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In this paper, a 2D problem of surface plasmon transformation due to time variation of silver nanowire environment is analytically solved. Solution of the problem is constructed in the form of the Laplace transform. Accurate time domain inversion has made it possible to analyze transient and steady state regimes.

[1-2].

$a$ ,

$n_1$ .

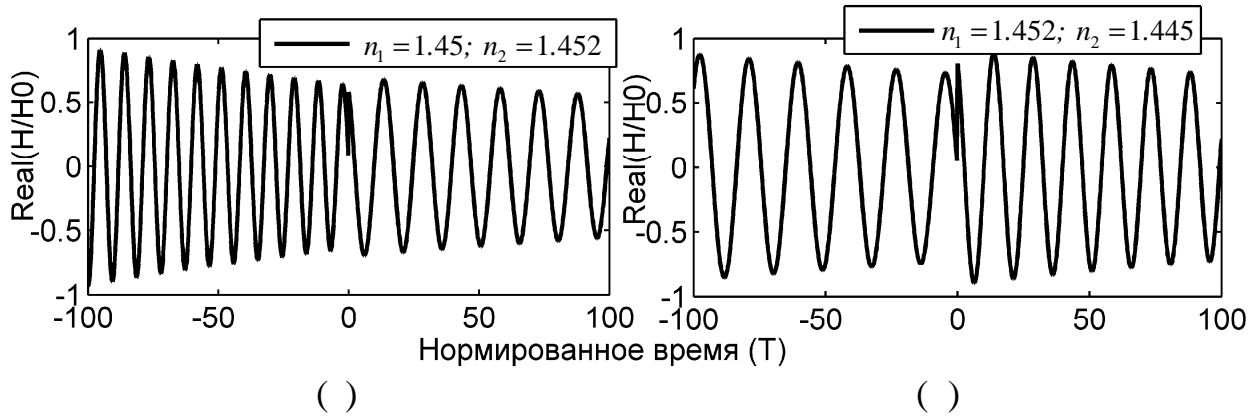
$n_1$

$n_2$

[3],

. 1

25



. 1.

: ( )  $n_1 = 1.45, n_2 = 1.452$ ; ( )  $n_1 = 1.452, n_2 = 1.445$ .

. 1

1. *Yogeswaran U. and Chen S. – M. A Review on the Electrochemical Sensors and Biosensors Composed of Nanowires as Sensing Material // Sensors* 8. 2008. Pp. 290 – 313. 2. *Byun K.M., Yoon S.J., Kim D., and Kim S.J. Experimental study of sensitivity enhancement in surface plasmon resonance biosensors by use of periodic metallic nanowires // Optics Letters.* 2007. Vol. 32, No. 13. Pp. 1902 – 1904. 3. *Yee K. S. Numerical solution of initial boundary value properties, involving Maxwell's equations in isotropic media // IEEE Trans. on Antennas and Propagation.* 1966. Vol. 14, No. 3. Pp. 302 – 307.