

Electronic Supporting Information (ESI)

Star-shaped hexakis(9,9-dihexyl-9H-fluoren-2-yl)benzene end-capped with carbazole and diphenylamine: solution-processable, high T_g hole-transporting materials for organic light-emitting devices

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Table S1. Crystal data for compound **HFB-Cz**

Empirical formula	C ₂₂₈ H ₂₄₀ N ₆ • 4(C ₇ H ₈)
Formula weight	3432.80
Crystal system	triclinic
Space group	<i>P1</i>
Unit cell dimensions	
a (Å)	12.983(4)
b (Å)	17.325(5)
c (Å)	25.312(7)
alpha (deg.)	106.990(5)
beta (deg.)	97.554(5)
gamma (deg.)	105.072(5)

Volume(Å ³)	5123(2)
Z	1
D _{cal} (g/cm ³)	1.113
μ(mm ⁻¹)	0.063
F(000)	1850.0
Final R indices [<i>I</i> > 2σ(<i>I</i>)]	<i>R</i> _{<i>I</i>} = 0.1047, <i>wR</i> ₂ = 0.2995
R indices (all)	<i>R</i> _{<i>I</i>} = 0.1385, <i>wR</i> ₂ = 0.3382
Goodness-of-fit on <i>F</i> ²	1.331
CCDC number	896094

Table S2. Crystal data for compound **HFB-Dpa**

Empirical formula	C ₂₂₈ H ₂₅₂ N ₆ • 4(C ₇ H ₈)
Formula weight	3444.89
Crystal system	triclinic
Space group	<i>P</i> 1
Unit cell dimensions	
a (Å)	17.370(2)
b (Å)	17.526(2)

c (Å)	19.152(2)
alpha (deg.)	111.516(2)
beta (deg.)	95.702(2)
gamma (deg.)	104.294(2)
Volume(Å ³)	5138.3(10)
Z	1
D _{cal} (g/cm ³)	1.113
μ(mm ⁻¹)	0.063
F(000)	1862.0
Final R indices [<i>I</i> > 2σ(<i>I</i>)]	<i>R</i> _{<i>I</i>} = 0.1317, <i>wR</i> ₂ = 0.3724
R indices (all)	<i>R</i> _{<i>I</i>} = 0.1729, <i>wR</i> ₂ = 0.4097
Goodness-of-fit on <i>F</i> ²	1.551
CCDC number	896095

$$R_1 = [\Sigma(|F_o| - |F_o|) / \Sigma|F_o|];$$

$$wR_2 = [\Sigma[w(|F_o|^2 - |F_o|^2)^2] / \Sigma[w(|F_o|^2)^2]^{1/2},$$

$$w = 1 / [\sigma^2|F_o|^2 + (xp)^2 + yp]; \text{ where } p = [|F_o|^2 + 2|F_o|^2] / 3.$$

