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Non-linear Properties Measurement for Liquid Solution of α- Chlorophyll Dissolved in Acetone

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***Abstract*— The spectral properties and Z- scan technique were used to study the nonlinear absorption coefficient (β) and nonlinear refractive coefficient (n2) of α- Chlorophyll dye solutions. A (100 mW) Neodymium- doped Yttrium Garnet (Nd: YAG) continuous laser (CW) with second harmonic generate at wavelength (532 mW) was used to evaluate open and closed z-scan setup. It is shown that the n_2, β, and $\chi^{(3)}$ is of the order of 10^{-12}, 10^{-2} and 10^{-10} respectively.**

***Index Terms*— Photovoltaic; Solar System Design; Optimization; HOMER; Baghdad City**

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