

Supporting Information

Synthesis, optical properties and self-assemblies of three novel asymmetrical perylene diimides modified with functioned hydrogen bonding groups at bay positions

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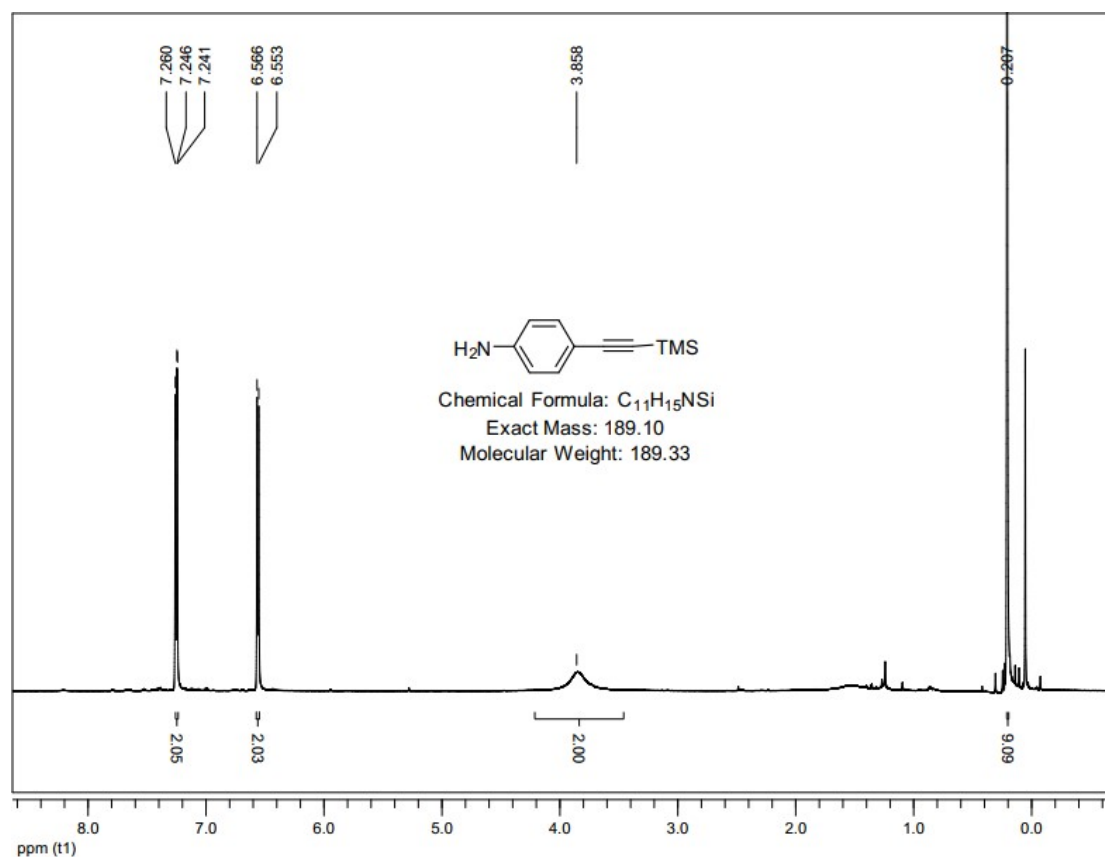


Figure S1 ¹H-NMR spectra of compound 1 (CDCl₃, 600 M)

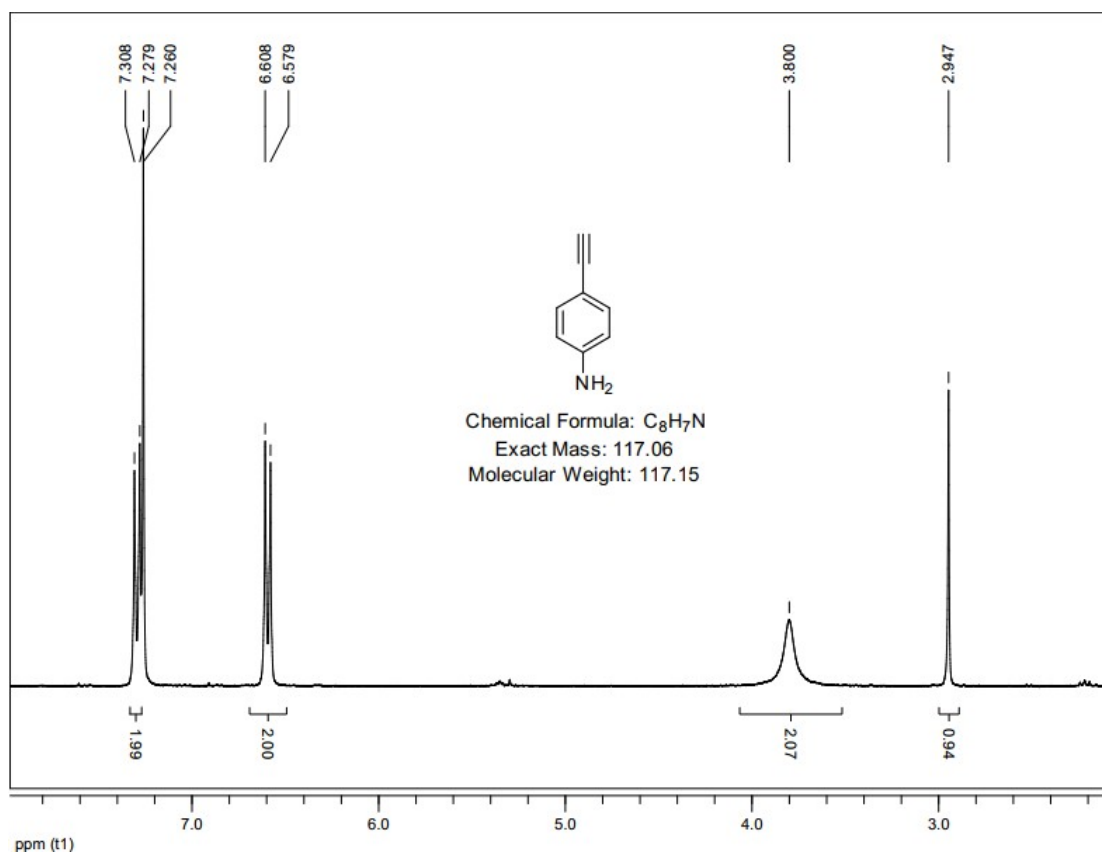


Figure S2 ¹H-NMR spectra of compound 2(CDCl₃, 300 M)

