Supplementary Materials

Preparation of Eggplant-derived Macroporous Carbon Tubes and Composites of EDMCT/Co(OH)(CO$_3$)$_{0.5}$ Nano-cone-arrays for High-performance Supercapacitors

Yicheng Qu$^a$, Guangtao Zan$^{a,b}$, Jiaxian Wang$^a$, Qingsheng Wu$^{a,b,*}$

$^a$Department of Chemistry, Tongji University, Shanghai 200092, PR China
$^b$School of Materials Science and Engineering, Tongji University, Shanghai 200092, PR China
*Corresponding author:
E-mail: qswu@tongji.edu.cn

Keywords: eggplant; hollow carbon; nano-Co(OH)(CO$_3$)$_{0.5}$; nanocomposites; supercapacitor
**Fig. S1.** SEM images of Co(OH)(CO$_3$)$_{0.5}$ arrays/ macroporous carbon tubes composites obtained at different time and magnifications. (A, A’) 1.5h, (B, B’) 3h, (C, C’) 4.5h, (D, D’) 6h. (the substrate in the figure is the wall of the EDMCT)

**Tab. S1.** the specific surface area and porosity parameters of the EDMCT, CCH and S-3

<table>
<thead>
<tr>
<th>samples</th>
<th>$S_{\text{BET}}$ [m$^2$ g$^{-1}$]</th>
<th>$S_{\text{Langmuir}}$ [m$^2$ g$^{-1}$]</th>
<th>$V_{\text{pore}}$ [cm$^3$ g$^{-1}$]</th>
<th>$V_{\text{micro}}$ [cm$^3$ g$^{-1}$]</th>
<th>$D_{\text{aver}}$ [nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDMCT</td>
<td>163.05</td>
<td>257.83</td>
<td>0.095</td>
<td>0.048</td>
<td>3.81</td>
</tr>
<tr>
<td>CCH</td>
<td>15.96</td>
<td>27.93</td>
<td>0.020</td>
<td>0.003</td>
<td>5.05</td>
</tr>
<tr>
<td>S-3</td>
<td>47.03</td>
<td>118.05</td>
<td>0.066</td>
<td>0.016</td>
<td>10.17</td>
</tr>
</tbody>
</table>

$S_{\text{BET}}$: BET surface area  
$S_{\text{Langmuir}}$: Langmuir surface area  
$V_{\text{pore}}$: Total pore volume  
$V_{\text{micro}}$: Micropore volume  
$D_{\text{aver}}$: Average pore size
Fig. S2. The electrochemical performance of pure CCH in 6M KOH in a three-electrode system. (A) The cyclic voltammetry curves of the pure CCH; (B) the galvanostatic charge-discharge plots of the pure CCH; (C) the specific capacitance values calculated by the galvanostatic charge-discharge plots; (D) the Nyquist impedance plot of the pure CCH.

Fig. S3. The (A) SEM image and (B) XRD pattern of the electrode materials (S-3) after the cycle stability test for 1500 times.