

Supporting Information for

# **Blue-greenish electroluminescent poly(p-phenylene vinylene) developed for organic light emitting diode applications**

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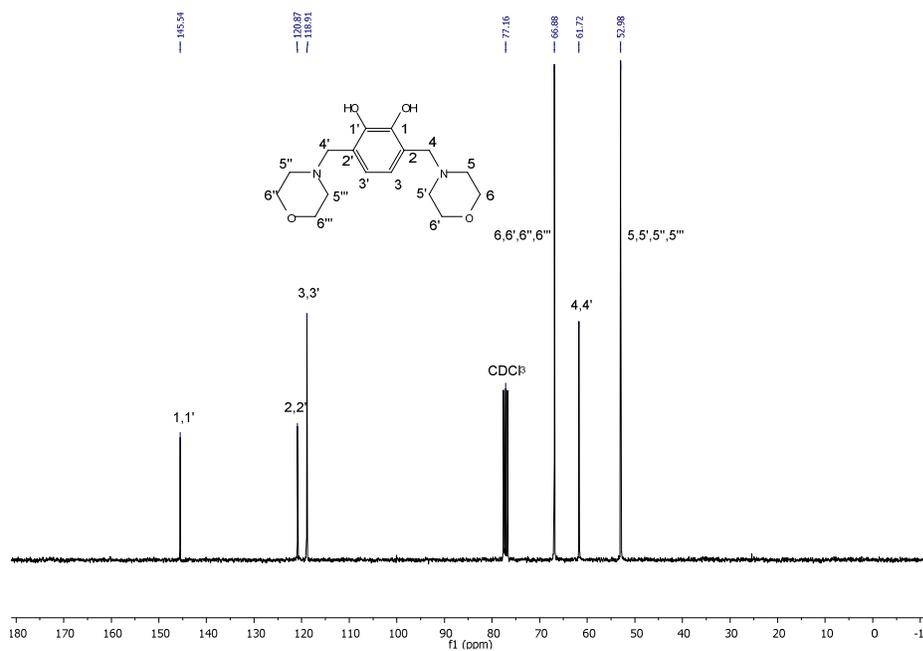
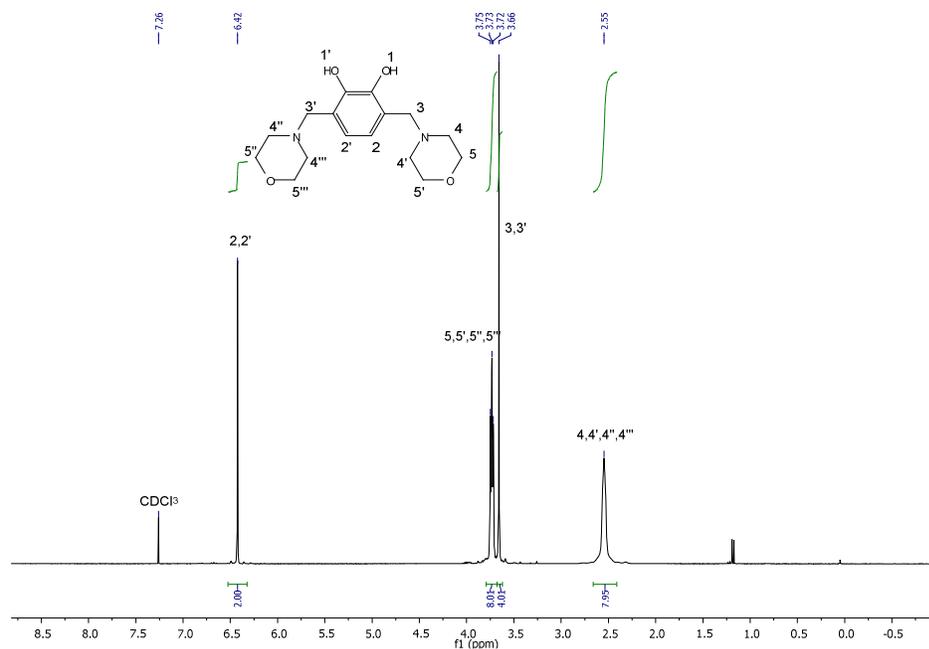
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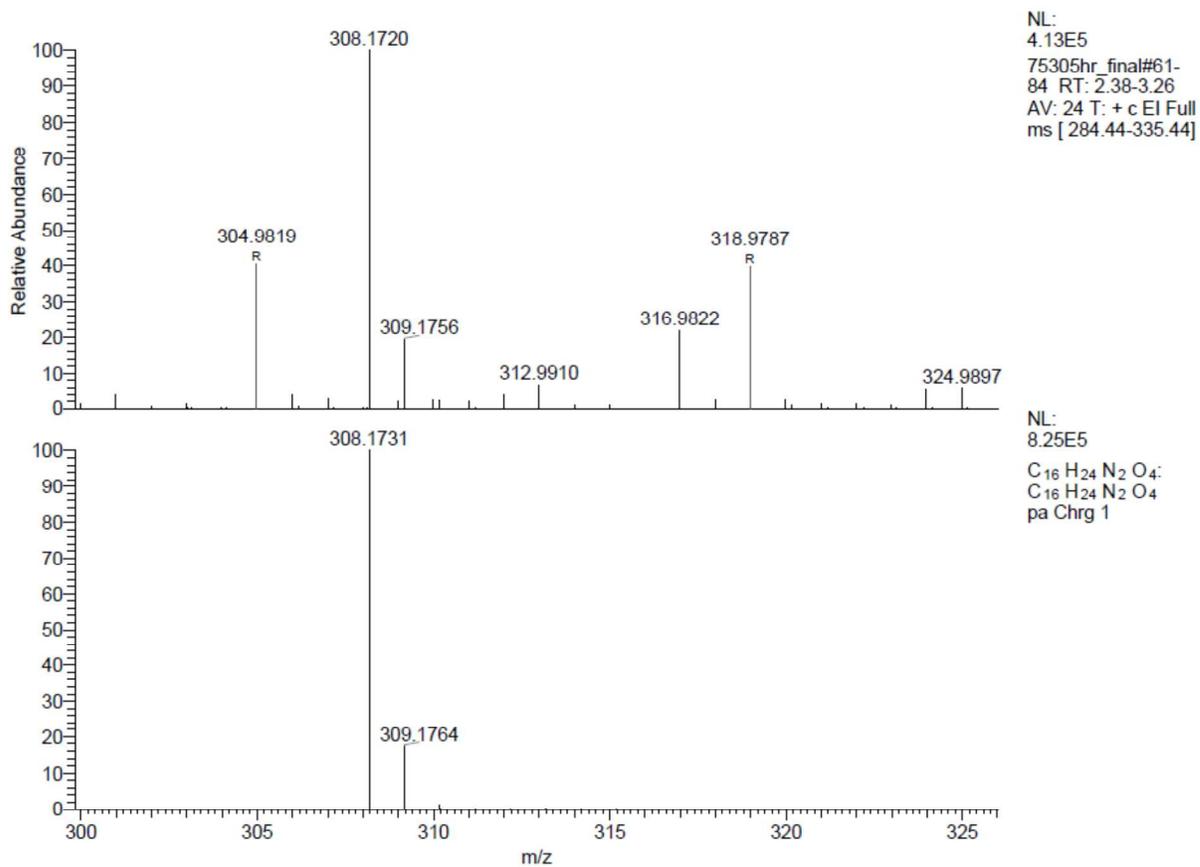
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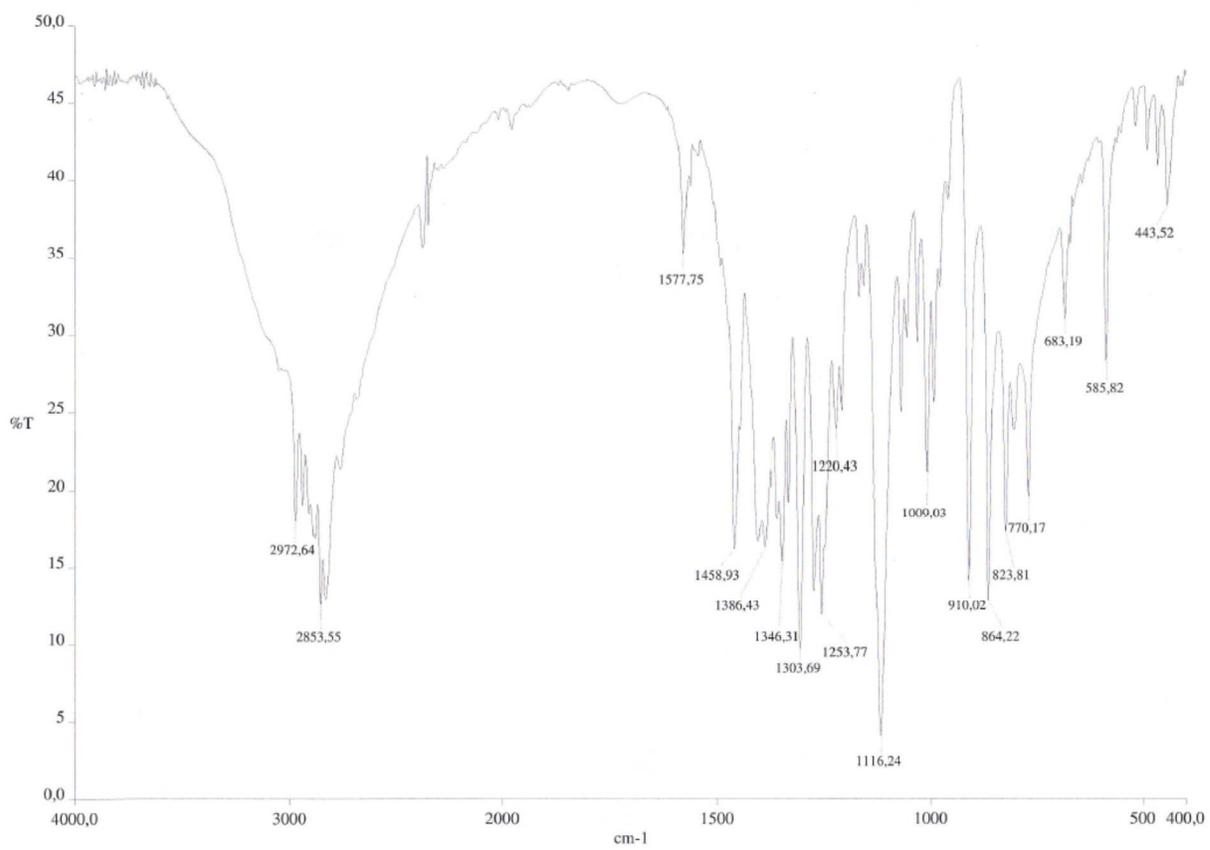
Corresponding author: [N.Vilbrandt@mc.tu-darmstadt.de](mailto:N.Vilbrandt@mc.tu-darmstadt.de)

