

# Nikita A. Olekhno

Industrial PostDoc, ITMO University

Born: 01 January 1994

Citizenship: Russian Federation

Phone: +7 (911) 144 77 77

Email: [nikita.olekhno@itmo.ru](mailto:nikita.olekhno@itmo.ru)

Homepage at ITMO University

Social Networks: [LinkedIn](#), [Google Scholar](#), [ResearchGate](#)



## Work Experience

**Dates:** 2022 – Present

**Affiliation:** ITMO University, 49 Kronverksky ave., bldg. A, 197101 Saint Petersburg, Russian Federation

<https://physics.itmo.ru>

**Title:** Industrial PostDoc

**Dates:** 2017 – 2022

**Affiliation:** ITMO University, 49 Kronverksky ave., bldg. A, 197101 Saint Petersburg, Russian Federation

<https://physics.itmo.ru>

**Title:** R&D Engineer

**Dates:** 2014 – 2017

**Affiliation:** Ioffe Institute, 26 Polytekhnicheskaya st., 194021 Saint Petersburg, Russian Federation

<http://ioffe.ru>

**Title:** Research Assistant

## Teaching Activities

**Dates:** 2022 – present

**Affiliation:** ITMO University, 49 Kronverksky ave., bldg. A, 197101 Saint Petersburg, Russian Federation

<https://physics.itmo.ru>

**Title:** Educational course “Engineering projects” within the Bachelor program “Wireless technologies”, Faculty of Physics (program developer, lecturer, lab assistant, and student project supervisor)

**Dates:** 2023

**Affiliation:** ITMO University, 49 Kronverksky ave., bldg. A, 197101 Saint Petersburg, Russian Federation

<https://physics.itmo.ru>

**Title:** Additional education program for the physics teachers “Project activity school”, Faculty of Physics (program co-developer, lecturer, and project supervisor)

**Dates:** 2018 – 2019

**Affiliation:** ITMO University, 49 Kronverksky ave., bldg. A, 197101 Saint Petersburg, Russian Federation

<https://physics.itmo.ru>

**Title:** Scientific practice for high-school students, Faculty of Physics (student project supervisor)

**Dates:** 2013

**Affiliation:** Lyceum "Physics and Technology High School" (PTHS), 8 Khlopina st., 194021 Saint Petersburg, Russian Federation

<http://school.ioffe.ru>

**Title:** "Introduction to Biophysics" lecture course (teacher of additional education)

### **PhD students supervision:**

Scientific advisor of PhD student Oleg I. Burmistrov, Faculty of Physics, ITMO University, 2021-present

Scientific advisor of PhD student Alina D. Rozenblit, Faculty of Physics, ITMO University, 2022-present

### **Graduate and undergraduate students supervision:**

Scientific advisor of Master student Anastasia A. Molodtsova, Faculty of Physics, ITMO University, 2021-present

Scientific advisor of Bachelor student Mikhail K. Buzakov, Faculty of Physics, ITMO University, 2022-present

Scientific advisor of Bachelor student Danil A. Chernomorov, Faculty of Physics, ITMO University, 2023-present

Scientific advisor of Bachelor student Andrei A. Mineev, Faculty of Physics, ITMO University, 2023-present

## **Education**

2009-2011: Lyceum "Physics and Technology High School" (PTHS)

2011-2015: Peter the Great Polytechnic University, Department of Physics and Technology of Nanostructures

BSc in Physics (graded with honors)

Thesis title: "Describing plasmon resonances in disordered nanocomposites within the framework of  $LC$ -circuit model"

2015-2017: Alferov University, Department of Theoretical Physics

MSc in Physics (graded with honors)

Thesis title: "Two-dimensional plasmons in the random impedance network model of disordered nanocomposites"

2017-2021: ITMO University, School of Physics and Engineering

PhD in Physics

Thesis title: “Higher-order topological and entangled states of photon pairs in resonant nanostructures”

