



Photochromic Polymer and Hybrid Materials Containing Azo Methylisoxazole Dye

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Auteur Ortyl, Ewelina [1], Jaworowska, Jolanta [2], Seifi, Payman Tajalli [3], Barille, Régis [4], Kucharski, Stanislaw [5]

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The photochromic polymer and sol-gel hybrid materials containing azo isoxazole derivatives were prepared. These new materials were used to form transparent films on glass plates by spin-coating technique. The maximum absorption band of the film was observed at 412-414 nm and 422 nm for polymer and hybrid materials, respectively. Illumination of the films with light caused isomerization of the diazo group manifested by decrease of the absorbance. The isomerization monitored during ellipsometric measurements showed decrease of refractive index on illumination. The magnitude of modulation of real part of the refractive index was in the range between 0.017 and 0.026. The surface relief grating (SRG) was successfully recorded in both polymer and copolymers films, containing methylisoxazole dye in the side chain. The refractive index modulation was also observed in the hybrid sol-gel film however no surface relief grating was recorded after 30 min inscription time.

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