204-007

THERMAL CHARACTERIZATION OF POLYESTER MATRIX COMPOSITES REINFORCED WITH EUCALYPTUS FIBERS

Oliveira, C.G.(1); Neves, A.C.C.(1); Fernandes, G.V.(1); Ferreira, M.V.F.(1); Muylaert, F.M.(2); Monteiro, S.N.(3); Pontes, L.A.(1);

Universidade Estadual do Norte Fluminense Darcy Ribeiro(1); Universidade Estadual do Norte Fluminense Darcy Ribeiro(2); Universidade Estadual do Norte Fluminense Darcy Ribeiro(3); Universidade Estadual do Norte Fluminense Darcy Ribeiro(4); Faculdade Redentor(5); Instituto Militar de Engenharia(6); Universidade Estadual do Norte Fluminense Darcy Ribeiro(7);

Recently, much has been investigated about alternative materials. In this area, polymeric matrices composites reinforced with lignocelullosic fibers has a great importance, such as the composites reinforced with eucalyptus fibers. The facts that make natural fibers a great option are their environmental advantages and relatively low cost. In the case of eucalyptus, it has also a large cultivation in Brazil. Besides that, the natural fiber presents interfacial characteristics that favor the mechanical properties by the composite structure when incorporated to polymeric matrices. This present work aims to characterize the polyester matrix composites reinforced with eucalyptus fibers through the thermogravimetric (TG) curves and its detivative (DTG) and differential scanning calorimetry (DSC) analysis. The samples of polyester matrix composite reinforced with 10, 20 and 30% in volume fraction of eucalyptus fibers incorporation were prepared and forwarded to the thermal tests. The results shows two mass losses which occurs around the temperature of 360ºC and 410ºC, both of them probably associated with the polymer chains degradation. Moreover, the increase of amount of eucalyptus fibers did not significantly modifies the thermal stability of the material.