

## Supporting Information

### Carbazole Based Linear Conjugated Molecules: Structure Property Relationship and Device Properties

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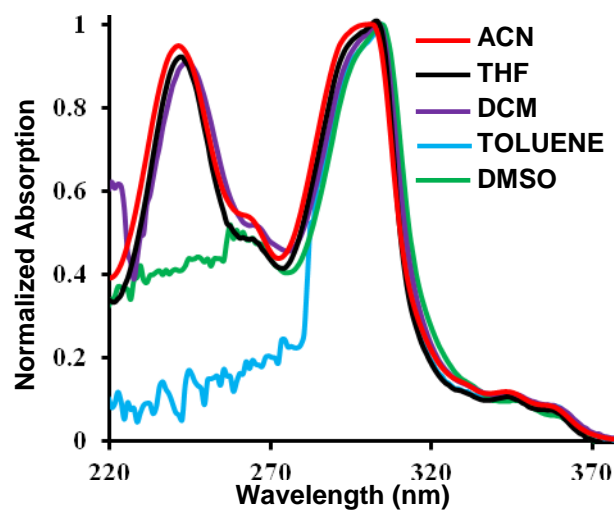
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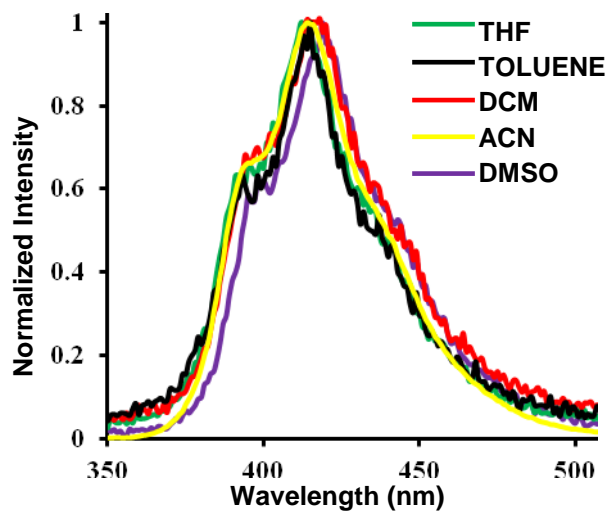
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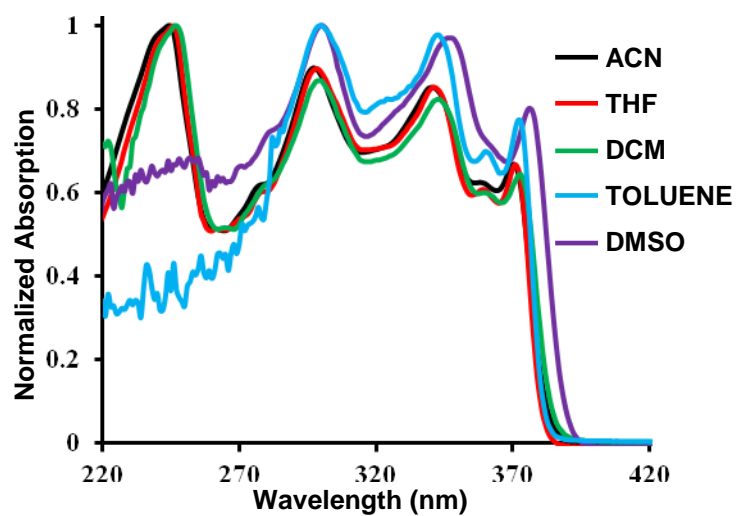
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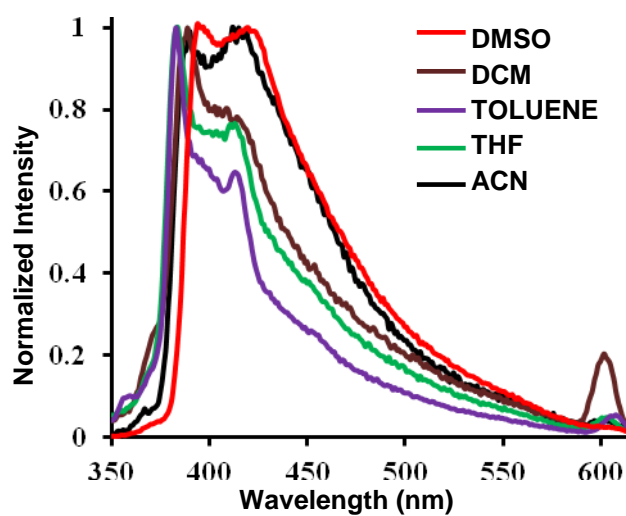
**Figure S1.** Normalized absorption spectra of compound **1** in different solvents



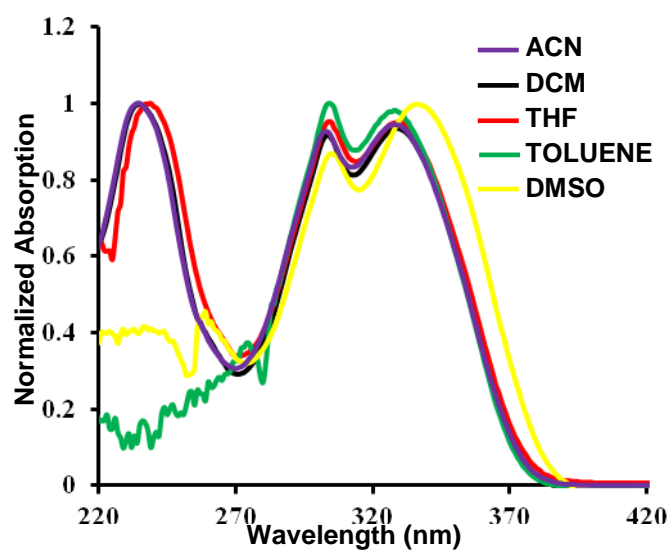
**Figure S2.** Normalized fluorescence spectra of compound **1** ( $\lambda_{\text{ex}} = \lambda_{\text{max}}$ ) in different solvents



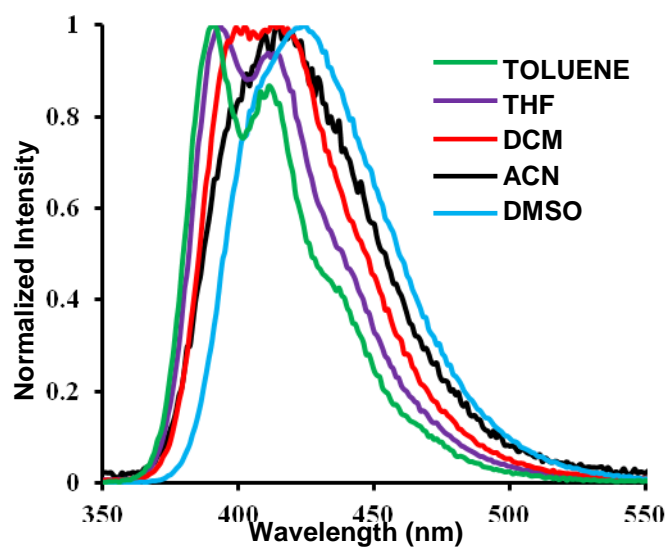
**Figure S3.** Normalized absorption spectra of compound **2** in different solvents



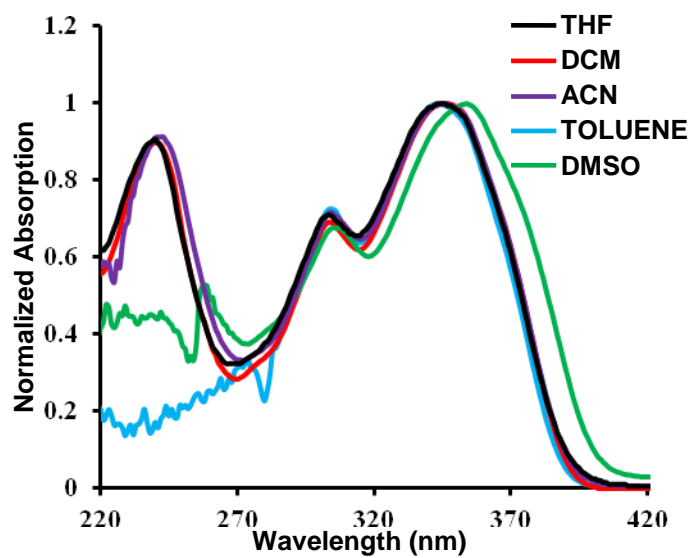
**Figure S4.** Normalized Fluorescence spectra of compound **2** ( $\lambda_{\text{ex}} = \lambda_{\text{max}}$ ) in different solvents



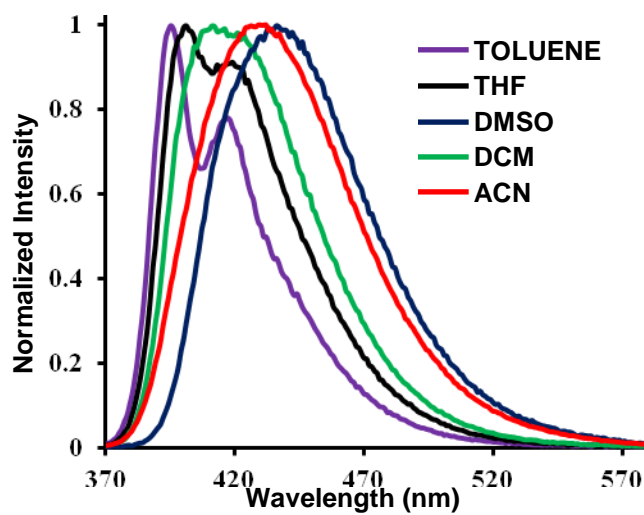
**Figure S5.** Normalized absorption spectra of compound **3** in different solvents



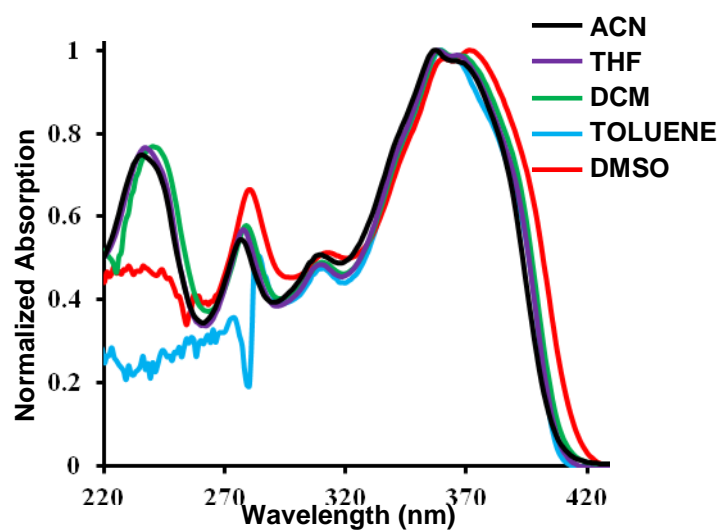
**Figure S6.** Normalized Fluorescence spectra of compound **3** ( $\lambda_{\text{ex}} = \lambda_{\text{max}}$ ) in different solvents



