

Supplementary material

Bicarbazole-benzophenone based twisted donor-acceptor derivatives as potential blue TADF emitters for OLEDs

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1. Thermogravimetric analysis

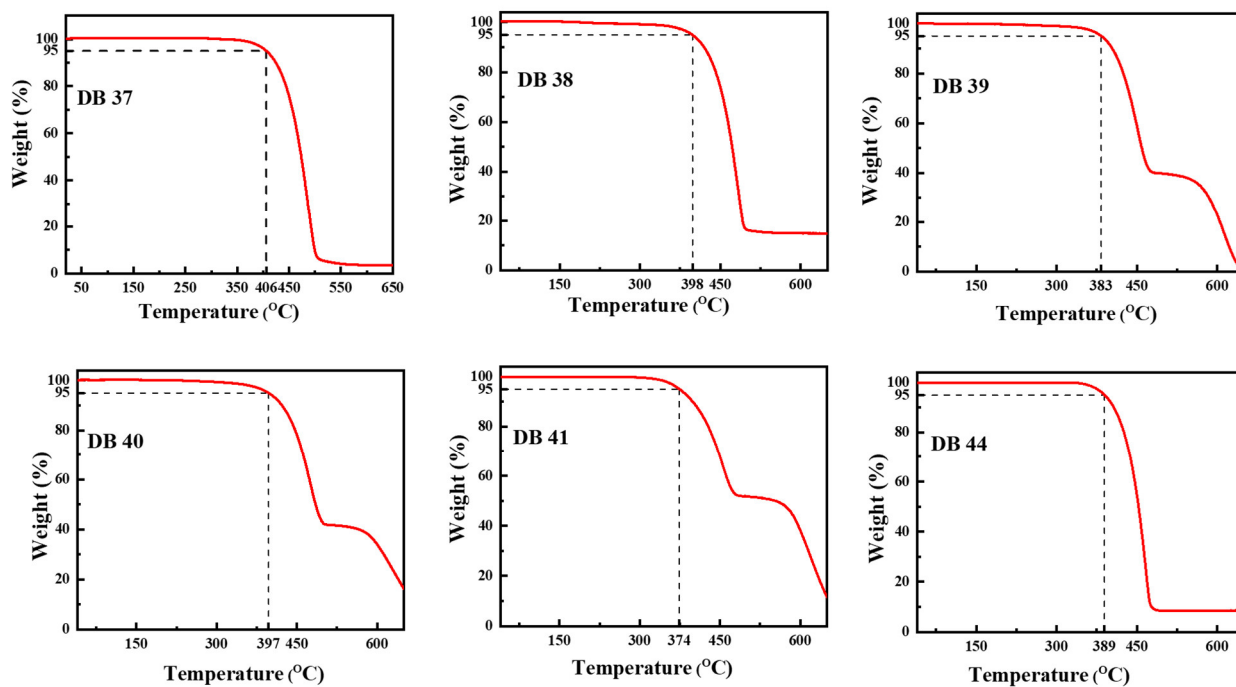


Figure S1. Data of thermogravimetric analysis of the compounds DB37 – DB41 and DB44. Heating rate: 10 °C/min.

