

Article

Poly(lactic acid) Composites with Lignin and Nanolignin Synthesized by In-Situ Reactive Processing

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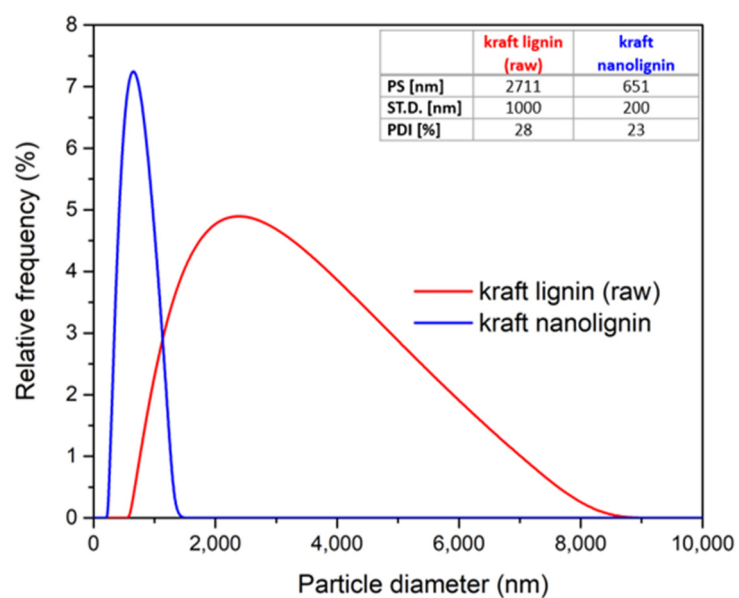
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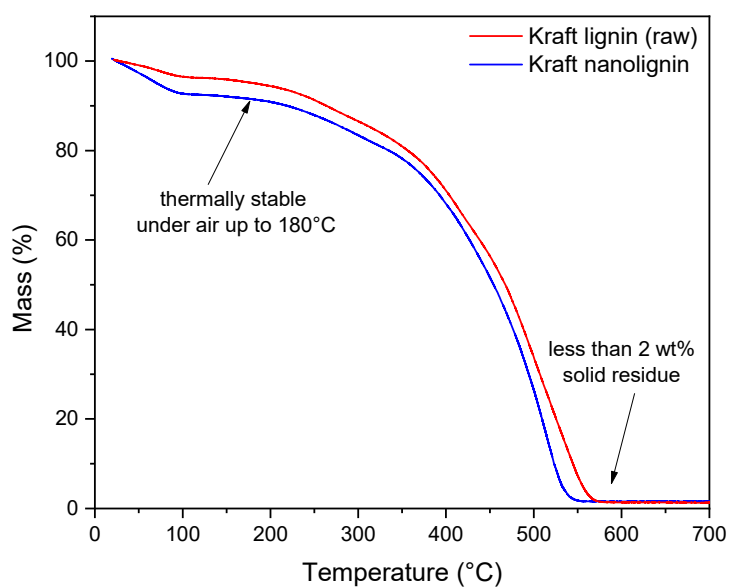
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Supplementary Materials

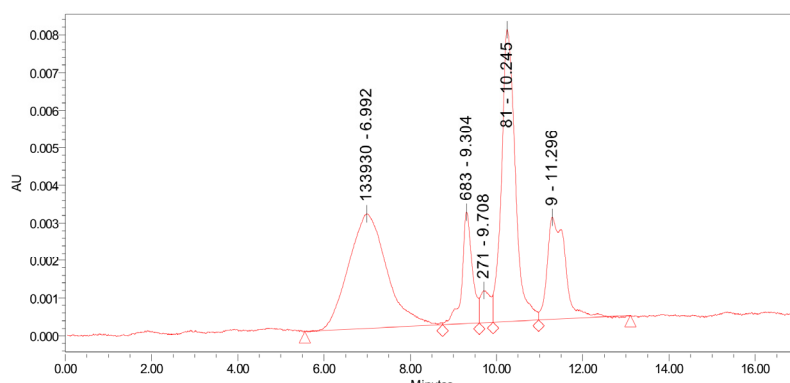


(a)

