

Electronic Supplementary Information for

**6,13-Dicyano pentacene-2,3:9,10-bis(dicarboximide) for
solution-processed air-stable n-channel field effect
transistors and complementary circuit**

**Jingjing Chang,^a Hemi Qu,^a Zi-En OOI,^b Jie Zhang,^b Zhikuan Chen,^b
Jishan Wu^{ab} and Chunyan Chi*^a**

*^aDepartment of Chemistry, National University of Singapore, 3 Science
Drive 3, Singapore 117543, E-mail: chmcc@nus.edu.sg*

*^bInstitute of Materials Research and Engineering, A*Star, 3 Research
Link, Singapore 117602*

1. Fluorescence spectrum of compound 1

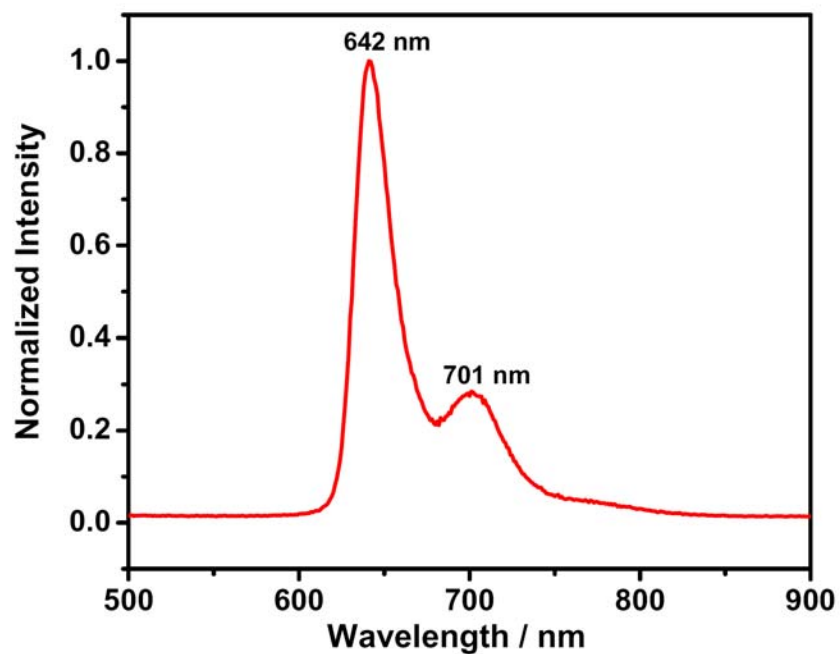


Fig. S1 Fluorescence spectrum of compounds **1** in CHCl_3 (1×10^{-6} M). Excitation wavelength is 361 nm.

2. Thermal behavior of compound 1

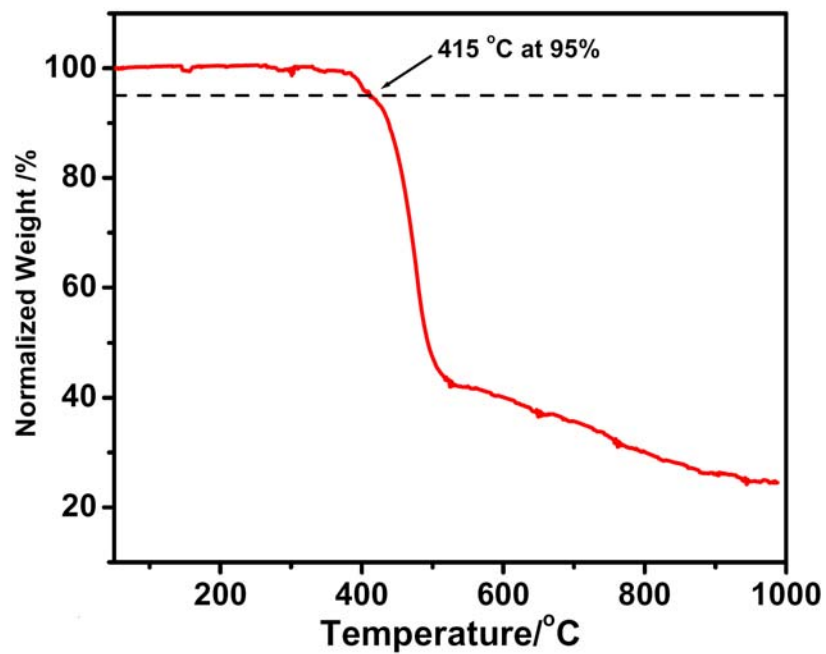


Fig. S2 Thermogravimetric analysis curve of compound **1** under nitrogen.

