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Electronic Supplementary Information

Mercapto functionalized magnetic Zr-MOF by solvent-assisted ligand exchange for Hg^{2+} removal from water

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Fig. S1 EDX spectra of One-pot (a) and MFC-S prepared at different time (b-f)

Fig. S2 SEM and TEM images of MFC-O (a, c) and MFC-S (b, d)

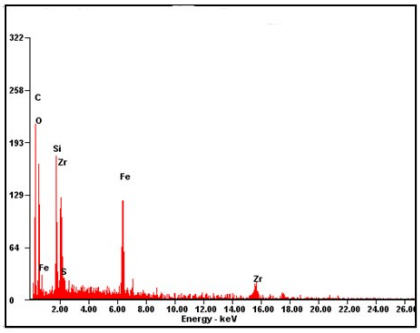
Fig. S3 The concentration of Zr^{4+} releasing from MFC-O and MFC-S under different pH

Fig. S4 XRD patterns of reused MFC-S with simulated pattern

Fig. S5 N_2 adsorption-desorption isotherms of MFC-S and MFC-S after 5 adsorption/desorption cycles of Hg^{2+}

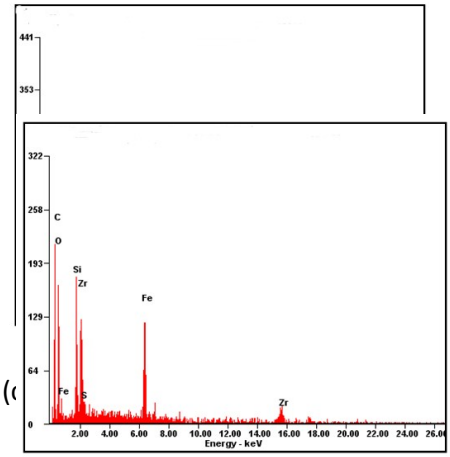
Fig. S6 TEM images of MFC-S after 5 adsorption/desorption cycles of Hg^{2+}

One-Pot



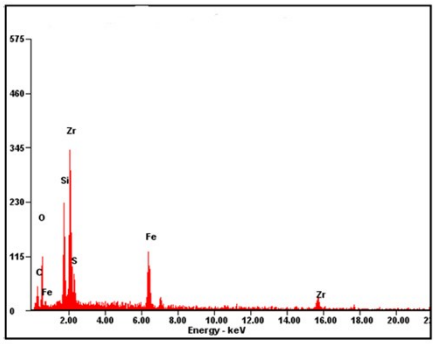
Element	Wt %	At %
C K	51.17	67.01
O K	27.95	27.48
SiK	02.98	01.67
S K	00.15	00.07
FeK	06.42	01.81
ZrK	11.33	01.95

(b) 3 h



Element	Wt %	At %
C K	40.64	56.90
O K	33.55	35.27
SiK	04.27	02.56
S K	01.35	00.71
FeK	07.27	02.19
ZrK	12.92	02.38

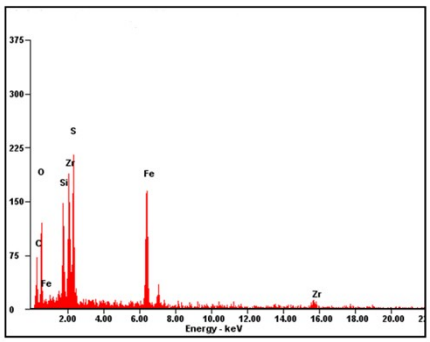
(d) 12 h



Element	Wt %	At %
C K	40.89	57.46
O K	32.58	34.37
SiK	04.28	02.57
S K	01.65	00.87
FeK	07.85	02.37
ZrK	12.75	02.36

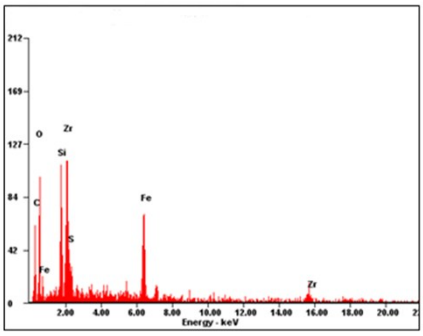
(e) 24 h

Element	Wt %	At %
C K	33.05	52.30
O K	28.72	34.12
SiK	07.22	04.89
S K	02.82	01.67
FeK	08.70	02.96
ZrK	19.49	04.06



Element	Wt %	At %
C K	21.6	49.9
O K	11.9	20.7
SiK	03.9	03.8
S K	08.2	07.1
FeK	10.3	05.1
ZrK	44.2	13.5

(f) 48 h



Element	Wt %	At %
C K	30.82	47.69
O K	32.99	38.32
SiK	09.80	06.49
S K	03.11	01.80
FeK	07.44	02.48
ZrK	15.85	03.23

