Supporting Information

Self-healing, recyclable, and degradable fire-retardant gelatin-based biogel coating for green buildings

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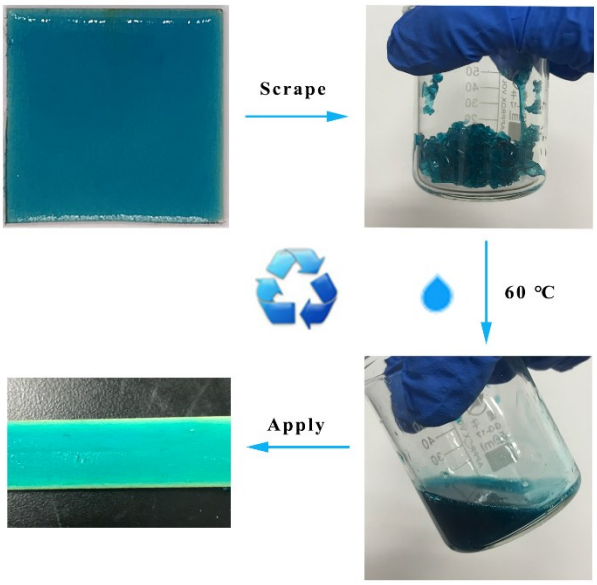

Fig. S1. Illustration of recycling process of biogel on obsolete wood.

Fig. S2. Colorful biogels can be obtained as needed for aesthetics.

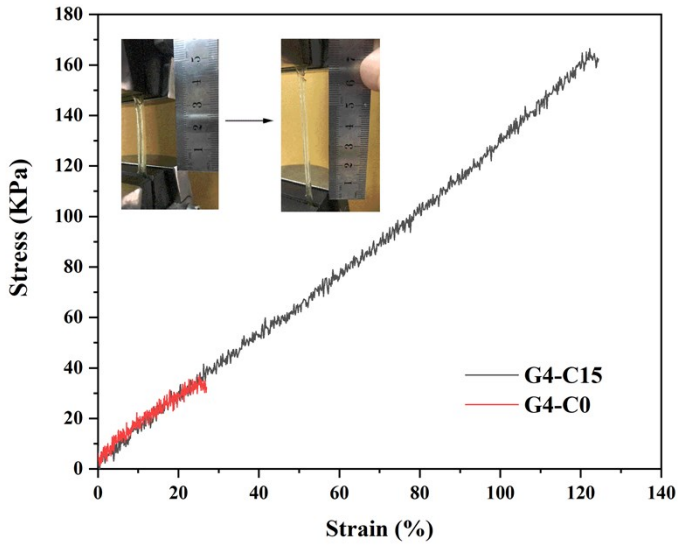

Fig. S3. Typical tensile stress-strain curves of G4-C15 and G4-C0 biogel.

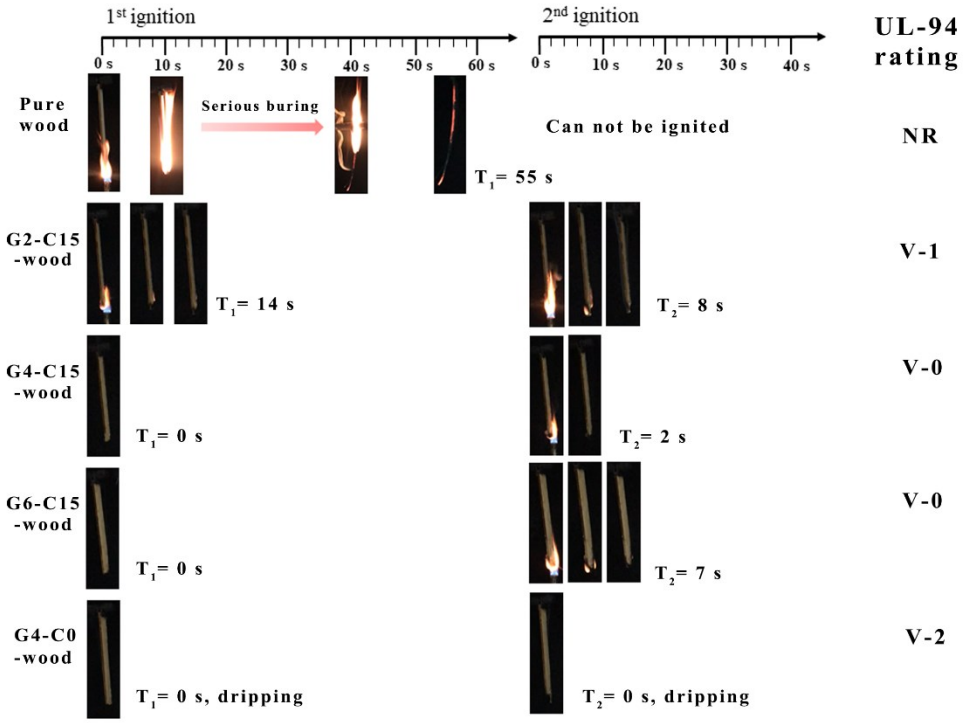

Fig. S4. Vertical combustibility test of uncoated and biogel-coated woods.