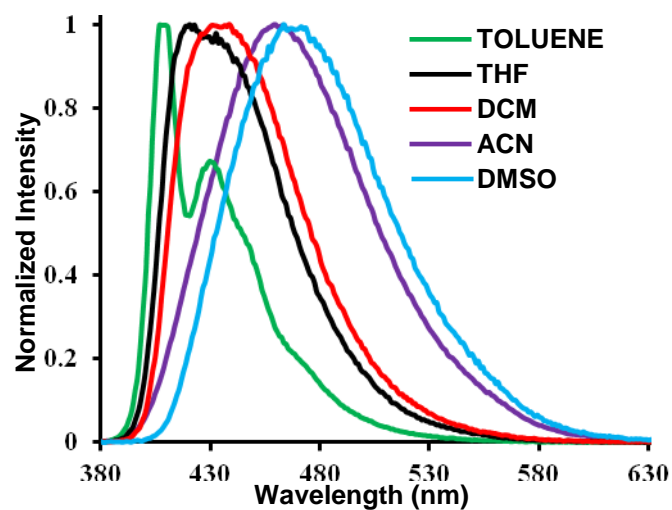
**Figure S7.** Normalized absorption spectra of compound **4** in different solvents



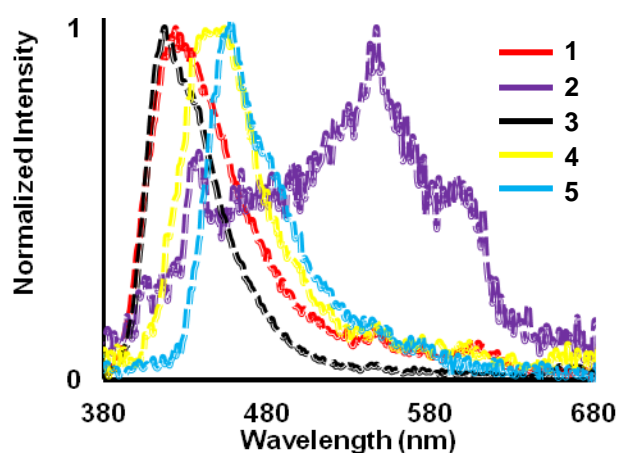
**Figure S8.** Normalized Fluorescence spectra of compound **4** ( $\lambda_{\text{ex}} = \lambda_{\text{max}}$ ) in different solvents



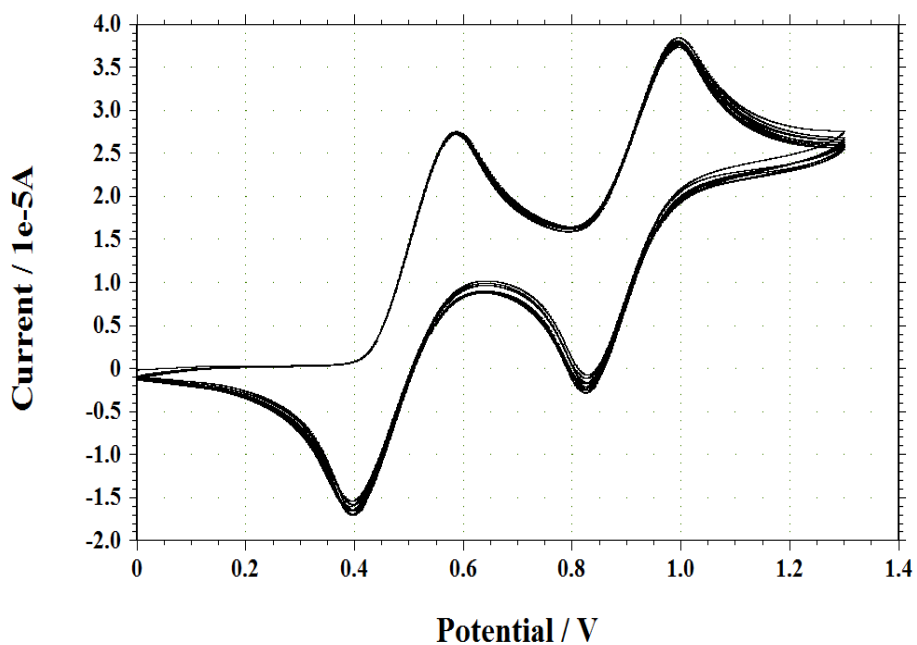
**Figure S9.** Normalized absorption spectra of compound G5 in different



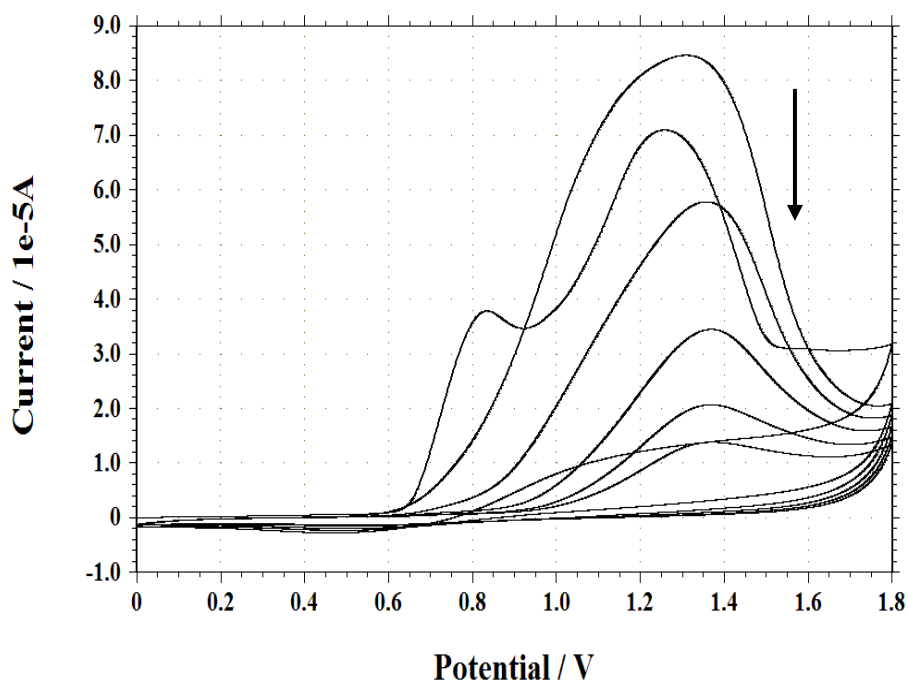
**Figure S10.** Normalized Fluorescence spectra of compound 5 ( $\lambda_{\text{ex}} = \lambda_{\text{max}}$ ) in different solvents



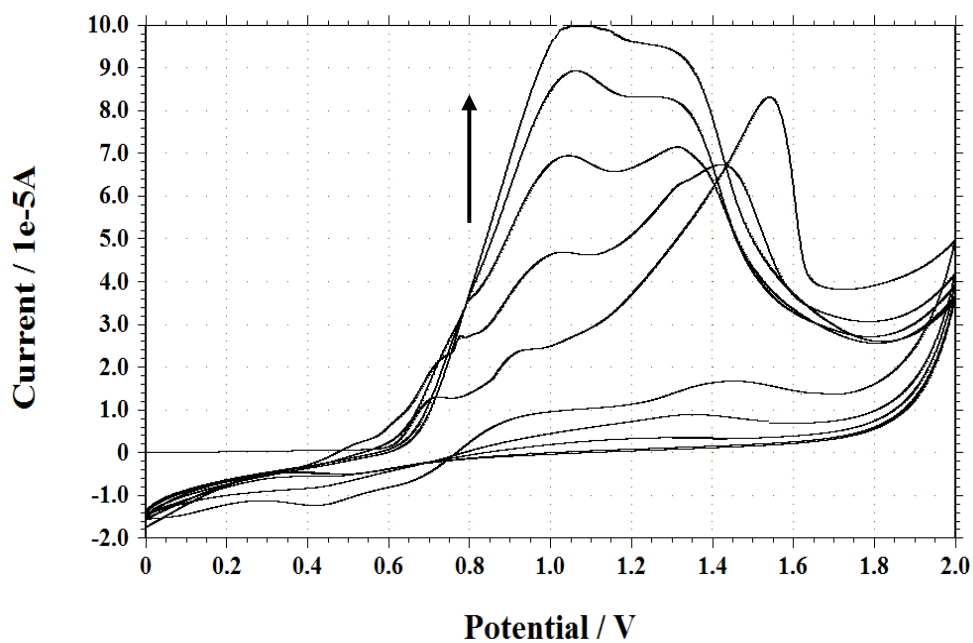
**Figure S11.** Normalised fluorescence spectra of **1** - **5** in thin films ( $\lambda_{\text{ex}}$  of **1** = 301 nm, **2** = 298 nm, **3** = 329 nm, **4** = 345 nm, and **5** = 358 nm)



