**Calorimetric and thermogravimetric study of aluminum reinforced with thermally expanded graphite**

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In order to study the thermal properties of aluminum reinforced by thermally expanded graphite (GTD), differential scanning calorimetry (DSC) and thermogravimetric (TGA) were used. The GTD was dispersed in the aluminum matrix by these parameters 63-100µ, 100-160µ, and 160-200µ. The DSC curves of this aluminum nanocomposite are different from those of alloys or other nanocomposites reinforced by carbon nanotubes. All three samples exhibit the anomalies in the DSC curves at around the same temperatures, although the sample with the smallest dispersion parameter is very different from the other samples.

The TGA curves are identical in shape and almost overlapping if it weren’t for the difference in the intensity of the peaks. The sample with the lowest parameter of dispersion (63-100µ) has the least intense peaks, the low dispersion may be the cause of the mild oxidation in the sample