2. UV-Vis absorption bands and Tauc plots

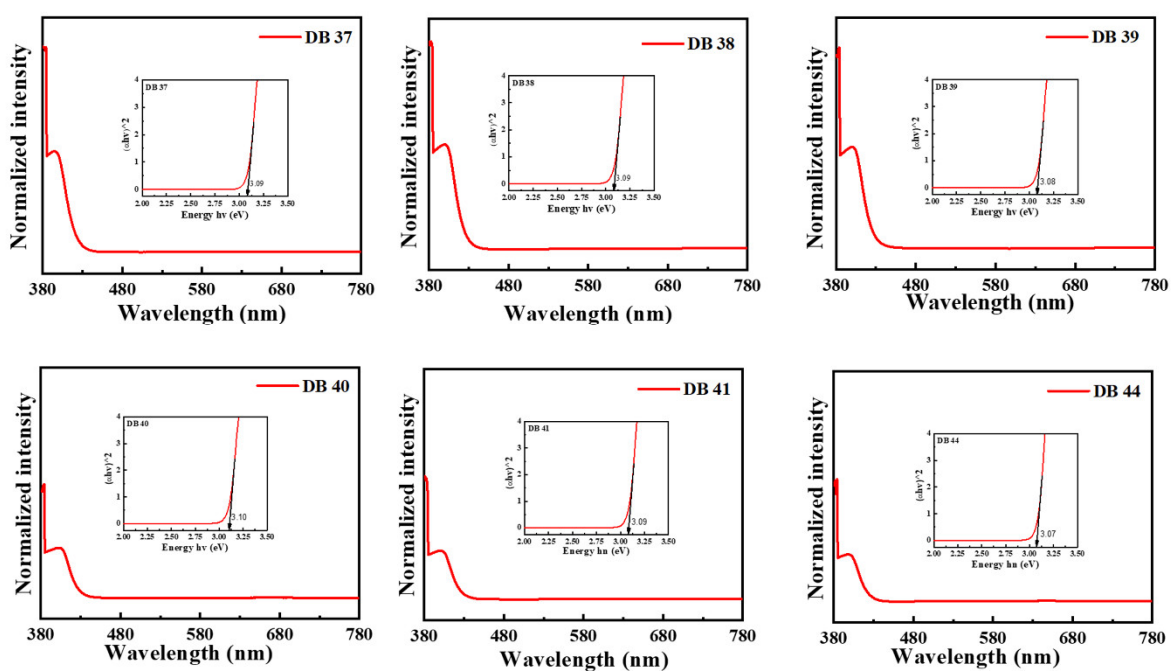


Figure S2. Ultraviolet-visible absorbance spectra and tauc plots (inset) of the compounds DB37 – DB41 and DB44.

3. Triplet energy

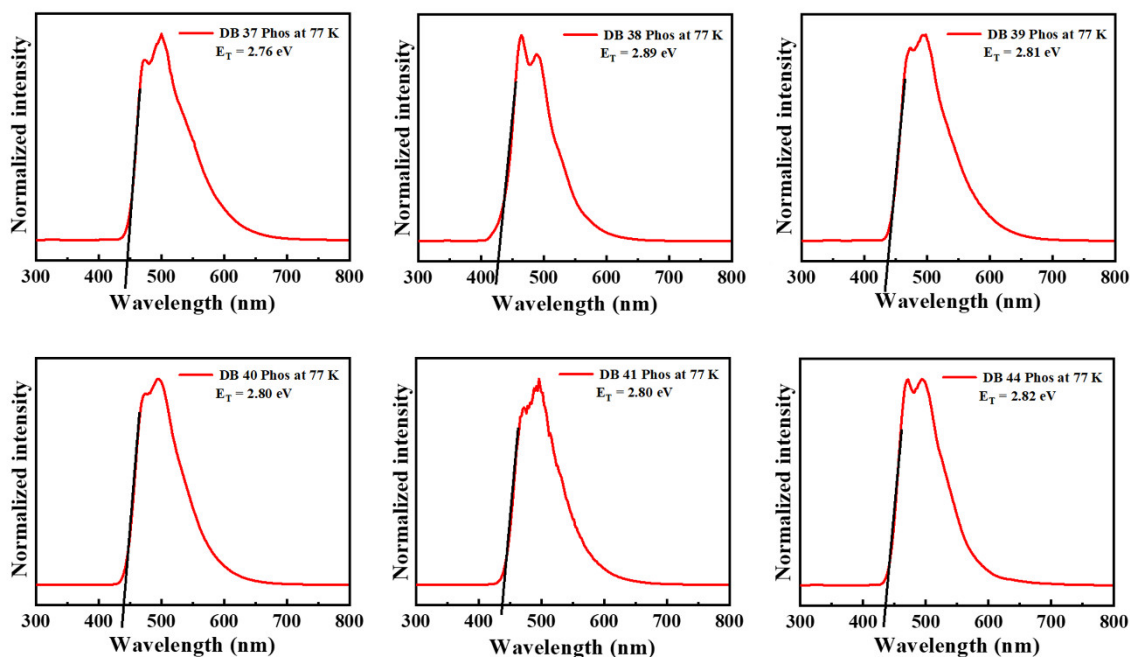


Figure S3. LTPL spectra of the derivatives DB37, DB38, DB39, DB40, DB41 and DB44 at 77K of the compounds.

