Electronic Supplementary Material (ESI) for Materials Advances.


# Tunable $CsPb(Br/Cl)_3$ perovskite Nanocrystals and further advancement in designing light emitting fiber membranes

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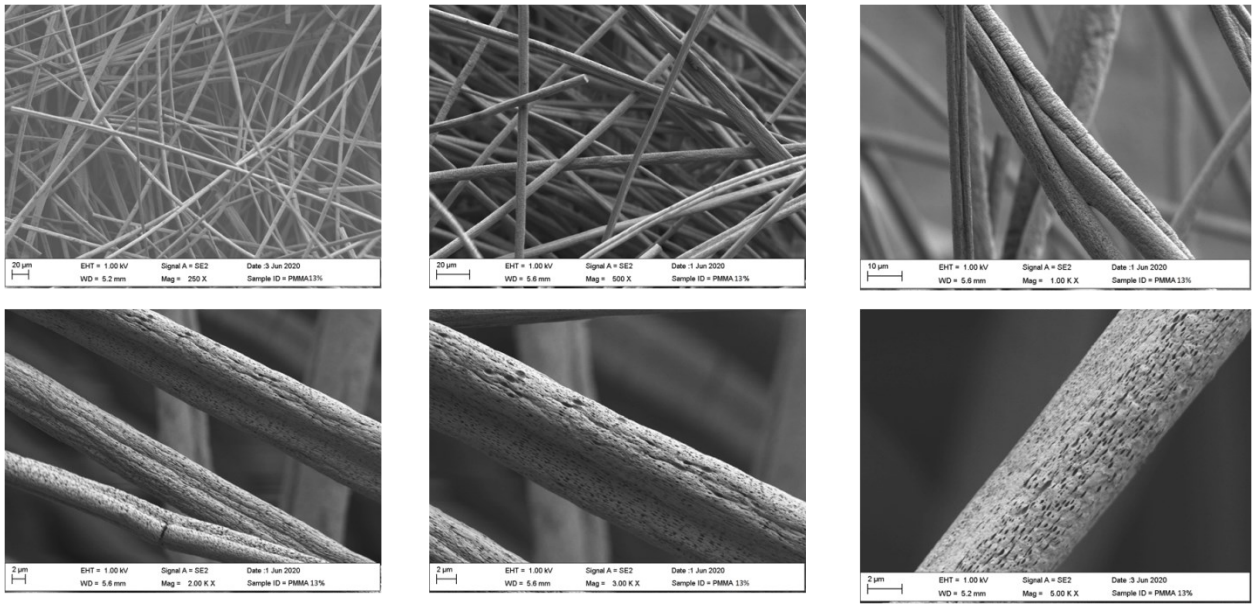

