

Supporting Information

Synthesis of Poly(Spirobisilafluorenes) and Their Improved Stability in Blue Emitting Polymer LEDs over Non-Spiro Analogs

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Section2: GPC Data:

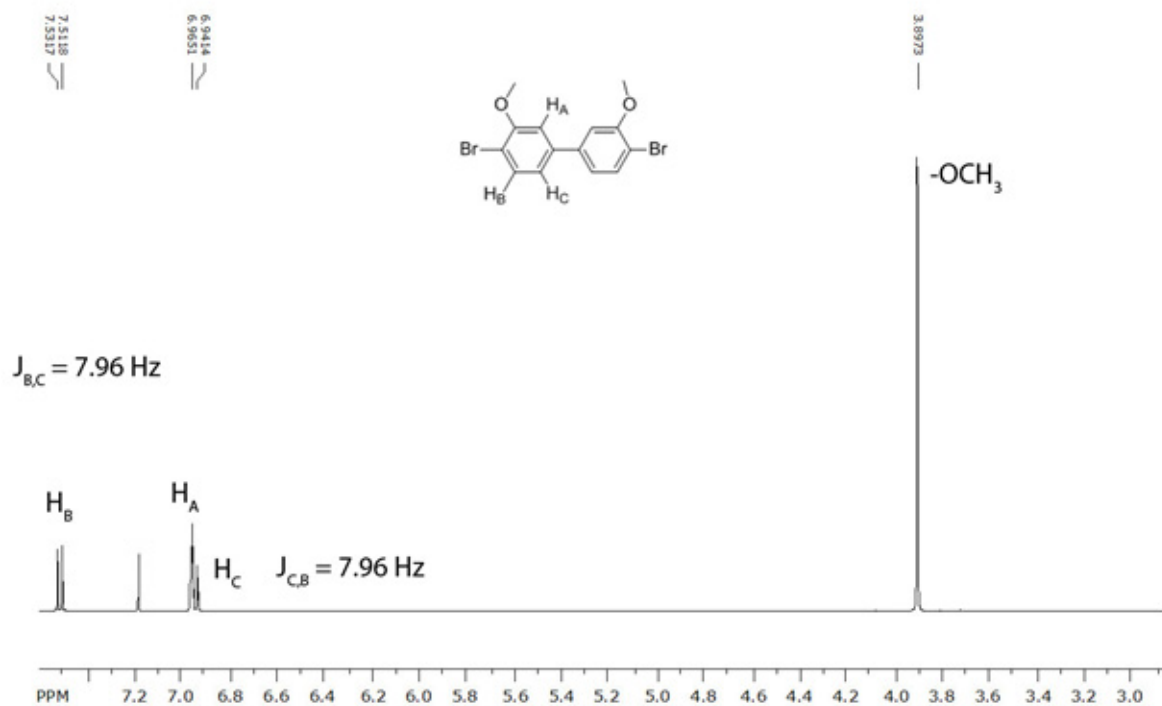
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S2.2.0 – **Poly(3,6-dimethoxy-9.9'-dihexylsilafuorene) (PDHSF)**- GPC (THF Eluent, 35°C Column Temp., PS Standards): PC Data:

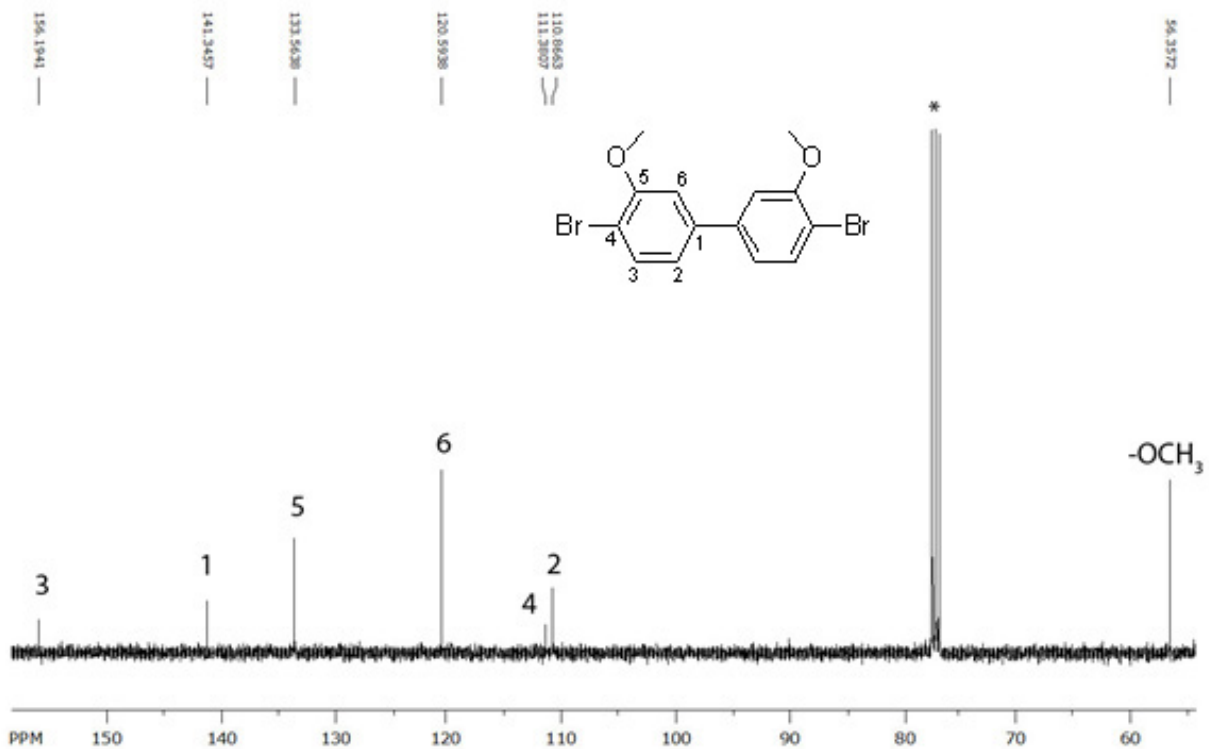
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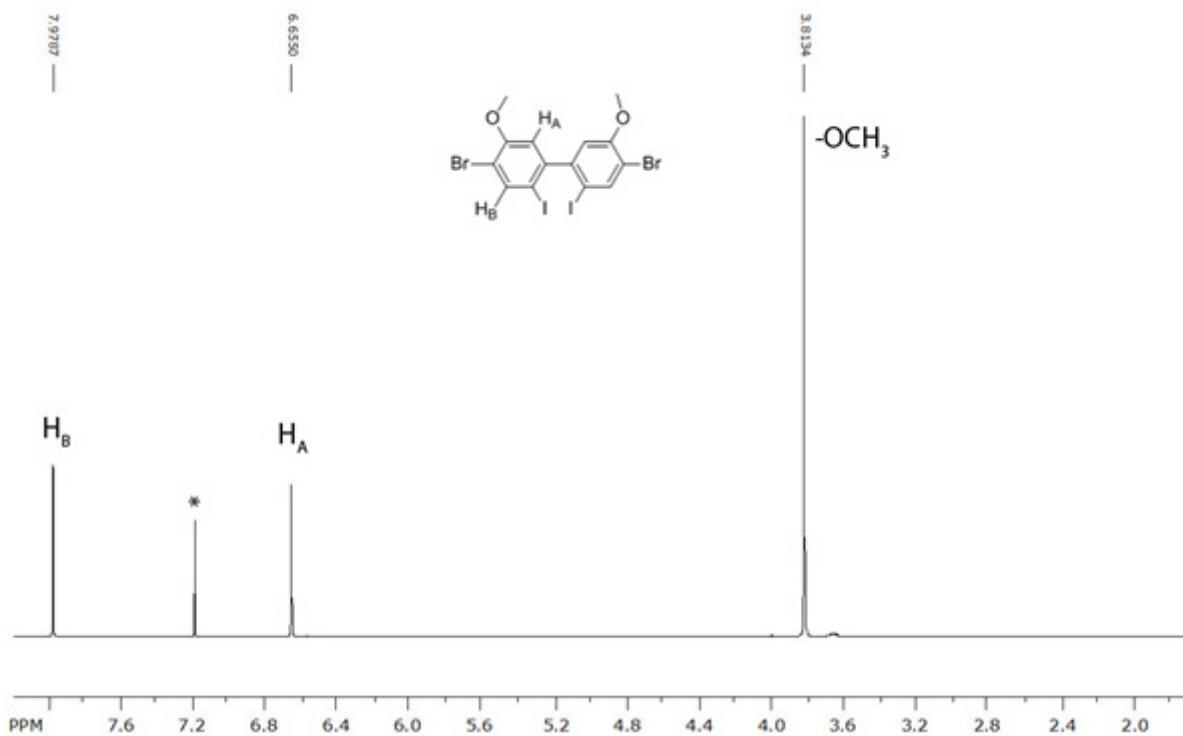
Section 1: $^1\text{H}/^{13}\text{C}$ NMR of Intermediate Compounds



