Electronic Supplementary Material (ESI) for RSC Advances

SUPPORTING INFORMATION

Boradipyrromethenecyanines on the base of BODIPY nucleus annelated with pyridone ring: a new approach to long-wavelength dual fluorescent probe design

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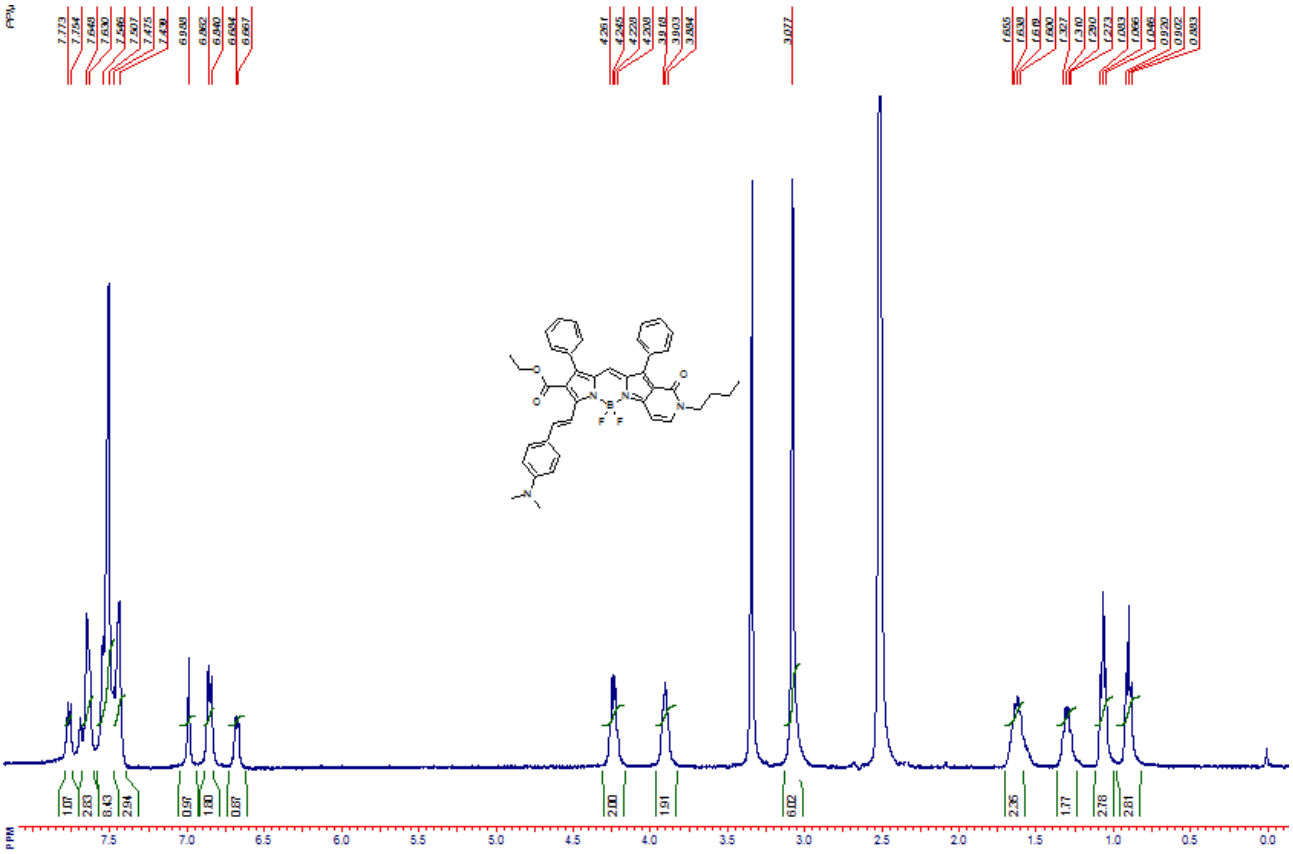

Figure 1. ^{1}H NMR spectrum of compound **2** in DMSO-d_6.

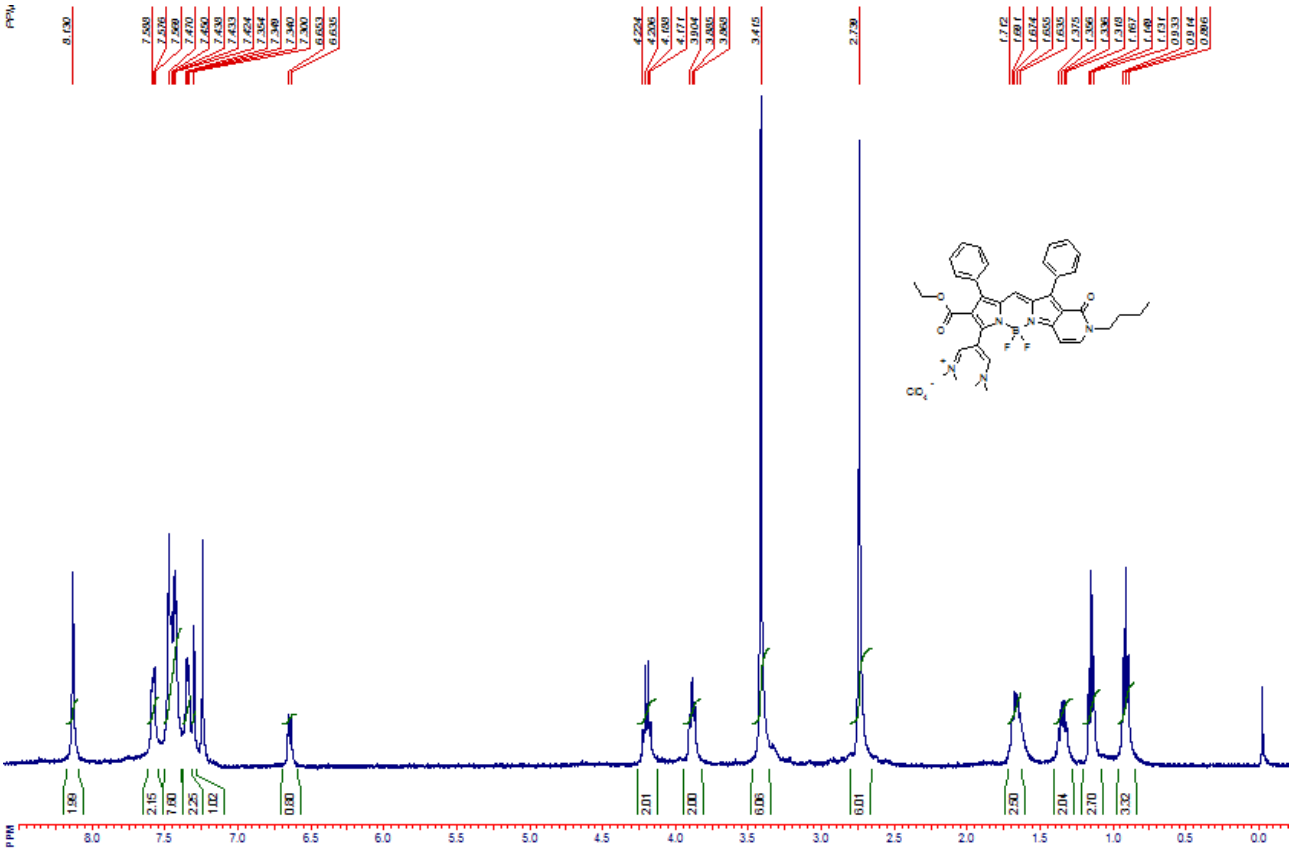

Figure 2. ^{1}H NMR spectrum of compound **3** in $CDCl_3$.

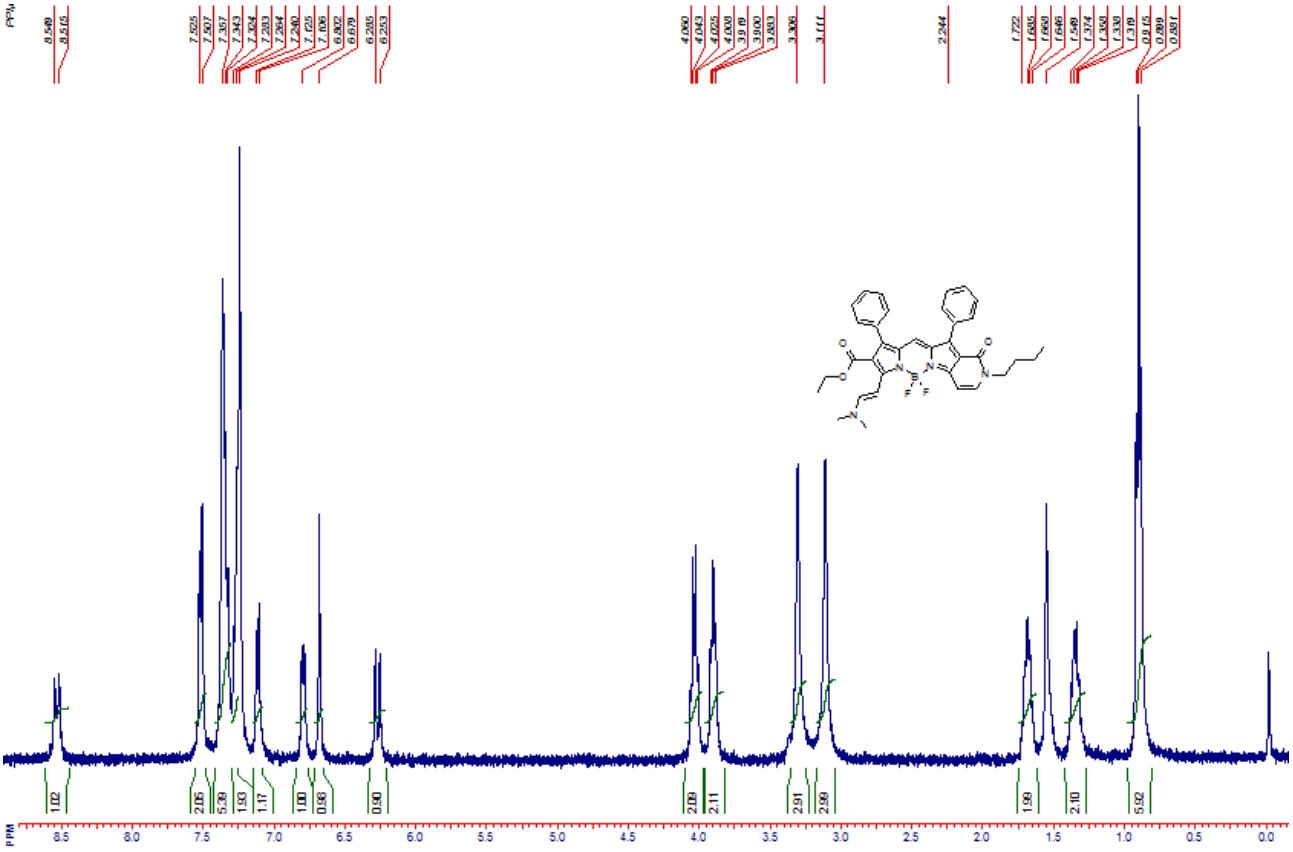

Figure 3. ^{1}H NMR spectrum of compound **4** in $CDCl_3$.

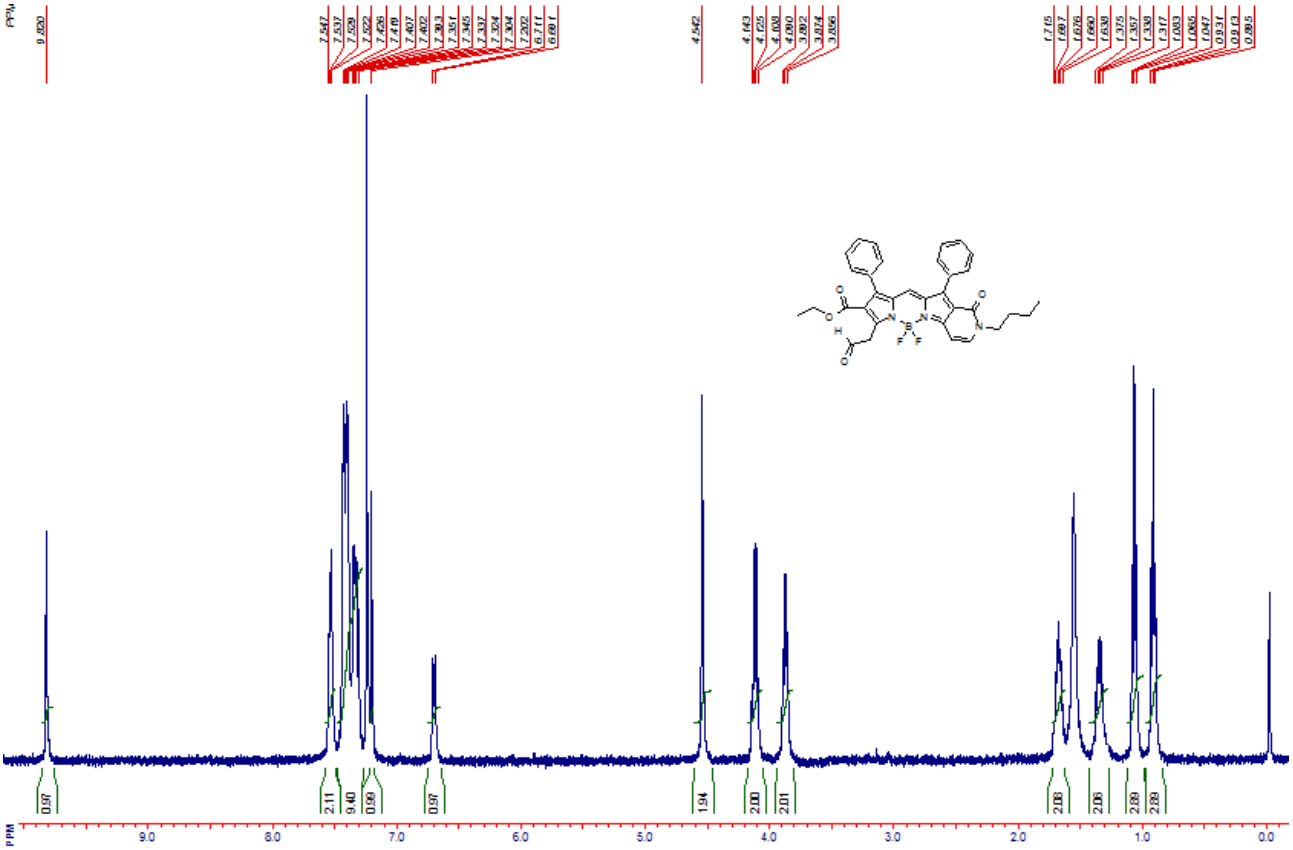

Figure 4. ^{1}H NMR spectrum of compound **5** in $CDCl_3$.

