

## Electronic Supplementary Information

### Synthesis of a multifunctional poly(*p*-phenylene ethynylene) scaffold with clickable azide-containing side chains for (bio)sensor applications

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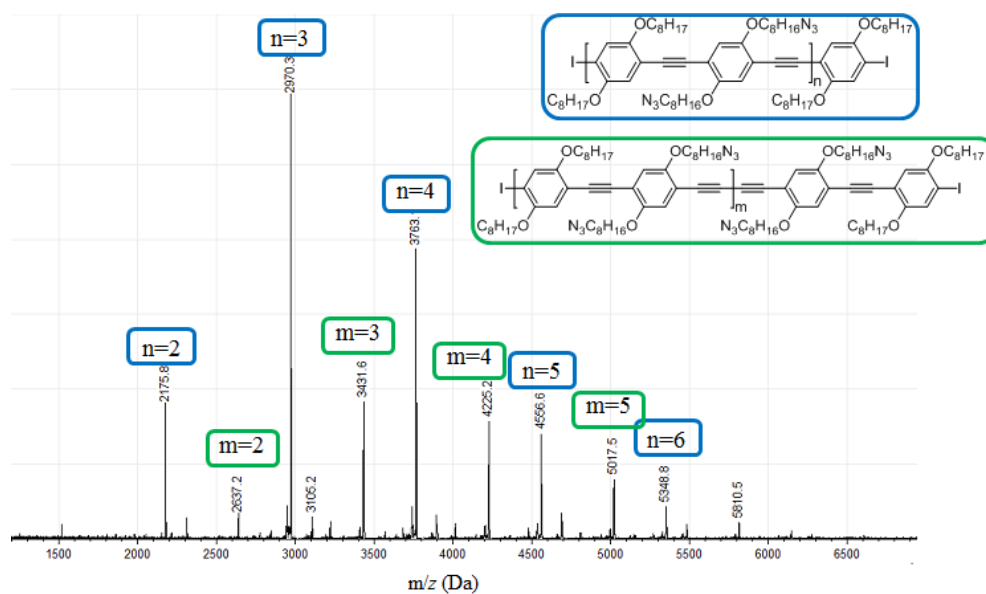
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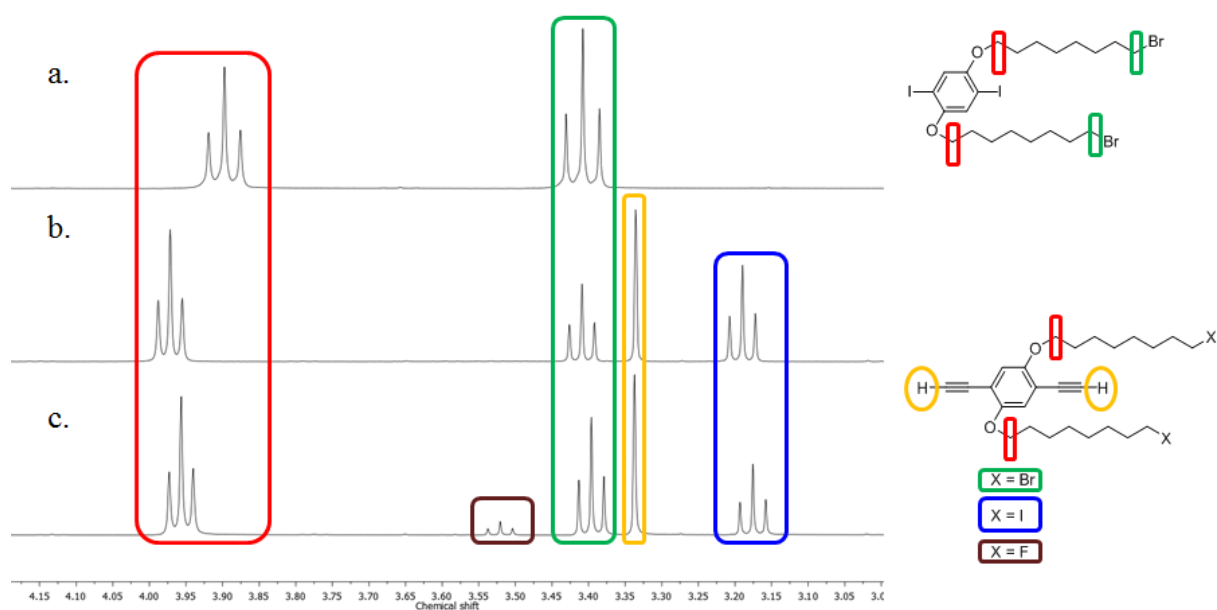
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## 1. MALDI-TOF mass spectrum of copolymer P2a



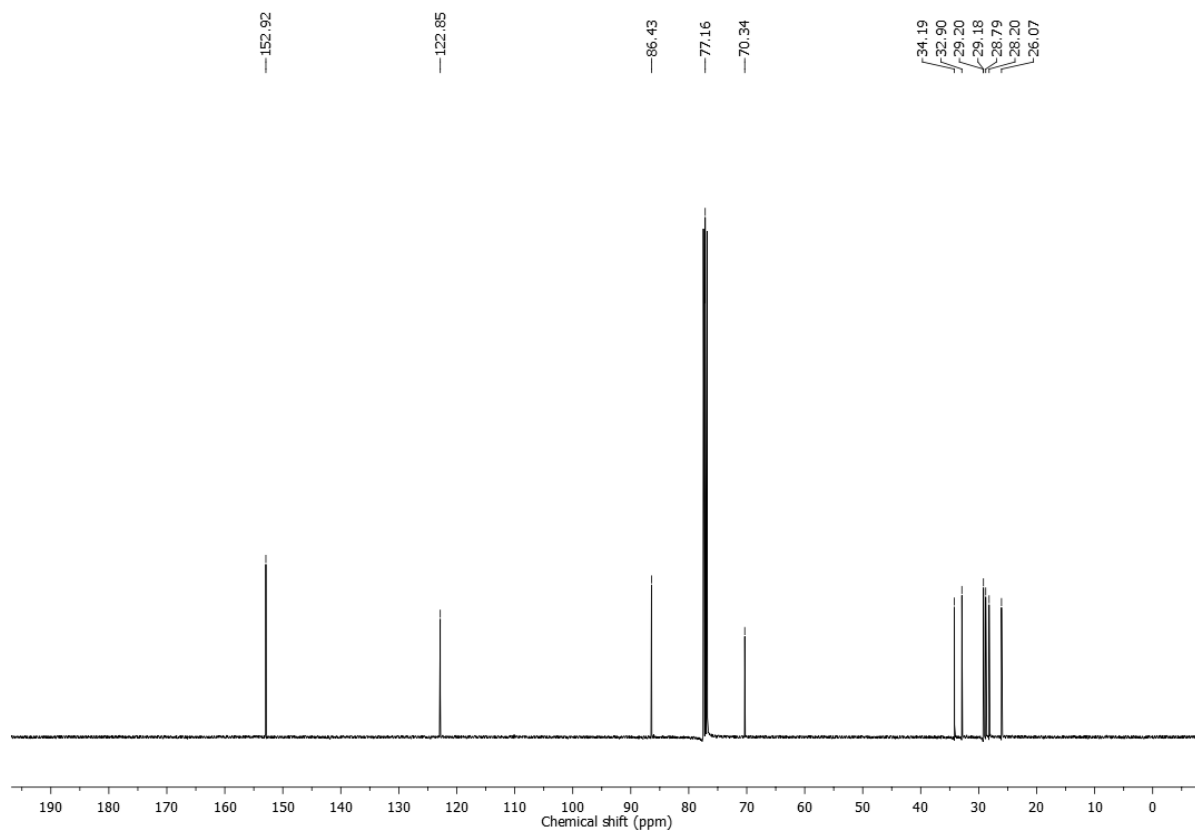
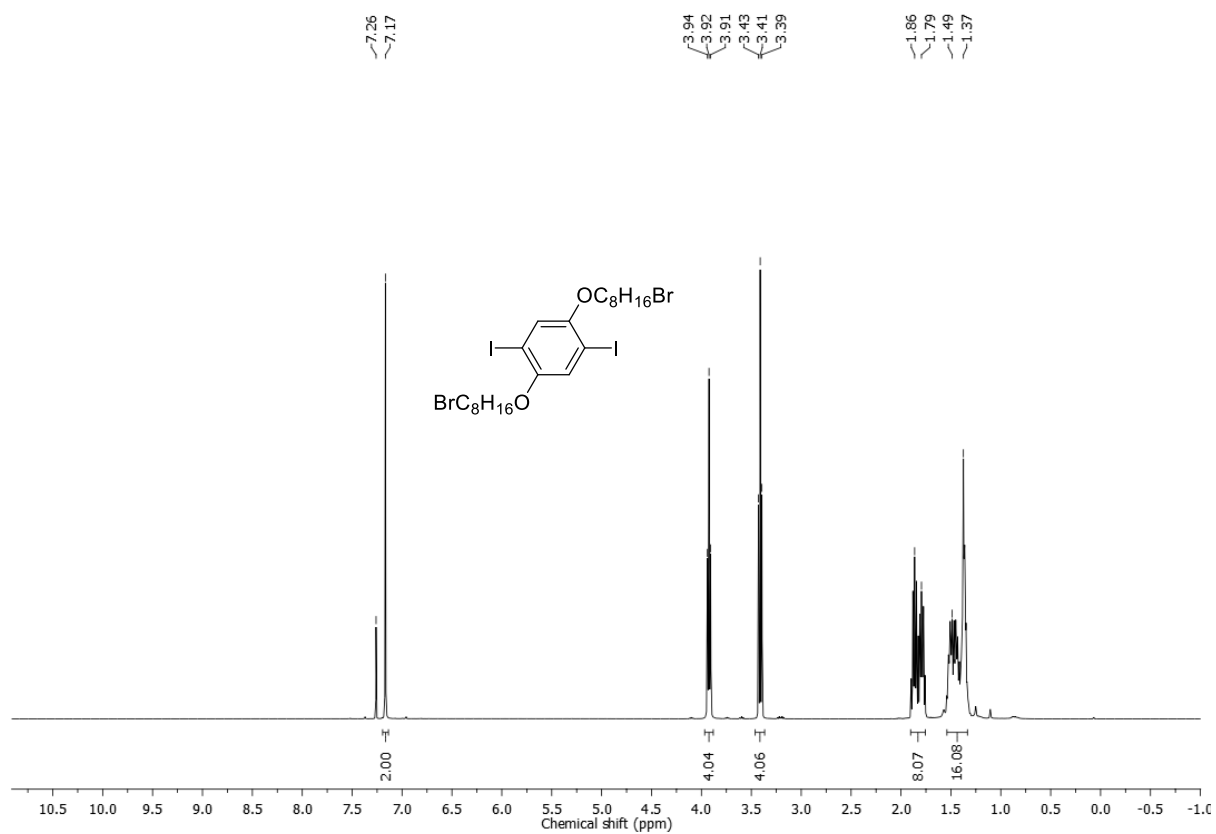
**Figure S1.** MALDI-TOF mass spectrum of (non-end-capped) copolymer **P2a** ( $M_n = 14$  kg/mol,  $\mathcal{D} = 2.1$ ). The majority of the polymer chains is defect-free, whereas a smaller part contains one homo-coupling somewhere along the polymer backbone.