ASSOCIATED CONTENT

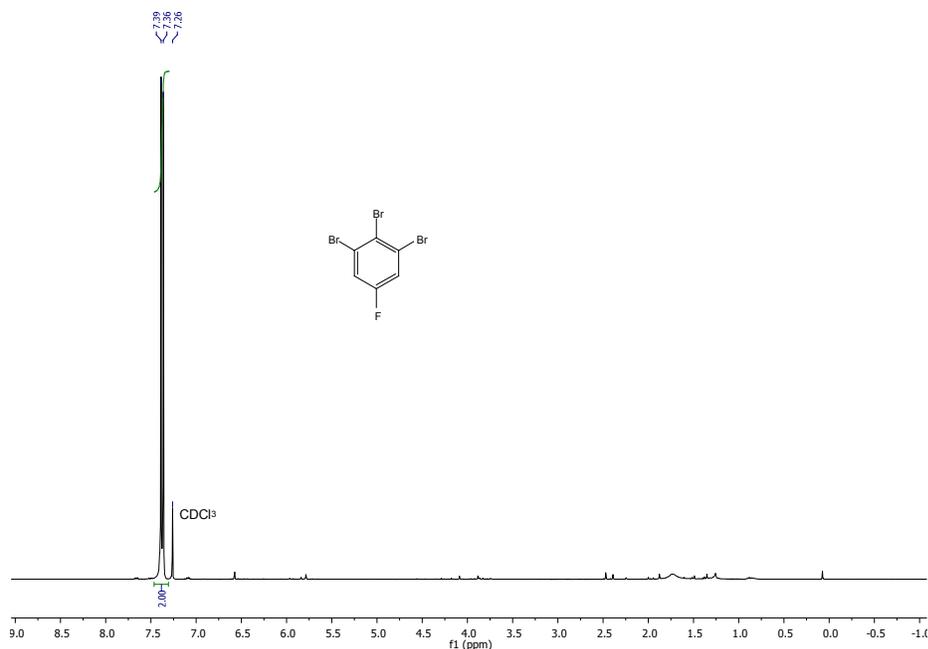




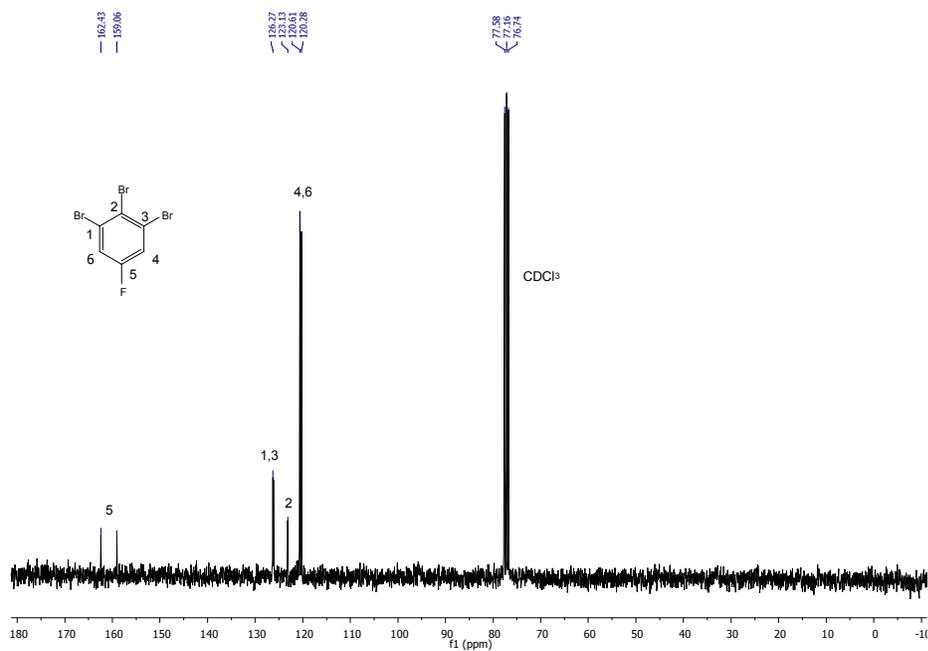
**Figure S3.** HR-MS spectrum of 3,6-bis(morpholinomethyl)benzene-1,2-diol (**1**)



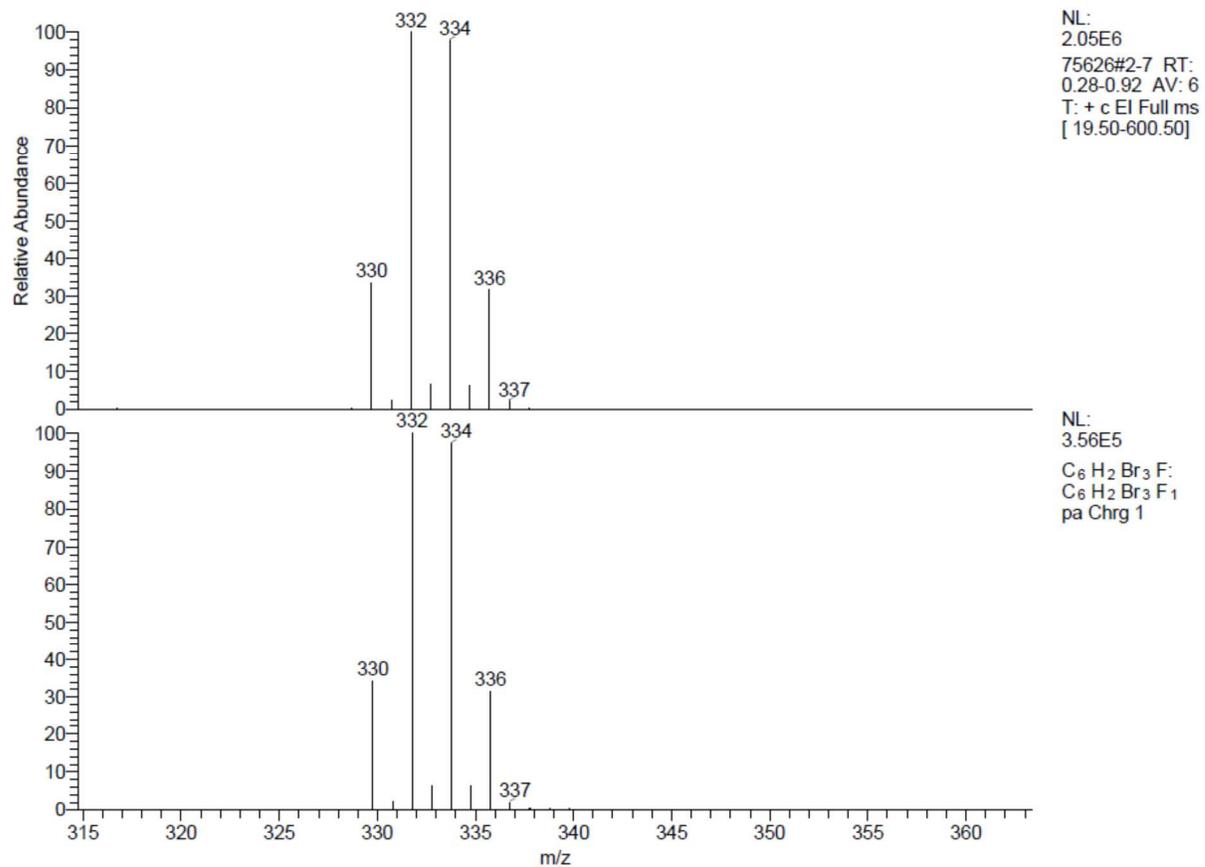
**Figure S4.** FT-IR spectrum of 3,6-bis(morpholinomethyl)benzene-1,2-diol (**1**).



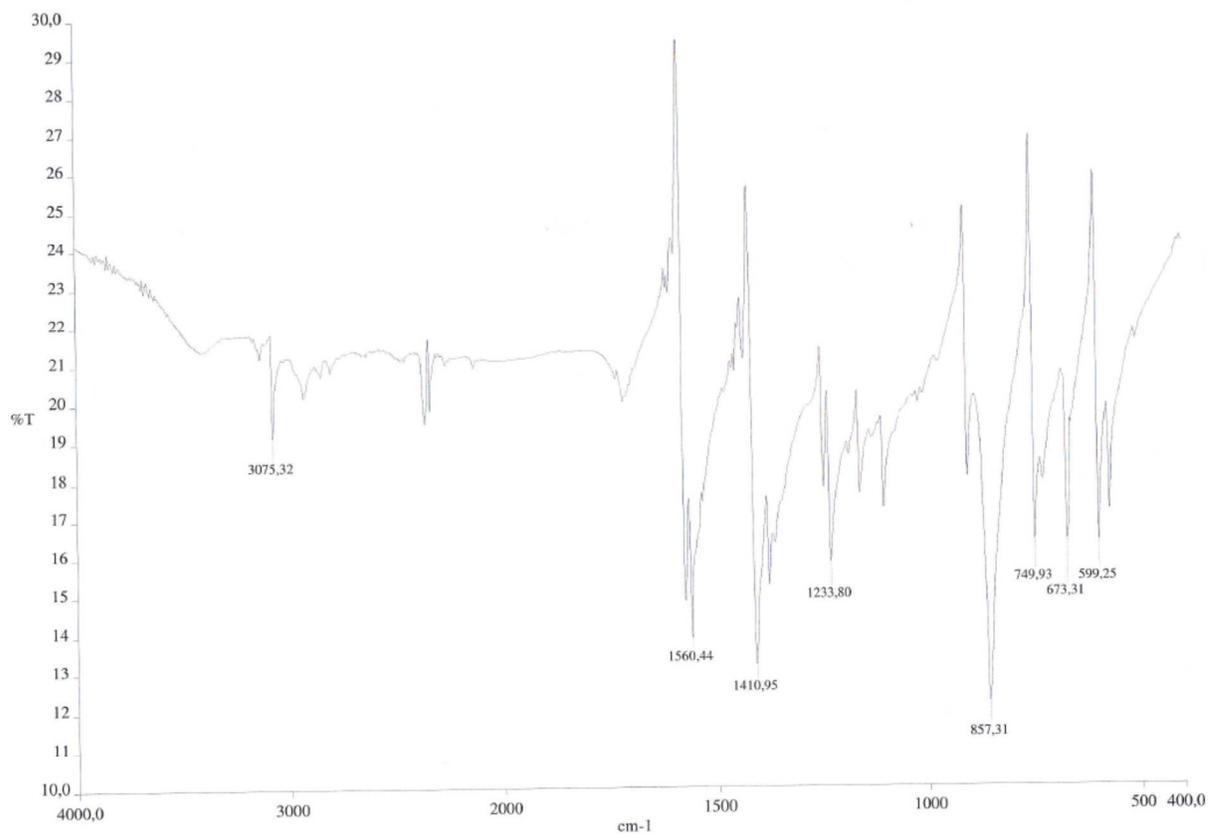
**Figure S5.** <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>) of 1,2,3-tribromo-5-fluorobenzene (7).



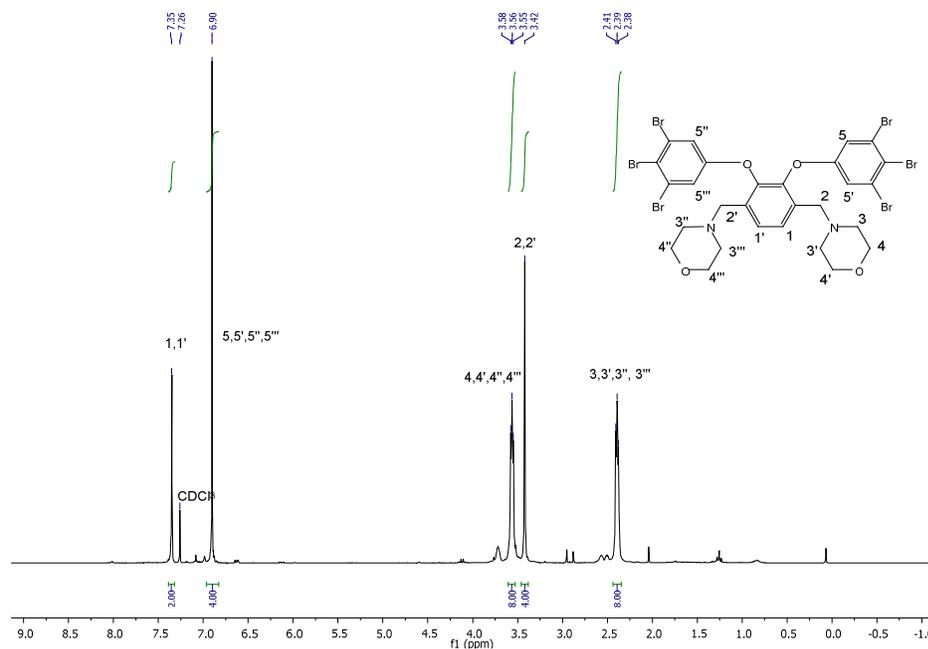
**Figure S6.** <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) of 1,2,3-tribromo-5-fluorobenzene (7).



