CURRICULUM VITAE

Olga Mashoshyna

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*Date of birth***:** October 19, 1976

Place of birth: Kharkov, Ukraine

Marital Status: Single

Languages: Russian (mother tongue), Ukrainian, English

Education

2002-2005 Postgraduate study at the Kharkov National University of Radio Electronics. Scientific adviser – Prof. Igor A. Sukhoivanov

1996-2001 Kharkov State Technical University of Radio Electronics (nowadays the full name of the University is the Kharkov National University of Radio Electronics)

MSc's degree with honour in speciality "*Lasers and Optoelectronics*" (GPA = 4.78) with qualification of *Electronics Engineer*

Title of the diploma project: "Influence of pump level fluctuations on radiation characteristics of lasers with phototropic modulators"

Bachelor's degree with honour in speciality "*Lasers and Optoelectronics*" (GPA = 4.75)

1993-1996 Kharkov technical school of medical equipment

Electronics technician (GPA = 4.54)

1983-1993 Secondary school

Current position

Junior research assistant

Computer skills

Competent in:

- Mathcad
- LATeX
- CorelDRAW
- Microsoft Office: Word, Excel, PowerPoint
- MATLAB
- Adobe Photoshop, Adobe Acrobat

Certificates

International **E**nglish **L**anguage **S**ystem (**IELTS**) Certificate (**Academic Module**)

Test Results: **Overall Band** – **6.5** (**L**istening – **6.5, R**eading – **6.5**, **W**riting – **7, S**peaking – **6**)

Date of the test – 19 of March 2005 Test Report Form Number – 04UA000656MASO001A

Personal abilities

- Industrious, ambitious and determined person
- Conscientious, reliable and meticulous
- Good communication skills
- Easy-studying
- Skill at working in a team under guidance or supervision but also functions well in a leadership capacity when required
- Good managerial abilities

Teaching Experience

In 2003 and 2004, I supervised the execution of 4 Master's theses concerning theoretical investigation and optimization of various operation characteristics of semiconductors quantum-well lasers, which have been successfully realized and defended.

Since September 2002, I am an adviser of a student group. My duties include providing counselling and support for students, giving them advice how to organise studies, conducting student seminars on progress in modern directions in photonics area.

Courses taught

– Physics of semiconductor lasers (both bulk and quantum well structures) including course project

– Optics

– Computer technologies in Lasers and Optoelectronics

– Laser polygraphy

Memberships

IEEE/LEOS – Student member

Research interests

- Low dimensional heterostructures on ternary and quaternary compounds
- Strained, unstrained and asymmetric nanostructures
- Theoretical modeling of intrinsic processes in quantum well semiconductor lasers
- Optimization of the laser output characteristics to extend an operating temperature regime
- Study of an influence of nanostructures parameters on the main laser characteristics
- Recombination and leakage mechanisms in semiconductor nonlinear systems
- Optical lattices
- Resonator solitons in quantum well semiconductor microresonators

List of Publications

1. Sukhoivanov I.A., Lysak V.V., Mashoshina O.V., “Investigation of Auger recombination processes in strained InGaAsSb/GaSb QW heterostructure”, Optoelectronics and Semiconductor Techniques, vol.38, p.256-264, 2003. (in Russian)

2. Mashoshina O.V., Lysak V.V., Sukhoivanov I.A., “The threshold current reduction in InGaAsSb structure with strain layers”, Journal of Physical Studies, I. Franko National University of L'viv, vol.7, no.3, p. 288-290, 2003.
http://www.ktf.franko.lviv.ua/JPS/

3. Sukhoivanov I.A., Mashoshyna O.V., “Semiconductor lasers on type-I and II heterostructures: numerical analysis and threshold characteristics”, Proceedings of SPIE, vol. 5582, Advanced Optoelectronics and Lasers, 2004, p. 69-76
http://bookstore.spie.org/index.cfm?fuseaction=DetailPaper&ProductId=583391&coden=