## 2. $^1\text{H}$ and $^{13}\text{C}$ NMR spectra of monomers and polymers (in $\text{CDCl}_3$ )

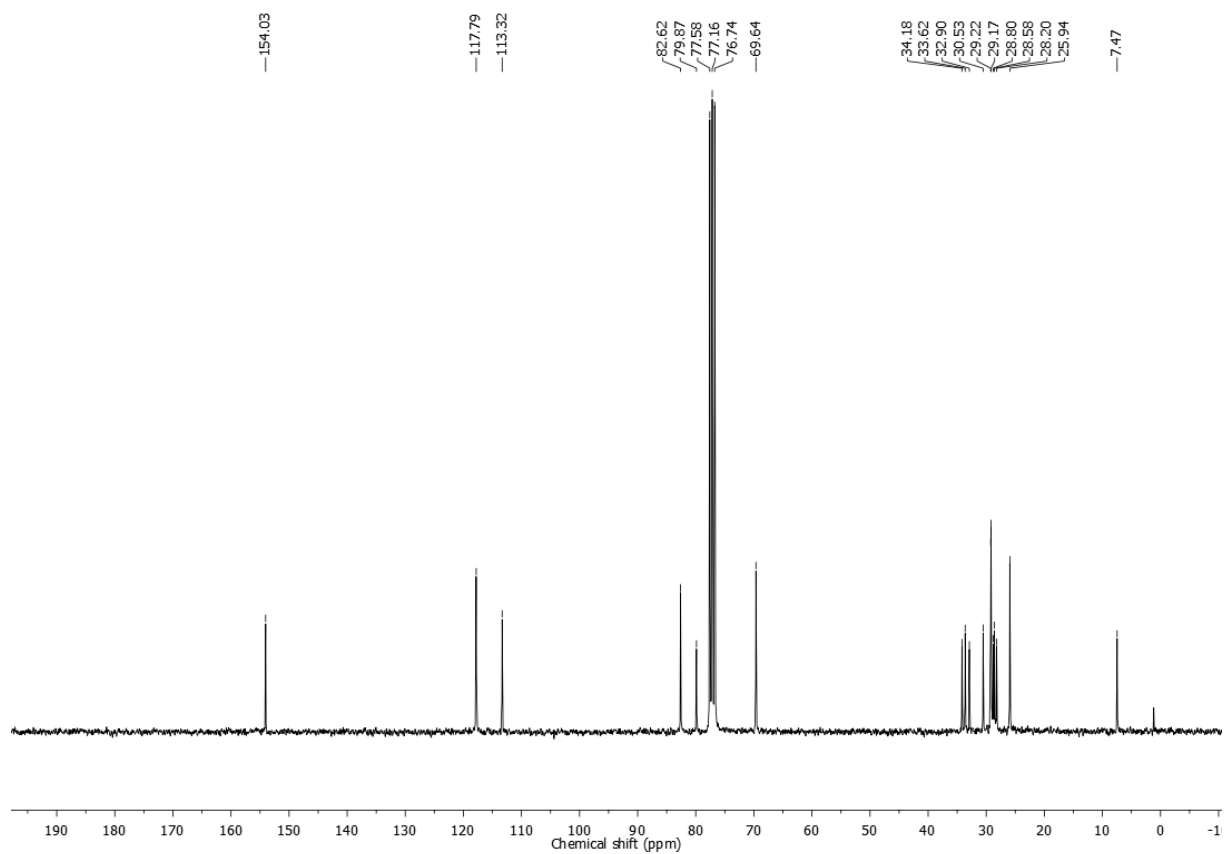
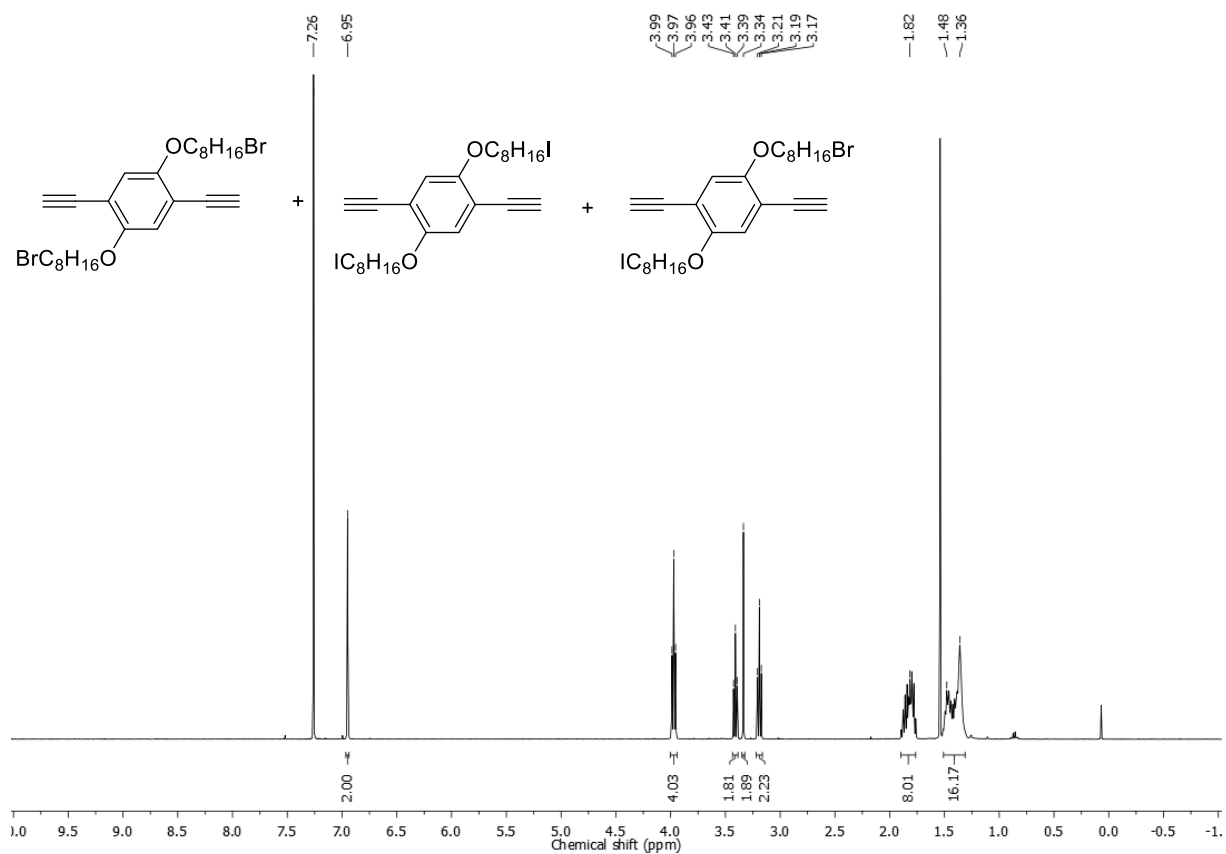


**Figure S2.**  $^1\text{H}$  NMR spectra (zoom from 3.0 to 4.2 ppm) illustrating the different products formed upon performing the Sonogashira reaction with TMSA on diiodobenzene precursor **3** and subsequent deprotection: a) Precursor **3** (the triplets of the  $\text{CH}_2$  groups next to the O and Br atoms are indicated in red and green, respectively), b) after Sonogashira coupling and deprotection with  $\text{K}_2\text{CO}_3$  (a new triplet at 3.19 ppm from the  $\text{CH}_2$  group next to I appears), c) after Sonogashira coupling and deprotection with TBAF (a new triplet at 3.52 ppm from the  $\text{CH}_2$  group next to F appears).

