

Nikita Ustimenko

Born: 15.04.2000,
Saint Petersburg, Russia
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RESEARCH INTERESTS

Quantum Optics, Subradiance, Atomic Ensembles, Doubly Excited States, Nonradiant States, All-dielectric Nanophotonics, Multipole Analysis, Coupled Multipole Model, Metasurfaces, Nanoparticles, Mie Theory.

LANGUAGES

- **Human:** Russian (native), English (B2)
- **Machine:** Matlab, Latex, Overleaf, Comsol Multiphysics, CST Microwave Studio, Python

EDUCATION

- Department of Physics, University of Burgundy Franche-Comte** Dijon, France
M.Sc. 2 in Physics, photonics and nanotechnology 2022 –Present
- Heads of the program: Prof. Claude Leroy & Prof. Benoit Cluzel
 - Thesis: “Resonant multipole coupling in nanoparticle structures for light trapping and propagation control”
 - Supervisor: [Prof. Andrey Evlyukhin](#)
- Faculty of Physics, School of Physics and Engineering, ITMO University** St. Petersburg, Russia
M.Sc. in Nanophotonics and Metamaterials, GPA:5.00/5.00 2021 –Present
- Head of the program: [Prof. Andrey Bogdanov](#)
 - Thesis: “Doubly excited subradiant states in ensembles of quantum emitters”
 - Supervisor: [Prof. Mihail Petrov](#)
- Faculty of Physics, School of Physics and Engineering, ITMO University** St. Petersburg, Russia
B.Sc. in Nanophotonics and Quantum Optics (with honors), GPA: 4.98/5.00 2017–2021
- Head of the program: [Prof. Pavel Belov](#)
 - Thesis: “Multiple scattering in problems on modeling and optimizing the optical response of nanostructure ensembles with induced multipole moments”
 - Supervisor: [Dr. Kseniia Baryshnikova](#)

WORK EXPERIENCE

Faculty of Physics, School of Physics and Engineering, ITMO University

Research Engineer

St. Petersburg, Russia

June 2019–Present

- Writing programs and modeling in Matlab
- Preparing articles (Latex, Overleaf, Adobe Illustrator for figures) and conference presentations (PowerPoint)
- Applying to grants and scholarships

TEACHING

Quantum Optics

Master course at ITMO University (in English)

St. Petersburg, Russia

Fall 2021–Present

- Lecture notes

Nanophotonics

Bachelor & Master course at ITMO University (in English)

St. Petersburg, Russia

Fall 2020–Present

- Checking homework assignments
- Lectures & practical classes
- Lecture notes

GRANTS & SCHOLARSHIPS

- Erasmus+, individual 2023
- Merit State Academic Scholarship for research activity, individual 2022, 2021, 2020
- [Scholarship of the President of the Russian Federation in priority areas](#), individual 2022-2023
- [Vladimir Potanin Scholarship](#), individual 2022-2023
- Grant of Russian Science Foundation No. 21-72-00096, employee 2021-2022
- [Scholarship Competition for Undergraduates, Faculty of Physics, ITMO University](#), individual (2-nd prize) 2021
- Grant of Russian Foundation of Basic Research No. 19-12-50348, employee 2019

PUBLICATIONS

1. Kseniia V. Baryshnikova, Sergey S. Kharintsev, Pavel A. Belov, **Nikita A. Ustimenko**, Sergey A. Tretyakov, Constantin R. Simovskii, “Metalenses for subwavelength imaging”, **Physics-Uspekhi**, 2022; [DOI:10.3367/UFNe.2021.03.038952](https://doi.org/10.3367/UFNe.2021.03.038952) [**IF: 3.361, Q2**].
2. **Nikita A. Ustimenko**, Danil F. Kornovan, Kseniia V. Baryshnikova, Andrey B. Evlyukhin, Mihail I. Petrov, “Multipole Born series approach to light scattering by Mie-resonant nanoparticle structures”, **Journal of Optics** **24**, p. 035603, 2022; [DOI:10.1088/2040-8986/ac4a21](https://doi.org/10.1088/2040-8986/ac4a21) [**IF: 2.516, Q1**].
3. **Nikita Ustimenko**, Kseniia V. Baryshnikova, Roman Melnikov, Danil Kornovan, Vladimir Ulyantsev, Boris N. Chichkov, Andrey B. Evlyukhin, “Multipole optimization of light focusing by silicon nanosphere structures”, **Journal of the Optical Society of America B** **38**, pp. 3009-3019, 2021; [DOI:10.1364/JOSAB.436139](https://doi.org/10.1364/JOSAB.436139) [**IF: 2.106, Q2**].

CONFERENCE PRESENTATIONS

1. (oral) [Yenisey Photonics 2022](#), Online, Dates 19.09.2022-24.09.2022
2. (poster) [International Conference PhysicA.SPb/2021](#), Online, Dates 18.10.2021-22.10.2021
3. (two posters) [VI International Conference on Nanophotonics and Metamaterials METANANO 2021](#), Online, Dates 13.09.2021-17.09.2021
4. (oral) [XXXII A.P. Sukhorukov All-Russian School-Seminar "Wave Phenomena: Physics and Applications" \("Waves-2021"\)](#), Online, Dates 06.06.2021-11.06.2021
5. (oral) [X All-Russian Congress of Young Scientists KMU-2021](#), Online, Dates 14.04.2021-17.04.2021
6. (poster) [XVII A.P. Sukhorukov Russian School-Seminar "Wave phenomena in inhomogeneous media" \("Waves-2020"\)](#), Online, Dates 23.08.2020-28.08.2020

CONFERENCE PROCEEDINGS (INCLUDED TO SCOPUS / WEB OF SCIENCE)

1. **N.A. Ustimenko**, K.V. Baryshnikova, R.V. Melnikov, D.F. Kornovan, V.I. Ulyantsev, A.B. Evlyukhin, "Light focusing by silicon nanosphere structures under conditions of magnetic dipole and quadrupole resonances", *Journal of Physics: Conference Series* 2015, p. 012160, 2021; DOI:10.1088/1742-6596/2015/1/012160 [IF: 0.55].
2. **N. Ustimenko**, D.F. Kornovan, K.V. Baryshnikova, A.B. Evlyukhin, M. Petrov, "Application of Born series for modeling of Mie-resonant nanostructures", *Journal of Physics: Conference Series* 2015, p. 012161, 2021; DOI:10.1088/1742-6596/2015/1/012161 [IF: 0.55].
3. **N. Ustimenko**, K. Baryshnikova, D. Kornovan, M. Beliakov, A.B. Evlyukhin, "Born series using for designing of all-dielectric metalenses", *AIP Conference Proceedings* 2300 (1), p. 020007, 2020; DOI:10.1063/5.0031976 [IF: 0.4].

SCHOOLS & INTERNSHIPS

1. Research internship at Group of [Prof. B. Chichkov](#), Leibniz Universität Hannover, Hannover, Germany, Dates 01.02 - present 2023
2. [Summer School on Photonics of 2D Materials METANANO SCHOOL 2021](#), Online, Dates 19.07-23.07 2021
3. [Summer School on Metamaterials and Nanophotonics METANANO SCHOOL 2020](#), Online, Dates 06.07-10.07 2020
4. [International Winter School on Physics of Semiconductors 2020](#), St. Petersburg, Russia, Dates 27.02-02.03 2020