

679

Accession Number

12378328

Author

Vodopyanov KL. Hurlbut WC. Kozlov VG.

Author Unabbreviated

Vodopyanov K. L.; Hurlbut W. C.; Kozlov V. G.

Author/Editor Affiliation

Vodopyanov KL. : E.L. Ginzton Laboratory, Stanford University, 348 via Pueblo, Stanford, CA 94305, USA

Hurlbut WC. Kozlov VG : Microtech Instruments, Inc., Eugene, OR 97403, USA

Title

Photonic THz generation in GaAs via resonantly enhanced intracavity multispectral mixing

Source

Applied Physics Letters, vol.99, no.4, 25 July 2011, 041104 (3 pp.). Publisher: American Institute of Physics, USA.

Abstract

We generate tunable (1.5-2 THz) terahertz output with up to 200 W average power in periodically inverted GaAs using resonantly enhanced multispectral frequency mixing inside the cavity of a type-0 optical parametric oscillator operating at degeneracy. The optical parametric oscillator was synchronously pumped by a 1064-nm picosecond Yb-fiber laser and produced, due to the presence of an intracavity Fabry-Pe'rot etalon, a set of optical frequency peaks spaced at the desired THz interval that allows efficient THz wave production via difference frequency generation. The proposed method is well adapted for cascaded THz generation, where the quantum conversion limit can be significantly surpassed. (16 References).