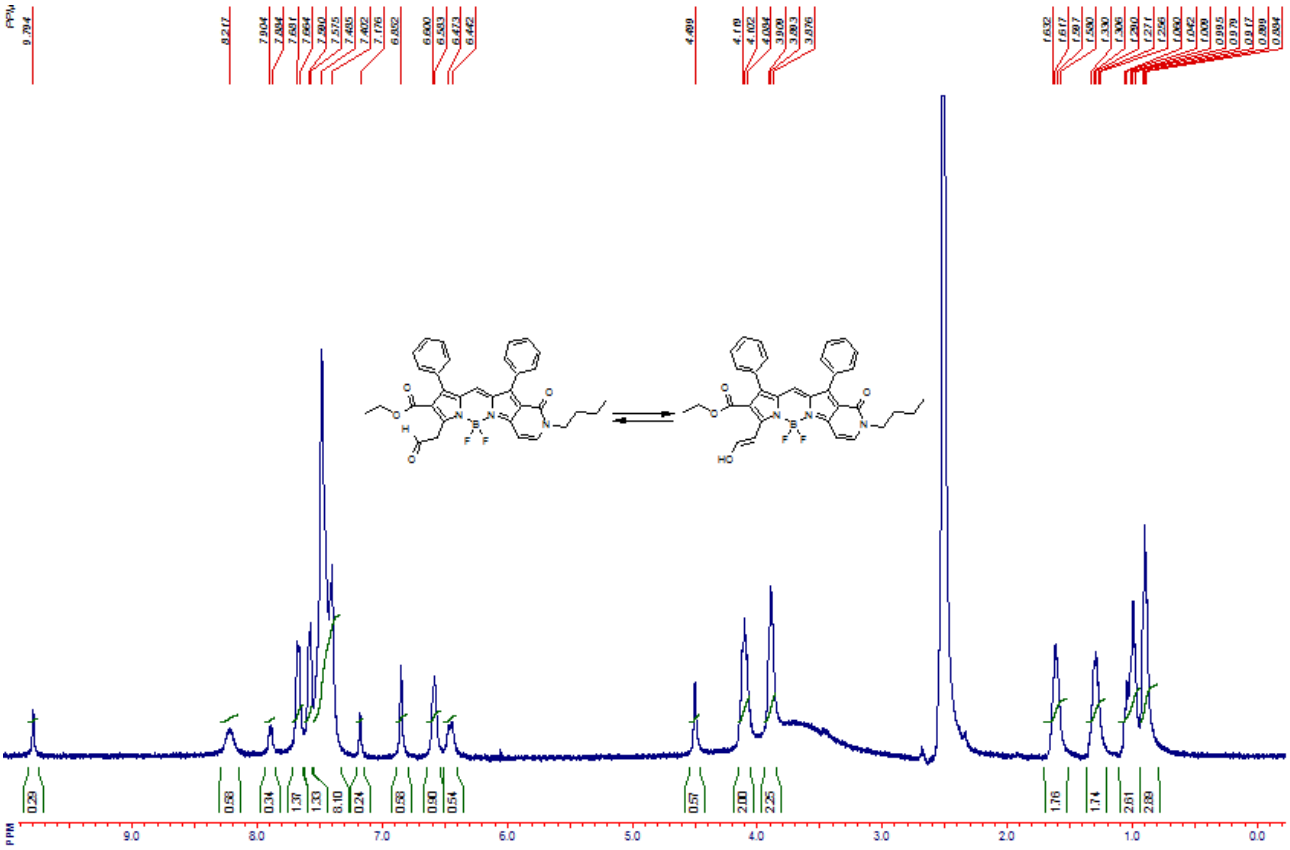

Figure 5. ^{1}H NMR spectrum of compound **5** in DMSO-d_6.

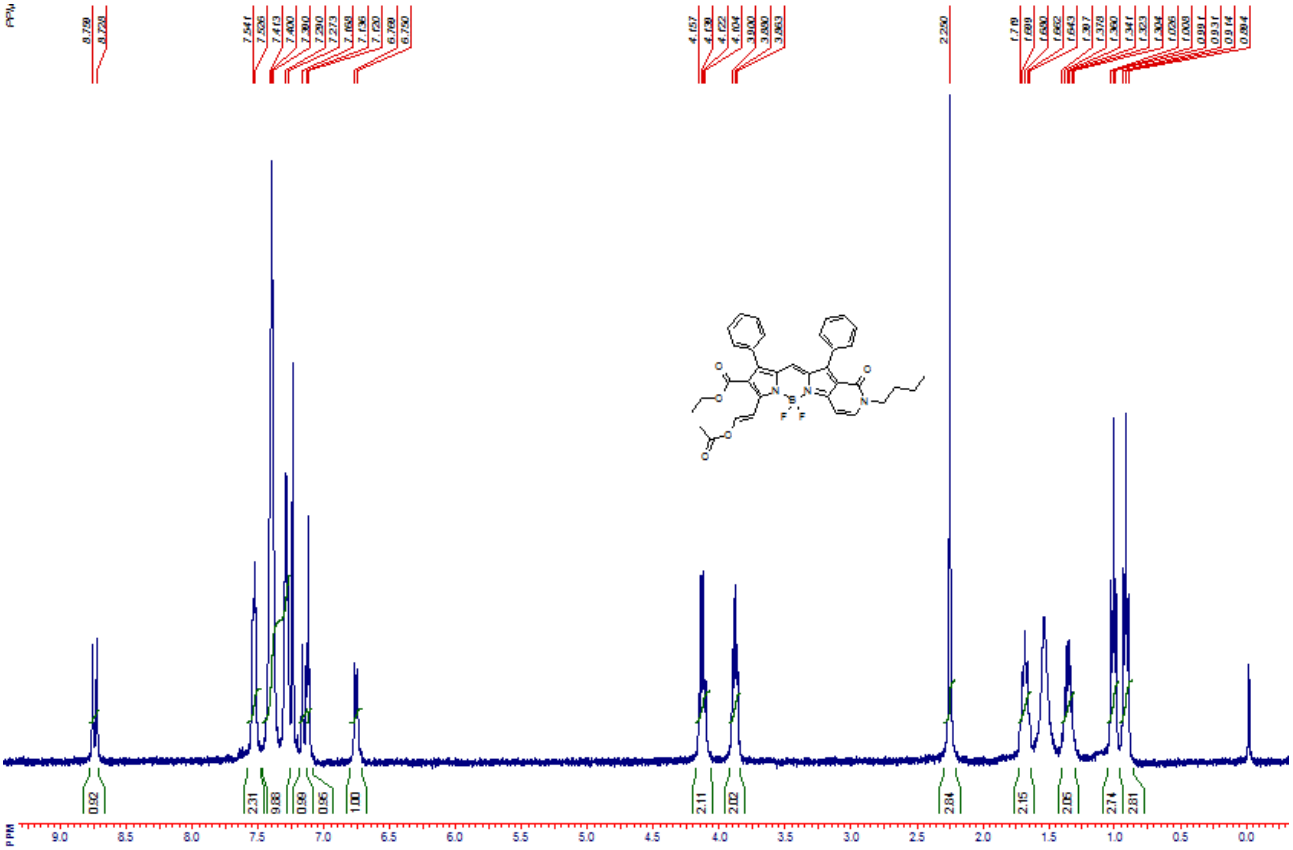

Figure 6. ^{1}H NMR spectrum of compound **6** in $CDCl_3$.

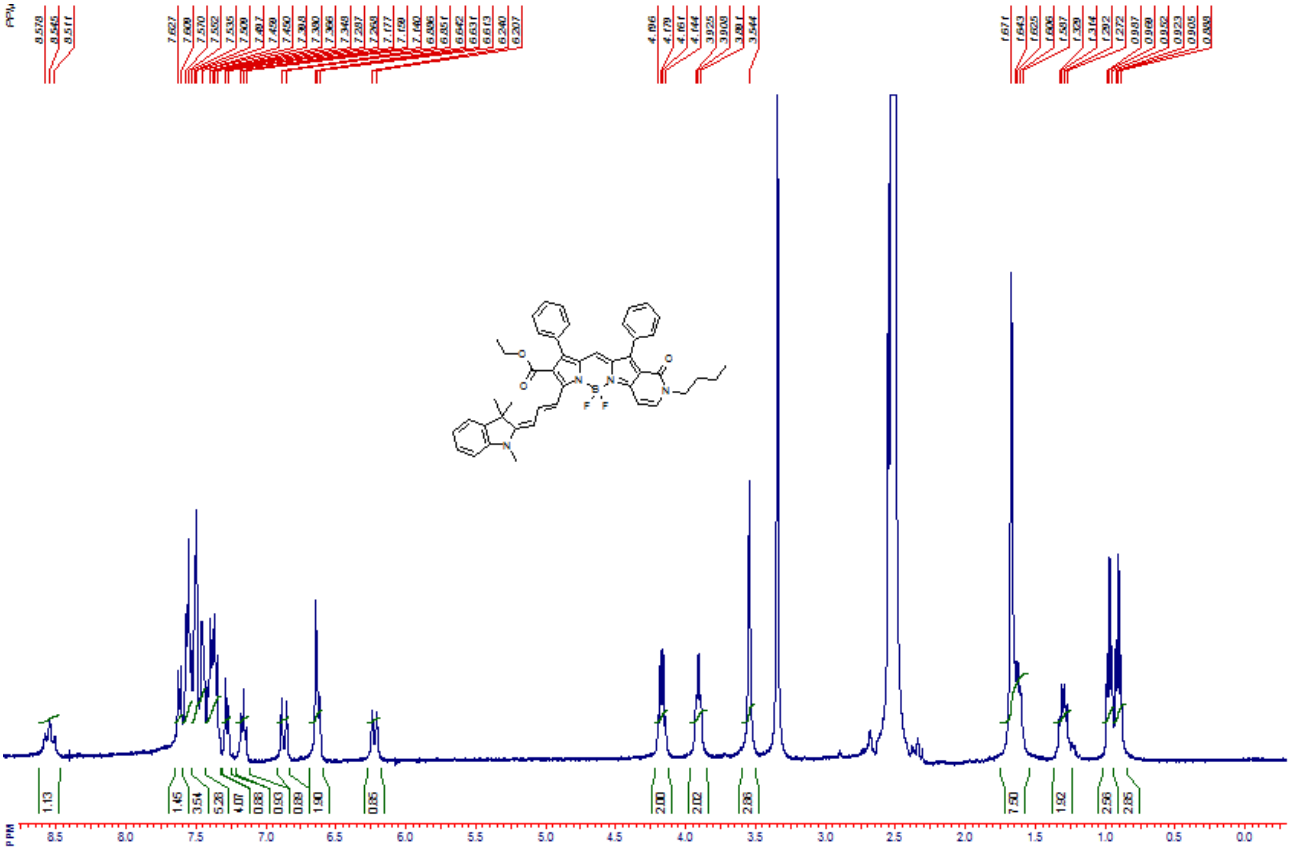

Figure 7. ^{1}H NMR spectrum of compound **7** in DMSO-d_6.

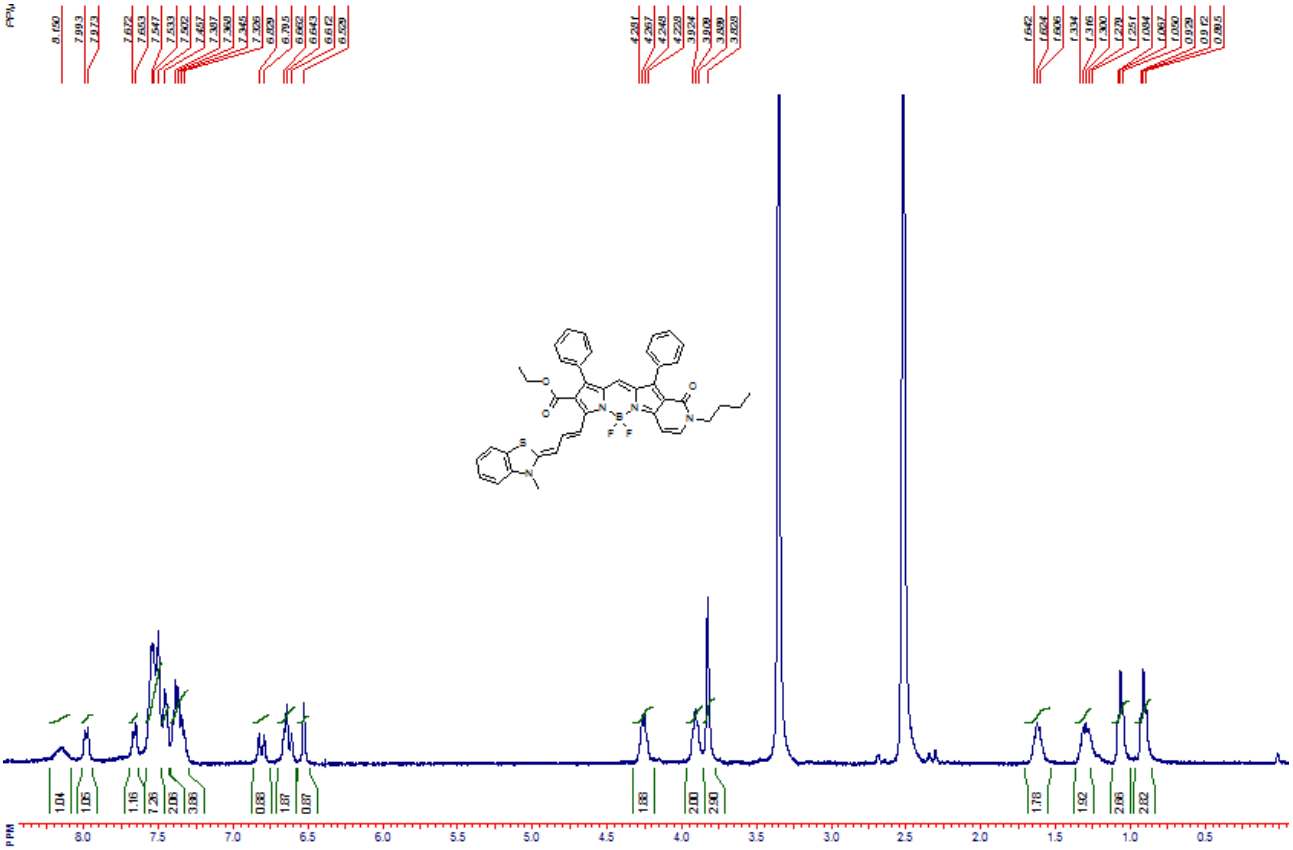

Figure 8. ^{1}H NMR spectrum of compound **8** in DMSO-d_6.

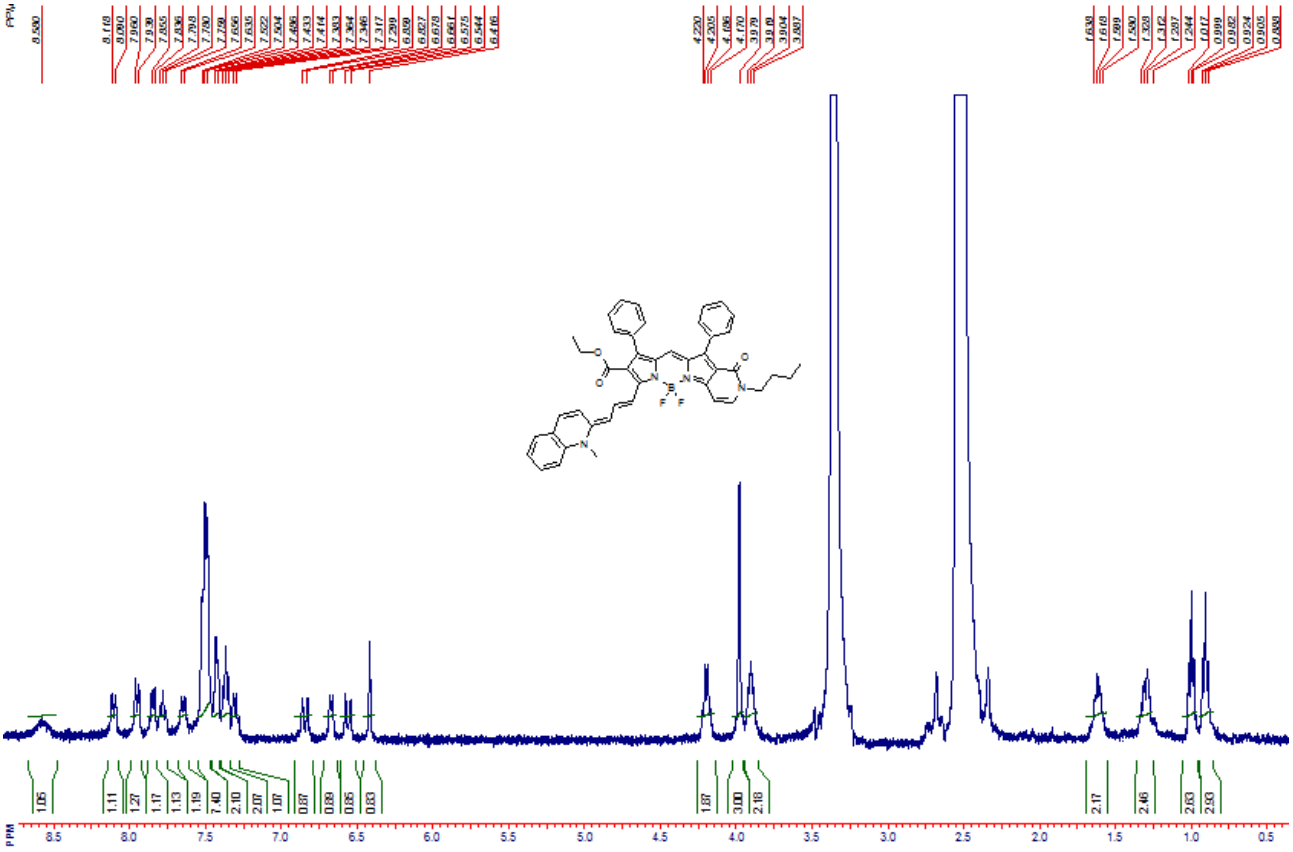

Figure 9. ^{1}H NMR spectrum of compound **9** in DMSO-d_6.

