Supplementary Information for

Reactions of Boron-Derived Radicals with Nucleophiles

Lauren E. Longobardi, Pavel Zatsepin, Roman Korol, Lei Liu, Stefan Grimme, and Douglas W. Stephan

Table of Figures

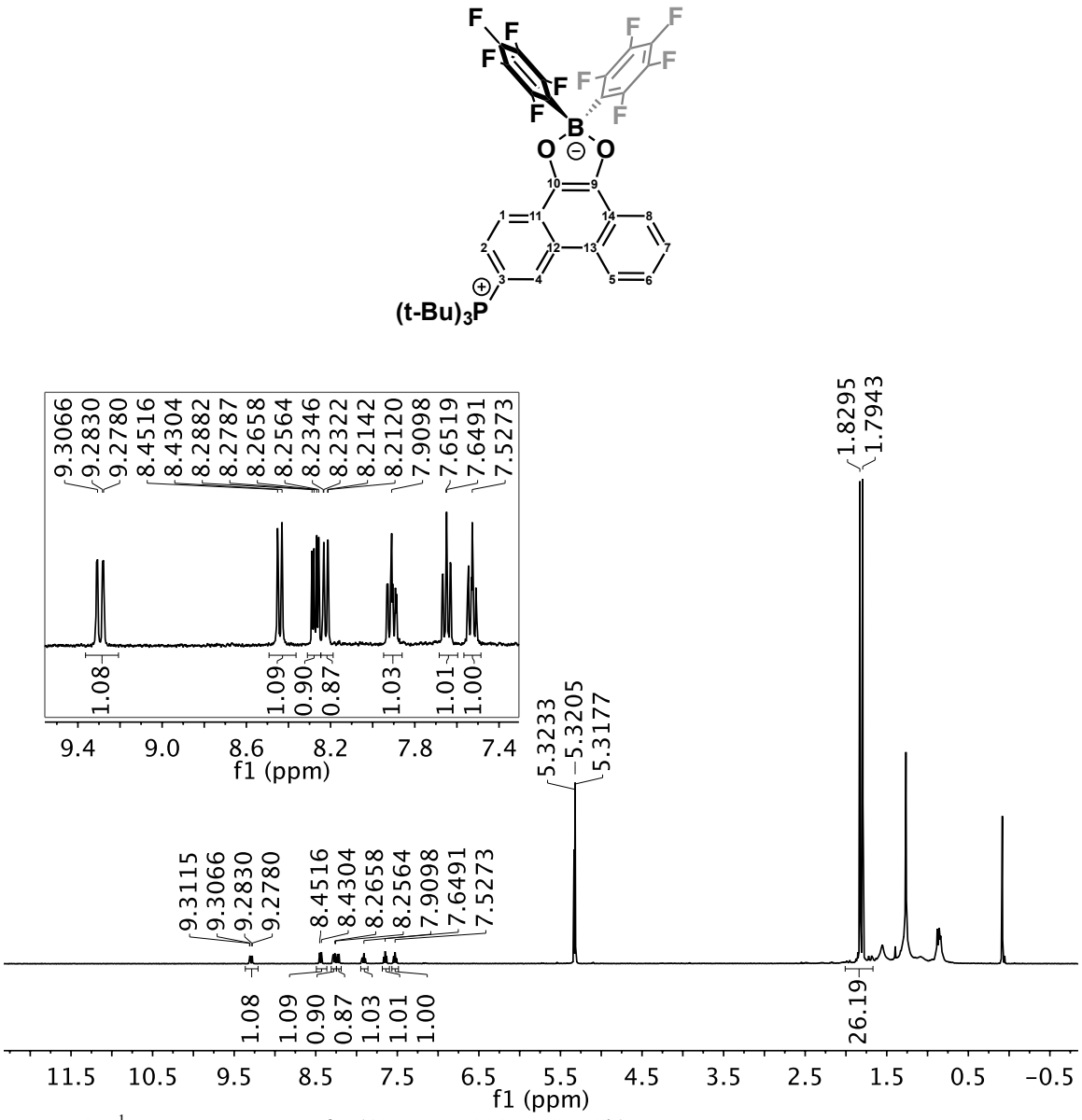

Figure 1 – ^{1}H NMR spectrum of **5** (400 MHz, 298 K, CD_2Cl_2).

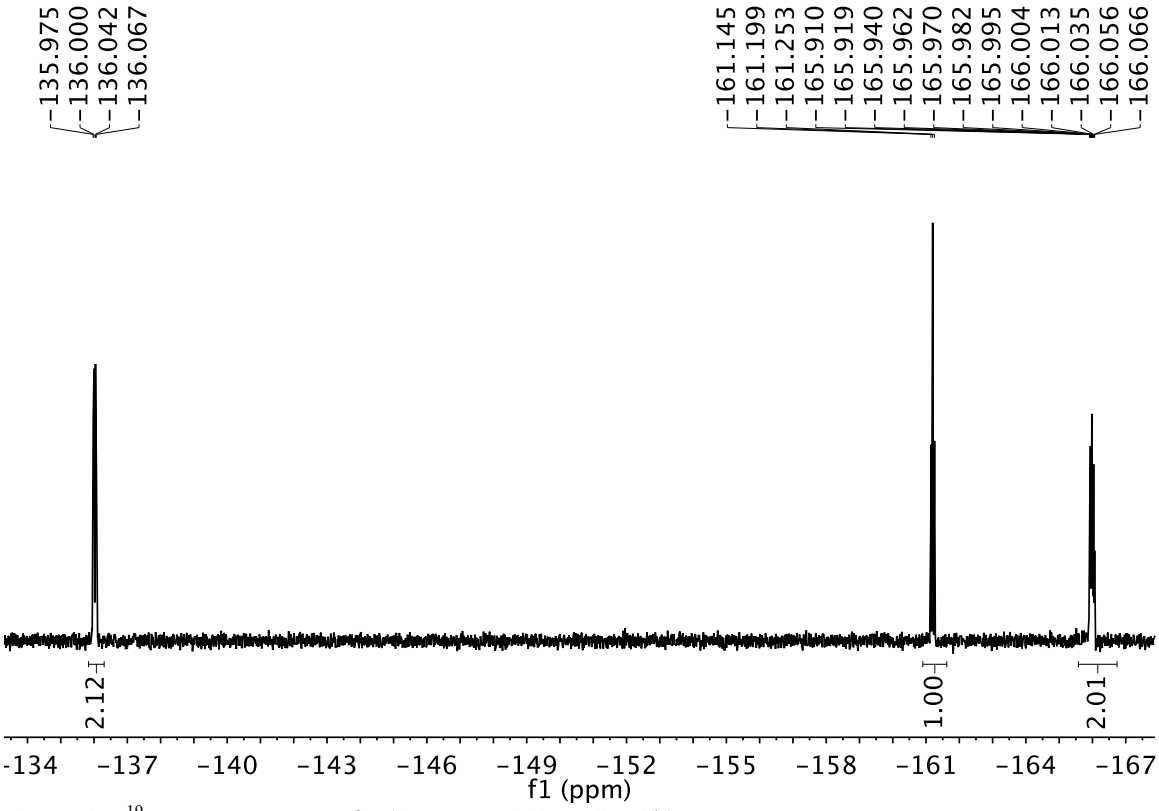

Figure 2 – ^{19}F NMR spectrum of **5** (377 MHz, 298 K, CD_2Cl_2).

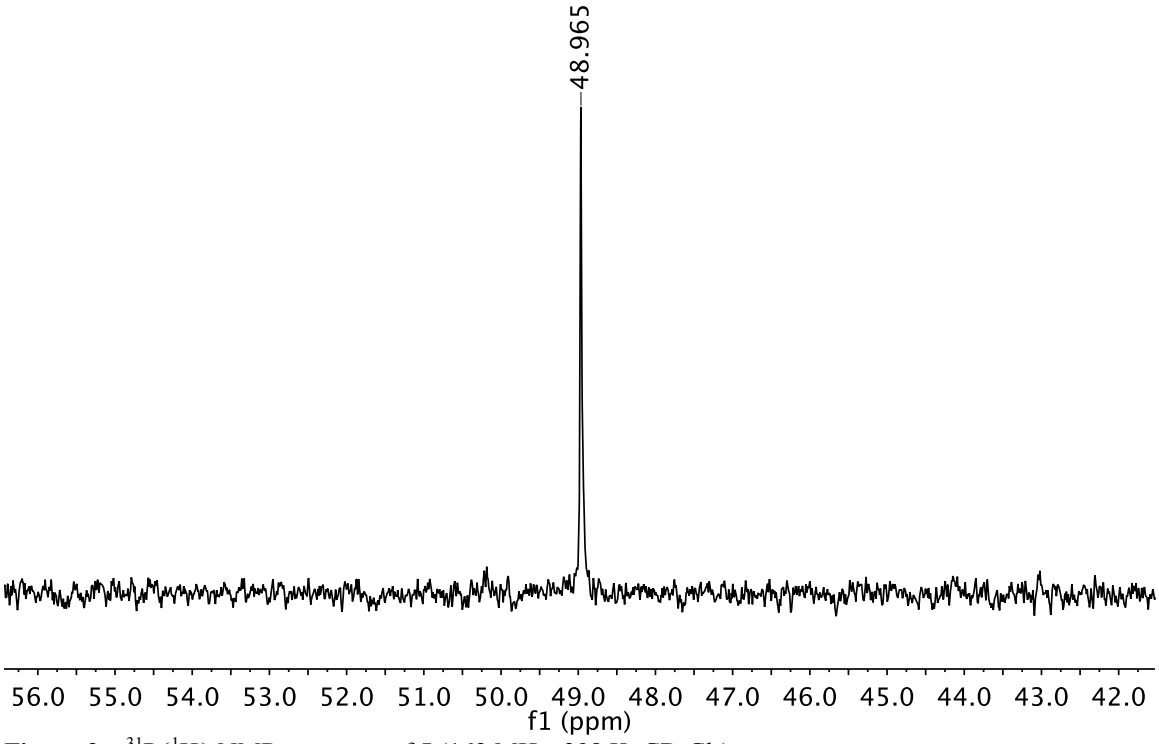

Figure 3 – $^{31}P\{^1H\}$ NMR spectrum of **5** (162 MHz, 298 K, CD_2Cl_2).

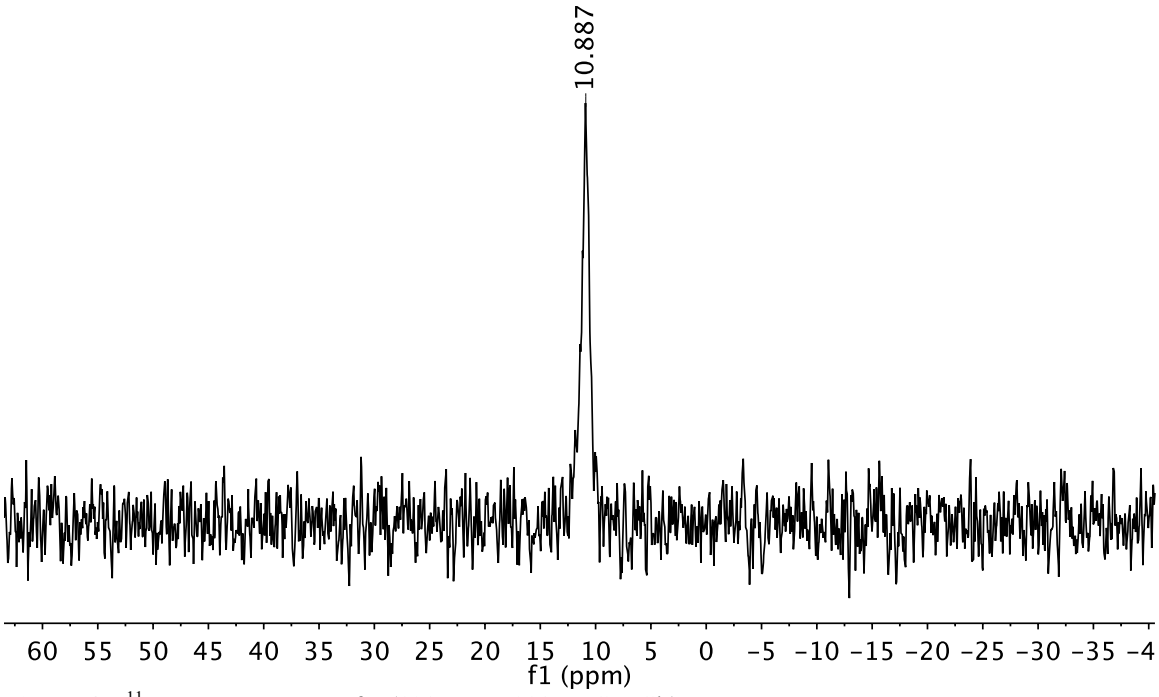

Figure 4 – ^{11}B NMR spectrum of **5** (128 MHz, 298 K, CD_2Cl_2).

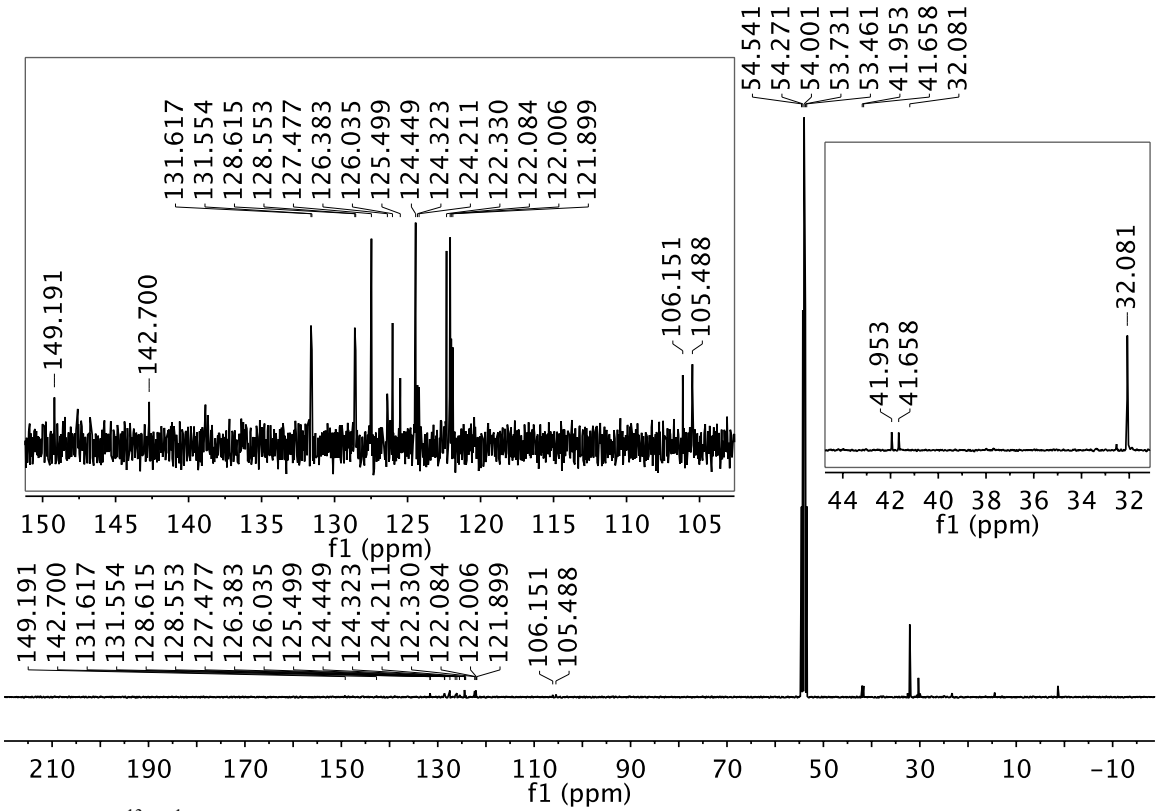

Figure 5 – $^{13}C\{^1H\}$ NMR spectrum of **5** (101 MHz, 298 K, CD_2Cl_2).

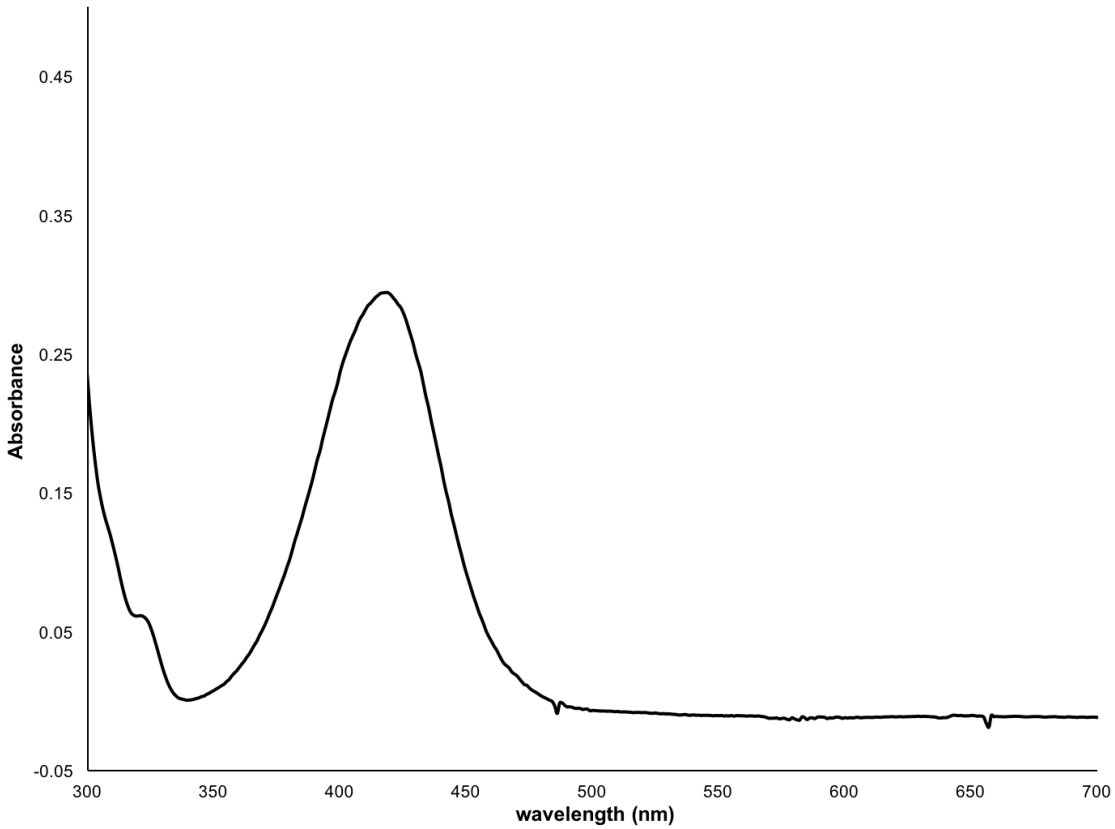

Figure 6 – UV-vis spectrum of **5** in DCM.

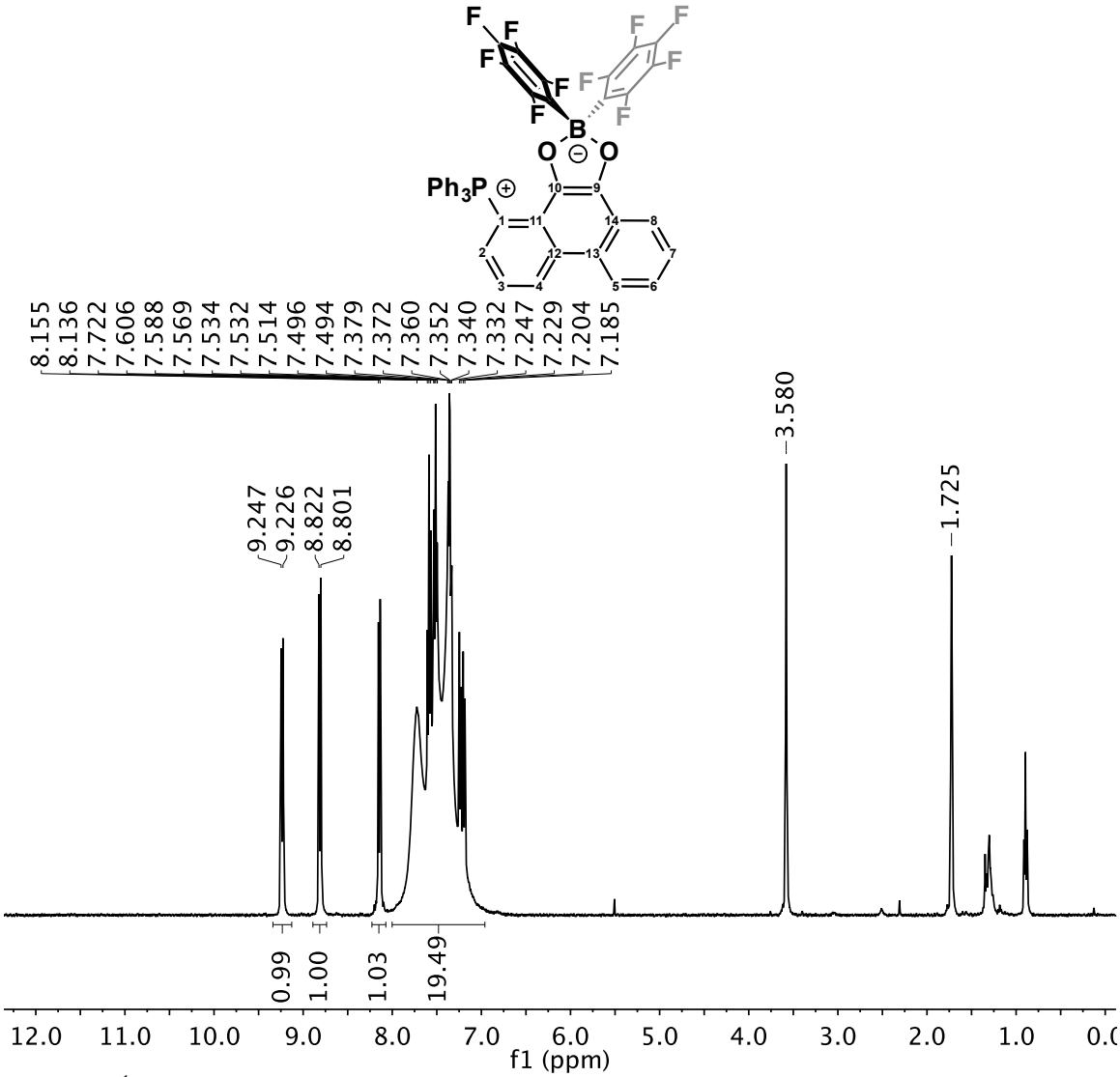

Figure 7 – ^{1}H NMR spectrum of **7a** (400 MHz, 298 K, d_8-THF).

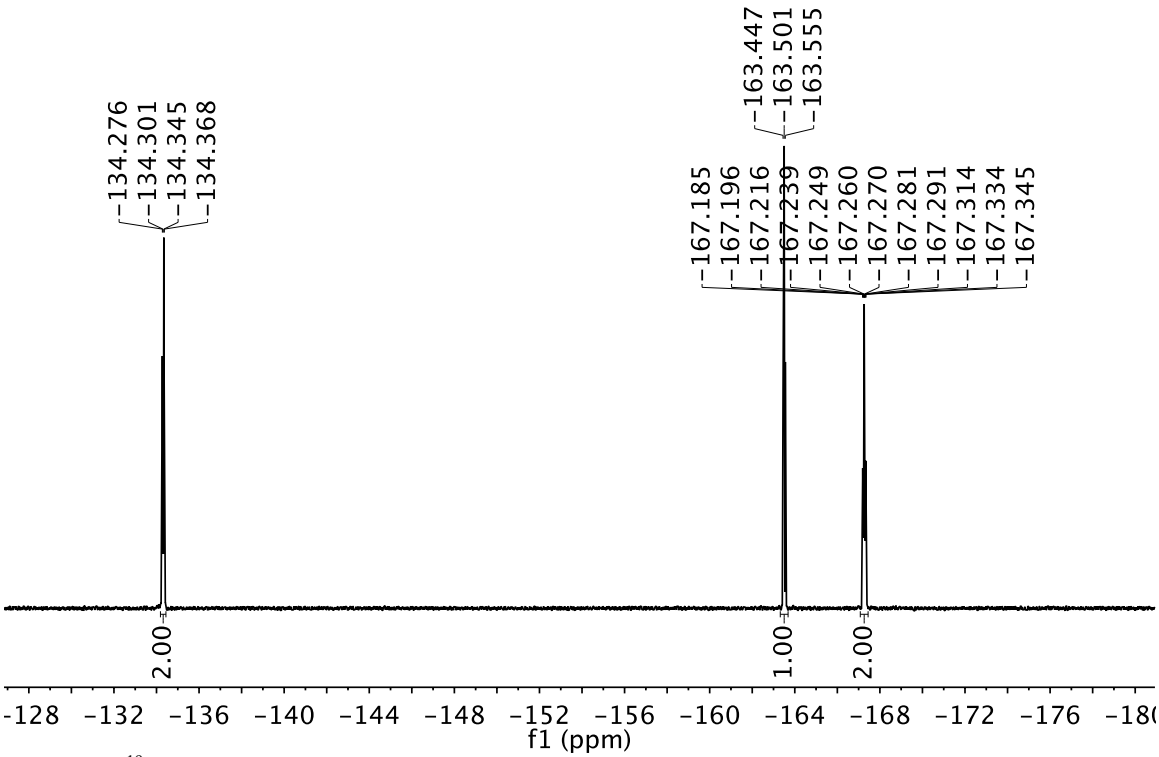

Figure 8 – ^{19}F NMR spectrum of **7a** (377 MHz, 298 K, d_8-THF).

