

Elizaveta P. Lazareva



Date of birth: 30.11.1994

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Education:

January 2022 – current: PhD course, Department of Materials Science and Engineering, Uppsala University, Sweden.

Research topic: Simultaneous scattering and magnetometry methods to study novel electrode materials.

Main supervisor: Dr. Germán Salazar Alvarez.

September 2017 – August 2018: PhD course, Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST).

Research topics: Plasmonic-tuned flash lamp welding of copper nanoparticles; Synthesis and investigation of copper organometallic inks for uniform coating of flexible plastics under laser and flash lamp explosion.

Supervisor: Dr. Keon Jae Lee.

September 2015 – July 2017: master degree, Faculty of Materials Science, Lomonosov Moscow State University.

Research topic: Quasi-two-dimensional CdTe nanoparticles and heterostructures based on them.

Supervisor: Dr. Roman B. Vasiliev.

GPA: 4.9 (5.0 - maximum)

September 2011 – July 2015: bachelor degree, Faculty of Materials Science, Lomonosov Moscow State University.

Research topics: Synthesis and investigation of CuS and Cu₂S plasmonic nanoparticles; Synthesis and optical properties of quasi-two-dimensional heterostructures based on CdTe.

Supervisor: Dr. Roman B. Vasiliev.

GPA: 4.3 (5.0 - maximum)

Work experience:

October 2018 – December 2020: Institute of Nanotechnologies of Microelectronics of The Russian Academy of Sciences, Moscow, Russia; researcher (Main responsibilities: Raman and FTIR spectroscopy analysis)

May 2016 – August 2017: The laboratory of chemistry and physics of sensor and semiconductor materials, Department of Chemistry, Lomonosov Moscow State University; engineer

September 2011 – August 2017: The laboratory of chemistry and physics of sensor and semiconductor materials, Department of Chemistry, Lomonosov Moscow State University; undergraduate/postgraduate research student

April, October – November 2013 Festival of Science (Nauka 0+); Exhibition of Max Planck Science Tunnel – Popular-Science events in Moscow; tour guide

Peer-reviewed publications:

1. L.V. Arapkina, K.V. Chizh, D.B. Stavrovskii, V.P. Dubkov, E.P. Lazareva, and V.A. Yuryev. *Diffusion processes in germanium and silicon films grown on Si₃N₄ substrates* // **Solar Energy Materials & Solar Cells**, 230, 2021.

[DOI: 10.1016/j.solmat.2021.111231](https://doi.org/10.1016/j.solmat.2021.111231)

2. R.B. Vasiliev, E.P. Lazareva, D.A. Karlova, A.V. Garshev, Y. Yao, T. Kuroda, A.M. Gaskov, and K. Sakoda. *Spontaneous folding of CdTe nanosheets induced by ligand exchange* // **Chemistry of Materials**, 30, 1710–1717, 2018.
[DOI: 10.1021/acs.chemmater.7b05324](https://doi.org/10.1021/acs.chemmater.7b05324)
3. E.P. Lazareva, V.F. Kozlovskii, R.B. Vasiliev, and A.M. Gaskov. *Tin domain growth on quasi-two-dimensional CdTe and CdSe nanoparticles* // **Russian Journal of Inorganic Chemistry**, 63(5), 642–646, 2018.
[DOI: 10.1134/s0036023618050133](https://doi.org/10.1134/s0036023618050133)
4. R.B. Vasiliev, A.I. Lebedev, E.P. Lazareva, N.N. Shlenskaya, V.B. Zaytsev, A.G. Vitukhnovsky, Y. Yao, and K. Sakoda. *High-energy exciton transitions in quasi-two-dimensional cadmium chalcogenide nanoplatelets* // **Physical Review B - Condensed Matter and Materials Physics**, 95(16), 165414, 2017.
[DOI: 10.1103/PhysRevB.95.165414](https://doi.org/10.1103/PhysRevB.95.165414)
5. A.G. Vitukhnovsky, A.S. Selyukov, V.R. Solovey, R.B. Vasiliev, and E.P. Lazareva. *Photoluminescence of CdTe colloidal quantum wells in external electric field* // **Journal of Luminescence**, 186, 194–198, 2017
[DOI: 10.1016/j.jlumin.2017.02.041](https://doi.org/10.1016/j.jlumin.2017.02.041)

Conference papers (selected):

1. Ch.K. Jeong, E.P. Lazareva, K.J. Lee. Highly flexible piezoelectric generator with stretchability up to 300% and robust energy conversion // **IV International Conference on Nanogenerators and Piezotronics NGPT**, 2018, Seoul, Korea
2. T.H. Im, E.P. Lazareva, M. Kim, K.J. Lee. Ultra-flat and transparent Silver Nanowire network for flexible and leakage-free Organic Light-Emitting Diodes // **The 4th International Conference on Advanced Electromaterials**, 2017, Jeju, Korea
3. R.B. Vasiliev, N.N. Shlenskaya, E.P. Lazareva, B.M. Saidjonov, D.A. Karlova, A.V. Garshev, A.I. Lebedev. Ultrathin heterostructures based on quasi-2D CdSe and CdTe nanoplatelets: synthesis, structure and optical properties // **MSU-IFW-ILTPE Joint Workshop. Synthesis, Theoretical Examination and Experimental Investigation of Emergent Materials**, 2017, Moscow, Russia
4. M.S. Sokolikova, E.P. Lazareva, R.B. Vasiliev, A.M. Gaskov. Formation of heteronanostructures with quasi-2D geometry based on atomically thin CdSe and CdTe nanoplates via ligand exchange // **XII International Conference on Nanostructured Materials (NANO 2014)**, 2014, Moscow, Russia
5. E.P. Lazareva, M.S. Sokolikova, R.B. Vasiliev. Synthesis of quasi-two-dimensional CdSe nanoplatelets with controlled thickness // **XXIV Mendeleev's conference of students and young scientists**, 2014, Volgograd, Russia
6. E.P. Lazareva, A.A. Irkhina. Synthesis and investigation of colloidal plasmonic Cu₂S nanoparticles // **XX International Conference of students and young scientists "Lomonosov-2013"**, 2013, Moscow, Russia

Skills:

- Colloidal synthesis of nanoparticles
- UV-visible absorption and Luminescence spectroscopy analysis
- XRD (results processing)
- TEM, LIBRA200 (sample preparation, imaging, results processing)
- Raman (Renishaw inVia Qontor) and FTIR (Nicolet iS50) spectroscopy analysis
- Inorganic and organic synthesis, MOCVD and electrochemical methods of synthesis – basic experience

Languages: Russian – native speaker, English – fluency with scientific terms, Spanish – beginner

Additional qualifications: certified life coach (ACSTH ICF)