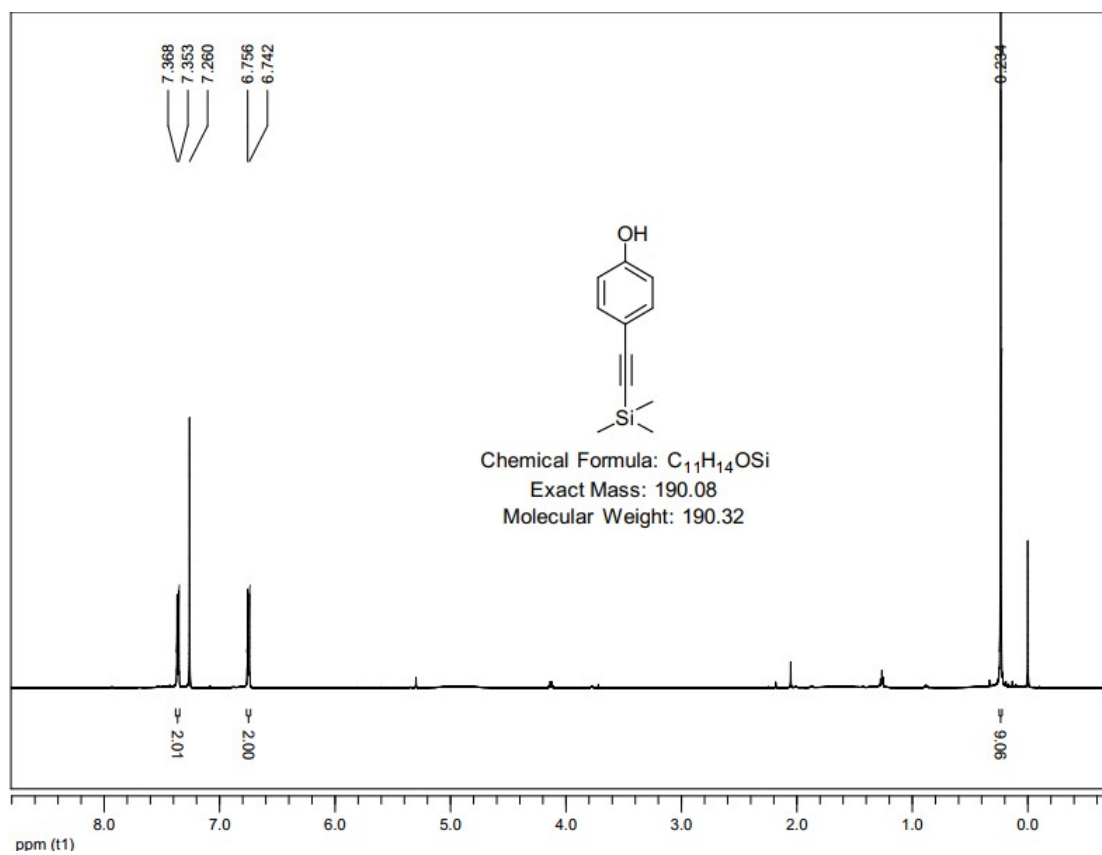


Figure S3 ¹H-NMR spectra of compound 3(CDCl₃, 600 M)

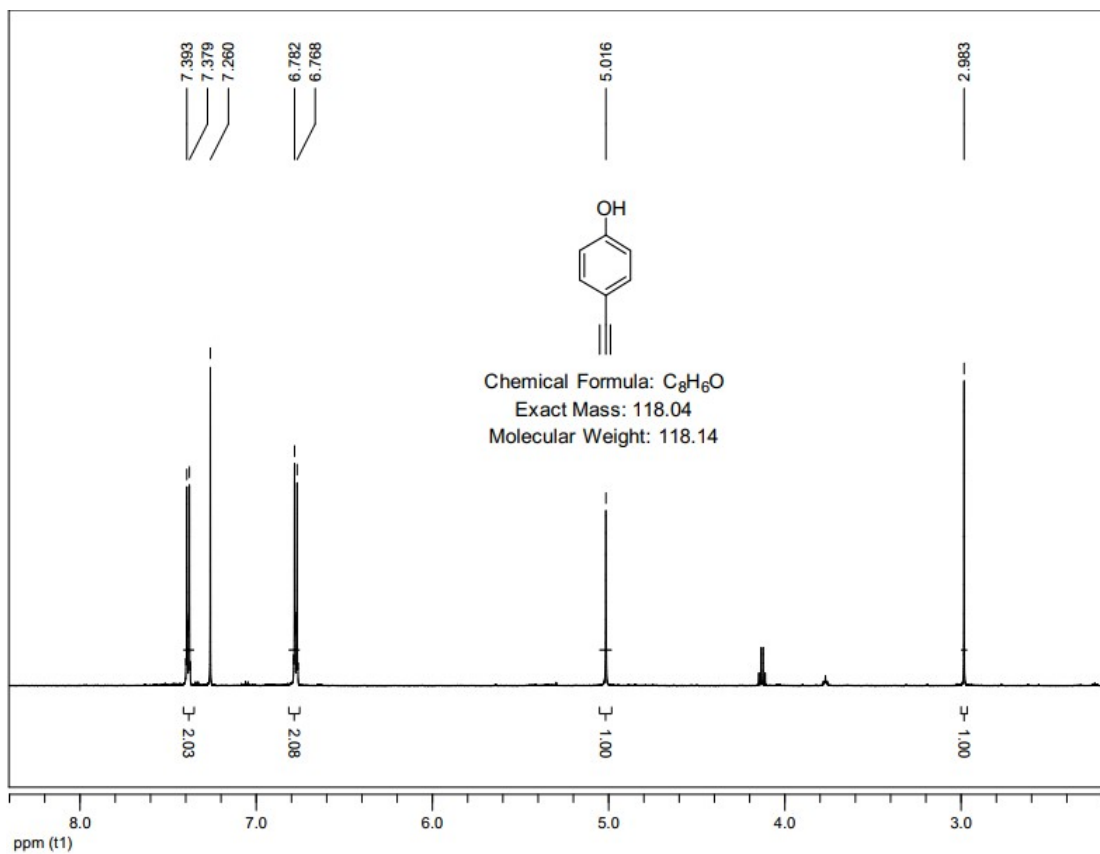


Figure S4 ¹H-NMR spectra of compound 4(CDCl₃, 600 M)

