

عنوان مقاله:

Effect of nonlinear absorption on terahertz wave generation via optical rectification in nonlinear crystals

محل انتشار:

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خلاصه مقاله:

We briefly review the theory of terahertz wave generation via optical rectification by using one-dimensional propagation equations of Maxwell in nonlinear media. Then we will use the Drude model to study the effect of nonlinear absorption on optical to terahertz conversion efficiency. Simulation results demonstrate that at optical wavelengths that satisfy phase matching condition, nonlinear absorption limits efficiency and we will need to choose appropriate optical laser wavelength to decrease the effect of nonlinear absorption. According to simulation results, in case of generating 1 THz waves in GaAs, appropriate wavelength for optical intensities lower than 1 GW/cm^2 , is about 1350 nm while for higher intensities, the efficient wavelength will be about 1800 nm

کلمات کلیدی:

Terahertz wave, Optical rectification, Two Photon Absorption

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