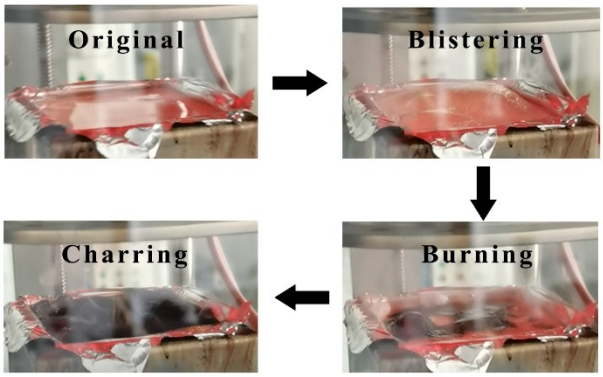

Fig. S5. Three combustion stages of biogel-coated wood during the cone calorimetry test.

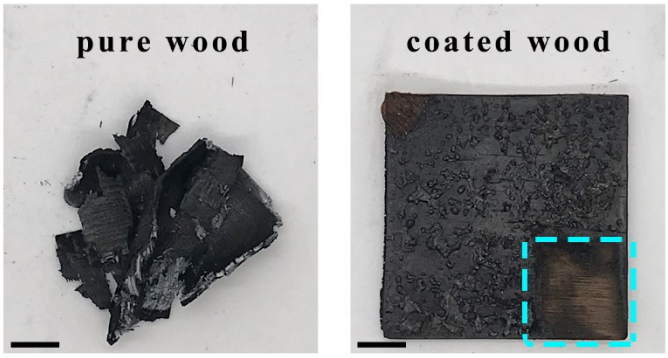

Fig. S6. Optical image of pure wood (left) and coated wood (right) after being subjected to butane flame for 30 s (scale bar: 1 cm). The highlighted area is the inner intact wood after eliminating the char.

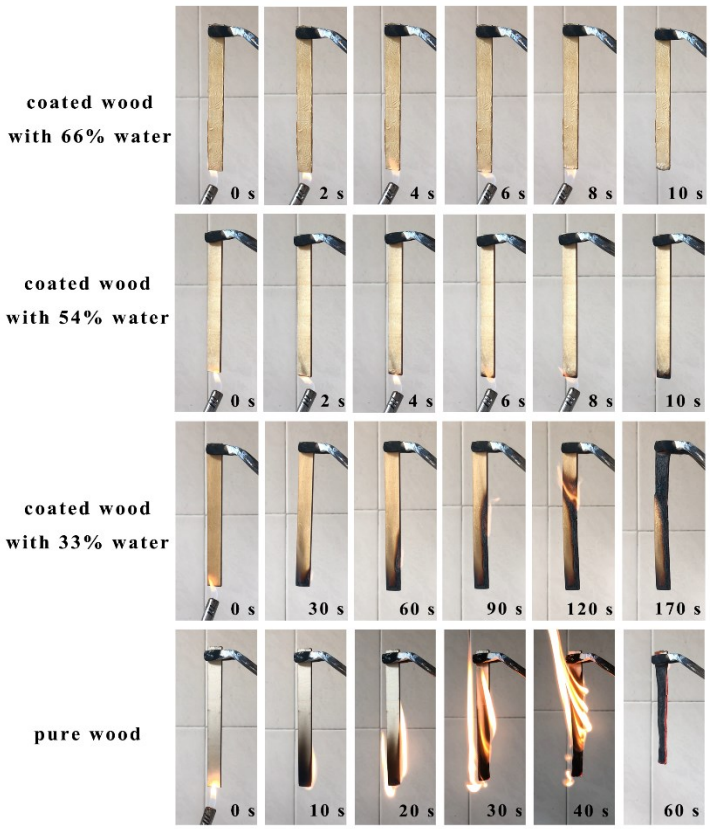

Fig. S7. Ignition test of coated woods with different water content in biogel.

Table S1. Formulation of samples for TGA test.

Samples	Gelatin (g)	4 wt% Chitosan solution	Glycerol (g)	DI water (g)	Char residue (%)
Gelatin	4	0	0	35	22.8
Gelatin+Glycerol	4	0	5	30	8.5
Gelatin+Glycerol+Chitosan	4	15	5	15	13.1