

Supporting Information for

Electronic, optical and magnetic consequences of delocalization in multifunctional donor-acceptor organic polymers

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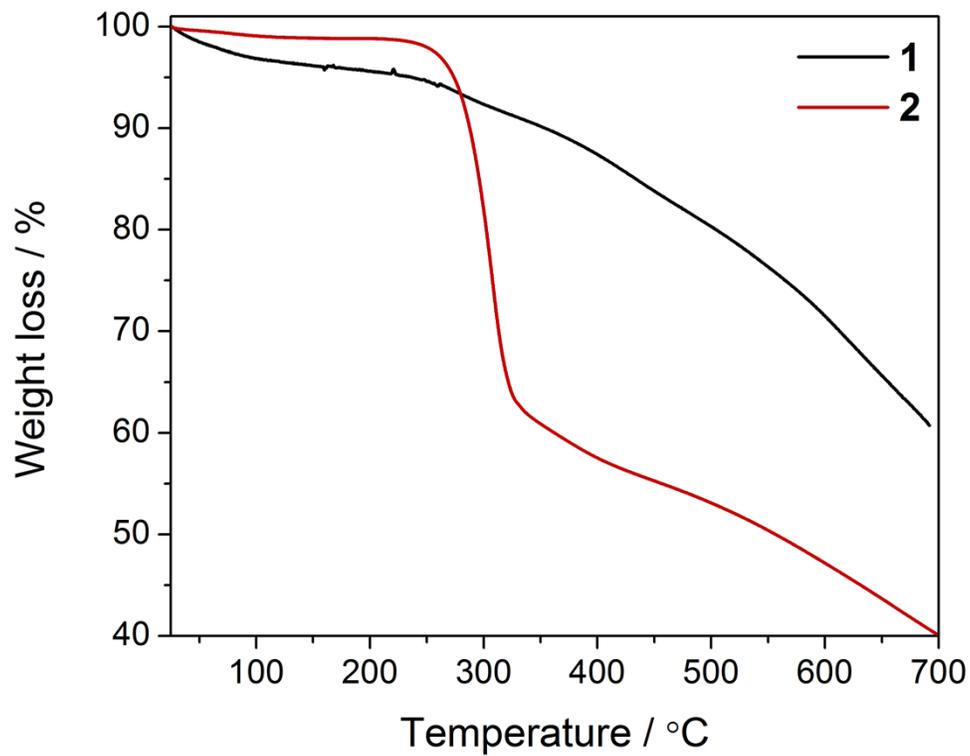


Figure S1. TGA of **1** and **2** over the temperature range 25 to 700 °C.

