



Image storage in coumarin-based copolymer thin films by photoinduced dimerization

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Auteur	Gindre, Denis [1], Iliopoulos, Konstantinos [2], Krupka, Oksana [3], Champigny, Emilie [4], Morille, Yohann [5], Sallé, Marc [6]
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Résumé en anglais	We report a technique to encode grayscale digital images in thin films composed of copolymers containing coumarins. A nonlinear microscopy setup was implemented and two nonlinear optical processes were used to store and read information. A third-order process (two-photon absorption) was used to photoinduce a controlled dimer-to-monomer ratio within a defined tiny volume in the material, which corresponds to each recorded bit of data. Moreover, a second-order process (second-harmonic generation) was used to read the stored information, which has been found to be highly dependent upon the monomer-to-dimer ratio.
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Liens

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