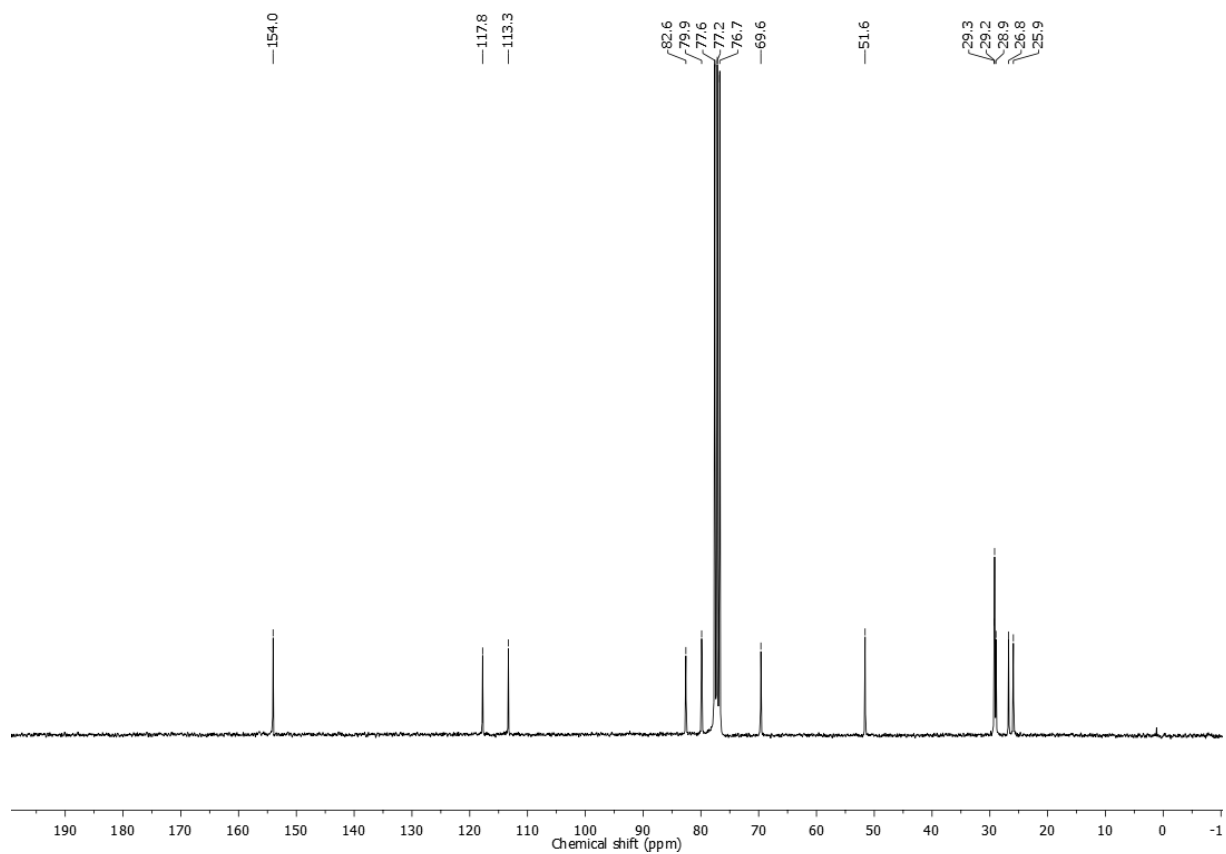
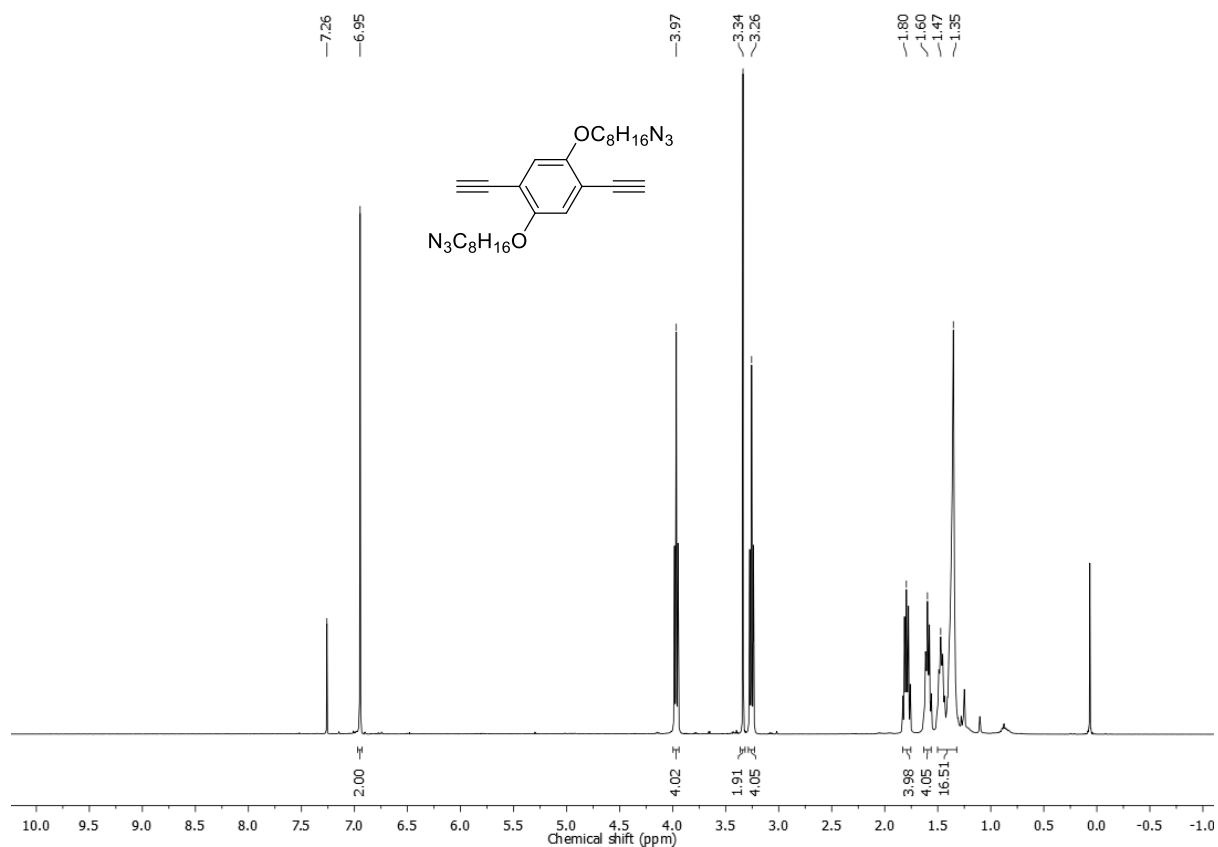
### 1,4-Bis(8-bromooctyloxy)-2,5-diiodobenzene (3)



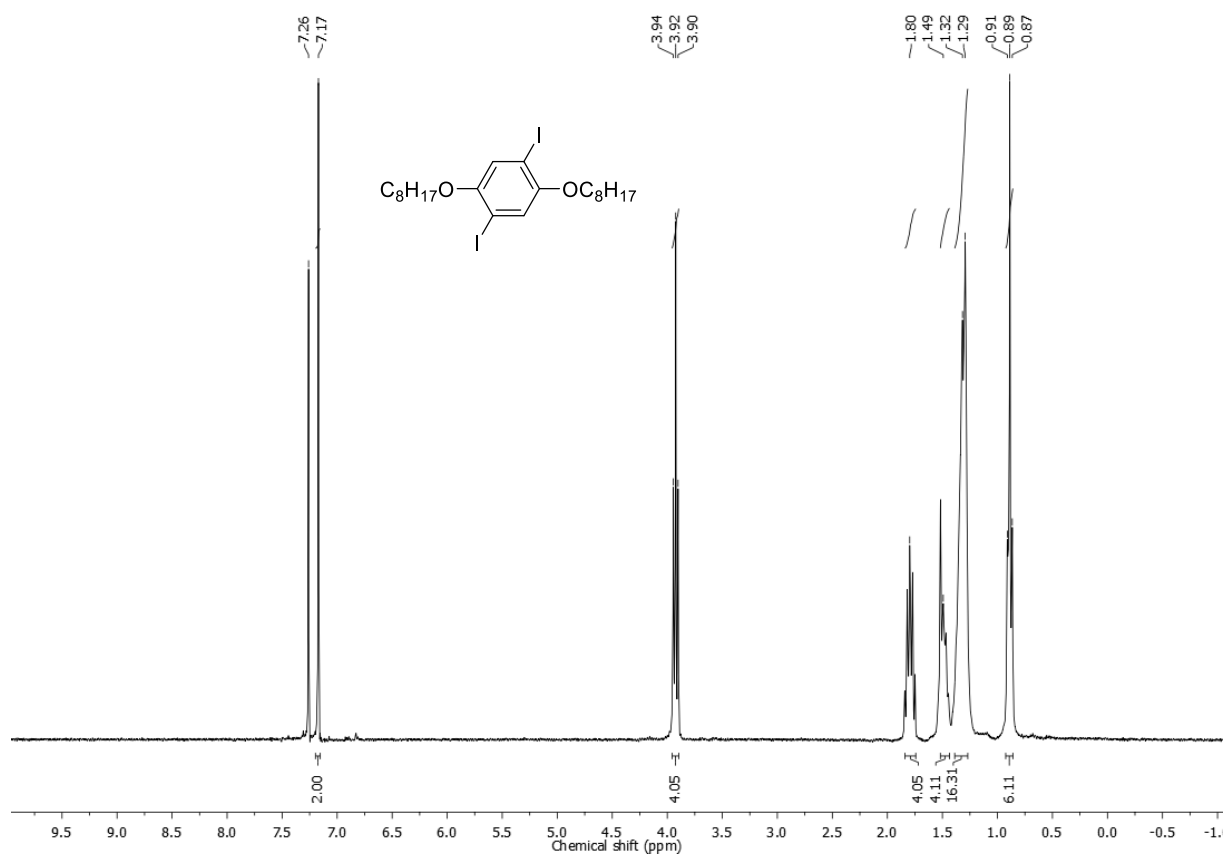
**1,4-Bis(8-bromooctoxy)-2,5-diethynylbenzene (4).**