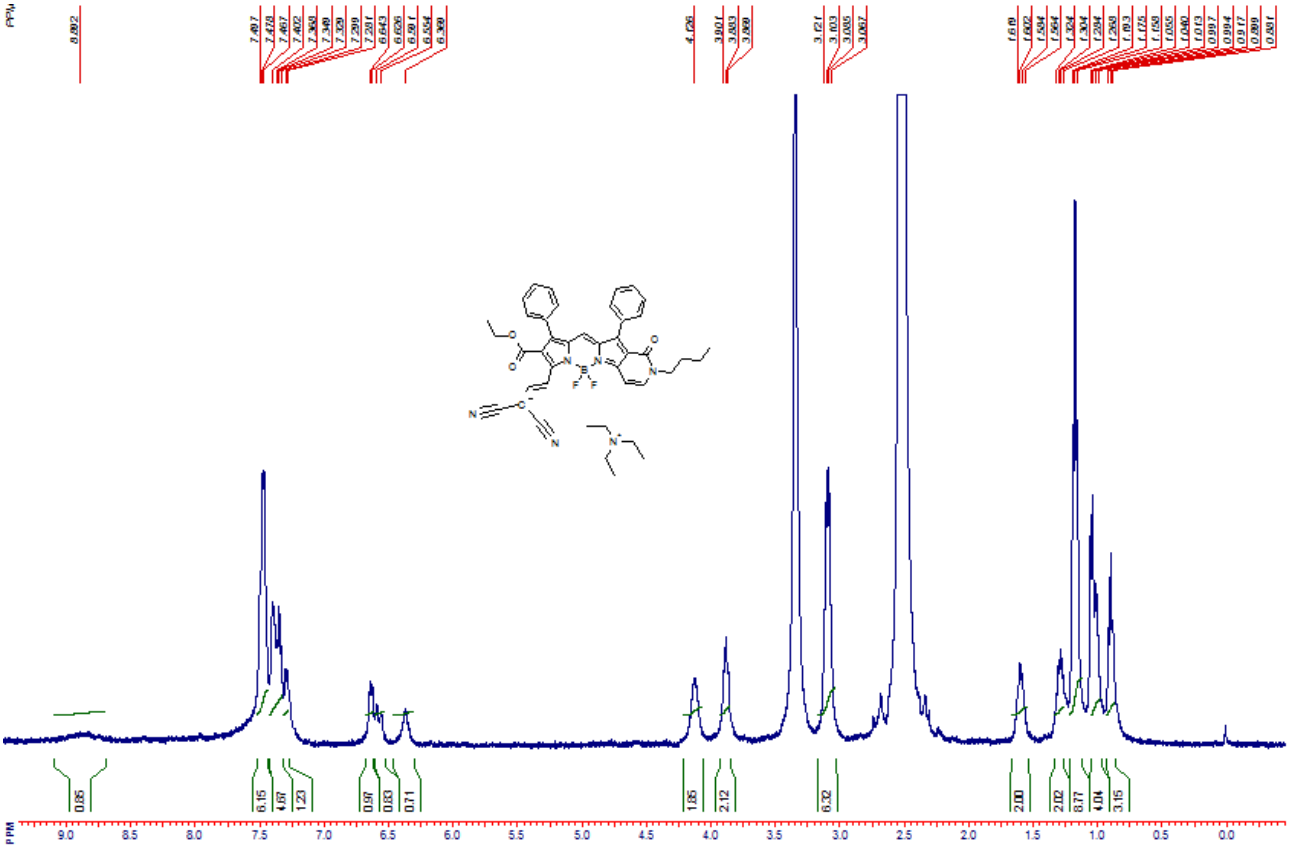

Figure 10. ^{1}H NMR spectrum of compound **10a** in DMSO-d_6.

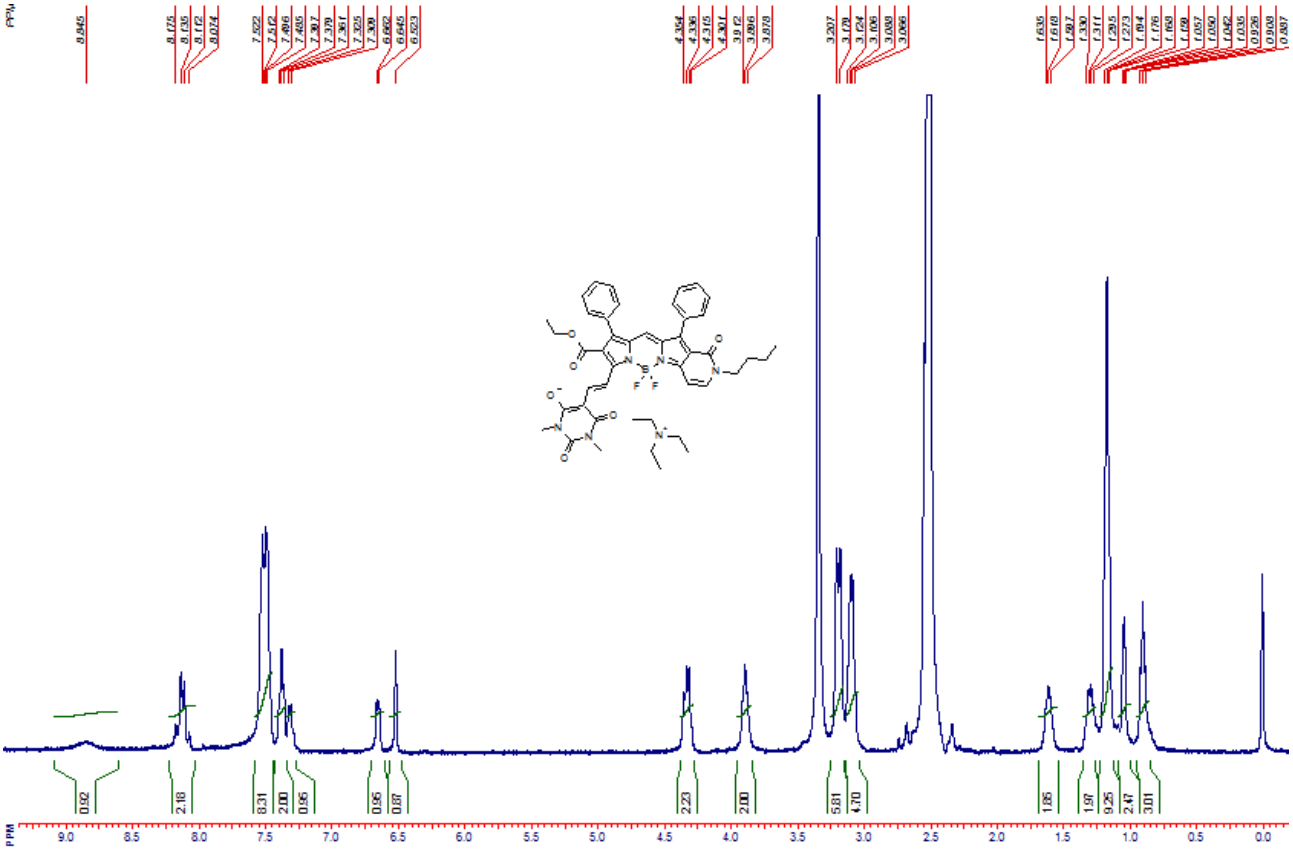

Figure 11. ^{1}H NMR spectrum of compound **11a** in DMSO-d_6.

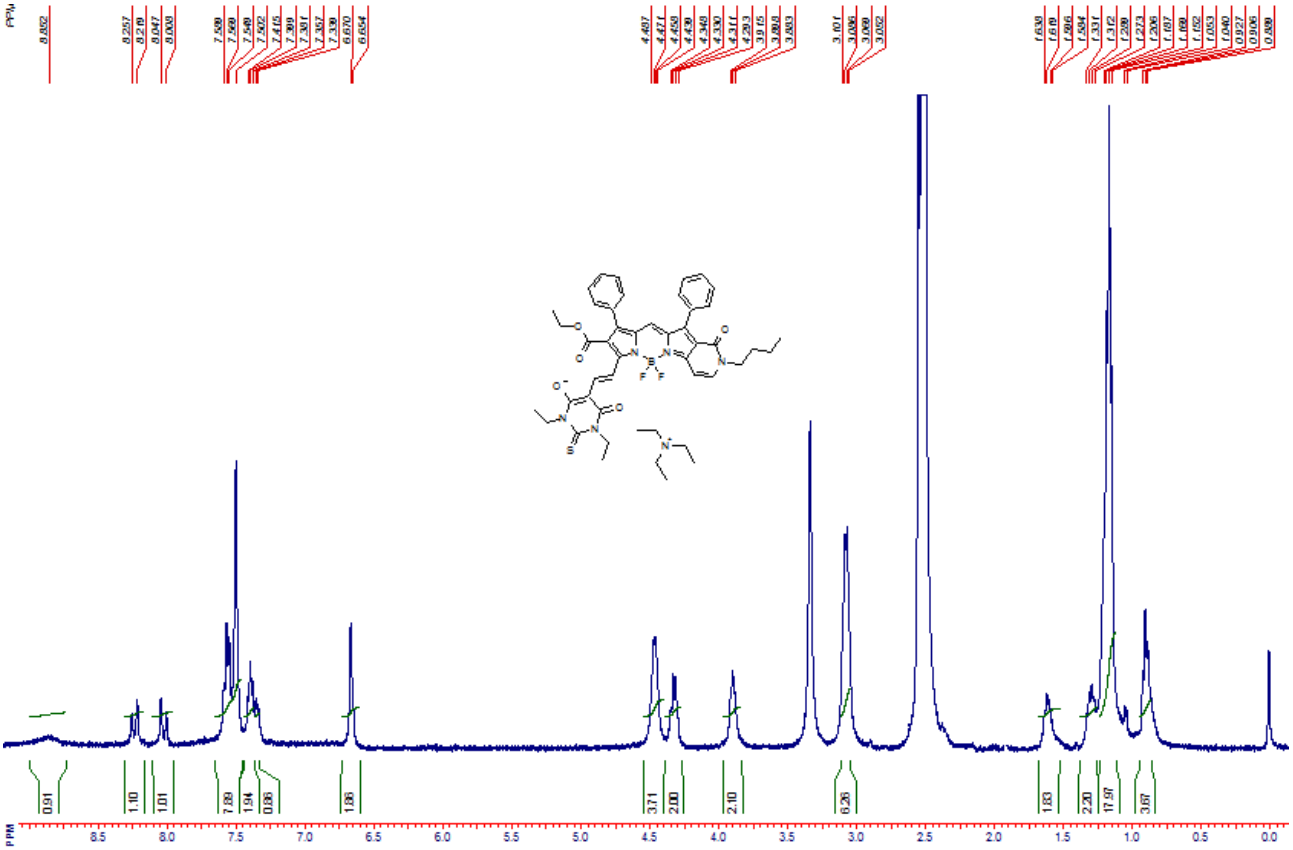

Figure 12. ^{1}H NMR spectrum of compound **12a** in DMSO-d_6.

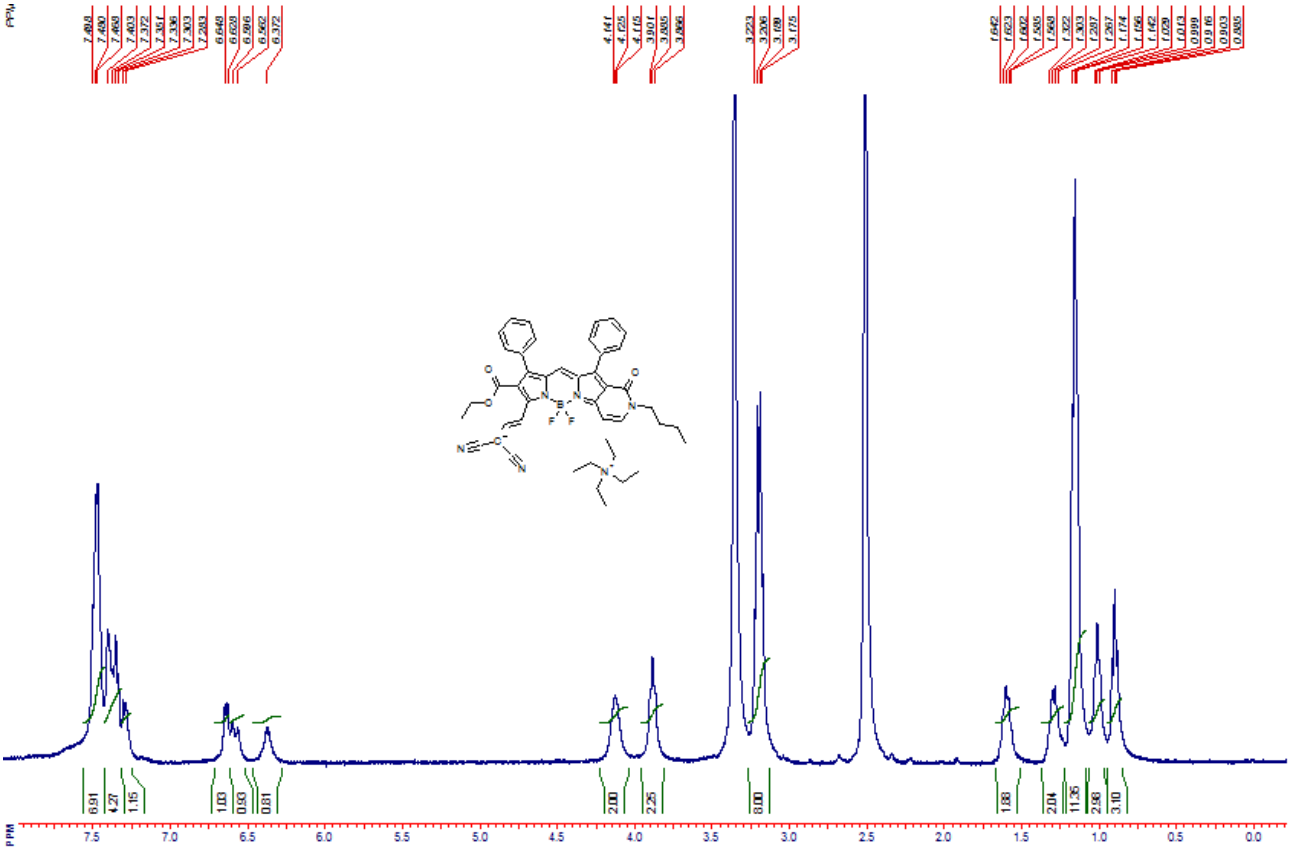

Figure 13. ^{1}H NMR spectrum of compound **10b** in DMSO-d_6.

