

Supporting Information

S1. The structure of $[\text{Fe}(\text{1,10-phenanthroline})_2(\text{NCS})_2]$

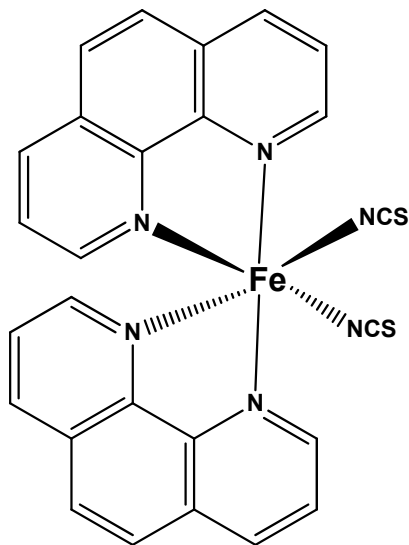
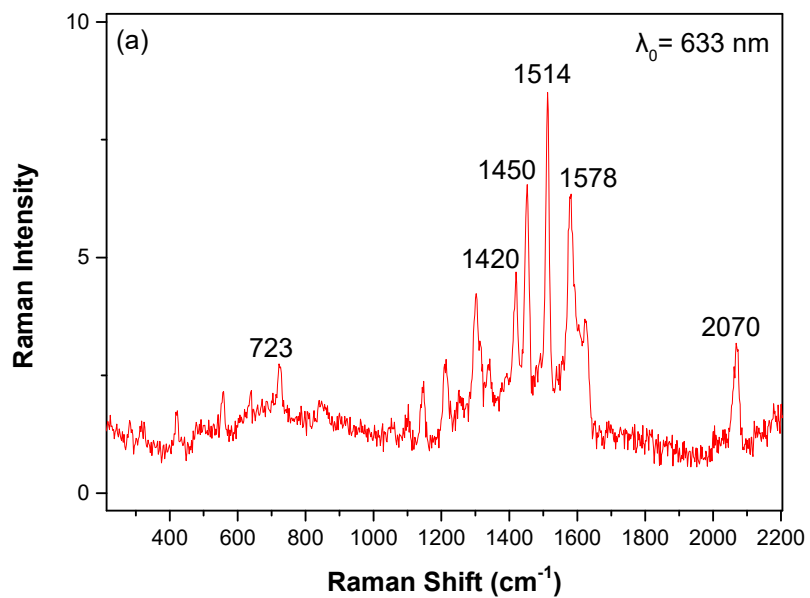


Figure S1. The chemical structure of the coordination compound $[\text{Fe}(\text{1,10-phenanthroline})_2(\text{NCS})_2]$.

S2. Vibrational analysis of the SCO compound



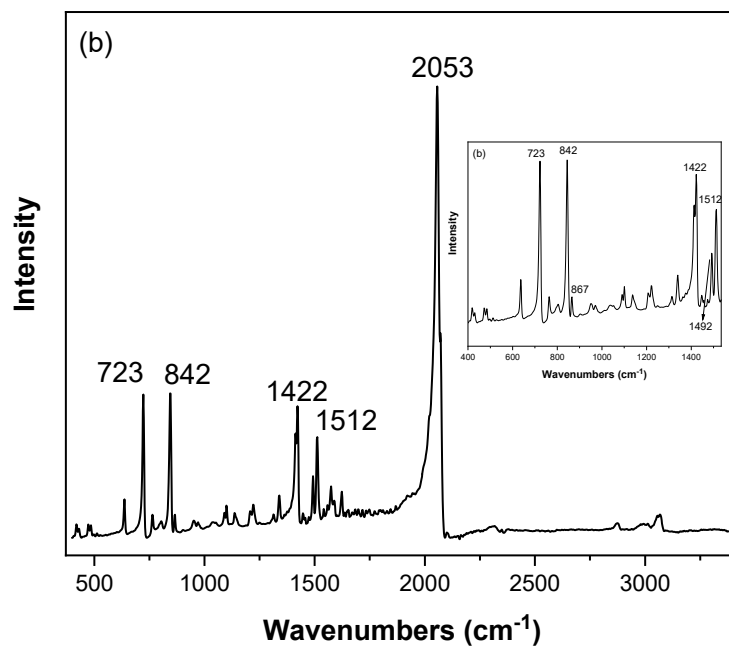


Figure S2. The Raman (a) and ATR/FTIR of the complex $[\text{Fe}(1,10\text{-phenanthroline})_2(\text{NCS})_2]$.