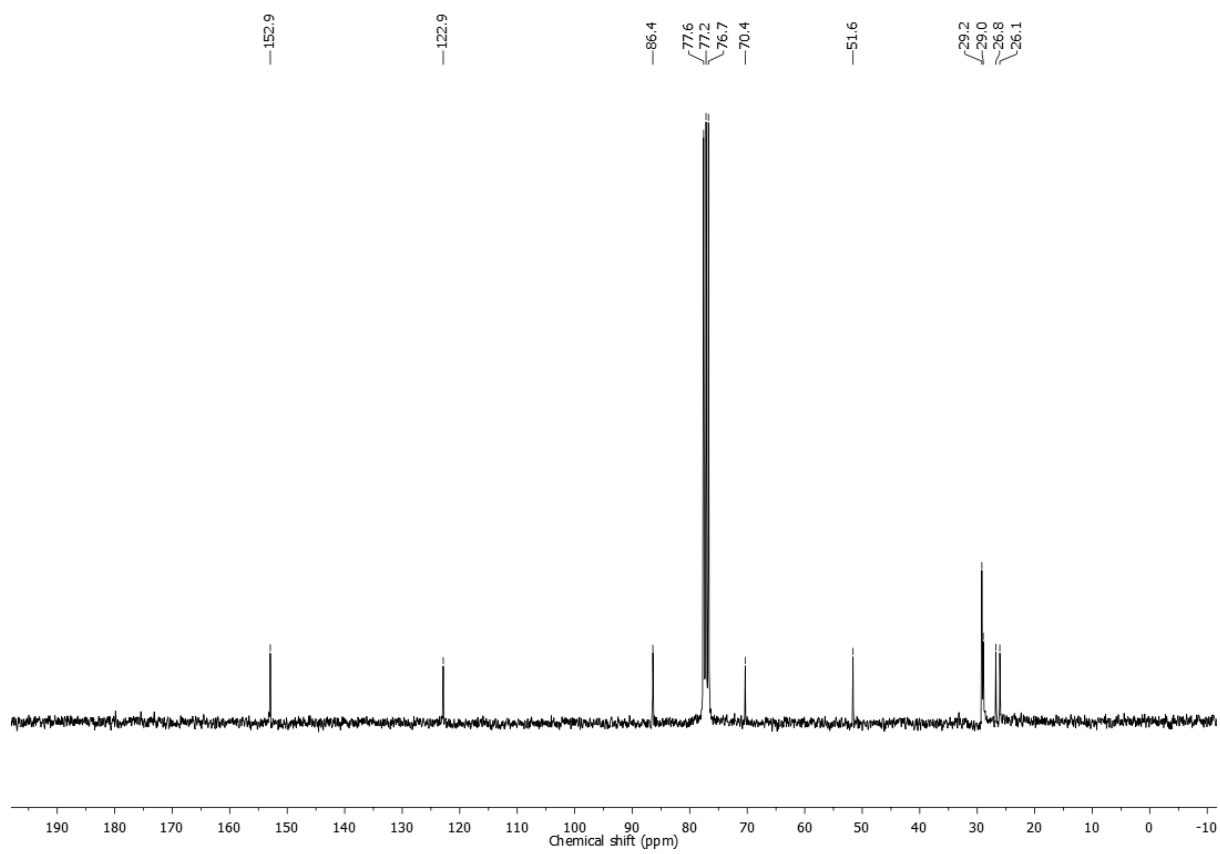
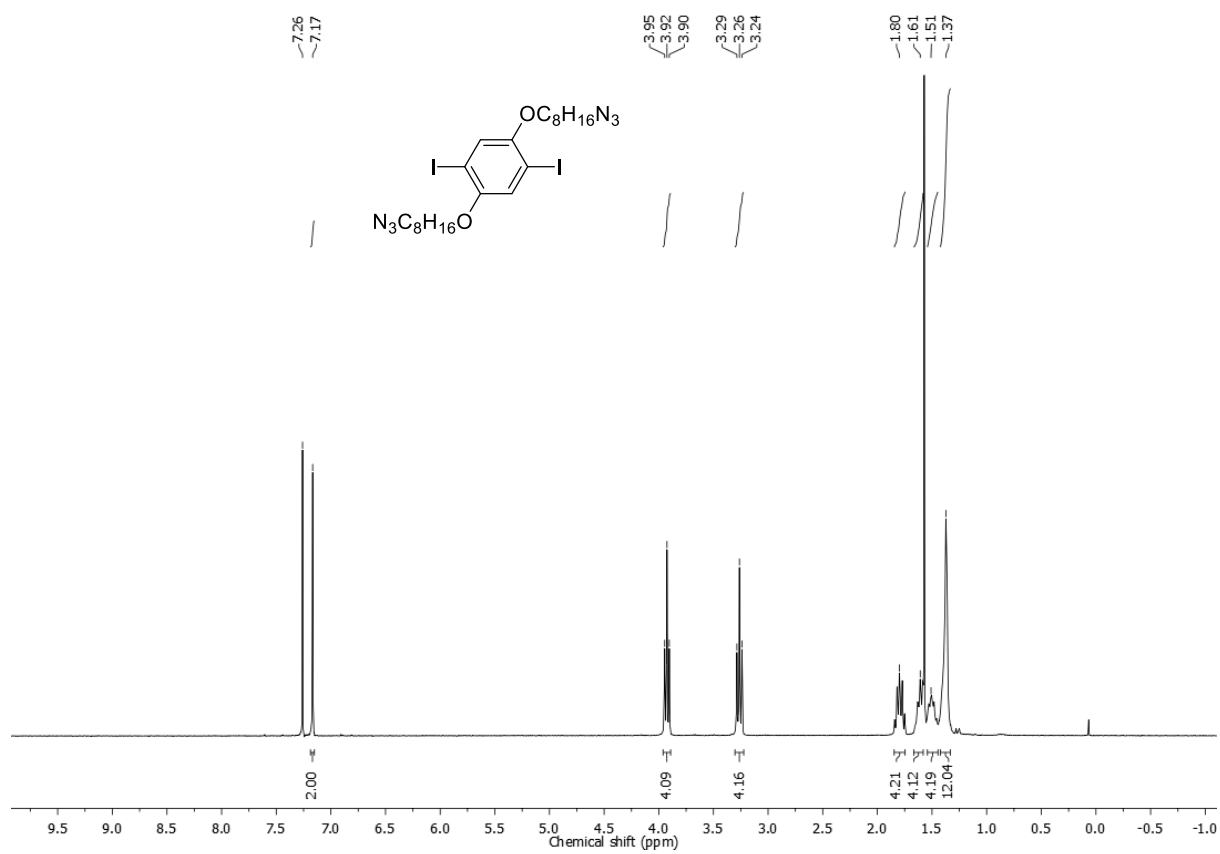
# 1,4-Bis(8-azidoctyloxy)-2,5-diethynylbenzene (5)