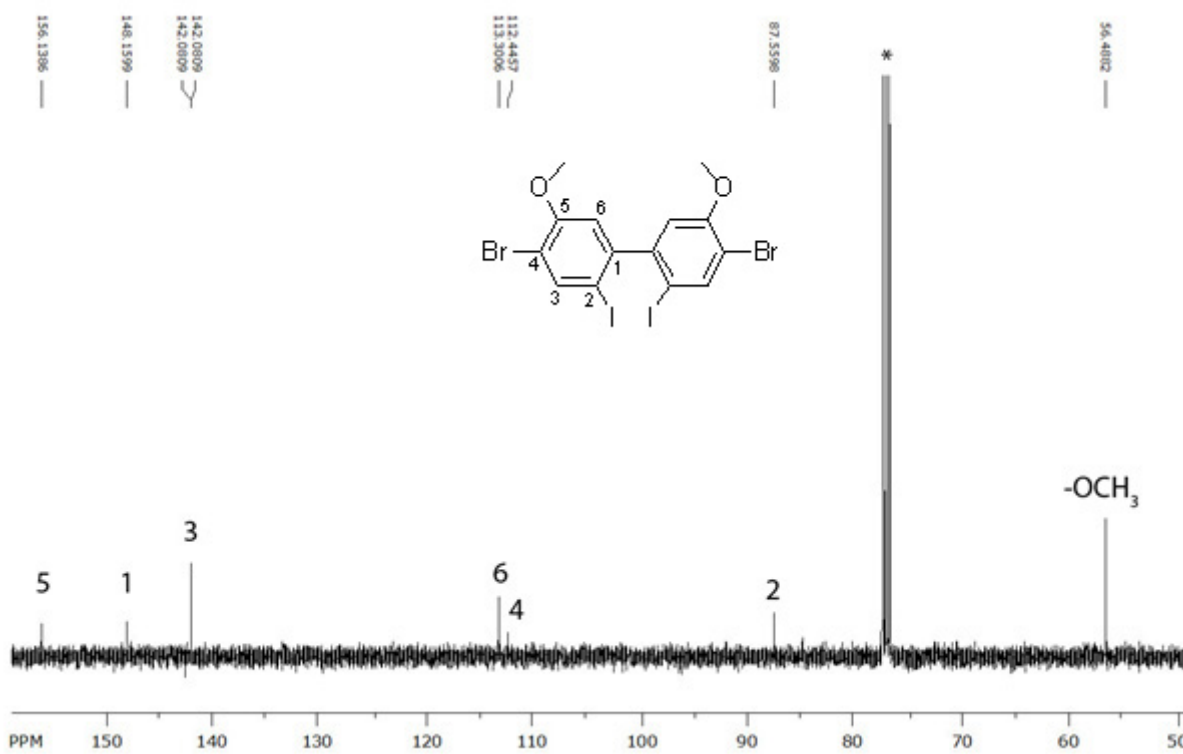
S1.1.0 –4,4'-dibromo-3,3'-dimethoxy-1,1'-biphenyl (2) ^1H -NMR



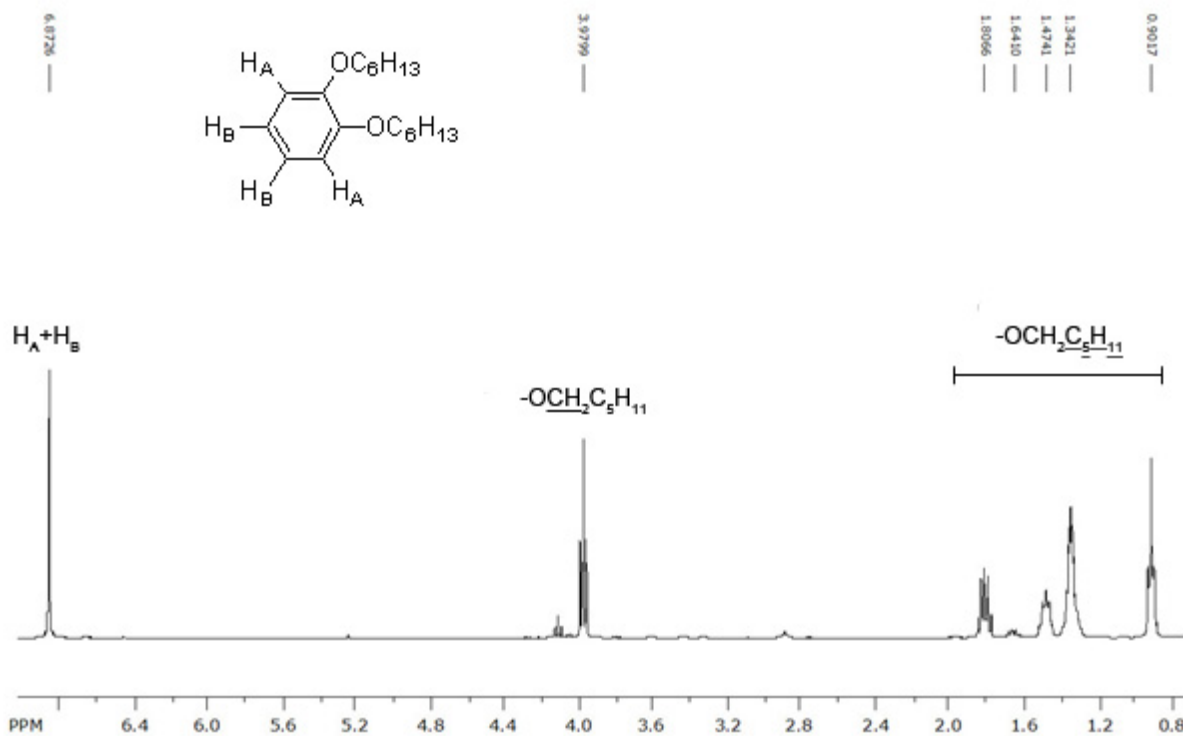
S1.1.1 –4,4'-dibromo-3,3'-dimethoxy-1,1'-biphenyl (2) ^{13}C -NMR



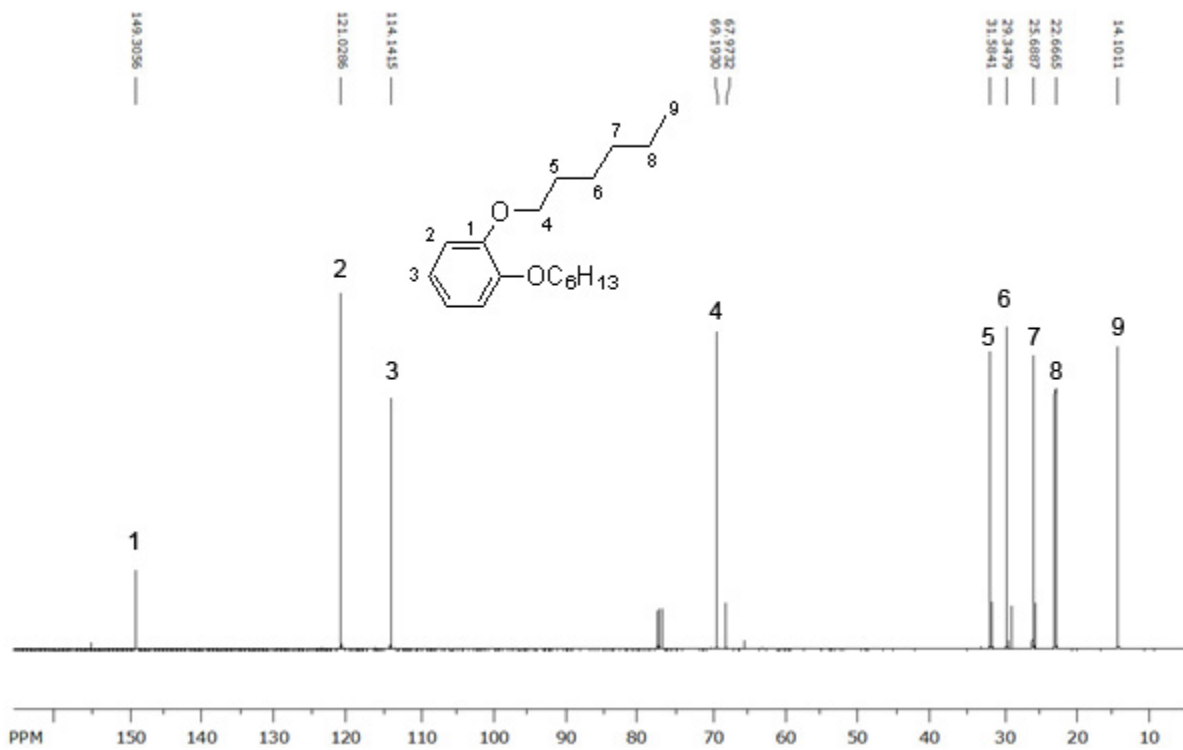
S1.2.0 – 4,4'-dibromo-2,2'-diiodo-5,5'-dimethoxy-1,1'-biphenyl (3) ¹H-NMR



