

Vladimir M. Shandarov

Date of Birth: 1950
Address: 40 Lenin Ave., Tomsk 634050, RUSSIA
Phone: +7(3822)701518
Fax: +7(3822)513262
E - mail: ShandarovVM@svch.rk.tusur.ru
Place of work: Scientific – Educational Center “Nonlinear optics, Nanophotonics and Laser Technologies” (Chief Scientific Fellow)
Department of Quantum Electronics at Tomsk State University of Control Systems and Radioelectronics
Position: Professor
Title: Professor

Education:

1967 - 1973 Tomsk Institute of Automatic Control Systems and Radioelectronics, Department of Radiotechnology - Engineer in Radioelectronics
1980 - 1983 Tomsk Institute of Automatic Control Systems and Radioelectronics, post-graduate course
1983 - Ph.D. (Candidate of Sciences) in Physic - Mathematic Sciences. The title of dissertation is "Investigation of Acoustooptical Interaction of Light with Inhomogeneous Acoustic Waves"
1994 - March 1997 - Tomsk Academy of Control Systems and Radioelectronics, post - doctoral course (doctorantura)
1997 - (October) - habilitation of a dissertation to the scientific degree of a Doctor of Physic – Mathematic Sciences. The title of dissertation is "Light interactions with physical fields in waveguide optical structures in lithium niobate".

Appointments:

Currently – Chief Scientific Fellow of Scientific – Educational Center “Nonlinear optics, Nanophotonics and Laser Technologies” at Tomsk State University of Control Systems and Radioelectronics, and Professor at Department of Quantum Electronics at the same University.

1998 – 2014 – Professor at Department of Quantum Electronics in Tomsk State University of Control Systems and Radioelectronics.

1997 – 1998 – Professor Assistant at Department of Quantum Electronics in Tomsk State University of Control Systems and Radioelectronics.

1983 - March 1994 - Senior Research Fellow at the Institute of Automatic Control Systems and Radioelectronics (currently - State University of Control Systems and Radioelectronics) in Tomsk, Russia.

1976 - Junior Research Assistant of the Department of Microwave and Quantum Radioelectronics at the same institution in Tomsk, USSR.

Research Experience and Interests:

Since 1976 I took part in and supervised the research projects on excitation of high-frequency surface acoustic waves in piezoelectric crystals, on development of technology for fabrication of optical waveguides in electrooptic crystals, on planar waveguide acoustooptics, on investigations of photorefractive effects within lithium niobate optical waveguides, on exploiting of light leakage effects in LiNbO₃ waveguides for electrooptic and acoustooptic modulation of light, on nonlinear optics of discrete waveguide systems (waveguide arrays and photonic lattices).

My current research interests are in the area of nonlinear and waveguide optics, photorefractive effects in electrooptic crystal and optical waveguides, nonlinear optics of periodic and quasi-periodic waveguide structures, photorefractive spatial solitons.

Supervision of research projects

Grant RFBR “Effects of formation and interaction of spatial optical solitons in photorefractive waveguides” (2000 - 2001).

Grant INTAS 01 – 0481 (2001 - 2003).

Grant RFBR, International competition of Russian-Chinese projects, 06-02-39017 GFEN_a, "Nonlinear optical effects in planar and periodic waveguide structures formed in electrooptic crystals by ion-implantation methods" (2006-2008).

Grant RFBR, International competition of Russian-Chinese projects, 11-02-91162 GFEN_a, "Formation and Investigation of photorefractive photonic waveguides and superlattices in optical crystals" (2011-2012).

Grant of Ministry of Education and Science of RF 3.878.2014K “Nonlinear-optical and diffraction effects in layered and waveguide-optical structures based on microstructured ferroelectric and semiconductor nitride single-crystals, films and liquid-crystal media” (2014 – 2016).

Honours, Awards, Fellowships

- Soros Professor, 2000, 2001.
- Member of Optical Society of America.
- Member of European Optical Society.
- Member of Laser Association of Russian Federation.
- Member of Tomsk Professor Assembly.

Reviewer of papers in Journals:

Optical Engineering, Physics Scripta, Journal of Physics D: Applied Physics, European Physical Journal D, Optics Letters, Optical Materials, Optics and Laser Technology.

Some recent scientific publications:

1. V. Shandarov, A. Perin, V. Ryabchenok. Self-induced diffraction patterns in nonlinear Fabry-Perot interferometer on lithium niobate // Journal of Physics: Conference Series 594 (2015) 012036.