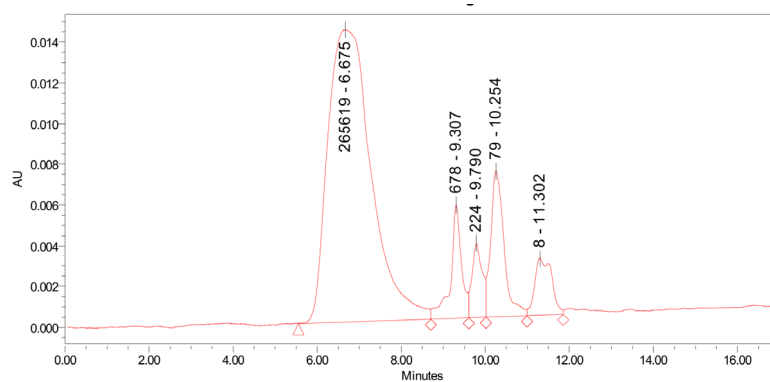


(b)

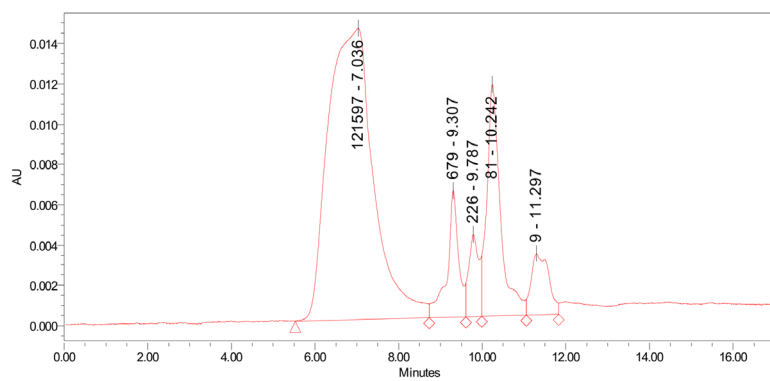
Figure S1. (a) Particle size distribution curves and (b) TGA curves of kraft lignin and nanolignin.



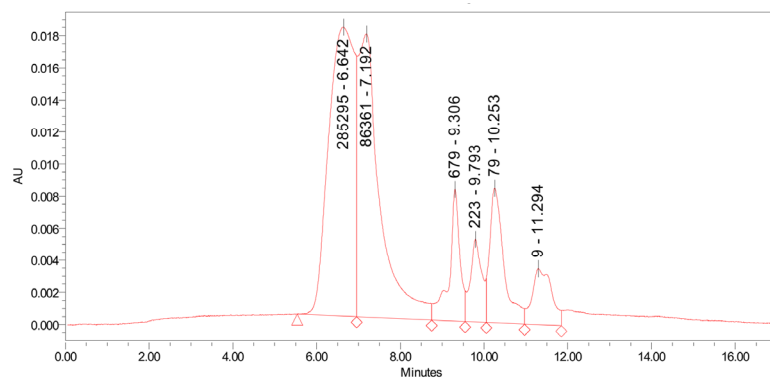
PLA ROP



PLA ROP L



PLA ROP L C



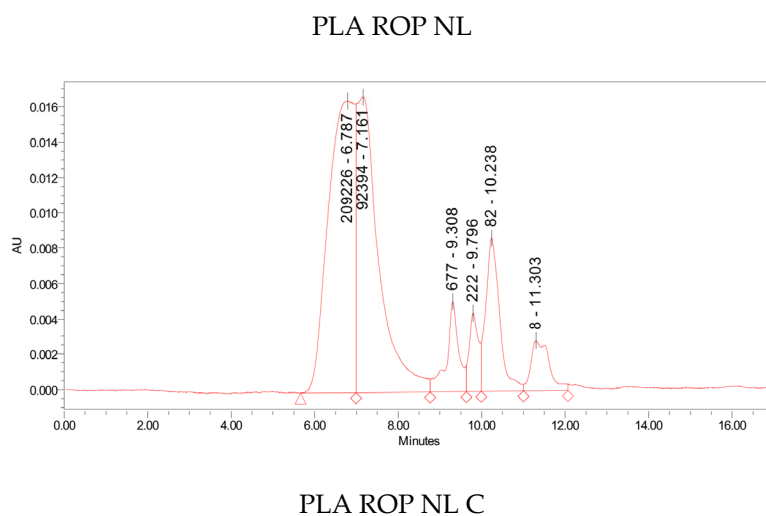


Figure S2. GPC chromatographs of PLA and its composites with lignin and nanolignin prepared by reactive processing.

