

Electronic Supplementary Information

Valorisation of Waste to Yield Recyclable Composites of Elemental Sulfur and Lignin

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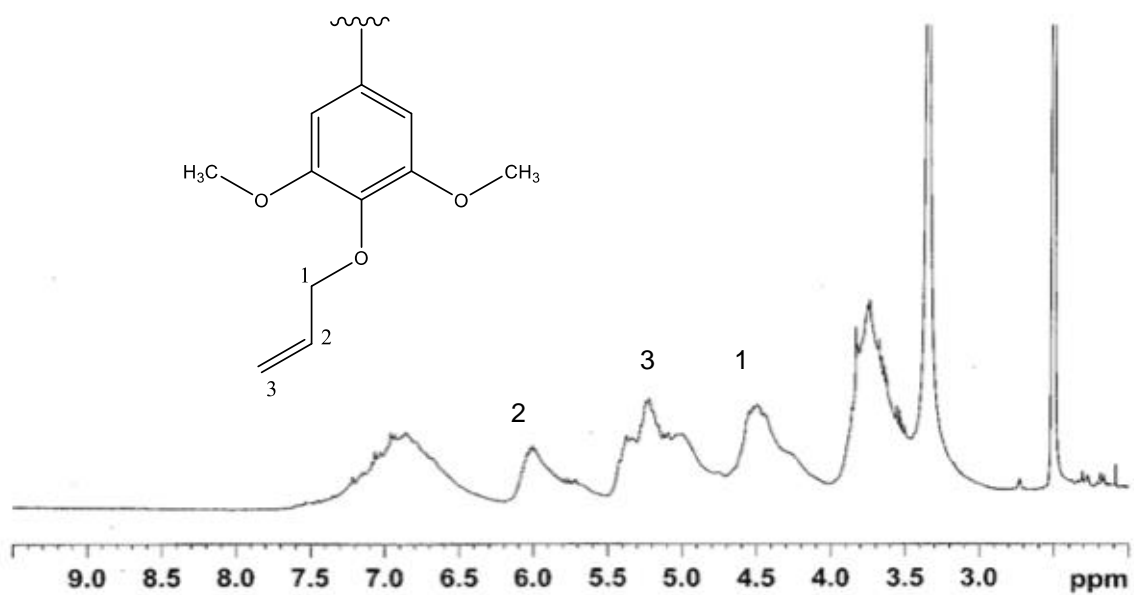


Fig. S1 ¹H NMR Spectrum of allyl lignin.

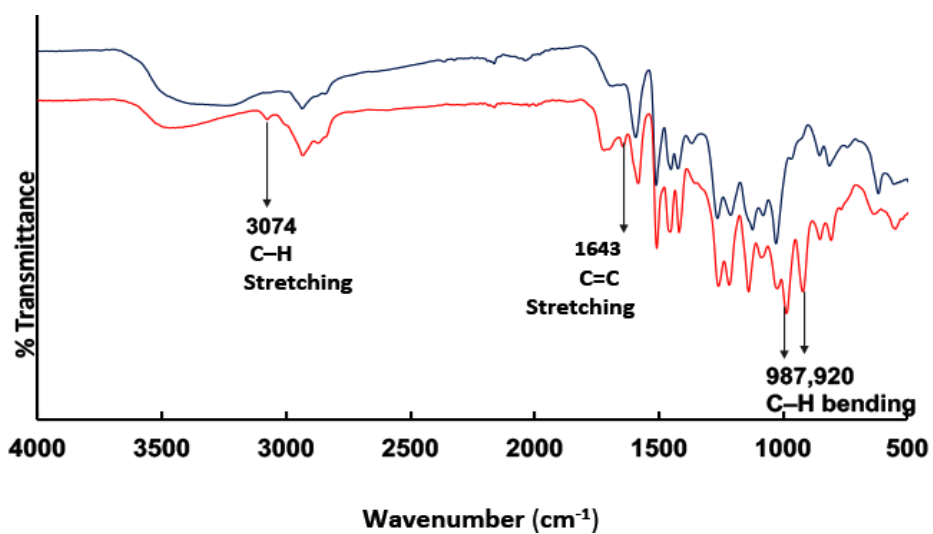


Fig.S2 FTIR spectra of reference (blue color) and allyl lignin (red color)

