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Original research article

## Studying the surface morphology, optical and nonlinear optical properties of epoxy resin doped nickel nitrate film

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### A B S T R A C T

An epoxy resin doped nickel nitrate film was prepared by a casting method. By using an optical microscopy, Image J and origin 2008 software the surface morphology of the film was obtained. UV-vis spectrophotometer were used to obtain the absorbance and transmittance data of the prepared sample. These data were used to evaluate the reflectance, the extinction coefficient, the linear refractive index, the real and imaginary parts of the dielectric constant, the linear susceptibility, the third order susceptibility, and nonlinear refractive index, of the sample. The single-oscillator Wemple–DiDomenico model was used to determine the dispersion energy and the single oscillator energy. Due to the high values of the third order susceptibility, and nonlinear refractive index shown by the sample at wavelengths range 400–900 nm, it is expected that it might be used in various optoelectronics devices.