

Title for the supplementary materials:

Synthesis of intermediate, OFET character, ¹HNMR, ¹³CNMR, ¹⁹FNMR, and MS

Supporting information

Synthesis and Characterization of Fullerene Derivatives with Perfluoroalkyl Groups

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3a and 3b

According to general procedure¹, the mixture of acetic acid (80 mL) and acetic anhydride (40 mL) was added iodide (15.24 g, 60 mmol) at 0 °C and then chromium trioxide (6 g, 60 mmol) was added after 10 min. Half an hour later, sulfuric acid (10 mL) was added dropwisely with half an hour to keep the reaction temperature below 0 °C. The benzophenone (8.3 g, 50 mmol) was poured into the reaction mixture and was stirred at ambient temperature for 7 h which was followed by stirring at 70 °C for 3 h. The reaction mixture was poured into sodium sulfite solution with 15 g of sodium sulfite and was stirred for a moment. The solution was poured into ice and was extracted with dichloromethane. The organic layer was dried over MgSO₄. Purification was accomplished by column chromatography on silica gel with petroleum ether: dichloromethane = 1:1, providing **3a** (6.93 g; 45%; mp: 38 – 40 °C) and **3b** (8.68 g; 40%; mp: 138- 140 °C).

¹(1) Lulinski ;Piotr; Skulski, *Lech. Bull. Chem. Soc. Jpn.*; EN; 70, 7,1997,1665 – 1670.

Fabrication and characteristics of organic thin film transistors

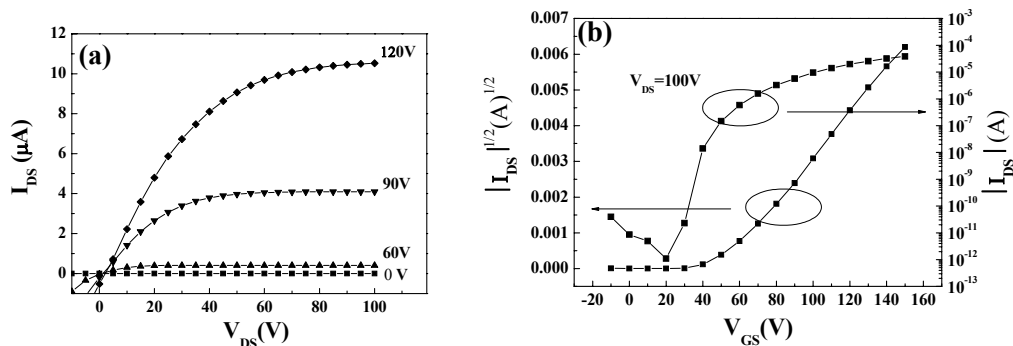


Figure S1. (a) Output and (b) transfer characteristics of the **1**-based OFETs fabricated under substrate temperature of 25 °C.

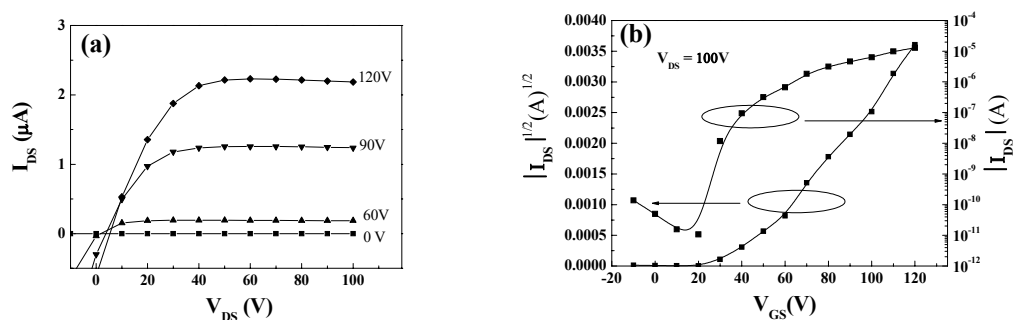


Figure S2. (a) Output and (b) transfer characteristics of the **2**-based OFETs fabricated under substrate temperature of 25 °C.

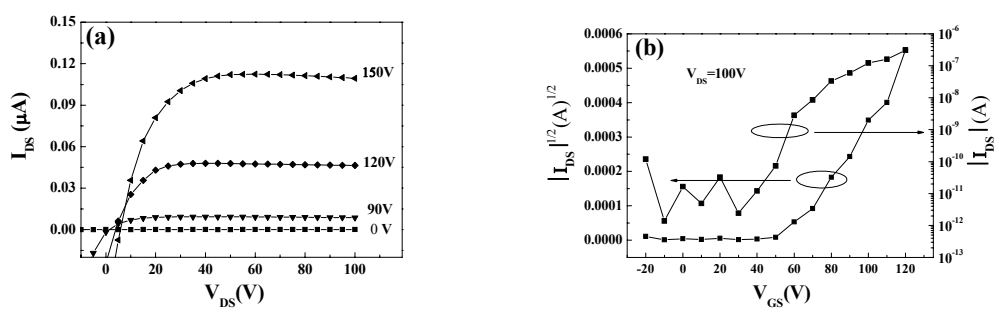
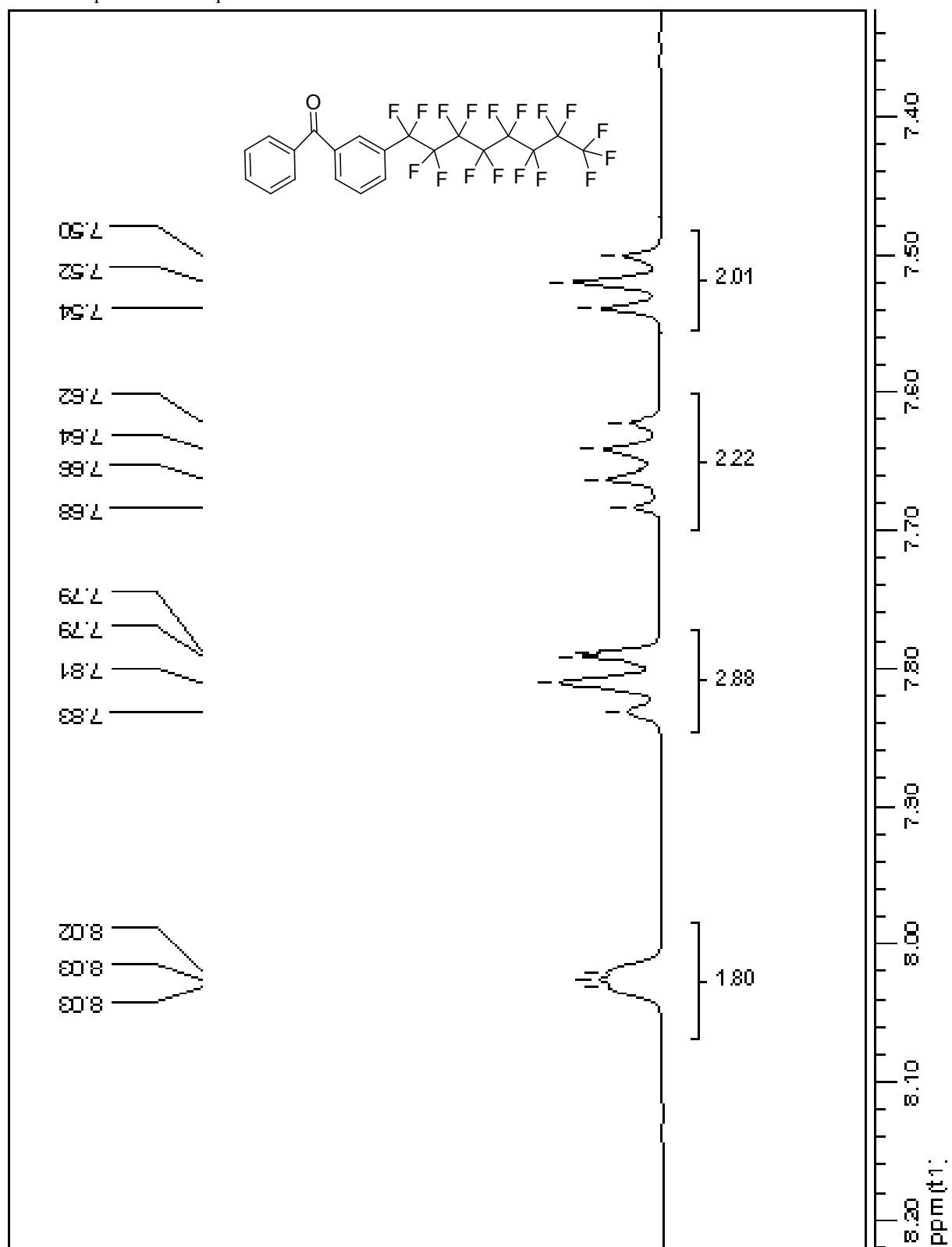
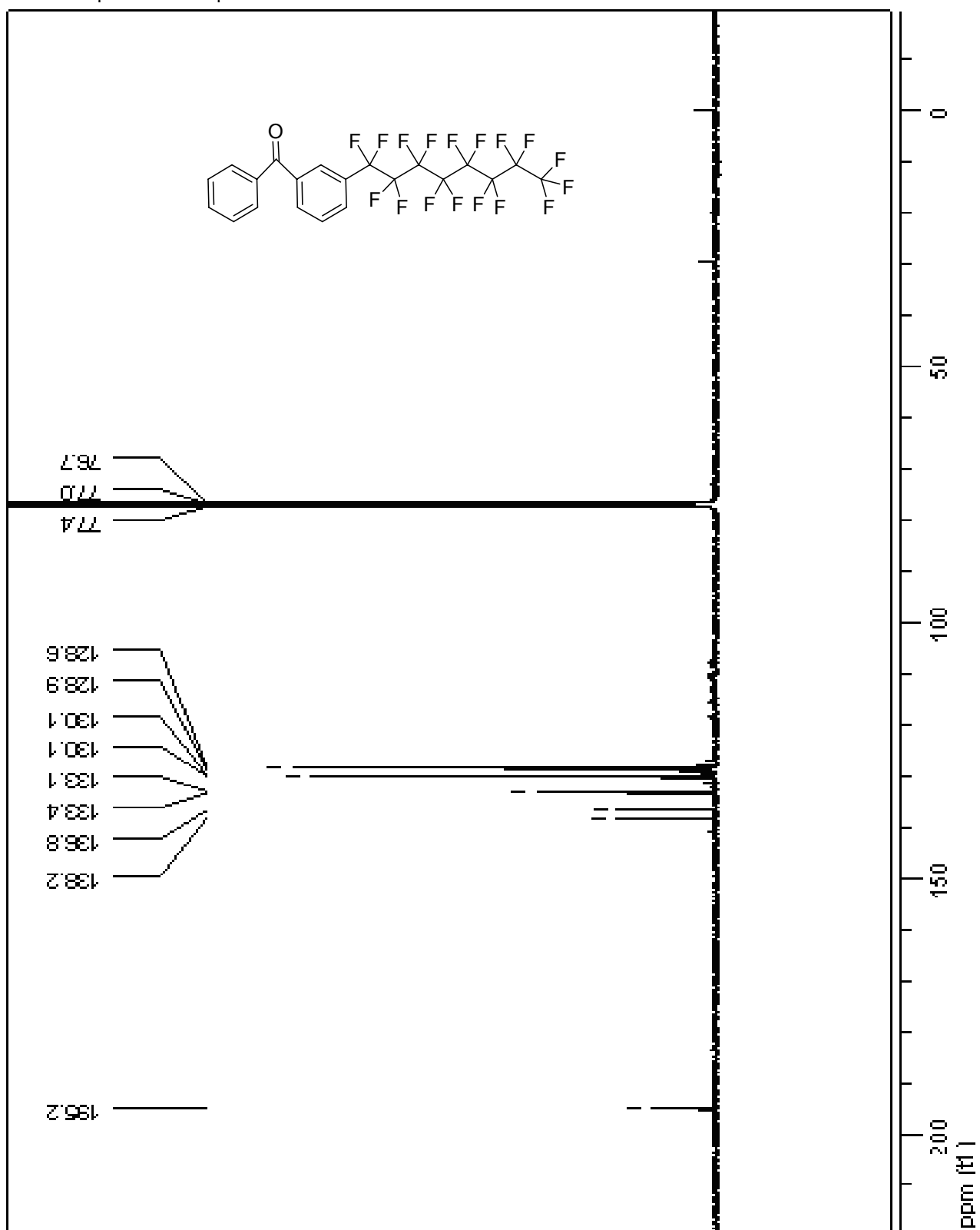