4. Sukhoivanov I.A., Mashoshyna O.V., Kononenko V.K., Ushakov D.V., “Temperature dependence of the threshold and Auger recombination in asymmetric quantum-well heterolasers”, Proceedings of SPIE, vol. 5582, Advanced Optoelectronics and Lasers, 2004, p. 203-210
http://bookstore.spie.org/index.cfm?fuseaction=DetailPaper&ProductId=583462&coden=

5. Sukhoivanov I.A., Mashoshina O.V., Kononenko V.K., Ushakov D.V., “Auger recombination processes and threshold conditions in asymmetric-multiple-quantum-well heterostructure lasers”, WSEAS TRANSACTIONS on MATHEMATICS, vol. 3, issue 2, April 2004, p. 322-328
http://www.wseas.org,
http://www.worldses.org/journals/mathematics/mathematics-april2004.doc

6. Mashoshyna O.V., Sukhoivanov I.A., Joullie A. ,Lysak V.V., “Outcome of refinement of the thermal sensitivity $Ga_{0.65}In_{0.35}As_{0.15}Sb_{0.85}$ / GaSb MQW laser”, Physica Status Solidi, vol. 2, issue 4, 2005, p. 1404-1409
http://www3.interscience.wiley.com/cgi-bin/abstract/109933817/ABSTRACT

7. Sukhoivanov I.A., Mashoshyna O.V., Kononenko V.K., Ushakov D.V., “How to restrain Auger recombination predominance in the threshold of asymmetric bi-quantum-well lasers”, Microelectronics Journal, vol. 36, issues 3-6, March-June 2005, p. 264-268
http://www.sciencedirect.com/science?_ob=ArticleURL&_aset=V-WA-A-W-A-MsSAYZW-UUW-U-AAAEUEVEWB-AAAZZDCDWB-AWAZVADVY-A-U&_rdoc=1&_fmt=summary&_udi=B6V44-4FPJBD7-1&_coverDate=06%2F30%2F2005&_cdi=5748&_orig=search&_st=13&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=7405930632fe341912fd0e574000914b

8. Guryev I.V., Shulika O.V. , Sukhoivanov I.A., Mashoshina O.V., “Improvement of characterization accuracy of the nonlinear photonic crystals using finite elements-iterative method”, Journal Applied Physics B: Lasers and Optics, vol. 84, no.1-2, July, 2006, p. 83-87 http://beta.springerlink.com/content/h212677707560525/

9. Sukhoivanov I.A., Guryev I.V., Shulika O.V., Kublyk A.V., Mashoshina O.V., Alvarado-Méndez E., Andrade-Lucio J. A., “Design of the photonic crystal demultiplexers for ultra-short optical pulses using the gap-maps analysis”, Journal of Optoelectronics and Advanced Materials, vol. 8, issue 4, 2006, p.1626-1630

