Alexey Proskurin, Ph.D.

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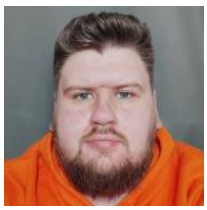
https://physics.itmo.ru/en/personality/alexey_proskurin-0
Professional interests: optics, nanophotonics



Employment History

2016 – · · · · **Engineer,** Faculty of Physics, ITMO University, St Petersburg.
2014 – 2017 **Laboratory assistant,** Ioffe Institute, St Petersburg.
2010 – 2010 **Boiler house operator,** Baltic shipyard, St Petersburg.

Education

2019 – 2023 **Ph.D., ITMO University** in Optics.
Thesis title: *Optical nanoantennas for efficient excitation and absorption of electromagnetic waves.*

2015 – 2019 **M.Sc., St Petersburg Academic University** in Electronics and Nanoelectronics.
Thesis title: *Optical forces acting on a spherical particle above the substrate.*

2011 – 2015 **B.Sc., Peter the Great St Petesburg Polytechnic University** in Solid State Physics.
Thesis title: *Levitational gap for a high-Tc sample suspended in the field of a permanent magnet.*

Research Publications

Journal Articles

1. S. Gladyshev, O. Pashina, A. Proskurin, *et al.*, "Fast Simulation of Light Scattering and Harmonic Generation in Axially Symmetric Structures in COMSOL," *ACS Photonics*, vol. 2024, 2024. DOI: 10.1021/acsphotonics.3c01166.
2. A. V. Dyshlyuk, A. Proskurin, A. A. Bogdanov, and O. B. Vitrik, "Scattering Amplitude of Surface Plasmon Polariton Excited by a Finite Grating," *Nanomaterials*, vol. 13, no. 14, p. 2091, 2023, ISSN: 2079-4991. DOI: 10.3390/nano13142091.
3. A. V. Dyshlyuk, A. Proskurin, A. A. Bogdanov, and O. B. Vitrik, "Analytical Calculations of Scattering Amplitude of Surface Plasmon Polaritons Excited by a Spherical Nanoantenna," *Nanomaterials*, vol. 11, no. 11, p. 2937, 2021, ISSN: 2079-4991. DOI: 10.3390/nano11112937.
4. A. Proskurin, A. Bogdanov, and D. G. Baranov, "Perfect Absorption of a Focused Light Beam by a Single Nanoparticle," *Laser Photonics Rev.*, vol. 15, no. 8, p. 2 000 430, 2021, ISSN: 1863-8880. DOI: 10.1002/lpor.202000430.
5. N. A. Kostina, D. A. Kislov, A. N. Ivinskaya, *et al.*, "Nanoscale Tunable Optical Binding Mediated by Hyperbolic Metamaterials," *ACS Photonics*, vol. 7, no. 2, pp. 425–433, 2020. DOI: 10.1021/acsphotonics.9b01378.
6. A. Ivinskaya, N. Kostina, A. Proskurin, *et al.*, "Optomechanical Manipulation with Hyperbolic Metasurfaces," *ACS Photonics*, vol. 5, no. 11, pp. 4371–4377, 2018. DOI: 10.1021/acsphotonics.8b00775.

Conference Proceedings

1. A. Proskurin, A. A. Bogdanov, A. V. Dyshlyuk, and O. B. Vitrik, "Analytical calculation of spp generation with structured substrates," in *2023 Days on Diffraction (DD)*, IEEE, 2023, pp. 179–182.

2 A. Proskurin, A. Bogdanov, and D. G. Baranov, "Coherent perfect absorption by a single nanoparticle," in *Nanophotonics IX*, SPIE, vol. 12131, 2022, pp. 152–157.

3 N. Kostina, D. Kislov, A. Proskurin, P. Ginzburg, and A. Shalin, "Long-range optical binding due to volumetric modes of hyperbolic metamaterial slab," in *AIP Conference Proceedings*, AIP Publishing, vol. 2300, 2020.

Skills

Languages	Russian (native), English (advanced).
Programming	C++, Python, LaTeX, MATLAB, COMSOL Multiphysics
Relevant coursework	Mathematics (calculus, linear algebra, complex analysis, mathematical physics), theoretical physics (mechanics, quantum mechanics, classical electrodynamics, statistical physics)
Misc.	Academic research, teaching.

Awards and Achievements

2022 – 2023 **Russian President Scholarship Competition for Study Abroad**.

2014 **1st place in the senior division**, All-Russian Mathematics Competition for students of technical specialties

A.F.Ioffe Scholarship, Ioffe Institute.