

71

Accession number:12711759

Title:Corrugated Goubau lines to slow down and confine THz waves

Authors:Laurette, S. (1); Treizebre, A. (1); Bocquet, B. (1)

Author affiliation:(1) Inst. of Electron., Microelectron. & Nanotechnol. (IEMN), Villeneuve-d'Ascq, France

Source title:IEEE Transactions on Terahertz Science and Technology

Abbreviated source title:IEEE Trans. Terahz. Sci. Technol. (USA)

Volume:2

Issue:3

Publication date:May 2012

Pages:340-4

Language:English

ISSN:2156-342X

CODEN:ITTSBX

Document type:Journal article (JA)

Publisher:IEEE

Country of publication:USA

Material Identity Number:GR96-2012-003

Abstract:Corrugations on planar Goubau lines are presented in order to slow down and focus electromagnetic waves. A propagation effective index shift is observed between corrugated and non-corrugated planar Goubau lines. Influence of the corrugation geometrical parameters is studied. Two original methods based on Bianco-Parodi differential measurements or on THz interferometer structure are validated. Finally, the effect of corrugating lines on unwanted substrate modes reject is discussed with experimental and parametric simulation studies. The wave stronger "attachment" in corrugated configurations is demonstrated.

Number of references:17

Inspec controlled terms:planar waveguides - surface plasmons - terahertz spectroscopy - terahertz waves - transmission lines

Uncontrolled terms:corrugated Goubau lines - planar Goubau line - electromagnetic wave focusing - corrugation geometrical parameter - THz interferometer structure - THz wave slowing - propagation effective index shift - Bianco-Parodi differential measurements - THz wave confinement

Inspec classification codes:B1310 Waveguides and striplines - B5210 Electromagnetic wave propagation

Treatment:Practical (PRA); Experimental (EXP)

Discipline:Electrical/Electronic engineering (B)

DOI:10.1109/TTHZ.2012.2189207

Database:Inspec

IPC Code:H01P3/00Copyright 2012, The Institution of Engineering and Technology