Abstract

One of the most important properties of wood-plastic composite production capability is recyclable. Due to the growing trend of product recovered and returned again to the production cycle of economic and environmental products is very important. This study research focues on the influence of one and twice recycling HDPE wood plastic that it is made from hardwood flour as filer and nanoclay as additives. Specimens are fabricated with raw materials in powder form, flat perss processing and under laboratory conditions. To estimate the effect of recycling, in interaction with the main aim of nanoclay and wood flour as secondary objective, physical and mechanical properties after each processed are measured and amounts of nanoclay in three levels (0, 2 and 4%), based on the weight of cellulosic fibers and wood flour in three levels (40, 50 and 60%) based on total weight of the sample were selected as variables. The results showed that the effect of nano clay particles in each test stage, Causes decreased Physical and increased mechanical properties. also nanoclay effect kept on during the recycling process. with increasing filler Physical properties increased And by increasing the filler flexural strength, flexural modulus and tensile strength reductioned and tensile modulus increasesed. Recycling wood-plastic once and twice has effect favorable on the physical properties and Recycling reduces the mechanical properties of the composites.

Key words : **Recycling, Nanoclay, Wood plastic composite, High density polyethylene**

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Recycling effects on the properties nanoclay reinforced high density polyethylene composite

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