

Electronic Supporting Information

Oligothiophene/graphene supramolecular ensembles managing photoinduced charge-transfer processes: Preparation, characterization, and electrochemical and photophysical properties leading to charge-separation

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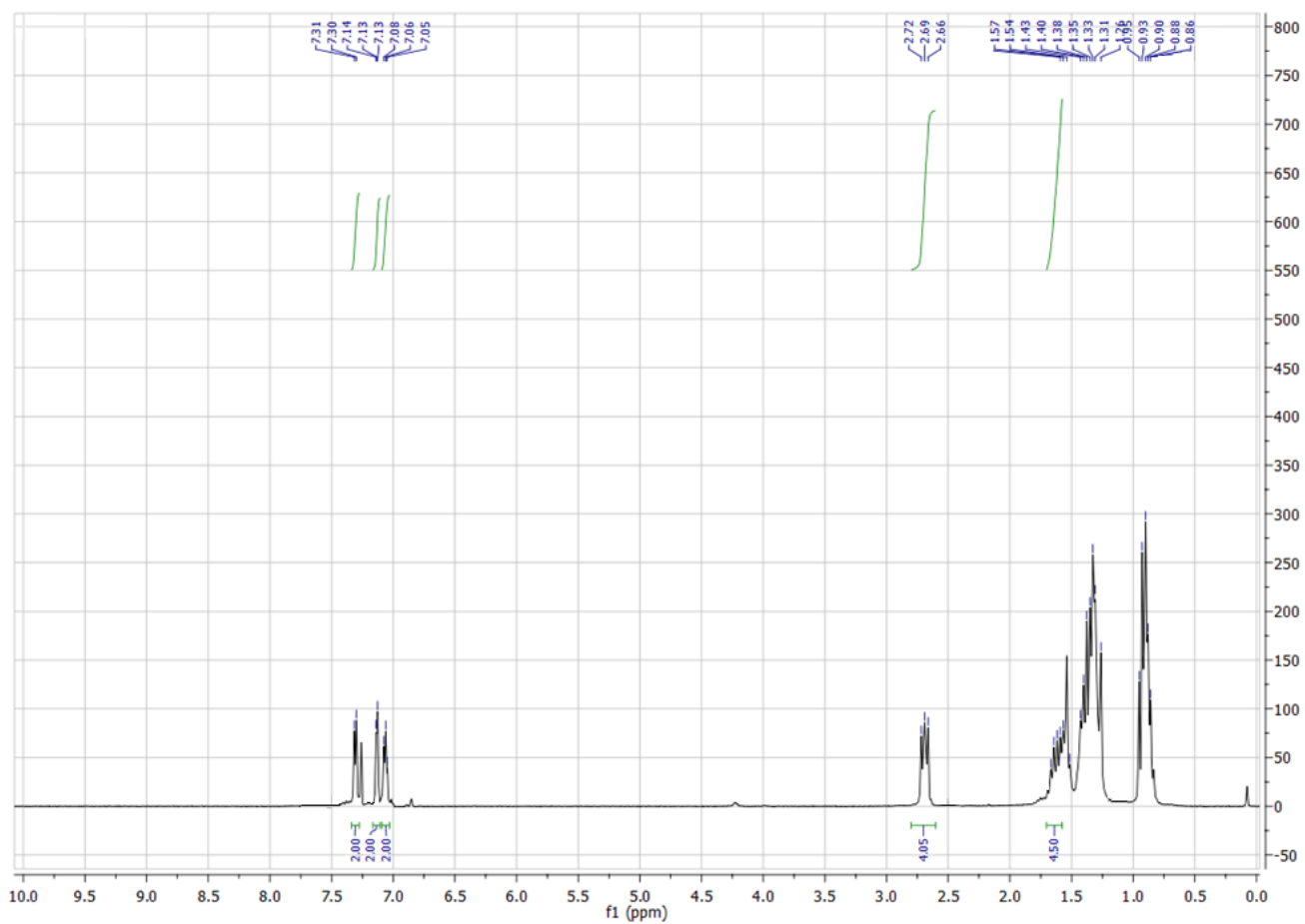


Figure S1. ^1H NMR spectrum of terthiophene **3T**.

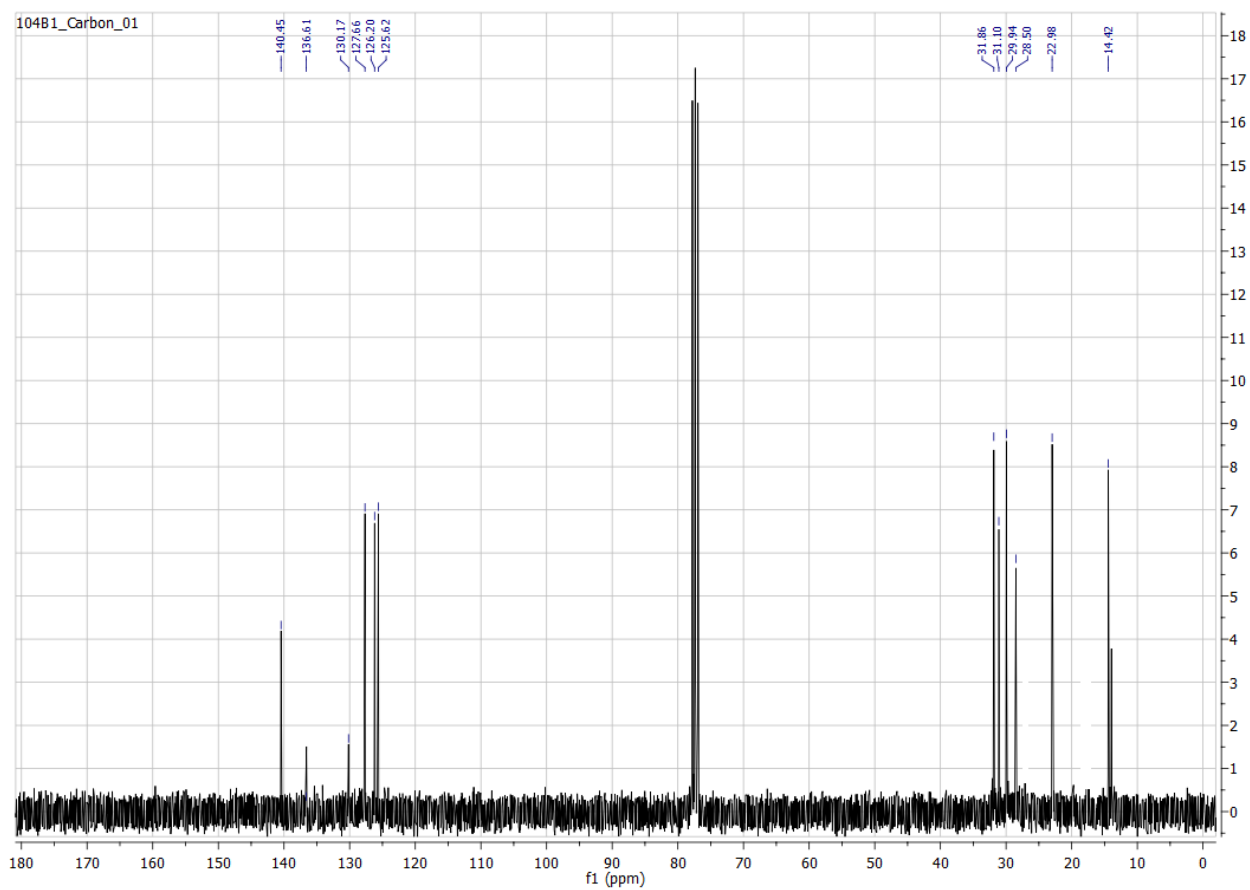


Figure S2. ^{13}C NMR spectrum of terthiophene **3T**.