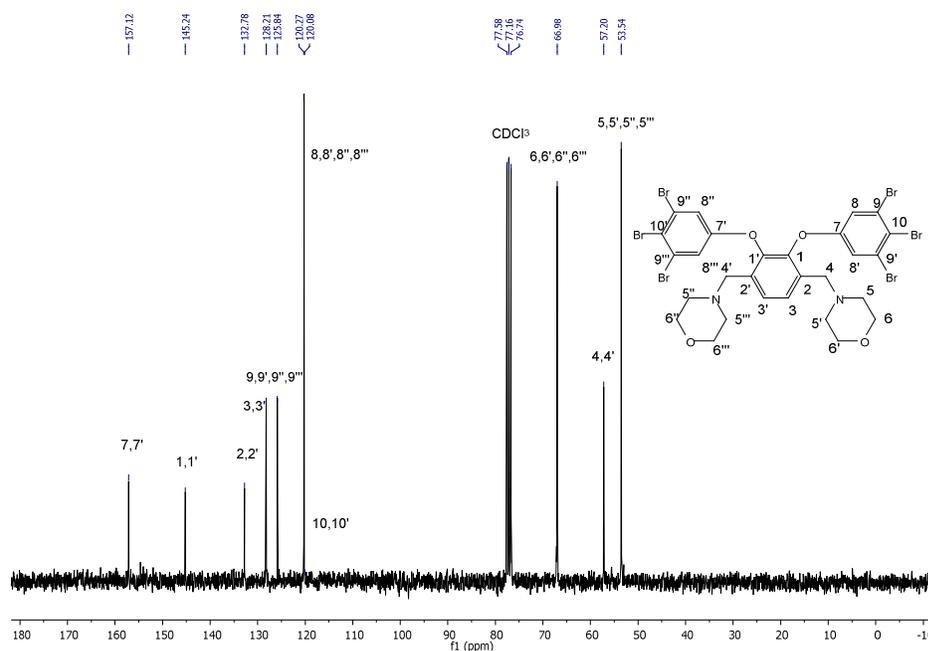
**Figure S7.** Mass spectrum of 1,2,3-tribromo-5-fluorbenzene (7).



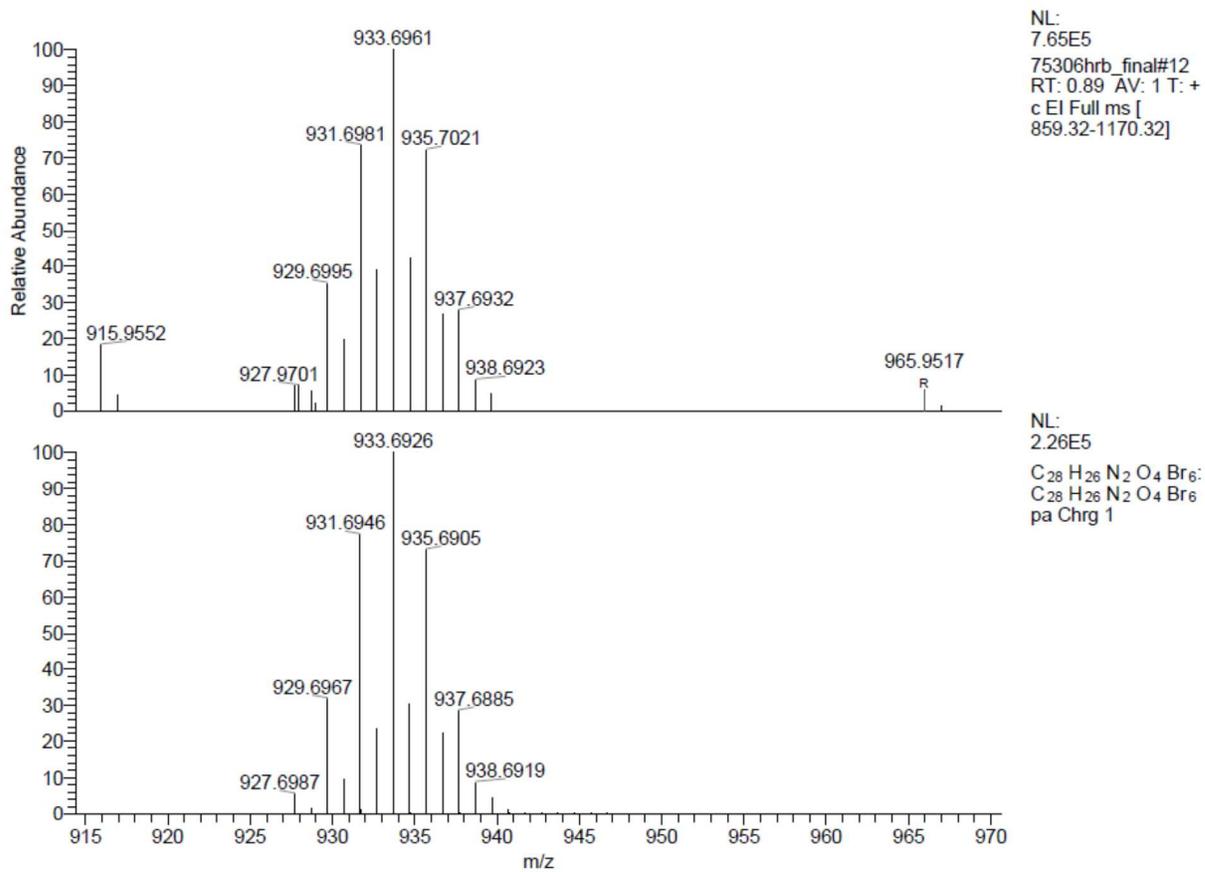
**Figure S8.** FT-IR spectrum of 1,2,3-tribromo-5-fluorobenzene (7).



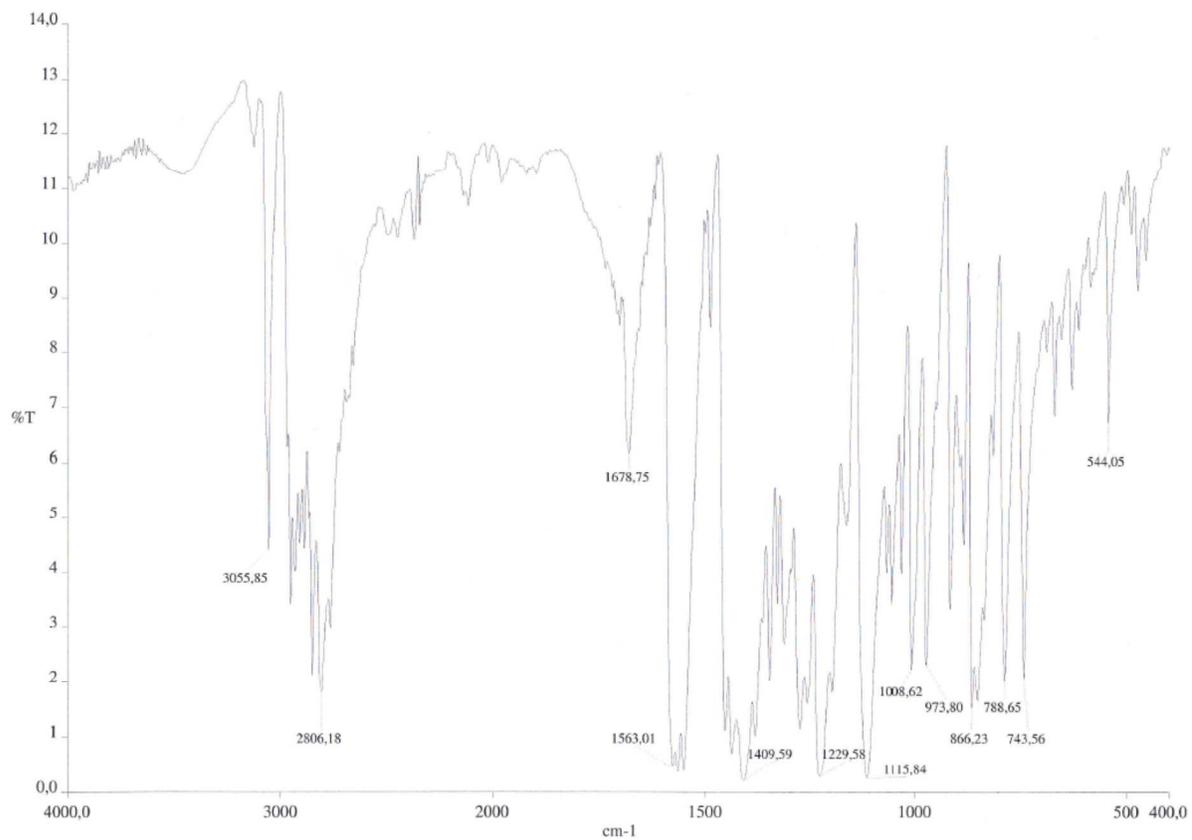
**Figure S9.**  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of 4,4'-((2,3-bis(3,4,5-tribromophenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**2**).



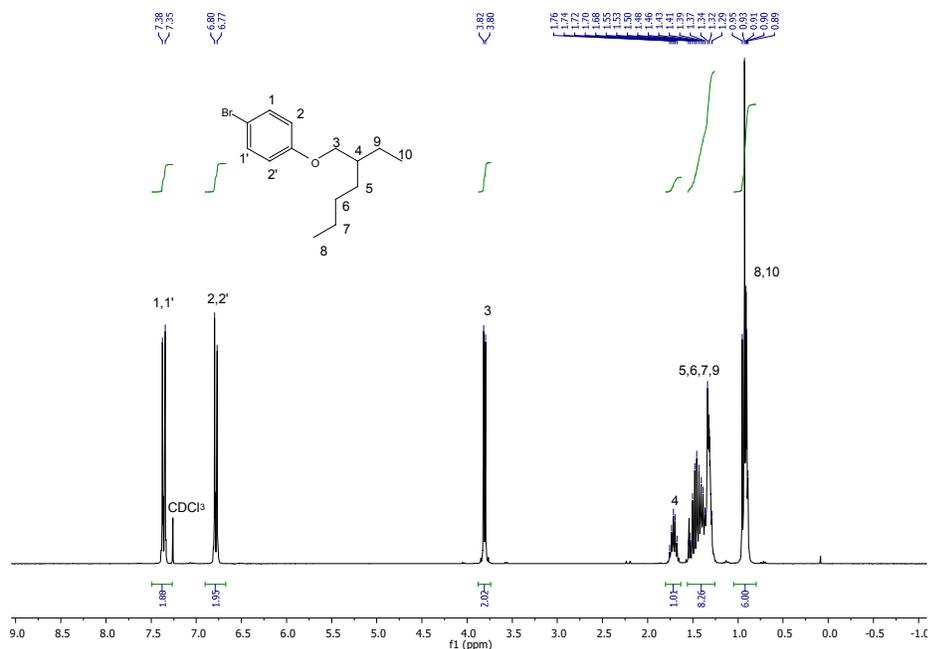
**Figure S10.**  $^{13}\text{C}$  NMR (75 MHz,  $\text{CDCl}_3$ ) of 4,4'-((2,3-bis(3,4,5-tribromophenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**2**).



