Electronic Supplementary Material (ESI) for Dalton Transactions.

Supporting Information

Green synthesis and evaluation of iron-based metal–organic framework MIL-88B for the efficient decontamination of arsenate from water

Shuliang Hou, [a] *Yi-nan Wu,** [a] *Lingyu Feng,* [a] *Wei Chen,* [a] *Ying Wang,* [a]

*Catherine Morlay,** [b] *and Fengting Li*[a]

[a] College of Environmental Science and Engineering, State Key Laboratory of Pollution Control and Resource Reuse, Shanghai Key Lab of Chemical Assessment and Sustainability, Department of Chemistry, Tongji University, Siping Rd 1239, 200092 Shanghai, China.

[b] Univ Lyon, Univ Lyon 1, INSA-Lyon, CNRS, MATEIS (UMR 5510), F-69621, Lyon, France.

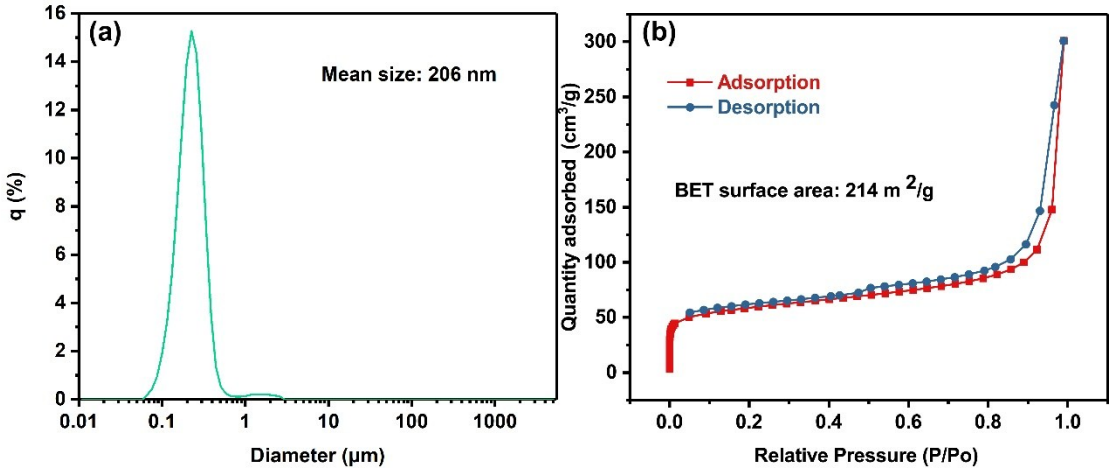

Figure S1. Size distribution in EtOH (a) and N_2 adsorption-desorption isotherm (b) of the prepared MIL-88B(Fe)-E

