

**Combining emissions of hole- and electron-transporting layers simultaneously  
for simple blue and white organic light-emitting diodes with superior device  
performance**

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## Section S1

In this work, all the devices were fabricated on the pre-patterned indium tin oxide (ITO) glass substrate with sheet resistance of  $10\Omega/\square$ . ITO substrates were scrubbed and sonicated consecutively with detergent water, deionized water, and acetone, dried in drying cabinet, and then exposed to a UV ozone environment for 10 min. After these processes, the substrates were transferred into a vacuum chamber for sequential deposition of all organic functional layers by thermal evaporation below a vacuum of  $5\times 10^{-4}$  Pa. The deposition rates for organic materials,  $\text{MoO}_3$ , LiF, and aluminum (Al) were about 1, 0.3, 0.1 and 5 Å/s, respectively. The thickness and deposition rates of the films were controlled by a quartz thickness monitor. The overlap between ITO anode and Al cathode is 3 mm×3 mm, as the active emissive area of the devices.

The current density–voltage–luminance (J-V-L) characteristics of the devices were measured by a computer-controlled BM-7A luminance meter and a Keithley 2400 programmable voltage current source. Electroluminescence (EL) spectra, Commission Internationale de L'Eclairage (CIE) coordinates, correlated color temperature (CCT) and CRI of devices were measured by a computer-controlled PR655 Spectra scan spectrometer. All the measurements were carried out directly after fabrication without encapsulation in ambient atmosphere at room temperature.

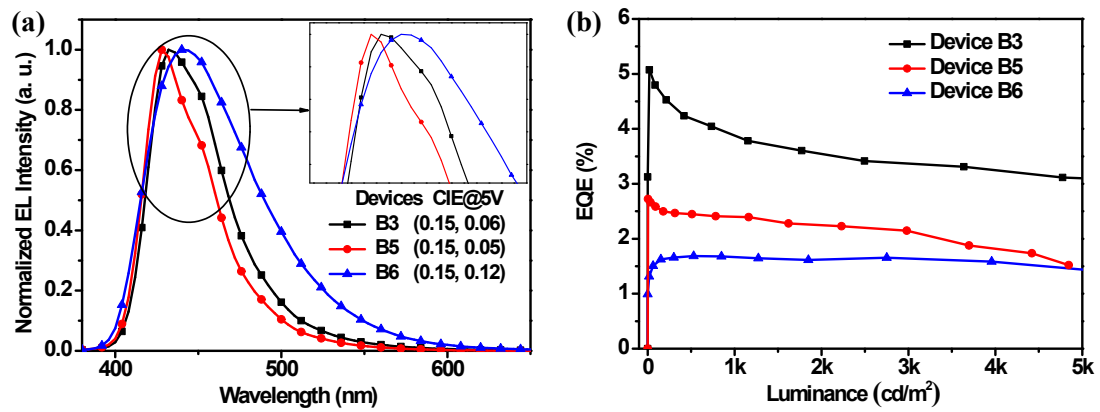


Fig. S1. (a) Normalized EL spectra and corresponding CIE coordinates of the devices B3, B5 and B6 at a driving voltage of 5V; (b) The EQE-L curves of the devices B3, B5 and B6.