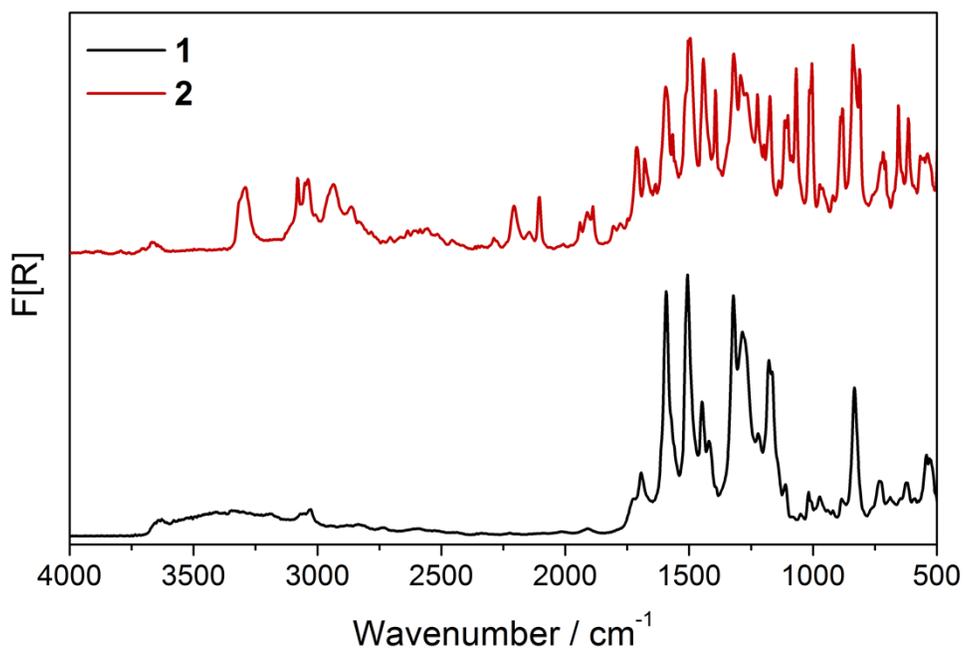


Figure S2. Infrared spectra of **1** and **2** over the range 4000-500 cm⁻¹.

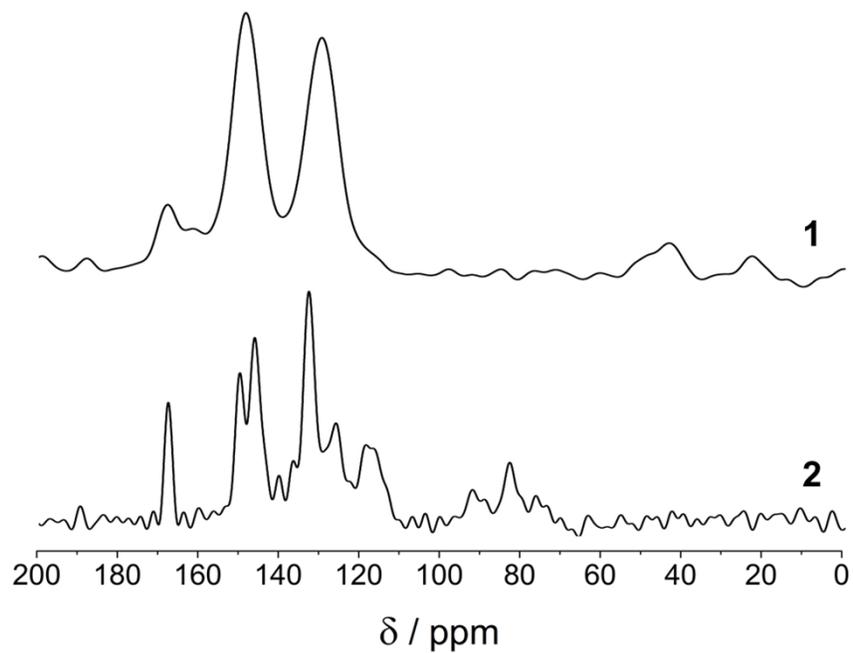


Figure S3. ^{13}C CP non-quaternary suppression (NQS) spectra of **1** and **2** at 75 MHz with 8 kHz MAS.

