Electronic Supplementary Material (ESI) for Nanoscale.

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

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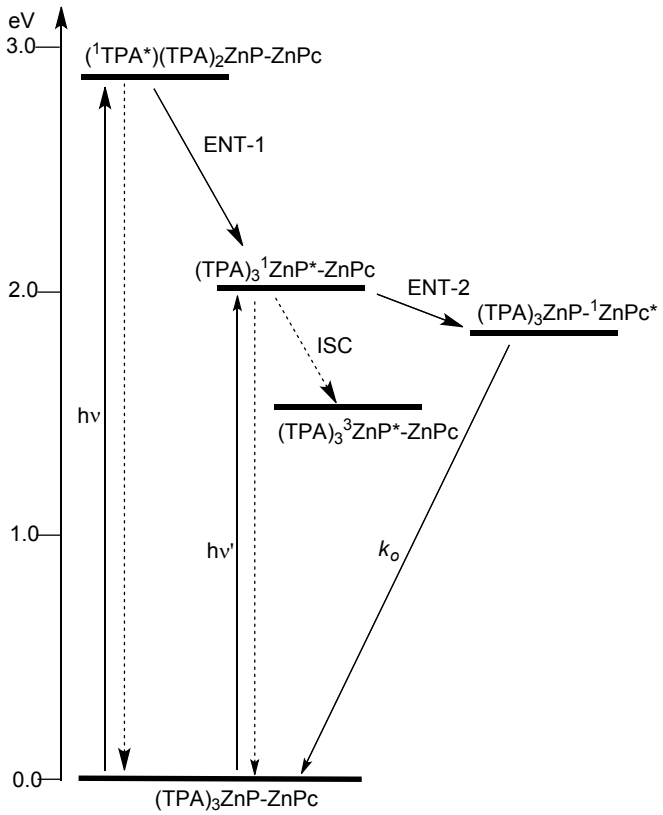

Fig. S1. Energy level diagram shown multi-step energy process in $(TPA)_3ZnP\text{-}ZnPc$.

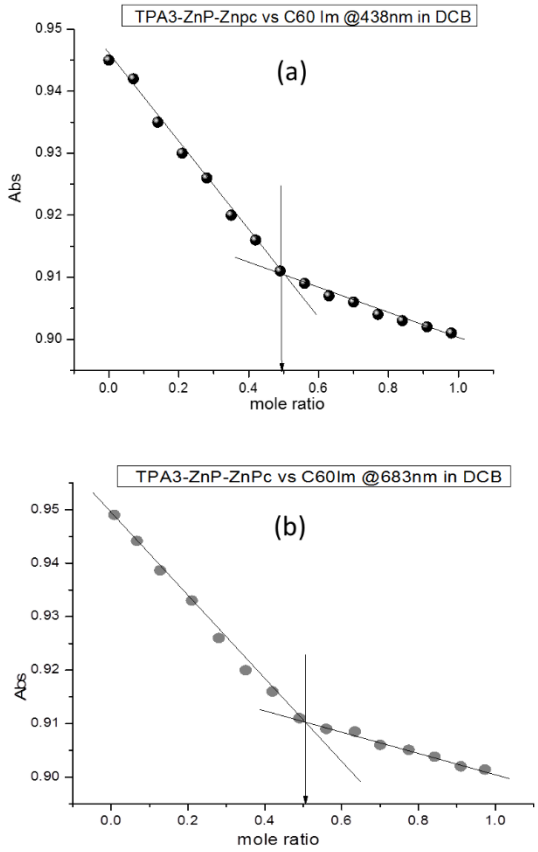

Fig. S2. Job's plots constructed using peak intensity of (a) porphyrin Soret and (b) phthalocyanine visible band.