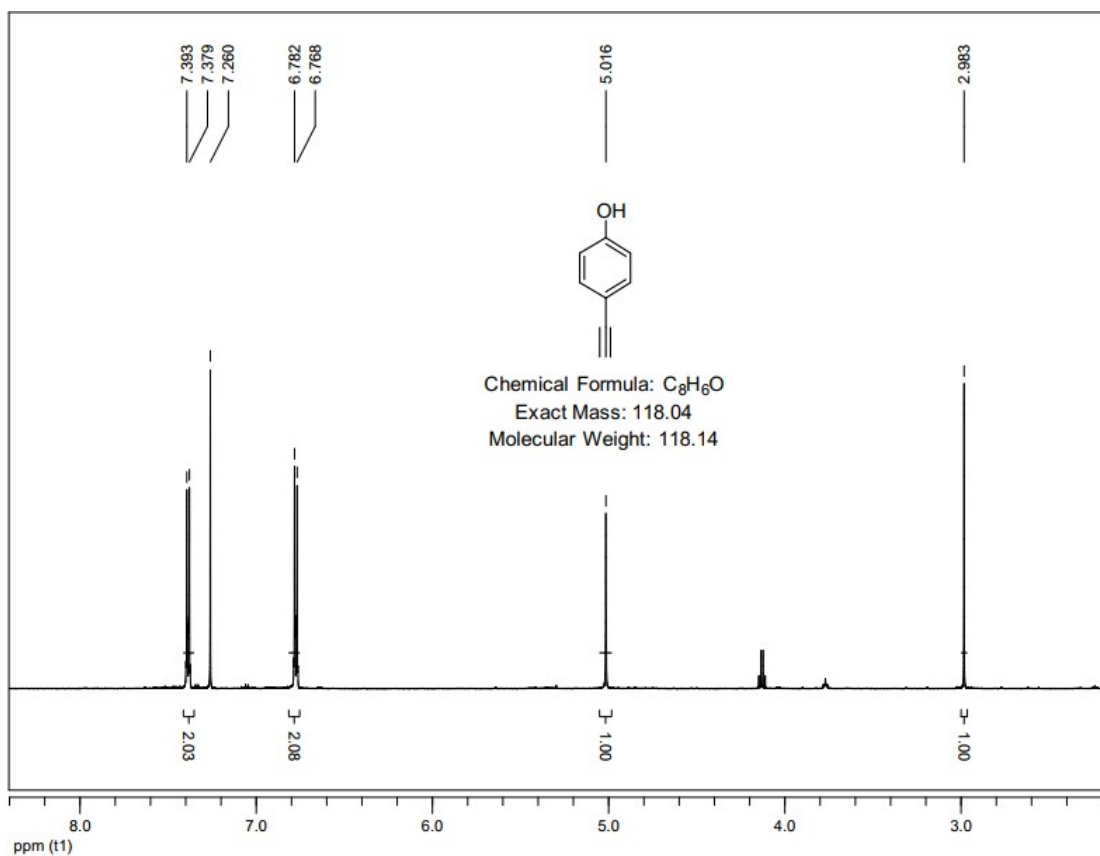


Figure S5 ¹H-NMR spectra of compound 4 (CDCl₃, 600 M)

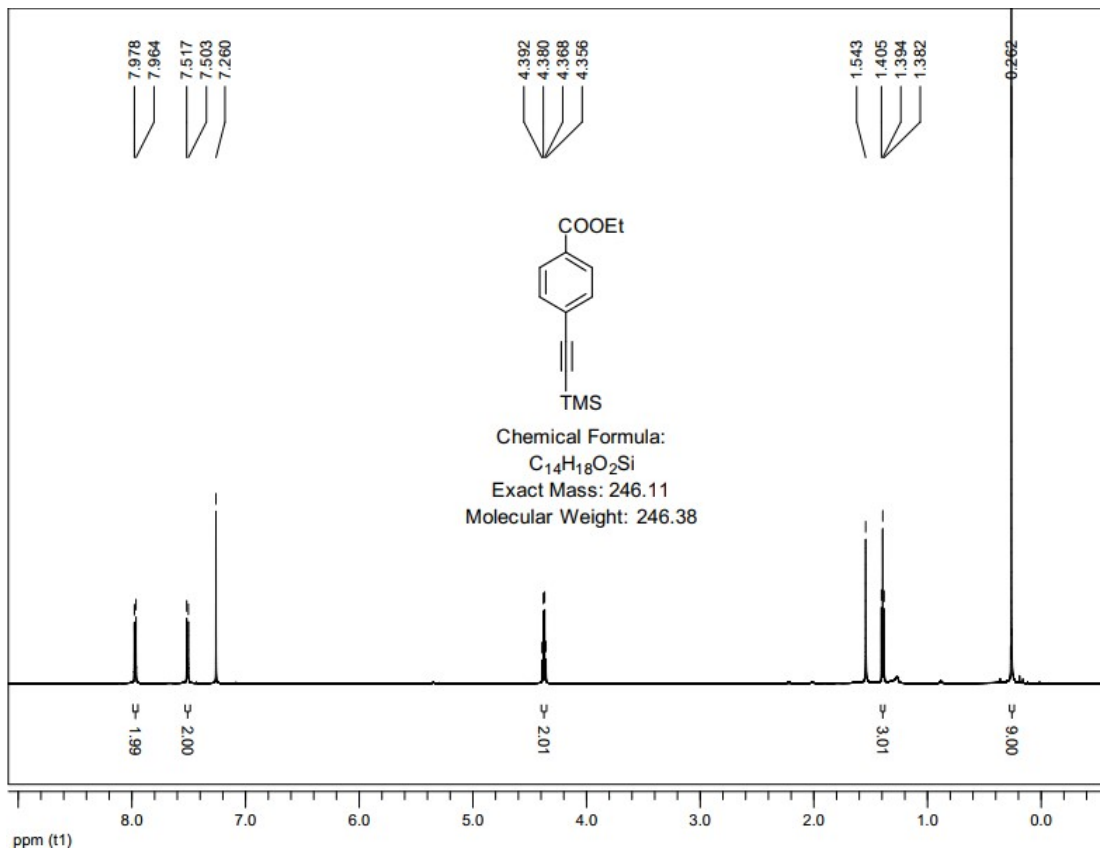


Figure S6 1H -NMR spectra of compound **5** ($CDCl_3$, 600 M)

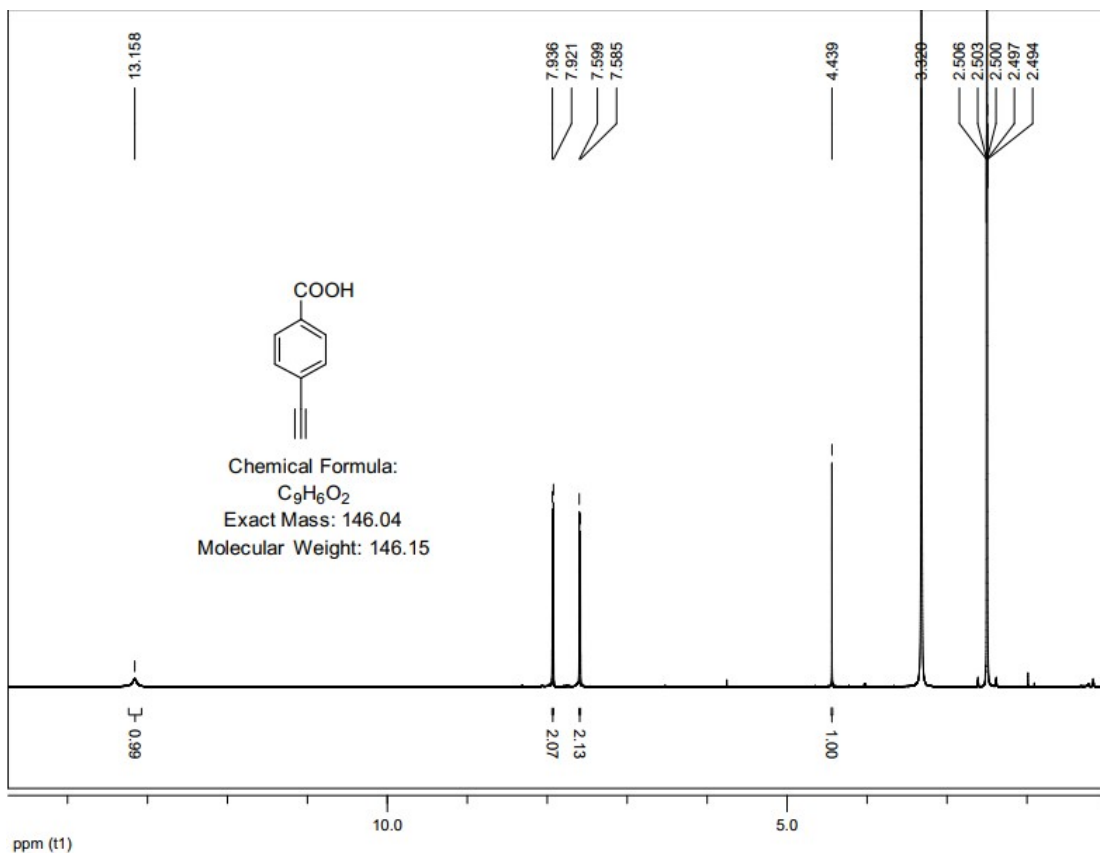


Figure S7 1H -NMR spectra of compound **6** ($DMSO-D_6$, 600 M)

