# Supporting Information

## High Yields of Solid Carbonaceous Materials from Biomass

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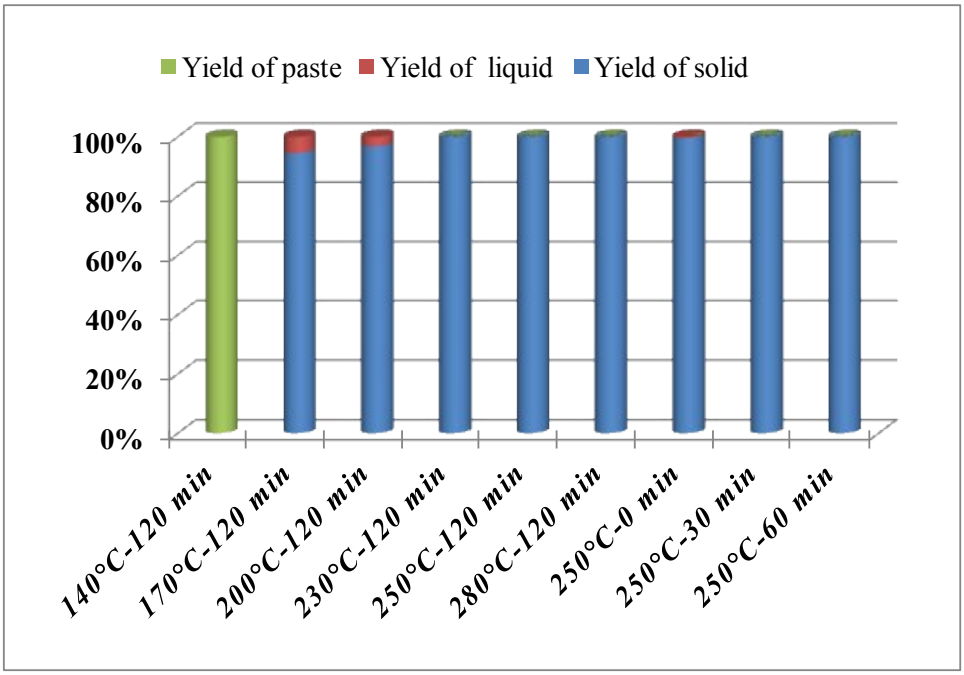
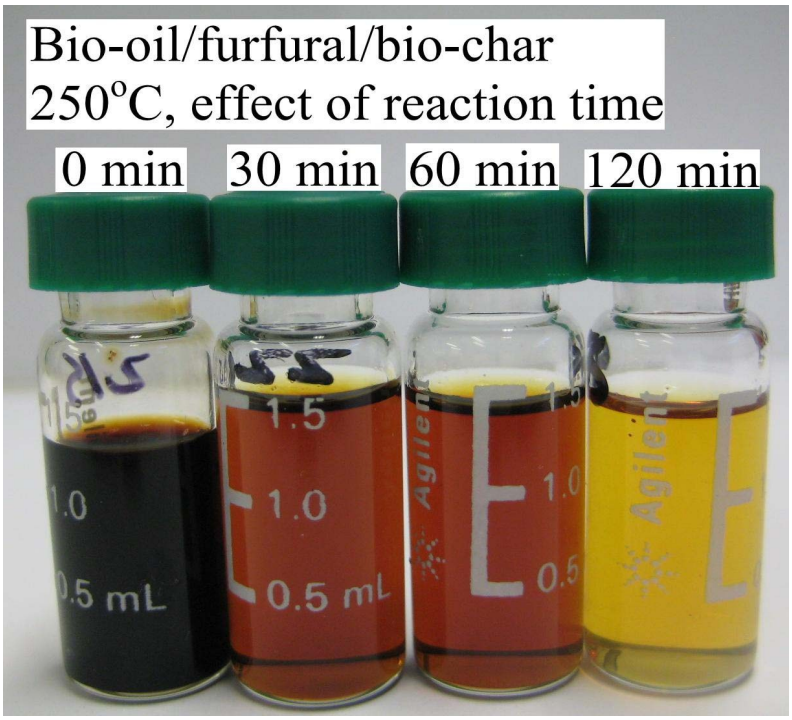



**Figure S1** Yields of the solid, liquid and pasty products from the thermal treatment of bio-oil/furfural/biochar at different reaction temperature and different reaction time. "250°C-0 min" meant when the temperature of the reactor reached 250°C in 45 min, the reactor was taken out of the sand bath.



