

## Preparation and Physical Properties of Wood/Polypropylene/Clay nanocomposites

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In recent years, wood plastic composites (WPCs) are attracting a lot of interests because they are economic, environmentally friendly, and show fairly good performance. To improve the performance of the WPCs an organoclay was incorporated as a nanosize filler. WPCs were prepared by melt-blending followed by compression molding. Maleic anhydride polypropylene copolymer (MAPP) was used to increase compatibility between the PP matrix and wood particles and also improve the dispersion and intercalation of the organoclay in the PP matrix. The physical properties of the WPCs were measured by UTM, izod impact tester, DMA, DSC, TMA and TGA. The PP matrix of the nanocomposites showed intercalated structure according to XRD data. The SEM images of the WPCs with MAPP showed strong interfacial adhesion. The degree of water absorption increased with immersion time, but it could be restrained by incorporating MAPP. Most physical properties of the WPCs were improved slightly by the incorporation of the organoclay.