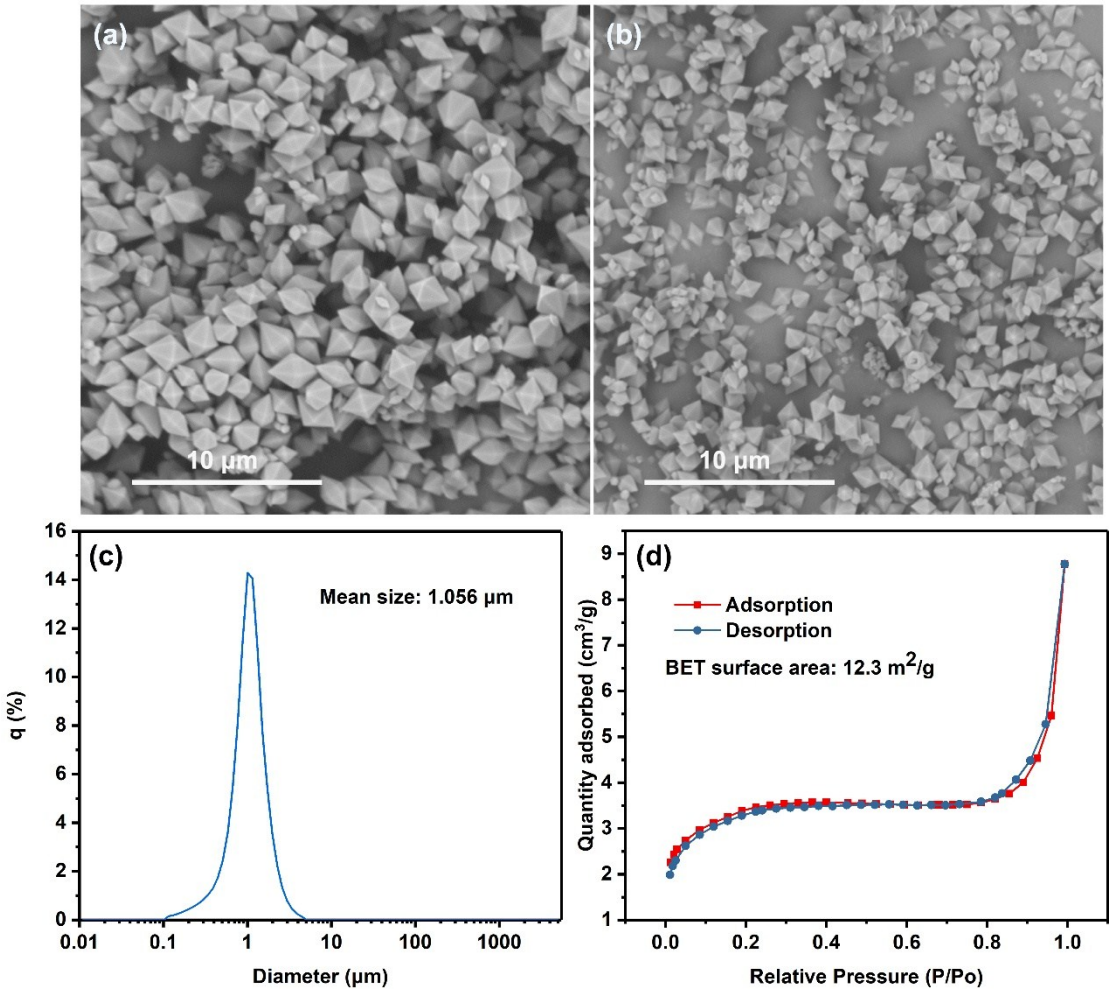

Figure S2. SEM images (a) and (b), the size distribution (c) and N_2 adsorption-desorption isotherm of MIL-88B(Fe)-D synthesized by conventional method.

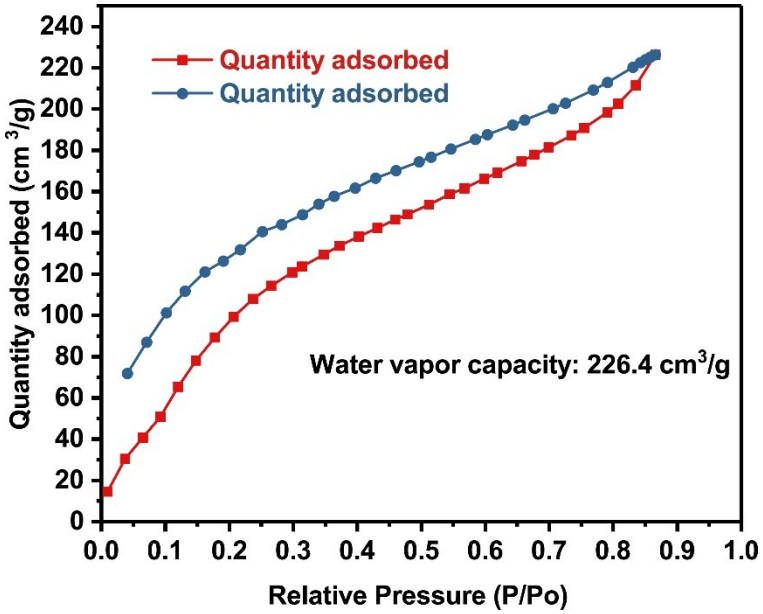

Figure S3. Water vapor adsorption isotherms of the MIL-88B(Fe)-E at 298 K.

