

Supplementary Materials

Palladium-catalyzed direct (het)arylation reactions of benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole and 4,8-dibromobenzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole)

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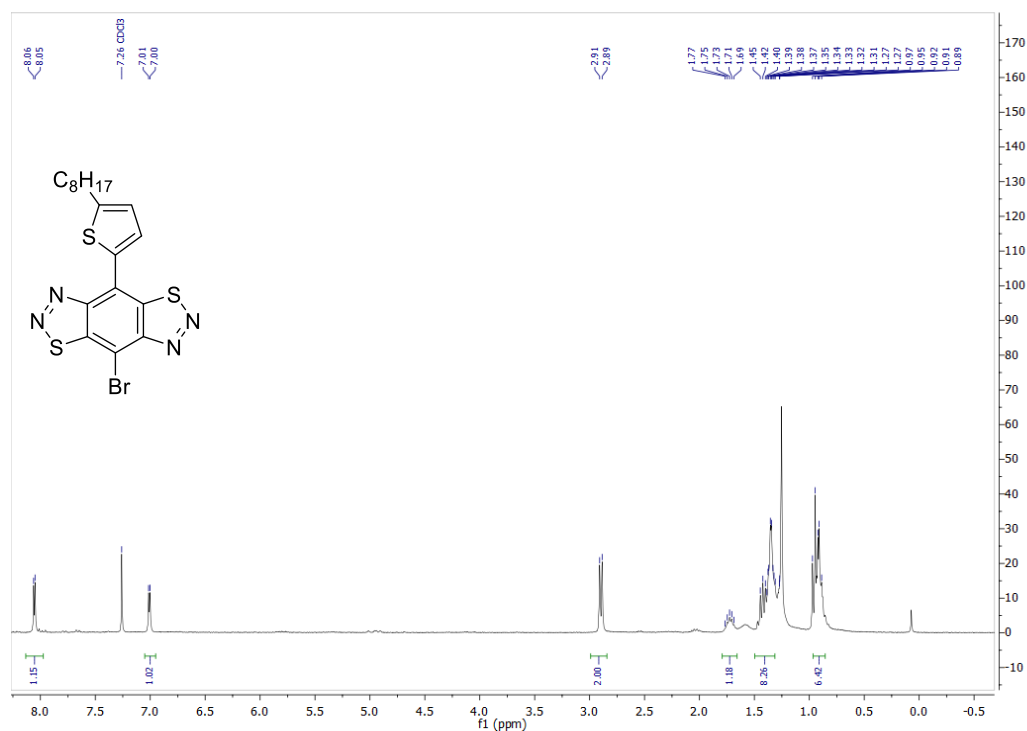
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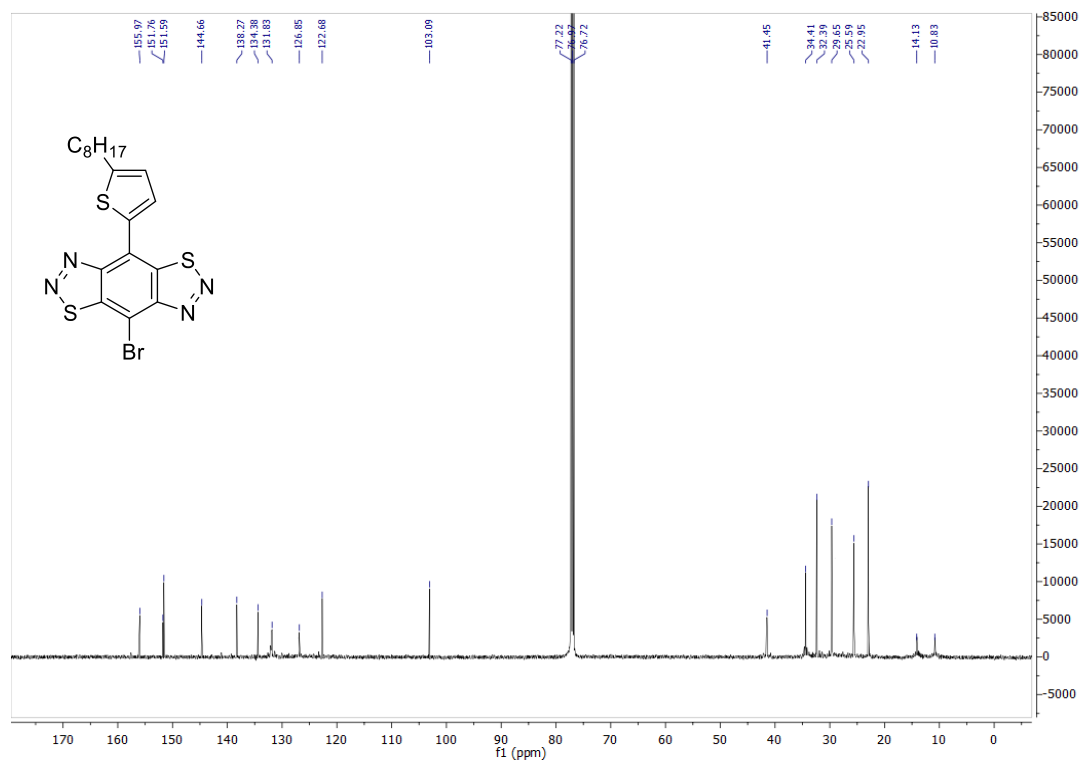
¹H and ¹³C NMR spectra.....	S2
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4-Bromo-8-(5-(2-ethylhexyl)thiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (4a)

^1H NMR (300 MHz)

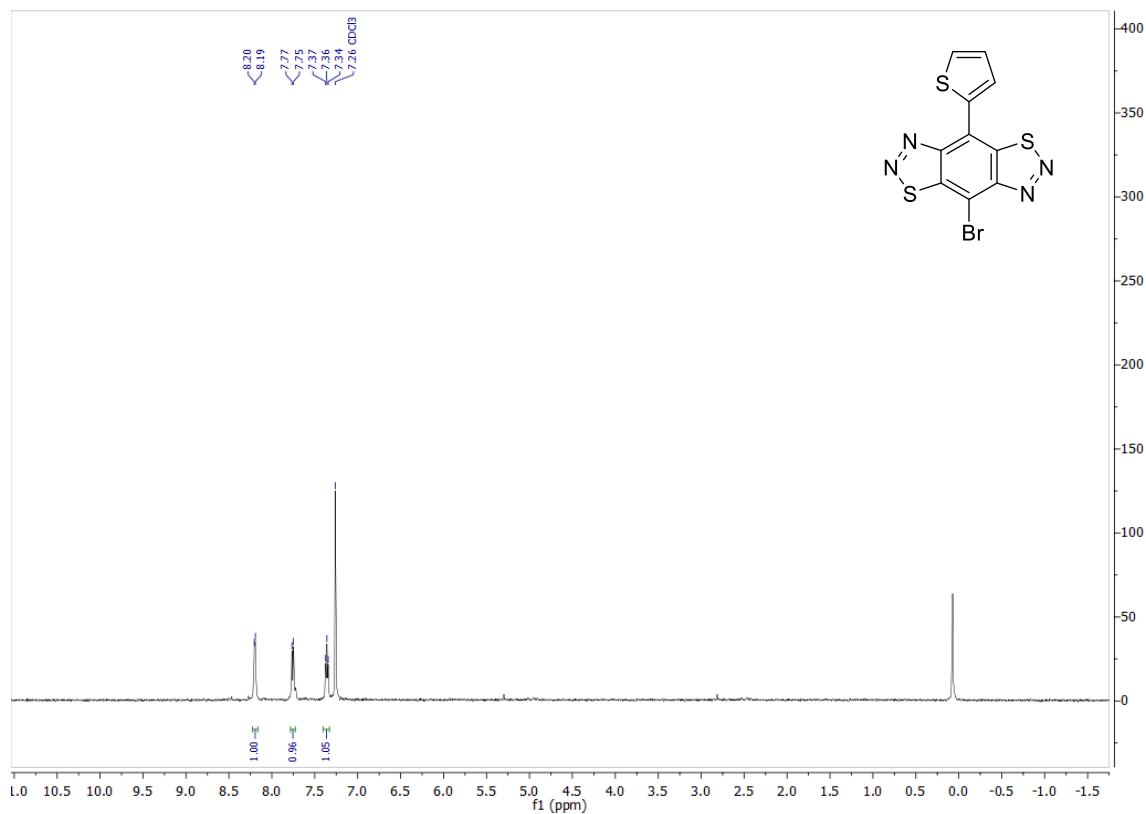


^{13}C NMR (75 MHz)

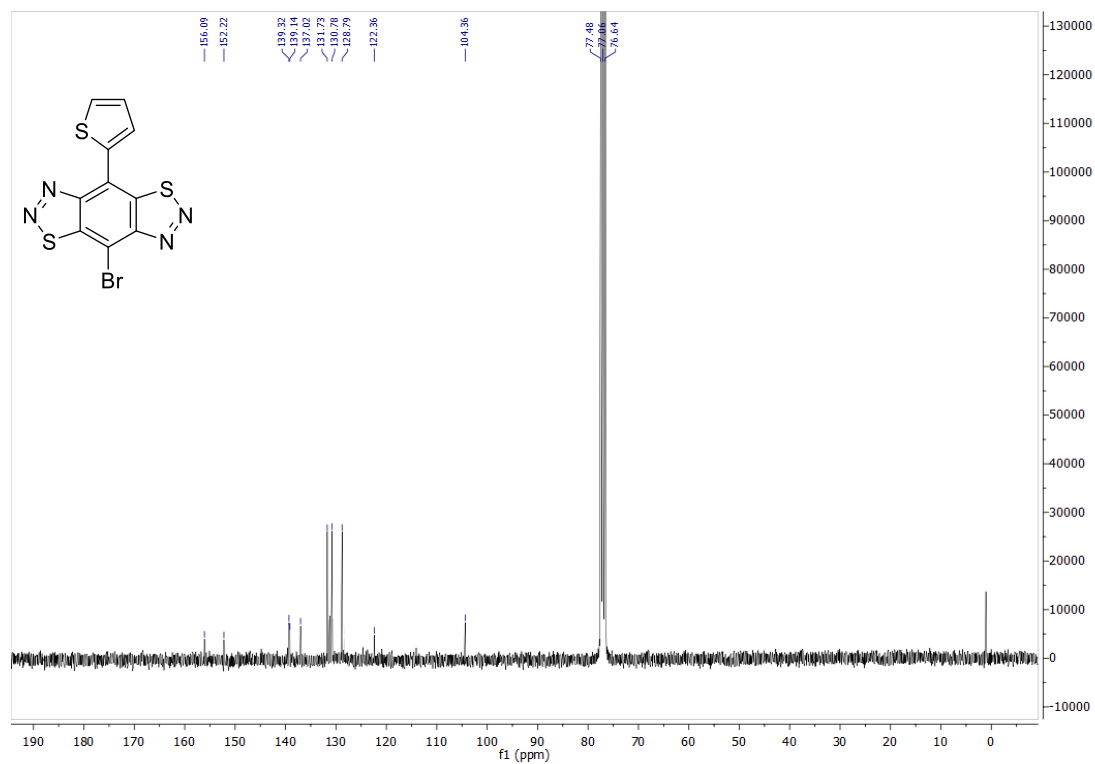


4-Bromo-8-(thiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (4b)

¹H NMR (300 MHz)

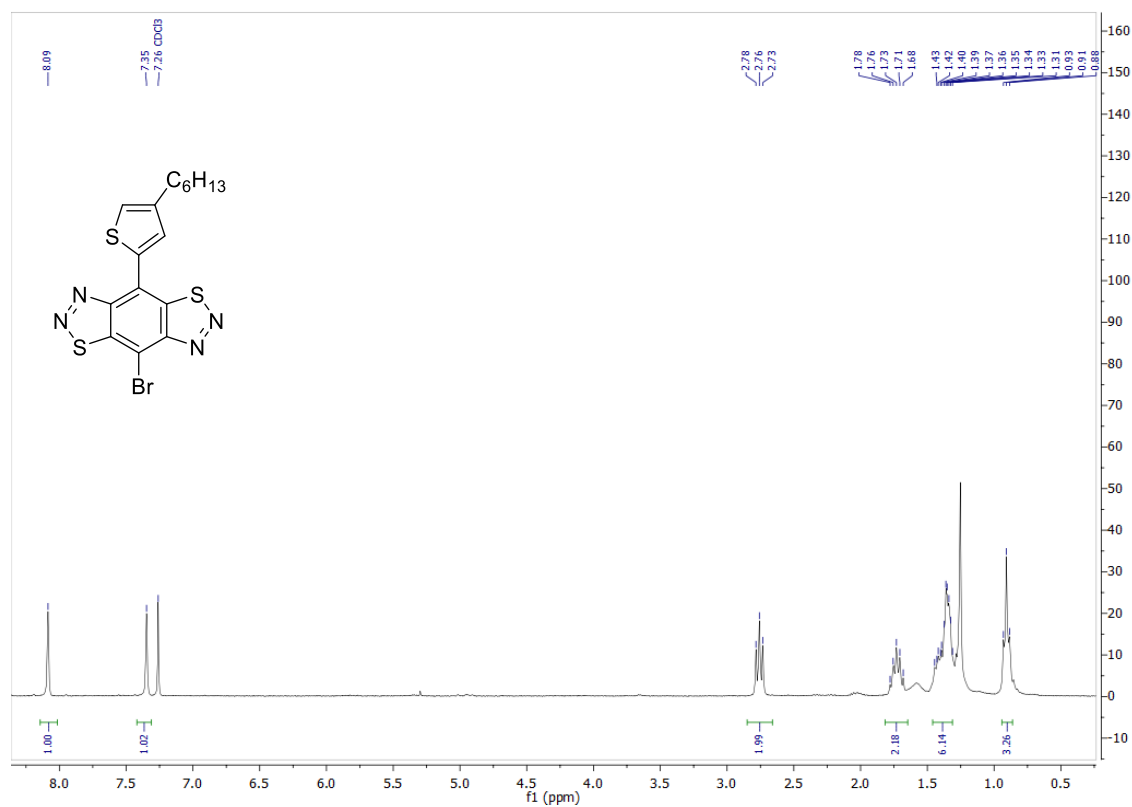


¹³C NMR (75 MHz)

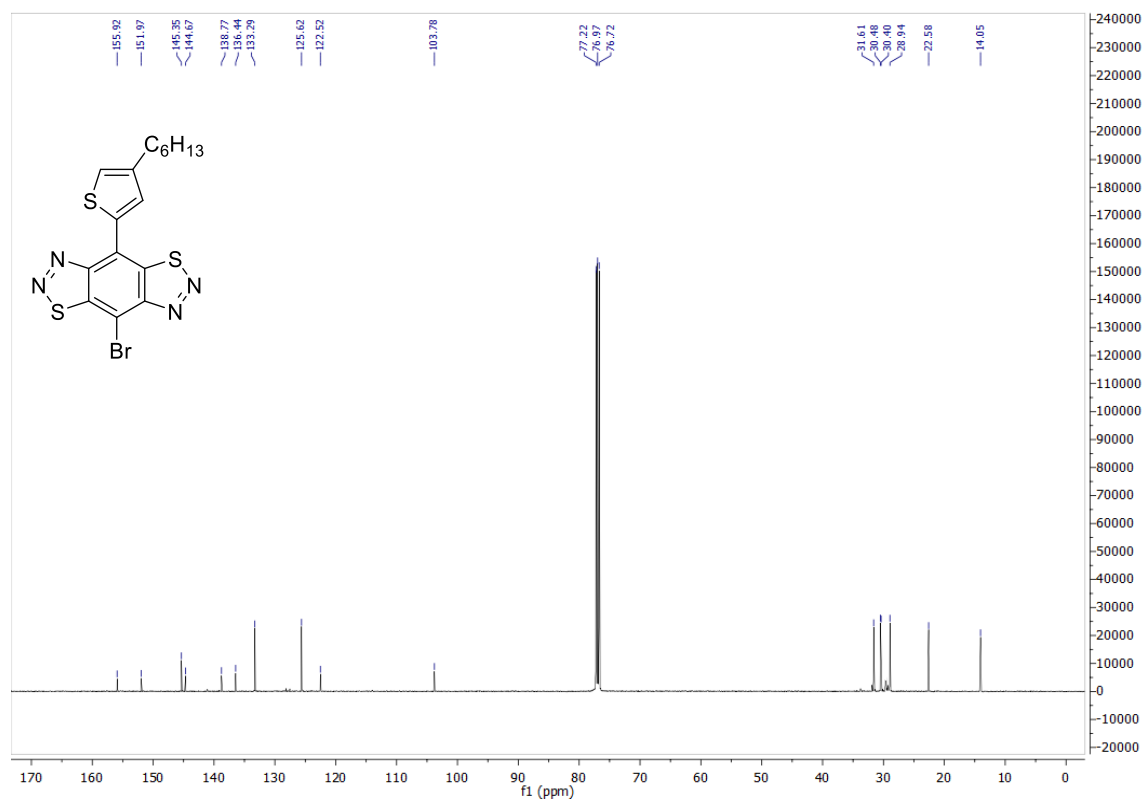


4-Bromo-8-(4-hexylthiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (4c)