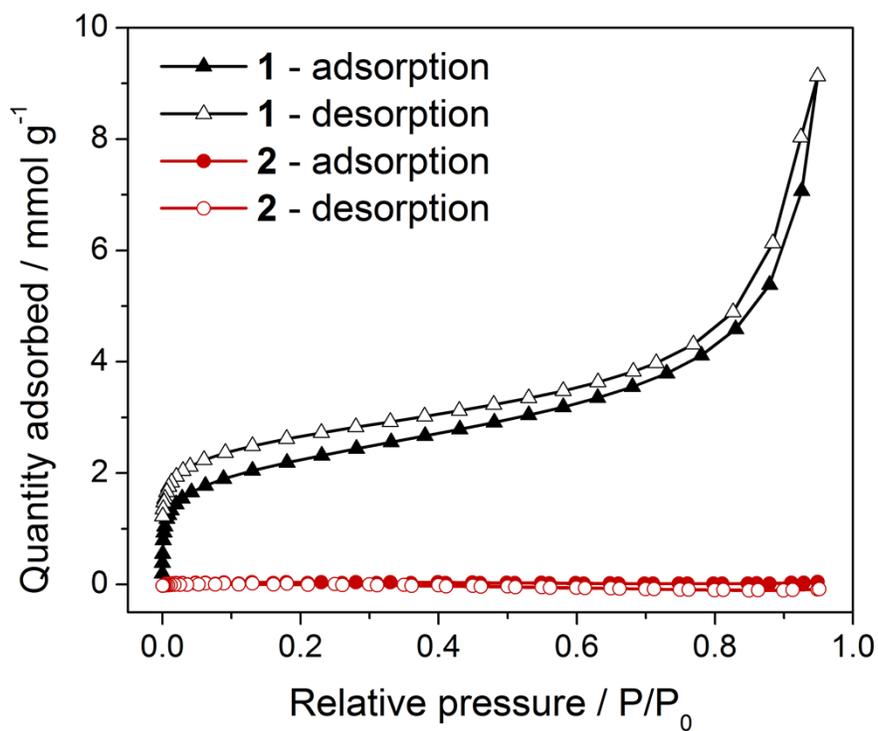


Figure S4. N_2 isotherm at 77 K for **1** and **2**.

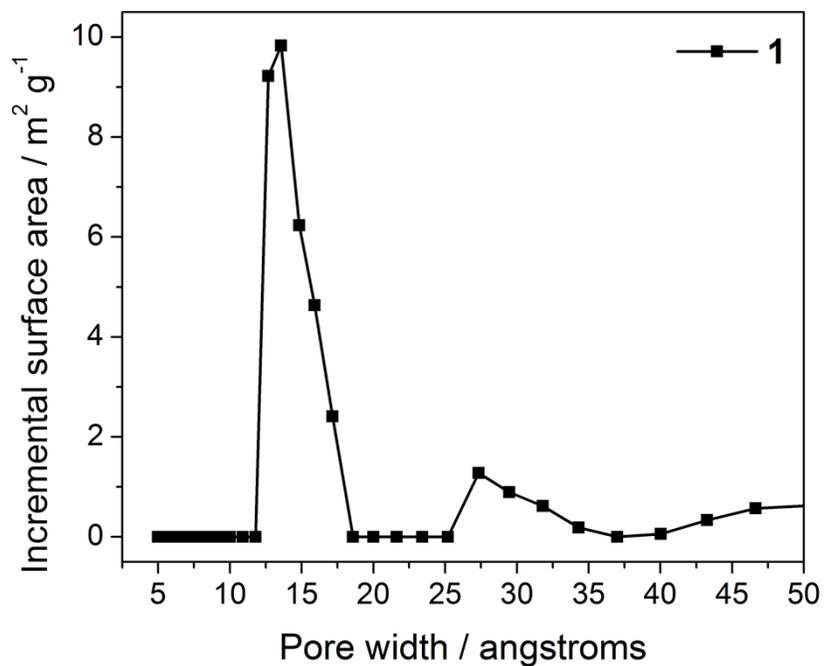


Figure S5. Pore size distribution of **1**.