T: ITMS + c ESI Full ms [100.00-1100.00]

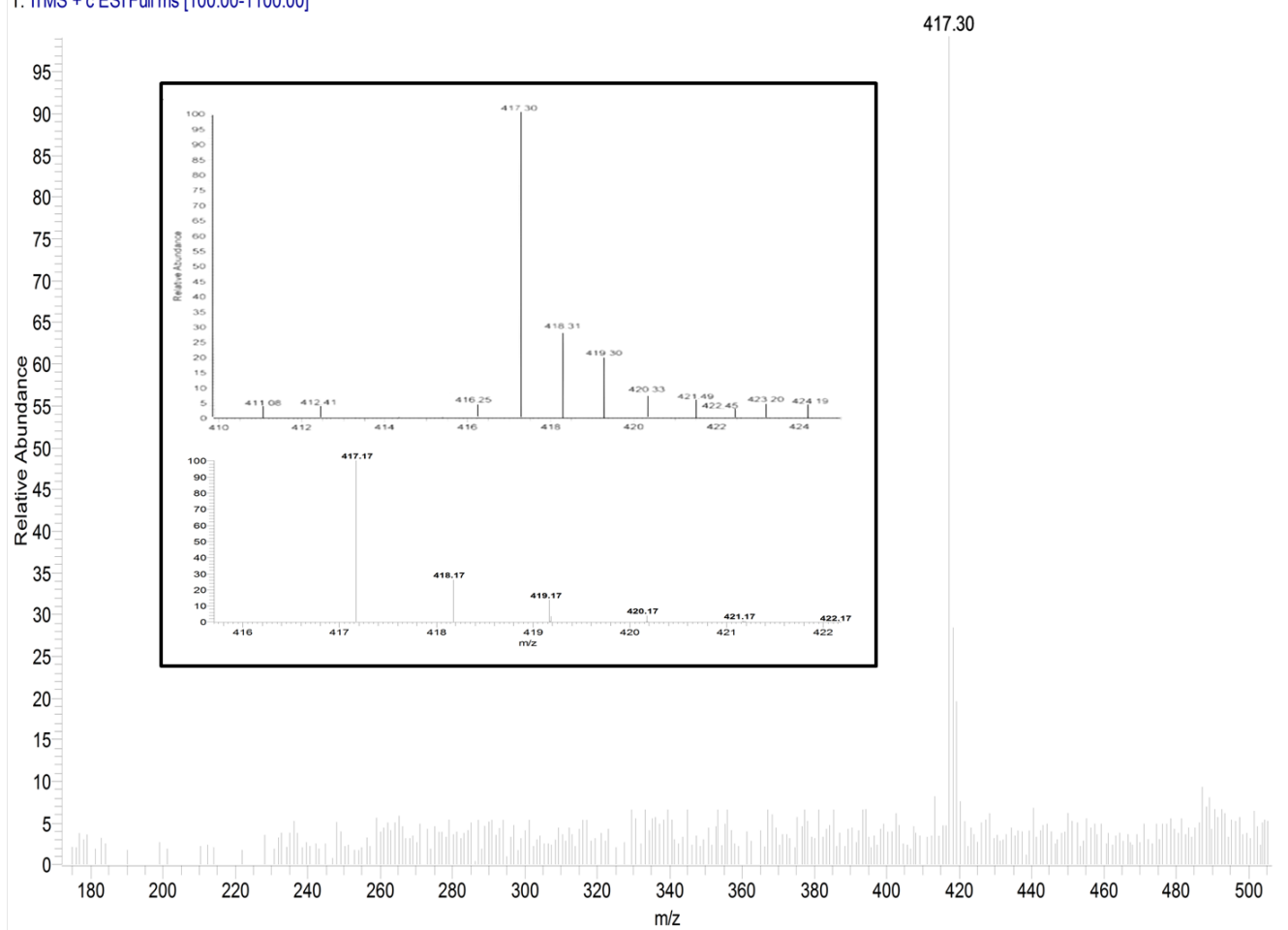


Figure S3. ESI mass spectrum of terthiophene **3T**, showing the $[M+1]$ ion. At the inset, the expanded region of the $[M+1]$ is shown in the upper panel, while the corresponding theoretically predicted isotopic distribution pattern is shown in the lower panel.

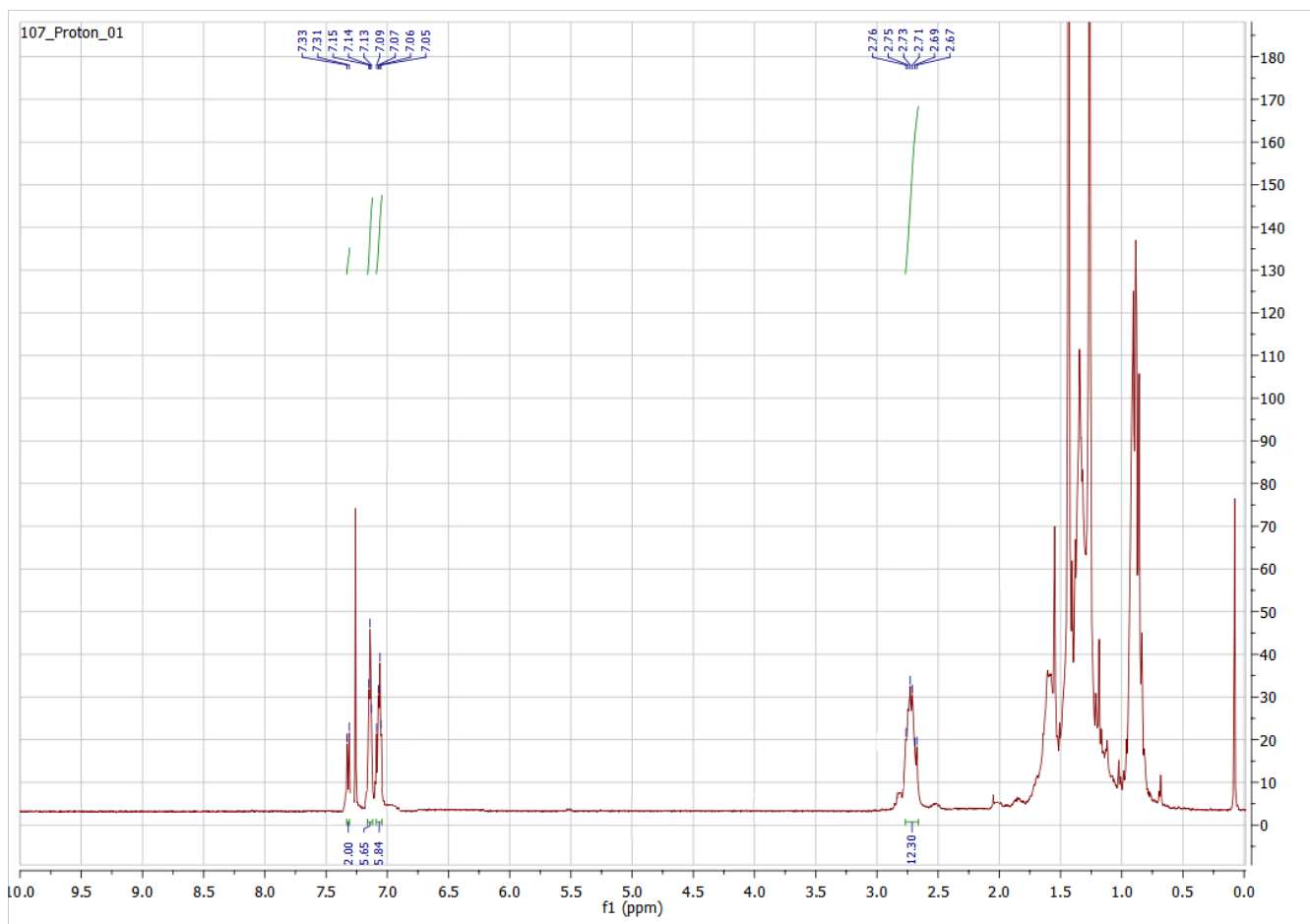


Figure S4. ^1H NMR spectrum of **9T**.