Figure S3. (a) Output and (b) transfer characteristics of the 2-based OFETs fabricated under substrate temperature of 100 °C.

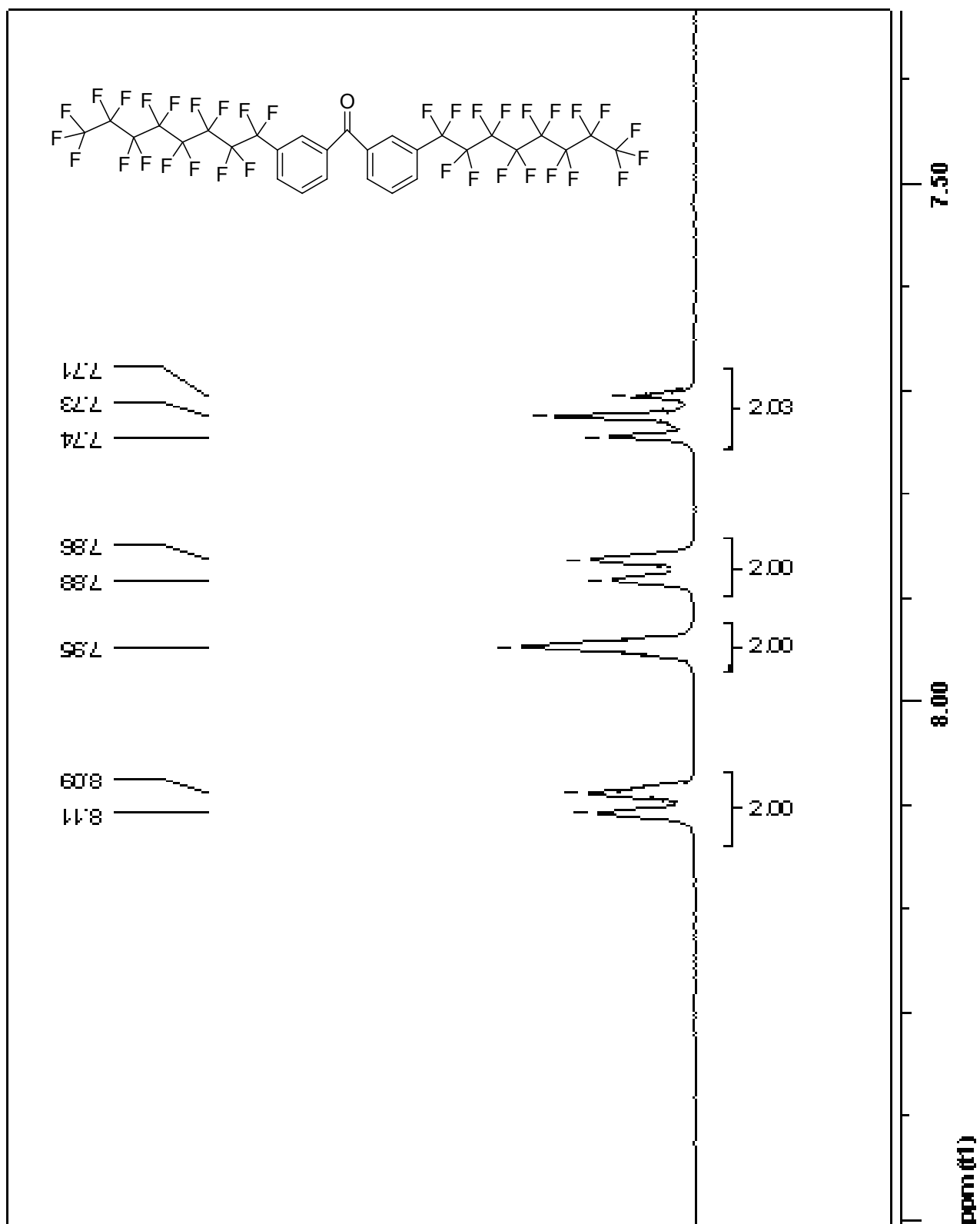
¹H NMR Spectra of Compound **4b**



