

## عنوان مقاله:

Effect of Component Ratio on Optical Properties of Nanocomposites of Ni-Fe Spinel Dispersed in Silica Matrix

## محل انتشار:

پنجمین کنگره بین المللی نانو و فناوری نانو (ICNN2014) (سال: 1393)

تعداد صفحات اصل مقاله: 3

## نویسندگان:

R Jafari - *Department of Color Physics, Institute for Color Science and Technology, Tehran, Iran*

M Gharagozlou - *Department of Nanomaterials and Nanotechnology, Institute for Color Science and Technology, Tehran, Iran*

## خلاصه مقاله:

In this paper, the effect of component ratio on optical attributes of nanocomposites of Ni-Fe spinels dispersed in silica matrix is investigated. In this way, various percentages of the nano-sized magnetic particles, i.e., 10%, 20%, 40% and 50%, are embedded in amorphous component. Then, the reflectance spectra of nanocomposites are measured over the visible spectrum to calculate the colorimetric properties of nanocomposites. Results show that by increasing molar ratio of Ni-Fe spinel nanoparticles in amorphous component, the lightness properties of nanocomposites decrease while the chroma attribute increase. It means that dispersion of more amounts of nano-sized magnetic crystals in amorphous network leads to darker and more saturated nanocomposites. The reflectance spectra of nanocomposites in different component ratio prove the colorimetric achievements. On the other hand, based on the achieved hue angles it seems that increasing of Ni-Fe spinel nanoparticles component does not lead to the significant variation in hue attributes of nanocomposites of Ni-Fe spinels.

## کلمات کلیدی:

Nanocomposites, Ni-Fe spinels, Silica, Reflectance spectra, Colorimetric attribute

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/397749>