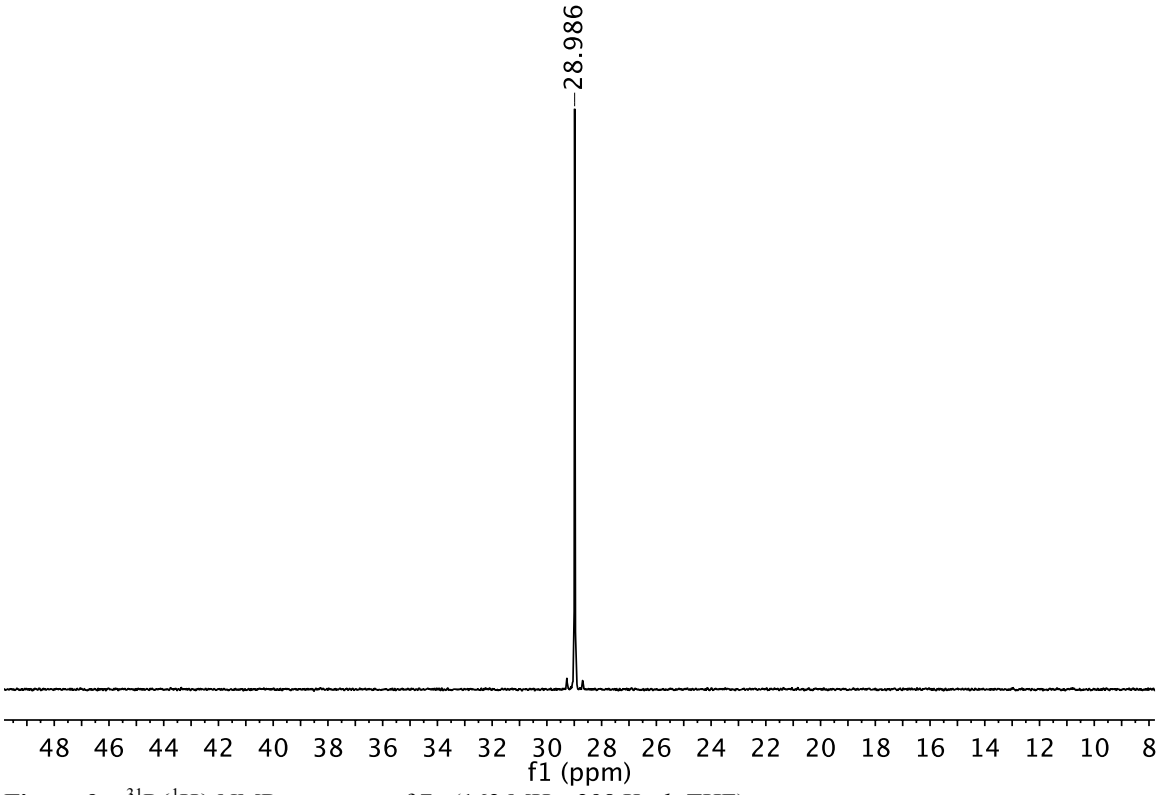

Figure 9 – $^{31}P\{^1H\}$ NMR spectrum of **7a** (162 MHz, 298 K, d_8-THF).

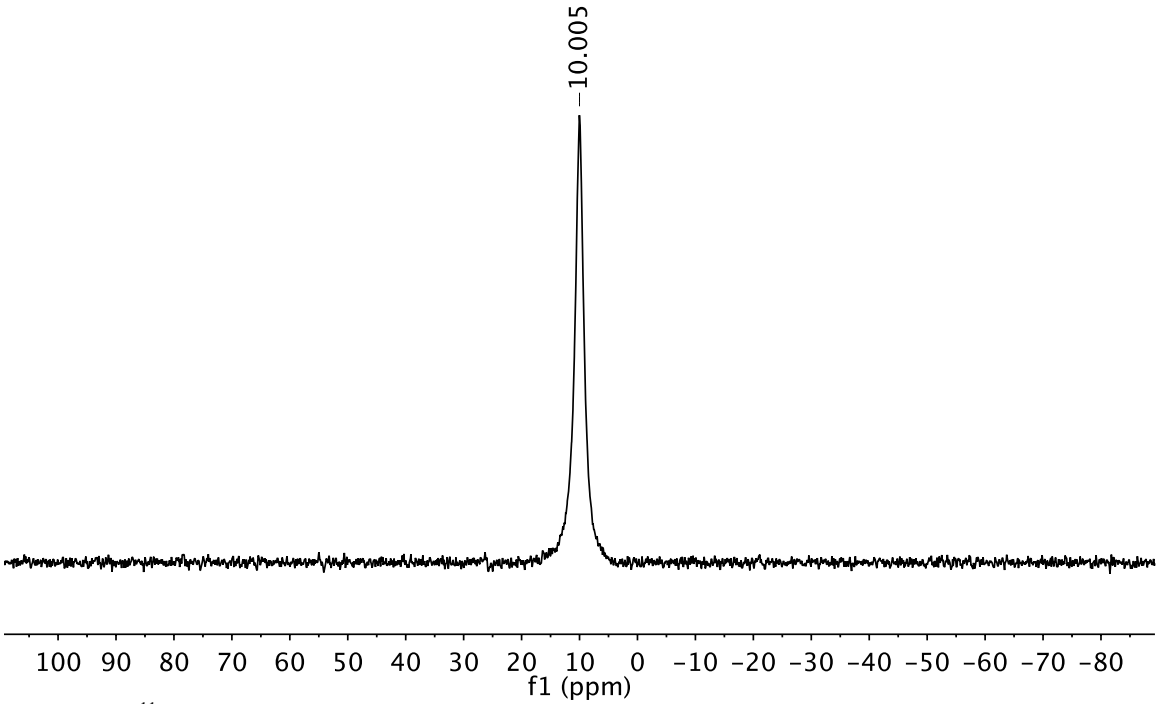

Figure 10 – ^{11}B NMR spectrum of **7a** (128 MHz, 298 K, d_8-THF).

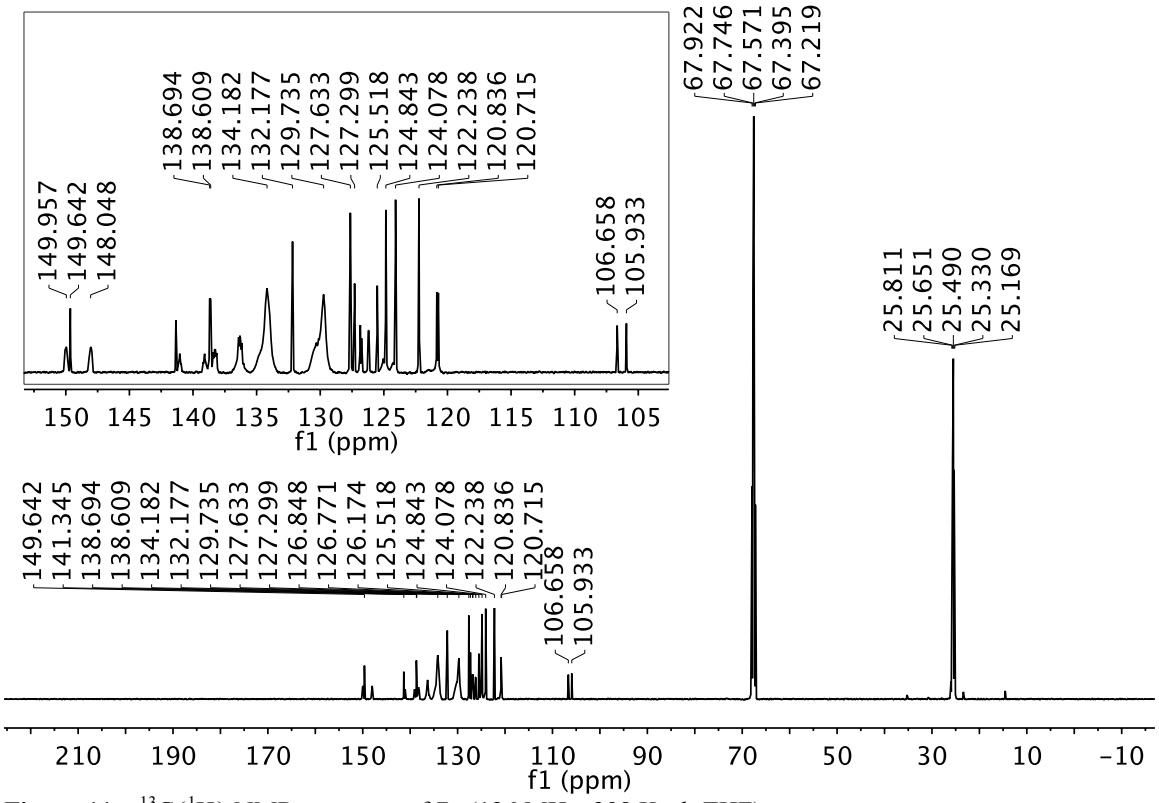

Figure 11 – $^{13}C\{^1H\}$ NMR spectrum of **7a** (126 MHz, 298 K, d_8-THF).

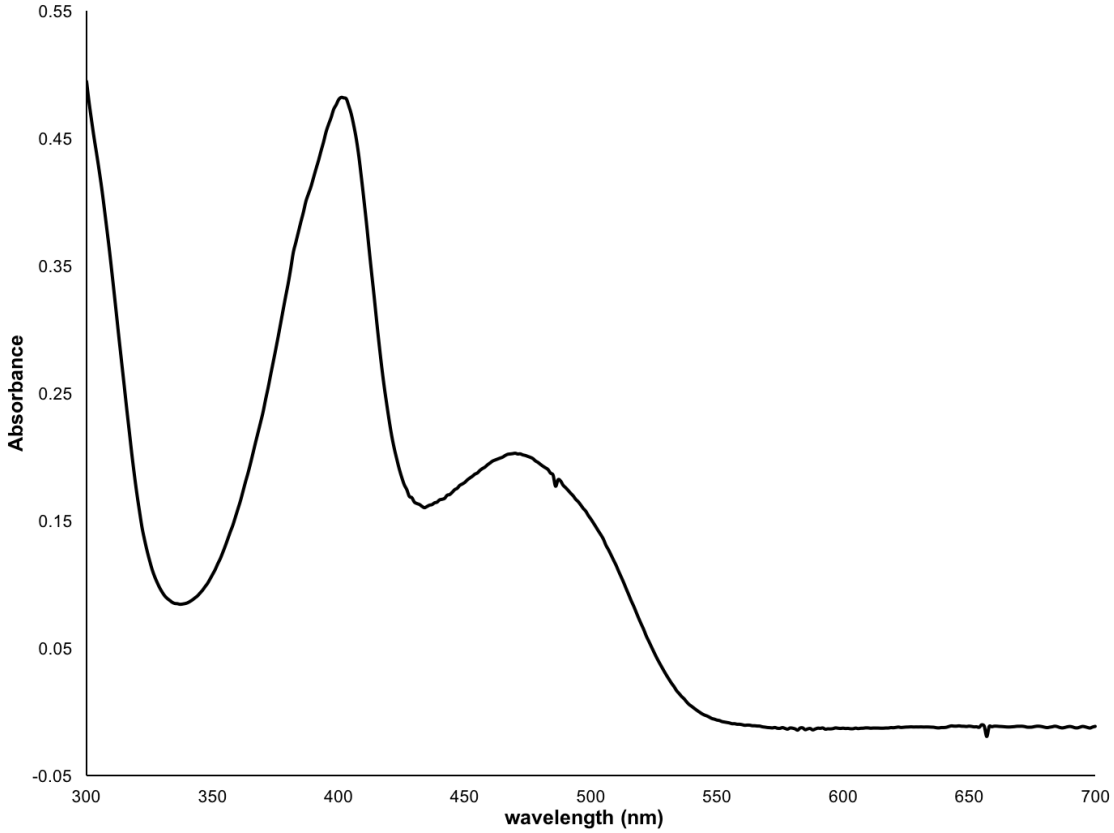

Figure 12 – UV-vis spectrum of **7a** in DCM.

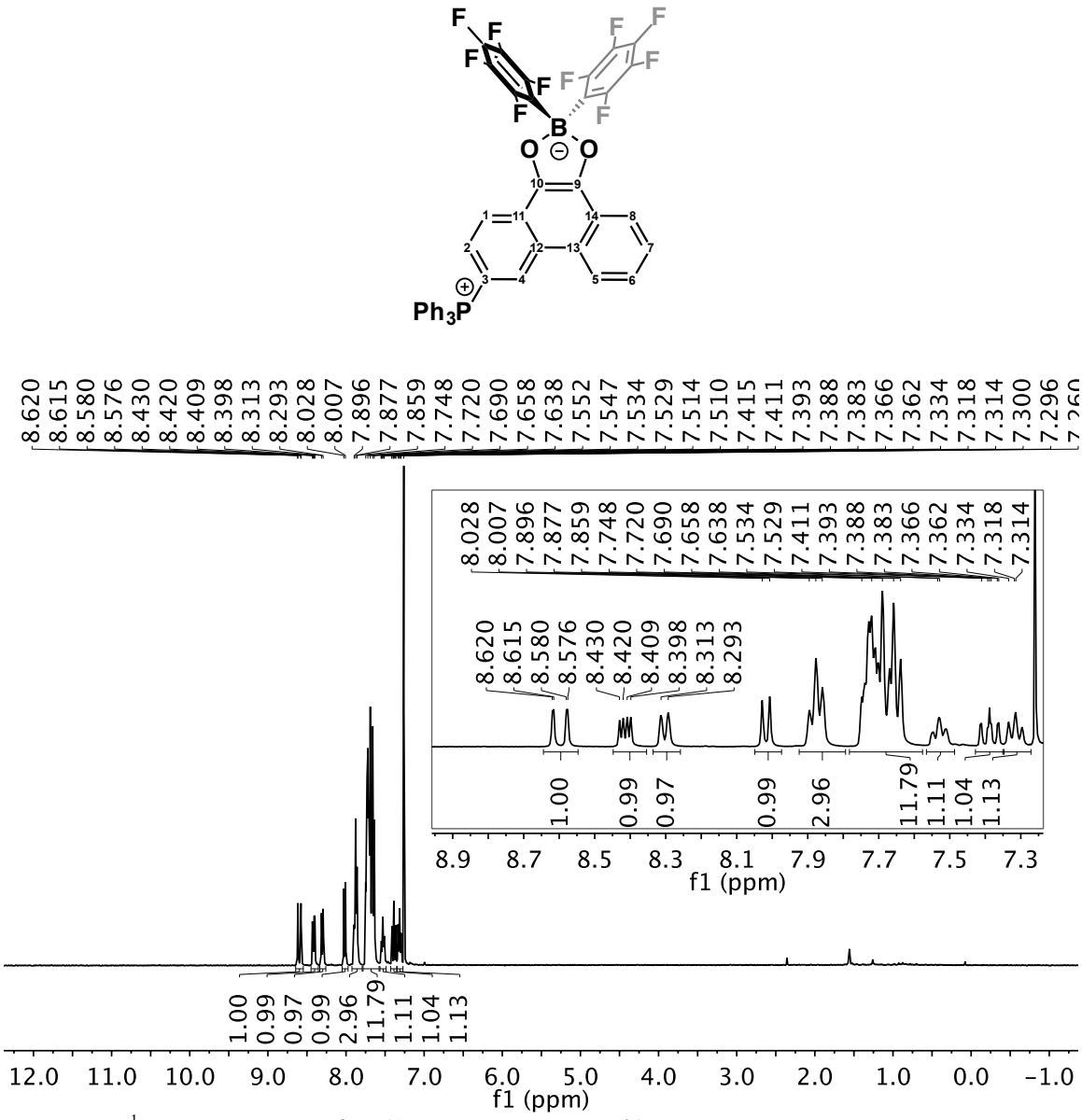

Figure 13 – ^{1}H NMR spectrum of **7b** (400 MHz, 298 K, $CDCl_3$).

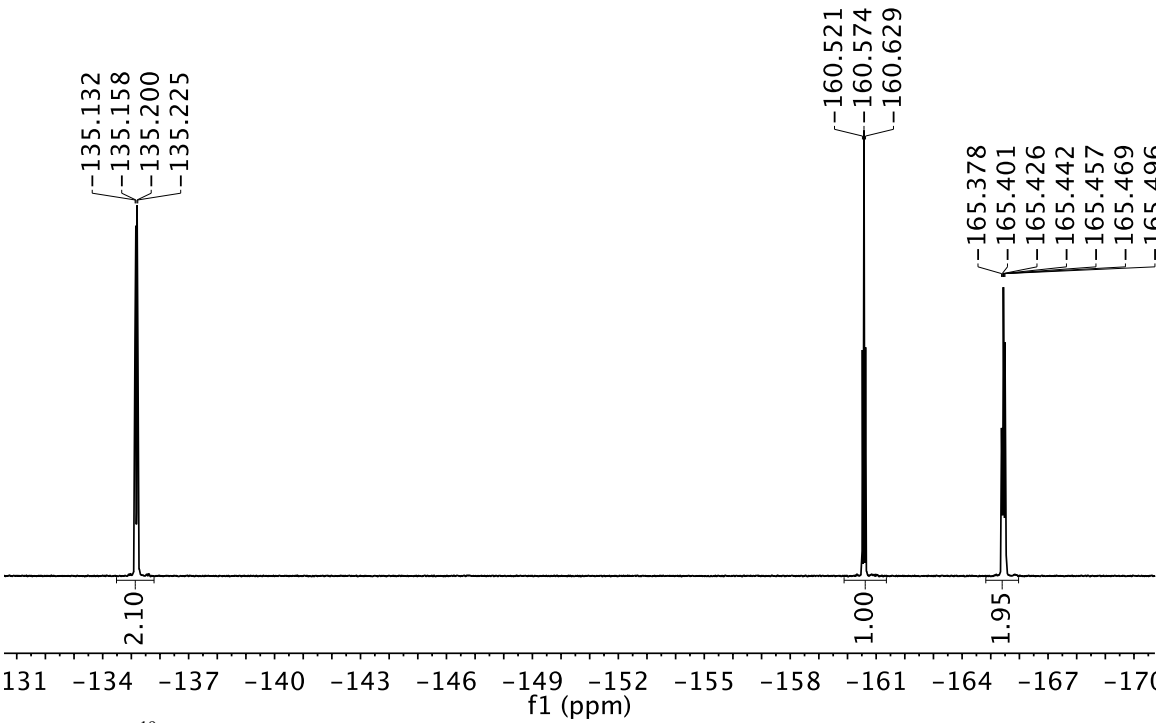

Figure 14 – ^{19}F NMR spectrum of **7b** (377 MHz, 298 K, $CDCl_3$).

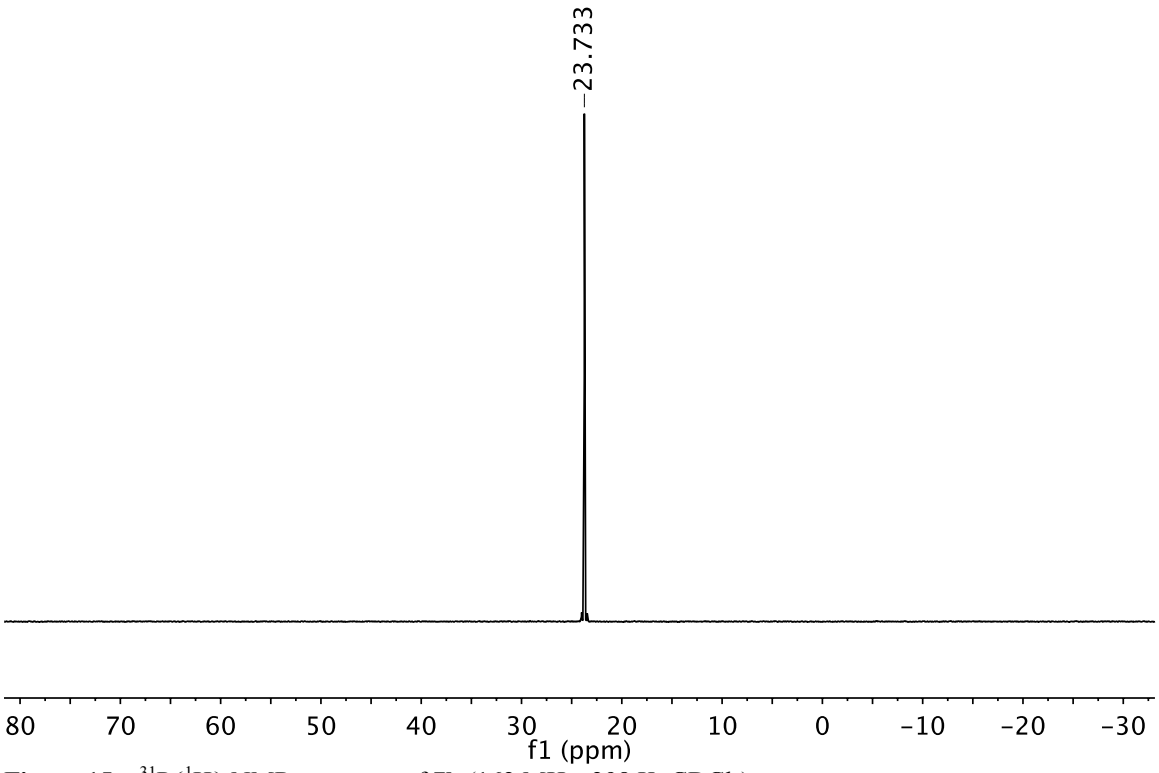

Figure 15 – $^{31}P\{^1H\}$ NMR spectrum of **7b** (162 MHz, 298 K, $CDCl_3$).

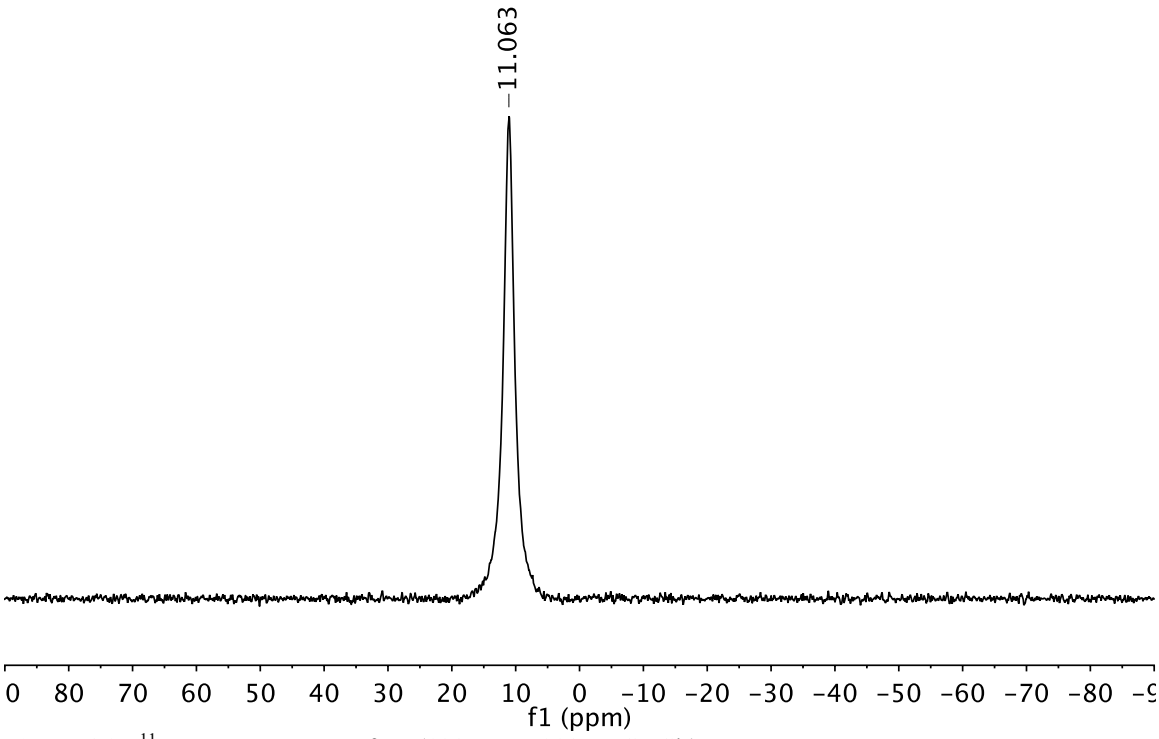

Figure 16 – ^{11}B NMR spectrum of **7b** (128 MHz, 298 K, $CDCl_3$).

