#### Список работ Ю.Е.Лозовика за последние 5 лет (2017-2013гг)

#### Yu. E.Lozovik, A. A.Sokolik, A. D. Zabolotskiy, Many-body effects of Coulomb interaction on Landau levels in graphene, Phys.Rev.B ,Vol.95, No.12, 125402 (2017).

#### O.V. Kotov and Yu. E.Lozovik, Enhanced optical activity in hyperbolic metasurfaces, Phys.Rev.B96, 235403 (2017).

#### Yu.E.Lozovik, I.V.Kurbakov, P.Volkov, Anisotropic superfluidity of two-dimensional excitons in a periodic potential, Phys.Rev.B 95, 245430 (2017).

#### Zhukov A., D. S. Shapiro, W. V. Pogosov, Yu.E.Lozovik, Dynamics of mesoscopic qubit ensemble coupled to cavity: Role of collective dark states, Phys.Rev.A96, No.3, 03384 (2017).

#### Zhukov A., D. S. Shapiro, S. V. Remizov, W. V. Pogosov, Yu. E. Lozovik, Superconducting qubit in a nonstationary transmission line cavity: parametric excitation, periodic pumping, and energy dissipation, Phys.Lett.A [381, Issue 6](http://www.sciencedirect.com/science/journal/03759601/381/6%22%20%5Co%20%22Go%20to%20table%20of%20contents%20for%20this%20volume/issue), Pages 592–596 (2017).

#### Ilya Valuev, Sergei Belousov, Maria Bogdanova, Oleg Kotov, and Yurii Lozovik, FDTD subcell graphene model beyond the thin-film approximation, Applied Physics A123: 60(2017).

#### Natalia Kaputkina, Mikhail Altaisky, Nadezhda Zolnikova, Victor Krylov; Yurii Lozovik, , Nikesh Dattani, Entanglement in a quantum neural network based on quantum dots, Photonics and Nanostructures - Fundamentals and Applications, Metamaterials, vol.24, 24-28 (2017).

#### А.И. Сягло, А.М. Попов, Н.А. Поклонский, Ю.Е. Лозовик, Энергетические характеристики и структура углеродных нанорулонов, Письма в ЖТФ, 2017, том 43, вып. 14, 55-63 (2017).

#### Oleg L.Berman, Roman Ya.Kezerashvili, Yurii Lozovik, Klaus E.Ziegler, Sensitive linear response of an electron-hole superfluid in a periodic potential, Physica E92, 1-6 (2017).

#### O.L. Berman, R.Ya. Kezerashvili, Yu.E. Lozovik, On Bose-Einstein condensation and superfluidity of trapped photons, J.Opt.Soc.Am B34, No.8, 1649 -1658 (2017).

#### A.E. Golomedov, Yu. E. Lozovik, G.E. Astrakharchik and J. Boronat, Composite boson description of a low density gas of excitons, J. Low. Temp. Phys. 189, 300-311 (2017).

#### S. V. Remizov, A. A. Zhukov, D. S. Shapiro, W. V. Pogosov, and Yu. E. Lozovik "Parametrically driven hybrid qubits-photon systems: dissipation-induced quantum entanglement and photon production from vacuum", Phys. Rev. A96, No.4, 043870 (2017).

#### Н.С.Воронова, М.А.Посаженков, Ю.Е.Лозовик, Внутренняя структура вихрей в двухкомпонентном конденсате экситонных поляритонов, Письма в ЖЭТФ, том106, вып.11, с.718–723 (2017).

#### Zhyrair Gevorkian, Vladimir Gasparian and Yurii Lozovik, Large diffusion lengths in perovskite and TiO\_2 heterojunction solar cells , Appl.Phys.Lett. v.108, No. 5, 051109(2016).

#### Elistratov A. and Yu. E. Lozovik, Coupled exciton-photon Bose condensate in path integral formalism, Phys.Rev.B 93, No.10, 104530 (2016).