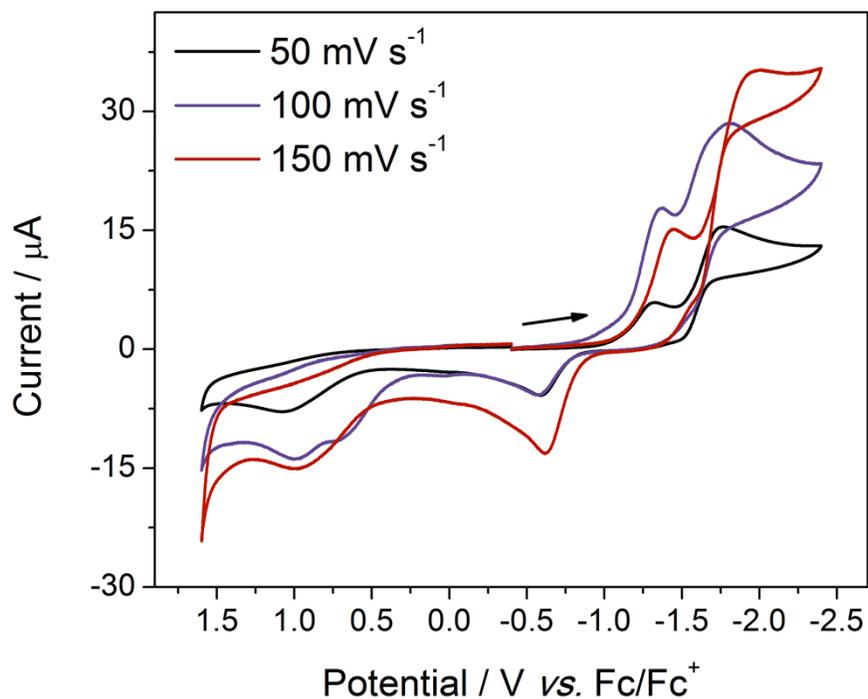


Figure S6. Solid state cyclic voltammograms of **1** with scan rates of 50, 100 and 150 mV s⁻¹ in [(*n*-C₄H₉)₄N]PF₆/MeCN. Notable is that, at 100 mV s⁻¹, the oxidation process splits into two peaks. The arrow indicates the direction of the forward scan.

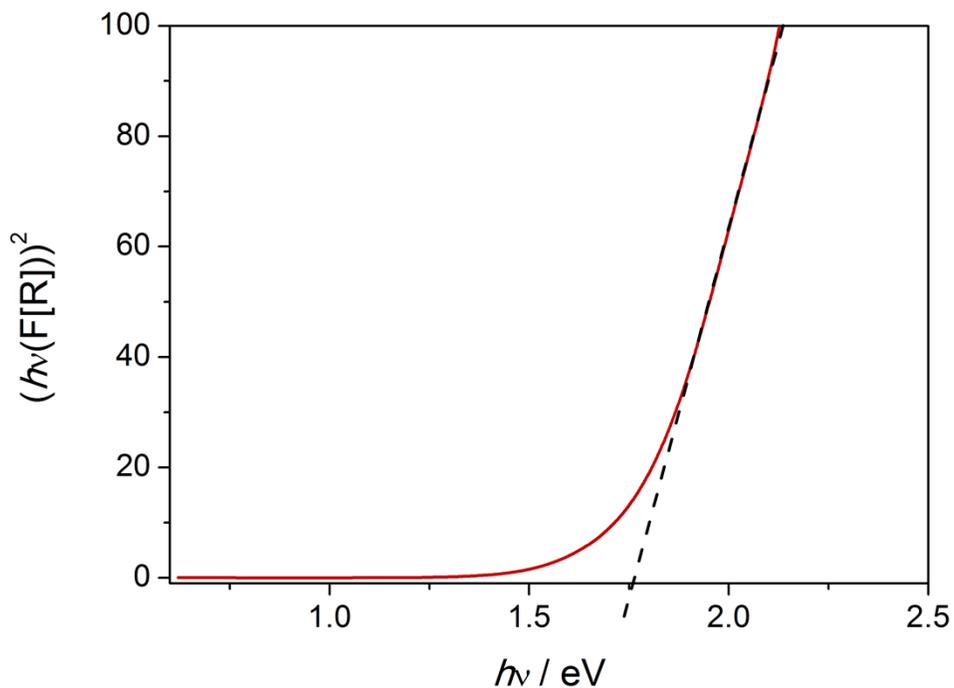


Figure S7. Tauc plot derived from the solid state UV-vis-NIR spectrum of **1** showing the estimation of the optical band gap (the intersection of the dashed line with the x -axis).