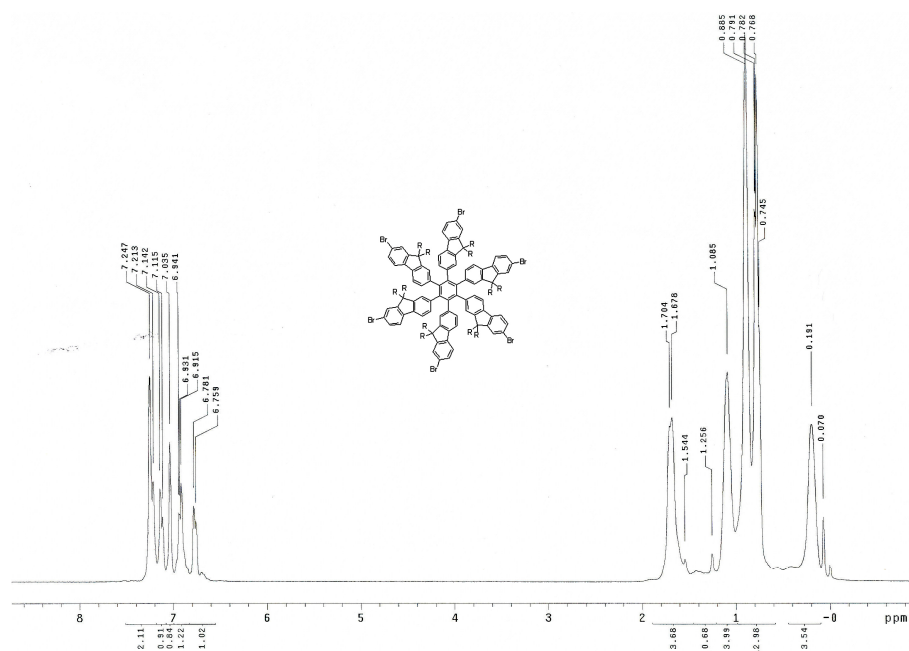


Fig. S1 ¹H NMR spectrum of 1,2,3,4,5,6-hexakis(7-bromo-9,9-dihexyl-9H-fluoren-2-yl)benzene

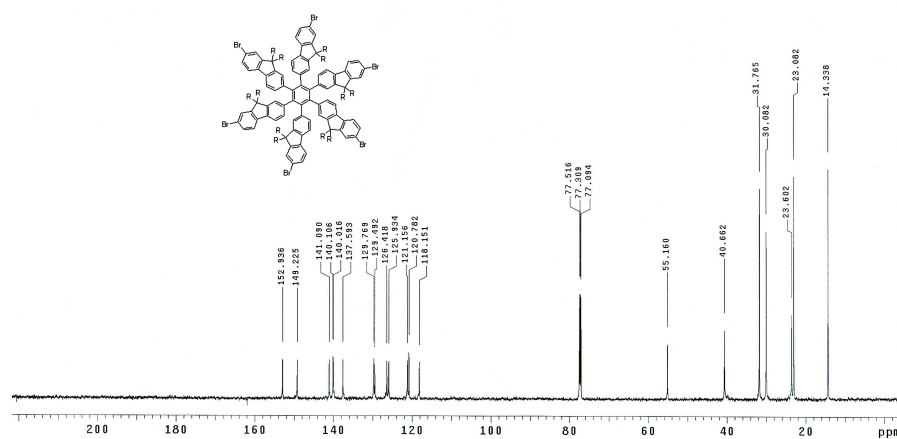


Fig. S2 ¹³C NMR spectrum of 1,2,3,4,5,6-hexakis(7-bromo-9,9-dihexyl-9H-fluoren-2-yl)benzene