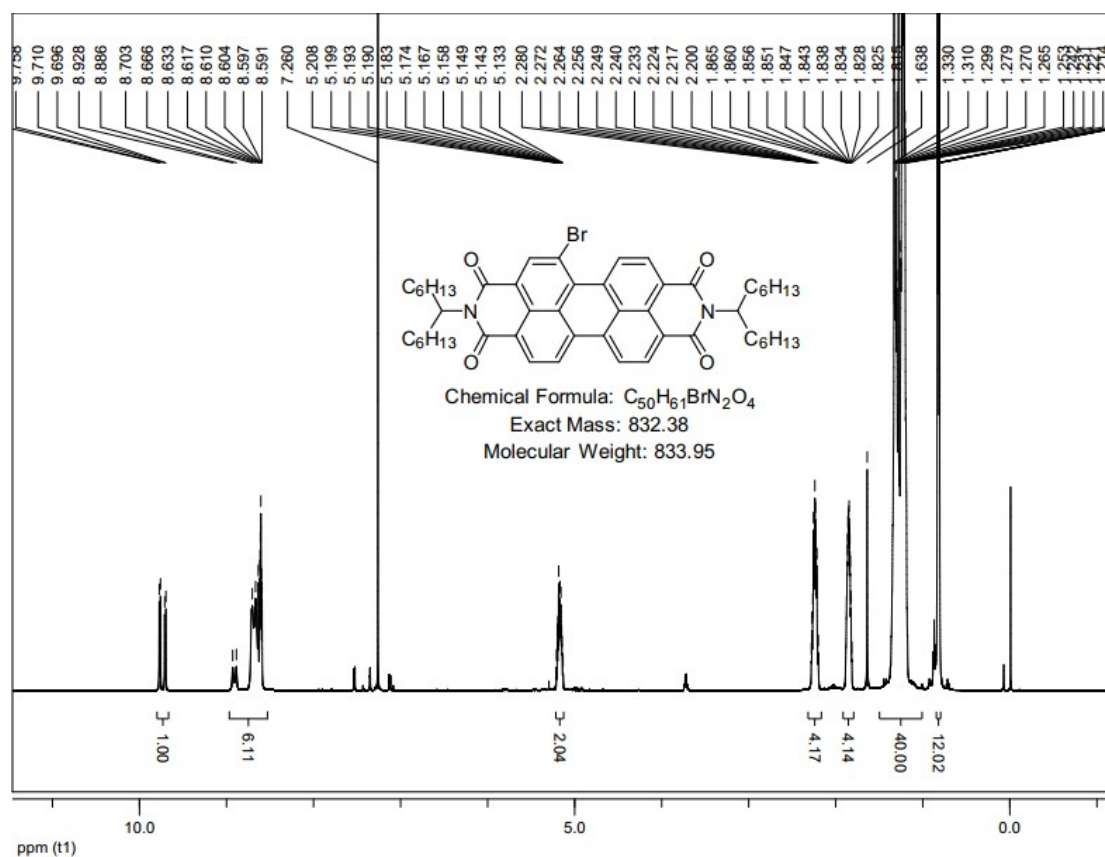


Figure S8 1H -NMR spectra of **PDI-Br** ($CDCl_3$, 600 M)

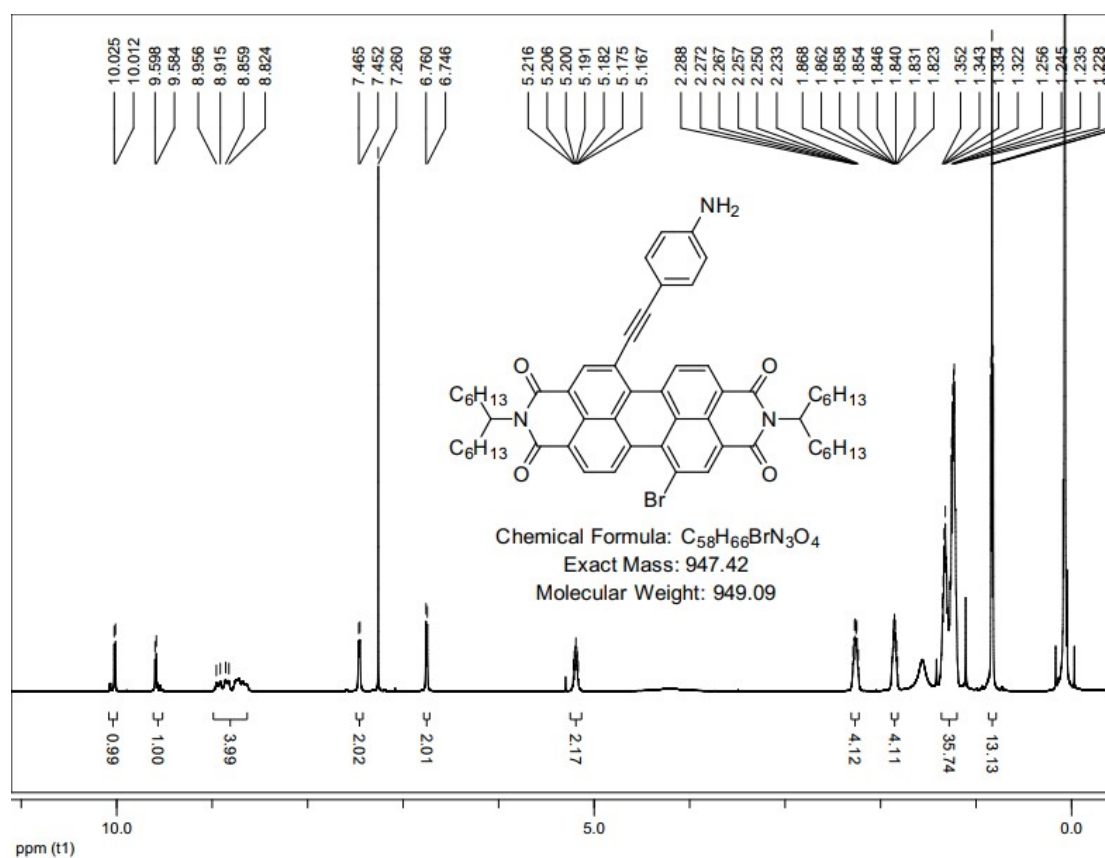


Figure S9 1H -NMR spectra of **PDI-NH₂** ($CDCl_3$, 600 M)