2. V. Shandarov, A. Perin, V. Ryabchenok and F. Chen. Laser-Induced Photonic Waveguides and Systems in Ferroelectric Crystals // Advanced Solid State Lasers Conference © OSA 2015. ATu2A.2.pdf

<https://www.osapublishing.org/abstract.cfm?uri=ASSL-2015-ATu2A.2>

3. V. Shandarov, V. Ryabchenok, A. Perin. Discrete diffraction of light in 1D photonic lattice induced in lithium niobate by means of the pyroelectric effect // Physics Procedia 70 (2015) 754 – 757.

4. A. Kanshu, C.E. Rüter, D. Kip, V. Shandarov, P.P. Belicev, I. Ilic, M. Stepic. Observation of discrete gap solitons in one-dimensional waveguide arrays with alternating spacings and saturable defocusing nonlinearity // *Optics Letters*, Vol. 37 Issue 7, pp.1253-1255 (2012).
5. A. Kanshu, C. E. Rüter, D. Kip, P. P. Belicev, I. Ilic, M. Stepic, and V. M. Shandarov. Linear and nonlinear light propagation at the interface of two homogeneous waveguide arrays // *Optics Express* Vol. 19, Iss. 2, pp. 1158–1167 (2011).
6. A. S. Perin, V. M. Shandarov, and F. Chen. Formation of Quasi-Regular Diffraction Patterns in the Nonlinear Photorefractive Fabry–Perot Interferometer // *Physics of wave phenomena*, 2011, Vol. 19, No. 4, pp. 1-5.
7. A. Kanshu, C. E. Rüter, D. Kip, V.M. Shandarov. Optically-induced defect states in photonic lattices: formation of defect channels, directional couplers, and disordered lattices leading to Anderson-like light localization // *Appl. Phys. B.* -2009. -V. 95. -P. 537 – 543.
8. Yang Tan, Feng Chen, Xue-Lin Wang, Lei Wang, V.M. Shandarov and D. Kip. Formation of reconfigurable optical channel waveguides and beam splitters on top of proton-implanted lithium niobate crystals using spatial dark soliton-like structures, *J. Phys. D: Appl. Phys.* 41 (2008) 102001 (4pp).
9. Yang Tan, Feng Chen, Milutin Stepić, Vladimir Shandarov, and Detlef Kip. Reconfigurable optical channel waveguides in lithium niobate crystals produced by combination of low-dose O^{3+} ion implantation and selective white light illumination, *Optics Express*, V. 16, No. 14, 10465-10470 (2008).
10. Smirnov E., Rüter C.E., Kip D., Shandarova K., Shandarov V. Light propagation in double-periodic nonlinear photonic lattices in lithium niobate, *Appl. Phys. B.* – 2007. - Vol. 88, No. 3. - P. 359-362.
11. Milutin Stepić, Eugene Smirnov, Christian E. Rüter, Liv Pronneke, Detlef Kip, Vladimir Shandarov. Beam interactions in one-dimensional saturable waveguide arrays, *Phys. Rev. E* **74**, 046614 (2006).
12. E. Smirnov, M. Stepic, V. Shandarov, D. Kip. Pattern formation by spatially incoherent light in a nonlinear ring cavity, *Applied Physics B.*, 2006, V.85, N1, pp. 135-138.
13. K. V. Shandarova and V. M. Shandarov. “Incoherent” Generation of Spatial Gap Solitons within One-Dimensional Photorefractive Photonic Lattices in Lithium Niobate, *Laser Physics*, 2007, Vol. 17, No. 2, pp. 152–156.
14. F. Chen, M. Stepić, C. E. Rüter, D. Runde, D. Kip, V. Shandarov, O. Manela, and M. Segev: Discrete diffraction and spatial gap solitons in photovoltaic $LiNbO_3$ waveguide arrays, *Opt. Express* **13**, 4314-4324 (2005).
15. Yu.F. Kargin, A.V. Egorysheva, V.V. Volkov, M.N. Frolova, M.V. Borodin, S.M. Shandarov, V.M. Shandarov, Detlef Kip: The Growth of photorefractive planar BTO/BSO and BTO/BGO waveguide. *Journal of Crystal Growth*, V. 275, pp. e2403-e2407 (2005).

Teaching activity:

Lectures on:

- Optoelectronic and quantum elements and devices;
- Basics of Physical Optics;
- Basic of Fiber Optics;
- Fiber - Optic Devices and Systems for Applications in Technology;
- Fiber optics;
- Optical solitons.

Languages:

Russian (native), English.