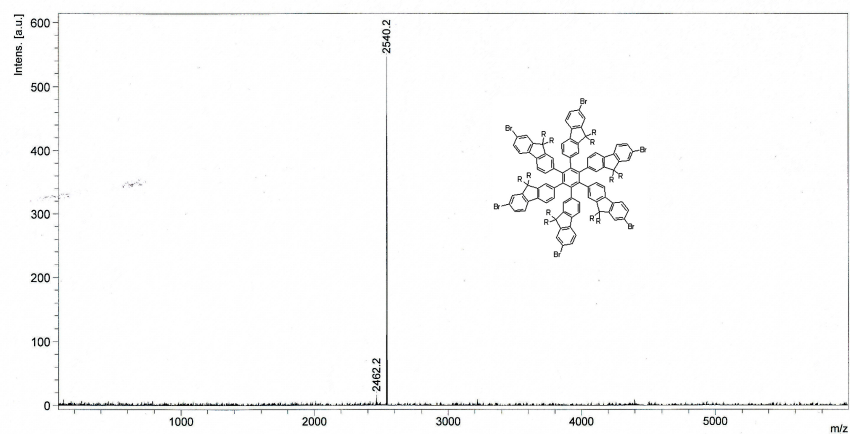


Fig. S3 MALDI-TOF MASS spectrum of

1,2,3,4,5,6-hexakis(7-bromo-9,9-dihexyl-9H-fluoren-2-yl)benzene

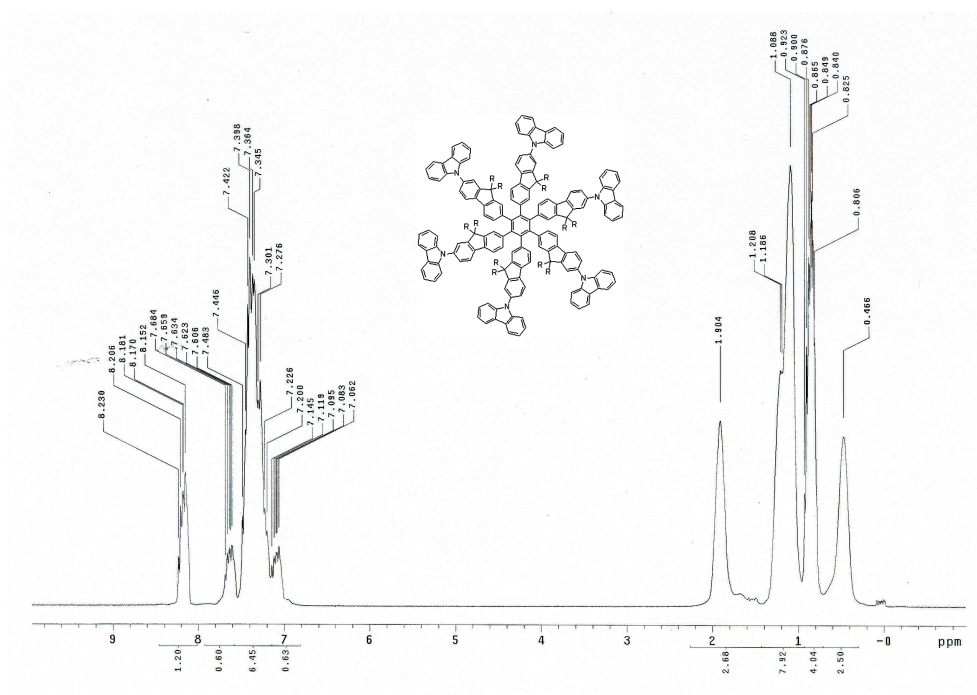


Fig. S4 ¹H NMR spectrum of **HFB-Cz**