**Figure S12.** Repeated cyclic voltammograms of **1** in DCM at 50mV/sec. (10 cycles)

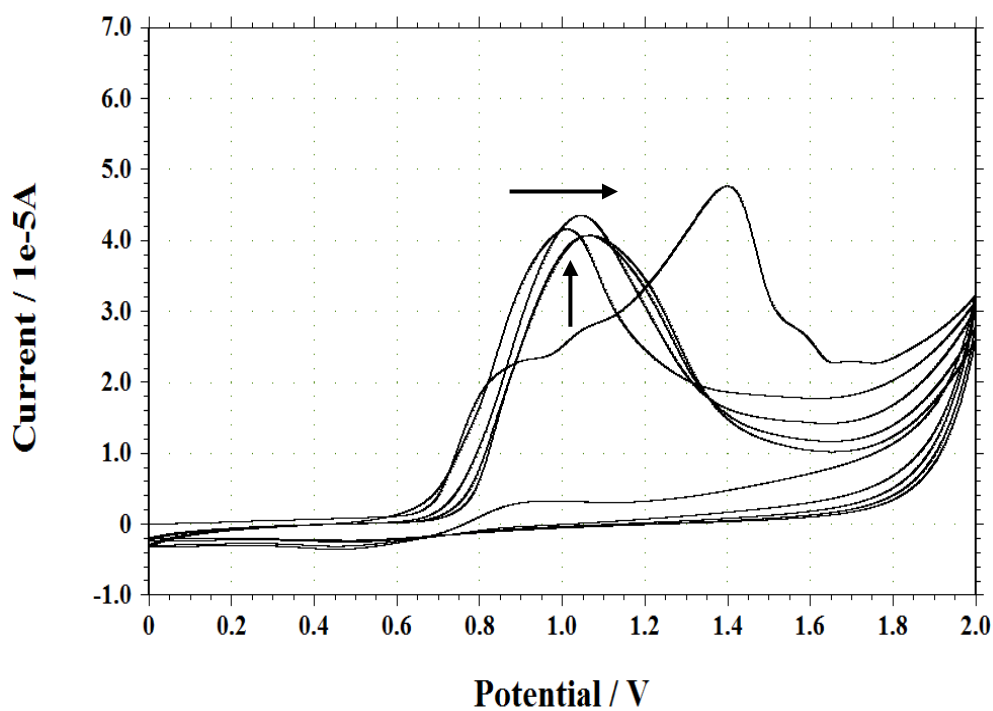


**Figure S13.** Repeated cyclic voltammograms of **2** in DCM at 50mV/sec. (5 cycles)

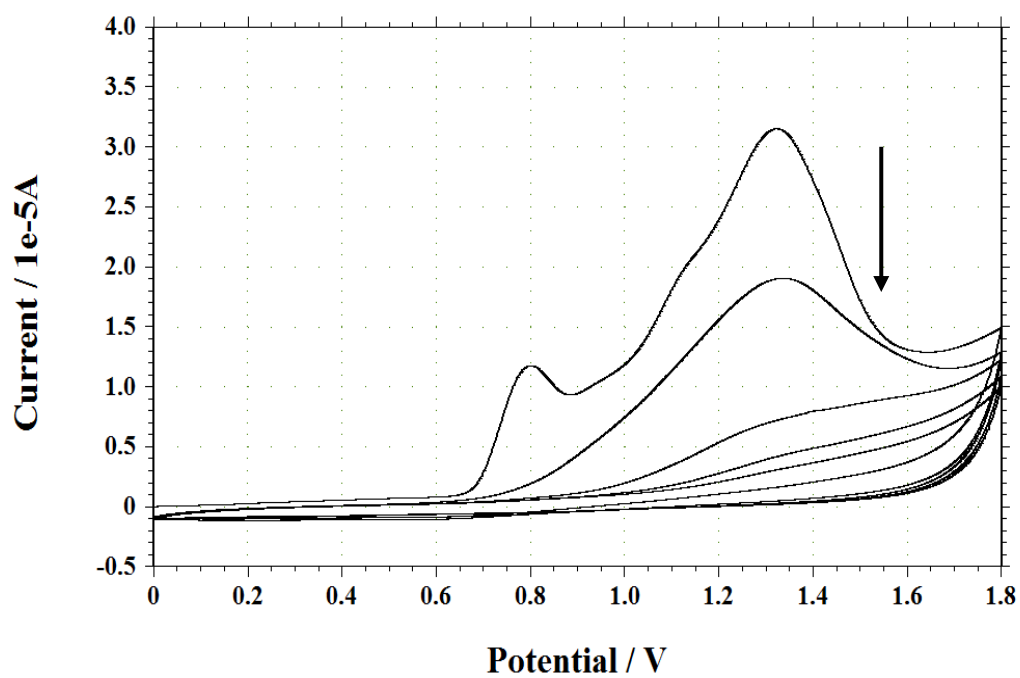


**Figure S14.** Repeated cyclic voltammograms of **3** in DCM at 50mV/sec. (5 cycles)

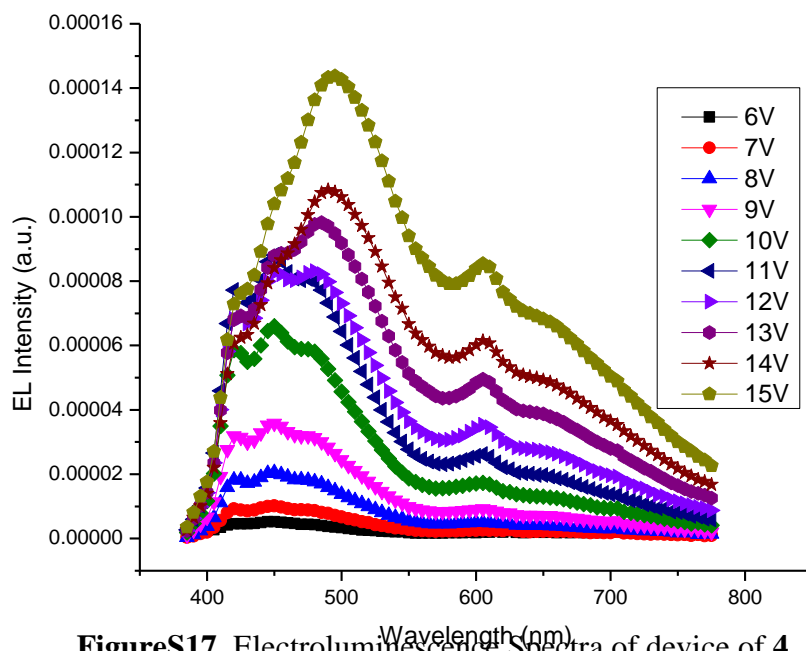




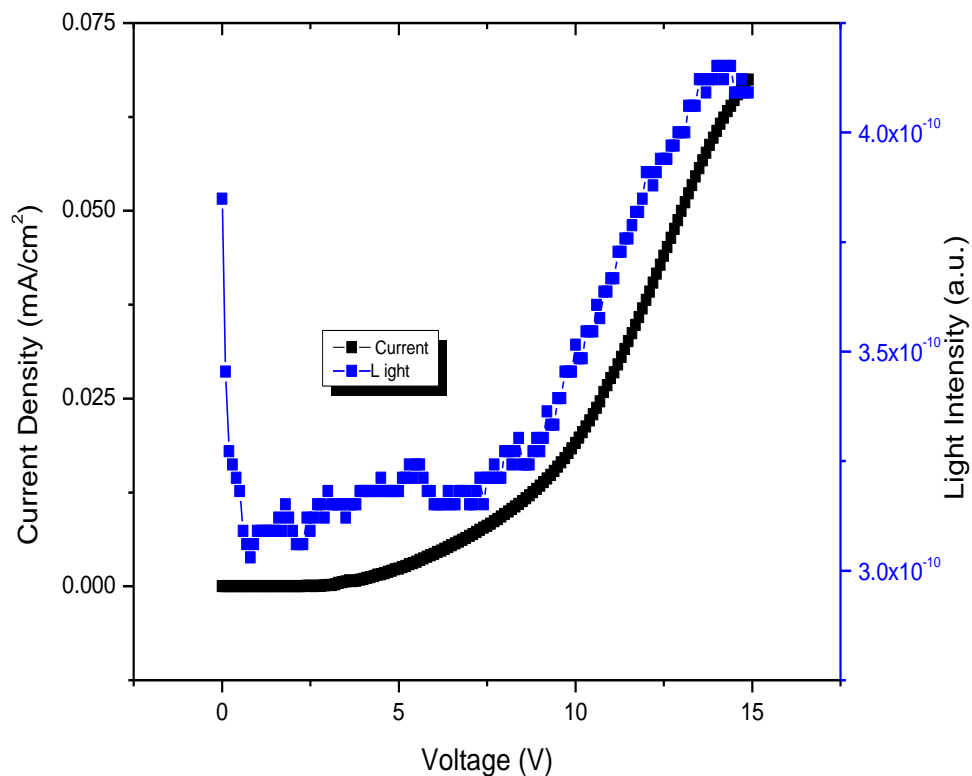
**Figure S15.** Repeated cyclic voltammograms of **4** in DCM at 50mV/sec. (5 cycles)



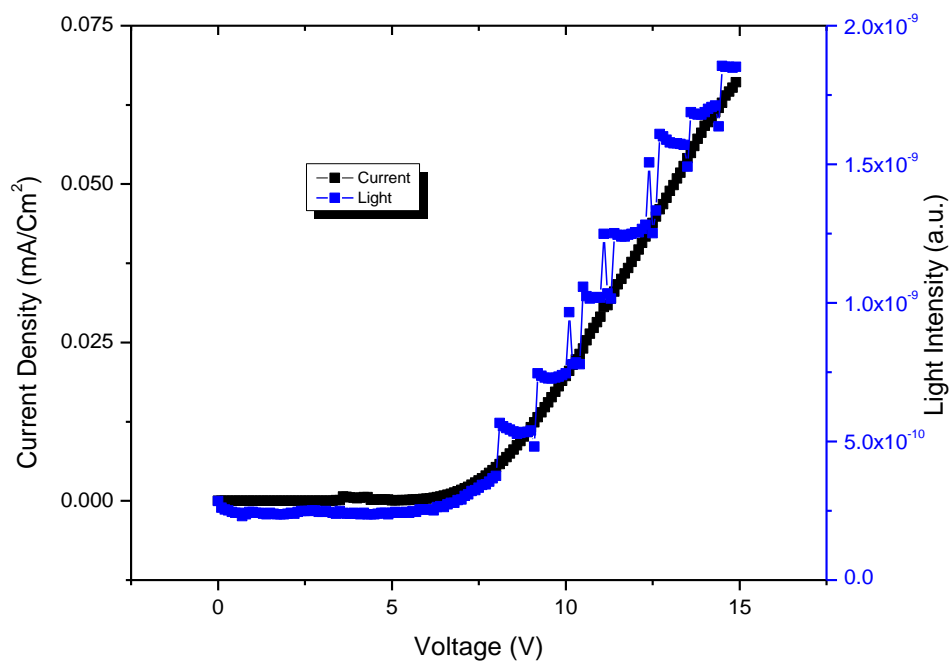
**Figure S16.** Repeated cyclic voltammograms of **5** in DCM at 50mV/sec.(5 cycles)



