

Melt-Spun Nanocomposite Fibers Reinforced with Aligned Tunicate Nanocrystals

–Supplementary Information –

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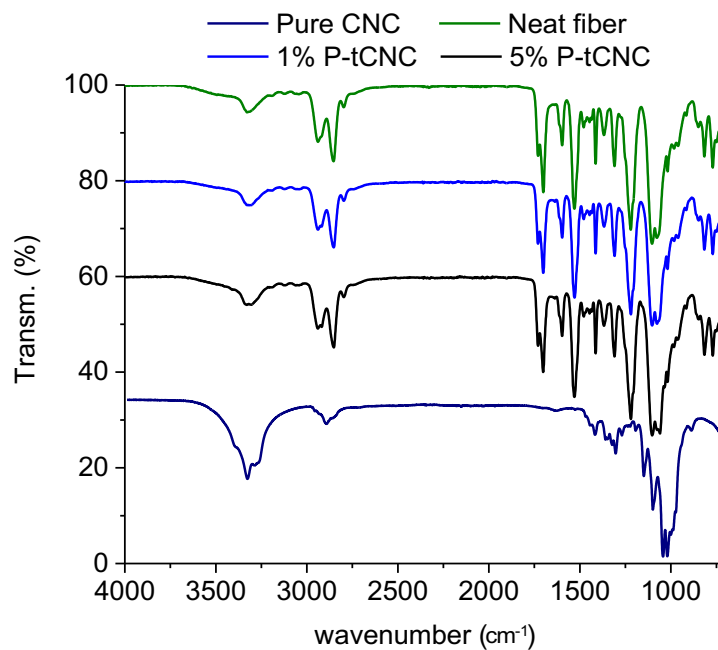


Figure S1: FT-IR spectra of 0, 1 and, 5 wt% P-tCNC melt-spun fibers and neat P-tCNC films. The N-H stretching region at 3000-3500 cm⁻¹ can be observed in the spectrum of the neat PU fiber. Upon CNC addition, this peak is seen to change due to the contribution of the CNC OH-groups overlapping with the N-H vibration.

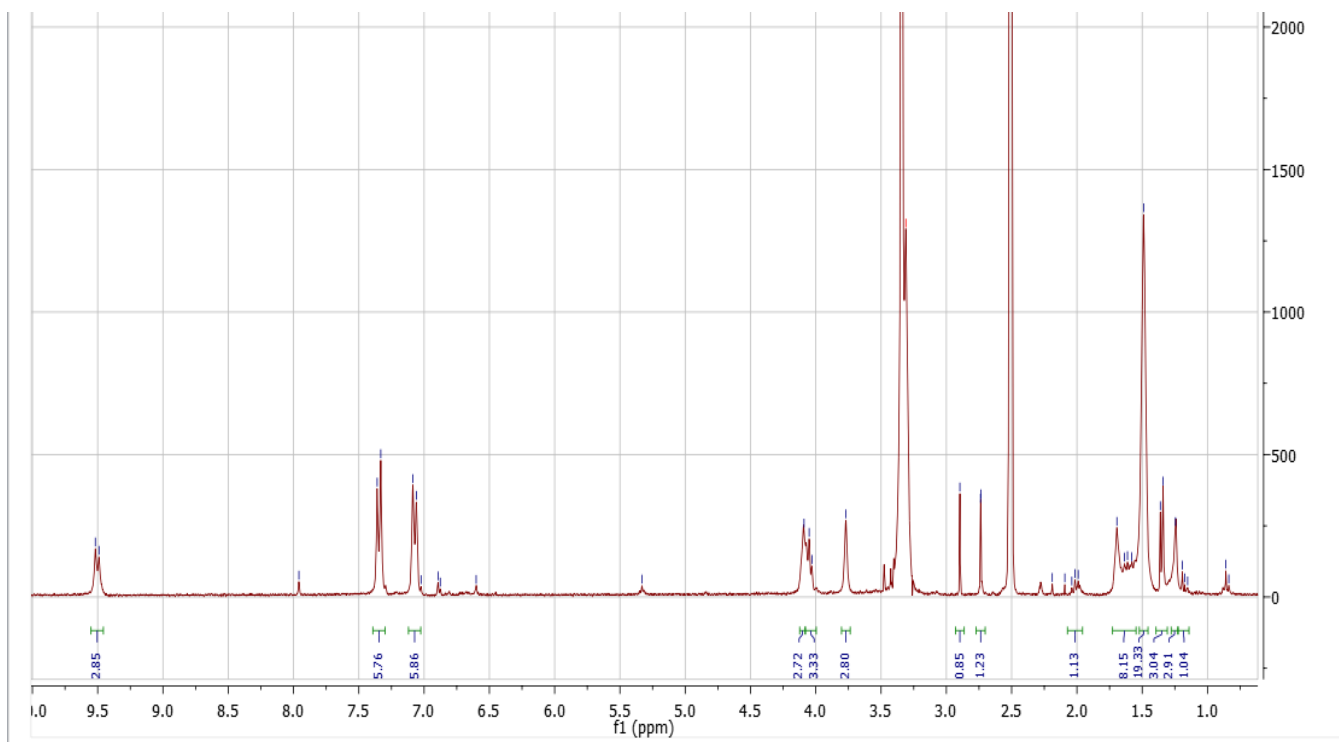


Figure S2: ¹H NMR spectrum of Texin 985 indicating the presence of the urethane N-H at 9.5 ppm, the aromatic protons at 6.5-8 ppm, and the proton near the amide and ether bond at 2.5-4.5 ppm.