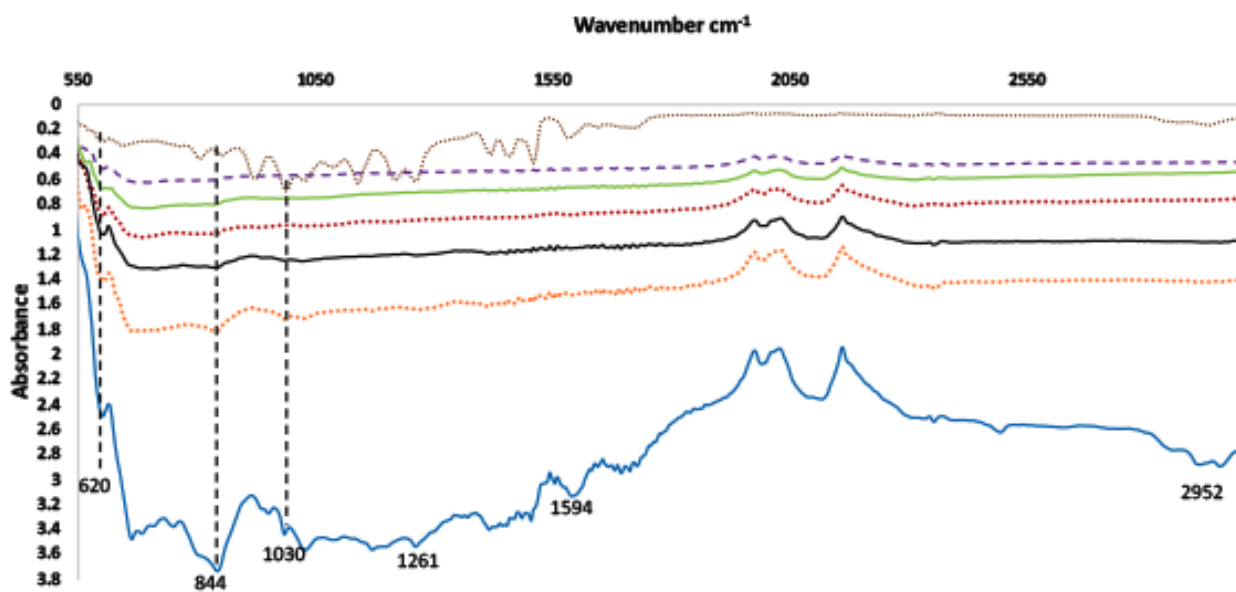


Fig.S3 IR Spectra of composite materials LS₈₀ (blue solid line), LS₈₅ (purple dashed line), LS₉₀ (orange dashed line), LS₉₅ (black solid line), LS₉₉ (red dashed line), sulfur (green solid line)

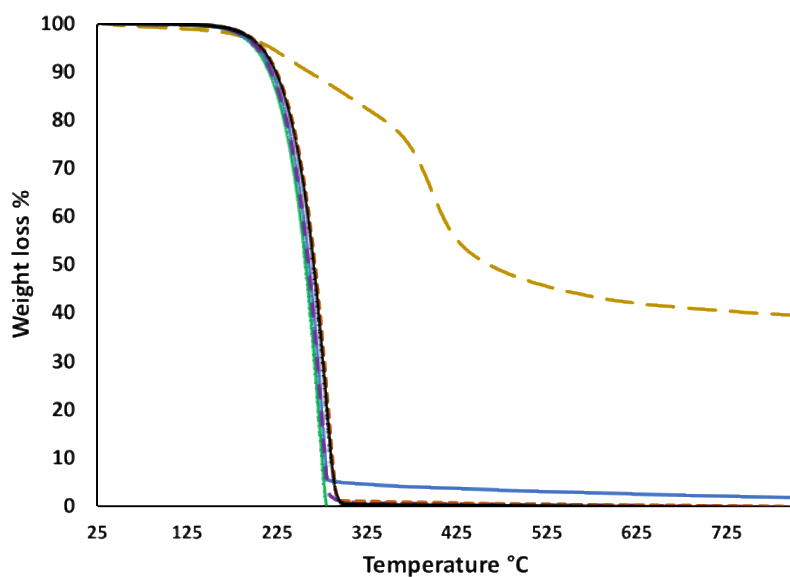


Fig. S4 TGA curves of prepared composite materials. Allyl lignin (yellow dashed line), LS₈₀ (blue solid line), sulfur (green solid line)

