Supporting Information

Synthesis and characterization of magnetic elongated hollow mesoporous silica nanocapsules with silver nanoparticles

Guijia Cui, Zebin Sun, Haizhen Li, Xiaoning Liu, Yan Liu, Yaxi Tian, Shiqiang Yan*

College of Chemistry and Chemical Engineering, Lanzhou University, Lanzhou 730000, P. R. China

* Corresponding author. Tel.:+86 931 8912582; Fax: +86 931 8912582
E-mail address:yansq@lzu.edu.cn
Figure S1. TGA curves of MSNCs and MSNCs-NH$_2$.

Figure S2. The color changes of the solution in the cuvette at different times
Figure S3. The reusability of MSNCs/Ag catalyst for the reduction of 4-NP and 2-NA with NaBH$_4$.

Table S1. Inductively coupled plasma (ICP) analysis of the content of Ag, surface areas and pore volume of MSNCs and MSNCs/Ag

<table>
<thead>
<tr>
<th>Samples</th>
<th>Content of Ag (%)</th>
<th>Surface area (m$^2$/g)</th>
<th>Pore volume (cm$^3$/g)</th>
<th>Pore width (nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSNCs</td>
<td></td>
<td>850</td>
<td>1.60</td>
<td>8</td>
</tr>
<tr>
<td>MSNCs/Ag</td>
<td>15.43</td>
<td>336</td>
<td>0.67</td>
<td>7</td>
</tr>
</tbody>
</table>
Scheme S1. Illustration of the procedures used to synthesize a variety of materials derived from the MSNCs nanocapsules: (A) functionalized MSNCs capsules, (B) urchin-like nanoparticles with outward spines, (C) porous carbon capsules, (D) carbon capsules coated with an inorganic phase, (E) inorganic capsules. The basic synthesis procedures used were: (1) incorporation of functional groups, (2) nanocasting and silica etching, (3) carbonization and silica etching, (4) coating the carbon capsule with an inorganic phase (e.g. metallic oxides) and (5) calcination.