Electronic Supporting Information

Multi-modular, tris(triphenylamine) zinc porphyrin – zinc phthalocyanine – fullerene conjugate as a broad-band capturing, charge stabilizing, photosynthetic ‘antenna-reaction center’ mimic

Chandra B. KC, Gary N. Lim, and Francis D’Souza*

Department of Chemistry, University of North Texas, 1155 Union Circle, #305070, Denton, TX 76203-5017, USA

E-mail: Francis.DSouza@unt.edu
Fig. S1. Energy level diagram shown multi-step energy process in \((\text{TPA})_3\text{ZnP-ZnPc}\).
Fig. S2. Job’s plots constructed using peak intensity of (a) porphyrin Soret and (b) phthalocyanine visible band.
**Fig. S3.** (a) Cyclic voltammograms of (TPA)$_4$ZnP and (TPA)$_3$ZnP, and (b) ZnPc in dichlorobenzene containing 0.1 M TBAClO$_4$. 
**Fig. S4.** Visible-NIR spectrum of neutral (dark line) and chemically oxidized using equimolar nitronium hexafluoroantimonate (red line) of (TPA)$_4$ZnP in $o$-DCB.
Fig. S5. (a) Femtosecond transient spectrum of (a) (TPA)$_4$ZnP (blue) and (TPA)$_4$ZnP:ImC$_{60}$ (red) recorded at 500 ps, and (b) (TPA)$_3$ZnP (blue) and (TPA)$_3$ZnP:ImC$_{60}$-ZnPc:ImC$_{60}$ (blue) at 10 ps in DCB.
Fig. S6. Femtosecond transient spectra of ZnPc in toluene at the indicated time intervals.
Fig. S7. (a) Nanosecond transient spectra at the indicated time intervals of (TPA)$_4$ZnP in toluene ($\lambda_{ex} = 430$ nm). (b) time profile of the 810 nm peak.
Fig. S8. Nanosecond transient spectra at the indicated time intervals of $(\text{TPA})_4\text{ZnP:ImC}_{60}$ complex in toluene ($\lambda_{\text{ex}} = 430$ nm).
Fig. S9. MALDI-Mass spectrum of (TPA)$_3$ZnP-ZnPc.
Fig. S10. $^1$H NMR spectrum of (TPA)$_3$ZnP-ZnPc in CDCl$_3$. Solvent peaks are marked by ‘*’.
Fig. S11. $^{13}$CNMR spectrum of (TPA)$_3$ZnP-ZnPc in CDCl$_3$. Solvent peaks are marked by ‘*’.
Fig. S12. Steady state fluorescence spectrum of ZnPc ($\lambda_{ex} = 680$ nm) in degassed o-dichlorobenzene.