
Generation of spectrally limited ultrashort pulses in YAG:Nd³⁺ laser with a rapidly relaxing passive gate

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The main purpose of the research was to implement the mode of generating ultrashort picosecond duration pulses using a rapidly relaxing dye and the method of cavity losses discharge of epy pulsed solid-state lasers with a passive gate. We calculated the generation kinetics and determined the optimal conditions modulation mode in combination with passive gate enlightenment. We implemented the method for the YAG: Nd³⁺ laser, for which we obtained the intense ultrashort pulses with duration of ≈ 12 ps, corresponding to the maximum width of the emission spectrum of the nonselective resonator.

Keywords: picosecond laser pulses, rapidly relaxing passive gate, Q-switched laser.

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