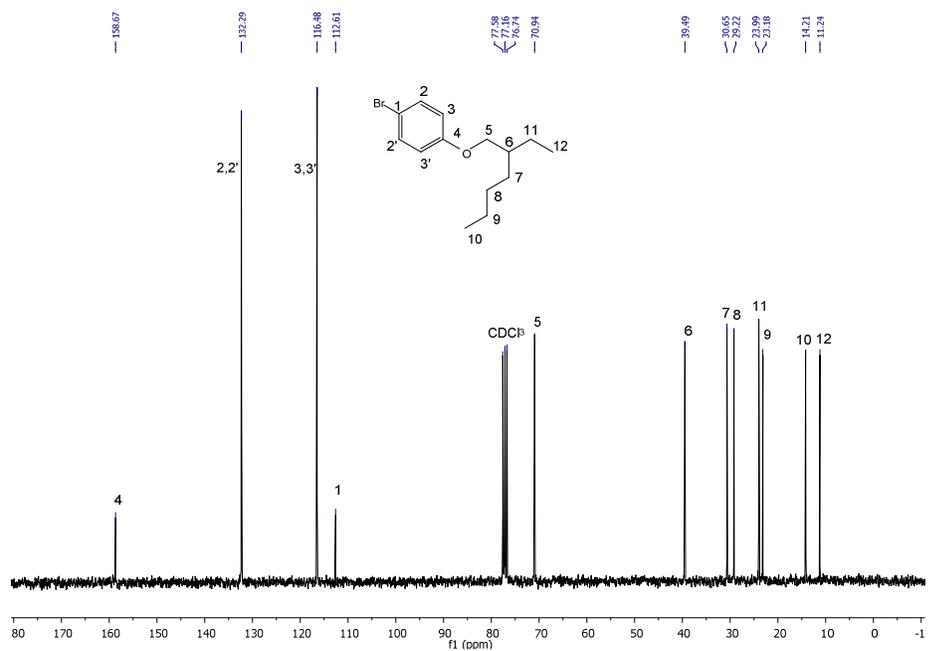
**Figure S11.** HR-MS spectrum of 4,4'-((2,3-bis(3,4,5-tribromophenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**2**).



**Figure S12.** FT-IR spectrum of 4,4'-((2,3-bis(3,4,5-tribromophenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**2**).



**Figure S13.** <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>) of 1-bromo-4-(2'-ethylhexyloxy)benzene (5).



**Figure S14.** <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) of 1-bromo-4-(2'-ethylhexyloxy)benzene (5).

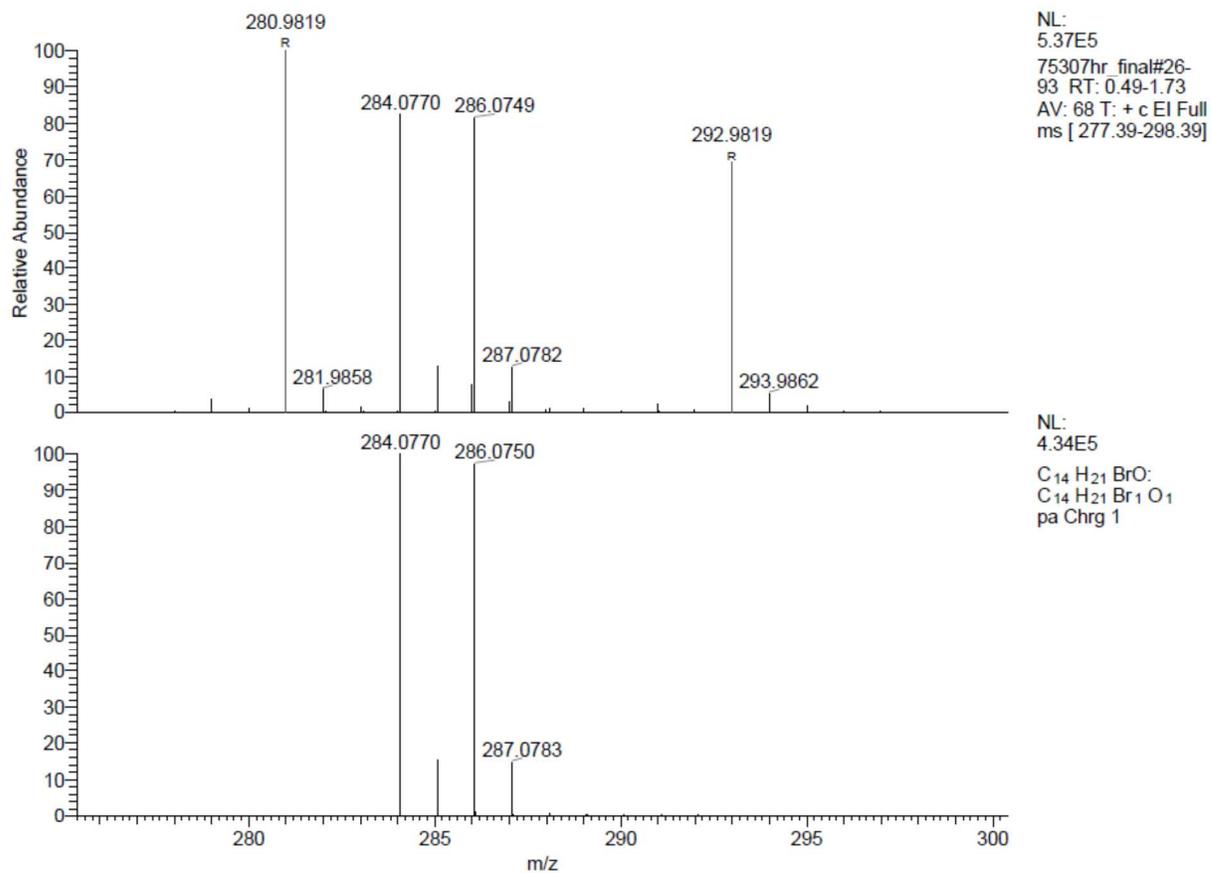
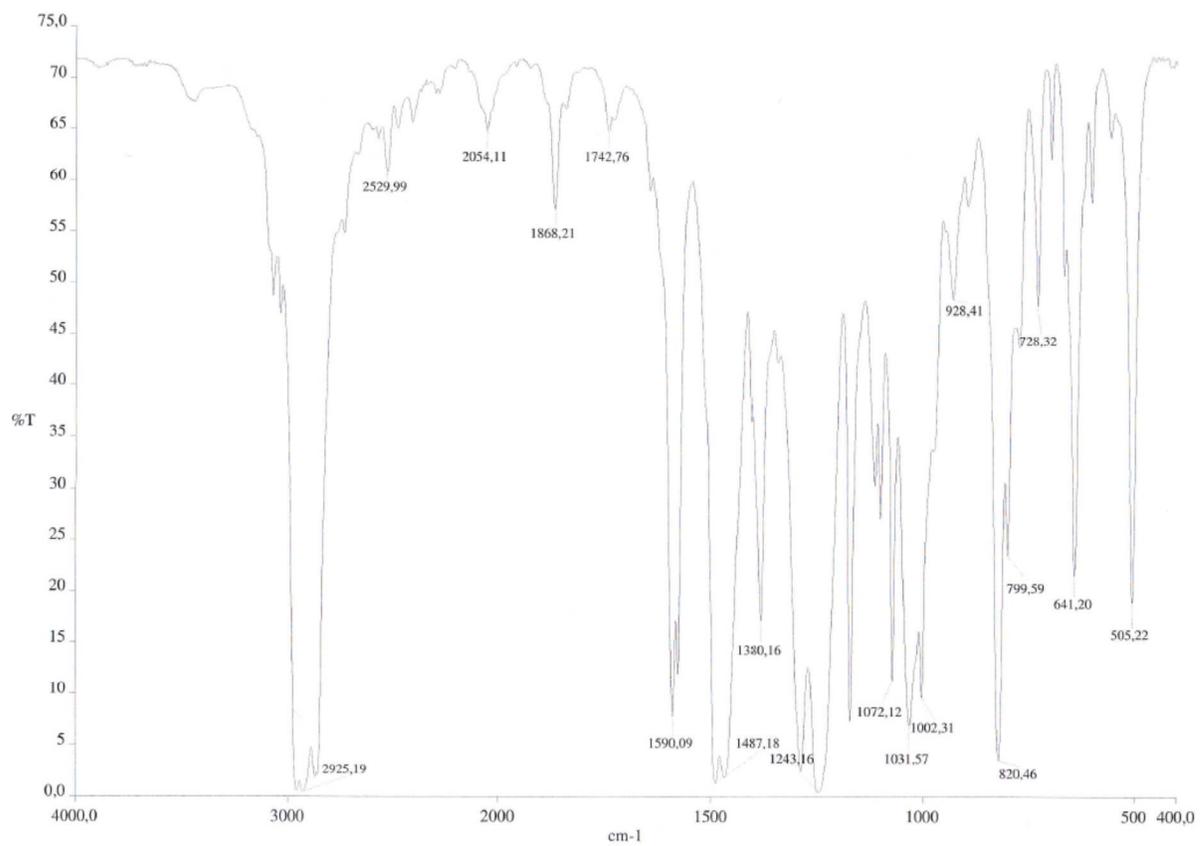
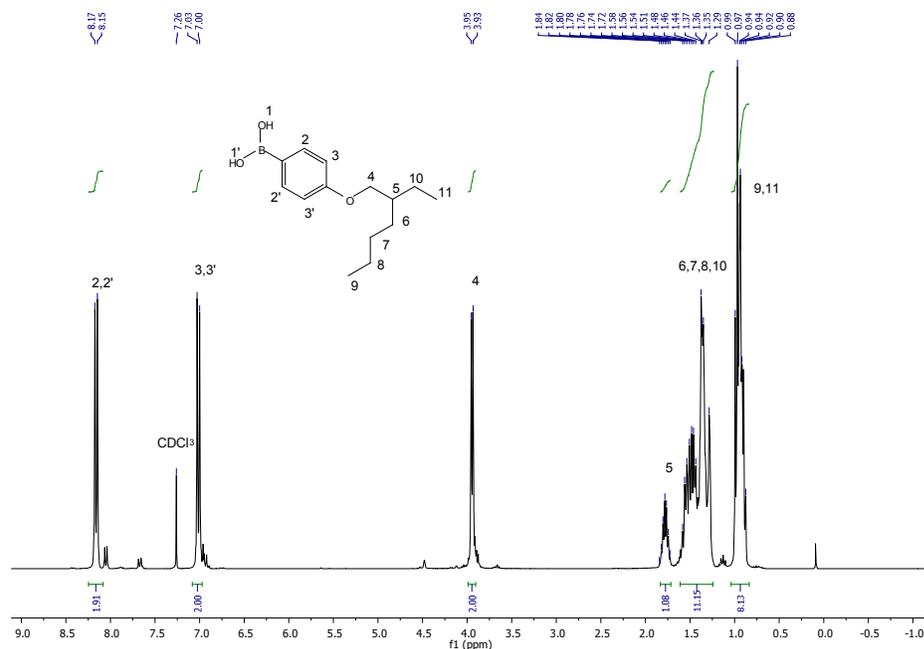


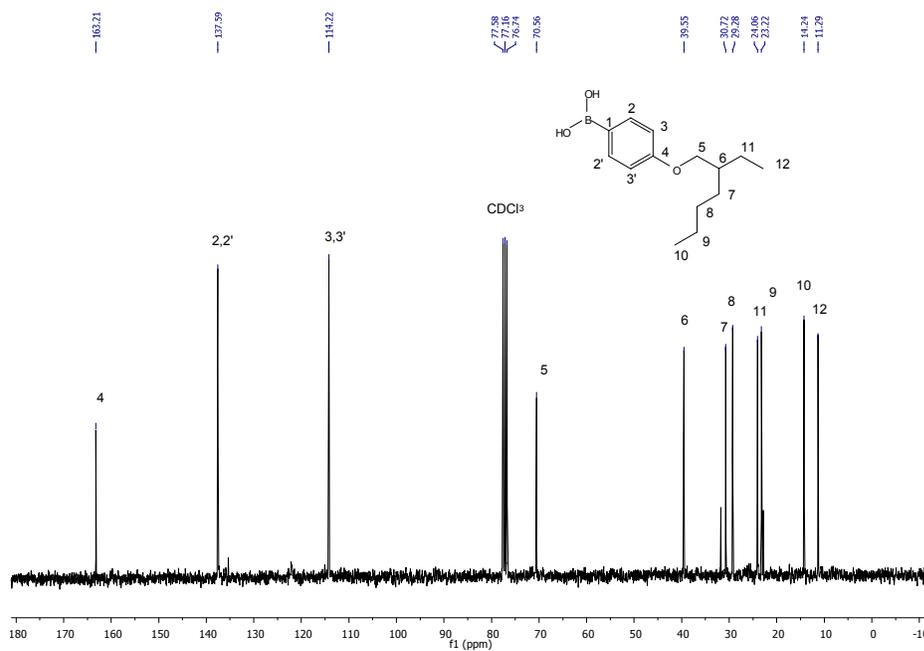
Figure S15. HR-MS spectrum of 1-bromo-4-(2'-ethylhexyloxy)benzene (5).