# 1,4-Diiodo-2,5-bis(octyloxy)benzene (7)

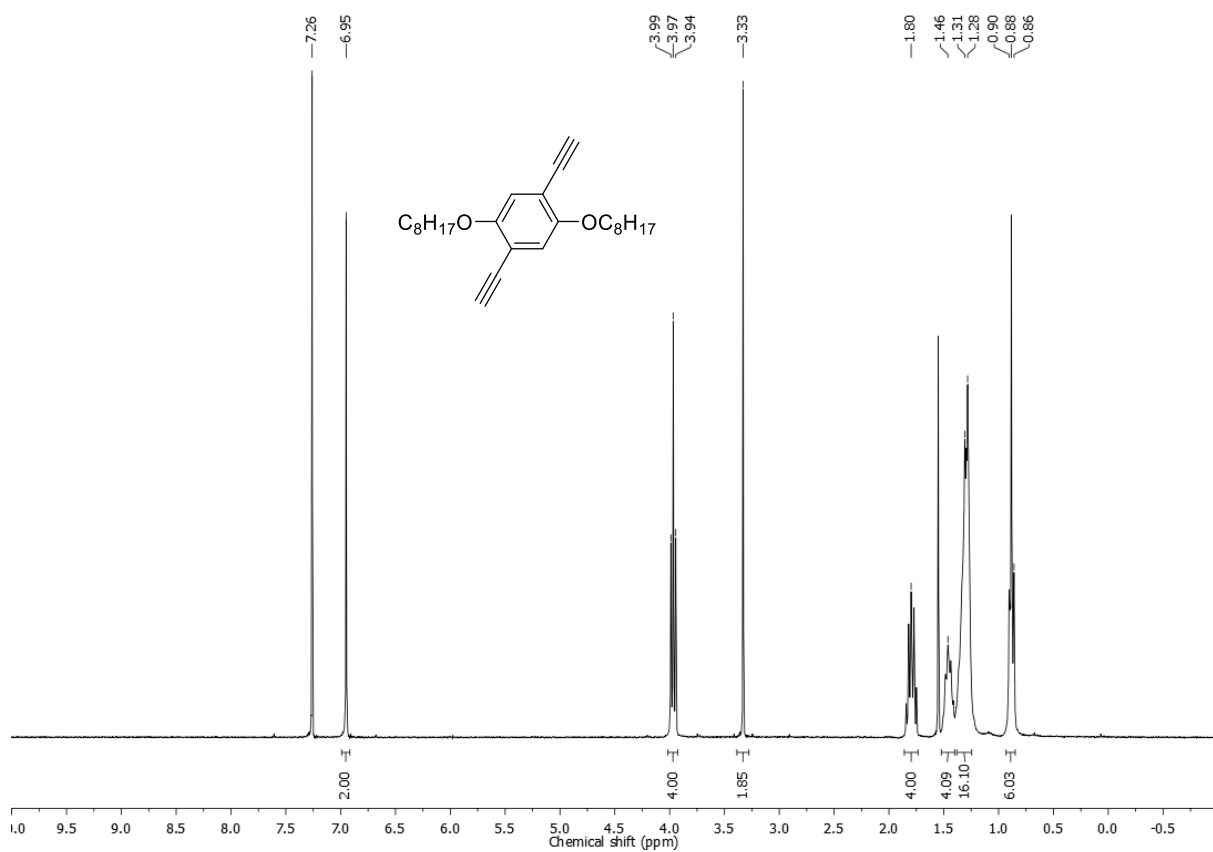


# 1,4-Bis(8-azidoctyloxy)-2,5-diiodobenzene (8)

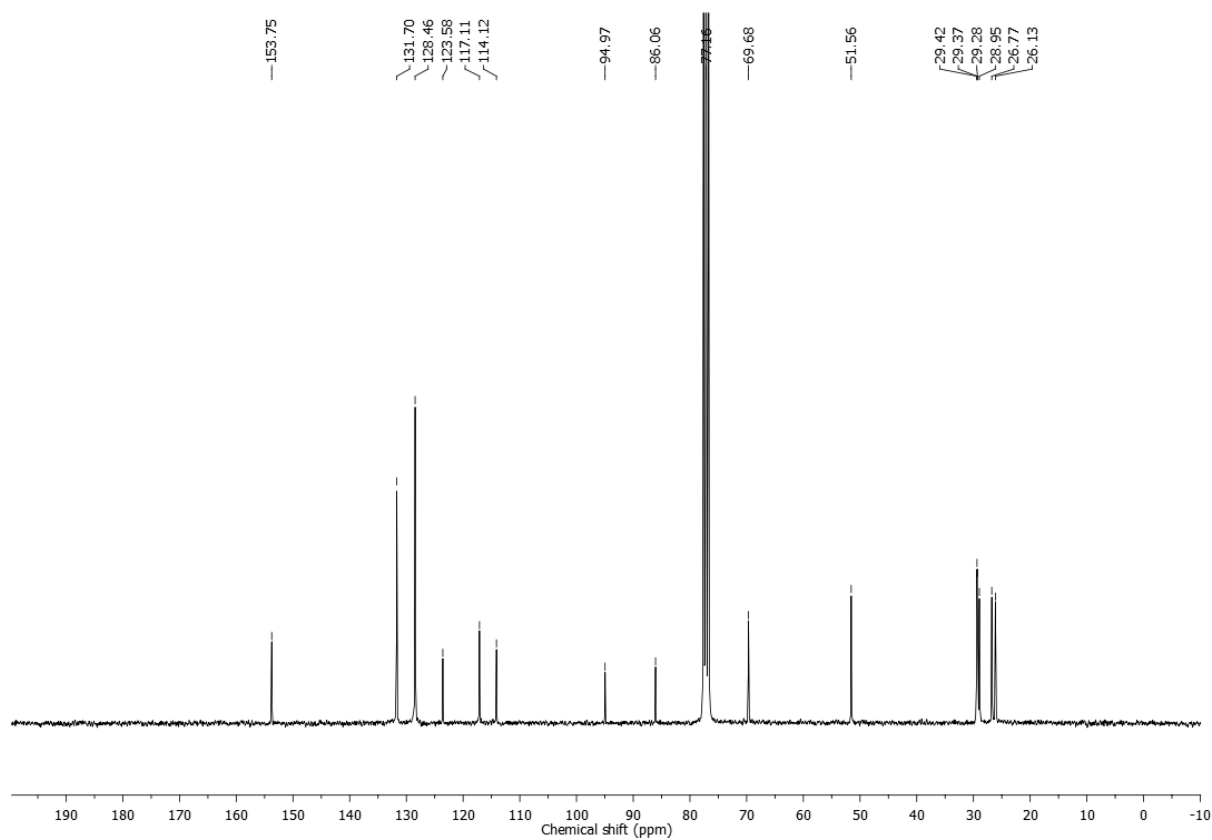
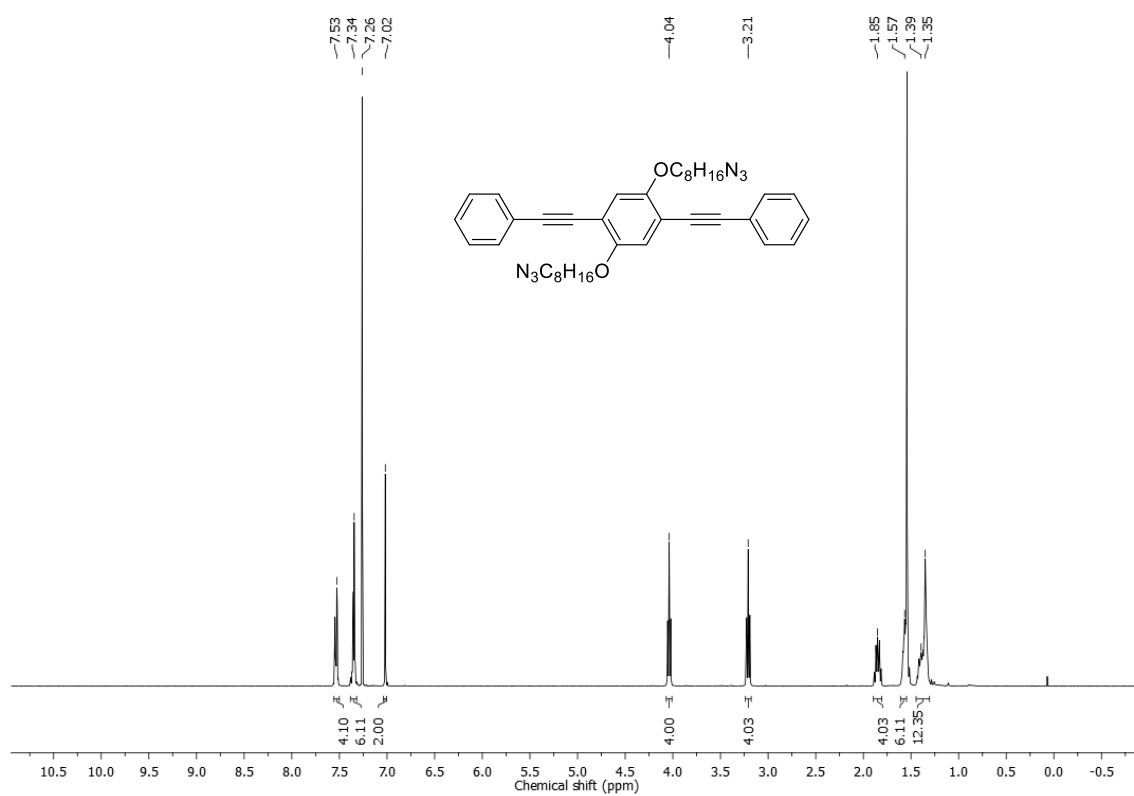




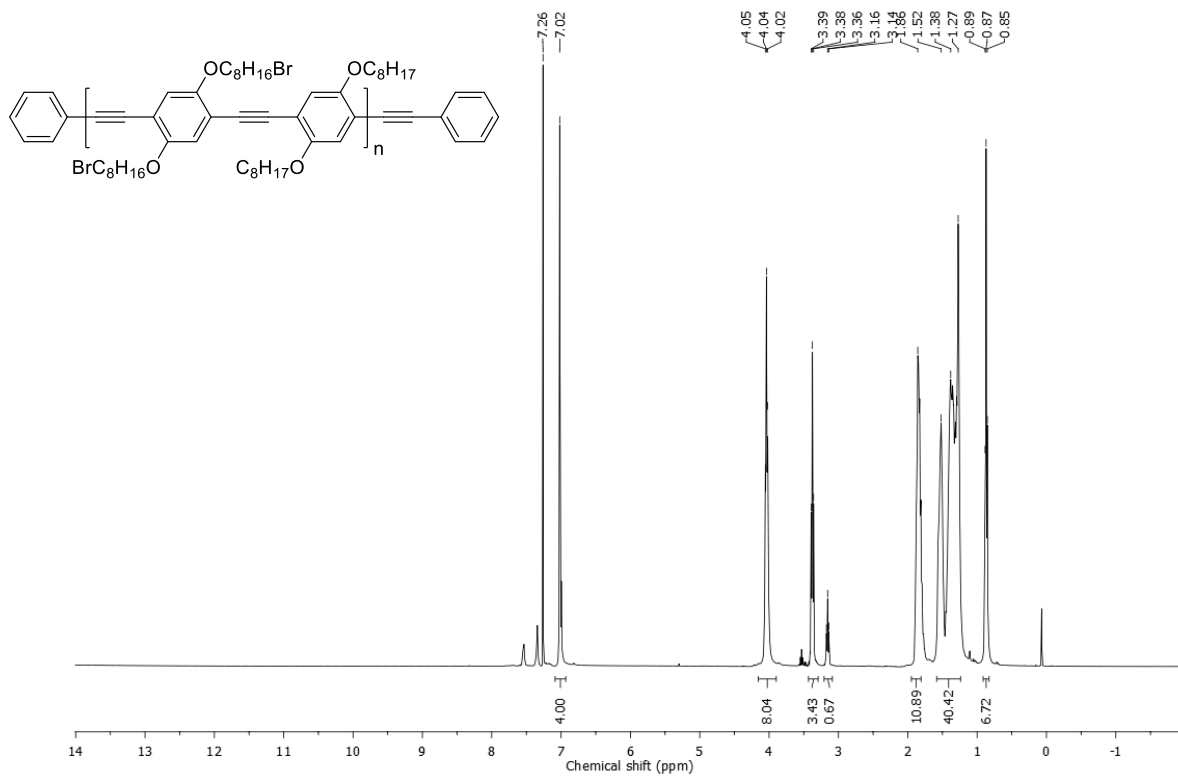
# 1,4-Diethynyl-2,5-bis(octyloxy)benzene (9)



