

# Awakening a Molecular Mummy: The Inter- and Intramolecular Photochemistry of Pyromellitic Diimides with Alkyl Carboxylates

Wolfgang H. Kramer <sup>1,\*</sup>, Donya Razinoubakht <sup>1</sup>, Gurjit Kaur <sup>1</sup>, Axel Klein <sup>2</sup>, Simon Garbe <sup>2</sup>, Jörg Neudörfl <sup>3</sup>, Sabrina Molitor <sup>3</sup>, Anne Zimmer <sup>3</sup> and Axel G. Griesbeck <sup>3,\*</sup>

<sup>1</sup> Department of Chemistry and Biochemistry, Millsaps College, 1701 North State Street, Jackson, MS 39210, USA

<sup>2</sup> Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Cologne, Inorganic Chemistry, Greinstr. 6, 50939 Köln, Germany

<sup>3</sup> Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Cologne, Organic Chemistry, Greinstr. 4, 50939 Köln, Germany

\* Correspondence: kramewh@millsaps.edu (W.H.K.); griesbeck@uni-koeln.de (A.G.G.)

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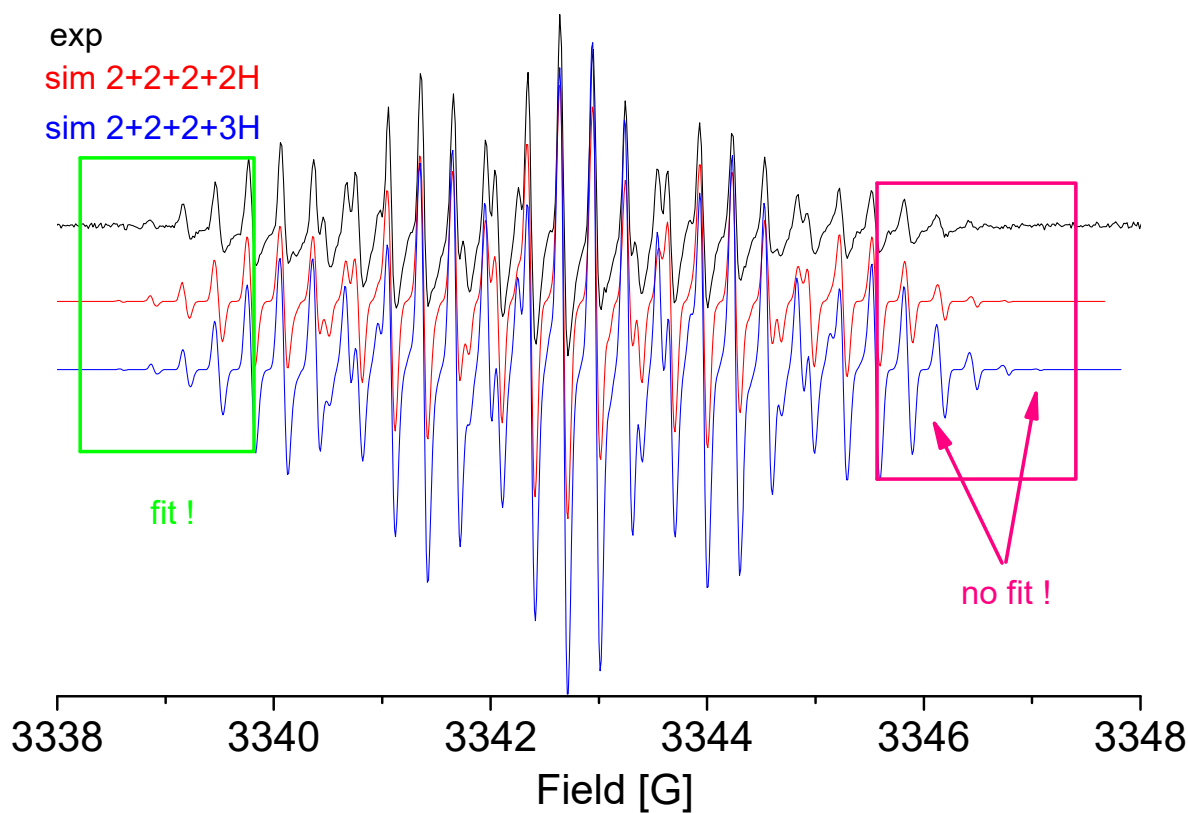
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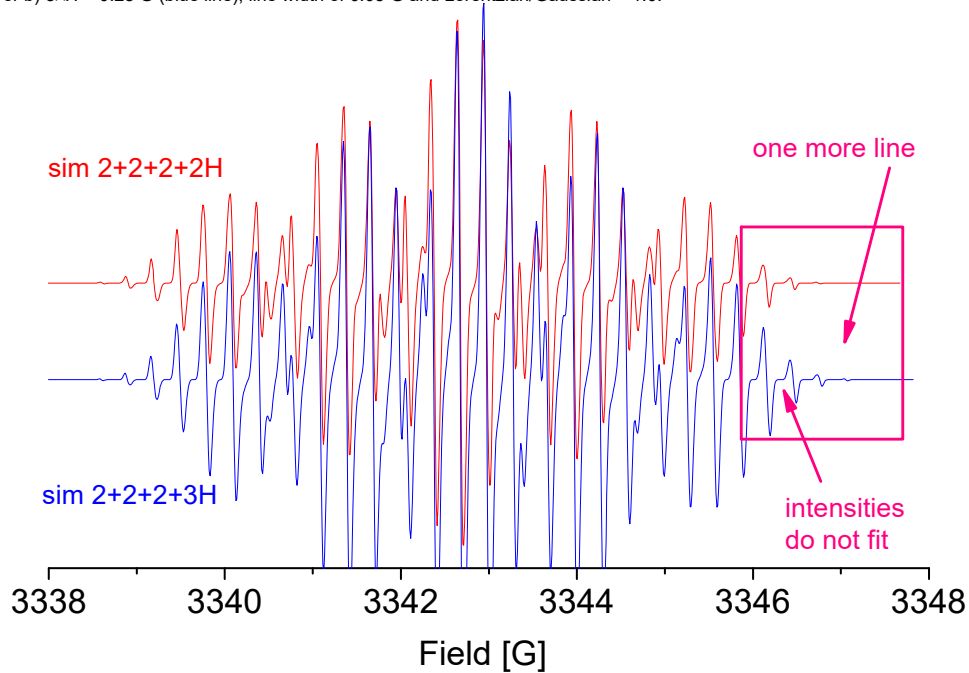
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## EPR Spectra and simulations:



**Figure S1.** X-Band EPR spectrum of **6d** ( $n = 4$ ) (conc. = 12.4 mM) in  $\text{H}_2\text{O}$  at 298 K with simulations containing 8H for the R group (in red) or 9H for the R group. The spectrum was simulated using  $g = 2.015$  and HFS coupling with  $2 \times N = 1.29$  G,  $2 \times \text{H}(\text{arom.}) = 0.33$  G,  $2 \times \text{H} = 0.31$  G,  $2 \times \text{H} = 0.30$  G,  $2 \times \text{H} = 0.29$  G, and a)  $2 \times \text{H} = 0.28$  G (red line) or b)  $3 \times \text{H} = 0.28$  G (blue line), line width of 0.05 G and Lorentzian/Gaussian = 1.0.