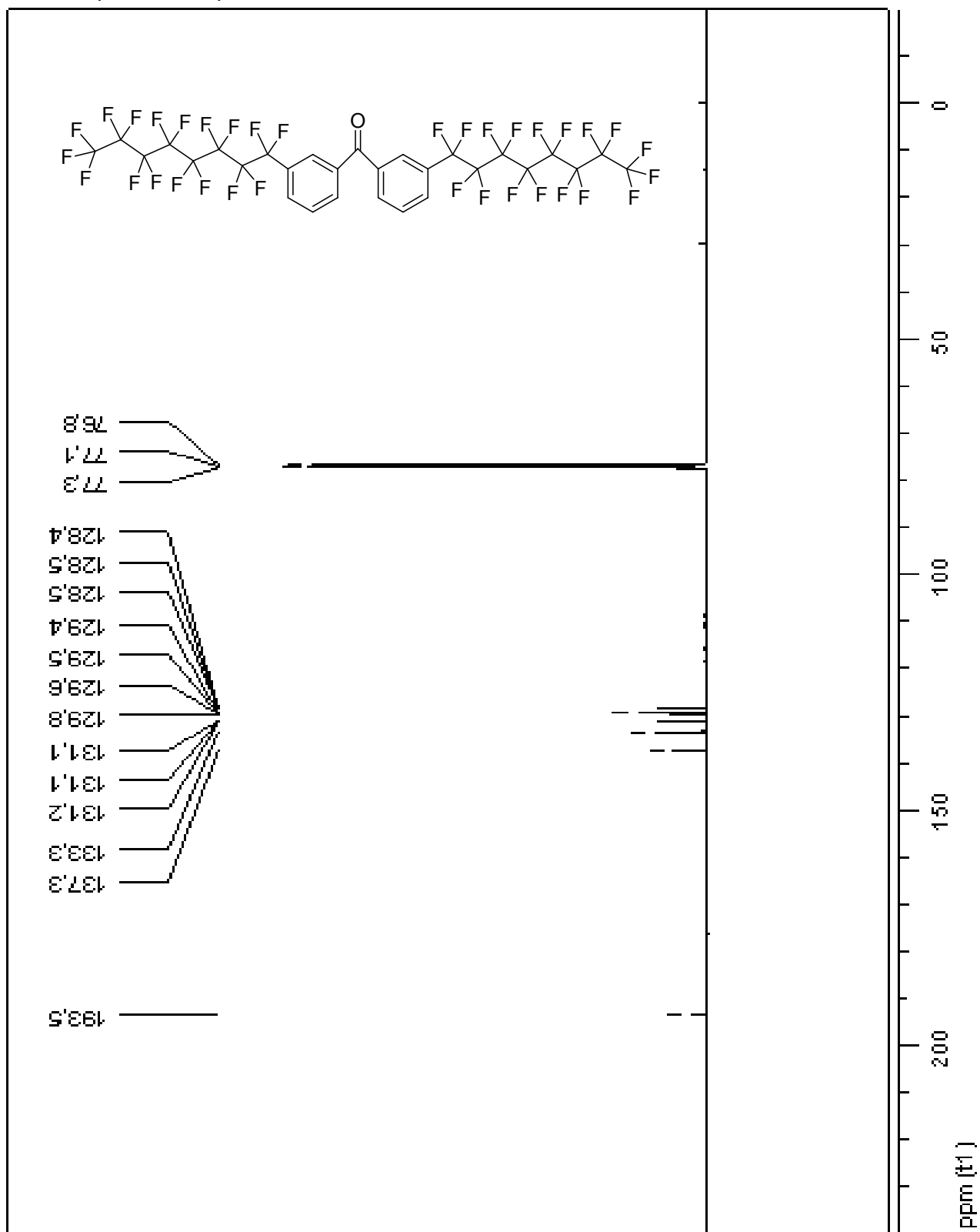
¹³CNMR Spectra of Compound **4b**



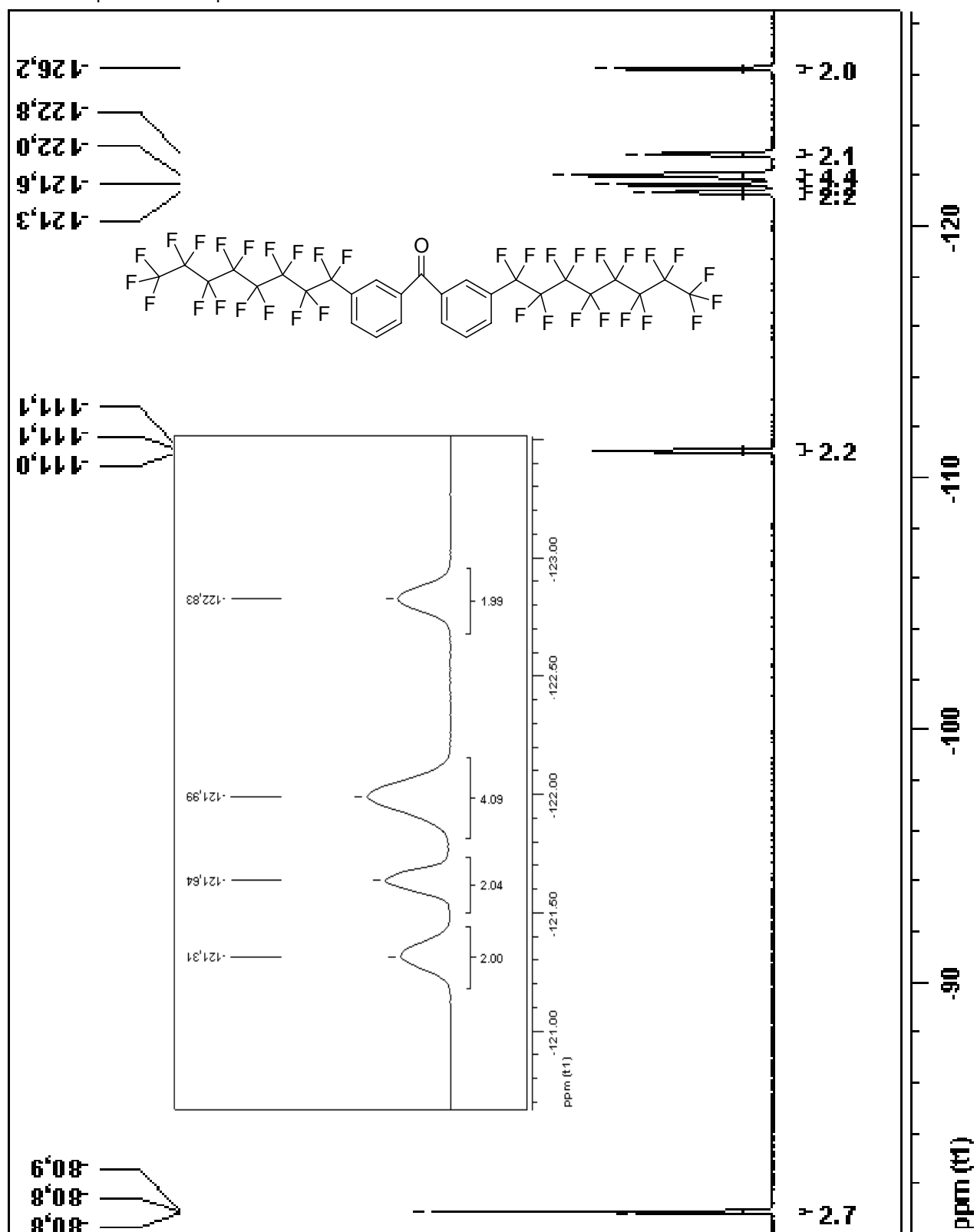
¹H NMR Spectra of Compound 4a



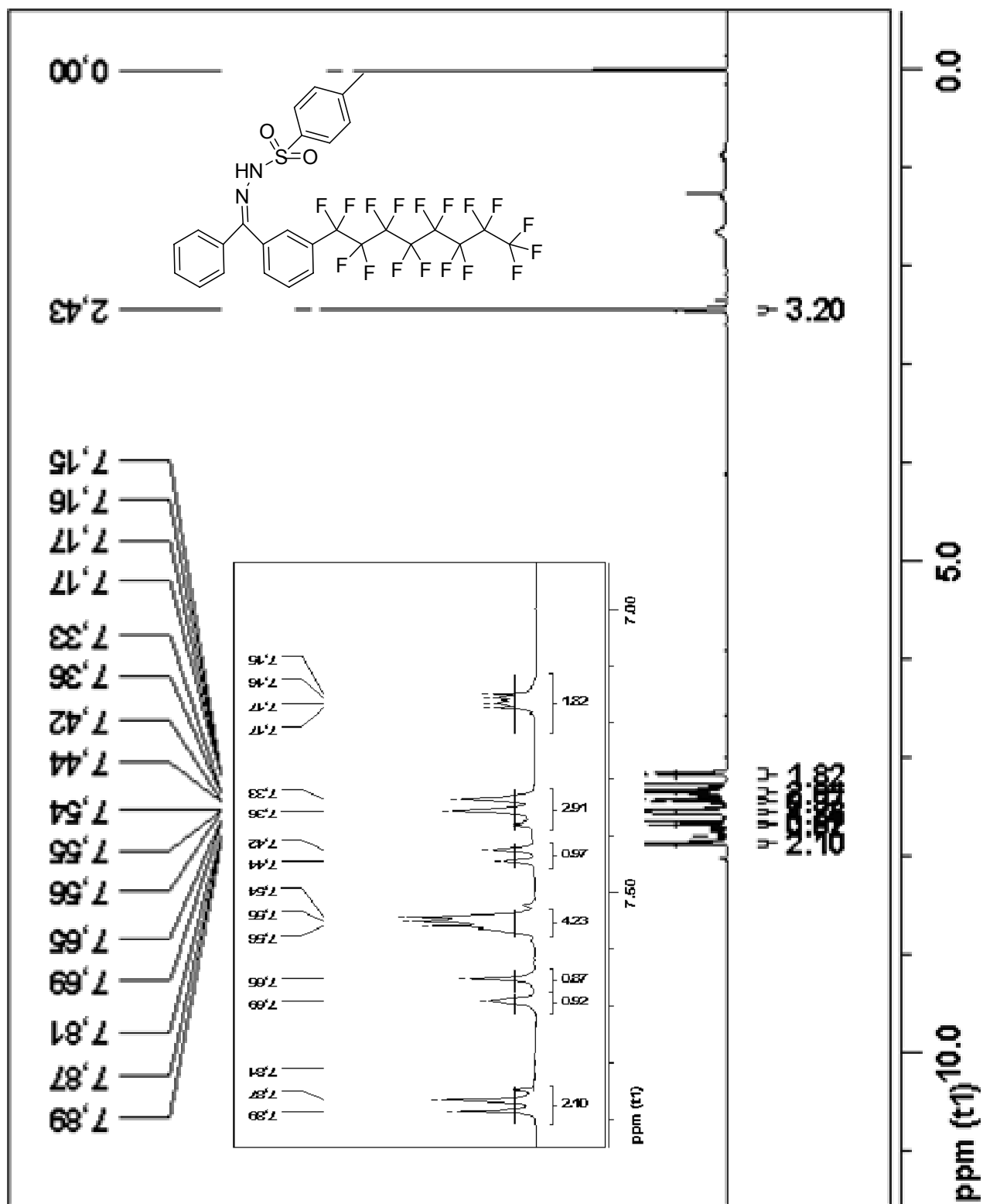