¹H NMR (300 MHz)

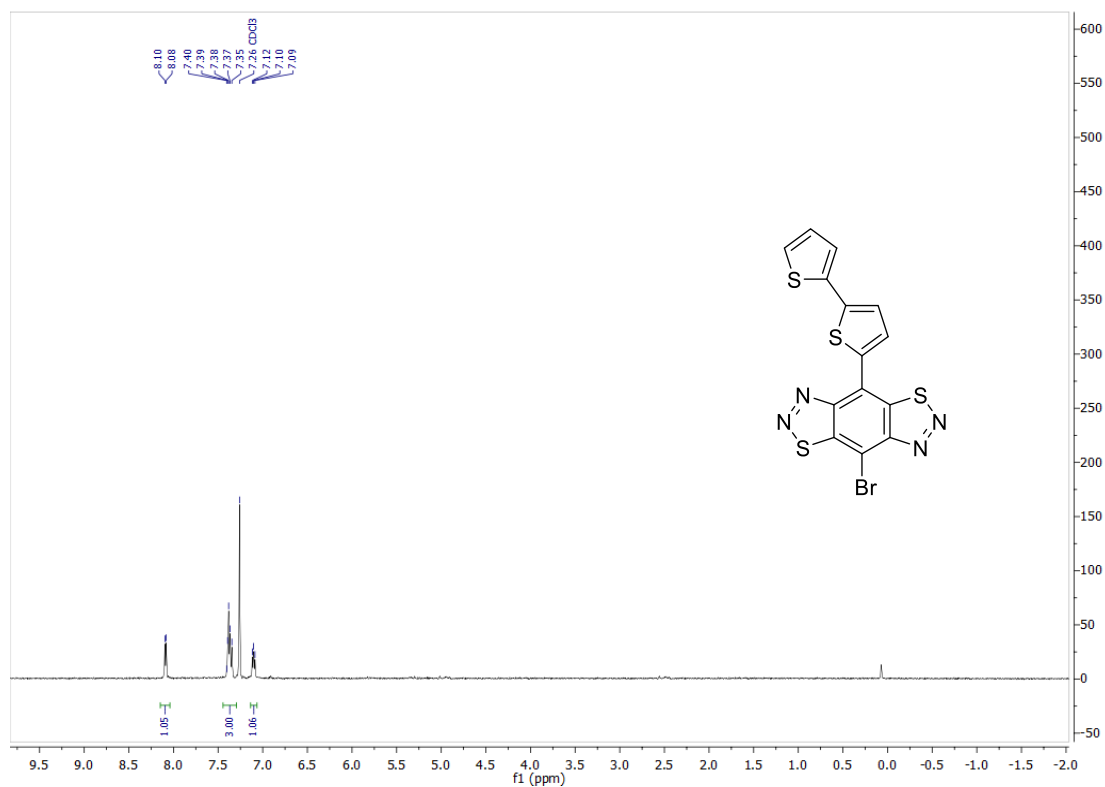


¹³C NMR (75 MHz)

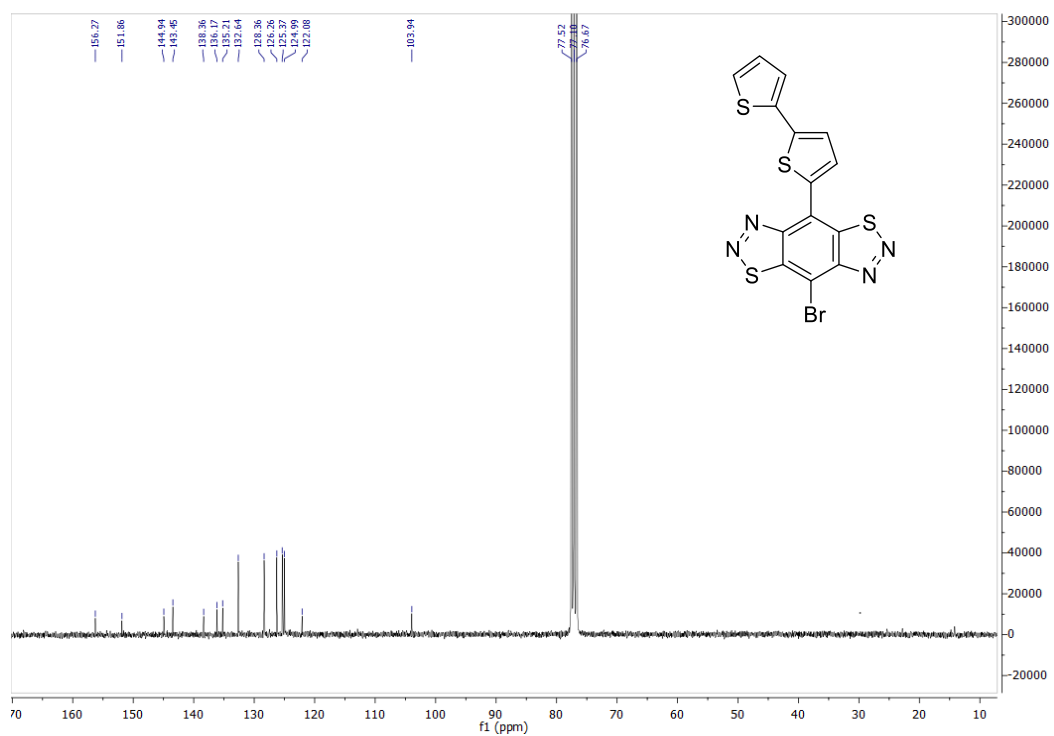


4-([2,2'-Bithiophen]-5-yl)-8-bromobenzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (4d)

¹H NMR (300 MHz)

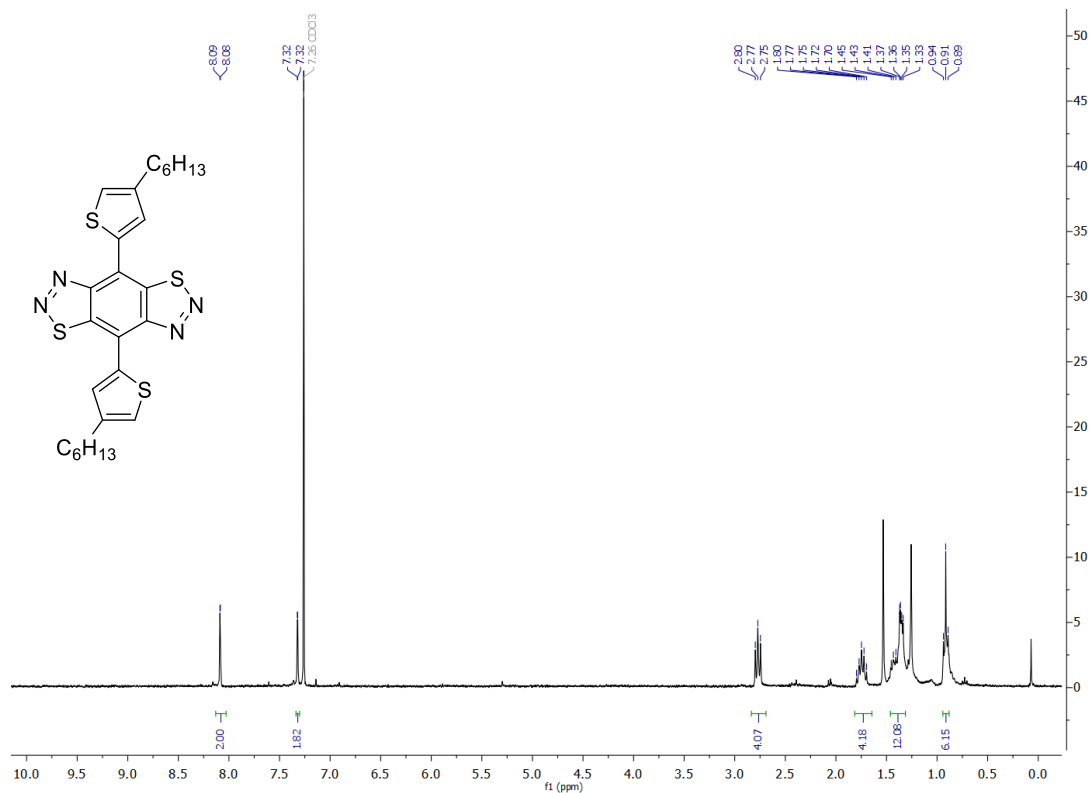


¹³C NMR (75 MHz)

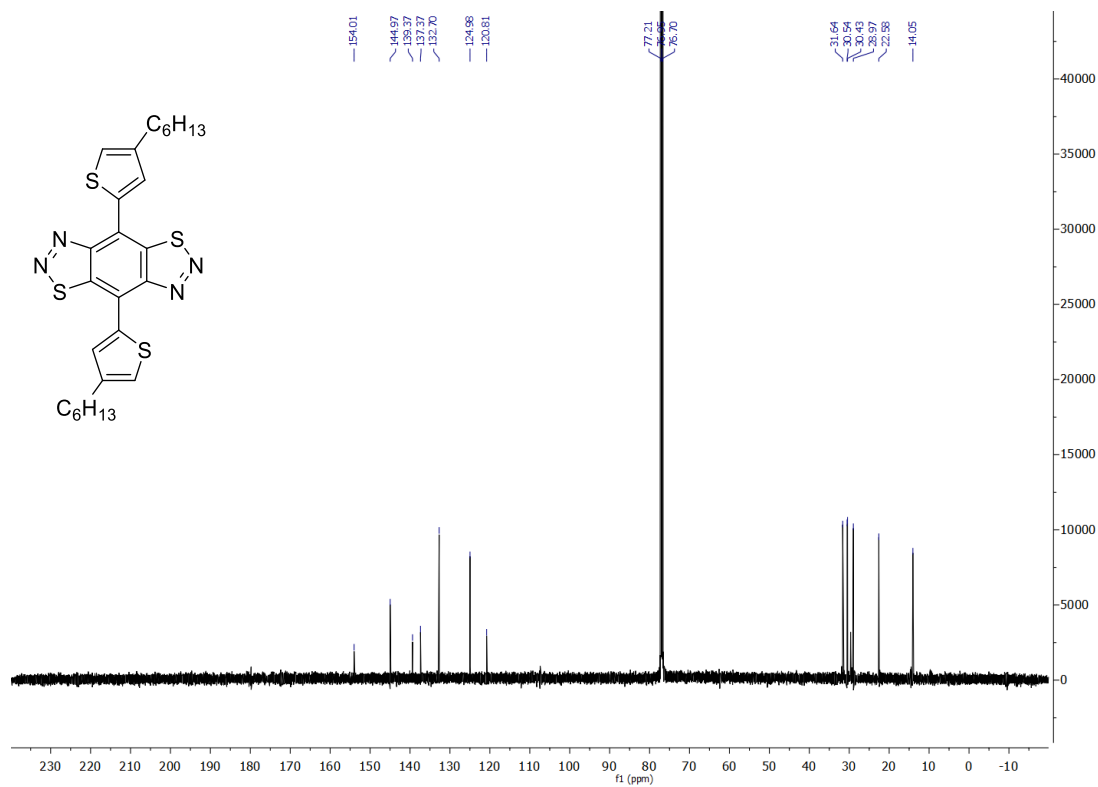


4,8-Bis(4-hexylthiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5a)

¹H NMR (300 MHz)

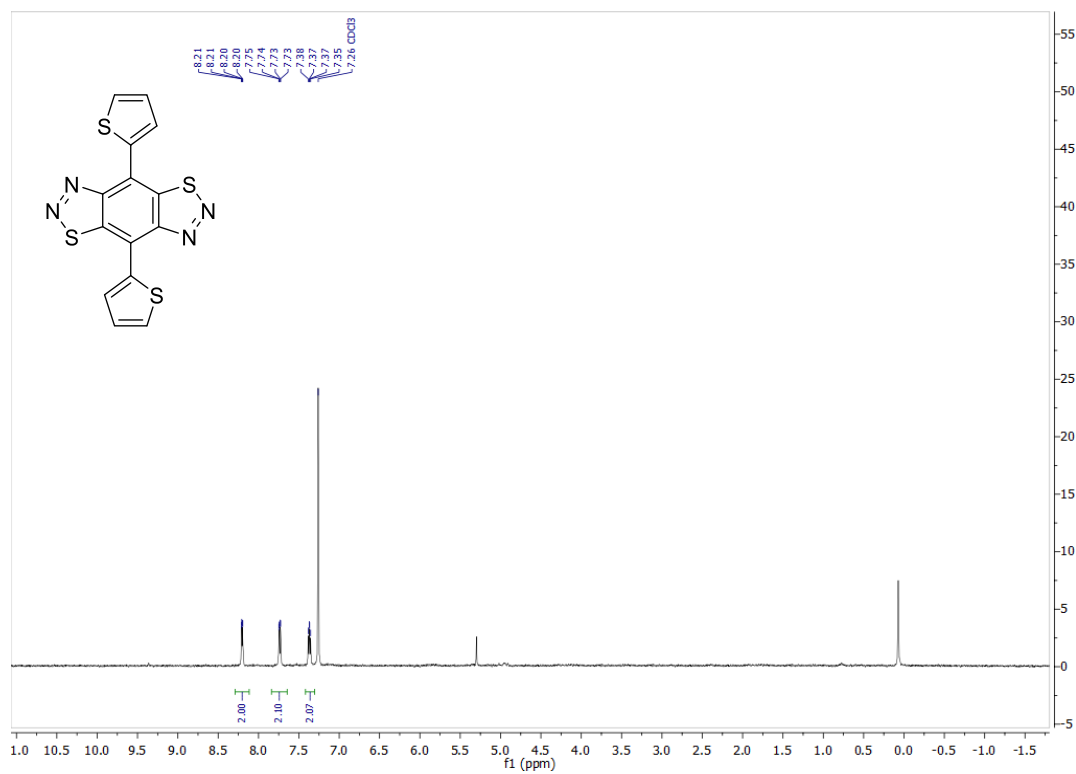


¹³C NMR (75 MHz)