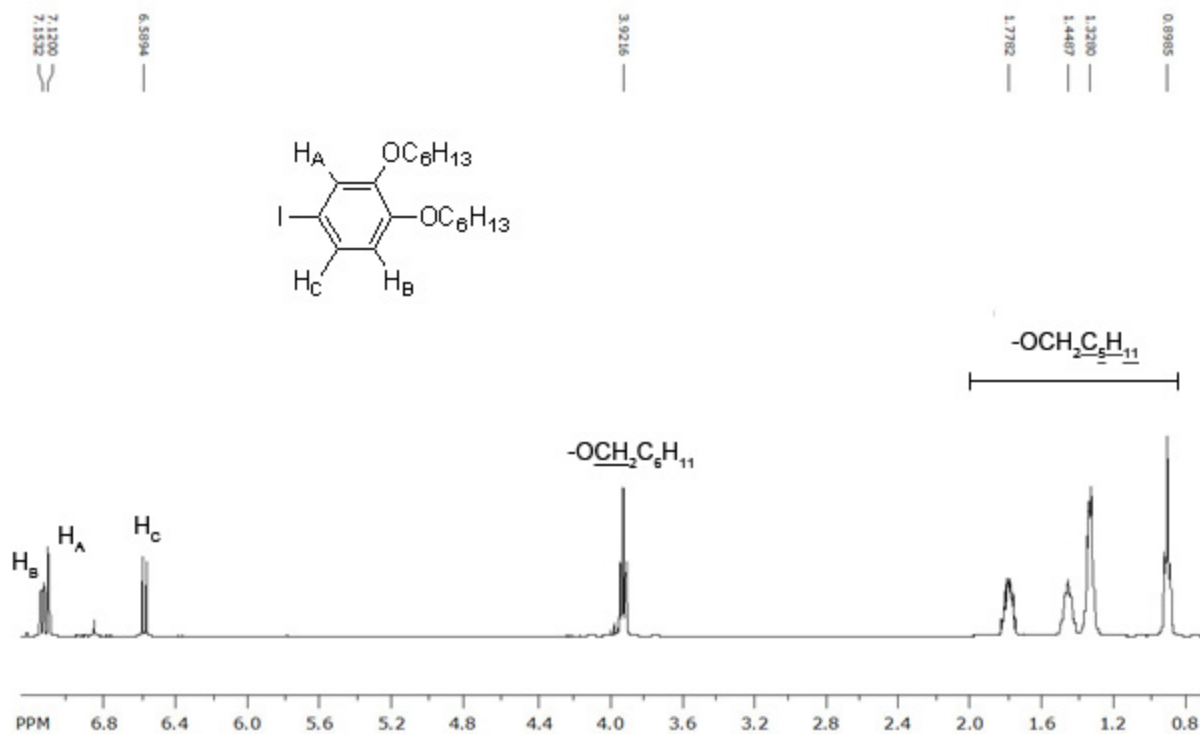
S1.2.1 – 4,4'-dibromo-2,2'-diiodo-5,5'-dimethoxy-1,1'-biphenyl (3) ¹³C-NMR



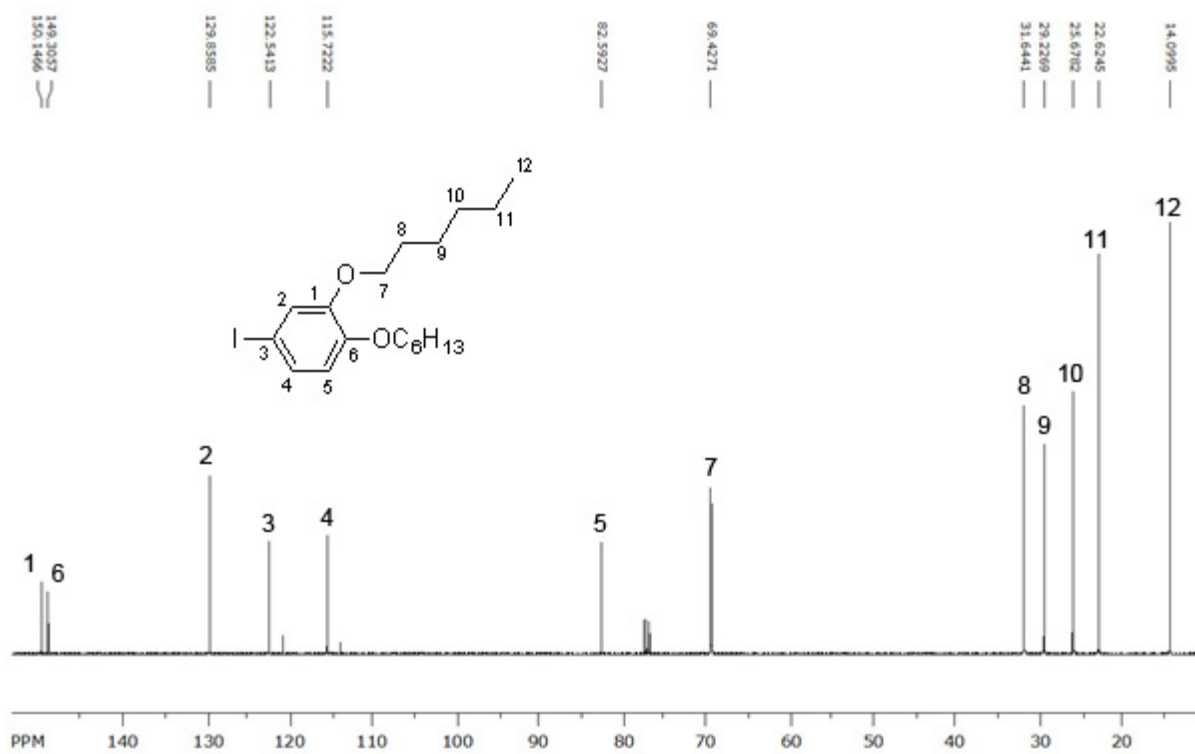
S1.3.0 – o-dihexyloxybenzene (5) ¹H-NMR



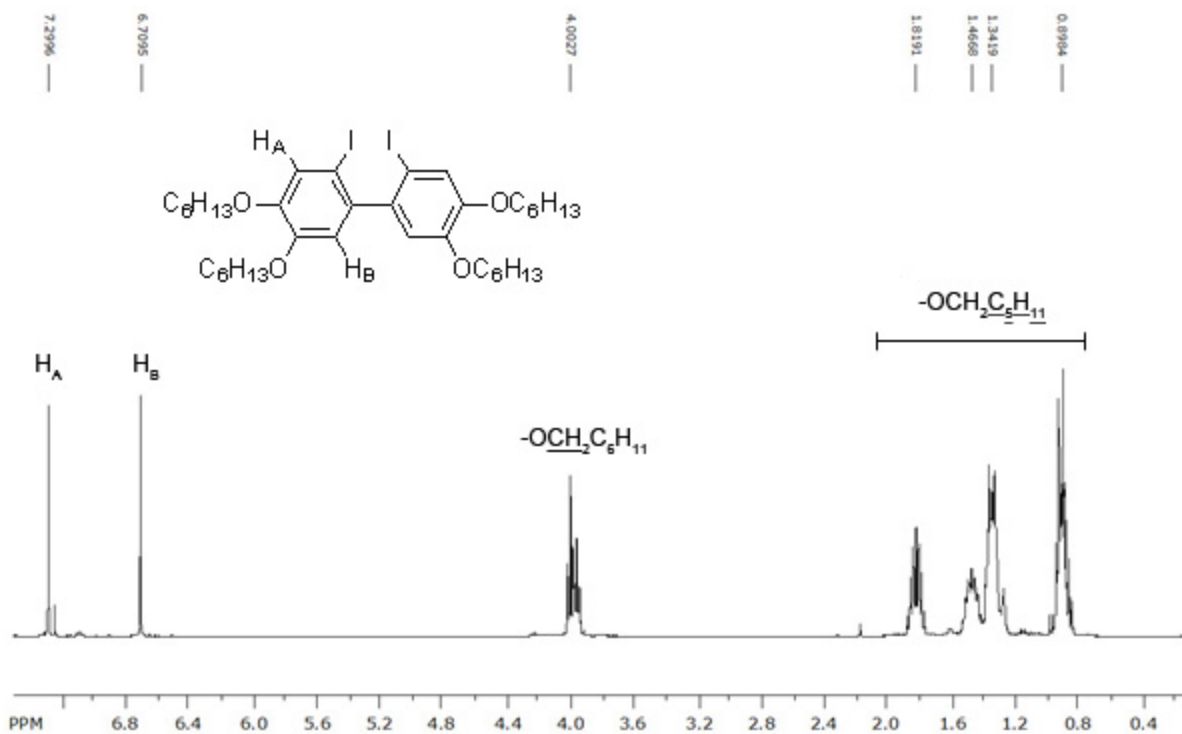
S1.3.1 – o-dihexyloxybenzene (5) ¹³C-NMR