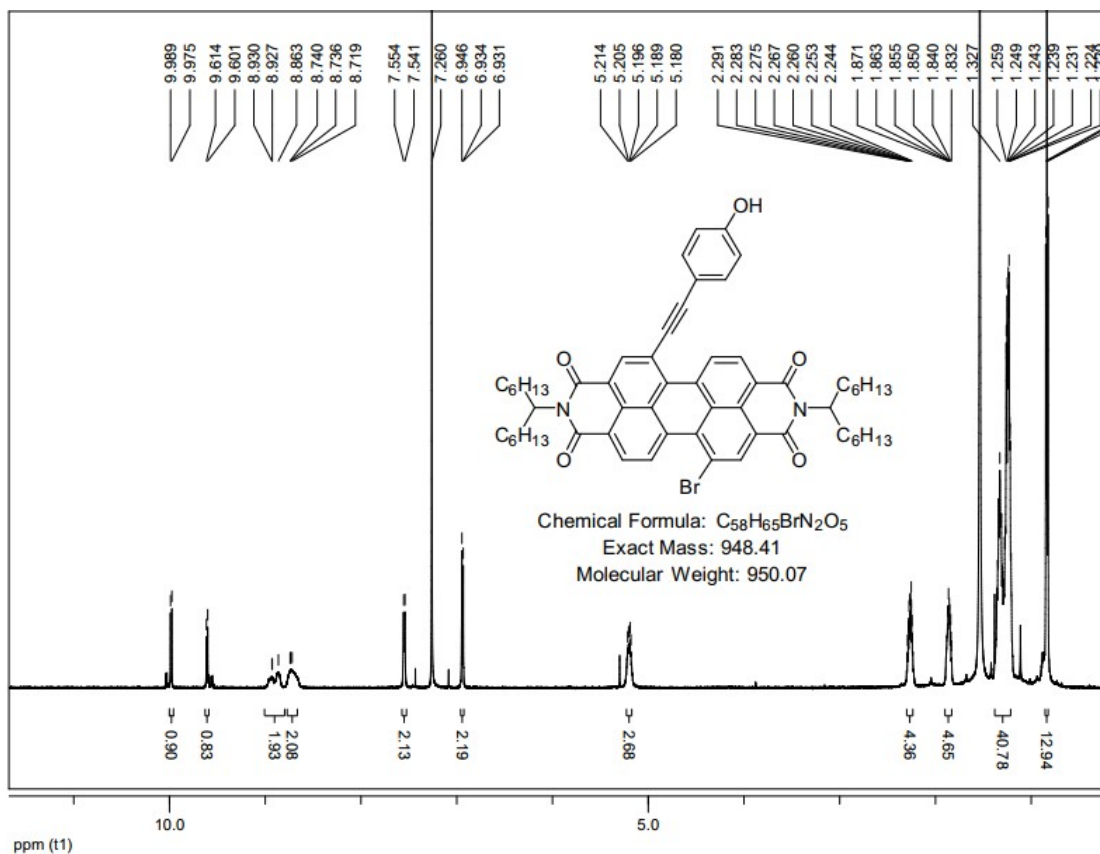


Figure S10 1H -NMR spectra of **PDI-OH** ($CDCl_3$, 600 M)

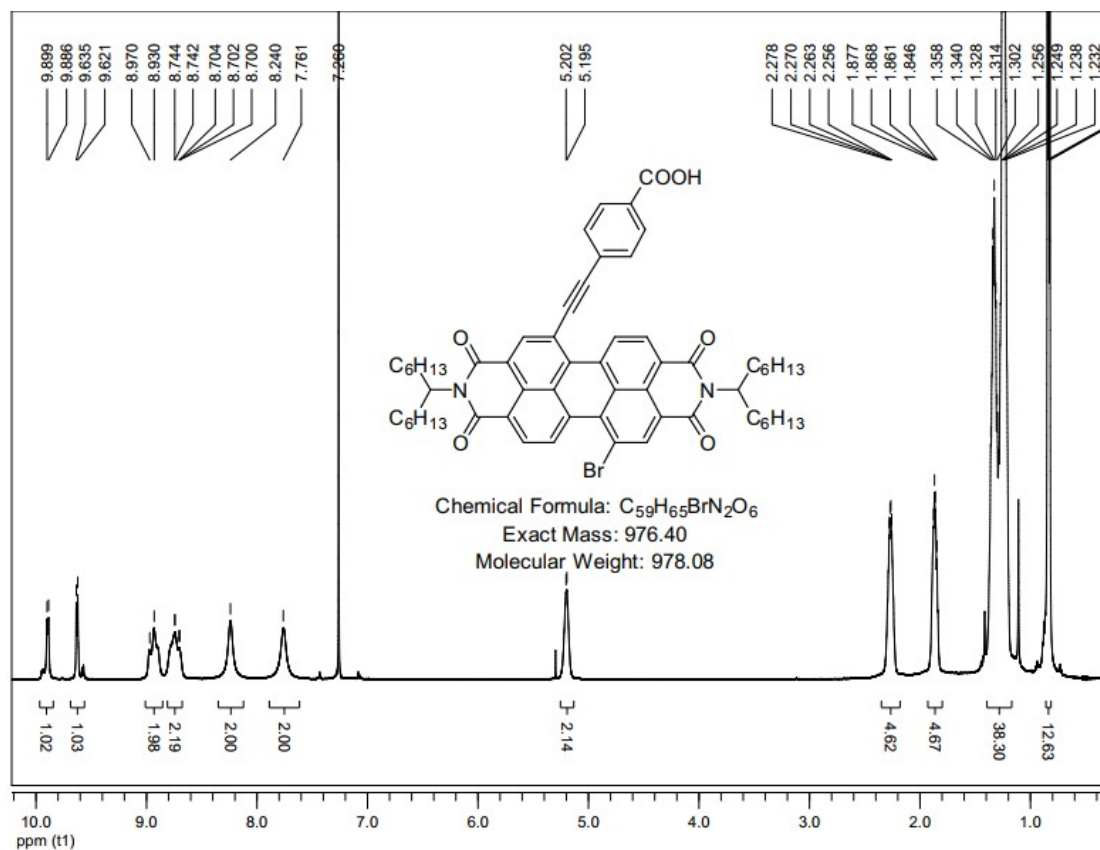


Figure S11 1H -NMR spectra of **PDI-COOH** ($CDCl_3$, 600 M)

