

Supporting Information

Bioinspired thermo-responsive xyloglucan-cellulose nanocrystal hydrogels

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Table S1. Values of G' and G'' at 20°C and 60°C for heating and cooling cycles. Samples are referred as follow XG type(XGu or DG-XG)- XG concentration (g/L) : CNC- CNC concentration (g/L)

	Heating				Cooling			
	G' (Pa)		G'' (Pa)		G' (Pa)		G'' (Pa)	
	20°C	60°C	20°C	60°C	20°C	60°C	20°C	60°C
XGu20	0.02	0.002	0.8	0.2	0.023	0.0026	0.83	0.24
DG-XG20	1.6	138	0.65	1.5	75	137	1.5	1.3
XGu20:CNC10	13	7.9	3	2	14	8	3	2
DG-XG20:CNC10	7	503	10	44.8	331	493	26	44
XGu20:CNC30	199	129	22	19	208	128	21	19
DG-XG20:CNC30	659	1445	103	165	884	1444	106	163
XGu5:CNC30	96	97	20	17	98	77	21	18
DG-XG5:CNC30	376	380	46	45	374	380	46	45

- Viscosimeter – light scattering – refractive index

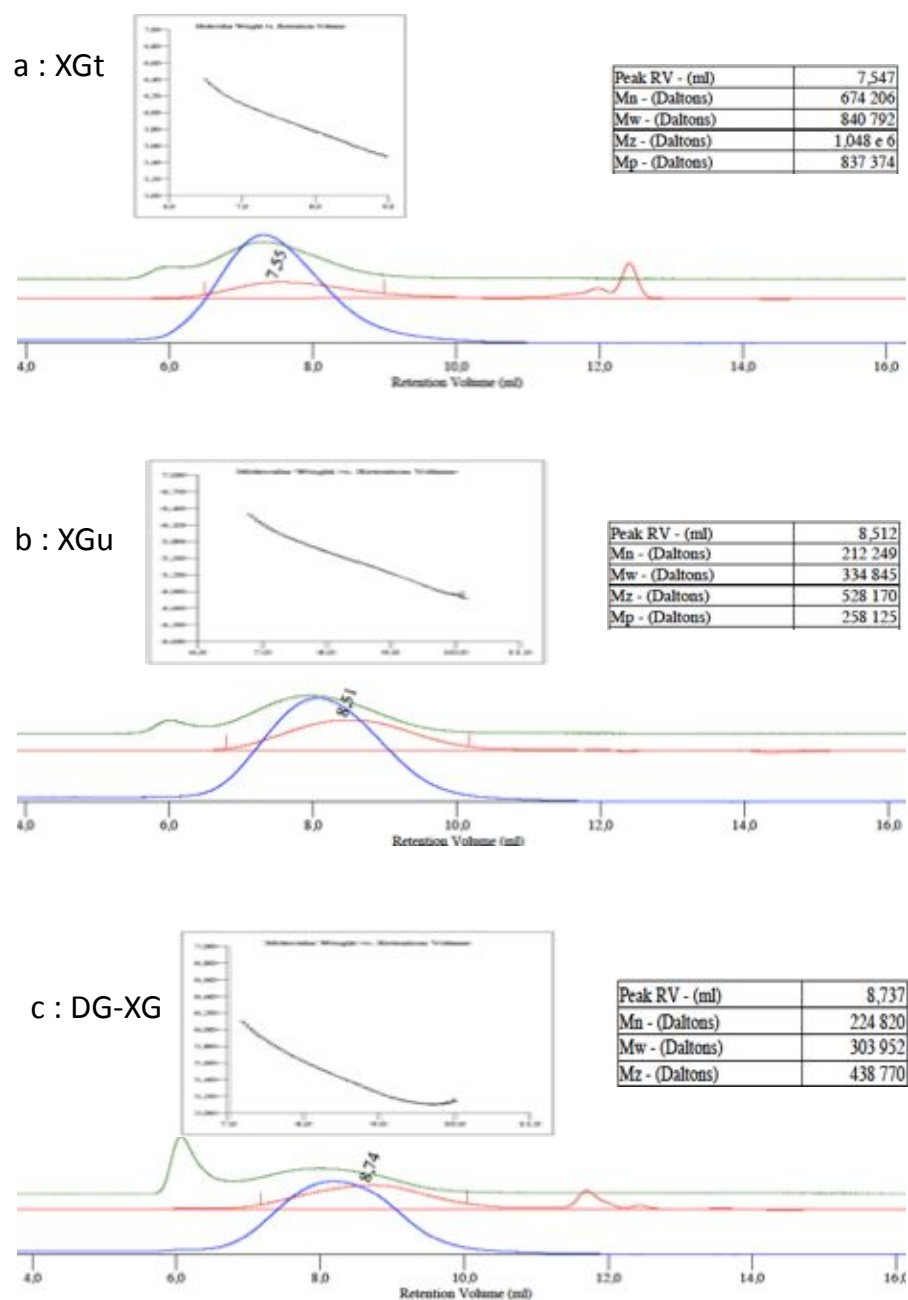


Figure S1 : High Pressure Steric Exclusion Chromatography traces and molar mass distribution of XGt, XGu and DG-XG

