

## OSCILLATION DYNAMICS OF A $\text{Sn}_2\text{P}_2\text{S}_6$ -BASED SEMILINEAR OPTICAL OSCILLATOR

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### S u m m a r y

The unusual temporal dynamics of a semilinear optical coherent oscillator based on a tin thiohypodiphosphate ( $\text{Sn}_2\text{P}_2\text{S}_6$ ) crystal has been described. Periodic non-harmonic oscillations of the oscillator output intensity have been studied. The pulse duration was found to depend on characteristic grating formation times and on how much the coupling strength constant exceeds its threshold value. The pulse width changes in a wide range, decreasing closer to the oscillation threshold. It has been proved experimentally that every pulse in a sequence is  $\pi$ -shifted in phase with respect to the previous one, while the phase of oscillations remains constant within every pulse. Such a behavior of the optical oscillator suggests its analogy with an electronic multivibrator. A competition between two species of movable charge carriers in the course of formation of the space charge grating makes up the origin of the phenomenon concerned.