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Optical Properties of Metal–Dielectric Nanocompositesthin film (Al_2O_3:Cu)Produced by Pulsed Laser Deposition

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Abstract: We prepared Metal–Dielectric Nanocomposites thin film (Al_2O_3:Cu) Produced by Pulsed Laser Deposition with two different methods ,first is by doping Cu in Al_2O_3 with different concentrations of Cu .Second is embedded Cu in Al_2O_3 matrix , where deposited on glass substrate with different temperatures and different laser parameters (energy and pulses).Optical properties of thin films such as absorption, absorption coefficient, complex refractive indexof the films have been estimated .The absorption coefficient was determined from absorption measurements at room temperature in the wavelength range 300-500 nm. We study the effect of each of two methods on theses optical properties. We showed a new absorption peak at (590nm).
Key words : Al_2O_3:Cu,Metal–Dielectricnanocomposite, refractive index, PLD, optical Properties.

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