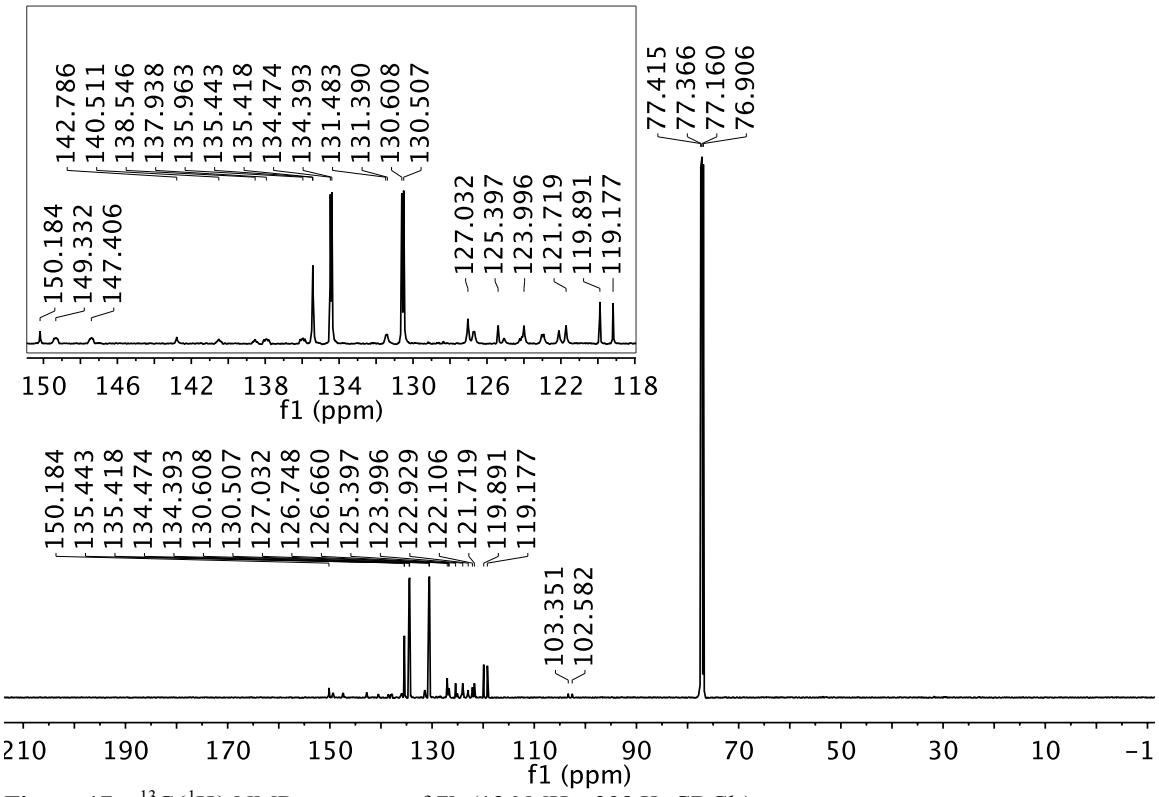

Figure 17 – $^{13}C\{^1H\}$ NMR spectrum of **7b** (126 MHz, 298 K, $CDCl_3$).

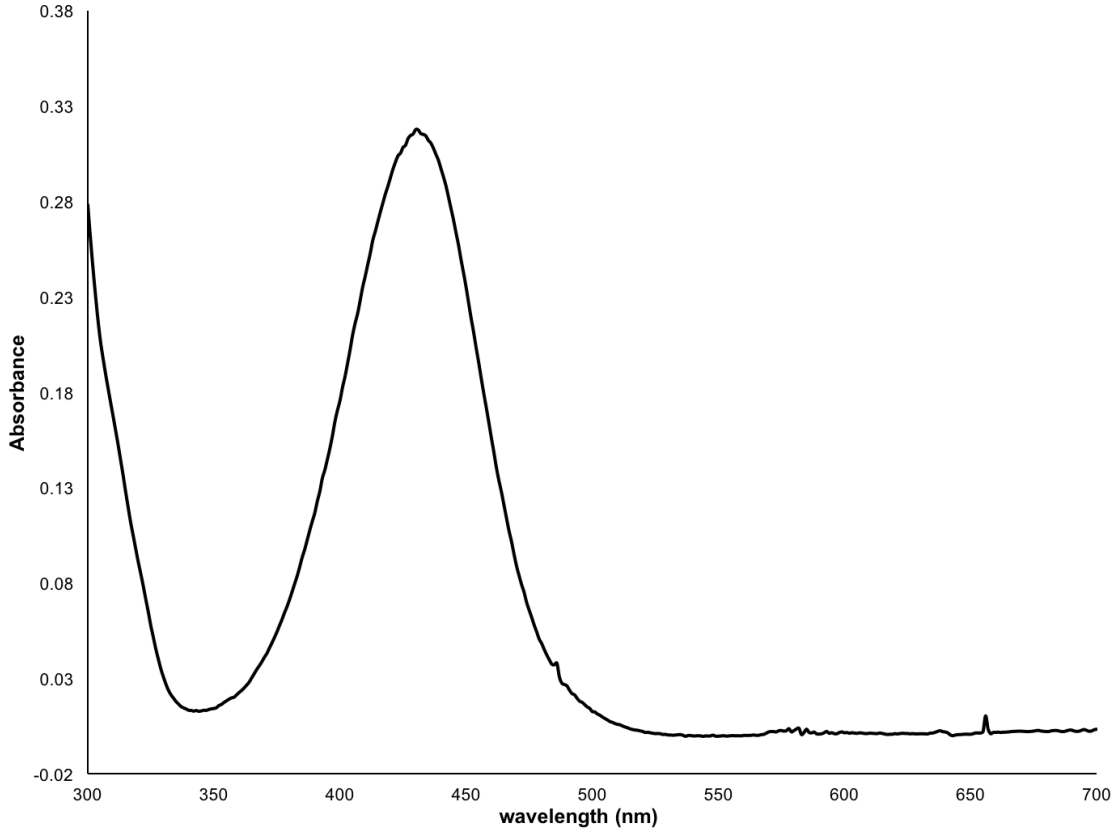

Figure 18 – UV-vis spectrum of **7b** in DCM.

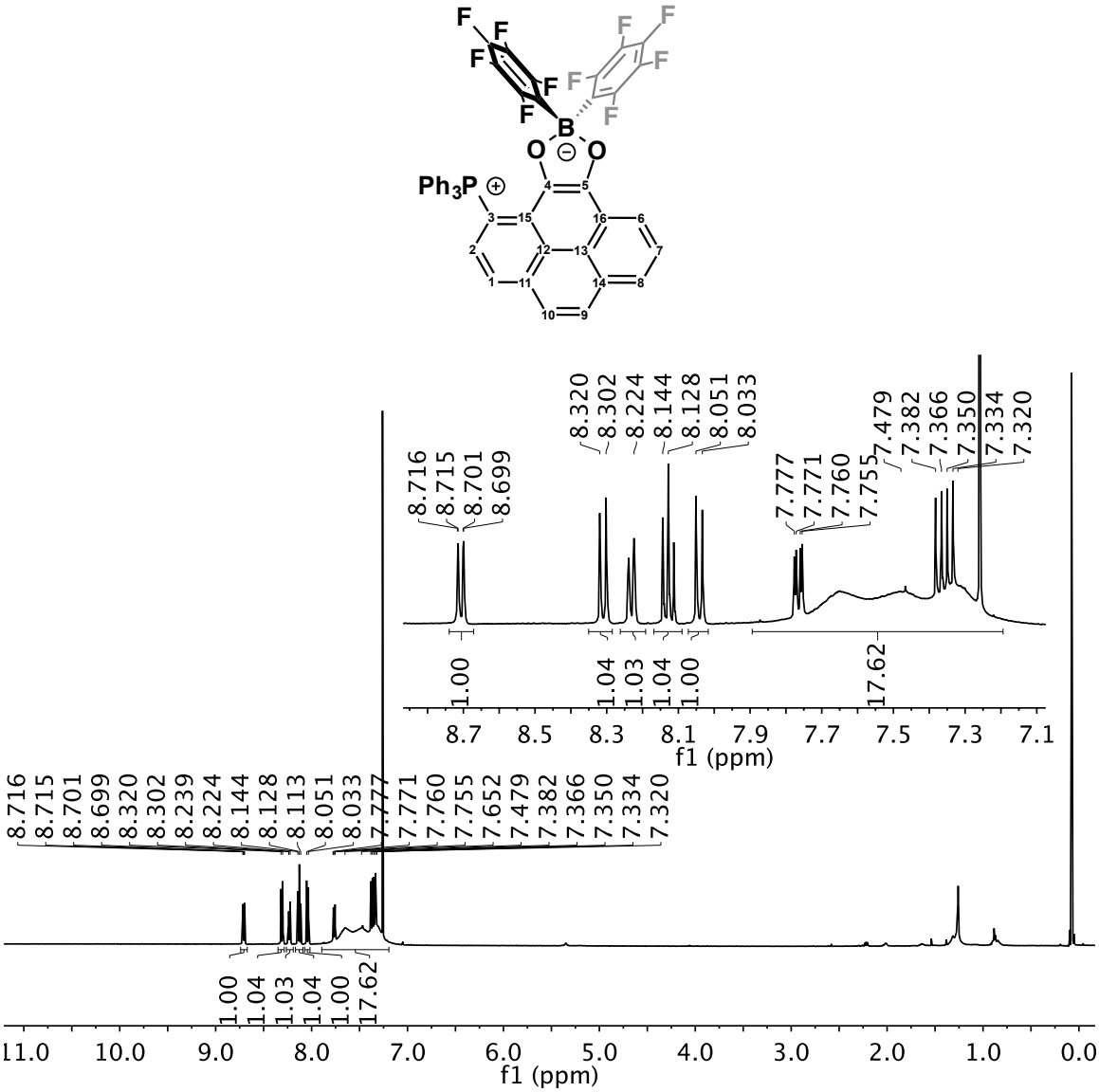

Figure 19 – ^{1}H NMR spectrum of **8a** (500 MHz, 298 K, $CDCl_3$).

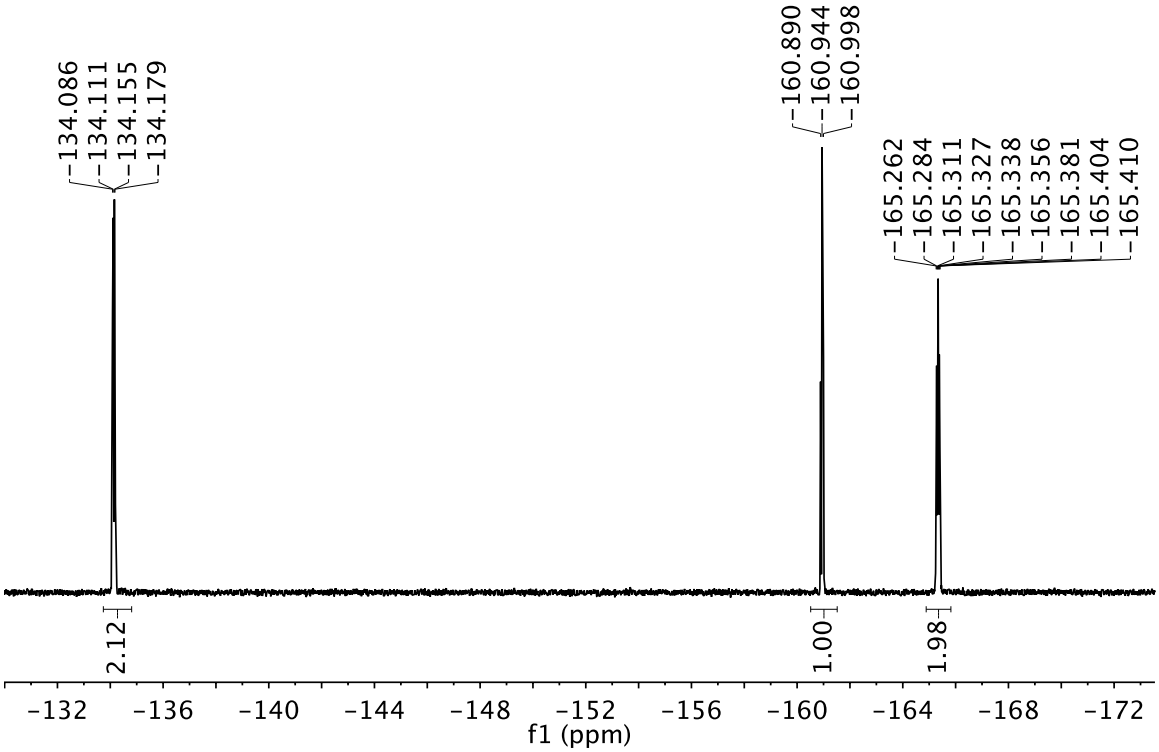

Figure 20 – ^{19}F NMR spectrum of **8a** (377 MHz, 298 K, $CDCl_3$).

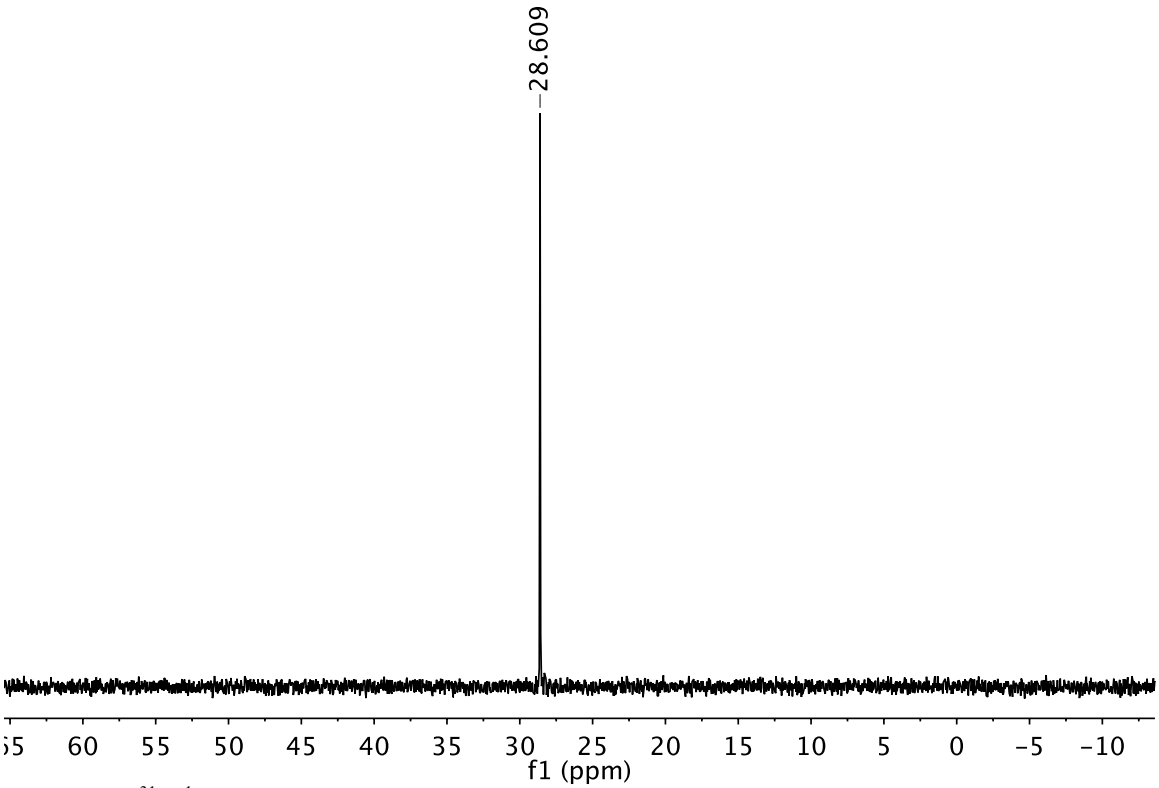

Figure 21 – $^{31}P\{^1H\}$ NMR spectrum of **8a** (162 MHz, 298 K, $CDCl_3$).

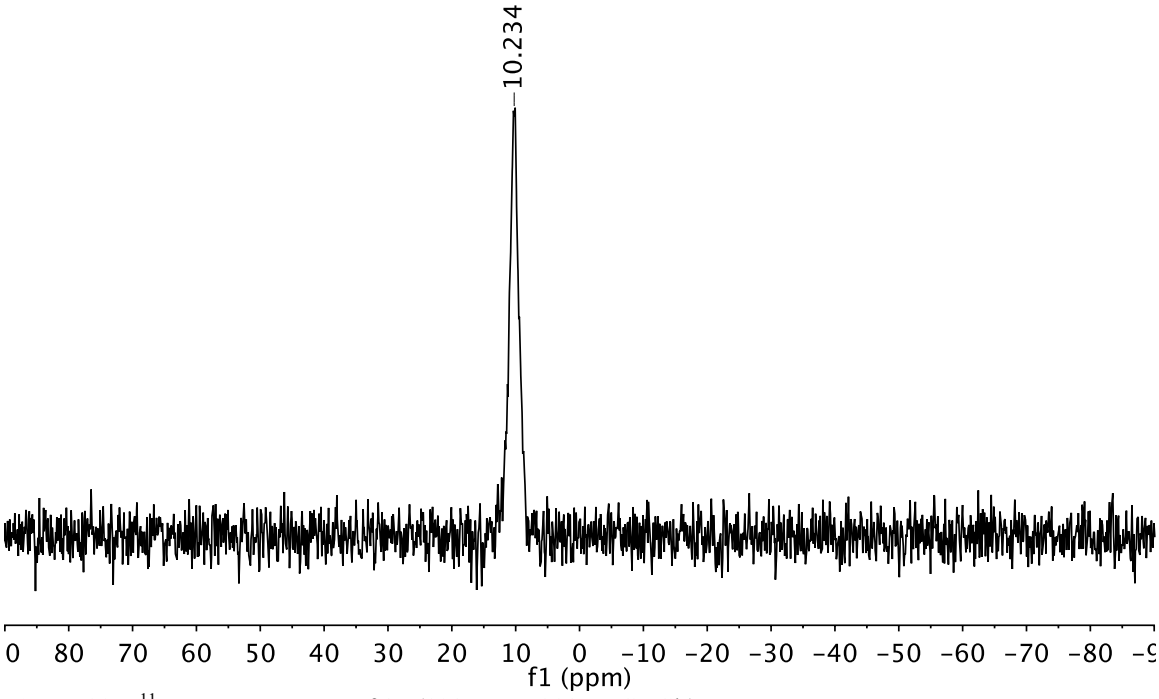

Figure 22 – ^{11}B NMR spectrum of **8a** (128 MHz, 298 K, $CDCl_3$).

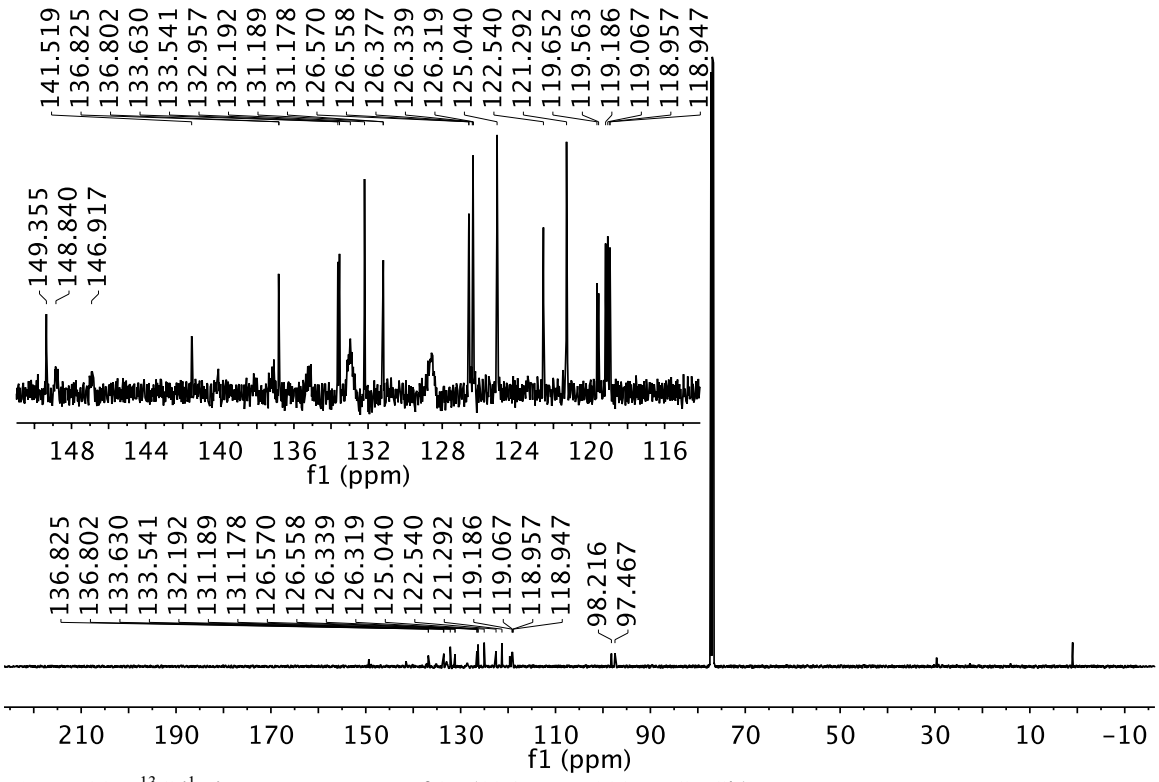

Figure 23 – $^{13}C\{^1H\}$ NMR spectrum of **8a** (126 MHz, 298 K, $CDCl_3$).