**Figure S2.** Two EPR spectral simulations containing 8H for the R group (in red) or 9H for the R group. The spectrum was simulated using  $g = 2.015$  and HFS coupling with  $2 \times N = 1.29$  G,  $2 \times \text{H}(\text{arom.}) = 0.33$  G,  $2 \times \text{H} = 0.31$  G,  $2 \times \text{H} = 0.30$  G,  $2 \times \text{H} = 0.29$  G, and a)  $2 \times \text{H} = 0.28$  G (red line) or b)  $3 \times \text{H} = 0.28$  G (blue line), line width of 0.05 G and Lorentzian/Gaussian = 1.0.

# **NMR Spectra of Photoproducts:**

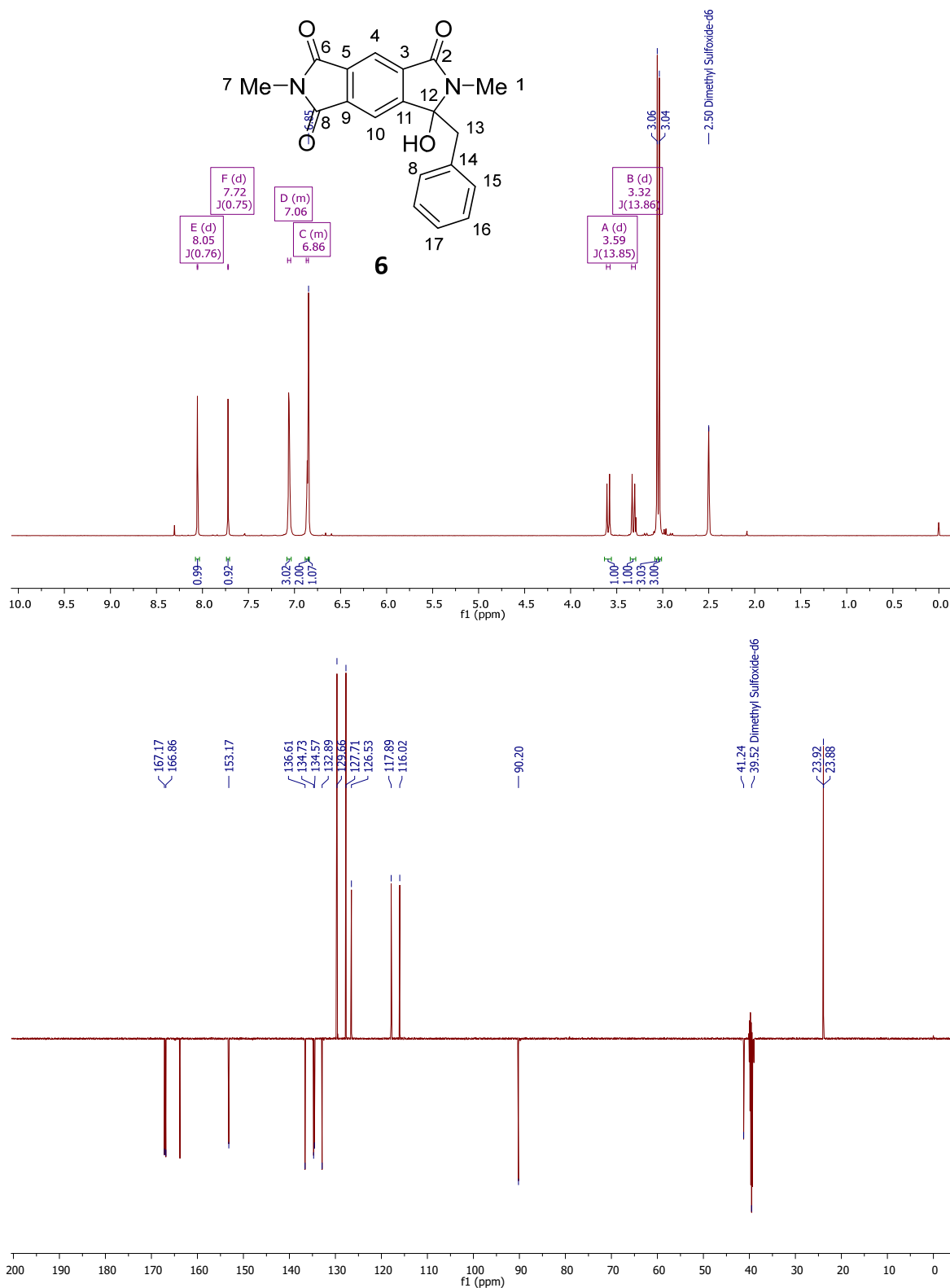


Figure S3. <sup>1</sup>H- and <sup>13</sup>C-NMR spectra of **6**

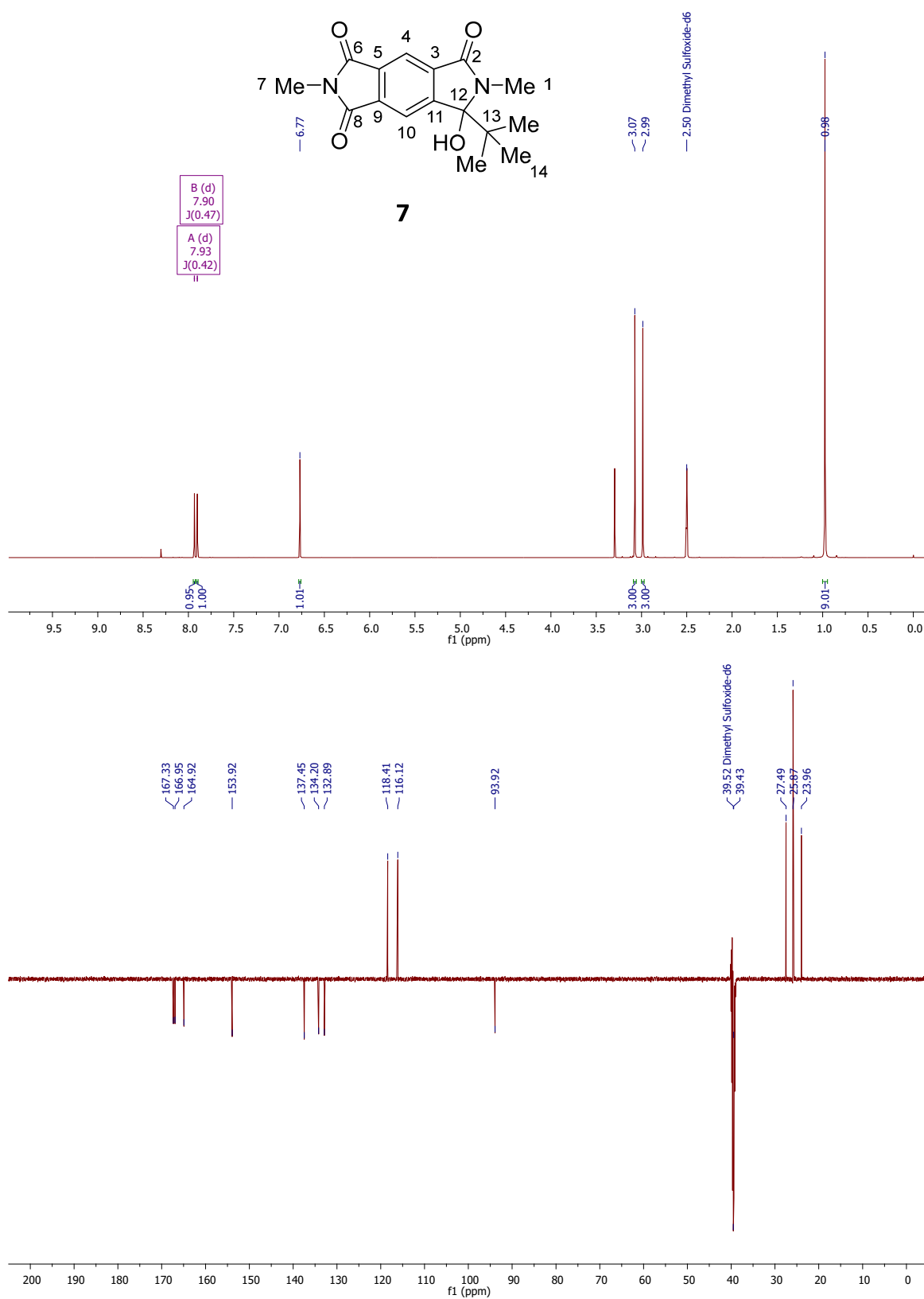


Figure S4. <sup>1</sup>H- and <sup>13</sup>C-NMR spectra of **7**

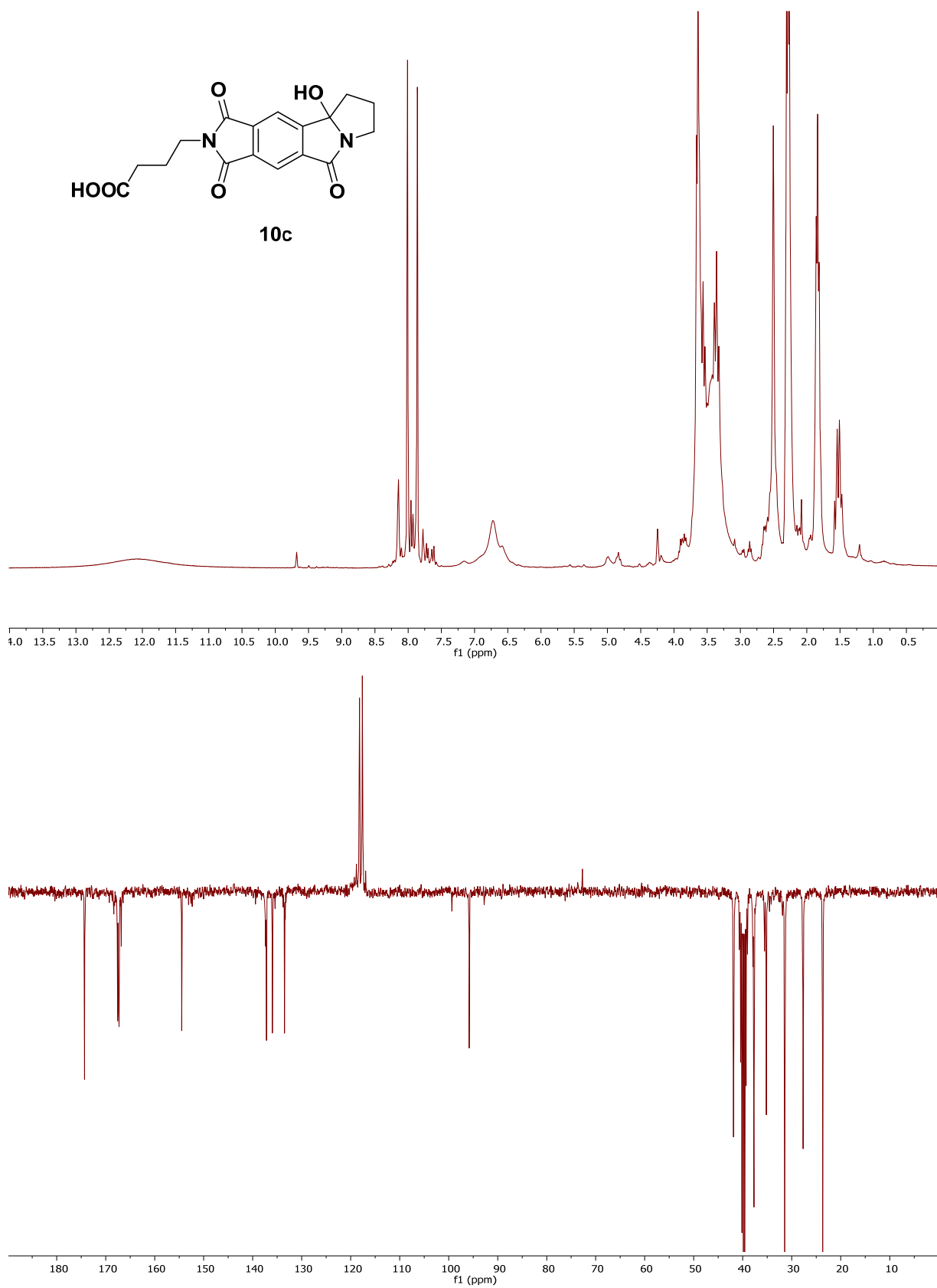


