

Electronic Supplementary Information

New solution-processable carbazole derivatives as deep blue emitters for Organic Light-Emitting Diodes

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Fig. S1 ^1H NMR spectrum (400 MHz, d_6 -acetone) of compound **1**.

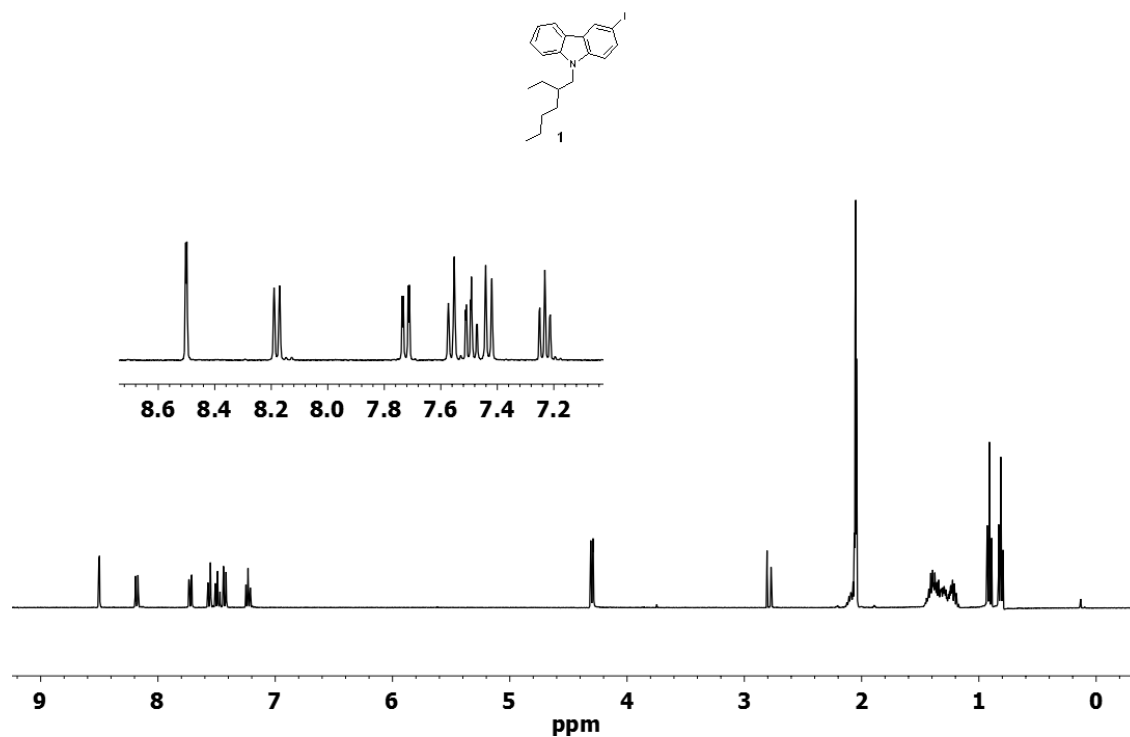


Fig. S2 ^1H NMR spectrum (400 MHz, d_6 -acetone) of compound **2**.

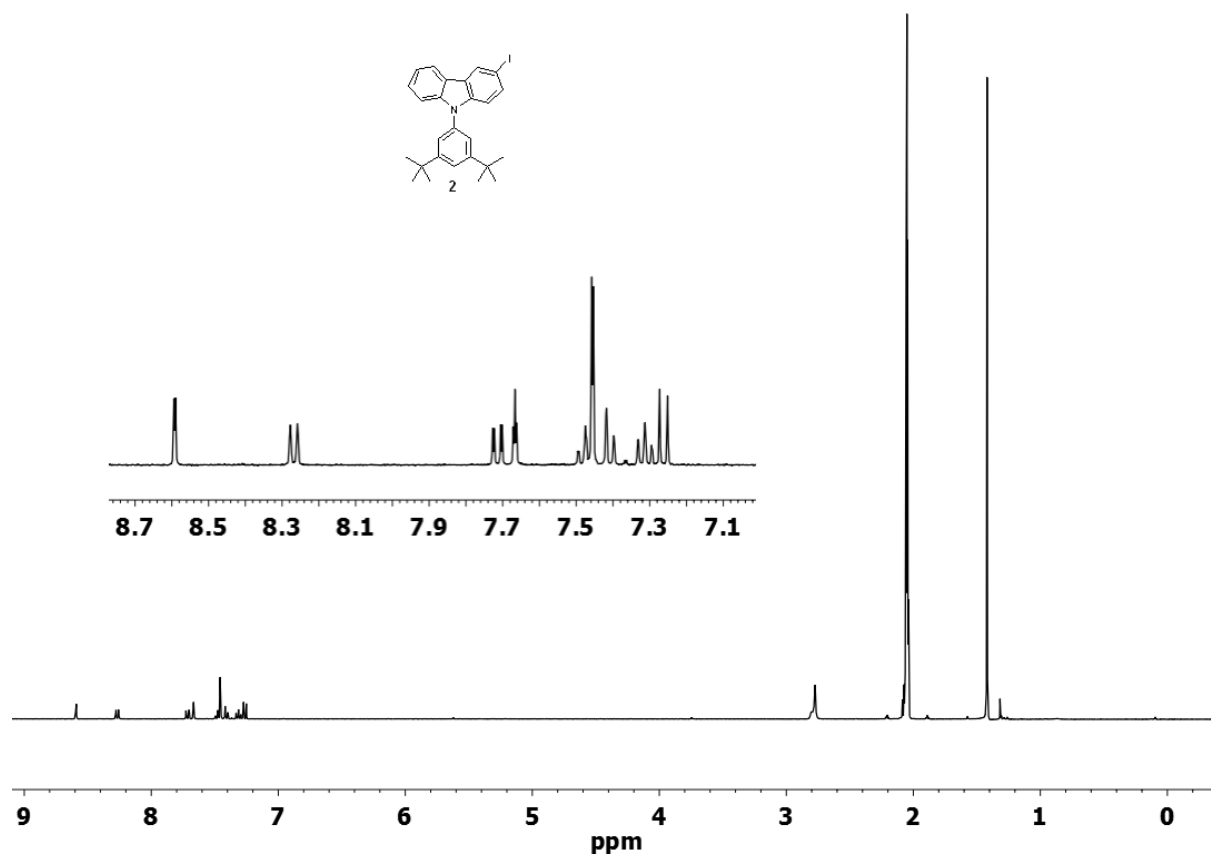


Fig. S3 ^{13}C NMR spectrum (100 MHz, d_6 -acetone) of compound **2**.

