



## Novel pendant azobenzene/polymer systems for second harmonic generation and optical data storage

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Titre	Novel pendant azobenzene/polymer systems for second harmonic generation and optical data storage
Type de publication	Article de revue
Auteur	Spiridon, Mitica Cezar [1], Iliopoulos, Konstantinos [2], Jerca, Florica Adriana [3], Jerca, Valentin Victor [4], Vuluga, Dumitru Mircea [5], Vasilescu, Dan Sorin [6], Gindre, Denis [7], Sahraoui, Bouchta [8]
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Mots-clés	Azo-monomer; SHG microscopy; Side-chain azo-polymer; H-aggregates; Nonlinear optics (NLO); Chromophore-chromophore aggregation [9]
Résumé en anglais	<p>New poly(methyl methacrylate)s bearing push-pull azo-moieties, with the azo-dye content ranging from 31 wt% to 100 wt%, are synthesized by (co)polymerization of a methacrylamide-based azo-monomer. The high reactivity of the colored monomer allowed well-balanced structures to be achieved, characterized by a suitable thermal stability. The second harmonic generation efficiency of the poled samples is investigated by means of the SHG Maker fringes setup. Features that hinder the translation of the azo-moiety optical nonlinearity in the material at the macroscopic level are debated. The results underline the role of chromophore-chromophore and chromophore-polymer interactions on the alignment of the azo-moieties. The polarity of the polymer matrix is proven to influence the chromophore-chromophore interactions. Two-photon absorption is employed for gray scale encoding of second harmonic signals on poled thin films, thus pointing out the possibility to employ these new materials for optical data storage applications.</p>
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### Liens

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