Supporting Information

Plant bio-inspired laminar cellulose-based foam with flame retardancy, thermally insulating and excellent mechanical properties

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Figures

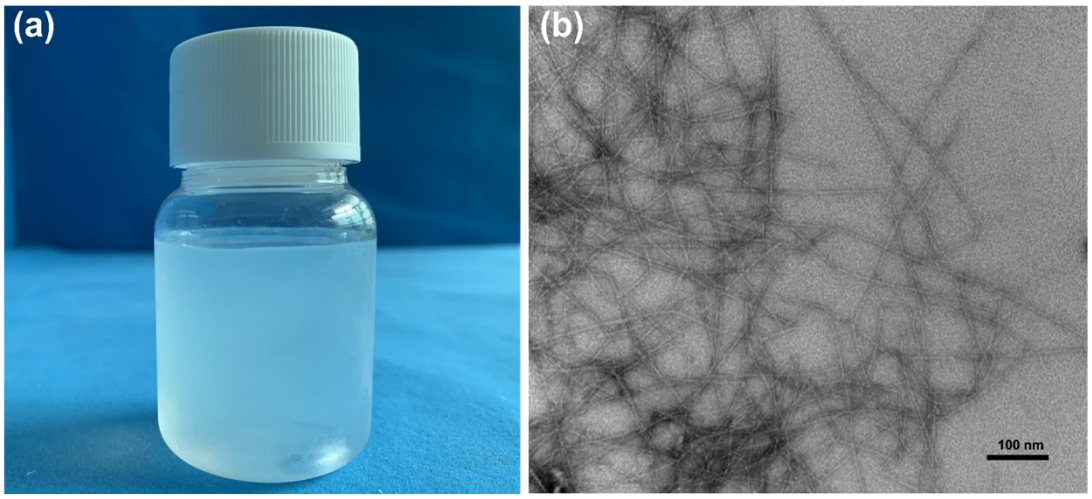

Fig. S1 (a) The optical photograph. (b) TEM image of CNF solution.

Fig. S2 Schematic diagram of the procedure for the fabrication of cellulose-based foams

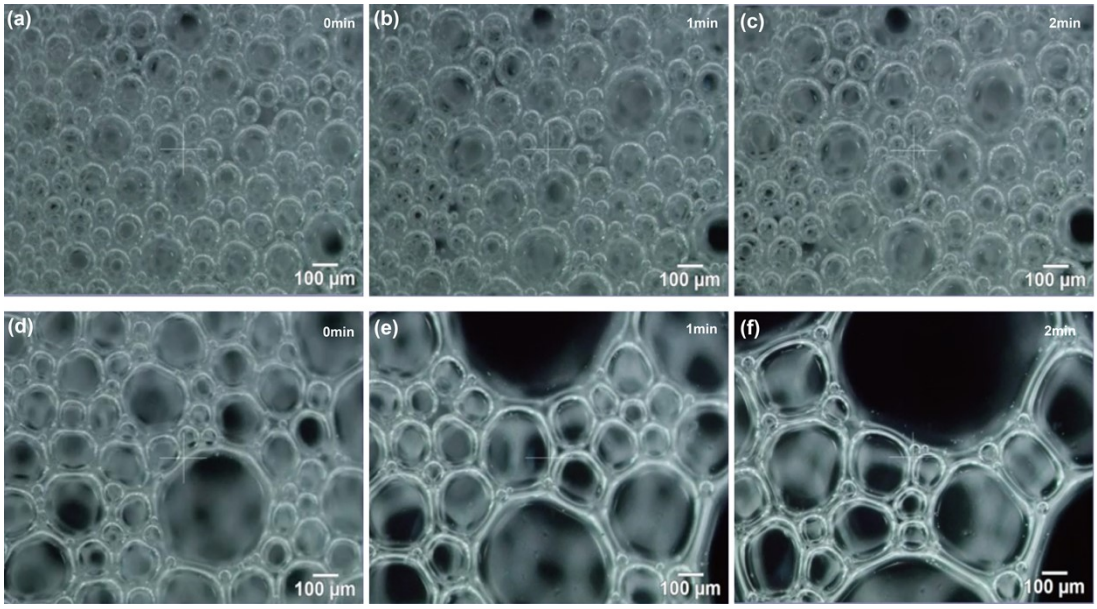

Fig. S3 Optical microscope images in (a-c) CNF-containing bubbles and (d-f) pure SDS solutions of bubbles at different times.

