



**Photo:** I am with my wife (we got married on September 25, 2021), her name is Love.

#### **Dmitry Andreevich Savelyev (born 1988)**

- Graduated with honors (2011) S.P. Korolyov Samara State Aerospace University, presently, Samara National Research University, Faculty of Computer Science – Master of Applied Mathematics and Computer Science.
- He received his Candidate in Physics & Maths (2015) degrees from Samara National Research University.
- He is the associate professor (Department of Technical Cybernetics) and senior scientist of Science and Research Laboratory of Automated Systems of Science Researches (Samara National Research University), junior researcher at the Laboratory of laser measurements of the IPSI RAS – Branch of the FSRC “Crystallography and Photonics” RAS.

**Dmitry A. Savelyev** is co-author more than 70 scientific papers and 4 certificates of state registration of computer programs, h-index WoS – 10 (number of citations is 304), h-index Scopus – 12 (number of citations is 478).

**Dmitry Savelyev** was Executive Secretary of the II and III International Conference and Youth School “Information Technologies and Nanotechnologies” (ITNT-2016, ITNT-2017).

**Dmitry Savelyev** was head of 2 and participant of 15 scientific grants and state assignments for scientific research.

**His current research interests** include diffractive optics and nanophotonics, optical and digital image processing, singular optics and polarization transformations, high-performance computing, data science and neural networks.

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#### **Honors & Awards:**

- Winner of the grant competition "Young scientist SSAU 2013".
- Winner of the regional contest "Young Scientist" of the Samara region 2013 (graduate student) in the nomination "Computer and Mathematical Modeling. Cybernetics".
- Winner of the regional contest "Young Scientist" of the Samara Region 2015 (Ph.D.) in the nomination "Computer and Mathematical Modeling. Cybernetics".
- Winner of the regional competition for young scientists and designers 2015, 2016, 2017, 2018, 2019, 2020, 2021 working in the Samara region and performing research and development work in priority areas for the development of science and technology for the Samara region.
- Laureate of the scholarship of the President of the Russian Federation for 2016-2018 in the section "Strategic information technologies, including the creation of supercomputers and software development."

- Laureate of the scholarship of the President of the Russian Federation for 2019 - 2021 in the section "Strategic information technologies, including the creation of supercomputers and software development."
- Winner of the 17th competition for young teachers and researchers of Samara University (2021).

#### **Participation in educational activities:**

- Lectures on the course "Operating Systems".
- Laboratory and practical classes in the courses "System and Application Software", "Modern Methods and Algorithms for Solving Complex Problems on Supercomputers", "Operating Systems".
- Management of diploma works of bachelors and masters of the direction "Applied Mathematics and Computer Science" (from 2017 to the present): protection of diplomas of 9 students topics of work which included the themes "Application of data mining tools for developing a recommendation system", "The use of neural networks to change the lighting conditions on images", "The use of convolutional neural networks to solve the problem of determining the age of a person from images of faces" and others.

#### **List of major publications (WoS)**

1. Savelyev, D., & Kazanskiy, N. (2021). Near-Field Vortex Beams Diffraction on Surface Micro-Defects and Diffractive Axicons for Polarization State Recognition. *Sensors*, 21(6), 1973. DOI: 10.3390/s21061973 **(Q1)**
2. Savelyev, D. A. (2021). The investigation of the features of focusing vortex super-Gaussian beams with a variable-height diffractive axicon. *Computer Optics*, 45(2), 214-221. DOI: 10.18287/2412-6179-CO-862
3. Savelyev, D. A. (2021). The investigation of focusing of cylindrically polarized beams with the variable height of optical elements using high-performance computer systems. *Proceedings of SPIE - Optical Technologies for Telecommunications 2020*, 11793, 117930X. DOI: 10.1117/12.2591993
4. Savelyev, D. (2020). The investigation of the cylindrically polarized beams focusing by a diffractive axicon using high-performance computer systems. *2020 International Conference on Information Technology and Nanotechnology (ITNT)*, IEEE, 1-5. DOI: 10.1109/ITNT49337.2020.9253243
5. Degtyarev, S. A., Savelyev, D. A., & Khonina, S. N. (2019). Subwavelength Diffraction Grating with Continuous Ridges for Inverse Energy Flux Generation. *2019 Photonics & Electromagnetics Research Symposium-Spring (PIERS-Spring)*, IEEE, 2005-2010. DOI: 10.1109/PIERS-Spring46901.2019.9017337
6. Savelyev, D. A., & Krasnov, S. V. (2019). Simulation of pulses propagation in a waveguide with a diffraction grating using high-performance computer systems. *Proceedings of SPIE - Optical Technologies for Telecommunications 2018*, 11146, 1114609. DOI: 10.1117/12.2527244
7. Degtyarev, S. A., Savelyev, D. A., & Karpeev, S. V. (2019). Diffractive optical elements for the generating cylindrical beams of different orders. *Computer Optics*, 43(3), 347-355. DOI: <https://doi.org/10.18287/2412-6179-2019-43-3-347-355>
8. Degtyarev, S., Savelyev, D., Khonina, S., & Kazanskiy, N. (2019). Metasurfaces with continuous ridges for inverse energy flux generation. *Optics Express*, 27(11), 15129-15135. DOI: 10.1364/OE.27.015129 **(Q1)**
9. Savelyev, D. A., & Degtyarev, S. A. (2018). Investigation of vortex evanescent fields in the near zone of fiber taper and sub-wavelength diffractive axicon. *Proceedings of SPIE - Optical Technologies in Telecommunications 2017*, 10774, 107740J. DOI: 10.1117/12.2318740
10. Khonina, S., Degtyarev, S., Savelyev, D., & Ustinov, A. (2017). Focused, evanescent, hollow, and collimated beams formed by microaxicons with different conical angles. *Optics Express*, 25(16), 19052-19064. DOI:10.1364/OE.25.019052 **(Q1)**