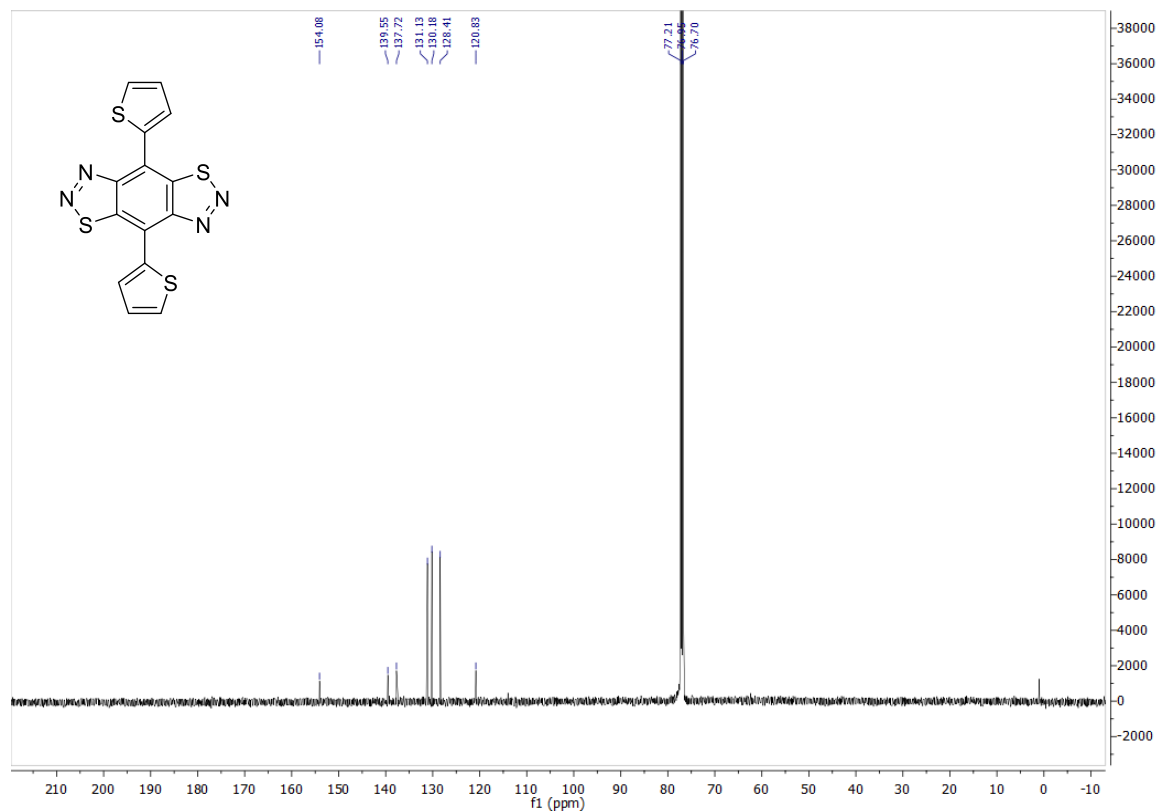


4,8-Di(thiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5b)

¹H NMR (300 MHz)

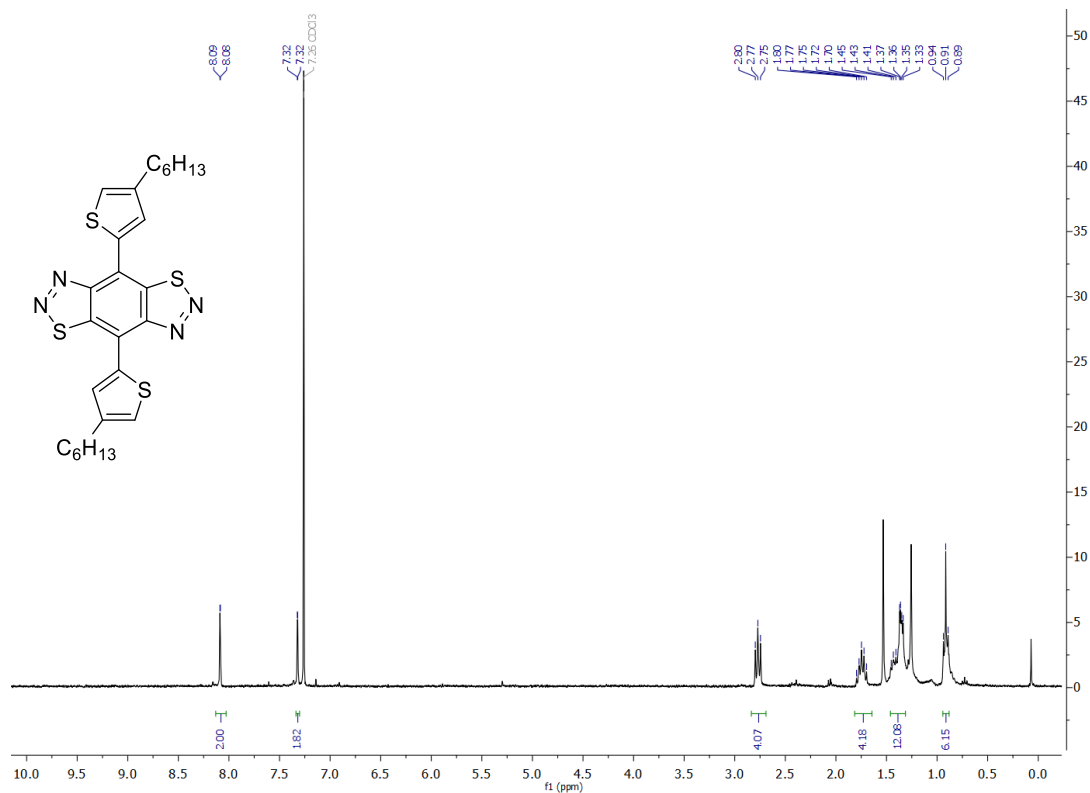


¹³C NMR(75 MHz)

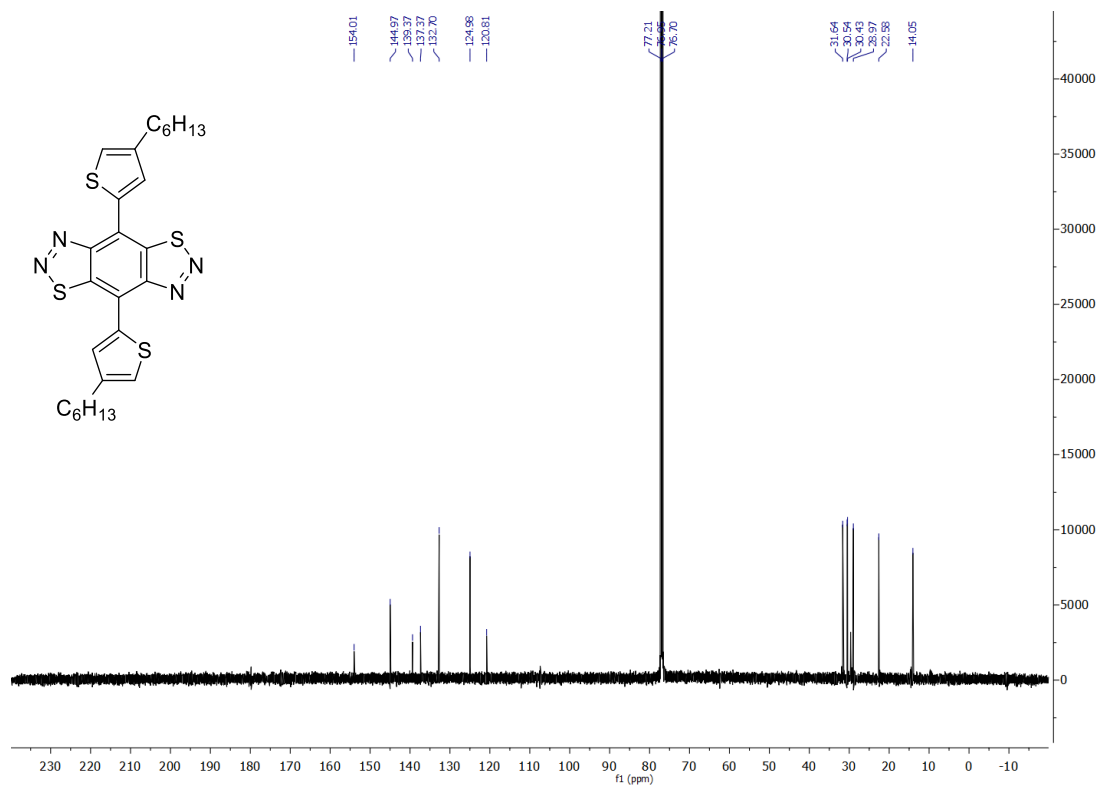


4,8-Bis(4-hexylthiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5c)

¹H NMR (300 MHz)

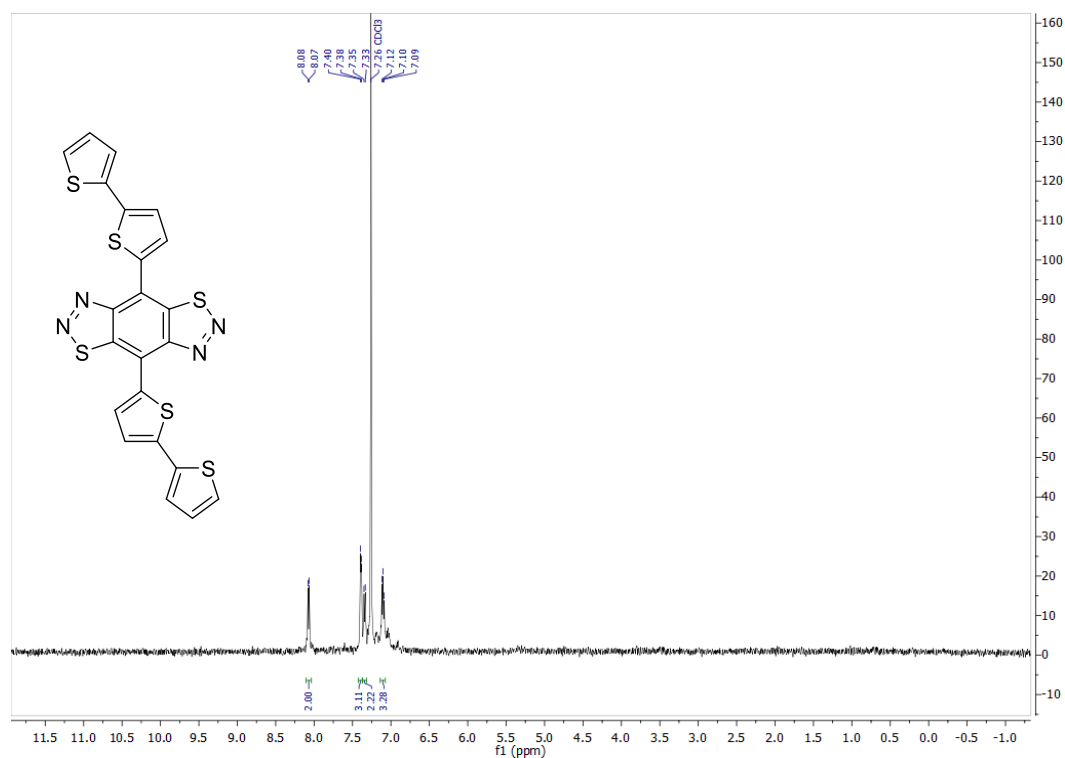


¹³C NMR (75 MHz)

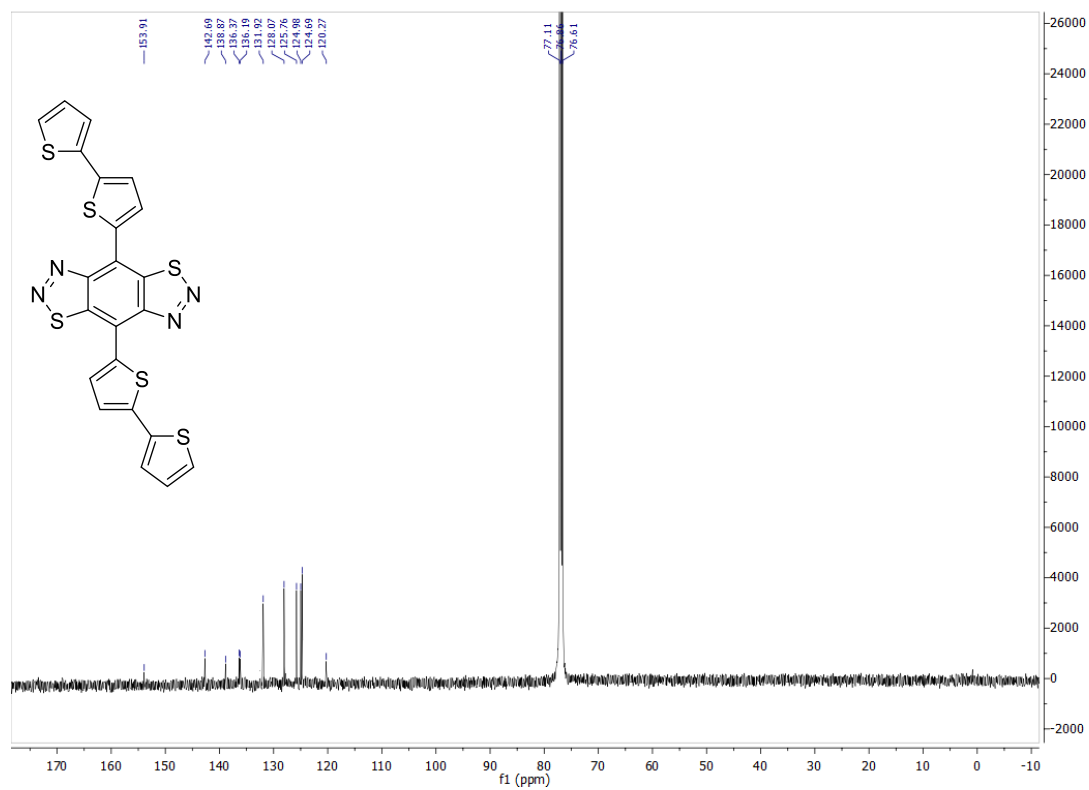


4,8-Di([2,2'-bithiophen]-5-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5d)

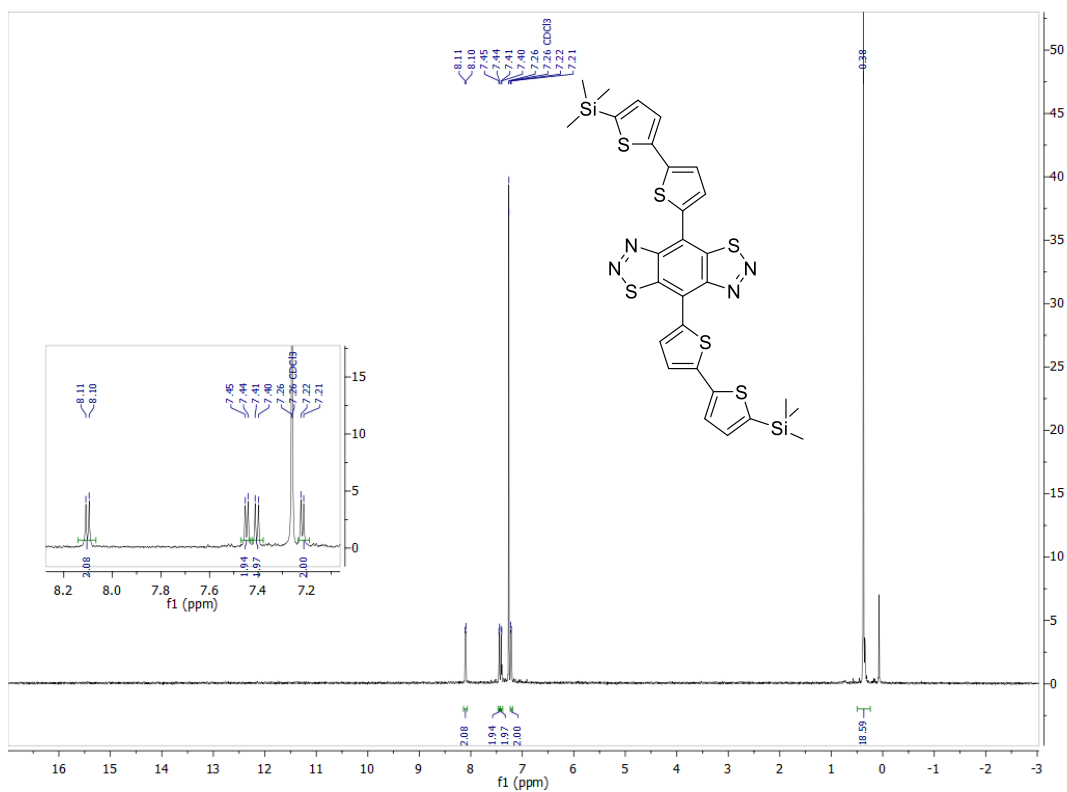
¹H NMR (300 MHz)