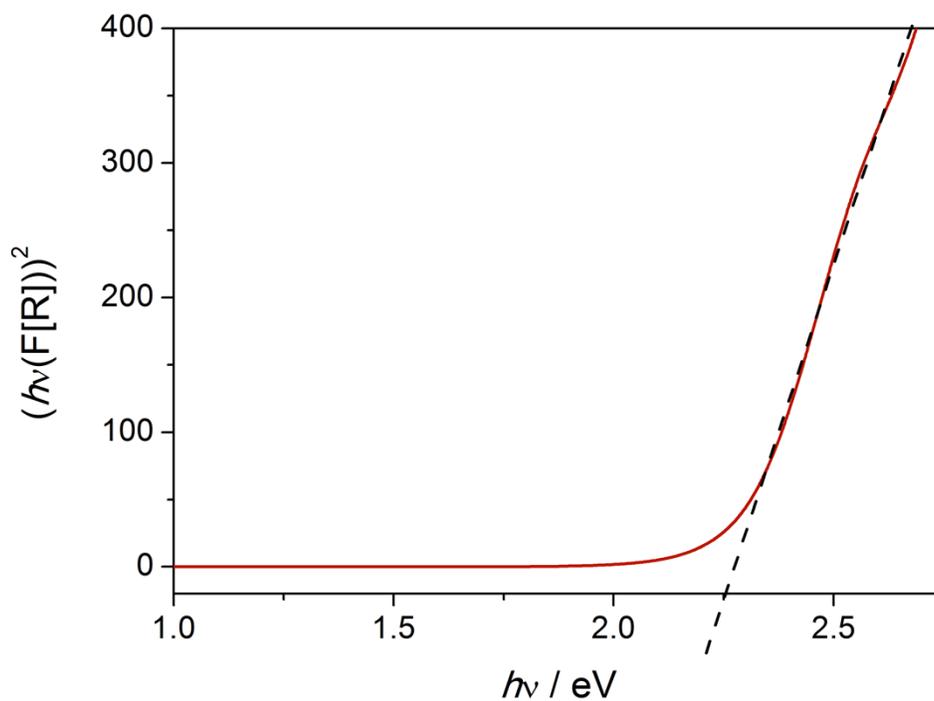


Figure S8. Tauc plot derived from the solid state UV-vis-NIR spectrum of **2** showing the estimation of the optical band gap (the intersection of the dashed line with the x -axis).