11. Savelyev, D. (2017). Diffraction of a Gaussian beam on a gradient lens with a fractional degree of dependence on the radius. *Procedia Engineering*, 201, 69-72. DOI: 10.1016/j.proeng.2017.09.663
12. Savelyev, D. A., Khonina, S. N., & Golub, I. (2016). Tight focusing of higher orders Laguerre-Gaussian modes. *AIP Conference Proceedings*, 1724(1), 020021. DOI: 10.1063/1.4945141
13. Verma, P., Juneja, S., Savelyev, D. A., Khonina, S. N., & Gopal, R. (2016). Design and fabrication of a 1-DOF drive mode and 2-DOF sense mode micro-gyroscope using SU-8 based UV-LIGA process. *AIP Conference Proceedings* 1724(1), 020017. DOI: 10.1063/1.4945137
14. Khonina, S. N., Savelyev, D. A., & Kazanskiy, N. L. (2016). Analysis of polarisation states at sharp focusing. *Optik*, 127(6), 3372-3378. DOI: 10.1016/j.ijleo.2015.12.108
15. Khonina, S. N., Savelyev, D. A., & Kazanskiy, N. L. (2015). Vortex phase elements as detectors of polarization state. *Optics Express*, 23(14), 17845-17859. DOI: 10.1364/OE.23.017845 (Q1)
16. Savelyev, D. A., & Khonina, S. N. (2015). Characteristics of sharp focusing of vortex Laguerre-Gaussian beams. *Computer Optics*, 39(5), 654-662. DOI: 10.18287/0134-2452-2015-39-5-654-662.
17. Khonina, S. N., & Savelyev, D. A. (2015). Optimization of the optical microelements using high-performance computer systems. *Radiophysics and Quantum Electronics*, 57(8-9), 650-658. DOI 10.1007/s11141-015-9550-0
18. Khonina S.N., & Savelyev D.A. (2015). Laser beam polarization type identification in the tight focus model. *Pattern Recognition and Image Analysis*, 25(3), 442-455. DOI: 10.1134/S1054661815030104
19. Savelyev, D. A., & Khonina S. N. (2014). Numerical analysis of subwavelength focusing using a silicon cylinder. *Computer Optics*, 38(4), 638-642. DOI: 10.18287/0134-2452-2014-38-4-638-642
20. Savelyev, D. A., & Khonina, S. N. (2014). The calculation of the diffraction of the laser beams with a phase singularity on the micro-axicons with using high-performance computing. *Journal of Physics: Conference Series* 490(1), 012213. DOI: 10.1088/1742-6596/490/1/012213
21. Khonina, S. N., Karpeev, S. V., Alferov, S. V., Savelyev, D. A., Laukkanen, J., & Turunen, J. (2013). Experimental demonstration of the generation of the longitudinal E-field component on the optical axis with high-numerical-aperture binary axicons illuminated by linearly and circularly polarized beams. *Journal of Optics*, 15(8), 085704. DOI: 10.1088/2040-8978/15/8/085704 (Q1)
22. Khonina S. N., & Savelyev D. A. (2013). High-aperture binary axicons for the formation of the longitudinal electric field component on the optical axis for linear and circular polarizations of the illuminating beam. *Journal of Experimental and Theoretical Physics*, 117(4), 623-630. DOI: 10.1134/S1063776113120157
23. Khonina S.N., Savelyev D.A., & Ustinov A.V. (2013). Diffraction of laser beam on a two-zone cylindrical microelement. *Computer Optics*, 37(2), 160-169. DOI: 10.18287/0134-2452-2013-37-2-160-169
24. Khonina S.N., Karpeev S.V., Alferov S.V., & Savelyev, D. A. (2013). Experimental demonstration of generation of longitudinal component of the electric field on the optical axis by high-aperture binary axicon for linear and circular polarization of the incident beam. *Computer Optics*, 37(1), 76-87. DOI: 10.18287/0134-2452-2013-37-1-76-87
25. Khonina S.N., Savel'ev D.A., Serafimovich P.G., & Pustovoï, I. A. (2012). Diffraction at binary microaxicons in the near field. *Journal of Optical Technology*, 79(10), 626-631. DOI: 10.1364/JOT.79.000626