Supplementary Materials for

Determining Interfacial Energy Levels between Crystalline Emitting Layer and Amorphous Electron Transport Layer: UPS-Assisted Efficiency Optimization in Crystalline OLEDs

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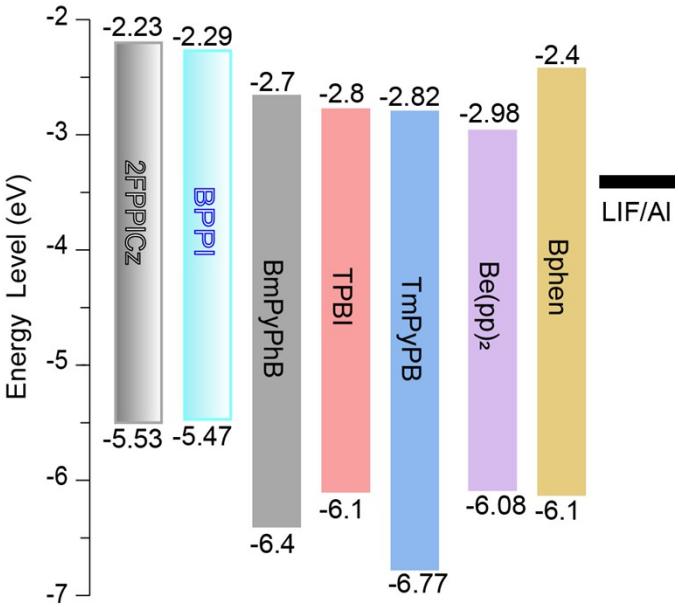
Figure S1-S3



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20 **Figure S1. LUMO and HOMO data of all materials obtained from CV**

21 **measurement, all from the reference.**[S1-S5]

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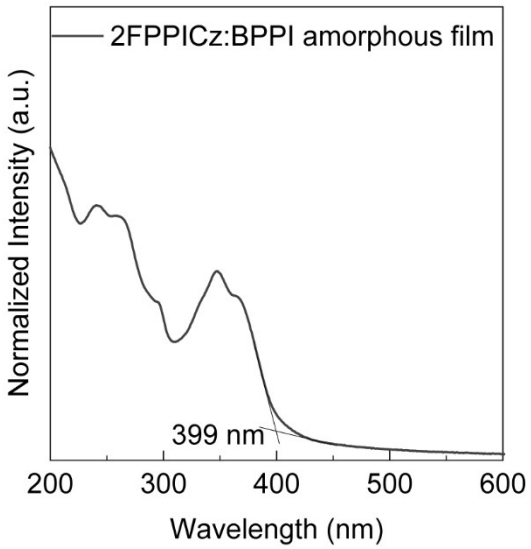
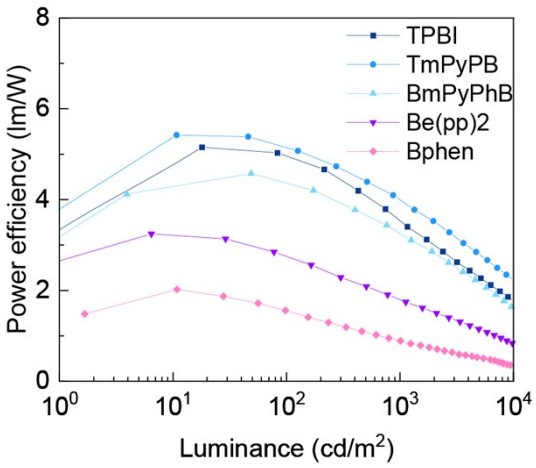


Figure S2. UV-vis absorption spectra of 2FPPICz: BPPI amorphous film.



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27 **Figure S3. Power efficiency v.s. luminance of all five C-OLEDs.**

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Reference

S1 Xin, J. *et al.* High-efficiency non-doped deep-blue fluorescent organic light-emitting diodes based on carbazole/phenanthroimidazole derivatives. *Journal of Materials Chemistry C* **8**, 10185-10190, doi:10.1039/D0TC02594A (2020).

S2 Wang, Z. *et al.* Phenanthro[9,10-d]imidazole as a new building block for blue light emitting materials. *Journal of Materials Chemistry* **21**, 5451-5456, doi:10.1039/C1JM10321K (2011).

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