## Additional Education

Science and Bureaucracy (ITMO University, Saint Petersburg, Russia, 2023)

Summer School “IP Pre-Masters” (ITMO University, Saint Petersburg, Russia, 2023)

OSA Innovation School (Optical Society of America, Washington, DC, USA, online, 2020)

Intellectual Property in Digital Economy (Federal Institute of Industrial Property, Moscow, Russia, 2020)

Pre-acceleration Program (Technopark of Saint Petersburg, Saint Petersburg, Russia, 2020)

## Research Projects Management

1. State Assignment FSER-2024-0041 “Youth Laboratory of Wireless Technologies, Co-PI, 2024–Present
2. RSF 24-79-10314 “Spatial organization and dynamical properties of clusters of self-propelled asymmetric particles”, Co-PI, 2024–Present
3. Practically-Oriented R&D funded by ITMO University “The development of AA-sized battery supporting Qi standard wireless charging”, Co-PI, 2024–Present
4. R&D Project in the interest of MedPribor Ltd., “Extending the functionality of recovery rehabilitation systems by the intergaton of interactive use scenarios”, Co-PI, 2023–2024
5. ITMO-Bosch Research Project “Spatial Structure and Dynamical Properties of Active Matter Based on Ensembles of Self-Propelled Particles”, PI, 2021–2023
6. RSF 20-72-10065 “Higher-order topological states in resonant structures”, Co-PI, 2020–2023
7. RFBR 18-32-01052 mol.a “Theory of nonlinear generation of entangled photon and plasmon states in nanostructures”, PI, 2018–2020
8. RFBR 18-02-01206 a “Theory of nonlinear second order processes in dielectric nanosystems”, Co-PI, 2018–2020
9. FASIE UMNİK 13468GU/2018 “The development of resonant dielectric nanostructures based on non-linear dielectric nanoparticles for application in entangled photon pair sources for quantum communications”, PI, 2018–2020

## Participation in Research Projects

1. RSF 24-72-10069 “Topological photonics of arrays of multimode meta-atoms”, 2024–Present
2. RSF 21-79-10209 “Electromagnetic topological states in metamaterials with bianisotropy and long-range couplings”, 2021–2024
3. RSF 16-19-10538 “Metamaterials and structures with topological order”, 2019–2020
4. RFBR 18-29-20037 mk “Infrared spectroscopy of topological states of entangled photons”, 2018–2021
5. RFBR 16-32-00359 mol.a “Plasmon resonances in disordered binary nanocomposites”, 2015–2018
6. RFBR 16-02-00064 a “Dynamical processes within complex ferromagnetic structures based on metals as well as semiconductors”, 2016–2018
7. RFBR 15-02-01575 a “Quantum kinetics of electron and phonon response and drag effects in micro and nanostructures and low-dimension systems”, 2015–2017

## Journal Roles

Reviewer for the journals *Nature Communications*, *Communications Physics*, *Photonics and Nanostructures - Fundamentals and Applications*, *Physical Review A*, and *Physical Review B*.

