

## **INFLUENCE OF SOFTENING TEMPERATURE OF AZOBENZENE POLYMERS AND EXTERNAL ELECTRIC FIELD ON DIFFRACTION EFFICIENCY OF POLARIZATION HOLOGRAMS**

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**Abstract.** The growth of the diffraction efficiency and recording velocity were found in the films of the 4-[(2-nitrophenyl)diazenyl]phenyl methacrylate copolymers with octyl methacrylate at room temperature holographic recording with a plane wavefront from parallel and orthogonal orientation of polarization of light beams for copolymer with less softening temperature. The effect of strengthening the diffraction efficiency was observed when charging the surface of investigated copolymers films with the recorded hologram in corona discharge. This effect is explained by growth of amplitude of regular geometric relief of the film surface appearing during formation of the polarization hologram in the copolymer with azobenzene chromophore.

**Keywords:** azobenzene polymer, optical anisotropy, polarization holography, thermoplastic property, surface relief.

Received: 22 December 2016/ Revised final: 7 February 2017/ Accepted: 14 February 2017