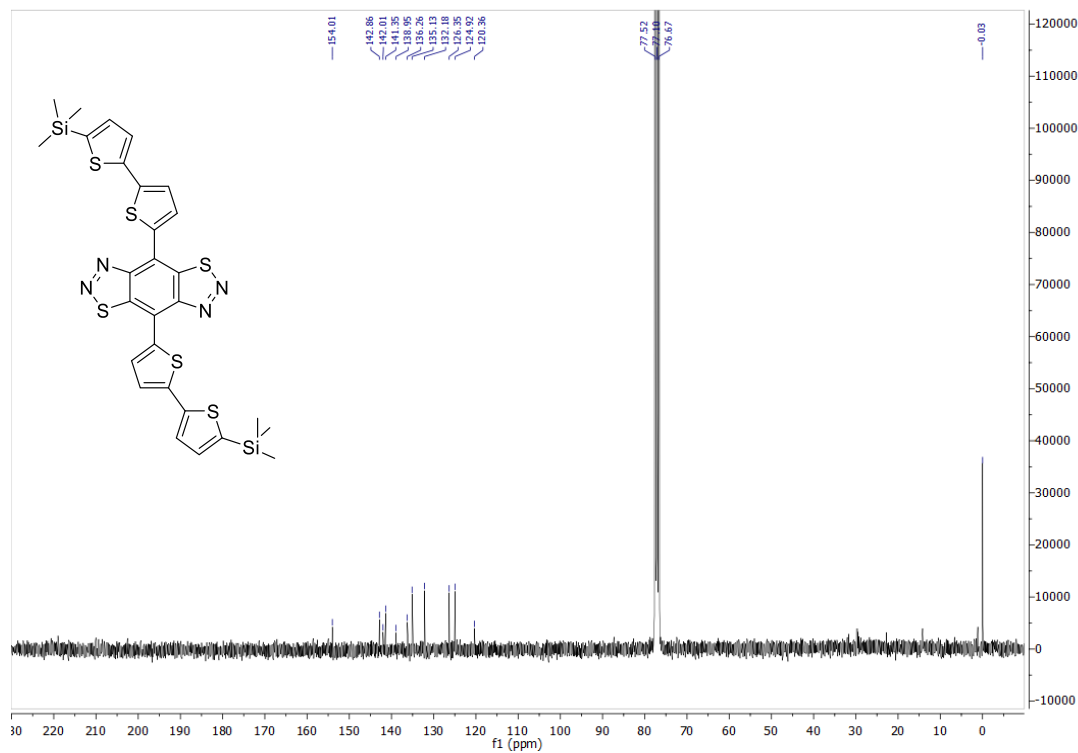
¹³C NMR(75 MHz)



**4,8-Bis(5'-(trimethylsilyl)-[2,2'-bithiophen]-5-yl)benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole)
(5e)**

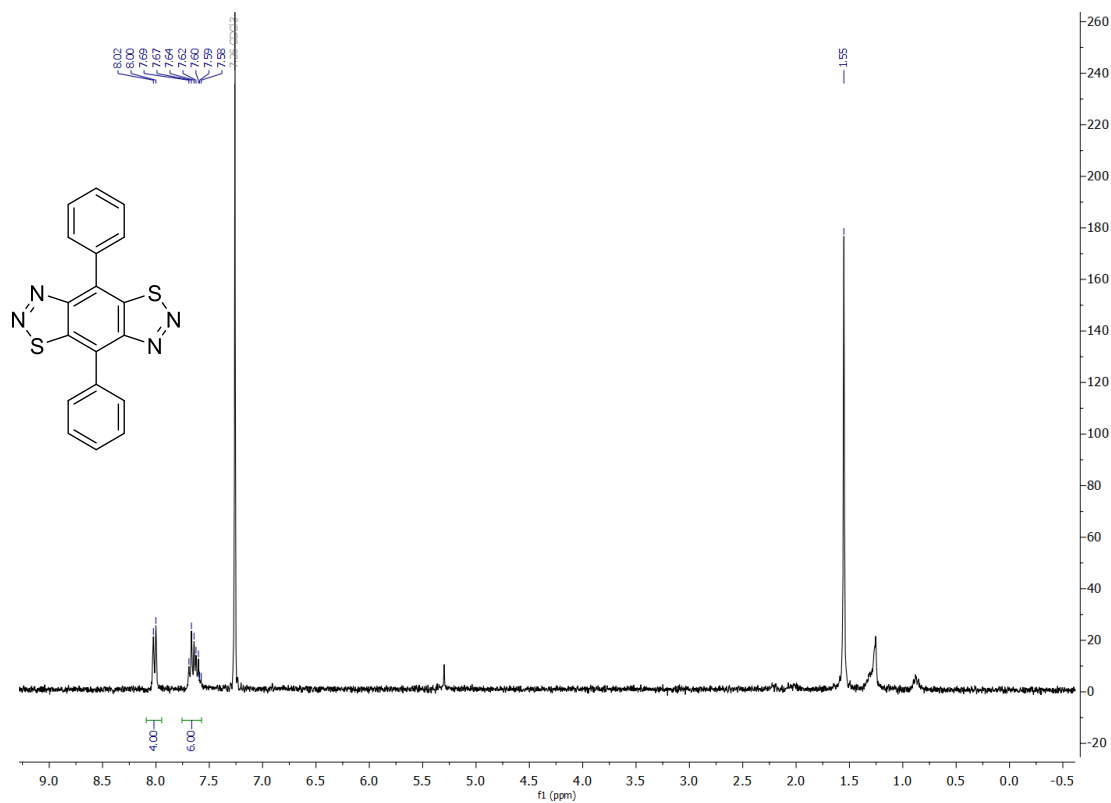


¹³C NMR(75 MHz)

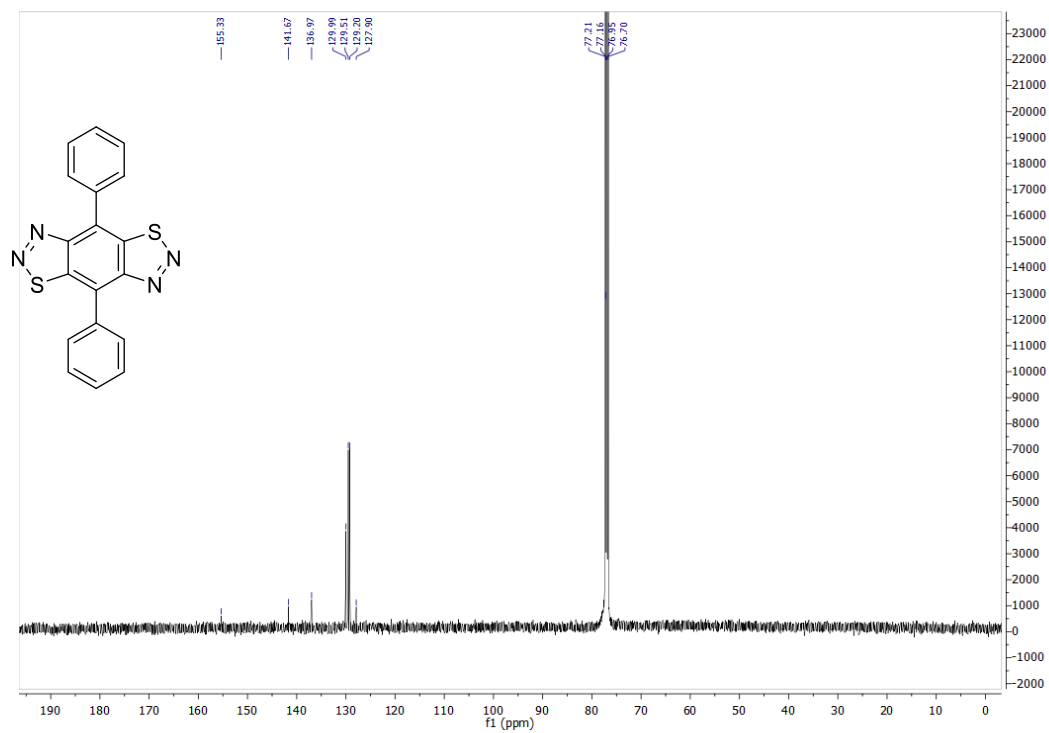


4,8-Diphenylbenzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5f)

¹H NMR (300 MHz)

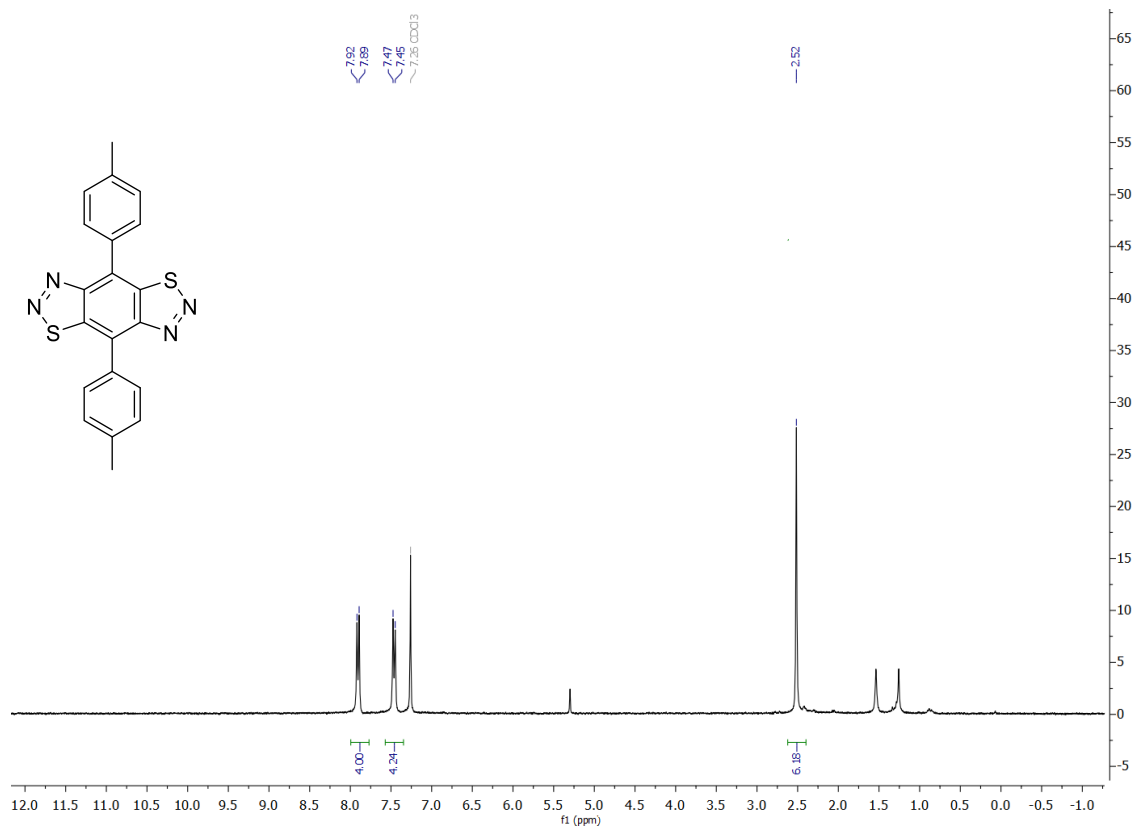


¹³C NMR(75 MHz)

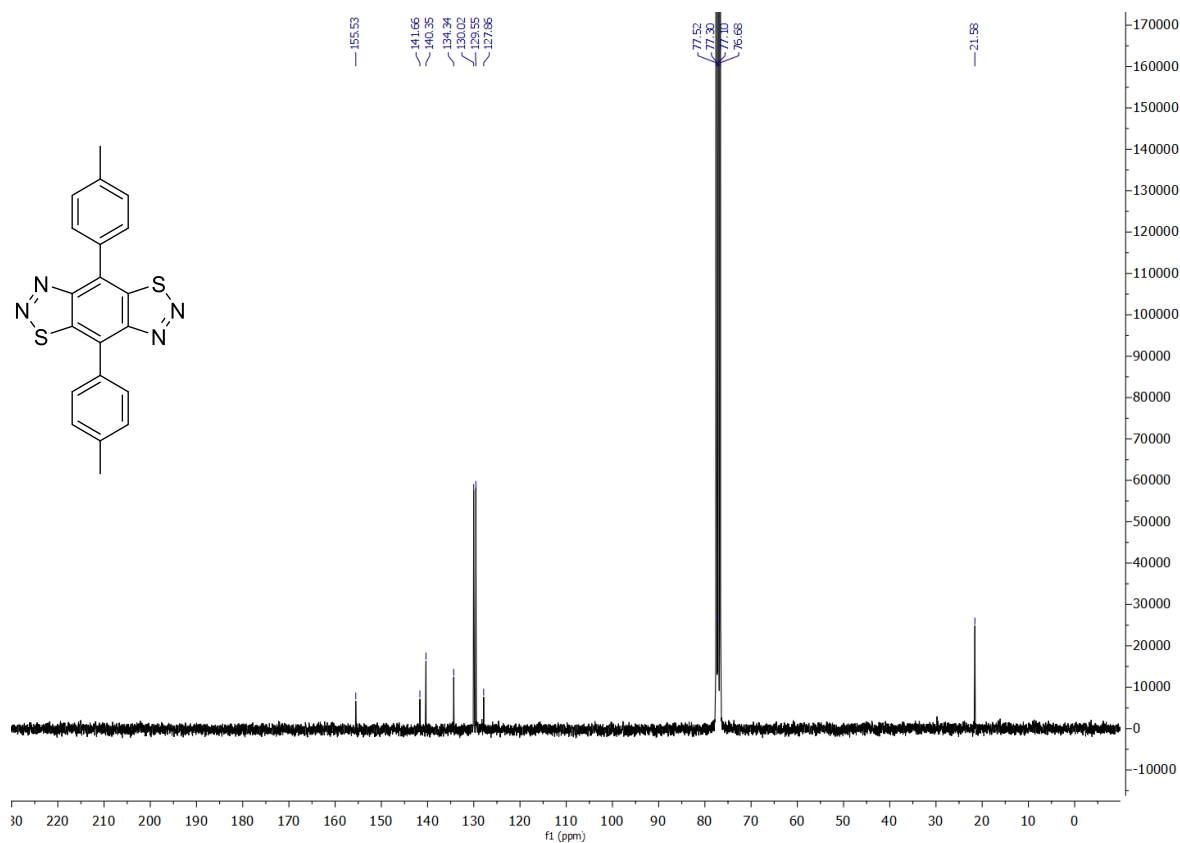


4,8-Di-p-tolylbenzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5g)

¹H NMR (300 MHz)