3. Additional morphological and electrical characterizations

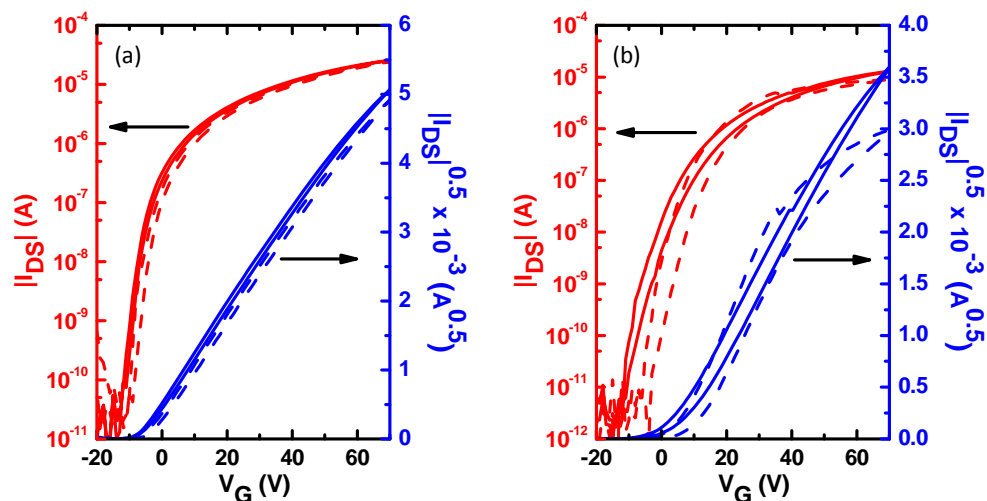


Figure S3. Transfer plots ($V_D = 70$ V) for a fresh device (solid line) and after 6 months storage in N_2 (a) or air (b). (a) The devices were tested in N_2 ; (b) the devices were tested in air.

