

Nikita Ustimenko

Born: 15.04.2000,
St. Petersburg, Russia
Citizenship: Russia
Office: 191002 Lomonosov street 9,
St. Petersburg, Russia
Website: [Homepage](#)
Email: nustimenko38@gmail.com
nikita.ustimenko@metalab.ifmo.ru
Skype: nustimenko38
ORCID: 0000-0002-5137-493X
[Google Scholar](#)
[ResearchGate](#)
(updated: May 5, 2021)

BASIC INFO

Bachelor student in Theoretical Nanophotonics, [Faculty of Physics @ ITMO University](#). Advised by [Kseniia Baryshnikova](#).

RESEARCH INTERESTS

All-dielectric Nanophotonics, Metalenses, Mie Theory, Multipole Decomposition, Coupled Multipole Model, Multiple-Scattering Theory, Born Approximation (Scattering) Orders Formalism.

SCIENTIFIC TOOLS

- Pen and paper
- Programming (Matlab)
- COMSOL Multiphysics

LANGUAGES

- **Human:** Russian (native), English (fluent)
- **Machine:** Matlab, Latex

EDUCATION

Faculty of Physics, School of Physics and Engineering, ITMO University St. Petersburg, Russia
B.S. in Nanooptics and Optoelectronics, GPA: 4.98/5.00 2017–Current

- Thesis: “Multiple scattering in problems on modeling and optimization of optical response of nanostructure ensembles with induced multipole moments”
- Advisor: [Kseniia Baryshnikova](#)

WORK EXPERIENCE

Faculty of Physics, School of Physics and Engineering, ITMO University St. Petersburg, Russia
Educational Course Assistant September 2020–Current

PUBLICATIONS & CONFERENCES

▪ Papers

1. [K.V. Baryshnikova, S.S. Kharintsev, P.A. Belov, N.A. Ustimenko, S.A. Tretyakov, C.R. Simovskii. Metalenses for subwavelength imaging // Physics-Uspekhi. – 2021; DOI:10.3367/UFNe.2021.03.038952.](#)
2. [N.A. Ustimenko, K.V. Baryshnikova, R.V. Melnikov, D.F. Kornovan, V.I. Ulyantsev, B.N. Chichkov, A.B. Evlyukhin. Multipole optimization of light focusing by silicon nanosphere structures // arXiv preprint arXiv:2103.01482. – 2021 Mar 2 \(under revision in Phys. Rev. Appl.\).](#)
3. [N.A. Ustimenko, D.F. Kornovan, K.V. Baryshnikova, M.I. Petrov. Light-scattering on the Mie-resonant nanostructures: multipole Born series approach \(draft\).](#)

▪ Proceedings

1. [N. Ustimenko, K. Baryshnikova, D. Kornovan, M. Beliakov, A.B. Evlyukhin. Born series using for designing of all-dielectric metalenses // AIP Conference Proceedings. – AIP Publishing LLC, 2020. – Vol. 2300. – No. 1. – p. 020007; DOI:10.1063/5.0031976.](#)
2. [N.A. Ustimenko, K.V. Baryshnikova, D.F. Kornovan, A.B. Evlyukhin. Born expansion for problem of metalens modeling. Proceedings of XVII A.P. Sukhorukov Russian School-Seminar “Wave Phenomena: Physics and Applications” \(“Waves-2020”\) – 2020. – pp. 13-16 \(no DOI, in Russian\).](#)
3. [N.A. Ustimenko, K.V. Baryshnikova, R.V. Melnikov, D.F. Kornovan, V.I. Ulyantsev, B.N. Chichkov, A.B. Evlyukhin. Light focusing by silicon nanosphere structures under conditions of magnetic dipole and quadrupole resonances // J. Phys. Conf. Ser. – 2021 \(accepted\).](#)
4. [N.A. Ustimenko, D.F. Kornovan, K.V. Baryshnikova, A.B. Evlyukhin, M.I. Petrov. Application of Born series for modeling of Mie-resonant nanostructures // J. Phys. Conf. Ser. – 2021 \(accepted\).](#)

▪ Conferences & Schools

2021

1. [International Conference PhysicA.SPb/2021](#) (accepted poster).
2. [VI International Conference on Nanophotonics and Metamaterials METANANO 2021](#) (two accepted posters).
3. [Summer School on Photonics of 2D Materials METANANO SCHOOL 2021.](#)
4. [XXXII A.P. Sukhorukov All-Russian School-Seminar “Wave Phenomena: Physics and Applications” \(“Waves-2021”\).](#) (accepted oral).
5. [X All-Russian Congress of Young Scientists KMU-2021](#) (best oral).

2020

1. [XVII A.P. Sukhorukov Russian School-Seminar “Wave Phenomena: Physics and Applications” \(“Waves-2020”\)](#) (poster).
2. [Summer School on Metamaterials and Nanophotonics METANANO SCHOOL 2020.](#)
3. [International Winter School on Physics of Semiconductors 2020.](#)

AWARDS, GRANTS & HONOURS

- | | |
|--|-------------|
| ▪ Graduate Scholarship of Faculty of Physics | 2021 |
| ▪ Merit State Academic Scholarship for research activity | spring 2021 |
| ▪ Grant of Russian Foundation of Basic Research 19-12-50348, <u>employee</u> | 2019 |
| ▪ Merit State Academic Scholarship for educational activity | spring 2018 |

TEACHING

Optics of Waveguides and Resonators

Bachelor Course at ITMO University. Practical classes

February 2021–Current

Introduction to Photonics

Master Course at ITMO University. Practical classes

September 2020–Current

OTHER ACTIVITIES

- V International Conference on Nanophotonics and Metamaterials METANANO 2020, volunteer 2020
- Saint-Petersburg Olympiad in Theoretical Foundations of Electrical Engineering, 3rd place 2017