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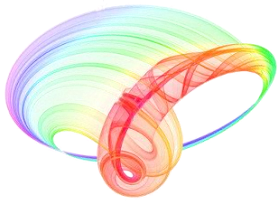

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VIII International School and Conference on Photonics

& HEMMAGINERO workshop

23 - 27 August 2021,

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Editors

Mihailo Rabasović, Marina Lekić and Aleksandar Krmpot

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ABSTRACTS OF TUTORIAL, KEYNOTE, INVITED LECTURES, PROGRESS REPORTS AND CONTRIBUTED PAPERS

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Dependence of loss parameters on circularly polarized terahertz wave propagation through graphene gated metamaterial

V.Milosevic[1], U.Ralevic[1], D. B. Stojanovic[2],
[1]*Institute of physics, University of Belgrade, Belgrade, Serbia*
[2]*Vinca Institute of Nuclear Sciences, University of Belgrade*
Belgrade, Serbia
e-mail:vojislav@ipb.ac.rs

Polarization is an important characteristic of electromagnetic waves and manipulation of polarization plays pivotal role in different areas such as communications, imaging and sensing. On the other hand, the ability to dynamically modify the state of polarization with metamaterials enables control of circular dichroism and optical activity in terahertz frequency range [1,2]. This dynamic control can be realized by incorporating graphene layer into the metasurface, whose conductivity can be controlled by applying gate voltage.

In this work, the effect of graphene conductivity on chiral effects of the metasurface will be analyzed using temporal coupled-mode theory [3,4]. In this frame, each resonant mode is characterized with its resonant frequency, radiative and non-radiative coupling coefficients. These parameters will be retrieved from simulated reflection and transmission spectra for left and right circular polarizations. In such way, theoretical model for tunable chiral effects in graphene metasurface will be given, enabling further improvement of its properties.

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