

## **Supporting Information**

**For**

# **Low-Driving-Voltage Sky-Blue Phosphorescent Organic Light-Emitting Diodes with Bicarbazole-bipyridine Bipolar Host Materials**

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## Supplementary Figures and Tables

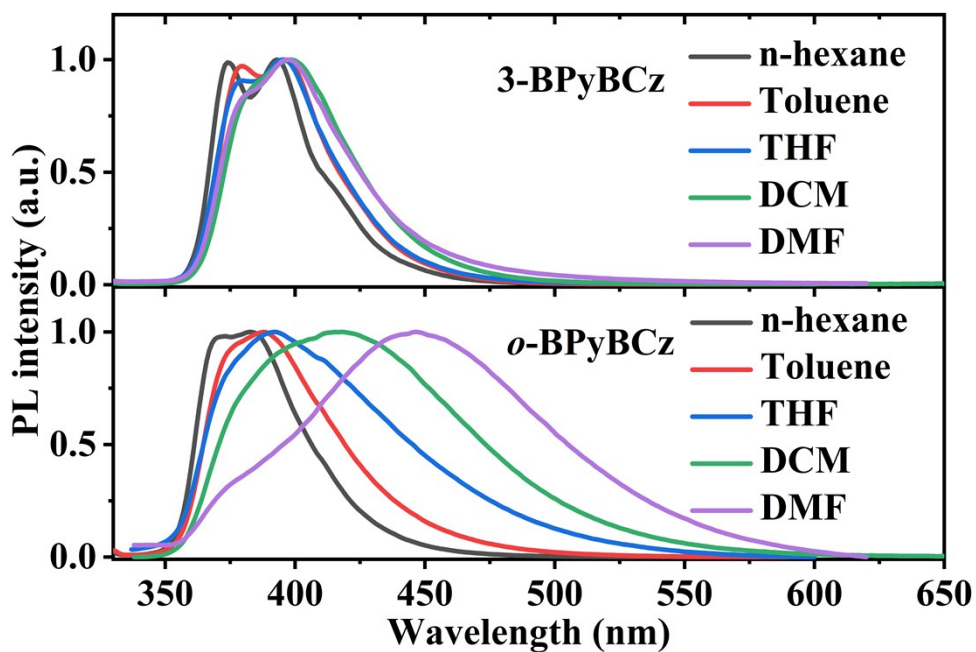


Fig. S1. PL spectra of 3-BPyBCz and *o*-BPyBCz in various solvents with different polarity.

