

## **Curriculum Vitae of Andrey Tsarev, Dr. Sci.**

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Andrey (Andrei) Tsarev (M'77) was born in Kuybyshev, Russia, in April 1955. He received the Diploma degree in physics (M.S.) from Novosibirsk State University, Novosibirsk, Russia in 1977, and the Degree of Candidate of Sciences (Ph.D.) and the Doctor of Sciences degree from the A. V. Rzhanov Institute of Semiconductor Physics, Siberian Branch of Russian Academy of Sciences (ISP SB RAS), Novosibirsk, Russia in 1983 and 2008, respectively. Since 1977, he has been with the ISP SB RAS, where he is currently a Chief Scientist and the Head of NanoPhotonics and Integrated Optics Group. He has investigated propagation optical waves and its interaction with surface acoustic wave in semiconductor, inhomogeneous and anisotropic waveguide structures. He has proposed and invented multi-splitting filtering technology and has numerically studied its implementation for compact tunable devices (filters and reconfigurable optical add/drop multiplexers) on different materials (silicon-on-insulator (SOI), lithium niobate, etc.). These devices are intended for fiber-optic interrogation and flexible wavelength-division-multiplexing (WDM) fiber optical networks. In recent years, he has conducted intensive investigation in silicon photonics. He proposes and investigates the wide single-mode heterogeneous and strip and grating-loaded waveguides on SOI, as well as efficient silicon wire waveguide crossing with negligible loss and crosstalk. The new SOI design is CMOS compatible and intended for implementation in multiple nano-photonics elements and the most preferable for development multi-splitting filtering devices for WDM and sensors. He had conducted two original lecturing courses for Politecnico di Bari, Italy: "Acoustooptic devices" (24-hours, September 2004) and "Acoustooptic interaction in anisotropic and semiconductor waveguides" (20-hours, December 1999). He has published about 100 scientific papers, as well as three U.S. and three Russian patents.

### Main publications of Andrey Tsarev, Dr. Sci.

1. A V Tsarev, E A Kolosovskii, "Analysis of light propagation for a crossing of thin silicon wires using vertical tunnelling coupling with a thick optical channel waveguide," *Quantum Electronics*, vol. 43(8), pp. 744–750 (2013), <http://dx.doi.org/10.1070/QE2013v043n08ABEH015089>, [http://www.turpion.org/php/full/infoFT.phtml?journal\\_id=qe&paper\\_id=15089&year\\_id=2013&volume\\_id=43&issue\\_id=8&fpage=744](http://www.turpion.org/php/full/infoFT.phtml?journal_id=qe&paper_id=15089&year_id=2013&volume_id=43&issue_id=8&fpage=744).
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9. Andrei V. Tsarev, "Compact acousto-optic filter with beam expanders constituted by photonic crystal rows of airholes," *Opt. Lett.* 35, 4033-4035 (2010).
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11. A.V.Tsarev, "Optical properties of wide strip and grating loaded single mode channel waveguides," *Quantum Electronics*, 39 (12), pp.1169–1174 (2009).
12. Francesco De Leonardis, Andrei V. Tsarev, Vittorio M. Passaro, "Optical properties of new wide heterogeneous waveguides with thermo optical shifters", *Optics Express* Vol. 16, Iss. 26, pp. 21333–21338 (2008).
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### **Chapter in Books**

49. Andrei V. Tsarev, Vittorio M. N. Passaro, and Francesca Magno, "Widely Tunable Reconfigurable Optical Add/Drop Multiplexers in Silicon-on-Insulator Technology: a New Approach", in *Silicon Photonics*, Editor: Vittorio M N Passaro, publisher Research Signpost, Trivandrum, Kerala, India: ISBN: 81-308-0077-2, chapter 3, pages 47-77 (2006).

### **Doctor Thesis**

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### **Patents and Inventions**

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23. A.V. Tsarev, Passive polarization rotator in anisotropic LiNbO<sub>3</sub> graded-index waveguide, 14th European Conference on Integrated Optics Eindhoven, the Netherlands on 11-13 June, 2008 (ECIO 2008), ThP15, poster.
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