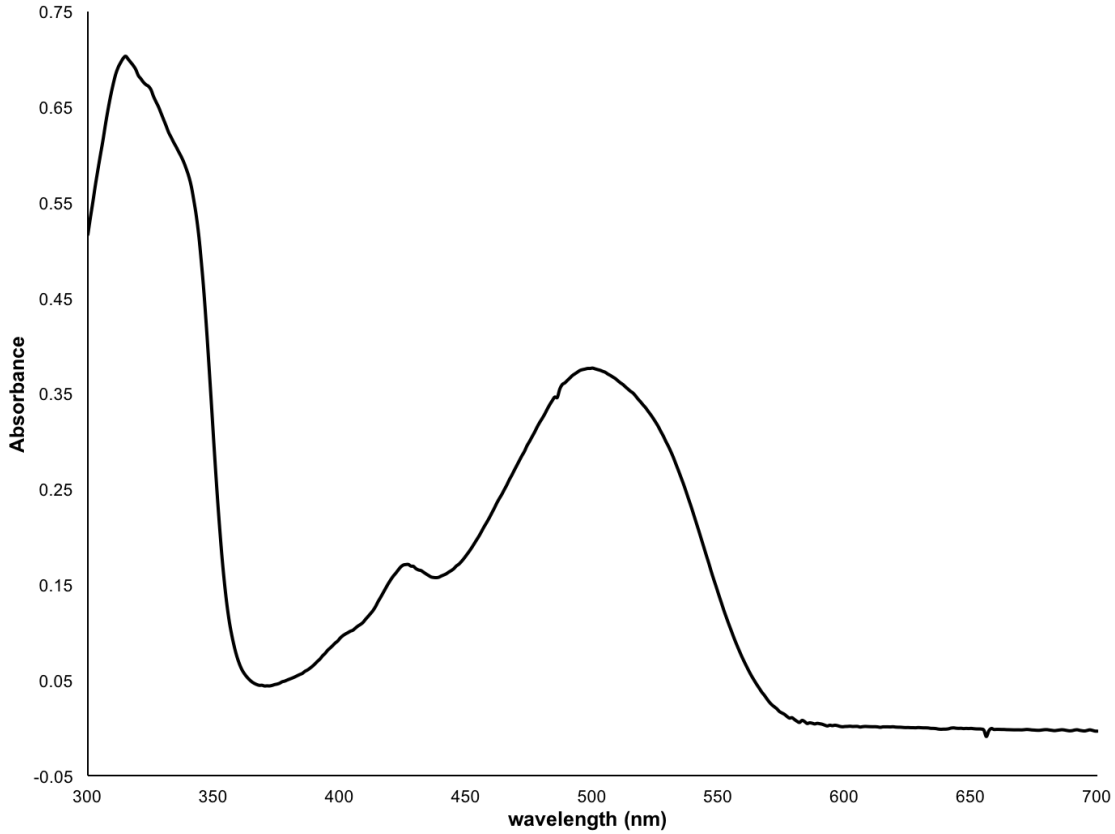

Figure 24 – UV-vis spectrum of **8a** in DCM.

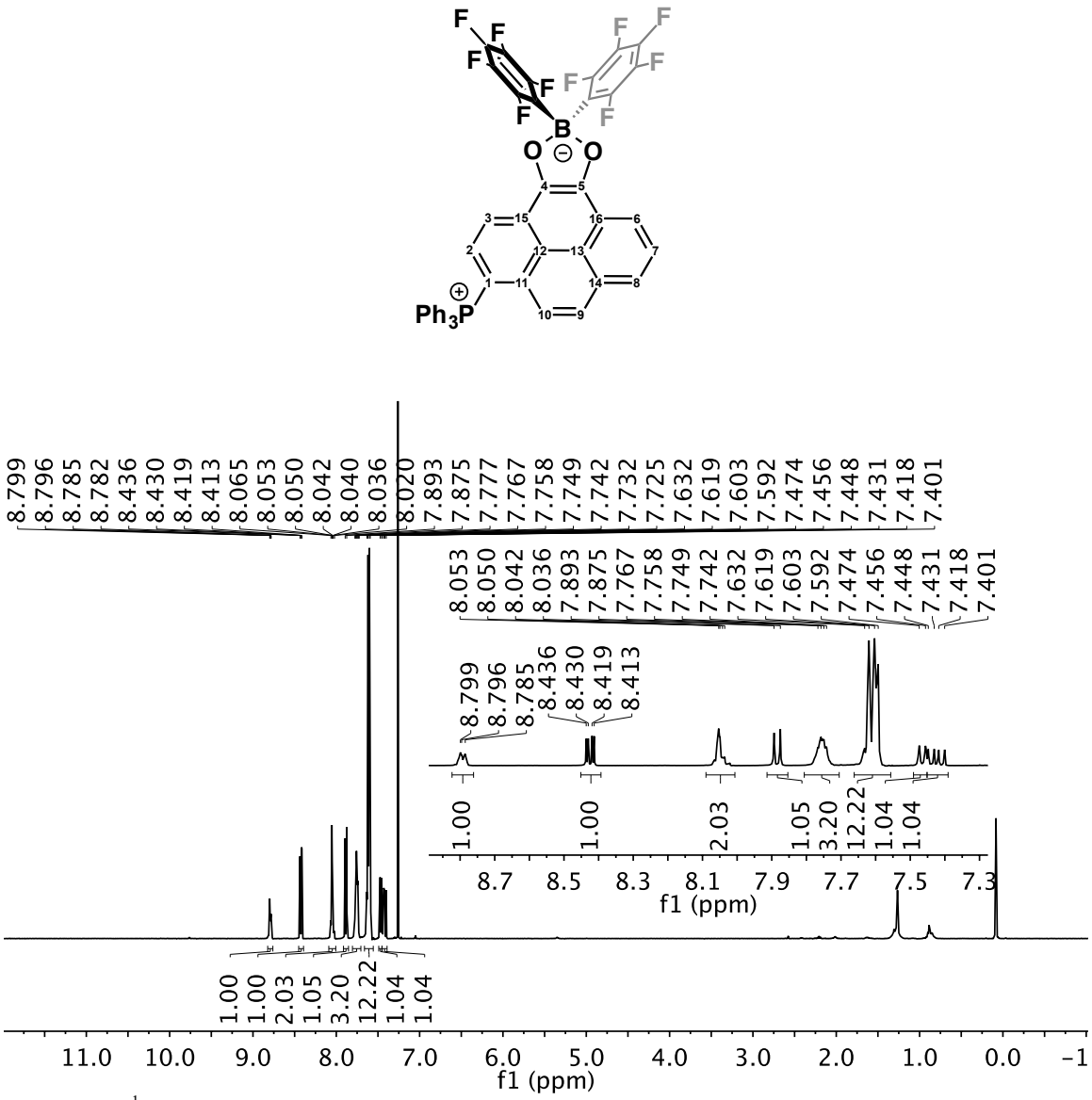

Figure 25 – ^{1}H NMR spectrum of **8b** (500 MHz, 298 K, $CDCl_3$).

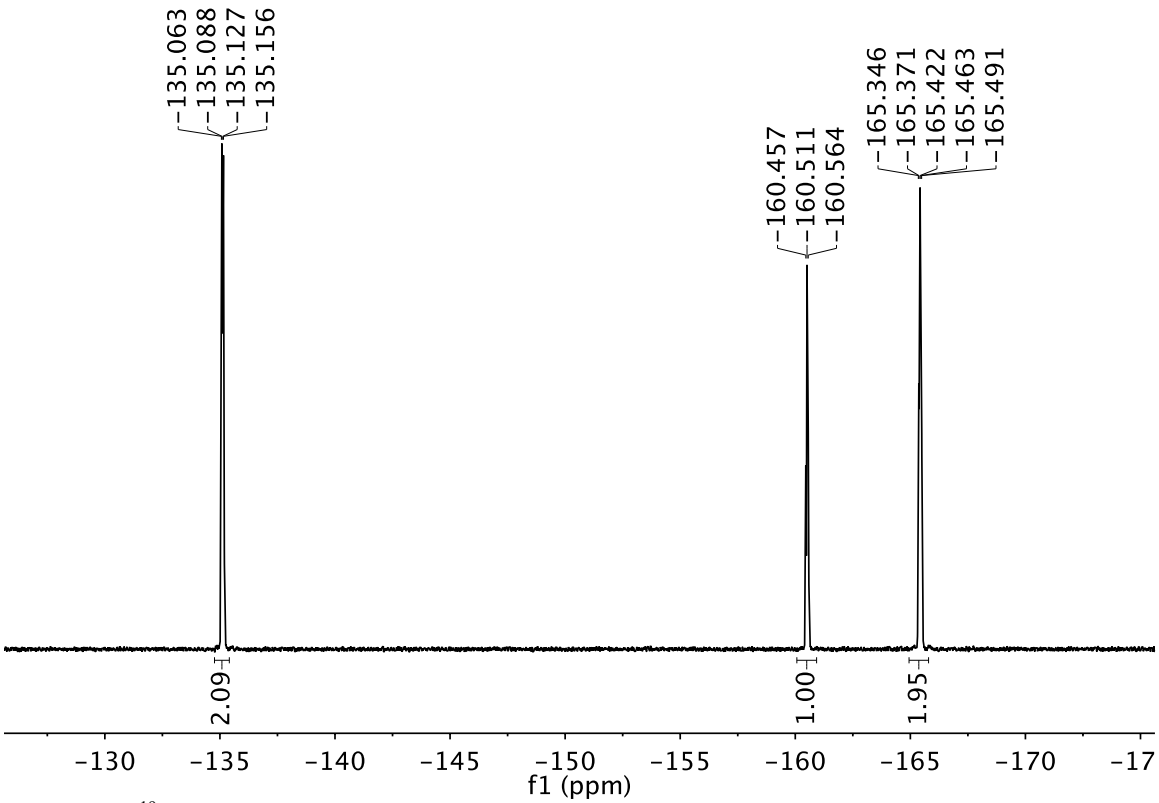

Figure 26 – ^{19}F NMR spectrum of **8b** (377 MHz, 298 K, $CDCl_3$).

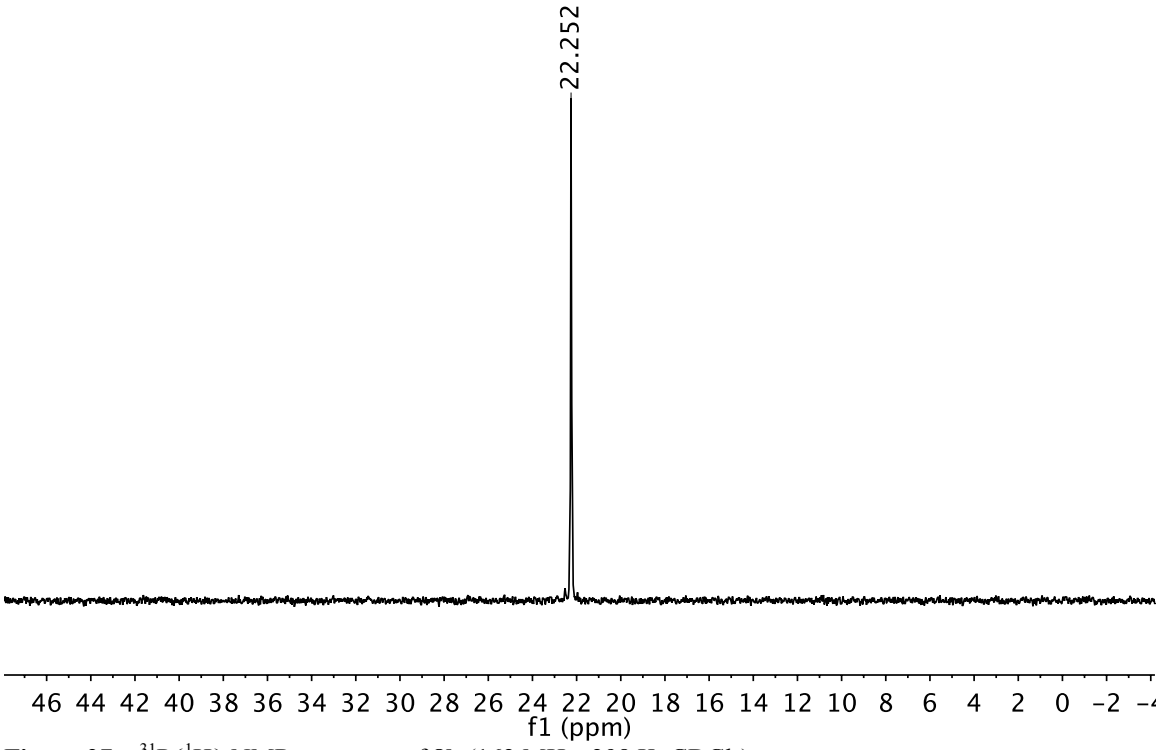

Figure 27 – $^{31}P\{^1H\}$ NMR spectrum of **8b** (162 MHz, 298 K, $CDCl_3$).

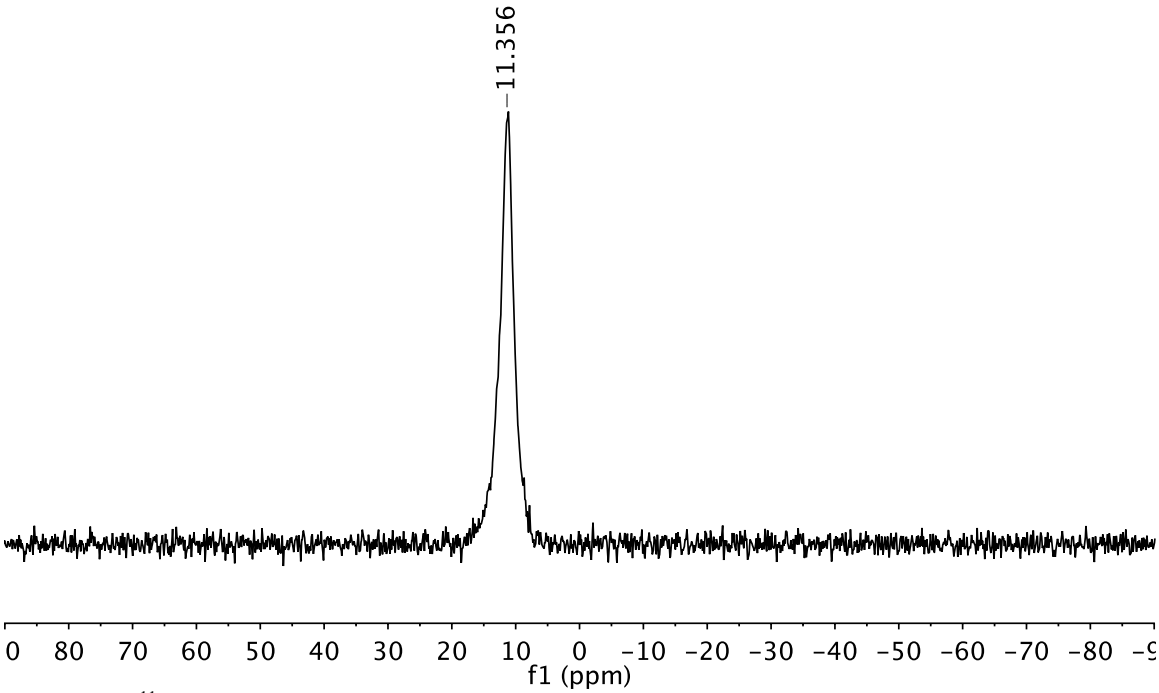

Figure 28 – ^{11}B NMR spectrum of **8b** (128 MHz, 298 K, $CDCl_3$).

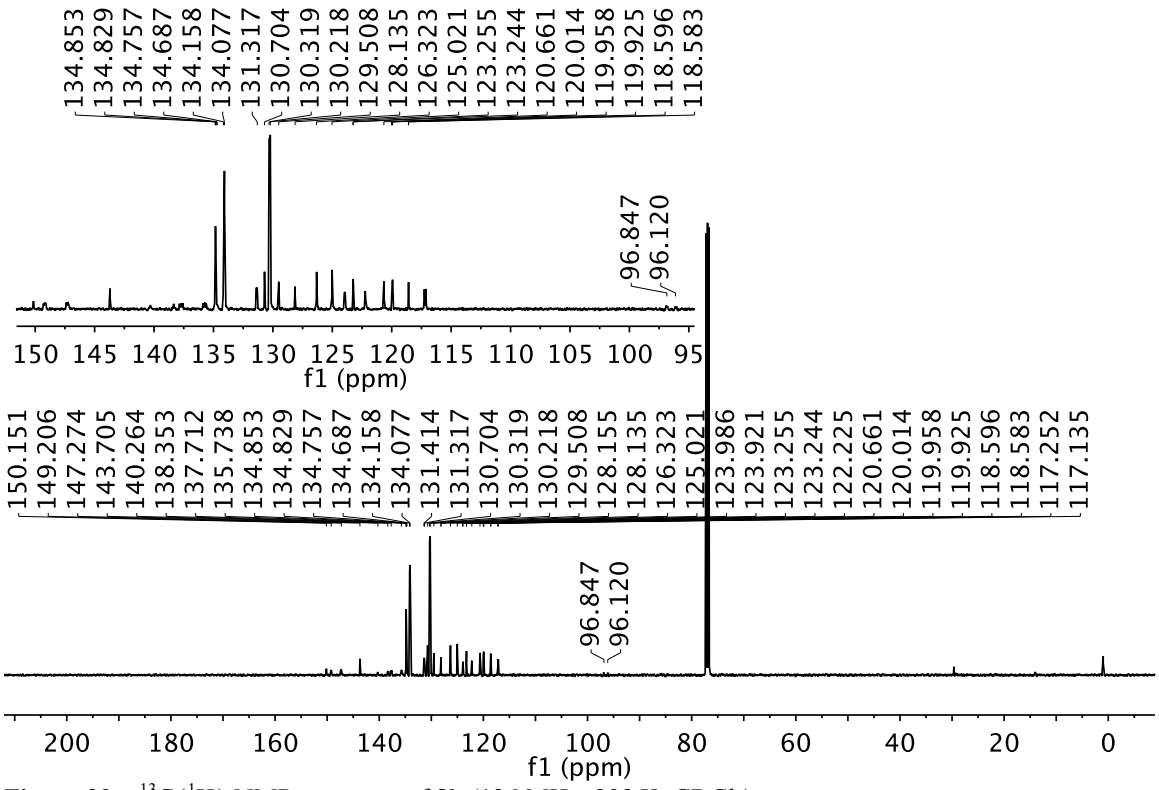

Figure 29 – $^{13}C\{^1H\}$ NMR spectrum of **8b** (126 MHz, 298 K, $CDCl_3$).

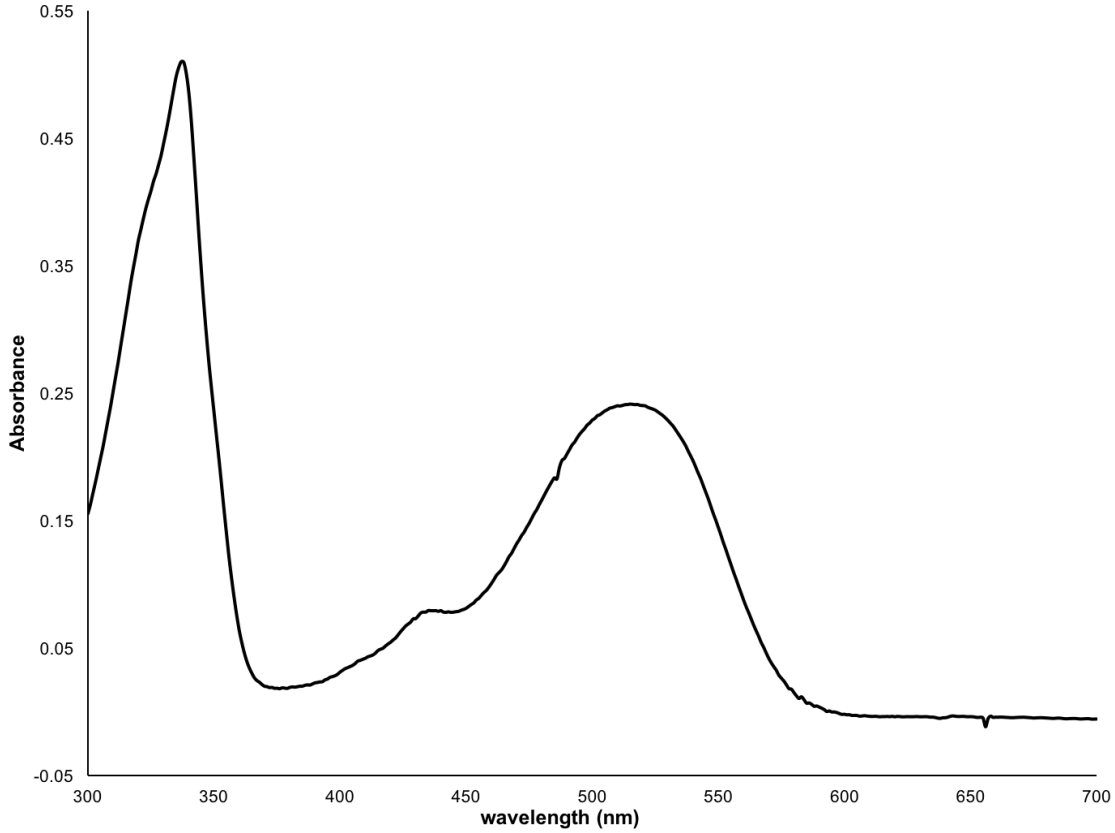

Figure 30 – UV-vis spectrum of **8b** in DCM.

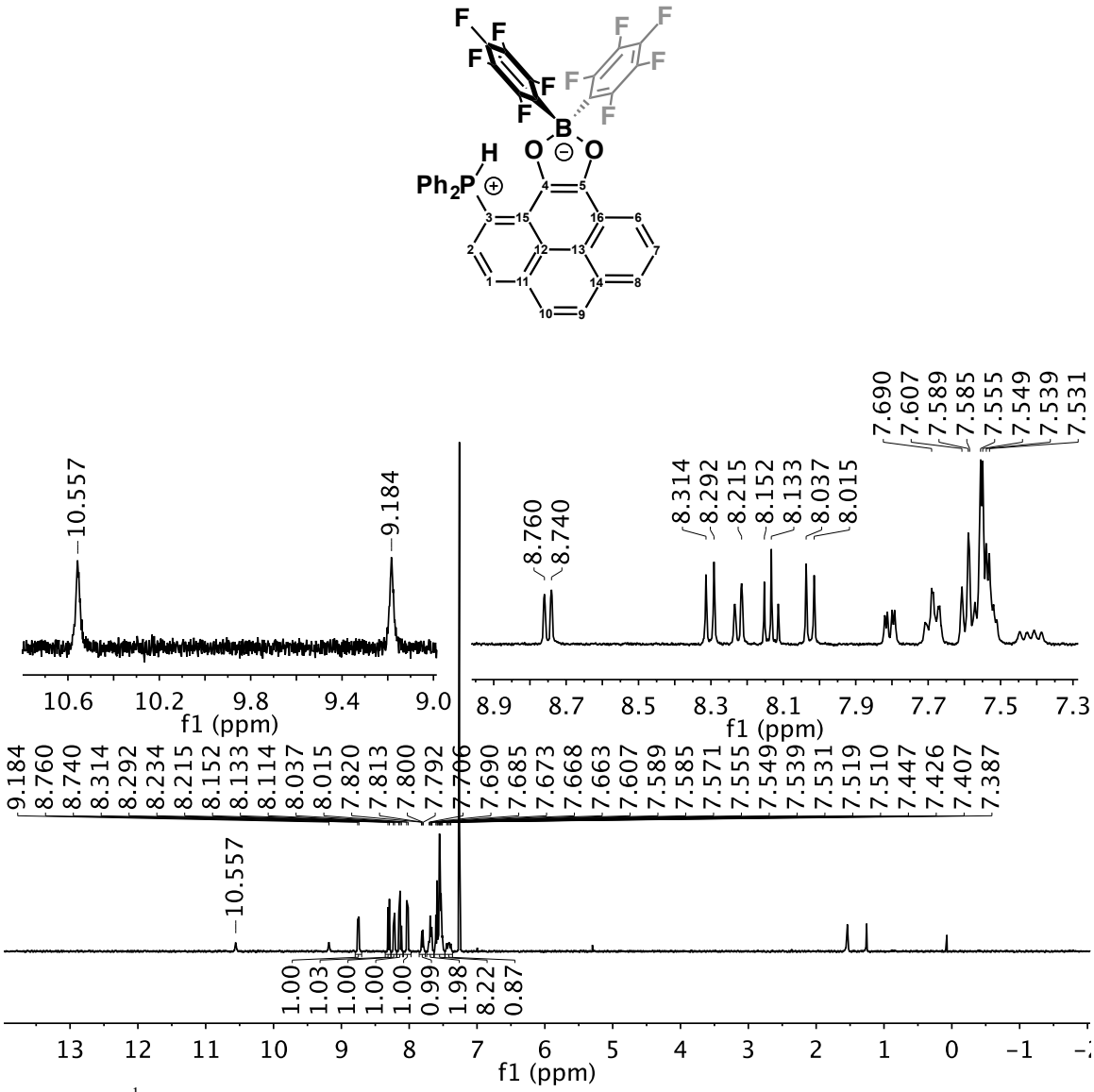

Figure 31 – ^{1}H NMR spectrum of **9** (400 MHz, 298 K, $CDCl_3$).

