Supporting Information

Synthesis and Aggregation Induced Enhanced Emission Effect of Pyrene Based Polysiloxanes

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Characterization:

¹H NMR and ¹³C NMR spectra were recorded on a Bruker AV400 (400MHz) spectrometer. Chemical shifts (δ) are given in parts per million (ppm) relative to tetramethylsilane (TMS; δ =0) as the internal reference. ¹H NMR spectra data are reported as chemical shift, relative integral, multiplicity (s = singlet, d = doublet, m = multiplet), coupling constant (J in Hz) and assignment. Elemental analyses of carbon, hydrogen, and nitrogen were performed on a Vario EL cube. UV-Vis absorption spectra were recorded on a Shimadzu UV-3600 recording spectrophotometer. PL spectra were recorded on a Hitachi F-7000 fluorescence spectrophotometer. Differential scanning calorimetry (DSC) was performed on a TA Q2000 Differential Scanning Calorimeter at a heating rate of 10 °C min⁻¹ from 25 to 300 °C under nitrogen atmosphere. The glass transition temperature (Tg) was determined from the second heating scan. Thermogravimetric analysis (TGA) was undertaken with a METTLER TOLEDO TGA/DSC 1/1100SF instrument. The thermal stability of the samples under a nitrogen atmosphere was determined by measuring their weight loss while heating at a rate of 10 °C min⁻¹ from 25 to 900 °C. Cyclic voltammetry (CV) was carried out in nitrogen-purged dichloromethane (oxidation scan) at room temperature with a CHI voltammetric analyzer. Tetrabutylammoniumhexafluorophosphate (TBAPF6) (0.1 M) was used as the supporting electrolyte. The conventional three-electrode configuration consists of a glassy carbon working electrode, a platinum wire auxiliary electrode, and an Ag/AgNO₃ pseudo-reference electrode with ferrocenium-ferrocene (Fc⁺/Fc) as the internal standard. Cyclic voltammograms were obtained at scan rate of 100 mV s⁻¹. The onset potential was determined from the intersection of two tangents drawn at the rising and background current of the cyclic voltammogram. DFT Calculations were performed at the DFT level of theory using the Gaussian 09 package. Becke's three-parameter hybrid method using the Lee-Yang-Parr correlation functional (denoted as B3LYP) was employed and the 6-31G (d) basis set was used.



Fig. S1 ¹HNMR spectrum of M1.



Fig. S2 ¹³CNMR spectrum of M1.







Fig. S4 ¹³CNMR spectrum of M2.



Fig. S5 ¹HNMR spectrum of PySQ.