Supporting information

Water processable Prussian blue-polyaniline: polystyrene sulfonate nanocomposite (PB-PANI:PSS) for multi-color electrochromic applications

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Fig. S1 XRD spectra of pure PB and PB-PANI:PSS nanocomposite.
SI.2 Calculation of the HOMO&LUMO level and band gap

We used the following equation as well as the onset potential of the CV diagram to calculate HOMO level:

\[ E_{\text{HOMO}} = (E_{\text{ox}} - E_{1/2(\text{ferrocene})} + 4.8) \text{ eV} \]

The Ag/AgCl reference is -0.44 mV with reference to SCE, and Fc/Fc\(^+\) reference electrode is about +400 mV with reference to SCE in organic electrolyte (Chem. Rev. 1996, 96, 877). The potential value was adjusted by -444 mV vs. Fc/Fc\(^+\). According to the above information, the HOMO/LUMO and band gap values are calculated and listed below:

<table>
<thead>
<tr>
<th>Materials</th>
<th>PANI:PSS</th>
<th>PB-PANI:PSS</th>
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</thead>
<tbody>
<tr>
<td>HOMO (eV)</td>
<td>4.55</td>
<td>4.50</td>
</tr>
<tr>
<td>LUMO (eV)</td>
<td>2.03</td>
<td>2.19</td>
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<tr>
<td>Band gap (eV)</td>
<td>2.52</td>
<td>2.31</td>
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