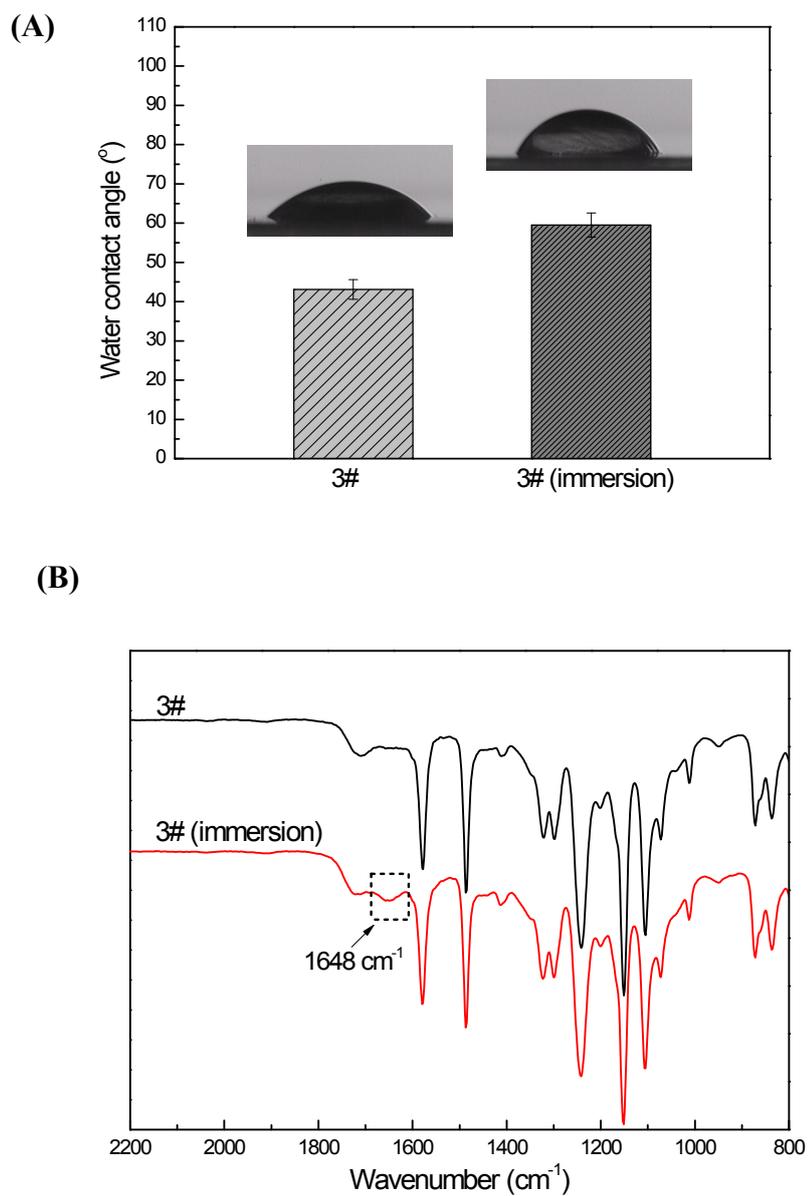


Fig. S6 The water contact angles (A) and FTIR spectra (B) for the TA-Fe^{III}/PES composite NF membrane (3#) before and after immersion into 100 ppm sodium hypochlorite solution of 12 days.