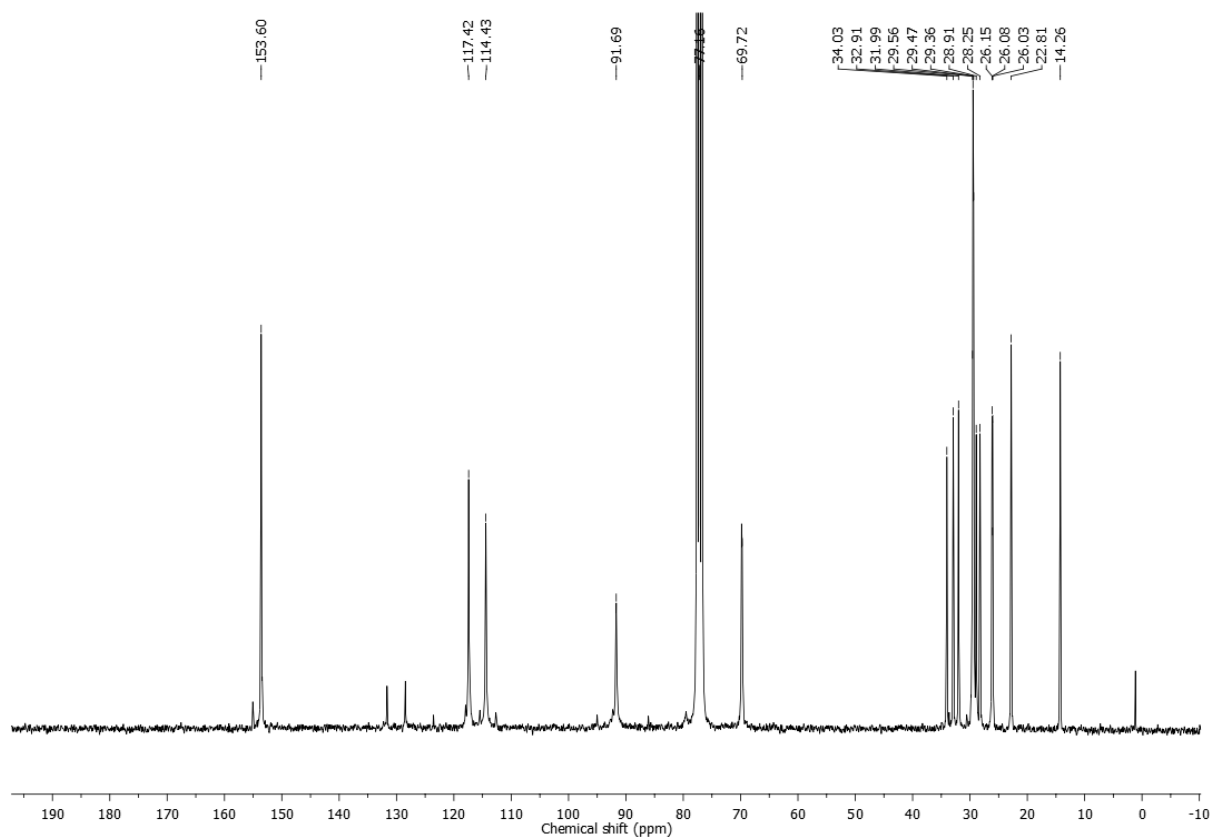
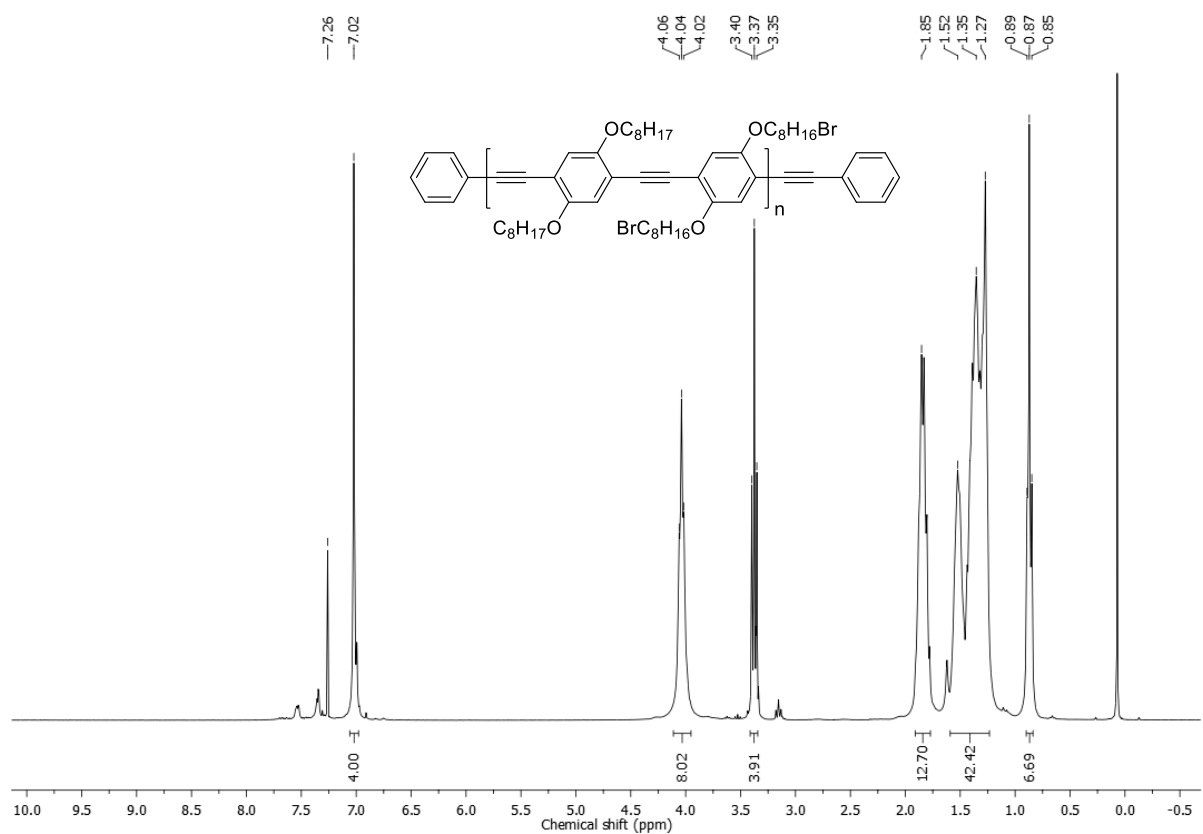
**{[2,5-Bis(8-azidoctyloxy)-1,4-phenylene]bis(ethyne-2,1-diy)}dibenzene** (model compound)



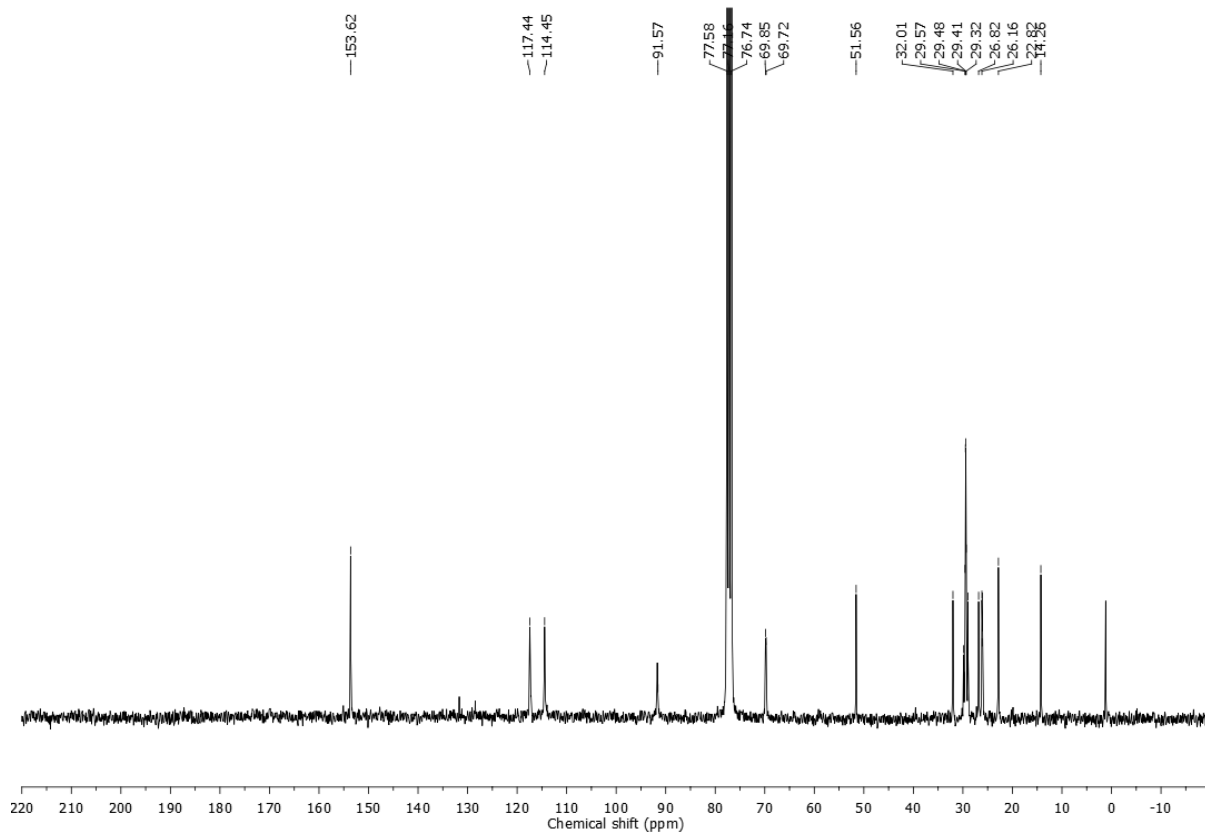
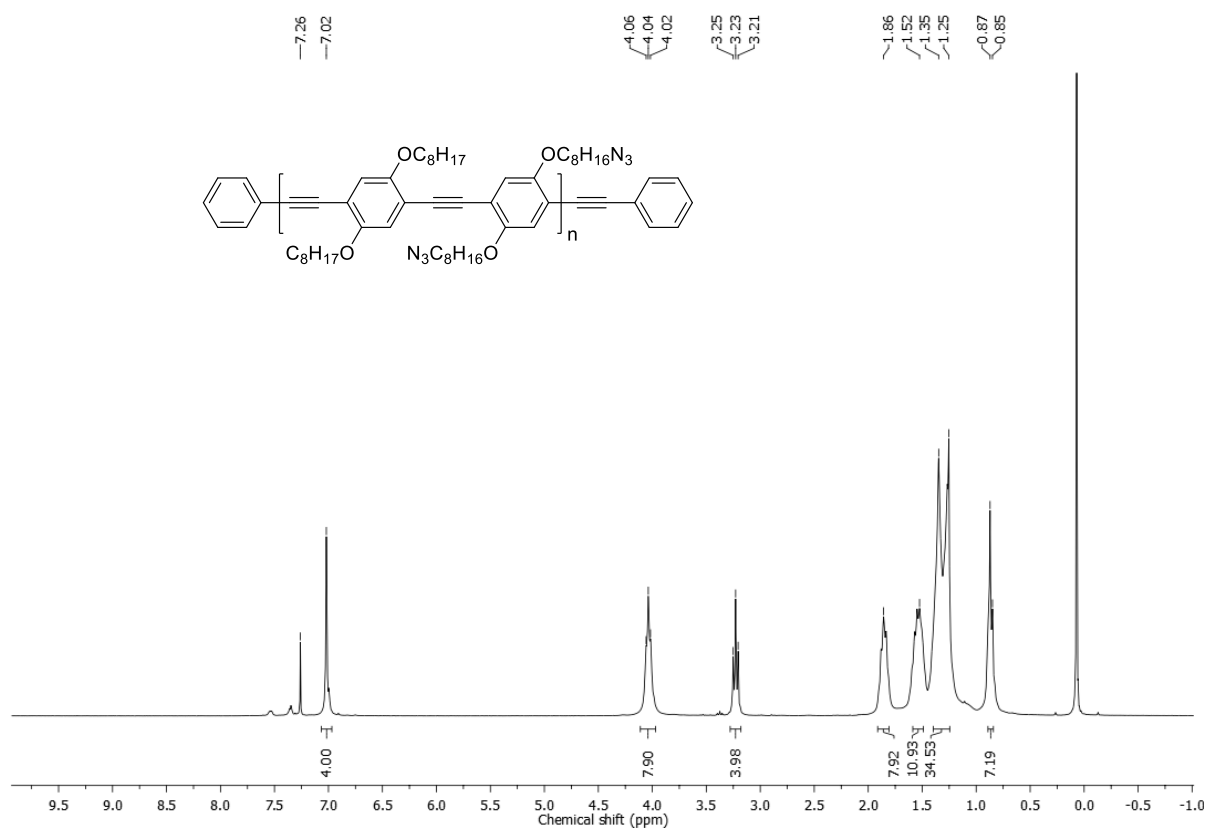
# PPE copolymer P1a'



