Supplementary Material

Oligoyne-bridged boron subphthalocyanine dimers – synthesis and redox properties

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[1]These authors contributed equally

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NMR Spectroscopy

Compound **3**

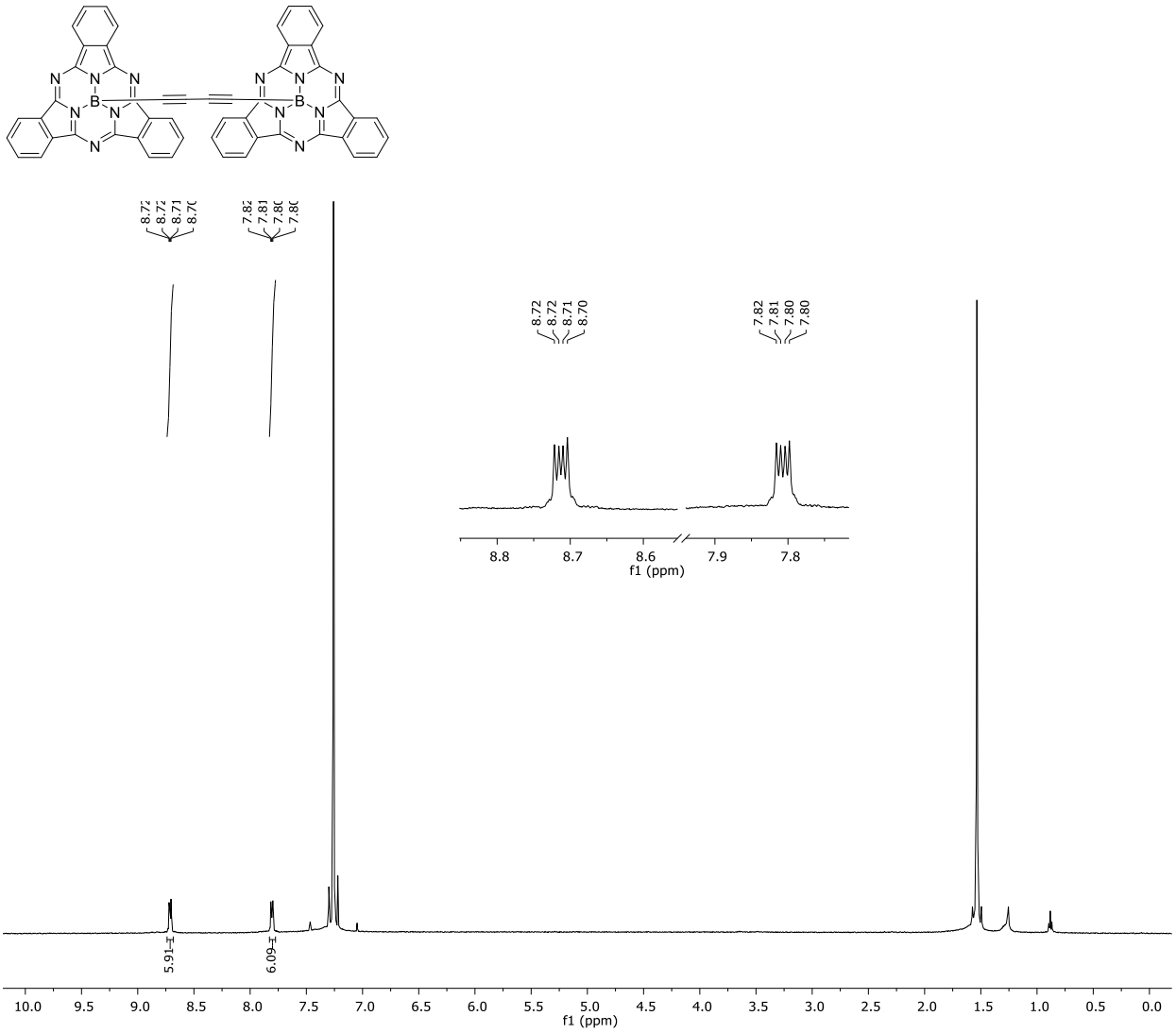
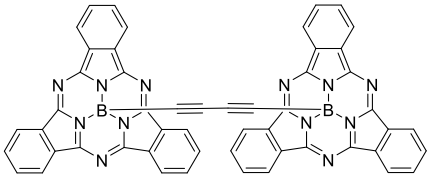


Figure S1. ^{1}H-NMR spectrum of compound **3** in $CDCl_3$.

Compound **3**



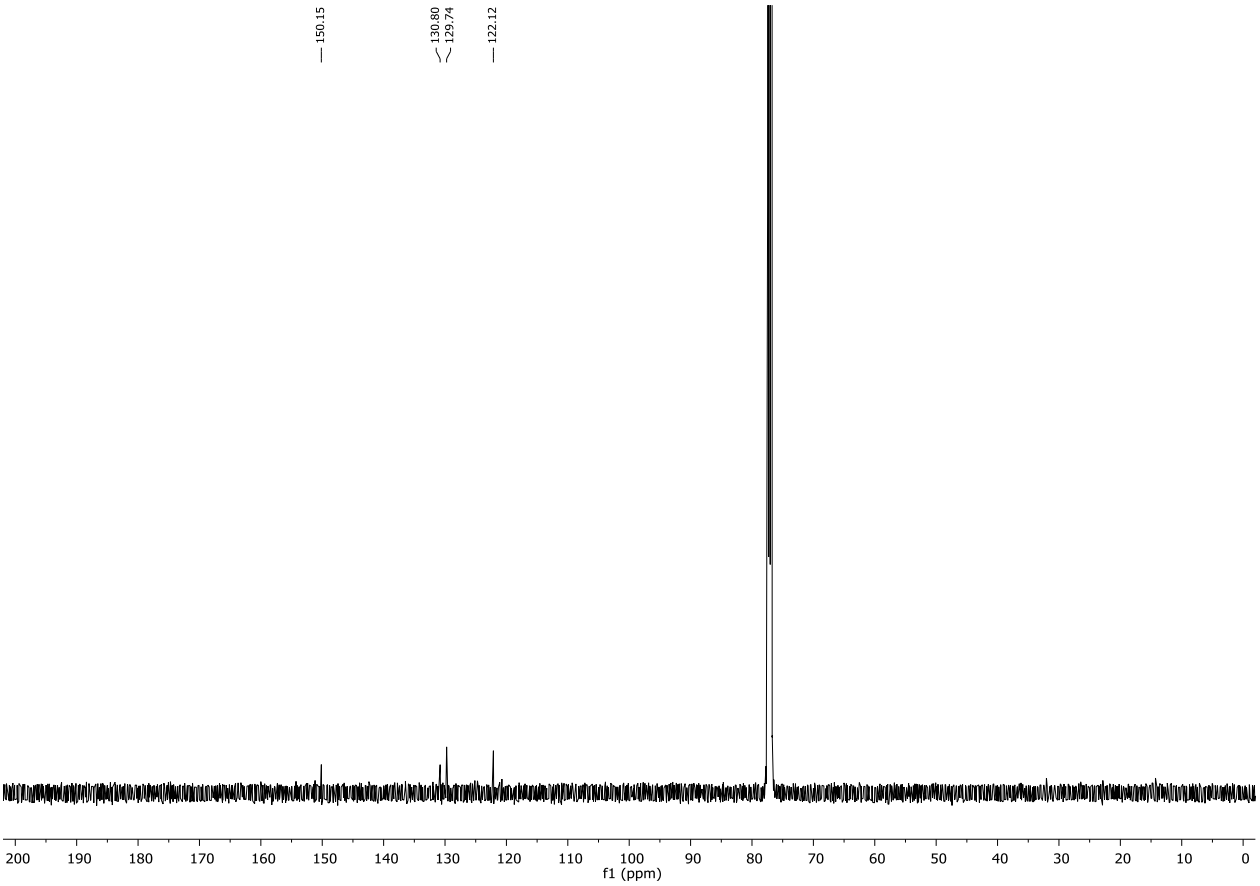


Figure S2. ^{13}C-NMR spectrum of compound **3** in $CDCl_3$.

