Supplementary Information

Mesoporous carbon-imbedded W_2C composite as flexible counter electrodes for dye-sensitized solar cells

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Fig. S1 TEM image of the prepared mesoporous carbon.

Fig. S2 EDS of prepared W₂C/MC

Fig. S3 The N₂ sorption isotherm of W₂C.
Fig. S4 The N₂ sorption isotherm of W₂C/MC.

![Graph showing N₂ sorption isotherm of W₂C/MC.]

Fig. S5 Molecular structure of T⁻ and T₂.

![Molecular structures of T⁻ and T₂.]

Table S1 Photovoltaic parameters of the iodide electrolyte based-DSCs using MC, W₂C, and W₂C/MC counter electrodes.

<table>
<thead>
<tr>
<th>Counter electrodes</th>
<th>$V_{oc}$/mV</th>
<th>$J_{sc}$/mA cm⁻²</th>
<th>FF</th>
<th>PCE/%</th>
</tr>
</thead>
<tbody>
<tr>
<td>MC</td>
<td>728</td>
<td>14.86</td>
<td>0.603</td>
<td>6.44</td>
</tr>
<tr>
<td>W₂C</td>
<td>726</td>
<td>13.59</td>
<td>0.648</td>
<td>6.40</td>
</tr>
<tr>
<td>W₂C/MC</td>
<td>744</td>
<td>15.23</td>
<td>0.672</td>
<td>7.61</td>
</tr>
</tbody>
</table>

$V_{oc}$: open-circuit voltage, $J_{sc}$: short-circuit current density, FF: fill factor, PCE: power conversion efficiency.