

Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.  
This journal is © The Royal Society of Chemistry 2019

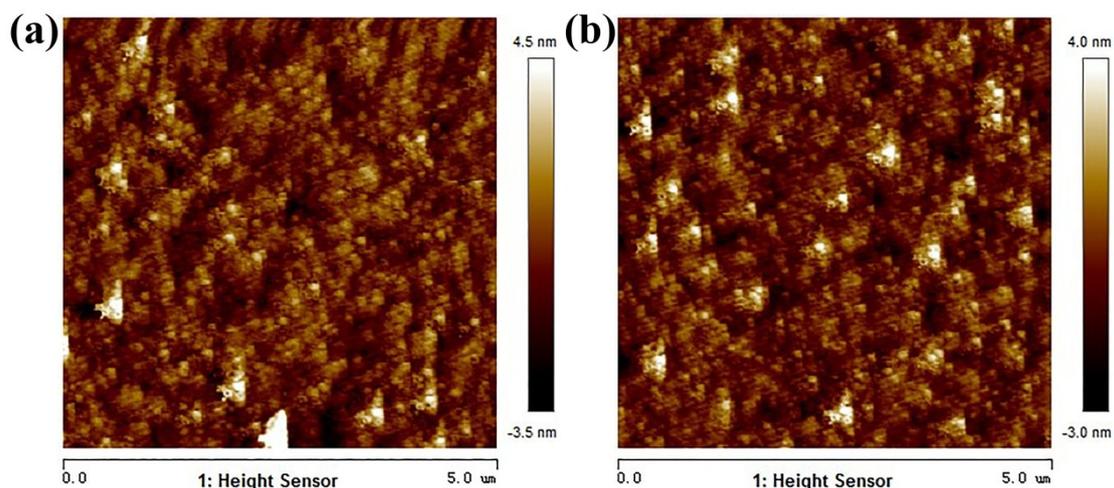
## ***Supporting Information***

### **Efficiency enhancement in inverted organic light-emitting device with TiO<sub>2</sub> electron injection layer through interfacial engineering**

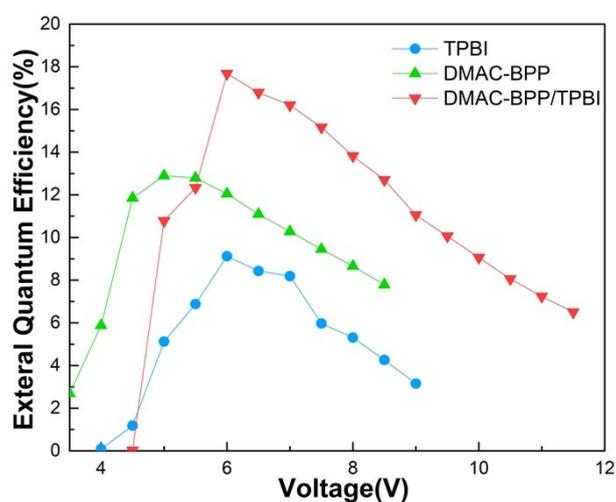
Chunxiu Zang, Hui Wang, Shihao Liu, Wenbin Guo, Letian Zhang\* and Wenfa Xie\*

State Key Laboratory of Integrated Optoelectronics, College of Electronic Science and  
Engineering, Jilin University, Changchun, 130012, People's Republic of China.

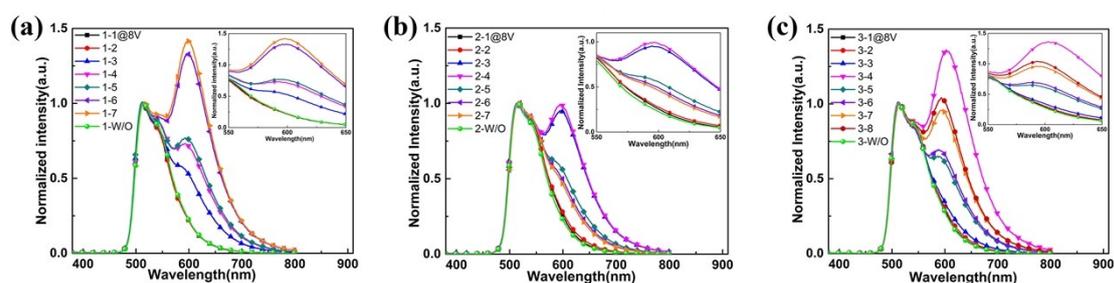
E-mail: zlt@jlu.edu.cn, xiewf@jlu.edu.cn