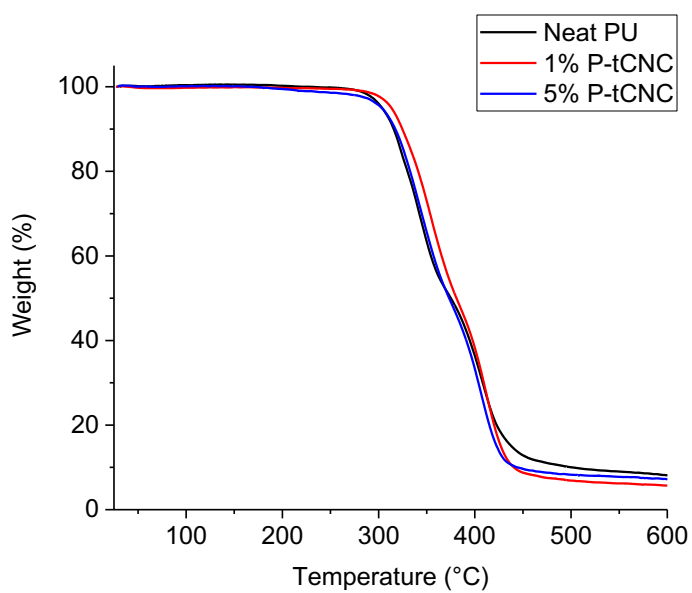


Figure S3: TGA traces of melt-spun fibers containing 0, 1 and 5 wt% P-tCNCs confirming their thermal stability irrespective of the P-tCNC concentration.

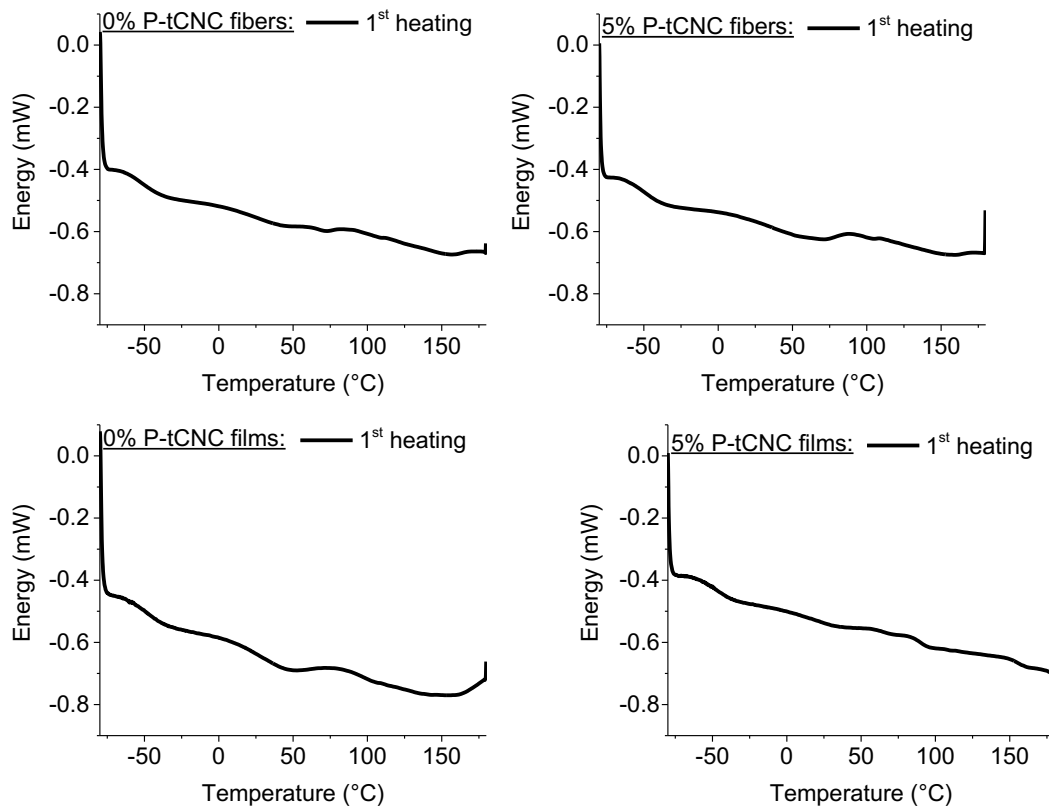


Figure S4: DSC first heating curves of neat PU and 5 wt% P-tCNC nanocomposite fibers and films indicating slight differences in their thermal history due to differences in processing between melt-spun fibers and solvent-cast films.