Electronic Supplementary Material (ESI) for RSC Advances.

Comparative Study of Extrinsic Properties of Poly(Lactic Acid)-Based Biocomposites Filled With Talc Versus Sustainable Biocarbon

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Supplementary Results:

From the cross-sectional images of the PLA composite sheets, the dispersion of the fillers can be seen. The talc shows random dispersion throughout the matrix with layer-by-layer agglomeration, as seen by the larger white particles present in Figure S1. As for the PLA/BC sample the biocarbon fragments are seen protruding from the surface in several directions that are not well dispersed within the PLA matrix. As for the 24-hour ball-milled biocarbon the particles are quite uniformly scattered within the polymeric matrix but have a larger interparticle spacing than that of the talc-filled sample. These variations in particle dispersion are responsible in part for the barrier performance of the composites as the talc provides the most tortuous path.

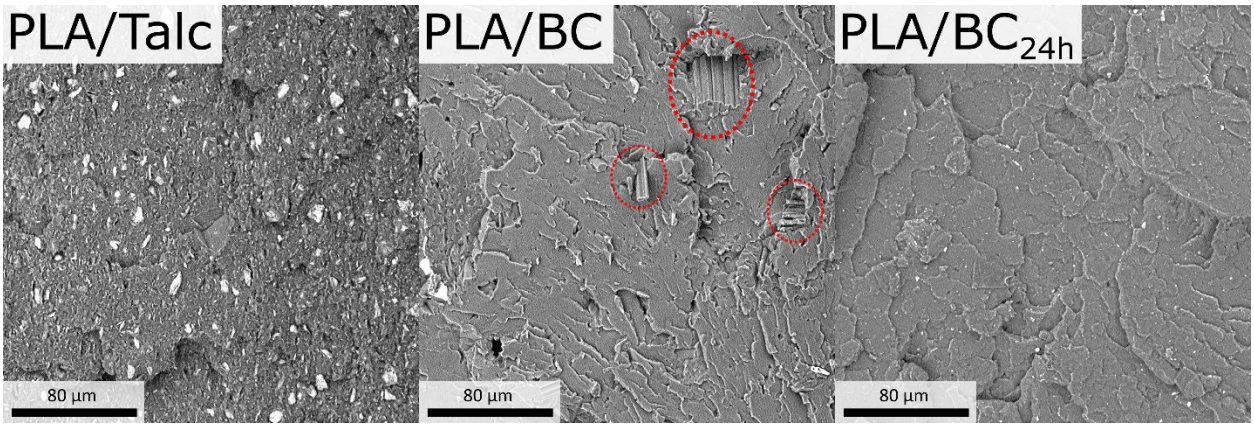

Figure S1. SEM cross-section of the PLA composites.