¹³CNMR Spectra of Compound **4a**



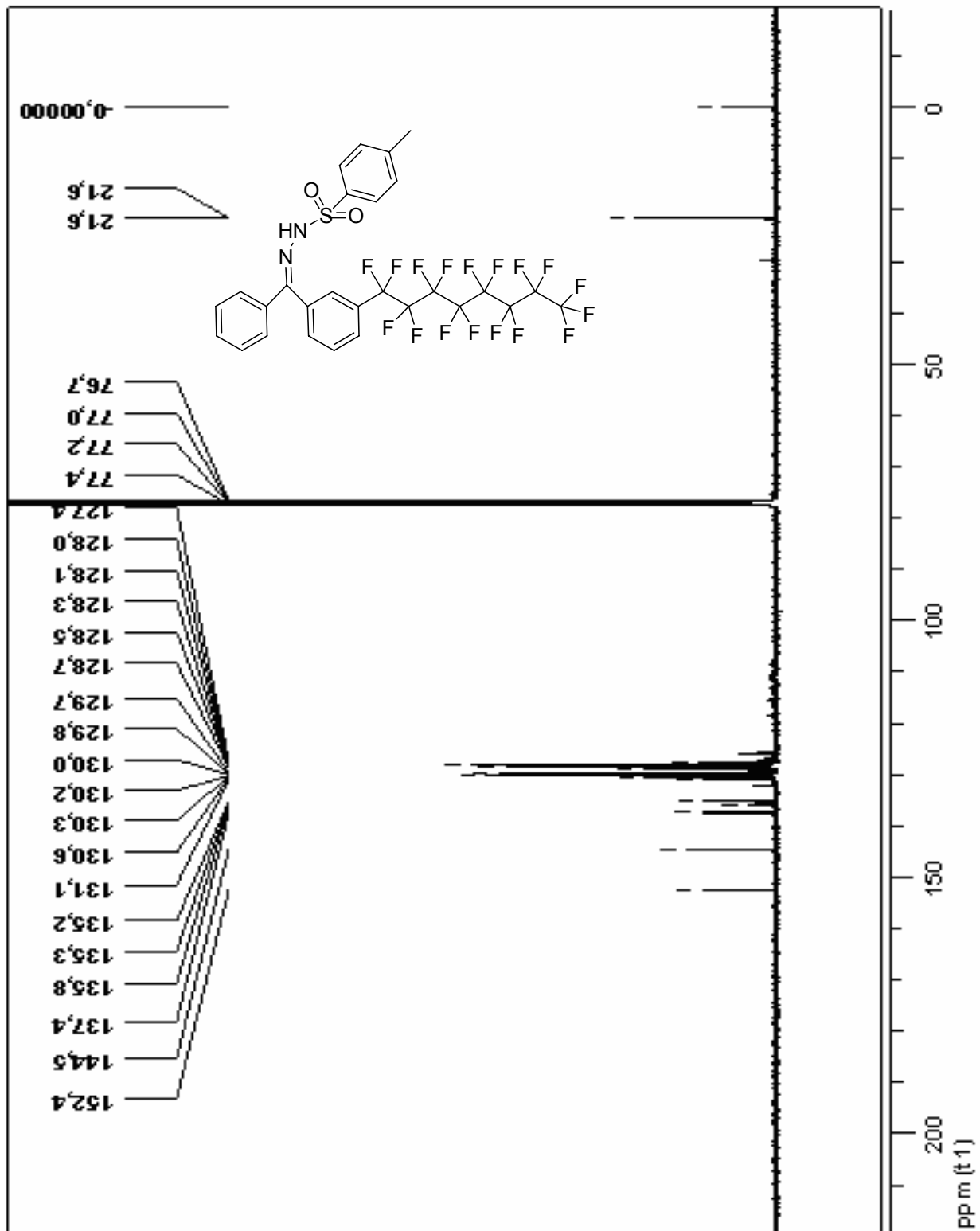
¹⁹F NMR Spectra of Compound 4a



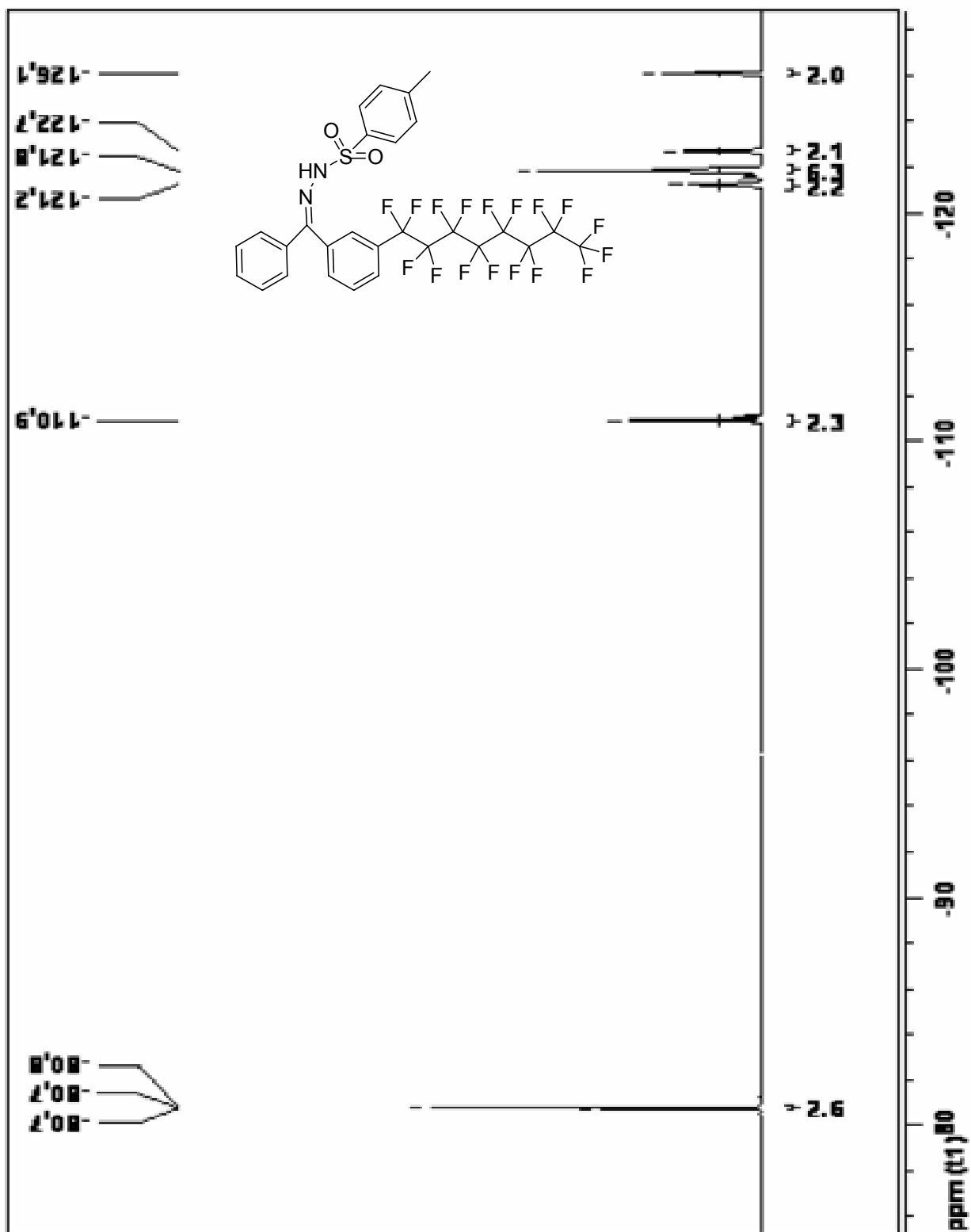
¹H NMR Spectra of Compound **5b**



