Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

Ultralong Room-Temperature Phosphorescence from Polycyclic Aromatic Hydrocarbons by Accelerating Intersystem Crossing within Rigid Polymer Network

Xiao Meng[†], Qian Hu[†], Xi Wang[†], Tengfei Ma, Weimin Liu, Xingjun Zhu[*], Chunhong Ye[*]

School of Physical Science and Technology, Shanghai Tech University, Shanghai 201210, China

Email: yechh@shanghaitech.edu.cn, zhuxj1@shanghaitech.edu.cn

[†] Contributed equally

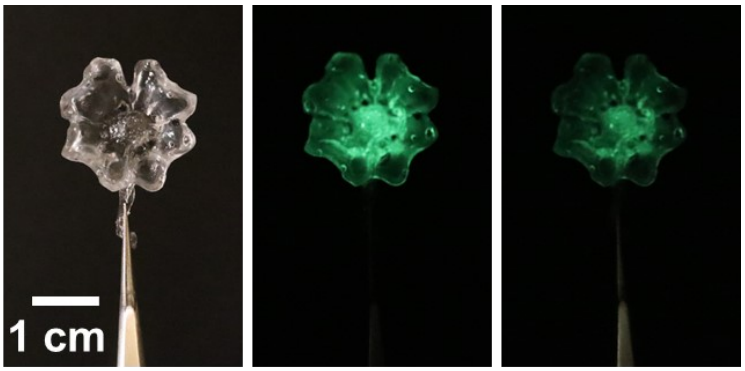

Figure S1. Transparent 3D flower of Nap@PMMA showing long-lived RTP under different duration time.

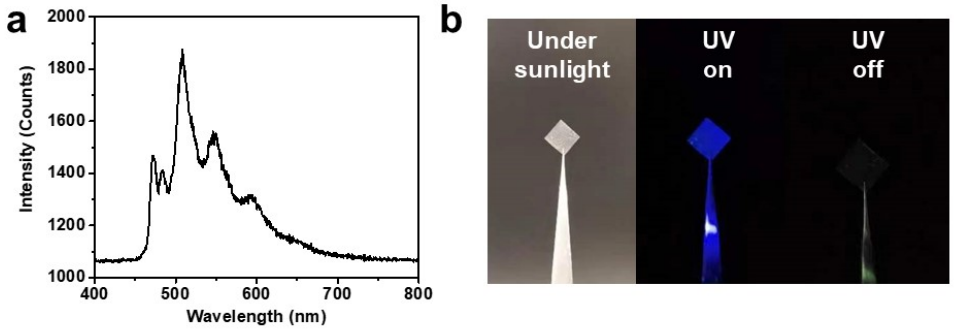

Figure S2. Phosphorescence spectra and photographs of PMMA with naphthalene by simple blending.

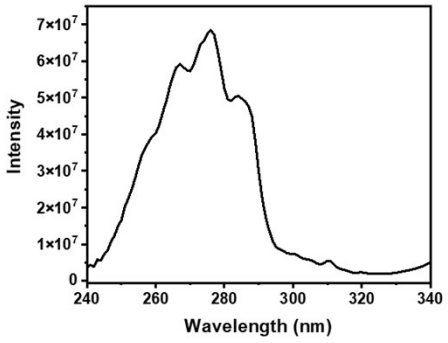

Figure S3. Fluorescence-excitation spectrum of Nap@PMMA (λ_{em}=320 nm).

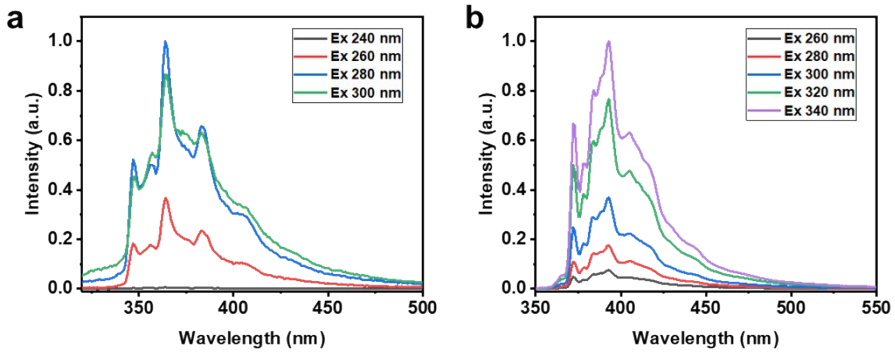

Figure S4. Fluorescence spectra with different wavelength excitation of (a) Phe@PMMA; (b) Pyr@PMMA.

