

Supporting Information

Bioinspired Hydrophobic Cellulose Nanocrystal Composite Films as Organic-Solvent-Responsive Structural-Color Rewritable Papers

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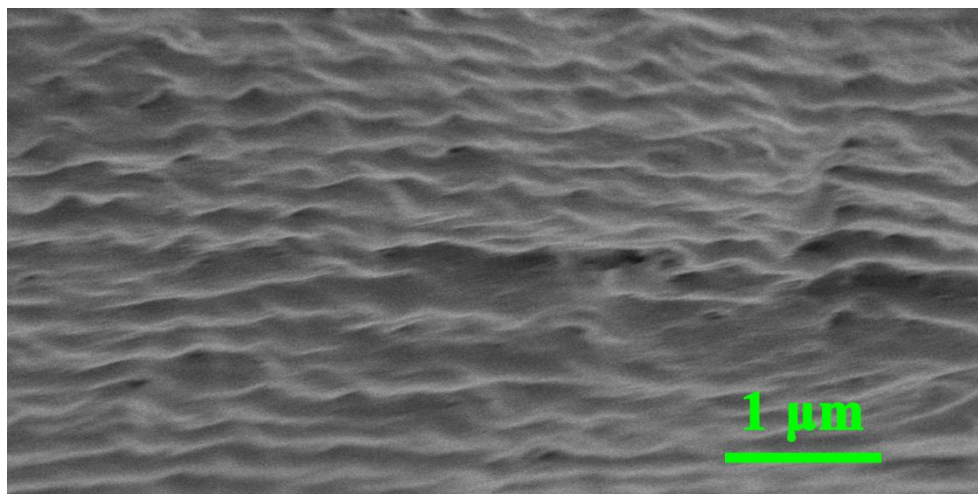


Figure S1. SEM photo for the cross section of the prepared CNC nanocomposite film with layers' structure.

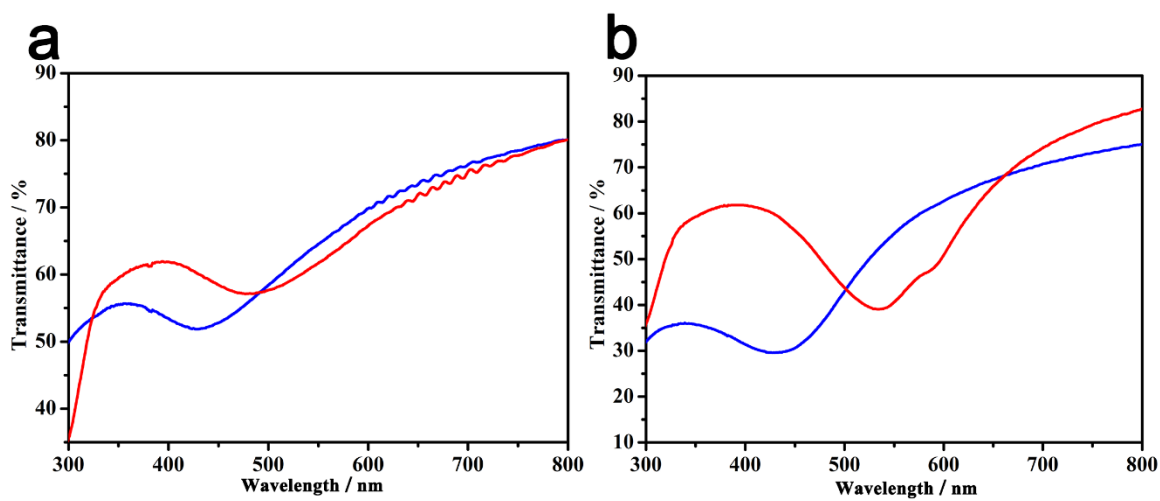


Figure S2. UV-vis spectra of CNC nanocomposite films before (blue) and after (red) cyclohexanone treatment. UV-vis spectra of CNC film with 20 wt % neat PEG resin (a). UV-vis spectra of CNCs-0 film (b).