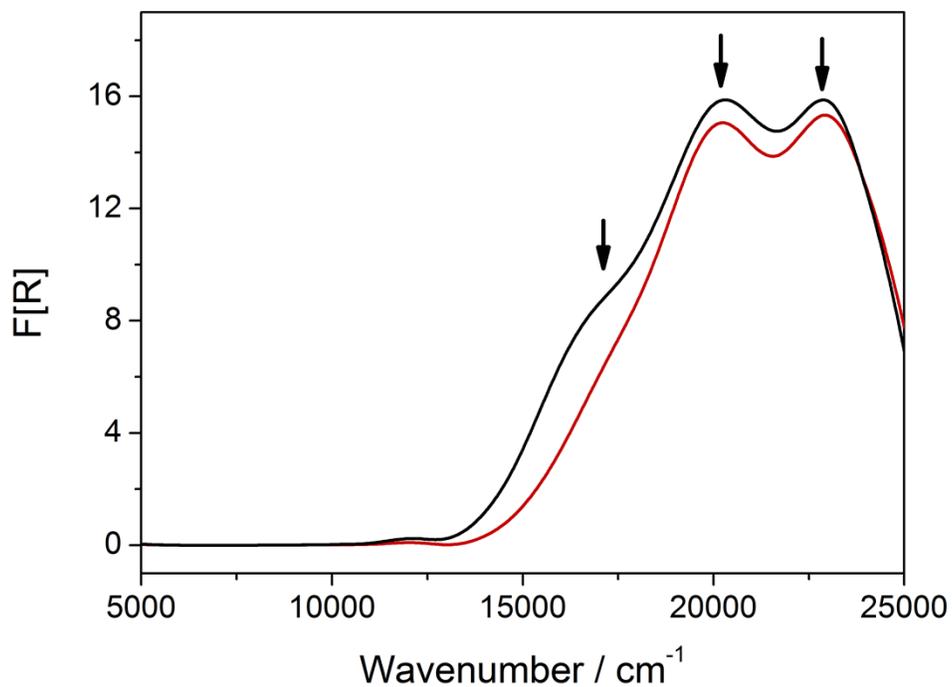


Figure S9. Solid state spectroelectrochemistry conducted on **1** in 0.1 M $[(n\text{-C}_4\text{H}_9)_4\text{N}]\text{PF}_6/\text{MeCN}$, during reduction (0 to -2.0 V). Arrows show the direction of spectral progression.

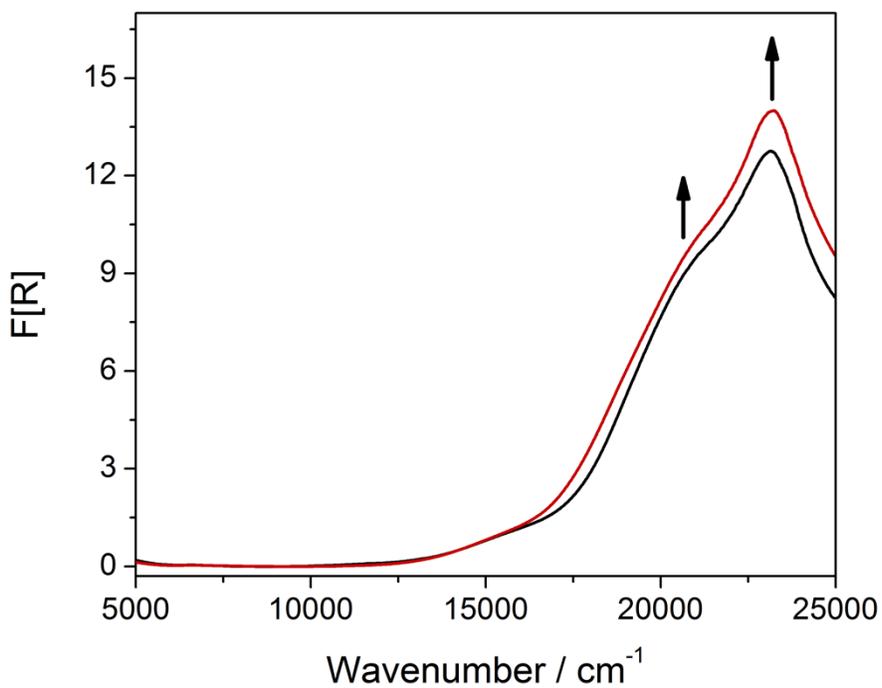


Figure S10. Solid state spectroelectrochemistry conducted on **2** in 0.1 M $[(n\text{-C}_4\text{H}_9)_4\text{N}]\text{PF}_6/\text{MeCN}$, during reduction (0 to -2.0 V). Arrows show the direction of spectral progression.