Figure S5.  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **10c**

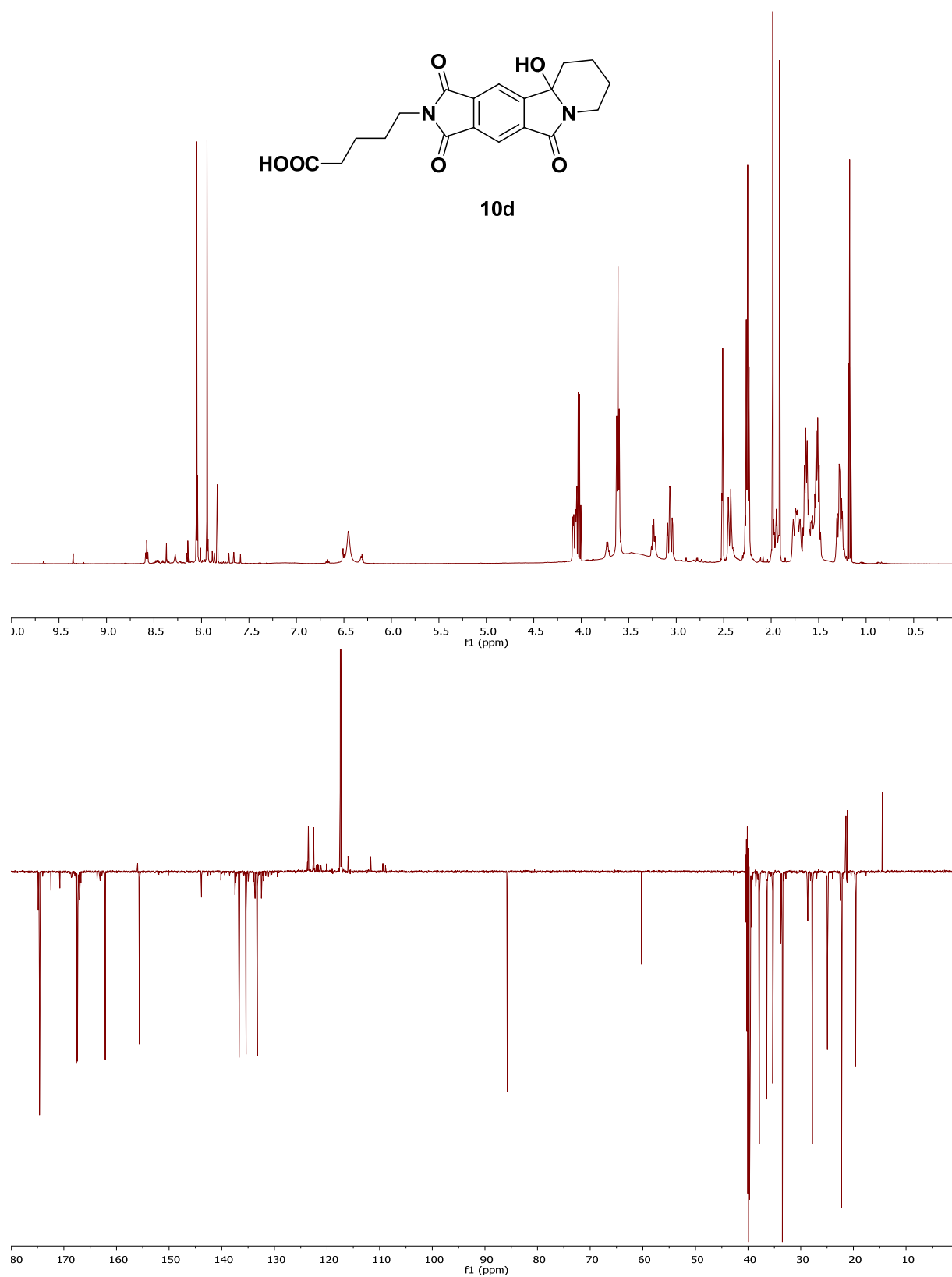


Figure S6.  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **10d**

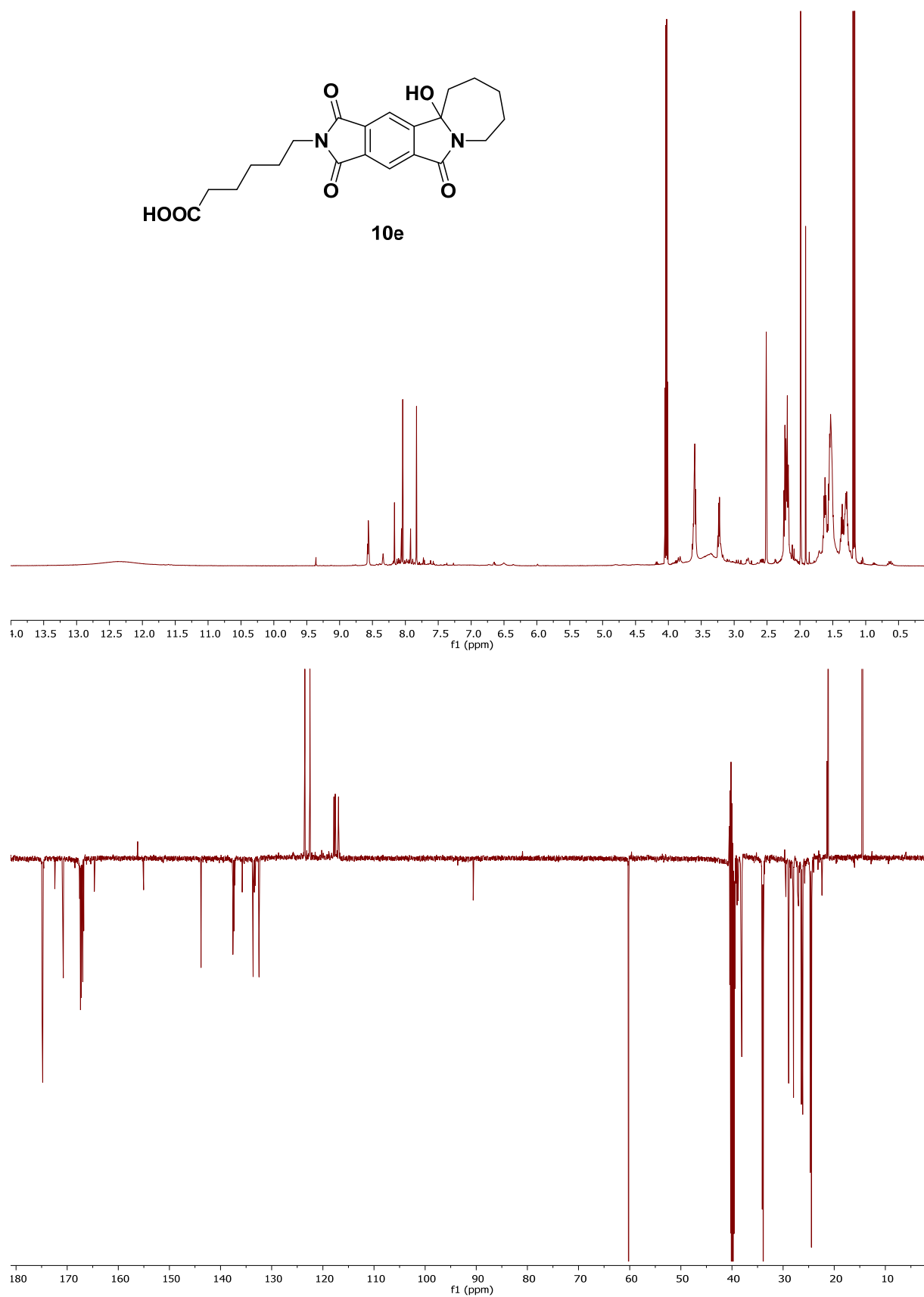


Figure S7.  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **10e**

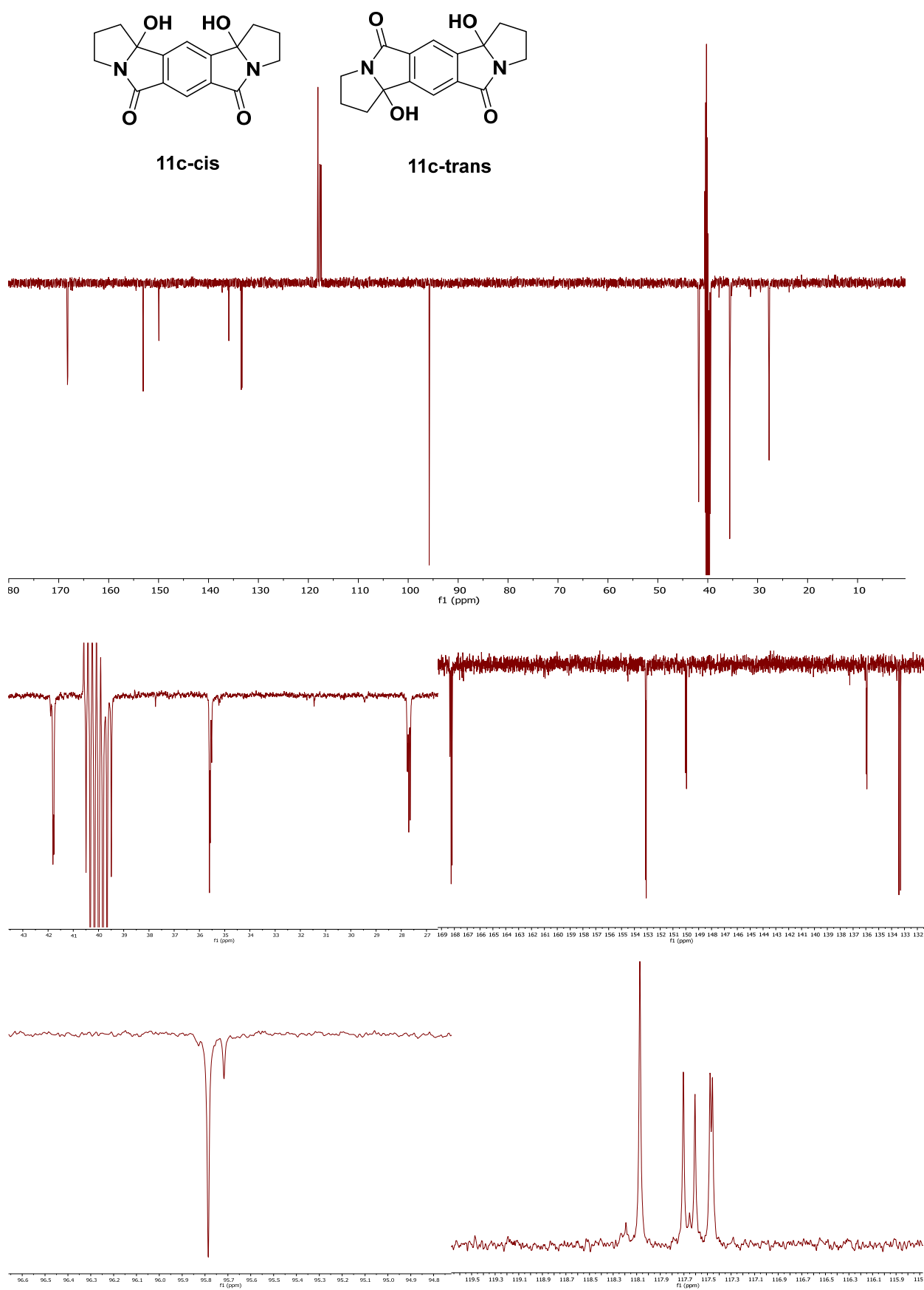
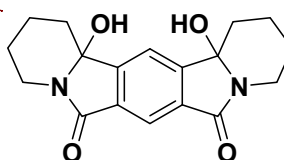
