Supporting Information

Management of Excitons for Highly Efficient Organic Light-Emitting Diodes with Reduced Triplet Exciton Quenching: Synergistic Effects of Exciplex and Quantum Well Structure

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Table S1 Summary of device performance based on the UEML and i-Exc structure.

EML structure	Voltage (V)	PE (lm W^{-1})/CE (cd A^{-1})/EQE (%)			
		Maximum	1000 cd m^{-2}	5000 cd m^{-2}	10000 cd m^{-2}
TCTA/Ir(ppy)$_2$acac/B3PyMPM	2.80	93.0/83.0/25.9	50.2/55.6/18.0	11.3/18.5/6.1	5.4/10.7/2.6

[a]Voltage at the current density of 0.2 mA cm^{-2}.

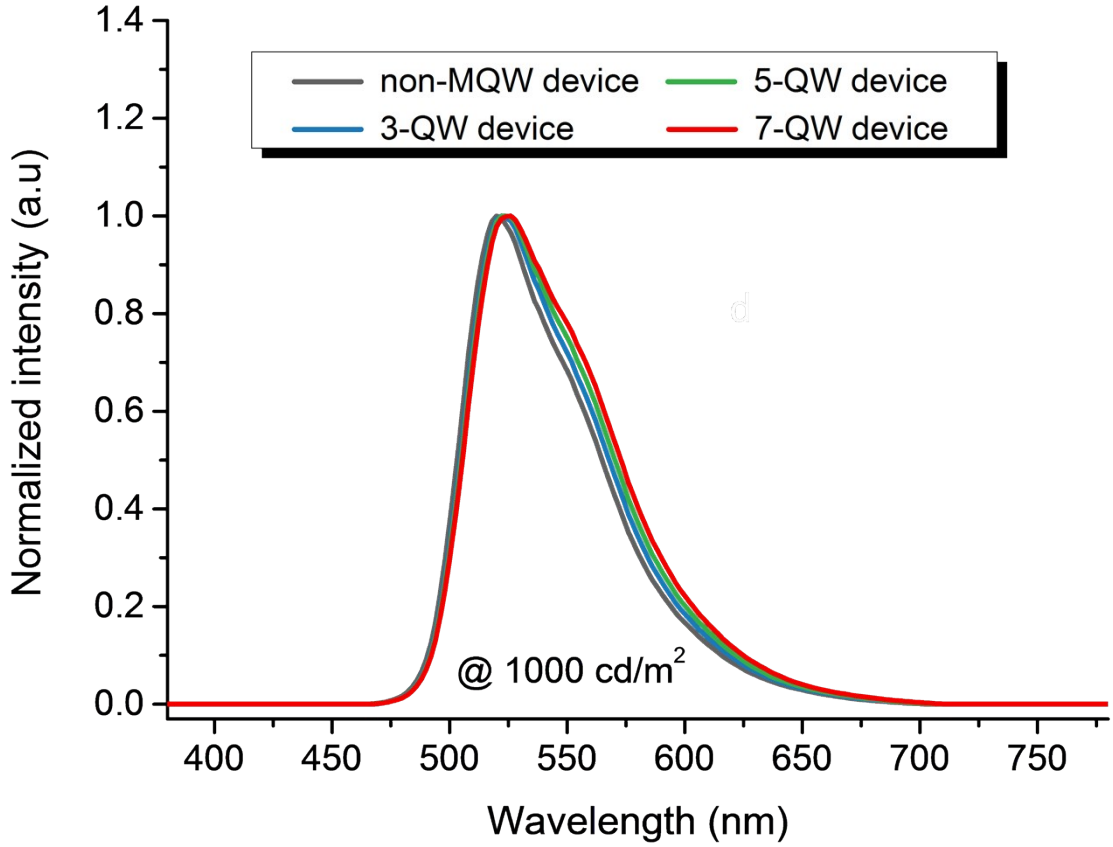

Fig. S1. EL spectra of the non-MQW, 3-QW, 5-QW and 7-QW based devices at a luminance of 1000 cd m^{-2}, respectively.