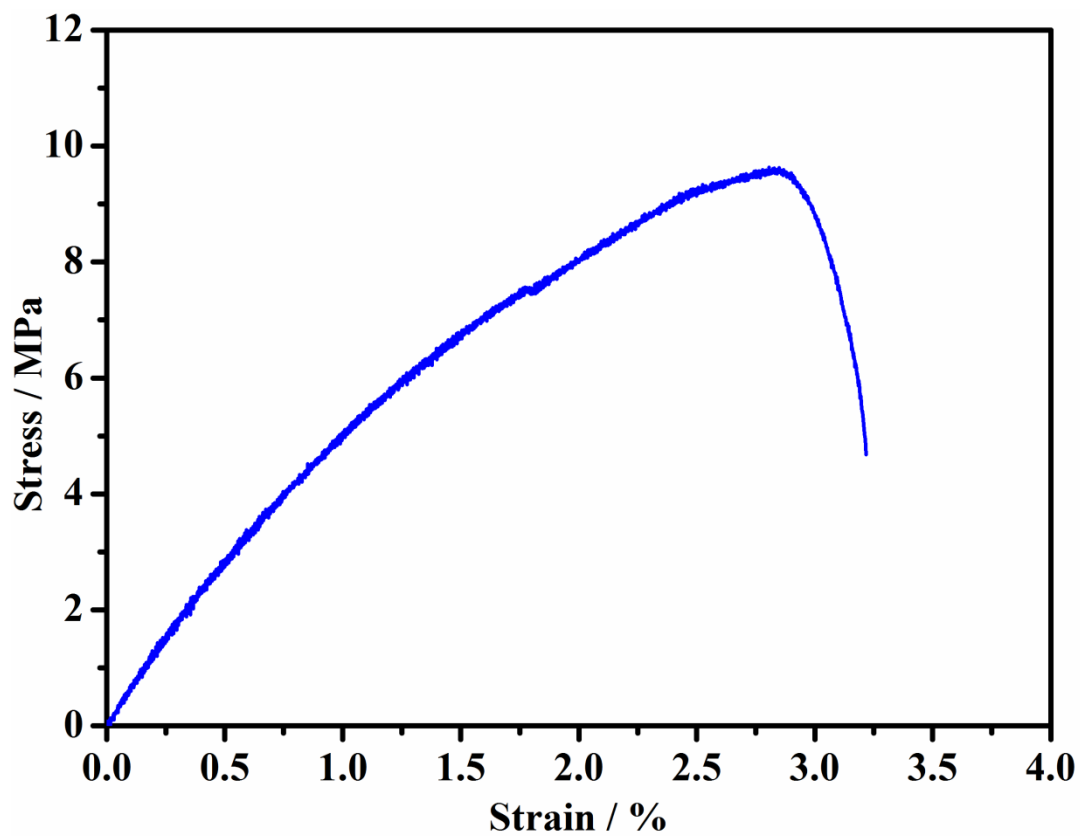


Figure S3. Stress-strain curve of the CNCs-0 film.

