Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Electronic Supporting Information (ESI)

Hollow cobalt sulfide for highly efficient uranium adsorption from aqueous solution

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Table S1 Uranium adsorption onto hollow Co_3S_4 with 200 mg L^{-1} initial concentration.

Pseudo-first kinetics model			Pseudo-second kinetics model		
K_1 (min^{-1})	q_e (mg g^{-1})	R^2	K_2 (min^{-1})	q_e (mg g^{-1})	R^2
0.1118	848.8	0.991	0.0002	905.2	0.943

Table S2 Langmuir and Freundlich Isotherm Parameters for U(VI) onto hollow Co_3S_4.

Langmuir			Freundlich		
q_m (mg g^{-1})	K_L (L mg^{-1})	R^2	K_F (mg g^{-1})	n	R^2
863.71	0.0775	0.997	489	6.99	0.0667

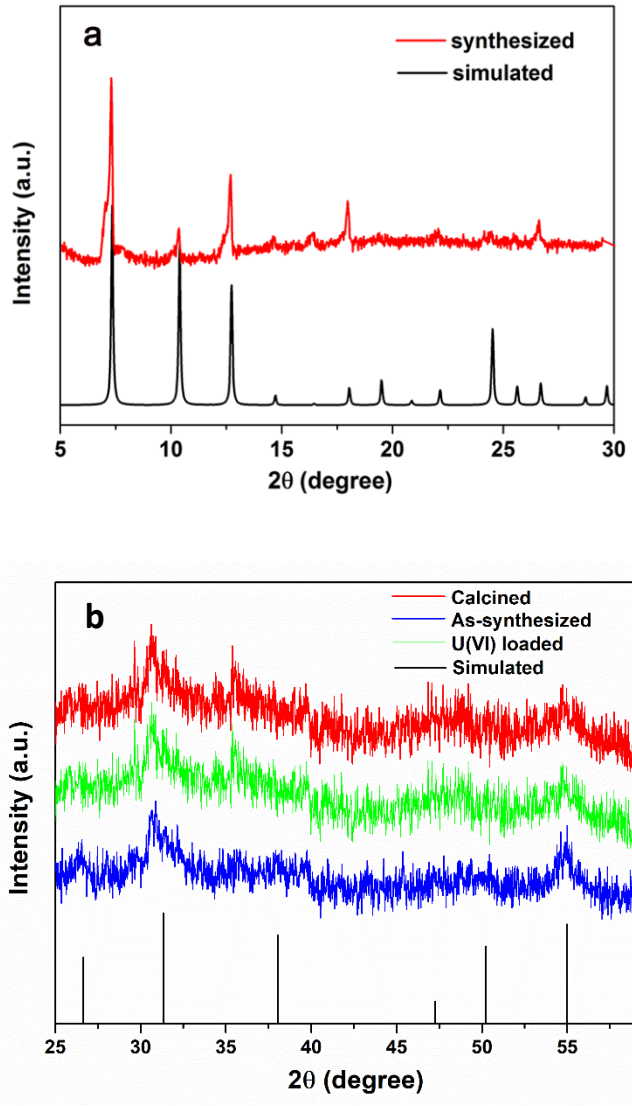

Fig. S1. XRD patterns of the ZIF-67 (a) and the hollow Co_3S_4 before and after uranium adsorption and calcined at 300 ºC (b)

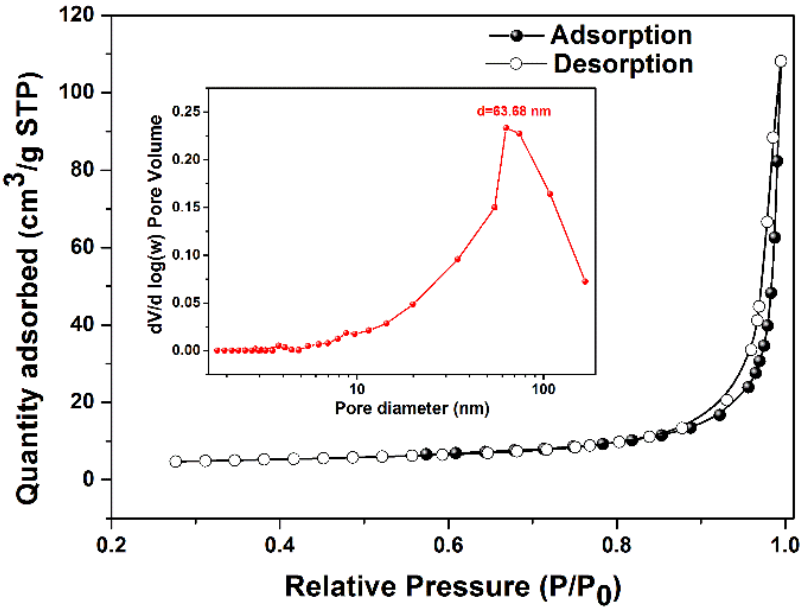

Fig. S2. N_2 adsorption/desorption isotherms and pore size distributions (inset).