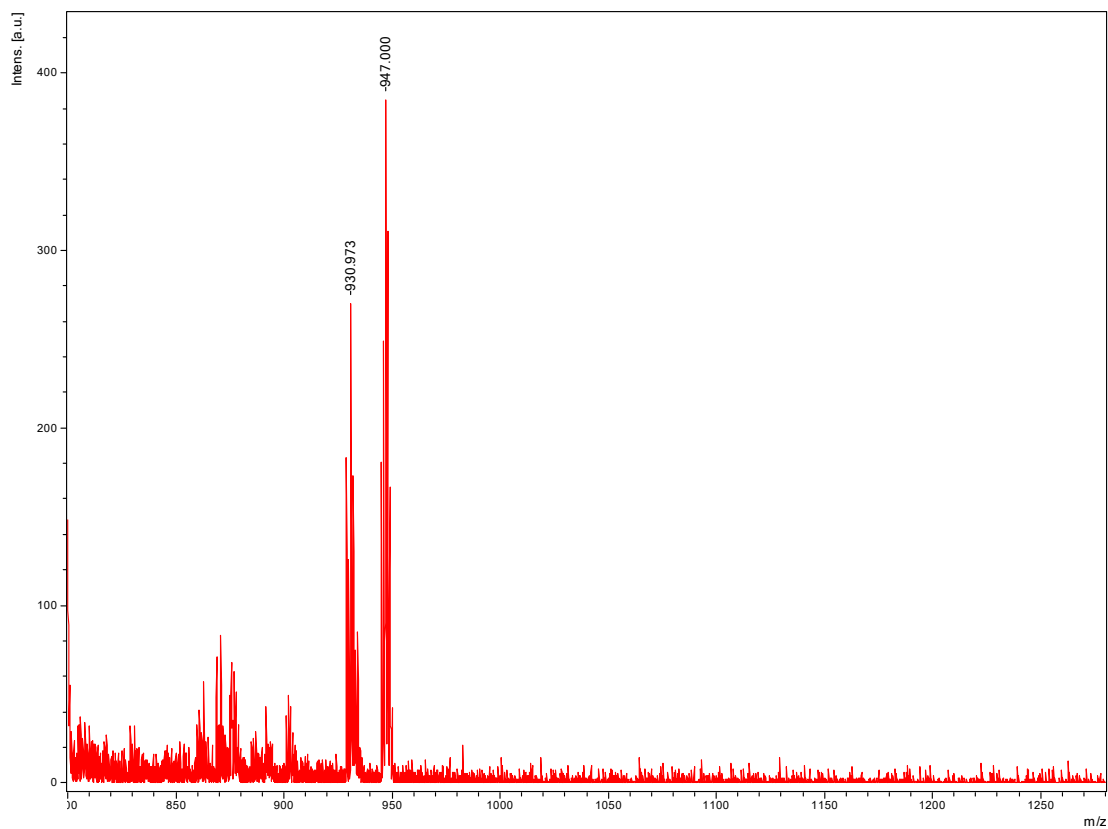


Figure S12 MALDI-TOF spectra of **PDI-NH₂**

TJY-948_180921102239 #217 RT: 1.72 AV: 1 NL: 4.57E6
T: FTMS - p ESI Full ms [500.00-2000.00]