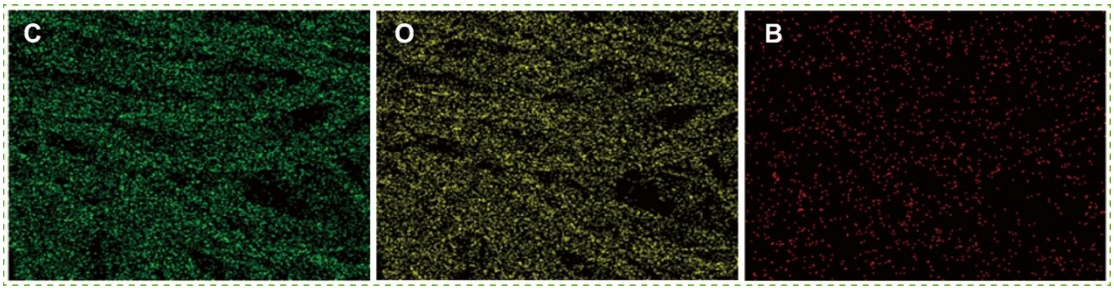

Fig. S4 X-ray energy spectra (EDS) of the foam after borate cross-linking.

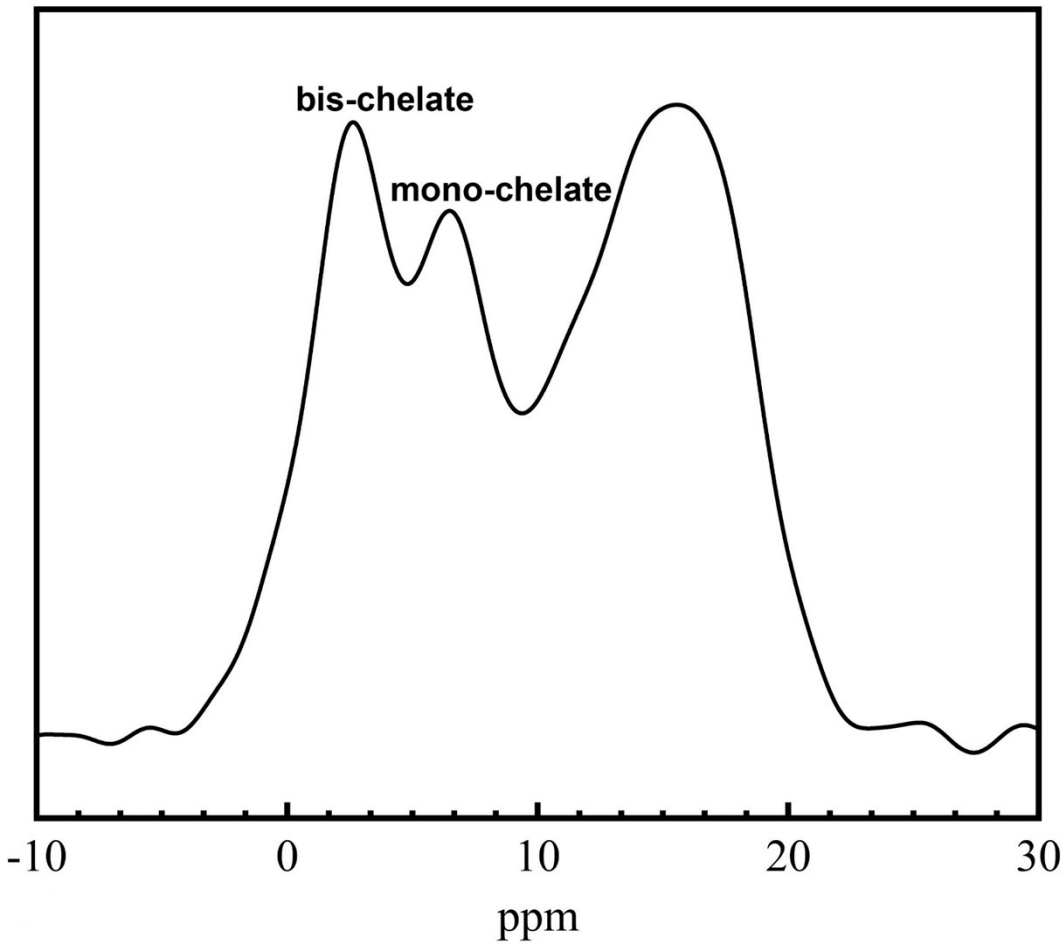

Fig. S5 ^{11}B MAS NMR spectrum of cellulose-based foam

Tables

Table S1 The density and porosity of PF, PCF-0, and PCF-0.12 samples.

Sample	Density（mg/cm^3）	Porosity（%）
PF	12.1	99.2
PCF-0	12.2	99.2
PCF-0.12	13.2	99.1

Table S2 The analytical results of XPS elemental determination of PF and PCF-0 samples.

Sample	C (%)	O (%)	B (%)
PF	62.8	35.5	1.0
PCF-0	63.4	34.2	1.9

Table S3 Combustion parameters of PF, PCF-0, and PCF-0.12.

Sample	PHRR (kW/m^2)	THR (MJ/m^2)	FGI ($kW/m^2 \cdot s$)	LOI (%)
PF	154.5	12.04	9.09	16.1
PCF-0	91.8	5.77	4.59	23.0
PCF-0.12	65.9	5.80	5.07	23.5