# Electronic Supporting Information

## Construction of MOFs-shell Porous Materials and Performance Study in Selective Adsorption and Separation of Benzene Pollutants

Yu Qiao,[a,c] Na Lv,[a,c] Dong Li,[b] Hongji Li,[a,d] Xiangxin Xue,[a,c] Wei Jiang,[a,d] Zhanlin Xu,*[a,c] Guangbo Che*[a]

[a] *Key Laboratory of Preparation and Application of Environmental Friendly Materials (Jilin Normal University), Ministry of Education, Changchun 130103, P. R. China*

[b] *School of Materials Science and Engineering, Liaoning Technical University, Fuxin 123000, P. R. China*

[c] *College of Chemistry, Jilin Normal University, Siping 136000, PR China*

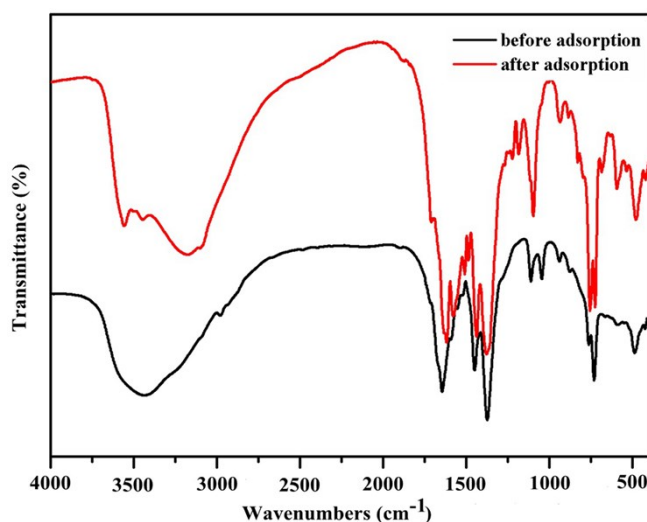[d] *College of Environmental Science and Engineering, Jilin Normal University, Siping 136000, PR China*

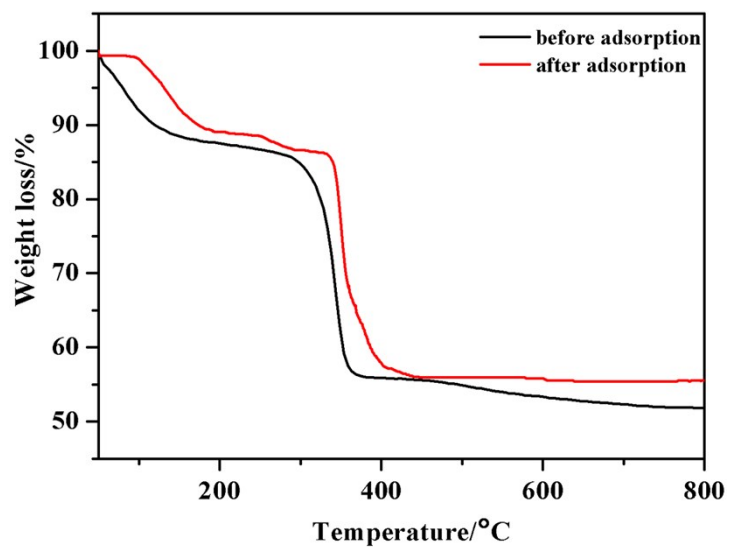**Fig. S1** FT-IR spectras of HKUST-1 shell before and after nitrobenzene adsorption.

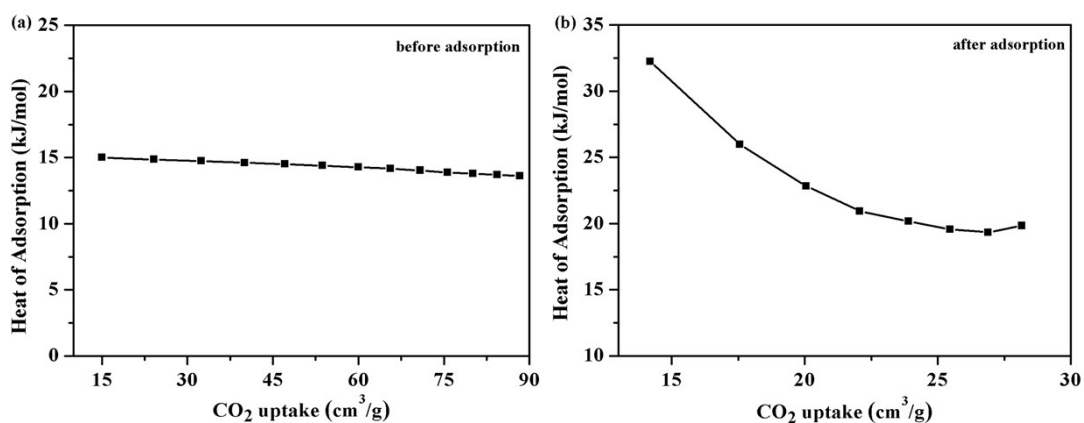**Fig. S2** TG curves of HKUST-1 shell before and after nitrobenzene adsorption.