#### [M. V. Altaisky](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BAltaisky_M/0/1/0/all/0/1), [N. N. Zolnikova](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BZolnikova_N/0/1/0/all/0/1), [N. E. Kaputkina](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BKaputkina_N/0/1/0/all/0/1), [V.A. Krylov](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BKrylov_V/0/1/0/all/0/1), [Yu. E. Lozovik](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BLozovik_Y/0/1/0/all/0/1), [N.S. Dattani](http://xxx.lanl.gov/find/quant-ph/1/au%3A%2BDattani_N/0/1/0/all/0/1), Towards a feasible implementation of quantum neural networks using quantum dots,  Appl.Phys.Lett.108, No.10, 103108 (2016).

#### Sokolik A., A. D. Zabolotskiy, Yu. E. Lozovik, Generalized virial theorem for massless electrons in graphene and other Dirac materials, Phys.Rev. B93, No.19, 195406 (2016).

#### O.V.Kotov, Yu. E. Lozovik, [The dielectric response and novel electromagnetic modes in 3D Dirac semimetal films](http://scholar.google.ru/scholar?oi=bibs&cluster=6590541942870557110&btnI=1&hl=ru), Phys. Rev. B 93,No.23, 235417 (2016).

#### Zhukov, D. S. Shapiro, W. V. Pogosov, Yu.E. Lozovik, Dynamical Lamb effect [versus dissipation in superconducting quantum circuits](http://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=MGcdnWwAAAAJ&sortby=pubdate&citation_for_view=MGcdnWwAAAAJ:C14xlUzwkXEC), Phys. Rev. A 93, No.6, 063845 (2016).

#### Yu. E. Lozovik, I.A. Nechepurenko, A.V. Dorofeenko, E.S. Andrianov, N.M. Chtchelkatchev, A.A. Pukhov, [Self-consistent Description of Graphene Quantum Amplifier](http://scholar.google.ru/scholar?oi=bibs&cluster=4863804900070229799&btnI=1&hl=ru), Phys.Rev.B94, No.3, 035406 (2016).

#### [M. Kuleshov, V. D. Mur, N. B. Narozhny, Yu. E. Lozovik, Topological phase and half-integer orbital angular, momenta in circular quantum dots, Few Body,  Volume 57, Issue 12, pp 1103–1126 (2016).](http://ufn.ru/ru/authors/32780/kuleshov-valerii-mikhailovich/)

#### Nina S. Voronova, Andrei A. Elistratov, Yurii E. Lozovik, [Inverted pendulum state of a polariton Rabi oscillator](http://scholar.google.ru/scholar?oi=bibs&cluster=2819007379582544562&btnI=1&hl=ru), Phys.Rev.B94, No.4, 045413 (2016).

#### Yu. Kh. Vekilov, O. M. Krasilnikov, A. V. Lugovskoy, and Yu. E. Lozovik, Higher-order elastic constants and megabar pressure effects of bcc tungsten: *Ab initio* calculations, Phys. Rev. B 94, No.10, 104114 (2016).

#### I.Nechepurenko, A. Dorofeenko, Y.E.Lozovik, Graphene Intracavity Spaser Absorption Spectroscopy, Photonics and Nanostructures - Fundamentals and Applications 21, 60-66(2016).

#### A.D. Zabolotskiy and Yu.E. Lozovik, Strain-induced pseudomagnetic field in Dirac semimetal borophene, Phys.Rev.B94, No.16, 165403 (2016).

#### Andrei I. Siahlo, Andrey M. Popov, Nikolai A. Poklonski, Yurii E. Lozovik, Sergey A. Vyrko, Sergey V. Ratkevich, Multi-layer graphene membrane based memory cell, [Physica E: Low-dimensional Systems and Nanostructures](http://www.sciencedirect.com/science/journal/13869477), 84, 348-353 (2016).

#### I.Shunyaev, A.A.Elistratov, Yu.E.Lozovik, Bose-Einstein condensates and the spectrum of excitations in a two-dimensional channel, Phys.Rev.A94, No.5, 053625 (2016).

#### O.L. Berman, R.Ya. Kezerashvili, Yu.E. Lozovik, Quantum entanglement for two qubits in a nonstationary cavity, Phys.Rev.A 94,No.5, 052308 (2016).

