



beta-BaTeMo₂O₉ microcrystals as promising optically operated materials

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Auteur	Majchrowski, Andrzej [1], Sahraoui, Bouchta [2], Fedorchuk, A. O [3], Jaroszewicz, L. R [4], Michalski, E. [5], Migalska-Zalas, Anna [6], Kityk, Ivan-V. [7]
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Résumé en anglais	<p>Studies of optical second harmonic generation (SHG) at fundamental wavelength of 1064 nm under photoinducing treatment of monoclinic piezoelectric beta-BaTeMo₂O₉ (beta-BTMO) were done. Continuous wave (CW) lasers generating at 808 and 1040 nm were used as photoinducing sources. The investigations were performed for the beta-BTMO microcrystalline powder samples with grain sizes varying within the 25-300 μm range. We showed that depending on the microcrystallites size, the photoinduced changes of the SHG were substantially different depending on number of defects which were controlled by positron annihilation. The photoinduced SHG efficiency was substantially higher for more defective crystallites. The processes are completely reversible; however, their photoinduced time kinetics is very sensitive to the wavelength of the photoinducing CW laser beam. The possible reasons for the observed differences are discussed within a framework of intrinsic defect trapping levels and their interactions with phonon subsystem.</p>
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[1] [http://okina.univ-angers.fr/publications?f\[author\]=4315](http://okina.univ-angers.fr/publications?f[author]=4315)

[2] <http://okina.univ-angers.fr/bouchta.sahraoui/publications>

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