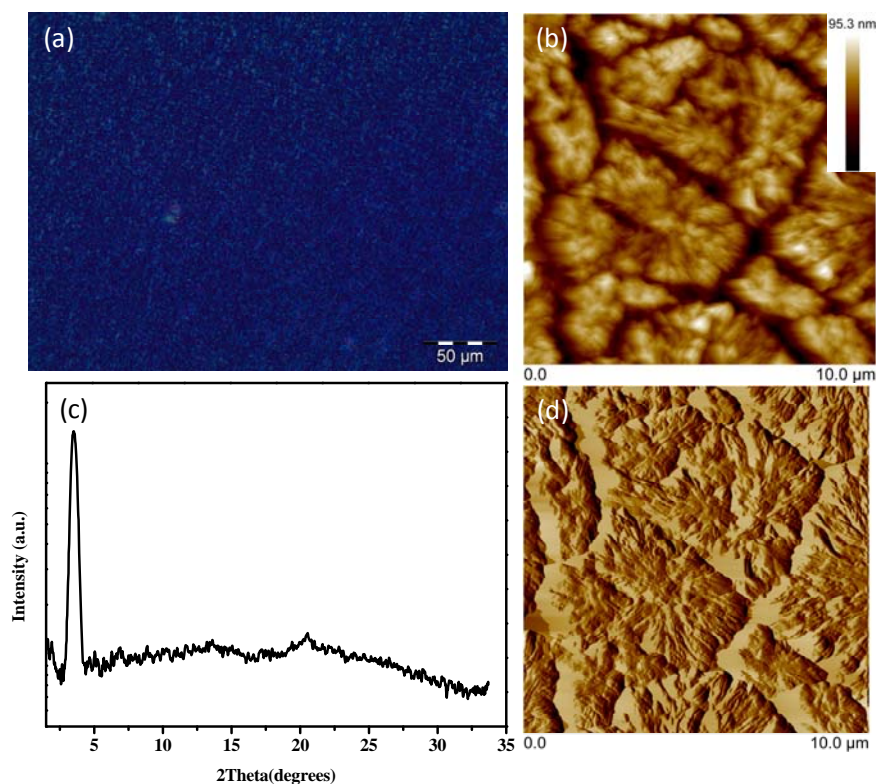
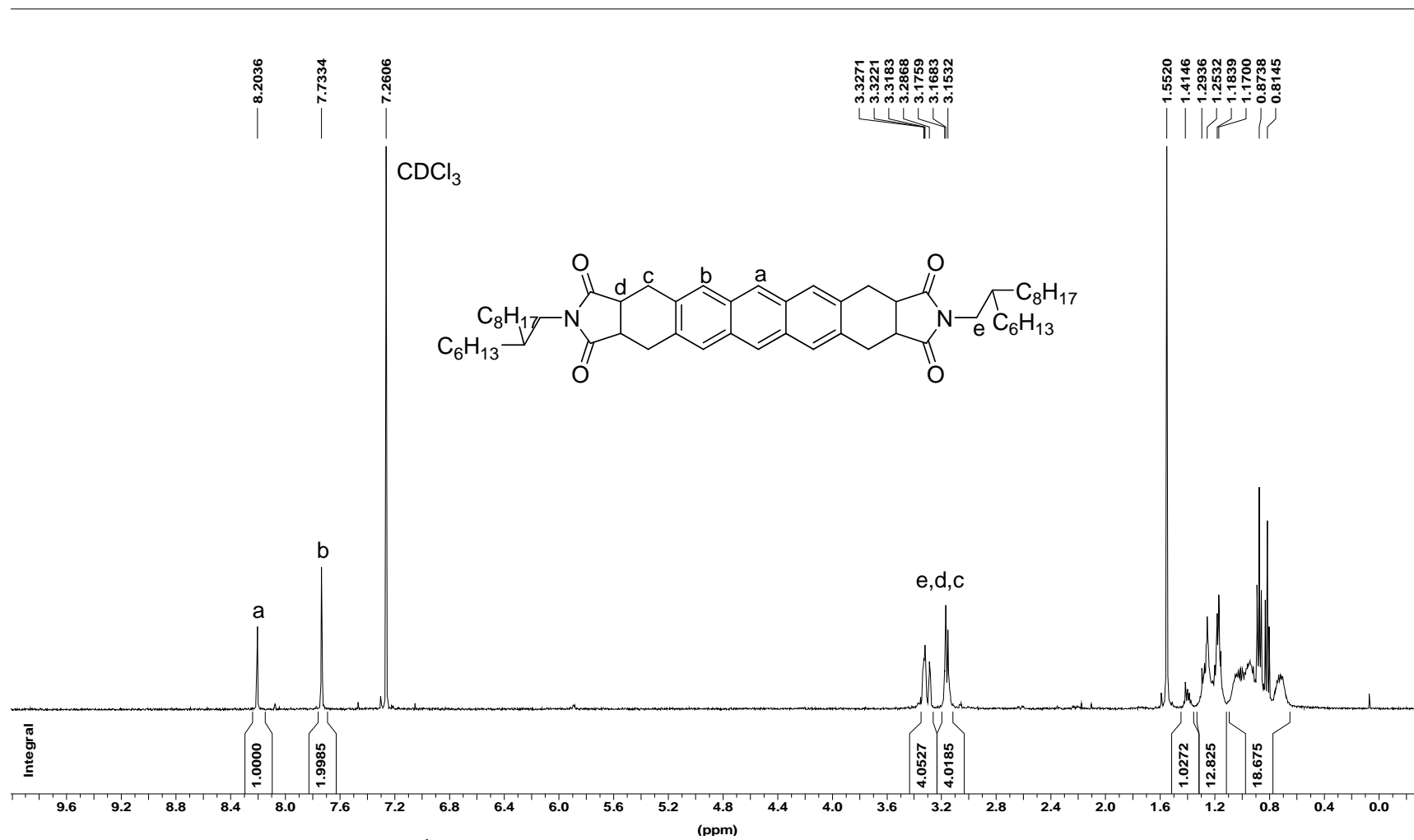
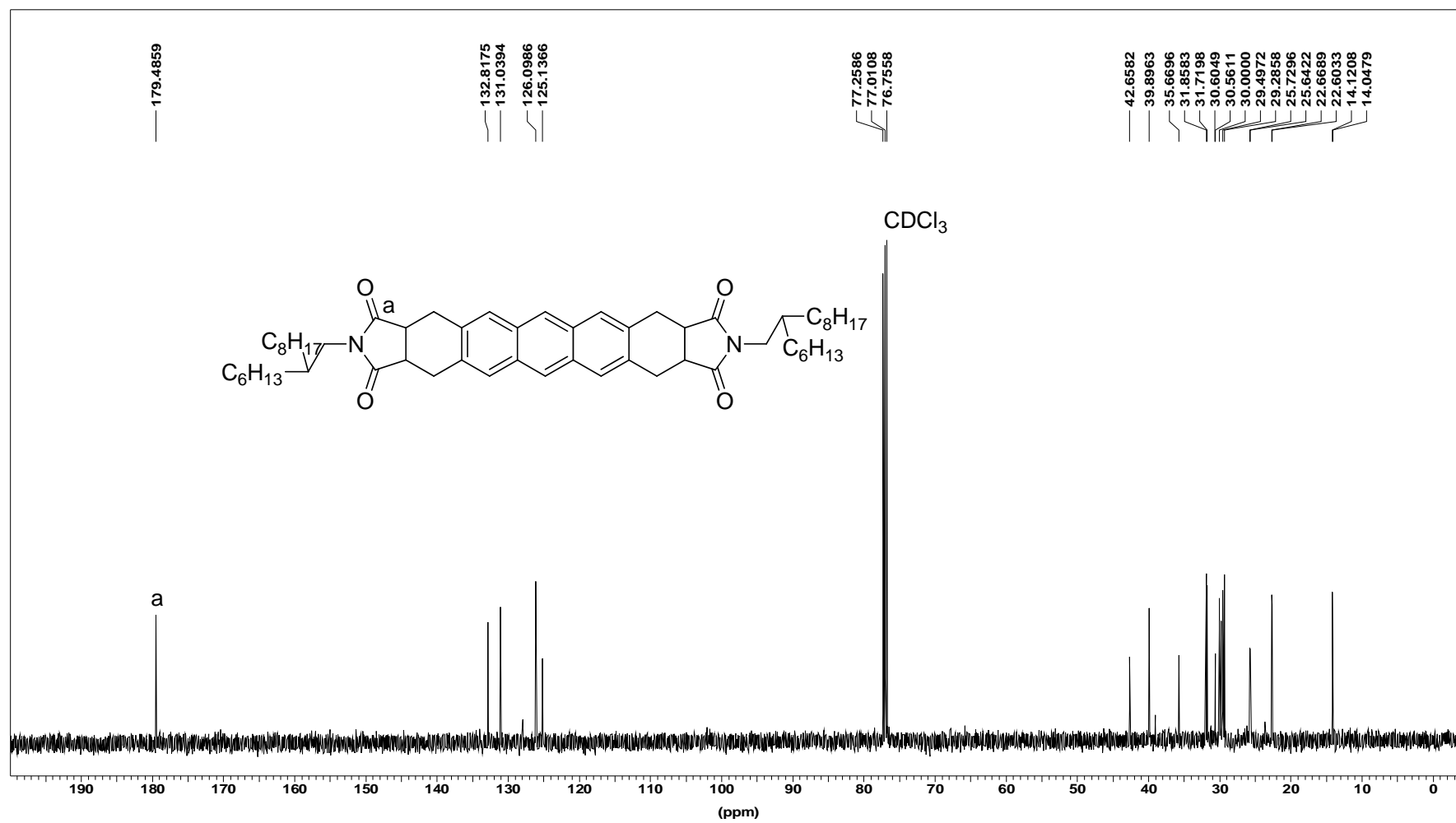


Fig. S4 (a) Polarized optical microscopy image of drop casted thin film from DCB solution; (b, d) tapping-mode AFM images of the thin film from DCB solution; (c) X-ray diffraction of the thin film in logarithmic scale.