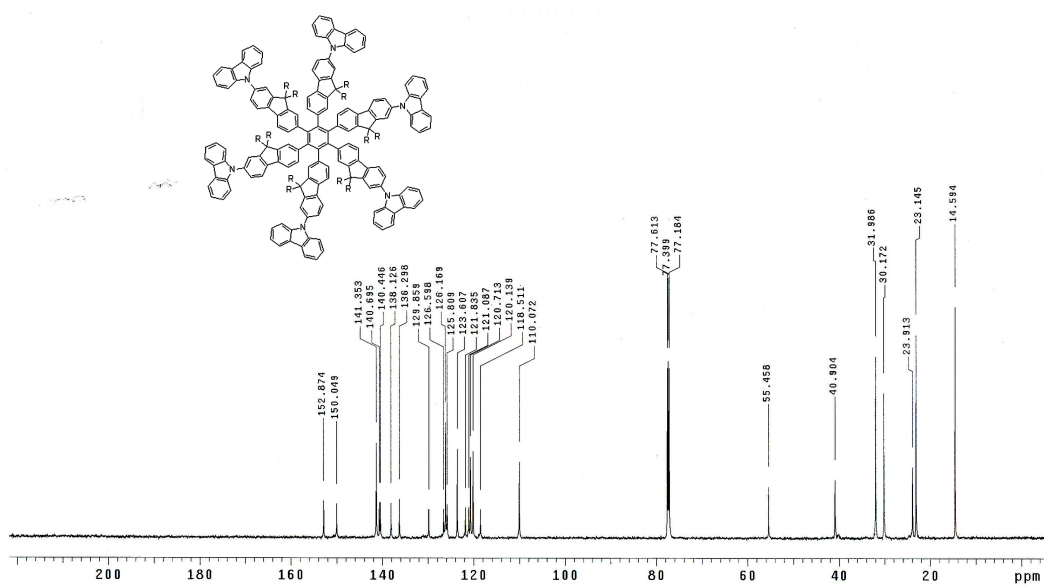


Fig. S5 ^{13}C NMR spectrum of **HFB-Cz**

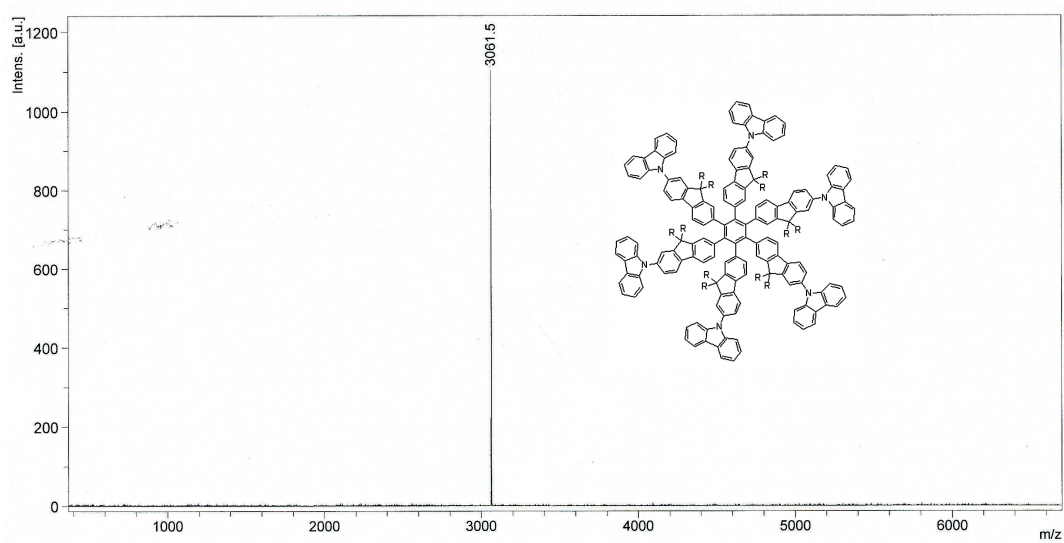


Fig. S6 MALDI-TOF MASS spectrum of **HFB-Cz**

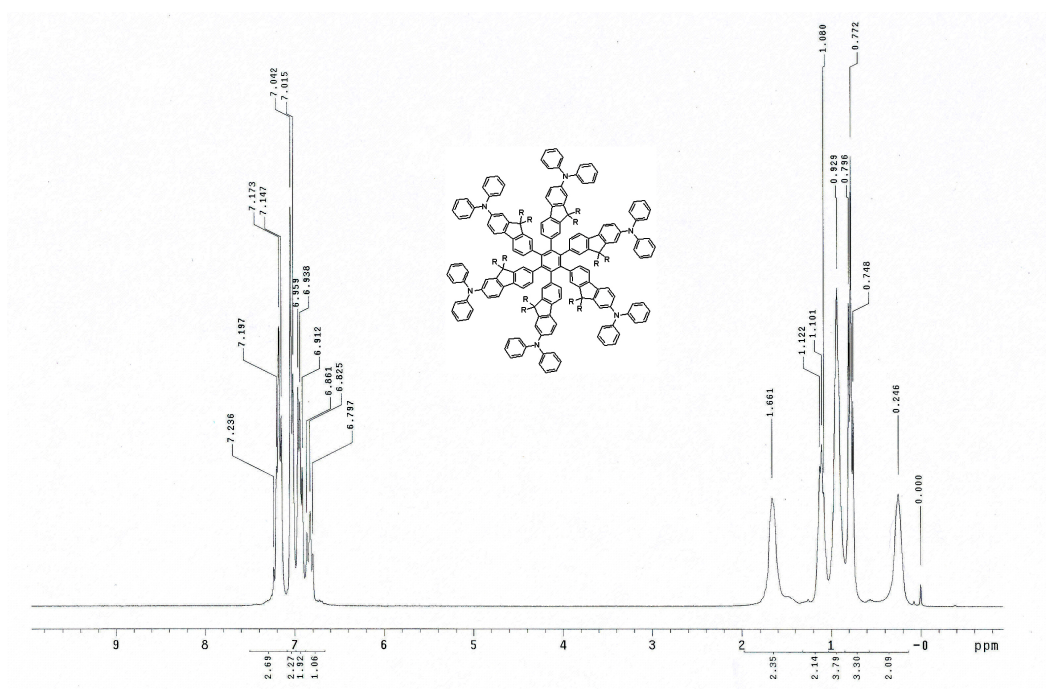


