

Accession number:20121714960349

Title:Resonant properties of the planar plasmonic crystal on a membrane substrate

Authors:Popov, V.V. (1); Fateev, D.V. (1); Polischuk, O.V. (1); Nikitov, S.A. (2); Otsuji, T. (4); Shur, M.S. (5)

Author affiliation:(1) Kotelnikov Institute of Radio Engineering and Electronics, Saratov Branch RAS, Saratov, 410019, Russia; (2) Saratov State University, Saratov, 410012, Russia; (3) Kotelnikov Institute of Radio Engineering and Electronics RAS, Moscow, 125009, Russia; (4) Research Institute of Electrical Communication, Tohoku University, 2-1-1 Katahira, Aoba-Ku, Sendai 980-8577, Japan; (5) Department of Electrical, Computer, and System Engineering, Center for Integrated Electronics, Rensselaer Polytechnic Institute, Troy, NY, 12180, United States

Corresponding author:Popov, V.V.(popov@soire.renet.ru)

Source title:Bulletin of the Russian Academy of Sciences: Physics

Abbreviated source title:Bull. Russ. Acad. Sci. Phys.

Volume:76

Issue:2

Issue date:February 2012

Publication year:2012

Pages:229-232

Language:English

ISSN:10628738

Document type:Journal article (JA)

Publisher:Allerton Press Inc., 250 West 57th Street, New York, NY 10007, United States

Abstract:The theory of the plasmon resonance excitation in the plasmonic-crystal structure on a dielectric substrate is presented. The effect of the plasmon resonance intensity oscillation as a function of the substrate thickness is predicted. It is shown that the enhancement of the plasmon resonance intensity occurs in a broad terahertz frequency range in the structure on a membrane substrate. © 2012 Allerton Press, Inc.

Number of references:12

Main heading:Plasmons

Controlled terms:Surface plasmon resonance

Uncontrolled terms:Dielectric substrates - Intensity oscillations - Plasmon resonances - Plasmonic crystals - Substrate thickness - Terahertz frequency range

Classification code:711 Electromagnetic Waves - 712.1 Semiconducting Materials

DOI:10.3103/S1062873812020219

Database:Compendex

Compilation and indexing terms, Copyright 2012 Elsevier Inc.