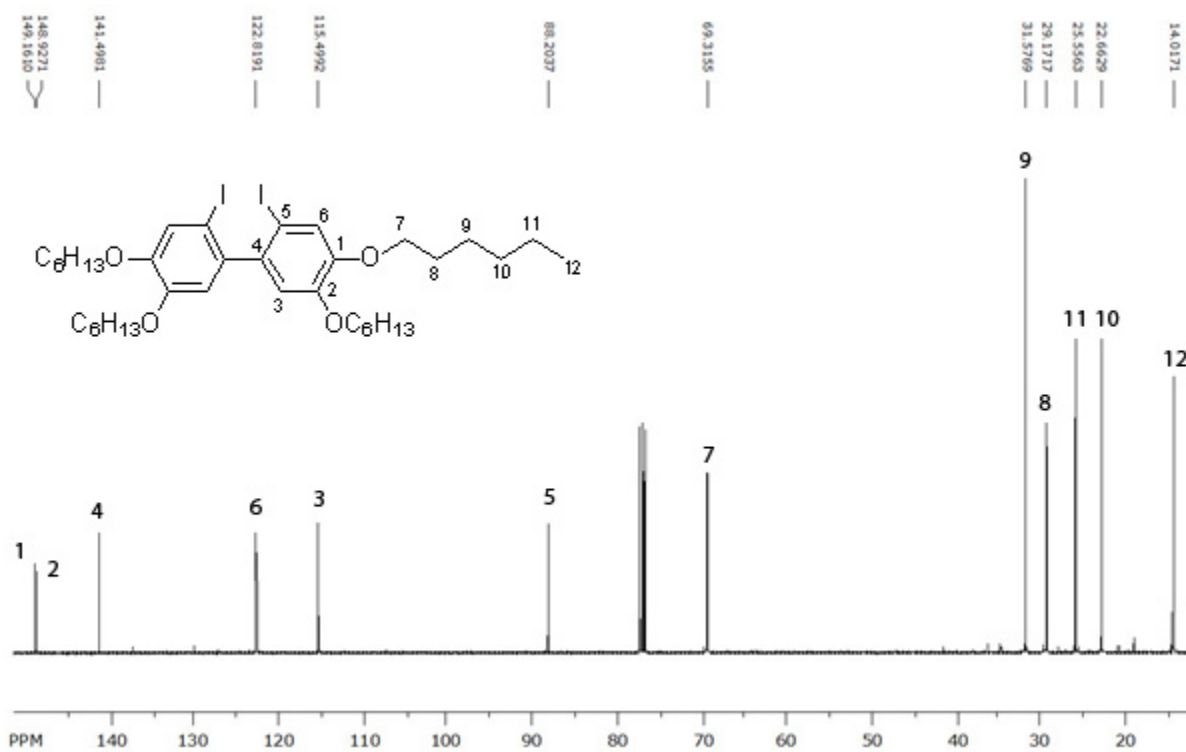
S1.4.0 – 1-iodo-3,4-dihexyloxybenzene (6) 1H -NMR



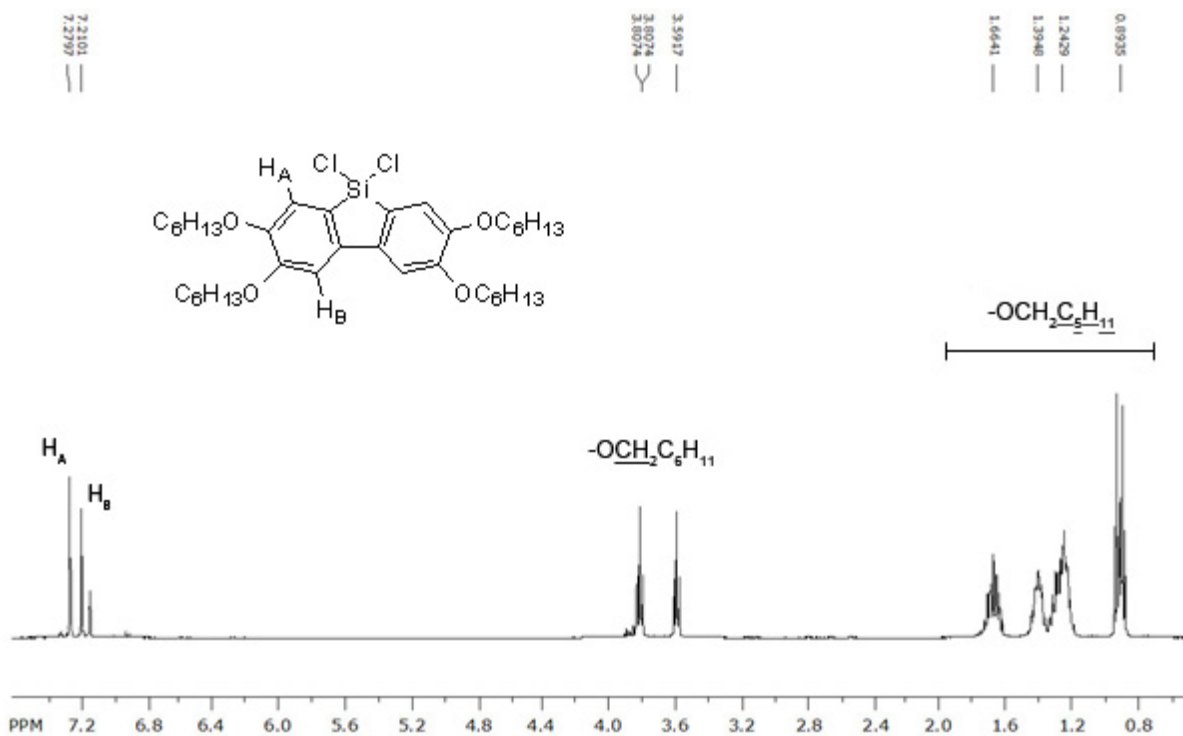
S1.4.1 – 1-iodo-3,4-dihexyloxybenzene (6) ^{13}C -NMR



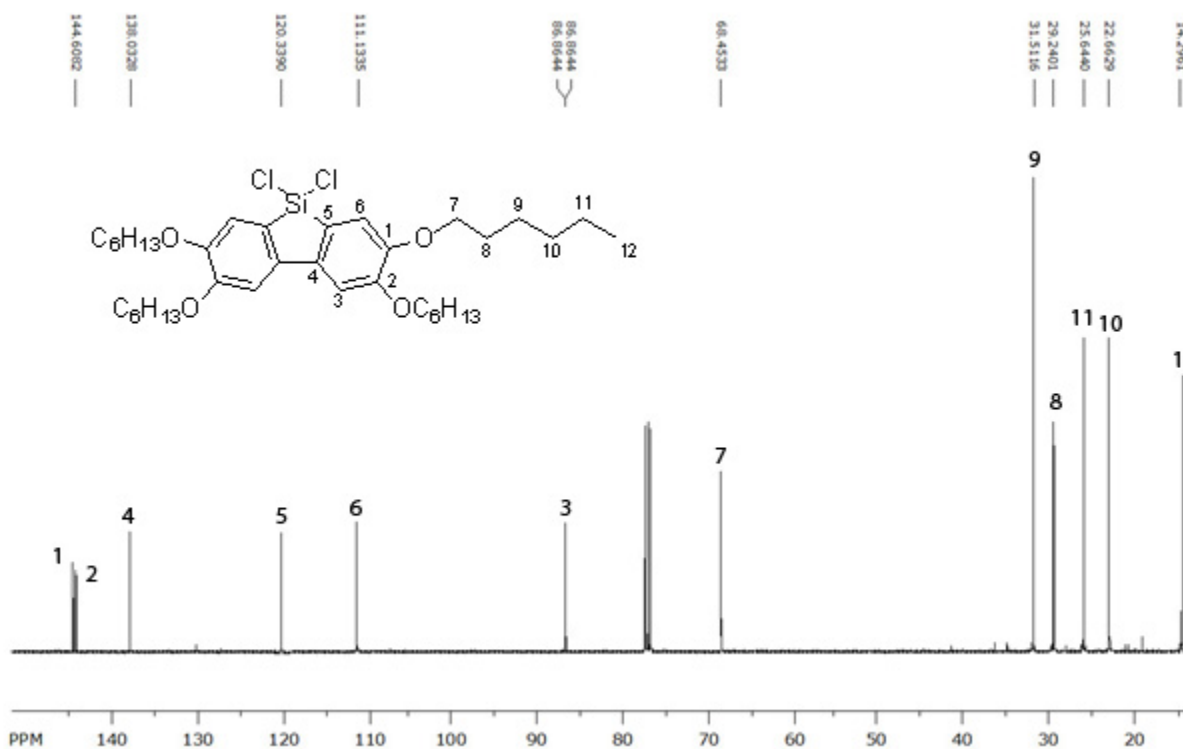
S1.5.0 – 2,2'-diiodo-4,4',5,5'-tetrahexyloxy-1,1'-biphenyl (7) 1H -NMR



