

## عنوان مقاله:

Mechanical and Thermal properties of New Polyimide/Nanocomposites Containing Sulfon moiety in the main chain including sulfonic acid-functionalized magnetic nanoparticles

## محل انتشار:

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## خلاصه مقاله:

In this work, sulfonic acid-functionalized magnetic nanoparticles (ASA-MNPs) were prepared. Then, a series of Nanocomposite consisted of organic polyimide and ASA-MNPs varying from 1 to 3 wt. % were successfully prepared by in situ polymerization. Polyimide used as a matrix of Nanocomposite was prepared through the reaction of benzophenone-3,3',4,4'-tetracarboxylic dianhydride and 3,3'-diamino diphenyl sulfone in N,N-dimethylacetamide (DMAc). The effect of ASA-MNPs on Mechanical and thermal properties of synthesized polyimide will be examined. Results showed that the addition of ASA-MNPs resulted in a substantial increase of the thermal stability and char yield of the Nano composites compared to those of the neat PI. Addition of the ASA-MNPs to 1 % (w/w) to polyimide film significantly improved the tensile strength, but as ASA-MNPs concentration increased to 3 % (w/w) to polyimide films decreased the tensile strength.

## کلمات کلیدی:

magnetic nanoparticles , Polyimide , Nanocomposite

## لینک ثابت مقاله در پایگاه سیویلیکا:

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