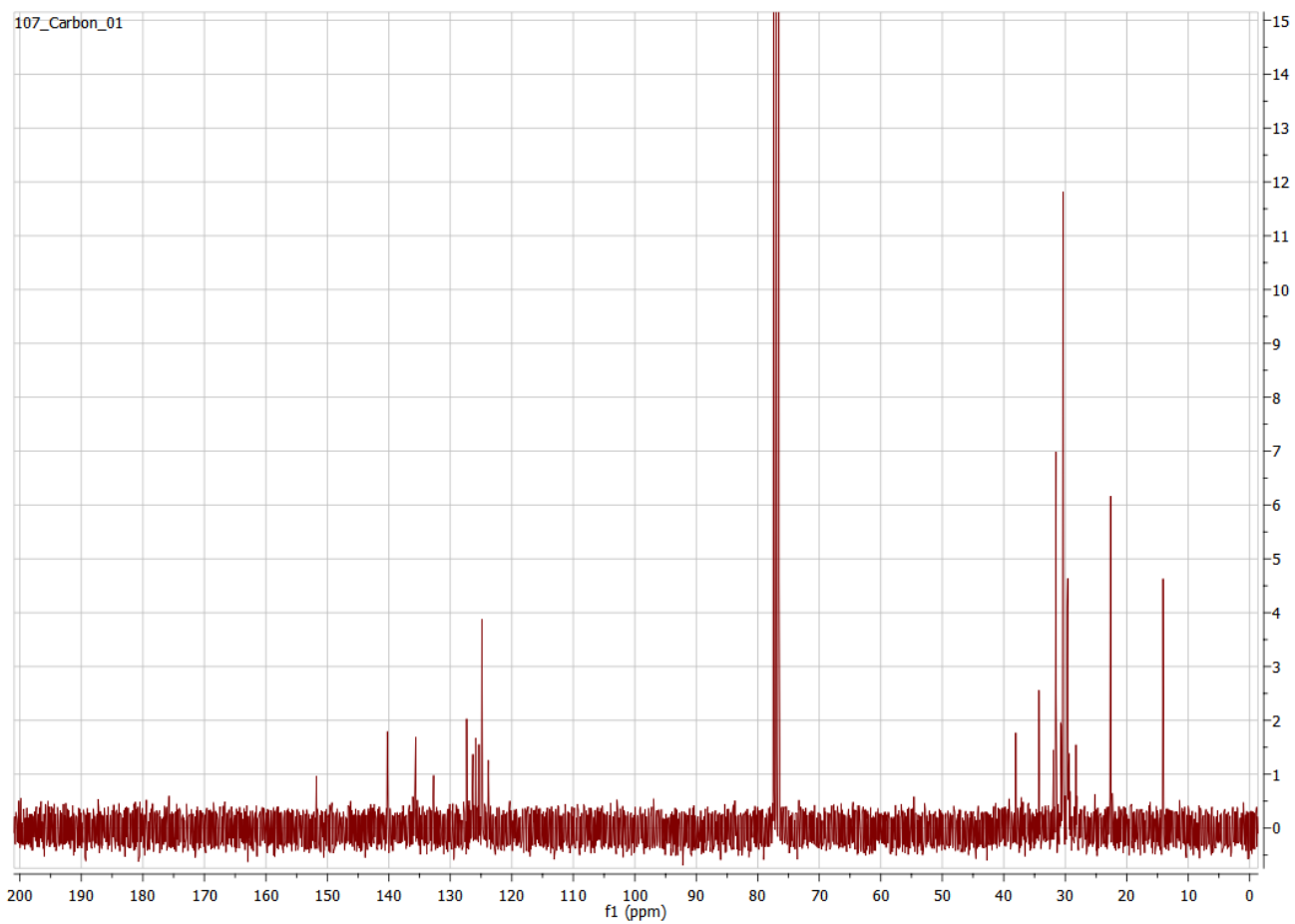


Figure S5. ^{13}C NMR spectrum of **9T**.

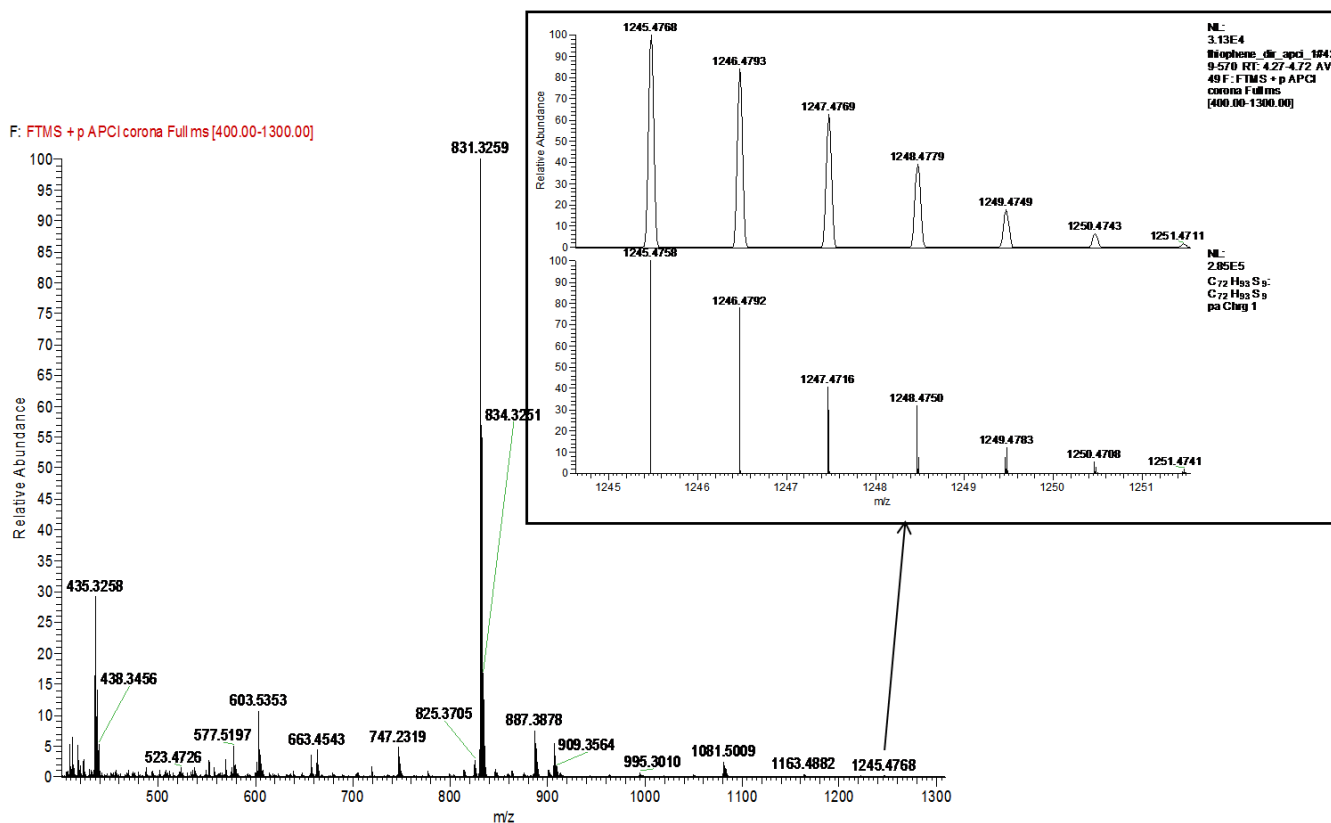


Figure S6. HR-MS of **9T**. At the inset, the expanded region of the $[M+1]$ is shown in the upper panel, while the corresponding theoretically predicted isotopic distribution pattern is shown in the lower panel.