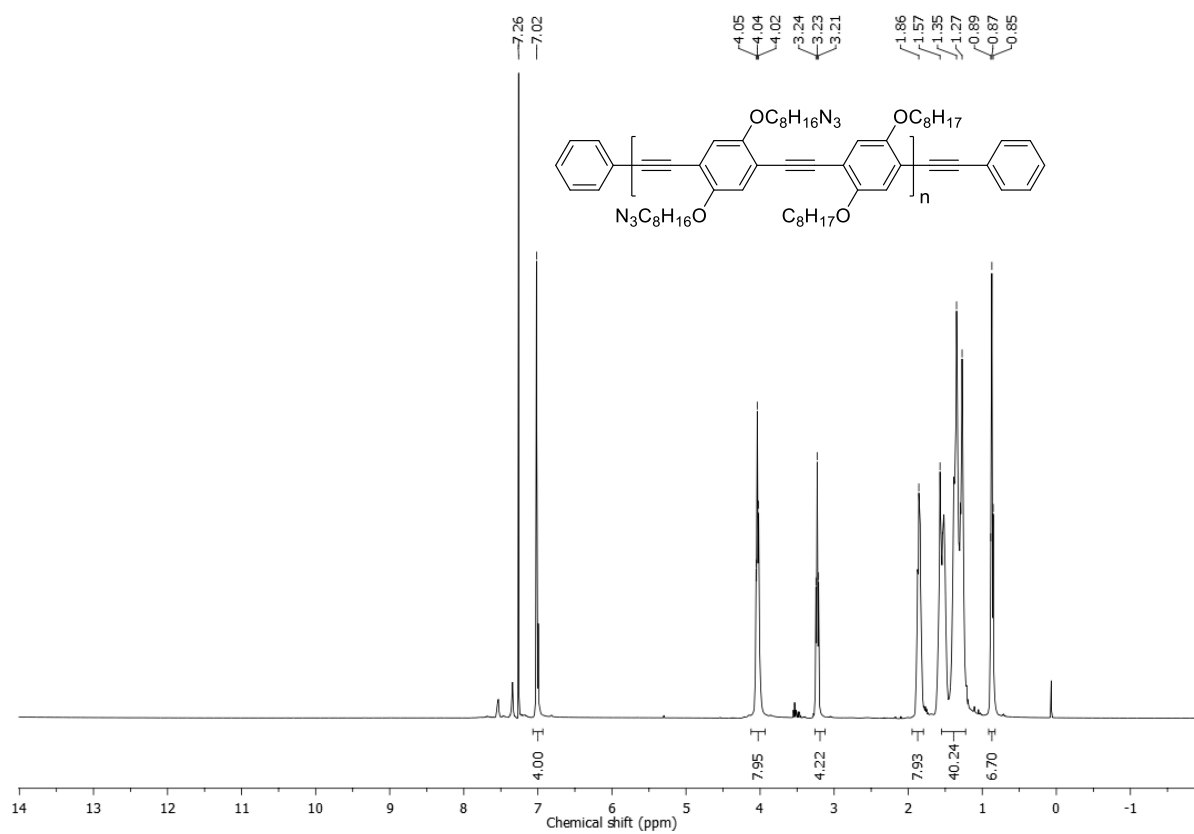
PPE copolymer **P1b'**



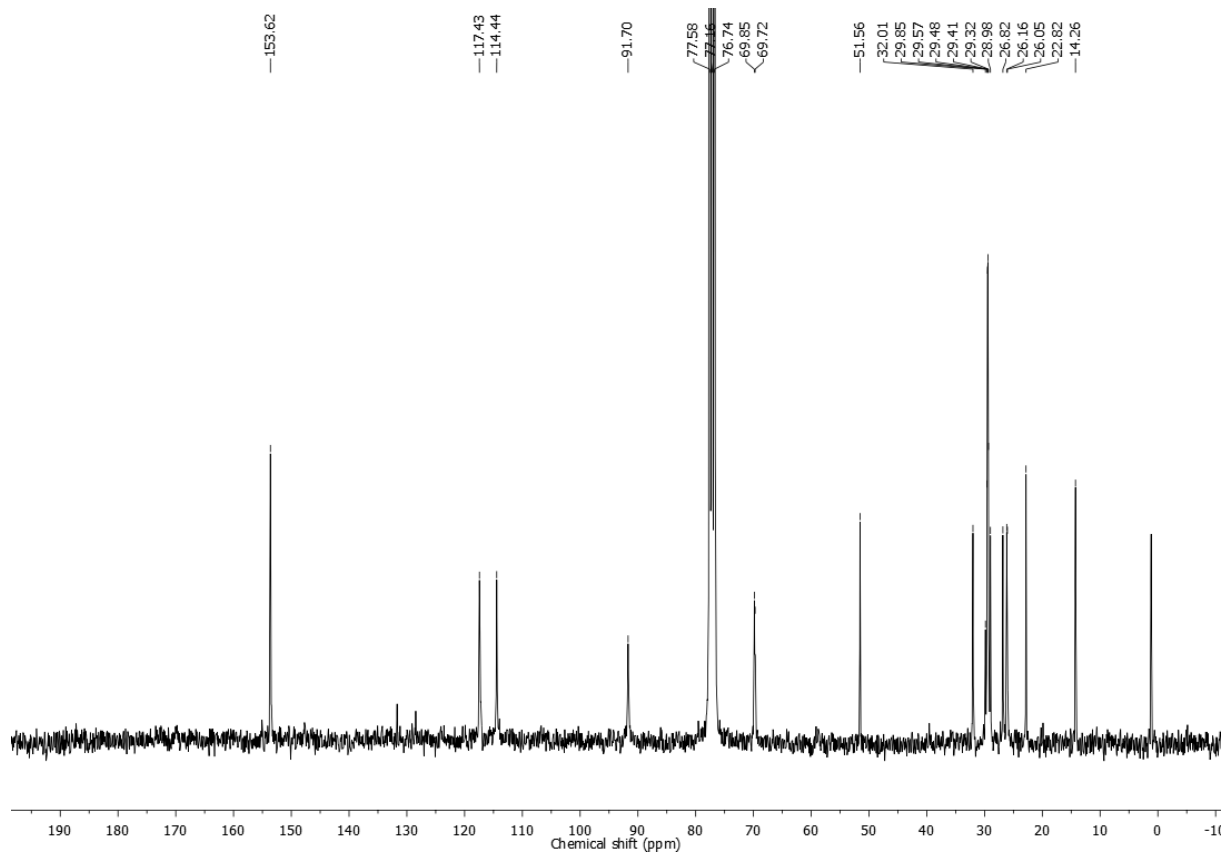
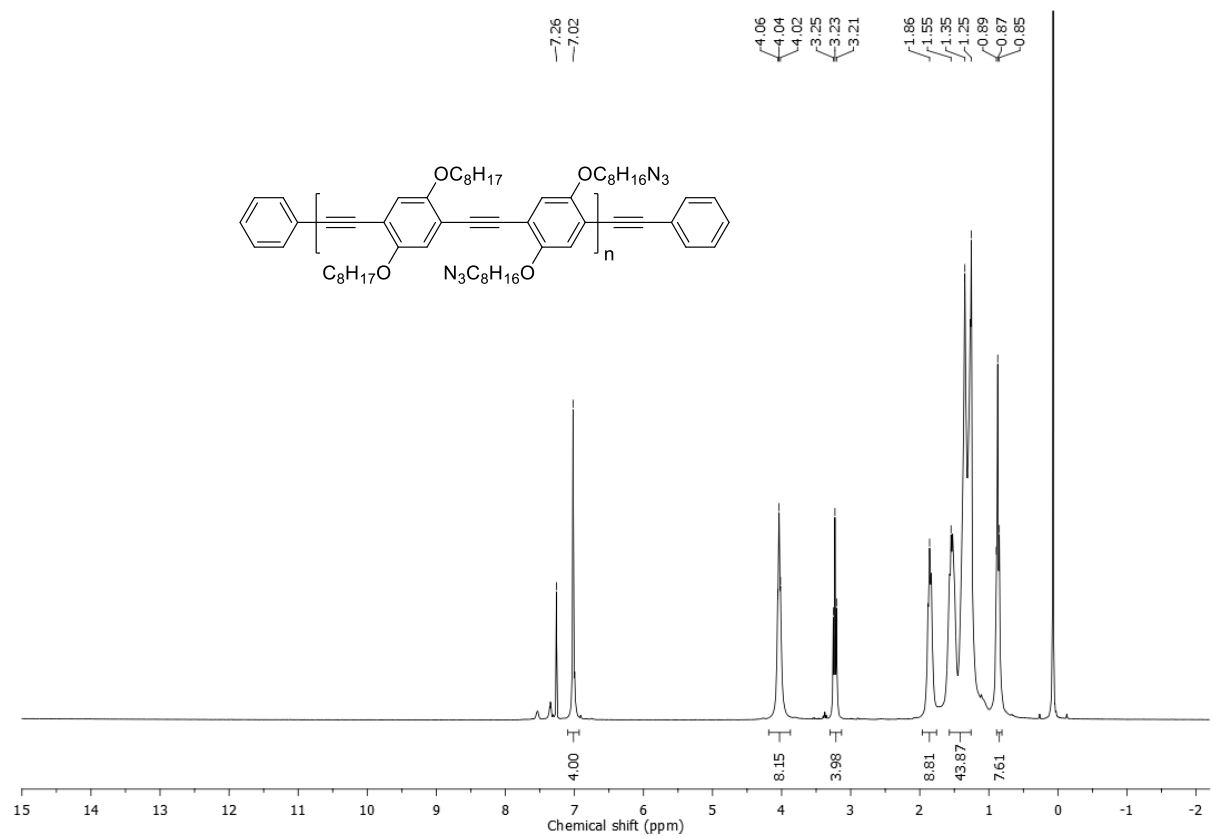
PPE copolymer **P1b'** after post-polymerization functionalization with  $\text{NaN}_3$