Fig. S1

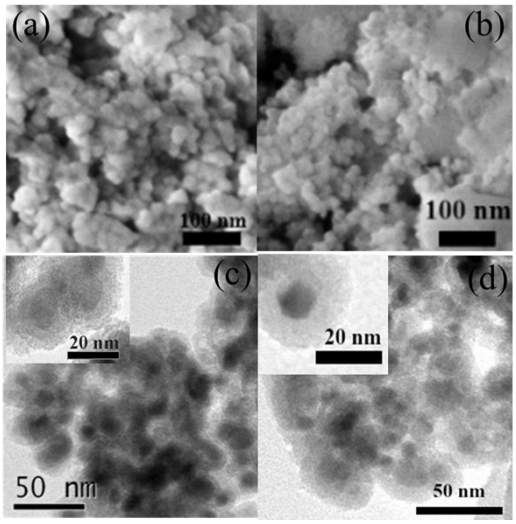


Fig. S2

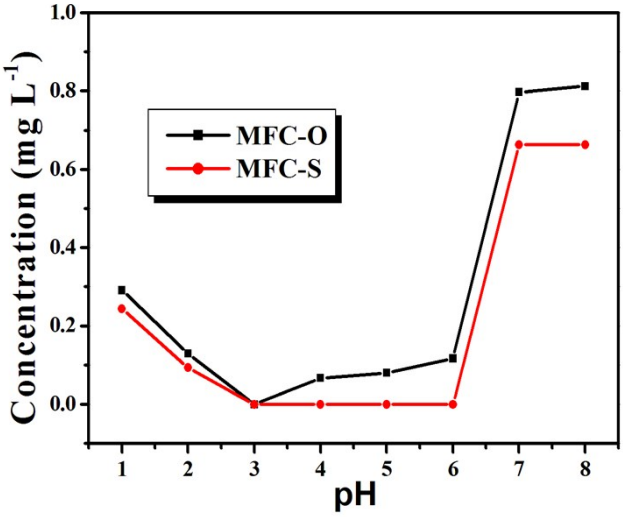


Fig. S3

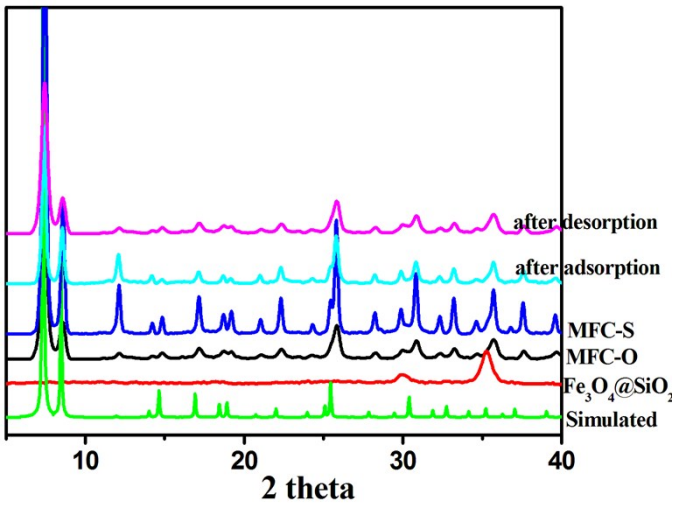

after desorption
after adsorption
MFC-S
MFC-O
Fe3O4@SiO2
Simulated
10
20
30
40
2 theta

Fig. S4

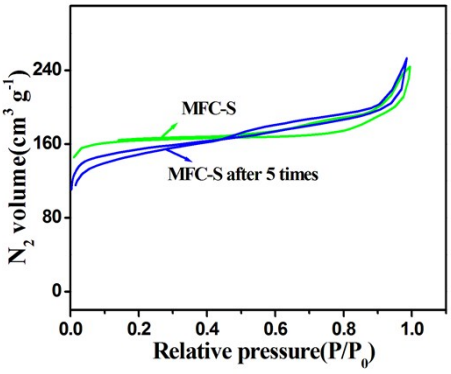

MFC-S
MFC-S after 5 times
N2 volume(cm3 g-1)
Relative pressure(P/P0)
0
80
160
240
0.0
0.2
0.4
0.6
0.8
1.0

Fig. S5

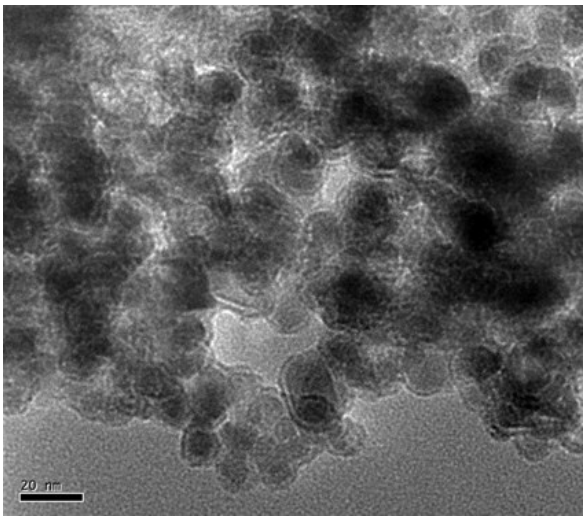


Fig. S6