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Author

Li, ZY (Li Zhong-Yang); Yao, JQ (Yao Jian-Quan); Xu, DG (Xu De-Gang); Bing, PB (Bing Pi-Bin); Zhong, K (Zhong Kai)

Title

Output Enhancement of a THz Wave Based on a Surface-Emitted THz-Wave Parametric Oscillator

Source

CHINESE PHYSICS LETTERS, vol.28,no.11. NOV 2011,114201.

Abstract

High-power nanosecond pulsed THz-wave radiation is achieved via a surface-emitted THz-wave parametric oscillator. One MgO:LiNbO(3) crystal with large volume is used as the gain medium. THz-wave radiation from 1.084 THz to 2.654 THz is obtained. The maximum THz-wave average power is 5.8 mu W at 1.93 THz when the pump energy is 84 mJ, corresponding to a energy conversion efficiency of 6.9 x 10(-6). The polarization characteristics of THz wave are analyzed. During the experiments the radiations of the first-order and the second-order Stokes wave are observed.