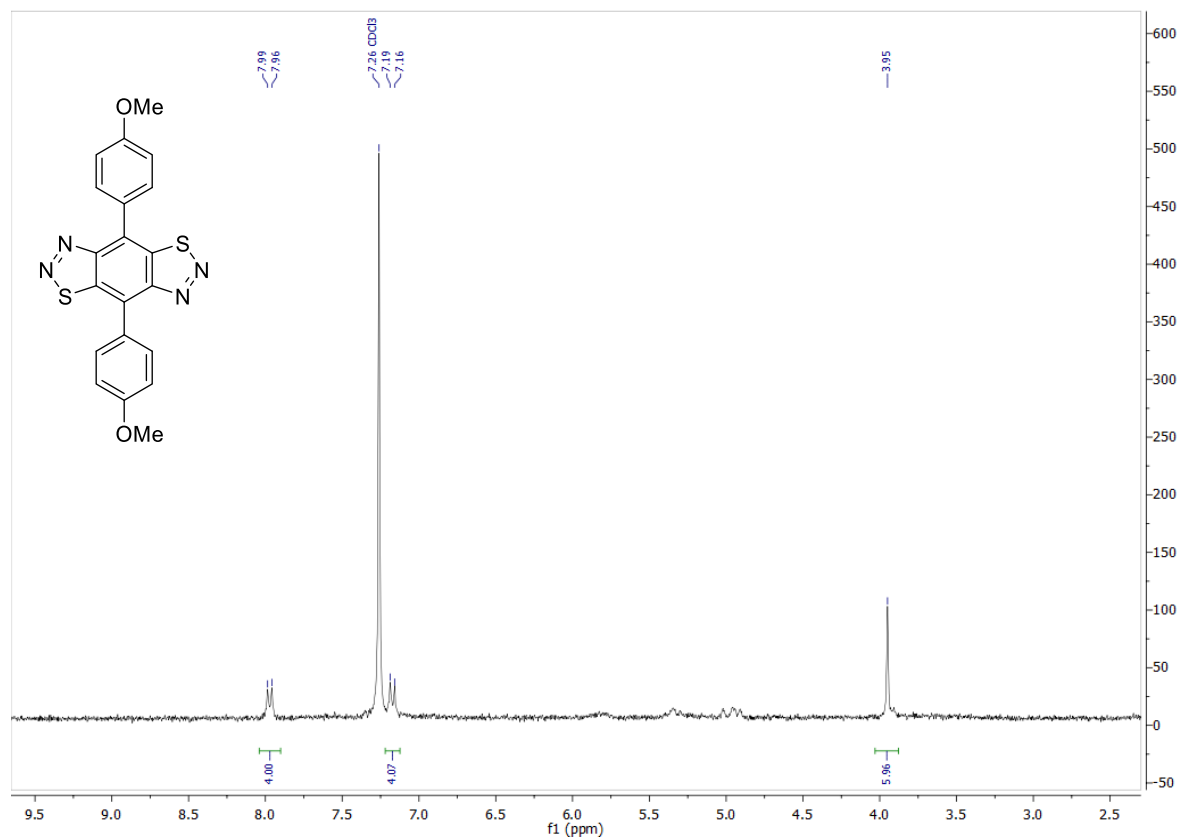


¹³C NMR (75 MHz)



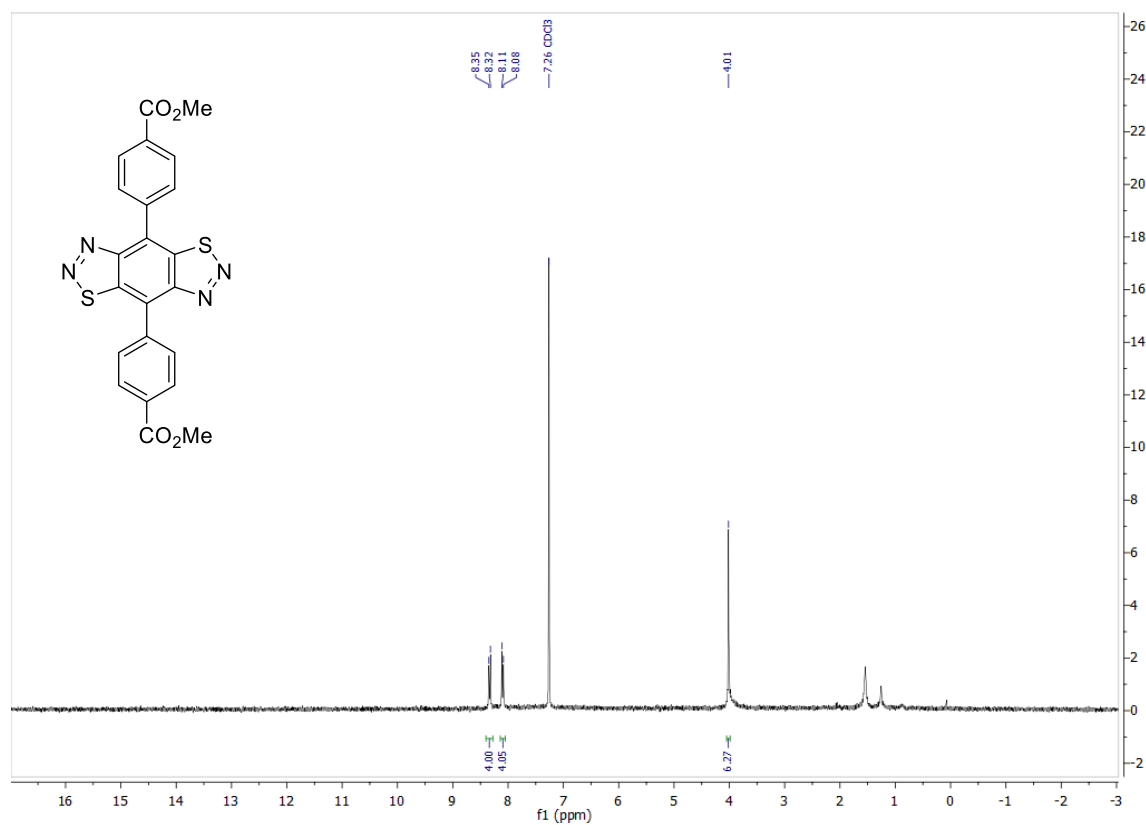
4,8-Bis(4-methoxyphenyl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (5h)

¹H NMR (300 MHz)

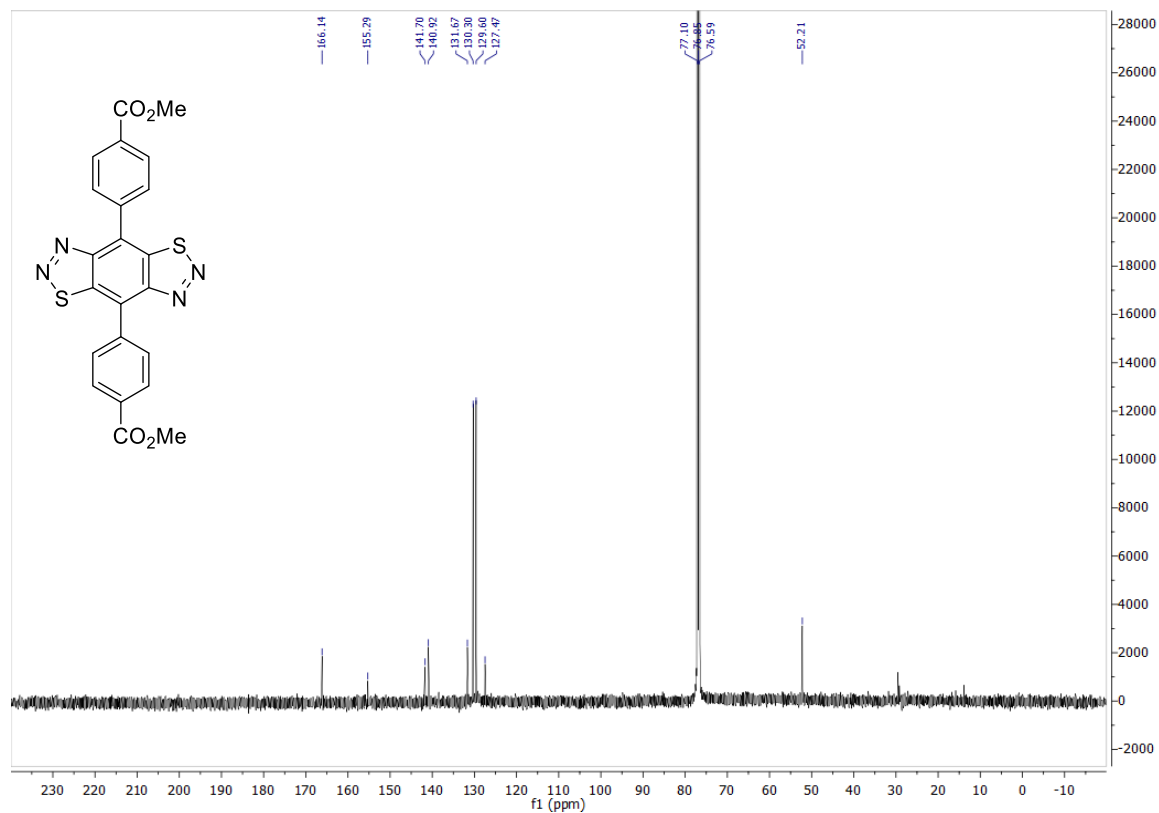


Dimethyl 4,4'-(benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole)-4,8-diyl)dibenzoate (5i)

¹H NMR (300 MHz)

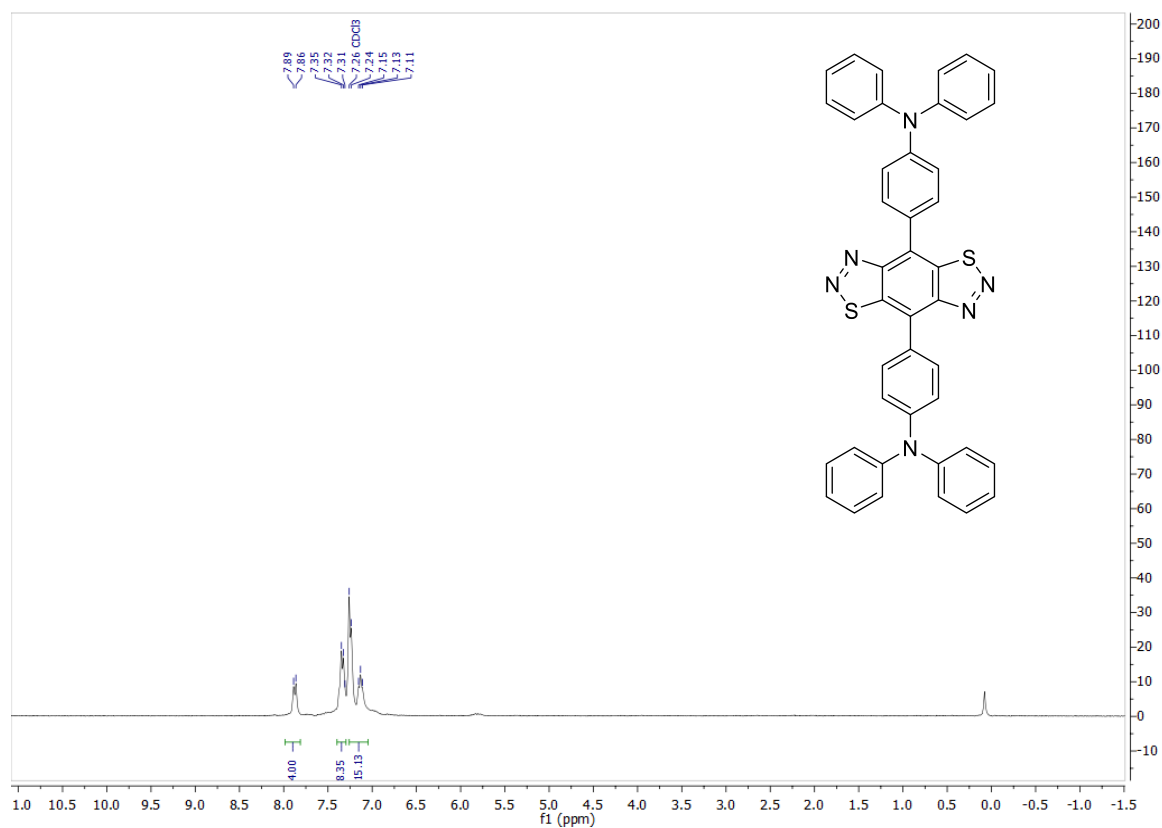


¹³C NMR (75 MHz)

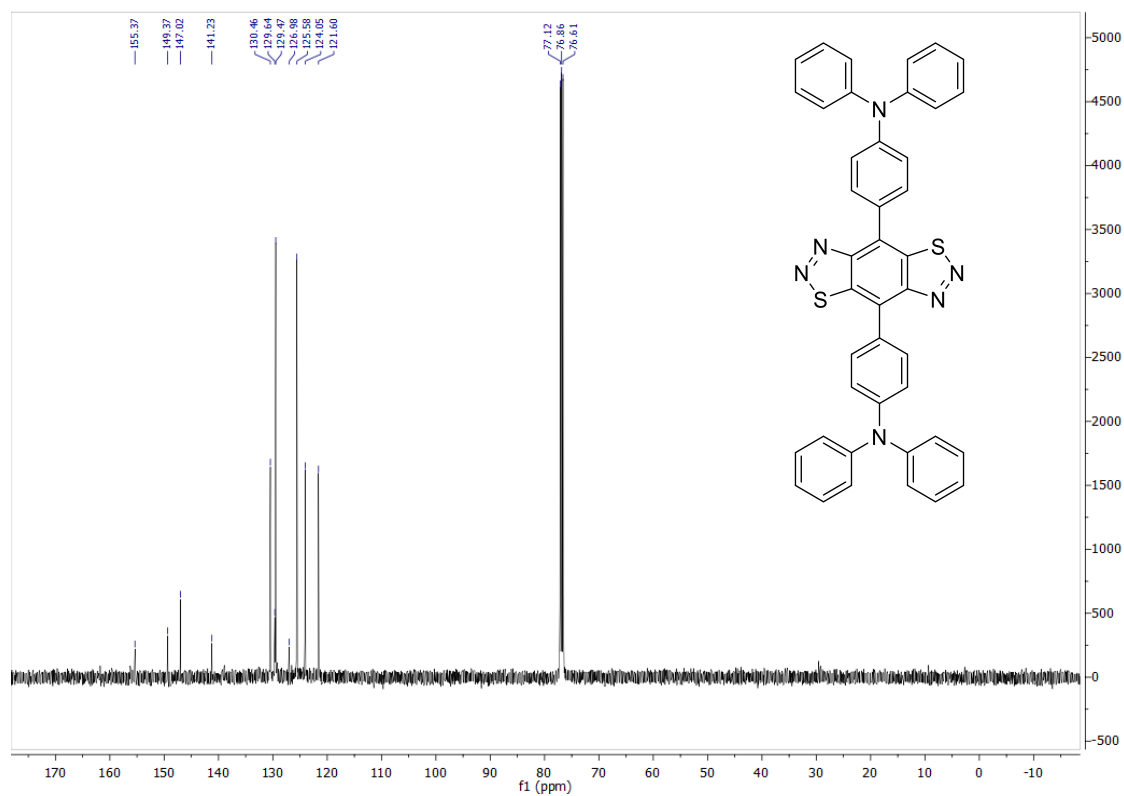


4,4'-(Benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole)-4,8-diyl)bis(N,N-diphenylaniline) (5j)

¹H NMR (300 MHz)