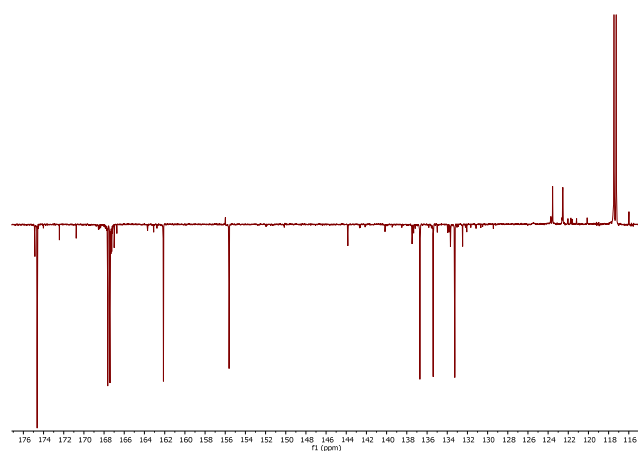
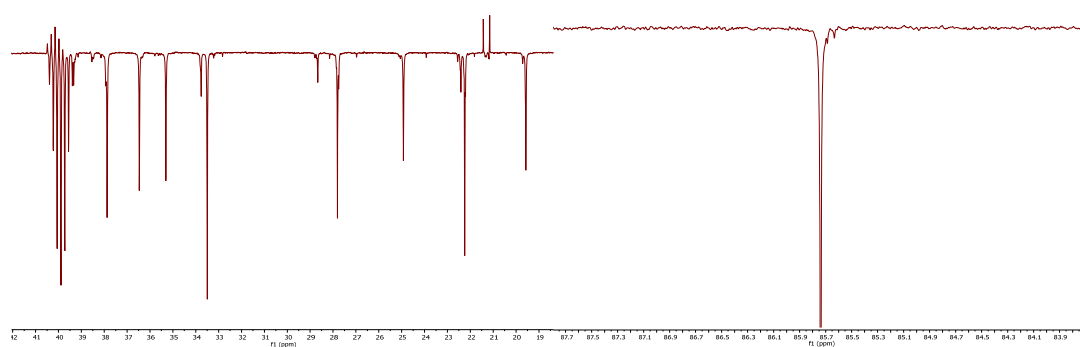
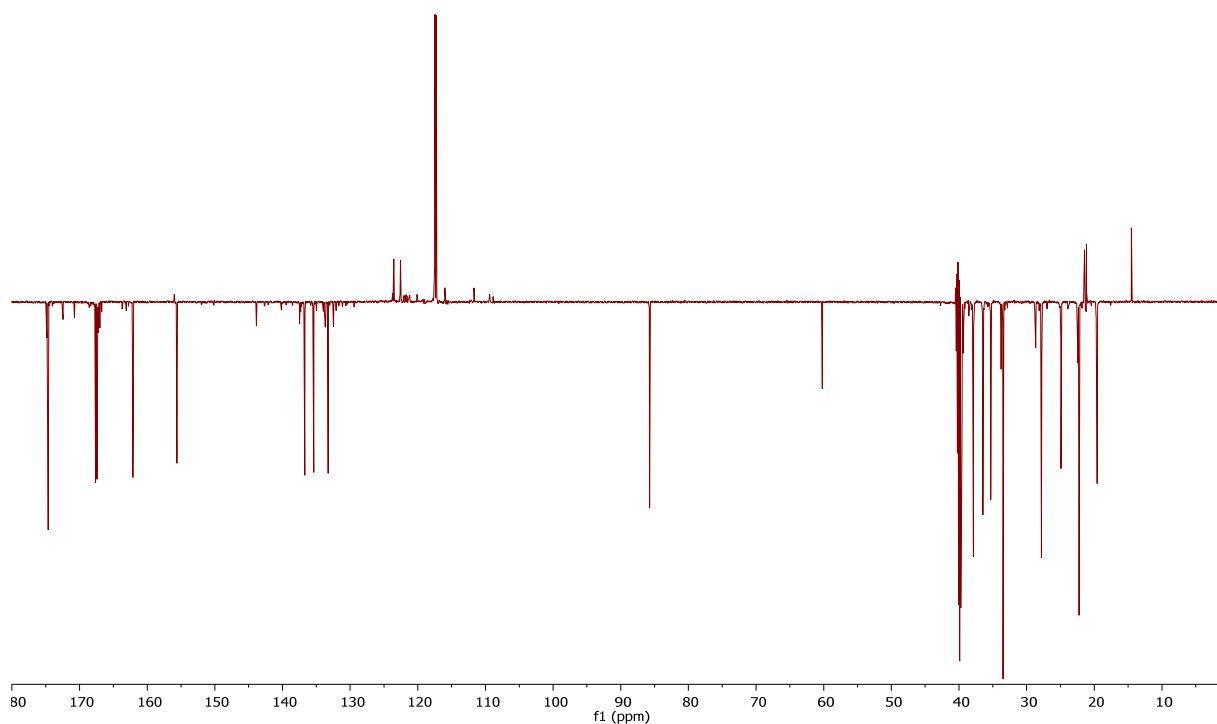
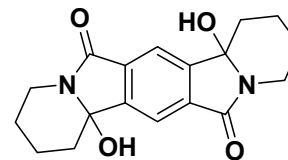


Figure S8.  $^{13}\text{C}$ -NMR spectra of **11c** – 90 ppm region and selected peaks





**11d-cis**



**11d-trans**

Figure S9.  $^{13}\text{C}$ -NMR spectra of **11d** – 90 ppm region and selected peaks