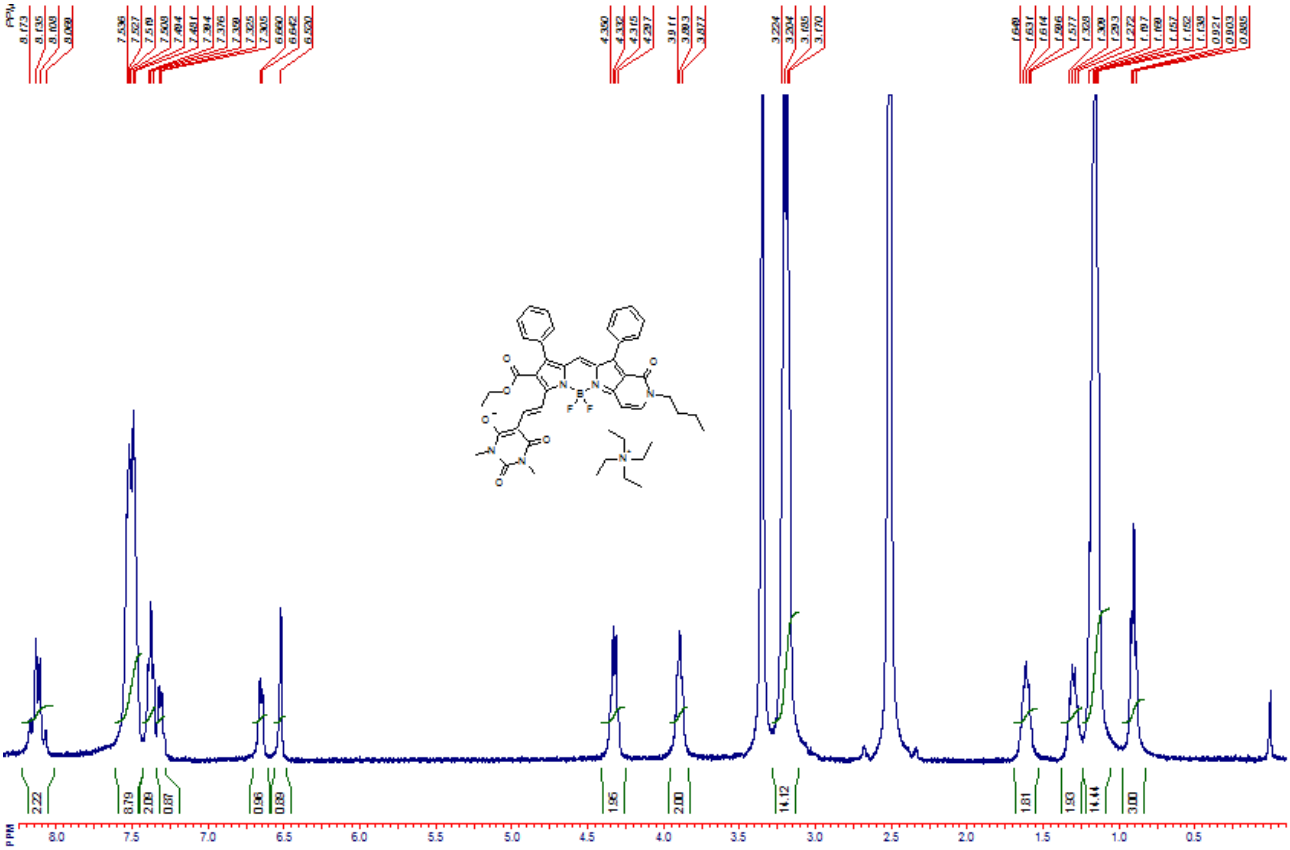

Figure 14. ^{1}H NMR spectrum of compound **11b** in DMSO-d_6.

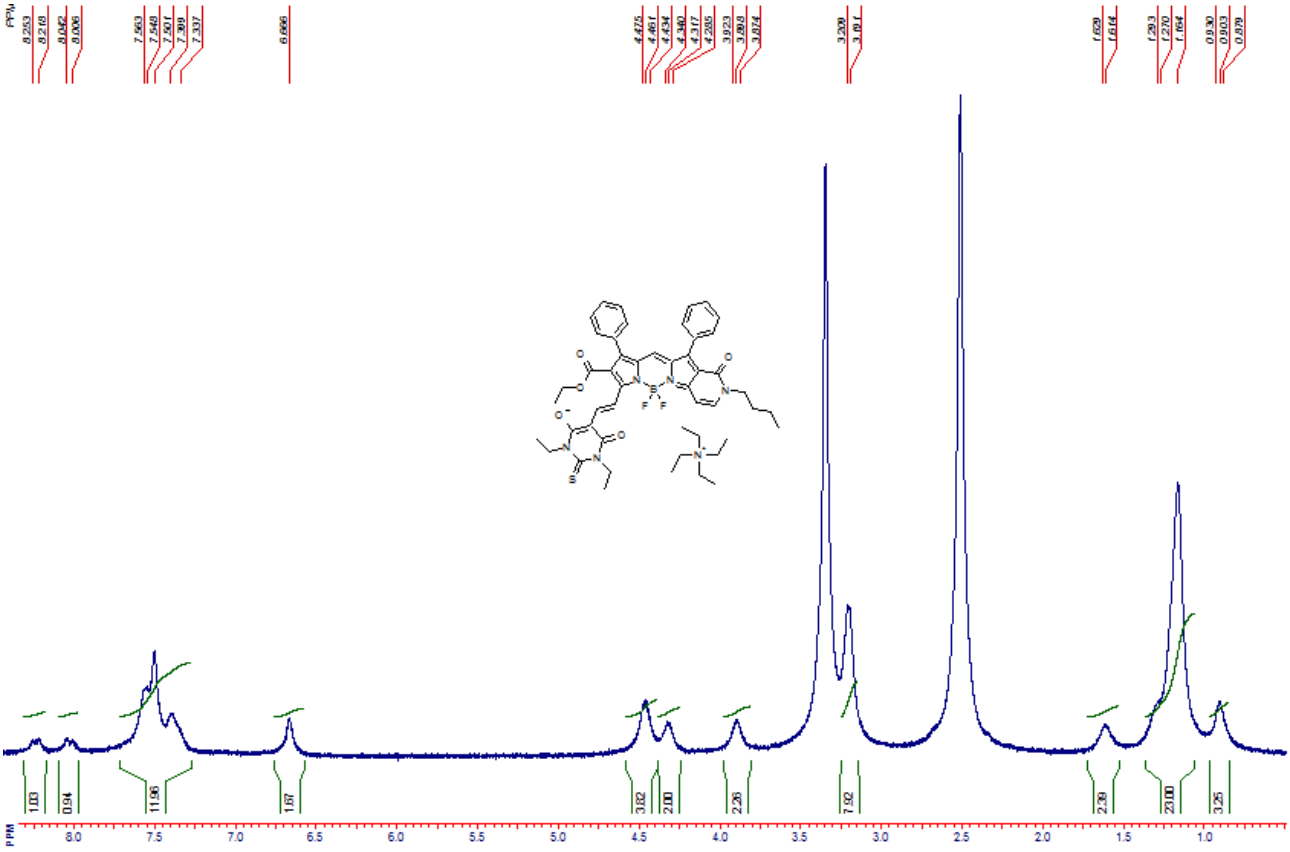

Figure 15. ^{1}H NMR spectrum of compound **12b** in DMSO-d_6.

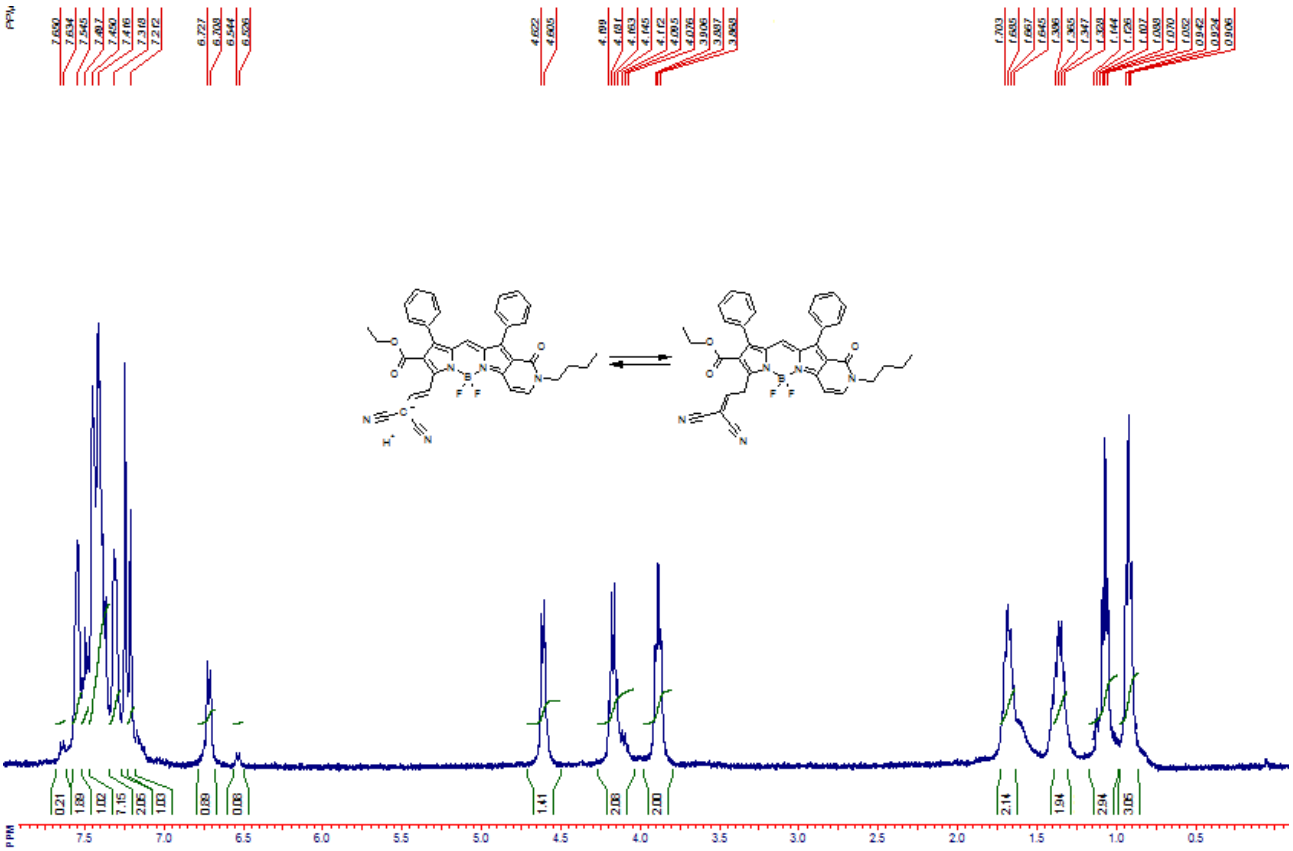

Figure 16. ^{1}H NMR spectrum of compound **13** in $CDCl_3$.

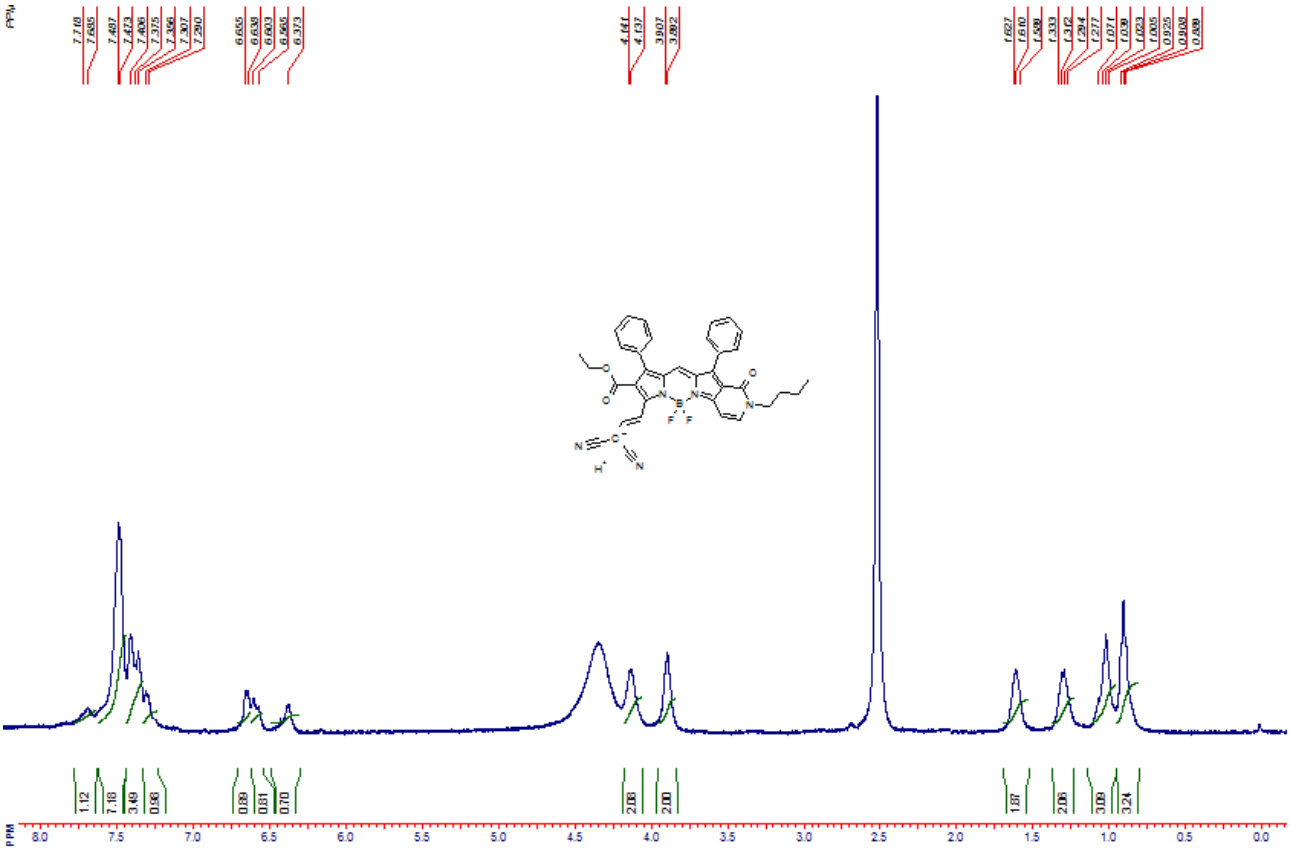

Figure 17. ^{1}H NMR spectrum of compound **13** in DMSO-d_6.

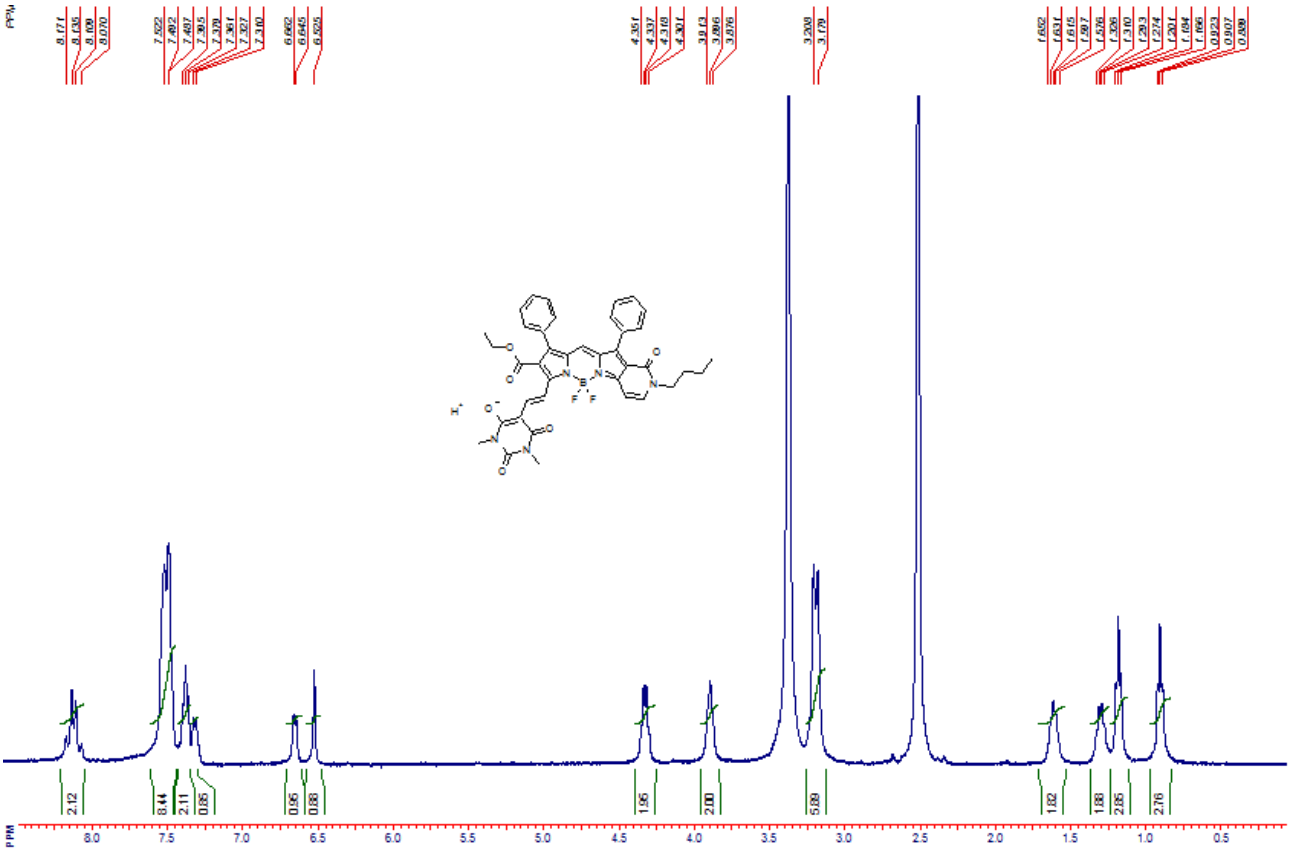

Figure 18. ^{1}H NMR spectrum of compound **14** in DMSO-d_6.