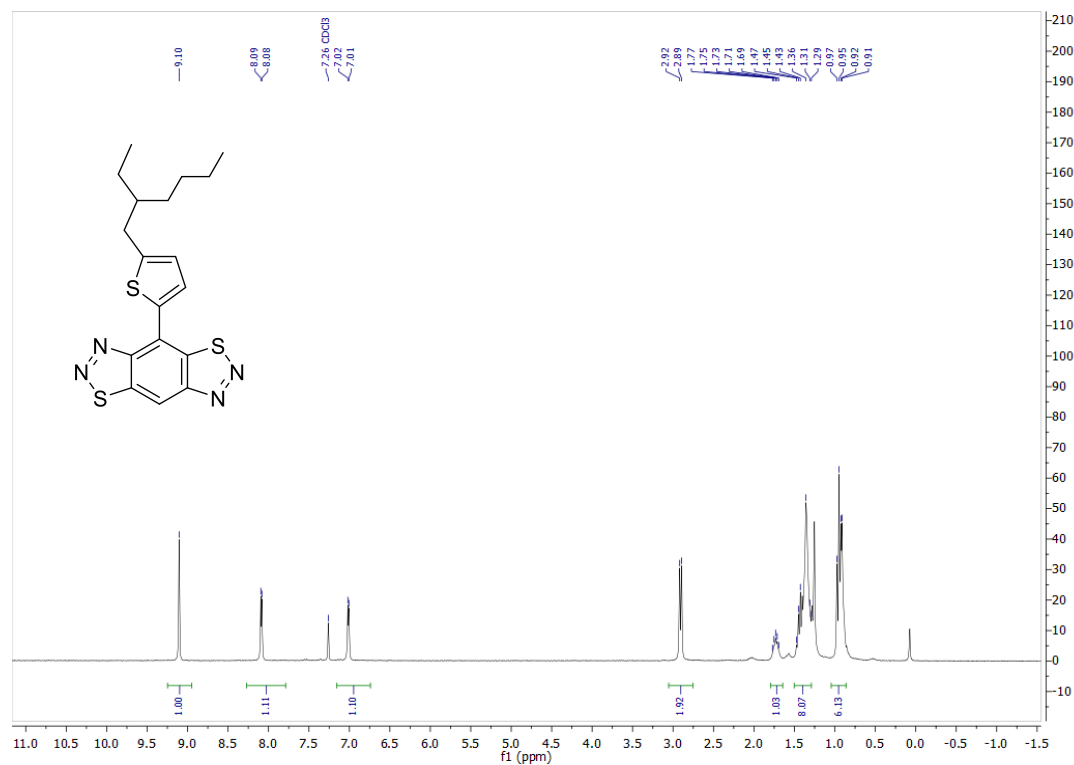


¹³C NMR(75 MHz)

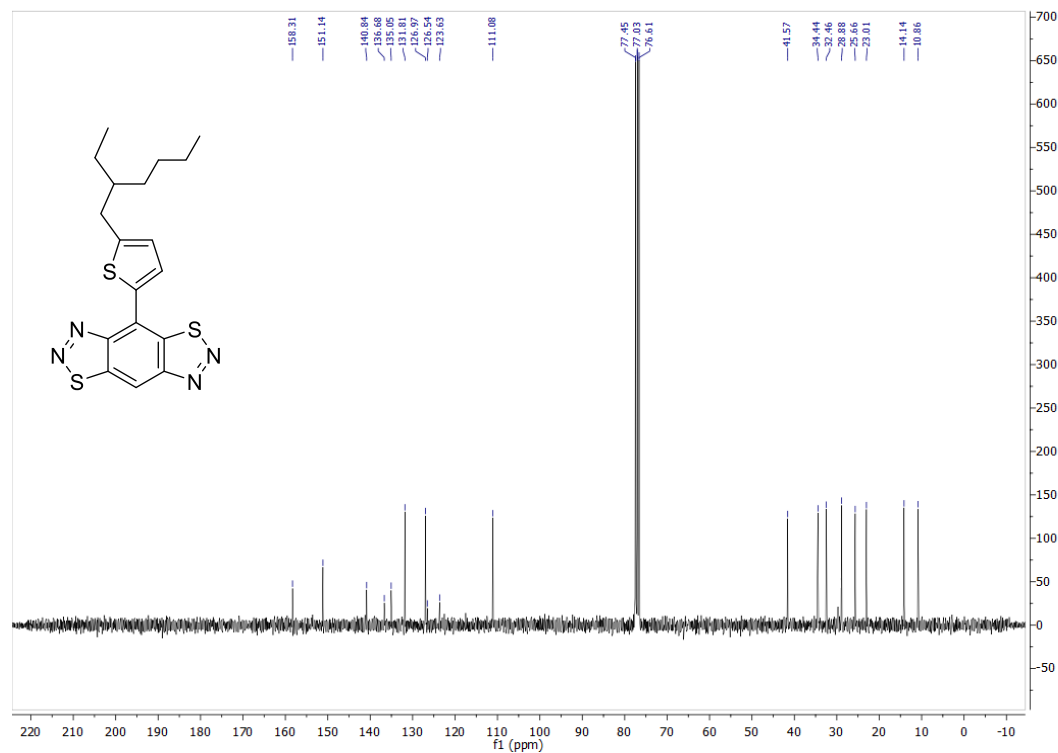


4-(5-(2-Ethylhexyl)thiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (7a)

¹H NMR (300 MHz)

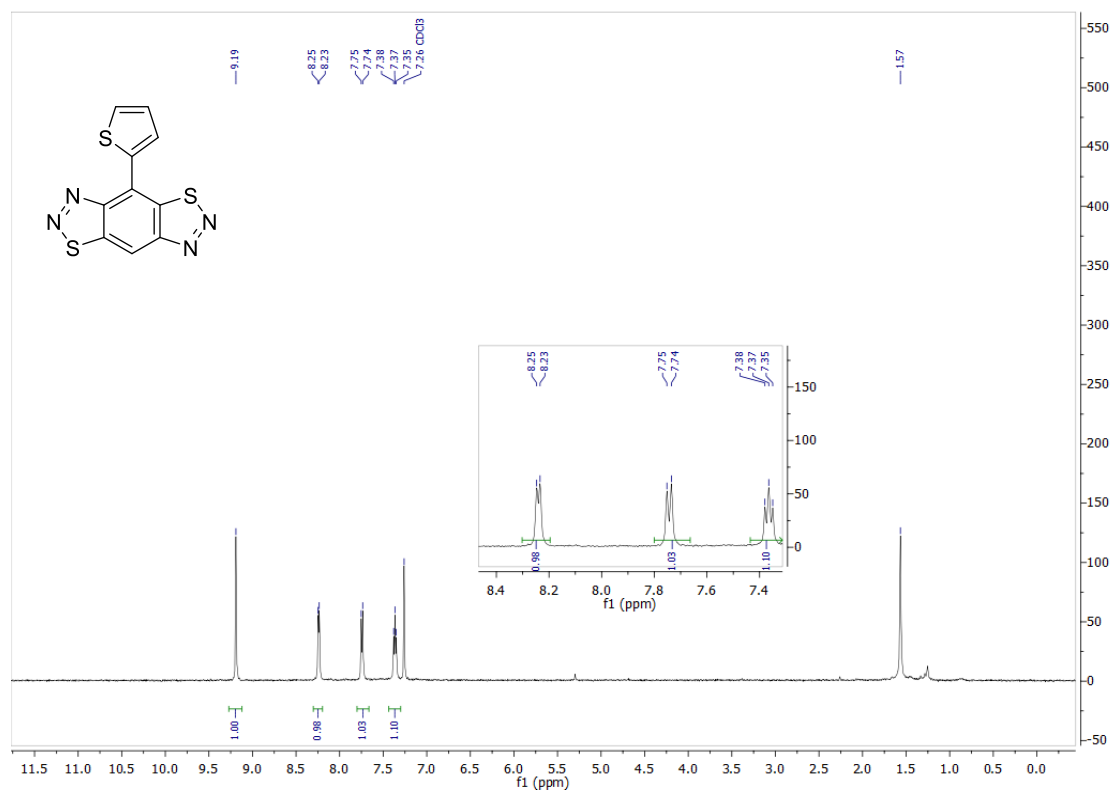


¹³C NMR (75 MHz)

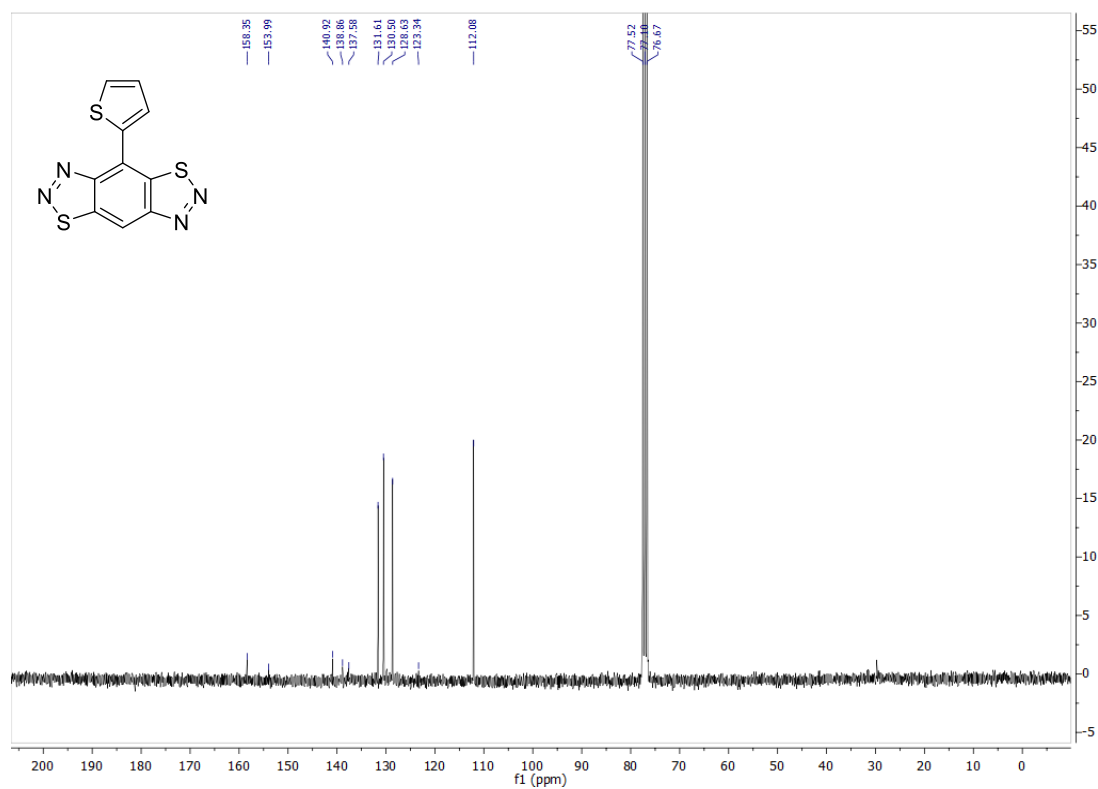


4-(Thiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (7b)

¹H NMR (300 MHz)

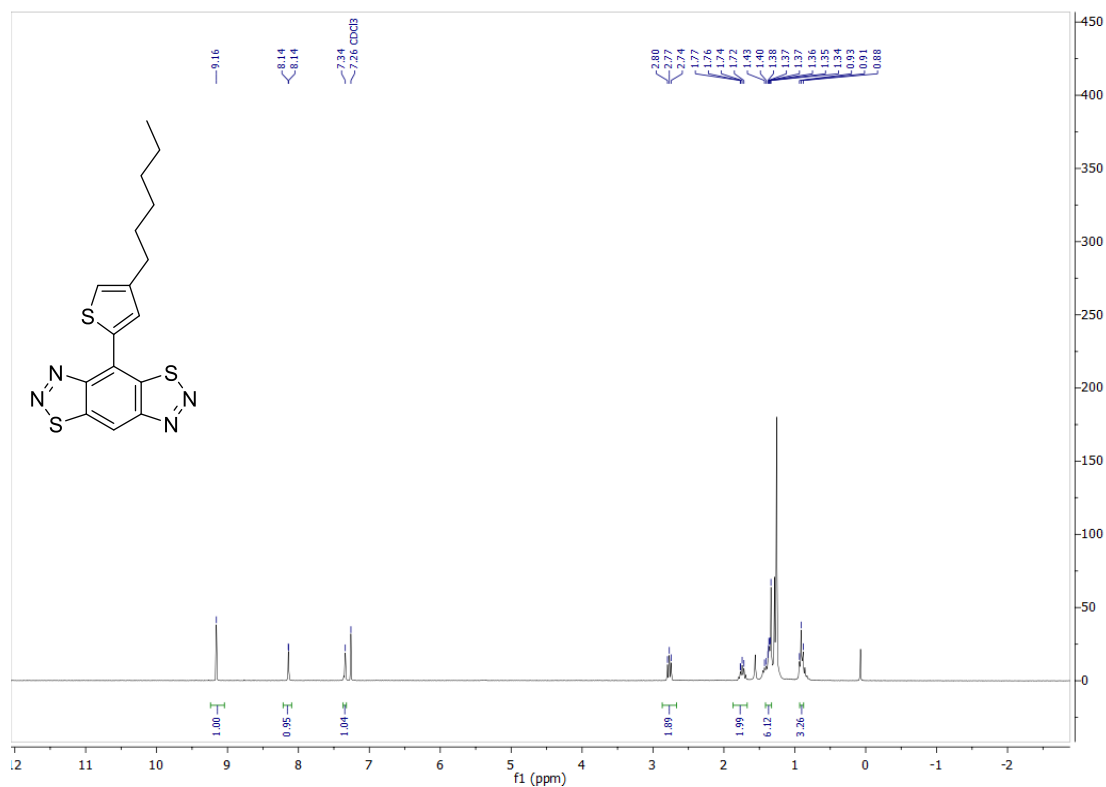


¹³C NMR (75 MHz)

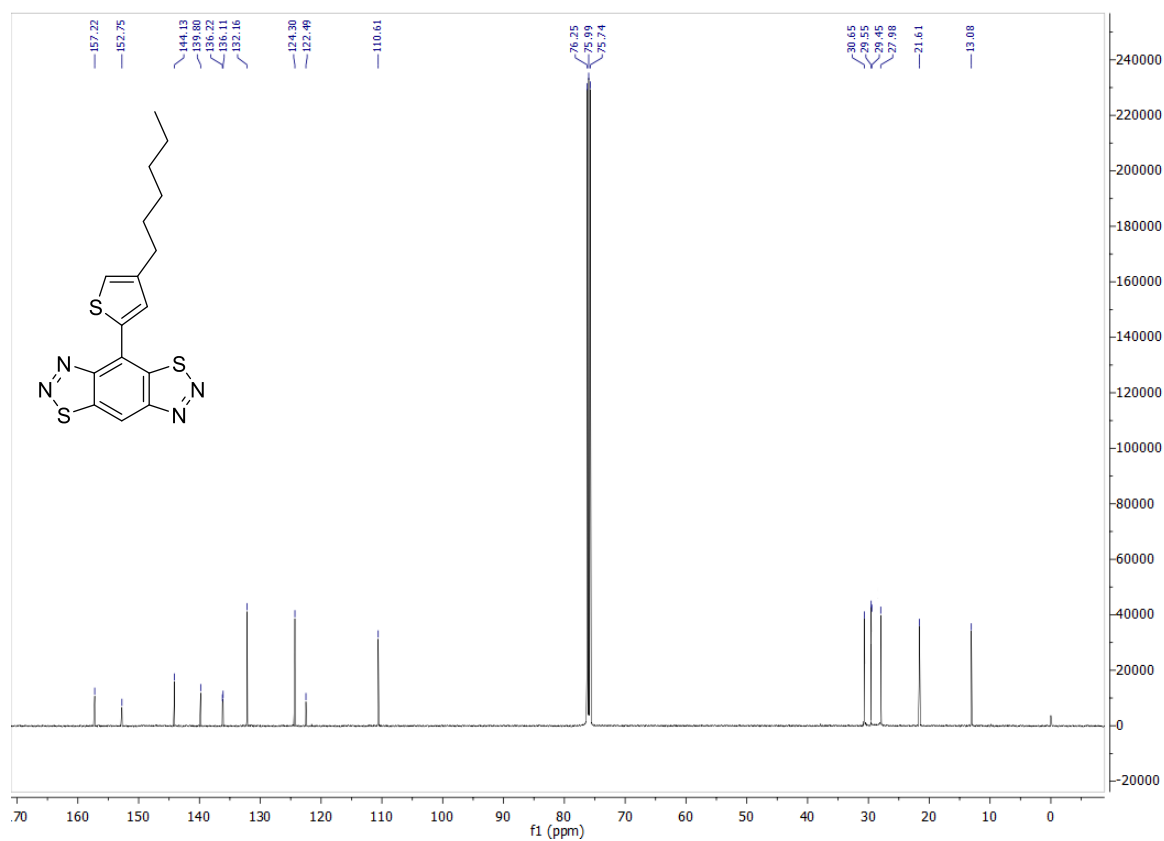


4-(4-Hexylthiophen-2-yl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (7c)

