Electronic Supporting Information for: Photochemical Upconversion and Triplet Annihilation Limit from a Boron Dipyrromethene Emitter

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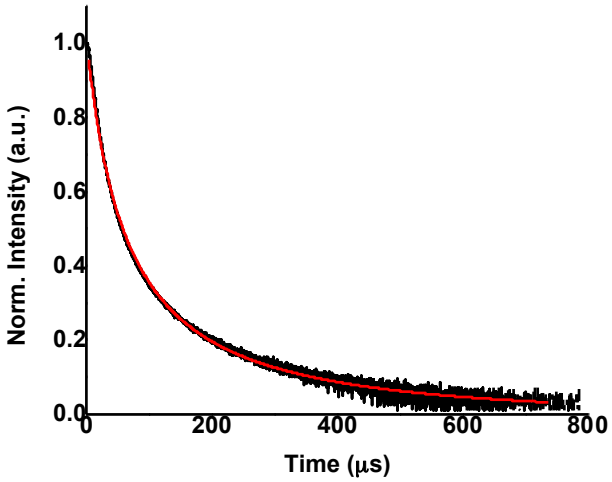

Figure S1. Square root (normalized to 1.0) of the delayed fluorescence intensity decay (black line) at 536 nm and the corresponding fit (red line) generated from 615 nm pulsed laser excitation (1.5 mJ/pulse) of PtTPTBP in the presence of Cl_2PyBODIPY. The kinetic fit is to Eq. 1 (β = 0.807; k_T = 3036 s^{-1}) and the relevant parameters (α = 12695 s^{-1}; f_2 = 0.607; η_{conv} = 0.79; ϕ_0 = 0.64) were calculated using the approach of Schmidt and coworkers (reference 36). The important extracted parameter from this analysis is the initial (maximum) annihilation efficiency ϕ_0 = 0.64.

$$\frac{[^3M^*]_t}{[^3M^*]_0} = \frac{1-\beta}{\exp(k_T t) - \beta} \qquad (1)$$

$\beta = \alpha / (k_T + \alpha)$ and $\alpha = k_{TT}[^3M^*]_0$; where $[^3M^*]_0$ is the initial sensitized triplet concentration and β equates to the initial fraction of triplet decay occurring through the bimolecular TTA channel.