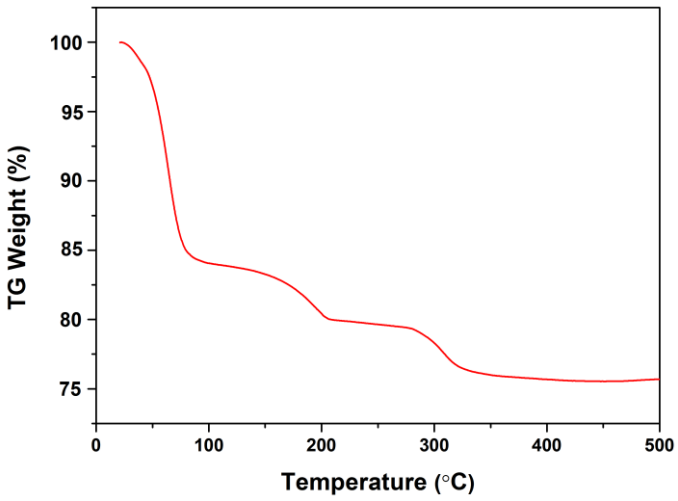

Fig. S3. TGA curve of hollow Co_3S_4.

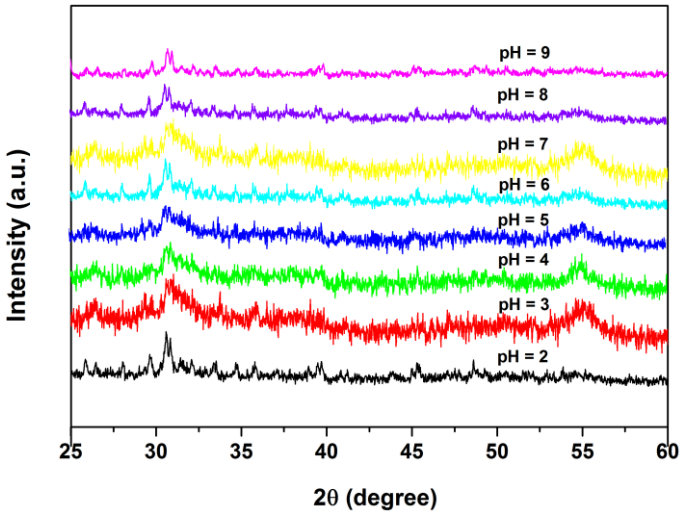

Fig. S4. (a) PXRD patterns of the hollow Co_3S_4 at pH from 2 to 9.

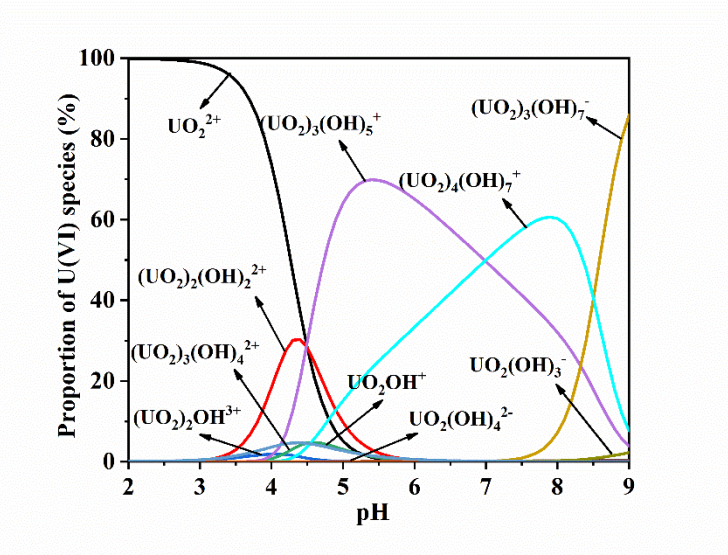

Fig. S5. The pH-dependence of various U(VI) species in aqueous solution ($C_{U(VI)}$ = 200 mg L^{-1}).

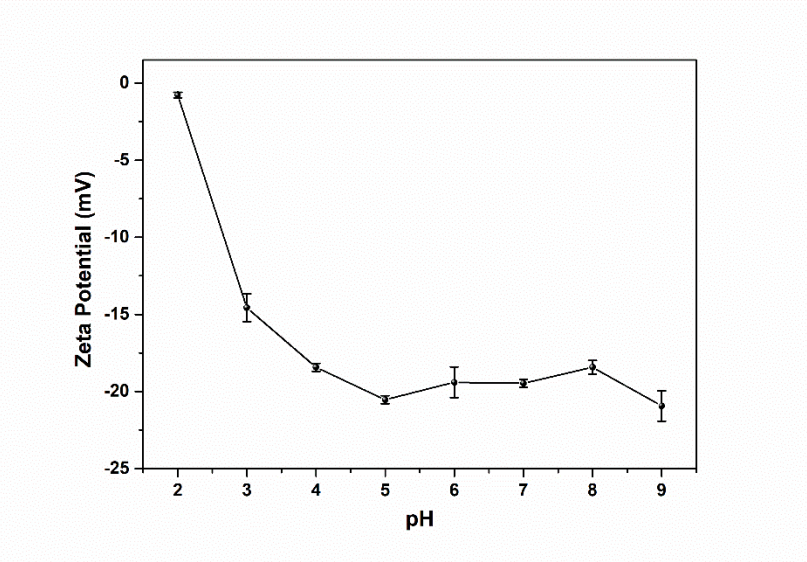

Fig. S6. Zeta potentials of hollow Co_3S_4 as functions of pH.

