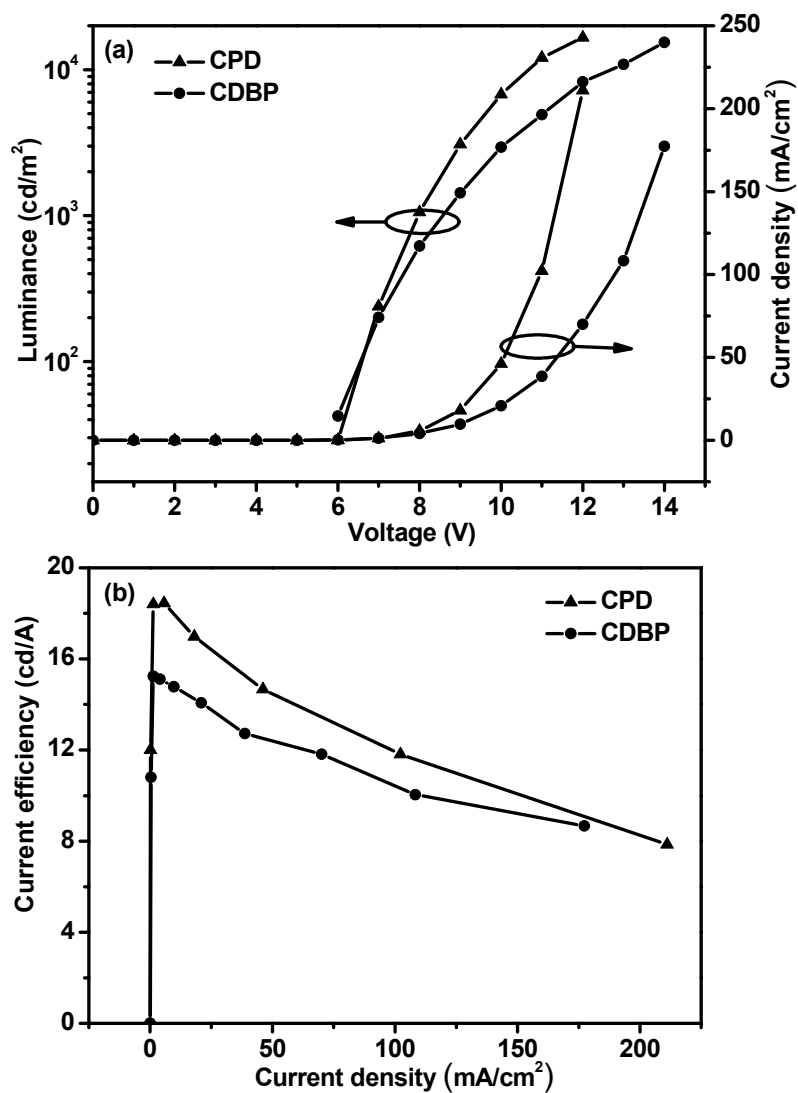


## Supporting information



**Figure S1.** The current density-voltage-luminance ( $J-V-L$ ) curves for the CPD and CDBP devices. The device structures are ITO/PEDOT:PSS (40 nm)/NPB (20 nm)/host:FIrpic (10wt%, 30 nm)/TPBI (40 nm)/LiF (1 nm)/Al (150 nm), in which host = CPD or CDBP.