Nanocasted Synthesis of Ordered Mesoporous Ce-Fe Binary Oxide with High Surface Area and Its Excellent Capacity for As(V) and Cr(VI) Removal from Aqueous Solution

Bo Chen¹, Zhiliang Zhu *¹, Jun Hong ¹, Hu Xiaohui, Zhipan Wen¹, Jie Ma ¹, Yanling Qiu¹, Junhong Chen*¹,²

¹State Key Laboratory of Pollution Control and Resource Reuse, Tongji University, Shanghai 200092, China;
²Department of Mechanical Engineering, University of Wisconsin-Milwaukee, Milwaukee, WI 53211, USA
1.

Fig. S1 (a) SXRD pattern, TEM image (inset), and (b) N\textsubscript{2} adsorption/desorption isotherm, pore size distribution (in inset), of the mesoporous cubic (Ia3d) vinylsilica after removal of the surfactant.
2. Fig. S2 Intra-particle diffusion model for As(V) or Cr(VI) adsorption onto OMCI. The initial As(V) or Cr(VI) concentration was 10 mg·L⁻¹; the dosage of adsorbents was 0.2 g·L⁻¹; the initial solution pH was 4 for As(V) and Cr(VI).

3. Fig. S3 Zeta potential of OMCF, As(V)-loaded OMCF and Cr(VI)-loaded OMCF.
Fig. S4 As 3d core levels of OMCl after the adsorption of As(V).
5. Fig. S5 Cr 2p core levels of OMCI after the adsorption of Cr(VI).

6. Fig. S6 Fe 2p spectra of OMCI (a), As(V)-loaded OMCI(b) and Cr(VI)-loaded OMCI(c).
Fig. S7 Ce 3d spectra of OMCl (a), As(V)-loaded OMCl(b) and Cr(VI)-loaded OMCl(c).
Table S1 Intraparticle diffusion model parameters for the adsorption of As(V) or Cr(VI) on OMCI.

<table>
<thead>
<tr>
<th>Absorbate</th>
<th>$k_{i,1}$ (mg·g$^{-1}$·min$^{-0.5}$)</th>
<th>$C_1$</th>
<th>$R^2$</th>
<th>$k_{i,2}$ (mg·g$^{-1}$·min$^{-0.5}$)</th>
<th>$C_2$</th>
<th>$R^2$</th>
<th>$k_{i,3}$ (mg·g$^{-1}$·min$^{-0.5}$)</th>
<th>$C_3$</th>
<th>$R^2$</th>
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<tbody>
<tr>
<td>As(V)</td>
<td>7.461</td>
<td>5.616</td>
<td>0.9988</td>
<td>1.336</td>
<td>39.04</td>
<td>1</td>
<td>0.0201</td>
<td>49.46</td>
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<tr>
<td>Cr(VI)</td>
<td>4.522</td>
<td>9.372</td>
<td>0.9899</td>
<td>1.942</td>
<td>23.40</td>
<td>1</td>
<td>0.0027</td>
<td>38.44</td>
<td>0.7358</td>
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