**Fig. S1** The AFM images of (a) TiO<sub>2</sub> film (root mean square deviation (rms): 1.04nm), (b) PEI spin-coating on TiO<sub>2</sub> (rms: 0.92 nm).



**Fig. S2** The EQE-voltage curves of the devices.



**Fig. S3** The electroluminescence intensity of (a) devices 1-1 to 1-7 and 1-W/O, (b) devices 2-1 to 2-7 and 2-W/O and (c) devices 3-1 to 3-8 and 3-W/O normalized at 515 nm (W/O represent the devices that without Ir(MDQ)<sub>2</sub>(acac) probe) normalized at 515 nm.

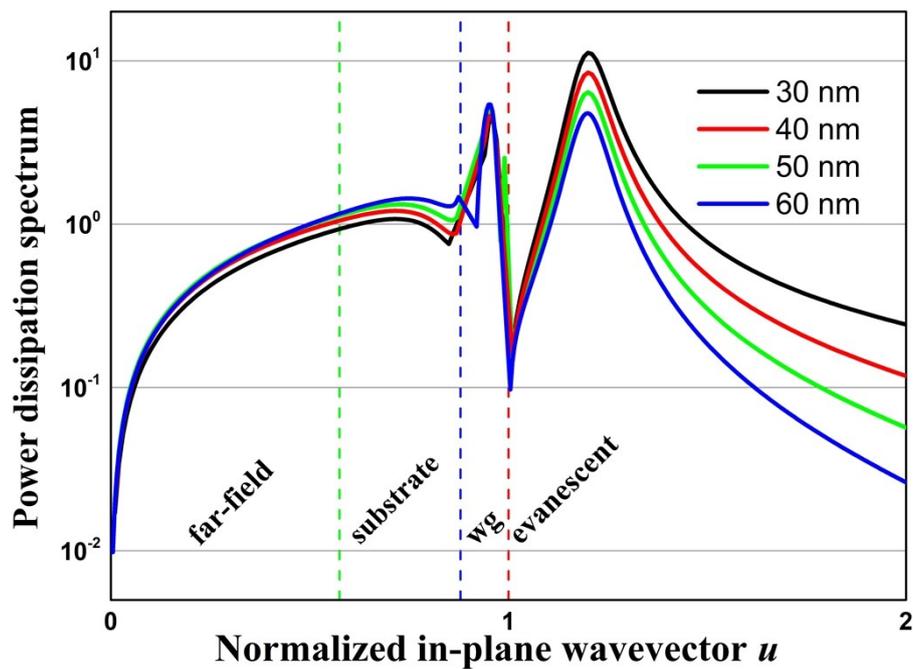


Fig. S4 The simulated the power dissipation spectra of the devices with different distance between light-emitting region and Ag anode. (wg: waveguide)