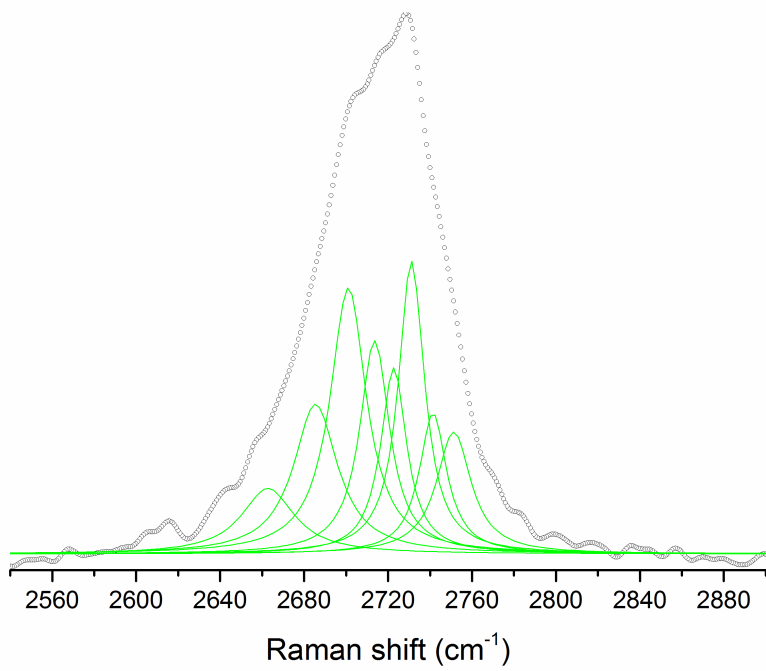


Figure S7. Deconvoluted 2D-band of eG.

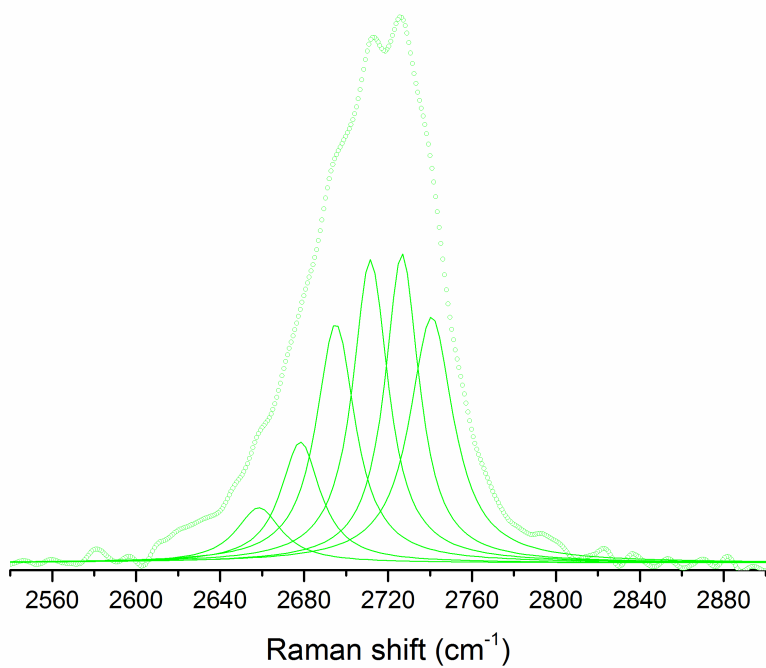


Figure S8. Deconvoluted 2D-band of 3T/eG ensemble.

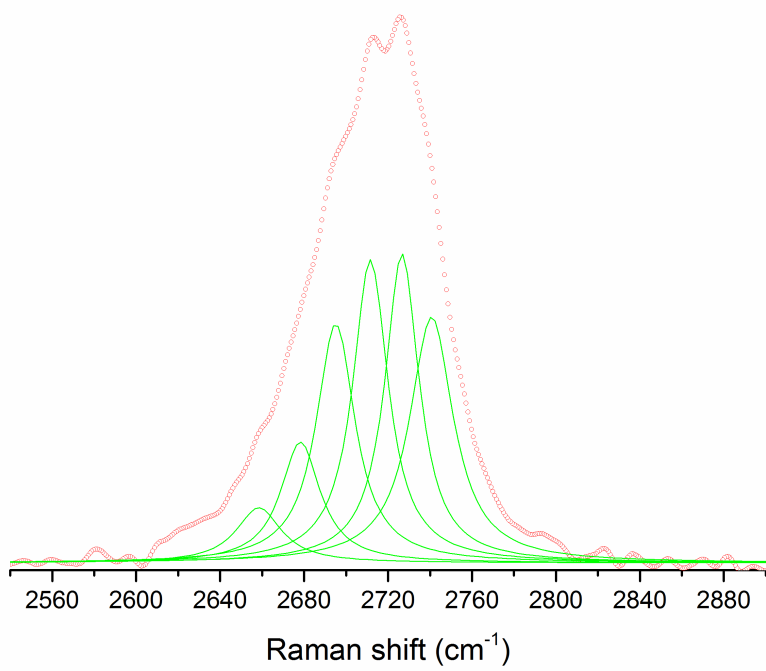


Figure S9. Deconvoluted 2D-band of 9T/eG ensemble.

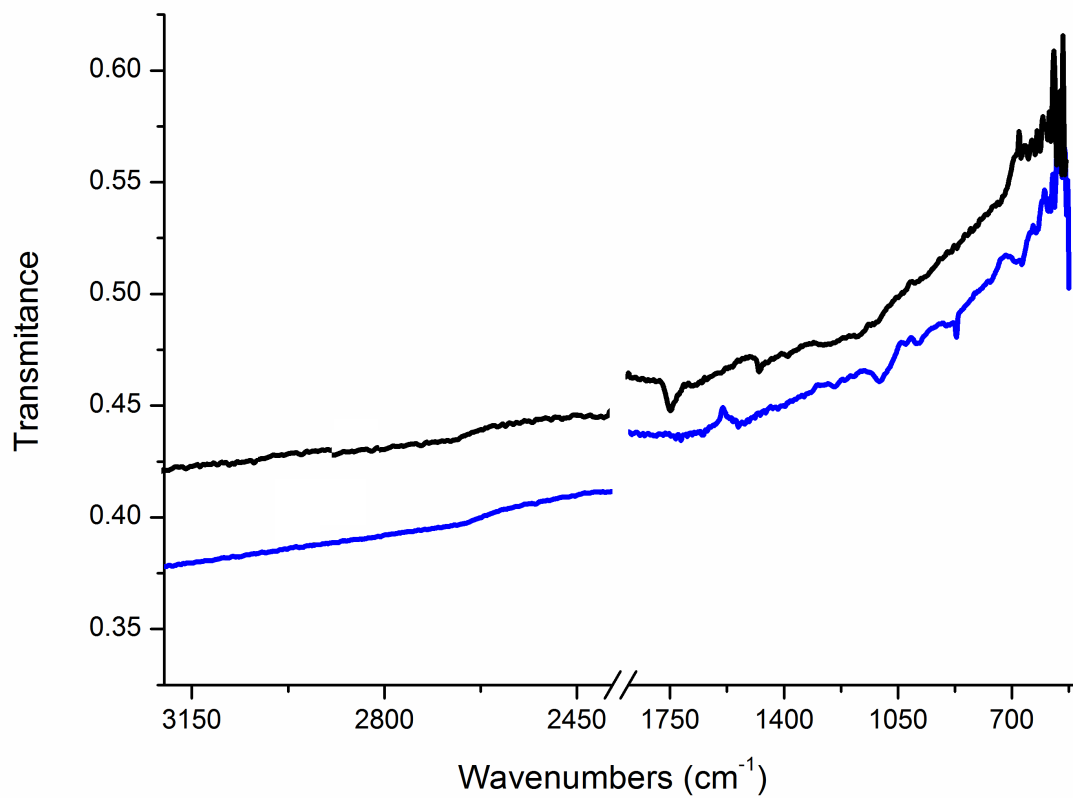


Figure S10. ATR-IR spectra of starting graphite flakes (black line) and eG (blue line).