## Publications

### *Preprints*

1. Egor D. Demeshko, Andrei A. Mineev, Danil A. Chernomorov, Oleg I. Burmistrov, Alexey A. Dmitriev, Sergey S. Ermakov, Alina D. Rozenblit, Pavel S. Seregin, and **Nikita A. Olekhno**, Wirelessly charged AA battery with a curved receiving coil, arxiv:2408.09852 (2024)  
<https://arxiv.org/abs/2408.09852>
2. Alina D. Rozenblit, Georgiy D. Kurganov, and **Nikita A. Olekhno**, Edge states in all-dielectric square-lattice arrays of bianisotropic microwave resonators, arxiv:2406.15246 (2024)  
<https://arxiv.org/abs/2406.15246>
3. Anastasia A. Molodtsova, Mikhail K. Buzakov, Alina D. Rozenblit, Vyacheslav A. Smirnov, Daria V. Sennikova, Vadim A. Porvatov, Oleg I. Burmistrov, Ekaterina M. Puhtina, Alexey A. Dmitriev, and **Nikita A. Olekhno**, Experimental demonstration of robotic active matter micellization, arxiv:2305.16659 (2023)  
<https://arxiv.org/abs/2305.16659>
4. Alexey A. Dmitriev, Alina D. Rozenblit, Vadim A. Porvatov, Mikhail K. Buzakov, Anastasia A. Molodtsova, Daria V. Sennikova, Vyacheslav A. Smirnov, Oleg I. Burmistrov, Timur I. Karimov, Ekaterina M. Puhtina, and **Nikita A. Olekhno**, Swarmodroid 1.0: A Modular Bristle-Bot Platform for Robotic Active Matter Studies, arxiv:2305.13510 (2023)  
<https://arxiv.org/abs/2305.13510>

*Journal Articles*

1. **Nikita A. Olekhno**, Mihail I. Petrov, Ivan V. Iorsh, Andrey A. Sukhorukov, and Alexander S. Solntsev, Generating N00N states of surface plasmon polaritons with  $N = 2$  by a single nanoparticle”, *Physical Review B* **109**, 245416 (2024)  
<https://doi.org/10.1103/PhysRevB.109.245416>  
<https://arxiv.org/abs/2002.05268>
2. Oleg I. Burmistrov, Nikita V. Mikhailov, Dmitriy S. Dashkevich, Pavel S. Seregin, and **Nikita A. Olekhno**, Wireless power transfer in magnetic resonance imaging at a higher-order mode of a birdcage coil, *Physical Review Applied* **21**, 014047 (2024)  
<https://doi.org/10.1103/PhysRevApplied.21.014047>  
<https://arxiv.org/abs/2308.10376>
3. Viktor M. Puchnin, Olga V. Matvievsckaya, Alexey P. Slobozhanyuk, Alena V. Shchelokova, and **Nikita A. Olekhno**, Application of Topological Edge States in Magnetic Resonance Imaging, *Physical Review Applied* **20**, 024076 (2023)  
<https://doi.org/10.1103/PhysRevApplied.20.024076>  
<https://arxiv.org/abs/2210.09994>
4. Eugene A. Koreshin, Denis I. Sakhno, **Nikita A. Olekhno**, Alexander N. Poddubny, and Pavel A. Belov, Emulating quantum photon-photon interactions in waveguides by double-wire media, *Photonics and Nanostructures-Fundamentals and Applications* **53**, 101104 (2023)  
<https://doi.org/10.1016/j.photonics.2022.101104>
5. **Nikita A. Olekhno**, Alina D. Rozenblit, Andrei A. Stepanenko, Alexey A. Dmitriev, Daniel A. Bobylev, and Maxim A. Gorlach, Topological transitions driven by quantum statistics and their electrical circuit emulation, *Physical Review B* **105**, 205113 (2022)  
<https://doi.org/10.1103/PhysRevB.105.205113>  
<https://arxiv.org/abs/2108.10435>
6. **Nikita A. Olekhno**, Alina D. Rozenblit, Valerii I. Kachin, Alexey A. Dmitriev, Oleg I. Burmistrov, Pavel S. Seregin, Dmitry V. Zhirihin, and Maxim A. Gorlach, Experimental realization of topological corner states in long-range-coupled electrical circuits, *Physical Review B* **105**, L081107 (2022).  
<https://doi.org/10.1103/PhysRevB.105.L081107>  
<https://arxiv.org/abs/2103.08980>
7. Pavel S. Seregin, Oleg I. Burmistrov, Georgiy A. Solomakha, Egor I. Kretov, **Nikita A. Olekhno**, and Alexey P. Slobozhanyuk, Energy-harvesting coil for circularly polarized fields in magnetic resonance imaging, *Physical Review Applied* **17**, 044014 (2022), selected as an Editors’ Suggestion.  
<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.17.044014>  
<https://arxiv.org/abs/2106.06886>
8. Anna A. Nikolaeva, Kristina S. Frizyuk, **Nikita A. Olekhno**, Alexander S. Solntsev, and Mihail I. Petrov, Directional emission of down-converted photons from a dielectric nano-resonator, *Physical Review A* **103**, 043703 (2021).  
<https://doi.org/10.1103/PhysRevA.103.043703>  
<https://arxiv.org/abs/2011.07842>