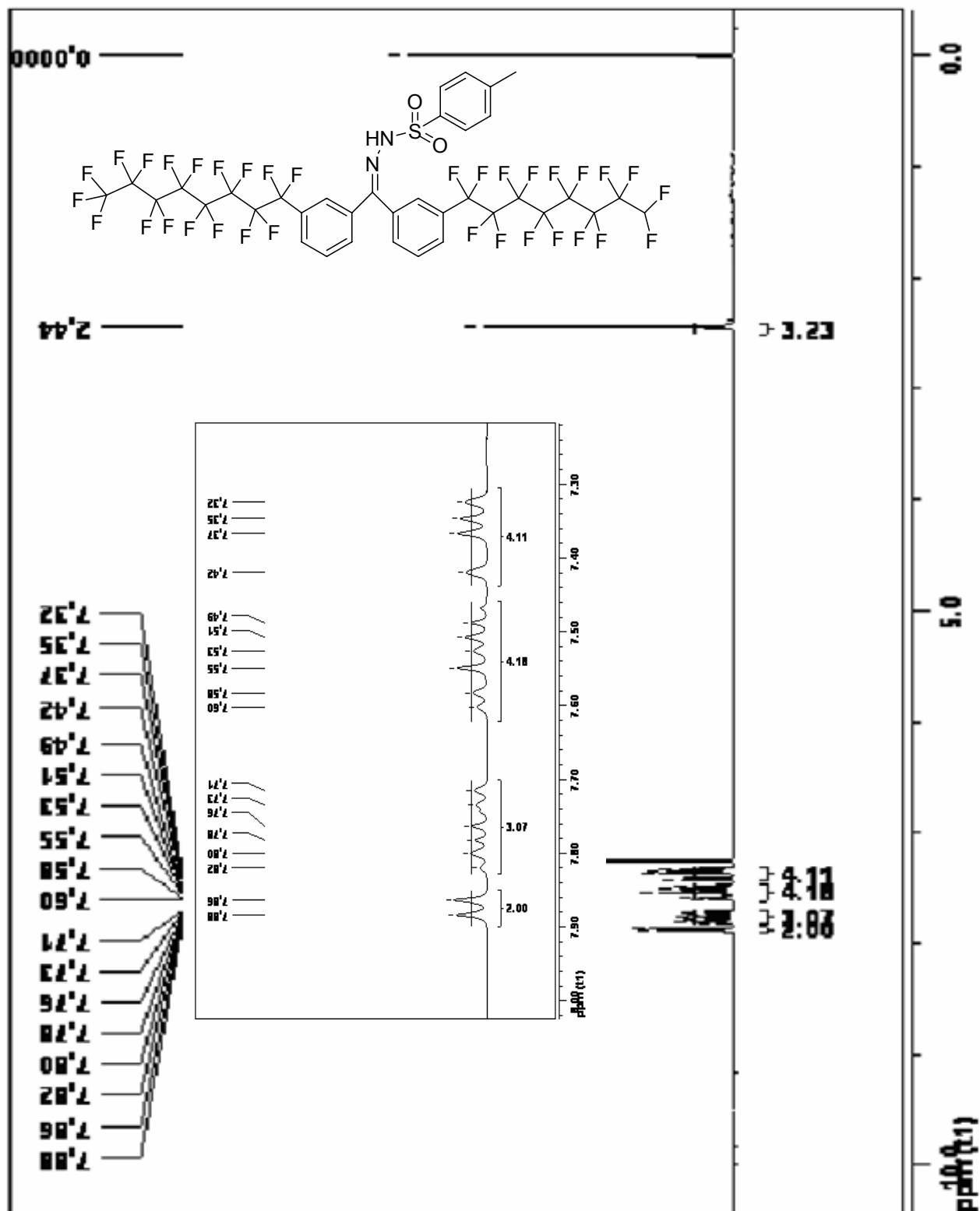
¹³CNMR Spectra of Compound **5b**



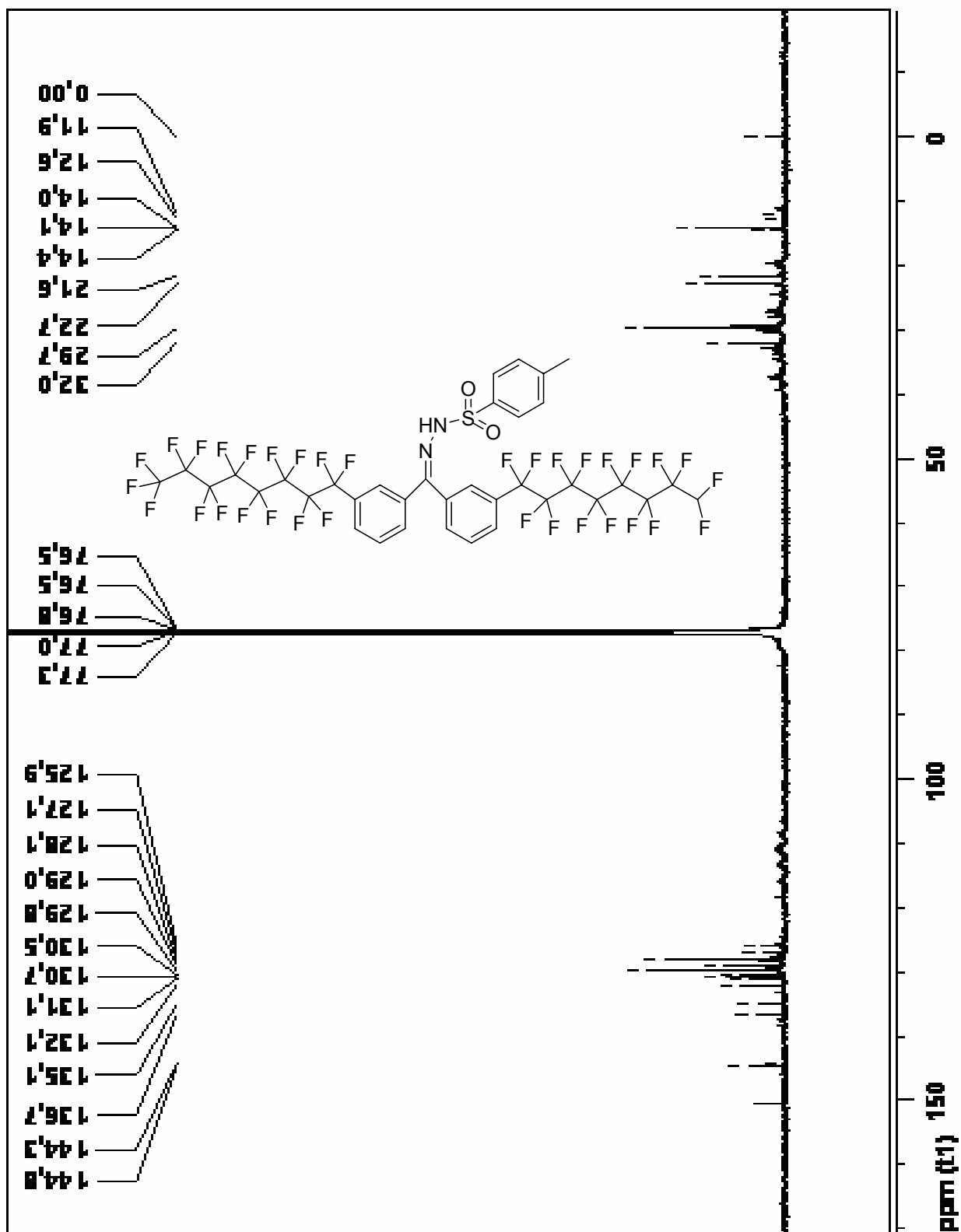
¹⁹F NMR Spectra of Compound **5b**



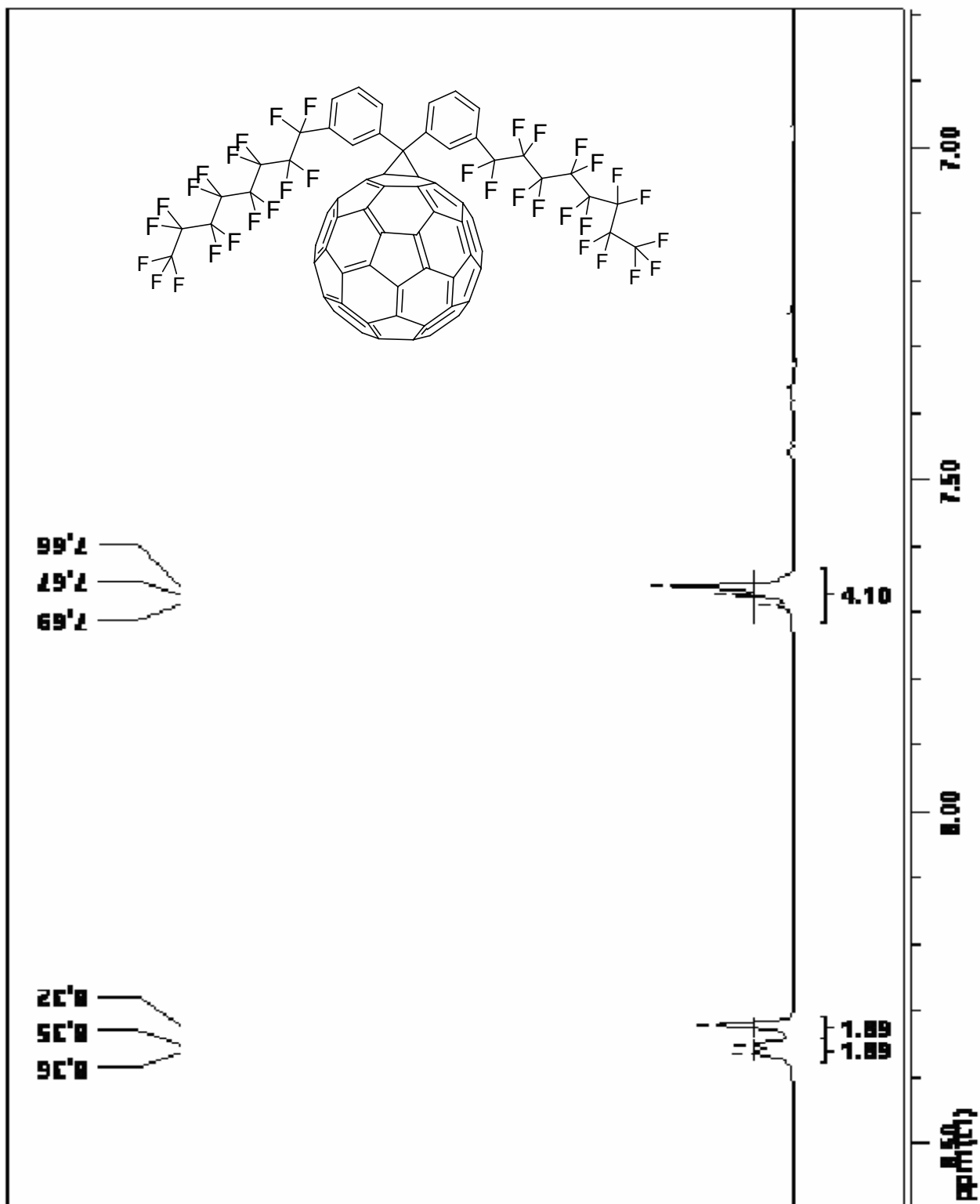
