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Author

Kovalev SP. Kitaeva GK. Ilyin NA. Ilyakov IE. Mishina ED. Penin AN. Sigov AS.

Author Unabbreviated

Kovalev S. P.; Kitaeva G. Kh; Ilyin N. A.; Ilyakov I. E.; Mishina E. D.; Penin A. N.; Sigov A. S.

Author/Editor Affiliation

Kovalev SP. Kitaeva GK. Penin AN. : Faculty of Physics, Moscow State University, Moscow 119991, Russia

Ilyin NA. Mishina ED. Sigov AS. : Moscow State Institute of Radioengineering, Electronics and Automation, Moscow 117454, Russia

Ilyakov IE. : Institute of Applied Physics, Nizhny Novgorod 603950, Russia

Title

Nonlinear optical detection of terahertz-frequency radiation in crystals with periodic domain structure

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Abstract

The temporal and spectral characteristics of the terahertz response are measured for crystals of doped lithium niobate with an as-grown domain structure. It is shown that the crystals can be used for narrow-band generation and detection of terahertz waves in the processes of nonlinear-optical conversion of the laser radiation frequency. Frequency tuning in the range from 0.5 to 2.5 THz can be performed, due to both variations in the domain structure period and changes in the nonlinear-optical interaction geometry. (12 References).