226
Accession number:20125115826611
Title:Analysis and design of terahertz antennas based on plasmonic resonant graphene sheets
Authors:Tamagnone, M. (1); Gómez-Díaz, J.S. (1); Mosig, J.R. (2); Perruisseau-Carrier, J. (1)
Author affiliation:(1) Adaptive MicroNano Wave Systems, LEMA/Nanolab, Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland; (2) Laboratory of Electromagnetics and Acoustics (LEMA), Ecole Polytechnique Fédérale de Lausanne (EPFL), 1015 Lausanne, Switzerland
Corresponding author:Tamagnone, M.
Source title:Journal of Applied Physics
Abbreviated source title:J Appl Phys
Volume:112
Issue:11
Issue date:December 1, 2012
Publication year:2012
Article number:114915
Language:English
ISSN:00218979
CODEN:JAPIAU
Document type:Journal article (JA)
Publisher:American Institute of Physics, 2 Huntington Quadrangle, Suite N101, Melville, NY 11747-4502, United States
Abstract:Resonant graphene antennas used as true interfaces between terahertz (THz) space waves and a source/detector are presented. It is shown that in addition to the high miniaturization related to the plasmonic nature of the resonance, graphene-based THz antenna favorably compare with typical metal implementations in terms of return loss and radiation efficiency. Graphene antennas will contribute to the development of miniature, efficient, and potentially transparent all-graphene THz transceivers for emerging communication and sensing application. © 2012 American Institute of Physics.
Number of references:20
Main heading:Antennas
Controlled terms:Graphene - Plasmons - Terahertz waves
Uncontrolled terms:Analysis and design - Graphene sheets - Plasmonic - Radiation efficiency - Return loss - Sensing applications - Terahertz - Terahertz antennas - THz antenna
Classification code:711 Electromagnetic Waves - 712.1 Semiconducting Materials - 716 Telecommunication; Radar, Radio and Television - 761 Nanotechnology - 804 Chemical Products Generally
DOI:10.1063/1.4768840
Database:Compendex