#### N. S. Voronova, A. A. Elistratov, and Yu. E. Lozovik, Detuning-controlled internal oscillations in an exciton-polariton condensate, Phys.Rev.Lett. 115, 186402 (2015) .

#### Yu. E. Lozovik, A. A. Sokolik, A. D. Zabolotskiy, Quantum capacitance and compressibility of graphene: The role of Coulomb interactions, Phys. Rev. B 91, No.7, 075416 (2015).

#### D. S. Shapiro, A. A. Zhukov, W. V. Pogosov, Yu.E. Lozovik, Dynamical Lamb Effect in a Tunable Superconducting Qubit-Cavity System, Phys.Rev.A,  91, 063814 (2015).

#### [В. М. Кулешов, В. Д. Мур, Н. Б. Нарожный, А. М. Федотов, Ю. Е. Лозовик, О кулоновской задаче в графене со щелью в электронном спектре](http://www.jetpletters.ac.ru/ps/2072/article_31185.shtml), Письма в ЖЭТФ, 101, No.4, 282-288 (2015).

#### [В.М. Кулешов](http://ufn.ru/ru/authors/32780/kuleshov-valerii-mikhailovich/), [В.Д. Мур](http://ufn.ru/ru/authors/32653/mur-vadim-davydovich/), [Н.Б. Нарожный](http://ufn.ru/ru/authors/748/narozhnyi-nikolai-borisovich/), [А.М. Федотов](http://ufn.ru/ru/authors/32695/fedotov-aleksandr-mikhailovich/), [Ю.Е. Лозовик](http://ufn.ru/ru/authors/731/lozovik-yurii-e/), [В.С. Попов](http://ufn.ru/ru/authors/1170/popov-vladimir-s/),Кулоновская задача с зарядом ядра *Z>Zcr* , УФН 2015, 185, вып. 8,  845–852 (2015).

#### [N.S. Voronova](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BVoronova_N/0/1/0/all/0/1), [Yu.E. Lozovik](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BLozovik_Y/0/1/0/all/0/1), Internal Josephson phenomena in a coupled two-component Bose condensate , [Superlattices and Microstructures](http://www.sciencedirect.com/science/journal/07496036), 87, 12-18 (2015).

#### O.L. Berman, R.Ya. Kezerashvili, Yu.E. Lozovik, Graphene based photonics and plasmonics, Chapter 3, pp. 93-126, in book “Nanoscale materials and devices for Electronics, Photonics and Solar energy” , Springer, 2015.

#### Lebedeva Irina, Popov Andrey, Knizhnik Andrei, Lozovik Yurii, Poklonski Nikolai, Siahlo Andrei,Vyrko Sergey, Ratkevich Sergey, Tunneling conductance of telescopic contacts between graphene layers with and without dielectric spacer , [Computational Materials Science](http://www.sciencedirect.com/science/journal/09270256), [Volume 109](http://www.sciencedirect.com/science/journal/09270256/109/supp/C), Pages 240–247 (2015).

#### И. А. Нечепуренко, А. В. Дорофеенко, Ю. Е. Лозовик, Полуклассическая теория спазера на основе графена, Журнал радиоэлектроники, N12 (2015).

#### [A.K. Fedorov](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BFedorov_A/0/1/0/all/0/1), [I.L. Kurbakov](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BKurbakov_I/0/1/0/all/0/1), [Yu.E. Lozovik](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BLozovik_Y/0/1/0/all/0/1), Roton-maxon spectrum and instability for weakly interacting dipolar excitons in a semiconductor layer, Phys. Rev. B 90, 165430 (2014).

#### [A.K. Fedorov](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BFedorov_A/0/1/0/all/0/1), [I.L. Kurbakov](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BKurbakov_I/0/1/0/all/0/1), [Y.E. Shchadilova](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BShchadilova_Y/0/1/0/all/0/1), [Yu.E. Lozovik](http://xxx.lanl.gov/find/cond-mat/1/au%3A%2BLozovik_Y/0/1/0/all/0/1), Two-dimensional  [Bose gas of tilted dipoles: Roton instability and condensate depletion](http://dx.doi.org/10.1103/PhysRevA.90.043616) , [Physical Review A](http://pra.aps.org/) 90: 043616, 2014.