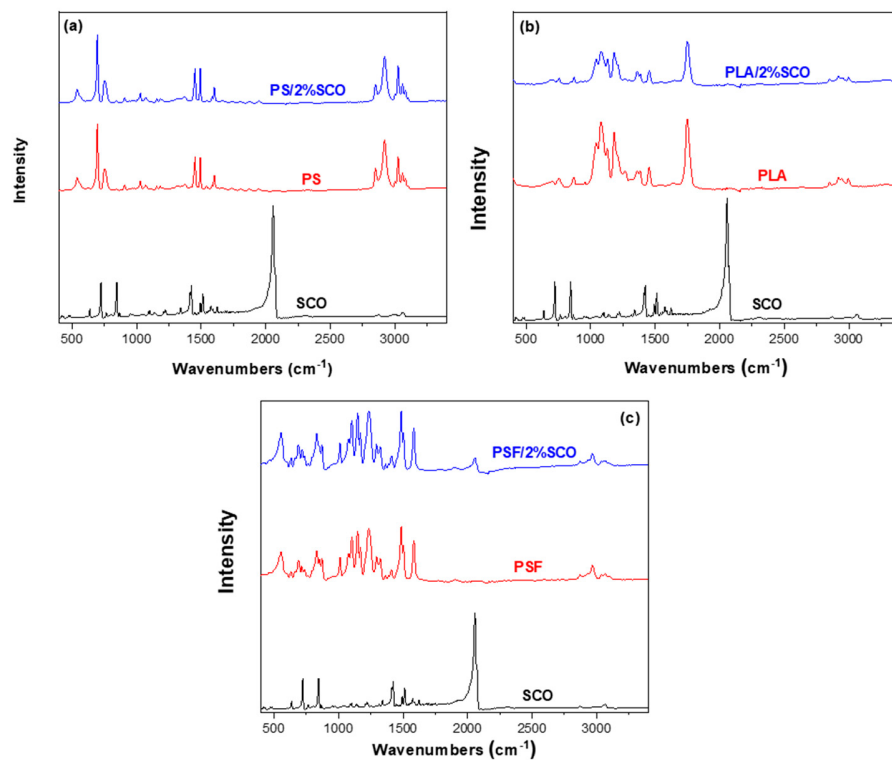


Figure S3. The ATR/FTIR spectra of the (a) PS, SCO and PS/2% SCO films, (b) PLA, SCO and PLA/2% SCO films, and (c) PSF, SCO and PSF/2% SCO films.