Compound **4**

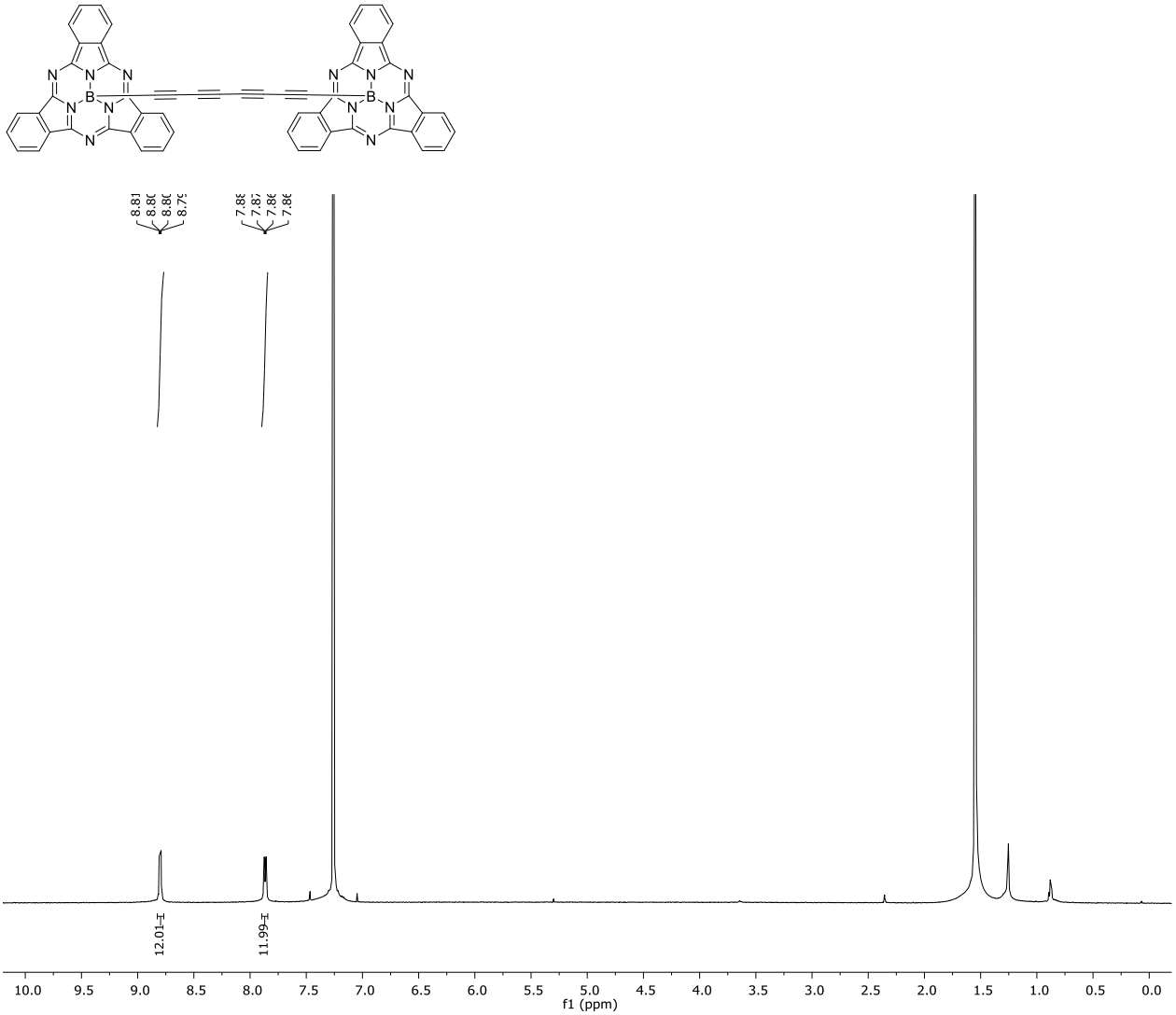


Figure S3. ^{1}H-NMR spectrum of compound **4** in $CDCl_3$.

Compound **4**

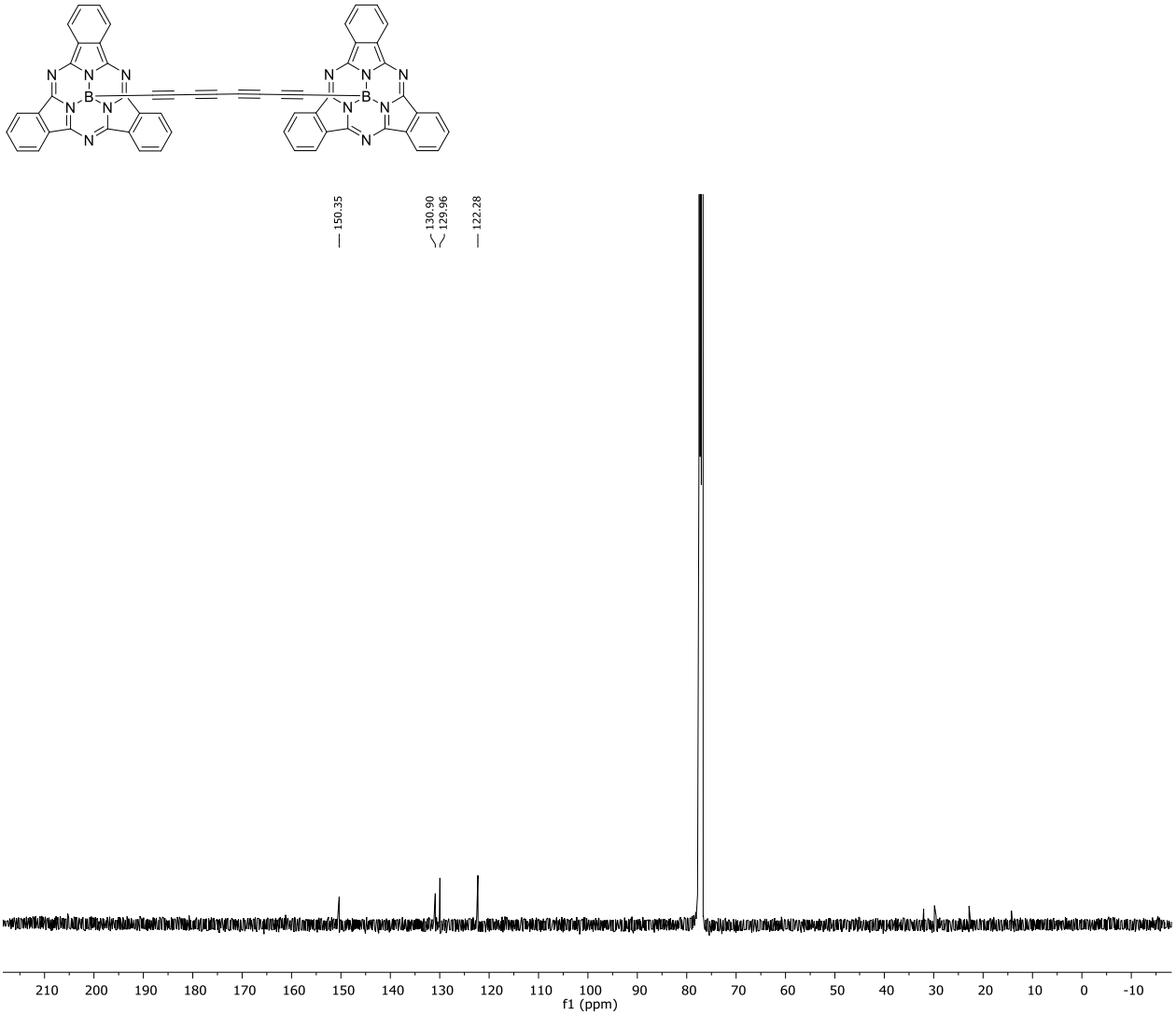


Figure S4. ^{13}C-NMR spectrum of compound **4** in $CDCl_3$.

Compound **5**

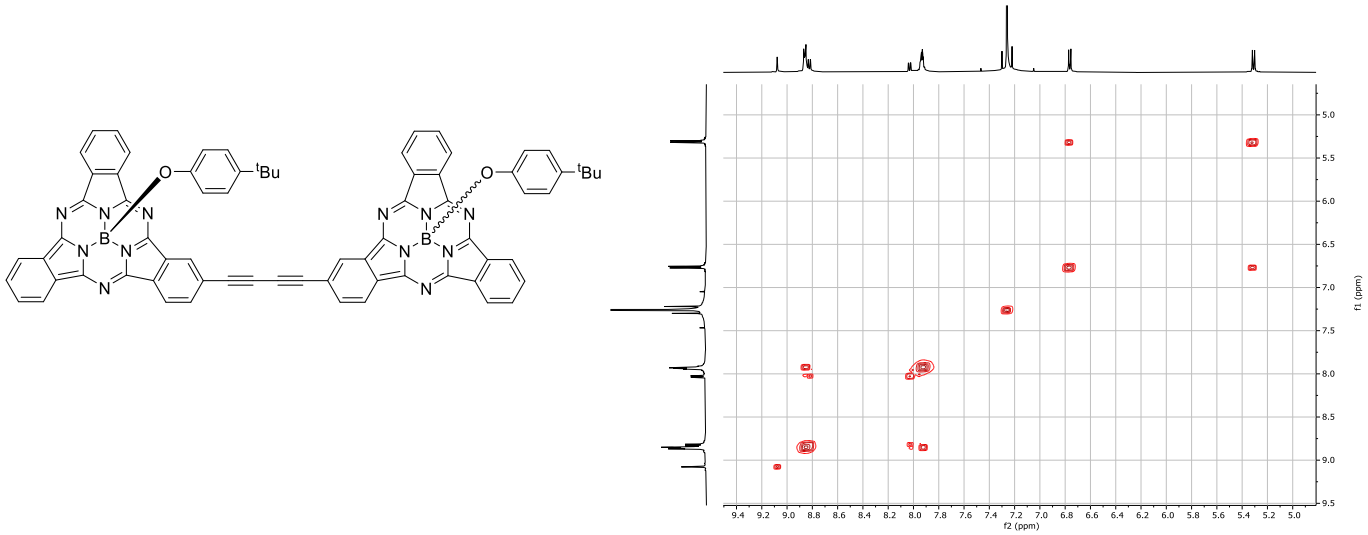


Figure S5. COSY spectrum of compound **5** in $CDCl_3$.