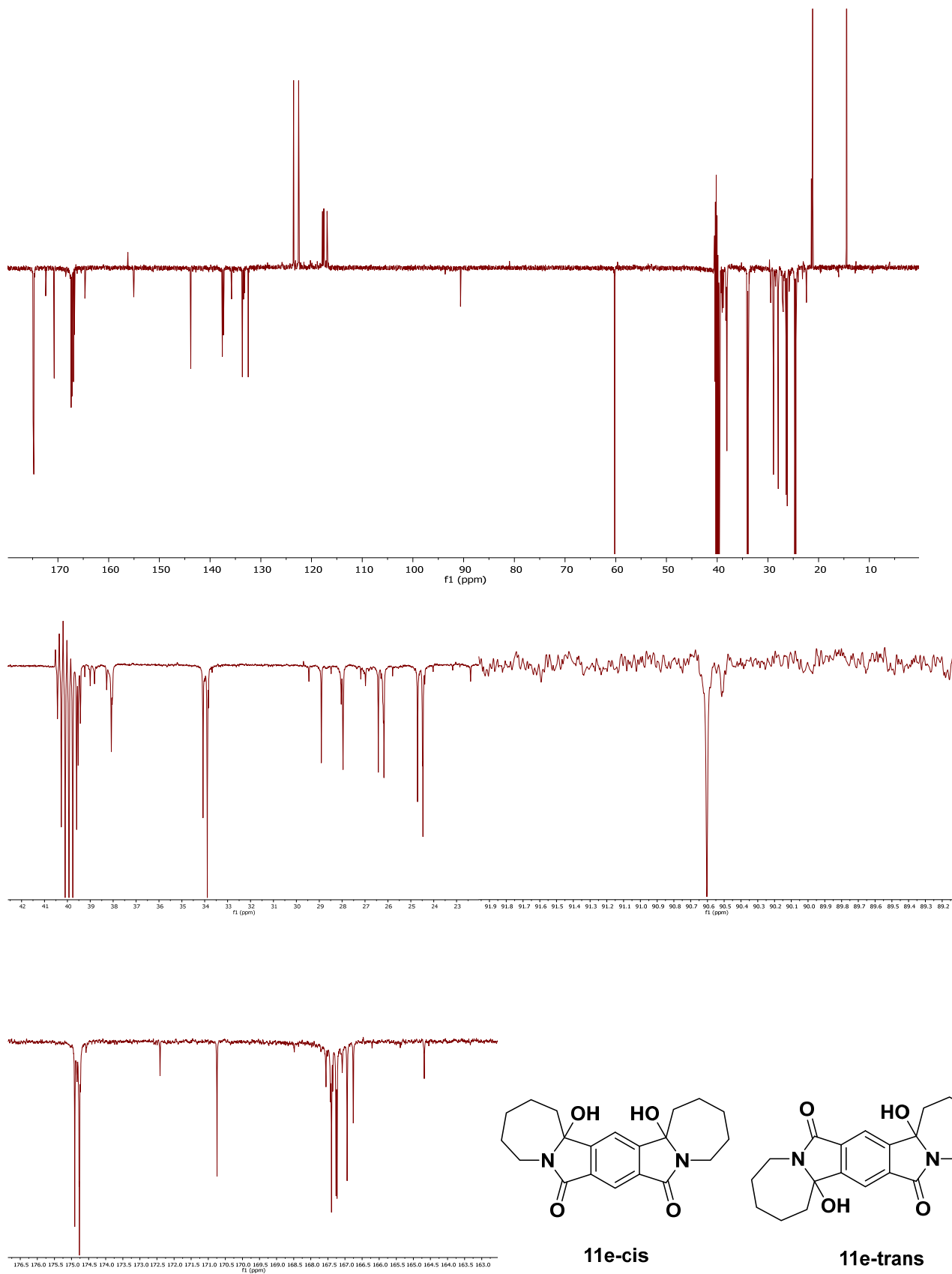


Figure S10.  $^{13}\text{C}$ -NMR spectra of **11e** – 90 ppm region and selected peaks (Ethyl acetate impurity)

**NMR spectra of photochemical starting materials:**

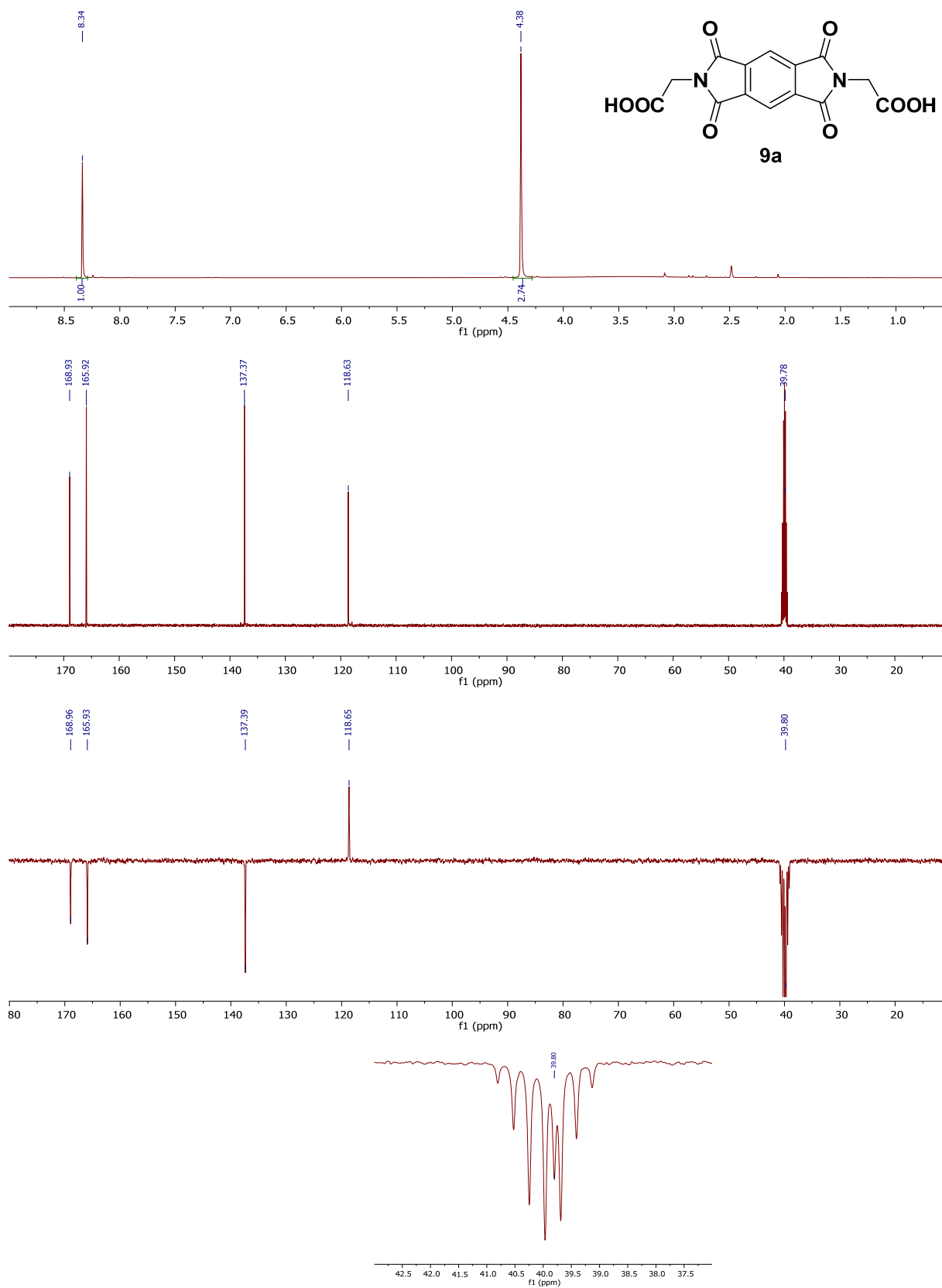


Figure S11  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **9a** – 40 ppm region