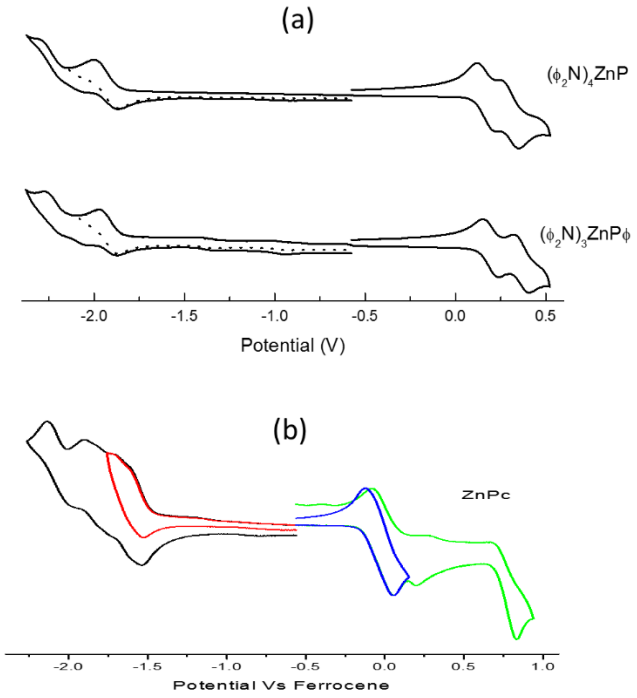

Fig. S3. (a) Cyclic voltammograms of $(TPA)_4ZnP$ and $(TPA)_3ZnP$, and (b) ZnPc in dichlorobenzene containing 0.1 M $TBAClO_4$.

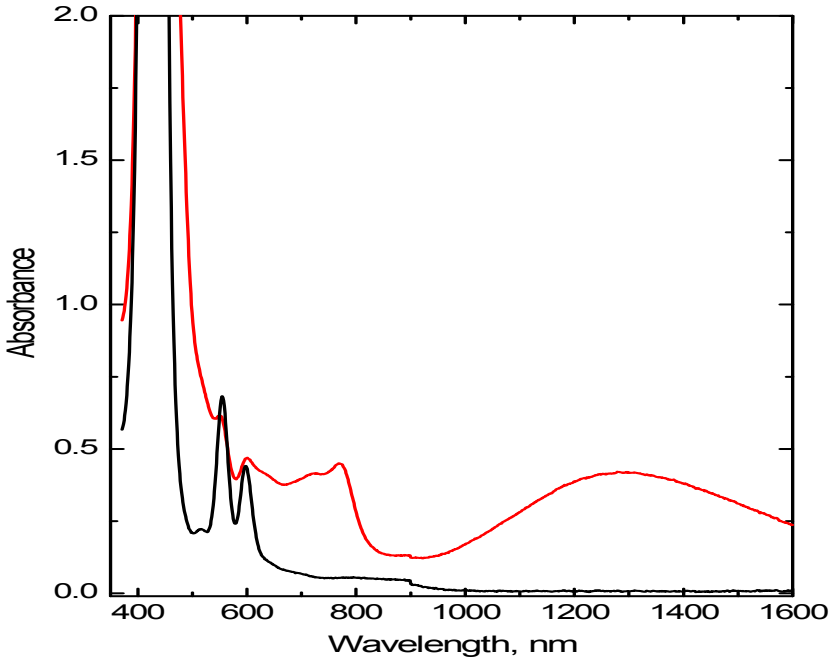

Fig. S4. Visible-NIR spectrum of neutral (dark line) and chemically oxidized using equimolar nitronium hexafluoroantimonate (red line) of $(TPA)_4ZnP$ in *o*-DCB.