Figure S1. SEM micrographs of PMMA fibers under different magnifications

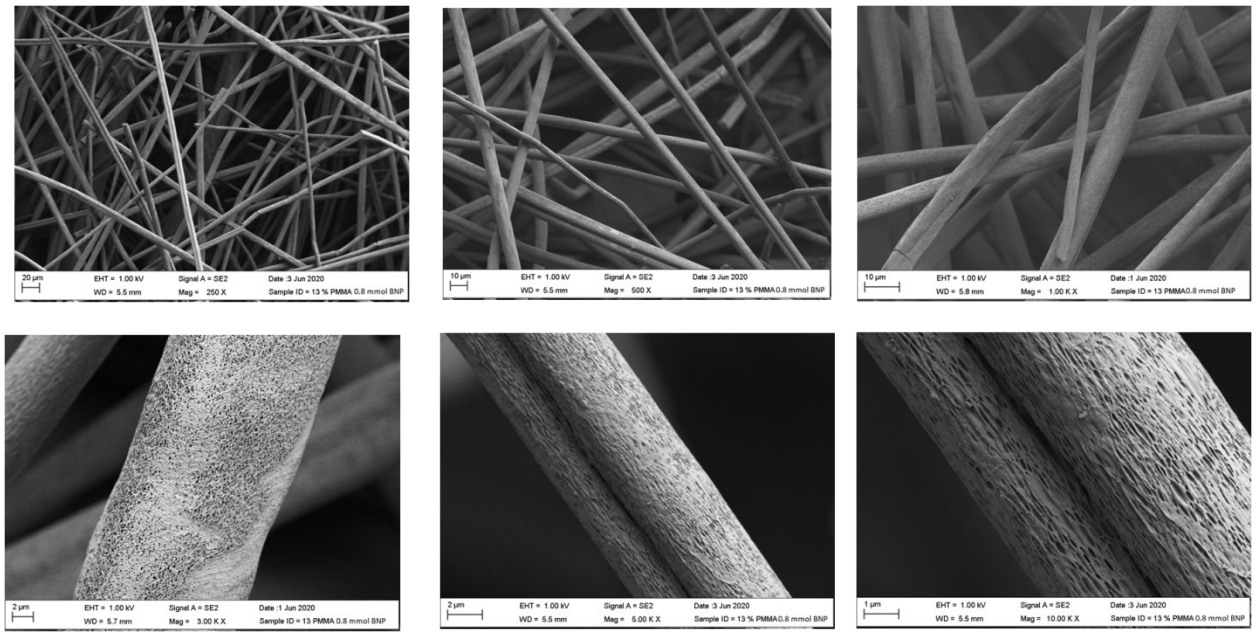


Figure S2. SEM micrographs of b-CPX:F fibers under different magnifications

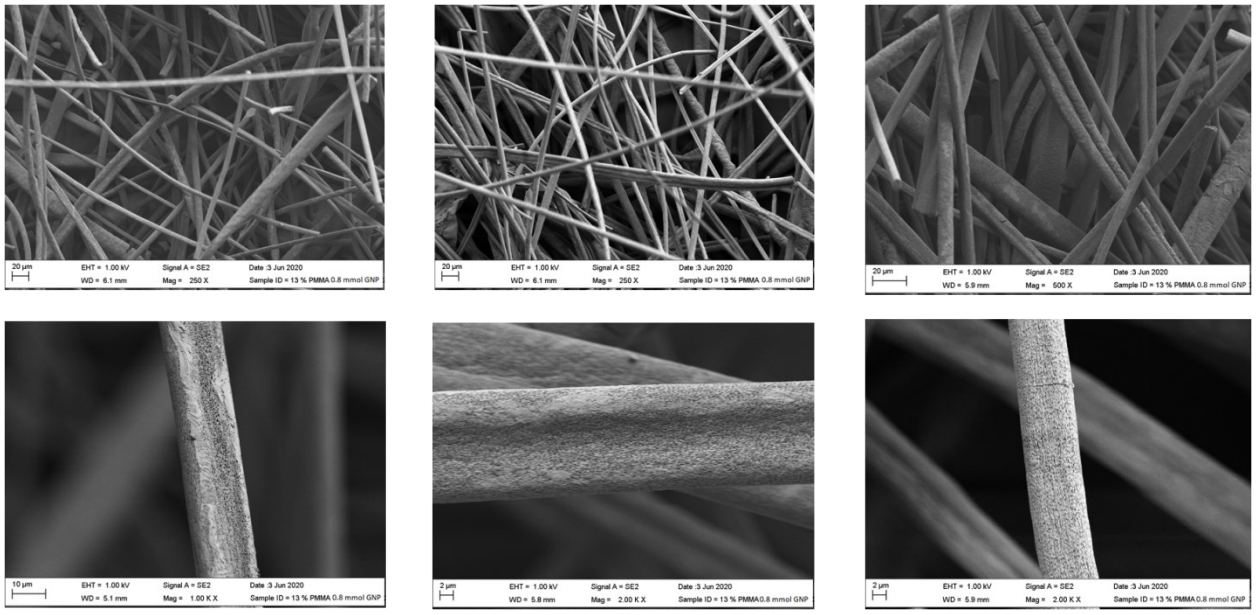


Figure S3. SEM micrographs of g-CPX:F fibers under different magnifications

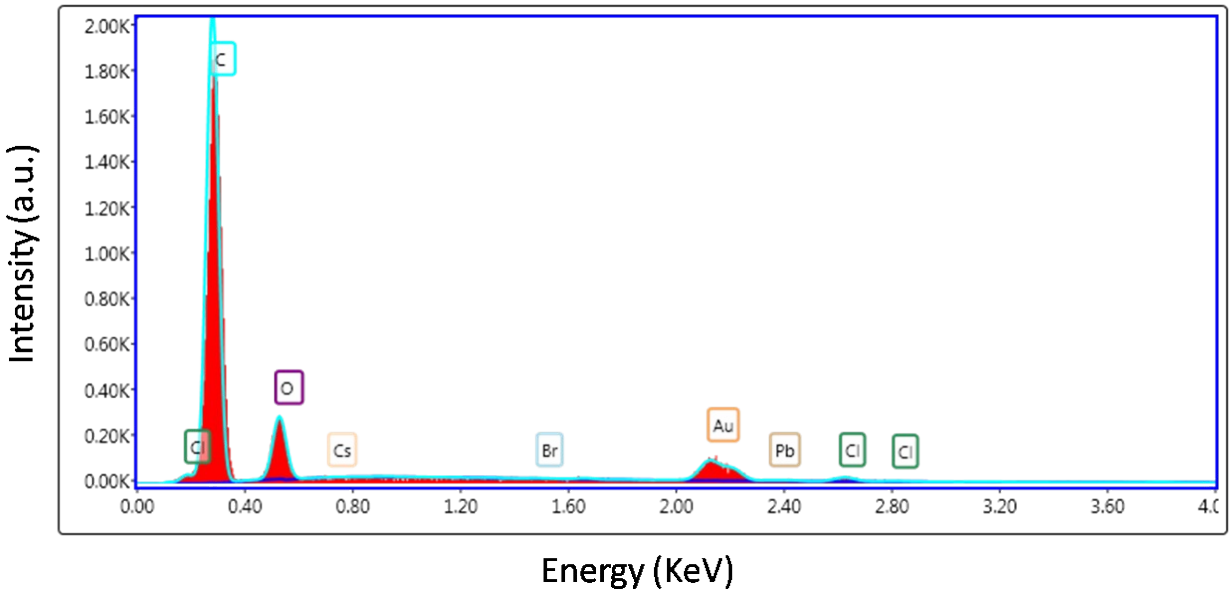


Figure S4: Representative EDX spectrum of b-CPX:F fibers

