Supporting Information for

Amino Acid Assisted Templating Synthesis of Hierarchical Zeolitic Imidazolate Framework-8 for Efficient Arsenate Removal

Yi-nan Wu, Meimei Zhou, Bingru Zhang, Baozhen Wu, Jie Li, Junlian Qiao, Xiaohong Guan, and Fengting Li*

College of Environmental Science and Engineering, State Key Laboratory of Pollution Control and Resource Reuse, Tongji University, Siping Rd 1239, 200092 Shanghai, China.

Figure S1  N$_2$ adsorption-desorption isotherms of the A-ZIF-8 with different CTAB:His molar ratios: 1:1, 1:2, 1:4 and corresponding distributions of pore diameters obtained from the desorption branch using Barrett-Joyner-Halenda (BJH) method.
Figure S2  a) The TEM image of the normal ZIF-8 nanocrystal synthesized in water and concomitant byproduct, in which the corresponding SAED patterns indicates the crystalline byproduct are not the ZIF-8. b) The corresponding STEM image, different contrasts of which also show the coexistence of ZIF-8 and crystalline byproduct.

Figure S3  HAADF-STEM image of hierarchically structured ZIF-8 for CTAB:His ratio of 1:4
Figure S4 TGA and DTA curves for the as-prepared H-ZIF-8-14, denoted as H-ZIF-8-14-AP in a flow of air.

Figure S5 FT-IR results of as-prepared H-ZIF-8-14 (H-ZIF-8-14-AP) and H-ZIF-8-14.
Figure S6 Optical images of a water droplet on the sample tablet prepared by a) normal ZIF-8 and b) H-ZIF-8-14.

Figure S7 XRD patterns of (a) normal ZIF-8 synthesized in water and (b) H-ZIF-8-14 samples heated at different temperatures in air for 1 hour. ZnO was formed when the temperature was higher than 300 °C, which is indexed in Figure S7 based on the criterion pattern of ZnO (JCPDS No. 65-3411).
Figure S8 The XRD patterns of the H-ZIF-8-14 before and after sorption of As$^V$.

Figure S9 $N_2$ adsorption-desorption isotherms of a) the H-ZIF-8-14 and b) ZIF-8-MeOH before and after sorption of As$^V$.

Table S1. Regeneration of adsorbent H-ZIF-8-14 (initial concentration of As$^V$: 5.0 mg·L$^{-1}$, dose (m/V) = 40 mg·L$^{-1}$, t = 24 h, T = 25 $^\circ$C, pH = 7.0)

<table>
<thead>
<tr>
<th>Stripping Cycle</th>
<th>Recycle Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>96.18</td>
</tr>
<tr>
<td>2</td>
<td>88.04</td>
</tr>
<tr>
<td>3</td>
<td>83.21</td>
</tr>
</tbody>
</table>