

Conventional agro-composites from chemically modified fibres

Abstract

The effect of chemical modification on the performance of agro-composites made from non-toxic chemically modified MDF fibres from oil palm empty fruit bunches and phenol formaldehyde as matrix were investigated. Four types of composite boards were produced (extracted; non-extracted; acetylated; propionylated) and mechanical and physical properties were compared accordingly. Evidence of modification was indicated by increased of weight and was confirmed by Fourier transform infrared analysis (FT-IR). The modification enhanced the composites properties, while unmodified MDF fibres composite showed lower mechanical properties and higher water absorption. The changes in mechanical properties followed the order: acetylated (highest) > propionylated > extracted > non-extracted (lowest). However, water absorption showed different phenomena, the changes followed in the order: extracted (highest) > non-extracted > propionylated > acetylated (lowest). © 2007.