

Fabrication and Evaluation of Particleboards from Oil Palm Fronds Blend with Empty Fruit Bunch Fibre

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Abstract : The aim of this study is to investigate physical and mechanical properties of experimental particleboards manufactured from mixing the oil palm fronds particles with empty fruit bunch fibers. Variables were two blending ratios (100:0 and 70:30), press temperature (160°C and 180°C) and press time (180 and 300 s). Experimental boards with a target density of 750 kg m⁻³ were manufactured from these two particles and fibers blended with urea formaldehyde resin and compressed into targeted thickness. The effect of these manufacturing conditions on bending strength, internal bonding, water absorption and thickness swelling were determined. From this research, it can be concluded that hybridization of fibers with fronds particles improved some properties of particleboard. Empty fruit bunch fibers and fronds particleboard showed better modulus of rupture and internal bonding than fronds particleboards.

Keywords : oil palm fronds, empty fruit bunch, particleboards, chemistry, environment

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