

## عنوان مقاله:

Assessment of Thermal and Electrical Properties of Graphene based poly (ethylene 2, 6-naphthalate)  
Nanocomposites Prepared by Melt Mixing

## محل انتشار:

دوازدهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1395)

تعداد صفحات اصل مقاله: 3

## نویسندگان:

A Ghadami - *Department of Chemical Engineering, Faculty of Engineering, Central Tehran Branch, Islamic Azad University, Tehran, Iran*

M Ehsani - *Department of Polymer Engineering, Faculty of Engineering, South Tehran Branch, Islamic Azad University, Tehran, Iran*

.H.A Khonakdar - *Department of polymer processing, Iran Polymer and Petrochemical Institute, Tehran, Iran*

## خلاصه مقاله:

In the present work, thermal and electrical properties of melt- processed poly (ethylene 2, 6-naphthalate) (PEN) / graphene nanocomposites were investigated. TEM observation indicated that graphene nanosheets exhibited a uniform dispersion in the matrix. The results of DSC showed that crystallization temperature of PEN enhanced by increasing nano concentration. Introducing graphene in addition to heterogenic nucleating results in reduction of crystallinity and crystallization rate of PEN. Also incorporation of graphene enhanced the thermal stability, Tg and Vicat softening temperature(VST) of composites. Moreover Electrical conductivity of PEN greatly improved by adding graphene. A high electrical conductivity of about 10<sup>-7</sup>S/cm was achieved with only 1.8 vol % of graphene. The superior electrical conductivity was attributed to the high aspect ratio, large specific surface area and uniform dispersion of the graphene nanosheets in PEN.

## کلمات کلیدی:

PEN-Graphene-Electrical-Thermal

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/578109>