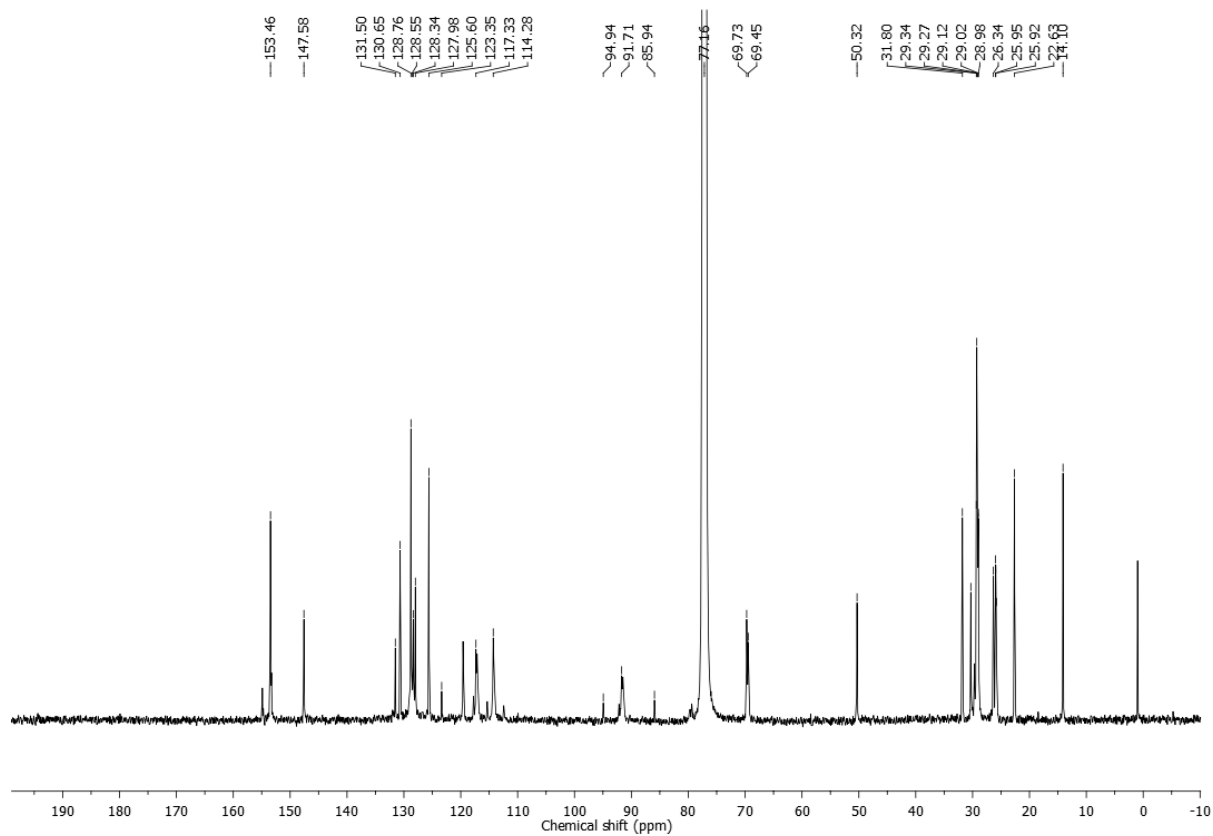
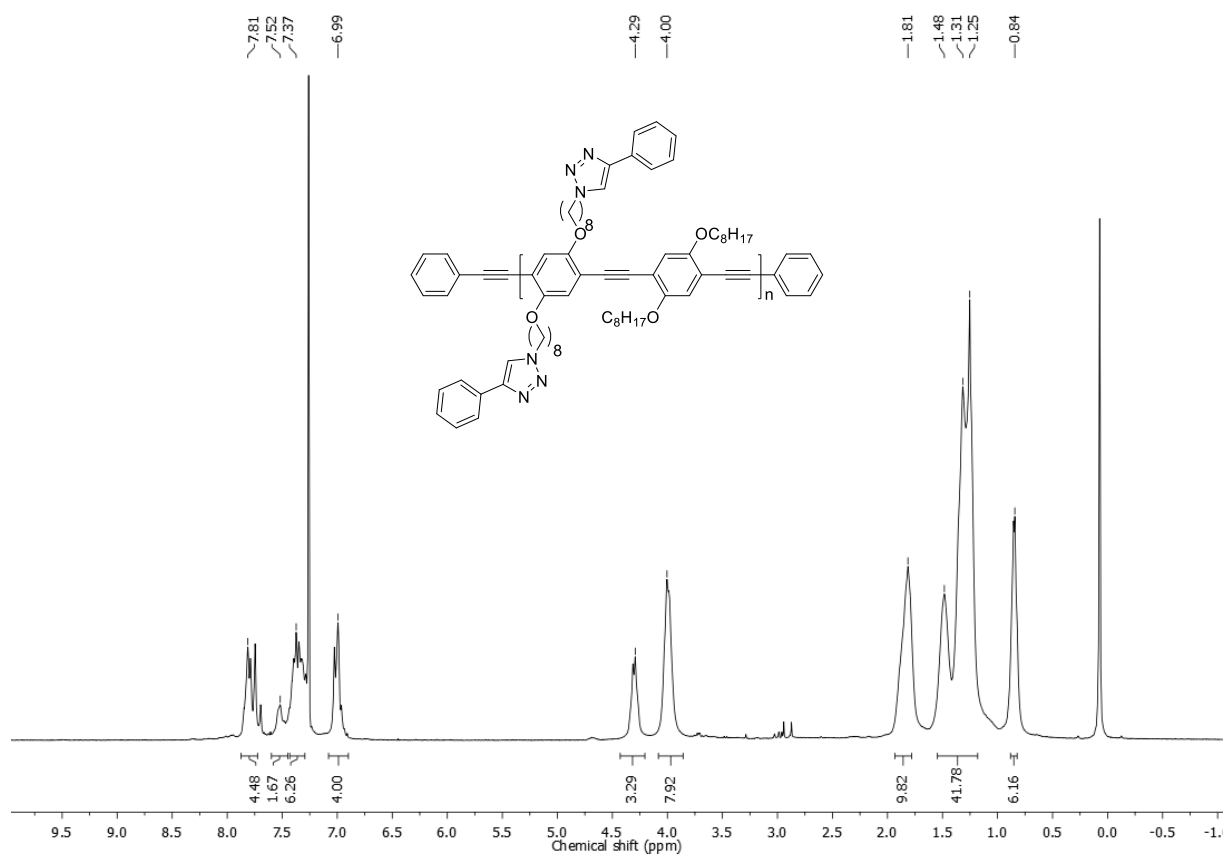
PPE copolymer **P2a'**



PPE copolymer **P2b'**

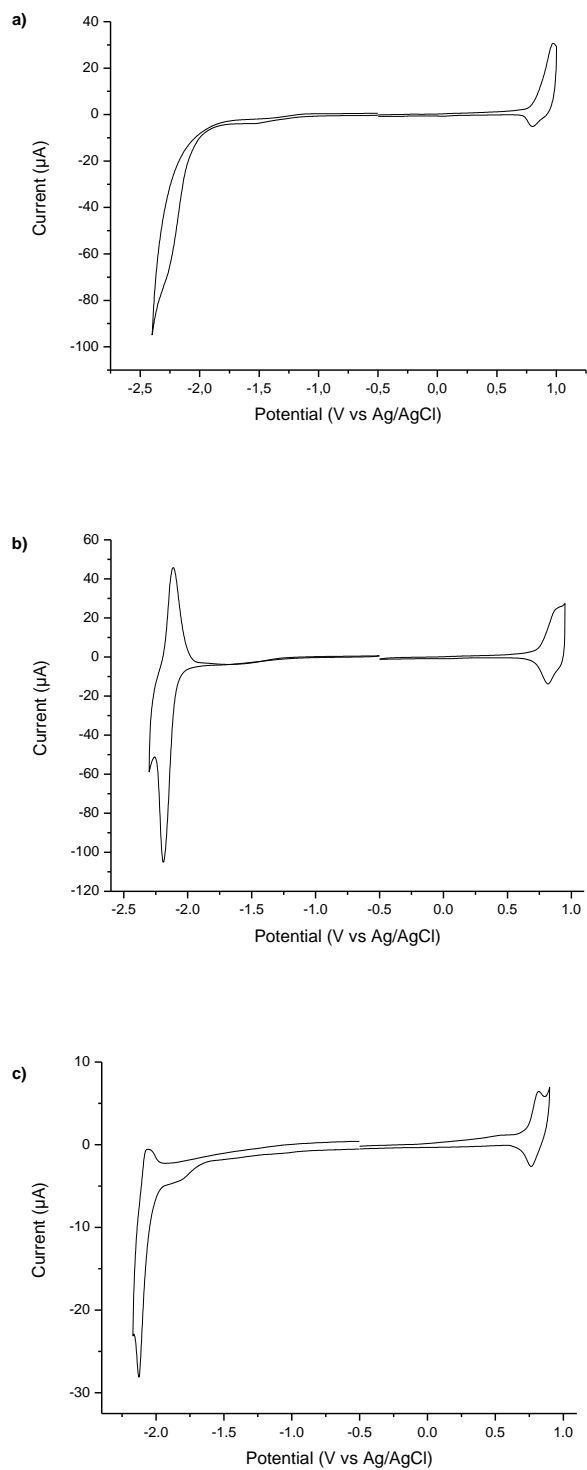


PPE copolymer **P3'**



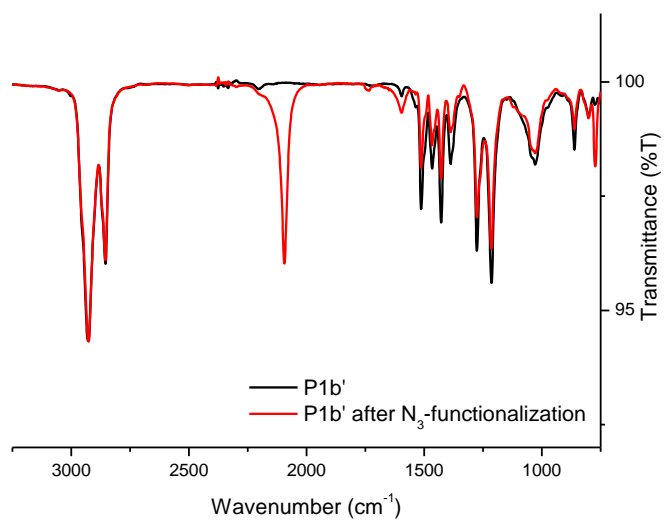


### 3. Cyclic voltammograms



**Figure S3.** Cyclic voltammograms of a) **P1b'**, b) **P2b'** and c) **P3'** (in film).

#### 4. FT-IR spectra



**Figure S4.** FT-IR spectra of copolymer **P1b'** before (black) and after (red) post-polymerization functionalization with azide moieties.