426.
Accession number:13083075
Title:Terahertz interferometer for integrated Goubau-line waveguides
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Source title:Progress In Electromagnetics Research Letters
Abbreviated source title:Prog. Electromagn. Res. Lett. (USA)
Volume:30
Publication date:2012
Pages:49-58
Language:English
ISSN:1937-6480
Document type:Journal article (JA)
Publisher:EMW Publishing
Country of publication:USA
Material Identity Number:GM59-2012-003
Abstract:An integrated Terahertz Mach-Zehnder interferometer is presented in order to perform differential measurements in a chip. Both simulation and experiment are performed for validating the interferometer structure. Destructive interference peaks are observed, and destructive frequencies are predicted by a mathematical model with a good agreement. The structure is then used to characterize dielectric constant of materials. Simulation results enable to quantify the device sensitivity. An experimental validation is given with the characterization of a thermosensitive polymer (Cyclotene BCB) in the sub-THz frequency band. Perspectives to increase investigated frequencies are discussed.
Number of references:20
Inspec controlled terms:Mach-Zehnder interferometers - waveguides
Uncontrolled terms:integrated Goubau-line waveguides - integrated terahertz Mach-Zehnder interferometer - differential measurements - interferometer structure - destructive interference - destructive frequencies - mathematical model - thermosensitive polymer
Inspec classification codes:B1310 Waveguides and striplines
Treatment:Practical (PRA)
Discipline:Electrical/Electronic engineering (B)
DOI:10.2528/PIERL11121205
Database:Inspec