**FigureS17.** Electroluminescence Spectra of device of **4**

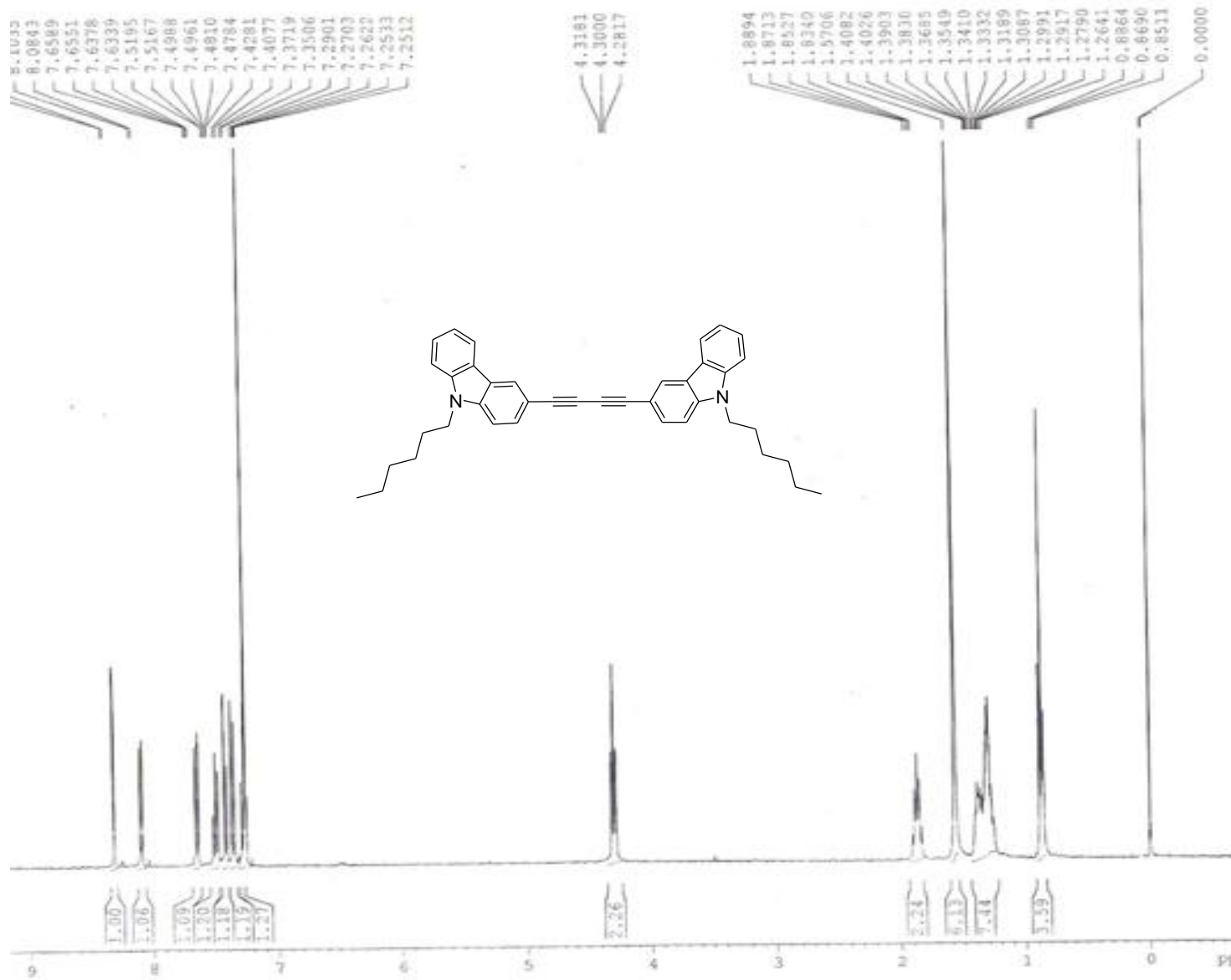


**Figure S18.** ILV characteristics of device of **3**



**Figure S19.** ILV characteristics of device of **5**

**<sup>1</sup>H NMR of Compound 2 in CDCl<sub>3</sub>**



**Figure S20. <sup>1</sup>H NMR of Compound 2 in CDCl<sub>3</sub>**

### $^1\text{H}$ NMR of Compound 3 in $\text{CDCl}_3$

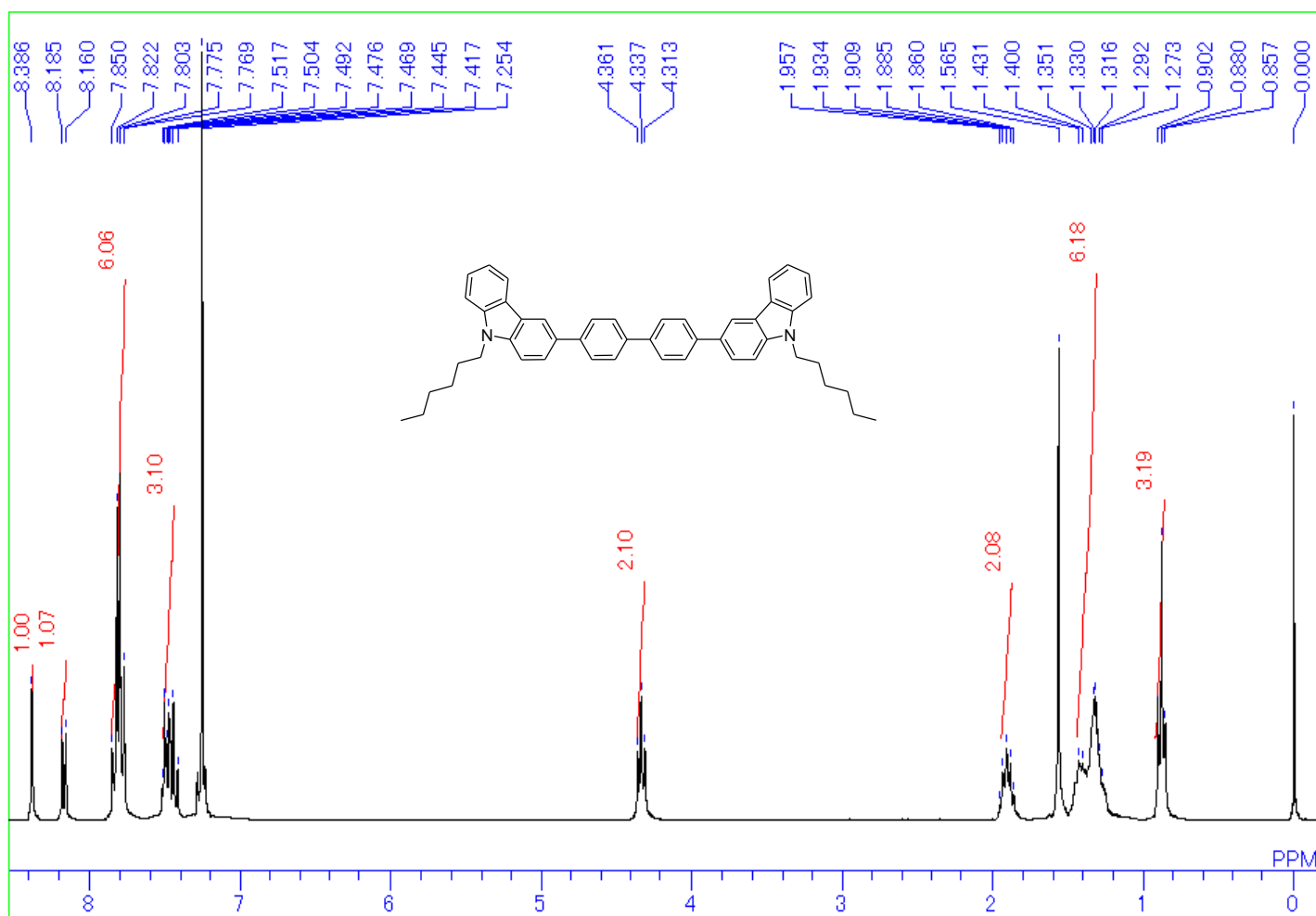