9. Alexander V. Poshakinskiy, Janet Zhong, Yongguan Ke, **Nikita A. Olekhno**, Chaohong Lee, Yuri S. Kivshar, and Alexander N. Poddubny, Quantum Hall phase emerging in an array of atoms interacting with photons, *npj Quantum Information* **7**, 34 (2021).  
<https://doi.org/10.1038/s41534-021-00372-8>  
<https://arxiv.org/abs/2003.08257>
10. **Nikita A. Olekhno**, Egor I. Kretov, Andrei A. Stepanenko, Polina A. Ivanova, Vitaly V. Yaroshenko, Ekaterina M. Puhtina, Dmitry S. Filonov, Barbara Cappello, Ladislau Matekovits, and Maxim A. Gorlach, Topological edge states of interacting photon pairs emulated in a topoelectrical circuit, *Nature Communications* **11**, 1436 (2020).  
<https://doi.org/10.1038/s41467-020-14994-7>  
<https://arxiv.org/abs/1907.01016>
11. Janet Zhong, **Nikita A. Olekhno**, Yongguan Ke, Alexander V. Poshakinskiy, Chaohong Lee, Yuri S. Kivshar, and Alexander N. Poddubny, Photon-mediated localization in two-level qubit arrays, *Physical Review Letters* **124**, 093604 (2020).  
<https://doi.org/10.1103/PhysRevLett.124.093604>  
<https://arxiv.org/abs/1911.04113>
12. **Nikita A. Olekhno**, Yaroslav M. Beltukov, Random matrix approach to plasmon resonances in the random impedance network model of disordered nanocomposites, *Physical Review E* **97**, 050101(R) (2018).  
<https://doi.org/10.1103/PhysRevE.97.050101>  
<https://arxiv.org/abs/1801.09233>
13. **Nikita A. Olekhno**, Yaroslav M. Beltukov, Two-dimensional plasmons in the random impedance network model of disordered thin film nanocomposites, *Physical Review B* **97**, 184204 (2018).  
<https://doi.org/10.1103/PhysRevB.97.184204>  
<https://arxiv.org/abs/1710.00949>
14. **Nikita A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, Spectral properties of plasmon resonances in a random impedance network model of binary nanocomposites, *JETP Letters* **103**, 577-581 (2016).  
<https://doi.org/10.1134/S0021364016090046>
15. **Nikita A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, Resonances in the generalized LC model of granular metal-dielectric nanocomposites, *Physics of the Solid State* **57**, 2479-2488 (2015).  
<https://doi.org/10.1134/S1063783415120252>

### Conference Proceedings

1. Alina D. Rozenblit, Georgy D. Kurganov, Dmitry V. Zhirihin, and **Nikita A. Olekhno**, Edge states supported by two-dimensional square-lattice arrays of bianisotropic dielectric resonators, *St. Petersburg State Polytechnical University Journal. Physics and Mathematics*, accepted (2024)
2. Oleg I. Burmistrov, **Nikita A. Olekhno**, Wireless power transfer in magnetic resonance imaging with a detuned birdcage coil, *St. Petersburg State Polytechnical University Journal. Physics and Mathematics*, accepted (2024)