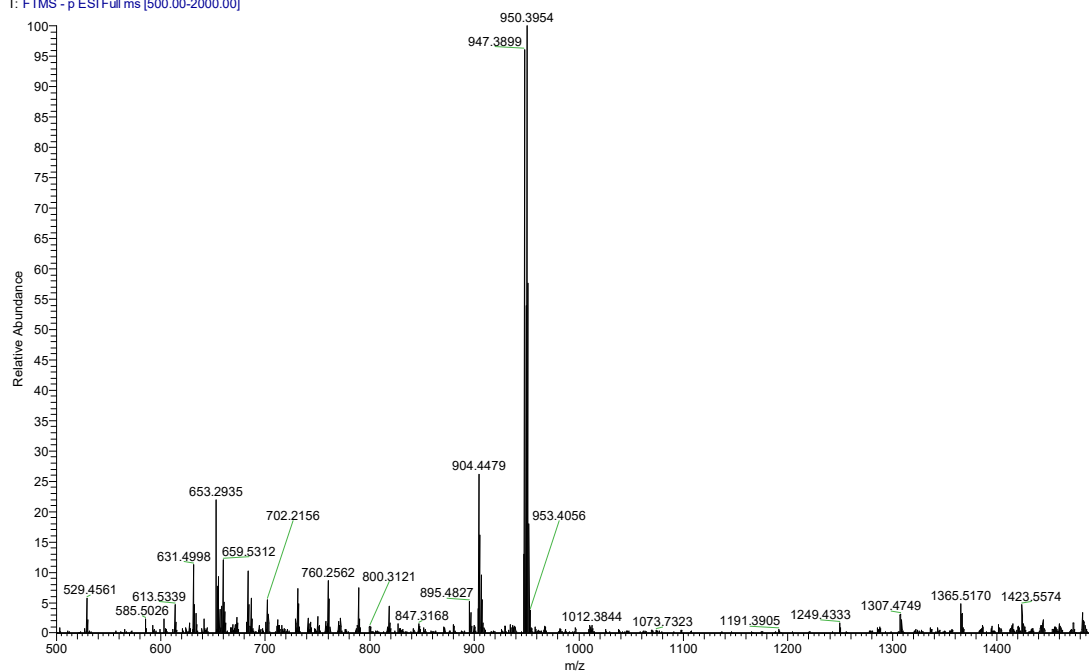


Figure S13 HRMS spectra of **PDI-OH**

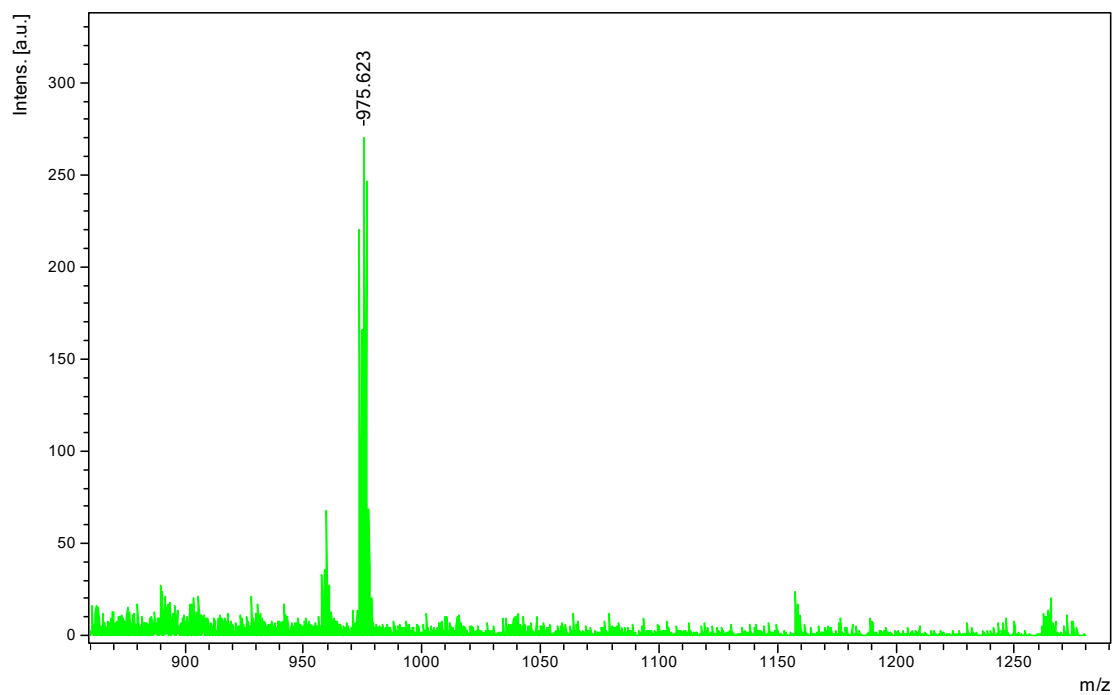


Figure S14 MALDI-TOF spectra of **PDI-COOH**

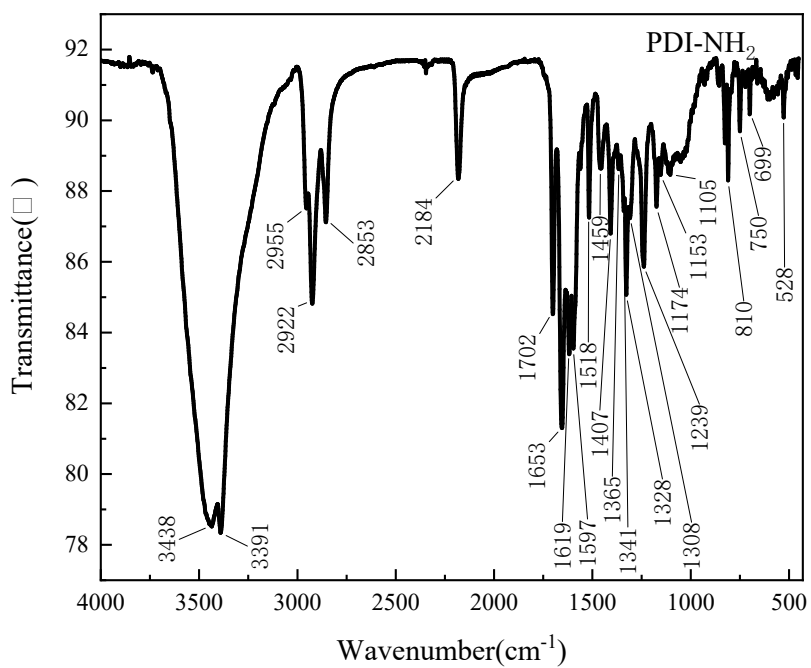


Figure S15. FT-IR spectra of **PDI-NH₂**

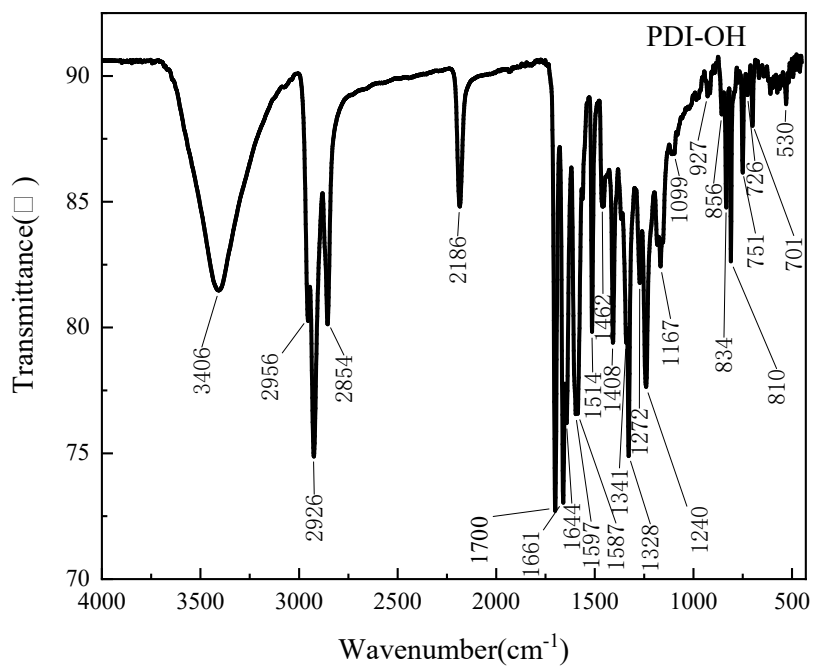


Figure S15. FT-IR spectra of **PDI-OH**

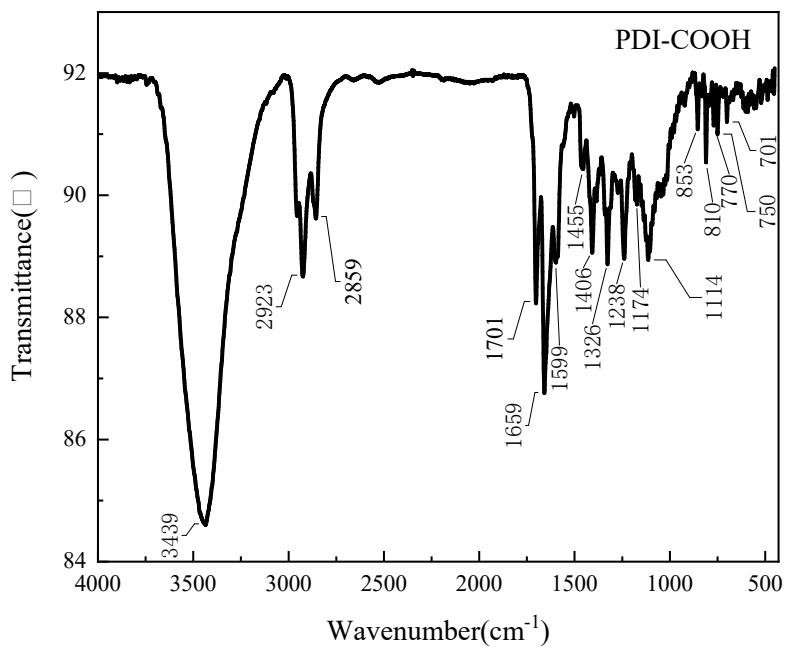


Figure S15. FT-IR spectra of **PDI-COOH**

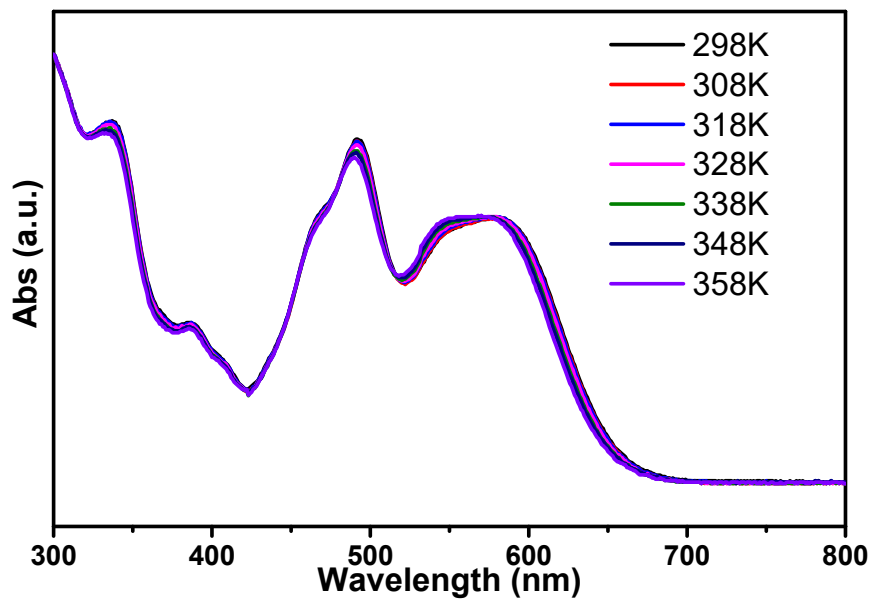


Figure S16. Temperature-dependent UV-vis spectra of **PDI-NH₂** in toluene (1×10^{-5} mol/L)

