Supplementary Material

Oligoyne-bridged boron subphthalocyanine dimers – synthesis and redox properties

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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

![Structure of Compound 4](image)

**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 CDCl₃.

Figure S6. ¹H-NMR spectrum of compound 5 in CDCl₃.
Compound 5

Figure S7. $^{13}$C-NMR spectrum of compound 5 in CDCl$_3$.
Compound 7

Figure S8. COSY spectrum of compound 7 in CDCl₃

Figure S9. ¹H-NMR spectrum of compound 7 in CDCl₃.
Compound 7

Figure S10. $^{13}$C-NMR spectrum of compound 7 in CDCl$_3$. 
Compound 8

Figure S1. $^1$H-NMR spectrum of compound 8 in CDCl$_3$. 
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 S1. $^{13}$C-NMR spectrum of compound 9 in CDCl$_3$. Toluene residues marked with x.
Compound 10

Figure S15. COSY spectrum of compound 10 in CDCl₃.

Figure S16. ¹H-NMR spectrum of compound 10 in CDCl₃.
Figure S17. $^{13}$C-NMR spectrum of compound 10 in CDCl$_3$. 

Compound 10
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

![Compound 3 structure](image)

**Figure S24.** Differential pulse voltammogram of compound 3 (0.24 mM) in CH₂Cl₂ (+ Bu₄NPF₆). 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.

![Differential pulse voltammogram](image)

**Figure S25.** Cyclic voltammogram of compound 3 (0.24 mM) in CH₂Cl₂ (+ Bu₄NPF₆). 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$_2$Cl$_2$ (+ Bu$_4$NPF$_6$). 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$_2$Cl$_2$ (+ Bu$_4$NPF$_6$). 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$_2$Cl$_2$ (+ Bu$_4$NPF$_6$). 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$_2$Cl$_2$ (+ Bu$_4$NPF$_6$). 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.