Electronic Supplementary Material (ESI) for Polymer Chemistry.

Electronic Supplementary Information

The Active Role of Excites States of Phenothiazines in Photoinduced Metal Free Atom Transfer Radical Polymerization: Singlet or Triplet Excited States?

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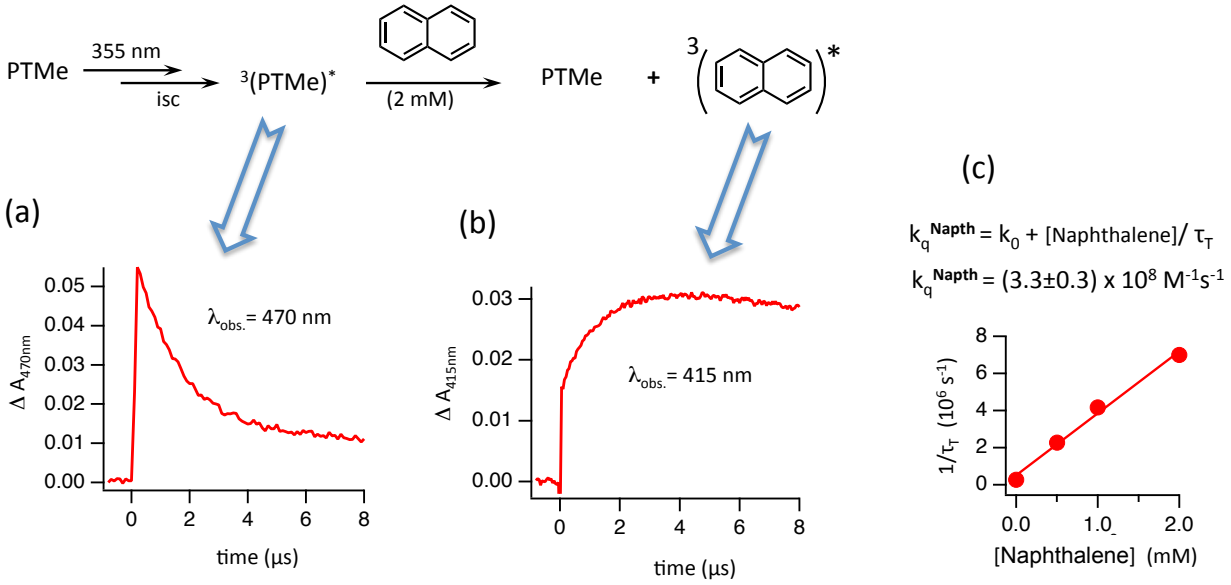

Fig. S1 Transient absorption decay traces monitored at 470 nm (a) and 415 nm (b) following laser excitation (λ_{ex} = 355 nm, 7 ns pulse width) of PTMe in the presence of 2 mM naphthalene in argon saturated DMA solutions, and plot of inverse PTMe triplet lifetime vs. varying naphthalene concentrations (c) in argon saturated DMA solutions.

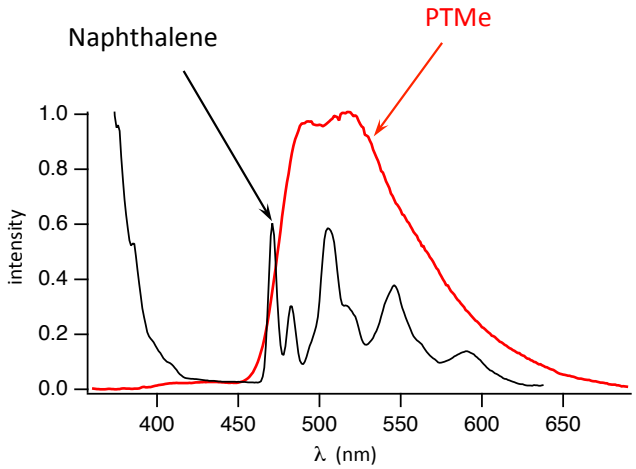

Fig. S2 Phosphorescence spectra of PTMe (λ_{ex} = 350 nm) and naphthalene (λ_{ex} = 300 nm) in DMA at 77K. The triplet energy of naphthalene in DMA was determined from the first peak of phosphorescence (E_T = 254 kJ/mol). Because of the broad, structureless PTMe phosphorescence, the exact value of the triplet energy is not clear, but should be close to 254 kJ/mol.

