COMPARATIVE DIFFERENTIAL SCANNING CALORIMETRIC TESTS OF EPOXY AND POLYESTER COMPOSITES REINFORCED WITH BAMBOO FIBERS OF THE SPECIMEN DENDROCALMUS GIGANTEUS

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Resumo:
Despite the benefits of the use of natural fiber instead the synthetic ones in composites, there are some limitations that still consists a challenge to the use of this type of material. Among the disadvantages associated with the use of natural fibers, specially those lignocellulosic obtained from plants, the low thermal resistance is a limitation to the use as reinforcement in composites subjected to temperatures above 100°C. The hydrophilic nature of lignocellulosic fibers causes the evaluation of absorbed water at this temperature to produce pores and flaws in the composite polymer matrix. The objective of the present work was to conduct a comparative differential scanning calorimetric investigation between polyester and epoxy matrixes composites incorporated with different volume fractions of giant bamboo fibers. It was found a substantial loss of mass up to 500°C. The DSC curves revealed a variation in the enthalpy as a function of the giant bamboo fiber fractions.