



Study of surface relief gratings on azo organometallic films in picosecond regime

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Résumé en anglais	<p>Materials for optical data storage and optical information processing must exhibit good holographic properties. Many materials for these applications have been already proposed. Here we describe a grating inscription process characterized by short inscription time and long-time stability. A series of ruthenium-acetylide organometallic complexes containing an azobenzene fragment were synthesized. Photo-induced gratings were produced by short pulse (16 ps, 532 nm) laser irradiation. The surface relief gratings formed at the same time were observed by atomic force microscope. In this work, we highlight the short inscription times brought into play as well as the good temporal stability of these gratings stored at room temperature. We study the influence of the polarization states and the light intensity of writing beams on the dynamics of the surface relief gratings formation and we compare these results with those of a known representative of azobenzene derivative (Disperse Red 1). Lastly, we show that it is possible to write two-dimensional surface relief gratings.</p>
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