S3. Migration release study

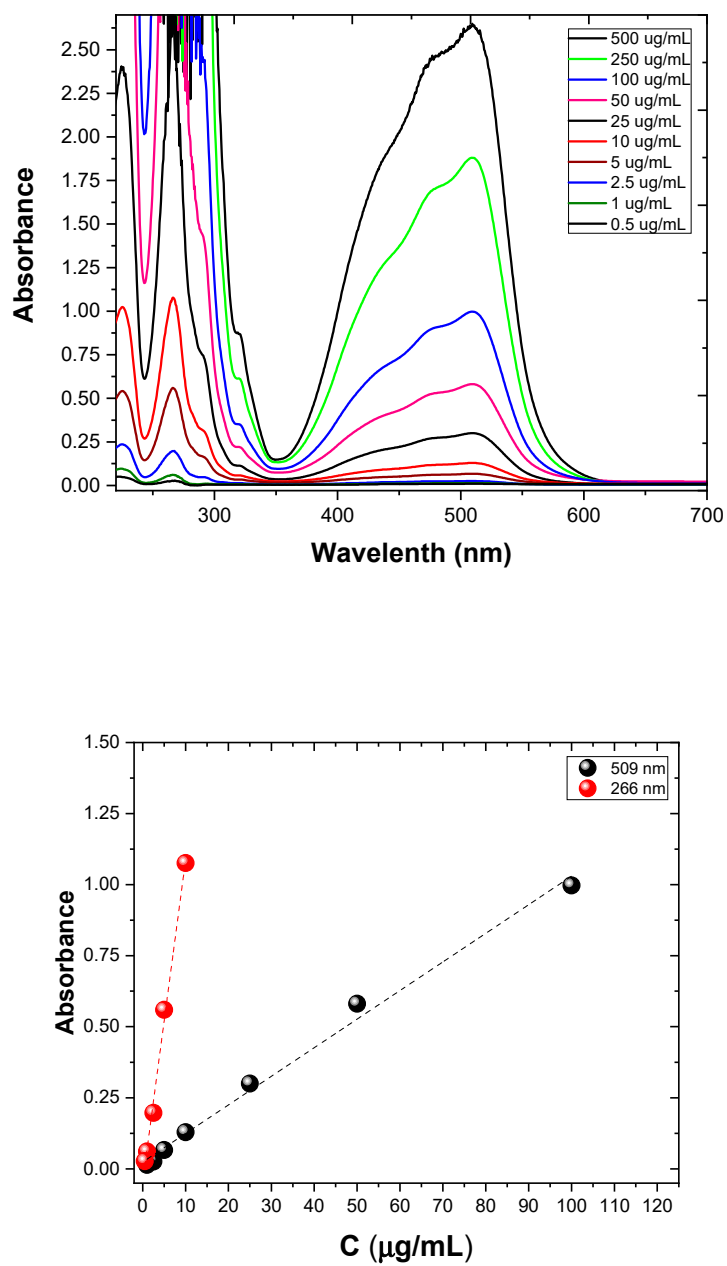


Figure S4. (a) UV/Vis spectra of the complex $[\text{Fe}(\text{1,10-phenanthroline})_2(\text{NCS})_2]$ in 20 or 50% ethanol. The calculated maximum migration is at 100 $\mu\text{g/mL}$, which corresponds to an absorption of less than 1, (b) The calibration curve of $[\text{Fe}(\text{1,10-phenanthroline})_2(\text{NCS})_2]$ in 20 or 50% ethanol.

