Electronic Supplementary Information

Fabrication of 3D hierarchical flower-like δ-MnO$_2$@COF nanocomposites for the efficient and ultra-fast removal of UO$_2^{2+}$ ion from aqueous solution

Xin Zhong$^a$, Zhipeng Lu$^a$, Wen Liang$^a$, Xiaojie Guo$^b$*, Baowei Hu$^a$*

$^a$ School of Life Science, Shaoxing University, Huancheng West Road 508, Shaoxing 312000, P.R. China

$^b$ College of Materials and Environmental Engineering, Hangzhou Dianzi University, Xiasha High Education Zone, Hangzhou, 310018, PR China

Corresponding author e-mail:

Baowei Hu: hbw@usx.edu.cn

Xiaojie Guo: xiaojie.guo@hdu.edu.cn

1. Chemicals

1, 3, 5-triformylphloroglucinol (≥95%, Tp) was obtained from Chinese Academy of Science Jilin Yanshen Technology Company. Other chemicals were analytical reagents or better and supplied by Macklin Chemical Reagent Company. All reagents were used directly without further purification.

The crystallographic data of δ-MnO$_2$ acquired from American Mineralogist Crystal Structure Database.
2. Figures

**Fig. S1** The influence of ionic strength on the removal efficiency UO$_2^{2+}$ ion adsorption onto $\delta$-MnO$_2$ and $\delta$-MnO$_2$@TpPa-1.

**Fig. S2** The linear plots of ln$K_0$ of UO$_2^{2+}$ ion versus 1/T at three different temperatures (T=298-318 K).
Fig. S3 XPS spectra of δ-MnO$_2$ and δ-MnO$_2$@TpPa-1: (a) δ-MnO$_2$-Mn2p; (b) δ-MnO$_2$-O1s; (c) δ-MnO$_2$@TpPa-1 N 1s after UO$_2$$^{2+}$ ion adsorption.