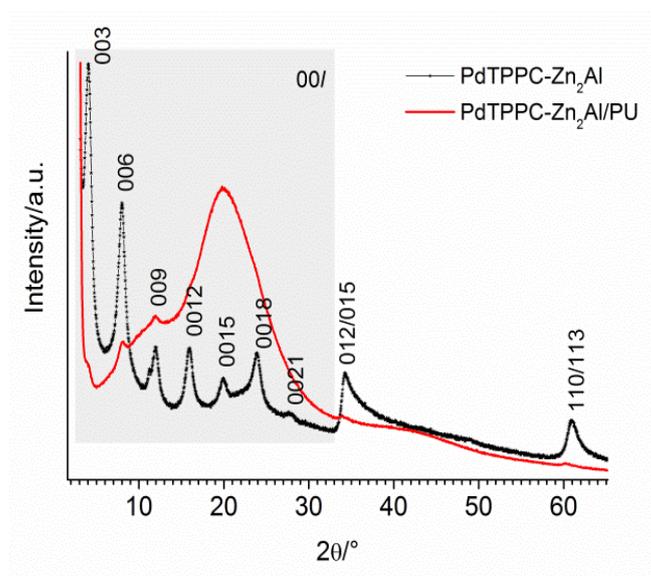


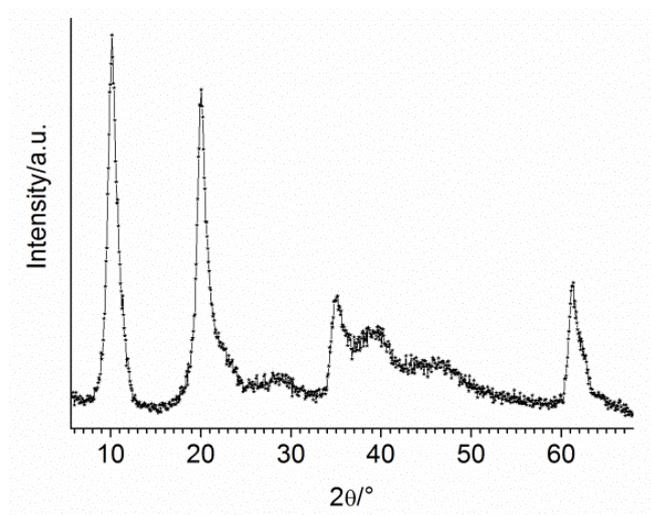
Supporting Information

Figure S11. Powder X-ray diffraction pattern of : A) PdTPPC-Zn₂Al filler and of PdTPPC-Zn₂Al/PU composite (Diffraction lines are indexed considering R-3m space group and 3R₁ polytype) ; B) CO₃- Zn₂Al filler

A



B



The XRD patterns of PdTPPC-Zn₂Al/PU composite film shows a poor signal likely to be due to the low concentration of porphyrin-LDH filler, only 1 wt%. The amorphous like-halo between 15–30°/2θ is ascribed to the polymer itself. The interlayer distances *d* deduced from

the position of the first diffraction line are consistent with the presence of (A) PdTPPC ($d \sim 23.0 \text{ \AA}$) and (B) CO_3 ($d \sim 7.8 \text{ \AA}$) intercalated LDH phases.

Figure SI2. Change in UV-Vis spectrum of PdTPPC- $\text{Zn}_2\text{Al/PU}$ composite film with exposure at 410 nm (irradiance of 8 W.m^{-2}) as a function of time.