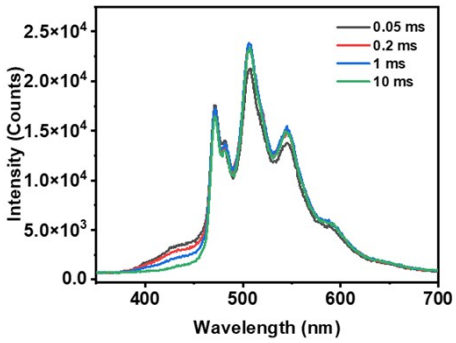

Figure S5. Phosphorescence spectra of Nap@PMMA with different delayed time.

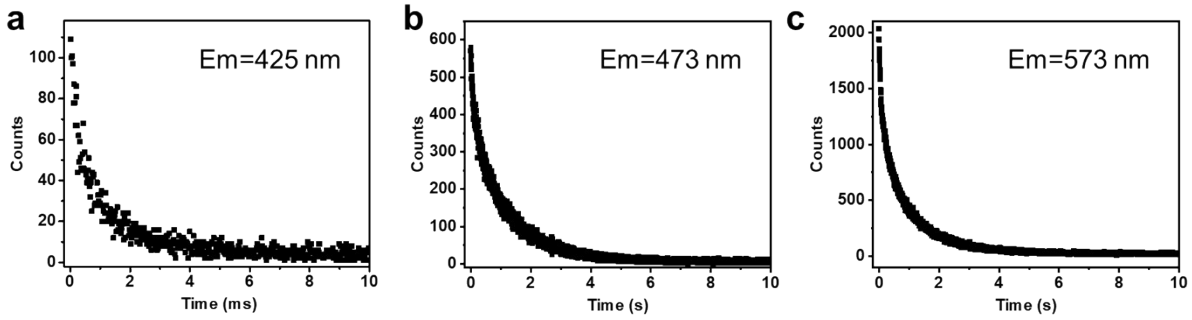

Figure S6. Time-resolved RTP decay curves of Nap@PMMA at 425, 473 and 573 nm.

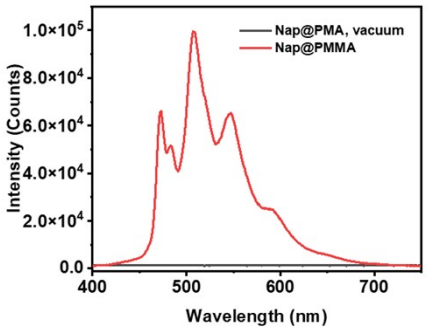

Figure S7. The comparison of phosphorescence spectra of Nap@PMA in vacuum and Nap@PMMA at room temperature.

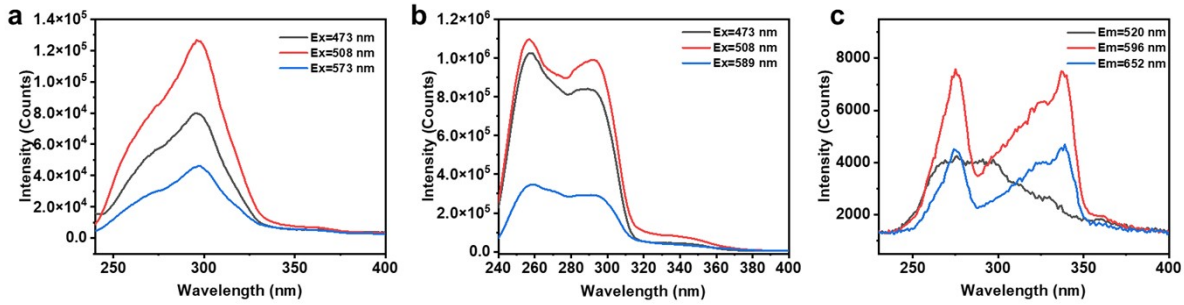

Figure S8. Excitation spectra of Nap, Phe and Pyr@PMMA at different wavelength.