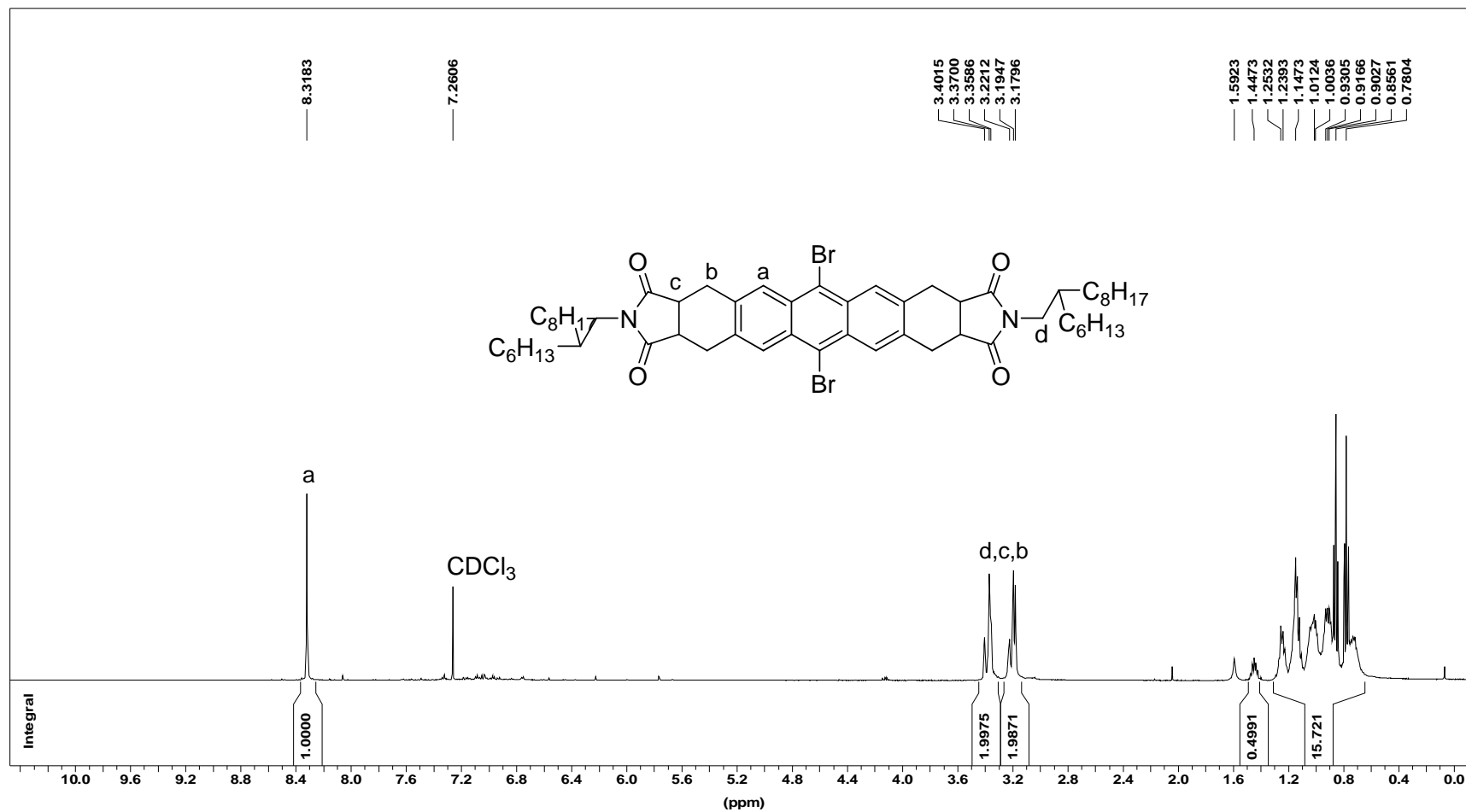
4. ^1H NMR and ^{13}C NMR spectra of compounds **5**, **6**, **8** and **1**.