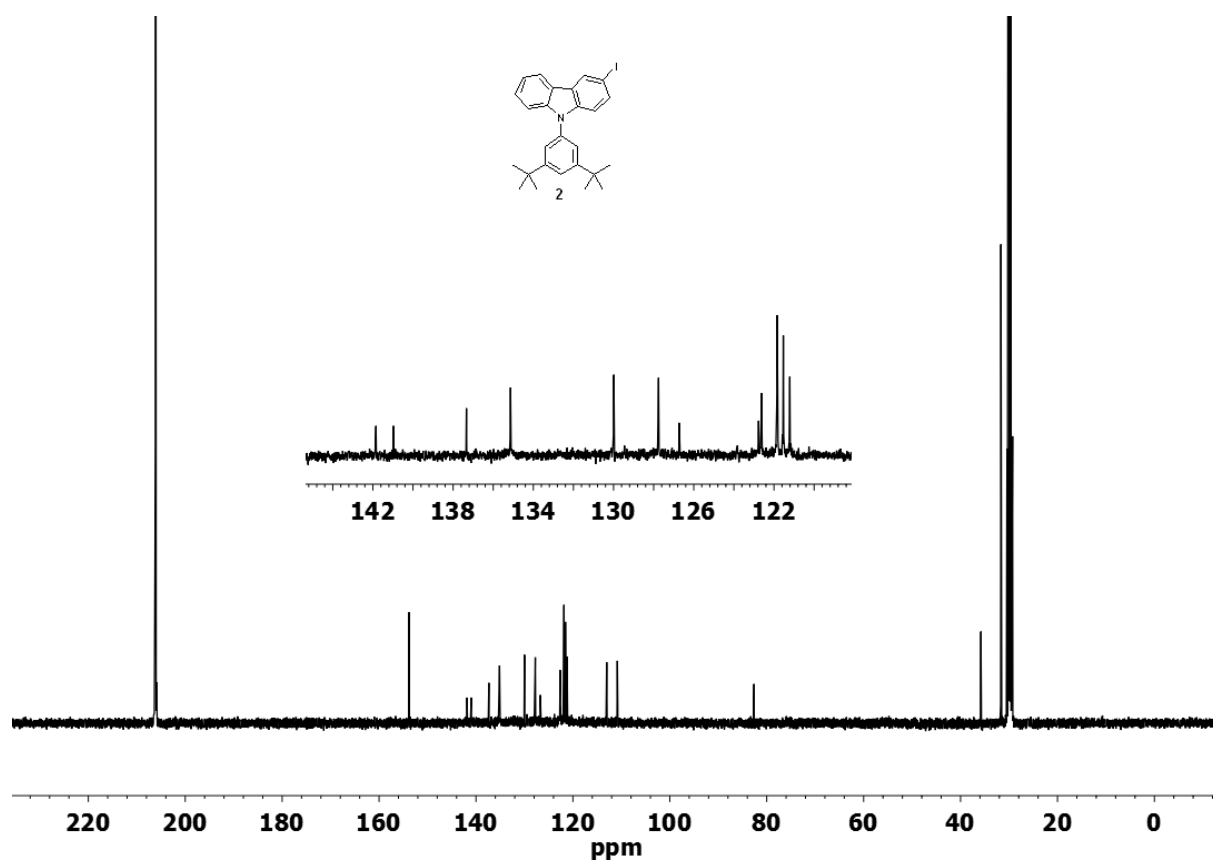


Fig. S4 HRMS (ESI-MS) of compound **2**.

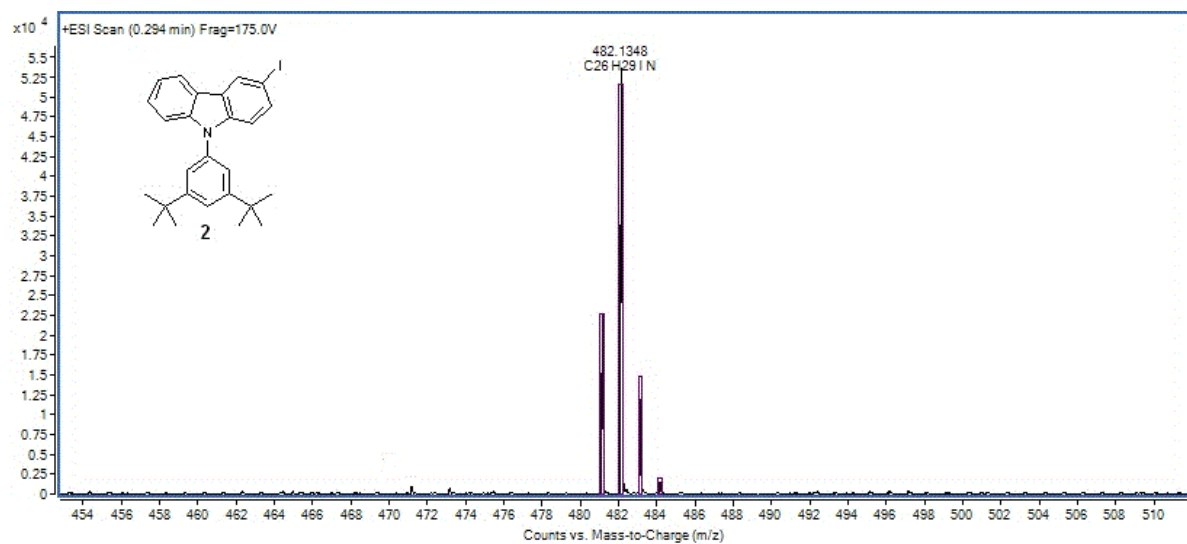


Fig. S5 ^1H NMR spectrum (400 MHz, d_6 -acetone) of compound **3a**.