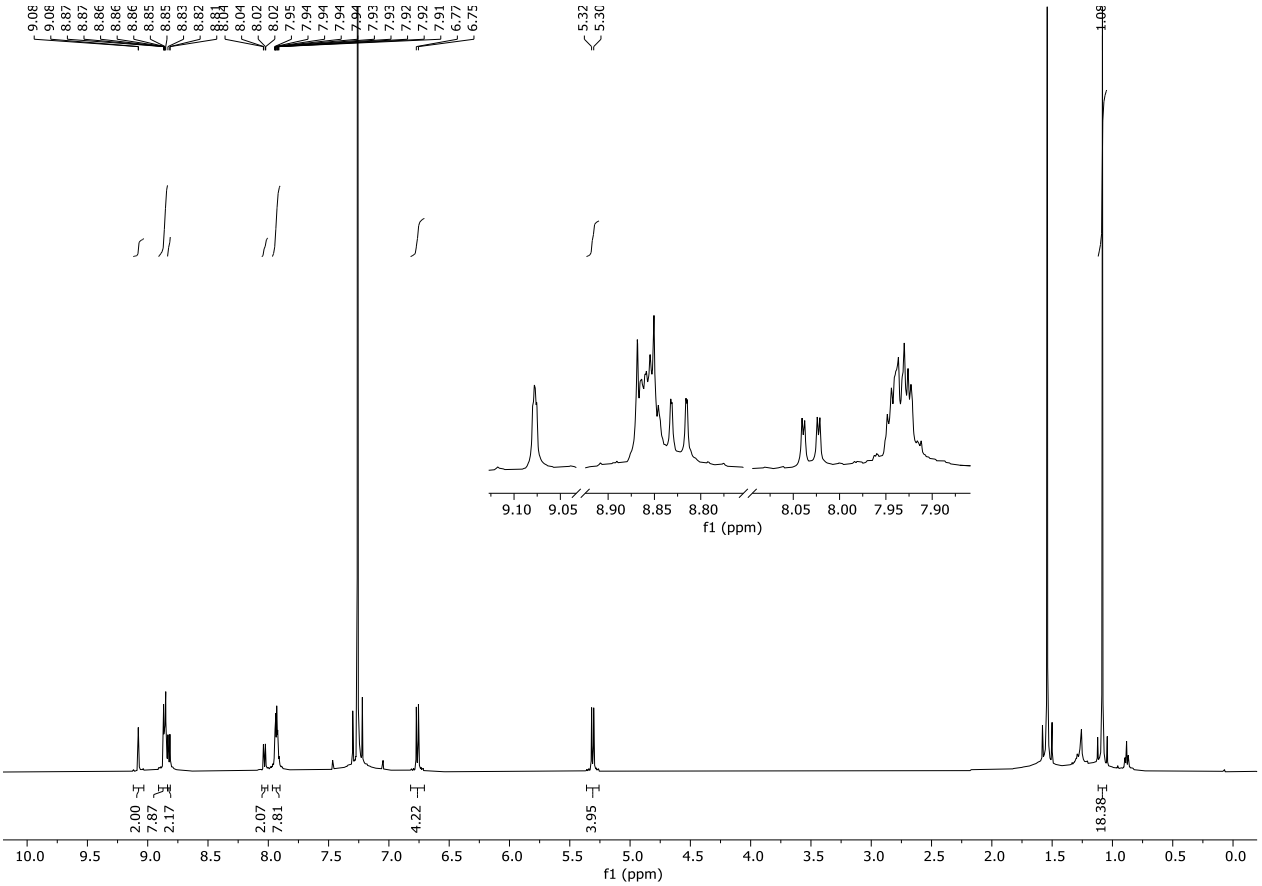


Figure S6. ^{1}H-NMR spectrum of compound **5** in $CDCl_3$.

Compound **5**

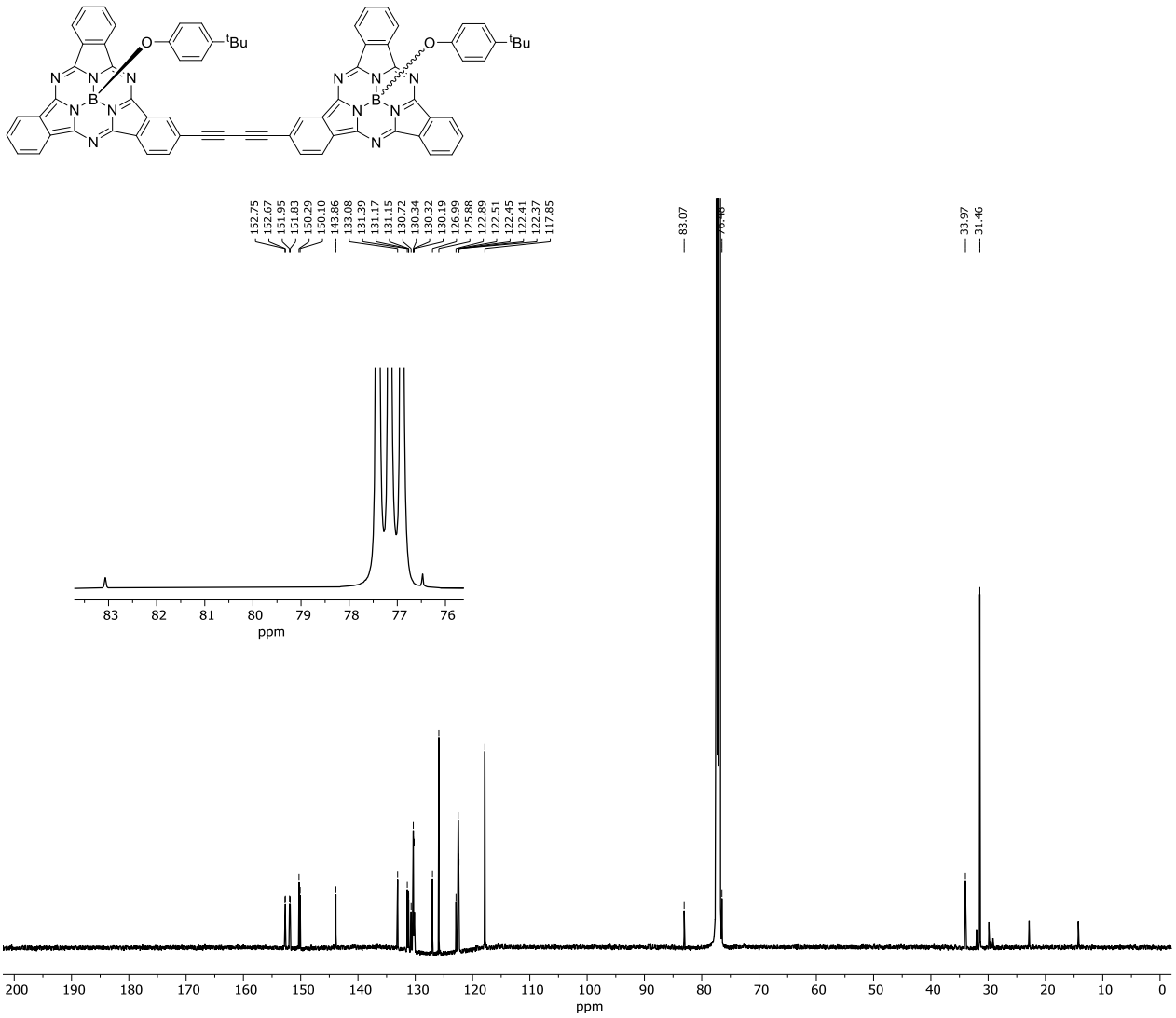


Figure S7. ^{13}C-NMR spectrum of compound **5** in $CDCl_3$.