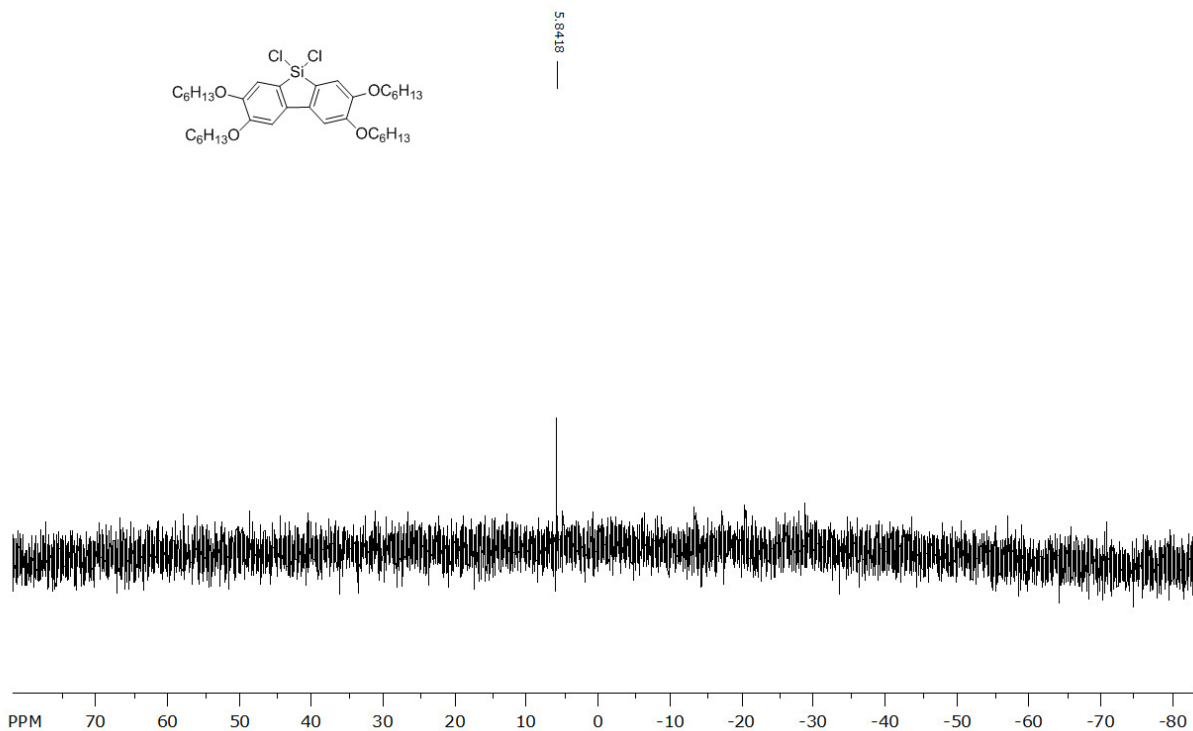
S1.5.1 – 2,2'-diiodo-4,4',5,5'-tetrahexyloxy-1,1'-biphenyl (7) ^{13}C -NMR



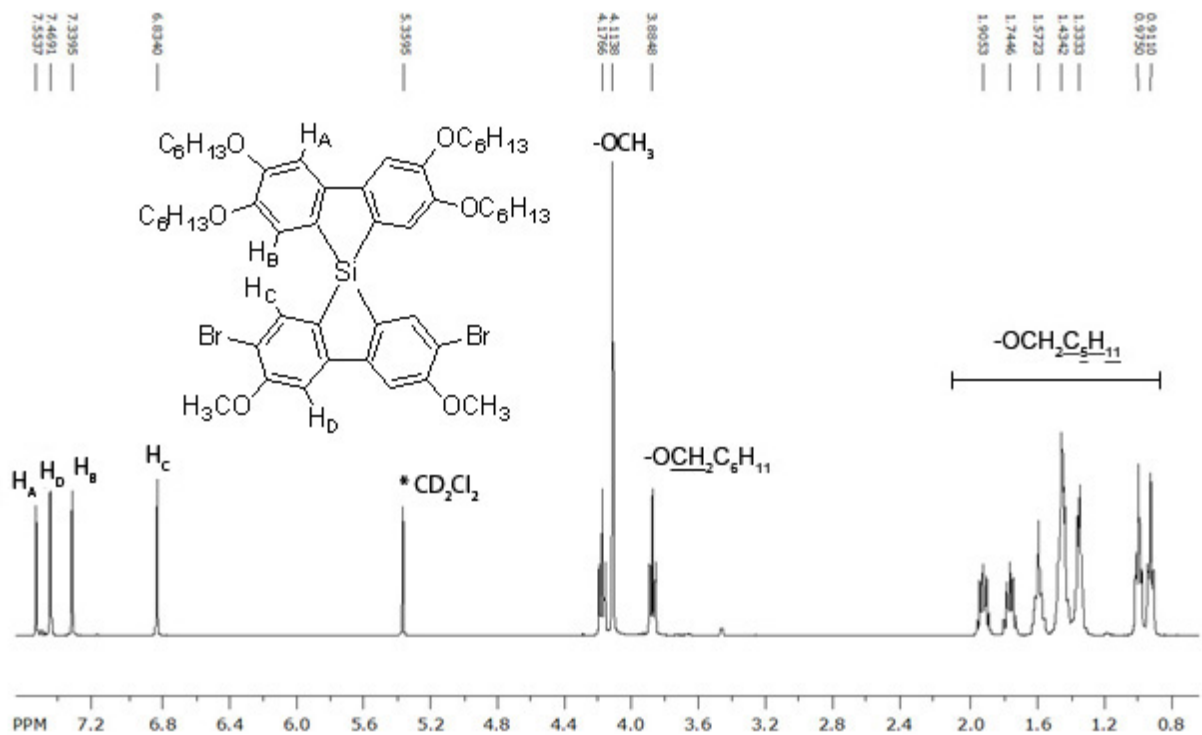
S1.6.0 – 2,3,6,7-tetrahexyloxy-9,9-dichlorosilafluorene (9) 1H -NMR



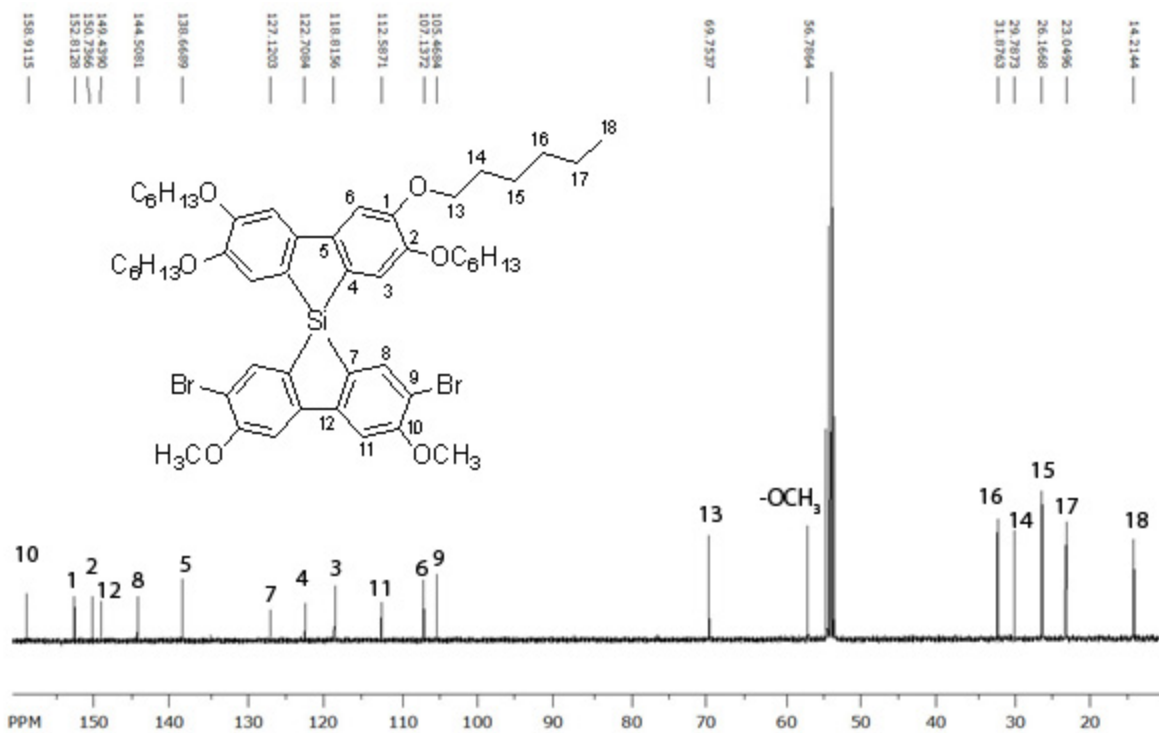
S1.6.1 – 2,3,6,7-tetrahexyloxy-9,9-dichlorosilafluorene (9) ^{13}C -NMR