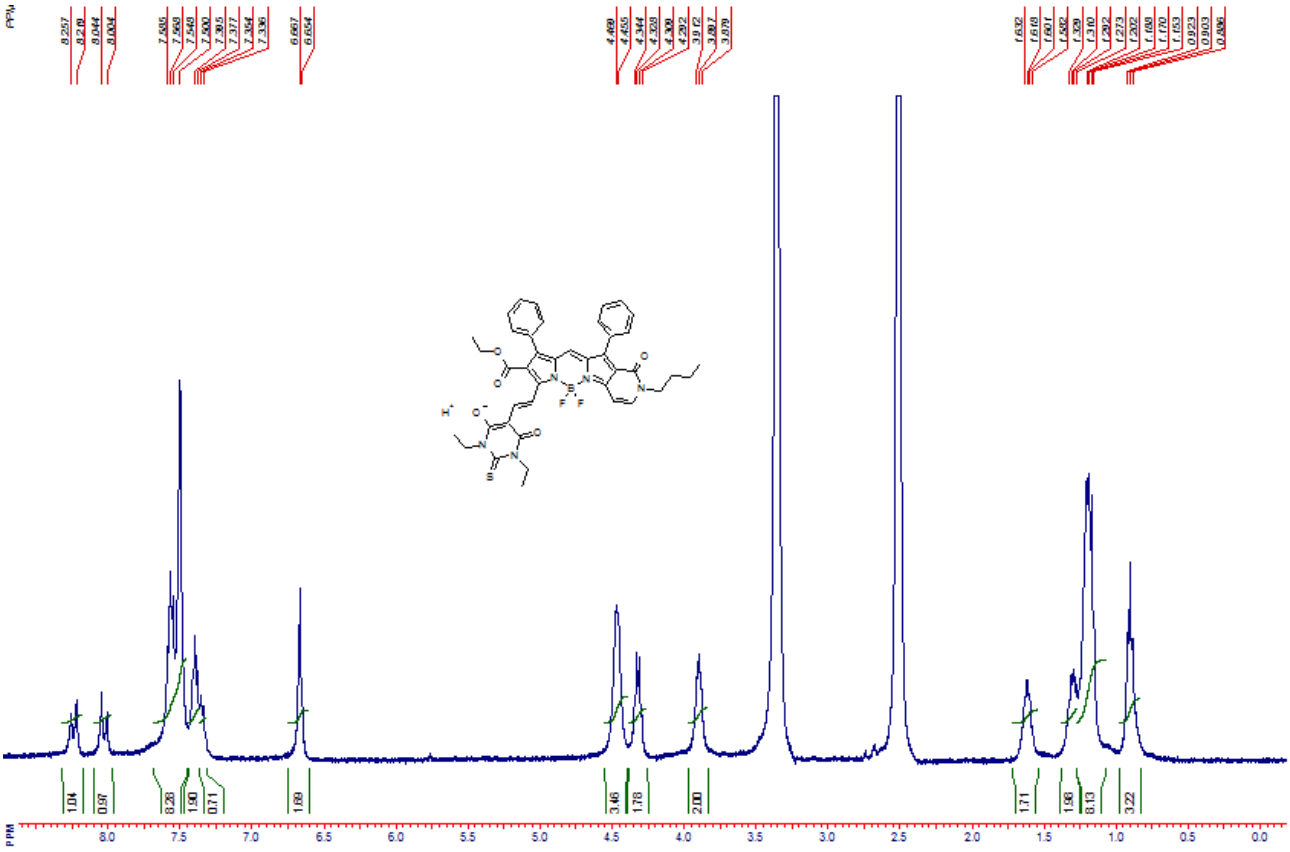

Figure 19. ^{1}H NMR spectrum of compound **15** in DMSO-d_6.

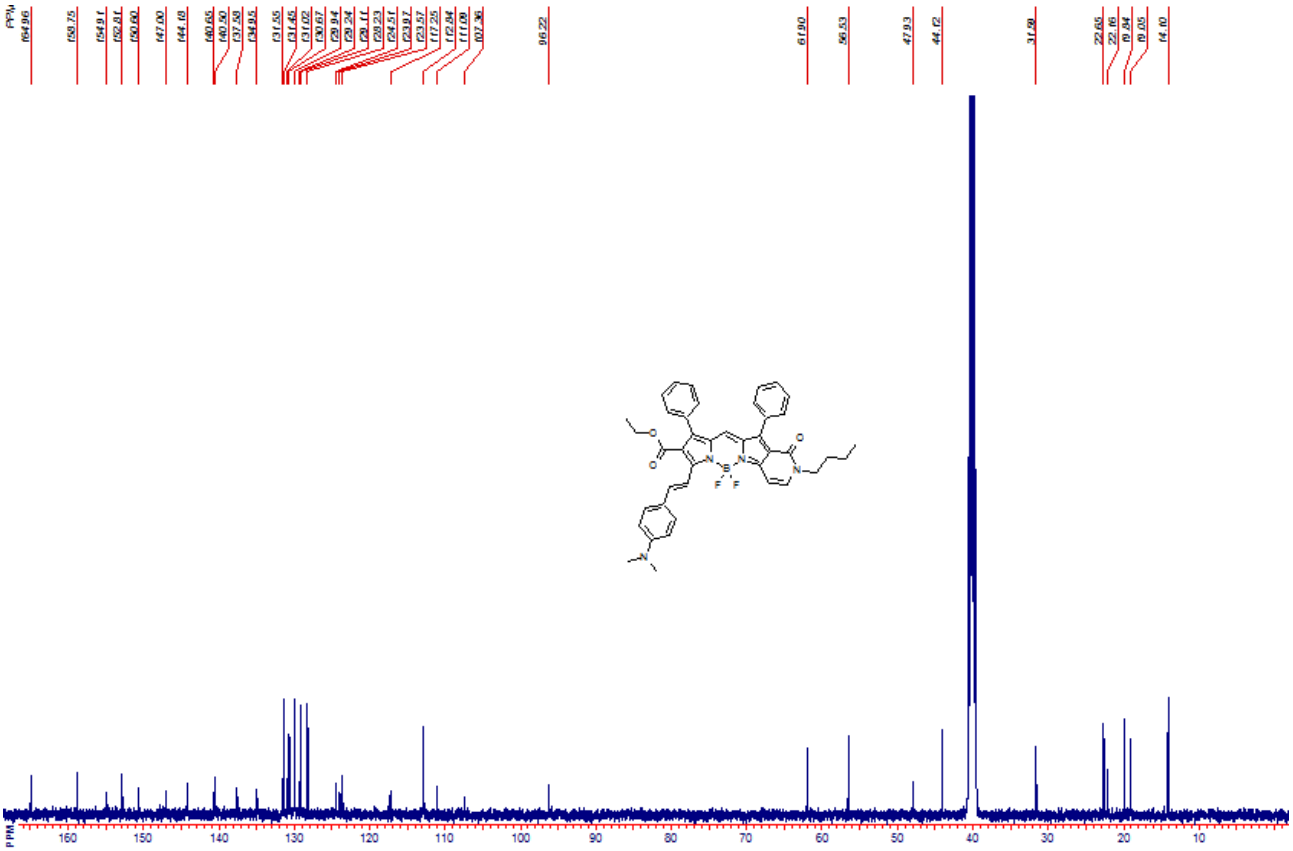

Figure 20. ^{13}C NMR spectrum of compound **2** in DMSO.

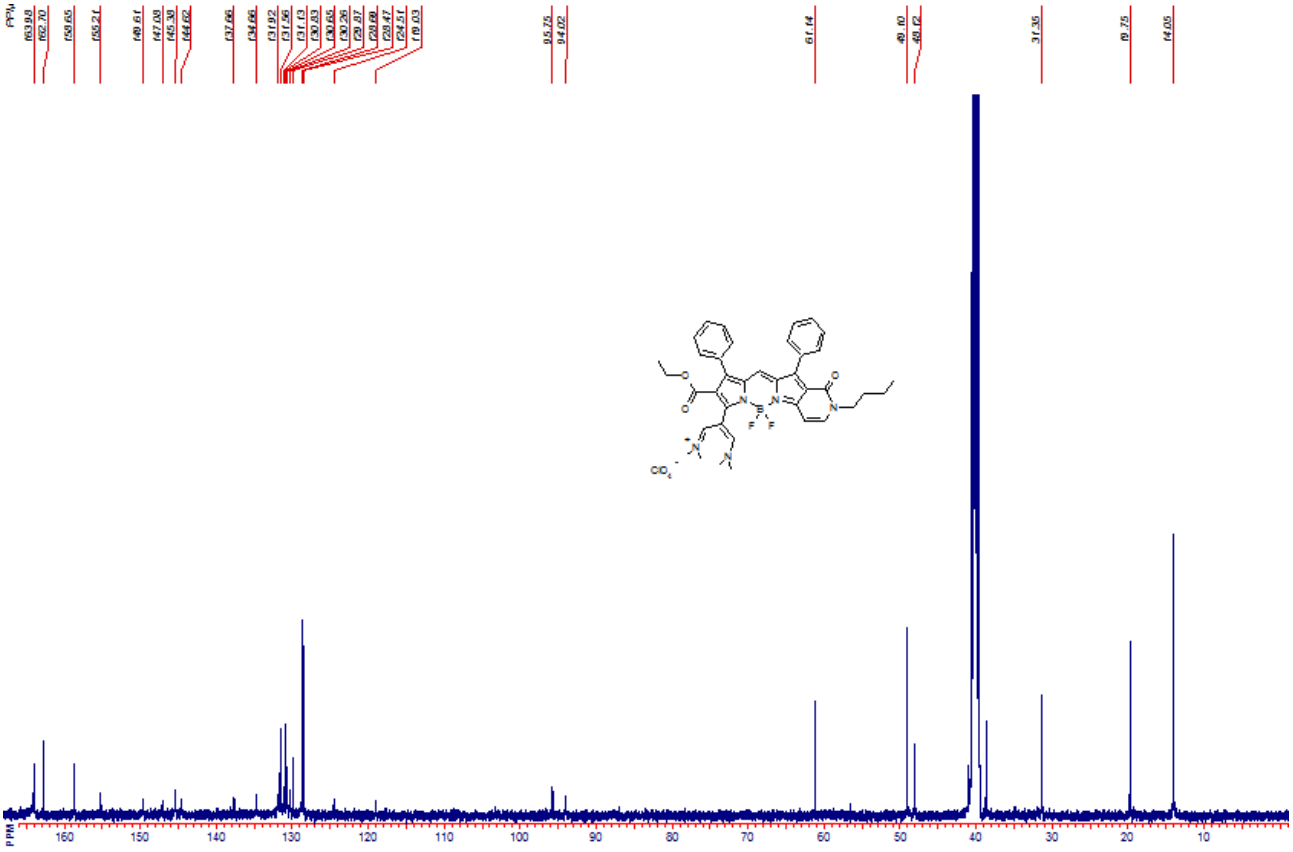

Figure 21. ^{13}C NMR spectrum of compound **3** in DMSO.

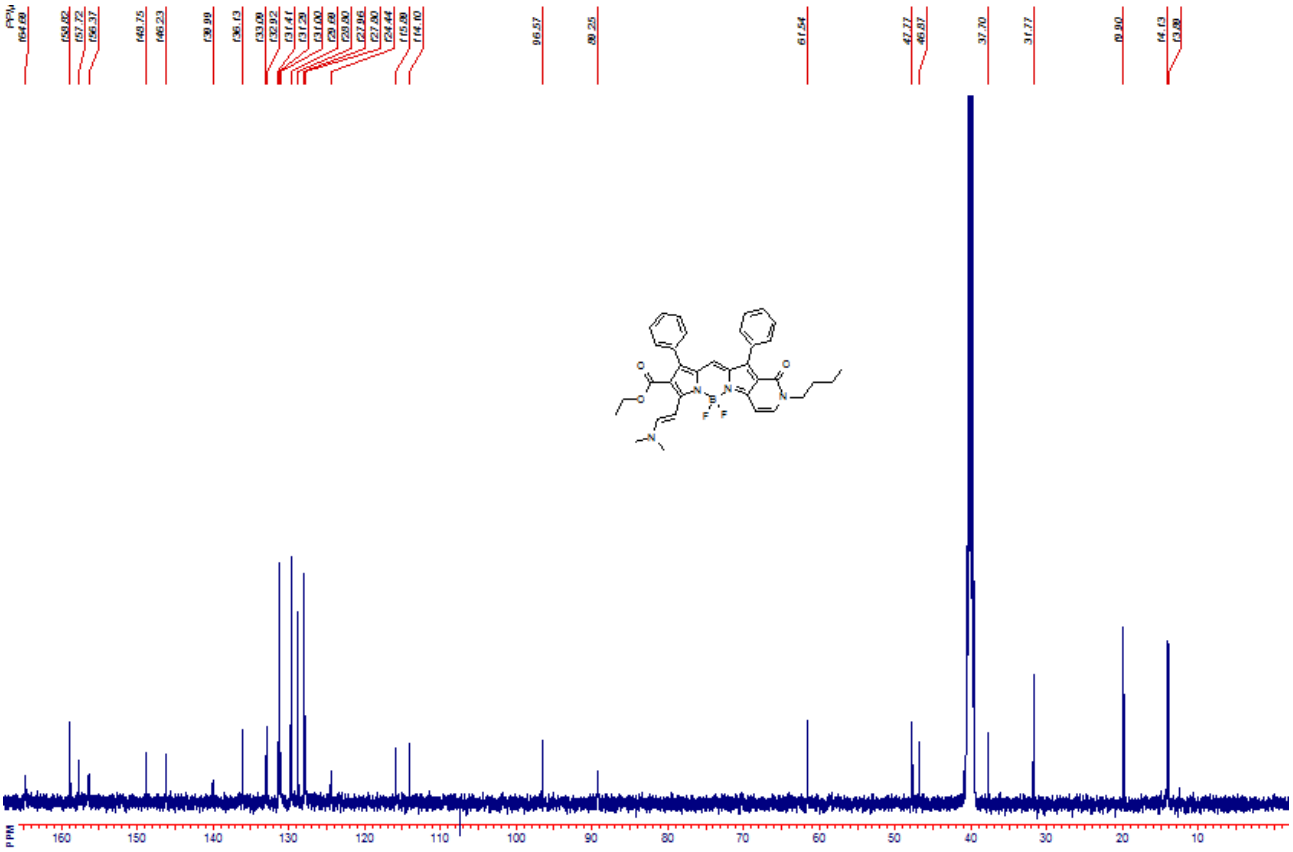

Figure 22. ^{13}C NMR spectrum of compound **4** in DMSO.