Figure S21.  $^1\text{H}$  NMR of Compound 3 in  $\text{CDCl}_3$

### $^1\text{H}$ NMR of Compound 4 in $\text{CDCl}_3$

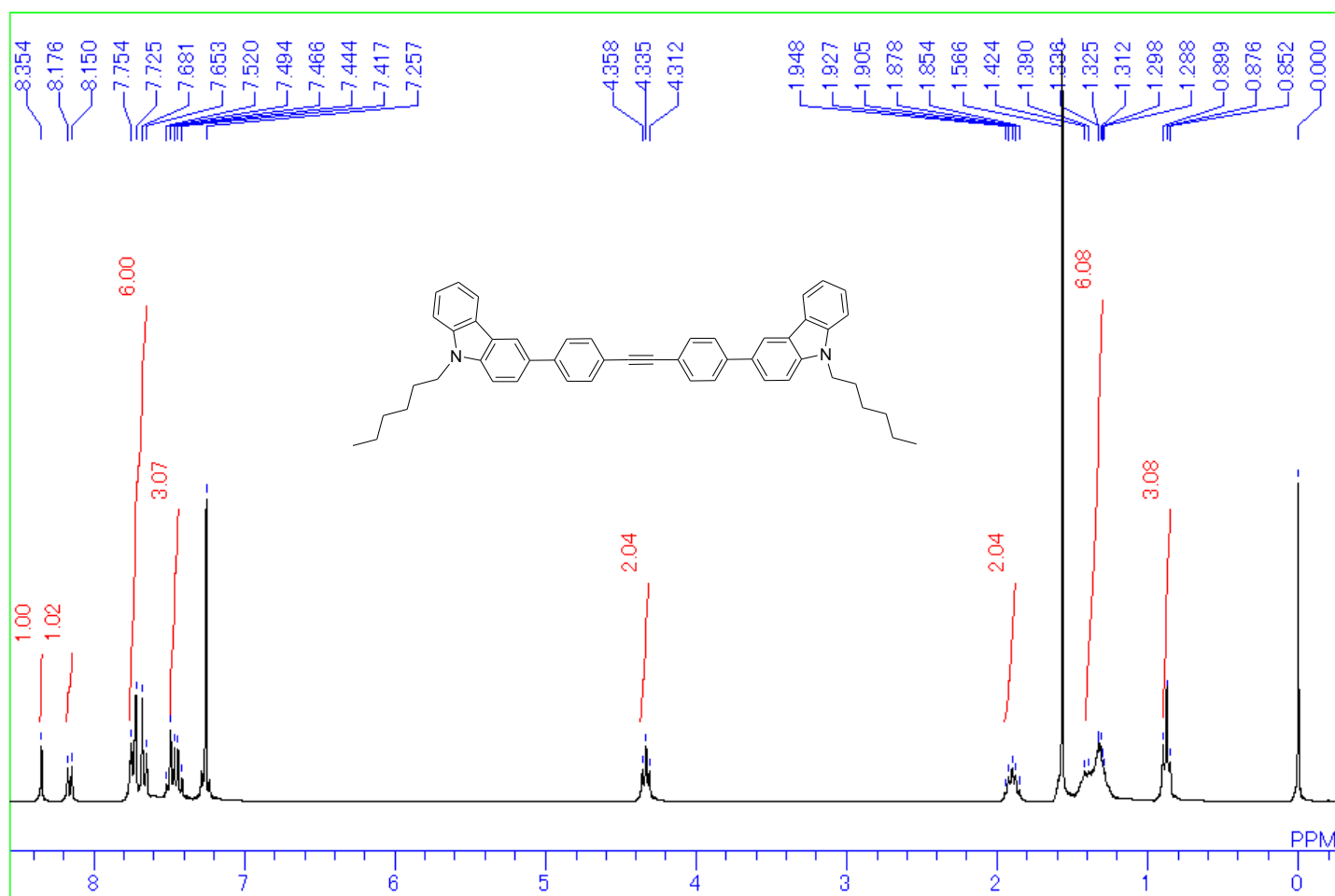


Figure S22.  $^1\text{H}$  NMR of Compound 4 in  $\text{CDCl}_3$

### $^1\text{H}$ NMR of Compound 5 in $\text{CDCl}_3$

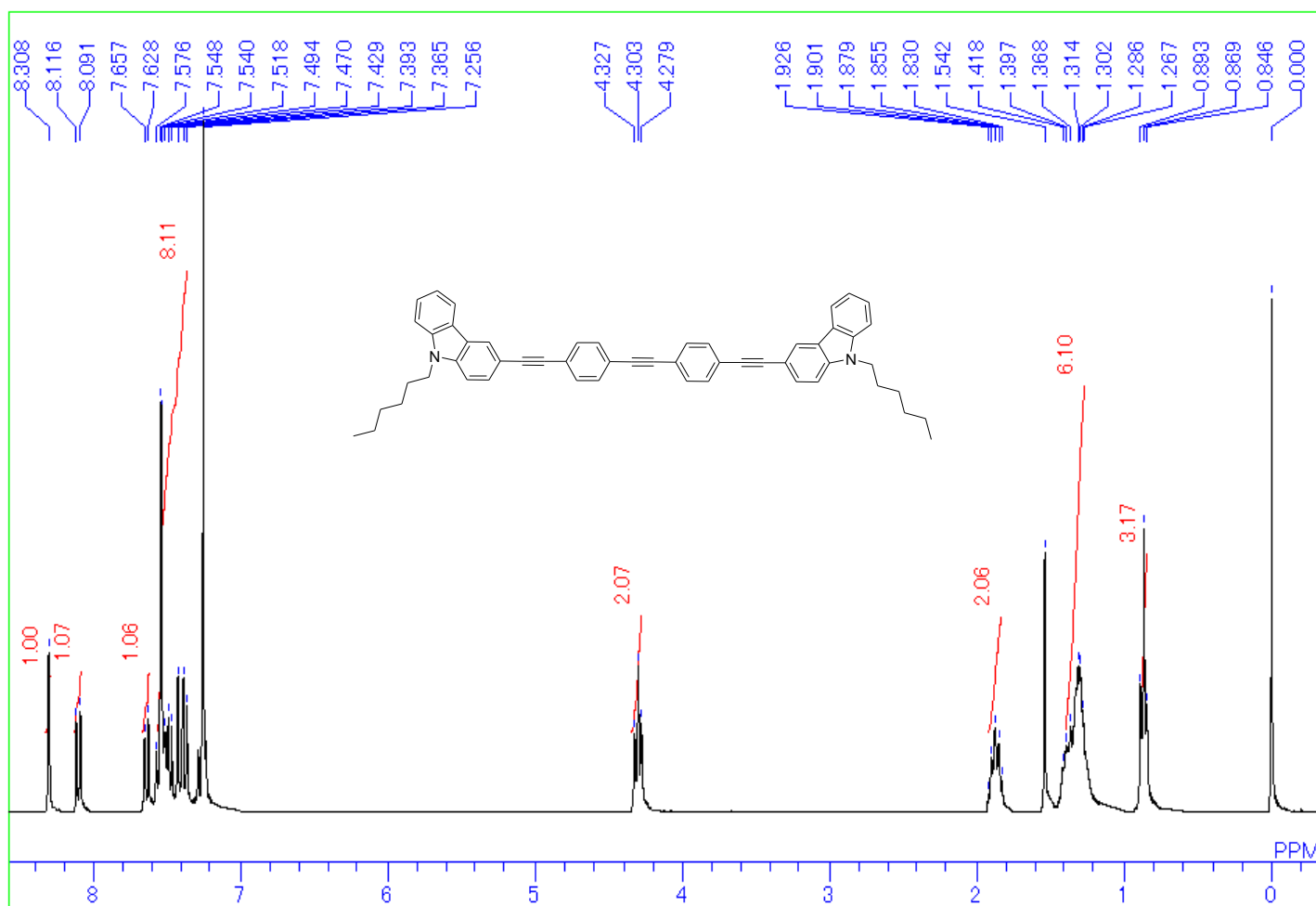
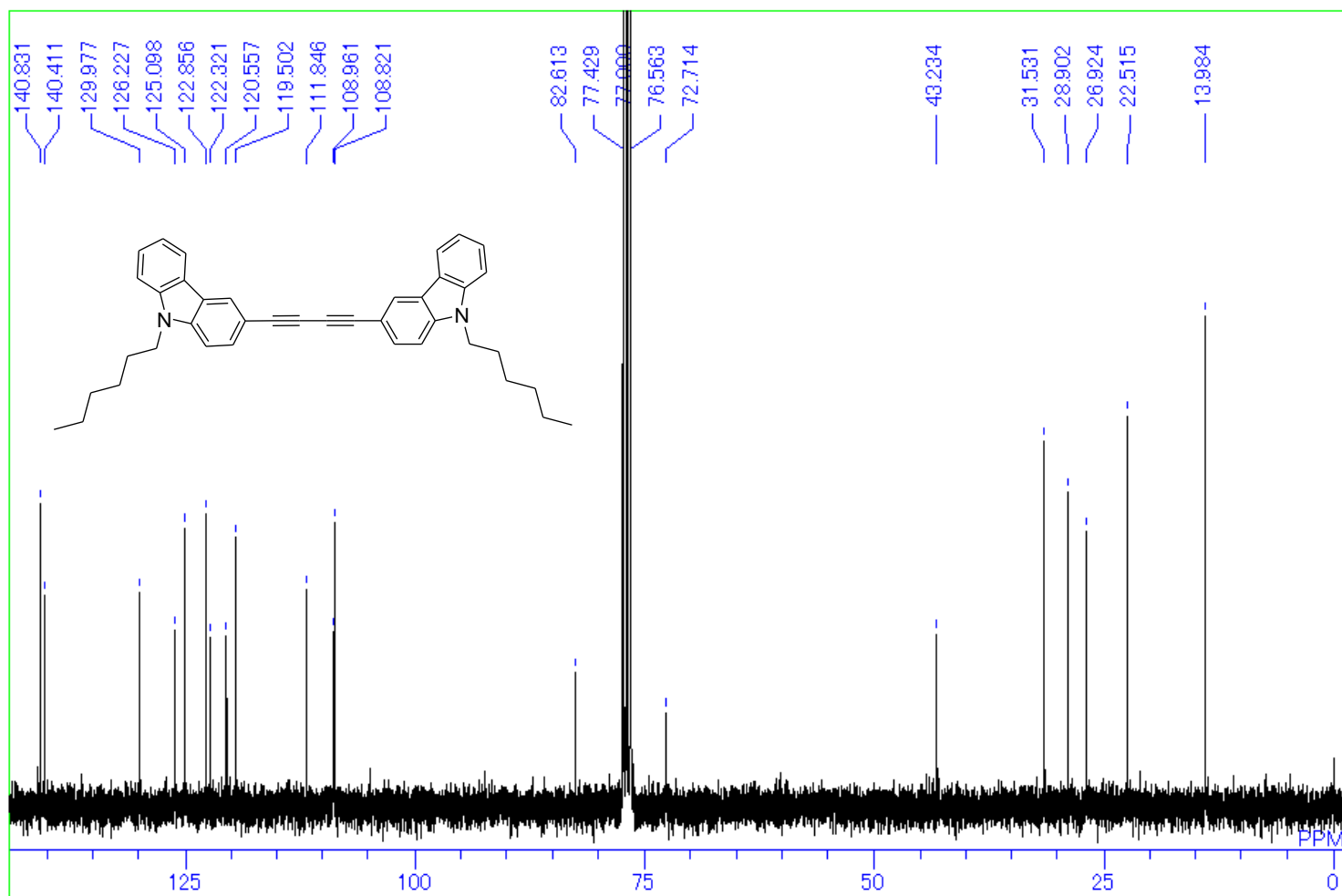