¹H NMR (300 MHz)

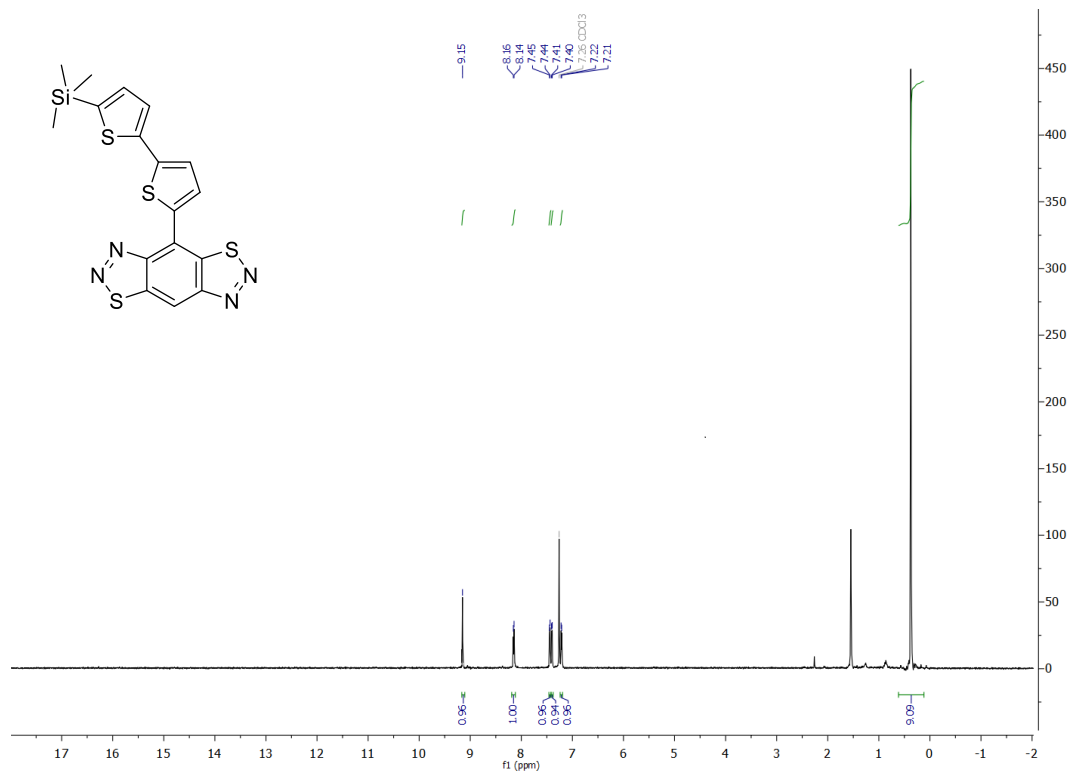


¹³C NMR (75 MHz)

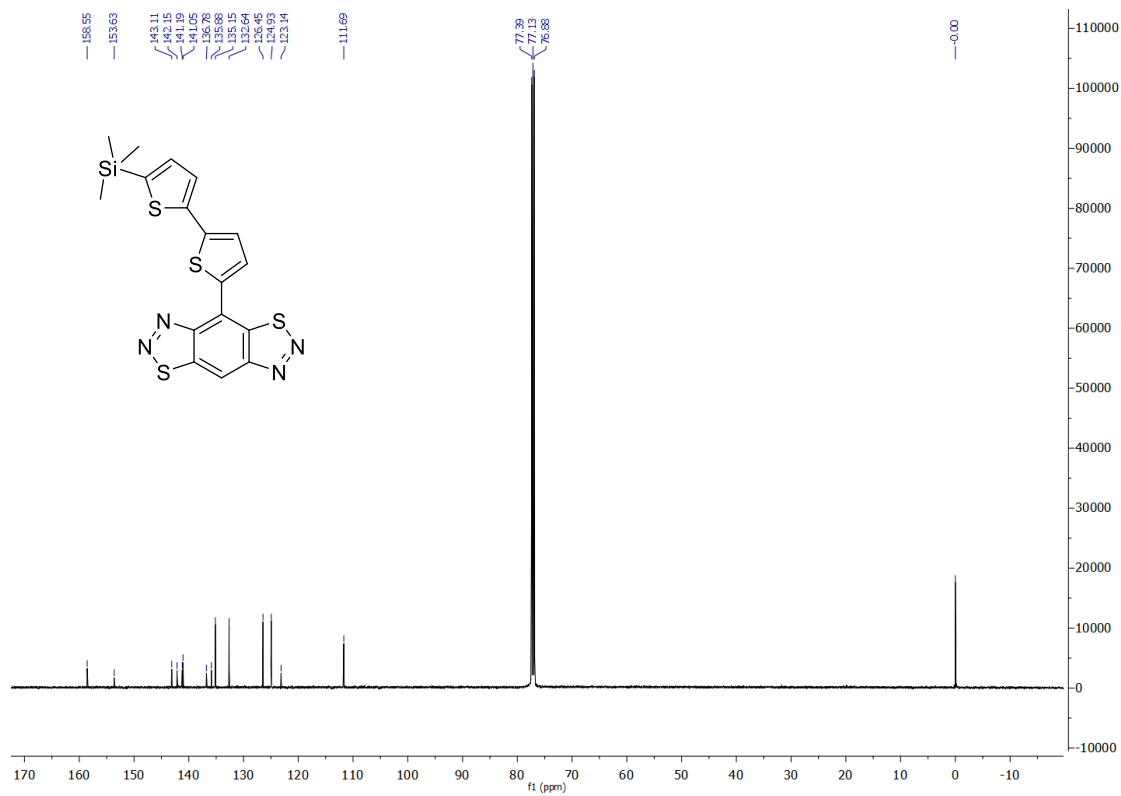


4-(5'-(Trimethylsilyl)-[2,2'-bithiophen]-5-yl)benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole) (7e)

¹H NMR (300 MHz)

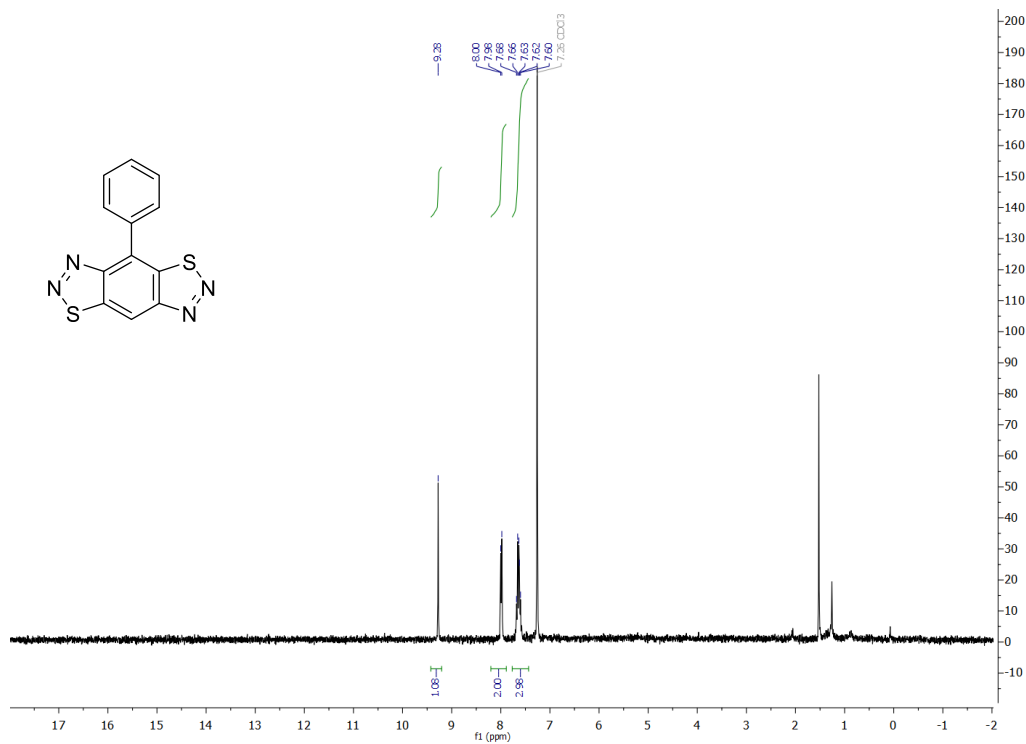


¹³C NMR (75 MHz)

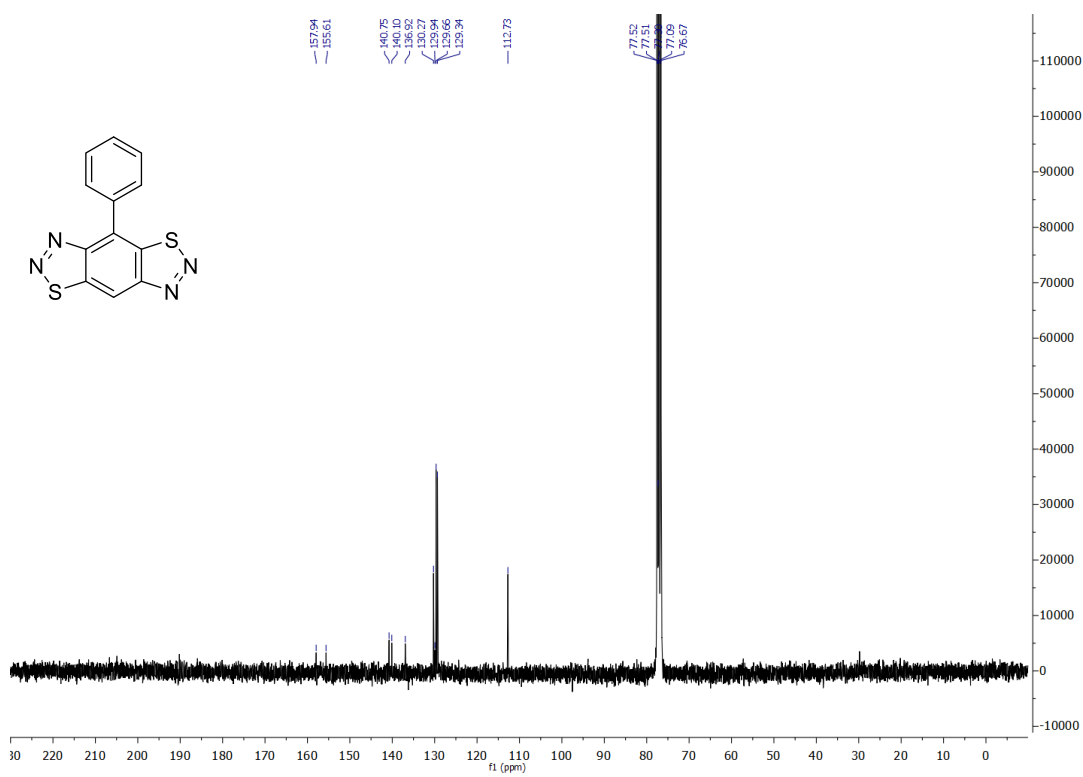


4-Phenylbenzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole) (7f)

¹H NMR (300 MHz)

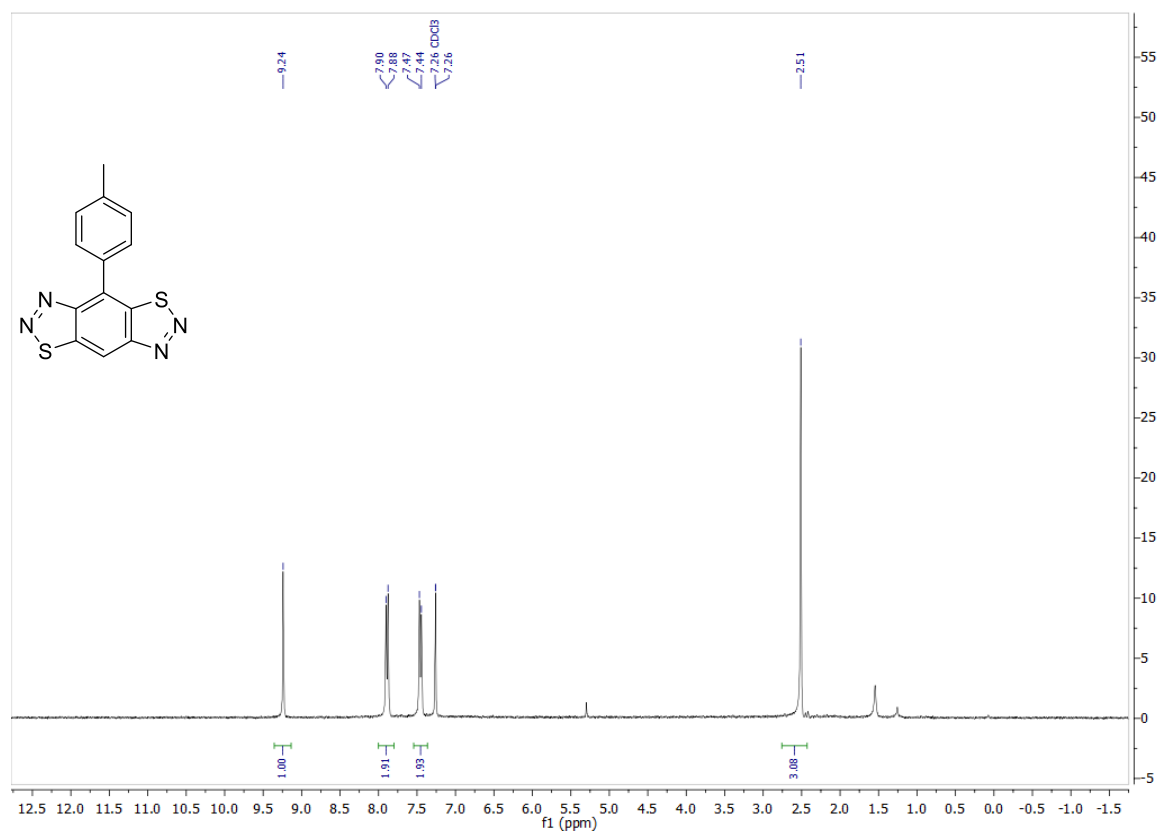


¹³C NMR (75 MHz)

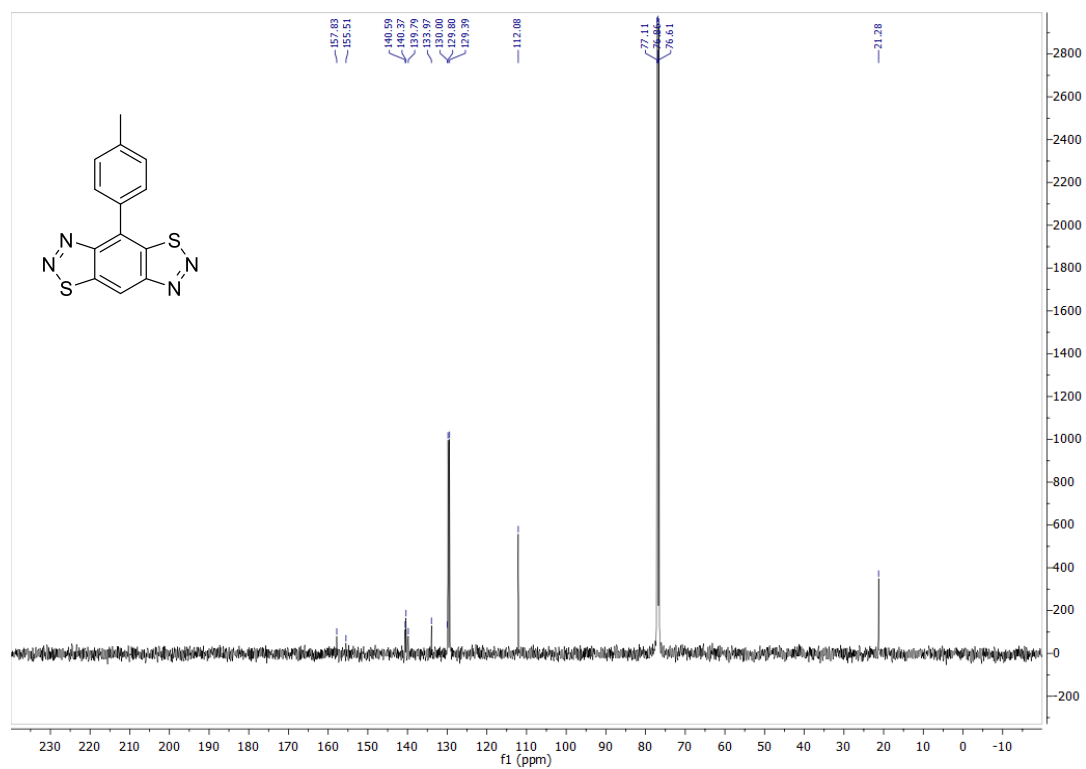


4-(p-Tolyl)benzo[1,2-d:4,5-d']bis([1,2,3]thiadiazole) (7g)

