

modulators, IR multiplexors, IR logic, and sensing devices [1].

References

- [1] J.D. Cox and F.J. García De Abajo, “Nonlinear Graphene Nanoplasmonics,” *Accounts of Chemical Research*, vol. 52, №9, 2019, pp. 2536–2547.
- [2] T. Tan, X. Jiang, C. Wang, B. Yao, and H. Zhang, “2D Material Optoelectronics for Information Functional Device Applications: Status and Challenges,” *Advanced Science*, vol. 7, April 2020, pp. 2000058.
- [3] D. Kundyś, O.P. Marshall, F. Rodriguez, M. Polini, A.N. Grigorenko, B. Van Duppen, I. Torre and A. Tomadin, “Nonlinear Light Mixing by Graphene Plasmons,” *Nano Letters*, vol. 18, №1, 2018, pp. 282–287.
- [4] J. Li, T. Zhang and L. Chen, “High-Efficiency Plasmonic Third-Harmonic Generation with Graphene on a Silicon Diffractive Grating in Mid-infrared Region,” *Nanoscale Research Letters*, vol. 13, №1, 2018, pp. 338.
- [5] D. Rodrigo, A. Tittl, O. Limaj, F. J. G. De Abajo, V. Pruneri, and H. Altug, “Double-layer graphene for enhanced tunable infrared plasmonics,” *Light: Science and Applications*, vol. 6, №6, 2017, pp. e16277.
- [6] A.M. Lerer and G.S. Makeeva, “Polarization Effects and Resonance Absorption in Terahertz Wave Diffraction on Graphene Metasurfaces,” *Optics and Spectroscopy*, vol. 125, №6, 2018, pp. 1034-1040.
- [7] A.M. Lerer and I.N. Ivanova, “Application of approximate boundary conditions for calculation of planar 2D periodic nanoplasmon structures,” *Journal of Communications Technology and Electronics*, vol. 61, №5, 2016, pp. 486-491.
- [8] A.M. Lerer, “Theoretical investigation of 2D periodic nanoplasmon structures,” *Journal of Communications Technology and Electronics*, vol. 57, №11, 2012, pp. 1151.
- [9] A. M. Lerer, I. V. Donets, G. A. Kalinchenko, and P. V. Makhno, “Volume integral method for investigation of plasmonic nanowaveguide structures and photonic crystals,” *Photon. Res.*, vol. 2, №1, 2014, pp. 31-37.
- [10] G.W. Hanson, “Dyadic Green’s functions and guided surface waves for a surface conductivity model of graphene,” *Journal of Applied Physics*, vol. 103, №6, 2008, pp. 064302.
- [11] S.A. Mikhailov, “Non-linear electromagnetic response of graphene,” *Europhysics Letters*, vol. 79, №2, 2007, pp. 27002.
- [12] J. Christensen, A. Manjavacas, S. Thongrattanasiri, F. Koppens, F. D. de Abajo, “Graphene plasmon waveguiding and hybridization in individual and paired nanoribbons,” *ACS Nano*, vol. 6, №1, 2012, pp. 431-40.