Electronic Supplementary Material (ESI) for Photochemical & Photobiological Sciences.

Supporting Information for

Amplified Polarization Properties of Electrospun Nanofibers Containing Fluorescent Dyes and Helical Polymer

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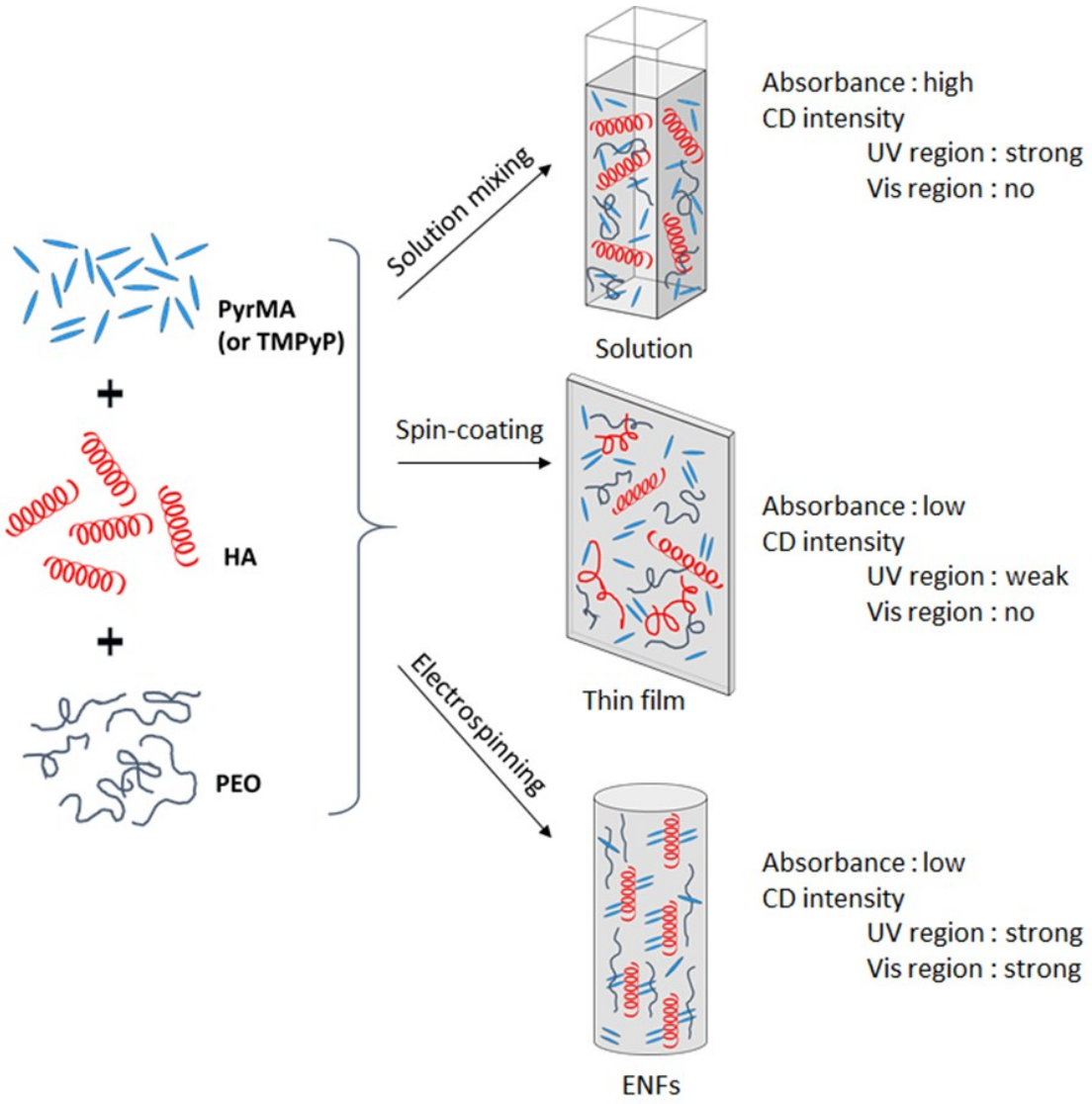
Spectroscopic properties of solution, thin film, and electrospun nanofibers (ENFs):



Scheme S1. Schematic illustration of plausible molecular orientations of each component in solution, thin film, and ENFs.

As illustrated in Scheme S1, monomeric dyes are well-dispersed in the solution contained HA and PEO, however, no interaction occurred between dyes and HA. Thus, in the CD spectra of the solution (Figure 3), we could observe only the strong CD intensity corresponding to absorption of HA in the UV region.

While in the thin film and the ENFs, dimeric dyes (or aggregated dyes) are formed. As the results, dramatically decresing of the intensity and broadening of the peak width were observed for both pyrene and porphyrin as shown in the absorption spectra in Figure 3. In the thin film, dimeric PyrMA and aggregated TMPyP are dispersed with some amount of monomeric dyes. However, the intensity of CD in UV region was decreased because the structure of helical HA was probably deformed in some extent through the spin-coating process. On the contrary, in the case of ENFs, well-aligned aggregates of the dyes, chiral HA, and PEO were obatained by the electrostatic streching *via* electrospinning process. The dimeric and/or aggregated dyes are bound to HA, which are resulted in the appearance of strong intensities of CD in both UV and visible regions.

Net effects of HA on the appearance of ICD:

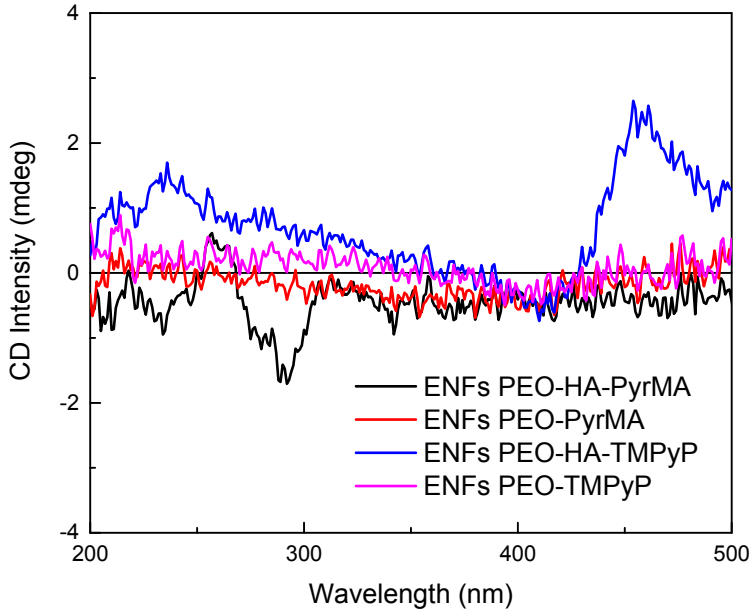


Figure S1. Overlaid curves of the half sum of two apparent CD spectra of the ENFs from Figure 8.