**Figure S16.** FT-IR spectrum of 1-bromo-4-(2'-ethylhexyloxy)benzene (**5**).

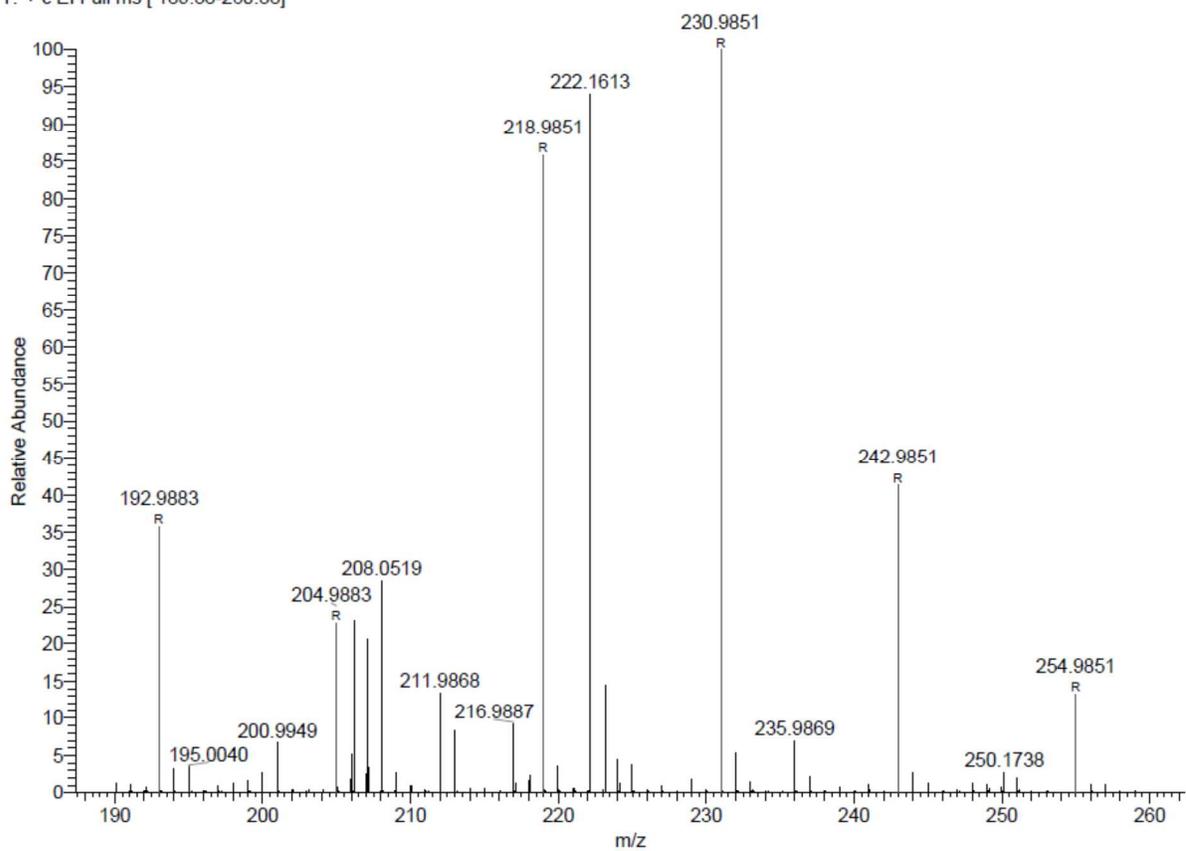


**Figure S17.**  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of 4-(2'-ethylhexyloxy)benzene boronic acid (**6**).

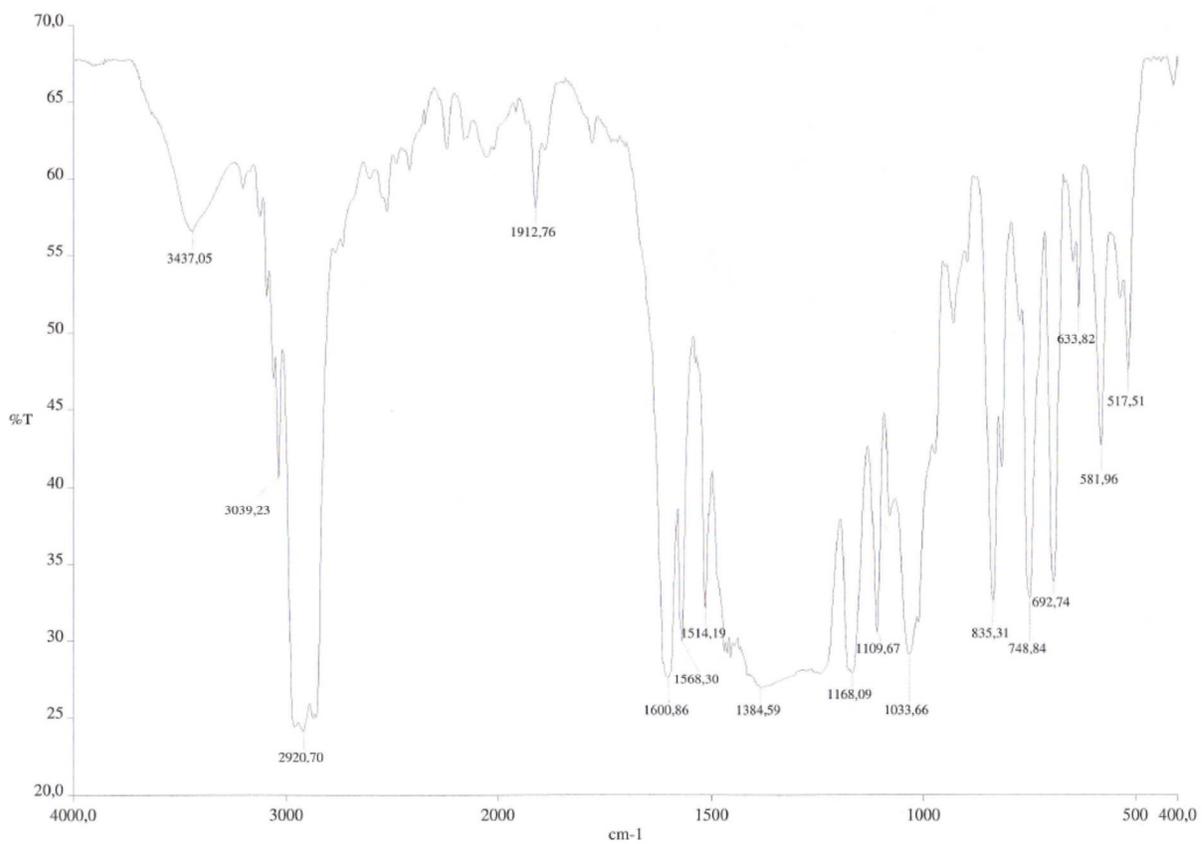


**Figure S18.**  $^{13}\text{C}$  NMR (75 MHz,  $\text{CDCl}_3$ ) of 4-(2'-ethylhexyloxy)benzene boronic acid (**6**).

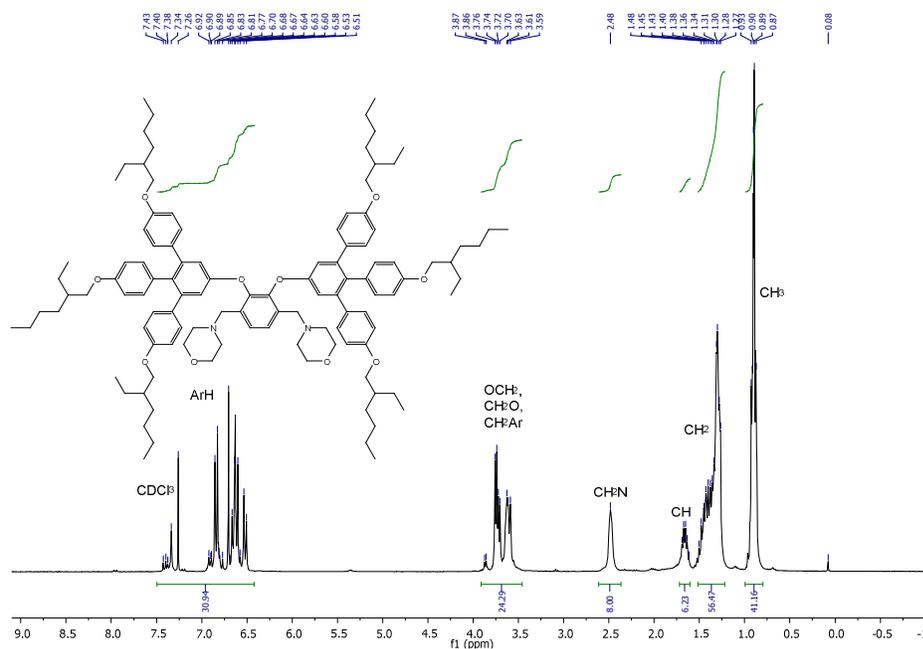
75308hr1\_final #24-44 RT: 1.79-3.22 AV: 21 NL: 6.65E5  
T: + c EI Full ms [ 189.38-260.38]



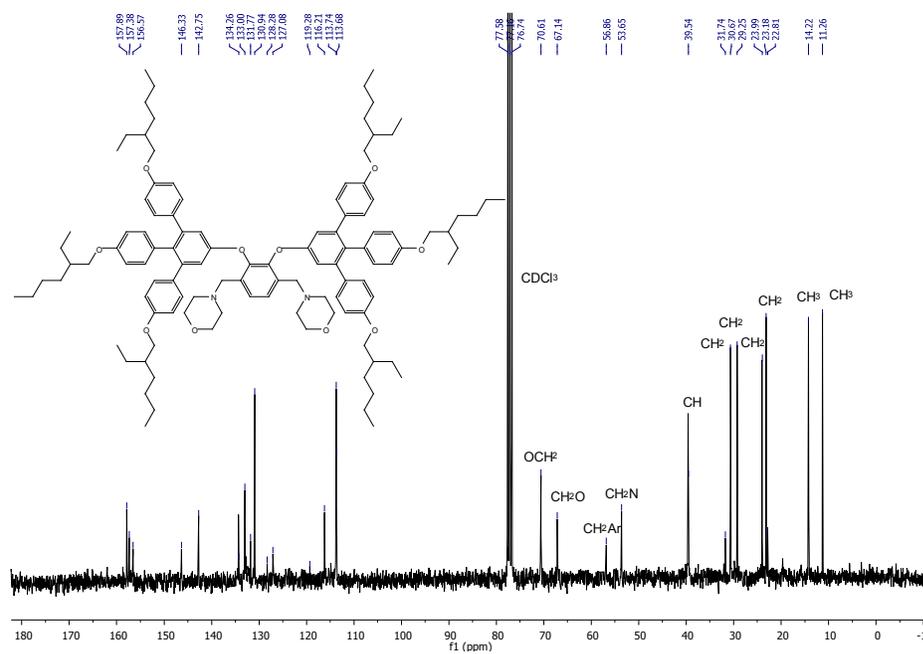
**Figure S19.** HR-MS spectrum of 4-(2'-ethylhexyloxy)benzene boronic acid (**6**).