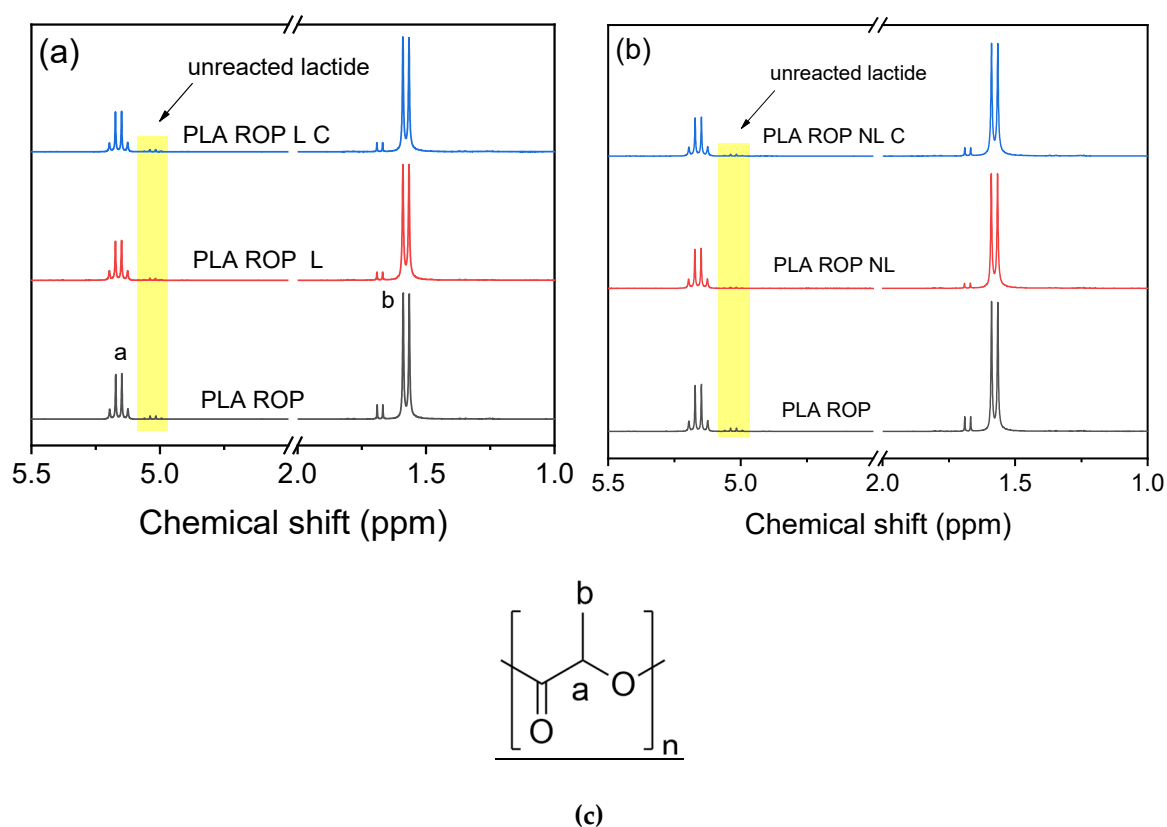


Figure S3. ^1H NMR spectra of ROP PLA with 0.5% (a) lignin (b) nanolignin, (c) peak assignments.