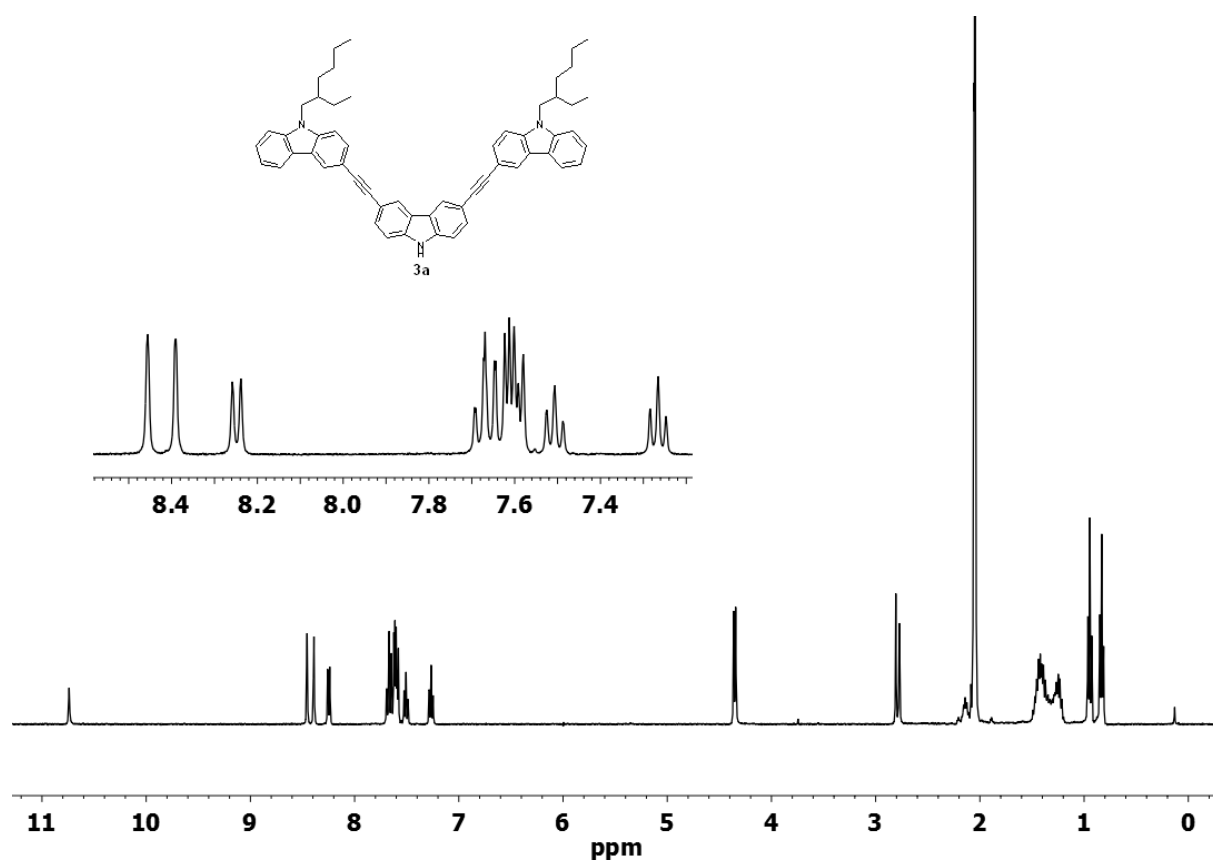


Fig. S6 ^{13}C NMR spectrum (100 MHz, CDCl_3) of compound **3a**.

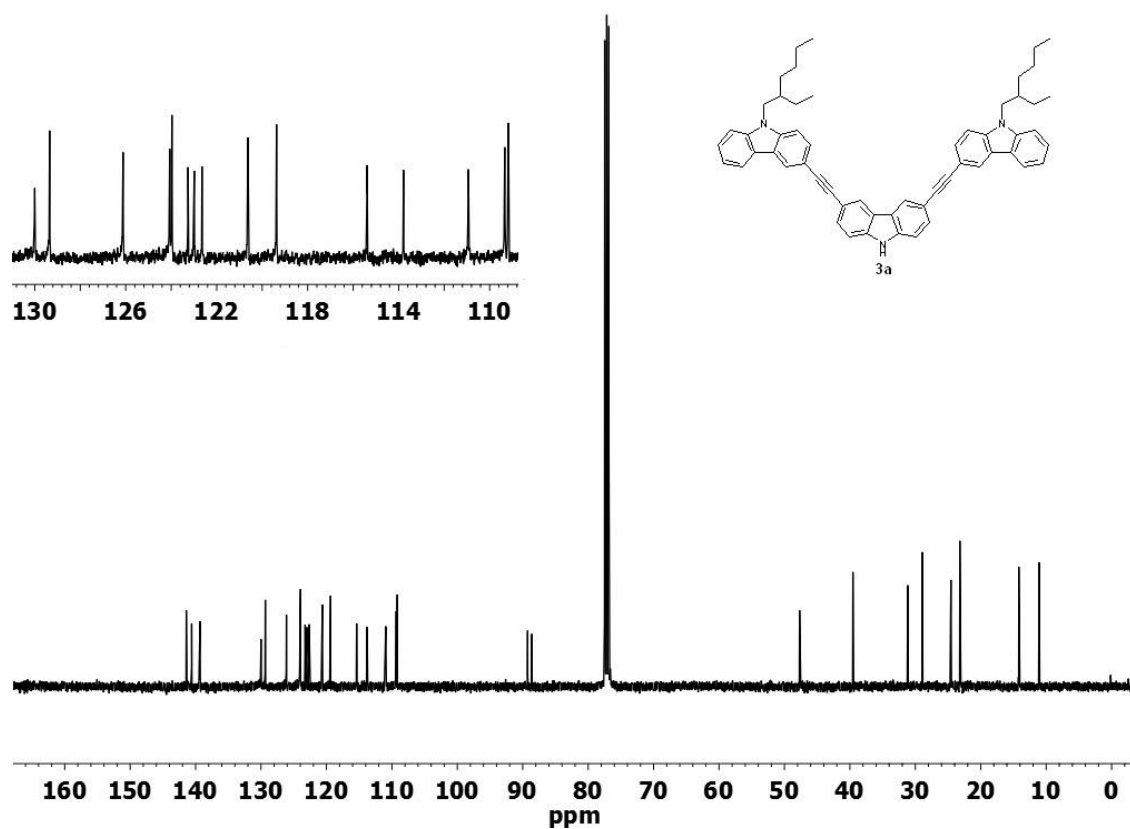


Fig. S7 HRMS spectrum (ESI-MS) of compound **3a**.

