

Table S1: The onset temperature (T_{onset}) of the main degradation step, and char residues at 800 °C measured trough TGA in nitrogen and in air atmospheres.

| Formulation | T_{onset} in nitrogen (°C) | Char residue in nitrogen (wt. %) | T_{onset} in air (°C) | Char residue in air (wt. %) |
|--|--|--|-----------------------------------|-----------------------------------|
| untreated | 217 | 18.5 | 235 | 5.40 |
| starch | 242 | 15.6 | 232 | 7.50 |
| starch + Na_2CO_3 | 200 | 24.5 | 206 | 10.9 |
| starch + K_2CO_3 | 200 | 25.9 | 196 | 14.5 |
| starch + $(\text{NH}_4)_2\text{HPO}_4$ | 216 | 32.5 | 220 | 4.90 |

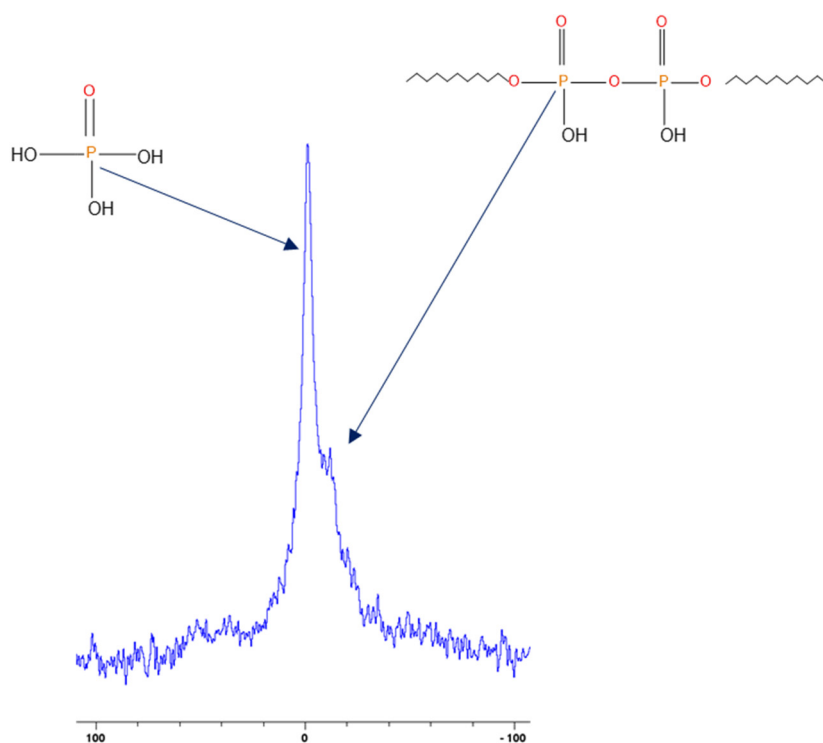


Figure S1: Solid-state ^{31}P NMR spectrum of char obtained from wood coated with 'starch + $(\text{NH}_4)_2\text{HPO}_4$ ' formulation (the abscissa denotes the chemical shift values, δ , in ppm, and the ordinate corresponds to the signal intensity in arbitrary units).

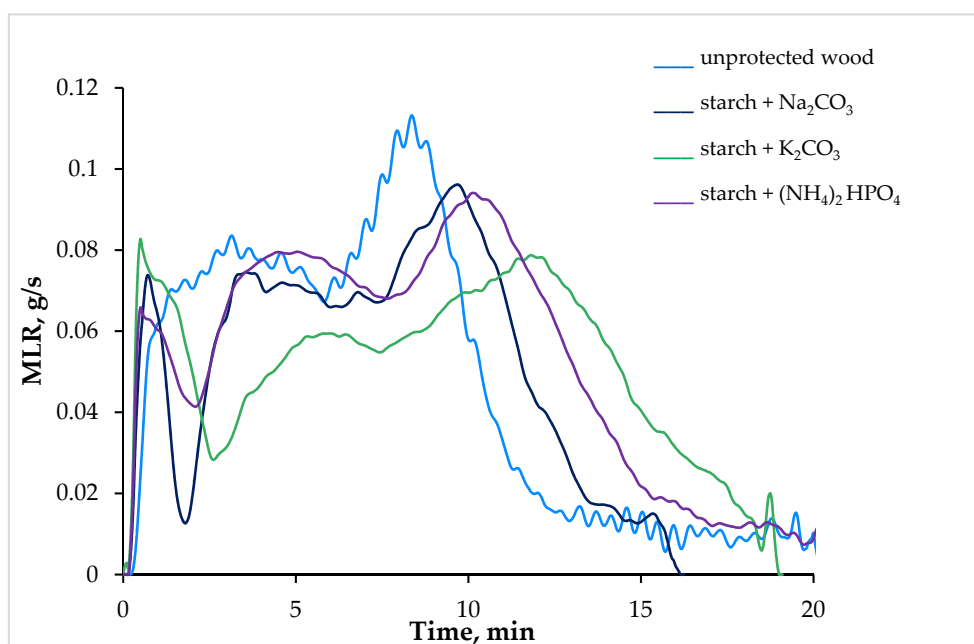


Figure S2: The MLR *vs.* time profiles of unprotected wood and the wood surfaces coated with starch + inorganic salt formulations.



