

**Study of the Thermal and Mechanical Properties of a Polypropylene Composite with Curaua  
Fibers Irradiated with Gamma Radiation**

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This work is concerned with the study of thermal and mechanical behavior of glass fiber and curaua fiber reinforced polypropylene composites. The treatment of the curaua fibers was executed in alkaline solution (10% wt NaOH). After the treatment, the fibers were washed with neutral detergent and dried up in stove. A coupling agent was used (maleic anhydride) with 2% in weight to increase the adhesion of the fiber/matrix interface. This composite was irradiated with gamma radiation in the doses of 5, 15 and 30 kGy for observe changes in the adhesion between the fibers and the matrix. The thermal behavior was evaluated using DSC and TGA. The Mechanical behavior was evaluated using tensile strength was used to compare different composites with those of non-reinforced polypropylene resin. The morphology of the fracture surface of the composites was observed using scanning electron microscopy (SEM).

Keywords: Polypropylene, composites, SEM, curaua fibers, gamma radiation.