STUDY OF IONIZING RADIATION EFFECT ON THE PROPERTIES OF POLYAMIDE 6 WITH GLASS FIBER REINFORCEMENT

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ABSTRACT

It is more and more common the use of polymers reinforced with glass fiber in the national market. These compounds perform a good tension resistance, to the impact and the humidity absorption being also at the present time used in the automobile industry in parts underneath the hood, especially in the radiator frames. It is resistant to thermal aging in ethanol, methanol and gasoline, besides performing better mechanical properties than many metallic parts. The aim of this work is to study the effect of ionizing radiation on properties of polyamide 6 with glass fiber reinforcement, undergone to different radiation doses. Samples were prepared and irradiated on JOB 188 accelerator with an electron beam energy of 1.5 MeV in air with doses of 100, 200, 300, 500 and 600kGy and a dose rate of 22.1 kGy/h. Afterward, the properties of the non-irradiated and irradiated polyamide 6 with glass fiber reinforcement were evaluated.