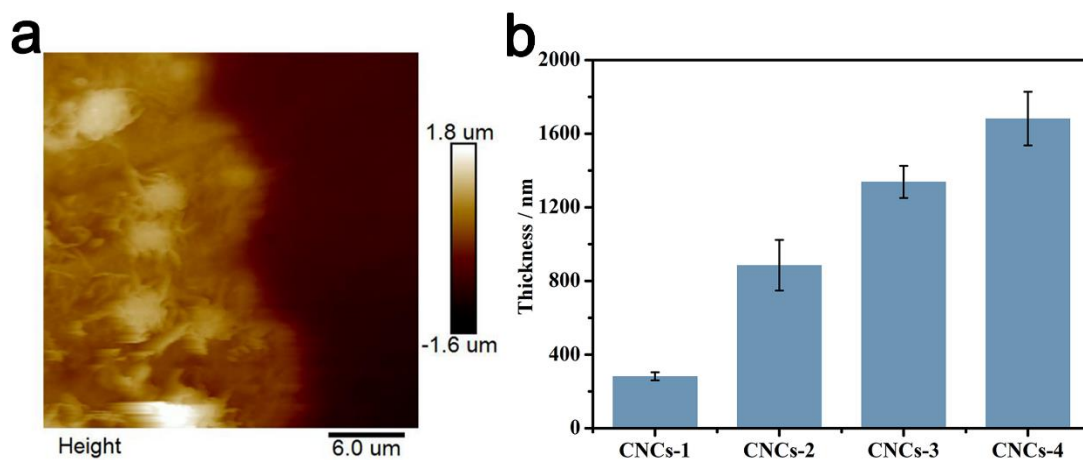


Figure S4. AFM photo of the hydrophobic HDTMS coating (a). Columnar section for the different thickness of hydrophobic HDTMS coatings (b).

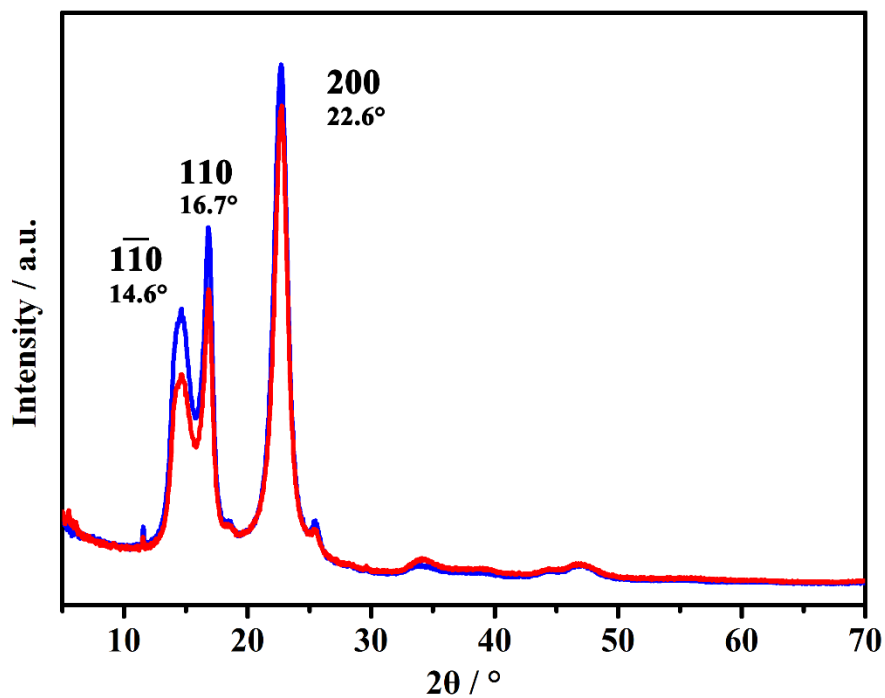


Figure S5. XRD patterns of the CNC nanocomposite film before (blue) and after (red) the hydrophobic modification.