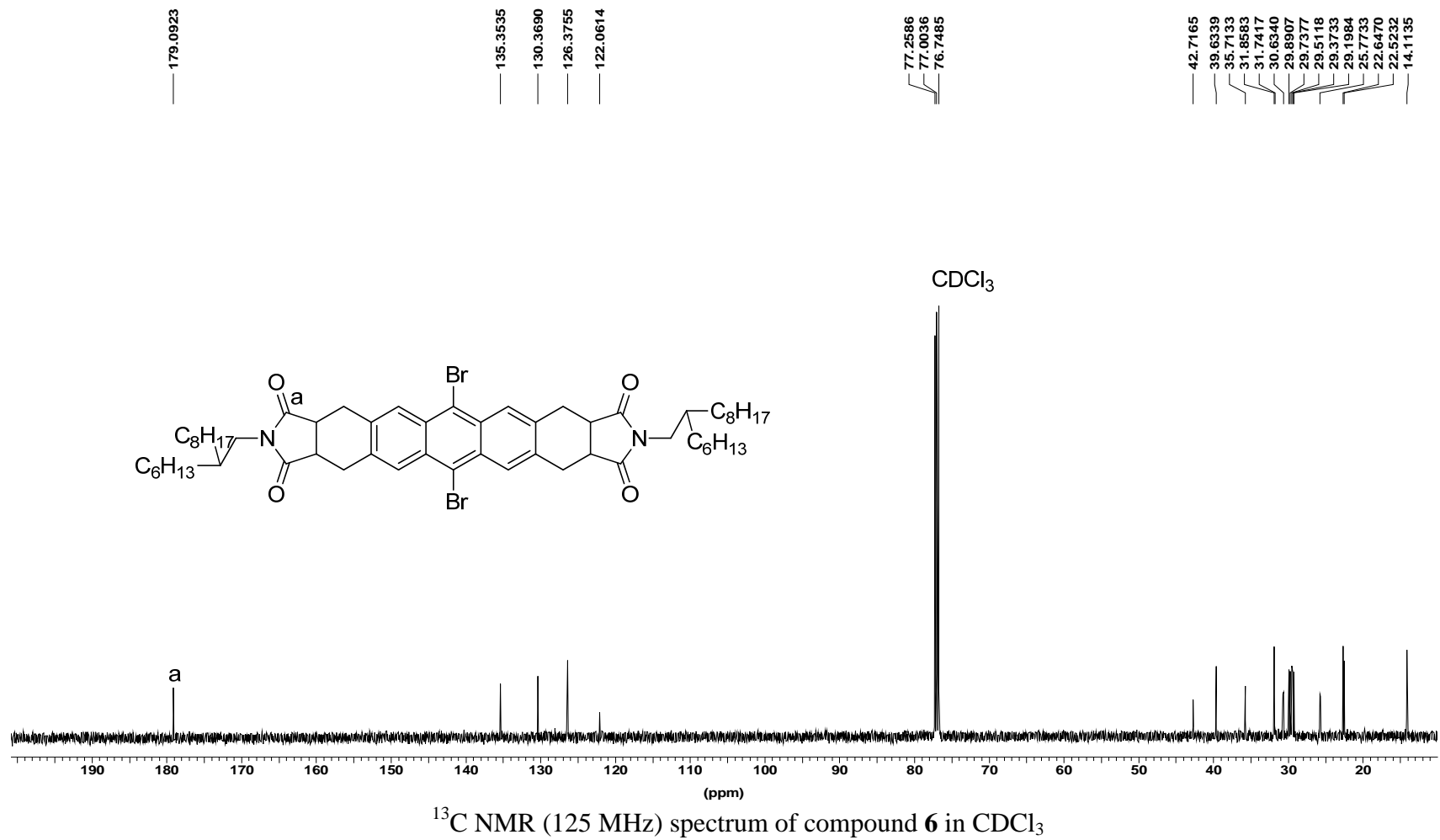
^1H NMR (500 MHz) spectrum of compound **5** in CDCl_3