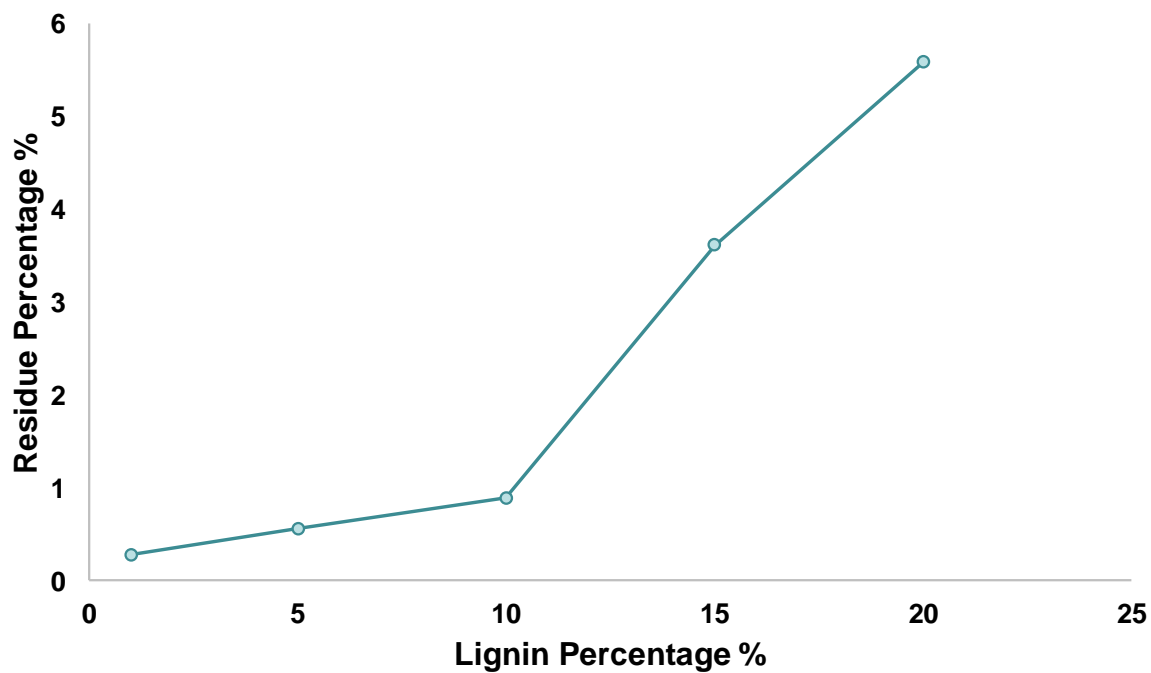


Fig. S5 The graph showing residue percentage remaining after heating to 800 °C in TGA experiments versus the weight percent of lignin in monomer feed

