Supporting Information

One-Pot Synthesis of Porous Crystal Structured Nanosponge-Like

Pristine Copper Metal-Organic Framework for Hybrid

Supercapacitor Application

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Figure S1 XRD patterns of simulated, Cu-BDC10, Cu-BDC15, Cu-BDC20, and Cu-BDC25.
Fig. S2 FE-SEM image of novel nanosponge-like pristine Cu-BDC20
Fig. S3 (a) FE-SEM images at the magnification of 2500 X, (b) elemental mapping of Cu (blue), (c) C (red), and (d) O (green) of as-prepared Cu-BDC20.
**Table S1** Surface elemental composition of Cu-BDC20 from EDX spectrum

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Element</th>
<th>Weight (%)</th>
<th>Atomic (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Copper</td>
<td>24.23</td>
<td>6.30</td>
</tr>
<tr>
<td>2</td>
<td>Oxygen</td>
<td>30.63</td>
<td>31.63</td>
</tr>
<tr>
<td>3</td>
<td>Carbon</td>
<td>45.13</td>
<td>62.07</td>
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</tbody>
</table>
Fig. S4 TEM image of novel nanosponge-like pristine Cu-BDC20
Fig. S5 The XRD patterns of as-prepared Cu-BDC20 before and after sonication.
Fig. S6 (a) Nitrogen gas adsorption-desorption isotherm, and (b) BJH (Barrett–Joyner–Halenda) pore size distribution curve of as-prepared Cu-BDC20.
Fig. S7 FTIR spectrum of Cu-BDC20.
Fig. S8 CV curves at various scan rate of (a) Cu-BDC10, (b) Cu-BDC15, (c) Cu-BDC20, and (d) Cu-BDC25.
Fig. S9 Outer surface contribution deconvolution from CV curves of Cu-BDC20@NiF at (a) 20 mV s$^{-1}$, (b) 50 mV s$^{-1}$, and (c) 100 mV s$^{-1}$ scan rate.
Fig. S10  GCD curves at various current density of (a) Cu-BDC10, (b) Cu-BDC15, (c) Cu-BDC20, and (d) Cu-BDC25.
Fig. S11 Electrochemical measurements (a) CV curves at 100 mV s$^{-1}$ and (b) GCD curves at 1 A g$^{-1}$ of Cu-BDC10, Cu-BDC15, Cu-BDC20, and Cu-BDC25.
Fig. S12 FE-SEM images of the Cu-BDC20@NiF (a) before, and (b) after cycle test.