Photonic applications of photochromic molecules.

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Streszczenie

We present results of studies of the systems containing photochromic molecules, for all-optical switching and amplified spontaneous emission applications. The systems consisted of: a) deoxyribonucleic acid doped with different photochromic molecules like Disperse Orange 3 or spiropyranes, and b) photochromic molecules of 4-heptyl-4'- methoxyazobenzene showing nematic liquid crystalline properties close to the room temperature (above T = 34° C). Experiments of dynamic birefringence switching were done in Optical Kerr Effect set-up, where for the sample excitation chopped cw or picosecond pulsed lasers were used. An excellent switching times and reversibility of the studied processes have been observed. The amplified spontaneous emission in luminescent dye doped biopolymeric system was achieved under the sample excitation by UV light pulses (355 nm) coming from pulsed Nd:YAG laser.

Adres publiczny

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