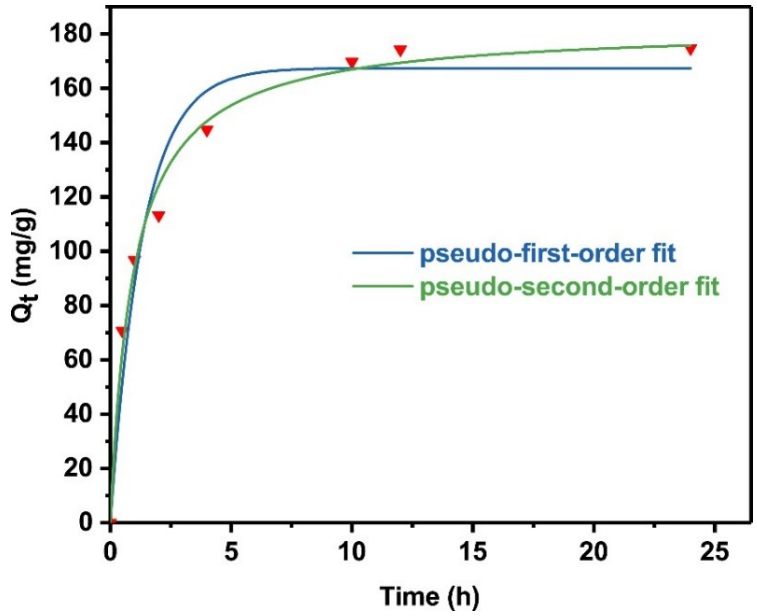

Figure S4. Adsorption kinetics of As(V) on MIL-88B(Fe)-E fitted with the pseudo-first-order and pseudo-second-order model.

Table S1. Adsorption kinetics parameters of As(V) onto MIL-88B(Fe)-E.

Adsorbent	Pseudo first order			Pseudo second order		
	k_1	q_e	R^2	k_2	q_e	R^2
MIL-88B(Fe)-E	0.750	167.46	0.962	0.006	182.72	0.992

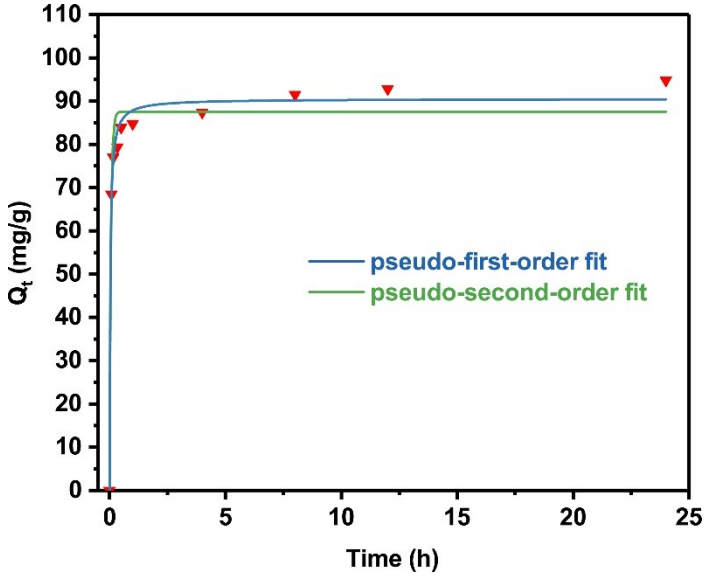

Figure S5. Adsorption kinetics of As(V) on MIL-88B(Fe)-D fitted with the pseudo-first-order and pseudo-second-order model.

Table S2. Adsorption kinetics parameters of As(V) onto MIL-88B(Fe)-D.

Adsorbent	Pseudo first order			Pseudo second order		
	k_1	q_e	R^2	k_2	q_e	R^2
MIL-88B(Fe)-E	16.54	87.51	0.969	0.366	90.50	0.991

