**The control of crystal structure and mechanical property in regenerated cellulose film by coagulation conditions**

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**Fig. S1.** FT-IR spectra of regenerated cellulose film prepared from (a) CNF and (b) MCC using various solvents as a coagulant

　　　 

**Fig. S2.** XRD spectra of the pristine and powdered regenerated cellulose film prepared from MCC through coagulation with 5wt% H2SO4 aqueous solution containing 5 wt% Na2SO4

**Table S1.** Mechanical properties of regenerated cellulose films

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cellulose | Coagulant | Tensile strength (MPa) | Elongation at break (%) | Young’s modulus (GPa) |
| CNF | 5 wt% H2SO4 and 5 wt% Na2SO4 | 75.95 ± 1.38 | 4.69 ± 0.93 | 3.96 ± 0.35 |
| H2O | 75.09 ± 7.55 | 5.97 ± 1.84 | 3.91 ± 0.25 |
| Ethylene glycol | 49.54 ± 4.72 | 2.16 ± 0.12 | 2.66 ± 0.51 |
| Methanol | 86.75 ± 6.69 | 12.91 ± 2.76 | 2.94 ± 0.45 |
| Ethanol | 72.57 ± 9.95 | 8.92 ± 0.84 | 3.39 ± 0.10 |
| 1-Butanol | 75.09 ± 9.09 | 2.43 ± 0.45 | 3.58 ± 0.13 |
| Acetone | 68.89 ± 2.10 | 11.88 ± 1.24 | 3.53 ± 0.19 |
| *n*-Hexane | 48.59 ± 4.37 | 8.39 ± 2.03 | 2.37 ± 0.12 |
| MCC | 5 wt% H2SO4 and 5 wt% Na2SO4 | 75.85 ± 12.14 | 2.30 ± 0.36 | 4.28 ± 0.79 |
| H2O | 17.04 ± 4.25 | 0.79 ± 0.10 | 1.89 ± 0.49 |
| Ethylene glycol | 27.70 ± 9.85 | 1.13 ± 0.11 | 2.20 ± 1.15 |
| Methanol | 77.08 ± 8.38 | 5.56 ± 2.04 | 2.65 ± 0.22 |
| Ethanol | 81.31 ± 6.32 | 4.15 ± 0.95 | 3.21 ± 0.27 |
| 1-Butanol | 29.21 ± 4.78 | 1.22 ± 0.15 | 2.44 ± 0.23 |
| Acetone | 65.83 ± 5.98 | 2.38 ± 0.25 | 3.25 ± 0.88 |
| *n*-Hexane | 19.42 ± 2.24 | 1.20 ± 0.11 | 1.04 ± 0.17 |