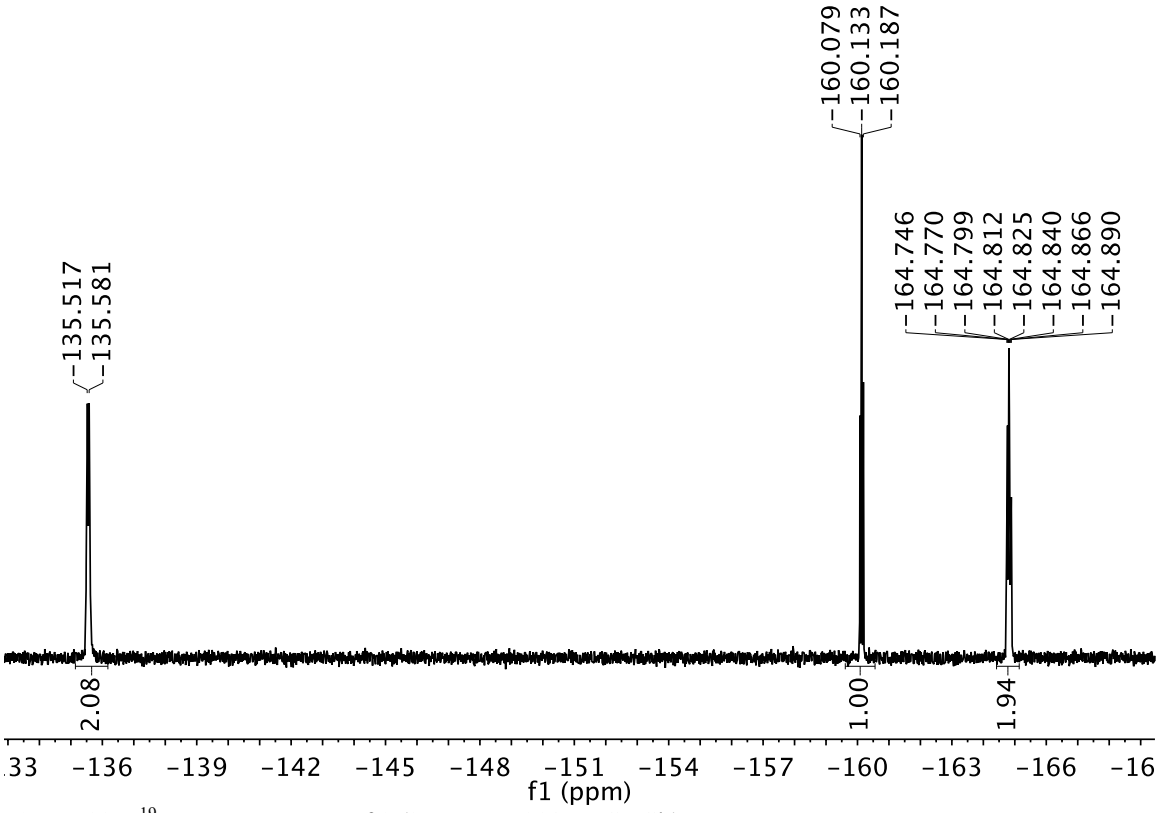

Figure 32 – ^{19}F NMR spectrum of **9** (377 MHz, 298 K, $CDCl_3$).

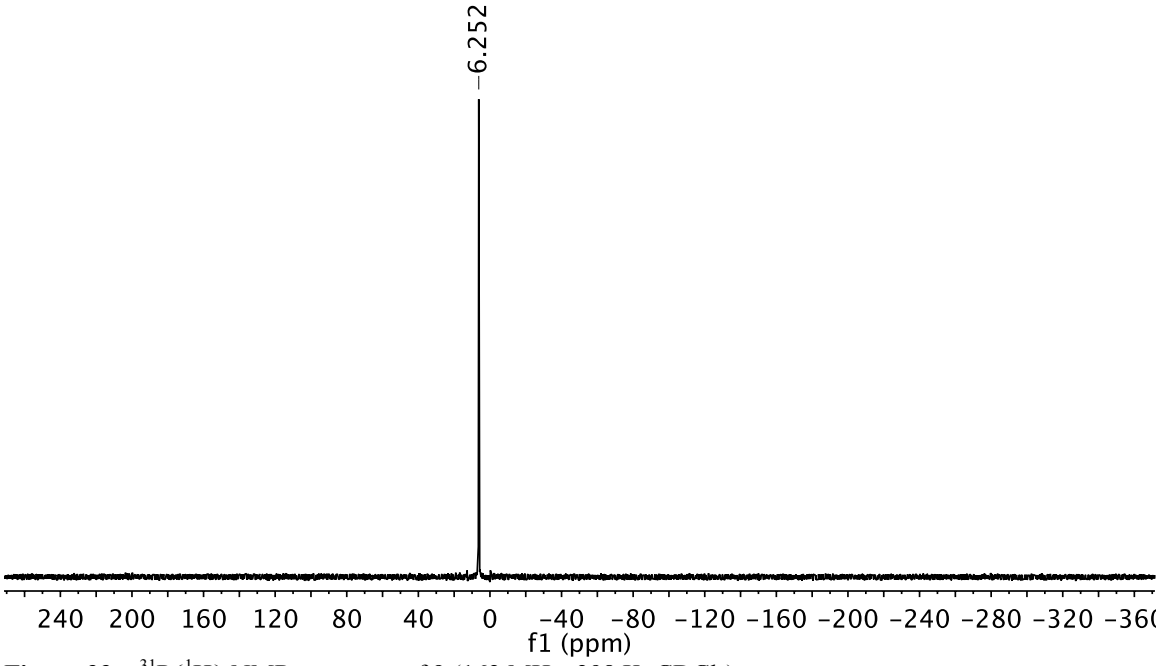

Figure 33 – $^{31}P\{^1H\}$ NMR spectrum of **9** (162 MHz, 298 K, $CDCl_3$).

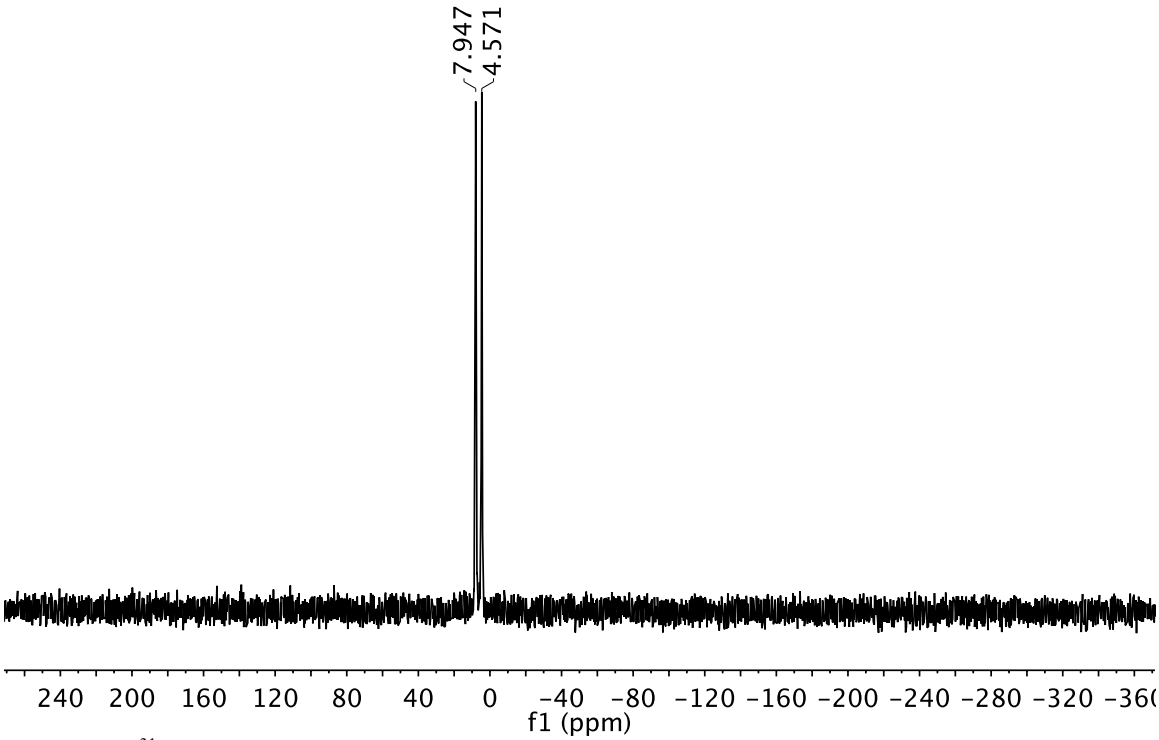

Figure 34 – ^{31}P NMR spectrum of **9** (162 MHz, 298 K, $CDCl_3$).

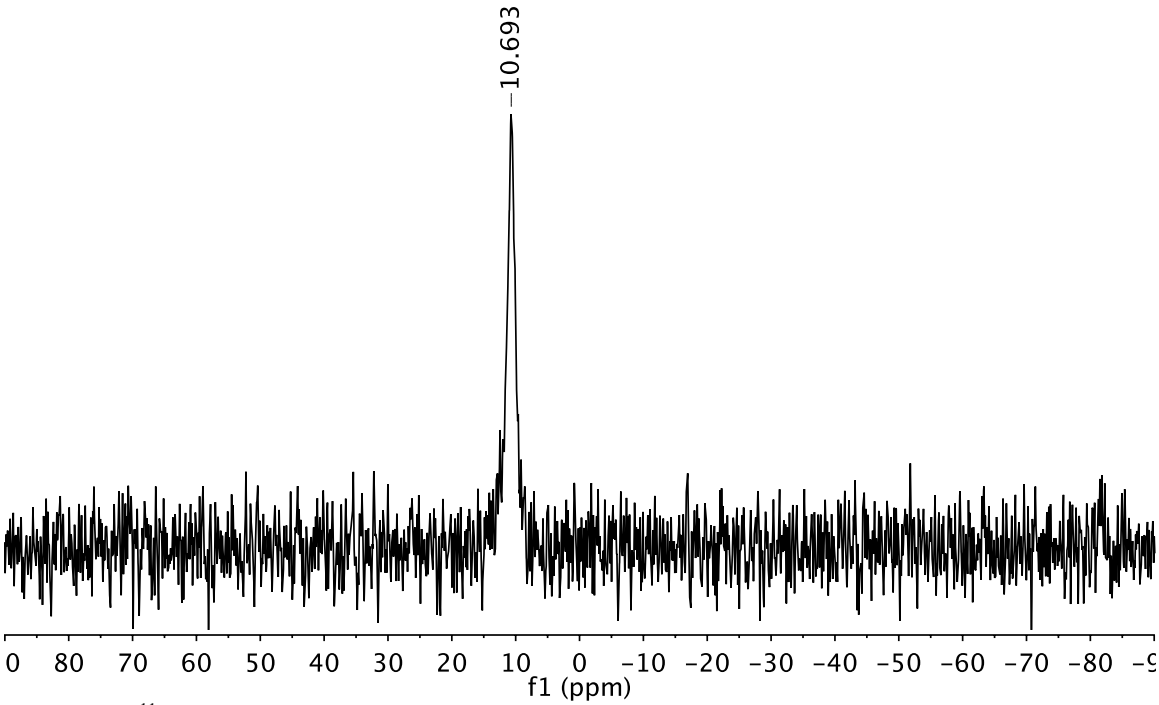

Figure 35 – ^{11}B NMR spectrum of **9** (128 MHz, 298 K, $CDCl_3$).

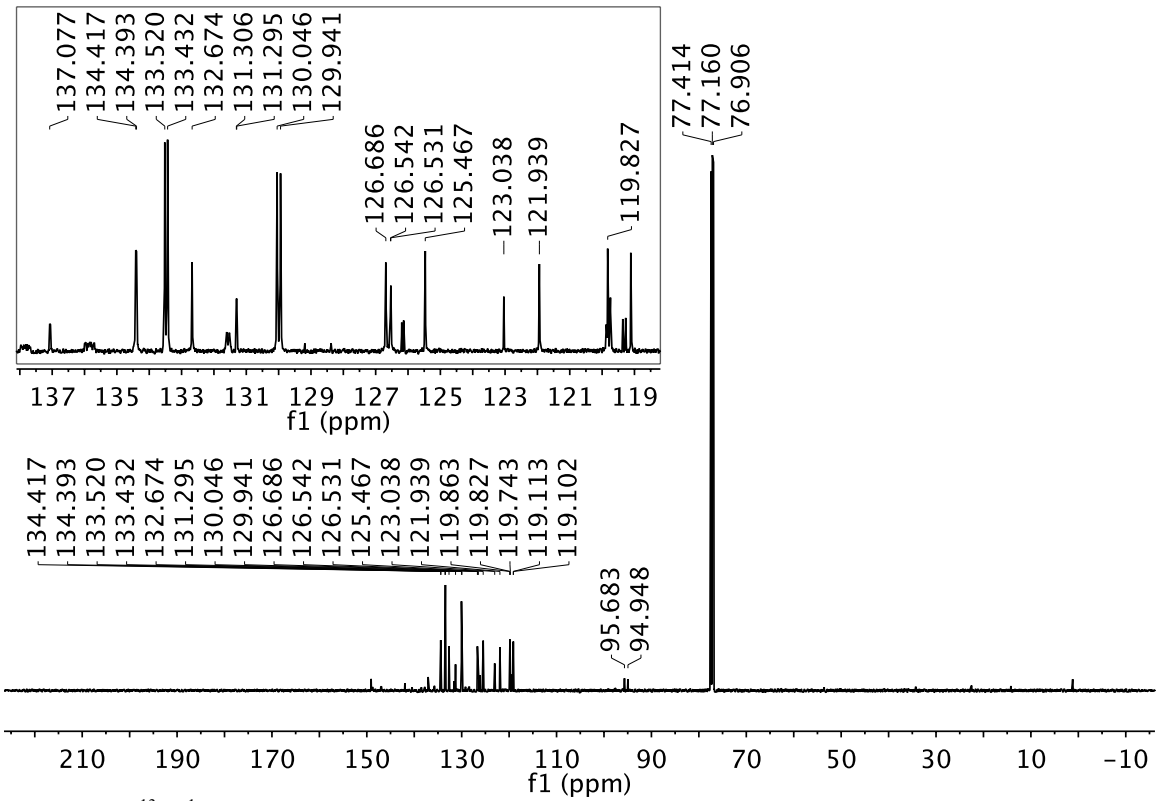

Figure 36 – $^{13}C\{^{1}H\}$ NMR spectrum of **9** (126 MHz, 298 K, $CDCl_3$).

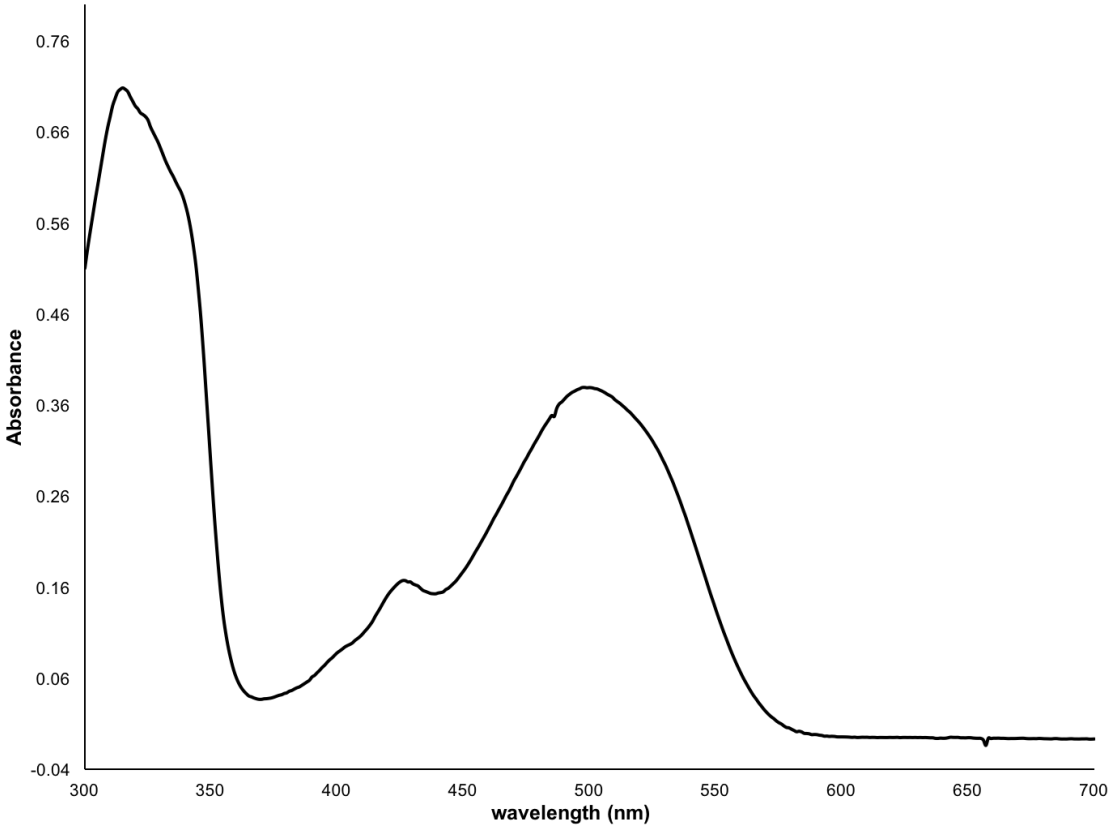

Figure 37 – UV-vis spectrum of **9** in DCM.

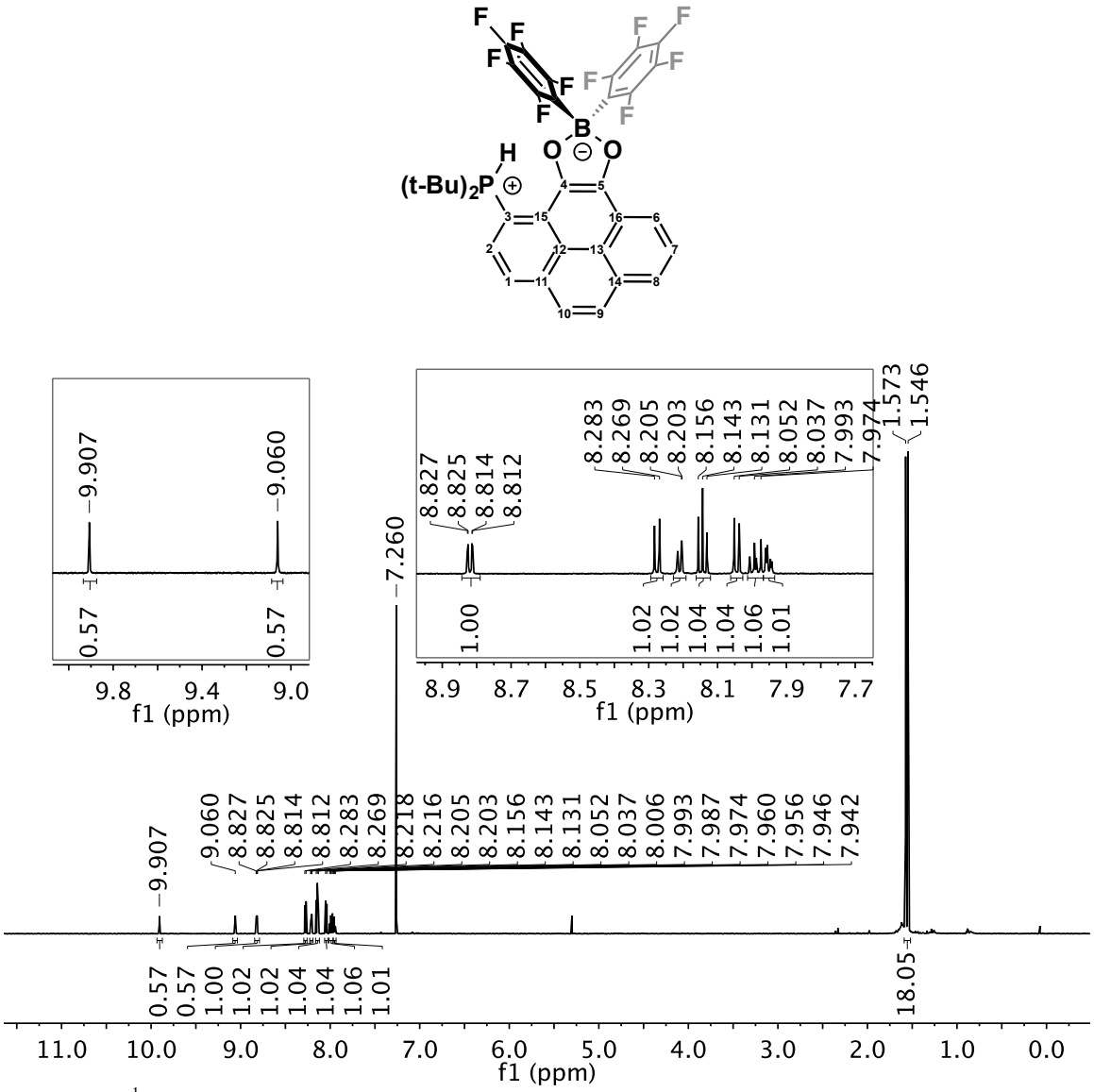

Figure 38 – ^{1}H NMR spectrum of **10** (600 MHz, 298 K, $CDCl_3$).

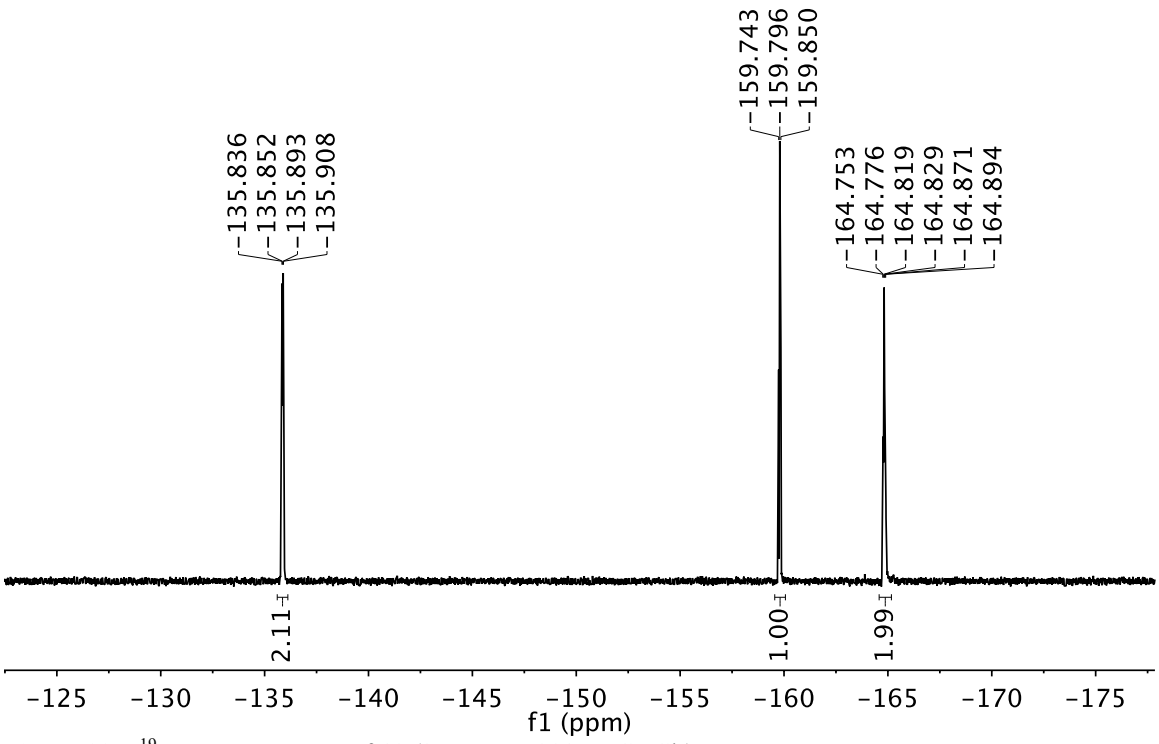

Figure 39 – ^{19}F NMR spectrum of **10** (377 MHz, 298 K, $CDCl_3$).

