

HOLOGRAPHIC RECORDING IN “DYE—IONIC SMECTIC” DOUBLE-LAYER CELLS

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S u m m a r y

The recording of dynamic gratings in double-layer cells by nanosecond-sized pulses of laser emission has been investigated. A double-layer cell consisted of a solid dye layer and the layer of an ionic lyotropic liquid crystal (ILLC) of the smectic-A type. The dependences of the self-diffraction efficiency in the first diffraction order on the energy of the writing emission pulse and the grating period have been found. The obtained values of the diffraction efficiency (5–6%) exceed analogous values for doped ILLCs by an order of magnitude. The time behavior of a holographic recording has been studied, and the characteristic time of the grating relaxation has been found to be 30 μ s.