ABSTRACT

The main aim of the work was to develop new polymer hybrid composite material with thermal resistive and inform the researchers, don’t stop research on composites and to find more composite materials with reinforced natural fibers for replacement metal with composite materials of high thermal resistive, significant strength to weight ratio, low density, high toughness, chemical resistance, dielectric strength and biodegradable composite. In this present research work two different hybrid composites such as treated and untreated cow dung fibers by adding glass fiber were fabricated with polyester and effect of alkali treatment of the cow dung fibers on these properties were studied. It was observed that, tensile strength, modulus, impact strength, dielectric strength, compressive and flexural strength, Hardness, chemical resistance. Void content and decreasing of thermal conductivity of the hybrid composites increases with increase of cow dung percentage of weight to the constant glass fiber content. These properties found to be higher when alkali treated cow dung fibers were used in the hybrid composites. The eradication of amorphous hemi-cellulose with alkali treatment leading to higher crystalline of the cow dung fibers with alkali treatment might responsible for these observations. Scanning electron microscope (SEM) was also conducted on the cross sections of fractured surfaces.