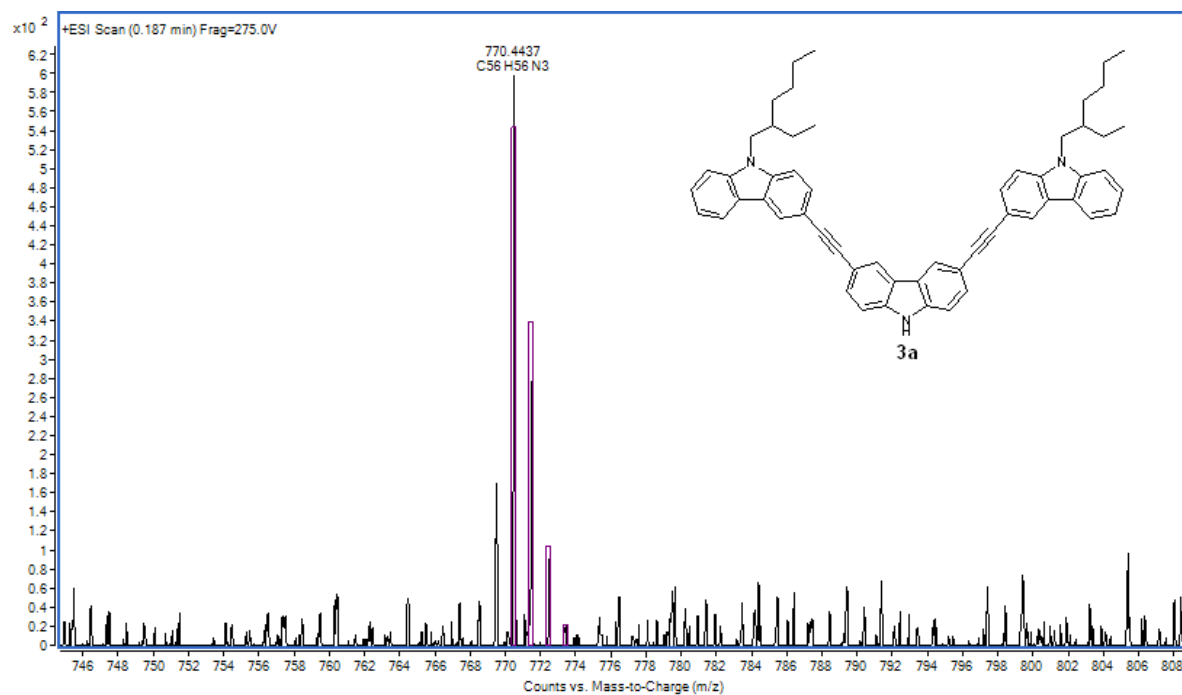


Fig. S8 ¹H NMR spectrum (400 MHz, *d*₆-acetone) of compound **3b**.

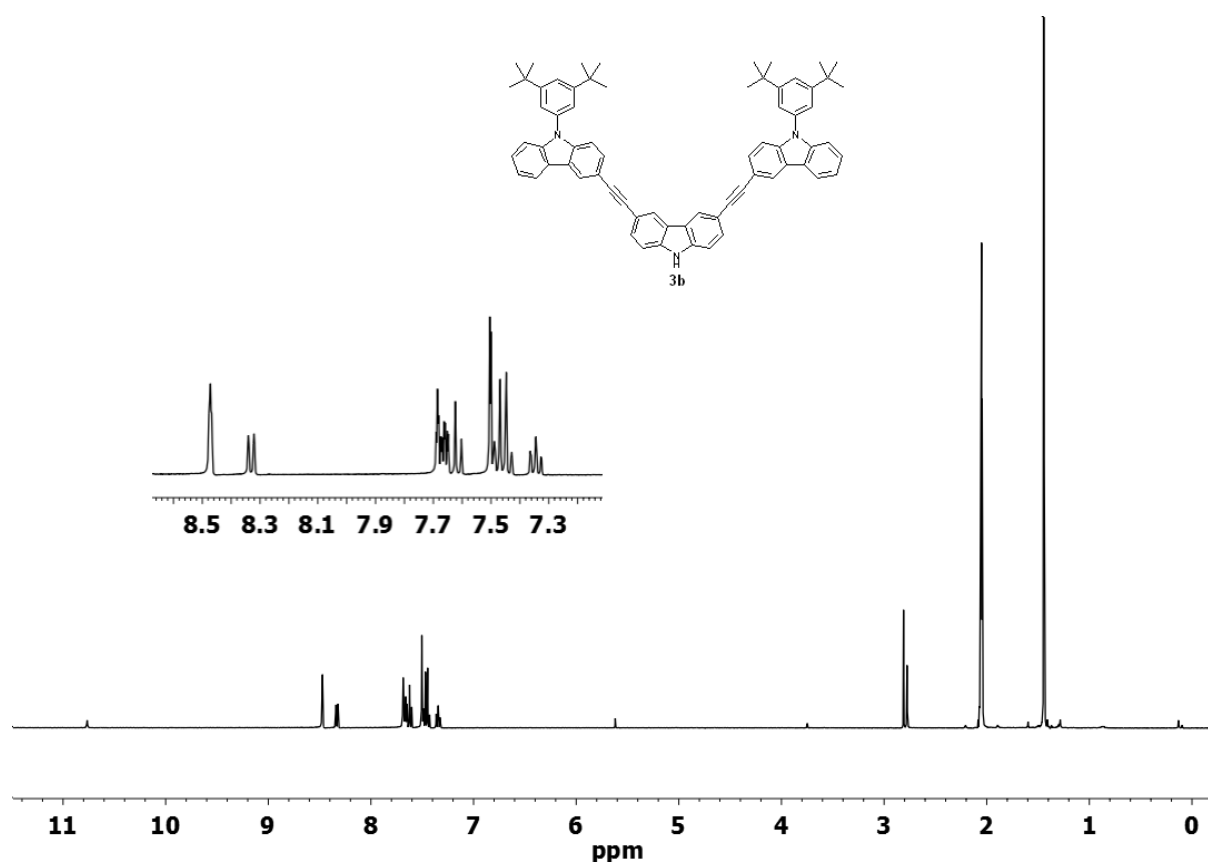


Fig. S9 ^{13}C NMR spectrum (100 MHz, d_6 -acetone) of compound **3b**.