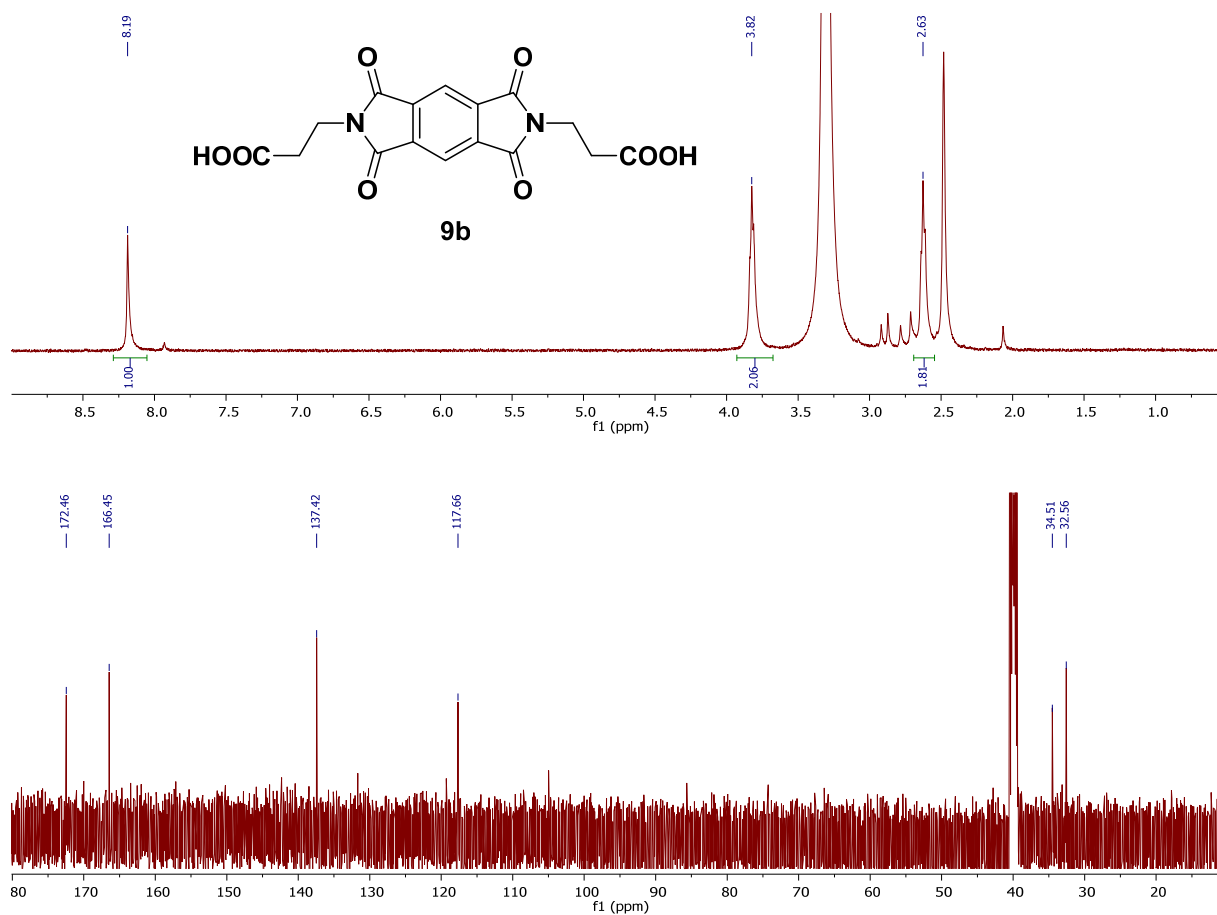


Figure S12  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **9b**

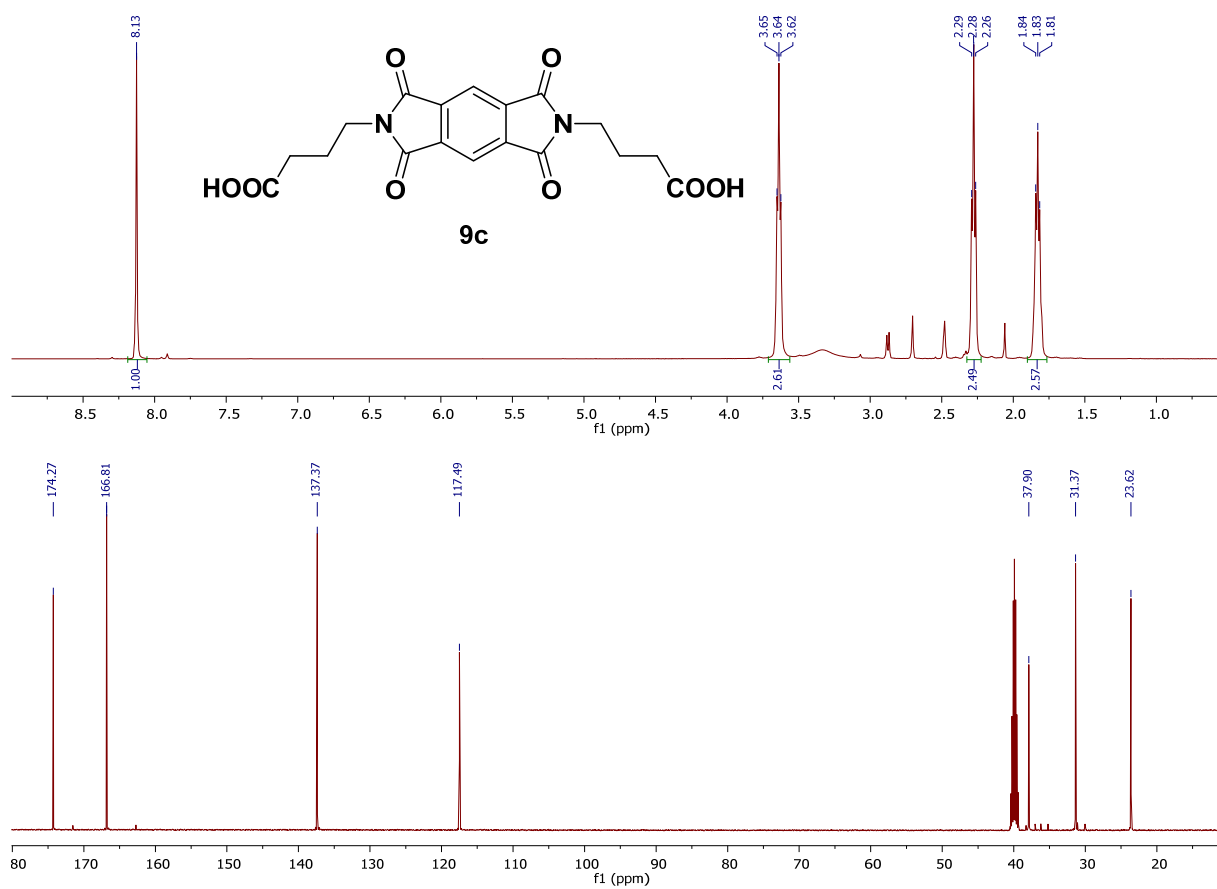


Figure S13  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **9c**