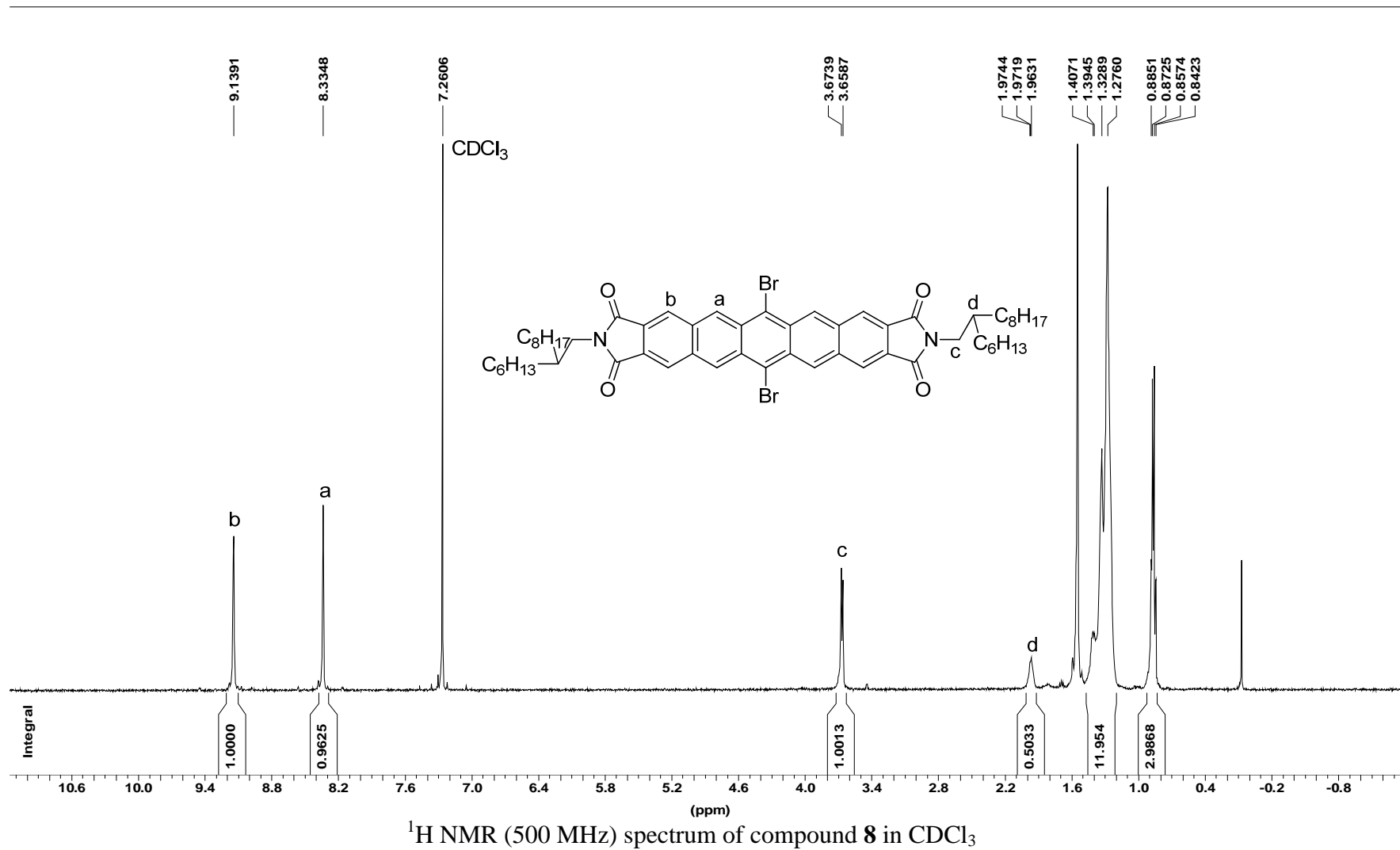


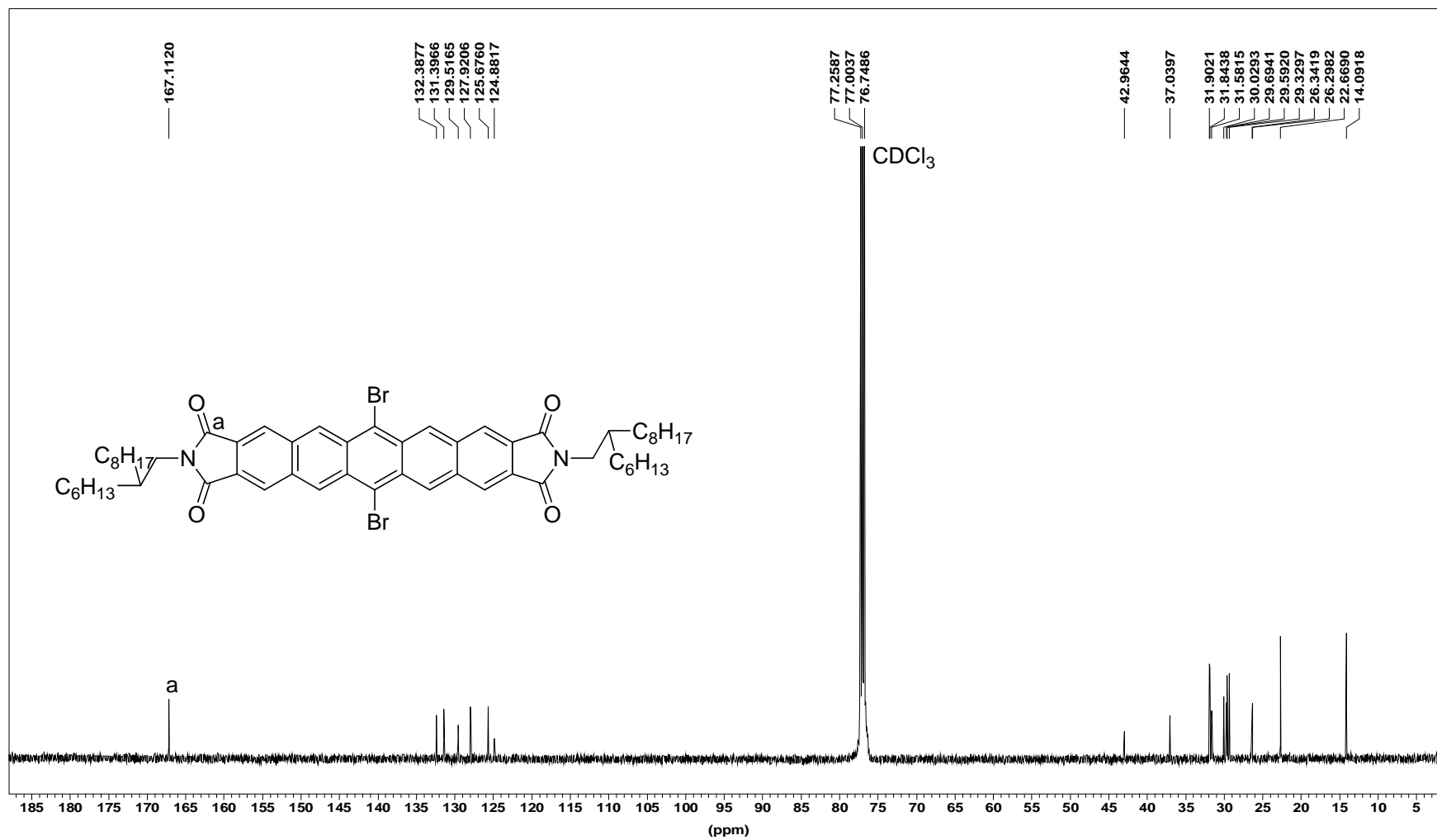
^{13}C NMR (125 MHz) spectrum of compound **5** in CDCl_3