**Fig. S3.** $CO_2$ isosteric heat of before and after nitrobenzene adsorption of HKUST-1 shell.
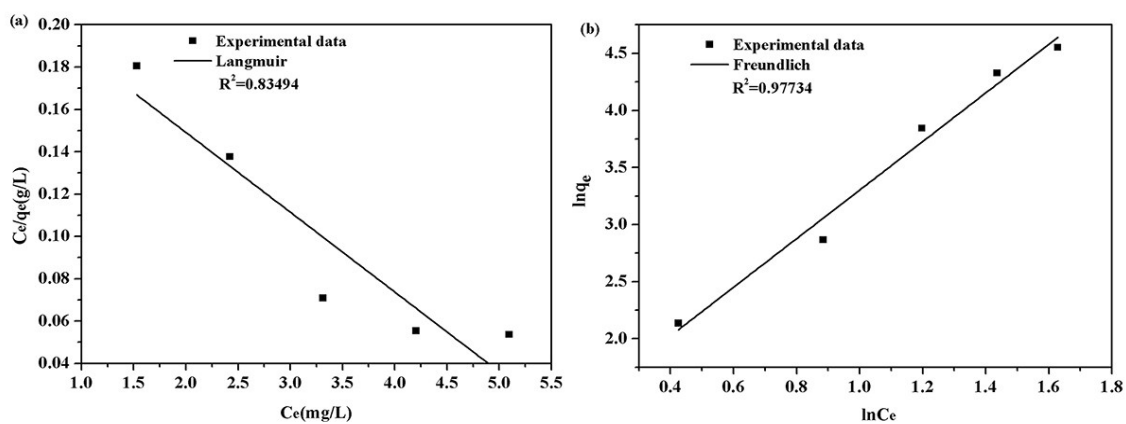


**Fig. S4** The adsorption isotherms of nitrobenzene on HKUST-1 shell: (a) Langmuir model and (b) Freundlich model.
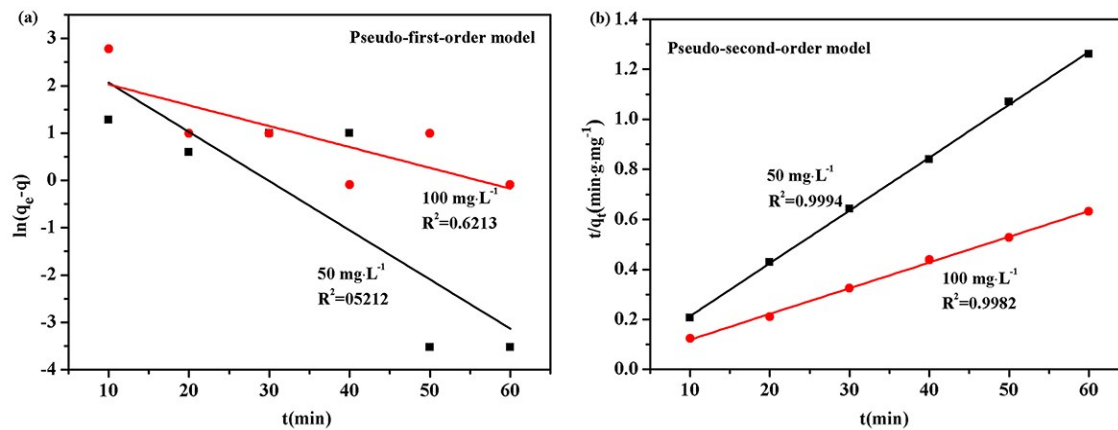
**Fig. S5** The fitting of adsorption kinetics of NB by HKUST-1 shell: (a) pseudo-first-order kinetics model; (b) pseudo-second-order kinetics model.
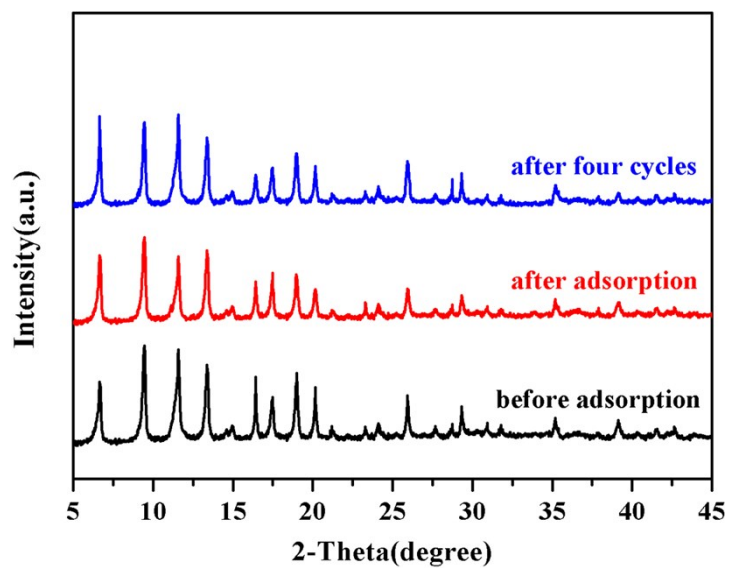


**Fig. S6** PXRD spectrum of HKUST-1 shell after four cycles.