**Figure S20.** FT-IR spectrum of 4-(2'-ethylhexyloxy)benzene boronic acid (**6**).

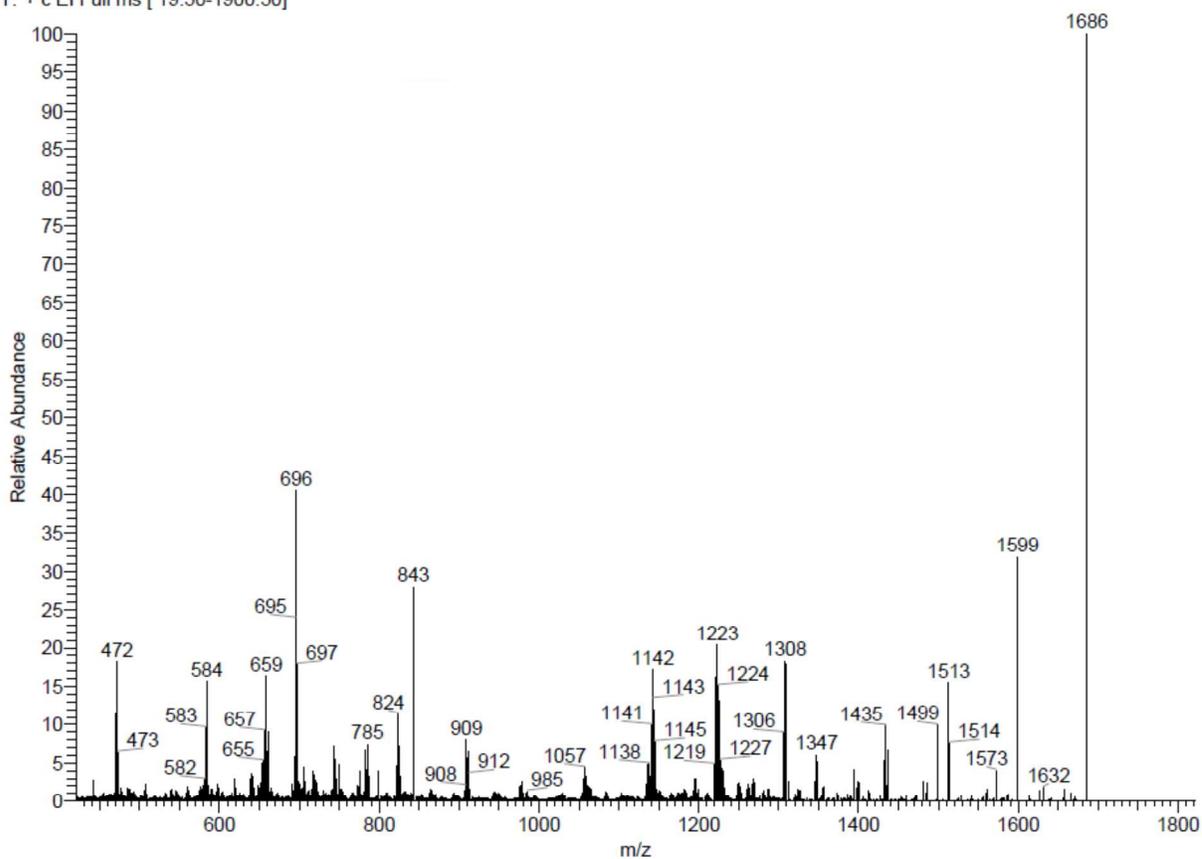


**Figure S21.**  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**3**).

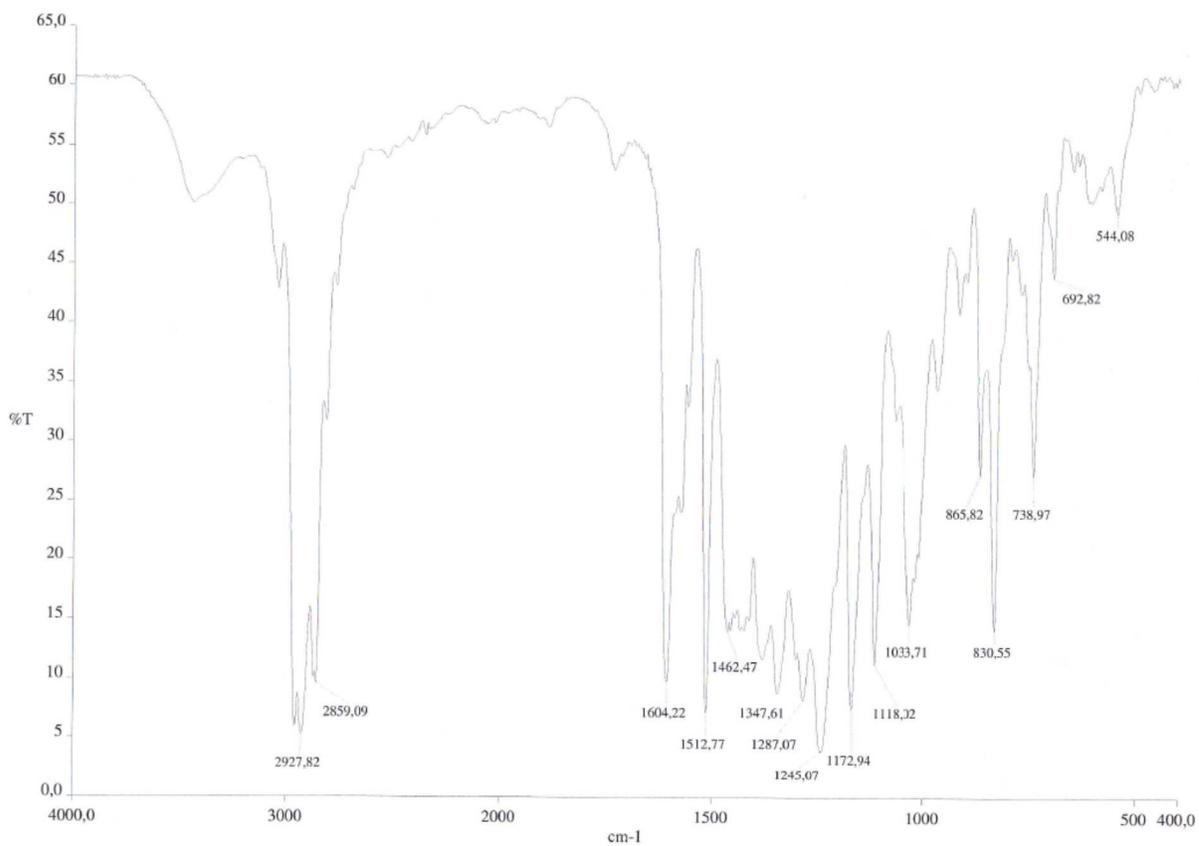


**Figure S22.**  $^{13}\text{C}$  NMR (75 MHz,  $\text{CDCl}_3$ ) of 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**3**).

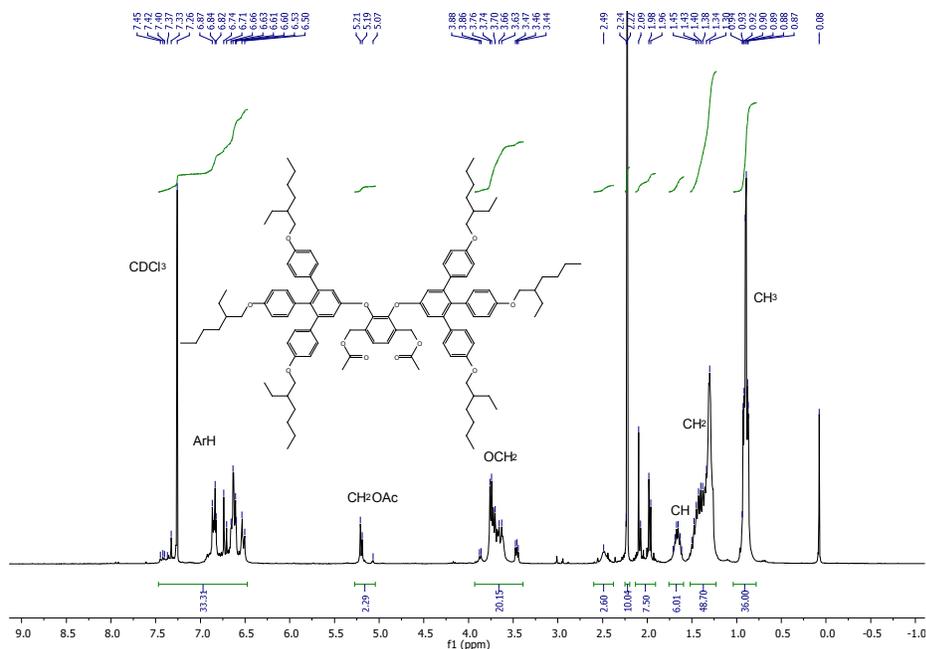
75846 #16-24 RT: 2.81-4.16 AV: 9 NL: 1.21E6  
T: + c EI Full ms [ 19.50-1900.50]



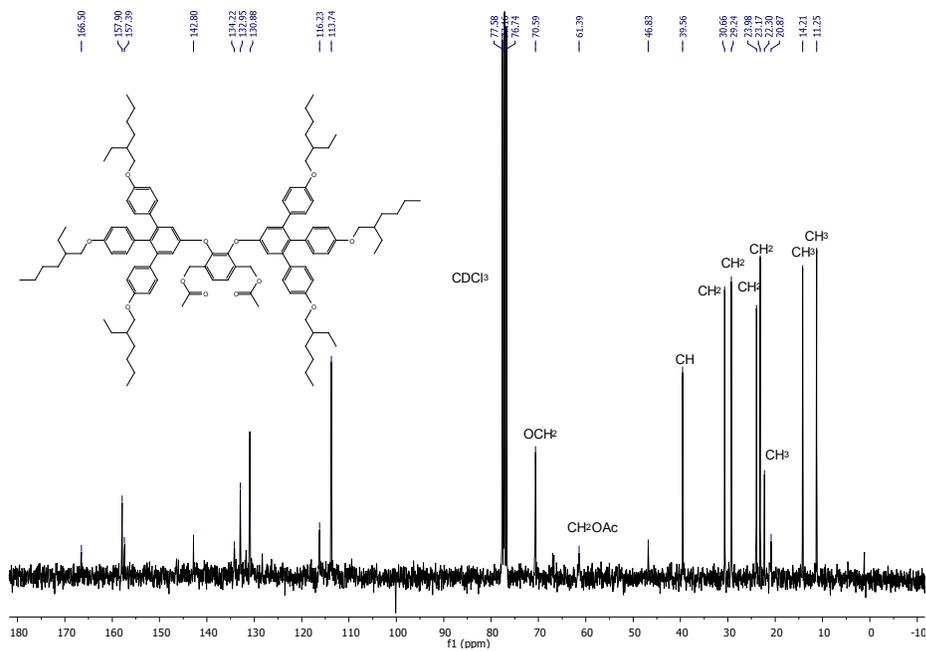
**Figure S23.** Mass spectrum of 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**3**).