4. Electroluminescent properties

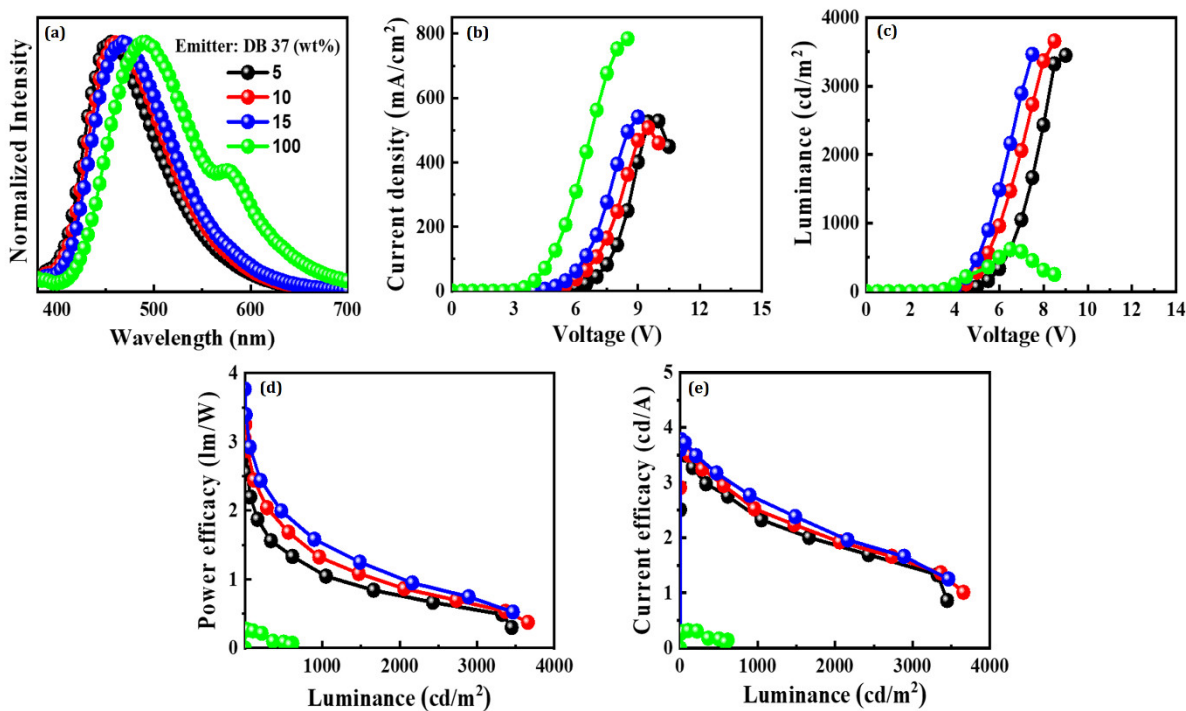


Figure S4. The electroluminescent (EL) properties of the device with emitter DB37 doped in CBP host matrix at varying concentrations showing (a) EL spectra, (b) current density–voltage, (c)

luminance–voltage, (d) power efficacy–luminance, and (e) current efficacy–luminance characteristics.

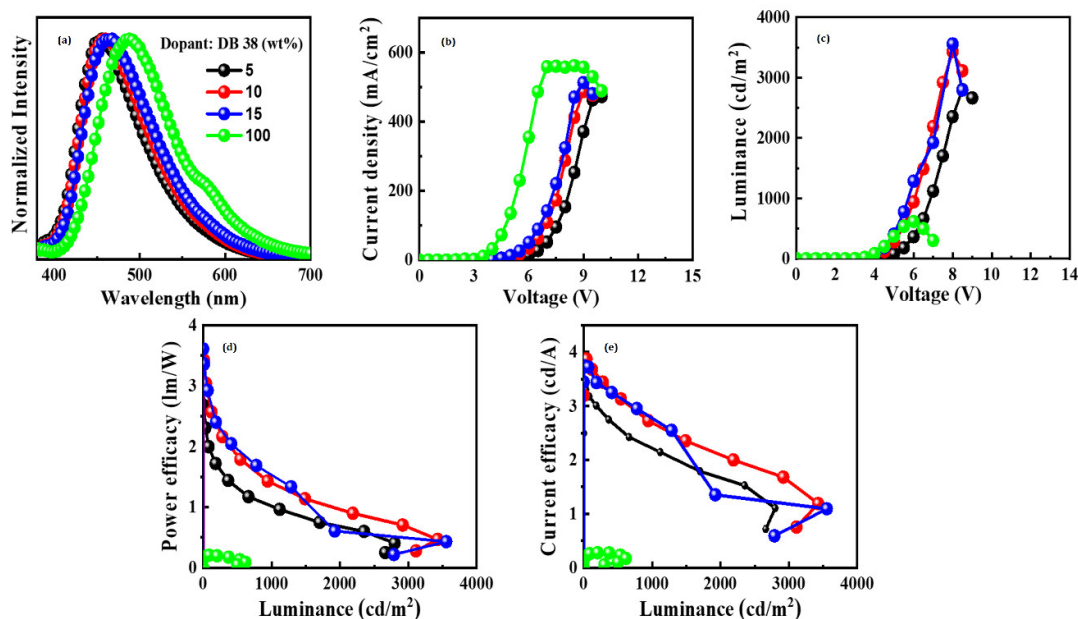


Figure S5. The electroluminescent (EL) properties of the device with emitter DB38 doped in CBP host matrix at varying concentrations showing (a) EL spectra, (b) current density–voltage, (c) luminance–voltage, (d) power efficacy–luminance, and (e) current efficacy–luminance characteristics.