Fig. S7 ¹H NMR spectrum of HFB-Dpa

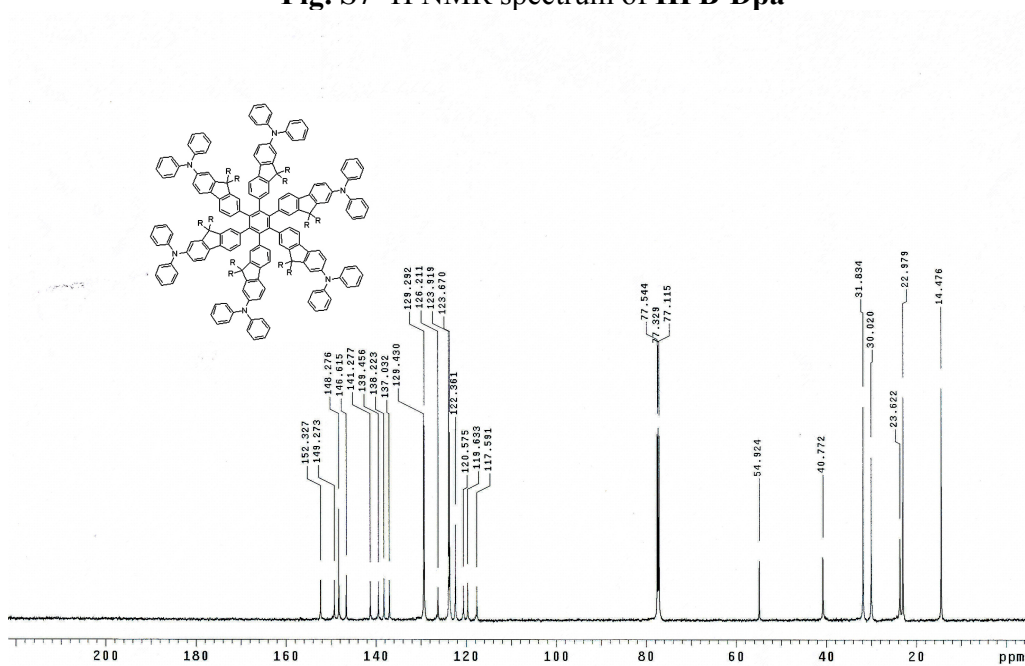


Fig. S8 ¹³C NMR spectrum of HFB-Dpa

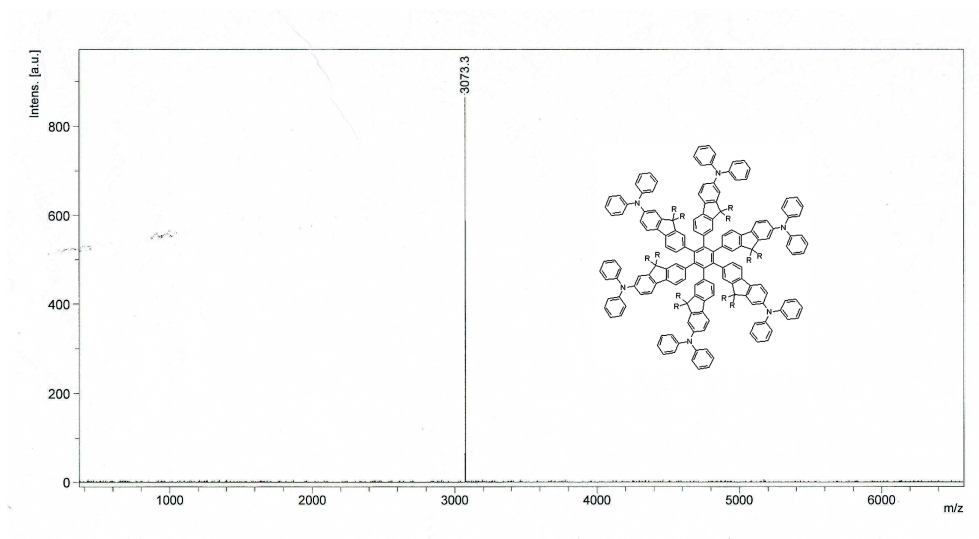


Fig. S9 MALDI-TOF MASS spectrum of **HFB-Dpa**