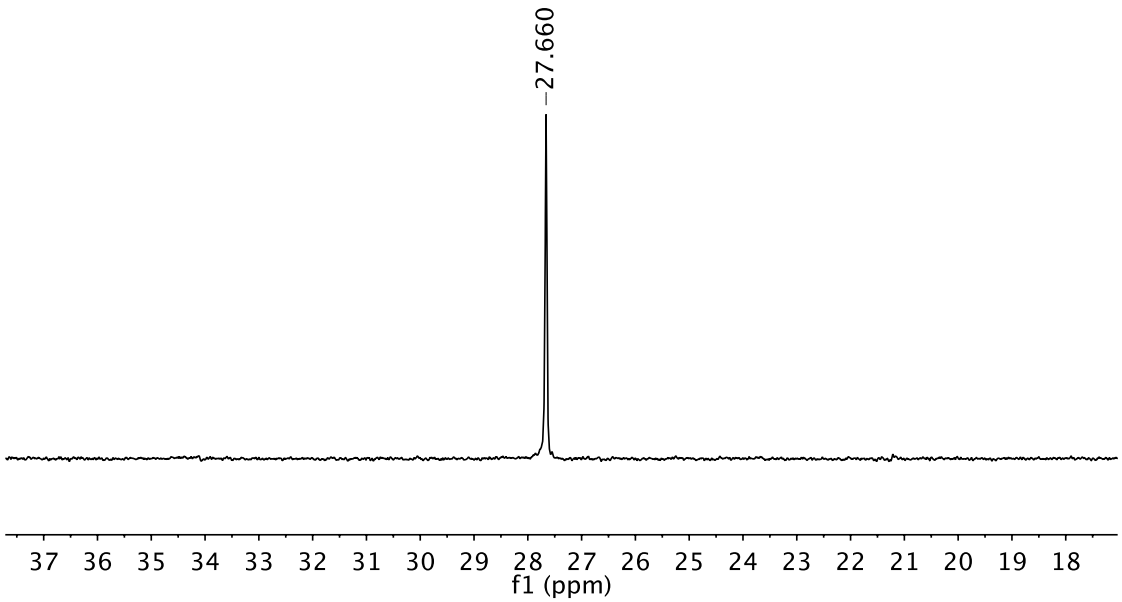

Figure 40 – $^{31}P\{^1H\}$ NMR spectrum of **10** (162 MHz, 298 K, $CDCl_3$).

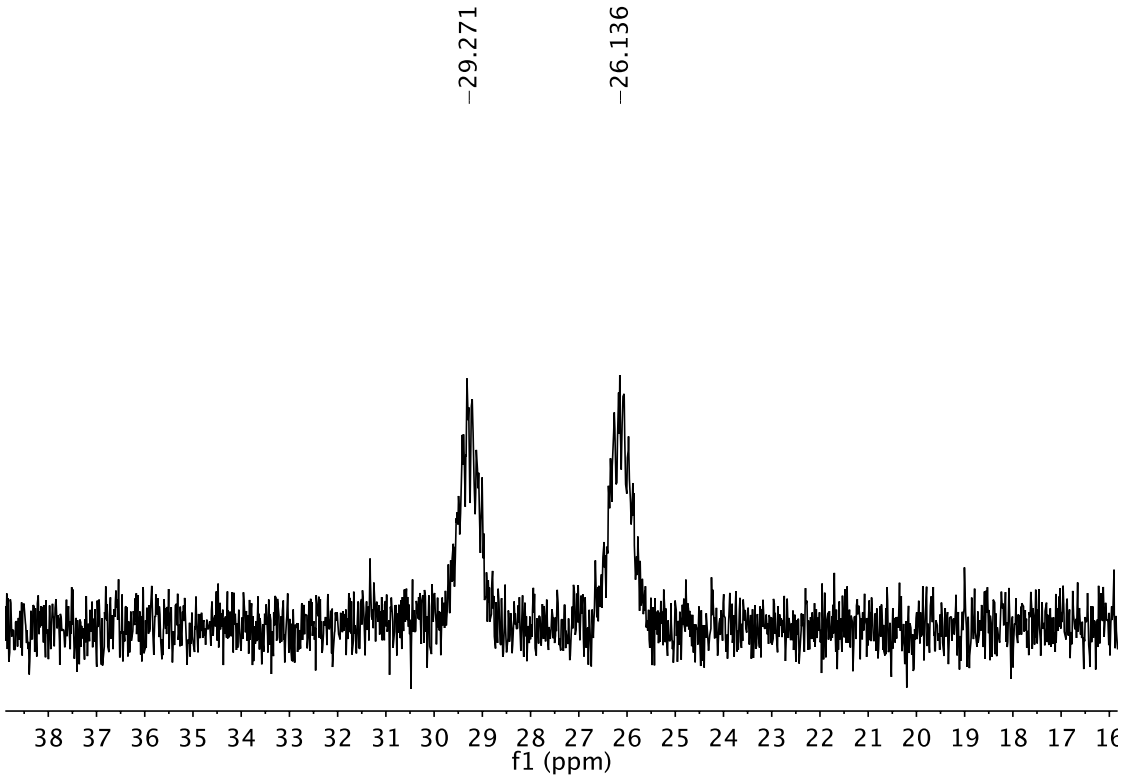

Figure 41 – ^{31}P NMR spectrum of **10** (162 MHz, 298 K, $CDCl_3$).

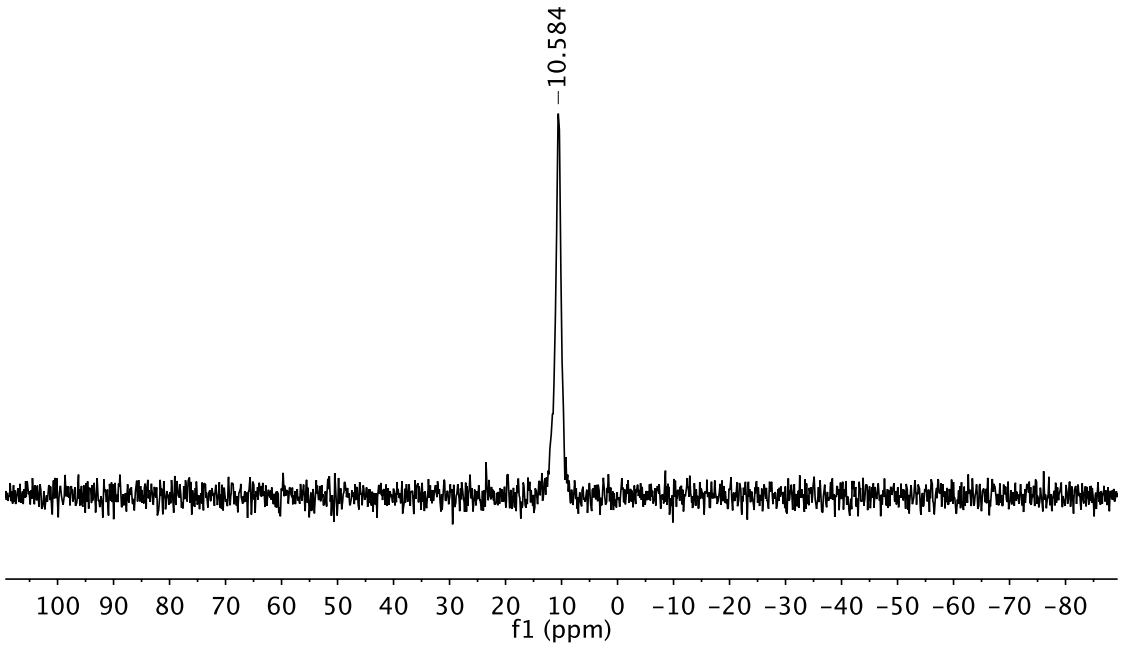

Figure 42 – ^{11}B NMR spectrum of **10** (128 MHz, 298 K, $CDCl_3$).

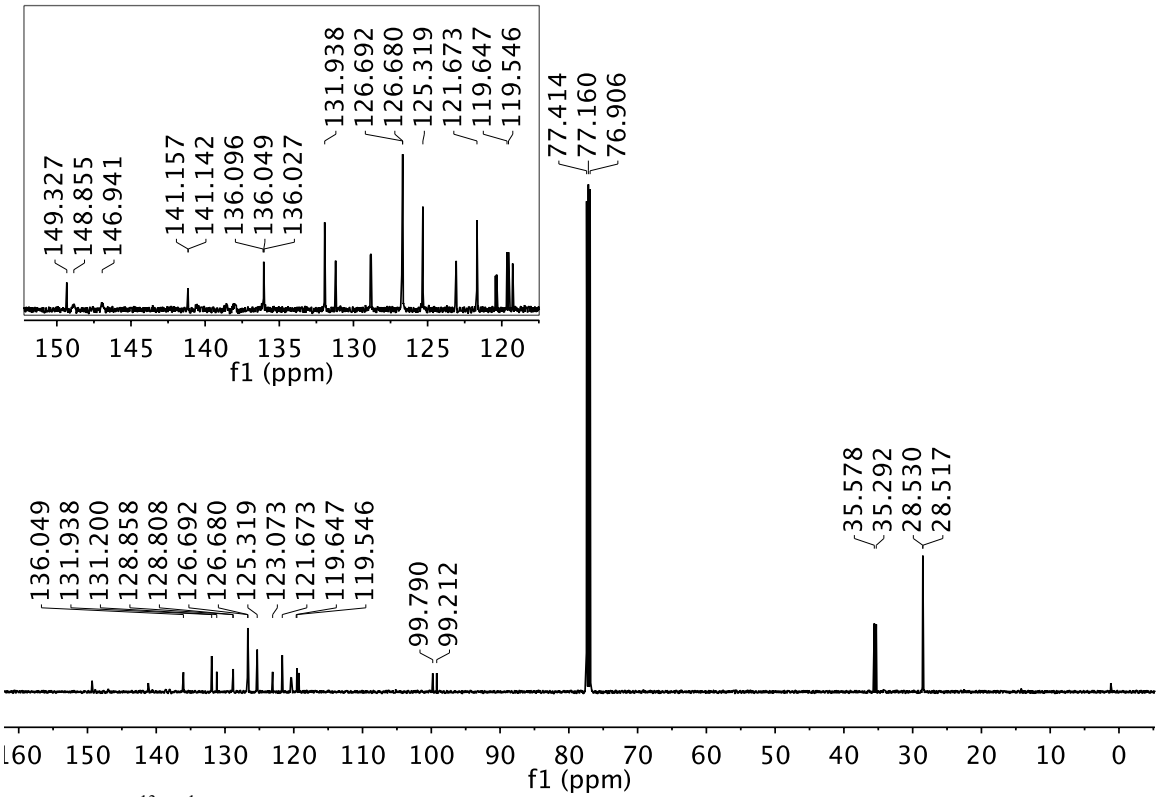

Figure 43 – $^{13}C\{^{1}H\}$ NMR spectrum of **10** (126 MHz, 298 K, $CDCl_3$).

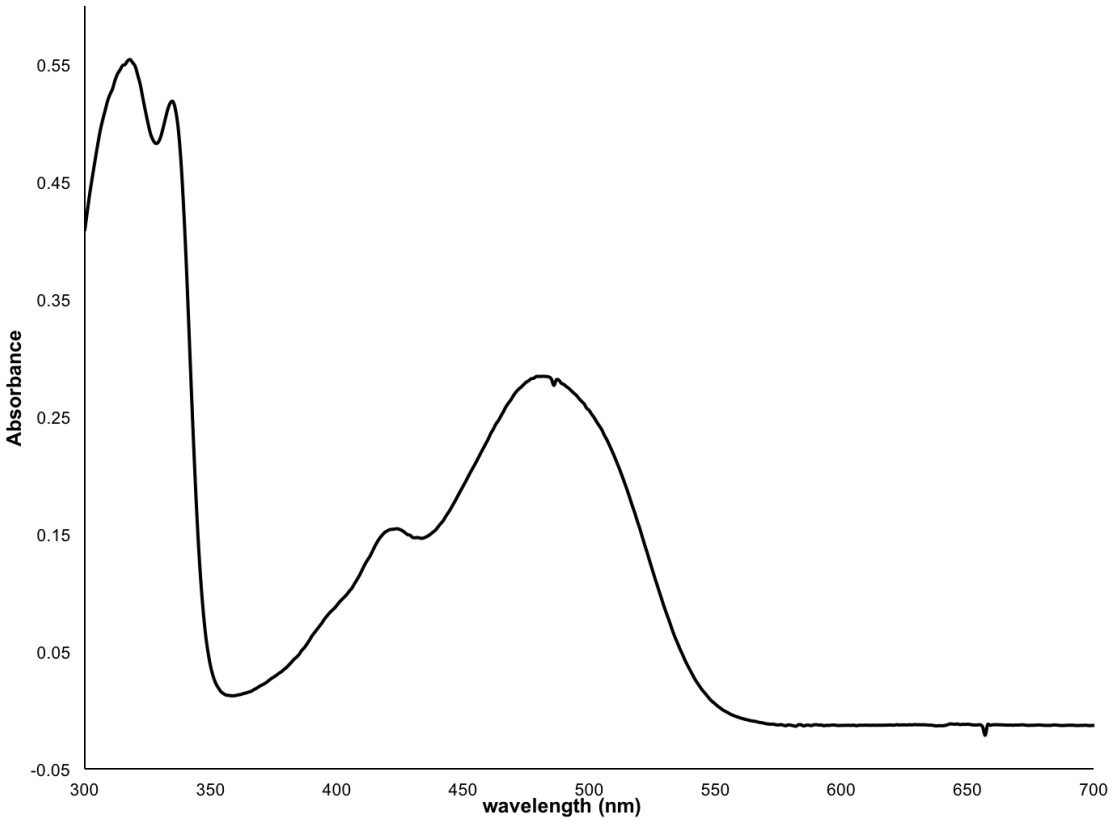

Figure 44 – UV-vis spectrum of **10** in DCM.

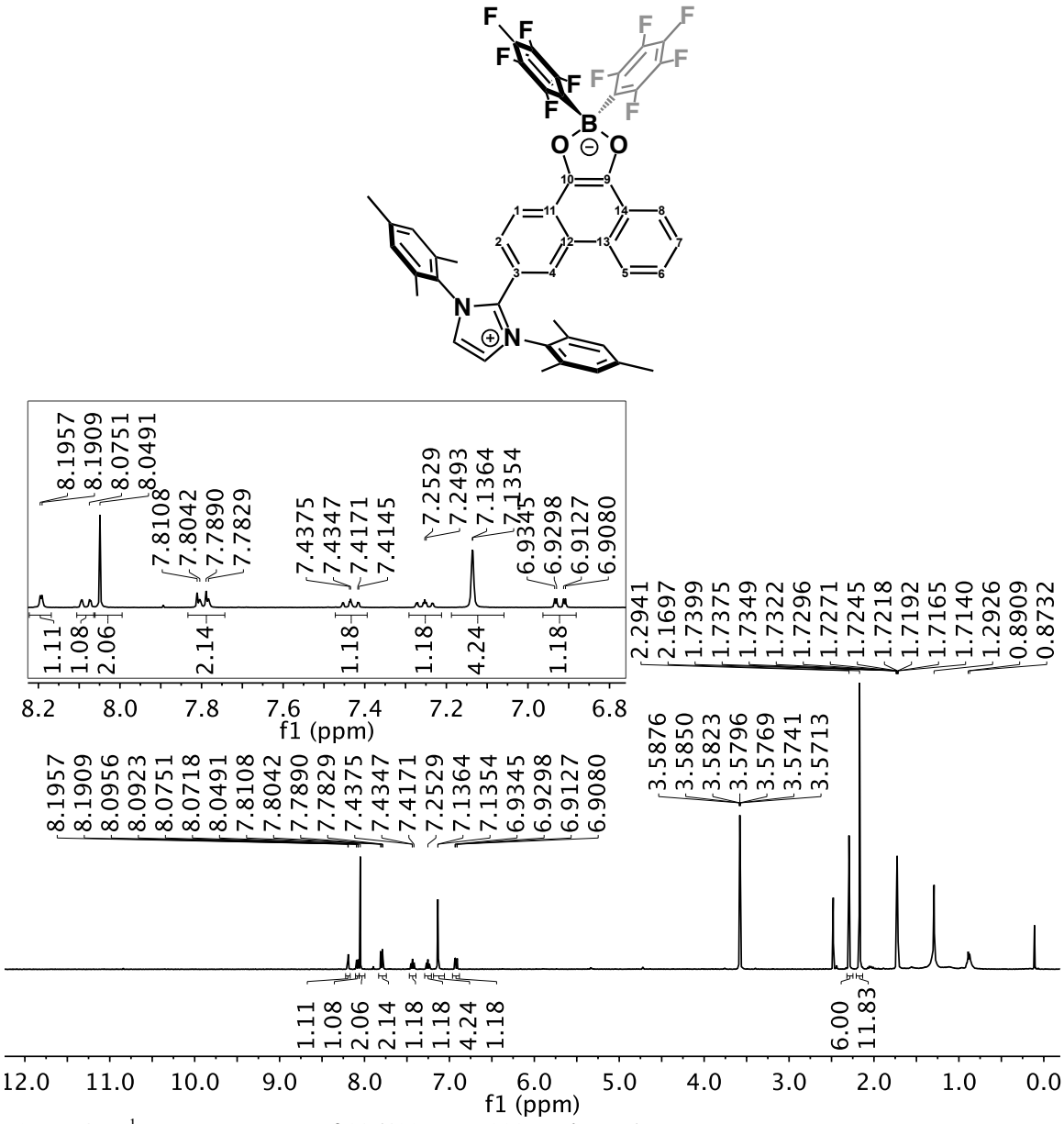

Figure 45 – ^{1}H NMR spectrum of **11** (400 MHz, 298 K, d_8-THF).

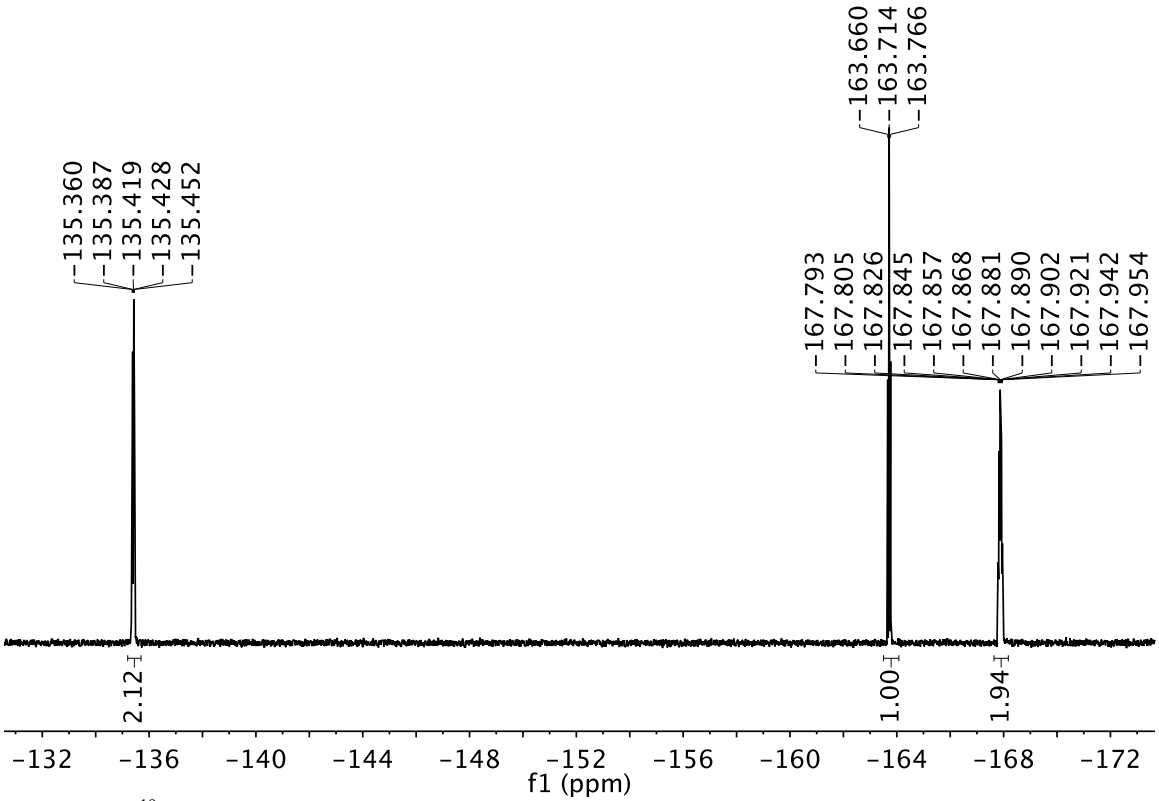

Figure 46 – ^{19}F NMR spectrum of **11** (377 MHz, 298 K, d_8-THF).

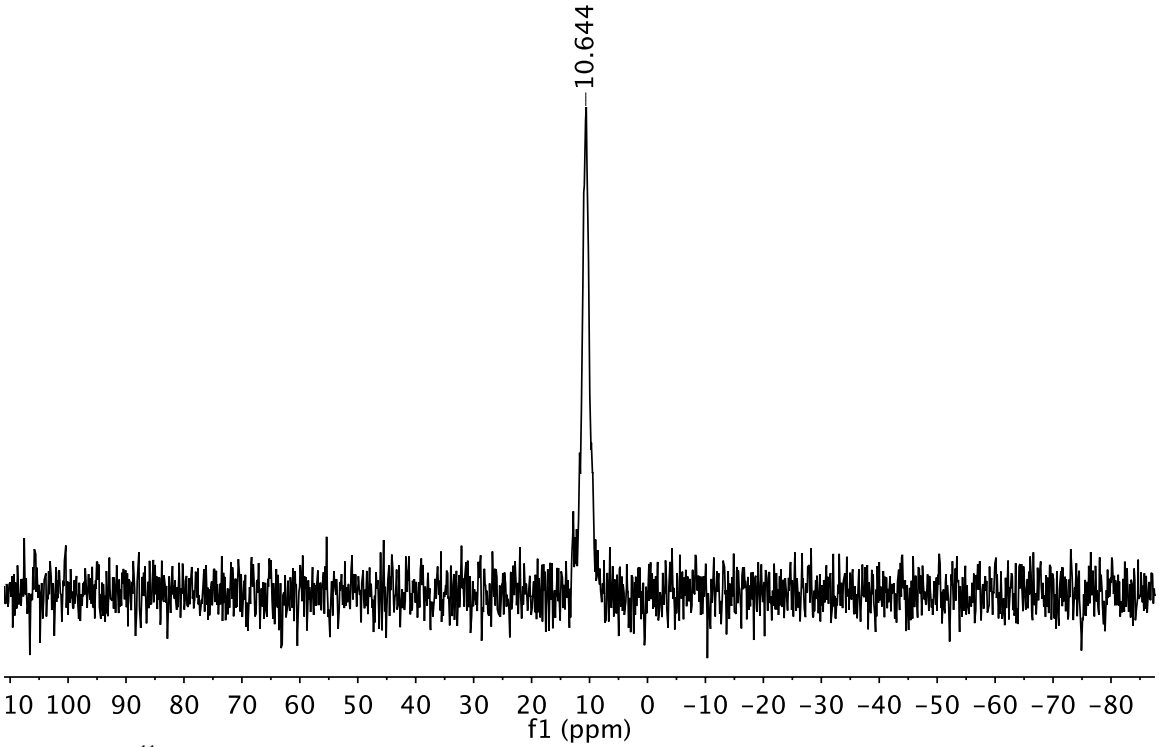

Figure 47 – ^{11}B NMR spectrum of **11** (128 MHz, 298 K, d_8-THF).