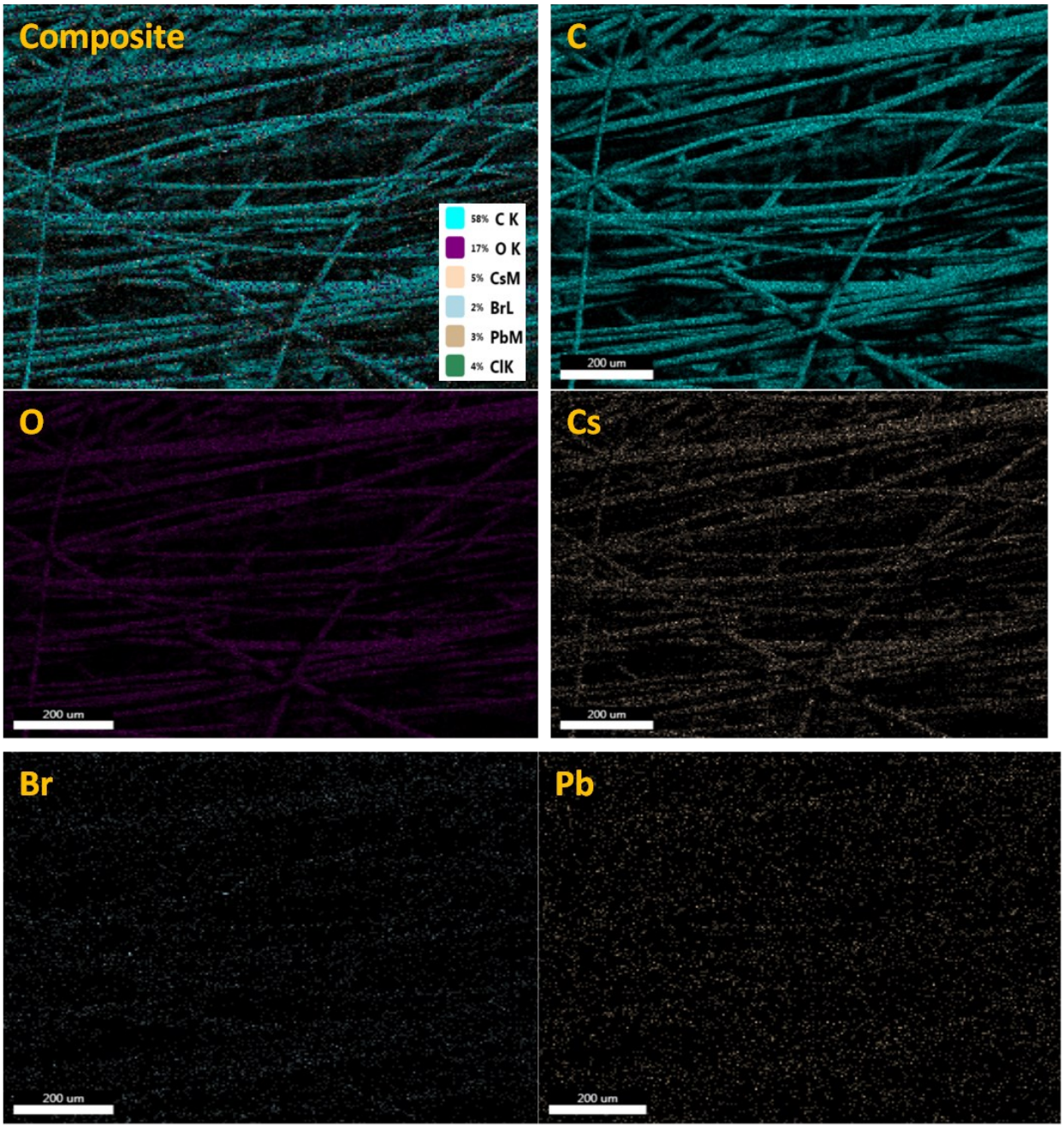


Figure S5: Representative EDX elemental mapping b-CPX:F fibers along with the individual elements.

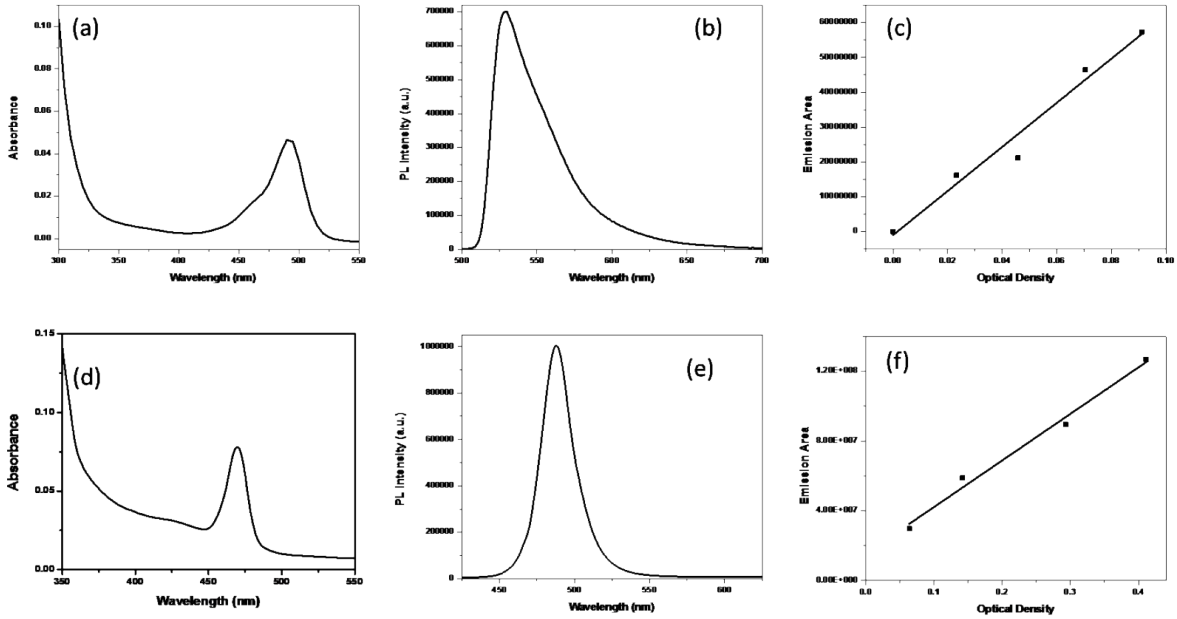


Figure S6. Top Panel: (a) UV-visible, (b) photoluminescence spectra and (c) plot of optical density versus emission area using different concentrations of the dye Fluorescein isothiocyanate (FITC) solution (0.1N NaOH). Excitation wavelength = 492 nm. Bottom Panel: (d) UV-visible, (e) photoluminescence spectra and (f) plot of OD Vs emission area using different concentrations of Green emitting g-CPX NCs in chloroform. Excitation wavelength = 365 nm. PL Intensity is in arbitrary unit, but numbers are provided for comparison as both the reference and nanocrystal measurements are carried out in same fluorimeter.