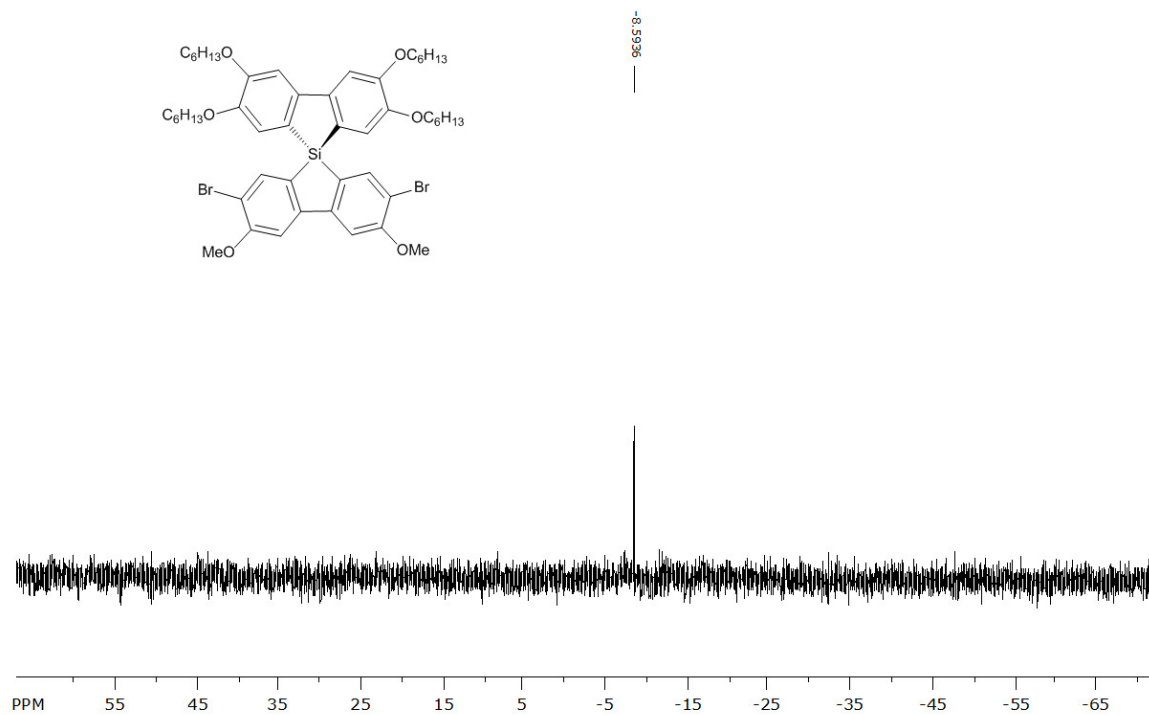
S1.6.2 – 2,3,6,7-tetrahexyloxy-9,9-dichlorosilabfluorene (9) $^{29}\text{Si-NMR}$



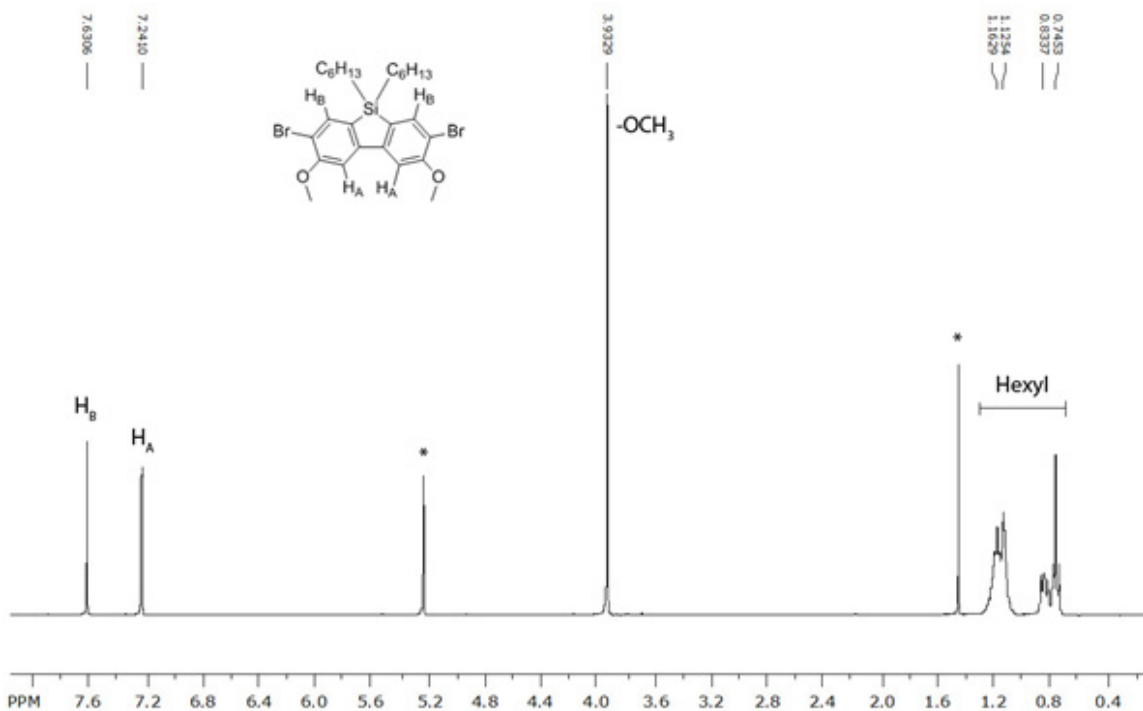
S1.7.0 – 2,7-dibromo-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene (10) $^1\text{H-NMR}$



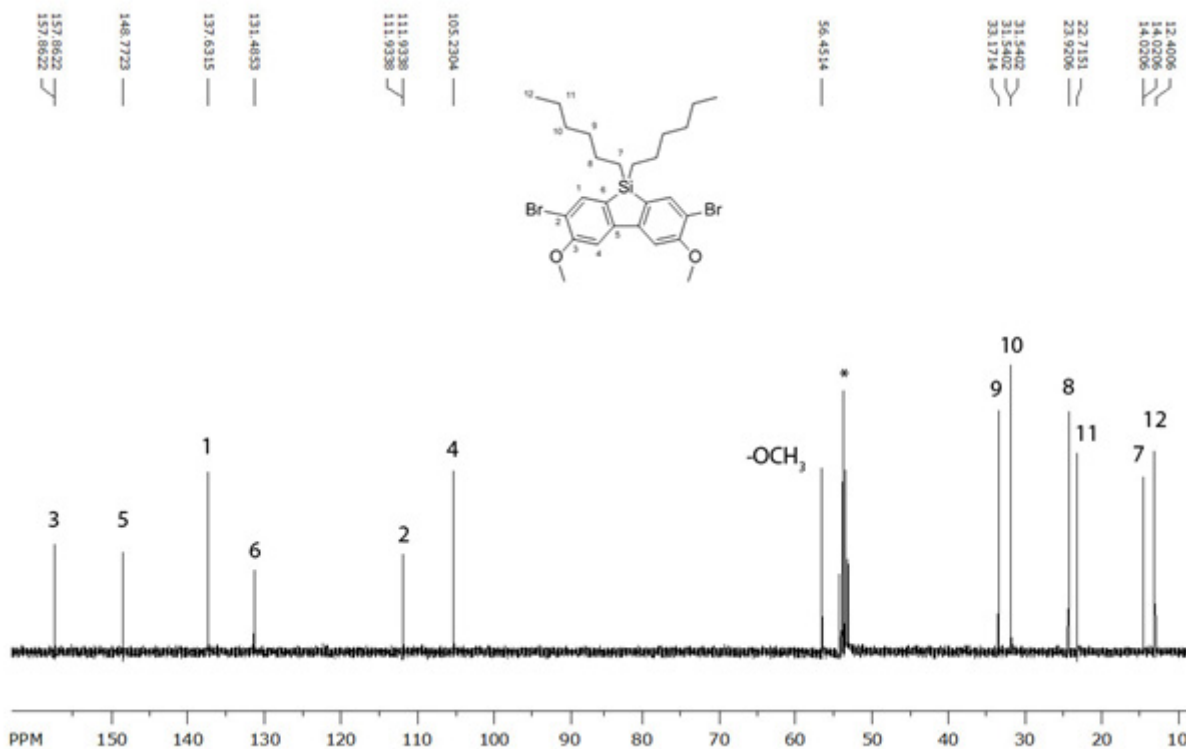
S1.7.1 – 2,7-dibromo-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene (10)
¹³C-NMR