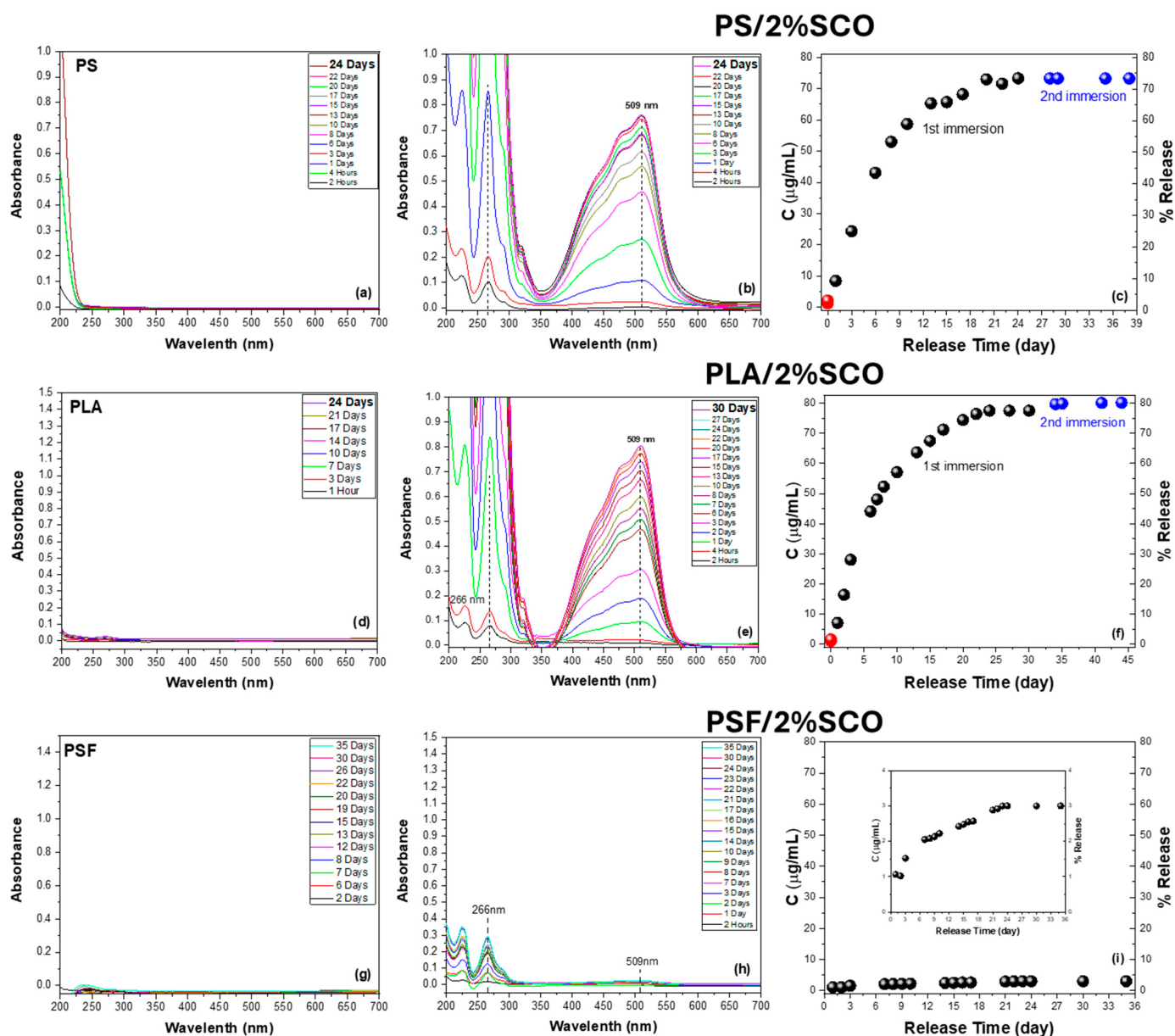


Figure S5. Migration release study of PS, PLA, PSF and the PS-SCO, PLA-SCO and PSF-SCO composites in 20% v/v ethanol. The UV/Vis spectra at different measurement times after immersion of (a) PS, (b) PS-SCO, (d) PLA, (e) PLA-SCO, (g) PSF, (h) PSF-SCO and the corresponding concentration ($\mu\text{g/mL}$) and percentage of the SCO release in the 20% v/v ethanol as a function of time (c, f, i).