¹H NMR Spectra of Compound 5a



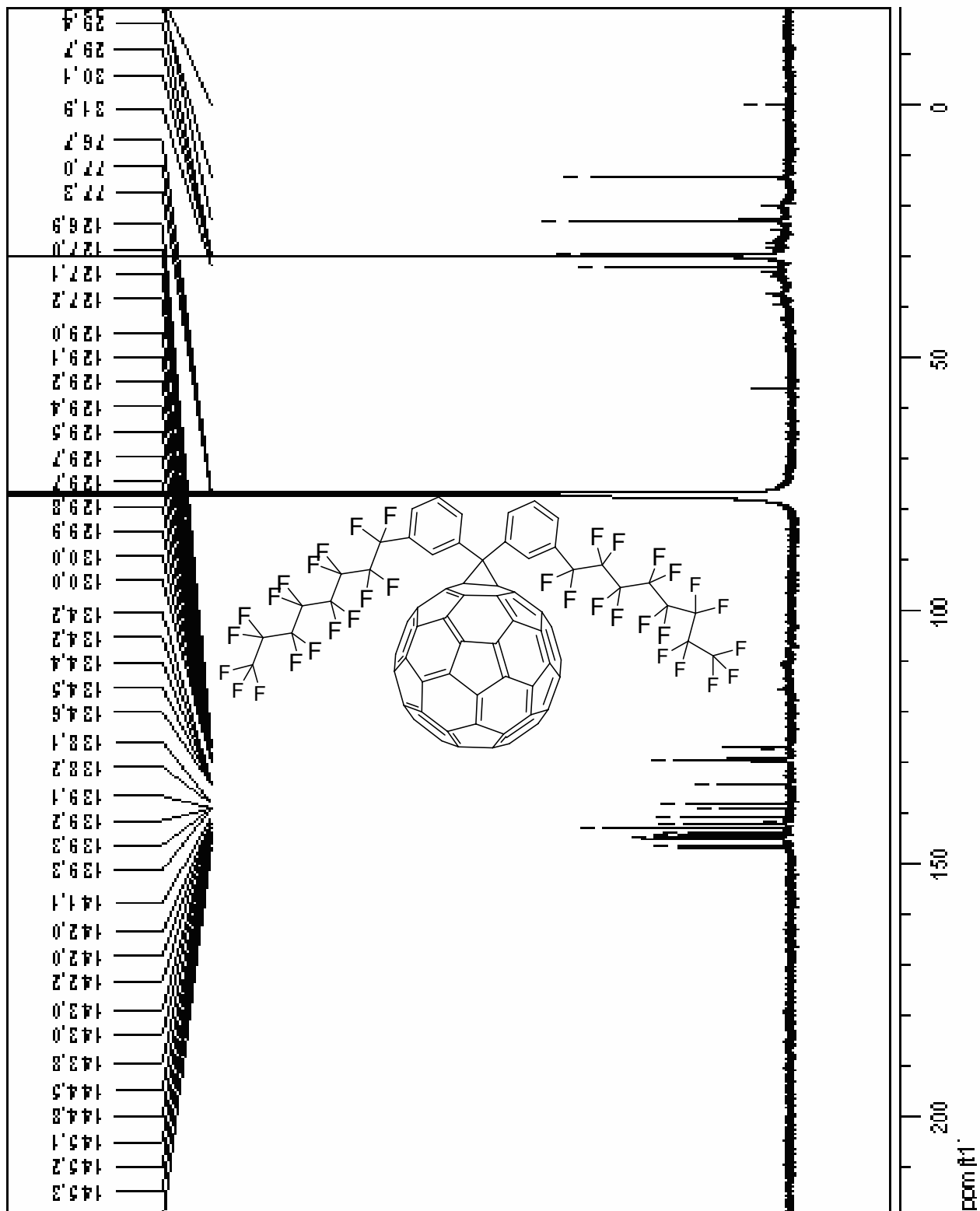
¹³CNMR Spectra of Compound 5a



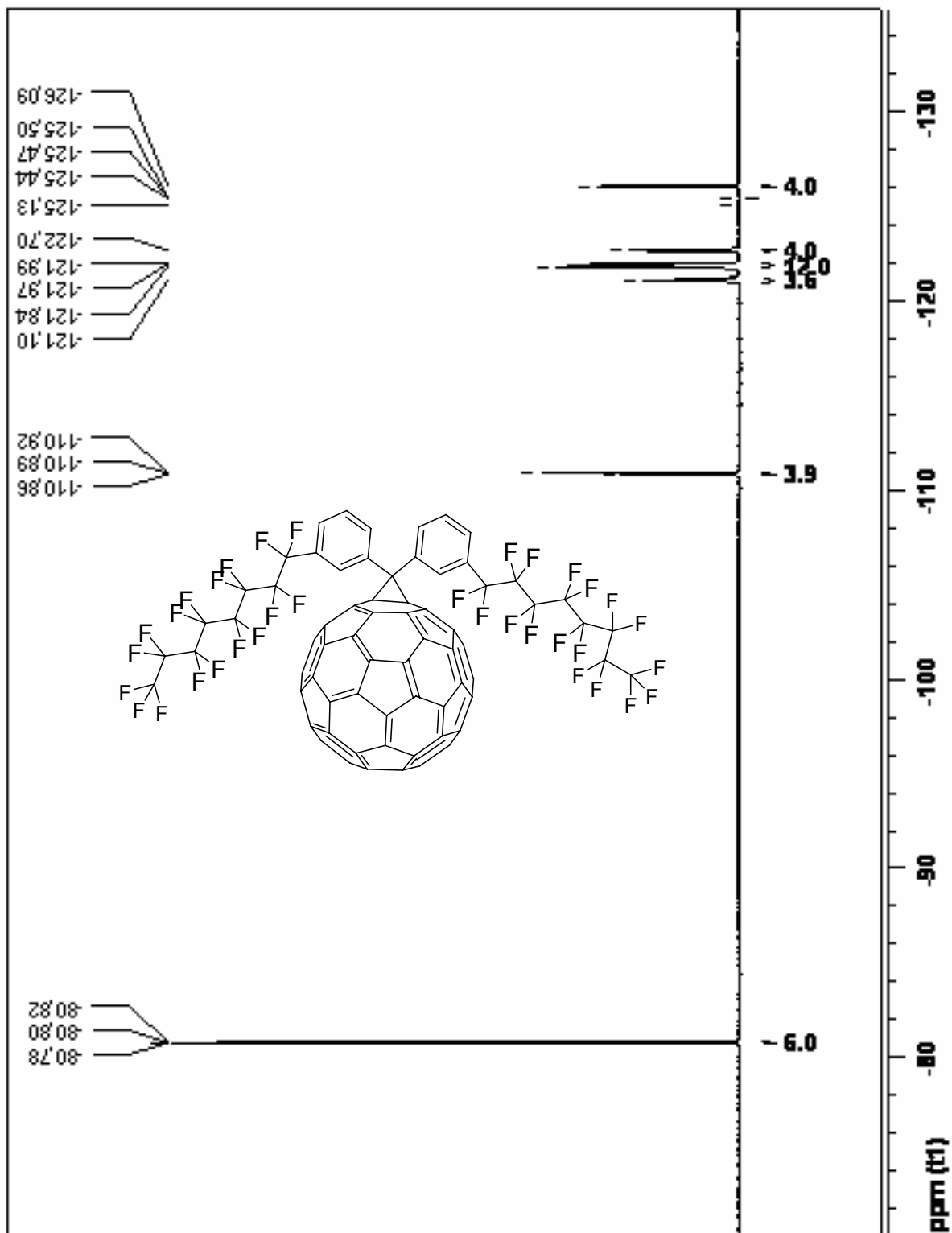
^1H NMR Spectra of Compound 1