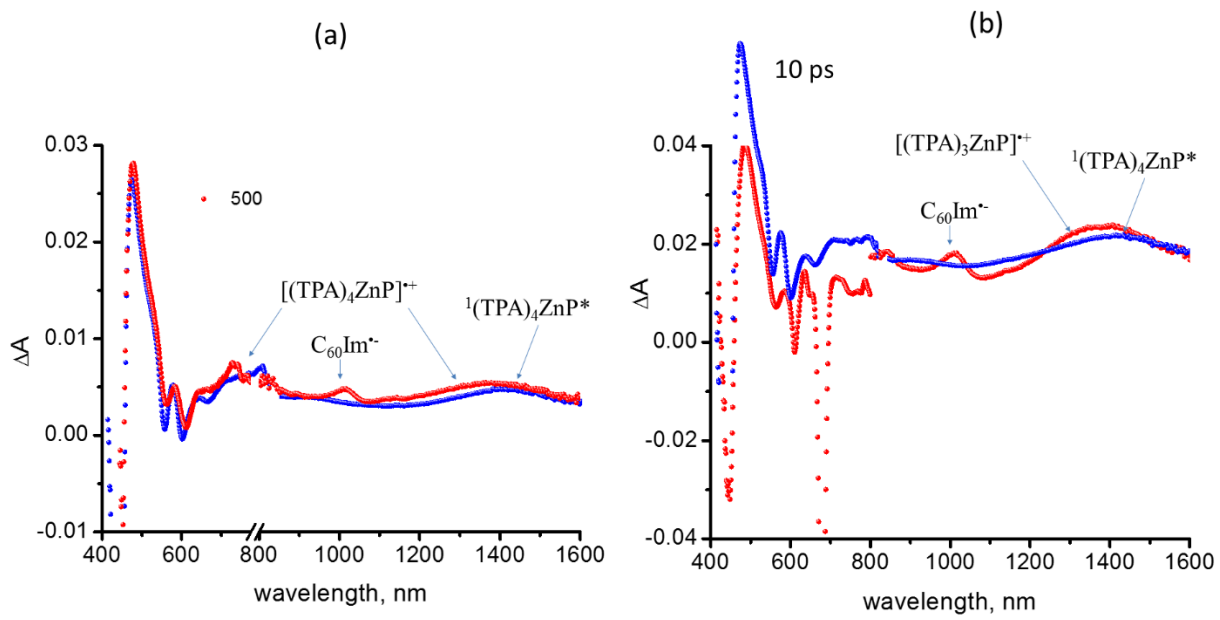

Fig. S5. (a) Femtosecond transient spectrum of (a) $(TPA)_4ZnP$ (blue) and $(TPA)_4ZnP$:ImC_{60} (red) recorded at 500 ps, and (b) $(TPA)_4ZnP$ (blue) and $(TPA)_3ZnP$:ImC_{60}-ZnPc:ImC_{60} (blue) at 10 ps in DCB.

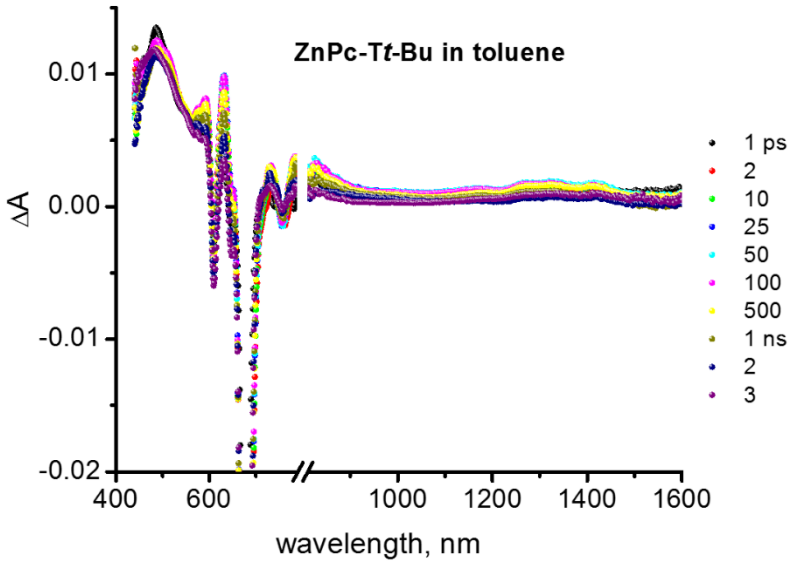

Fig. S6. Femtosecond transient spectra of ZnPc in toluene at the indicated time intervals.

