

307. Title:Terahertz-wave parametric oscillator with a misalignment-resistant tuning cavity

Authors:Sun, Bo (1); Li, Sanxing (1); Liu, Jinsong (1); Li, Enbang (3); Yao, Jianquan (1)

Source title:Optics Letters

Volume:36

Issue:10

Issue date:May 15, 2011

Publication year:2011

Pages:1845-1847

Language:English

Document type:Journal article (JA)

Abstract:We demonstrate a terahertz-wave parametric oscillator (TPO) with a corner-cube resonator consisting of a cornercube prism (CCP) and a flat mirror. By using the cavity configuration proposed in this Letter, the generation of tunable monochromatic terahertz (THz) waves can be achieved just by rotating the flat mirror instead of rotating the TPO cavity relative to the pump beam. The THz-wave output intensity and pulse width can be controlled periodically by rotating the CCP around the cavity axis. The TPO stability against cavity misalignment is significantly improved by at least 1 to 2 orders of magnitude compared with the conventional plane-parallel resonator configuration.