116
Accession number:20114014390574
Title:Substrate integrated circuits (SICs) for terahertz electronics and photonics: Current status and future outlook
Authors:Wu, Ke (1)
Author affiliation:(1) Ecole Polytechnique Montreal, Station Centre-Ville, P.O. Box 6079, Montreal, QC H3C 3A7, Canada
Corresponding author:Wu, K.(ke.wu@polymtl.ca)
Source title:Frequenz
Abbreviated source title:Frequenz
Volume:65
Issue:9-10
Issue date:September 2011
Publication year:2011
Pages:255-259
Language:English
ISSN:00161136
E-ISSN:21916349
CODEN:FQNZA3
Document type:Journal article (JA)
Publisher:Walter de Gruyter GmbH and Co. KG, Genthiner Strasse 13, Berlin, D-10785, Germany
Abstract:This paper attempts to provide a panoramic picture of research and development of substrate integrated circuits (SICs), presumably the next generation of integrated circuits for GHz and THz electronics and photonics. Current status and future outlook of SICs-related research and development are briefly discussed with focus on THz. WITH interest in low-cost and matured cmos and si-related technologies, we examine the possibility of developing innovative SICs within such platforms. This may be enabled by rapid deployment of through-silicon via (TSV) processes and related 3-D silicon stacking techniques as well as material research progress such as nanostructured techniques in this way, SICs may allow us to anticipate and extrapolate the trends of their applications towards the THz frequency range where no tangible integrated circuits technology is available yet to date. Challenging issues and future directions are considered, pointing to a potentially cost-effective and performance-promising ICs solution for mass commercial applications.
Number of references:9