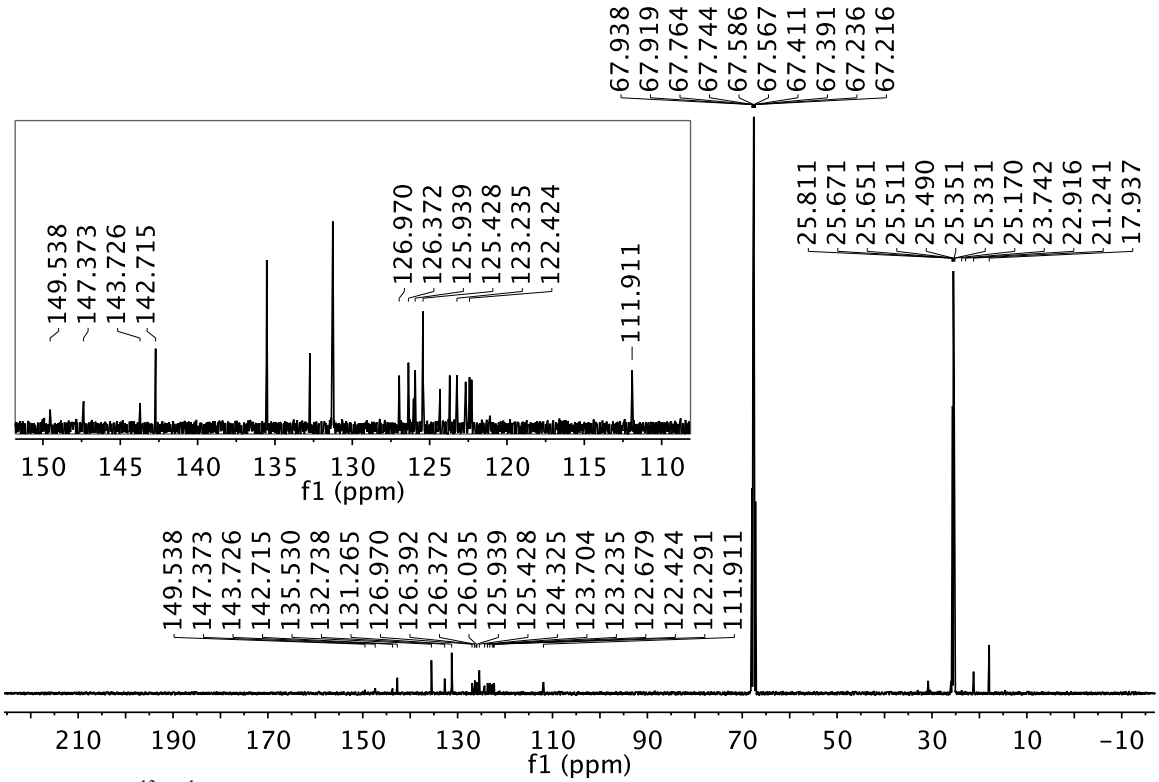

Figure 48 – $^{13}C\{^{1}H\}$ NMR spectrum of **11** (126 MHz, 298 K, d_8-THF).

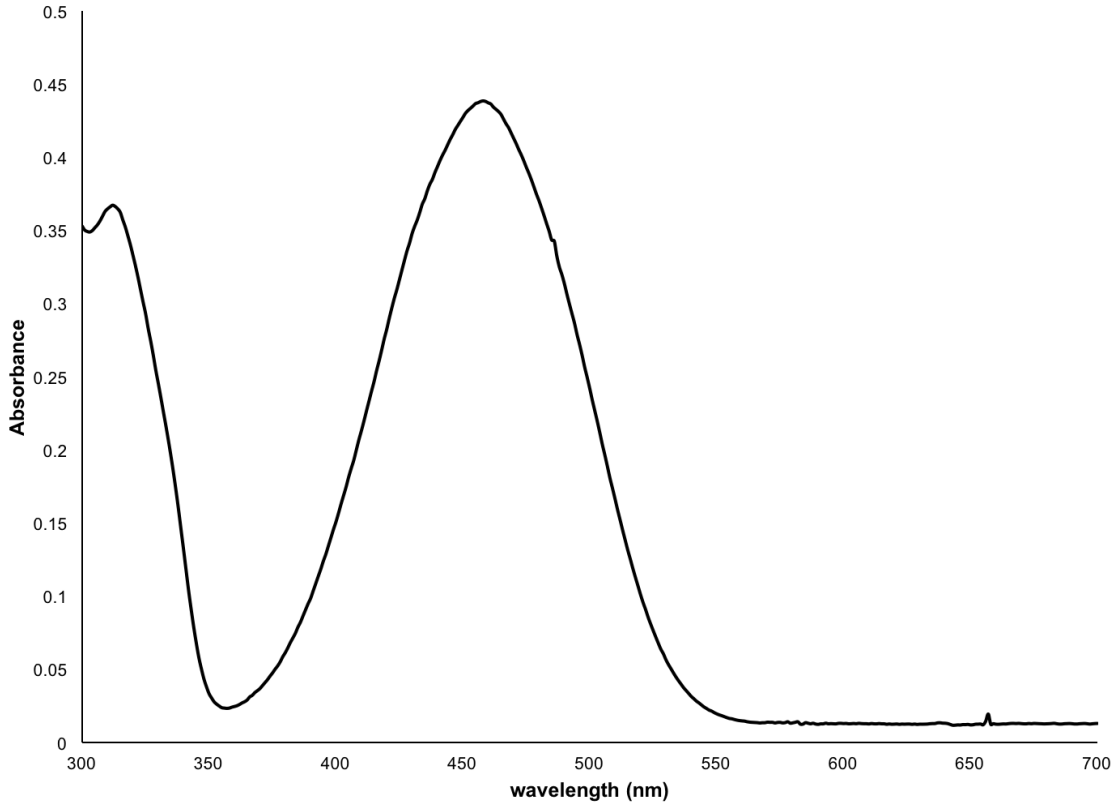

Figure 49 – UV-vis spectrum of **11** in DCM.

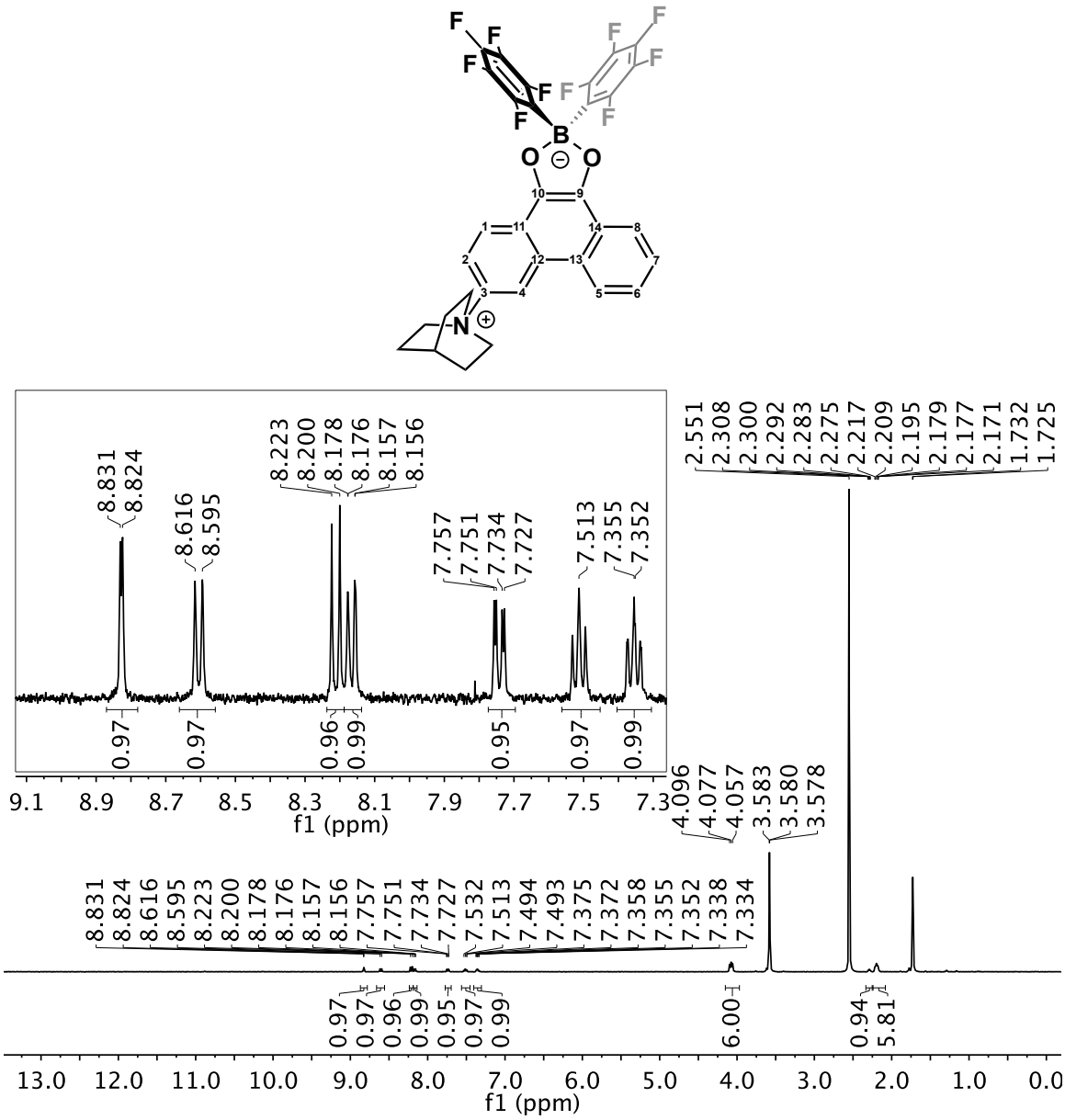

Figure 50 – ^{1}H NMR spectrum of **13** (400 MHz, 298 K, d_8-THF).

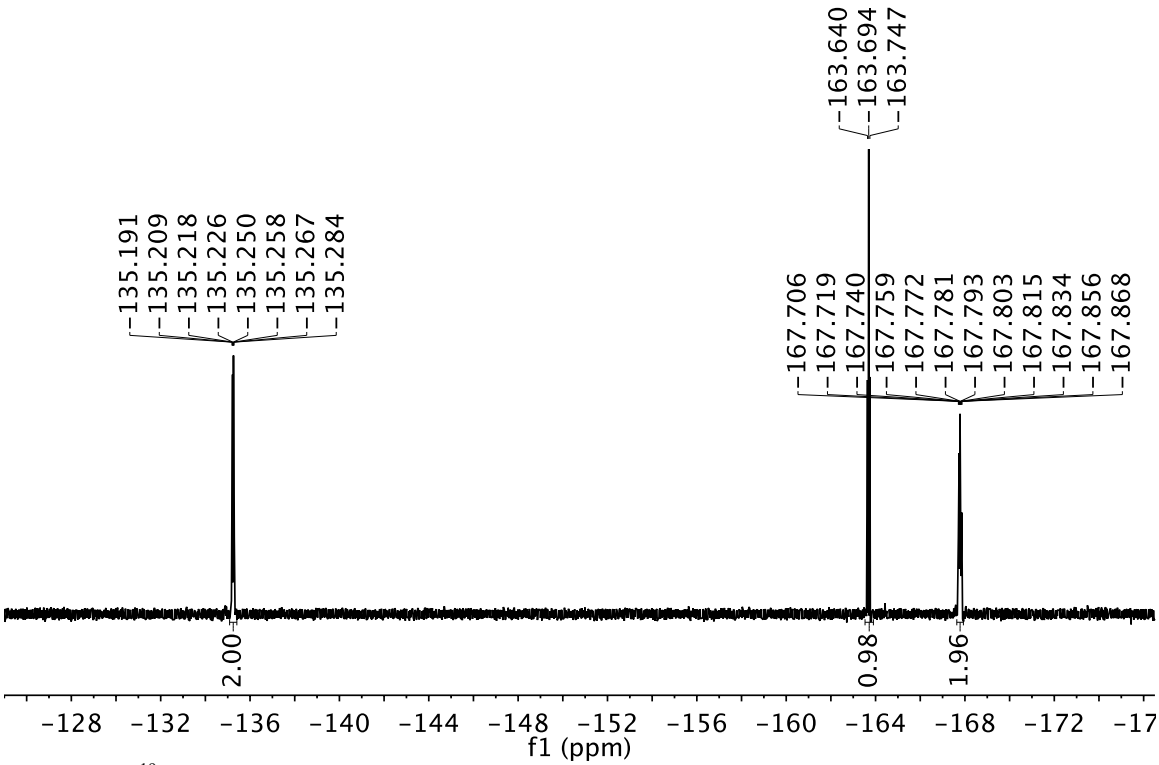

Figure 51 – ^{19}F NMR spectrum of **13** (377 MHz, 298 K, d_8-THF).

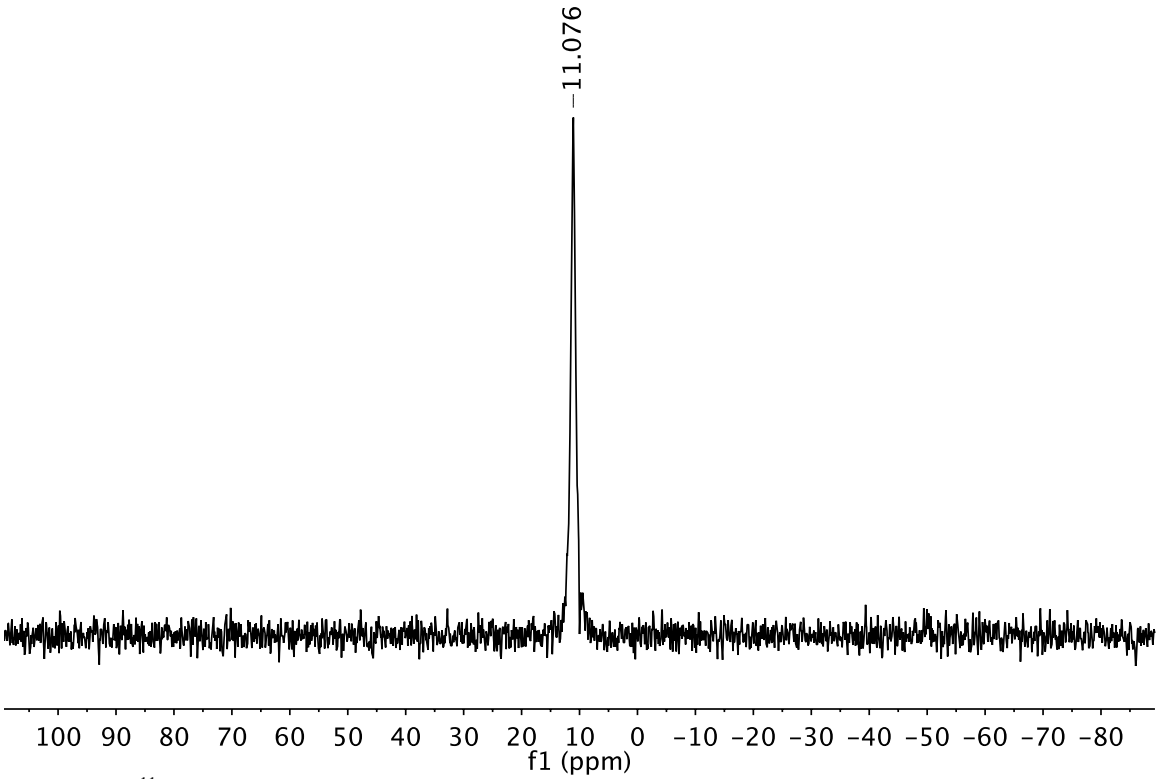

Figure 52 – ^{11}B NMR spectrum of **13** (128 MHz, 298 K, d_8-THF).

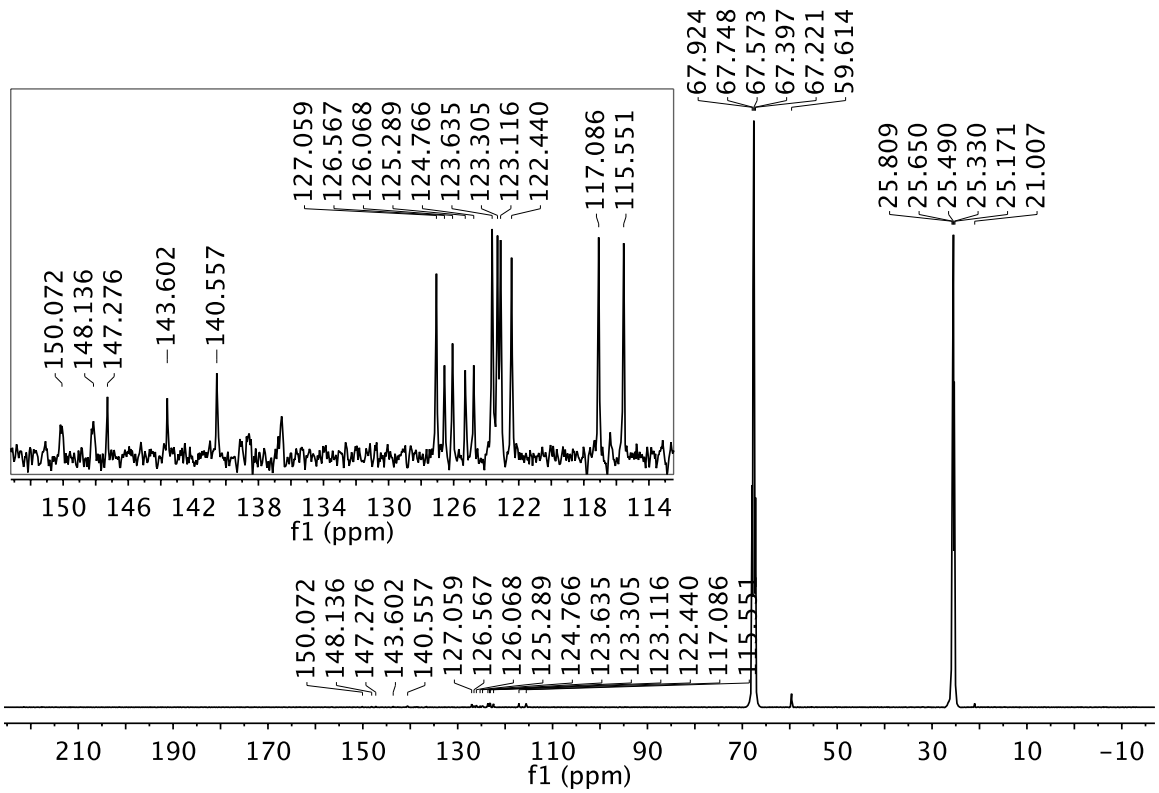

Figure 53 – $^{13}C\{^{1}H\}$ NMR spectrum of **13** (126 MHz, 298 K, d_8-THF).

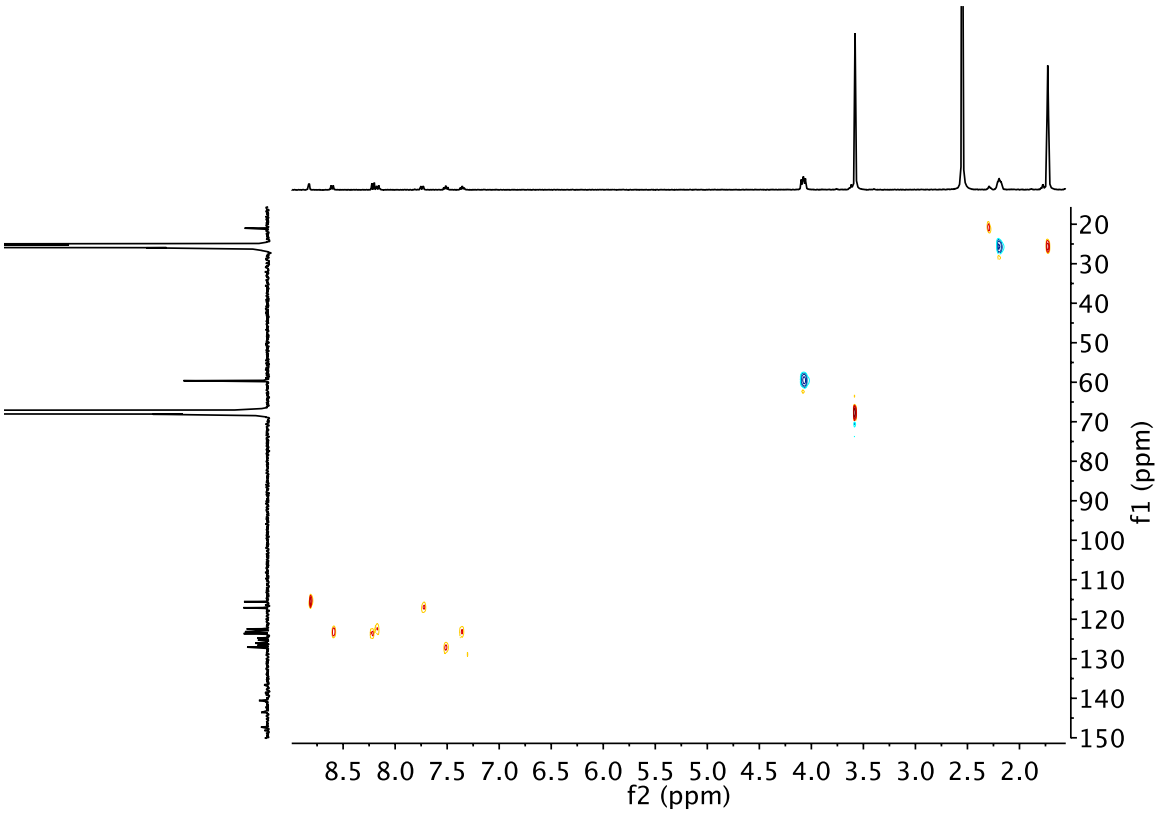

Figure 54 – HSQC NMR spectrum of **13** (600 MHz vs 151 MHz, 298 K, d_8-THF).

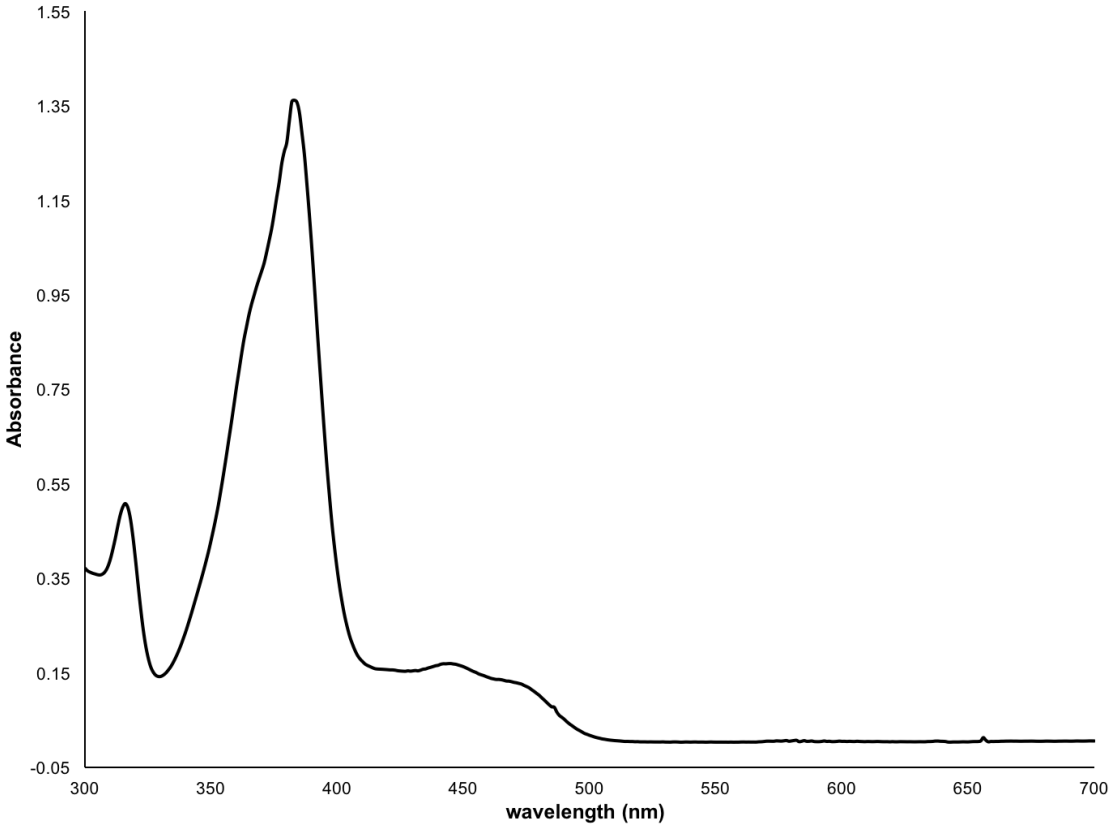

Figure 55 – UV-vis spectrum of **13** in THF.

