Structural and nonlinear optical properties of as-grown and annealed metallophthalocyanine thin films

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Résumé en anglais	The paper presents the Third Harmonic Generation investigation of four metallophtalocyanine (MPc, M = Cu, Co, Mg and Zn) thin films. The investigated films were fabricated by Physical Vapor Deposition in high vacuum onto quartz substrates. MPc thin films were annealed after fabrication in ambient atmosphere for 12 h at the temperature equal to 150 °C or 250 °C. The Third Harmonic Generation spectra were measured to investigate the nonlinear optical properties and their dependence on the structure of the thin film after the annealing process. This approach allowed us to determine the electronic contribution of the third-order nonlinear optical susceptibility $\chi^{<3>}_{elec}$ of these MPc films and to investigate two theoretical models for explanation of the observed results. We find that the annealing process significantly changes the optical and structural properties of MPc thin films.
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