(a) (b)

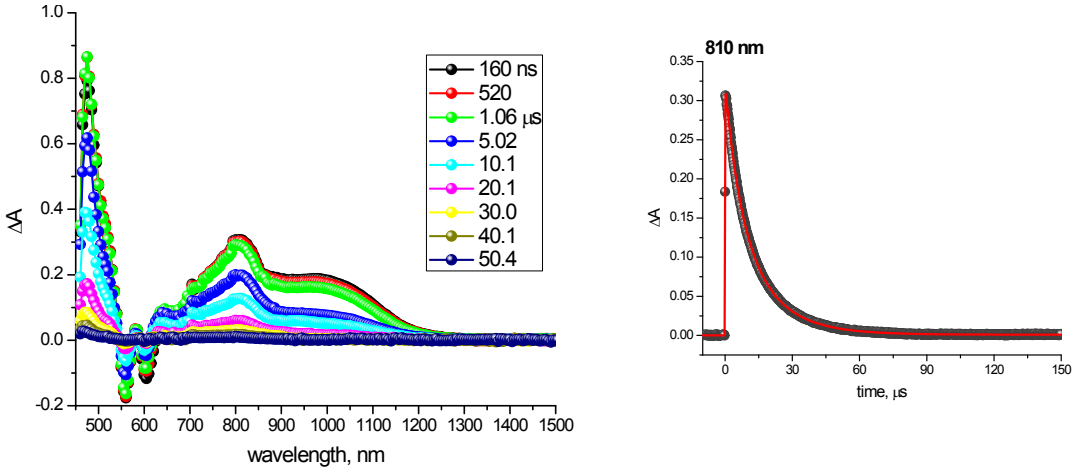

Fig. S7. (a) Nanosecond transient spectra at the indicated time intervals of $(TPA)_4ZnP$ in toluene (λ_{ex} = 430 nm). (b) time profile of the 810 nm peak .

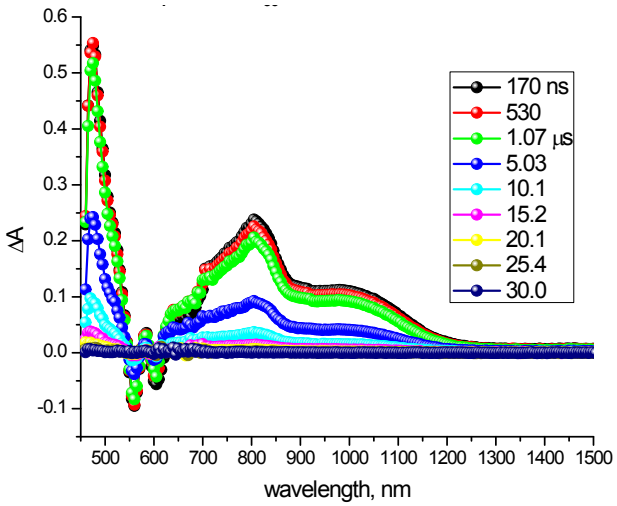

Fig. S8. Nanosecond transient spectra at the indicated time intervals of $(TPA)_4ZnP:ImC_{60}$ complex in toluene (λ_{ex} = 430 nm).