3. Mikhail K. Buzakov, Vyacheslav A. Smirnov, Daria V. Sennikova, Anastasia . Molodtsova, Alina D. Rozenblit, Vadim A. Porvatov, Oleg I. Burmistrov, Ekaterina M. Puhtina, Alexey A. Dmitriev, and **Nikita A. Olekhno**, Crystallization of robotic swarms in a parabolic potential, *St. Petersburg Polytechnic University Journal. Physics and Mathematics* **16**, 36-40 (2023)  
<https://doi.org/10.18721/JPM.163.106>
4. **Nikita A. Olekhno**, Mihail I. Petrov, Ivan V. Iorsh, Andrey A. Sukhorukov, and Alexander S. Solntsev, Generating N00N-states of surface plasmon-polariton pairs in a nonlinear nanoparticle on metallic substrate, *2022 International Conference Laser Optics (ICLO)*, 1 (2022)  
<https://doi.org/10.1109/ICLO54117.2022.9839893>
5. Alexey A. Dmitriev, Alina D. Rozenblit, Vadim A. Porvatov, Anastasia A. Molodtsova, Ekaterina M. Puhtina, Oleg I. Burmistrov, Dmitry S. Filonov, Anton Souslov, and **Nikita A. Olekhno**, Statistical Correlations in Active Matter Based on Robotic Swarms, *2021 International Conference Engineering and Telecommunication (En&T)*, 1 (2021).  
<https://doi.org/10.1109/EnT50460.2021.9681775>
6. Vadim A. Porvatov, Alina D. Rozenblit, Alexey A. Dmitriev, Oleg I. Burmistrov, Daria A. Petrova, Georgy Yu. Gritsenko, Ekaterina M. Puhtina, Egor I. Kretov, Dmitry S. Filonov, Anton Souslov, and **Nikita A. Olekhno**, Optimizing self-rotating bristle-bots for active matter implementation with robotic swarms, *Journal of Physics: Conference Series* **2086**, 012202 (2021).  
<https://doi.org/10.1088/1742-6596/2086/1/012202>
7. Alina D. Rozenblit, **Nikita A. Olekhno**, Alexey A. Dmitriev, Pavel S. Seregin, and Maxim A. Gorlach, Topological edge states of anyon pairs emulated in electric circuits, *Journal of Physics: Conference Series* **2015**, 012127 (2021).  
<https://doi.org/10.1088/1742-6596/2015/1/012127>
8. Pavel Seregin, Oleg Burmistrov, Georgiy Solomakha, Egor Kretov, **Nikita Olekhno**, and Alexey Slobozhanyuk, Circularly polarized RF coil for energy harvesting in clinical MRI, *Journal of Physics: Conference Series* **2015**, 012134 (2021).  
<https://doi.org/10.1088/1742-6596/2015/1/012134>
9. **Nikita A. Olekhno**, Alina D. Rozenblit, Valerii I. Kachin, Oleg I. Burmistrov, Alexey A. Dmitriev, Pavel S. Seregin, Dmitry V. Zhirihin, and Maxim A. Gorlach, Higher-Order Topological States in the Extended Two-Dimensional SSH Model and Their Electric Circuit Implementation, OSA Technical Digest (Optical Society of America, 2021), paper FTu1M.5 (2021).  
[https://doi.org/10.1364/CLEO\\_QELS.2021.FTu1M.5](https://doi.org/10.1364/CLEO_QELS.2021.FTu1M.5)
10. Janet Zhong, Alexander V. Poshakinskiy, Yongguan Ke, **Nikita A. Olekhno**, Chaohong Lee, Yuri S. Kivshar, and Alexander N. Poddubny, Topological and Localized States in Waveguide Quantum Electrodynamics, OSA Technical Digest (Optical Society of America, 2021), paper FTh1P.3 (2021).  
[https://doi.org/10.1364/CLEO\\_QELS.2021.FTh1P.3](https://doi.org/10.1364/CLEO_QELS.2021.FTh1P.3)

