323. Title:Characterization of the terahertz near-field output of parallel-plate waveguides
Authors:Zhan, Hui (1); Mendis, Rajind (1); Mittleman, Daniel M. (1)
Source title:Journal of the Optical Society of America B: Optical Physics
Abbreviated source title:J Opt Soc Am B
Volume:28
Issue:3
Issue date:March 1, 2011
Publication year:2011
Pages:558-566
Language:English
Document type:Journal article (JA)
Abstract:We experimentally characterize the field confinement properties of various parallel-plate waveguide (PPWG) geometries in the terahertz spectral range. In contrast to infinite-width PPWGs with free-space diffraction along the unshielded direction, finite-width (and also tapered) PPWGs show well-confined THz fields at the output facet. Both the transverse field component, perpendicular to the inside surfaces, and the longitudinal component, parallel to the propagation direction, exhibit strong lateral confinement. We also observe an antisymmetric longitudinal field distribution across the air gap, analogous to the symmetric surface plasmon polariton mode observed in optical slot waveguides.