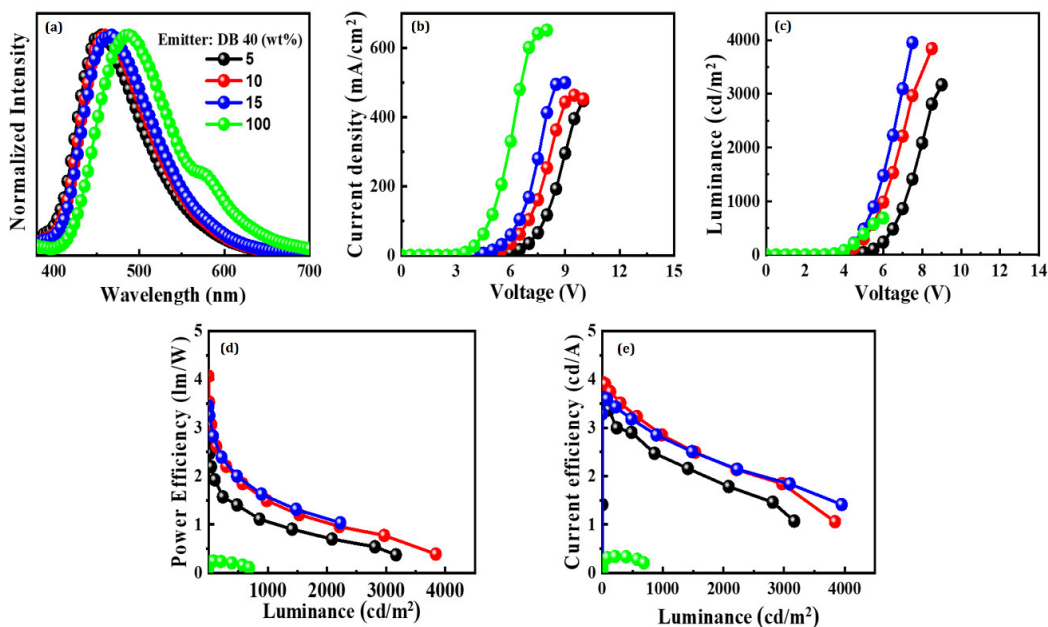


Figure S6. The electroluminescent (EL) properties of the device with emitter DB40 doped in CBP host matrix at varying concentrations showing (a) EL spectra, (b) current density–voltage, (c) luminance–voltage, (d) power efficacy–luminance, and (e) current efficacy–luminance characteristics.

