Full Paper

Effect of Medium Acidity and Photostability of 3-(4-Dimethylamino-phenyl)-1-(2,5-dimethyl-thiophen-3-yl)-propenone (DDTP): A New Green Emitting Laser Dye

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Abstract

On the line of a previous work on the spectral properties of some of heteroaryl chalcone, the effect of medium acidity and photoreactivity of 3-(4-dimethylamino-phenyl)-1-(2,5-dimethyl-thiophen-3-yl)-propenone (DDTP) has been investigated in dimethylformamide and in chloromethane solvents such as methylenechloride, chloroform and carbon tetrachloride. The dye solution (*ca*. 5×10^{-4} mol·L^{-1} in DMF) gives a good laser emission in the range 470–560 nm with emission maximum at 515 nm upon pumping by nitrogen laser (λ_{ex}=337.1 nm). The laser parameters such as gain coefficient (α),

emission cross section (δ_e) and half life energy ($E_{1/2}$) at maximum laser emission are also determined.

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