
Electronic Supplementary Information

High Efficiency Hybrid White Organic Light-Emitting Diodes based on a Simple and Efficient Exciton Regulation Emissive Layer Structure

Yuwen Chen, Shian Ying, Qian Sun, Yanfeng Dai, Xianfeng Qiao, Dezhi Yang,
Jiangshan Chen and Dongge Ma*

*Institute of Polymer Optoelectronic Materials and Devices, State Key Laboratory of
Luminescent Materials and Devices, South China University of Technology,
Guangzhou, 510640, People's Republic of China*

E-mail: msdgm@scut.edu.cn

Contents

Figures

Figure S1. Schematic structure of designed Blue OLED

Figure S2. The molecular structures of organic materials used for OLED in this work.

Table S1. Summary of EL performances of the resulting WOLEDs.

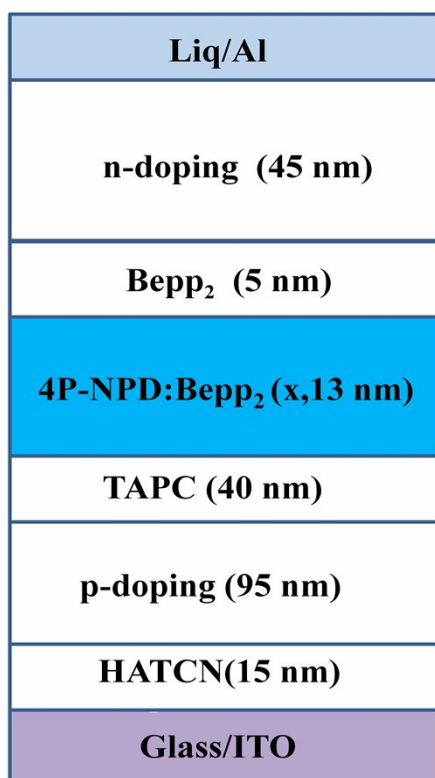


Figure S1. Schematic structure of designed Blue OLED

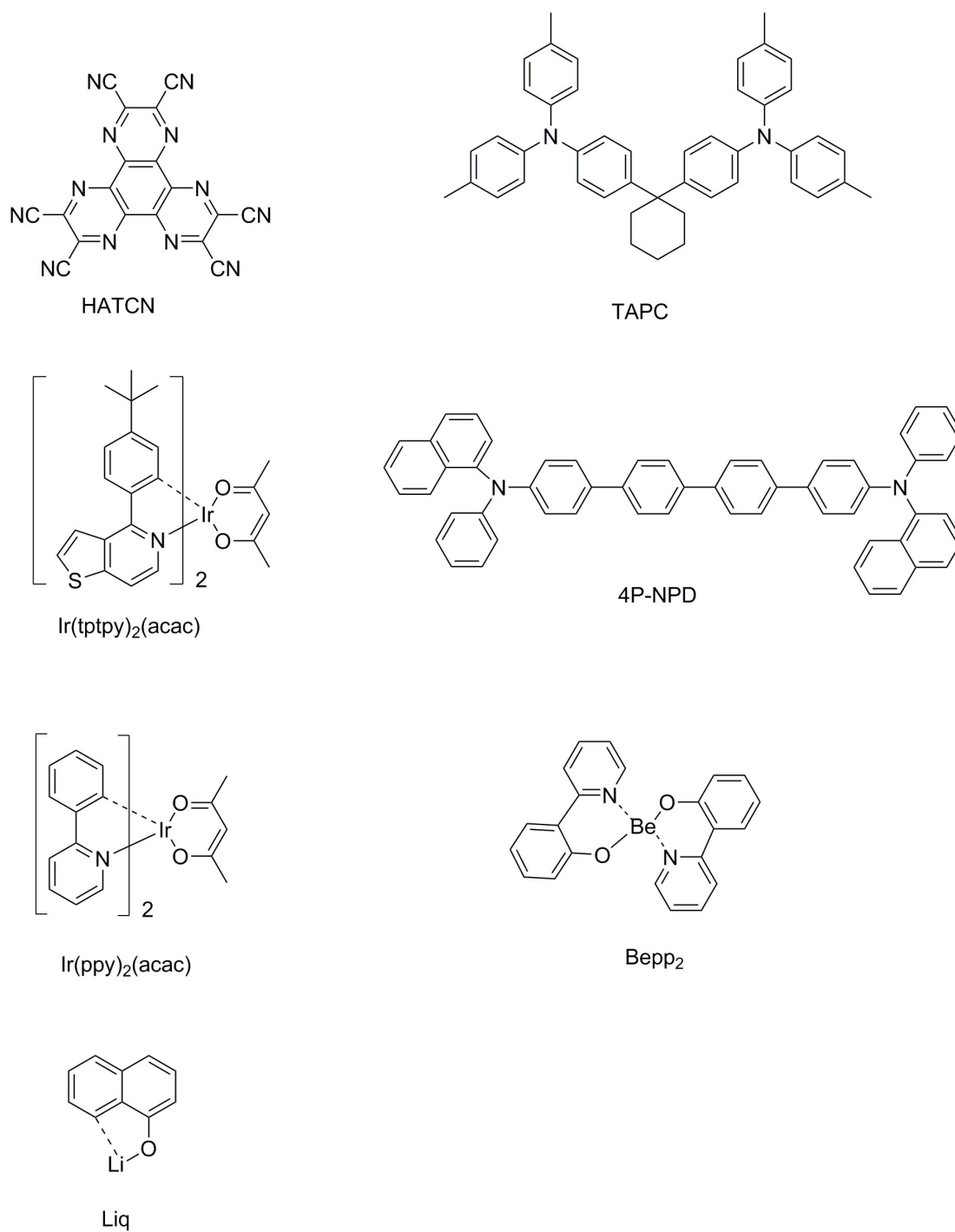


Figure S2. The molecular structures of organic materials used for OLED in this work.

W1 structure: ITO/HAT-CN (15 nm)/TAPC: HAT-CN (4/2, 95 nm)/TAPC (40 nm)/4P-NPD: Ir(tptpy)₂(acac) (4%, 5 nm)/4P-NPD: Bepp₂ (1: 1, 13 nm)/Bepp₂ (2 nm)/Ir(ppy)₂(acac) (0.4 nm)/Bepp₂ (3 nm)/Bepp₂: Liq (4.5%, 50 nm)/Liq (1.25 nm)/Al,