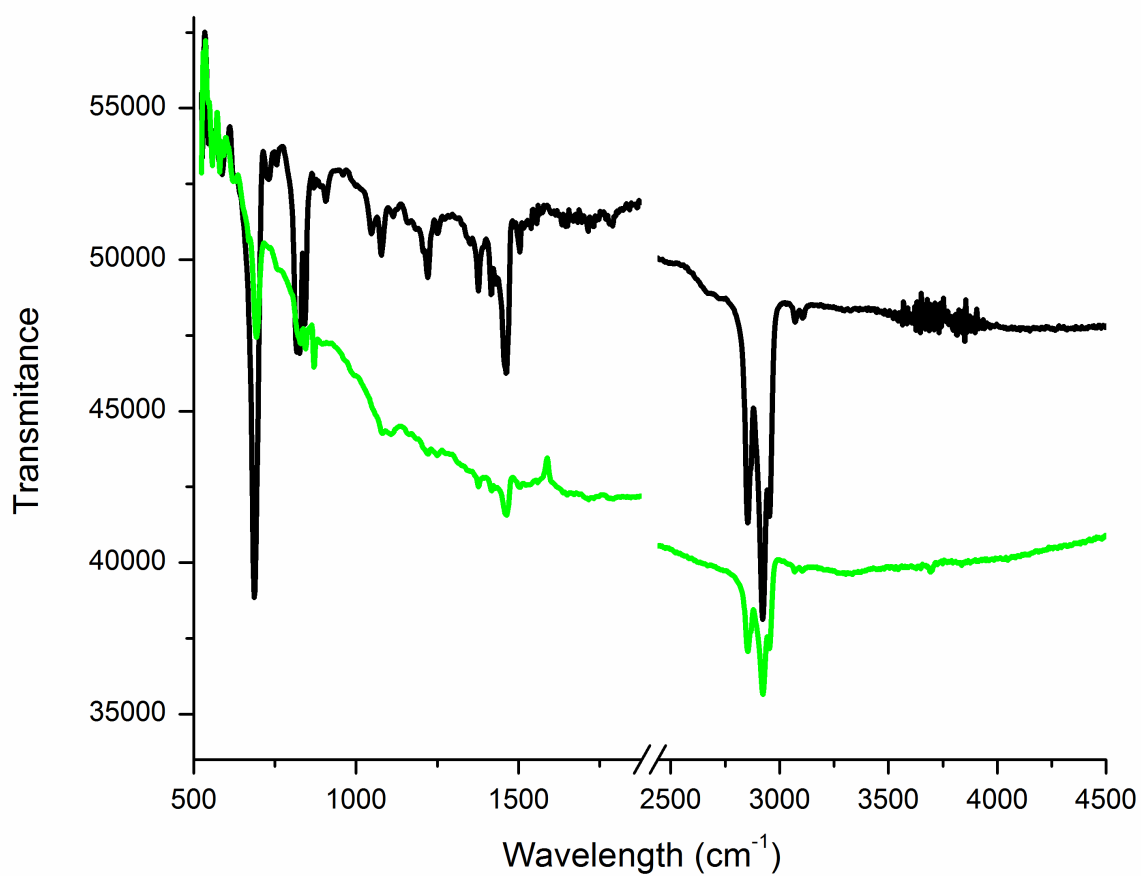


Figure S11. ATR-IR spectra of free 3T (black line) and 3T/eG ensemble (green line).

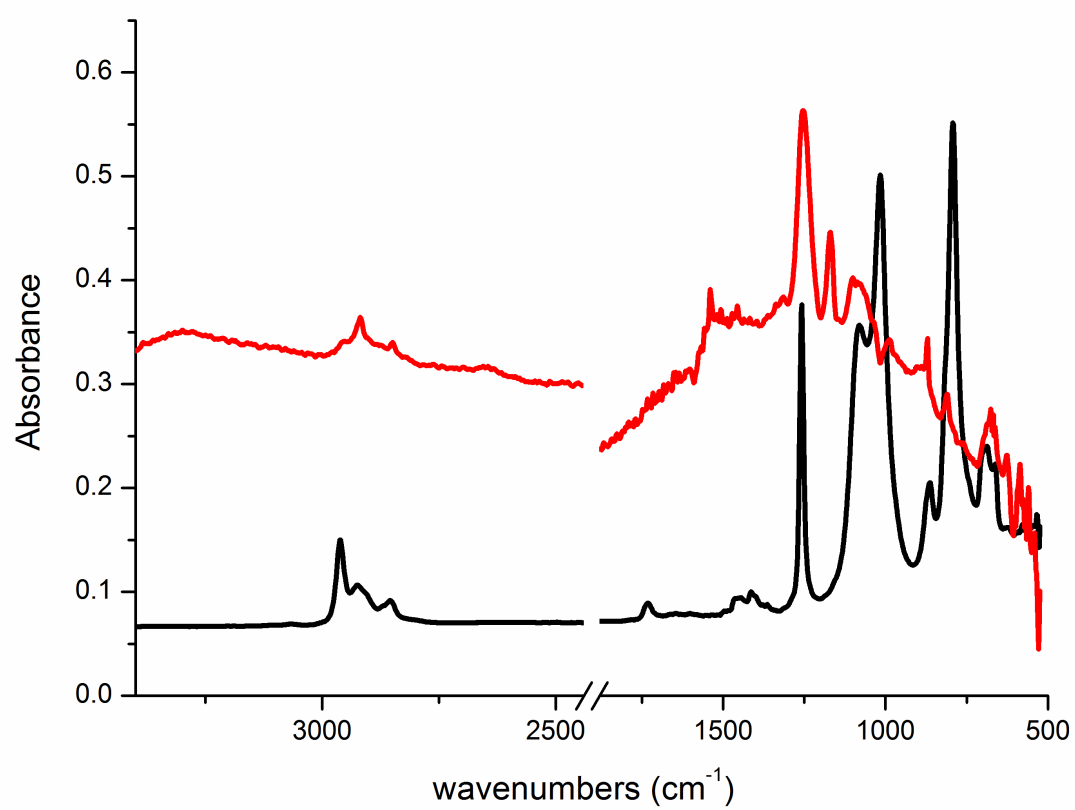


Figure S12. ATR-IR spectra of **9T** (black line) and **9T/eG** ensemble (red line).

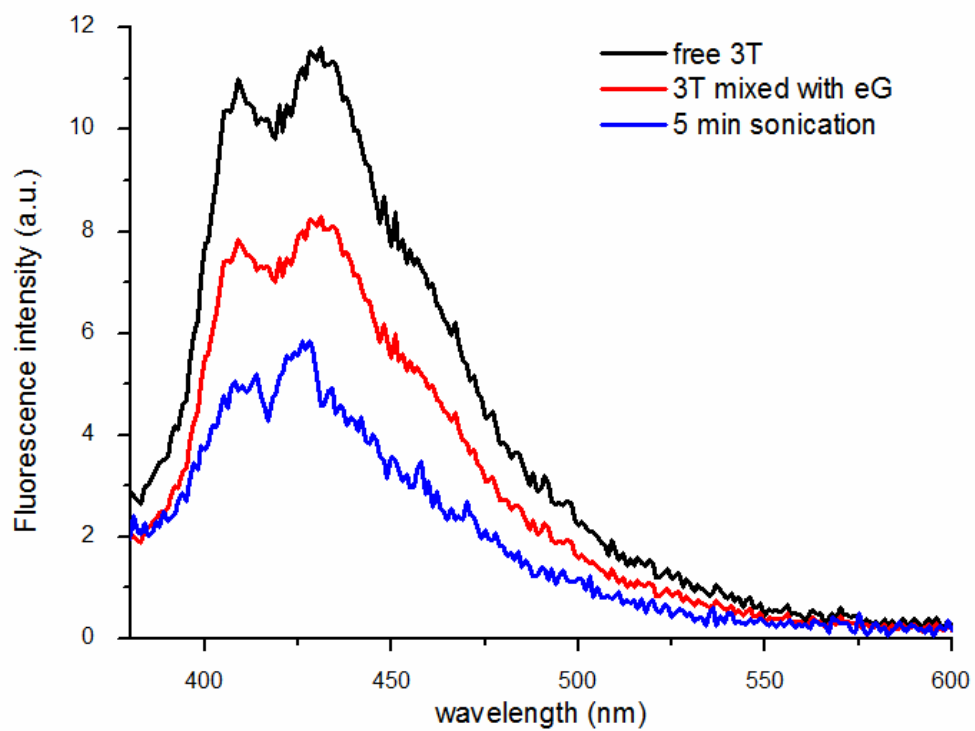


Figure S13. Blank photoluminescence spectra of **3T** and mixed **3T** with **eG**, obtained in THF with matching absorbance at the excitation wavelength of 330 nm.

