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Fig. 1S: (a) XRD patterns of MOF and (b) magnetic MOF nanocomposite.

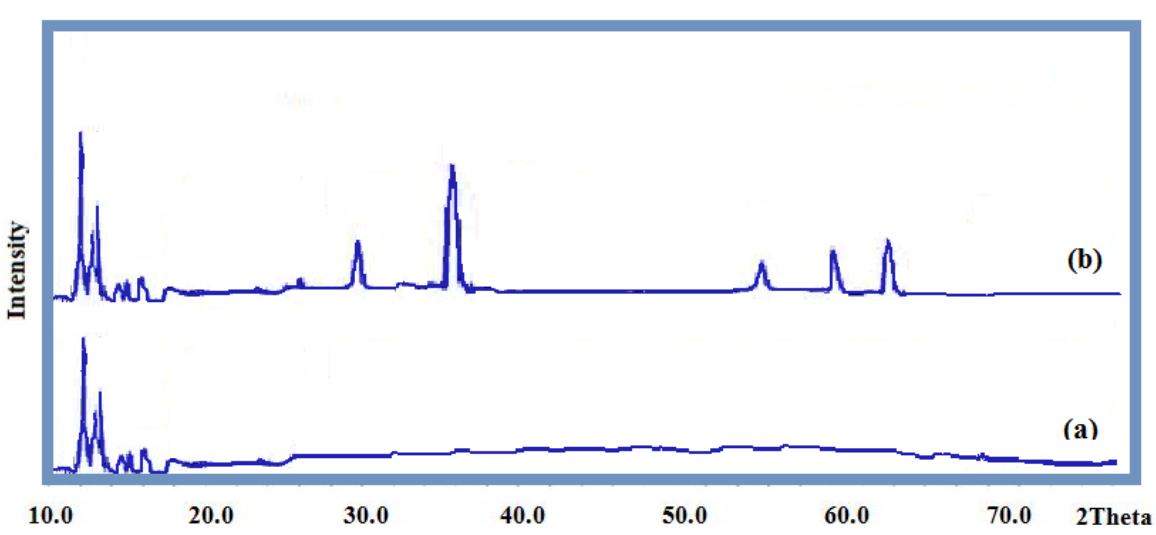

Table 1S

The tolerance limit of various ions on the determination of heavy metal.

Potentially interfering ions	Tolerable Concentration Ratio X[c]/ Cd, Zn, Pb, Cr	R[a] (%) ± S[b]			
		Cadmium	Zinc	Lead	Chromium
K^+	10000	98.0 ± 3.5	100 ± 3.0	99.4 ± 2.0	101 ± 3.3
Na^+	10000	99.2 ± 3.5	99.1 ± 4.8	99.2 ± 2.4	98.9 ± 3.6
Ca^{2+}	1000	97.0 ± 1.6	98.2 ± 3.8	97.0 ± 2.8	98.2 ± 4.4
Al^{3+}	1000	99.0 ± 4.1	98.5 ± 2.8	98.5 ± 4.0	97.4 ± 3.2
Ni^{2+}	500	96.0 ± 2.6	95.4 ± 3.0	96.3 ± 2.2	96.9 ± 3.0
Fe^{3+}	400	97.5 ± 3.4	98.1 ± 2.5	97.6 ± 2.5	96.1 ± 3.1
Sn^{2+}	1000	96.0 ± 2.9	97.0 ± 3.3	96.4 ± 2.0	96.0 ± 4.4
Mg^{2+}	1000	99.5 ± 3.3	98.6 ± 2.7	98.4 ± 2.9	97.6 ± 2.7
Mn^{2+}	500	98.5 ± 1.9	97.4 ± 2.4	97.1 ± 2.6	96.1 ± 3.0
Ag^+	500	96.2 ± 3.4	96.7 ± 4.0	96.8 ± 3.6	95.8 ± 2.9
Hg^{2+}	250	95.6 ± 3.5	96.8 ± 3.5	95.7 ± 3.8	96.4 ± 3.3
Cu^{2+}	100	96.4 ± 3.2	94.8 ± 3.3	95.5 ± 3.6	96.3 ± 2.4
Co^{2+}	50	95.1 ± 2.6	94.5 ± 3.1	96.4 ± 2.8	96.0 ± 3.6
AsO_4^{3-}	1000	97.0 ± 3.0	98.0 ± 4.6	95.0 ± 3.4	98.0 ± 2.7

[a] Recovery

[b] standard deviation (n = 3)

Conditions: sample pH = 6.1, sample volume = 250 mL, 0.02 mg of Cd(II), Pb(II), Zn(II) and Cr(III) ions uptake time = 15 min; eluent = 4.2 mL, 0.7 mol L^{-1} EDTA in 0.06 mol L^{-1} HNO_3 solution, elution time = 17 min.

[c] Concentration of potentially interfering ions.

Table 2S
Comparison of magnetic metal-organic framework nanocomposite with those of the other sorbents.

Method	Instrument	LOD (ng mL^{-1})	Sorption capacity (mg g^{-1})	PF[a]	RSD (%)	Ref.
(Fe_3O_4-ethylenediamine)/MIL-101(Fe) magnetic metal-organic framework nanocomposite	FAAS	0.15-0.8	155-198	238	< 7.6	This work
Multiwalled carbon nanotubes/ cresolphthalein Complexone	FAAS	1.64-5.68	-	40	-	[1]
Multiwalled carbon nanotubes/ APDC[b]	FAAS	0.30-0.60	7.3-14.2	80	< 5	[2]
Magnetic multiwalled carbon nanotube composite	FAAS	0.09-1.0	150-201	181	< 5.1	[3]
Decanoic acid-coated Fe_3O_4 nanoparticles	ICP-OES	0.3-0.8	-	118-136	< 8.2	[4]
Gallic acid modified silica gel	FAAS	0.58-0.65	6.09-12.63	100-200	< 4.7	[5]
XAD-2 functionalized with o-aminophenol	FAAS	2.0-25	3.32-3.42	40-50	< 5.1	[6]
Thioacetamide modified silica gel	FAAS	0.51-0.96	12.5-19.76	200-300	< 5.3	[7]

[a] Preconcentration factor.
[b] Ammonium pyrrolidine dithiocarbamate.

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