Compound **7**

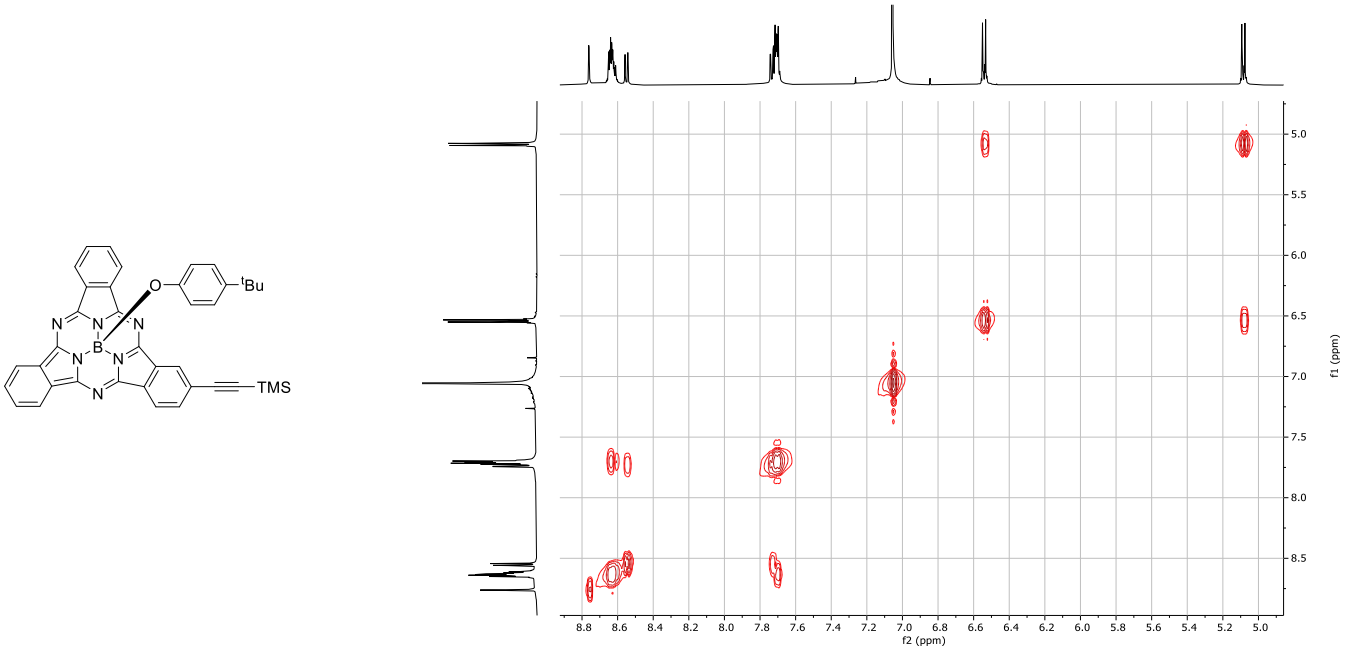


Figure S8. COSY spectrum of compound **7** in $CDCl_3$

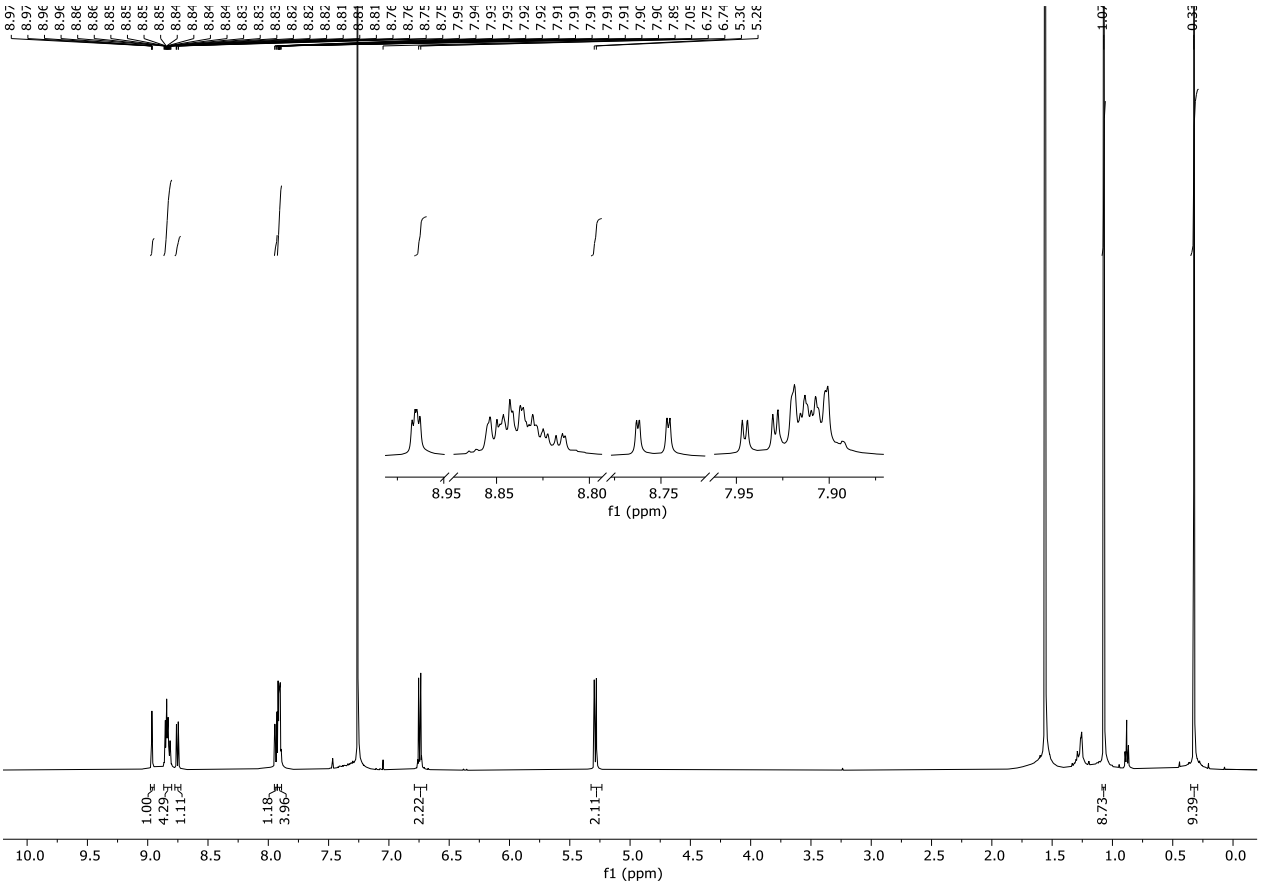


Figure S9. ^{1}H-NMR spectrum of compound **7** in $CDCl_3$.

Compound **7**

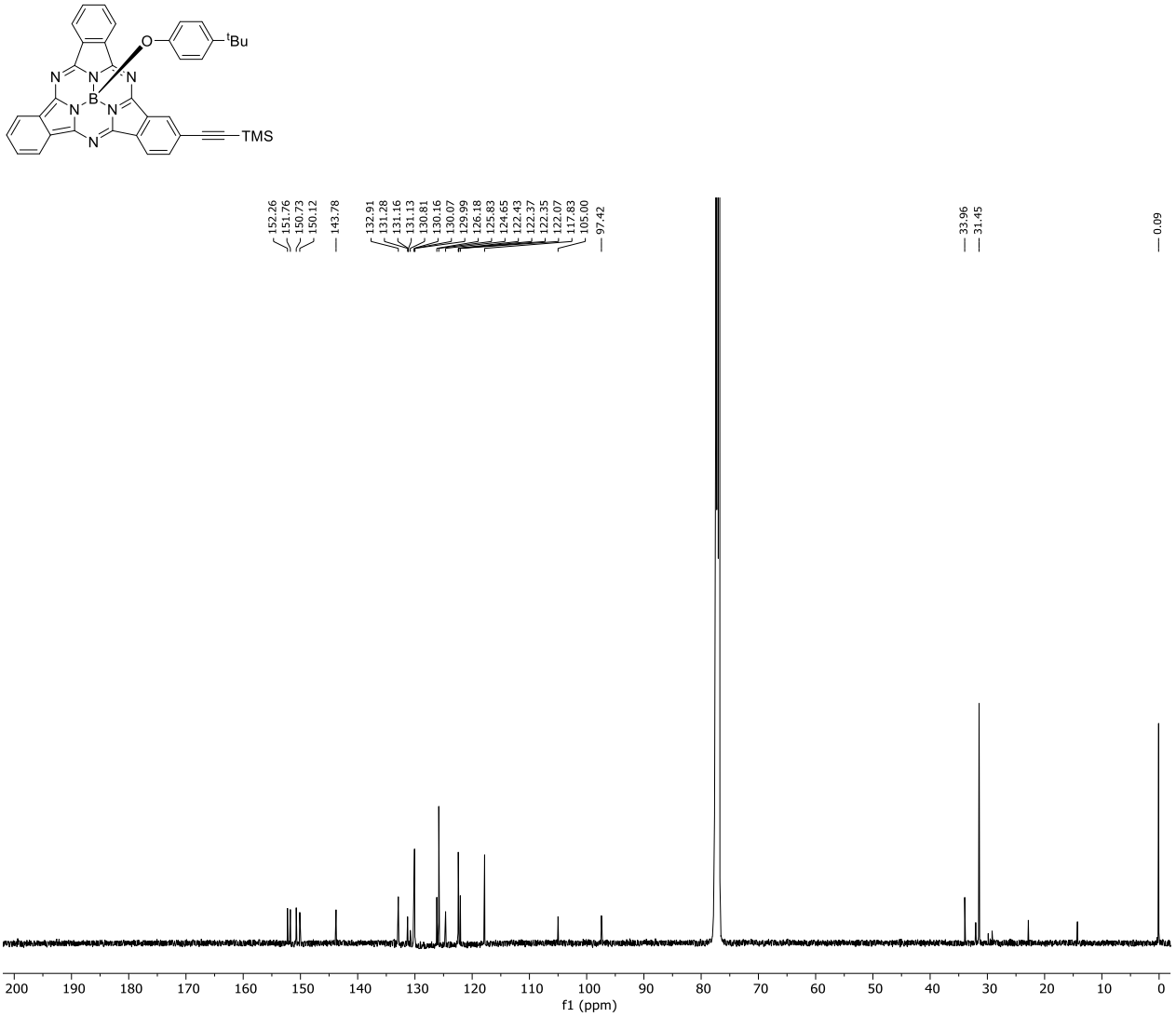
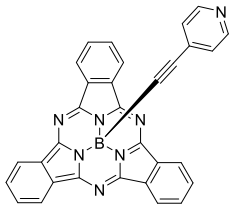


Figure S10. ^{13}C-NMR spectrum of compound **7** in $CDCl_3$.

Compound **8**



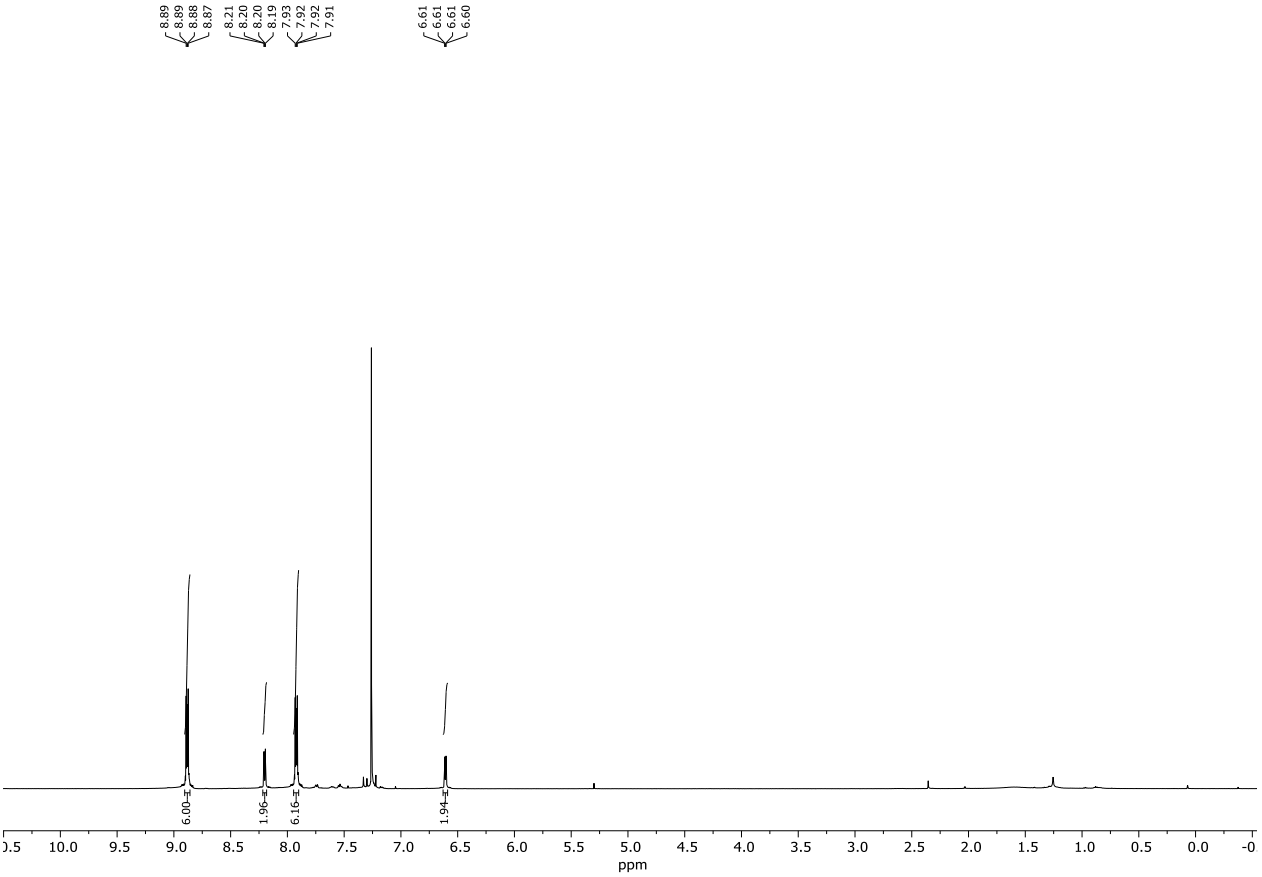
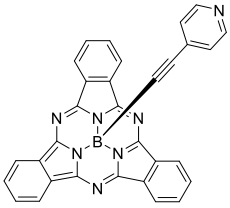


Figure S11. ^{1}H-NMR spectrum of compound **8** in $CDCl_3$.