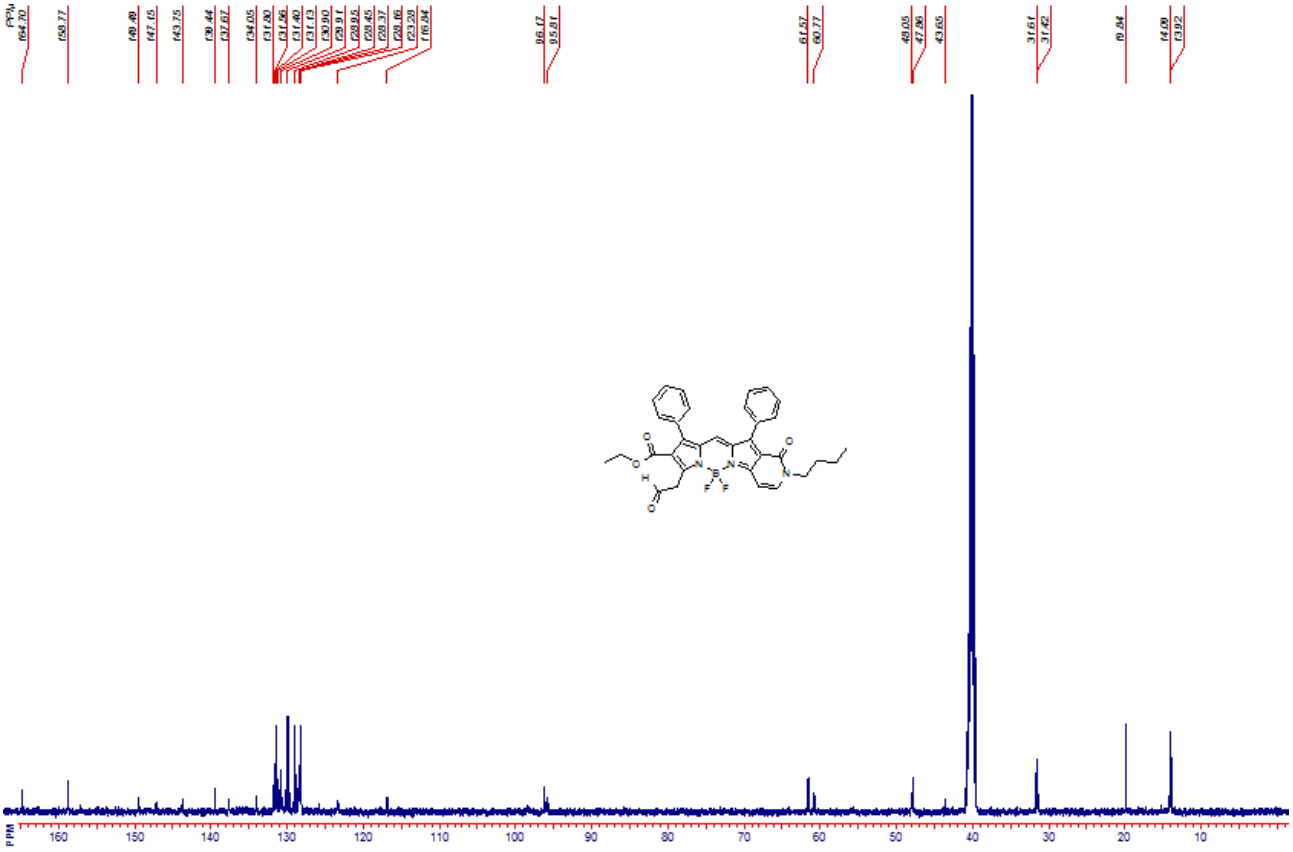

Figure 23. ^{13}C NMR spectrum of compound **5** in DMSO.

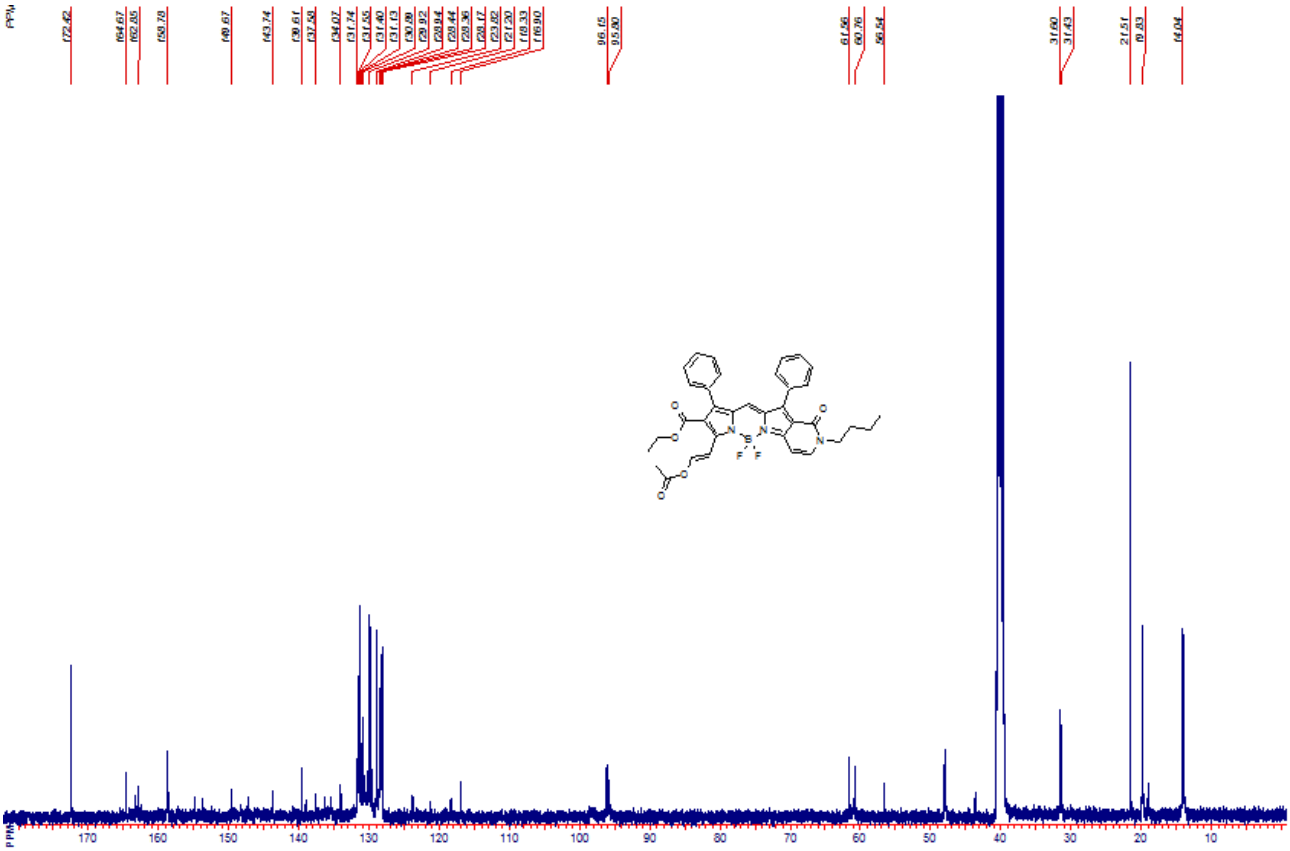

Figure 24. ^{13}C NMR spectrum of compound **6** in DMSO.

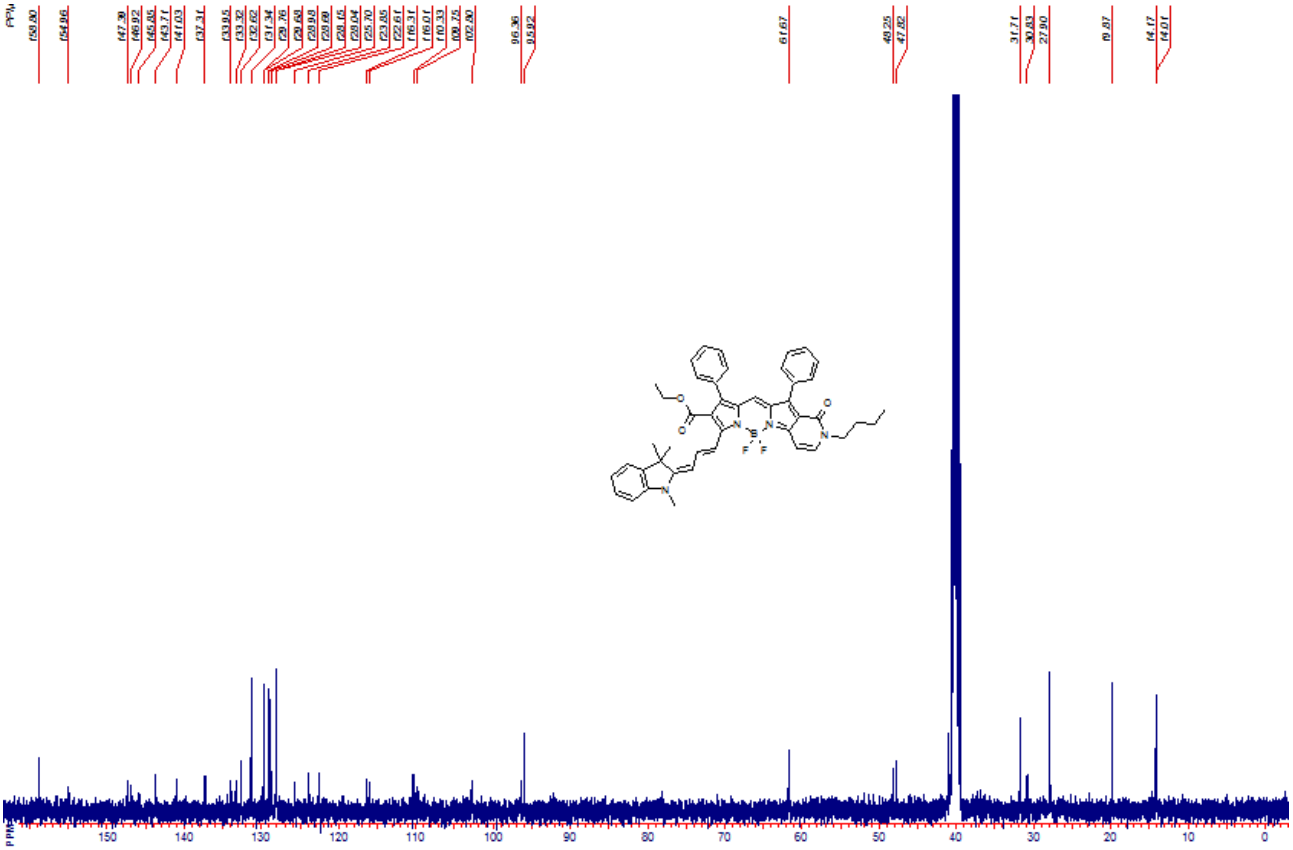

Figure 25. ^{13}C NMR spectrum of compound **7** in DMSO.

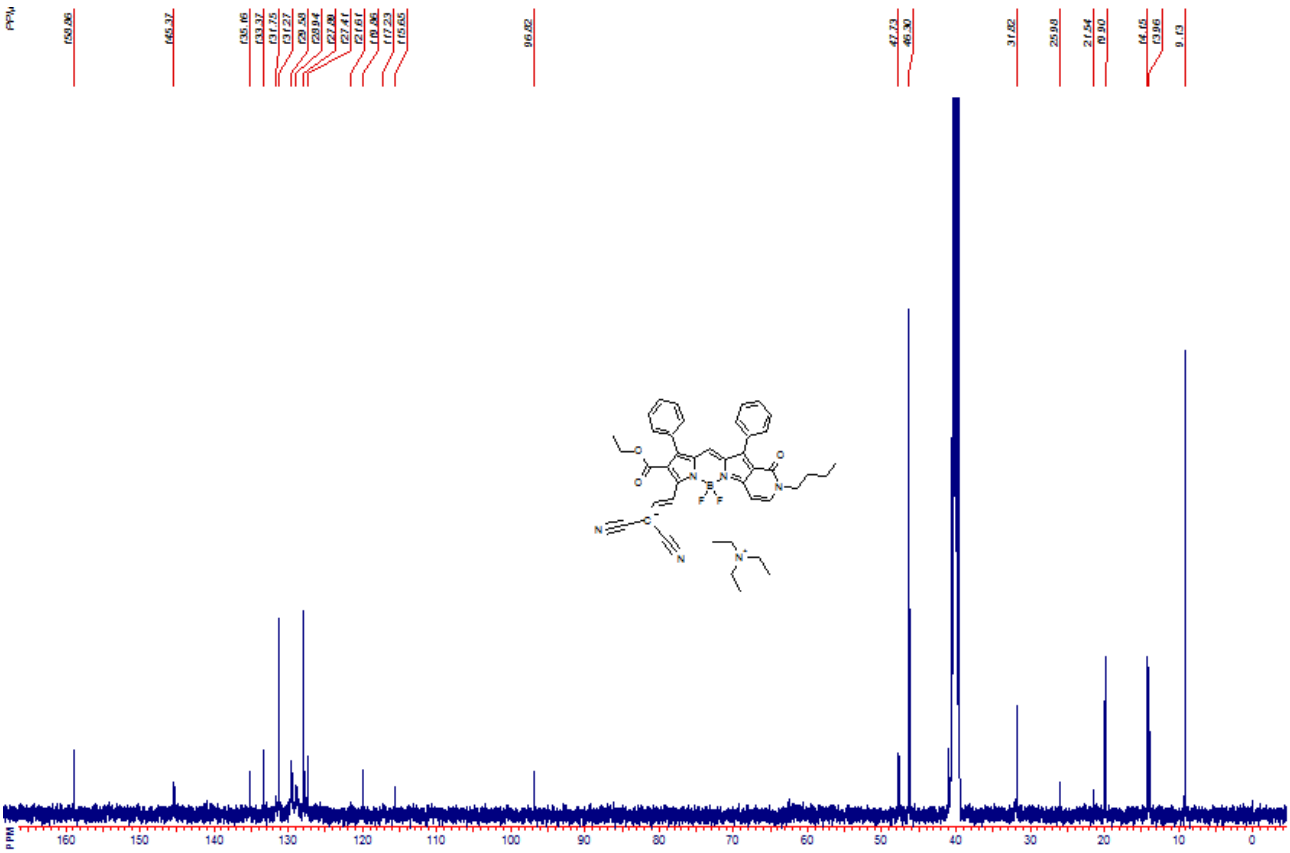

Figure 26. ^{13}C NMR spectrum of compound **10a** in DMSO.

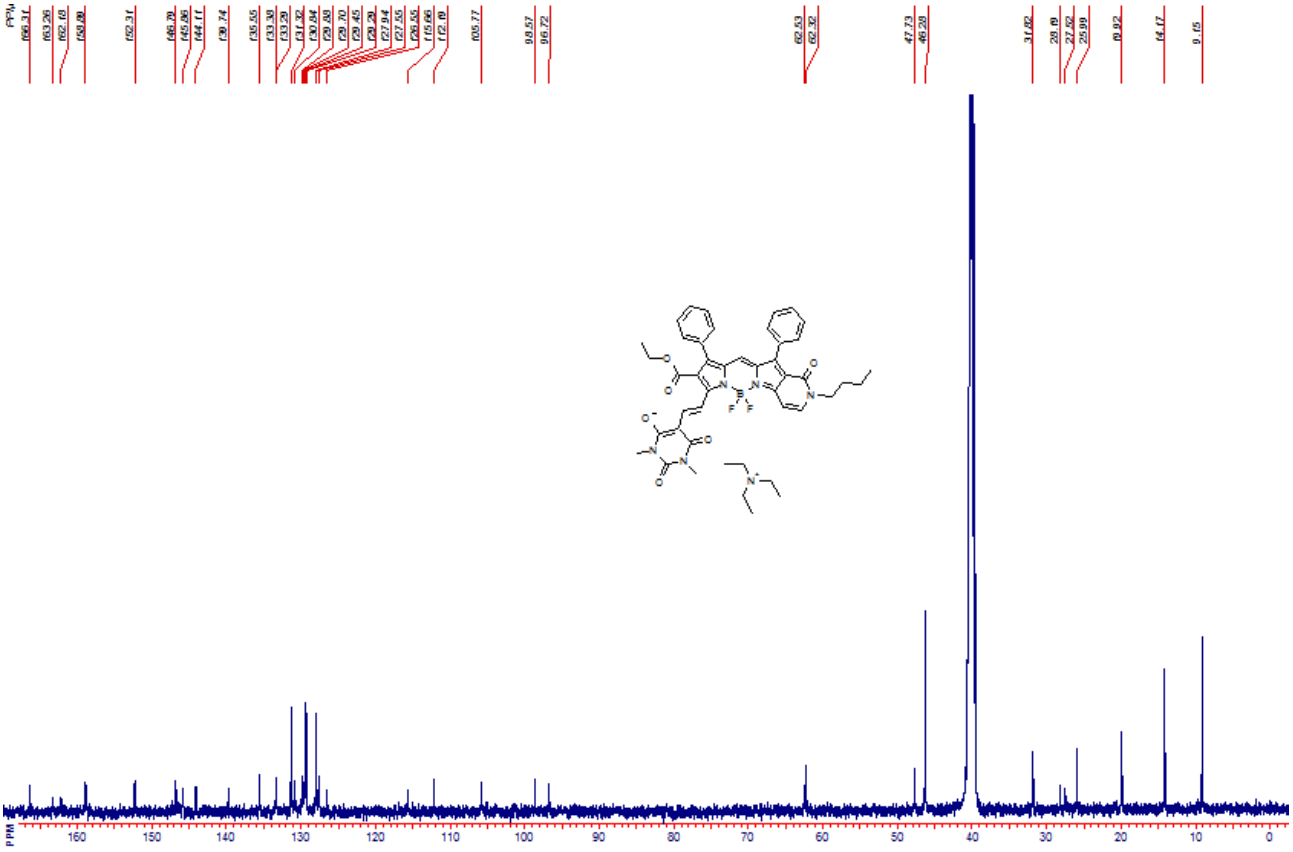

Figure 27. ^{13}C NMR spectrum of compound **11a** in DMSO.