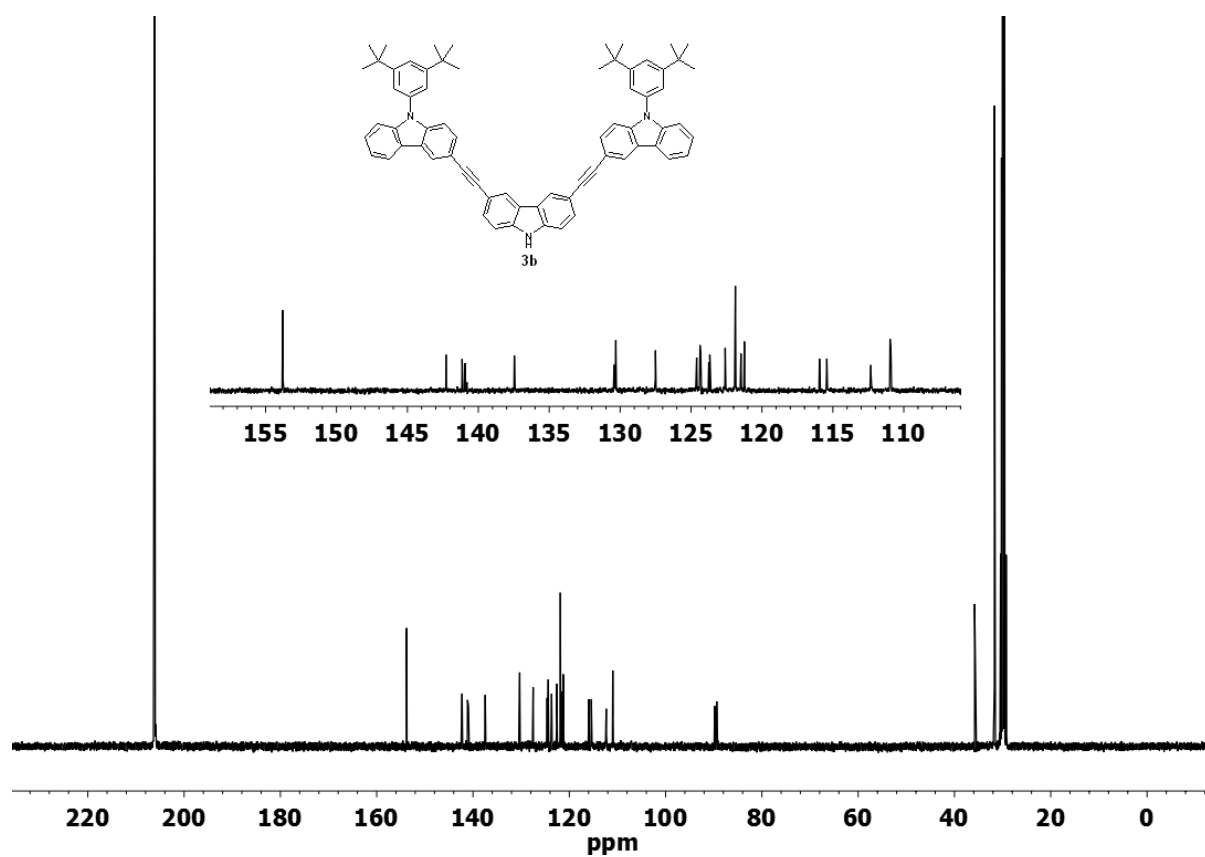


Fig. S10 MS (MALDI-TOF) of compound **3b**.

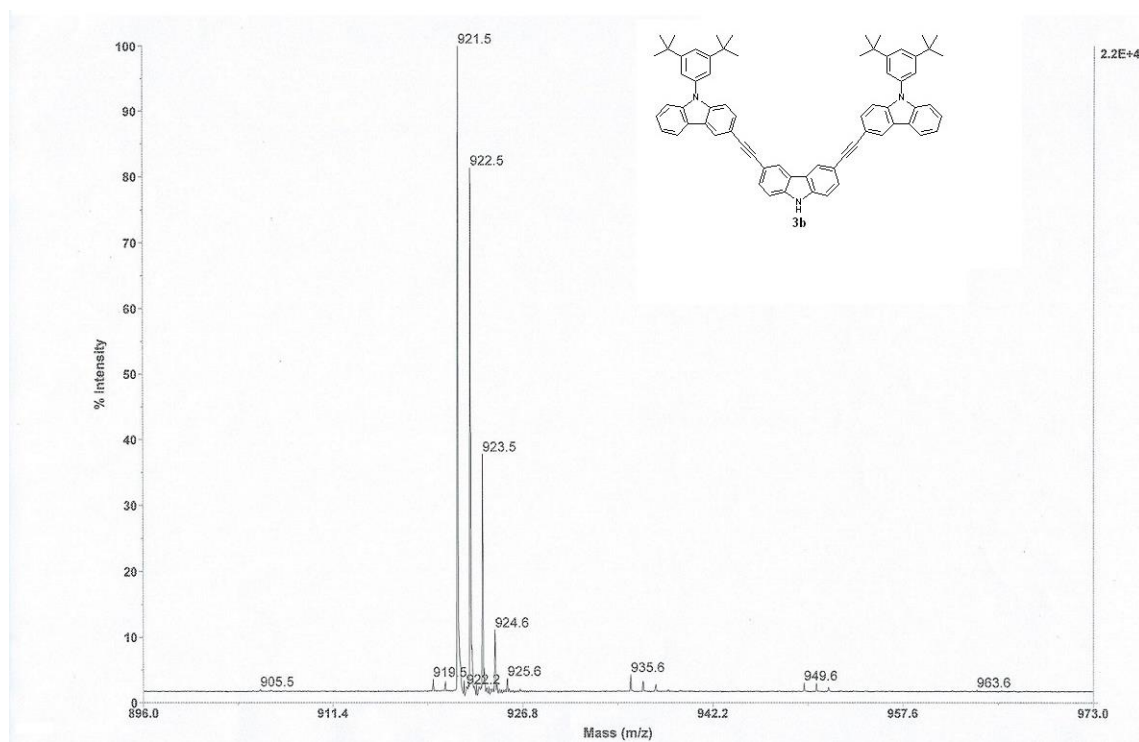


Fig. S11 ^1H NMR spectrum (400 MHz, d_6 -acetone) of compound **4**.