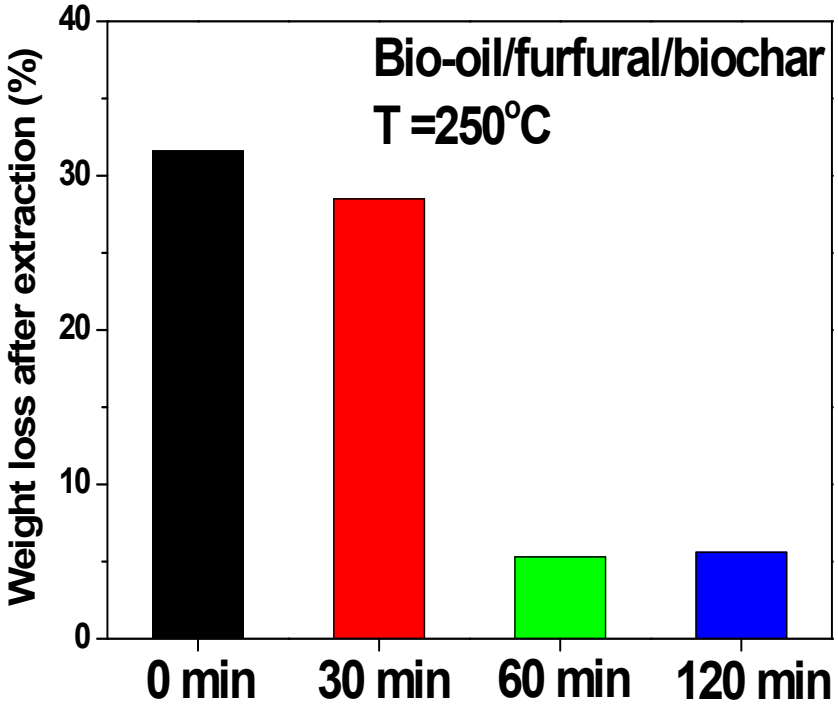




**Figure S2** Color of the extracted solution and the weight loss after the extraction of the carbon materials produced from 250°C at different reaction time. 0.30 g polymer was immersed into 6 g of methanol/chloroform and stirred, filtered, dried and weighted.

