

PECULIARITIES OF HOLOGRAPHIC RECORDING
IN $a\text{-As}_{40}\text{S}_{15}\text{Se}_{45}$ FILMS AT MILLISECOND
EXPOSURES

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S u m m a r y

Millisecond impulse hologram recording in amorphous chalcogenide films is performed for the first time and experimentally studied. The maximum diffraction efficiency in $a\text{-As-S-Se}$ films was 0.32% which is about five times lower than for the corresponding continuous recording. However, about 500 times lower exposure is needed to reach the same diffraction efficiency in the former case. The millisecond recording is non-permanent. The dark relaxation time of millisecond holograms is 107 minutes. A photoinduced recharging of localized states in the bandgap is found to be responsible for the millisecond recording. It can be applied for non-permanent optical storage and optical information processing.