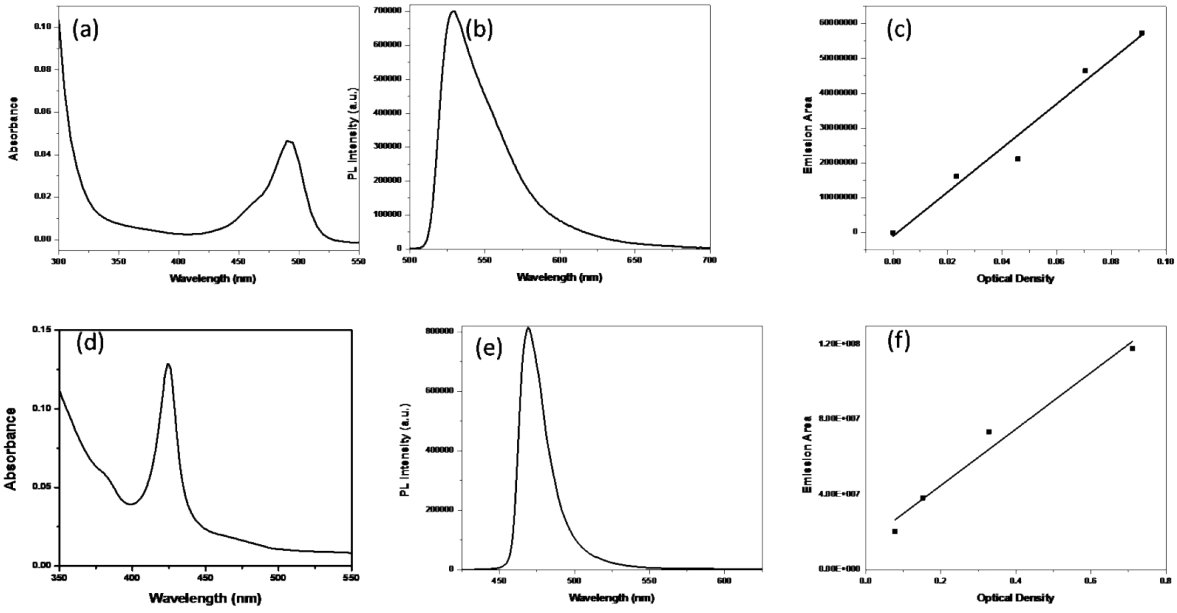


Figure S7. Top Panel: (a) UV-visible, (b) photoluminescence spectra and (c) plot of optical density versus emission area using different concentrations of the dye Fluorescein isothiocyanate (FITC) solution (0.1N NaOH). Excitation wavelength = 492 nm. Bottom Panel: (d) UV-visible,

(e) photoluminescence spectra and (f) plot of OD Vs emission area using different concentrations of b-CPX NCs in chloroform. Excitation wavelength = 365 nm. PL Intensity is in arbitrary unit, but numbers are provided for comparison as both the reference and nanocrystal measurements are carried out in same fluorimeter.

**Information I1:**

**Equation used for Quantum Yield**

$$\Phi_X = \Phi_{ST}\left(\frac{Grad_X}{Grad_{ST}}\right)\left(\frac{\eta_X^2}{\eta_{ST}^2}\right)$$

where the subscripts ST and X denote standard and unknown respectively, Φ is the fluorescence quantum yield, Grad is the gradient from the plot of integrated fluorescence intensity versus absorbance, and η the refractive index of the solvent which is 1.33 for Standard Dye in 0.1 N NaOH and 1.445 for $CsPbX_3$ QDs in chloroform.