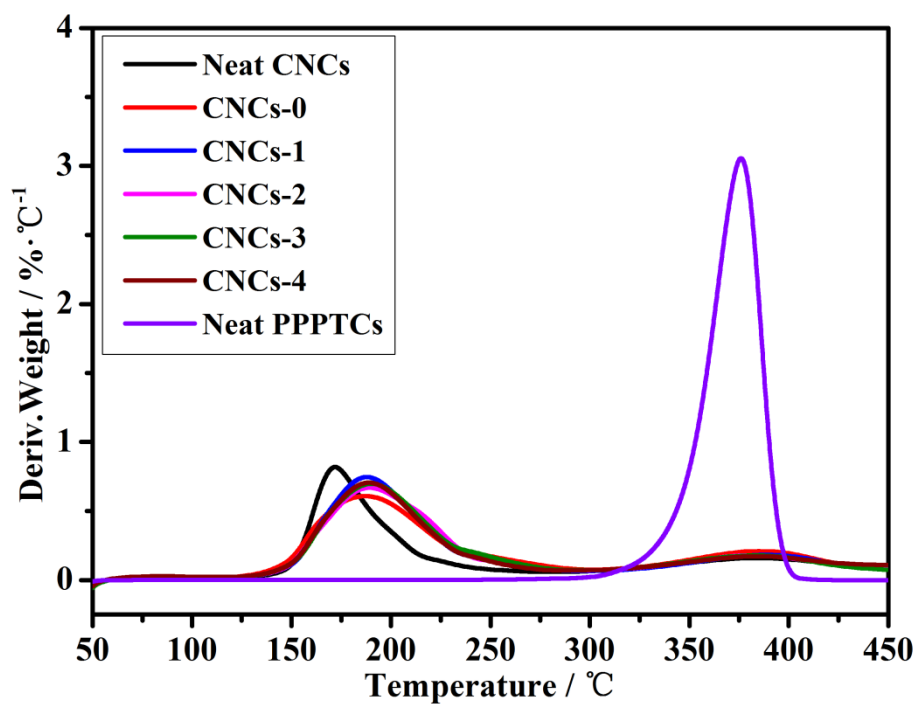


Figure S6. DTG curves of various prepared CNC nanocomposite films.

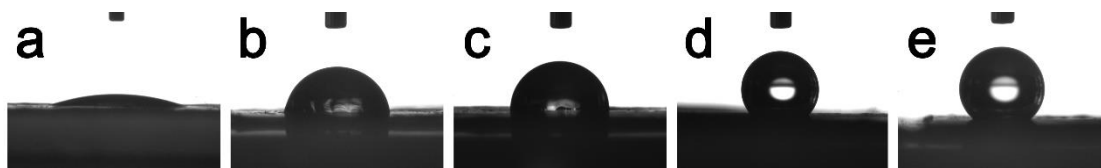


Figure S7. Photos of water drops on the surface of various CNC nanocomposite films. CNCs-0 (a), CNCs-1 (b), CNCs-2 (c), CNCs-3 (d), CNCs-4 (e) films.

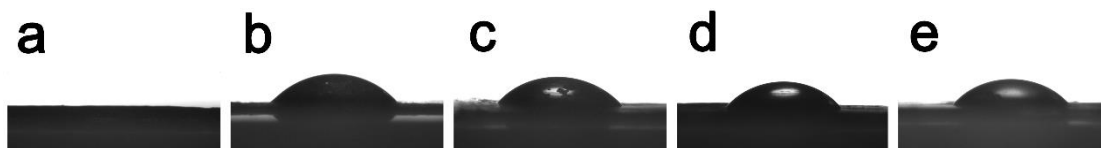


Figure S8. Photos of cyclohexanone drops on the surface of various CNC nanocomposite films. CNCs-0 (a), CNCs-1 (b), CNCs-2 (c), CNCs-3 (d), CNCs-4 (e) films.

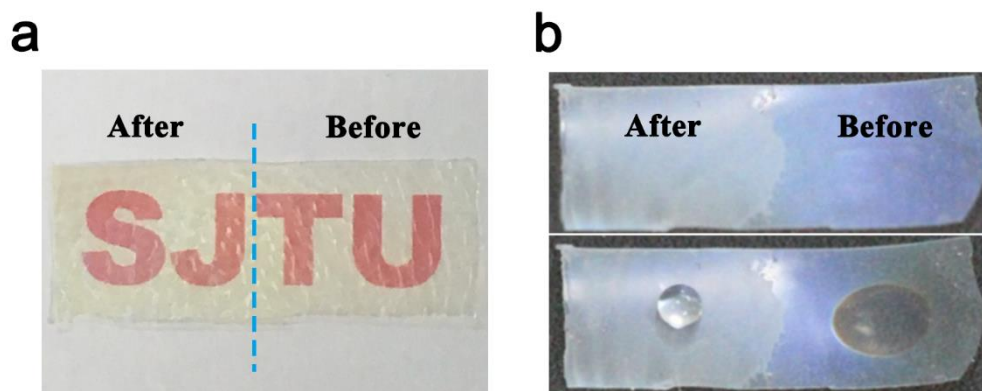


Figure S9. Digital photo for the transmittance degree of the film before and after hydrophobic modification (a). Digital photo for difference of water drops on the surface of CNC nanocomposite film with and without hydrophobic modification (b).

