

Abstract Submitted  
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**Influence of carbon nanotubes diameter on thermal conductivity of polyester based nanocomposites** ROMEO DE COSS-MARTÍNEZ, GRACIELA INÉS QUIÑONES-WEISS, JAZMÍN ANELY DOPORTO-VALLADARES, Facultad de Ingeniería de la Universidad Autónoma de Yucatán, CARIDAD GUADALUPE VALES-PINZÓN, Department of Applied Physics, Cinvestav-Mérida, MIGUEL ÁNGEL ZAMBRANO-ARJONA, JOSÉ ÁNGEL MENDEZ-GAMBOA, RUBÉN ARTURO MEDINA-ESQUIVEL, Facultad de Ingeniería de la Universidad Autónoma de Yucatán, JUAN JOSÉ ALVARADO-GIL, Department of Applied Physics, Cinvestav-Mérida — Carbon nanotubes (CNTs) are considered good candidates to improve the physical properties of polymeric materials. It is well known that CNTs have one of the highest thermal conductivities in nature. However, it has been found that thermal resistance between polymer matrix and CNTs, at nanometric scale, could imply a disadvantage to obtain high thermal conductivity nanocomposites. In this work, the effect of CNTs diameter on the effective thermal conductivity of composites based on polyester resin is studied. In particular, the effects of CNT's diameter and volume fraction are analyzed. The thermal conductivity of the nanocomposites is obtained determining the thermal diffusivity by photothermal radiometry and from the values of their specific heat capacity.

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