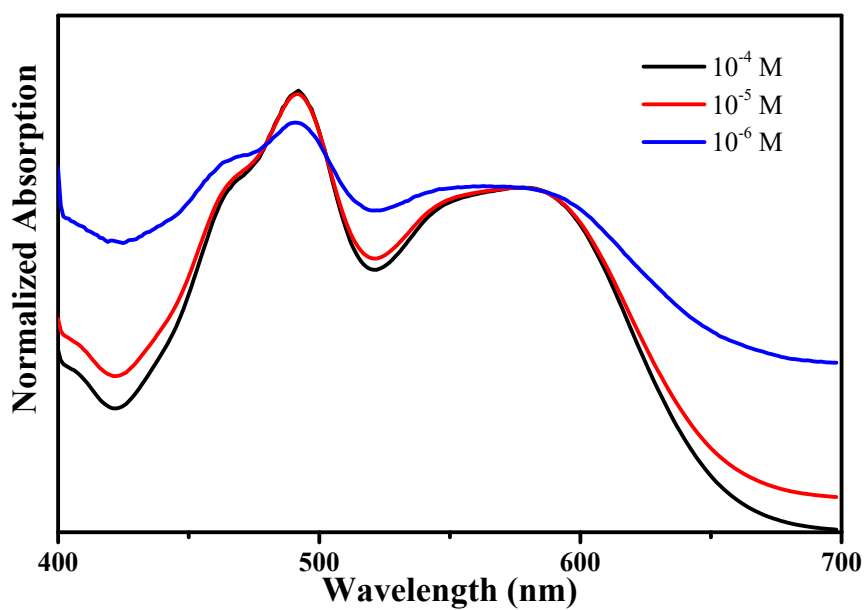


Figure S17. Concentration-dependent UV-vis spectra of **PDI-NH₂** in toluene

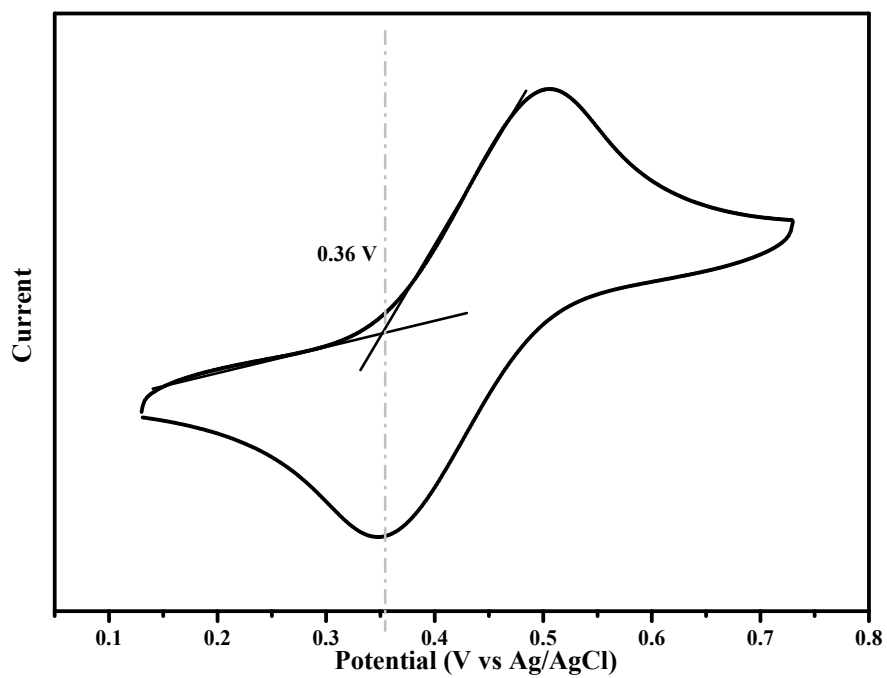


Figure S18. Cyclic voltammograms of Fc /Fc⁺ vs Ag/AgCl in CH₂Cl₂ containing 0.1 M TBAPF₆ at a scan rate of 0.1 V/s

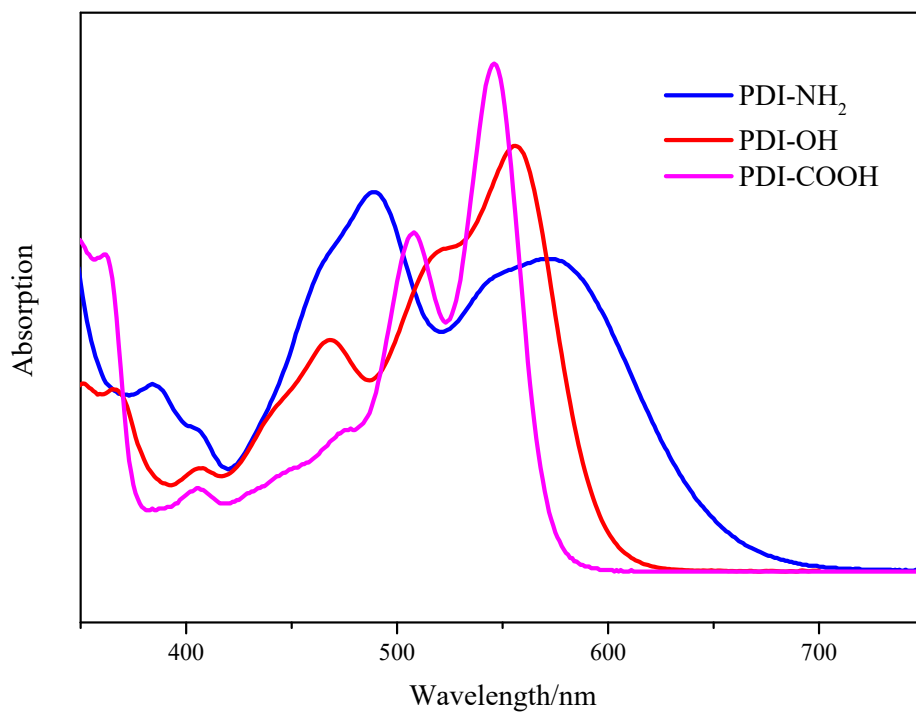


Figure S19. Absorption spectra of **PDI-NH₂**, **PDI-OH** and **PDI-COOH** in CH₂Cl₂