Compound **8**



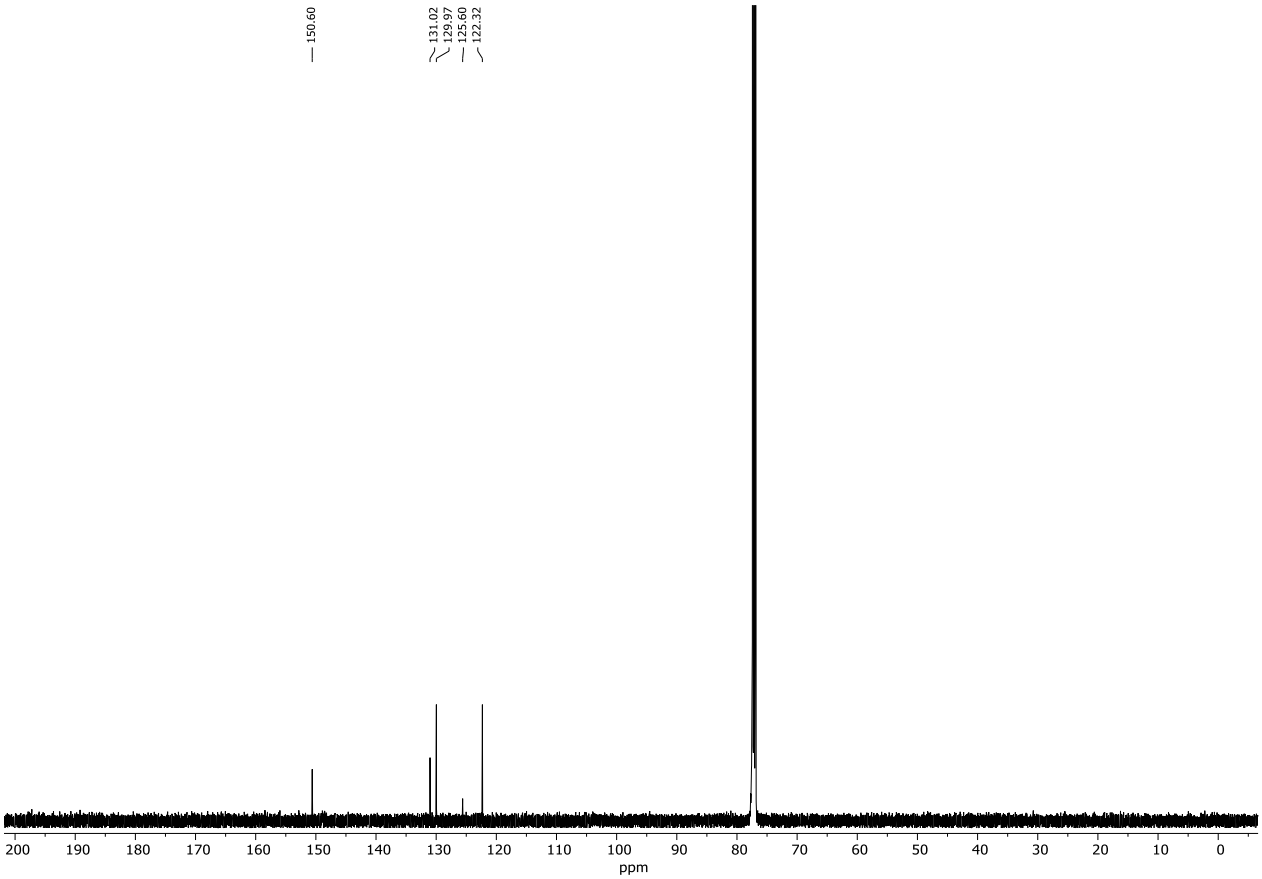
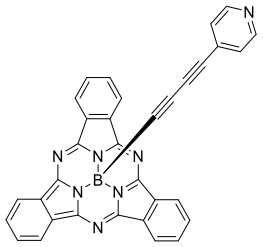


Figure S12. ^{13}C-NMR spectrum of compound **8** in $CDCl_3$.

Compound **9**



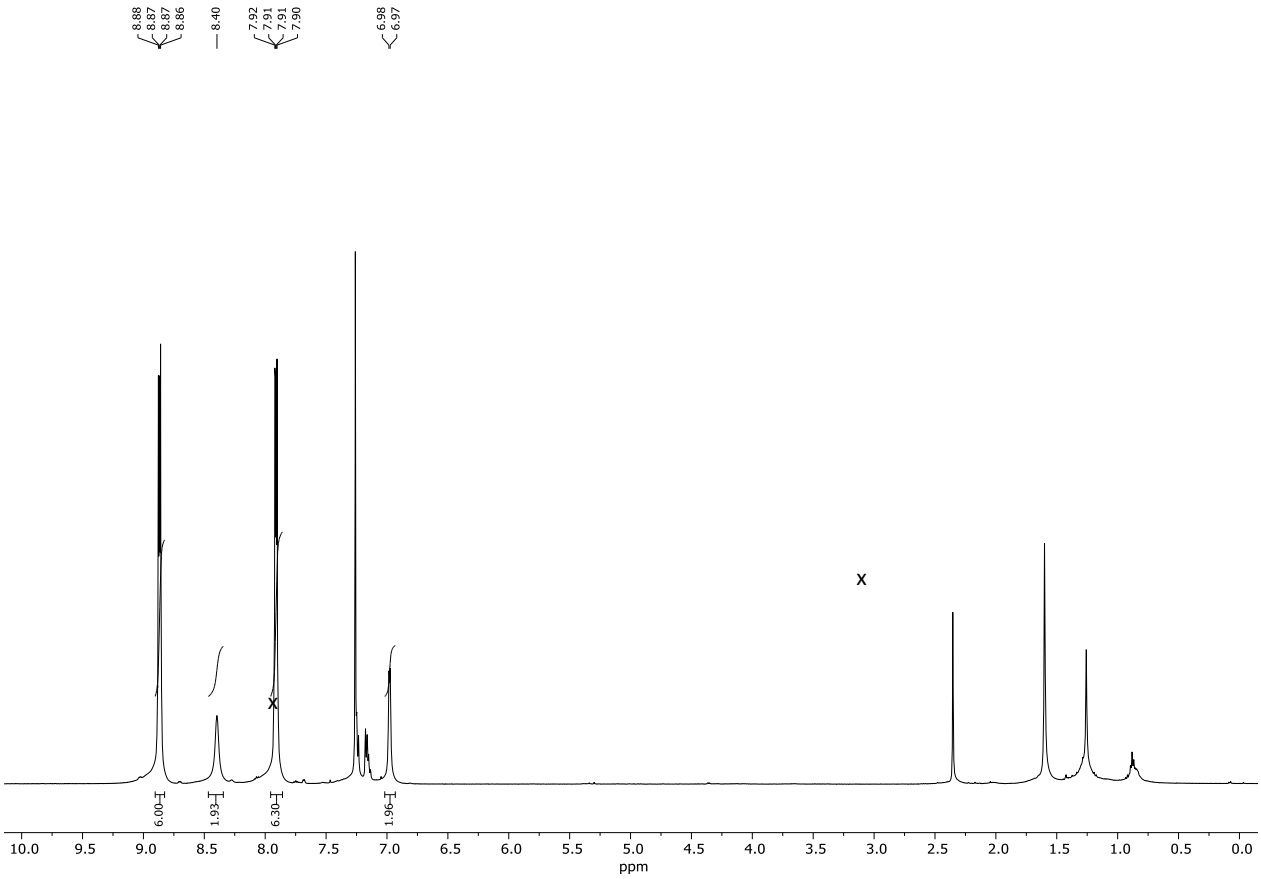


Figure S13. ^{1}H-NMR spectrum of compound **9** in $CDCl_3$. Toluene residues marked with x.