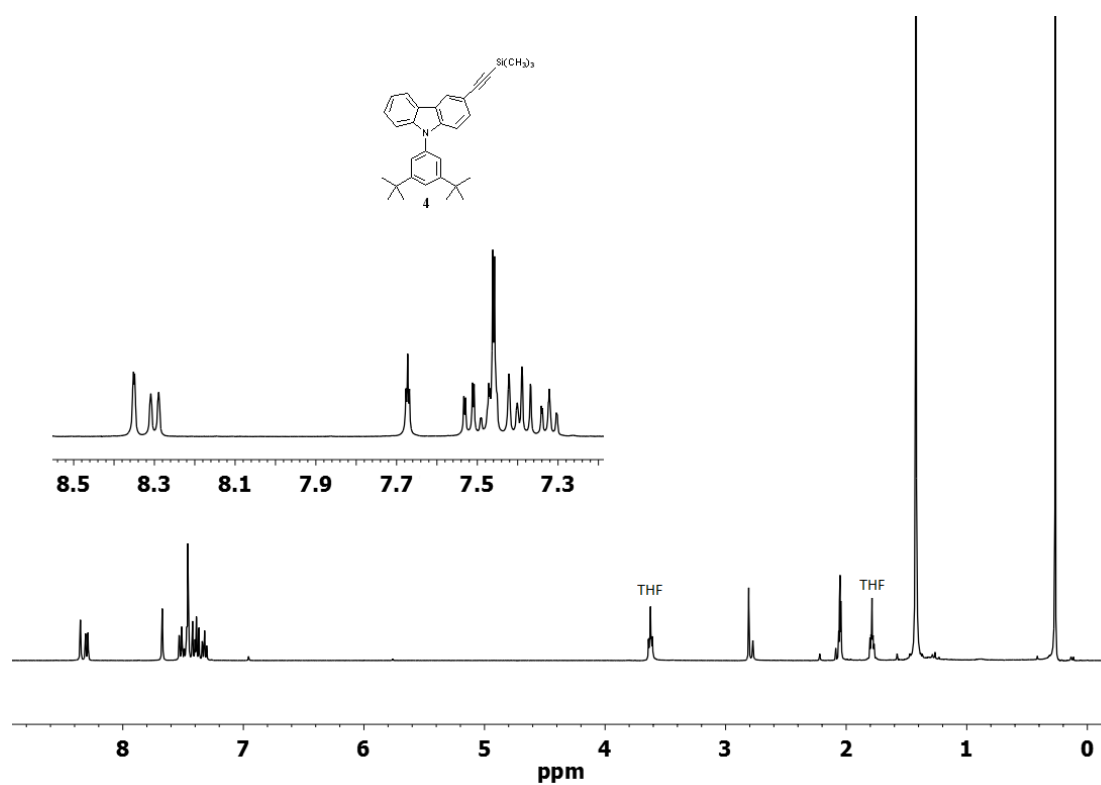


Fig. S12 ^{13}C NMR spectrum (100 MHz, d_6 -acetone) of compound **4**.

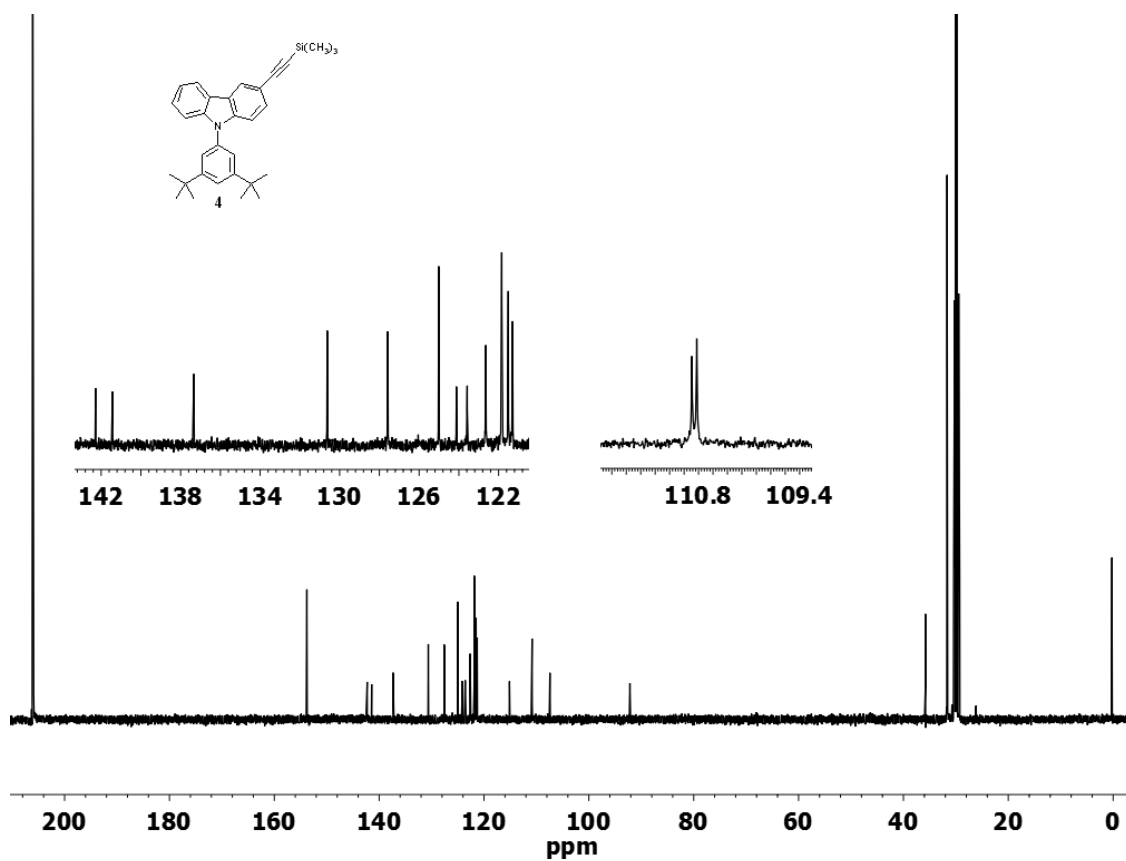


Fig. S13 HRMS spectrum (ESI-MS) of compound **4**.

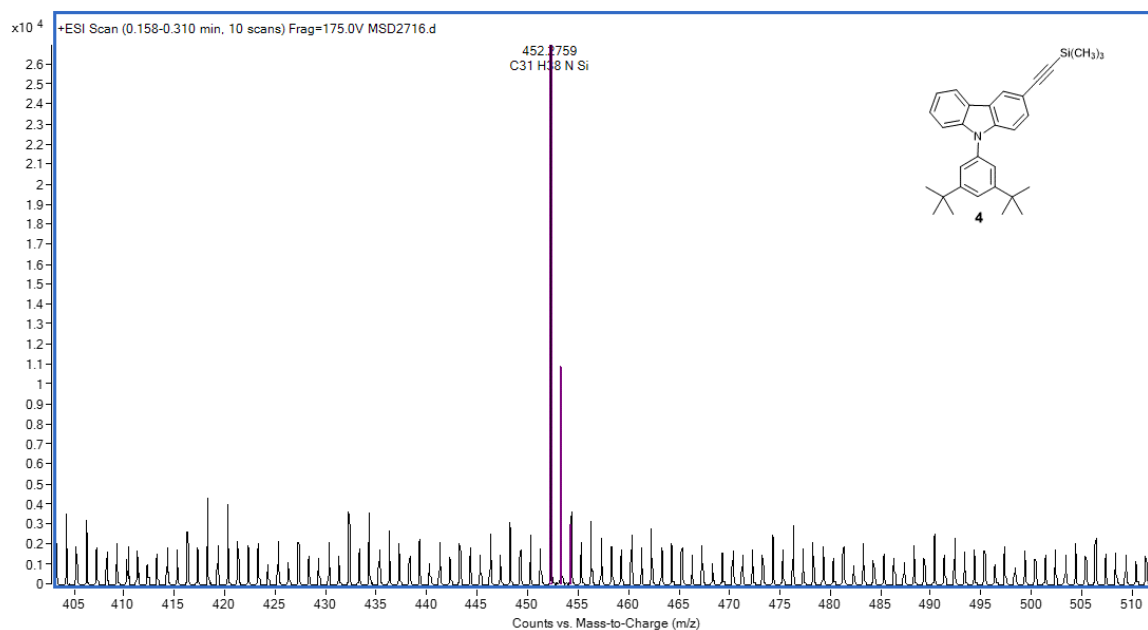


Fig. S14 ¹H NMR spectrum (400 MHz, d₆-acetone) of compound **5**.