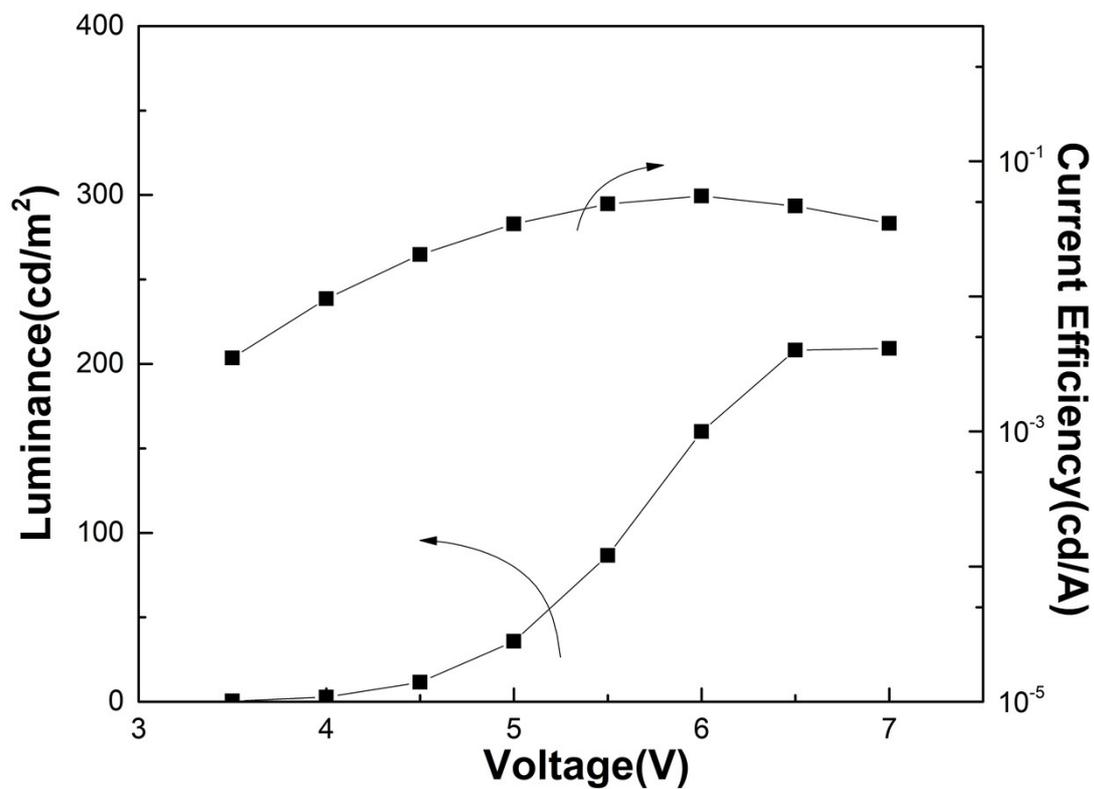
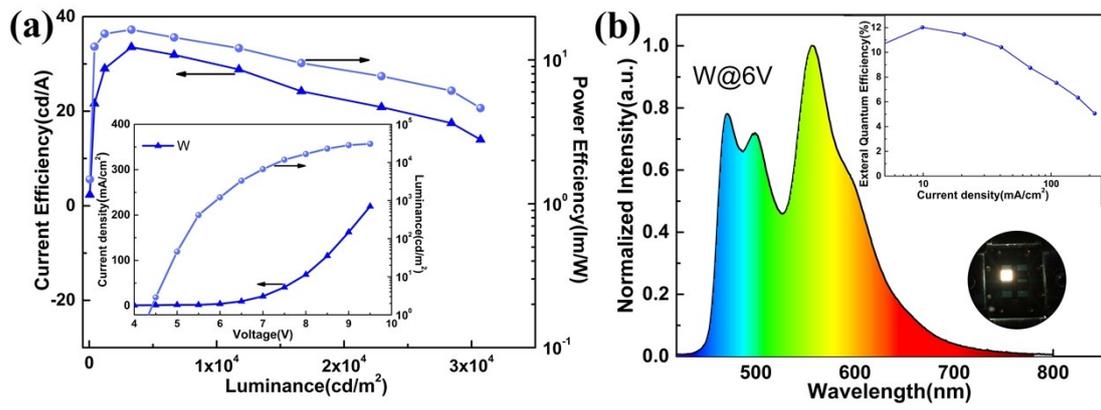


Fig. S5 Device performance of  $\text{TiO}_2/\text{PEI}/\text{CBP}:\text{Ir}(\text{ppy})_3$  (10 wt% 20 nm)/TcTa (5 nm)/TAPC (35 nm)/ $\text{MoO}_3$  (3 nm)/Ag (100 nm).



**Fig. S6** (a) Efficiency-luminance curves of device W (Inset is current density-voltage-luminance characteristics of the device). (b) EQE-current density curve (Inset: (bottom left) Normalized EL spectrum of the white OLED, (top right): Photo of the device W drives at 6V).