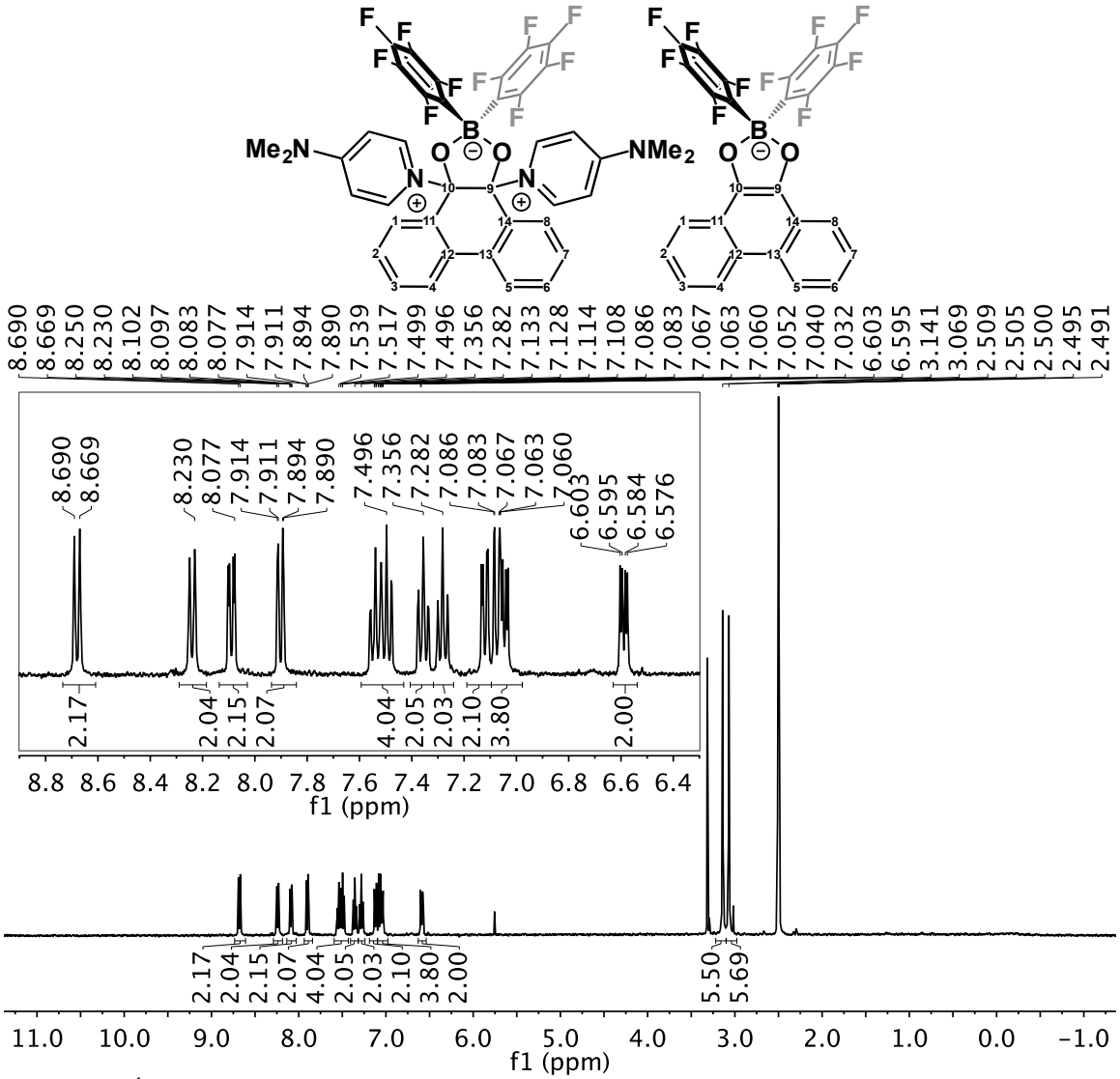

Figure 56 – ^{1}H NMR spectrum of **15** (400 MHz, 298 K, d_6-DMSO).

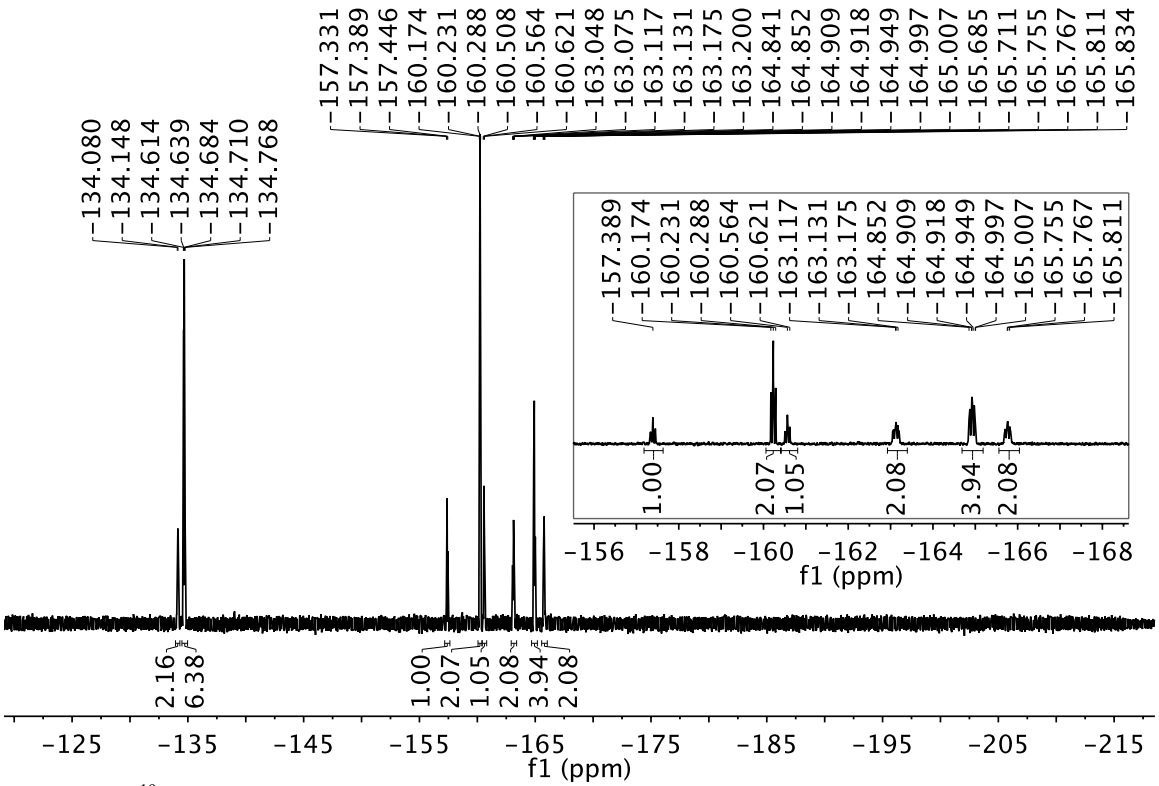

Figure 57 – ^{19}F NMR spectrum of **15** (377 MHz, 298 K, d_6-DMSO).

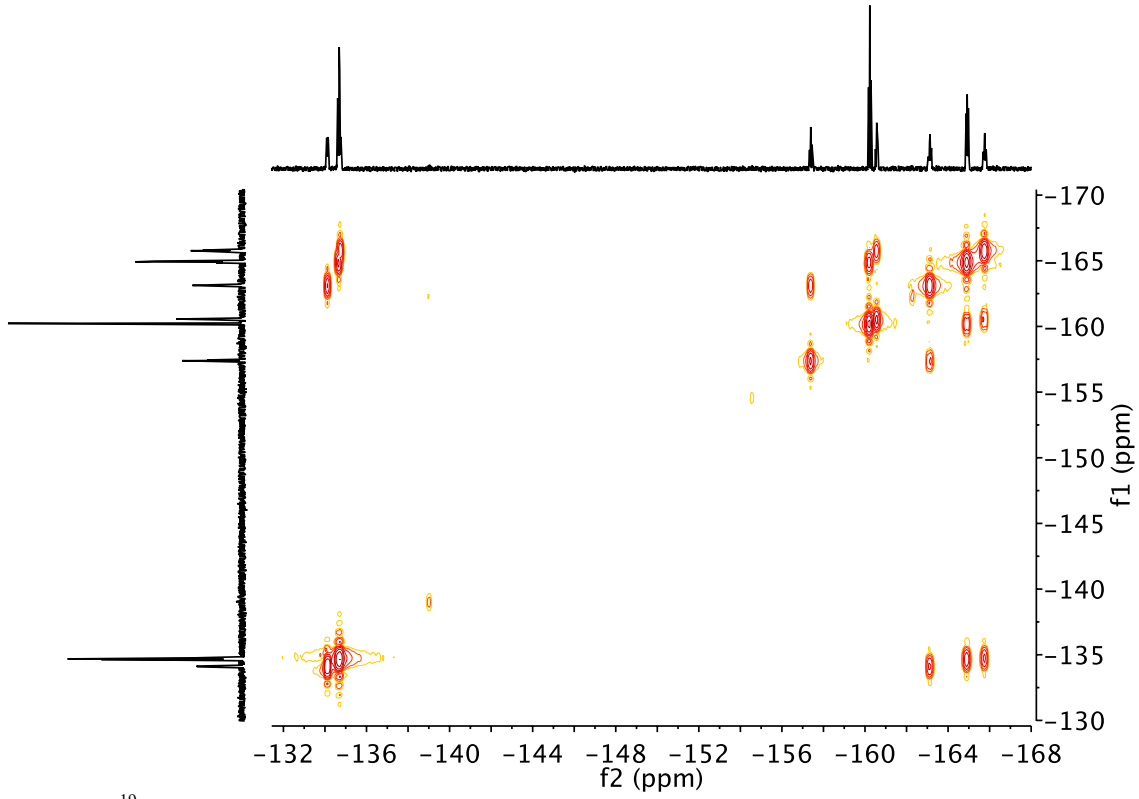

Figure 58 – ^{19}F COSY NMR spectrum of **15** (377 MHz, 298 K, d_6-DMSO).

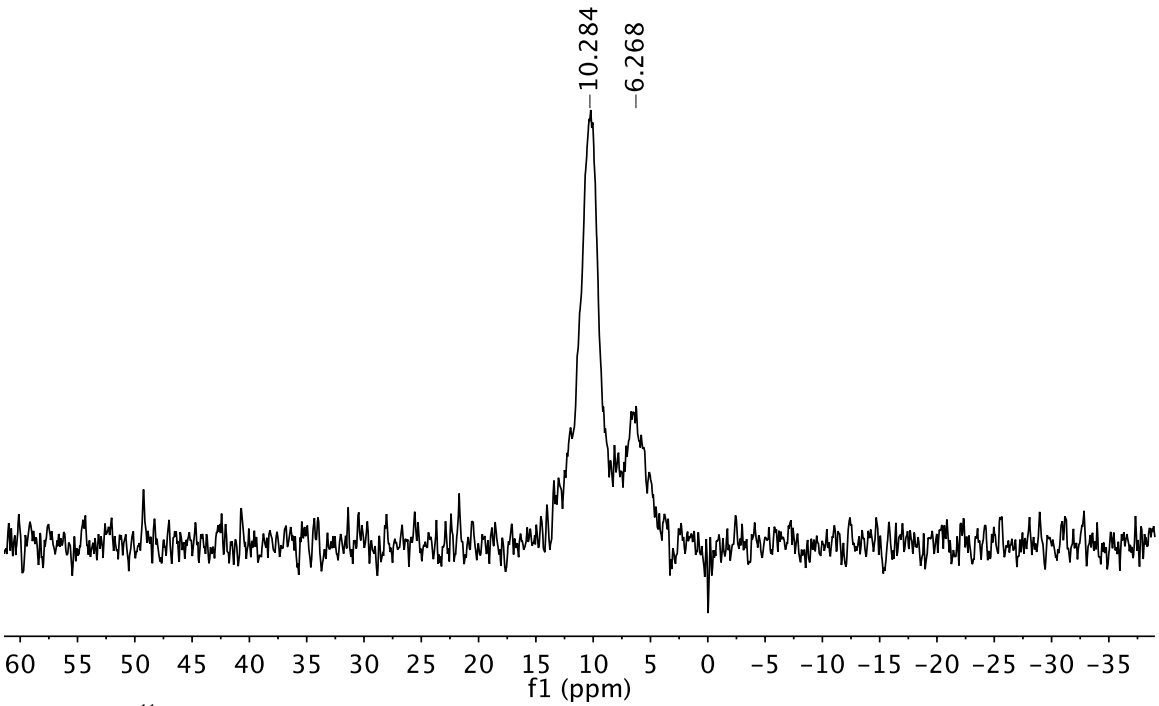

Figure 59 – ^{11}B NMR spectrum of **15** (128 MHz, 298 K, d_6-DMSO).

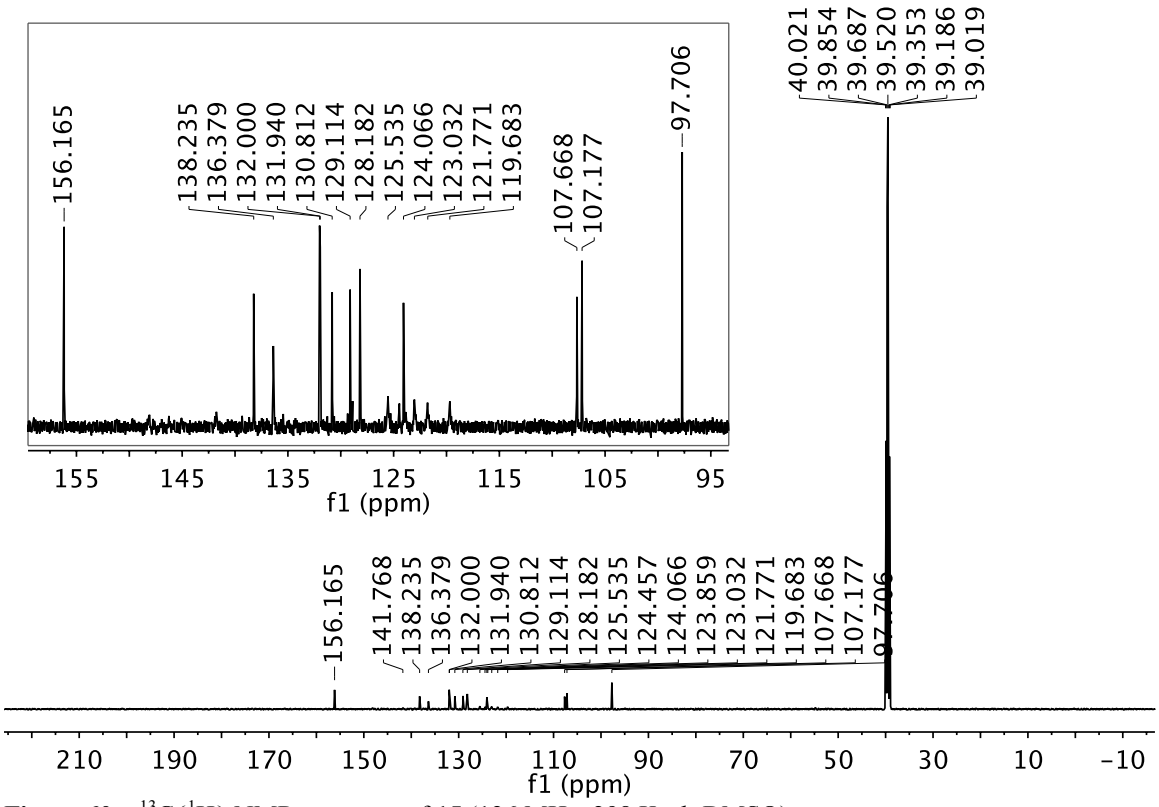

Figure 60 – ^{13}C{^{1}H} NMR spectrum of **15** (126 MHz, 298 K, d_6-DMSO).

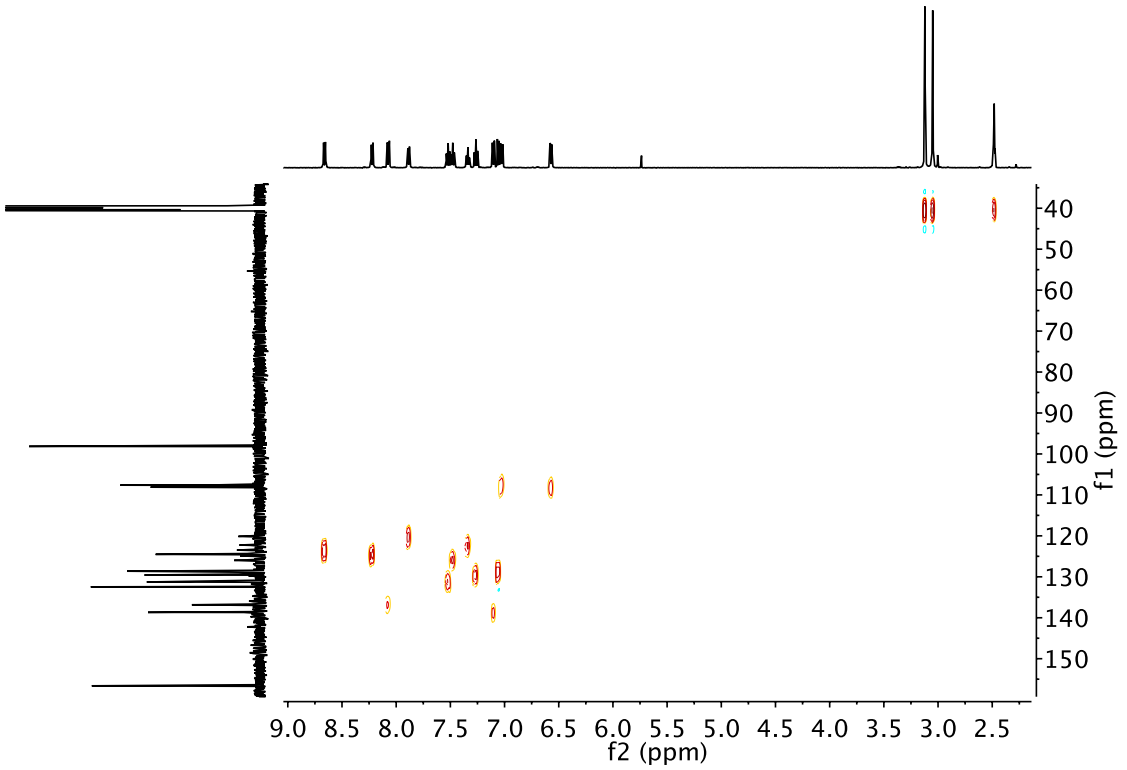

Figure 61 – HSQC NMR spectrum of **15** (600 MHz vs 151 MHz, 298 K, d_6-DMSO).

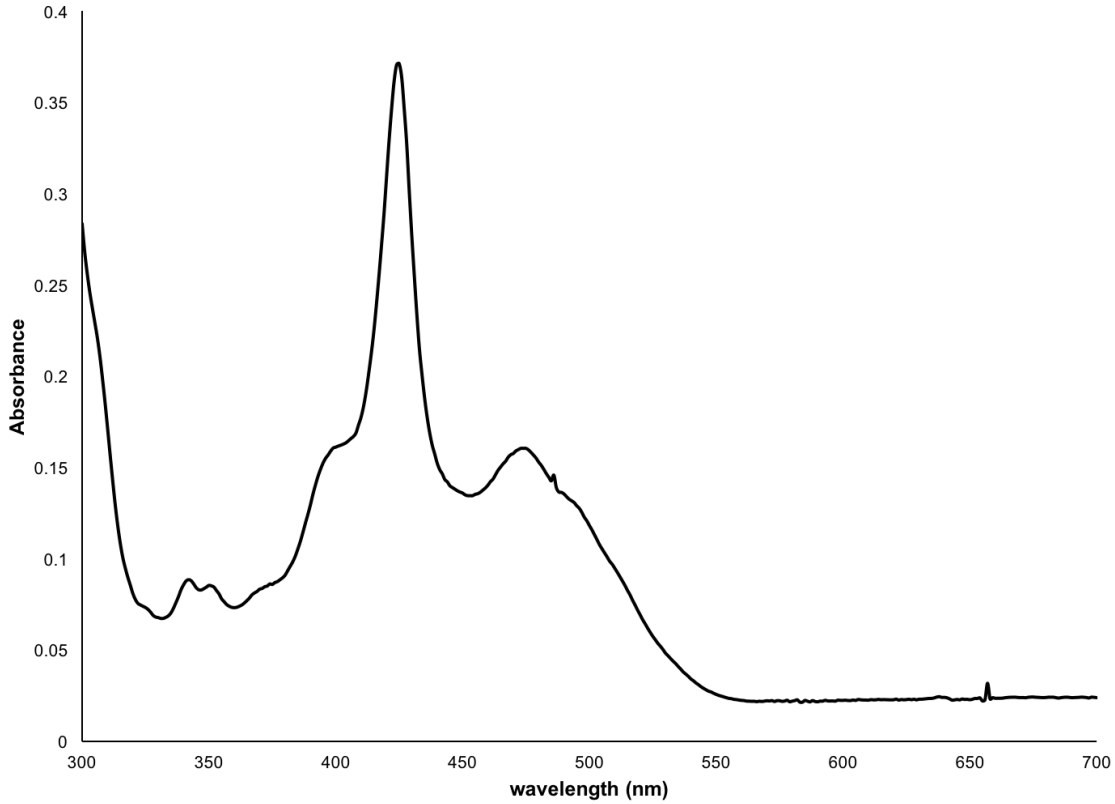

Figure 62 – UV-vis spectrum of **15** in DCM.

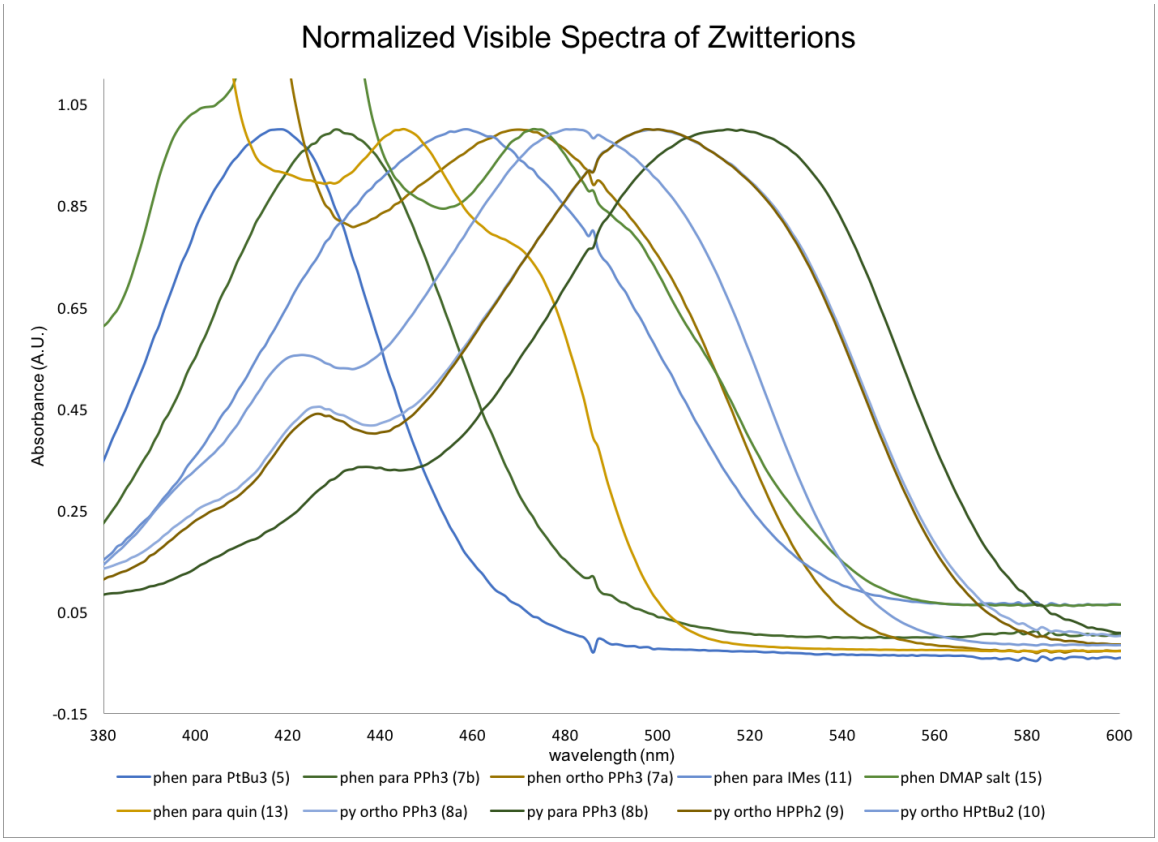

Figure 63 – normalized visible absorbance spectra of compounds **5** – **15** in DCM (spectrum of compound **13** was recorded in THF).