Figure S23.  $^1\text{H}$  NMR of Compound 5 in  $\text{CDCl}_3$

**$^{13}\text{C}$  NMR of Compound 2 in  $\text{CDCl}_3$**



**Figure S24.**  $^{13}\text{C}$  NMR of Compound 2 in  $\text{CDCl}_3$



### $^{13}\text{C}$ NMR of Compound 3 in $\text{CDCl}_3$

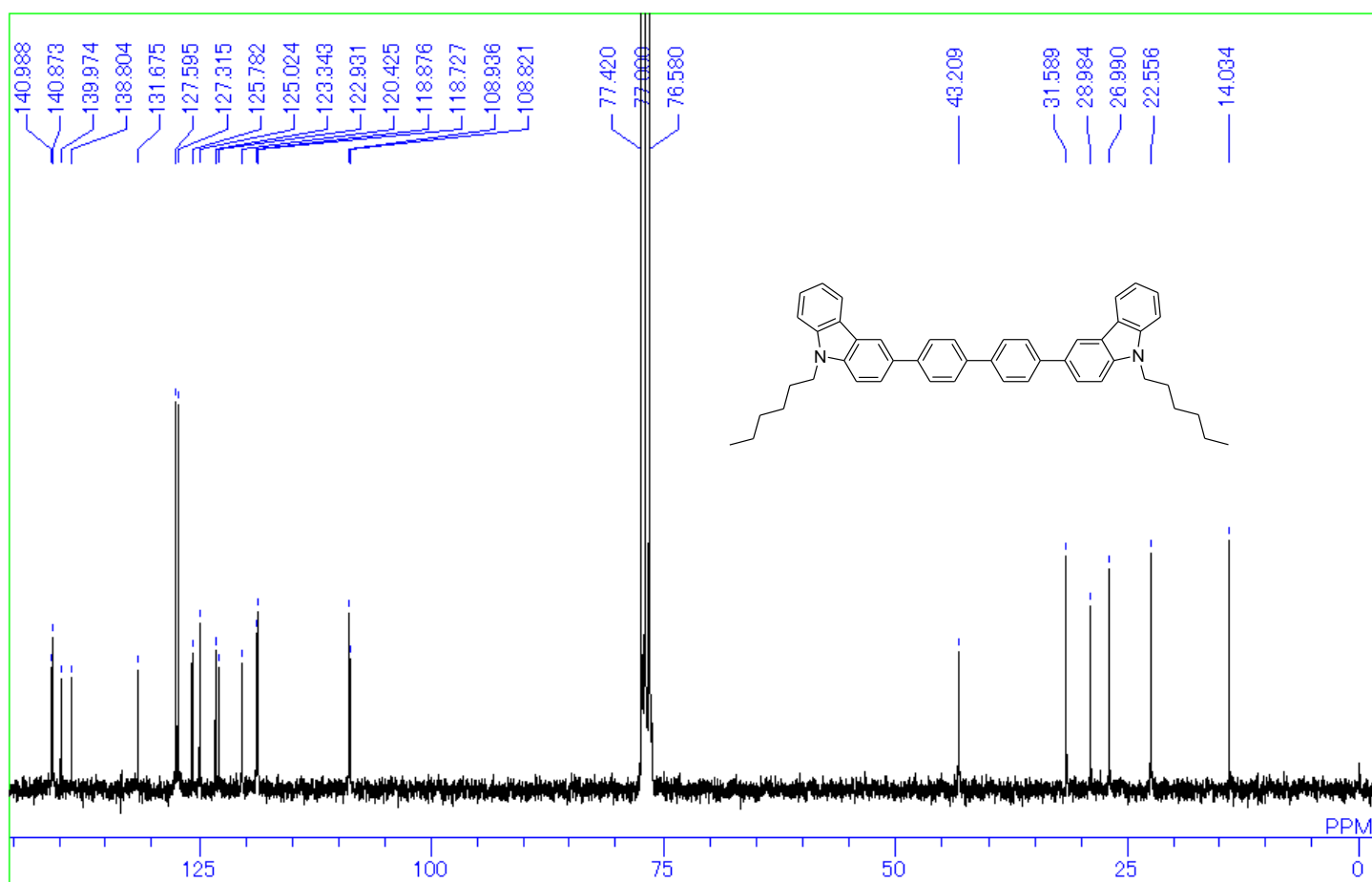
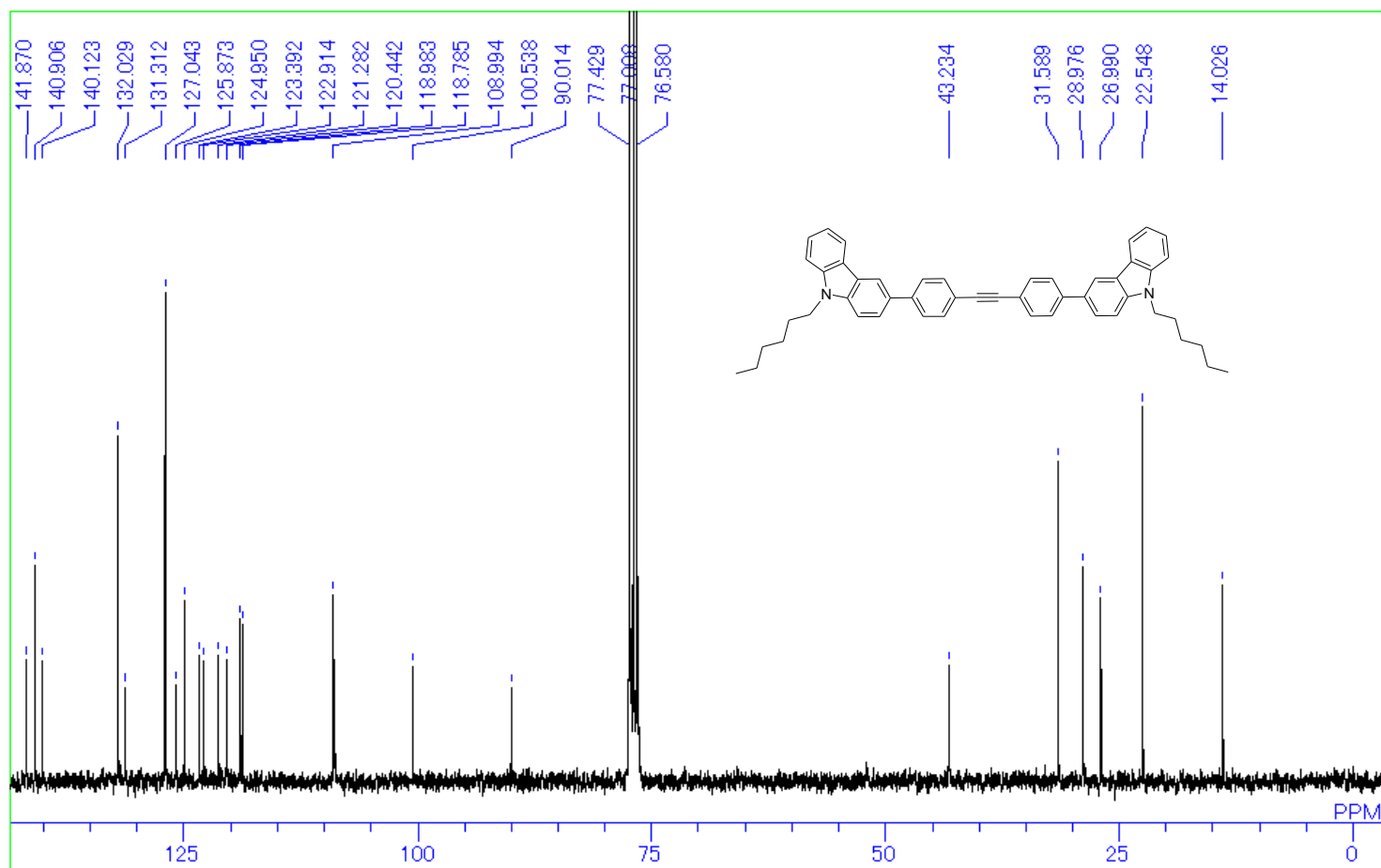


