

# CURRICULUM VITAE

## Georgiy V. Tkachenko

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## EDUCATION

|              |                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2007-present | Ph.D. Student; speciality: "Radiophysics".                                                                                            |
| 2007         | Master of Science; speciality: "Lasers and optoelectronic techniques".                                                                |
| 2006-2007    | M.S. student at the Electronics Faculty in the KhNURE, Kharkov, Ukraine. Speciality: "Lasers and optoelectronic techniques". GPA = 5. |
| 2006         | Bachelor of Science in the area of lasers and optoelectronic techniques.                                                              |
| 2002-2006    | Student at the Electronics Faculty in the KhNURE, Kharkov, Ukraine. Speciality: "Lasers and optoelectronic techniques". GPA = 4.93.   |
| 1992-2002    | Study in the Academical gymnasium №45, Kharkov, Ukraine                                                                               |

**Languages:** Russian, Ukrainian, English, Italian (entry level).

**Personal:** date of birth: 10 September 1985, not married, good health.

## Ph.D. THESIS

**Title:** "Active elements based on liquid crystals for photonic applications"

## MASTER DEGREE THESIS

**Title:** "Investigation of porous silicon in near infrared range for active optical filters"

### Professional activity:

- Modeling of light propagation through multilayer porous silicon (PSi) distributed Bragg reflectors and rugate filters;
- Calculation of nematic liquid crystal (NLC) director-field within cylindrical macropores under influence of an external electric field;
- Calculation of the effective refractive index of a macropore with NLC;
- Modeling of electrically and thermally tunable multilayer PSi filter infiltrated with NLC;

- Study of porous silicon fabrication technology;
- Computerization of PSi multilayer fabrication and simulation processes;
- Study of the NLC infiltration into PSi samples and modeling of the NLC volume fraction inside porous medium;
- Study of the influence of electric field and temperature on spectral characteristics of PSi multilayers with NLC.

## COMPUTER SKILLS

**Research software:** MATLAB;  
Mathcad;  
RSoft;  
FemLab.

**Other:** Microsoft Office: Word, Excel, PowerPoint;  
Adobe Acrobat;  
CorelDRAW;  
Adobe PhotoShop;  
OriginPro.

## FOREIGN COLLABORATION

Participation in activity of Integrated Optics laboratory in the University of Naples Federico II, 19 January – 8 February, 2005, Naples, Italy.

Work on probation and performing of experiments for MS thesis in Institute of Microelectronics and Microsystems (IMM-CNR), 27 February – 5 June, Naples, Italy.

## MEMBERSHIP

**IEEE** Student member. The Institute of Electrical and Electronic Engineers (<http://www.ieee.org>).  
Member of the Organizing Committee for IEEE-LEOS International Conference on Laser and Fiber Optical Networks Modeling, **LFNM** (<http://lfnm.kture.kharkov.ua>).  
Member of the Organizing Committee for IEEE-LEOS International Conference on Advanced Optoelectronics and Lasers, **CAOL** (<http://caol.kture.kharkov.ua>).

## JOURNAL PUBLICATIONS

1. V. Tkachenko, A.A. Dyomin, G.V. Tkachenko, G. Abbate, I.A. Sukhoivanov, "Electrical reorientation of liquid crystal molecules inside cylindrical pores for photonic device applications", *J. Opt. A: Pure Appl. Opt.*, vol. 10, No 5, May 2008, pp. 055301-6.

## PARTICIPATION IN CONFERENCES

1. G.V. Tkachenko, I.V. Guryev, "Experimental research of two-channel demultiplexer based on microstrip structure with photonic band gap", *Proceedings of the 9<sup>th</sup> International youth Forum "Radio electronics and youth in the XXI century"*, Kharkov, Ukraine, 2005 (in Russian).
2. G.V. Tkachenko, V.I. Fesenko, I.V. Guryev, "Wavelength division multiplexer based on FBG with defect", *Proceedings of the 7<sup>th</sup> International Conference on Laser and Fiber-Optical Networks Modeling, LFNM'05*, September 15-17, 2005, Yalta, Crimea, Ukraine, pp 176-179.