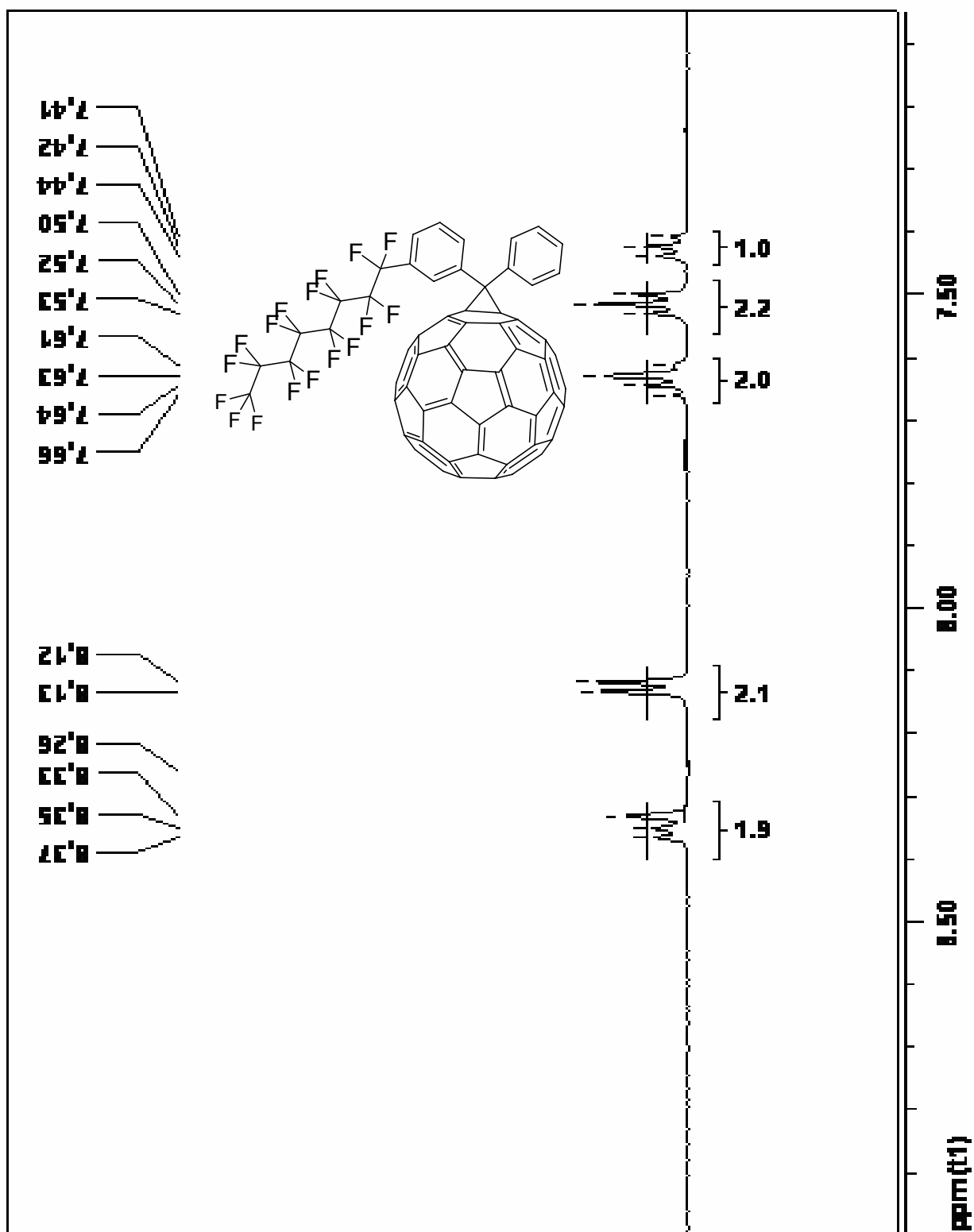
¹³CNMR Spectra of Compound 1



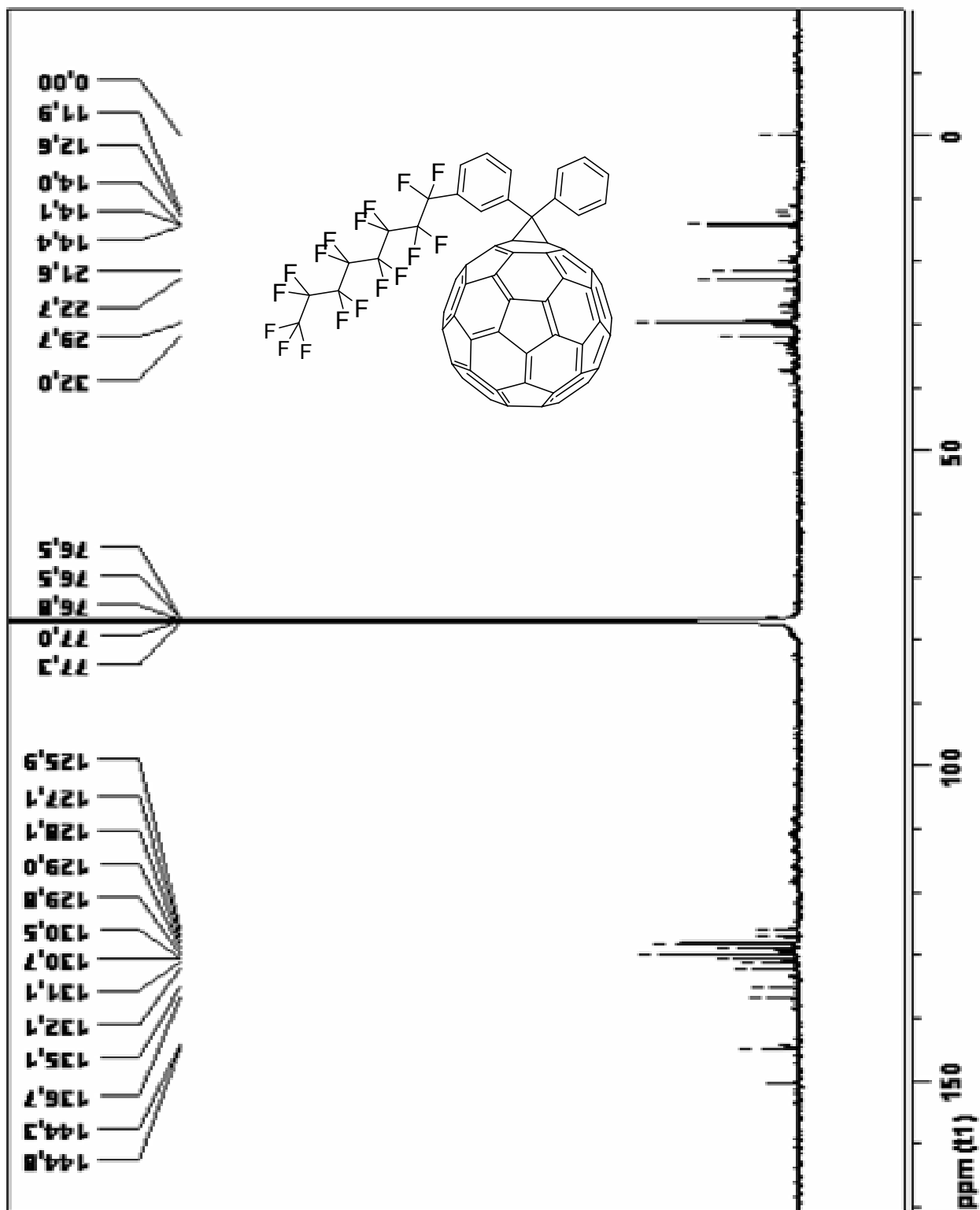
¹⁹F NMR Spectra of Compound 1



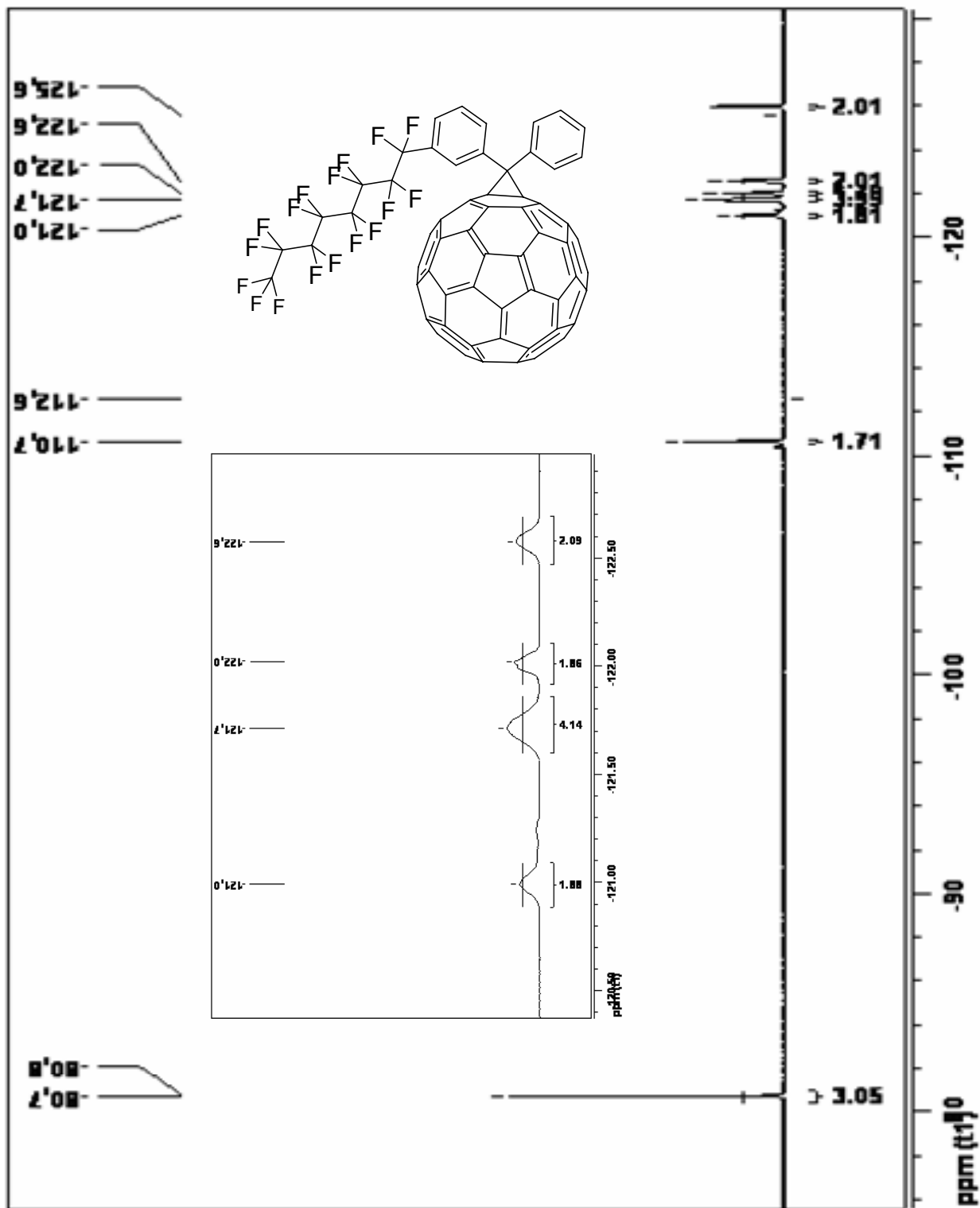
