Annotation.

The research paper offers a new approach to the creation and diagnostics of laser-induced extreme states of matter and subsequent damage formation by two color (wavelengths of 620nm and 1240nm) femtosecond low energy (less than 1 μJ) oncoming laser pulses tightly focused in the bulk of wide bandgap dielectrics with the online-diagnostics of third harmonic signal generated from infrared pulse. Unique experimental scheme is created, which allows to overlap two oncoming femtosecond pulses focused in the bulk of the sample with high spatial and temporal precision. Beams oncoming geometry ensures optimal spatial intersection of the beams, and also increases the possibility of diagnosis by separating and power influence and diagnostics channels in opposite directions. With this experimental scheme the parameters of laser-indused microplasma generated by the double-pulse impact are studied. Evolution microplasma diagnosis in this mode detects a monotonic dependence of the absorption of the second (IR) pulse and non-monotonic (two-peak) structure of the third harmonic signal.

The advantages of double-pulse impact in creating microplasma with near-critical density ($2.8 \cdot 10^{21}$ cm^{-3}) in comparison with the one-pulse mode are shown. As a criterion of bulk micromodifications in fused silica exceeding the threshold bulk density of absorbed energy is selected which equals 4,5kJ/cm^3. The possibilities of the use of techniques of two-color mode for creating volume micromodifications are discussed.