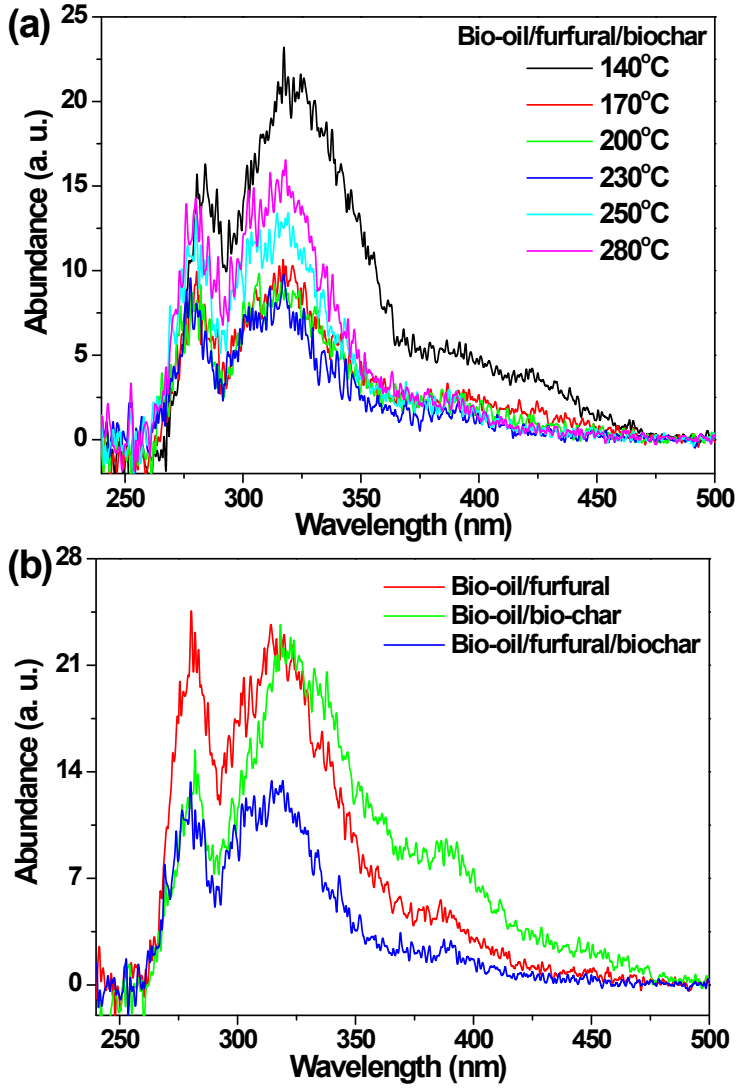



Figure S3 Constant energy (− 2800 $cm^{-1}$) synchronous spectra for the extractives from the extraction of the polymers from the thermal treatment of bio-oil/furfural/biochar, bio-oil/furfural or bio-oil/biochar.

