Supporting Information

Antifouling UV-treated GO/PES Hollow fiber membrane in membrane bioreactor (MBR)

Mahdi Fathizadeh#, Weiwei L. Xu#, Margaret Shen#, Emily Jeng, Fanglei Zhou, Qiaobei Dong, Dinesh Behera, Zhuonan Song, Lei Wang, Abolfazl Shakouri, Konstantin Khivantsev, and Miao Yu*

1Department of Chemical Engineering, University of South Carolina, Columbia, SC 29208, USA.

2Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, Troy, NY 12180, USA

3Science, Mathematics, and Computer Science Magnet Program, Montgomery Blair High School, 51 University Blvd E, Silver Spring, MD 20901, USA.

4School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, New York 14853, United States

#: Contribute equally

*: Corresponding author; Email: yum5@rpi.edu

Table of Figures

Figure S 1. (a) AFM image of as-prepared single layer featured GO flakes; (b) The ATR-FTIR of SLGO and UV-treated SLGO in the solution .................................................................2

Figure S 2. The ATR-FTIR spectrum of pristine PES HF and SLGO/UV-treated SLGO coated PES HF membranes ........................................................................................................3

Figure S 3. The pore size distribution of PES HF membranes prepared with different amount of SLGO loading, the results are analyzed by ImageJ from FESEM provided in Figure 3 ..................................................4

Figure S 4 FESEM and AFM topological scan of PES HF membranes coated with SLGO flakes irradiated by different duration of UV-treatment. (A), (B) SEM and AFM images of PES_GO6.20_UV0.5; (C), (D) SEM and AFM images of PES_GO6.20_UV1.0; (E), (F) SEM and AFM images of PES_GO6.20_UV1.5 ..........................5
Figure S 1.(a) AFM image of as-prepared single layer featured GO flakes; (b) The ATR-FTIR of SLGO and UV-treated SLGO in the solution.
Figure S 2. The ATR-FTIR spectrum of pristine PES HF and SLGO/UV-treated SLGO coated PES HF membranes
Figure S 3. The pore size distribution of PES HF membranes prepared with different amount of SLGO loading, the results are analyzed by ImageJ from FESEM provided in Figure 3.
Figure S 4 FESEM and AFM topological scan of PES HF membranes coated with SLGO flakes irradiated by different duration of UV-treatment. (A), (B) SEM and AFM images of PES_GO6.20_UV0.5; (C), (D) SEM and AFM images of PES_GO6.20_UV1.0; (E), (F) SEM and AFM images of PES.GO6.20_UV1.5