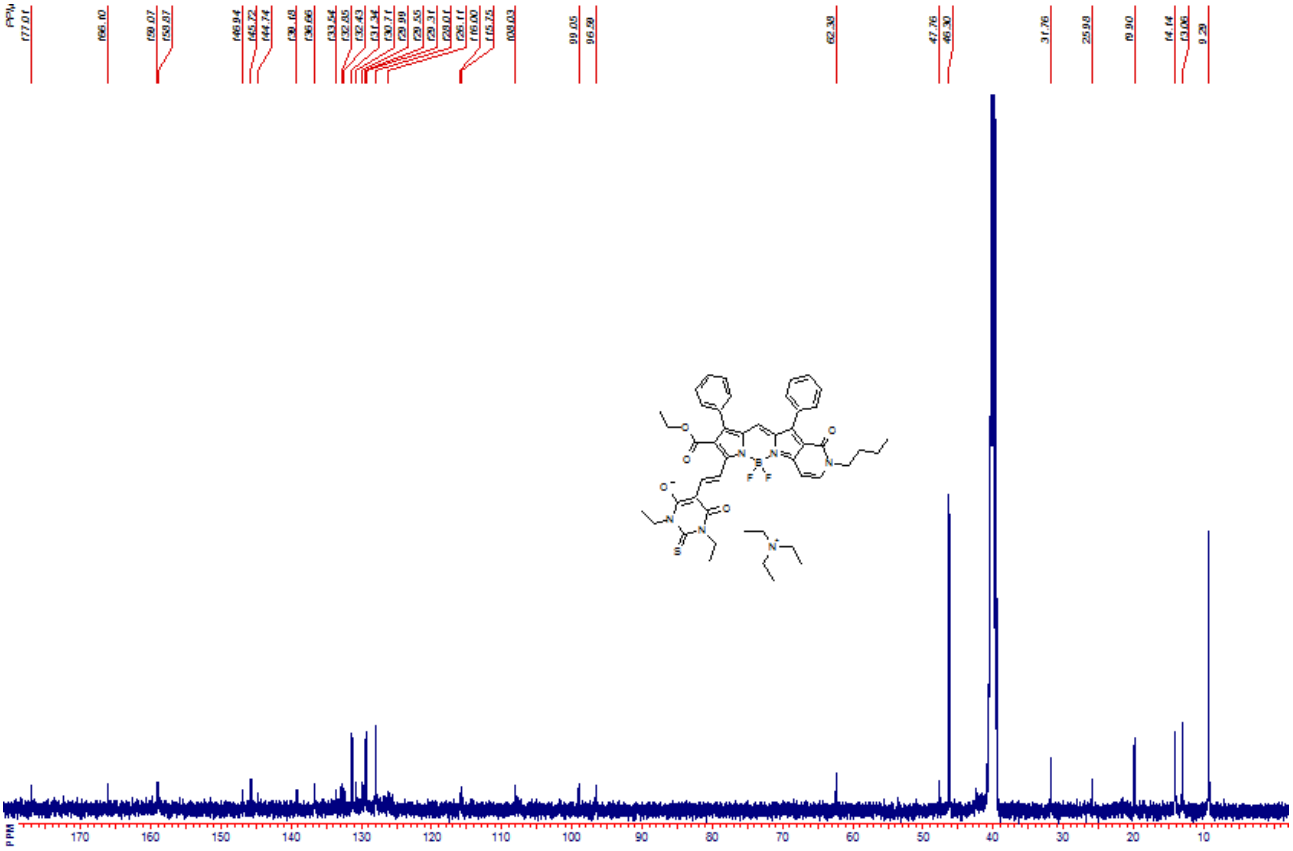

Figure 28. ^{13}C NMR spectrum of compound **12a** in DMSO.

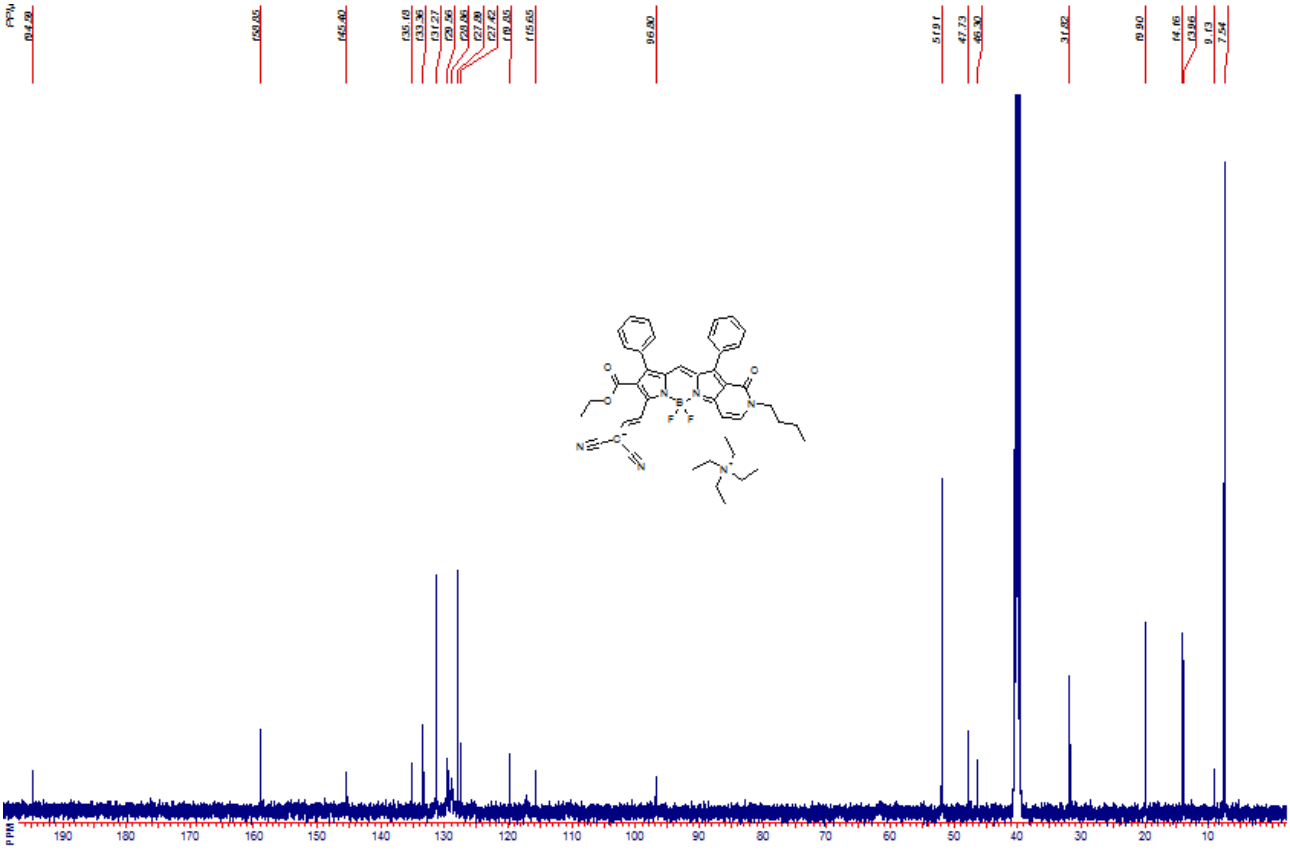

Figure 29. ^{13}C NMR spectrum of compound **10b** in DMSO.

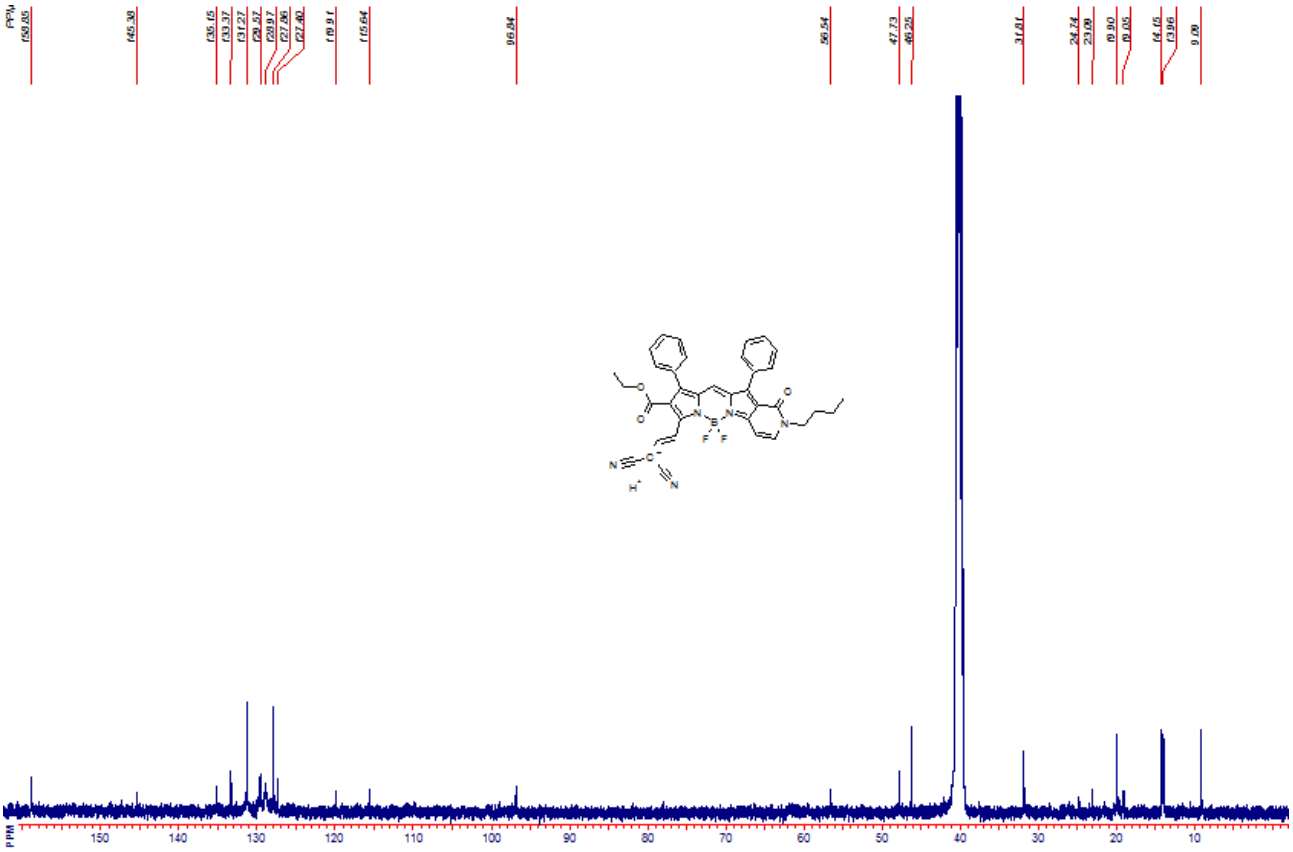

Figure 30. ^{13}C NMR spectrum of compound **13** in DMSO.

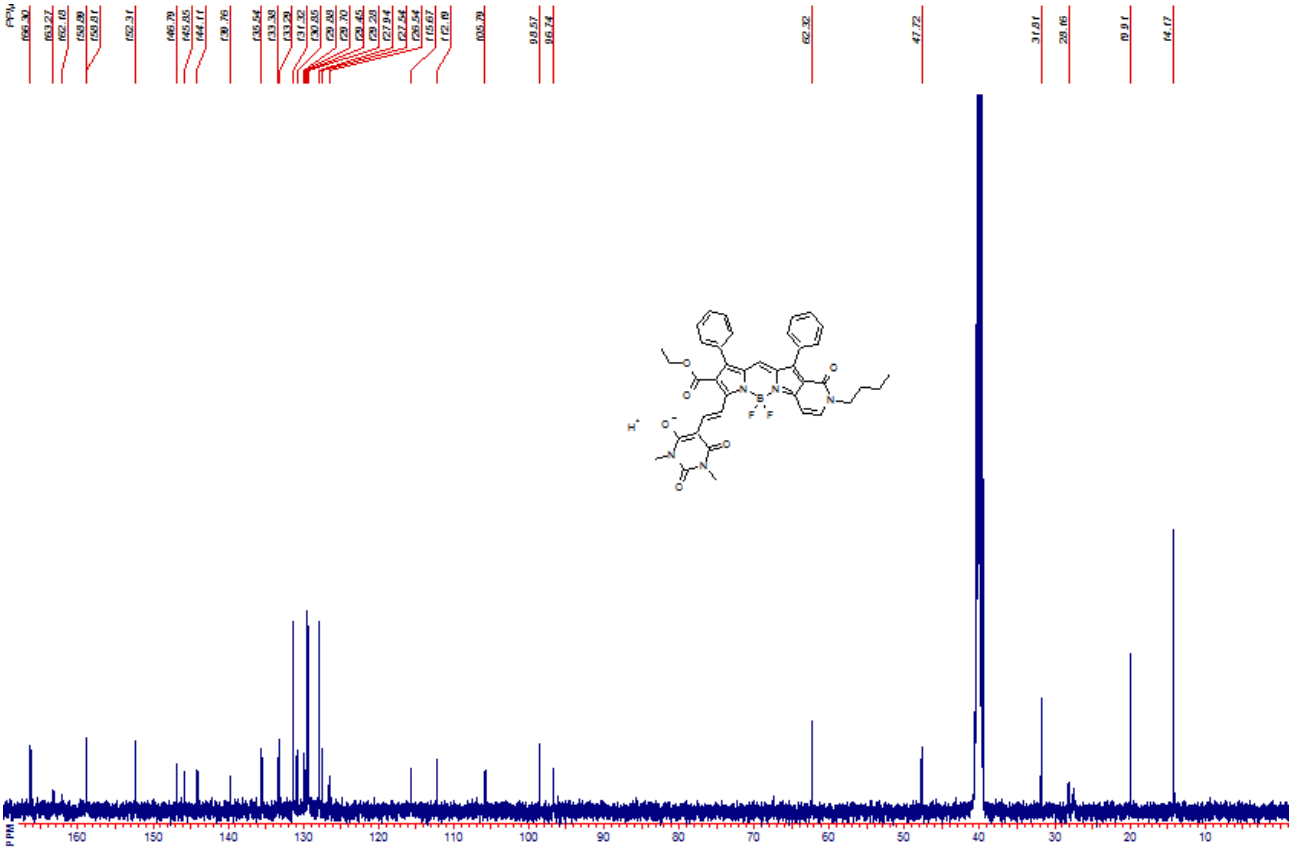

Figure 31. ^{13}C NMR spectrum of compound **14** in DMSO.