## Calculation for Quantum Yield of Green emitting NPs in

$$QY(\%) = 92.0 \text{ x } \frac{2.67408 \text{ x } 10^8}{6.32717 \text{ x } 10^8} \text{ x}(1.445/1.33)^2$$

$$QY \text{ of } Green\ NPs(\%) = 45.9\ \%$$

## Calculation for Quantum Yield of Blue emitting NPs in

$$QY(\%) = 92.0 \text{ x } \frac{1.50505 \text{ x } 10^8}{6.32717 \text{ x } 10^8} \text{ x}(1.445/1.33)^2$$

$$QY \text{ of } Blue\ NPs(\%) = 25.8\ \%$$

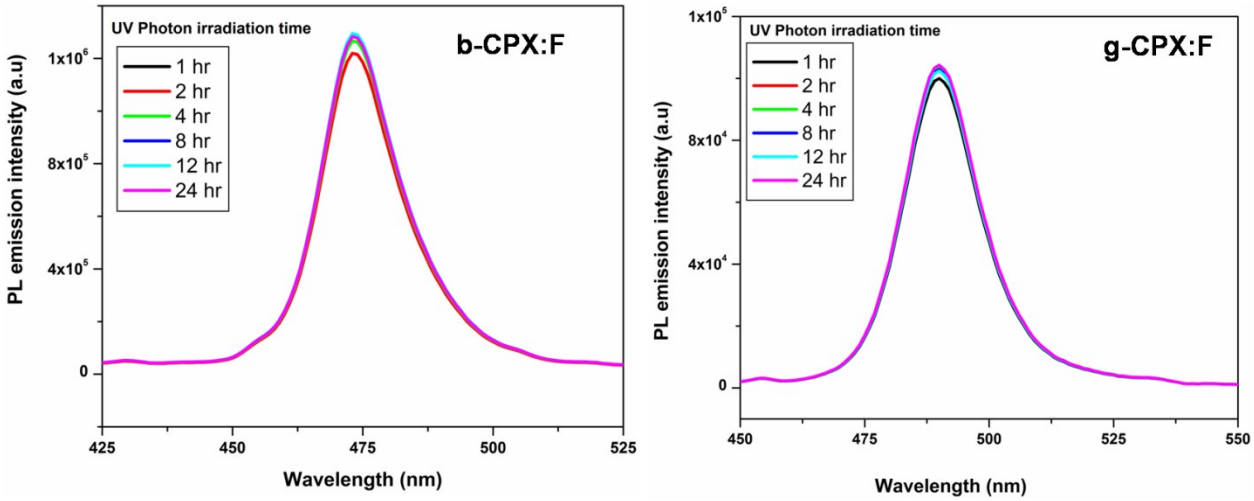


Figure S8: PL emission spectra for b-CPX:F and g-CPX:F under different UV exposure time.

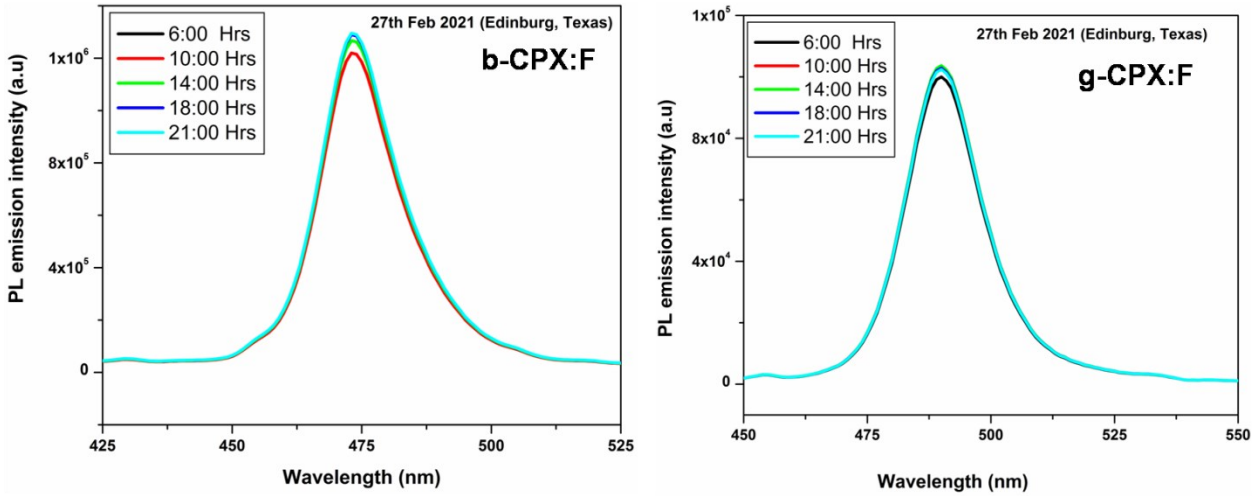


Figure S9: PL emission spectra for b-CPX:F and g-CPX:F under different time interval throughout the day