Figure S25.  $^{13}\text{C}$  NMR of Compound 3 in  $\text{CDCl}_3$

**$^{13}\text{C}$  NMR of Compound 4 in  $\text{CDCl}_3$**



**Figure S26.  $^{13}\text{C}$  NMR of Compound 4 in  $\text{CDCl}_3$**

### $^{13}\text{C}$ NMR of Compound 5 in $\text{CDCl}_3$

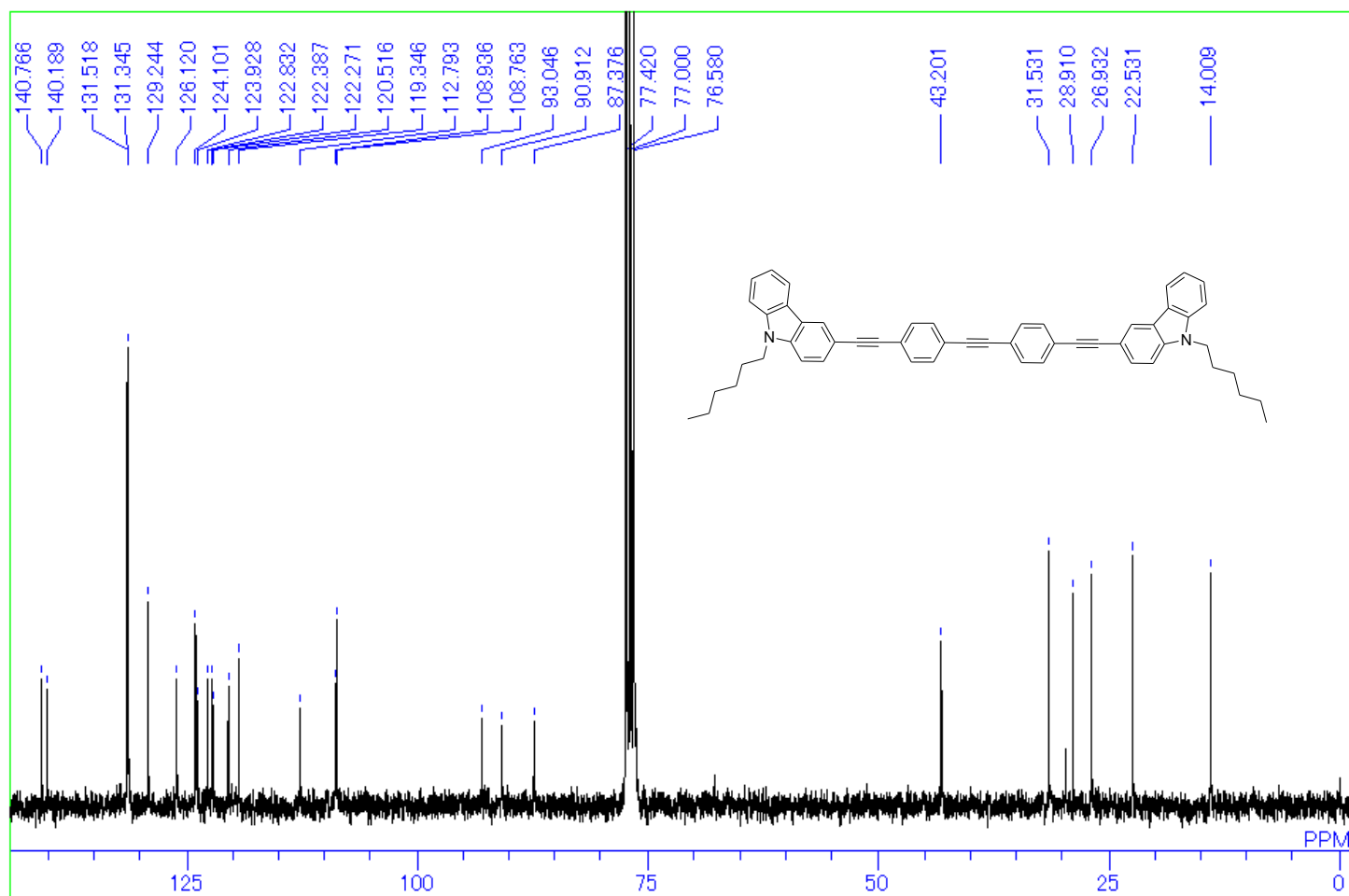


Figure S27.  $^{13}\text{C}$  NMR of Compound 5 in  $\text{CDCl}_3$

### Mass Spectrum of Compound 2

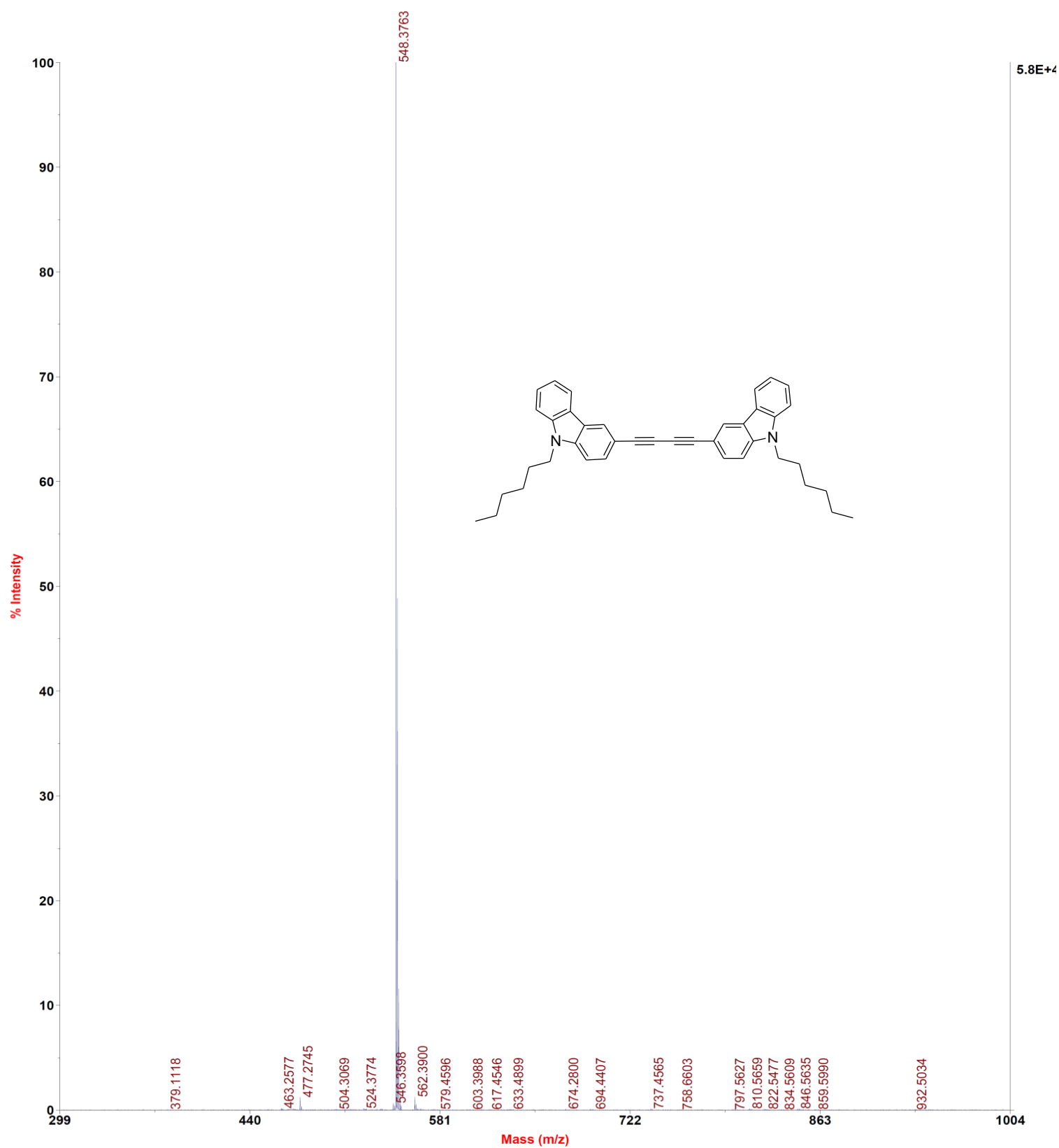


Figure S28. Mass Spectrum of Compound 2

### Mass Spectrum of Compound 3

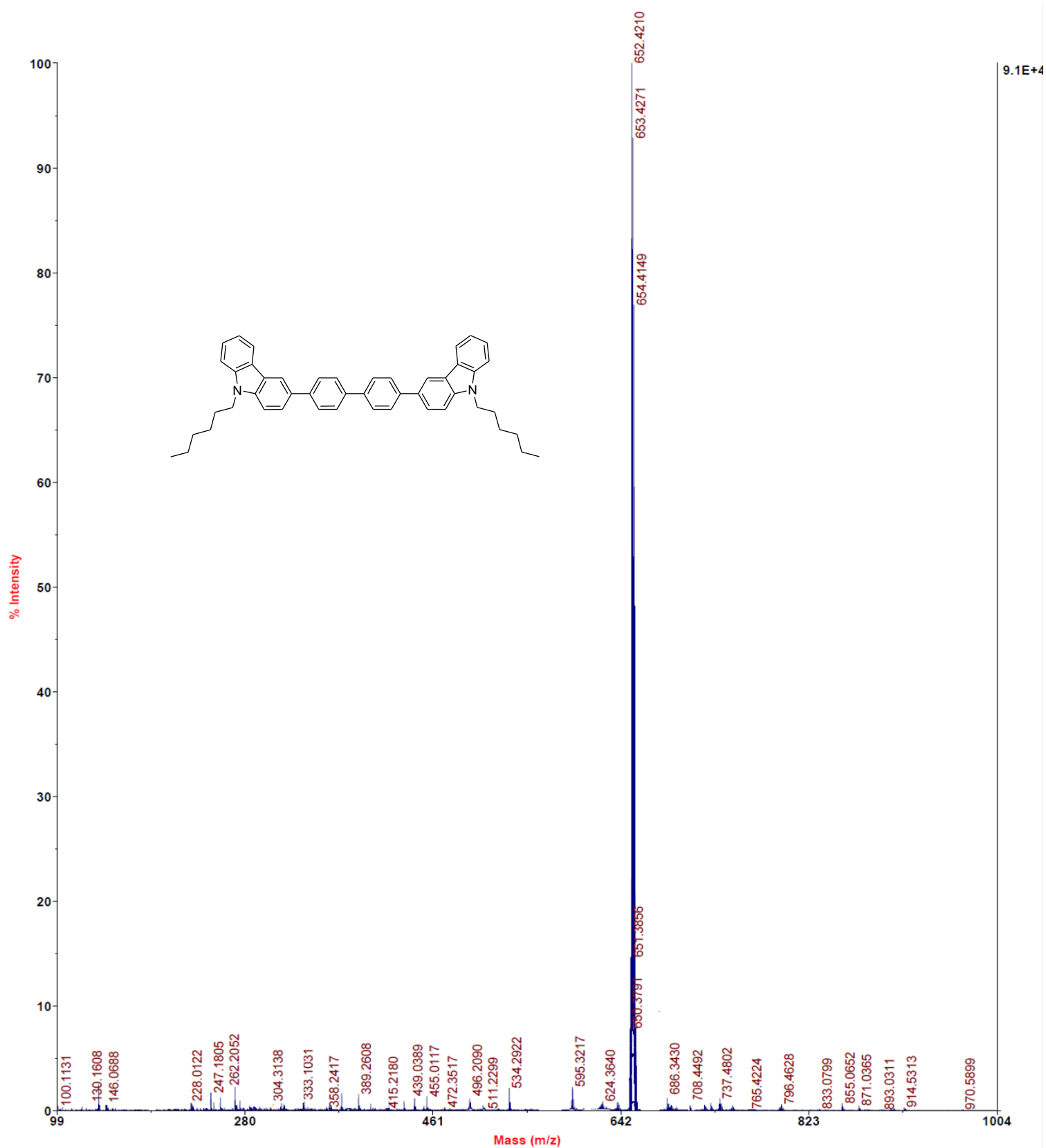


Figure S29. Mass Spectrum of Compound 3

### Mass Spectrum of Compound 4

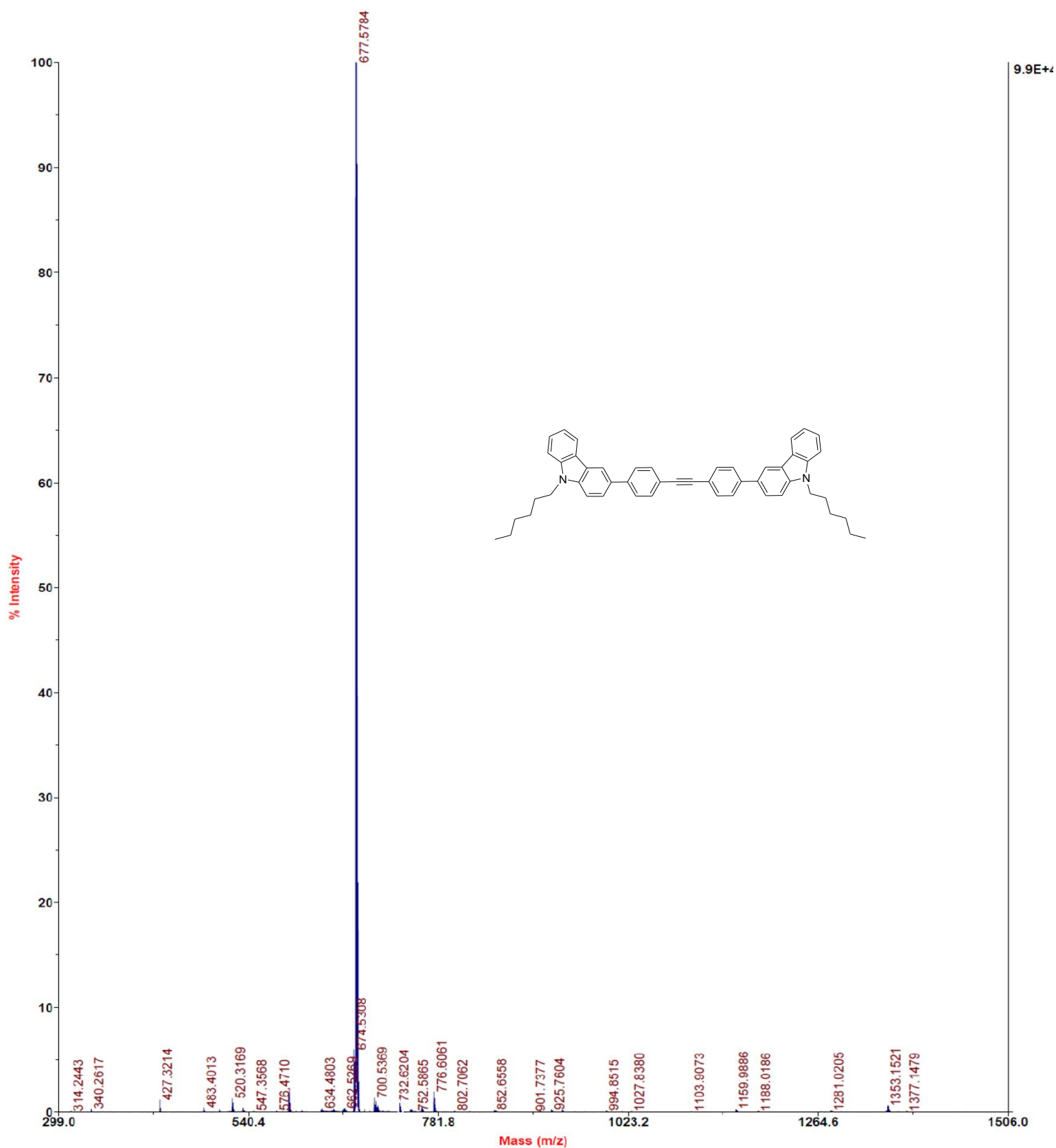