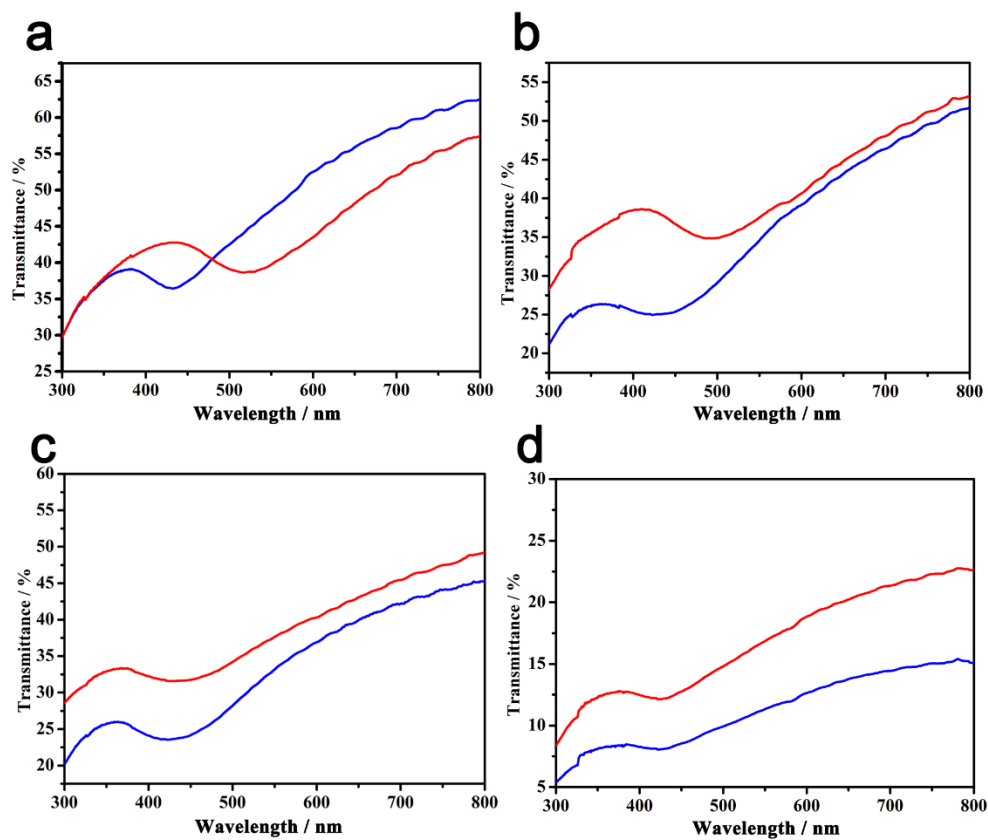


Figure S10. UV-vis spectra of various hydrophobic CNC nanocomposite films before (blue) and after (red) water treatment. CNCs-1 (a), CNCs-2 (b), CNCs-3 (c), CNCs-4 (d) films.