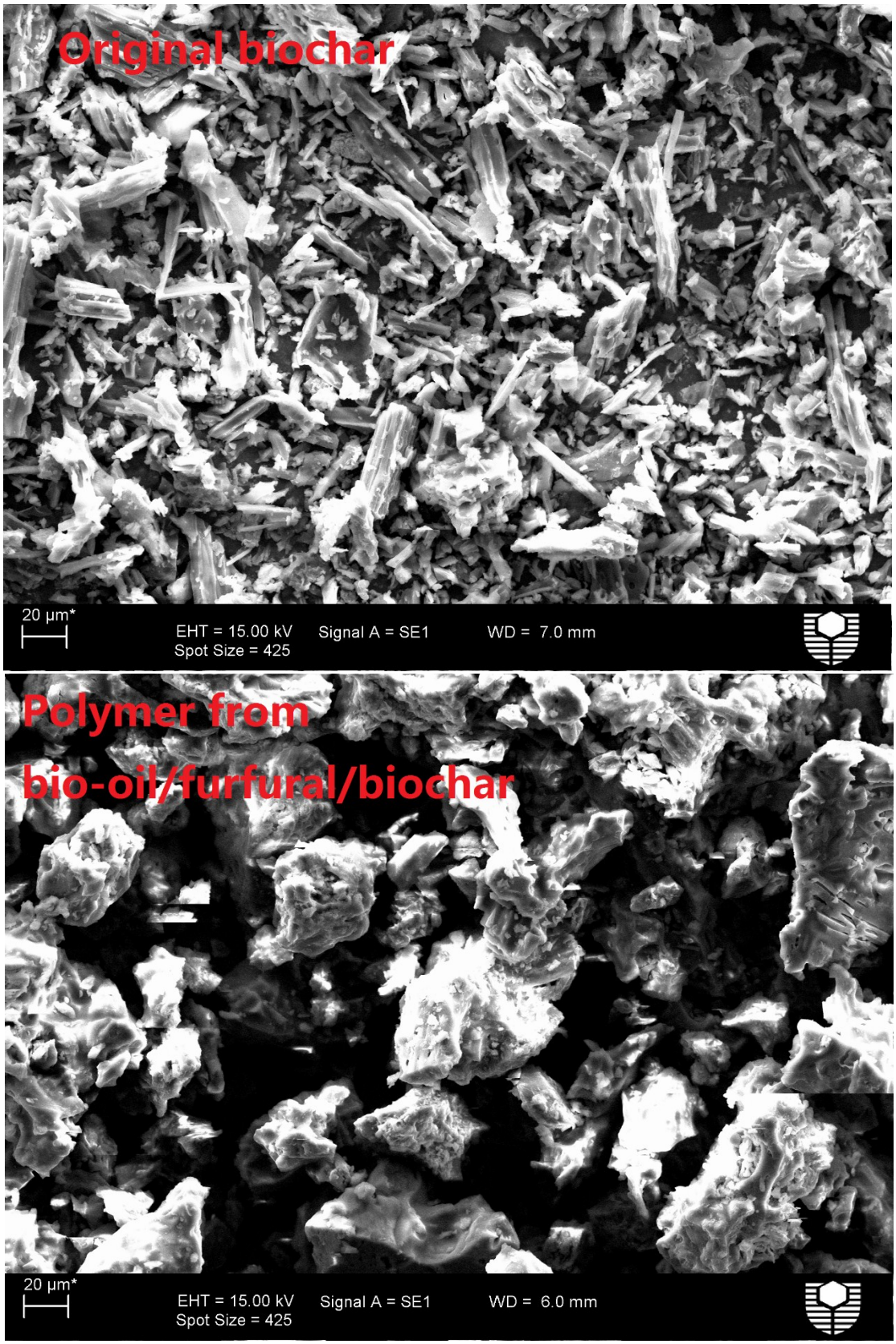



**Figure S4** SEM images of biochar and the polymer produced from bio-oil/furfural/biochar.

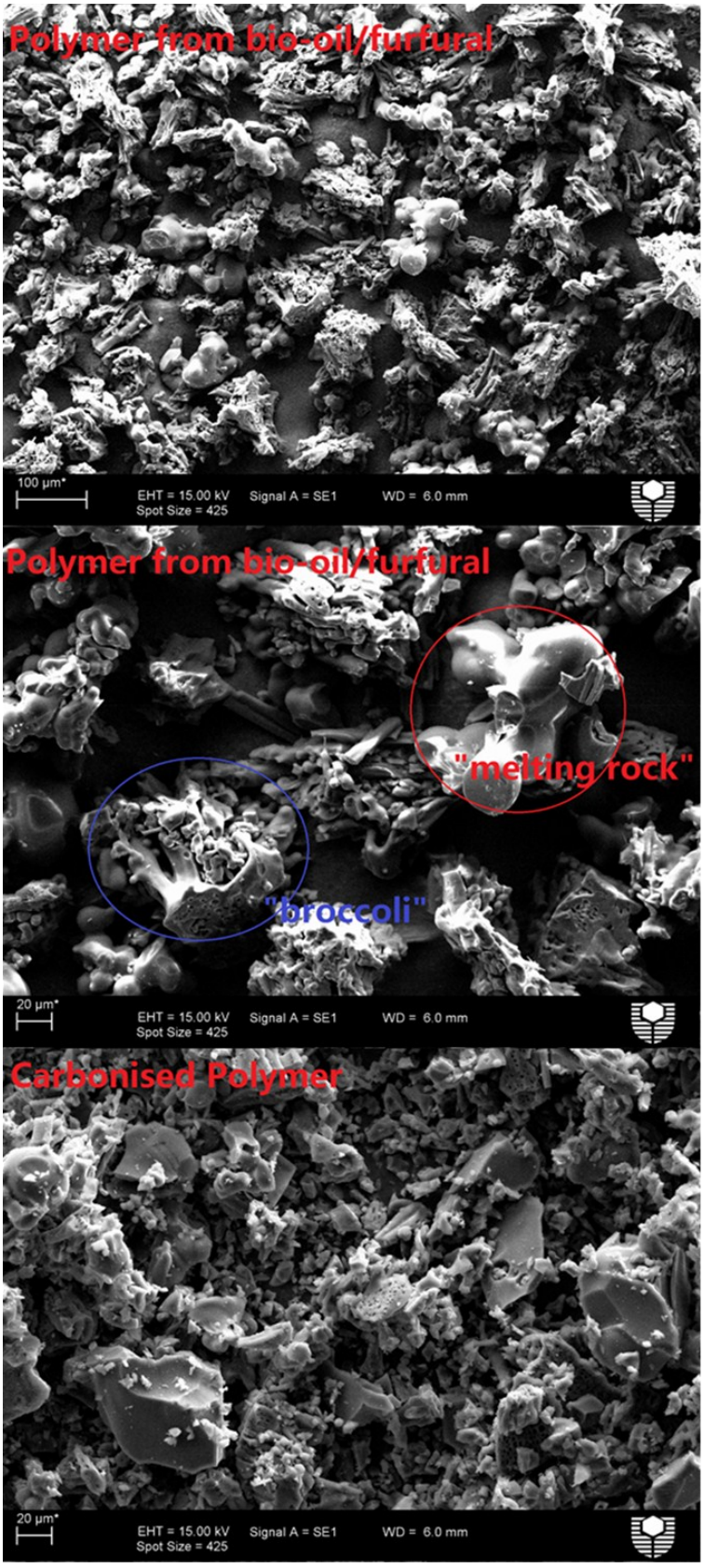



**Figure S5** SEM images of the polymer produced from bio-oil/furfural and the carbonised polymer.

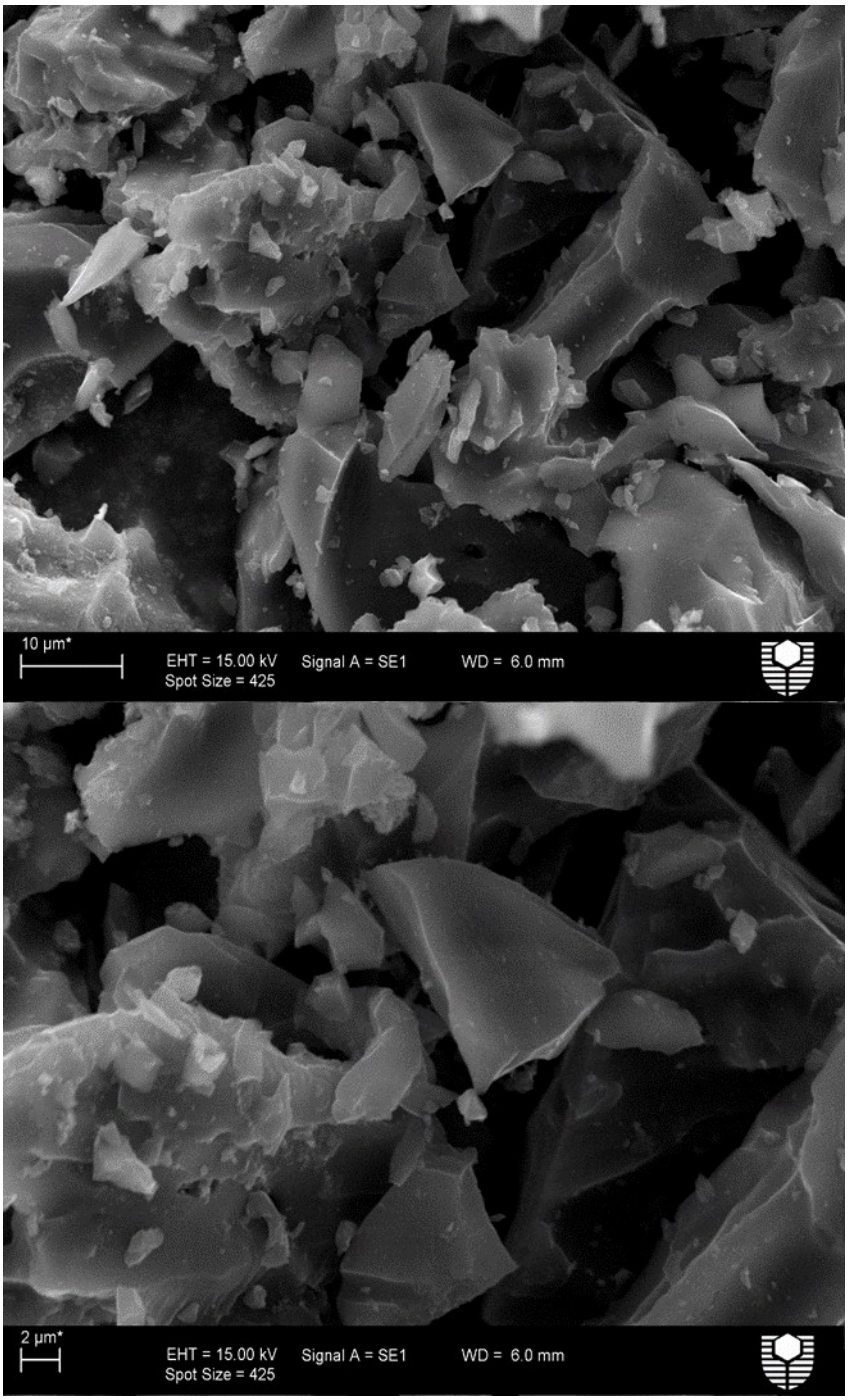



