

Theoretical studies of the generation of picoseconds pulses with two-section blue-violet semiconductor lasers

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Abstract

We report the results of theoretical investigations of the generation of sub-10 ps pulses by a blue-violet InGaN two-section laser. The principle of pulse generation is active Q-switching. We study numerically the influence of the length of the switching section and the emission wavelength on the steady-state and dynamic behaviour. We investigate also the impact of the gain-compression factor on peak power, pulse energy and pulse width and compare the numerical results with semi-analytic expressions.