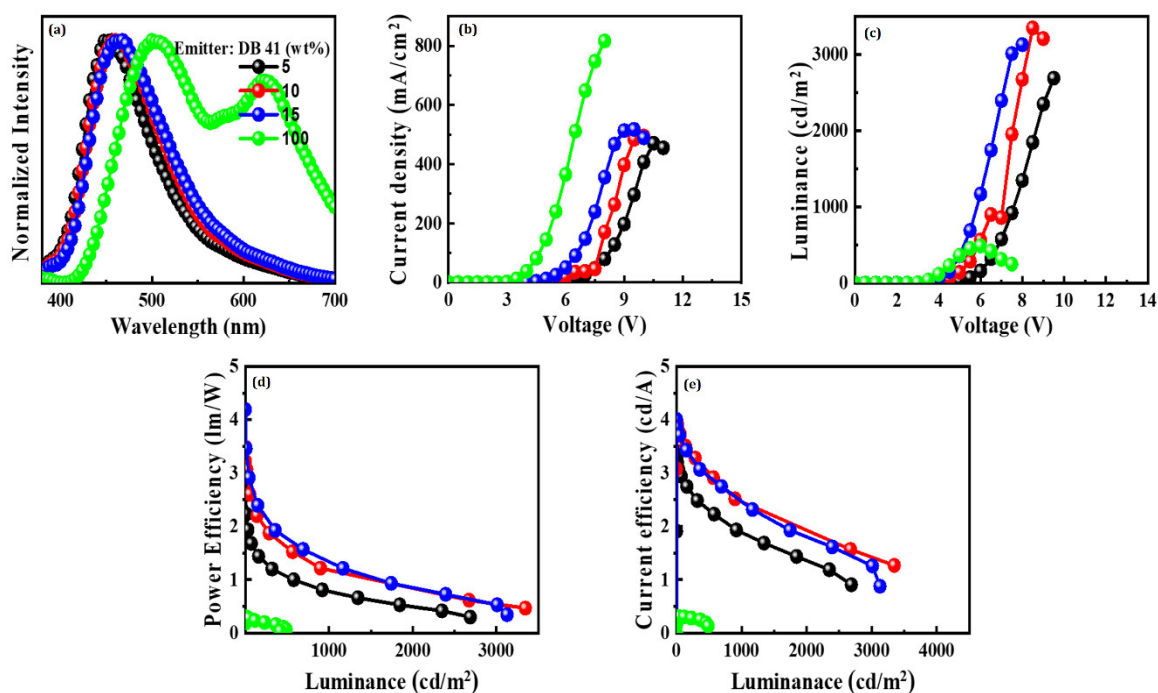


Figure S7. The electroluminescent (EL) properties of the device with emitter DB41 doped in CBP host matrix at varying concentrations showing (a) EL spectra, (b) current density–voltage, (c) luminance–voltage, (d) power efficacy–luminance, and (e) current efficacy–luminance characteristics.

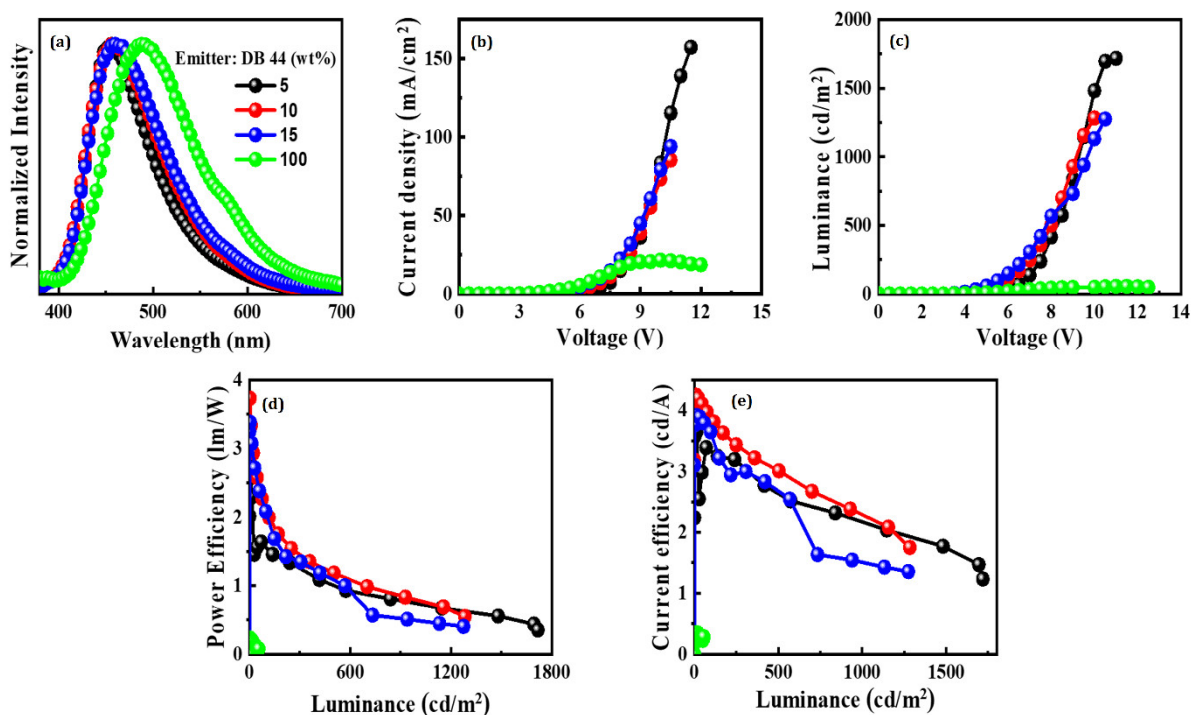


Figure S8. The electroluminescent (EL) properties of the device with emitter DB44 doped in CBP host matrix at varying concentrations showing (a) EL spectra, (b) current density–voltage, (c) luminance–voltage, (d) power efficacy–luminance, and (e) current efficacy–luminance characteristics.