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Flexural and morphology properties of rHDPE/BF composites: Effect of surface modification of bamboo filler by NaOH treatment

Abstract

This study is about the effect of alkaline treatment on bamboo filler reinforced with recycle high density polyethylene (rHDPE) composites. The alkaline treatment was done by sodium hydroxide (NaOH) at three different concentrations (2.5 wt.%, 5.0 wt.% and 7.5 wt.%) for two hours at room temperature. The bamboo filler and rHDPE was compound with the extrusion method and the granule was form. The granule of rHDPE/bamboo filler composites was inject by using injection molding to produce the sample of end product. The samples of rHDPE/bamboo filler was tested using conventional universal testing machine. Field emission electron microscopy (FESEM) was used to analyze the morphology of filler and Fourier Transform Infrared Spectroscopy (FTIR) for characterization of functional group in the filler and composites. The result showed that the flexural properties of rHDPE/bamboo filler composites were slightly affected by the alkaline treatment on the bamboo filler.