

Curriculum vitae

Personal details

Olga Kushchenko

Born 28th February 1999

Saint-Petersburg, Russia

e-mail: olga.kushchenko@metalab.ifmo.ru

telephone: 89217884533

Profile

I received a bachelor's degree at ITMO University, Faculty of Photonics and Optical Information, Physics of Nanostructures program. At the beginning of my research activity (2-3 courses), I worked on a theoretical description of the dynamics of nanoparticles in ion traps. As a result of this work, the article in the Journal of Technical Physics was published ([link](#)). I also presented the results of the work at three international and three all-Russian conferences. In the 4th year of studying, I decided to change my scientific interests and started to work on a project connected with researching of self-assembly of colloidal quantum dots to dendritic structures. During this work, I got basic skills of working in a chemical laboratory and at such devices as a spectrophotometer, fluorescence spectrophotometer and confocal laser scanning microscopy. According to the results of the research, the article in Optics and Spectroscopy journal was published ([link](#)).

Additional skills:

- Wolfram Mathematica
- Origin Lab
- Experimental data processing
- Experiments with spectrophotometer Shimadzu UV-3600
- Experiments with fluorescence spectrophotometer Cary Eclipse
- Experiments with confocal laser scanning microscopy Zeiss LSM-710
- Experiments with time-resolved Fluorescence Microscope PicoQuant MicroTime 100

Publications (articles):

1. Kushchenko O.M., Rudyi S.S., Borodina L.N., Cherevko S.A., Rozhdestvensky Y.V. Fractal Properties of CdTe Quantum Dots Dendrites // Optics and spectroscopy - 2020, Vol. 128, No. 8, pp. 1190

Link to the article: <https://link.springer.com/article/10.1134/S0030400X20080202>

2. Vasil'Ev I.A., Kushchenko O.M., Rudyi S.S., Rozhdestvenskii Y.V. Effective Rotational Potential of a Molecular Ions in a Plane Radio-Frequency Trap // Technical Physics - 2019, Vol. 64, No. 9, pp. 1379–1385

Link to the article: <https://link.springer.com/article/10.1134/S1063784219090202>

3. Васильев И.А., Кущенко О.М., Рудый С.С., Рождественский Ю.В. Эффективный ротационный потенциал молекулярных ионов в плоской радиочастотной ловушке // Журнал технической физики - 2019. - Т. 89. - № 9. - С. 1457-1463

Link to the article: <https://www.elibrary.ru/item.asp?id=41130911>

Publications (abstracts):

1. Кущенко О.М., Рождественский Ю.В. Фрактальные характеристики самоупорядоченных дендритов CdTe квантовых точек//Сборник тезисов докладов конгресса молодых ученых. Электронное издание – 2020

Link to the abstract: <https://kmu.itmo.ru/digests/article/2954>

2. Kuschenko O., Vasiliev I., Rudyi S., Rozhdestvensky Y. Molecular Dipole Electrostatic Localization//13th European Conference on Atoms, Molecules and Photons Abstract Book, IET - 2019, pp. 155

Link to the abstract (155 pp):

<https://www.ecamp13.org/sites/www.ecamp13.org/files/documenti/ecamp2019-abstract-book.pdf>

3. Кущенко О.М., Бородина Л.Н., Рудый С.С., Рождественский Ю.В. Fractal properties of CdTe quantum dots dendrites//Book of abstracts of the 2nd International school conference for young researchers “Smart Nanosystems for Life”, IET – 2019

Link to the abstract (96 pp):

https://drive.google.com/file/d/1Cr0FLAT5AQCp5XU_VUB61eUzDhKcGkTj/view?usp=sharing

4. Kuschenko O., Vasiliev I., Rudyi S., Rozhdestvensky Y. Effective Rotation Potential of the Diatomic Molecular Ion in the RF Trap//13th European Conference on Atoms, Molecules and Photons Abstract Book, IET - 2019, pp. 172

Link to the abstract (172 pp):

<https://www.ecamp13.org/sites/www.ecamp13.org/files/documenti/ecamp2019-abstract-book.pdf>

5. Kushchenko O.M., Vasilev I.A., Rudiy S.S., Rozhdestvensky Y.V. Mass Selection in a Nonlinear Effective Potential//Progress In Electromagnetics Research Symposium Abstracts, IET - 2018, pp. 1714

Link to the abstract (1714 pp):

<https://drive.google.com/file/d/18f7NLpu4jsBpcxgZDH68MuQg5ZmCLfB2/view?usp=sharing>

6. Кущенко О.М., Иванов А.В. Аппаратная система локализации сложных биомолекулярных комплексов//Сборник тезисов докладов и трудов конгресса молодых ученых – 2018

Link to the abstract:

http://old.kmu.itmo.ru/collections_article/6920/apparatnaya_sistema_lokalizacii_slozhnyh_bio_molekulyarnyh_kompleksov.htm

7. Кущенко О.М., Васильев И.А., Иванов А.В. Ротационный эффективный потенциал молекулярного иона в линейной радиочастотной ловушке Пауля//Сборник тезисов докладов и трудов конгресса молодых ученых – 2018

Link to the abstract:

http://old.kmu.itmo.ru/collections_article/7397/rotacionnyy_effektivnyy_potencial_molekulyarnogo_iona_v_lineynoy_radiochastotnoy_lovushke_paulya.htm

Participation in conferences:

1. IX Congress of Young Scientists in St. Petersburg, Russia, April 15-18, 2020 <https://kmu.itmo.ru/>

2. The 2nd international school-conference for young researchers «Smart Nanosystems for Life» in St. Petersburg, Russia, December 10-13, 2019 <http://snl.itmo.ru/>

3. The 13th European Conference on Atoms Molecules and Photons (ECAMP13) in Florence, Italy, April 8-12, 2019 <https://www.ecamp13.org/>

4. All-Russian conference "Физика ультрахолодных атомов", in Novosibirsk, Russia, December 17-19, 2018 <https://www.isp.nsc.ru/quantum18>

5. Progress In Electromagnetics Research Symposium (PIERS) in Toyama, Japan, August 1-4, 2018 <http://www.piers.org/piers2018Toyama/>

6. VII Congress of Young Scientists in St. Petersburg, Russia, April 17-20, 2018 <http://old.kmu.itmo.ru/>