S4.Post migration characterization

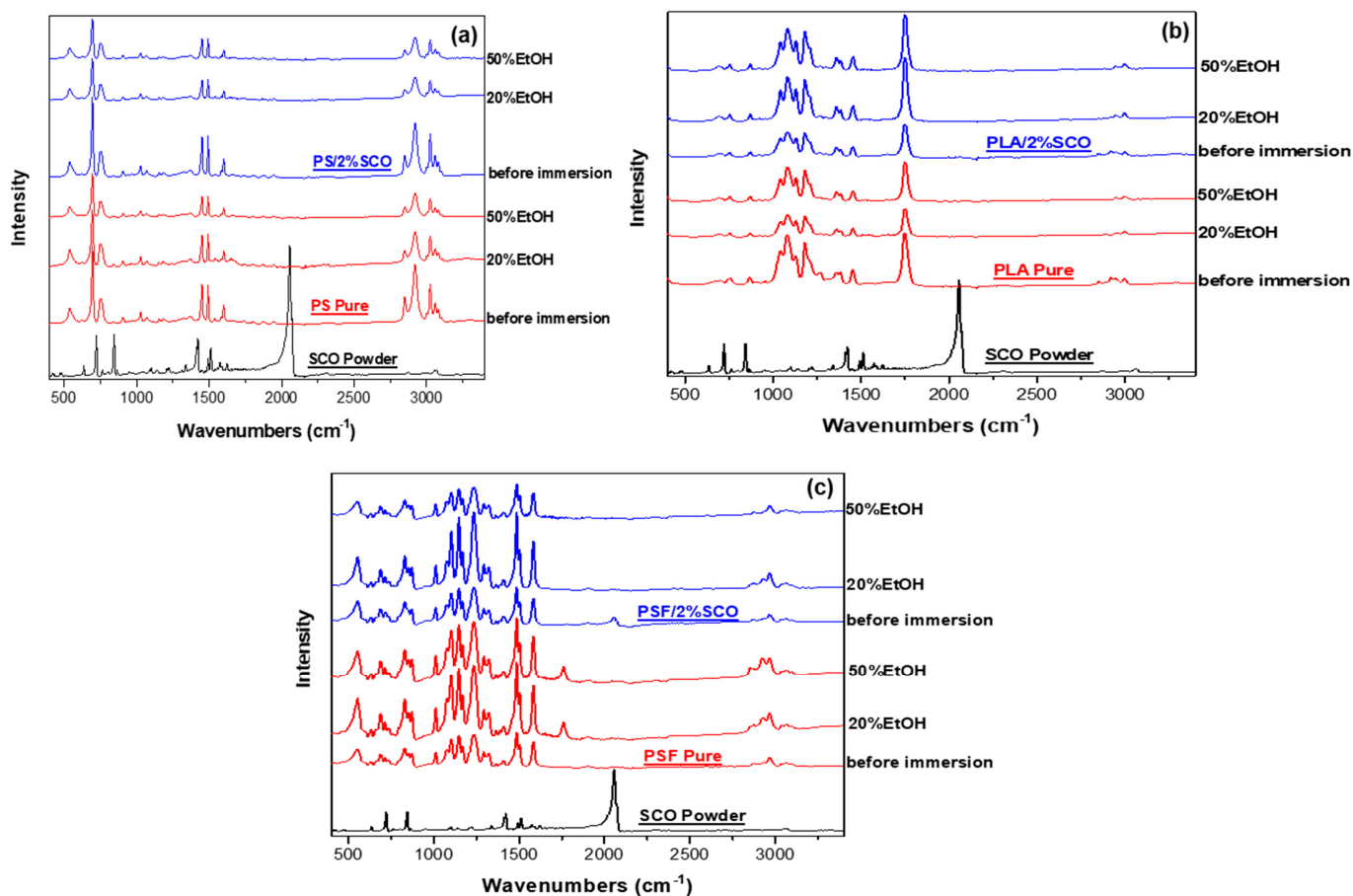


Figure S6. ATR/FTIR spectra before and after migration of PS and PS-SCO (a) PLA and PLA-SCO (b), PSF and PSF-SCO (c) composites.

