Supporting Information

An Alternative Hydrothermal Route to Amorphous Carbon Nanotubes for Treatment of Organic Pollutants in Water

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Figure S1: Nitrogen adsorption/desorption isotherms of the ACNTs. The inset is the BJH pore-size distribution curve.

Figure S1 and its inset are the nitrogen adsorption/desorption isotherms and corresponding Barrett-Joyner-Halenda (BJH) pore-size distribution curve of the as-prepared ACNTs, respectively. The adsorption/desorption isotherms exhibit a clear hysteresis loop at higher relative pressure P/P₀, which is coincident with the H4 type. According to the results of nitrogen adsorption, the total BET surface area of the ACNTs is 10.5 m²/g, which is higher than that of carbon-rich composite sub-microtubes (7.51 m²/g).
**Figure S2**: FTIR spectra of raw MWCNTs and ACNTs.

**Table S1** Effect of the concentration of the reagents on the ACNTs (200 °C, 24 h).

<table>
<thead>
<tr>
<th>Samples NO.</th>
<th>Salicylic acid concentration mol/L</th>
<th>AgNO₃ concentration mol/L</th>
<th>K₂CO₃ concentration mol/L</th>
<th>NH₂SO₃H concentration mol/L</th>
<th>Products of the topside in the Teflon liner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.100</td>
<td>0.050</td>
<td>0.025</td>
<td>0.100</td>
<td>No amorphous CNTs</td>
</tr>
<tr>
<td>2</td>
<td>0.133</td>
<td>0.067</td>
<td>0.033</td>
<td>0.133</td>
<td>A small quantity of amorphous CNTs</td>
</tr>
<tr>
<td>3</td>
<td>0.200</td>
<td>0.100</td>
<td>0.050</td>
<td>0.200</td>
<td>Plentiful amorphous CNTs</td>
</tr>
<tr>
<td>4</td>
<td>0.400</td>
<td>0.200</td>
<td>0.100</td>
<td>0.400</td>
<td>Plentiful amorphous CNTs</td>
</tr>
</tbody>
</table>
Figure S3: SEM and TEM image of the Ag@C nanocables obtained from the lower concentration of the reagents.

Figure S4: SEM images of the sediment of the bottom in the teflon-lined autoclave prepared at different hydrothermal synthetic stages: (a) 1 h, (b) 2 h, (c) 4 h, (d) 8 h, (e) 16 h and (f) 24h. (the experiment parameters are set as the NO.4 in table S1 at a determined synthetic temperature of 200 °C)
Figure S5: Absorption spectrum and chemical structure of MB

Reference
