

**Supplementary information**

**Influence of Cellulose Nanocrystal Surface Functionalization on the Bending Response of Cellulose Nanocrystal/Ionic Liquid Soft Actuators**

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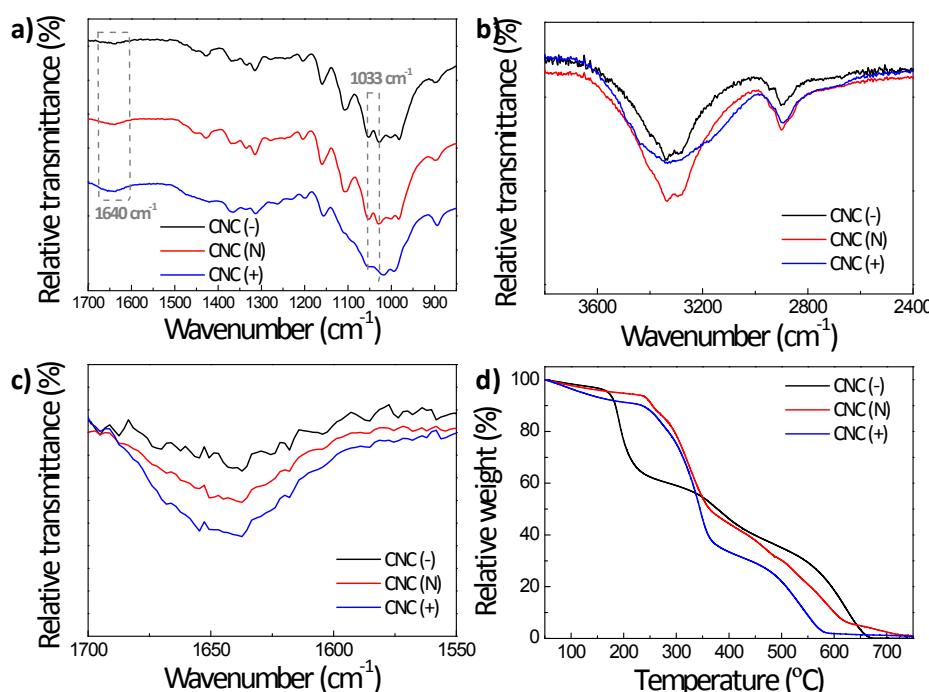


Fig. S1. a) ATR-FTIR spectra in the 1700-850 cm<sup>-1</sup> region, b) enlarged view of the O-H stretching vibration region of cellulose, c) enlarged view of the region indicating water adsorption and b) thermogravimetric curves of original and functionalized CNCs.

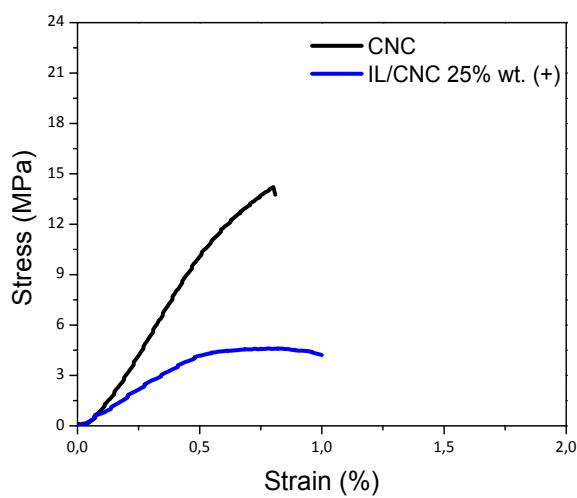


Fig. S2. Stress vs strain mechanical curves for neat CNC and CNC comprising 25% wt. [Ch][DHP] content.

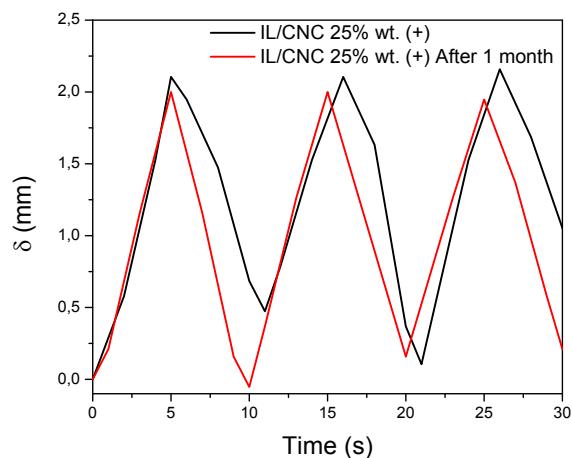


Fig. S3. Displacement of the composites for IL/CNC (+) 25% wt. for an applied voltage of 4 Vpp at a frequency of 100 mHz as a function of time.