Supporting Information

Blue Emitting and Hole-Transporting Materials Based on Bis(4-diphenylaminophenyl)fluorenes for Efficient Electroluminescent Devices

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Synthesis of 2,7-Dibromo-9, 9-bis(4-diphenylaminophenyl)fluorene (2)

A mixture of 2, 7-dibromofluorenone (2.57 g, 6.79 mmol), triphenylamine (16.67 g, 67.99 mmol), and methanesulfonic acid (0.45 ml) was heated at 190 °C for 6 h. The cooled mixture was poured into water. The greenish precipitate was filtered, washed with water and dried to afford crude compound 3. Purification by column chromatography using silica gel eluting with a mixture of CH₂Cl₂ and hexane followed by recrystallized from methanol/CH₂Cl₂ afforded light white solids (3.72 g, 61%); ¹H NMR (300.13 MHz, CDCl₃) δ 6.99 ppm (4H, d, J = 9.01 Hz), 7.00 (8H, t, J = 9.01 Hz), 7.09 (8H, d, J = 9.01 Hz), 7.26 (8H, t, J = 9.01 Hz), 7.55 (4H, t, J = 9.01 Hz), 7.58 (2H, d, J = 9.01 Hz); ¹³C NMR (75 MHz, CDCl₃) δ 64.65 ppm, 121.55, 121.76, 122.77, 123.06, 124.5, 124.68, 128.69, 129.27, 129.38, 130.82, 137.66, 137.98, 146.74, 147.52 and 153.47; HRMS m/z calcd for C₄₀H₃₄Br₂N₂, 808.1089; found, 809.1169 [MH⁺].
**Fig. S1** Multiple CV scan curves of BPTF and BTTF measured in CH$_2$Cl$_2$ at a scan rate of 50 mV s$^{-1}$.

**Fig. S2** Band energy diagram of the OLED devices.
Fig. S3 Normalized EL spectra of OLED devices under different applied voltages.
Fig. S4 $^1$H-NMR, $^{13}$C-NMR and Mass spectra of BTTF, TPTF, 3 and BPTF.
Single Mass Analysis

Tolerance = 200.0 mDa / DBE: min = -1.5, max = 50.0
Isotope cluster parameters: Separation = 1.0  Abundance = 1.0%

Monoisotopic Mass, Odd and Even Electron Ions
1 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

TEST2
TS_S106_VP010 2 293 (5.511) AM (Cen,4, 80.00, Ar,10000.0,734.47,0.00); Cm (290:298)

% 100

734.4690 756.4299 772.4204 816.4139 834.4066 893.3567 897.3668 907.3417 933.3270 971.4304
720 740 760 780 800 820 840 860 880 900 920 940 960

ms