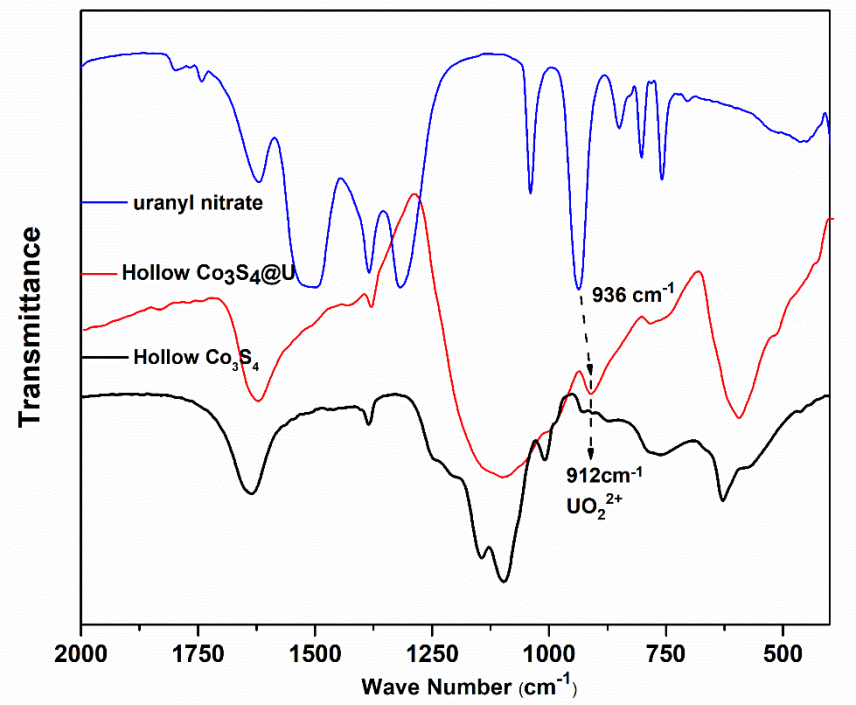

Fig. S7. FT-IR spectra of the hollow Co_3S_4 before and after U(VI) adsorption and pure uranyl nitrate.

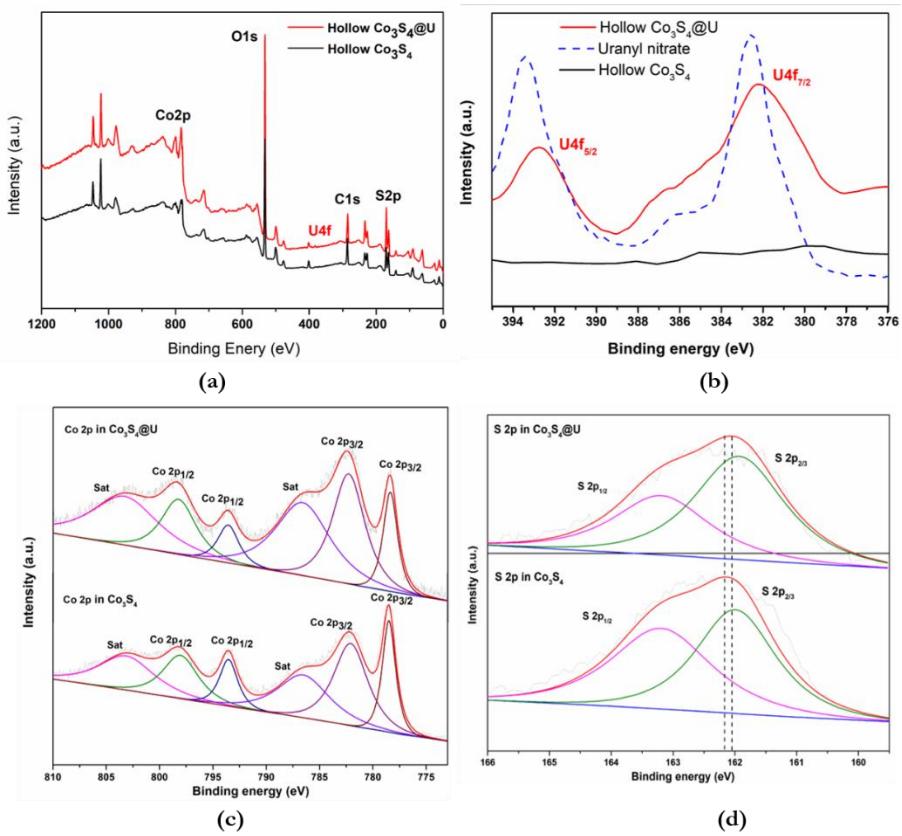

Fig. S8. XPS of the hollow Co_3S_4 before and after U(VI) adsorption and pure uranyl nitrate.