

## Characterization of polypropylene composites with wood flours hydrophobized by vegetable oils

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Wood plastic composites are widely used because they are eco-friendly and economic. In this study, hydrophobization of wood flour by soybean or palm oil was performed first to improve its compatibility to hydrophobic polypropylene (PP) and it was confirmed by compatibility test, FTIR and TGA. Then PP composites with 20 wt.% of neat or one of the hydrophobized wood flours were prepared by melt-blending followed by compression molding, and they were characterized by impact test, tensile test, water absorption test, crystallinity and morphology. The hydrophobization improved the interfacial bonding between the PP matrix and wood flour, thus mechanical properties and crystallinity of the composites. There were positives for each, for example, palm oil was better for impact strength and soybean oil was better for tensile strength.