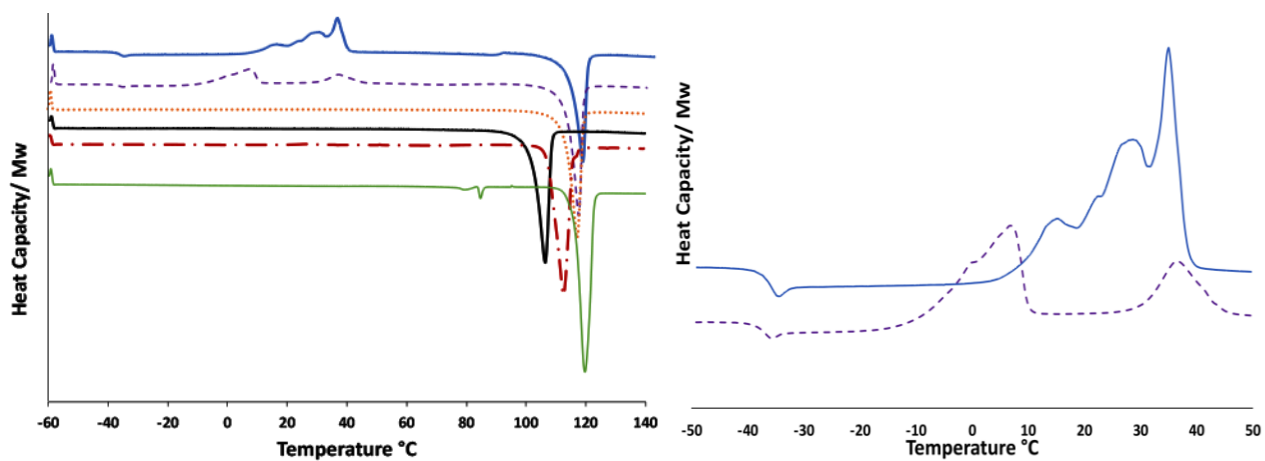


Fig. S6 a) DSC curves of LS₈₀ (blue solid line), LS₈₅ (purple dashed line), LS₉₀ (orange dashed line), LS₉₅ (black solid line), LS₉₉ (red dashed line), sulfur (green solid line) b) enlarged view of DSC curves of LS₈₀ (blue solid line) and LS₈₅ (purple dashed line) showing T_g and cold crystallization peaks.

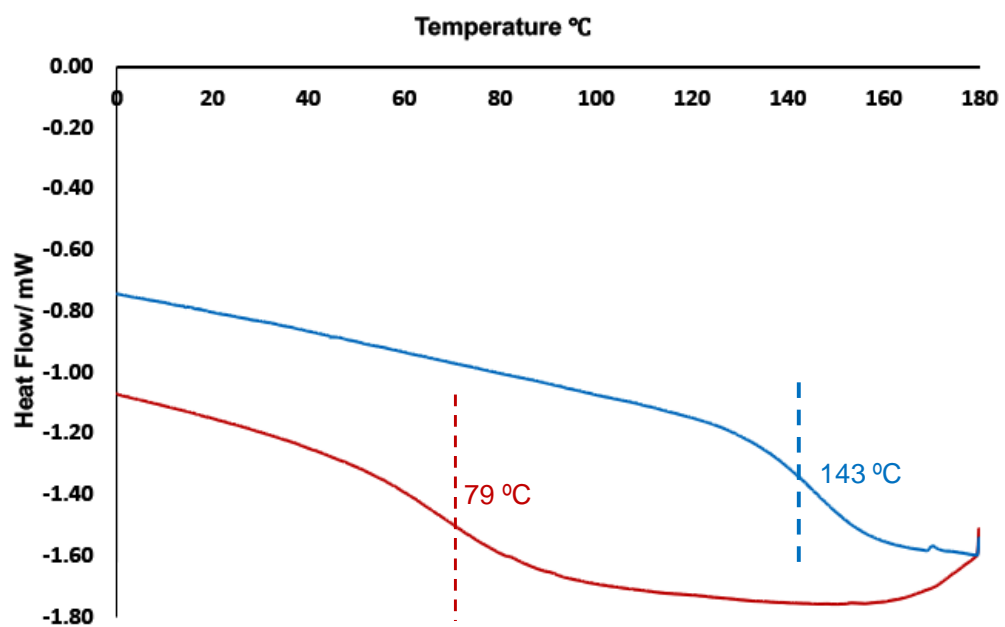


Fig. S7 DSC data for allyl lignin (red line) and reference lignin (blue line). The T_g values are marked for clarity.

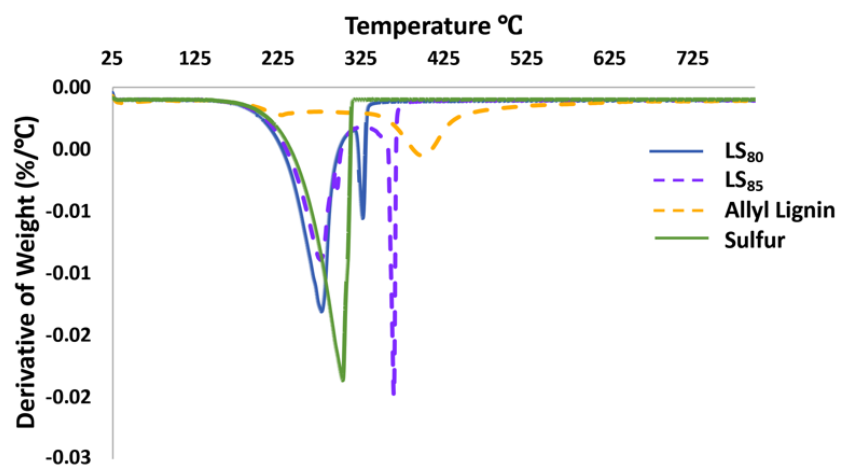


Fig. S8 DGA curves for data presented in Figure 3 of the manuscript