**Figure S6** SEM images of the coke produced via carbonisation of the polymer produced from bio-oil/furfural/biochar.

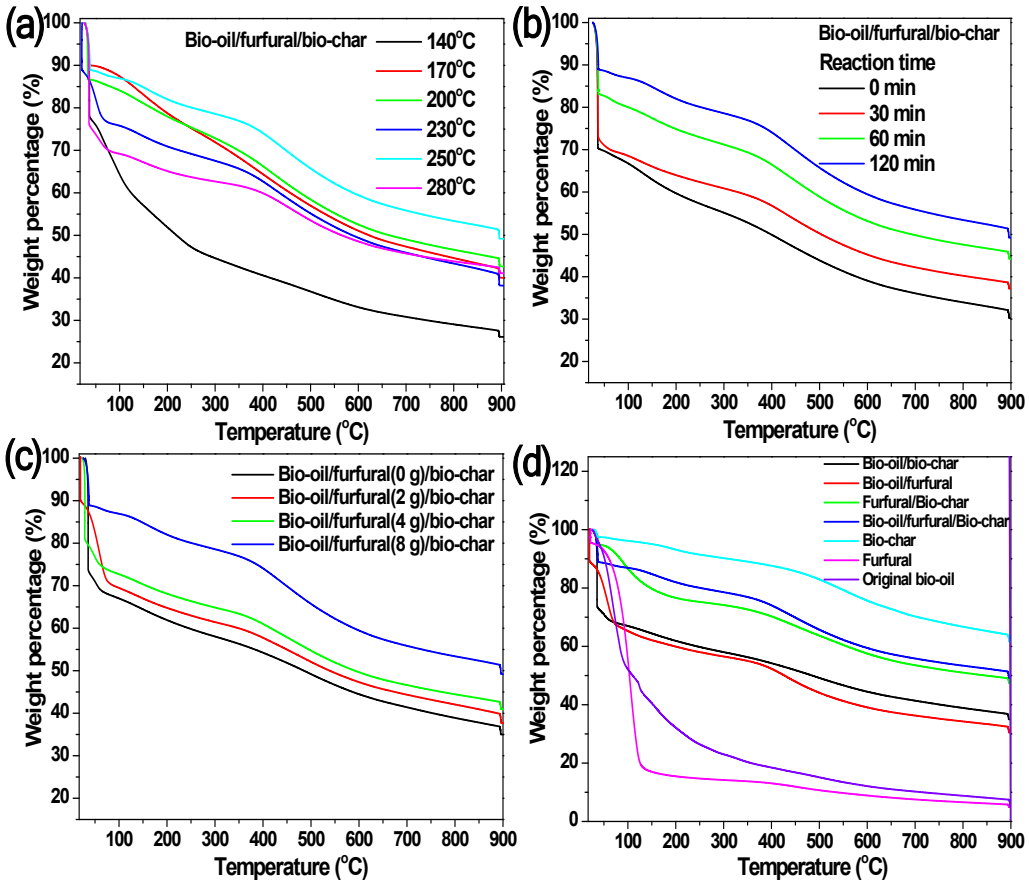



**Figure S7** TGA characterisation of the polymers produced from polymerisation of bio-oil, furfural and/or biochar at (a) different reaction temperature; (b) different