Compound **9**

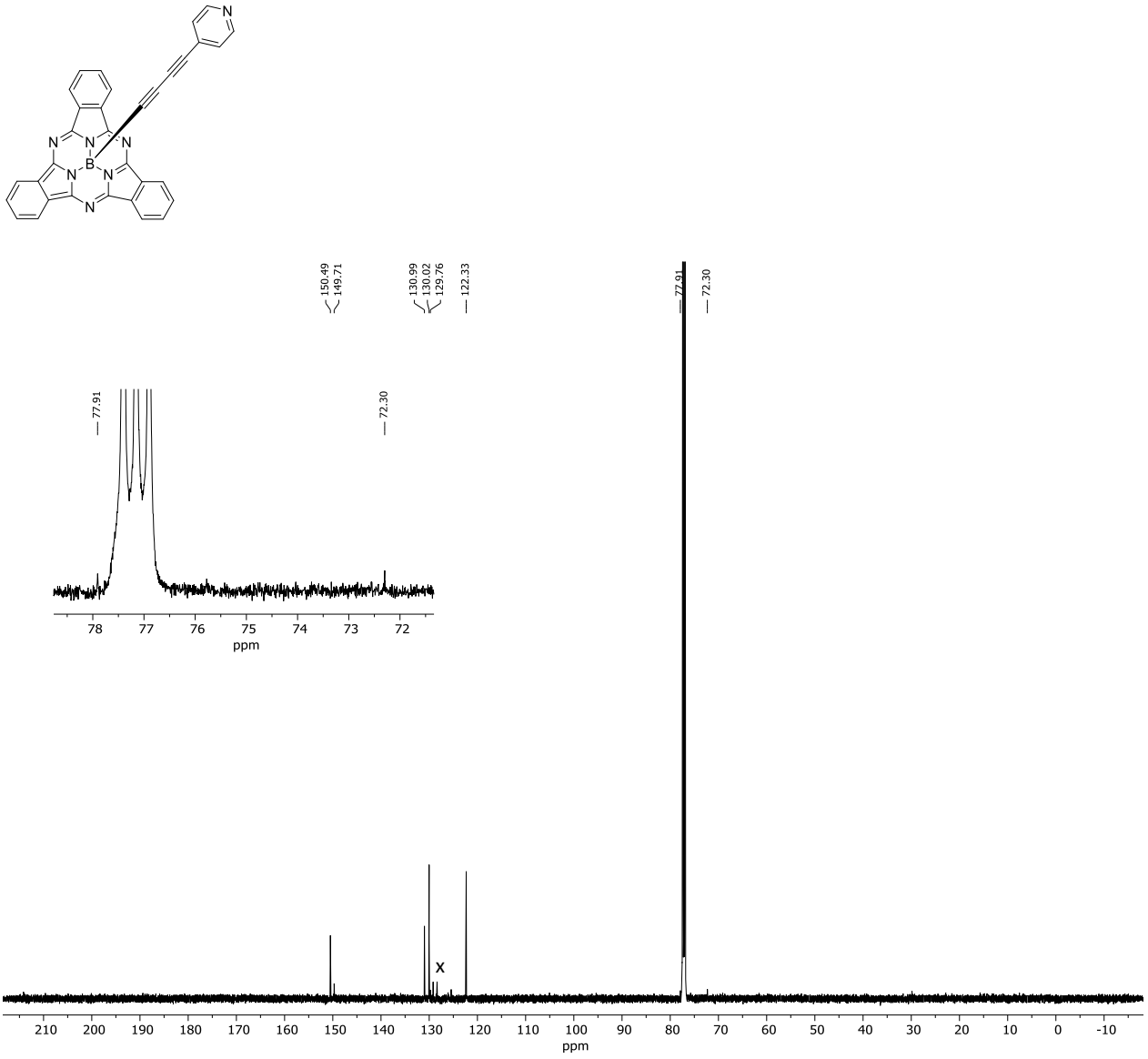
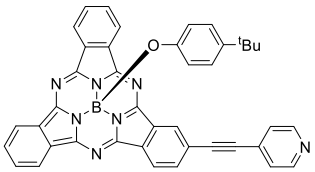


Figure S14. ^{13}C-NMR spectrum of compound **9** in $CDCl_3$. Toluene residues marked with x.

Compound **10**



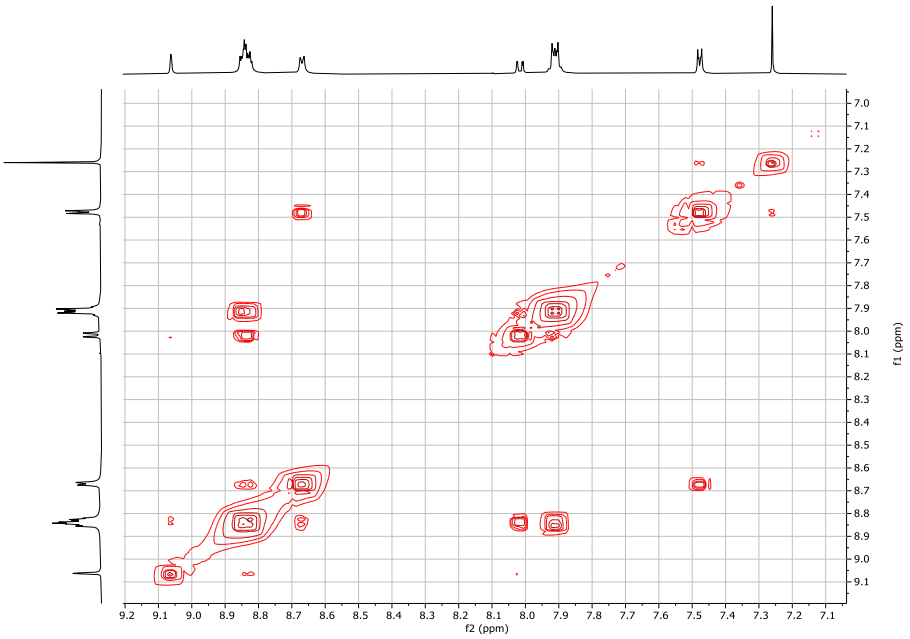


Figure S15. COSY spectrum of compound **10** in $CDCl_3$

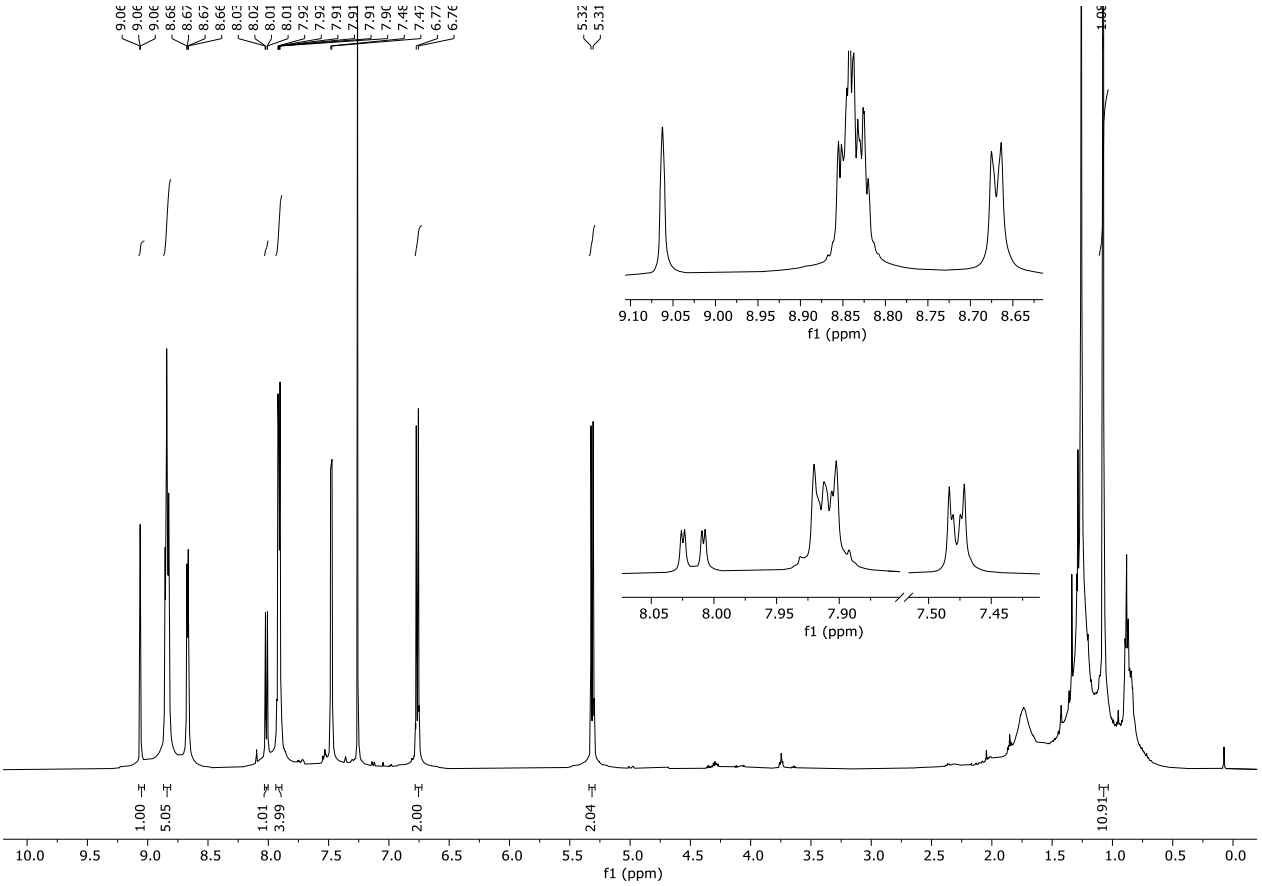


Figure S16. ^{1}H-NMR spectrum of compound **10** in $CDCl_3$.