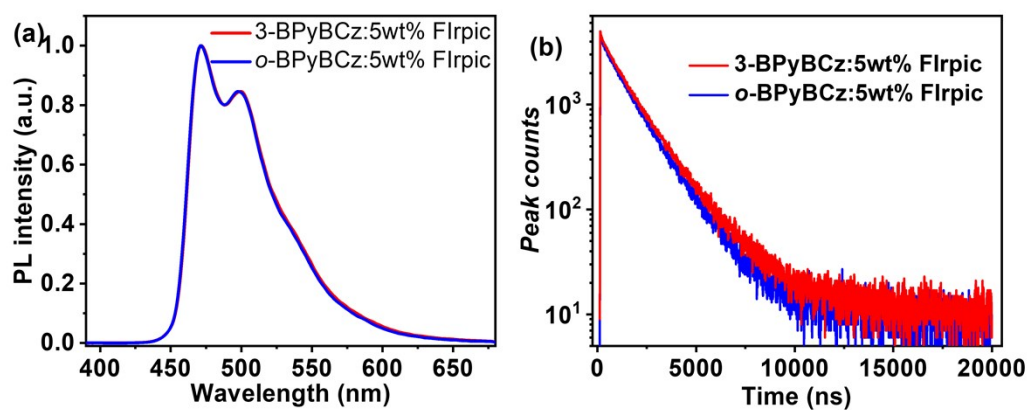
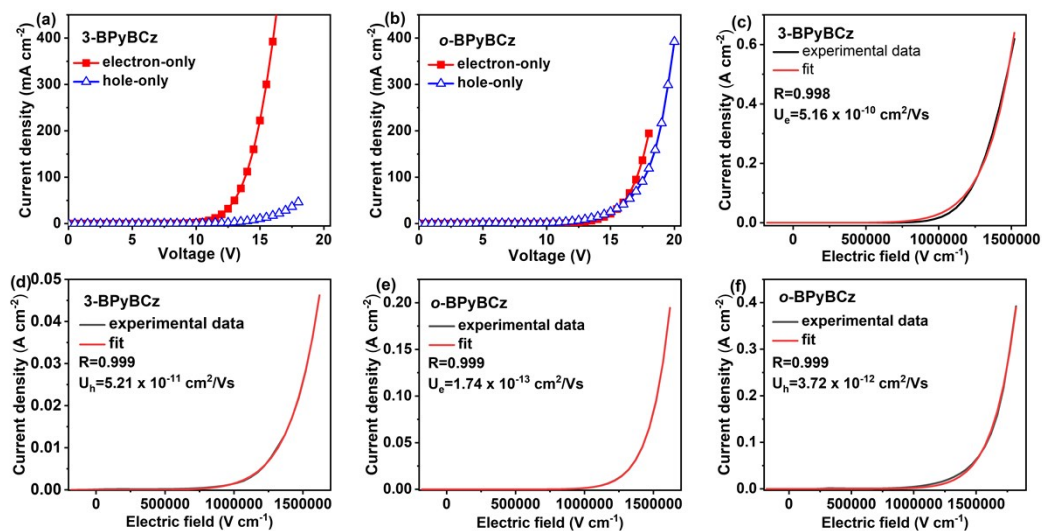
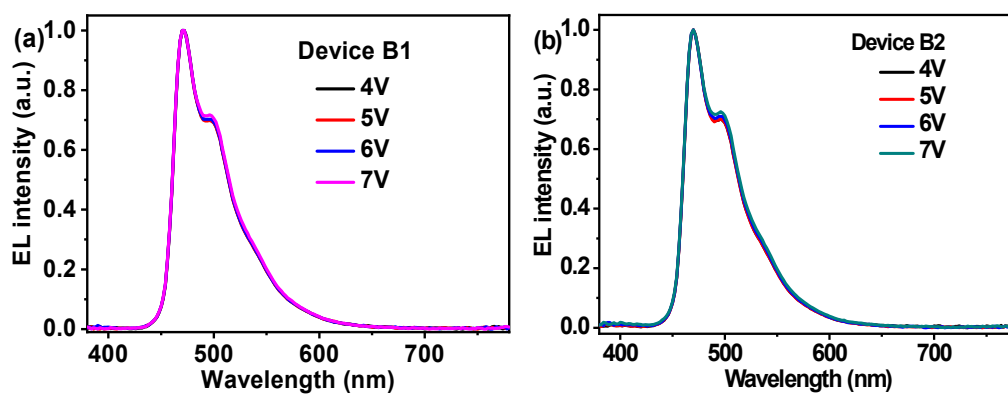