reaction time at 250°C; (c) different furfural content at 250°C; (d) different formulation of the reactants at the temperature of 250°C. The samples were not dried and characterized directly in TG as obtained from the polymerisation experiments.

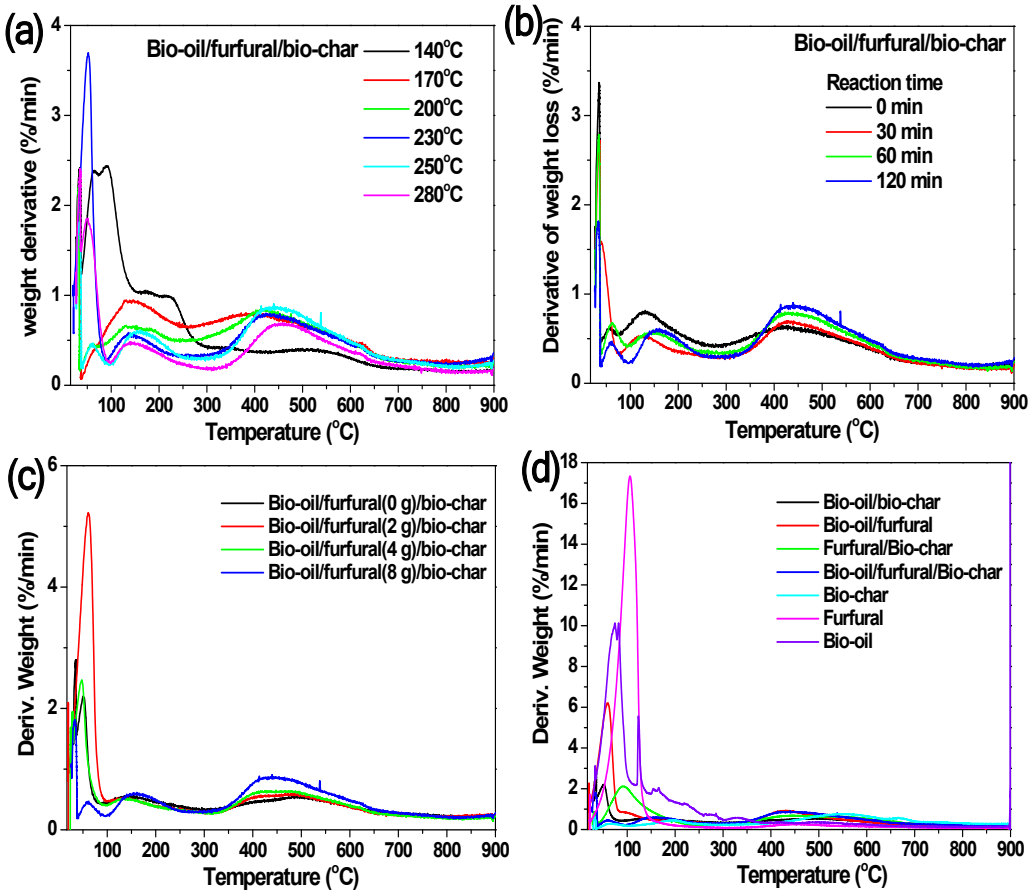



**Figure S8** DTG curves of the carbon materials produced from polymerisation of bio-oil, furfural and/or biochar at (a) different reaction temperature; (b) different reaction time at 250°C; (c) different furfural content at 250°C; (d) different formulation of the reactants at the temperature of 250°C. TGA curves were depicted in Figure 6 in the paper.