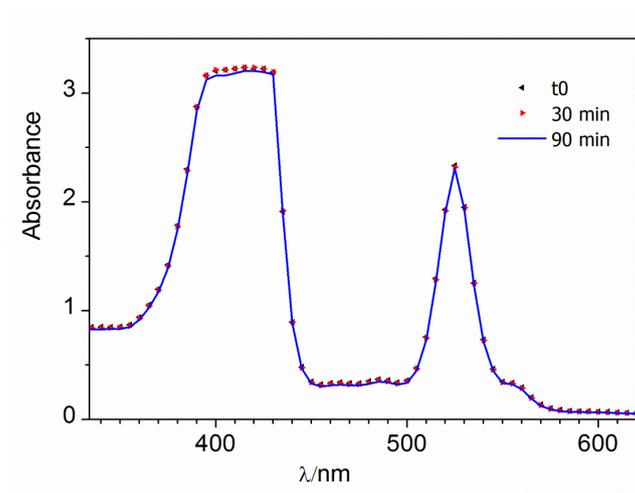
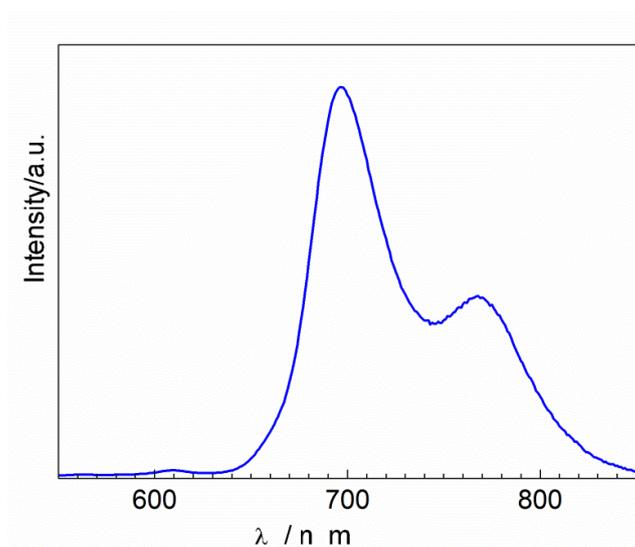


Figure SI3. Photophysical measurements PdTPPC- $\text{Zn}_2\text{Al/PU}$ composite film: A) Emission spectra recorded in air; B) Stern-Volmer plot calculated from PdTPPC phosphorescence decay kinetic curves recorded under different oxygen pressures (**Figure 2A**).

A



B

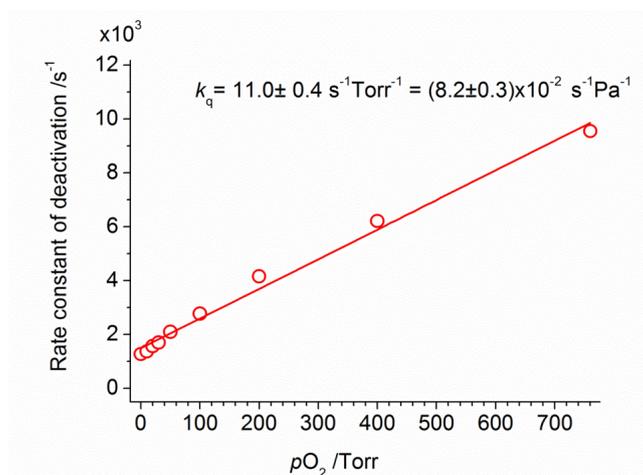
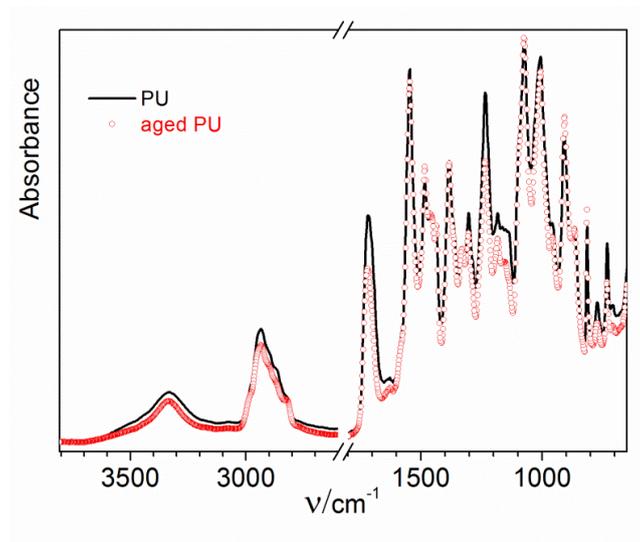


Figure SI4. ATR-IR spectra of A) PU and B) CO₃-Zn₂Al/PU films before and after oxygen consumption experiments depicted in **Figure 3**.

A



B

