The Impact of Lone Pair-π Interactions on Photochromic Properties in 1-D Naphthalene Diimide Coordination Networks

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**Figure S1.** The lone pair-π (X···π) and C-H···π interactions in crystals 1-3.

**Figure S2.** The lone pair-π (O···π) interactions in crystals 1-3.

**Table S1.** Distance Parameters for weak interactions for the 1-3.

<table>
<thead>
<tr>
<th>Complex</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td><strong>Lone-π interactions (Å)</strong></td>
<td></td>
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<tr>
<td>X···π</td>
<td>3.524</td>
<td>3.541</td>
<td>3.589</td>
</tr>
<tr>
<td>O···π</td>
<td>2.722</td>
<td>2.699</td>
<td>2.688</td>
</tr>
<tr>
<td><strong>C-H···X interactions (Å)</strong></td>
<td>3.499</td>
<td>3.622</td>
<td>3.814</td>
</tr>
</tbody>
</table>
Figure S3. The 1-D rhombic channels for crystals 1-3 view along c axis.

Figure S4. The time-dependent UV-vis spectral curves of 1 and 2 upon irradiation with a 300 W xenon lamp.
Figure S5. Fluorescence spectra of DPNDI ($\lambda_{ex} = 490$ nm).

Figure S6. Thermogravimetric analyses of crystals 1-3 in N$_2$ with a ramp rate of 10 K/min.
Figure S7. IR spectra of crystals 1-3.

Figure S8. PXRD patterns of 1, 1a decolored sample. The simulated curve is based on the single-crystal X-ray diffraction data.
Figure S9. PXRD patterns of 2, 2a, decolored sample. The simulated curve is based on the single-crystal X-ray diffraction data.

Figure S10. PXRD patterns of 3 and 3a. The simulated curve is based on the single-crystal X-ray diffraction data.
Figure S11. N 1s XPS core-level spectra of 1 and 1a.

Figure S12. O 1s XPS core-level spectra of 1 and 1a.

Figure S13. C 1s XPS core-level spectra of 1 and 1a.