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Title:Terahertz interferometer for integrated goubau-line waveguides
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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.
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