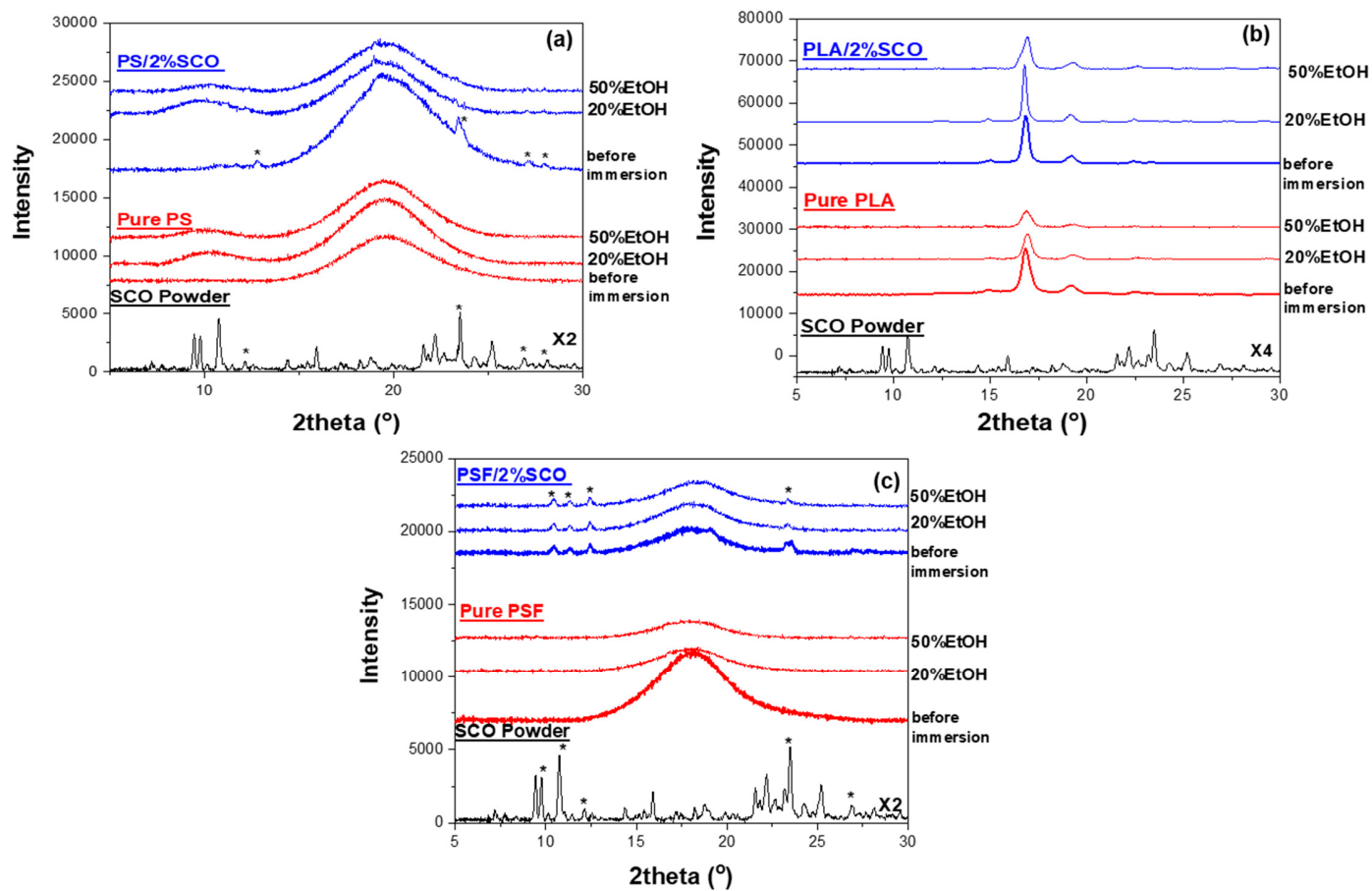


Figure S7. XRD before and after migration of PS and PS-SCO (a) PLA and PLA-SCO (b), PSF and PSF-SCO (c) composites.