(a)



(b)

Figure S3: The snapshots taken from the videos recorded during cone calorimetry testing, 10 seconds after the ignition: (a) untreated wood; (b) wood coated with 'starch + K₂CO₃' formulation.

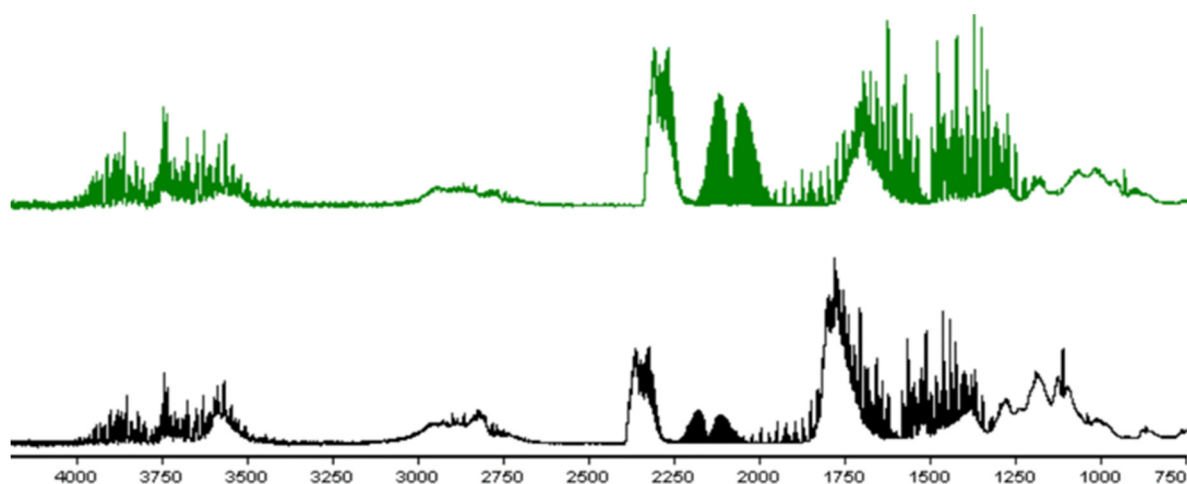


Figure S4: FT-IR spectra of gaseous products produced in the tube furnace during decomposition of untreated wood (black) and wood coated with 'starch + K₂CO₃' formulation (green), 350 °C, nitrogen atmosphere (the abscissa is wavenumber (in cm⁻¹) and the ordinate is absorbance (in arbitrary units)).

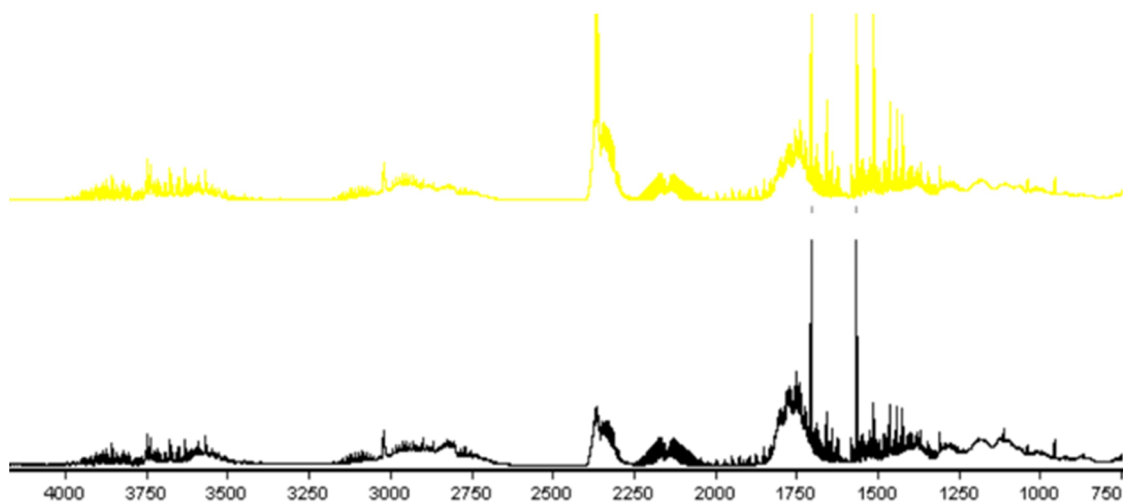


Figure S5: FT-IR spectra of gaseous products produced in the tube furnace during decomposition of untreated wood (black) and wood coated with 'starch + K₂CO₃' formulation (yellow), 650 °C, nitrogen atmosphere (the abscissa is wavenumber (in cm⁻¹) and the ordinate is absorbance (in arbitrary units)).