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Not all allotropes of carbon are famous like it’s nanotubes as a reinforcing material. In this study, we used an allotrope that is not often used, it is thermally expanded graphite. The aim of this work is the study of the thermal properties of a nanocomposite of fluoroplastic with additions of thermally expanded graphite.

The samples of the reinforced polymer differ by the distribution of the TEG, one has a distribution D<60 and the second 60<D<100. The shapes of the samples allowed us measures by two axes, (X) and (Z).

The dilatomertic curves of the direction (X) for the two samples have similar shapes. A dilatometric anomaly is present at around 210°C for both of the samples, it is twice as intense in the curve of the second sample. For the direction of analysis (Z), the shapes of the curves have an opposite behavior. The first is linear and steady until it reachs 70°C, then it increases non-stop. While, the second is decreasing from the start of the analysis and keeps on decreasing.

The representative curves of the coefficient of thermal expansion **a** are similar for the first direction of analysis (X). an anomaly appears around 210°C, it is attribueted to a glass transition. The curves of the second direction of analysis (Z) share the positions of the anomalies, but their shapes are so different. The first one is almost linear, the anomaly starts at around 60°C and ends at 150°C. The second curve is more similar to those of the first direction (X) added two anomalies at 60°C and 150°C.

Though the curves of the differiental scanning calorimetry (DSC) have shapes that are alike, they are offset from one another. The two anomalies presents in these curves are more intense for the second sample.