366. Title:Balanced terahertz wave air-biased-coherent-detection
Authors:Lu, Xiaofei (1); Zhang, X.-C. (1)
Source title:Applied Physics Letters
Volume:98
Issue:15
Issue date:April 11, 2011
Publication year:2011
Language:English
Document type:Journal article (JA)
Abstract:A balanced heterodyne air-biased-coherent-detection scheme for broadband terahertz waves is achieved using third-order nonlinear susceptibility tensor elements to produce field-induced optical second harmonic photons, which have two orthogonal polarizations. The differential signal between two orthogonally polarized second harmonic photons reduces the common noise in a balanced detection geometry and improves the signal-to-noise ratio by a factor of 2.