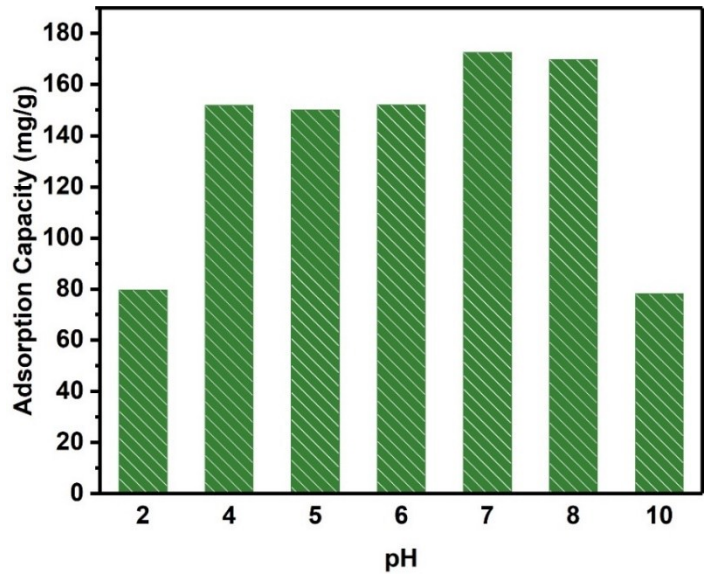

Figure S6. the pH influence on adsorption behavior of As(V) on MIL-88B(Fe)-E.

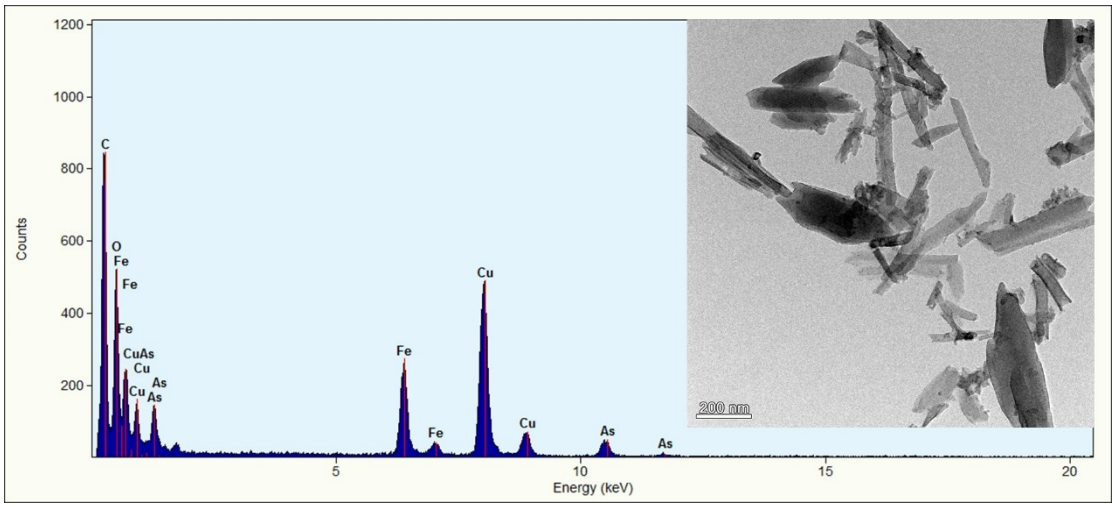

Figure S7. TEM image and corresponding EDS spectra of MIL-88B(Fe)-E after the adsorption of As(V).

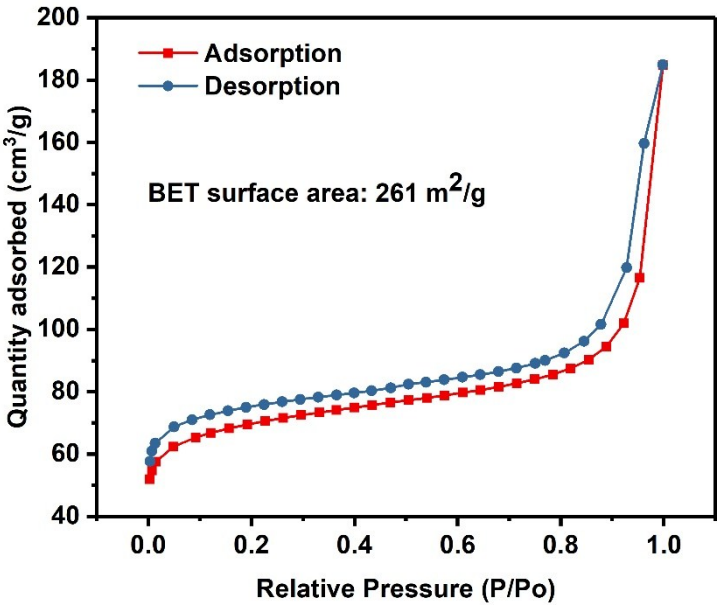

Figure S8. N2 adsorption-desorption isotherm of MIL-88B(Fe)-E synthesized from 1 L autoclave at room temperature.