

## Supporting Information

### **Evaluation of the formation and antifouling properties of a novel adsorptive homogeneous mixed matrix membrane with in situ generated Zr-based nanoparticles**

Mei Zhang <sup>a,1</sup>, Fan Ni<sup>b,1</sup>, Jinsong He<sup>a,\*</sup>, and Yan Liu

<sup>a</sup>*Institute of Ecological and Environmental Sciences, Sichuan Agricultural University, Chengdu, Sichuan, 611130, China.*

<sup>b</sup>*Department of Chemical Engineering, Northwest University for Nationalities, Lanzhou, Gansu, 730030, China*

\* *Corresponding author: .hejinsong.,Email:hejinsong@sicau.edu.cn*

<sup>1</sup>*Co-first author*

Supplemental S1: The mean pore size and pore size distribution of M2

In order to further investigate the effect of membrane structure on the filtration performance, the pore size characteristics of the membrane M2 was measured by Mercury Intrusion Porosimetry (HgP) using an mercury intrusion porosimeter (Autopore IV9500, Micrometrics, US) following the method reported in the previous study<sup>1</sup>.

References:

1. M. B. Tanis-Kanbur, R. I. Peinador, J. I. Calvo, A. Hernández and J. W. Chew, *Journal of Membrane Science*, 2021, 619, 118750.

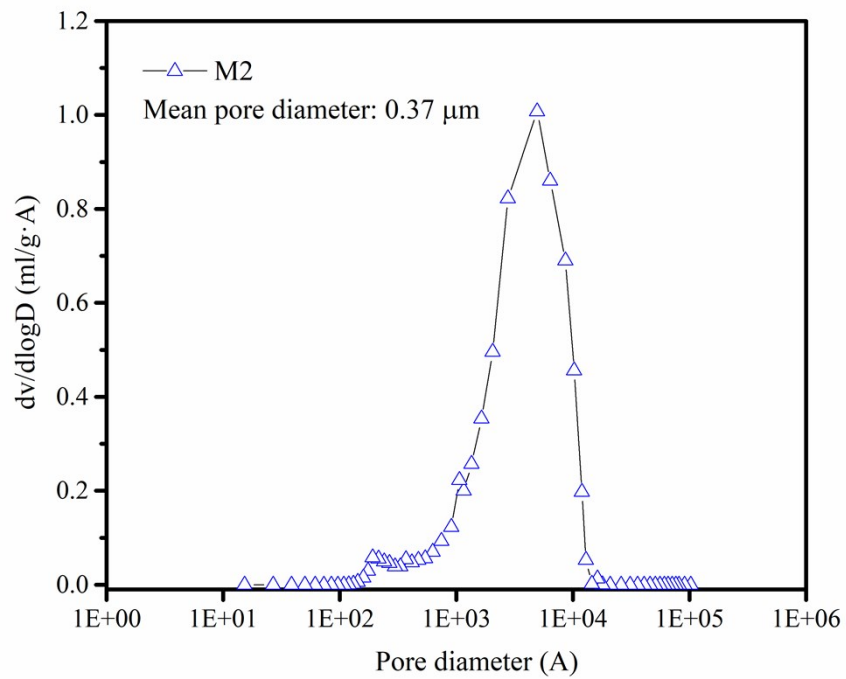


Fig.S1. pore size distribution and mean pore size of M2

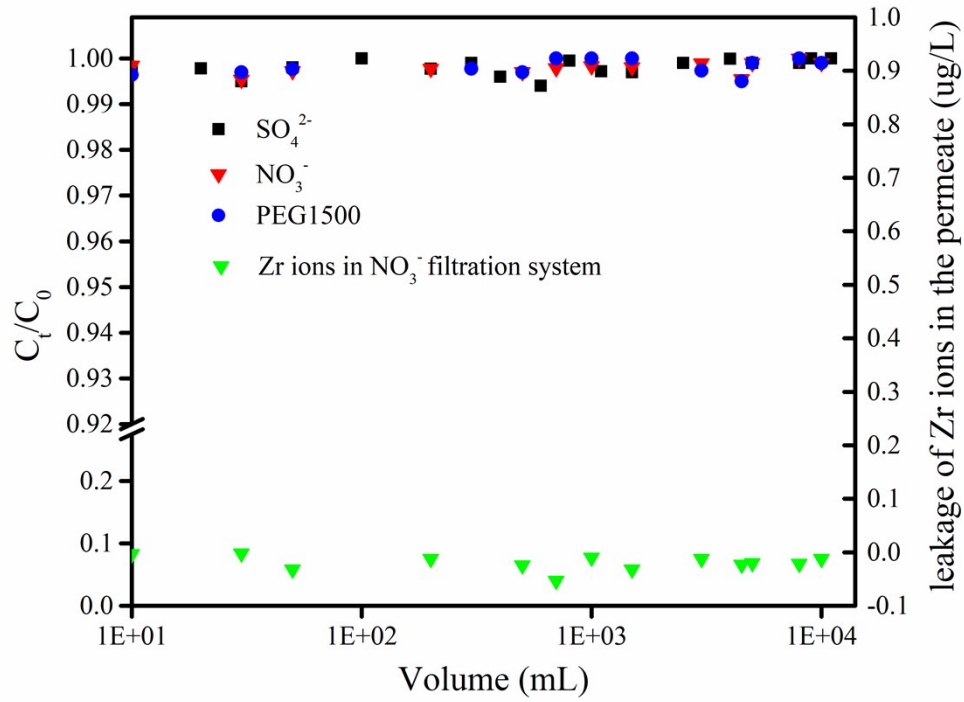


Fig. S2 Filtration performance of sulphate, nitrate and PEG by M2 in relative long term running