¹H NMR (300 MHz)

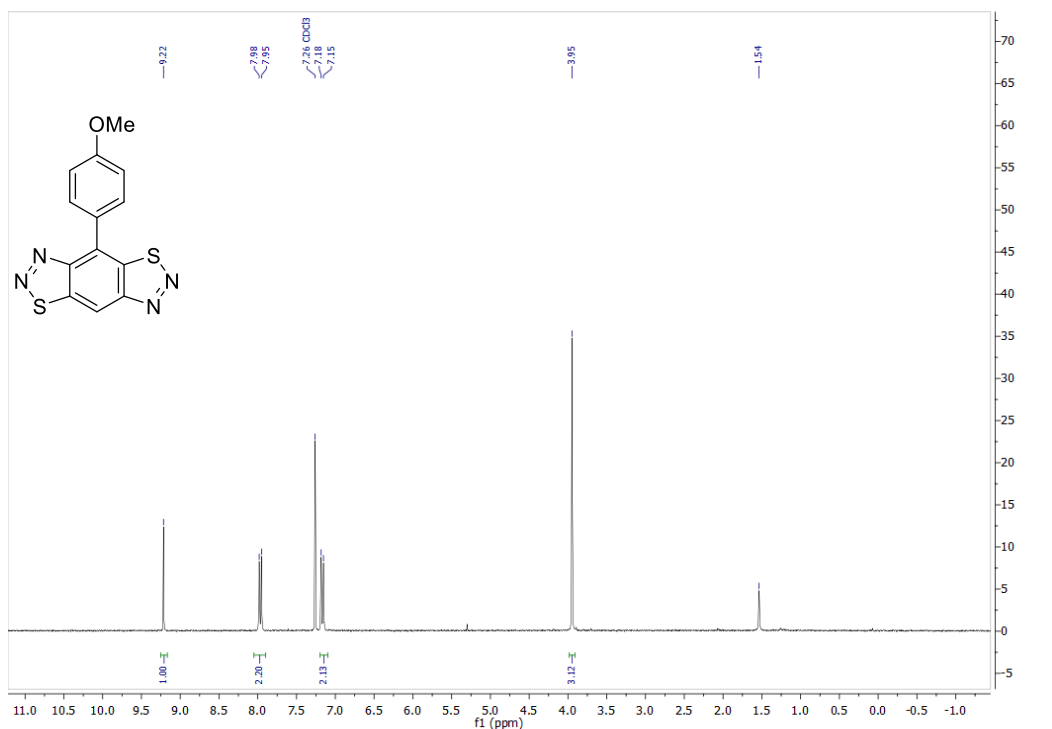


¹³C NMR(75 MHz)

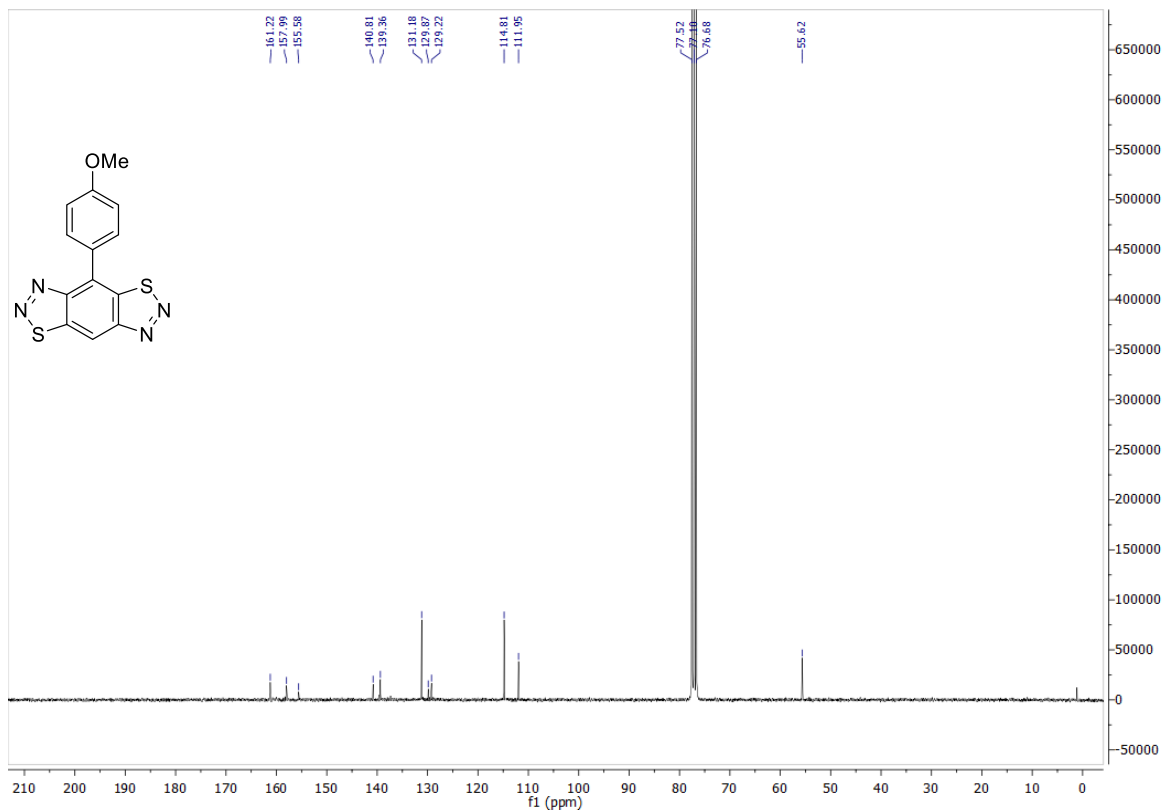


4-(4-Methoxyphenyl)benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole) (7h)

¹H NMR (300 MHz)

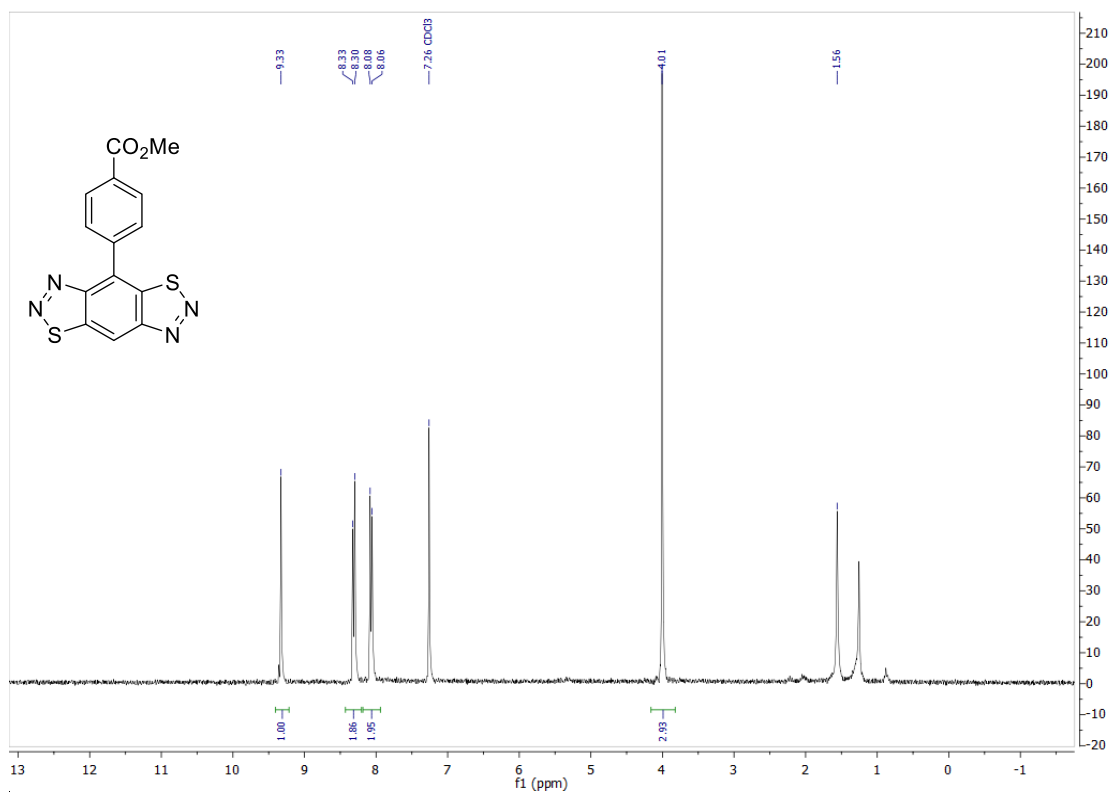


¹³C NMR(75 MHz)

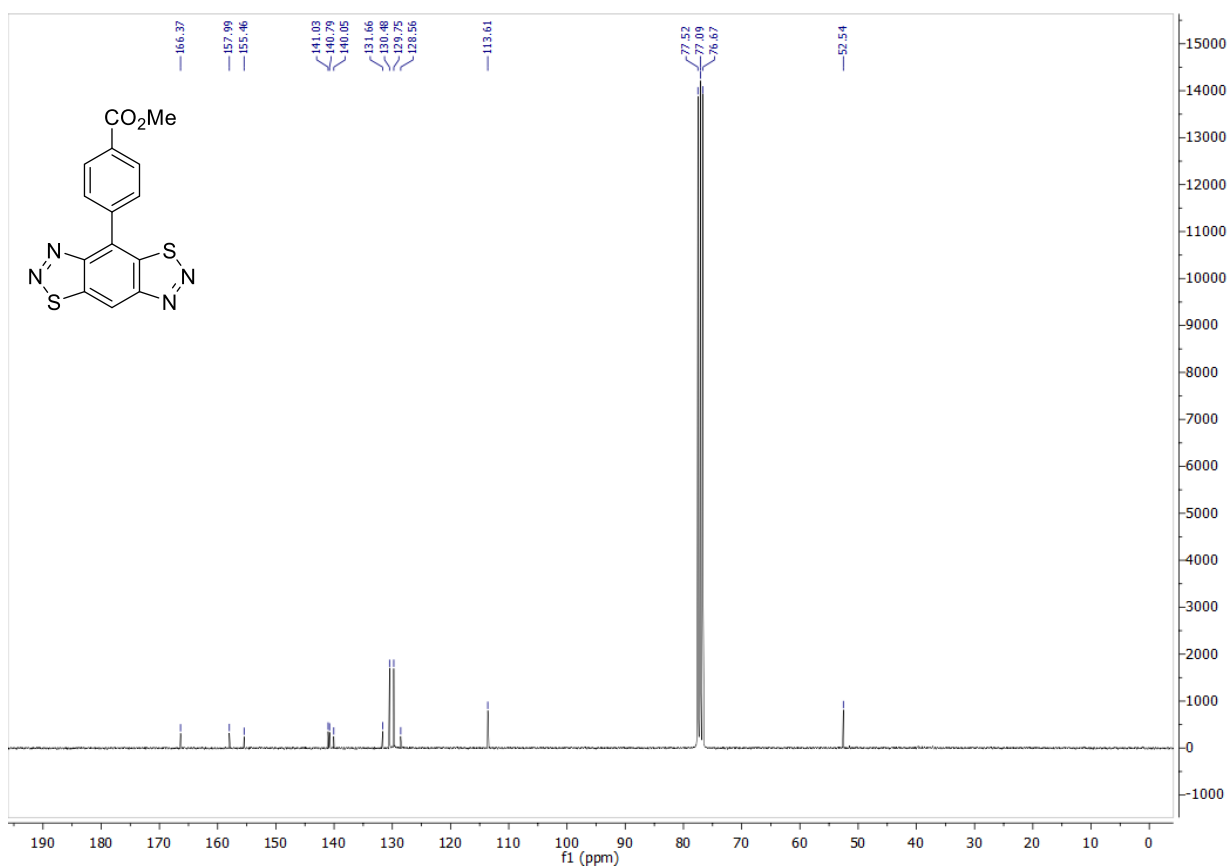


Methyl 4-(benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole)-4-yl)benzoate (7i)

¹H NMR (300 MHz)

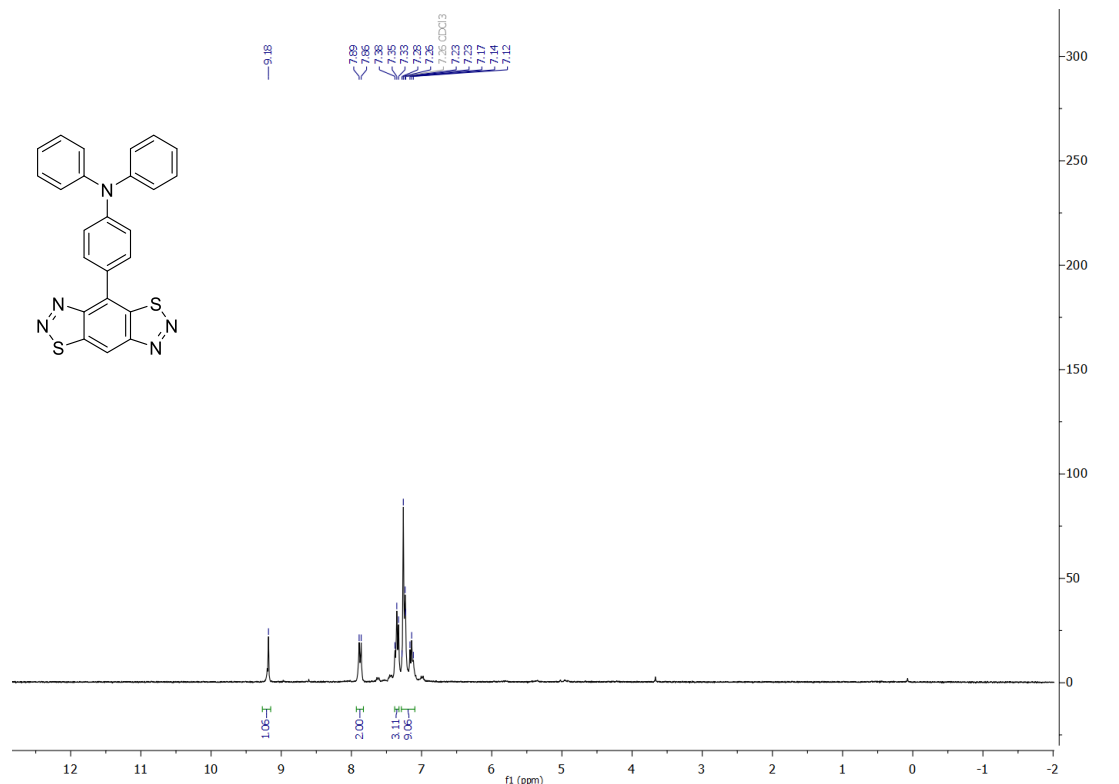


¹³C NMR (75 MHz)



4-(Benzo[1,2-*d*:4,5-*d'*]bis([1,2,3]thiadiazole)-4-yl)-*N,N*-diphenylaniline (7j)

¹H NMR (300 MHz)



¹³C NMR(75 MHz)