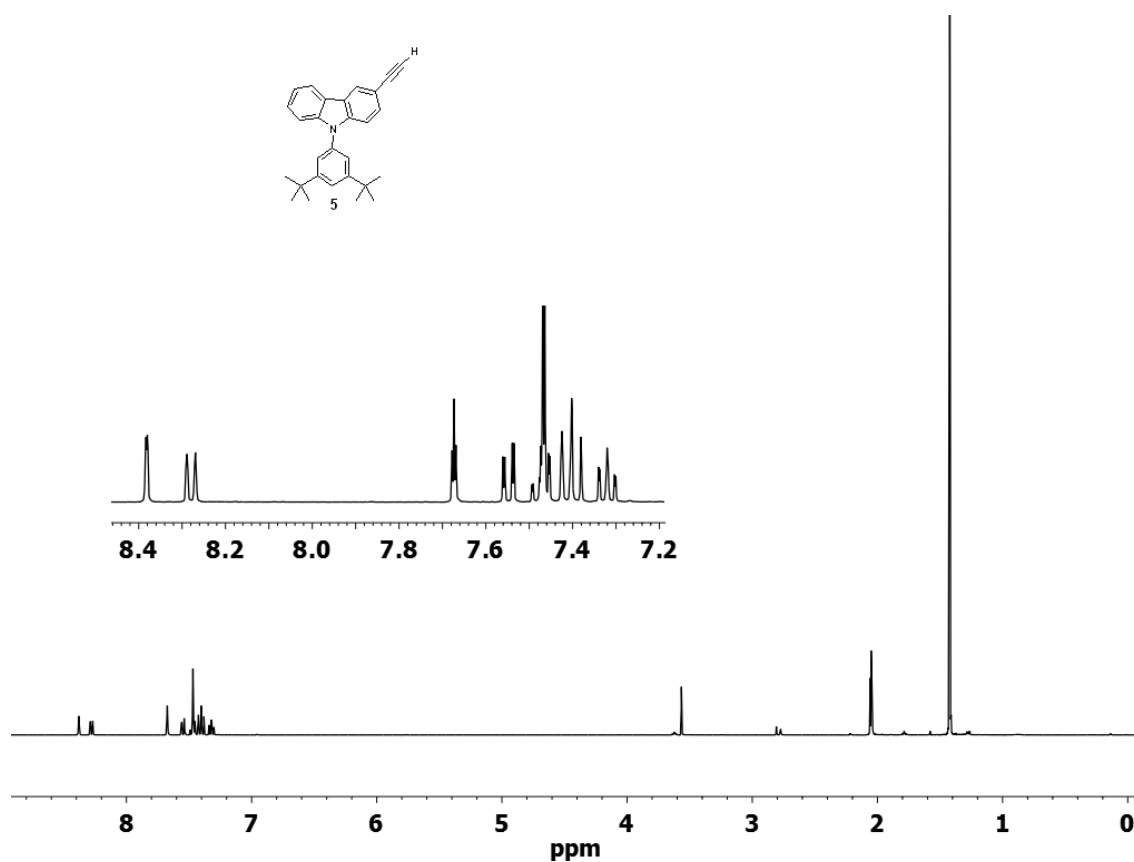


Fig. S15 ^{13}C NMR (100 MHz, d_6 -acetone) of compound **5**.

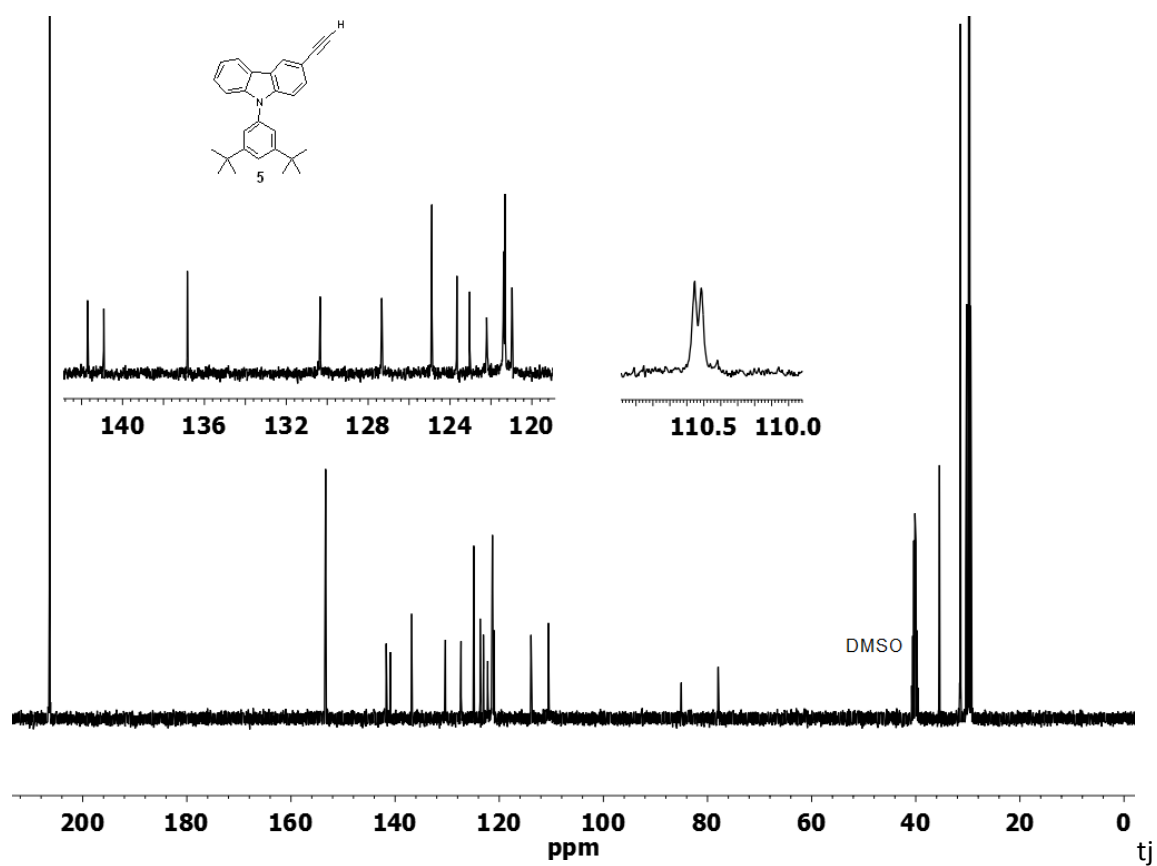


Fig. S16 HRMS (ESI-MS) of compound **5**.