Compound **10**

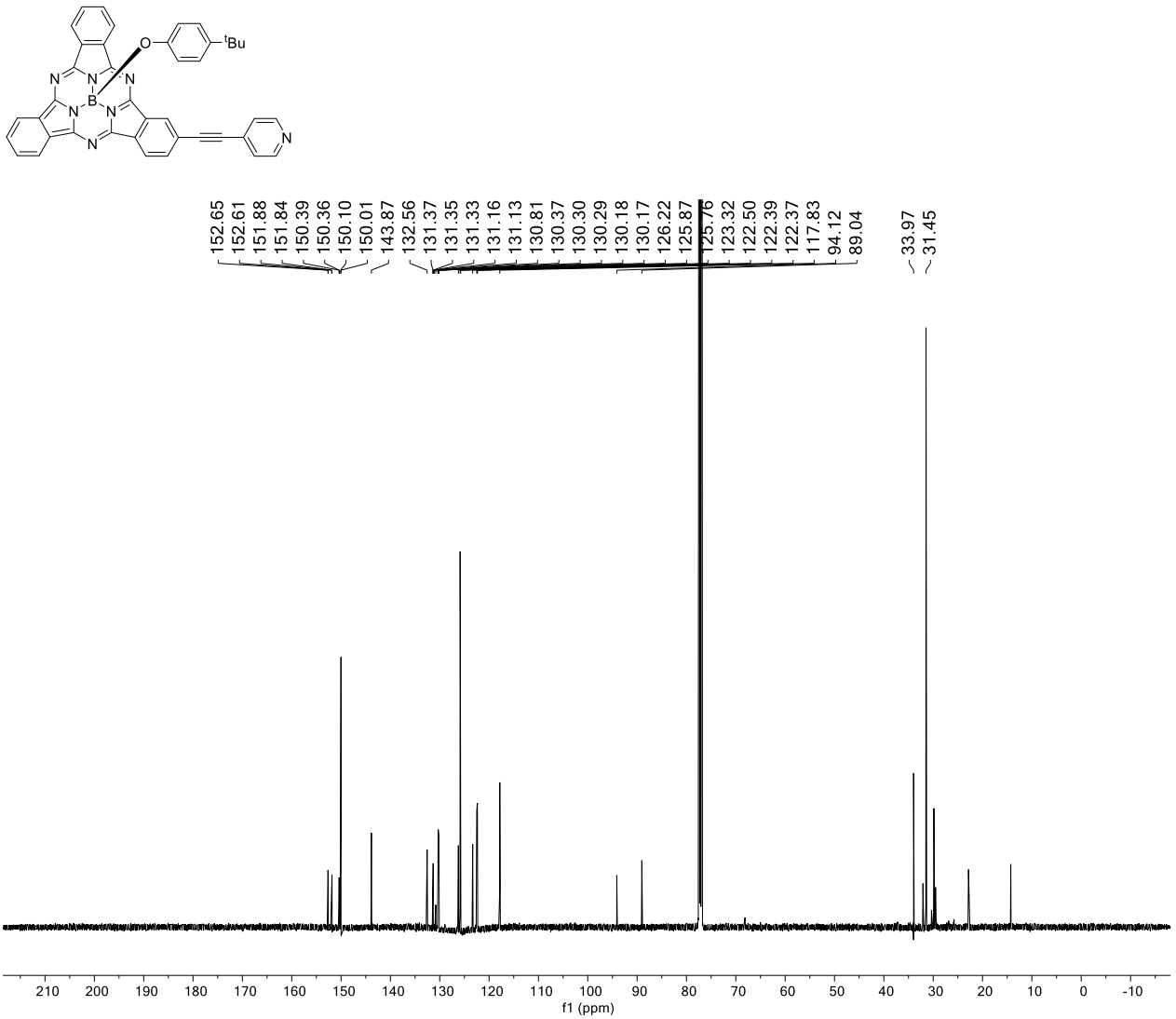
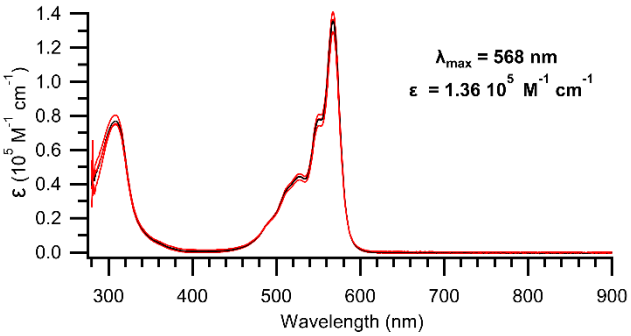


Figure S17. ^{13}C-NMR spectrum of compound **10** in $CDCl_3$.

UV-Vis Absorption Spectroscopy



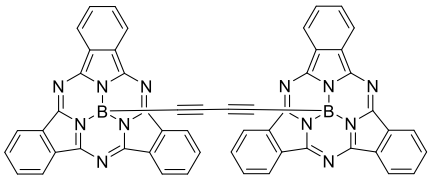
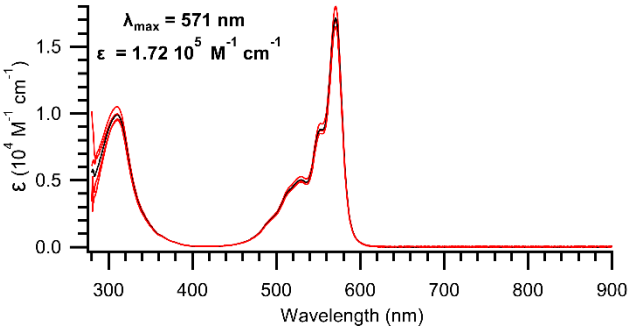


Figure S18. Absorption spectra of **3** in toluene, red lines showing the measured spectra and the black showing the average



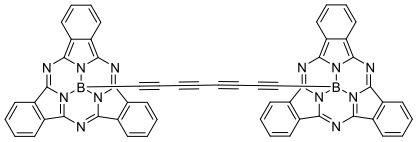
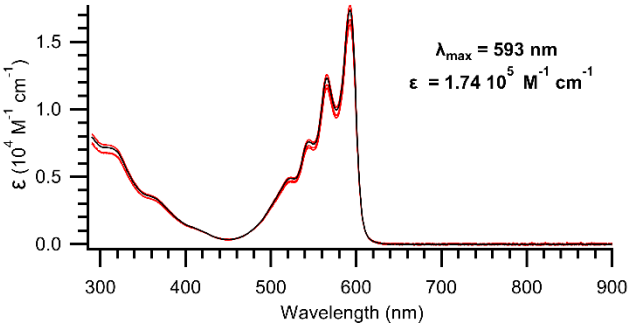


Figure S19. Absorption spectra of **4** in toluene, red lines showing the measured spectra and the black showing the average



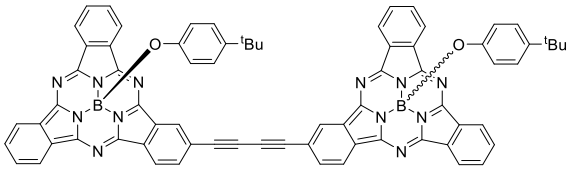
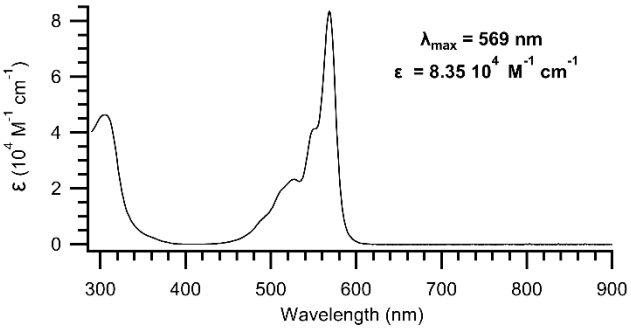


Figure S20. Absorption spectra of **5** in toluene, red lines showing the measured spectra and the black showing the average



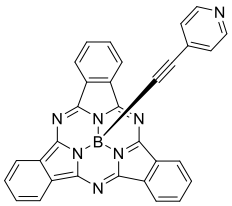
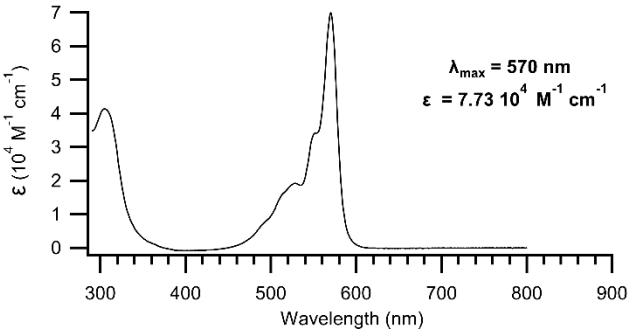


Figure S21. Absorption spectrum of **8** in toluene.



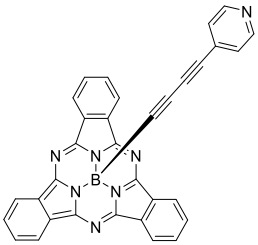
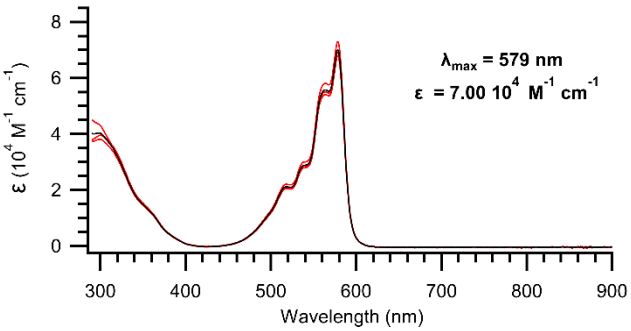


Figure S22. Absorption spectrum of **9** in toluene.



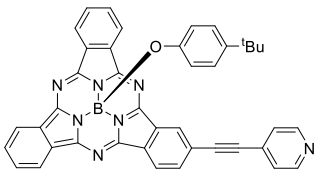
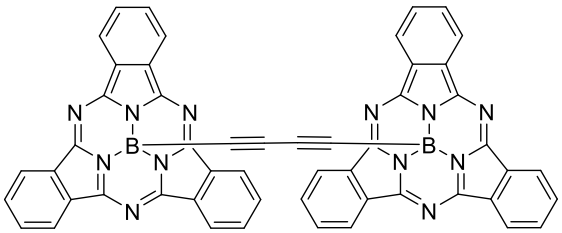


Figure S23. Absorption spectra of **10** in toluene, red lines showing the measured spectra and the black showing the average

Electrochemistry

Compound **3**



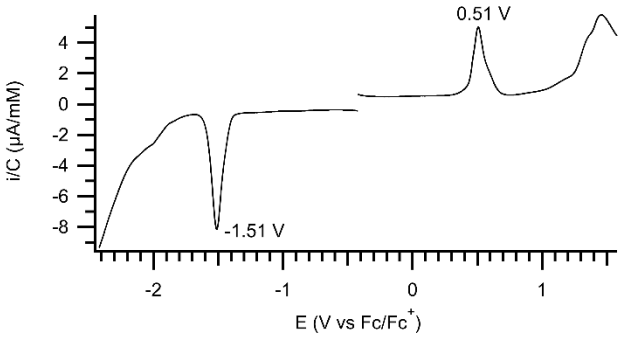


Figure S24. Differential pulse voltammogram of compound **3** (0.24 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.