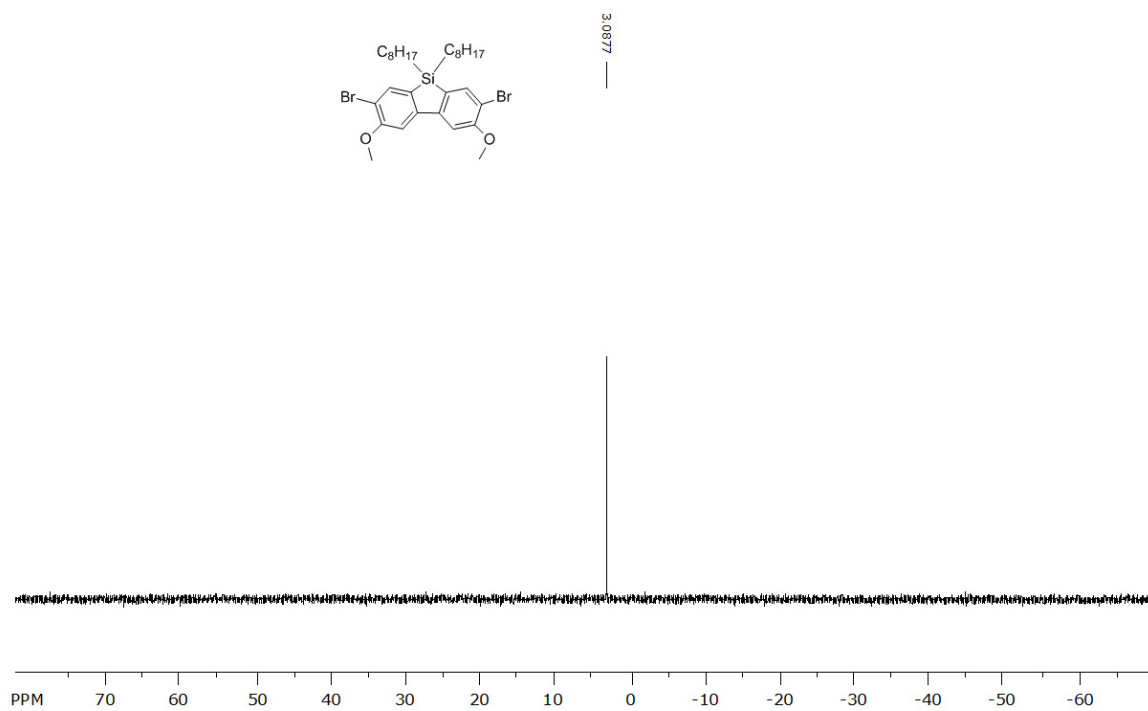
S1.7.2 – 2,7-dibromo-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene (10)
²⁹Si-NMR



S1.8.0 – 2,7-dibromo-3,6-dimethoxy-9,9-dihexylsilabifluorene (11) ¹H-NMR

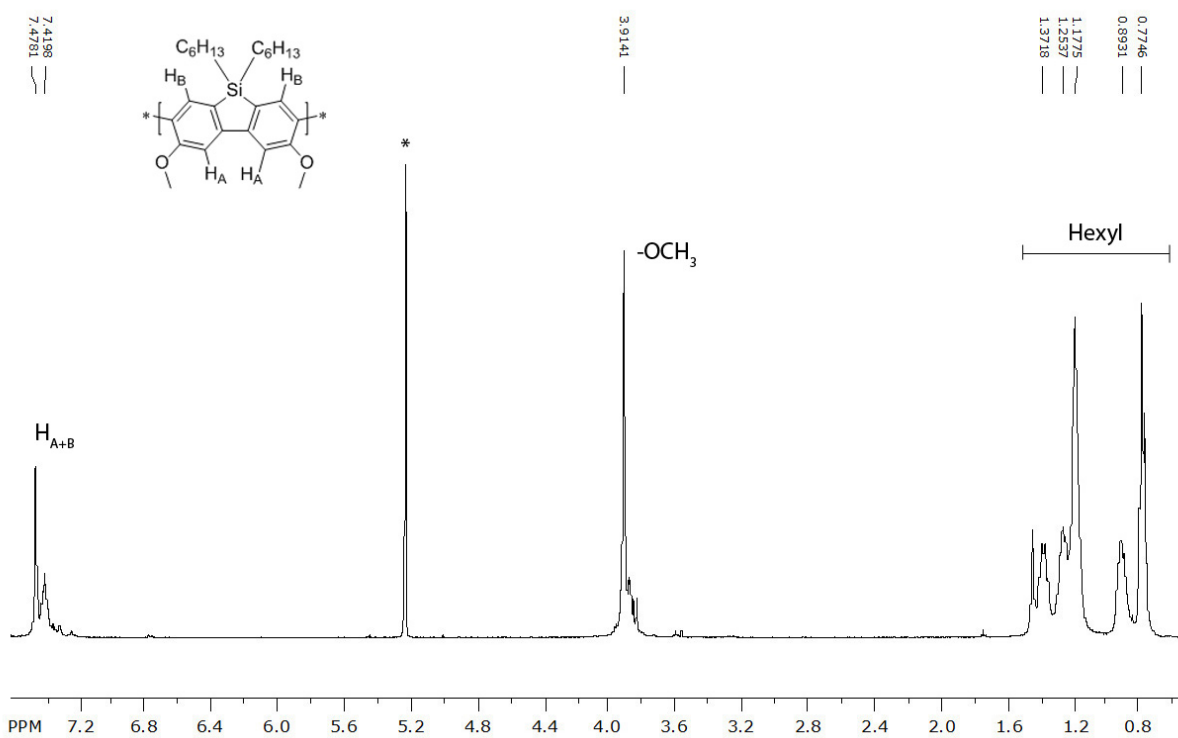


S1.8.1 – 2,7-dibromo-3,6-dimethoxy-9,9-dihexylsilabifluorene (11) ¹³C-NMR

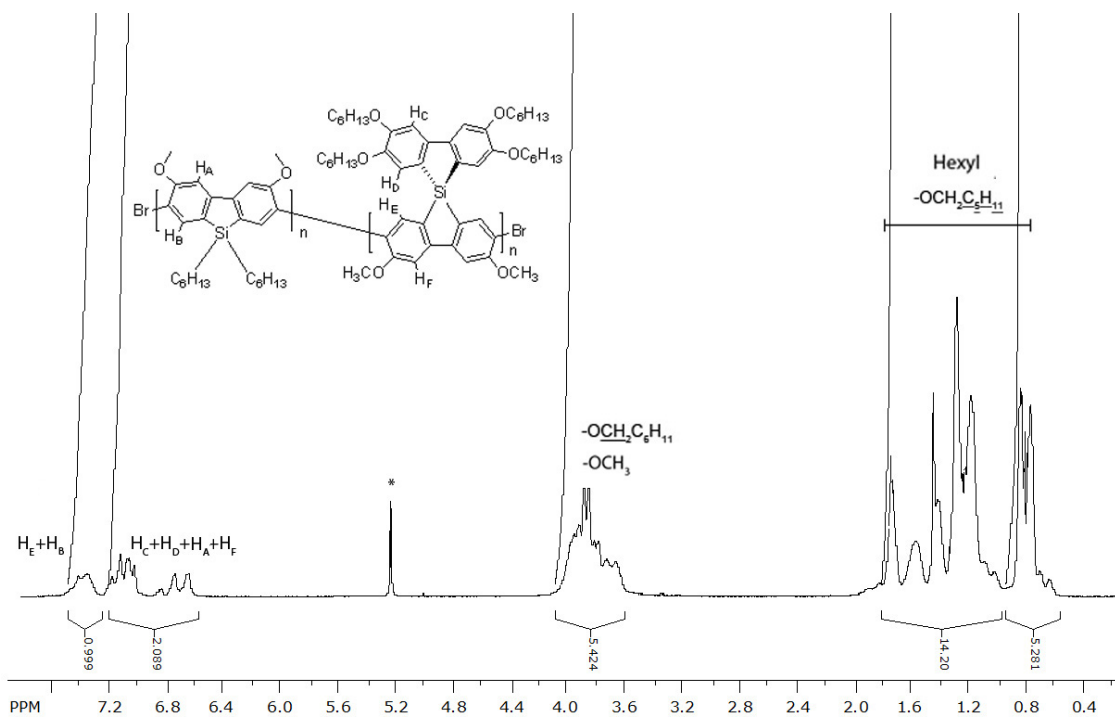


S1

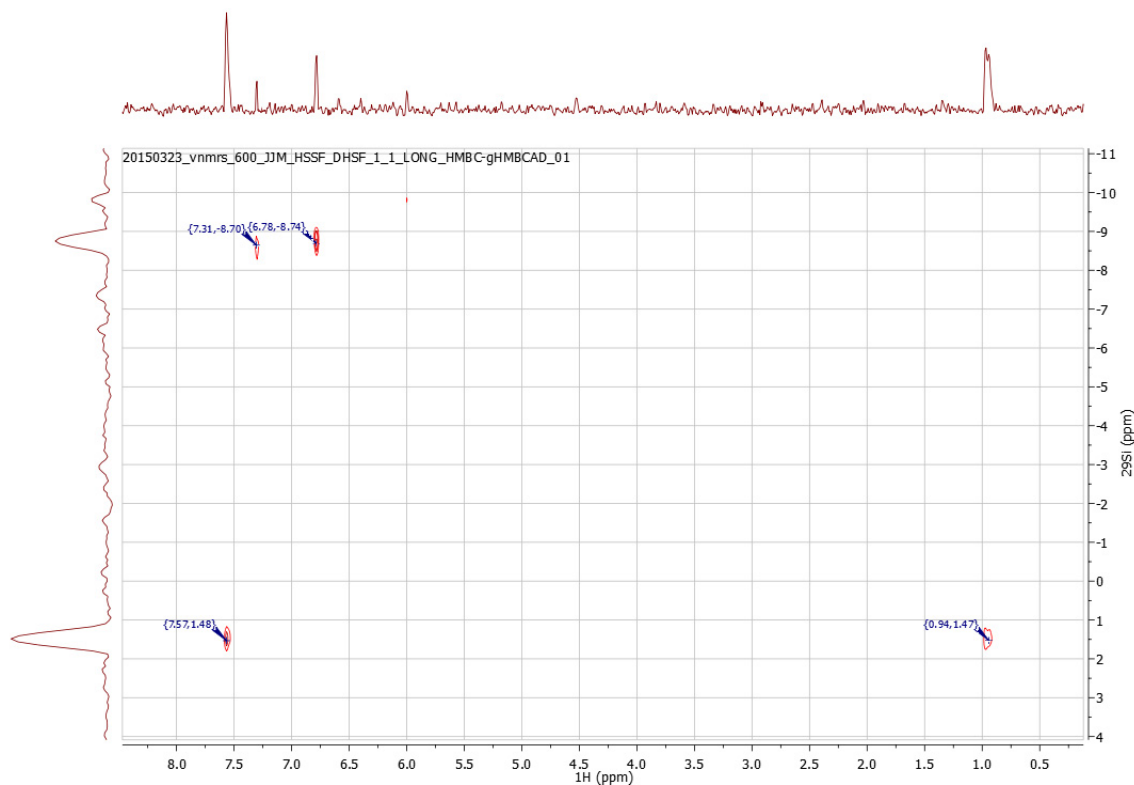
1.8.2 – 2,7-dibromo-3,6-dimethoxy-9,9-dihexylsilabifluorene (11) ^{29}Si -NMR