W2 structure: ITO/HAT-CN (15 nm)/TAPC: HAT-CN (4/2, 95 nm)/TAPC (40 nm)/4P-NPD: Ir(tptpy)₂(acac) (4%, 5 nm)/4P-NPD: Bepp₂ (2: 1, 13 nm)/Bepp₂ (5nm)/Bepp₂: Liq (4.5%, 50 nm)/Liq (1.25 nm)/Al.

W6 structure: ITO/HATCN (15 nm)/TAPC: HATCN (4/2, 95 nm)/TAPC (40 nm)/4P-NPD: Ir(tptpy)₂(acac) (4%, 5 nm)/4P-NPD: Bepp₂ (2: 1, 13 nm)/Bepp₂ (2 nm)/Ir(ppy)₂(acac) (0.4 nm)/Bepp₂ (3 nm)/Bepp₂: Liq (4.5%, 50 nm)/Liq (1.25 nm)/Al.

Table S1 Summary of EL performances of the resulting WOLEDs.

Device	V _{on} ^a (V)	Max/@100 cd m ⁻² /@1000 cd m ⁻²			CRI ^b	CIE ^b (x,y)
		CE (cd A ⁻¹)	PE (lm W ⁻¹)	EQE (%)		
W1	2.6	58.3/56.7/48.7	65.5/59.3/44.9	16.7/13.5/11.0	42	(0.43,0.52)
W2	2.6	47.3/34.5/18.2	57.2/33.9/13.5	15.8/12.1/13.5	51	(0.36,0.37)
W6	2.6	60.3/40.8/28.3	72.9/37.7/20.2	18.2/12.5/8.8	46	(0.40,0.49)

^a Turn-on voltage estimated at a brightness of >1cd m⁻². ^b Emission peak and the corresponding CRI and CIE coordinates obtained at a voltage of 4 V.

Table S1. Summary of EL performances of the resulting WOLEDs.