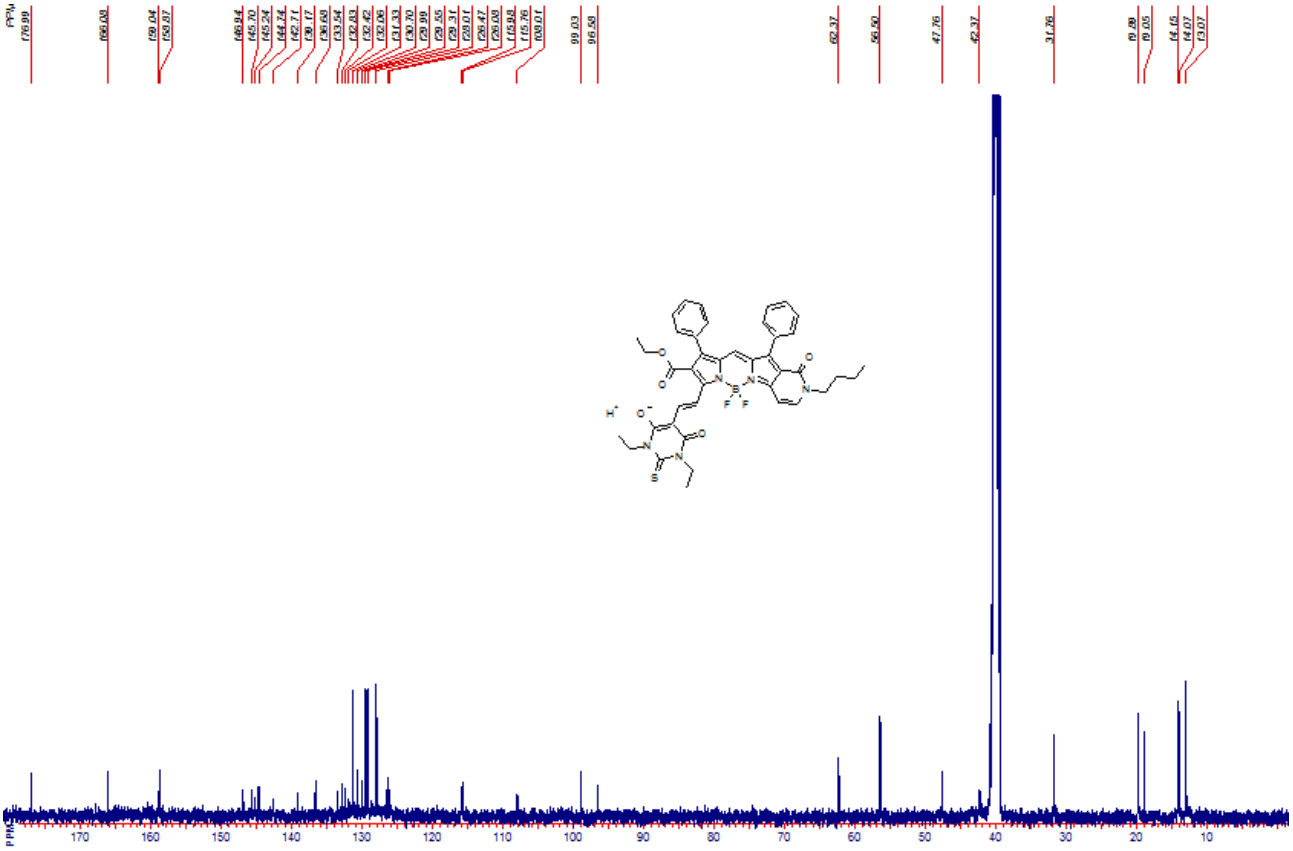

Figure 32. ^{13}C NMR spectrum of compound **15** in DMSO.

Absorption spectra

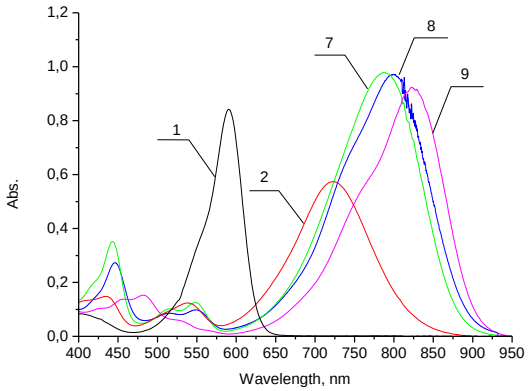

Figure 33. Absorption spectra of compounds **1,2** and **7-9** in DMF ($C_M = 1 \cdot 10^{-5}$)

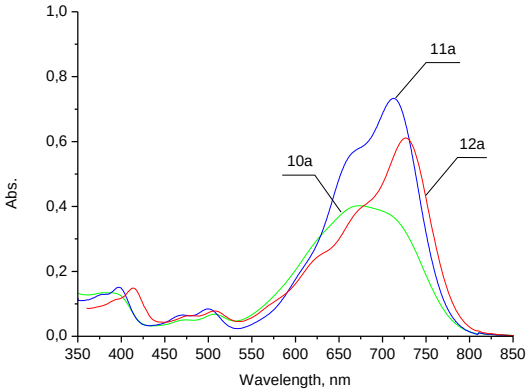

Figure 34. Absorption spectra of compounds **10a-12a** in DMF ($C_M = 1 \cdot 10^{-5}$)

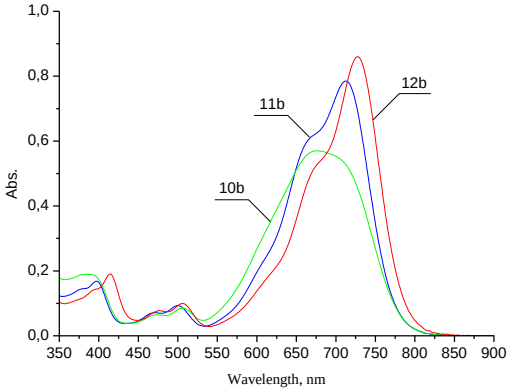

Figure 35. Absorption spectra of compounds **10b-12b** in DMF ($C_M = 1 \cdot 10^{-5}$)

Fluorescence spectra

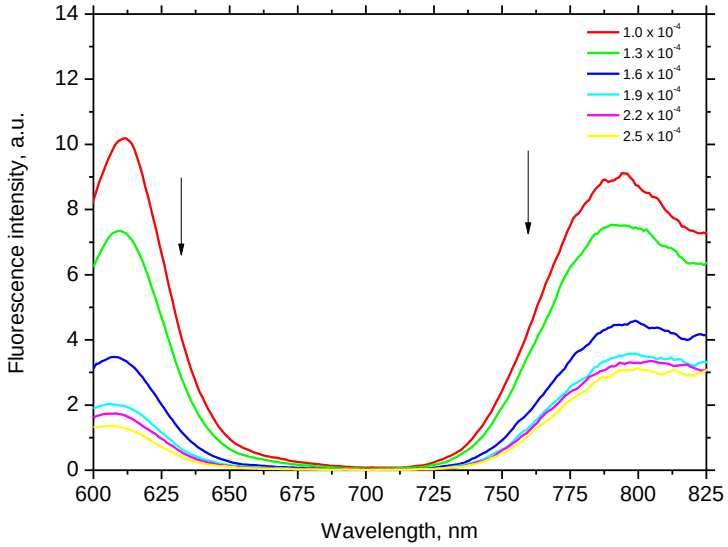

Figure.36. Fluorescence spectra of compound **14** in MeCN in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-4} M, final – 2.5×10^{-4} M. Excitation wavelength is 590 nm.

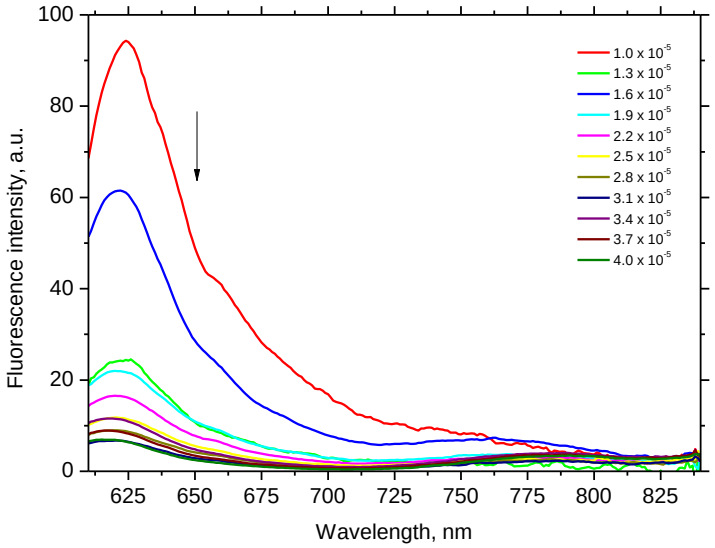

Figure.37. Fluorescence spectra of compound **14** in MeCN in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-5} M, final – 4.0×10^{-5} M. Excitation wavelength is 600 nm.

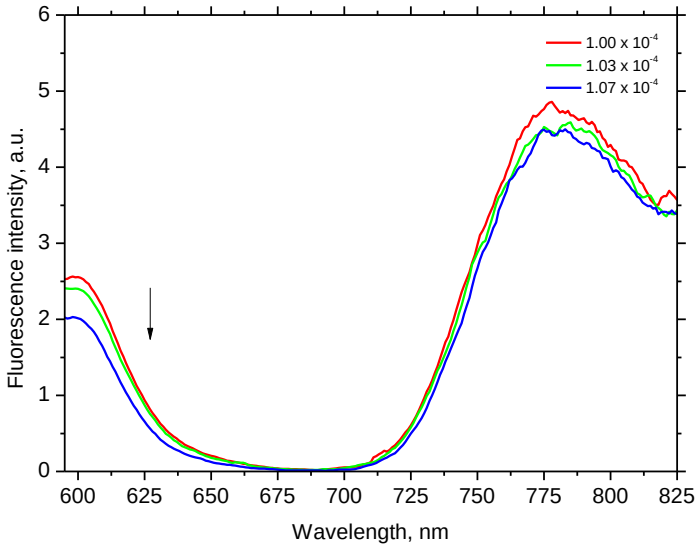

Figure.38. Fluorescence spectra of compound **14** in MeOH in different concentrations at 25 °C. Initial concentration of the dye is 1.00×10^{-4} M, final – 1.07×10^{-4} M. Excitation wavelength is 590 nm.

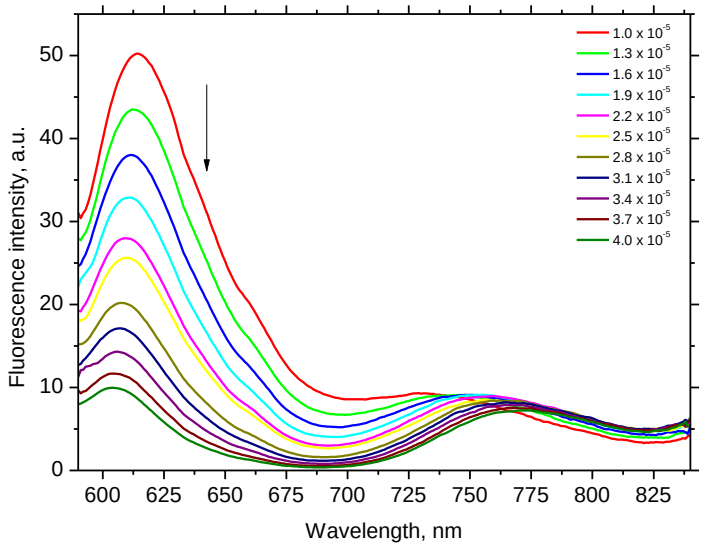

Figure.39. Fluorescence spectra of compound **14** in MeOH in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-5} M, final – 4.0×10^{-5} M. Excitation wavelength is 580 nm.

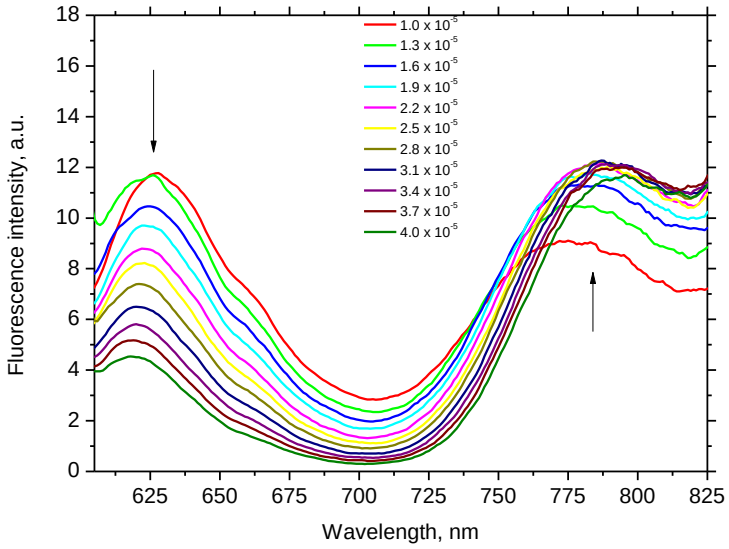

Figure.40. Fluorescence spectra of compound **14** in 50% DMSO aqueous solution in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-5} M, final – 4.0×10^{-5} M. Excitation wavelength is 590 nm.

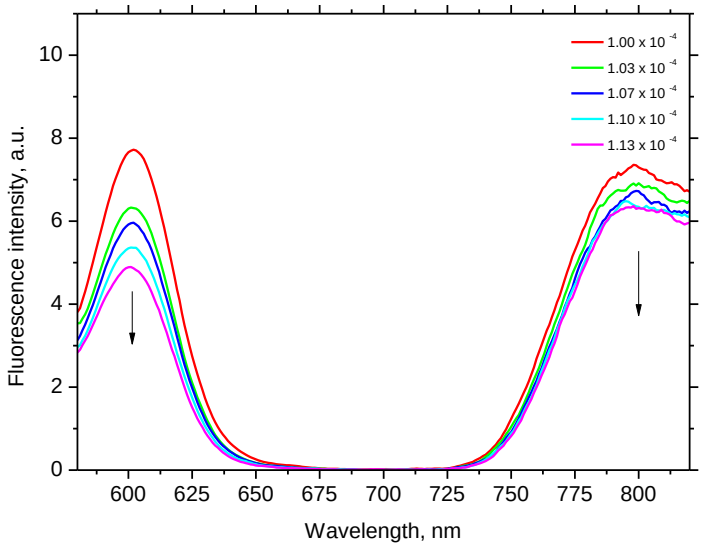

Figure.41. Fluorescence spectra of compound **15** in MeOH in different concentrations at 25 °C. Initial concentration of the dye is 1.00×10^{-4} M, final – 1.13×10^{-4} M. Excitation wavelength is 570 nm.

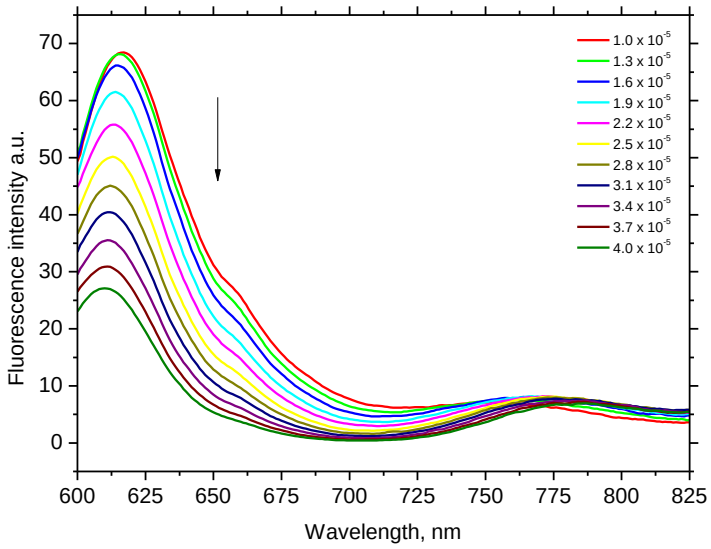

Figure.42. Fluorescence spectra of compound **15** in MeOH in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-5} M, final – 4.0×10^{-5} M. Excitation wavelength is 590 nm.

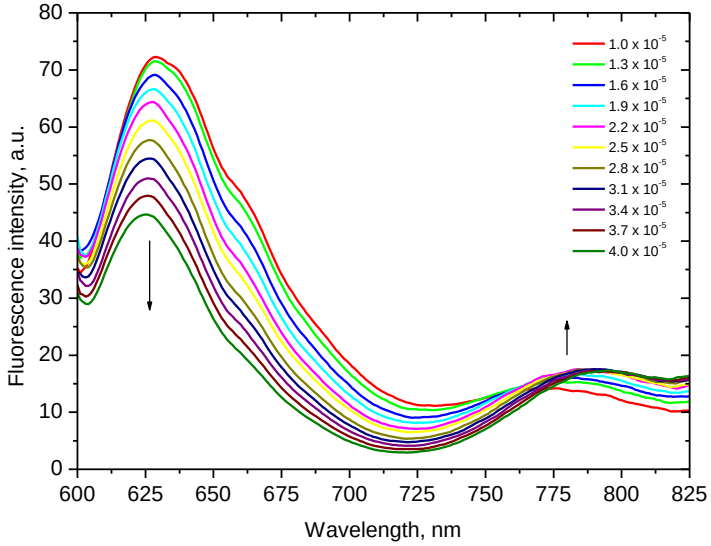

Figure.43. Fluorescence spectra of compound **15** in 50% DMSO aqueous solution in different concentrations at 25 °C. Initial concentration of the dye is 1.0×10^{-5} M, final – 4.0×10^{-5} M. Excitation wavelength is 590 nm.