

عنوان مقاله:

Investigation the influence of the polarization of incident light on the transmission and absorption powers of Rhodamine B Dye in presence of Gold and Silver Nanoparticles

محل انتشار:

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خلاصه مقاله:

The influence of the polarization of incident light on the transmission and absorption powers of Rhodamine B dye with and without gold and silver nanoparticles are investigated. Type of orientation of incident light, cause to the variations of the transmission and absorption powers of dye and the results of this experiment is analyzed by Jones matrix. Because of the polarized incident light and dye's dipole moment at 45° polarization angle is not orientated, maximum transmission and minimum absorption of dye is occurred. However, minimum transmission and maximum absorption due to the orientation of the incident light and dipole moment of dye, at 0 and 90° angles, can be observed. Dipole-dipole interaction between Rhodamine B dye and nanoparticles at 45° polarization angle, lead to maximum variation of the Rhodamine B dye 'absorption. Results of the absorption spectra and powers show Rhodamine B dye-gold nanoparticles mixture is more appropriate than than Rhodamine B dye-silver nanoparticles mixture, which is used as gain medium of the random lasers

کلمات کلیدی:

Silver Nanoparticles, Gold Nanoparticles, Rhodamine B Dye

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