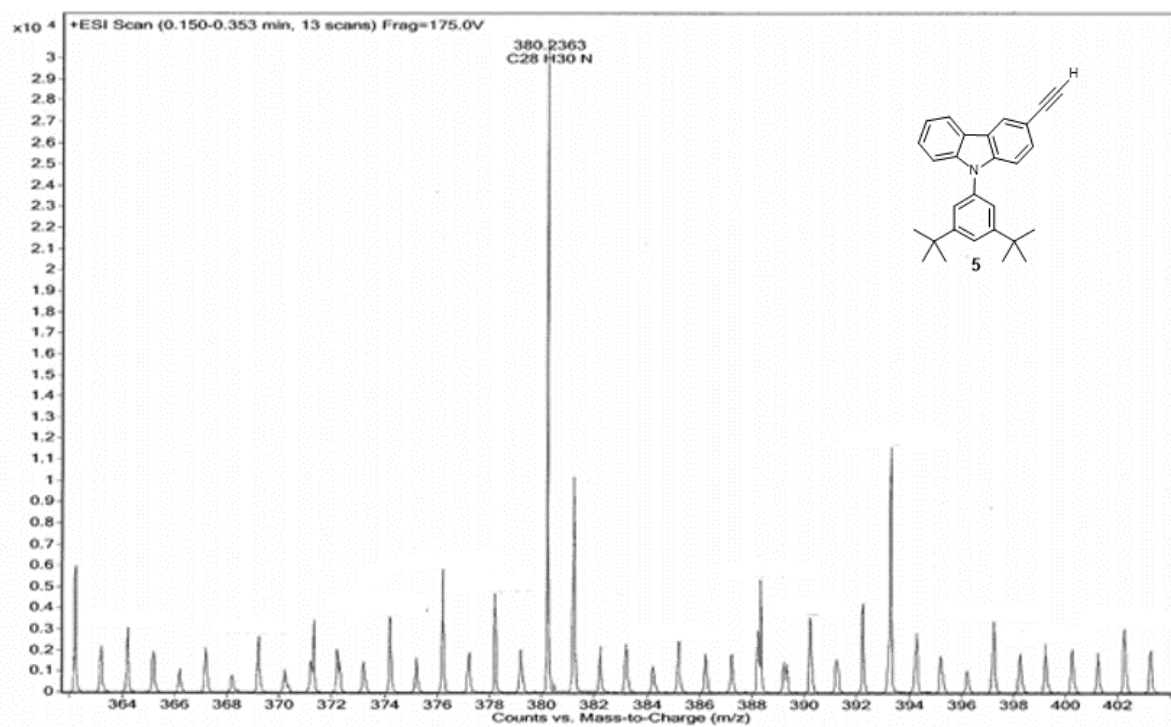


Fig. S17 Cyclic voltammograms of compounds a) **3a** and b) **3b** in dichloromethane solutions with Ag/AgCl as the reference electrode.

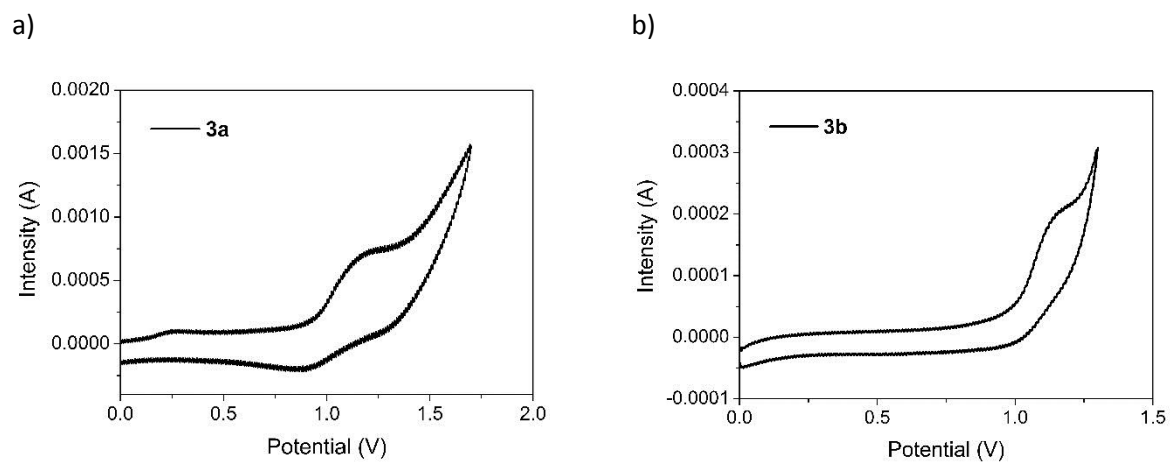


Fig. S18 Electric field dependencies of hole drift mobilities of the amorphous films of **3a**.

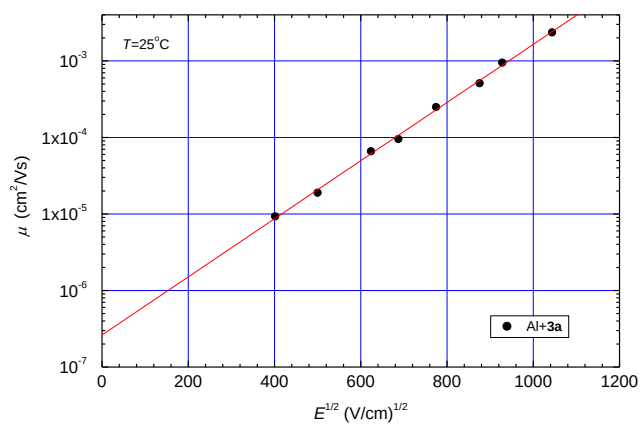


Table S1 Average values (over a population of 8 diodes each) of OLED devices based on compound **3a**.

solvent ^a	d (nm) ^b	V _t (V) ^c	L _{max} (cd/m ²) ^d	η _c (cd/A) ^e
CB	25	2.82	30.47	0.07
CB	30	2.70	34.68	0.07
CB	40	2.92	37.21	0.07
CB	50	3.30	37.23	0.15
CB	55	3.59	29.13	0.05
DCM	25	2.63	21.69	0.02
THF	25	2.60	25.94	0.03

^a Solvent used for preparing the **3a** based layer by spin-coating (CB: chlorobenzene, DCM: dichloromethane, THF: tetrahydrofuran). ^b Thickness of the **3a** based layer measured with a profilometer. ^c Turn-on-voltage defined as voltage corresponding to a luminance of 0.1 cd/m². ^d Maximum luminance. ^e Maximum current efficiency.

Fig. S19 Digital picture of an OLED device based on compound **3a** (luminance around 10 cd/m² at 3.5 V).