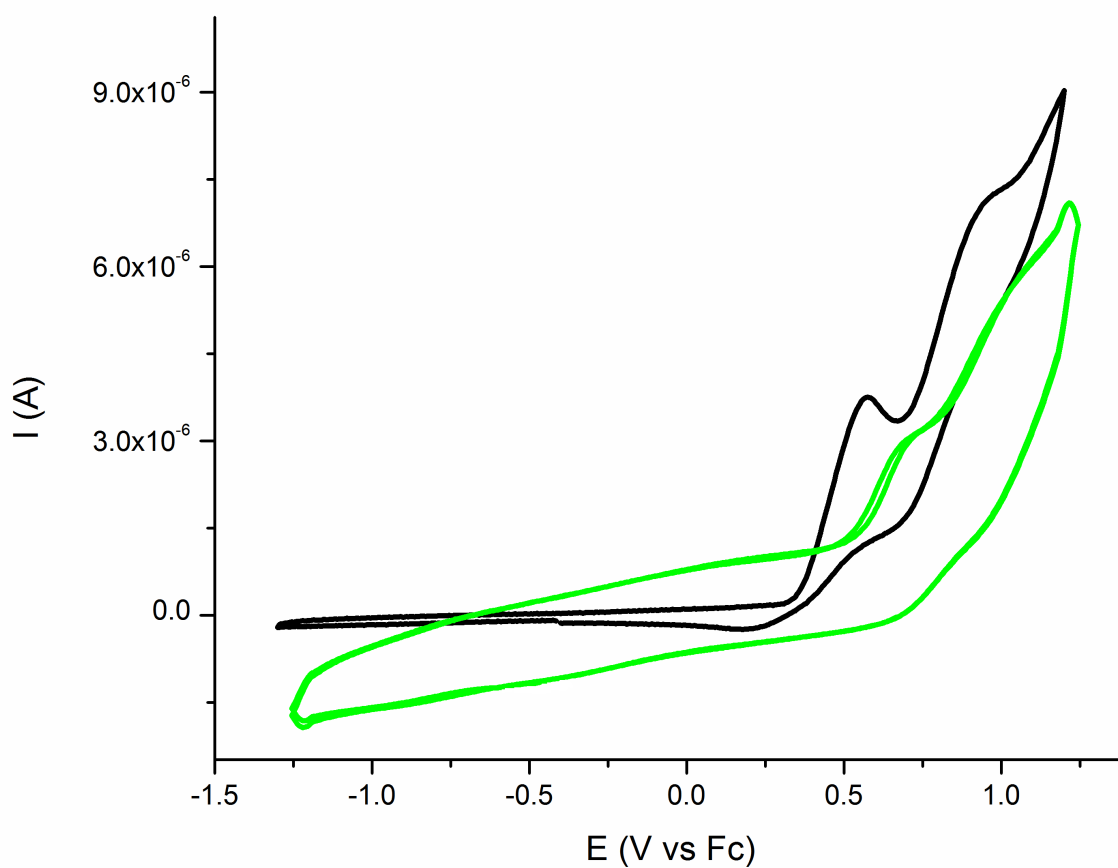


Figure S14. CV graphs of free 3T (black line) and 3T/eG ensemble (green line), recorded at 100 mV/s in CH_2Cl_2 with 0.1M TBAPF_6 as electrolyte.

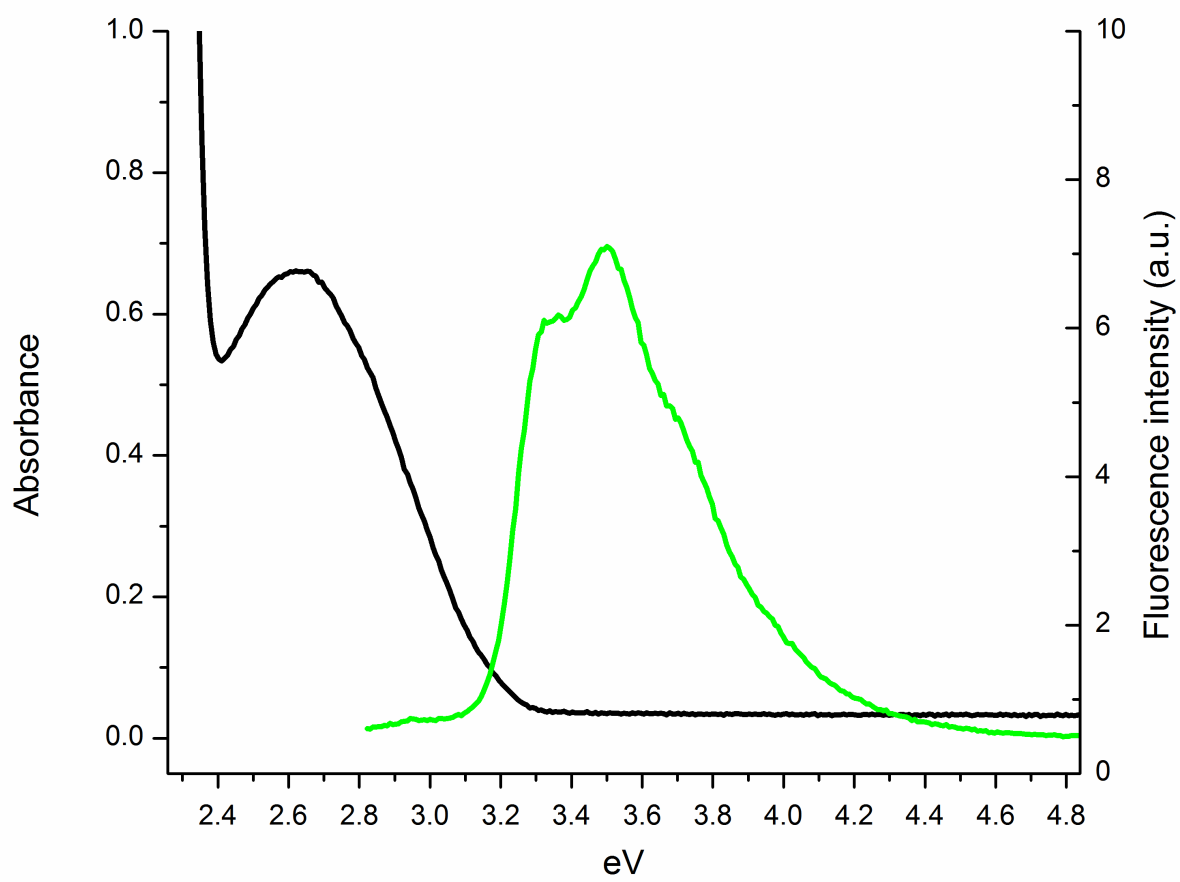


Figure S15. UV-Vis absorption and fluorescence emission spectra of free **3T**.