3. I.O. Zinkovska, A.A. Dyomin, E.V. Tkachenko, E. Alvarado-Mendez, V.M. Tkachenko, O. Ibarro-Manzano, J.A. Andrare-Lucio, I.A. Sukhoivanov, "Electrical modulation of Bragg reflectors based on porous silicon infiltrated with liquid crystals", *Proceedings of the 7<sup>th</sup> International Conference on Laser and Fiber-Optical Networks Modeling, LFNM'05*, September 15-17, 2005, Yalta, Crimea, Ukraine, pp 152-155.
4. A.A. Dyomin, V.I. Fesenko, I.O. Dyomina, G.V. Tkachenko, I.A. Sukhoivanov, V.M. Tkachenko, "Polarization dependence of optical characteristics of microcavity based on macroporous silicon infiltrated with liquid crystals", *Proceedings of the 8<sup>th</sup> International Conference on Laser and Fiber-Optical Networks Modeling, LFNM'06*, 29 June – 1 July 2006, Kharkov, Ukraine, pp 493-496.
5. G.V. Tkachenko, I.V. Guryev, "Dispersion compensators based on chirped multilayer structures", *Proceedings of the 11<sup>th</sup> International youth Forum "Radio electronics and youth in the XXI century,"* Kharkov, Ukraine, 2007 (in Russian).
6. G.V. Tkachenko, A.A. Dyomin, I.A. Sukhoivanov, "Influence of electric field on molecular alignment of liquid crystals infiltrated in porous silicon", *Proceedings of the 11<sup>th</sup> International youth Forum "Radio electronics and youth in the XXI century,"* Kharkov, Ukraine, 2007 (in Russian).
7. A.A. Dyomin, G.V. Tkachenko, V. Tkachenko, G. Abbate, L. De Stefano, I.A. Sukhoivanov, "Electrical reorientation of liquid crystal within silicon macropore for photonic devices", *Proceedings of the 9<sup>th</sup> International Conference on Transparent Optical Networks, ICTON'07, Rome, Italy*, vol.4, pp.301-304.
8. V.I. Fesenko, G.V. Tkachenko, I.A. Sukhoivanov, "Modeling of 1-D photonic bandgap microstrip structures", *Proceedings of the International Workshop Optoelectronic Physics and Technology, OPT'07*, Kharkov, Ukraine, 2007.
9. A.A. Dyomin, G.V. Tkachenko, V. Tkachenko, I.A. Sukhoivanov, G. Abbate, "Macroporous silicon infiltrated with liquid crystals: director-field configuration and device applications", *Proceeding of the International Workshop on Optoelectronic Physics and Technology, OPT'07*, 20-22 June, 2007, Kharkov, Ukraine, pp. 46-49.
10. G. Abbate, A.A. Dyomin, G.V. Tkachenko, V. Tkachenko, L. De Stefano, I.A. Sukhoivanov, "Electrical reorientation of nematic within cylindrical pores for applications in photonics", *Proceeding of the 12<sup>th</sup> International Topical Meeting on Optics of Liquid Crystals, OLC'07*, 1-5 October, 2007, Puebla, México.
11. G.V. Tkachenko, A.A. Dyomin, V. Tkachenko, I.A. Sukhoivanov, "Thermooptical filter based of a free-standing porous silicon film infiltrated with liquid crystal", *Proceeding of the VII Kharkiv Young Scientists Conference, YSC'07*, 12-14 December, 2007, Kharkov, Ukraine, p. 100.
12. G.V. Tkachenko, V. Tkachenko, G. Abbate, Luca De Stefano, I.A. Sukhoivanov, "Active NIR filter with a free-standing porous silicon microcavity containing liquid crystal", *Proceedings of the 10<sup>th</sup> International Conference on Transparent Optical Networks, ICTON'08, Athens, Greece*, vol. , pp.