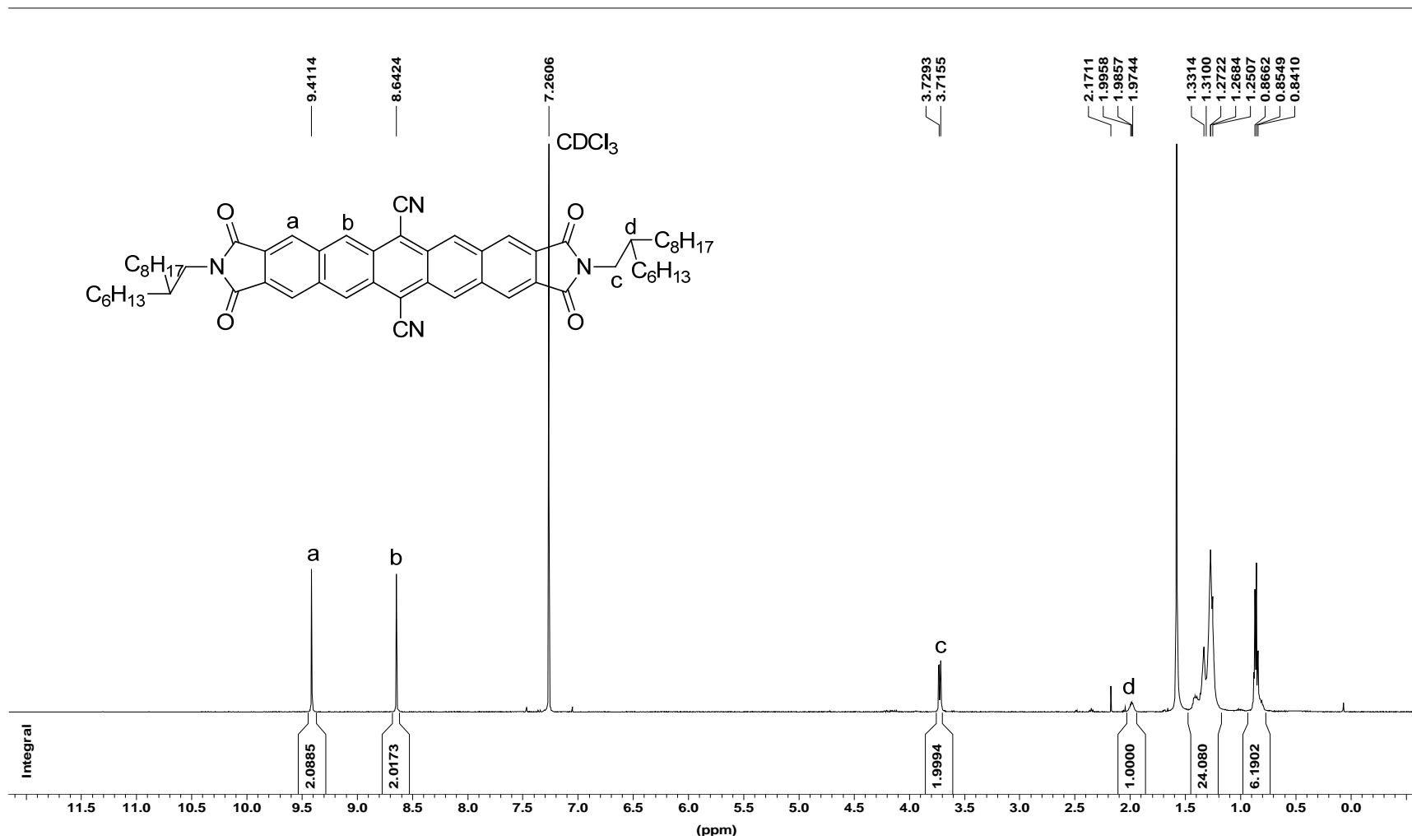
¹H NMR (500 MHz) spectrum of compound **6** in CDCl₃