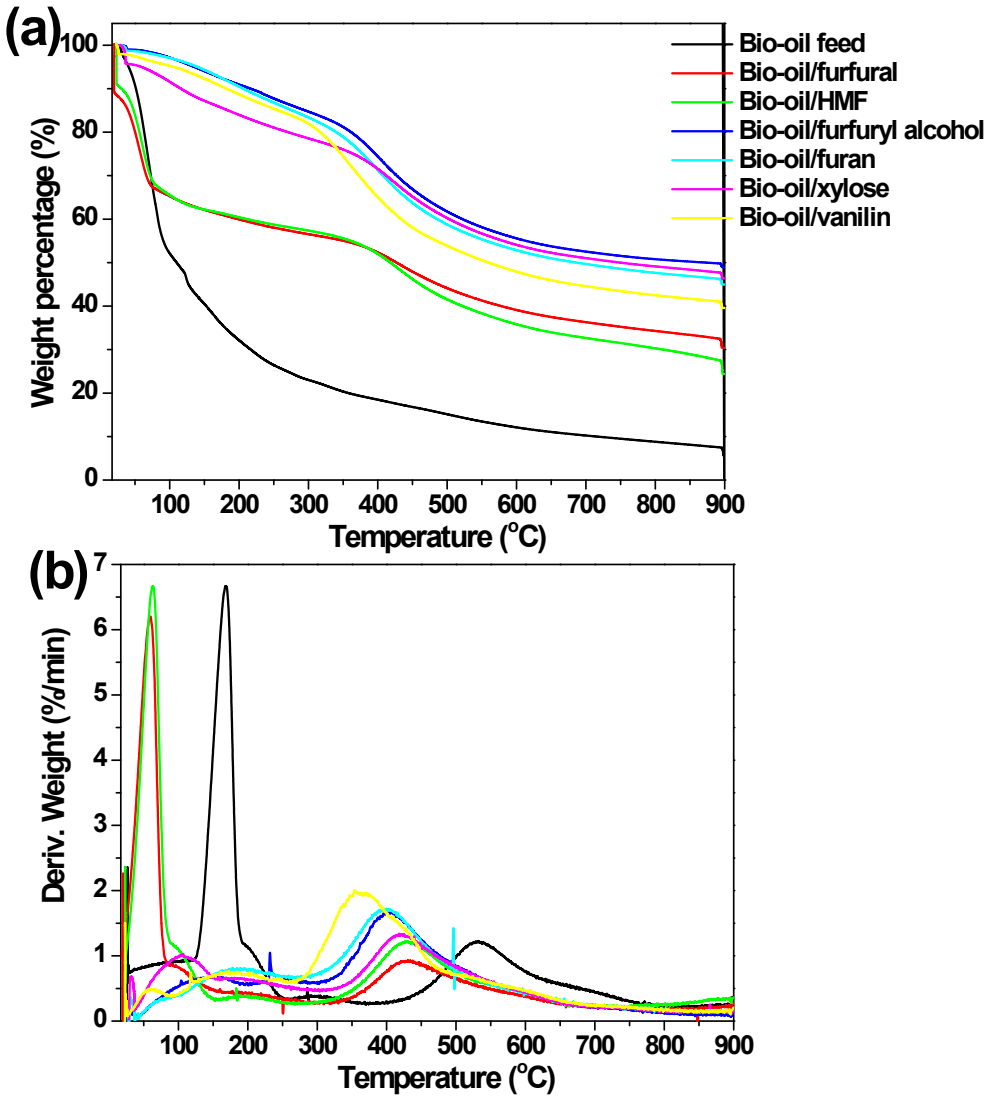



**Figure S9** TGA characterization of the polymer produced from the polymerisation of bio-oil with the different polymerisation agents at 250°C for 120 min.