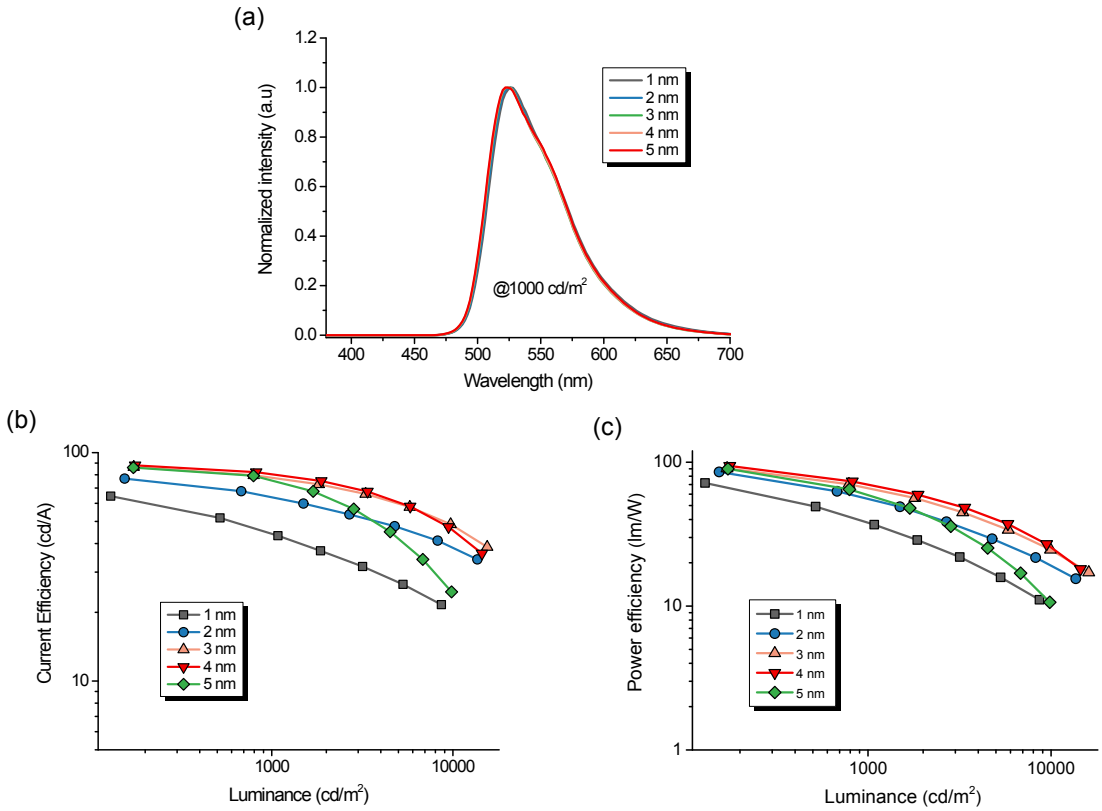

Fig. S2. (a) EL spectra of the 5-QW based device with varied thickness of constituting layer at a luminance of 1000 cd m^{-2}; (b)Current efficiency-luminance characteristics and (c) power efficiency-luminance characteristics of devices with varied thickness of constituting layer.

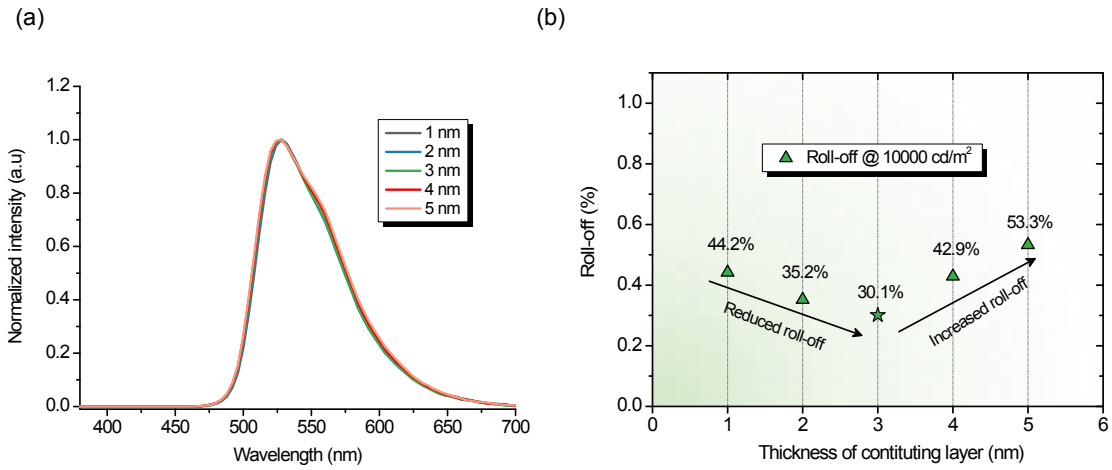

Fig. S3. (a) EL spectra and (b) efficiency roll-off of the 7-QW based device with varied thickness of constituting layer at a luminance of 10000 cd m^{-2}.

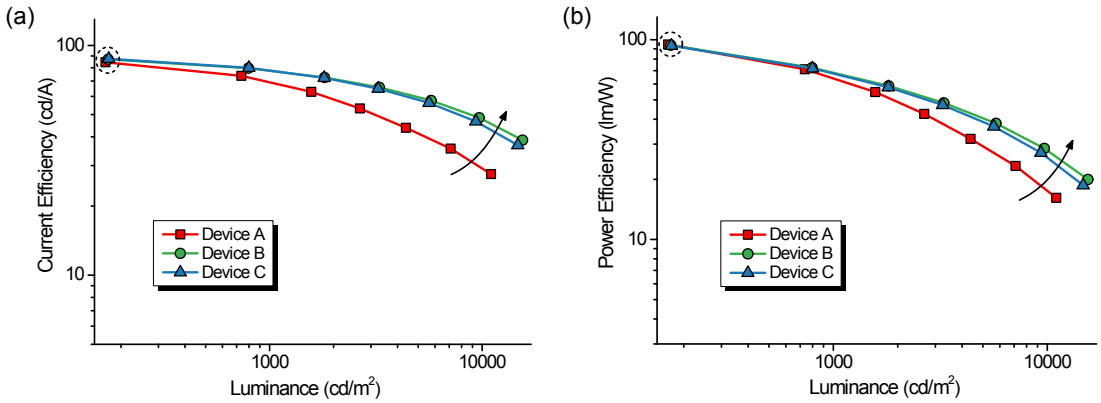

Fig. S4. (a) Current efficiency-luminance characteristics and (b) power efficiency-luminance characteristics of device A, B and C.