Supporting Information

Antifouling and antibacterial behavior of polyethersulfone membrane incorporating polyaniline@silver nanocomposites

Song Zhao*¹ a, Lichuan Huang a, Tiezheng Tong b, Wen Zhang a, Zhi Wang a*, Jixiao Wang a, Shichang Wang a

a Chemical Engineering Research Center, School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, PR China

Tianjin Key Laboratory of Membrane Science and Desalination Technology, State Key Laboratory of Chemical Engineering (Tianjin University), Synergetic Innovation Center of Chemical Science and Engineering (Tianjin), Tianjin University, Tianjin 300072, PR China

b Department of Chemical and Environmental Engineering, Yale University, New Haven, Connecticut 06520-8286, USA

*Corresponding author at: Chemical Engineering Research Center, School of Chemical Engineering and Technology, Tianjin University, Weijin Road 92#, Nankai District, Tianjin 300072, PR China. Tel.: +86 02227404533. E-mail address: songzhao@tju.edu.cn (Song Zhao), wangzhi@tju.edu.cn (Zhi Wang).
Fig. S1 shows ATR-FTIR spectra of PES, PES/PANI and PES/PANI@Ag composite membranes. For all the membranes, the characteristic absorption bands corresponding to PES are observed at 1578 cm$^{-1}$ (benzene ring stretching), 1485 cm$^{-1}$ (C–C bond stretching), 1242 cm$^{-1}$ (aromatic ether stretching), 1153 cm$^{-1}$ (sulfonyl stretching) and 1107 cm$^{-1}$ (C–O bond stretching), respectively. After blending modification, there is no obvious difference observed between the spectra of PES, PES/PANI and PES/PANI@Ag membranes, probably because of the strong absorption bands of sulfones and secondary aromatic amines.
Fig. S2 The time-dependent pure water fluxes of the membranes during membrane compaction at 0.30 MPa TMP.
Fig. S3 The digital photos of membranes before biofouling (a-c), and after biofouling (a’-c’).