**Figure S24.** FT-IR spectrum of 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)dimorpholine (**3**).

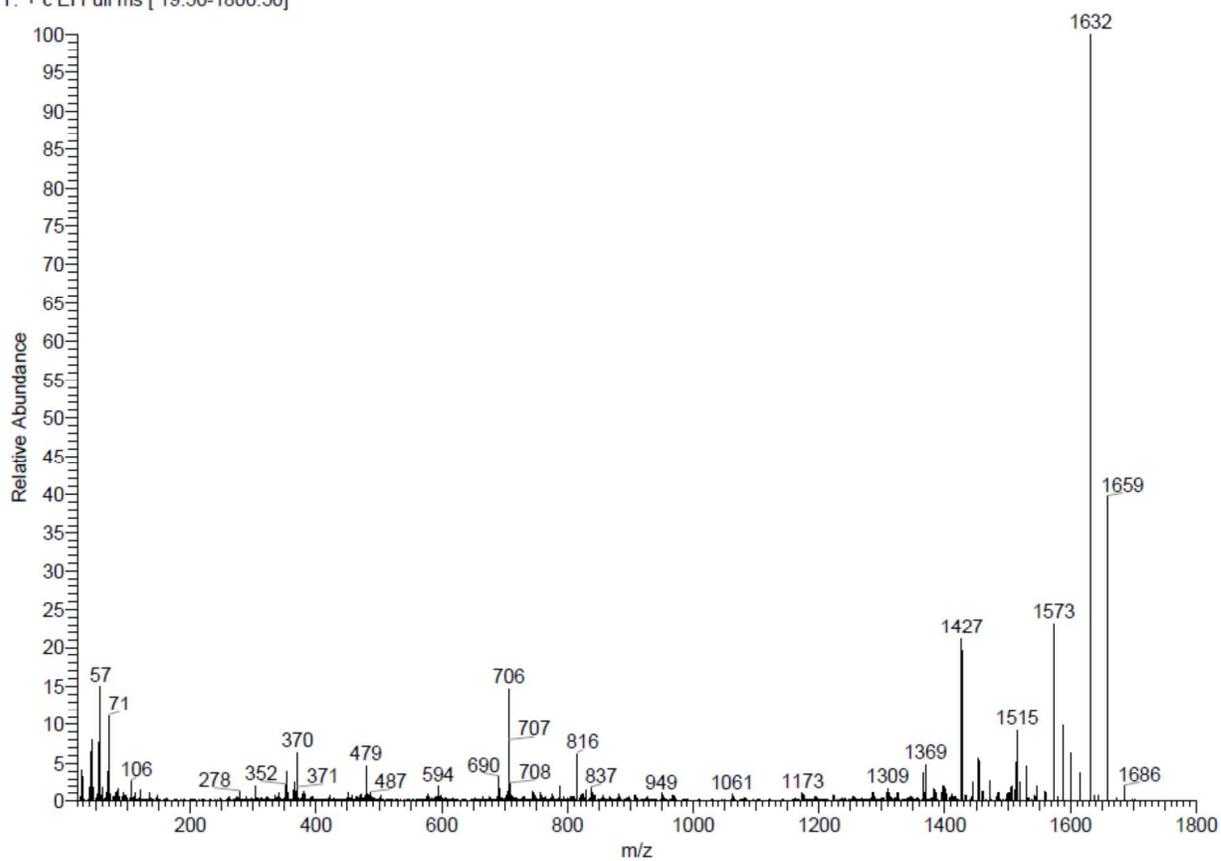


**Figure S25.**  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of crude 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)diacetate (**4**).

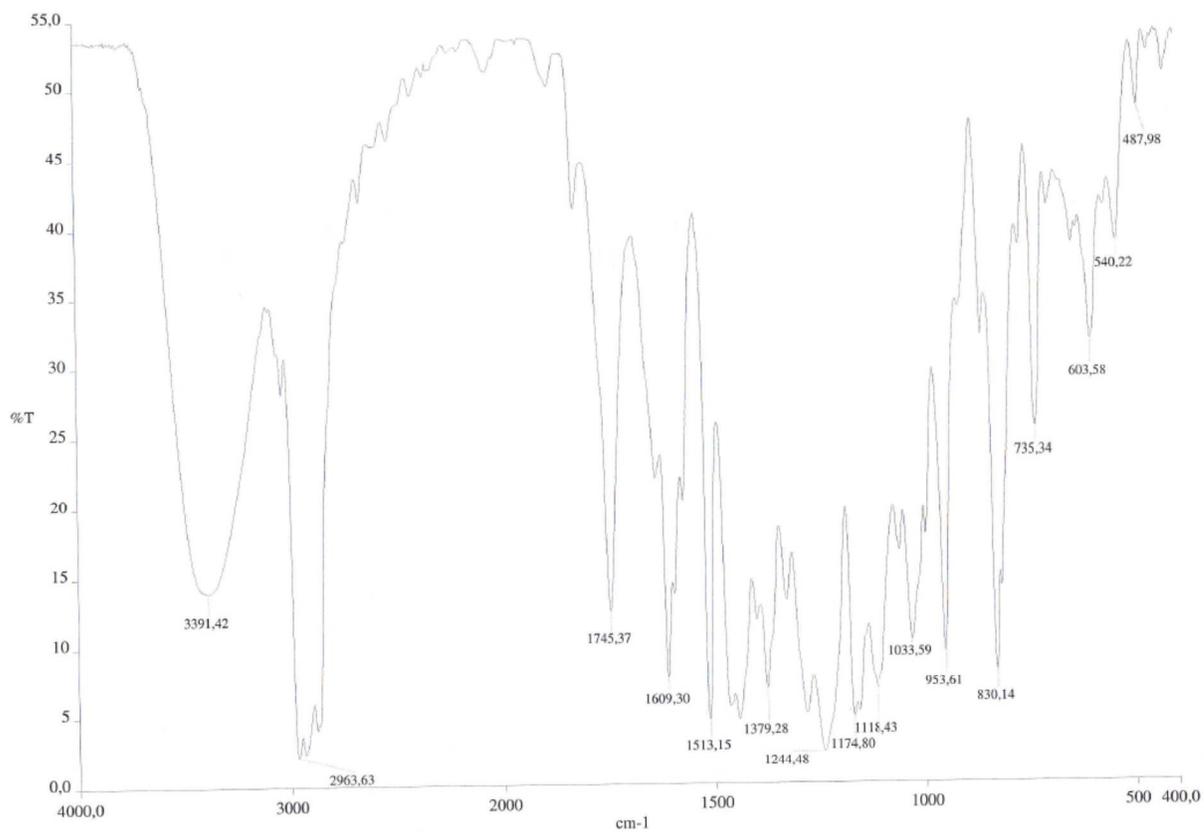


**Figure S26.**  $^{13}\text{C}$  NMR (75 MHz,  $\text{CDCl}_3$ ) of crude 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)diacetate (**4**).

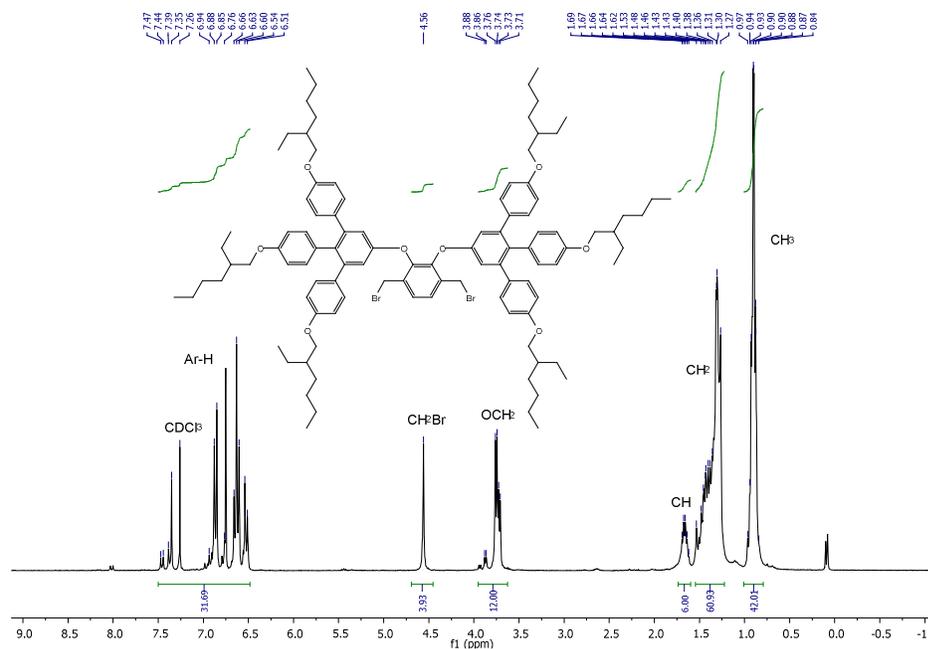
75847 #30-44 RT: 5.12-7.45 AV: 15 NL: 1.38E7  
T: + c EI Full ms [ 19.50-1800.50]



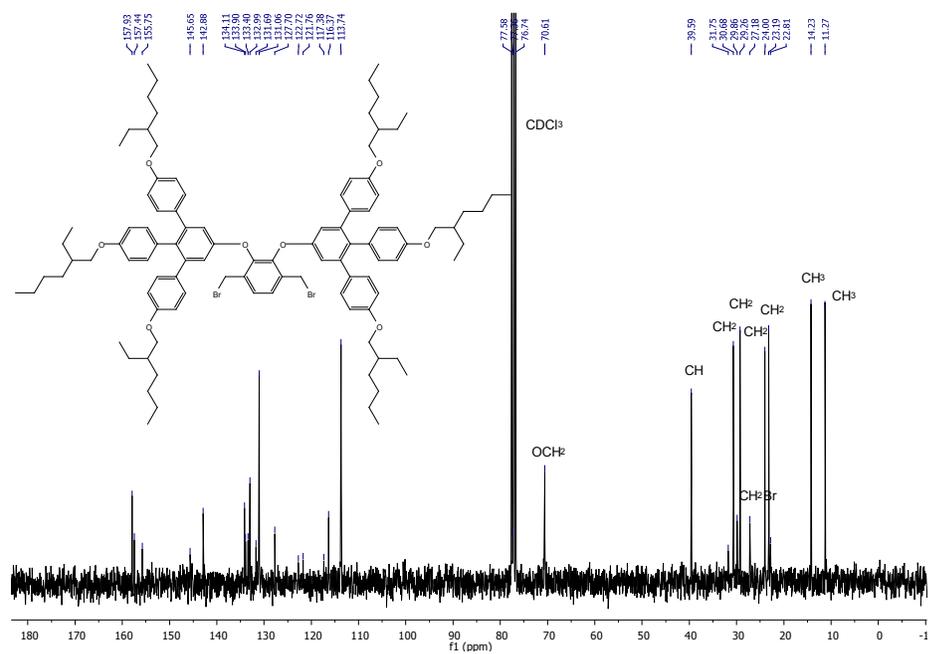
**Figure S27.** Mass spectrum of crude 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)diacetate (**4**).



**Figure S28.** FT-IR spectrum of crude 4,4'-(2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)-1,4-phenylene)bis(methylene)diacetate (**4**).

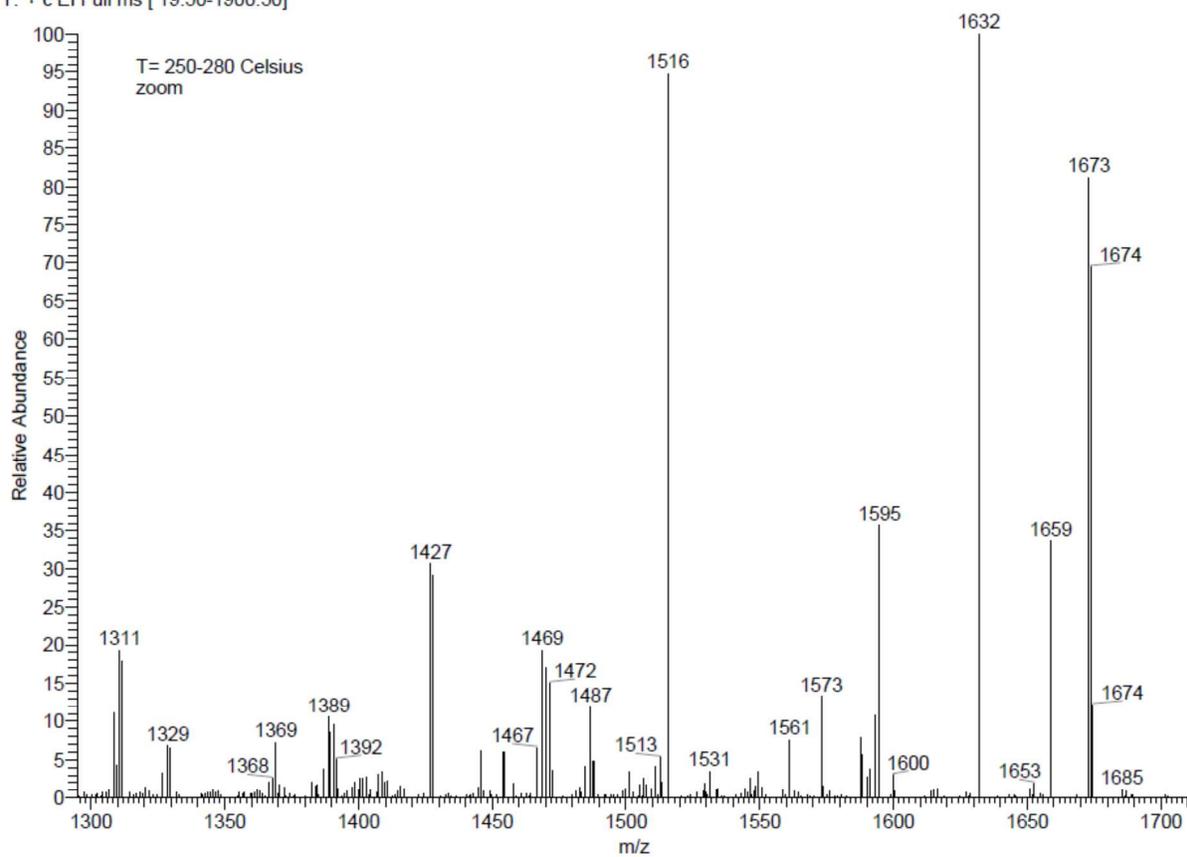


**Figure S29.**  $^1\text{H}$  NMR (300 MHz,  $\text{CDCl}_3$ ) of 1,4-bis(bromomethyl)-2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)benzene (**M1**).