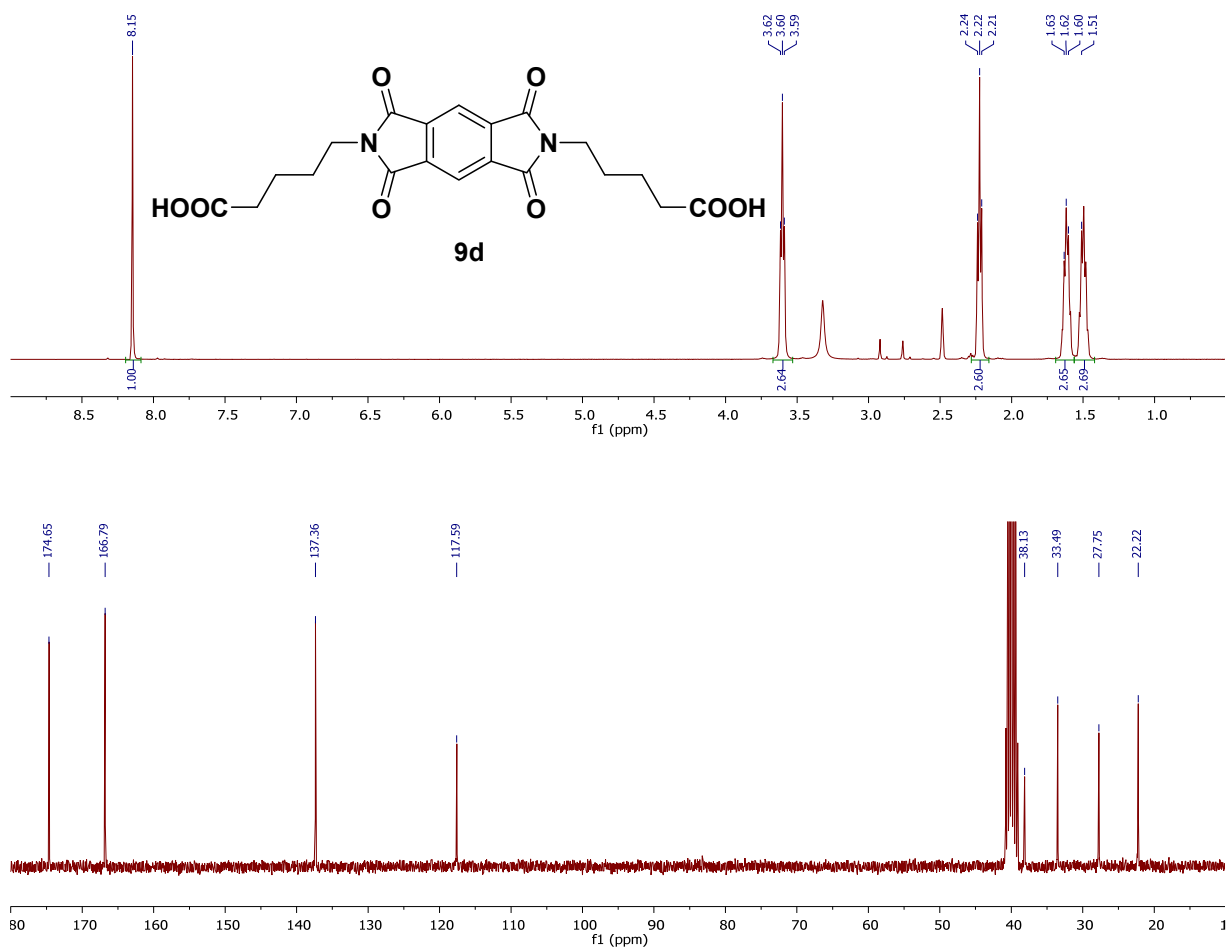


Figure S14  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **9d**

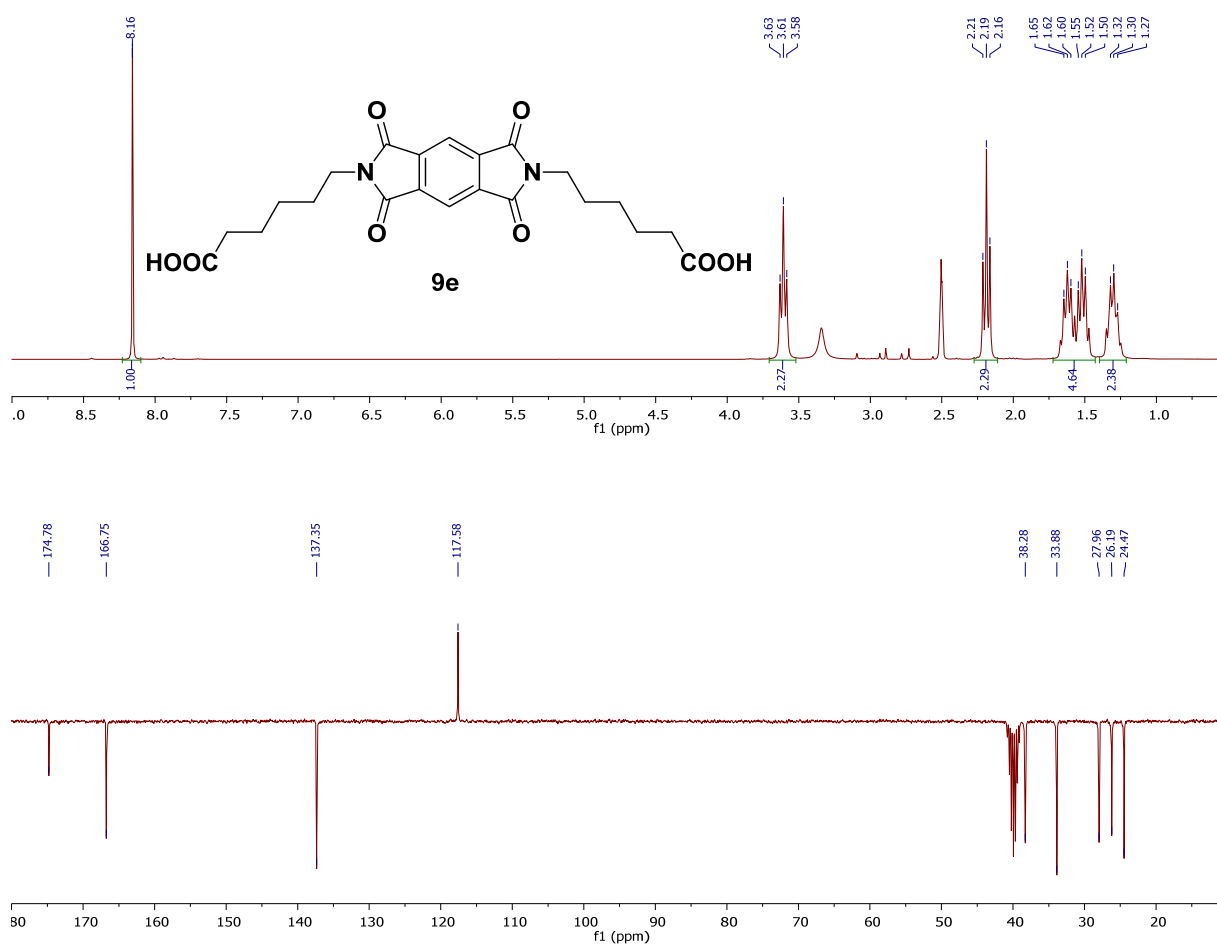


Figure S15  $^1\text{H}$ - and  $^{13}\text{C}$ -NMR spectra of **9e**