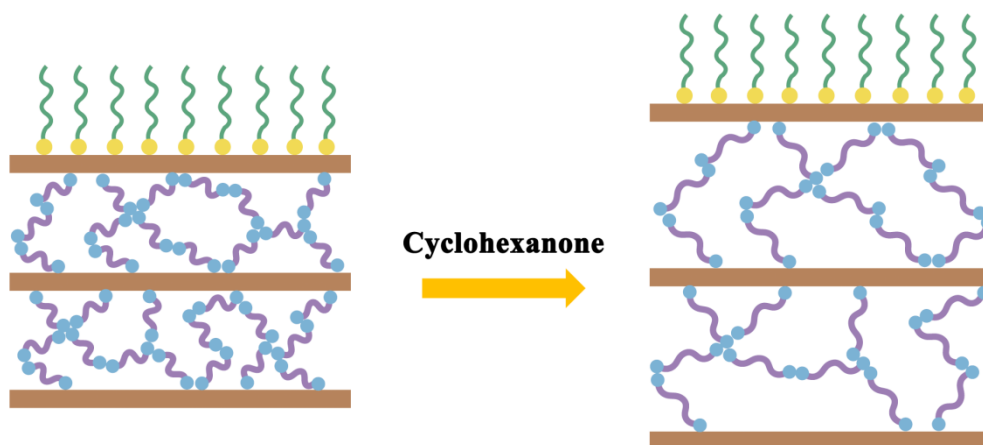


Figure S11. Schematic illustration for the enlargement of CNC layer distance after cyclohexanone treatment.

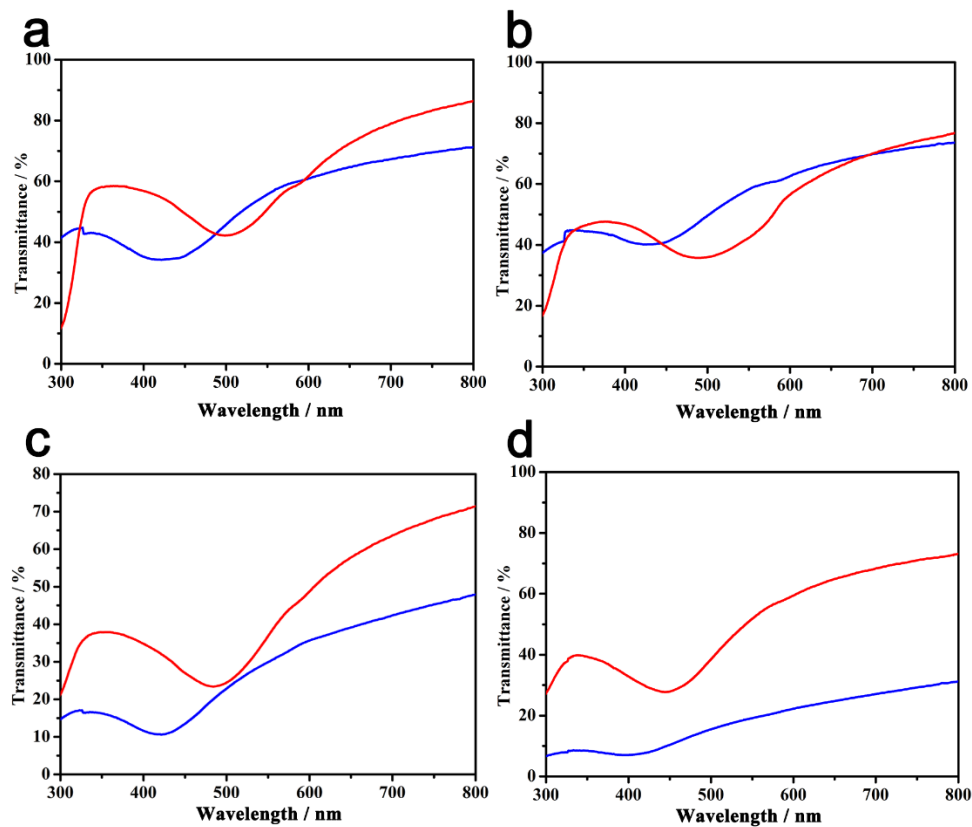


Figure S12. UV-vis spectra of various hydrophobic CNC nanocomposite films before (blue) and after (red) cyclohexanone treatment. CNCs-1 (a), CNCs-2 (b), CNCs-3 (c), CNCs-4 (d) films.