

Supplementary File

Development and characterization of water hyacinth reinforced thermoplastic starch as sustainable biocomposites

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1. FESEM analysis TPS-WHF composites

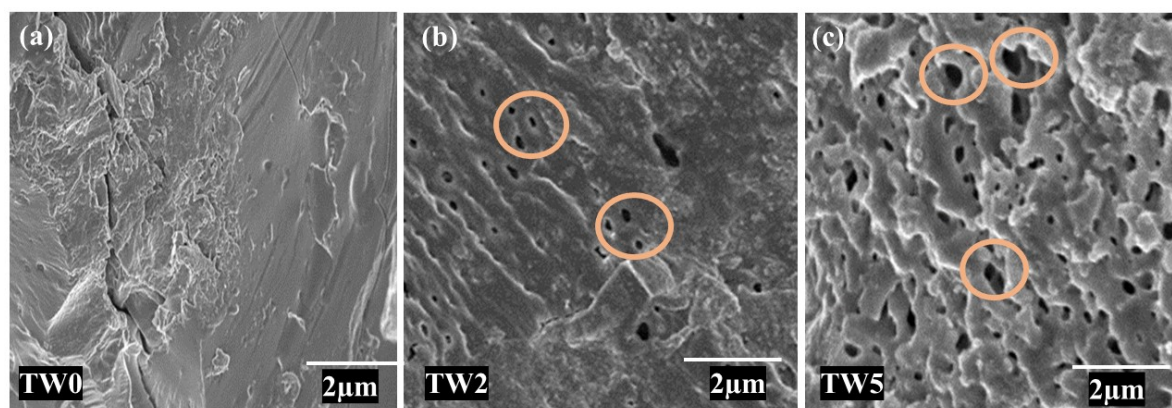


Fig. S1: FESEM images of (a) TW0, (b) TW2, and (c) TW5 composites.

The increase in porosity upon the addition of WHF filler can be attributed to factors such as enhanced moisture uptake and biodegradability. These porous structures, however, were also crucial in making the TW composites harder, more brittle, and more impact-resistant compared to the soft and flexible neat TPS (TW0), thereby supporting the manufacturing of single-use utility products. However, further increases in WHF loading led to higher porosity, causing the TW5 composite to perform poorly in terms of comparative mechanical properties.