11. **Nikita Olekhno**, Alina Rozenblit, Pavel Seregin, and Maxim Gorlach, Statistics-Induced Topological States of Interacting Anyons, AIP Conference Proceedings **2300**, 020093 (2020).  
<https://doi.org/10.1063/5.0031727>
12. Alina D. Rozenblit, Vadim A. Porvatov, Daria A. Petrova, Ivan S. Khakhalin, Konstantin P. Kotlyar, Gorgy Yu. Gritsenko, Anastasia A. Evreiskaya, Mikhailina F. Lebedeva, Egor I. Kretov, Dmitry S. Filonov, Anton Souslov, and **Nikita A. Olekhno**, Diffusive dynamics and jamming in ensembles of robots with variable friction, Journal of Physics: Conference Series **1695**, 012201 (2020).  
<https://doi.org/10.1088/1742-6596/1695/1/012201>
13. Polina A. Ivanova, **Nikita A. Olekhno**, Valery I. Kachin, Dmitry V. Zhirihin, Pavel S. Seregin, and Maxim A. Gorlach, Realizing topological corner states in two-dimensional Su-Schrieffer-Heeger model with next-nearest neighbor couplings, Journal of Physics: Conference Series **1695**, 012142 (2020).  
<https://doi.org/10.1088/1742-6596/1695/1/012142>
14. Janet Zhong, Alexander V. Poshakinskiy, Yongguan Ke, **Nikita A Olekhno**, Chaohong Lee, Yuri S. Kivshar, and Alexander N. Poddubny, Interaction-induced topological phases of photons interacting with atoms, Frontiers in Optics, OSA Technical Digest (Optical Society of America, 2020), paper FM5A.2 (2020).  
<https://doi.org/10.1364/FIO.2020.FM5A.2>
15. **Nikita A. Olekhno**, Egor I. Kretov, Andrei A. Stepanenko, Polina A. Ivanova, Vitaly V. Yaroshenko, Ekaterina M. Puhtina, Dmitry S. Filonov, Barbara Cappello, Ladislau Matekovits, and Maxim A. Gorlach, Topological States of Interacting Photon Pairs Emulated in a Topolectrical Circuit, 2019 Photonics & Electromagnetics Research Symposium - Fall (PIERS — Fall), 1082-1086 (2020).  
<https://doi.org/10.1109/PIERS-Fall148861.2019.9021710>
16. **Nikita Olekhno**, Mihail Petrov, Ivan Iorsh, Andrey A. Sukhorukov, and Alexander Solntsev, Generating Quantum States of Surface Plasmon-Polariton Pairs with a Nonlinear Nanoparticle, 2019 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC), paper ck\_p-1 (2019).  
<https://doi.org/10.1109/CLEOE-EQEC.2019.8872429>
17. Mihail I. Petrov, Anna A. Nikolaeva, Kristina S. Frizyuk, and **Nikita A. Olekhno**, Second harmonic generation and spontaneous parametric down-conversion in Mie nanoresonators, Journal of Physics: Conference Series **1124**, 051021 (2018).  
<https://doi.org/10.1088/1742-6596/1124/5/051021>
18. **Nikita A. Olekhno**, Mihail I. Petrov, and Ivan V. Iorsh, Generation of surface plasmon-polariton pairs by a nonlinear nanoparticle, Journal of Physics: Conference Series **1092**, 012105 (2018).  
<https://doi.org/10.1088/1742-6596/1092/1/012105>
19. **Nikita A. Olekhno**, Mihail I. Petrov, and Ivan V. Iorsh, Generation of photon and plasmon pairs by a nonlinear semiconductor nanoparticle, OSA Technical Digest (online) (Optical Society of America, 2018), paper NpM21.5 (2018).  
<https://doi.org/10.1364/NP.2018.NpM2I.5>