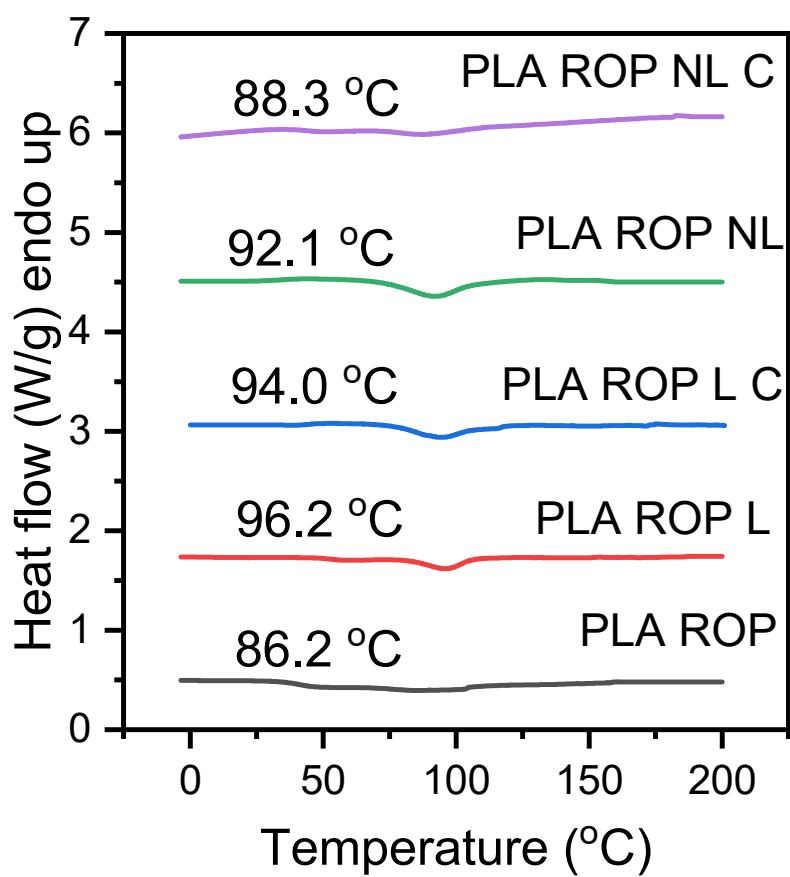


Figure S4. Cooling DSC scans of the PLA ROP composites (rate 10 °C/min).

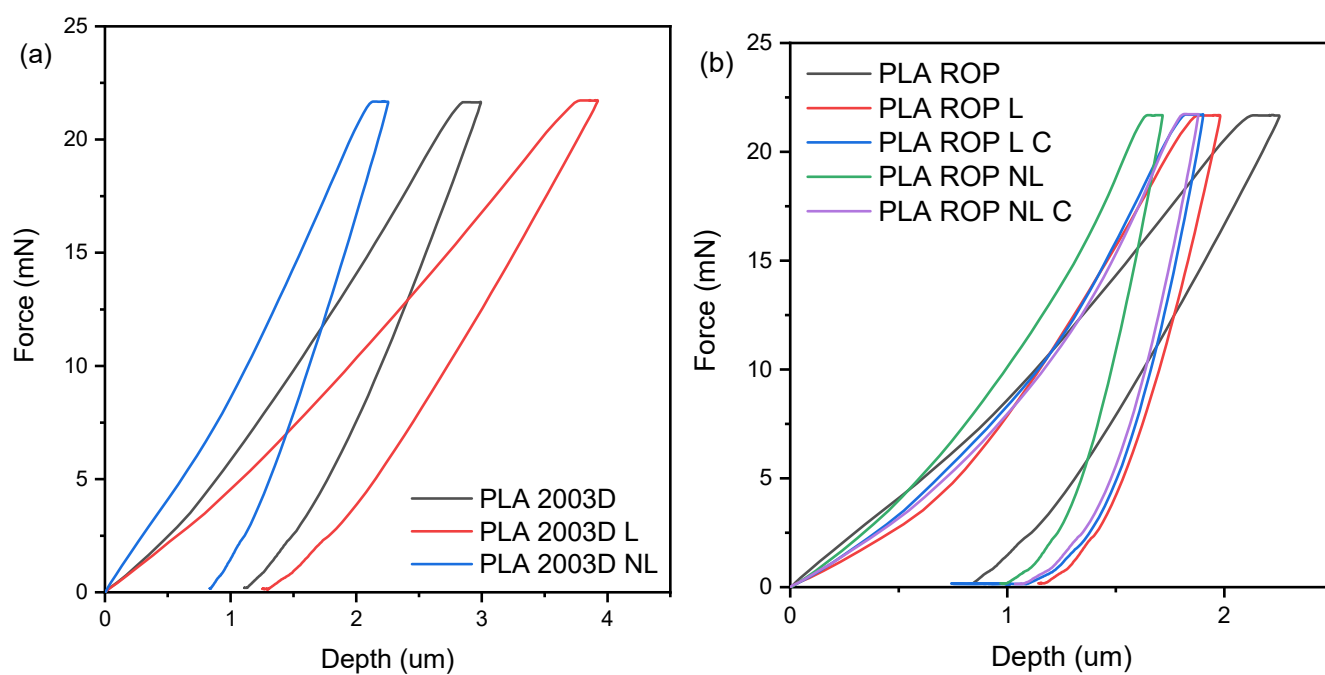


Figure S5. Force-depth curves of PLA composites with lignin and nanolignin prepared by (a) melt compounding and (b) reacting processing.