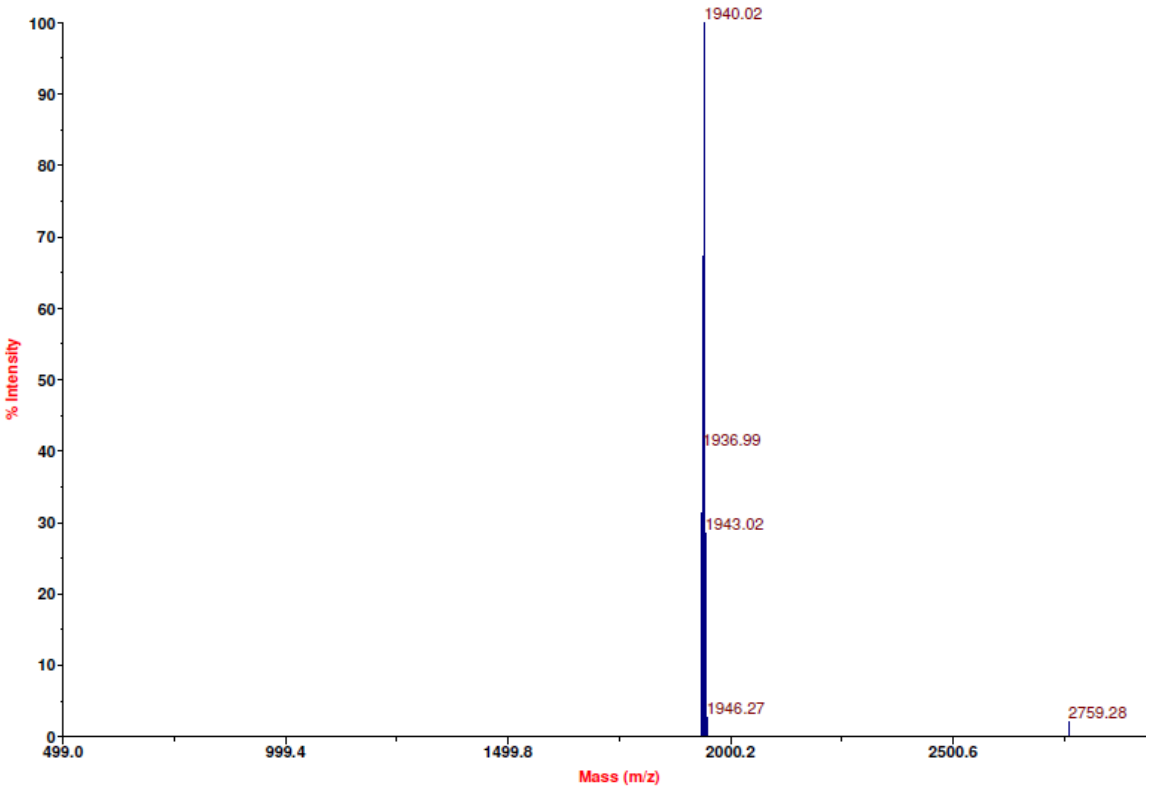

Fig. S9. MALDI-Mass spectrum of $(TPA)_3ZnP$-ZnPc.

