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SUPPORTING INFORMATION

Facile one-pot synthesis of urchin-like Fe-Mn binary oxide nanoparticles for effective adsorption of Cd(II) from water

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Table S1 Thermodynamic parameters for Cd(II) adsorption on UMFBO at different temperatures.

Temperature (K)	K_d (L g^{-1})	ΔG (kJ mol^{-1})	ΔH (kJ mol^{-1})	ΔS (J $(mol\ K)^{-1}$)
283	1350	-16.96		
298	1400	-17.95	5.174	0.078
313	1650	-19.30		

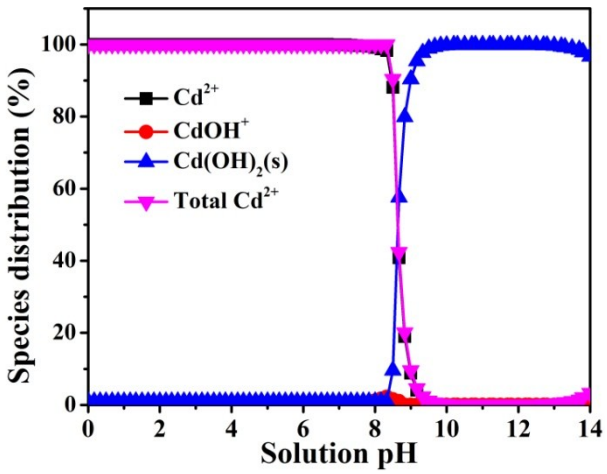

Figure S1 Distribution of cadmium species as a function of solution pH.

(Simulation condition: Cd concentration = 0.5 mM, temperature = 25 °C).

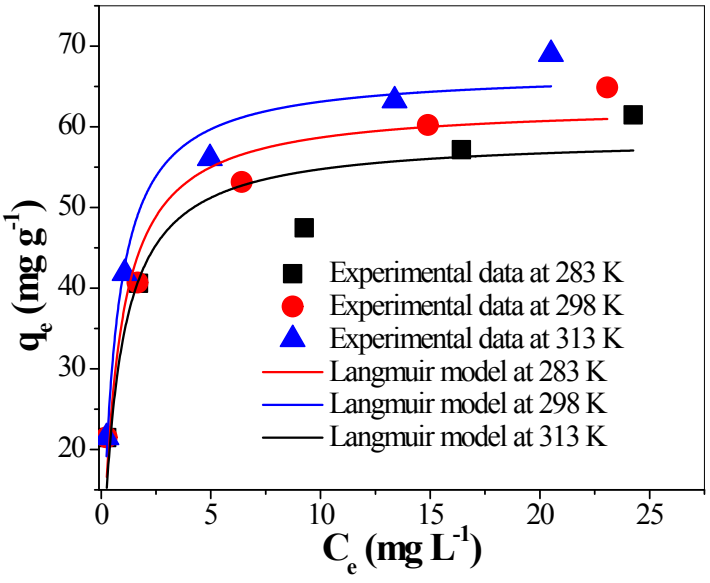

Figure S2 Effect of temperature on Cd(II) adsorption isotherm on the UFMBO.

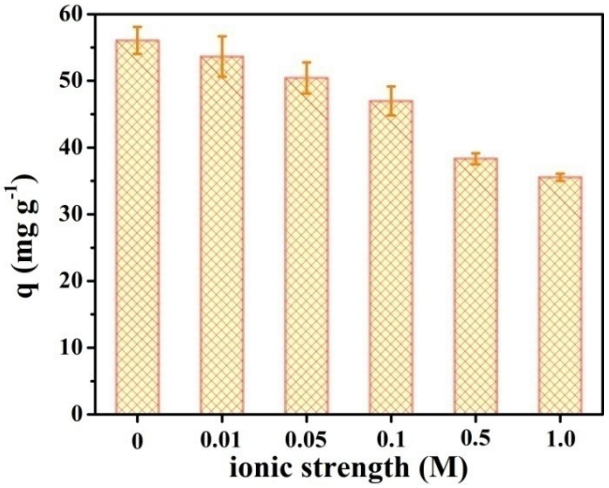

Figure S3 Effect of ionic strength on adsorption of Cd(II) on the UFMBO. Experimental conditions: initial Cd(II) concentration = 50 mg L^{-1}, adsorbent dosage = 0.5 g L^{-1}, temperature = 25 °C, contact time = 24 h, solution pH = 6. Error bars represent the standard deviation of triplicate experiments.

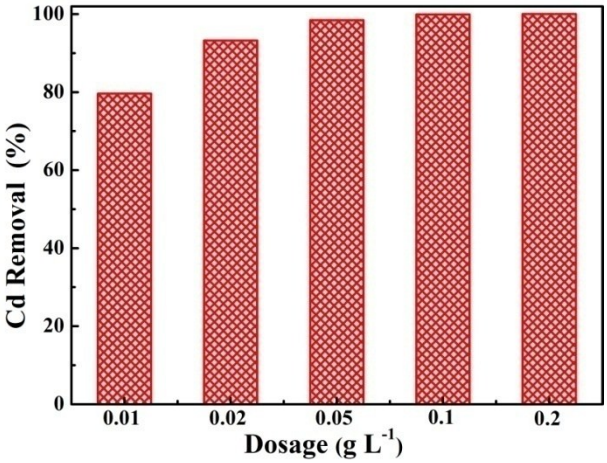

Figure S4 Removal of trace level of Cd(II) using the UFMBO with different dosages. Experimental conditions: initial Cd(II) concentration = 100 μg L^{-1}; solution pH = 6.0, contact time = 24 h, temperature = 25 °C.

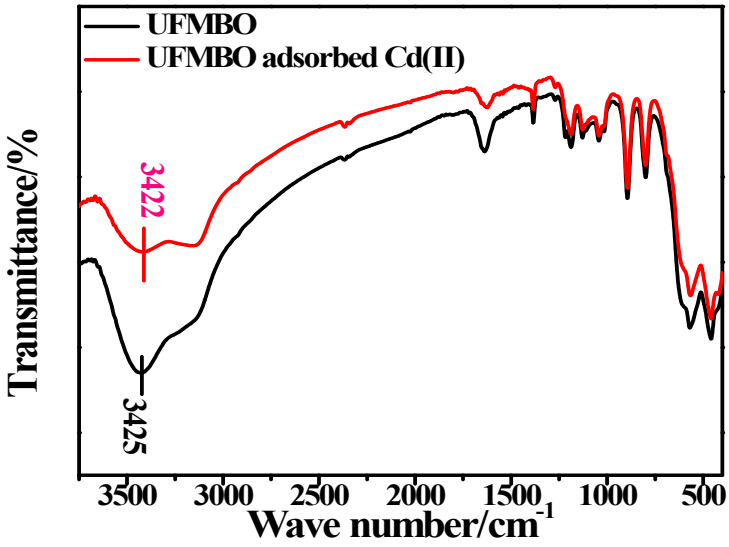

Figure S5 FTIR spectra of UFMBO before and after Cd(II) adsorption.