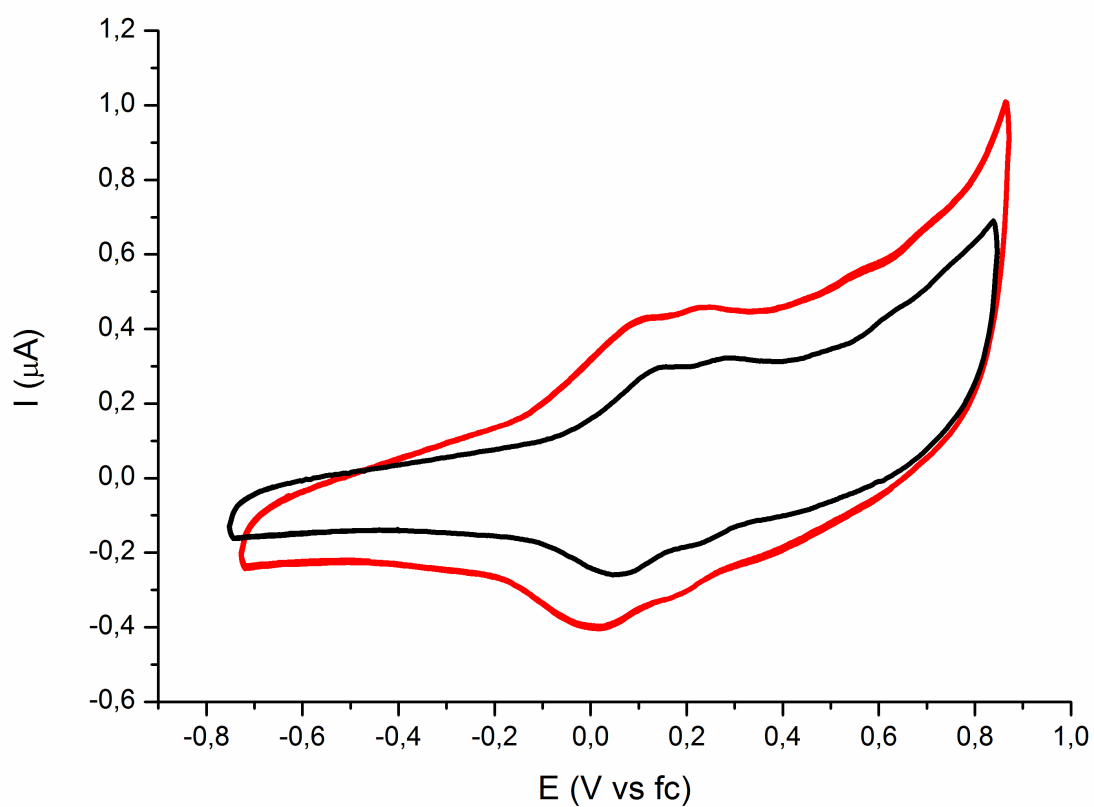


Figure S16. CV graphs of free **9T** (black line) and **9T/eG** ensemble (red line), recorded at 100 mV/s in CH_2Cl_2 with 0.1M TBAPF_6 as electrolyte.

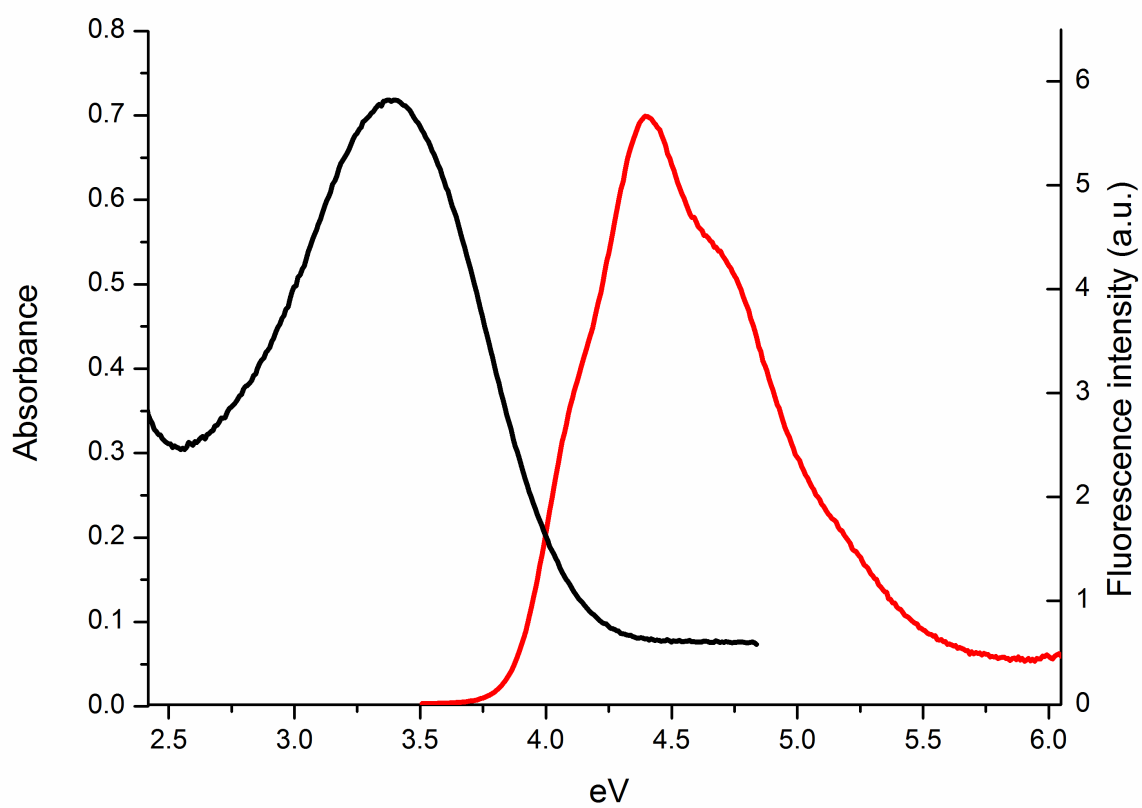


Figure S17. UV-Vis absorbance and fluorescence emission spectra of free **9T**.

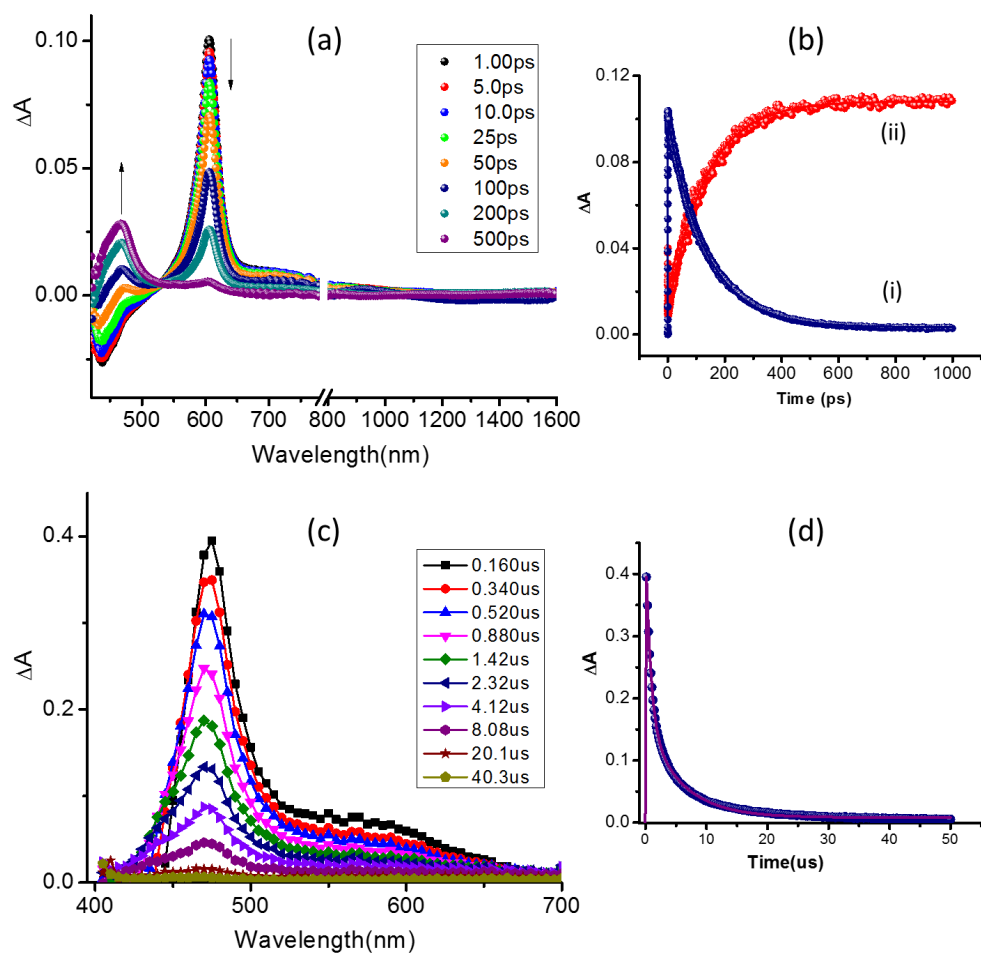


Figure S18. (a) Femtosecond transient absorption spectra of **3T** in THF, (b) time profiles of (i) 601 nm peak and (ii) 470 nm peak, (c) nanosecond transient spectra of **3T** in THF, and (d) time profile of the 470 nm peak.