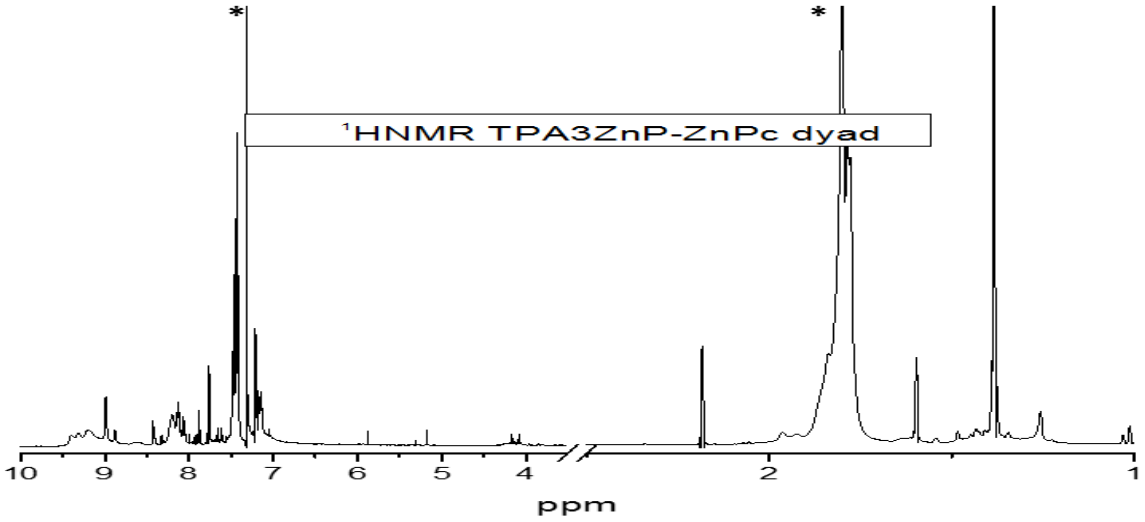

Fig. S10. ^{1}H NMR spectrum of $(TPA)_3ZnP$-ZnPc in $CDCl_3$. Solvent peaks are marked by '*'.

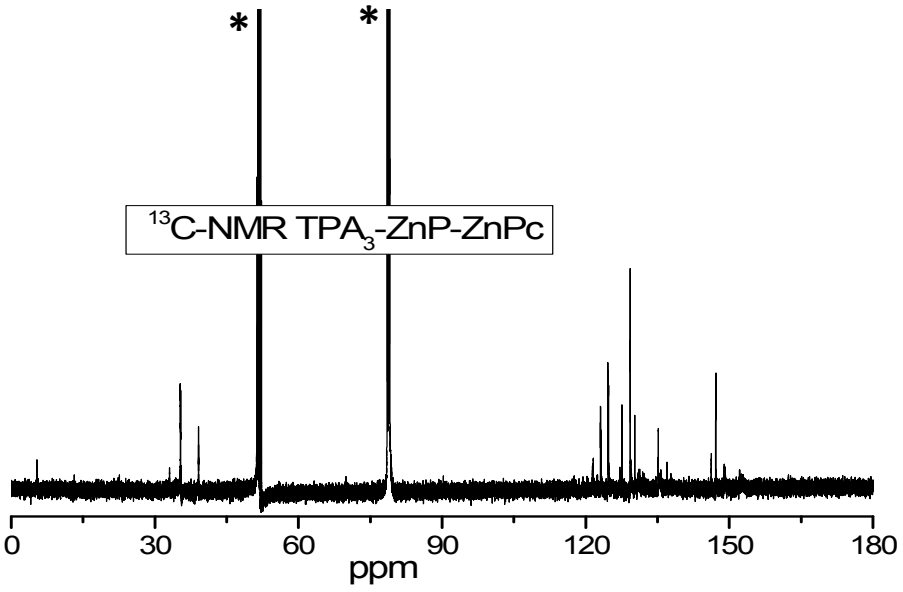

Fig. S11. ^{13}CNMR spectrum of $(TPA)_3$ZnP-ZnPc in $CDCl_3$. Solvent peaks are marked by '*'.

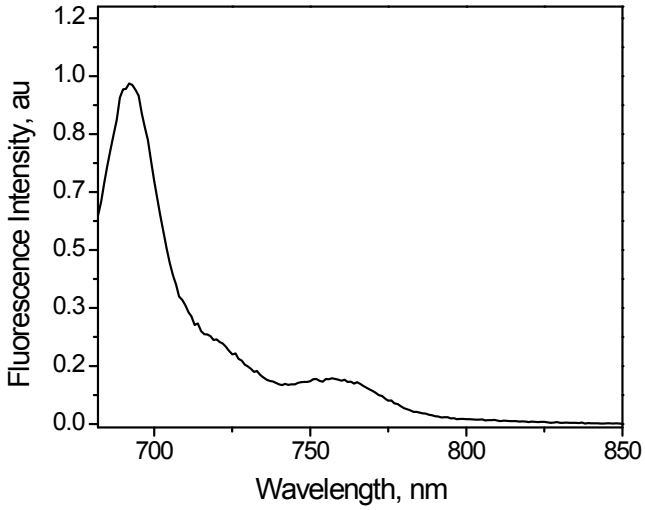

Fig. S12. Steady state fluorescence spectrum of ZnPc (λ_{ex}= 680 nm) in degassed *o*-dichlorobenzene.