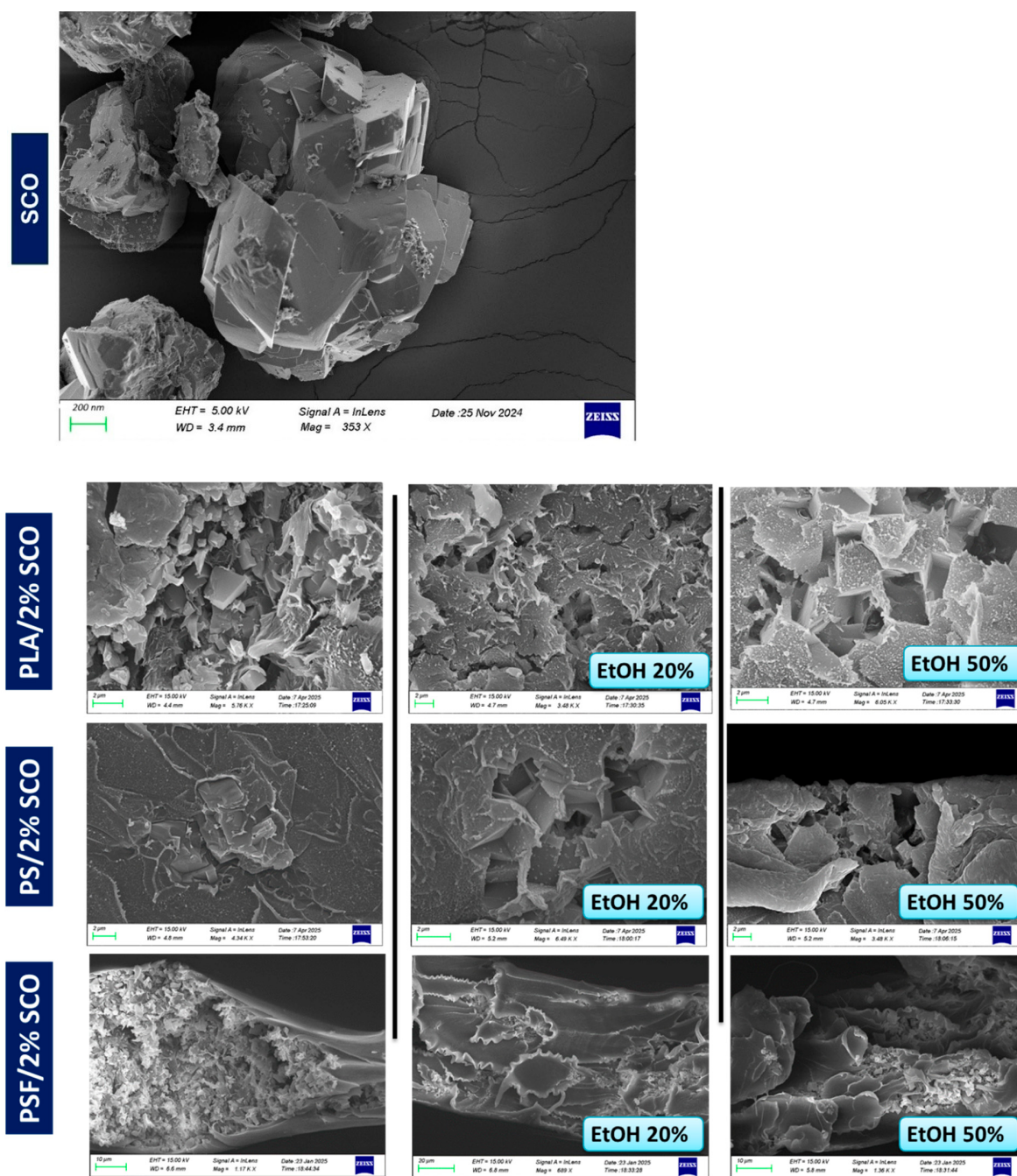


Figure S8. SEM images of the SCO particles of $[\text{Fe}(\text{1,10-phenanthroline})_2(\text{NCS})_2]$, before and after migration of PS-SCO, PLA-SCO and PSF-SCO composites.

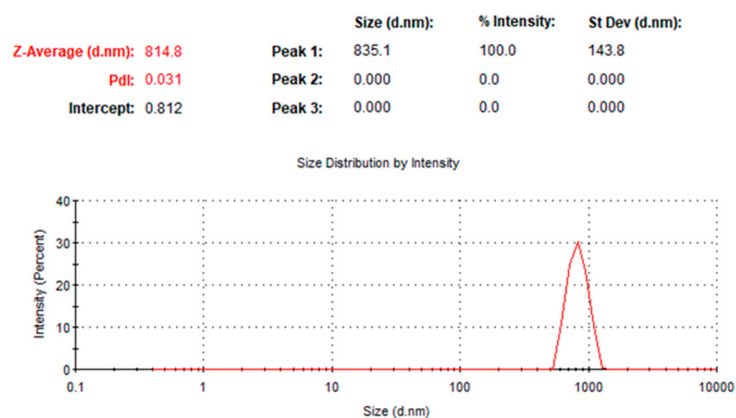


Figure S9. Calculated particle size distributions (with respect to intensity) obtained for the SCO particles of $[\text{Fe}(1,10\text{-phenanthroline})_2(\text{NCS})_2]$ in CH_2Cl_2 resembling the film casting conditions. The extracted average hydrodynamic radius of SCO particles is denoted in the corresponding plot.