Supporting Information

Improving the Efficiency of Polymer Solar Cells Based on Furan-Flanked Diketopyrrolopyrrole Copolymer via Solvent Additive and Methanol Treatment

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Figure S1. Current density versus voltage ($J-V$) characteristics of PDVF-8:PC$_{71}$BM PSCs from CF+DIO with different concentrations of DIO.

Table S1. Performances of PDVF-8:PC$_{71}$BM PSCs from CF+DIO with different concentrations of DIO.

<table>
<thead>
<tr>
<th>Solvents</th>
<th>$J_{sc}$ [mA cm$^{-2}$]</th>
<th>$V_{oc}$ [V]</th>
<th>FF [%]</th>
<th>PCE [%]</th>
<th>$Rs$ [$\Omega$ cm$^2$]</th>
<th>$R_{sh}$ [$\Omega$ cm$^2$]</th>
<th>Rectification Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF+1vol%DIO</td>
<td>8.95</td>
<td>0.650</td>
<td>0.544</td>
<td>3.17</td>
<td>15.2</td>
<td>785.9</td>
<td>8.3 × 10$^4$</td>
</tr>
<tr>
<td>CF+3vol%DIO</td>
<td>9.73</td>
<td>0.650</td>
<td>0.590</td>
<td>3.73</td>
<td>7.2</td>
<td>910.6</td>
<td>4.0 × 10$^5$</td>
</tr>
<tr>
<td>CF+5vol%DIO</td>
<td>9.55</td>
<td>0.630</td>
<td>0.577</td>
<td>3.47</td>
<td>8.4</td>
<td>855.9</td>
<td>4.6 × 10$^5$</td>
</tr>
<tr>
<td>CF+3vol%DIO (MT)</td>
<td>10.30</td>
<td>0.655</td>
<td>0.597</td>
<td>4.03</td>
<td>7.0</td>
<td>956.1</td>
<td>6.0 × 10$^5$</td>
</tr>
</tbody>
</table>
**Figure S2.** Current density versus voltage ($J$–$V$) characteristics of PDVF-8:PC$_{71}$BM PSCs from CF+CN with different concentrations of CN.

**Table S2.** Performances of PDVF-8:PC$_{71}$BM PSCs from CF+CN with different concentrations of CN.

<table>
<thead>
<tr>
<th>Solvents</th>
<th>$J_{sc}$ [mA cm$^{-2}$]</th>
<th>$V_{oc}$ [V]</th>
<th>FF [%]</th>
<th>PCE [%]</th>
<th>$R_s$ [Ω cm$^2$]</th>
<th>$R_{sh}$ [Ω cm$^2$]</th>
<th>Rectification Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF+1vol%CN</td>
<td>9.46</td>
<td>0.675</td>
<td>0.568</td>
<td>3.63</td>
<td>3.58</td>
<td>12.3</td>
<td>810.8</td>
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<tr>
<td>CF+3vol%CN</td>
<td>10.89</td>
<td>0.670</td>
<td>0.583</td>
<td>4.26</td>
<td>4.18</td>
<td>7.7</td>
<td>868.7</td>
</tr>
<tr>
<td>CF+5vol%CN</td>
<td>10.20</td>
<td>0.670</td>
<td>0.578</td>
<td>3.95</td>
<td>3.91</td>
<td>7.5</td>
<td>838.2</td>
</tr>
<tr>
<td>CF+3vol%CN (MT)</td>
<td>11.64</td>
<td>0.670</td>
<td>0.601</td>
<td>4.69</td>
<td>4.59</td>
<td>6.2</td>
<td>1083.5</td>
</tr>
</tbody>
</table>

**Figure S3.** Current density versus voltage ($J$–$V$) characteristics of Device 1-6 in the dark.
Figure S4. $J^{0.5}$ vs. $V_{\text{appl}}$-$V_{\text{bi}}$-$V_{r}$ plots for the electron-only (a) and the hole-only devices (b) from different solvent/solvent mixture without or with MT.

Figure S5. S2p and C1s XPS spectra of PDVF-8:PC$_7$BM film spin-coated from CF+3vol% CN without (a and b) and with (c and d) MT in different etching time.