#### Lozovik, Y. E., Nechepurenko, I. A., Dorofeenko, A. V., Andrianov, E. S., Pukhov, A. A. Highly sensitive spectroscopy based on a surface plasmon polariton quantum generator. Laser Physics Letters, 11(12), 125701(2014).

#### Yurii E. Lozovik, Igor A. Nechepurenko,Alexander V. Dorofeenko, Eugeny S. Andrianov, Alexander A. Pukhov, Spaser Spectroscopy with Subwavelength Spatial Resolution, Phys.Lett. A 378, No.9, pp. 723-727 (2014).

#### Andrey M. Popov, Irina V. Lebedeva, Andrey A. Knizhnik, Yurii E. Lozovik, Nikolai A. Poklonski, Andrei I. Siahlo, Sergey A. Vyrko, Sergey V. Ratkevich, Force and magnetic field sensor based on measurement of tunneling conductance between ends of coaxial carbon nanotubes, Computational Materials Science 92, 84–91 (2014).

#### O.L. Berman, R.Ya. Kezerashvili, Yu.E. Lozovik, Graphene nanoribbon based spaser, **Phys**. **Rev**. B 88, 235424 (2013).

#### D. K. Efimkin and Yu. E. Lozovik, [Drag effect and Cooper electron-hole pair fluctuations in a topological insulator film](http://arxiv.org/abs/1308.2601#_blank), Phys. Rev. B 88, 235420 (2013).

#### D. K. Efimkin and Yu. E. Lozovik, Resonant manifestations of chiral excitons in magnetooptical Faraday and Kerr effects in topological insulator film, Phys.Rev.B87, 245416 (2013).

#### D. K. Efimkin and Yu. E. Lozovik, Fluctuational internal Josephson effect in a topological insulator film, **Phys**. **Rev**. B 88, 085414 (**2013**) .

#### A.M. Popov, I.V. Lebedeva, A.A. Knizhnik, Yu.E. Lozovik, B.V. Potapkin, Ab initio study of edge effect on relative motion of walls in carbon nanotubes, J. Chem. Phys. 138, 024703 (2013).

#### O.V. Kotov, M.A. Kol'chenko, and Yu. E. Lozovik, Ultrahigh refractive index sensitivity of TE-polarized electromagnetic waves in graphene at the interface between two dielectric media, Optics Express, Vol. 21, Issue 11, pp. 13533-13546 (2013).

#### N.A. Poklonski, A.I. Siahlo, S.A. Vyrko, E.F. Kislyakov, A.M. Popov, Y.E. Lozovik, I.V. Lebedeva, A.A. Knizhnik, Graphene-Based Nanodynamometer, J. of Comp. and Theor. Nanoscience 10, 141-146 (2013).

#### Oleg L. Berman, Yurii E. Lozovik, Anton A. Kolesnikov, Maria V. Bogdanova, Rob D. Coalson, Surface plasmon polaritons and optical transmission through a vortex lattice in a film of type-II Superconductor, J. Opt. Soc. Am. B, Vol. 30, No. 4, 909-913 (2013).

#### Andrey M. Popov, Irina V. Lebedeva, Andrey A. Knizhnik, Yurii E. Lozovik, Boris V. Potapkin, [Structure, Energetic and Tribological Properties, and Possible Applications in Nanoelectromechanical Systems of Argon-Separated Double-Layer Graphene](http://www.isan.troitsk.ru/~am-popov/papers/jpcc117_11428.pdf#_blank), J. Phys.Chemistry, C 117, 11428- 11435 (2013).

#### A.M. Popov, I.V. Lebedeva, A.A. Knizhnik, Yu.E. Lozovik, B.V. Potapkin, N.A. Poklonski, A.I. Siahlo, S.A. Vyrko, AA stacking, tribological and electronic properties of double-layer graphene with krypton spacer, J. Chem. Phys. 139(15), 154705 (2013).