Supporting information

Highly efficient deep-blue light-emitting copolymers containing phenoxazine: enhanced device efficiency and lifetime by blending a hole transport molecule

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Fig. S1 $^1$H NMR and $^{13}$C NMR spectra of monomer PO-Br$_2$. 
**Fig. S2** TGA curves of copolymers.

**Fig. S3** PL spectra of copolymers in (a) toluene and (b) solid films.
Fig. S4 DFT calculation of model molecules.

Fig. S5 PL spectra of copolymers in various solvents.
**Fig. S6** (a) $J$-$V$-$L$ curves and (b) the energy level alignment of double-layer device II with the structure of ITO/PEDOT:PSS/PVK/EL/CsF/Al.

**Fig. S7** CV curves of BCFN.
Fig. S8 UV-vis absorption of BCFN and PL emission of PF-TD2PO1.

Fig. S9 J-V-L curves of blended emitters based devices III with the structure of ITO/PEDOT:PSS/PVK/PF-TD2PO1:BCFN/CsF/Al.
<table>
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<th>Polymer</th>
<th>$\lambda_{\text{abs, toluene}}$ (nm)</th>
<th>$\lambda_{\text{abs, film}}$ (nm)</th>
<th>$\lambda_{\text{PL, toluene}}$ (nm)</th>
<th>$\lambda_{\text{PL, film}}$ (nm)</th>
<th>FWHM$^a$ (nm)</th>
<th>FWHM$^b$ (nm)</th>
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<tr>
<td>PF-PO1</td>
<td>387</td>
<td>380</td>
<td>417, 446</td>
<td>455</td>
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<td>PF-TD2PO1</td>
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<td>381</td>
<td>419, 453</td>
<td>456</td>
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<td>46</td>
</tr>
</tbody>
</table>

$^a$Evaluated from the PL spectra in toluene solution

$^b$Evaluated from the PL spectra in solid film.