¹H NMR Spectra of Compound 2



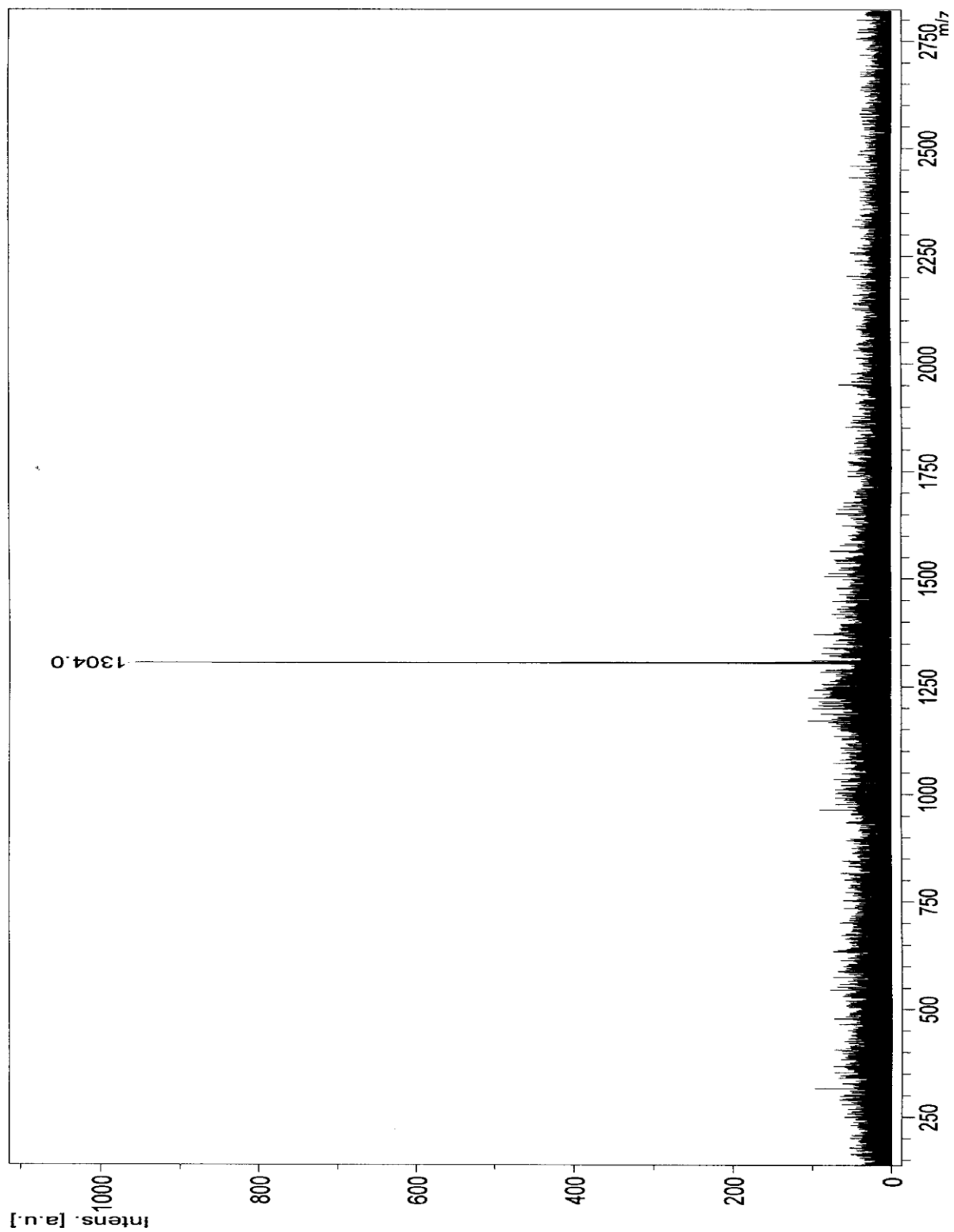
¹³CNMR Spectra of Compound 2



¹⁹F NMR Spectra of Compound 2



MALDI - TOF of Compound 2



MALDI - TOF of Compound 1