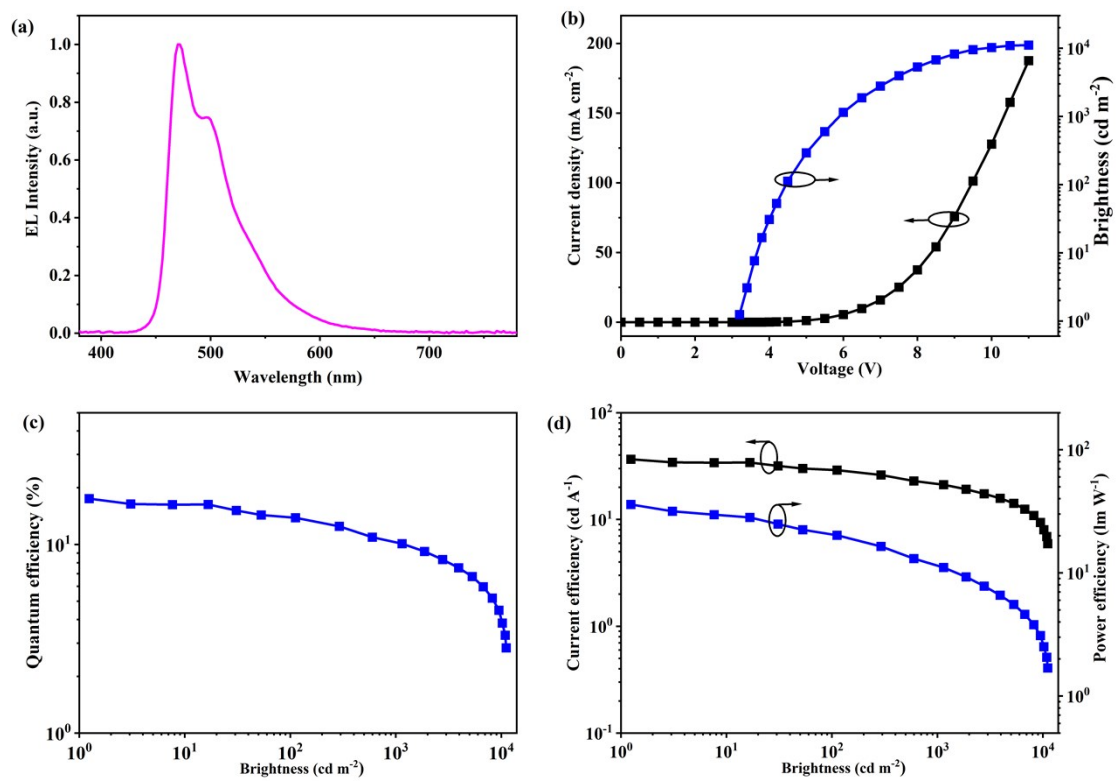
Fig. S2. The PL spectra (a) and transient PL decay (b) of FIrpic doped in 3-BPyBCz and *o*-BPyBCz films.



**Fig. S3.** The  $J$ - $V$  (a and b) and  $J$ - $E$  (c-f) curves for the ohmic contact single-carrier devices of 3-BPyBCz and *o*-BPyBCz.



**Fig. S4.** EL spectra of 3-BPyBCz and *o*-BPyBCz based device B1 and B2 at different voltages.



**Fig. S5.** The EL spectra (a),  $J$ - $V$ - $B$  characteristics (b) and efficiency curves (c and d)

for mCP hosted sky-blue PhOLED B3.

**Table S1** Comparison of the turn-on voltages of FIrpic based PhOLEDs reported both in present work and in literatures.

Host	$V_{on}$ [V]	$V_{100}$ [V]	$V_{1000}$ [V]	Reference
<b>3-BPyBCz</b>	<b>2.3</b>	<b>3.17</b>	<b>4.14</b>	<b>This work</b>
<b>o-BPyBCz</b>	<b>2.4</b>	<b>3.32</b>	<b>4.06</b>	
<i>p</i> -BPyCz	2.8			ACS Appl. Mater. Interfaces, 2017, 9, 37888
<i>p</i> -BPyDCz	2.6			Adv. Funct. Mater. 2018, 28, 1803193
PyTzDCz	2.7			J. Mater. Chem. C, 2018, 6, 7839
PyTzSCz	2.6			
BPCN-Cz2Ph		3.60		Org. Electron., 2020, 81, 105660
BPCN-2Cz		3.36		
BPCN-3Cz		3.17		
mCPCN	~2.5	4		J. Mater. Chem., 2012, 22, 16114
SF33	2.8		5.1	Adv. Mater., 2015, 27, 4213
SF34	3.0		4.6	
DCzPBI	2.8			Org. Electron., 2020, 77, 105513
POCzPBI	2.9			
DPOPBI	2.7			
DPBP-DMAC	2.7			ACS Appl. Mater. Interfaces, 2019, 11, 27134
TCZSO <sub>2</sub>		3.6		J. Mater. Chem. C, 2019, 7, 6714
p2PCB2CZ	2.8			ACS Appl. Mater. Interfaces, 2019, 11, 6292
SAIP	2.6			J. Mater. Chem. C, 2019, 7, 1370
mCP: PO-T2T (exciplex host)	2.4	2.75	3.29	Adv. Funct. Mater., 2015, 25, 361-366