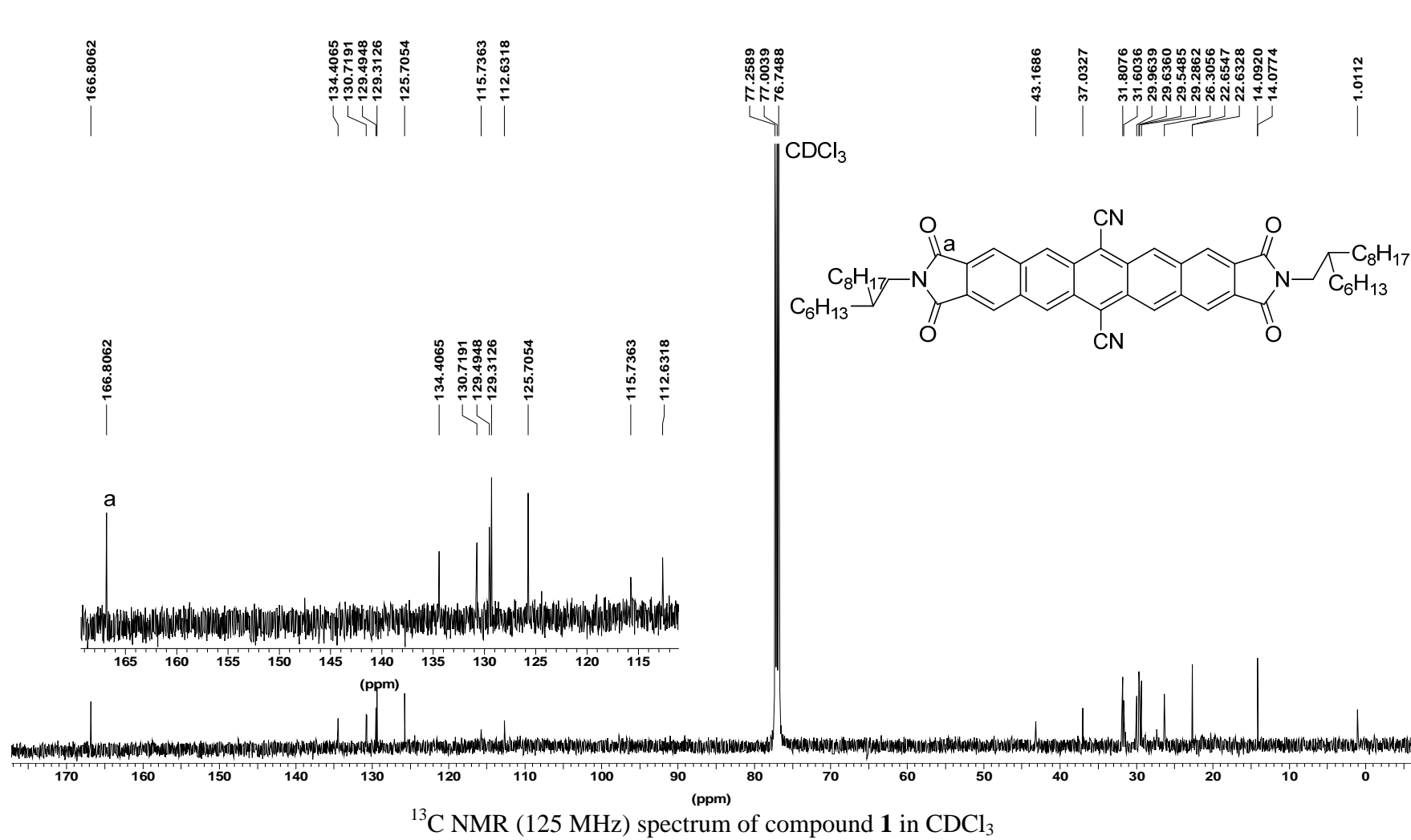




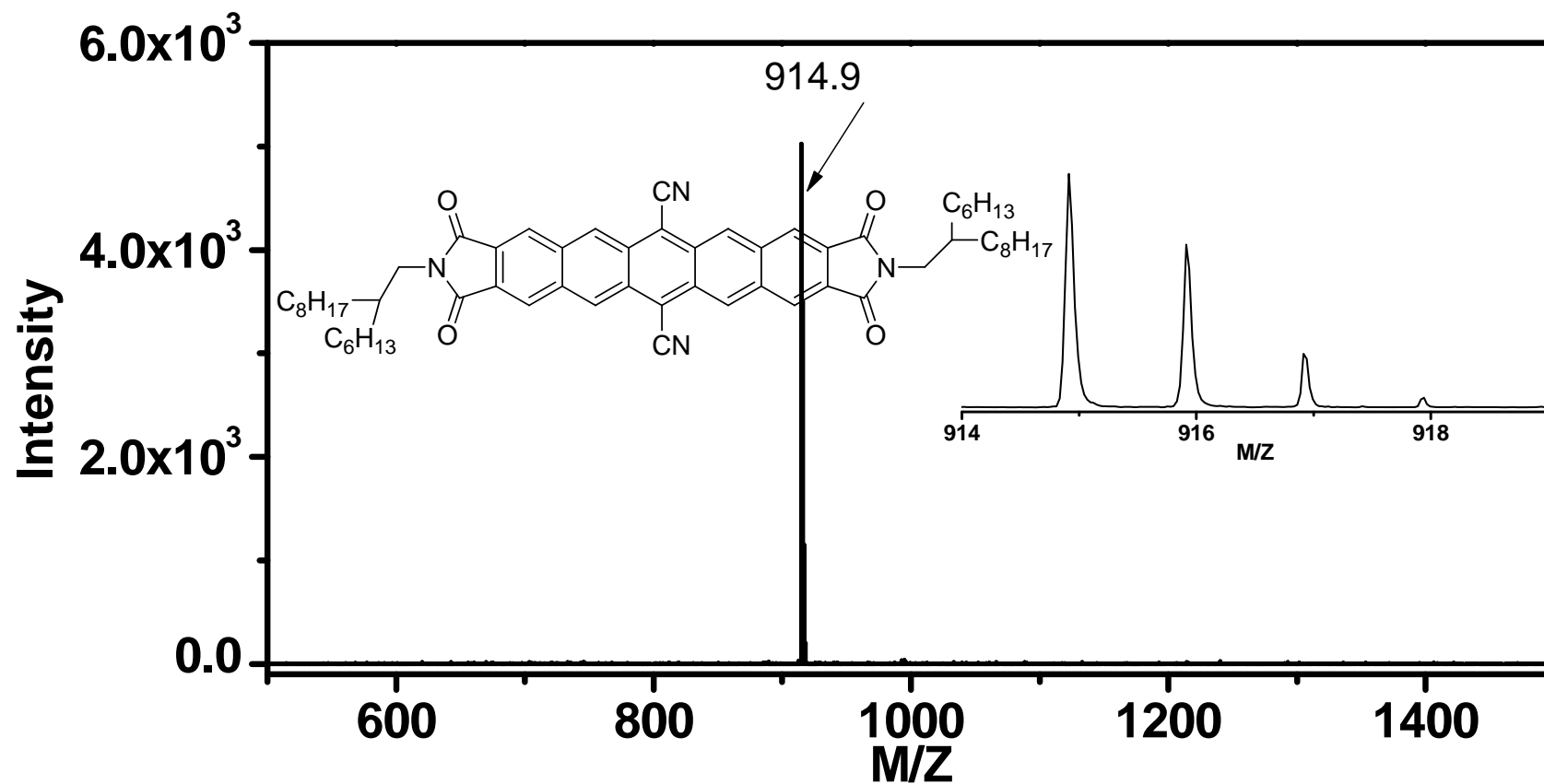
¹³C NMR (125 MHz) spectrum of compound **8** in CDCl₃



^1H NMR (500 MHz) spectrum of compound **1** in CDCl_3



5. MALDI-TOF spectrum of compound 1



MALDI-TOF spectrum of compound 1.