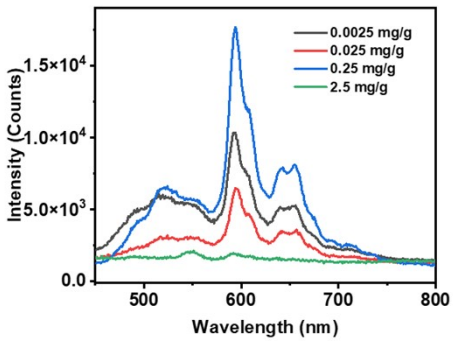

Figure S9. Phosphorescence spectra of Pyr@PMMA at different concentration (delay time=10 ms).

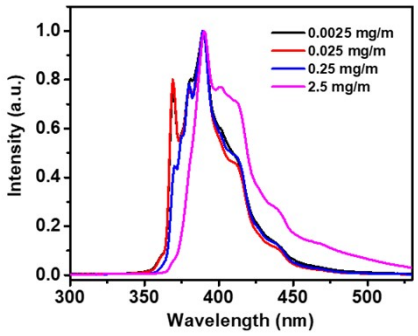

Figure S10. Fluorescence spectra of Pyr@PMMA at different concentrations.

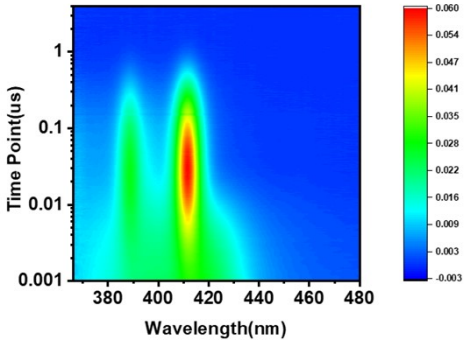

Figure S11. Transient absorption two-dimensional temporal evolution spectra of naphthalene solution in hexane.

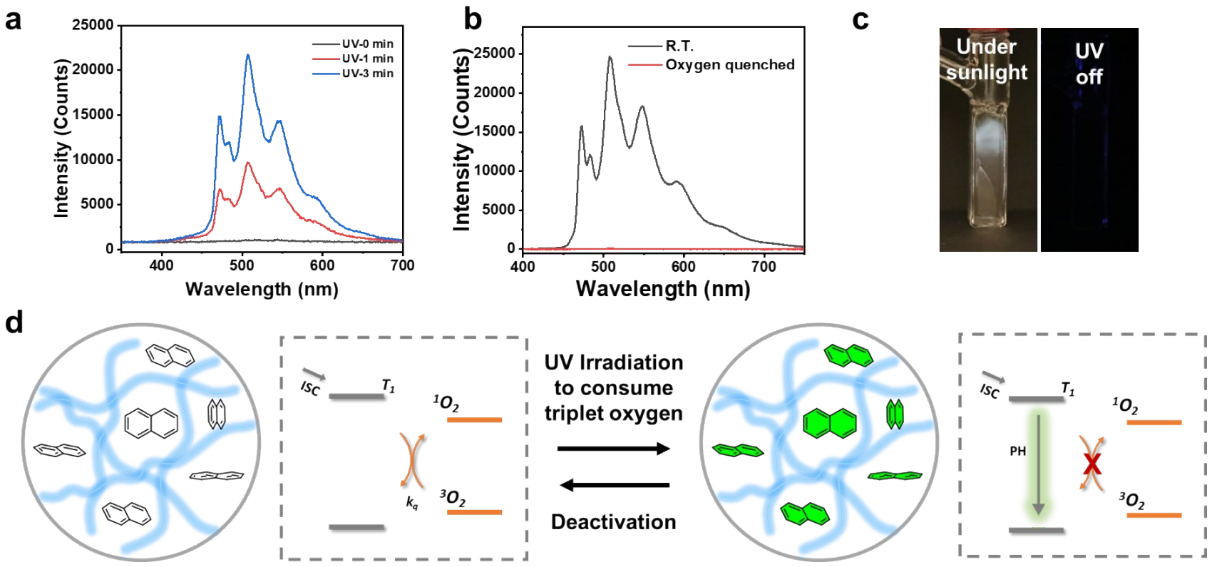

Figure S12. a. Delayed (10 ms) phosphorescence spectra of Nap@PMMA with different irradiation time; b. Afterglow spectra before and after oxygen quenched; c. the photographs of Nap@PMMA after oxygen quenched (no afterglow in sunlight and dark after UV turned off); d. Schematic illustration of oxygen effects.