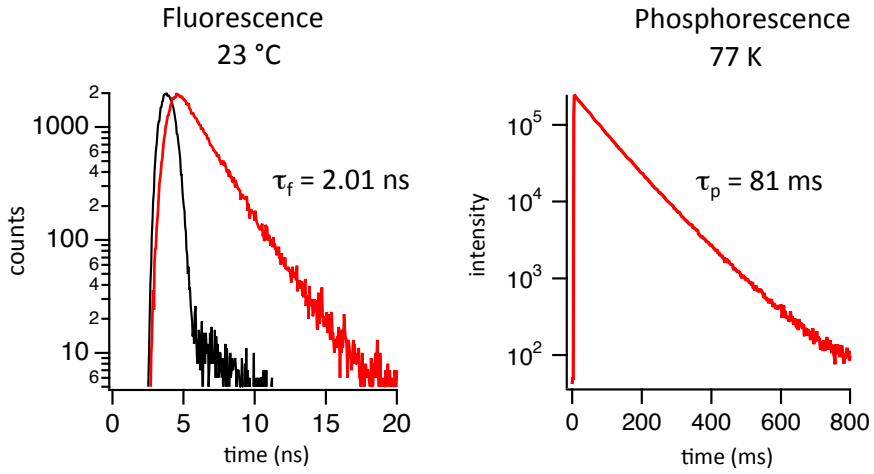

Fig. S3 Left: Fluorescence decay (red) of PTMe in DMA at 23 °C with 350 nm excitation monitored at 450 nm. Instruments response function (black). Right: Phosphorescence decay of PTMe in DMA at 77 K with 350 nm excitation monitored at 490 nm.

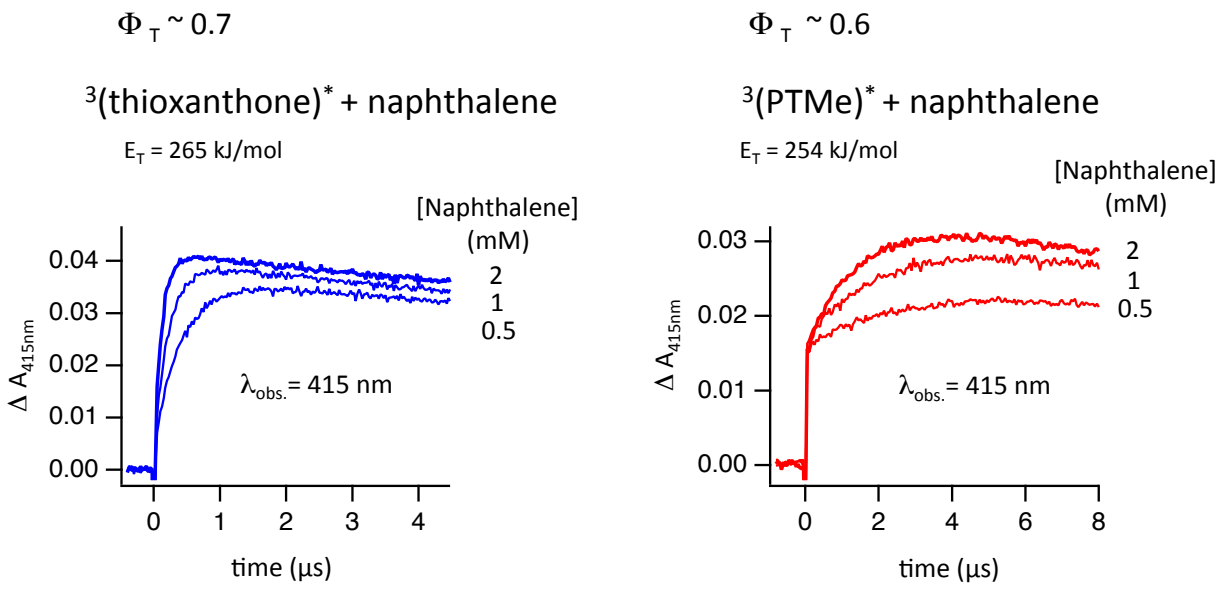

Fig. S4 Transient absorption decay traces monitored at 415 nm (naphthalene triplet) following laser excitation (λ_{ex} = 355 nm, 7 ns pulse width) of thioxanthone (left) or PTMe (right) in the presence of varying amounts of naphthalene in argon saturated DMA solutions.