Figure S30. Mass Spectrum of Compound 4

### Mass Spectrum of Compound 5

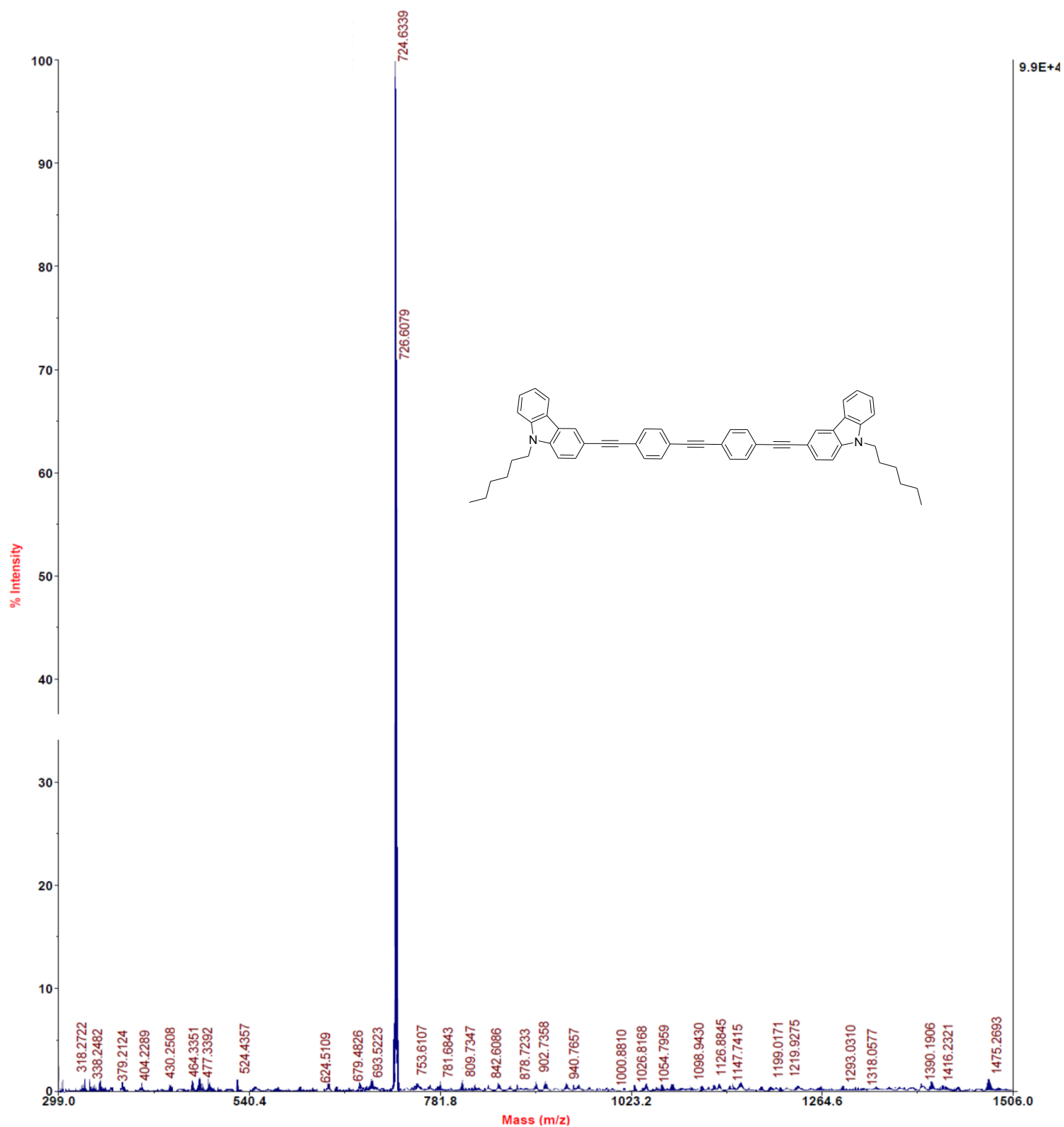
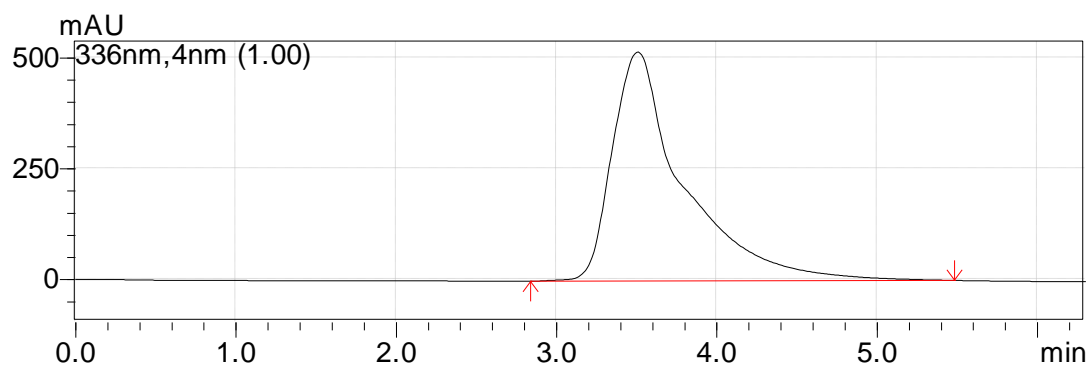


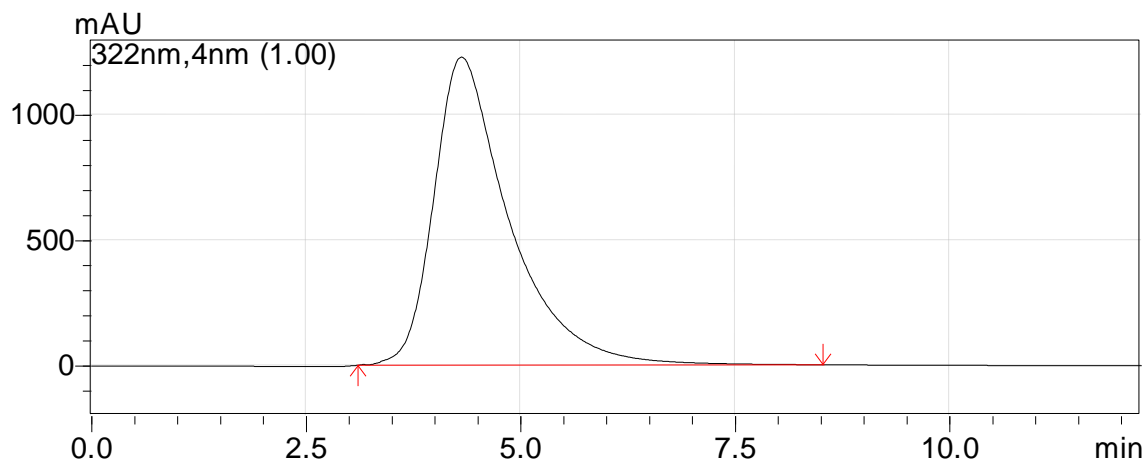
Figure S31. Mass Spectrum of Compound 5

### HPLC data of compound 2



Peak	Ret time	Area%
1	3.500	100.0000

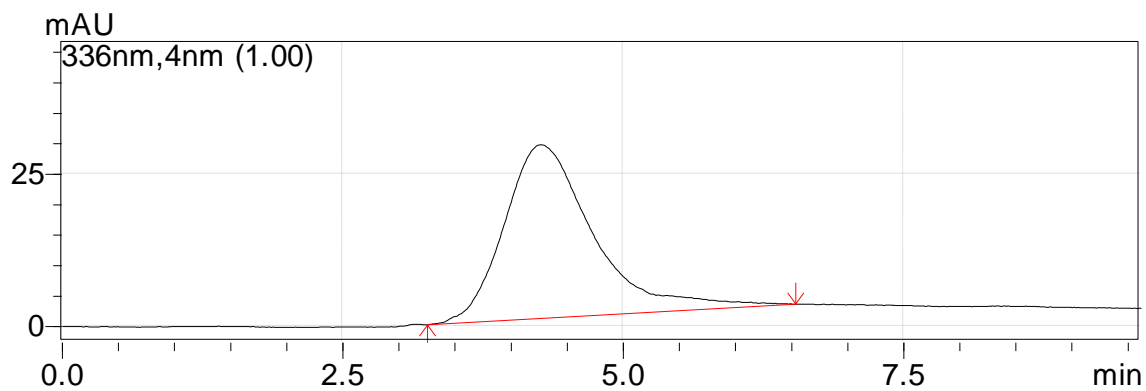
### HPLC data of compound 3



Peak	Ret time	Area%
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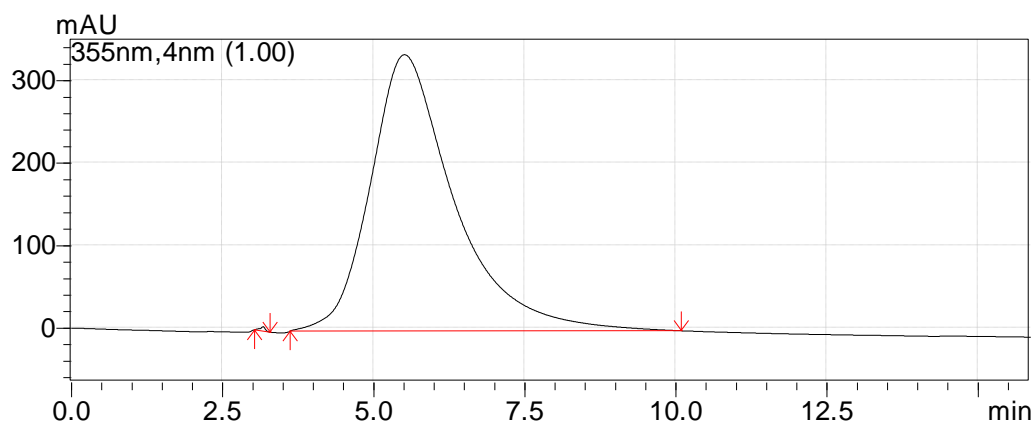


### HPLC data of compound 4



Peak	Ret time	Area%
1	4.261	100.0000

### HPLC data of compound 5



Peak	Ret time	Area%
1	3.164	0.0936
2	5.503	99.9064