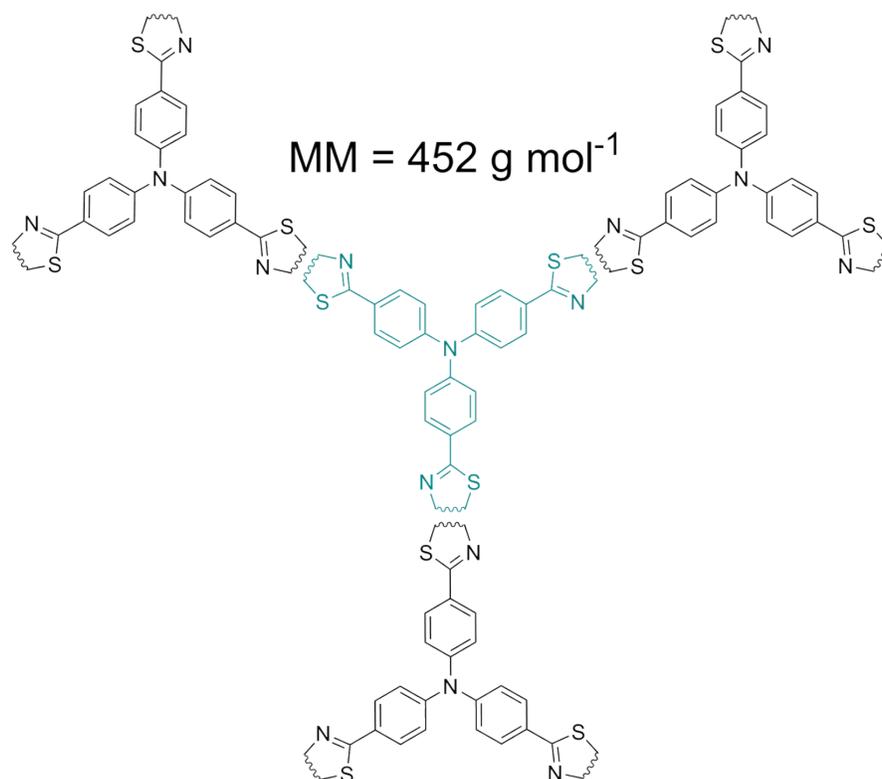


Figure S11. Formula unit of **1** (shown in cyan), used for stoichiometric redox agent additions and magnetic calculations. The polymer is extended to show the predicted connectivity.

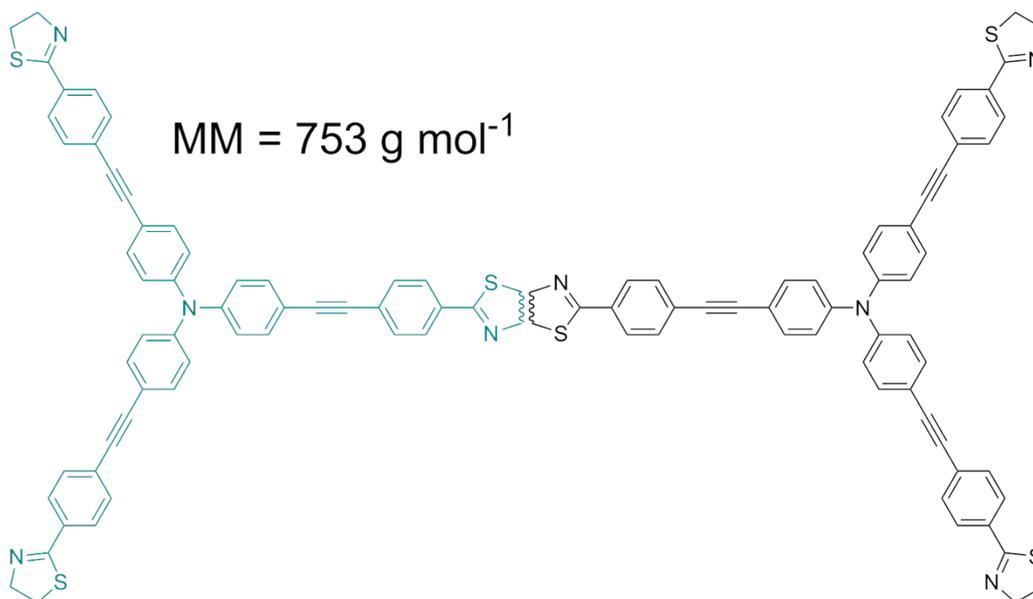


Figure S12. Formula unit of **2** (shown in cyan), used for stoichiometric redox agent additions and magnetic calculations. The polymer is extended to show the predicted connectivity.