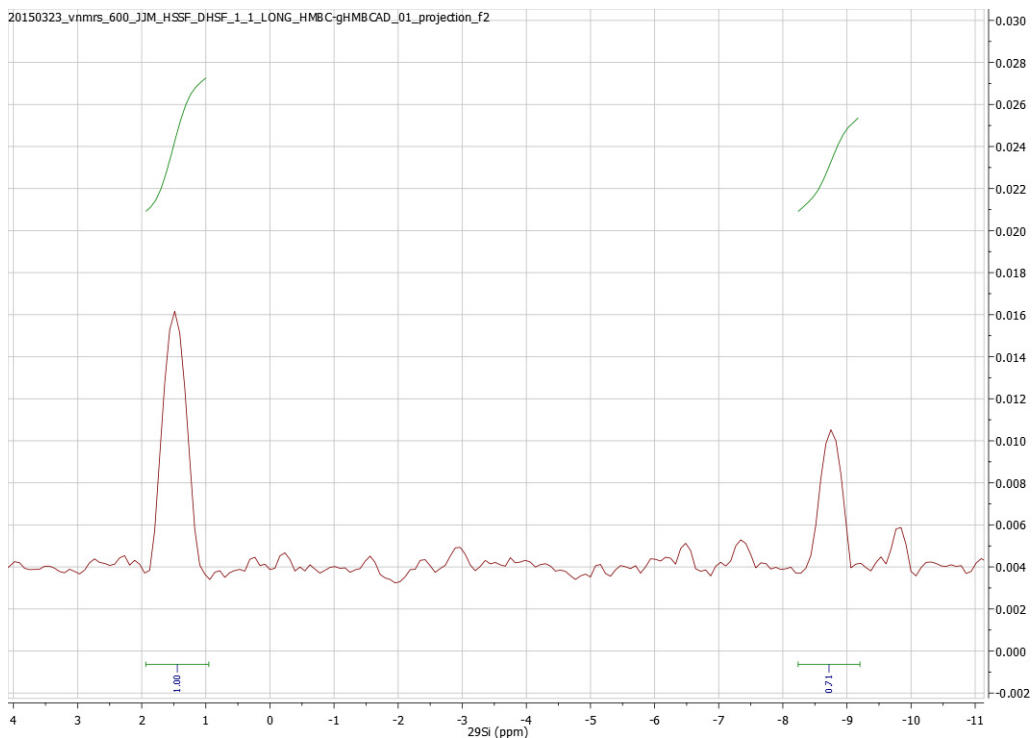
S1.8.3 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene) (PDHSF) ^1H -NMR



S1.9.0 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene-co-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene) (PDHSF-co-PHSSF) (13) 1H -NMR

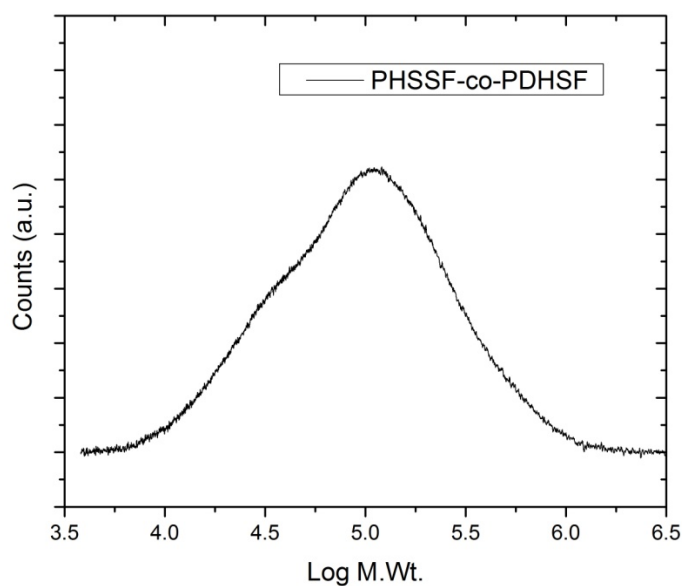


S1.9.1 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene-co-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene) (PDHSF-co-PHSSF) (13) ^{29}Si HMCB NMR

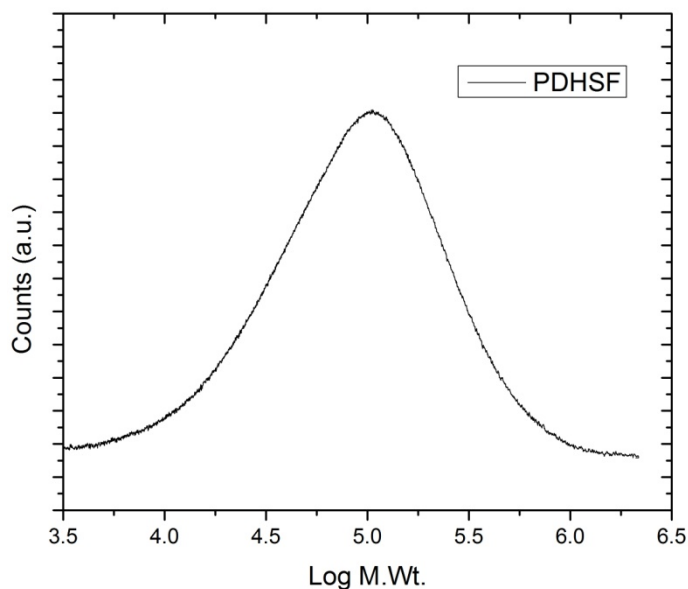


S1.9.2 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene-co-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene) (PDHSF-co-PHSSF) (13) ²⁹Si Ratio

Section 2: GPC Data:

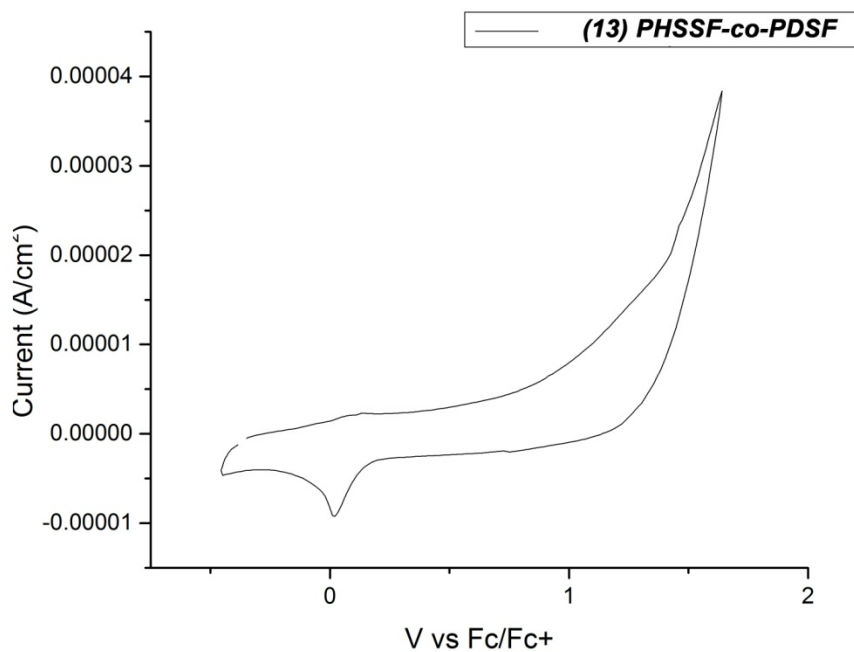


S2.1.0 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene-co-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene) (PDHSF-co-PHSSF) (13)- GPC (THF Eluent, 35°C Column Temp., PS Standards):



S2.2.0 – Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene) (PDHSF)- GPC (THF Eluent, 35°C Column Temp., PS Standards):

Section3: Electrochemistry



S3.1.0 – CV of Poly(3,6-dimethoxy-9,9'-dihexylsilafluorene-co-3,6-dimethoxy-2',3',6',7'-tetrahexyloxy-9,9-spiro-9-silabifluorene) (PDHSF-co-PHSSF) (13)