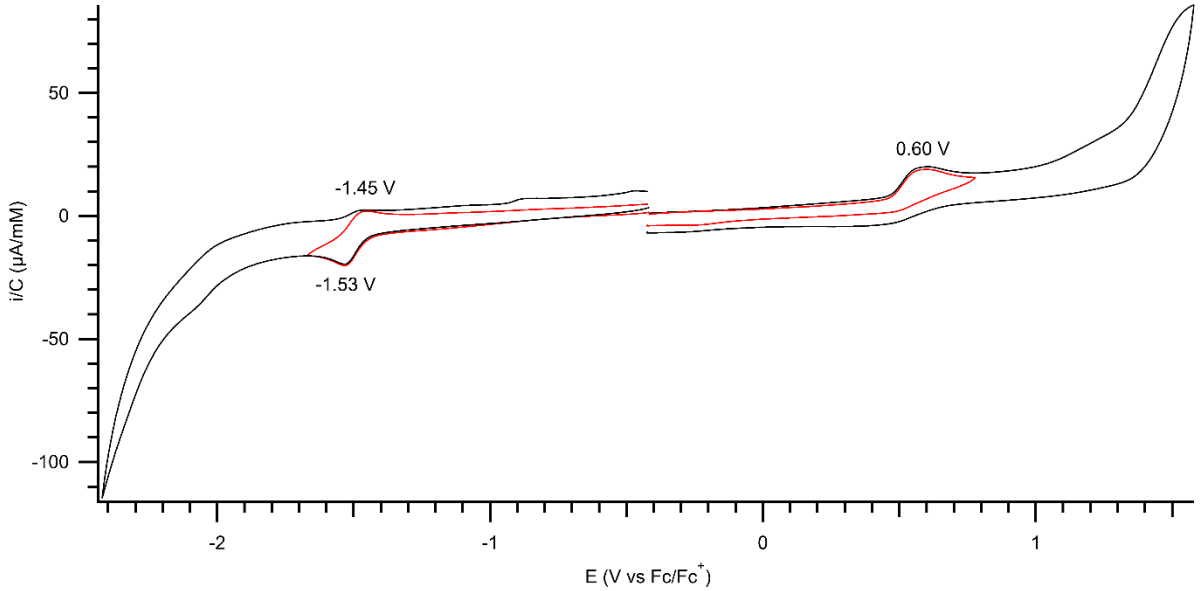
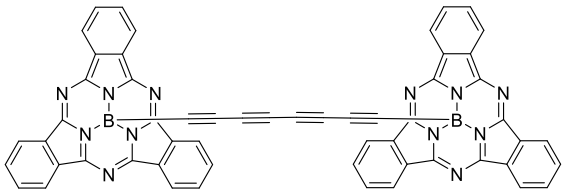


Figure S25. Cyclic voltammogram of compound **3** (0.24 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Scan rate 0.1 V s^{-1}. Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.

Compound **4**



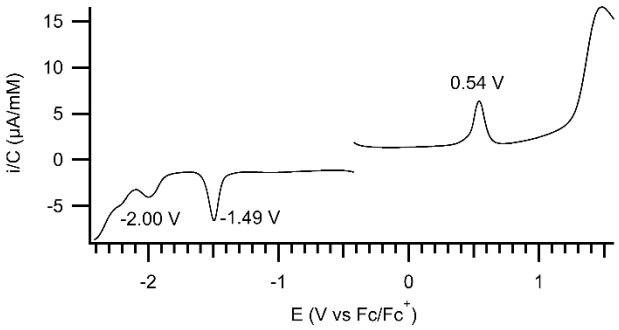


Figure S26. Differential pulse voltammogram of compound **4** (0.094 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.

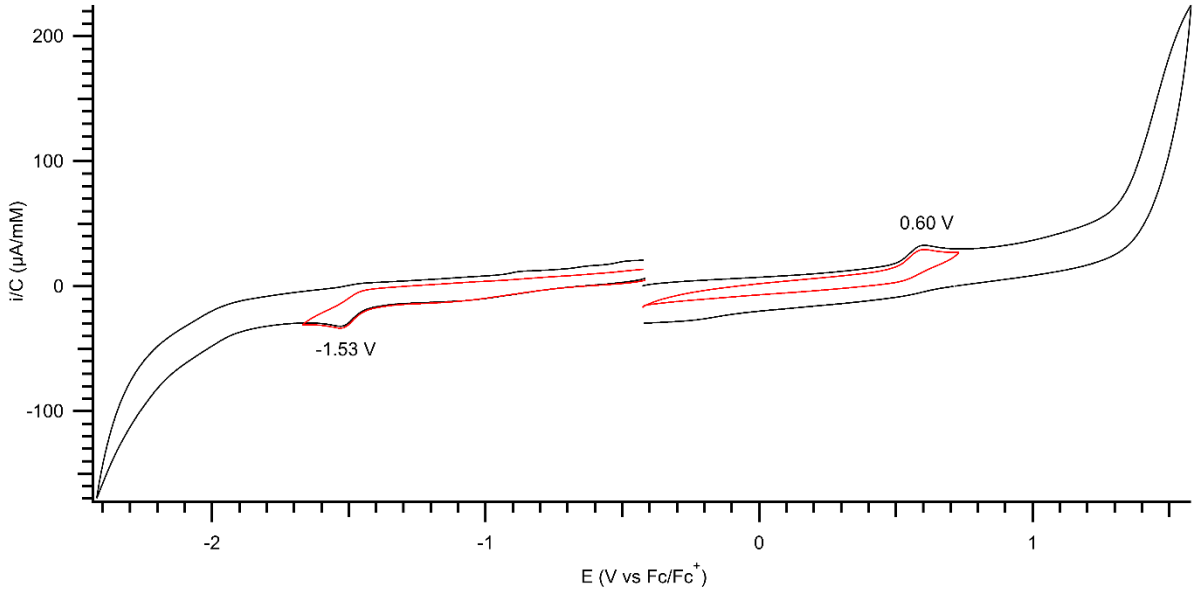
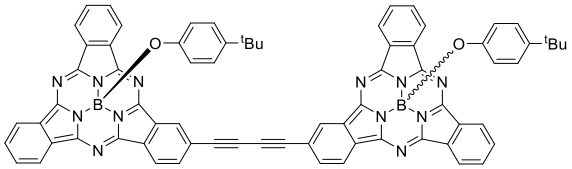


Figure S27. Cyclic voltammogram of compound **4** (0.094 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Scan rate 0.1 V s^{-1}. Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.

Compound **5**



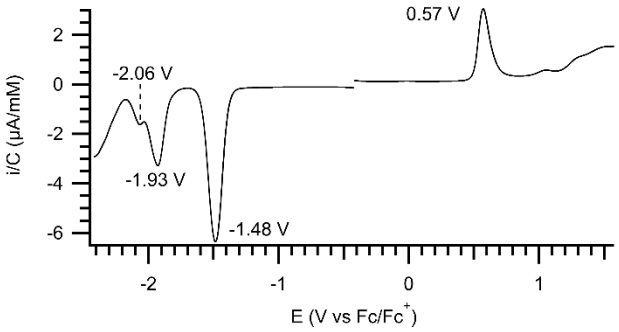


Figure S28. Differential pulse voltammogram of compound **5** (0.99 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.

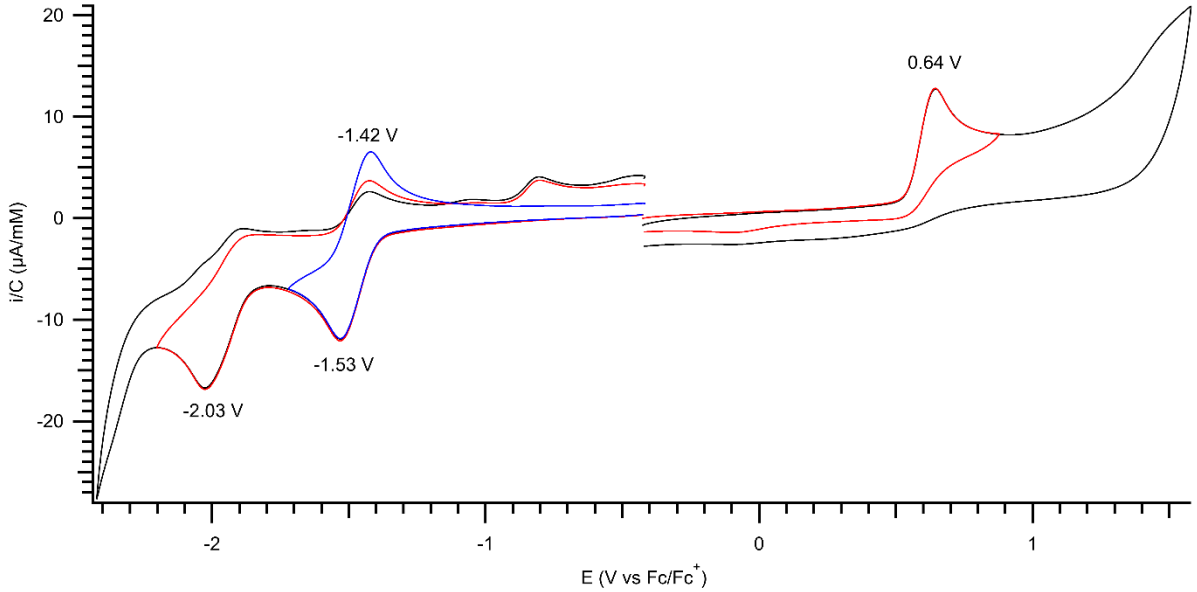


Figure S29. Cyclic voltammogram of compound **5** (0.99 mM) in CH_2Cl_2 (+ Bu_4NPF_6). Scan rate 0.1 V s^{-1}. Reference electrode: Ag/AgCl, counter electrode: Pt wire; working electrode: glassy-carbon disc electrode (diameter 3 mm). Potentials are referenced to the ferrocene/ferrocenium (Fc/Fc^+) redox couple.