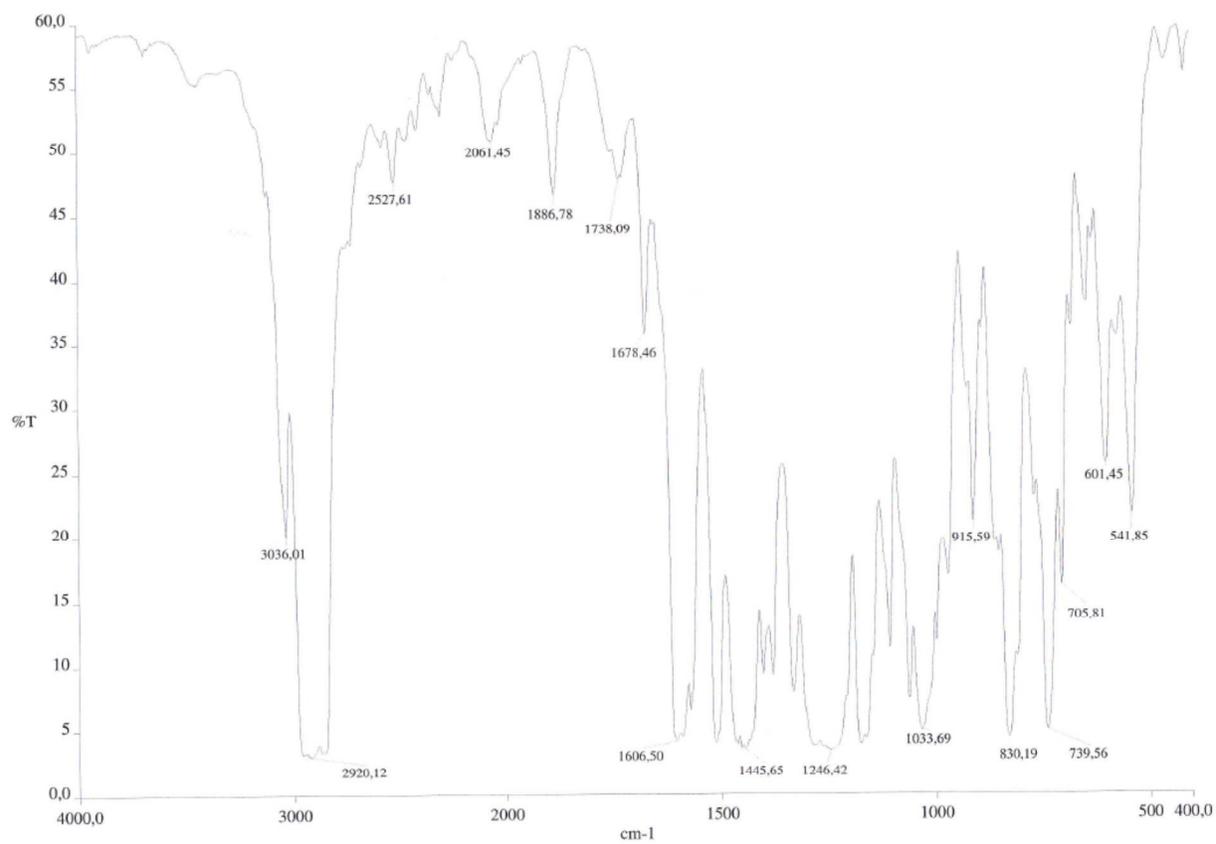


**Figure S30.**  $^{13}\text{C}$  NMR (75 MHz,  $\text{CDCl}_3$ ) of 1,4-bis(bromomethyl)-2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)benzene (**M1**).

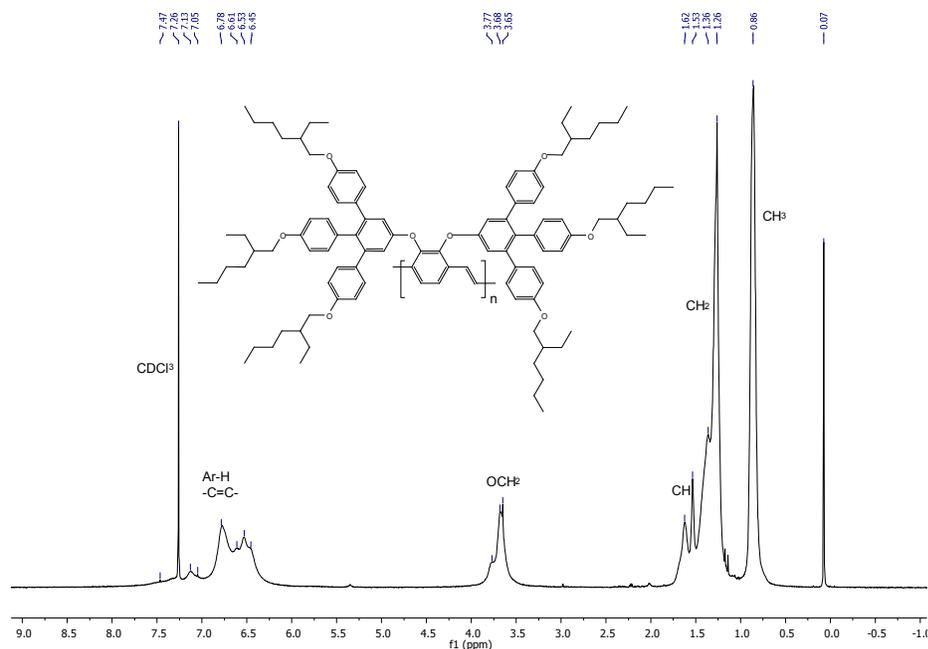
75848 #19-21 RT: 3.38-3.71 AV: 3 NL: 1.45E5  
T: + c EI Full ms [ 19.50-1900.50]



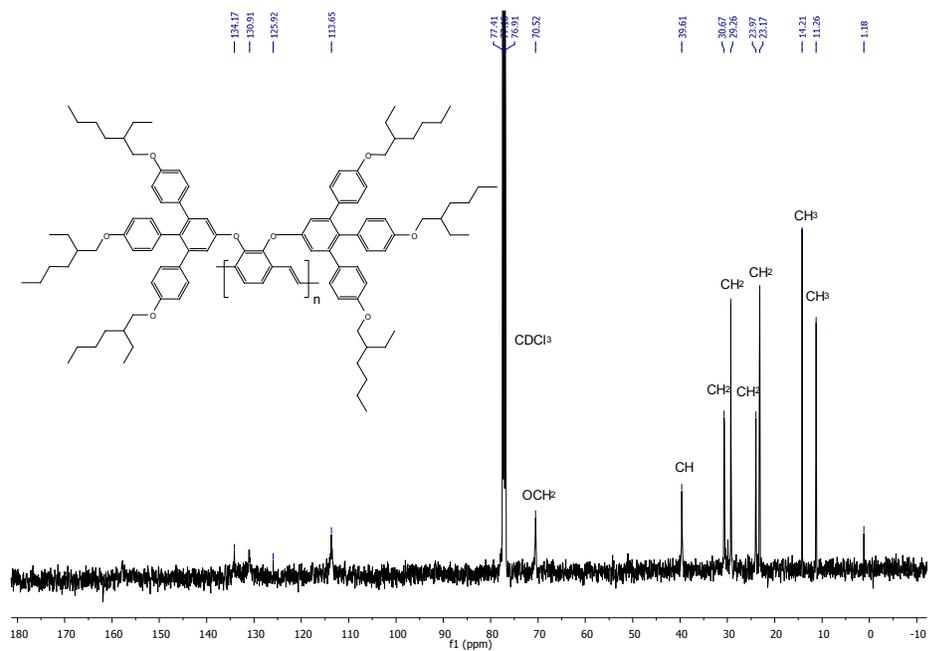
**Figure S31.** Mass spectrum of 1,4-bis(bromomethyl)-2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)benzene (**M1**).



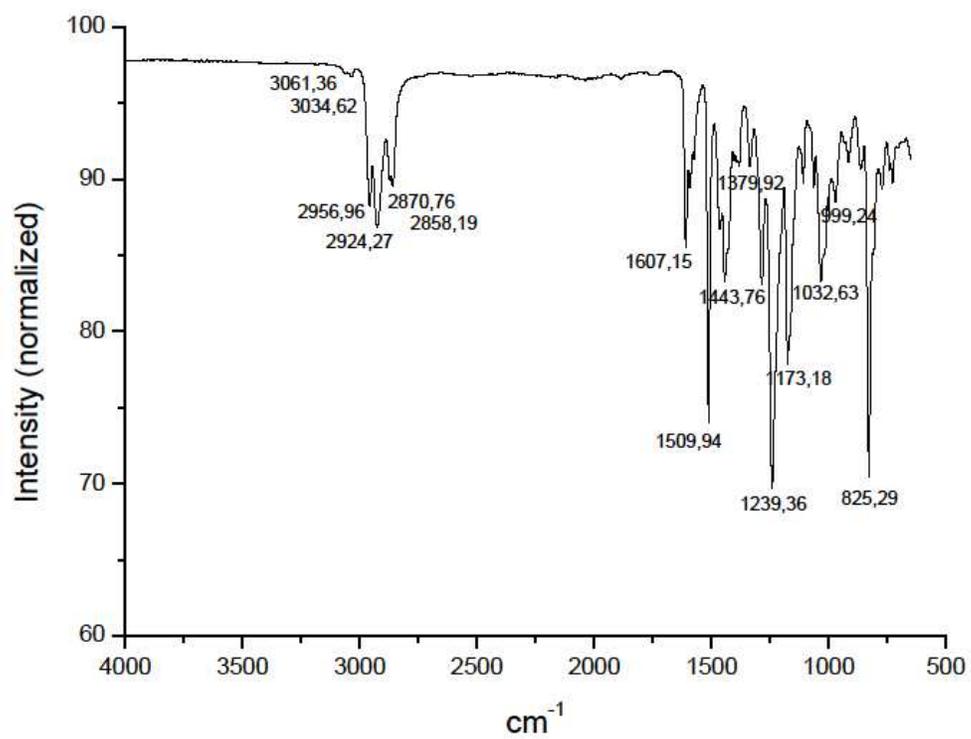
**Figure S32.** FT-IR spectrum of 1,4-bis(bromomethyl)-2,3-bis(1,2,3-tris(4-(2'-ethylhexyloxy)phenyl)-5-phenoxy)benzene (**M1**).



**Figure S33.** <sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) of OC<sub>48</sub>C<sub>48</sub> PPV.



**Figure S34.** <sup>13</sup>C NMR (125 MHz, CDCl<sub>3</sub>) of OC<sub>48</sub>C<sub>48</sub> PPV.



**Figure S35.** ATR-FT-IR spectrum of OC<sub>48</sub>C<sub>48</sub> PPV.