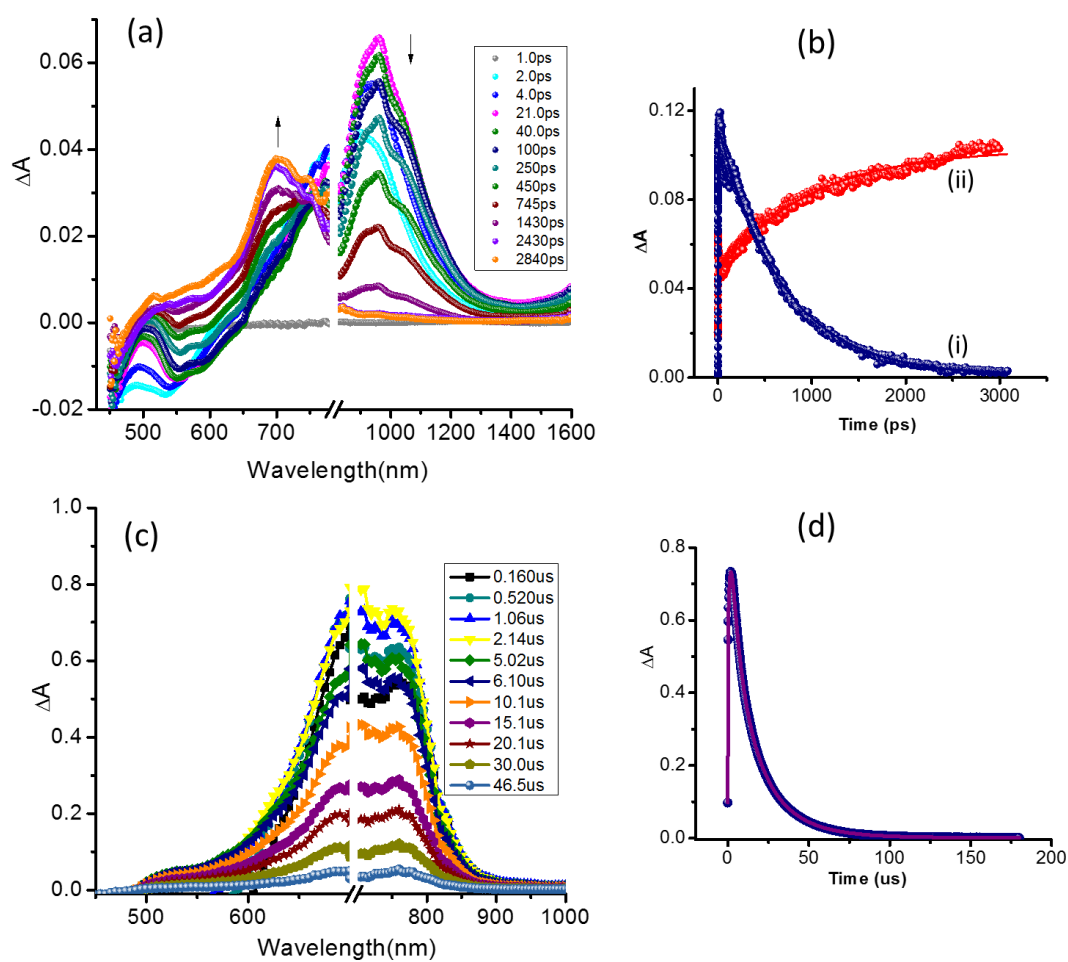


Figure S19. (a) Femtosecond transient absorption spectra of **9T** in THF, (b) time profiles of (i) 958 nm peak and (ii) 702 nm peak, (c) nanosecond transient spectra of **9T** in THF, and (d) time profile of the 752 nm peak.

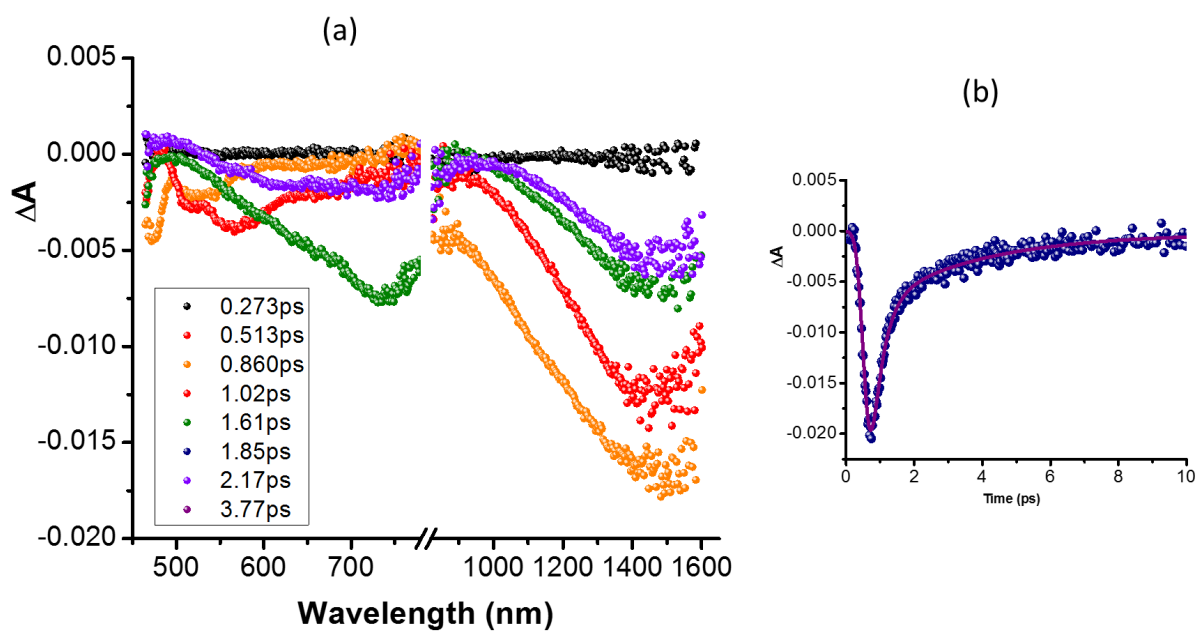


Figure S20. Femtosecond transient absorption spectra of eG in THF at the indicated delay times. (b) Time profiles of 1450 nm peak.

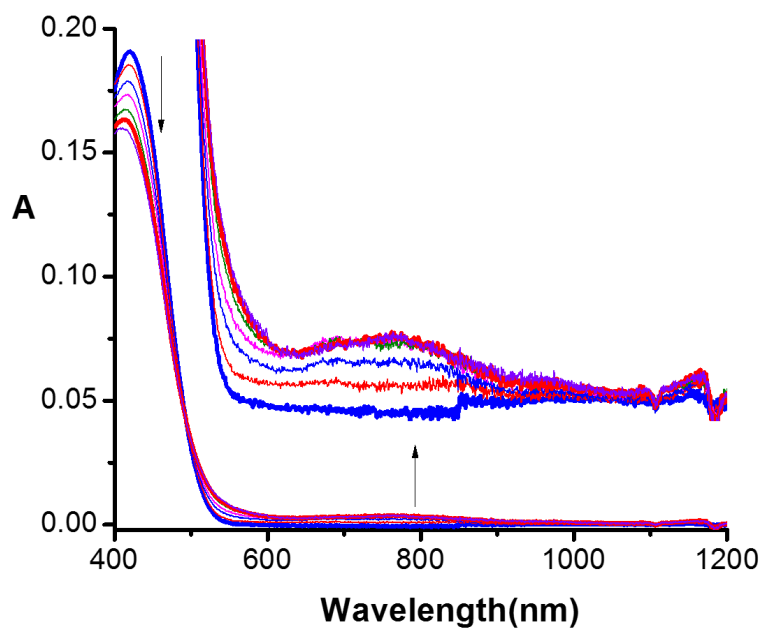


Figure S21. Spectral changes observed during chemical oxidation of **9T** in THF. Nitrosonium tetrafluoroborate was used as oxidant.