20. **Nikita A. Olekhno**, Mihail I. Petrov, and Ivan V. Iorsh, Spontaneous parametric down-conversion of light by a dielectric nanoparticle, *Journal of Physics: Conference Series* **993**, 012022 (2018).  
<https://doi.org/10.1088/1742-6596/993/1/012022>
21. **Nikita A. Olekhno**, Yaroslav M. Beltukov, 2D-plasmons in a Random Impedance Network Model of Disordered Nanocomposites, 2017 Progress In Electromagnetics Research Symposium - Spring (PIERS), 1529-1534 (2018).  
<https://doi.org/10.1109/PIERS.2017.8261989>
22. **N.A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, Surface modes of big clusters and resonances in generalized *LC*-model of metal-dielectric nanocomposites, *Journal of Physics: Conference Series* **661**, 012042 (2015).  
<https://doi.org/10.1088/1742-6596/661/1/012042>
23. **Nikita A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, A theory of spectral properties of disordered metal-semiconductor nanocomposites, *Journal of Physics: Conference Series* **643**, 012118 (2015).  
<https://doi.org/10.1088/1742-6596/643/1/012118>
24. **Nikita A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, Resonances in random reactance networks with fluctuating entries, *Journal of Physics: Conference Series* **572**, 012037 (2014).  
<https://doi.org/10.1088/1742-6596/572/1/012037>
25. **Nikita A. Olekhno**, Yaroslav M. Beltukov, and Dmitry A. Parshin, Spectral properties of random *LC* networks with uniformly distributed entries, *Journal of Physics: Conference Series* **541**, 012075 (2014).  
<https://doi.org/10.1088/1742-6596/541/1/012075>

## Awards

1. Second prize in the competition “Film the Science” (2022)
2. Honorable Mention in Best Student Paper Award at PIERS-2019 Xiamen
3. Diploma for the featured oral presentation at 19th Russian Youth Conference on Physics of Semiconductors and Nanostructures, Opto- and Nanoelectronics, 2017
4. Best Student Paper Award at PIERS 2017 St. Petersburg
5. Diploma for the best poster presentation at 3rd International School and Conference “Saint Petersburg OPEN”, 2016
6. First prize in Young Scientist Award Competition at Ioffe Institute International Winter School on Semiconductor Physics, 2016
7. Diploma for the best poster presentation at International Youth Conference PhysicA.SPb/2015
8. Diploma for the best poster presentation at 2nd International School and Conference “Saint Petersburg OPEN”, 2015

9. Bronze medal (Third prize) as the Student of the Year in Peter the Great Polytechnic University, 2014
10. First prize for the oral talk at Peter the Great Polytechnic University Week of Science, 2014
11. Second prize in Young Scientist Award Competition at Ioffe Institute International Winter School on Semiconductor Physics, 2014
12. Second prize for the oral talk at Peter the Great Polytechnic University Week of Science, 2013
13. Second prize in Saint Petersburg Open Olympiade on Physics for the Students of Universities, 2013

## Scholarships

1. President of Russian Federation Scholarship for Young Scientists (starting 2022)
2. SPIE 2021 Optics and Photonics Education Scholarship (2021)
3. “Basis” Foundation Scholarship for PhD students in Theoretical Physics (2018 - 2021)
4. President of Russian Federation Scholarship for PhD students (2017 - 2020)
5. “Dynasty” Scholarship for Master students in Theoretical Physics (2015 - 2017)
6. President of Russian Federation Scholarship for Master students (2016 - 2017)
7. Alferov’s Foundation Scholarship for Master students (2015 - 2016)
8. Saint Petersburg Administration Scholarship for the winners of the grant competition for the students of universities (2015, 2017, 2018)
9. Peter the Great Polytechnic University Scholarship for the excellence in study and achievements in scientific research (2013 - 2015)
10. Ioffe Scholarship for students (2013)
11. Lift to the Future Scholarship (2013)
12. Saint Petersburg Administration Scholarship for Students in Physics (2011 - 2013)