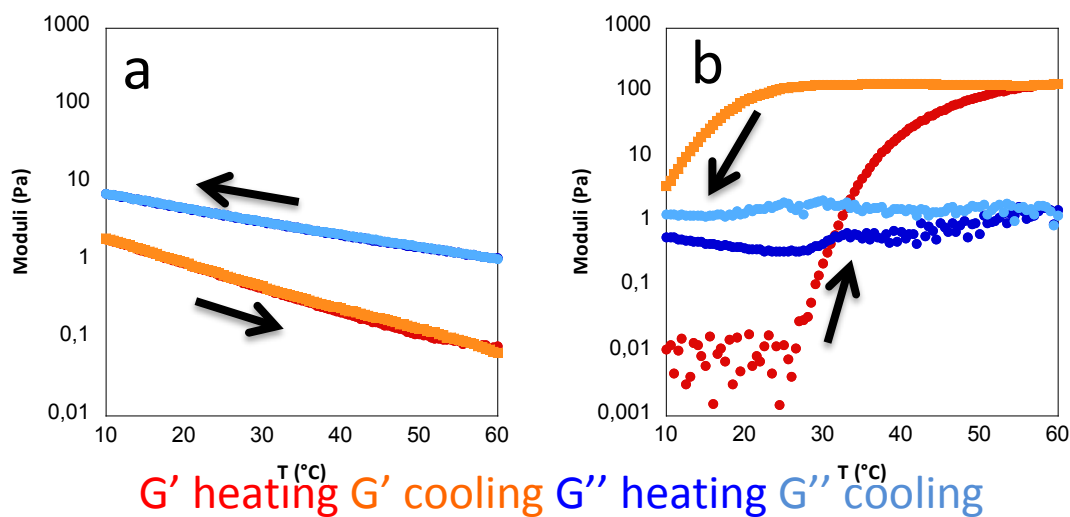


Figure S2. Evolution of the storage (G' , red-orange heating-cooling cycle) and loss (G'' , light blue-dark blue heating-cooling cycle) moduli as a function of temperature for XGu (a), and DG-XG (b).

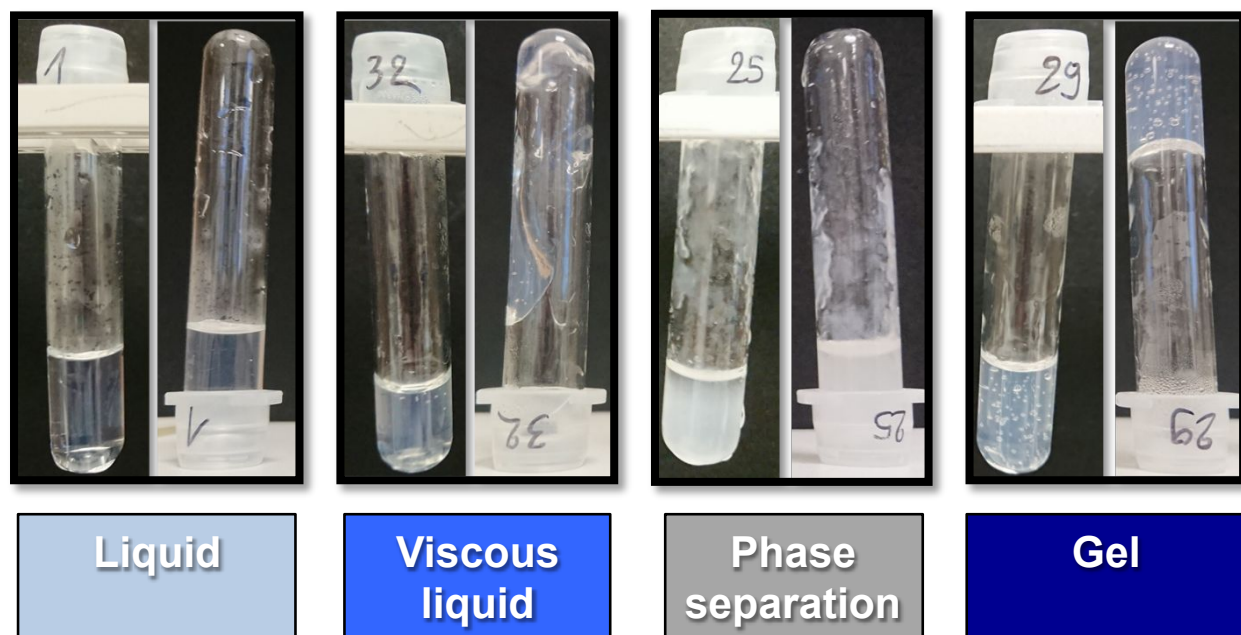


Figure S3. Different phases observed in the inverted tube test phase diagrams.

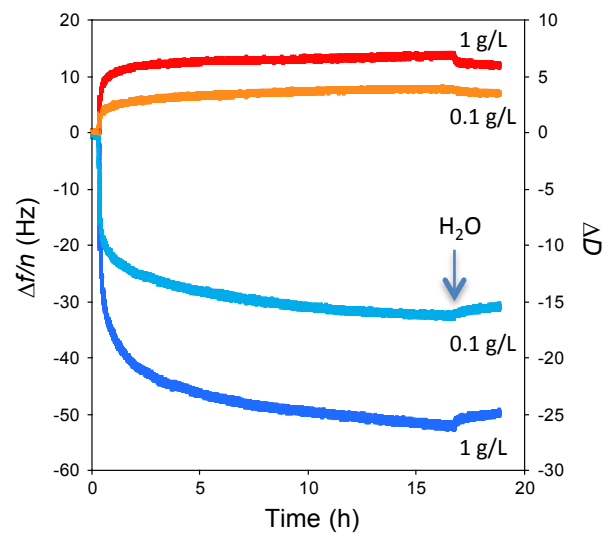


Figure S4. DG-XG adsorption to a CNC-coated sensor monitored using quartz crystal microbalance with dissipation. Normalized frequency ($\Delta f_n/n$, blue and turquoise) and dissipation (ΔD , red and orange) changes for harmonic $n = 3$ of the CNC film exposed to aqueous DG-XG solutions at different concentrations (0.1 and 1 g/L) over a 16 hour period. The arrow indicates the beginning of the rinsing step with water.