Participation in Conferences

1. Sukhoivanov I.A. , Lysak V.V., Mashoshina O.V., Yarekha D., Rouillard Y., Joullie A., “Importance of As mole fraction on Auger recombination value in strained MQW GaInAsSb lasers”, Fourth International Workshop on Laser and Fiber-Optical Networks Modeling, LFNM’2002, June 3-5, 2002, Kharkov, Ukraine. Oral presentation
2. Mashoshina O.V., Lysak V.V., Sukhoivanov I.A., “Influence of As mole fraction on the threshold characteristics of mid-IR lasers based on InGaAsSb/GaSb”, International Quantum Electronics Conference, IQEC/LAT’2002, June 22-28, 2002, Moscow, Russia. Poster presentation
3. Mashoshina O.V., Lysak V.V., Sukhoivanov I.A., “The threshold current reduction in InGaAsSb/GaSb structure with strain layers”, I International Ukrainian Conference on Physics of Semiconductors, 10-14 September, 2002, Odessa, Ukraine. Poster presentation
4. Sukhoivanov I.A., Lysak V.V., Mashoshina O.V. “Influence of parameters of barrier stratums to a drop of a threshold current in infra-red QW lasers”, 4th International Conference on Quantum Electronics, QE’2002, November 18-21, 2002, Minsk, Belarus. Oral presentation
5. Mashoshina O.V., Sukhoivanov I.A., Lysak V.V., Y.Rouillard, A.Joullie, “The ways of threshold current reduction in mid-IR QW lasers”, Conference on Lasers and Electro-Optics, CLEO/Europe 2003, June 22-27, 2003, Munich, Germany. Poster presentation
6. Sukhoivanov I.A., Mashoshyna O.V., “Semiconductor lasers on type-II heterostructures: calculation features and threshold characteristics”, International Conference on Advanced Optoelectronics and Lasers, CAOL’2003, September 16-20, 2003, Alushta, Crimea, Ukraine. Oral presentation
7. Sukhoivanov I.A., Mashoshyna O.V., Kononenko V.K., Ushakov D.V., “Temperature dependence of the threshold and Auger recombination in asymmetric quantum-well lasers”, Fifth International Workshop on Laser and Fiber-Optical Networks Modeling, LFNM’2003, September 19-20, 2003, Alushta, Crimea, Ukraine. Poster presentation
8. Mashoshyna O.V., Lysak V.V., Sukhoivanov I.A., ”Auger recombination in GaInAs-InP lasers on asymmetrical QW heterostructures”, III International Conference for Students, Young Scientists and Engineers “Optics-2003”, October 20-23, 2003, S.-Petersburg, Russia. Poster presentation

9. Mashoshyna O.V., Sukhoivanov I.A., Joullie A., Lysak V.V., "Outcome of refinement of the thermal sensitivity $Ga_{0.65}In_{0.35}As_{0.15}Sb_{0.85}/GaSb$ MWQ laser" ,7th International Workshop on Expert Evaluation & Control of Compound Semiconductor Materials & Technologies, EXMATEC'04, June 1- 4, 2004, Montpellier, France. Poster presentation

10. Kononenko V.K., Ushakov D.V., Sukhoivanov I.A., Mashoshina O.V., "Control of influence of Auger recombination on the threshold in asymmetric quantum-well lasers", Sixth International Conference on Laser and Fiber-Optical Networks Modeling, LFNM'2004, September 6-9, 2004, Kharkov, Ukraine. Invited paper

11. Sukhoivanov I.A., Kononenko V.K., Ushakov D.V., Mashoshyna O.V., "How to restrain Auger recombination predominance in the threshold of asymmetrical bi-quantum-well lasers", Fifth International Conference on Low Dimension Structures and Devices, LDSD'2004, Cancun - Mayan Riviera – Mexico, December 12-17, 2004, Mexico. Poster presentation

12. M.V. Klimenko, O.V. Shulika, O.V. Mashoshyna, I.A. Sukhoivanov, "Effect of band structure anisotropy on gain spectra of SQW lasers and amplifiers", LFNM '2005, September 15-17, 2005, Yalta, Crimea, Ukraine

Grants and awards

– Grant from IEEE/LEOS Chapter Ukraine for participation in International Quantum Electronics Conference, **IQEC/LAT'2002**, June 22-28, 2002, Moscow, Russia

– Grant from IEEE/LEOS Chapter Ukraine for participation in 1st Ukrainian Scientific Conference on Semiconductor Physics, **USCSP-1** (with international participation), September 10-14, 2002, Odessa, Ukraine

–Second place in poster presentation competition among young scientists in 1st Ukrainian Conference on Semiconductor Physics **USCSP-1** (with international participation), September 10-14, 2002, Odessa, Ukraine

– Grant from IEEE/LEOS for participation in International Conference on Lasers and Electro Optics, **CLEO'2003**, June 22-27, 2003, Munich, Germany

– Grant from IEEE/LEOS Chapter Ukraine for participation in Conference on Advanced Optics and Lasers, **CAOL'2003**, September 16-20, 2003, Alushta, Crimea, Ukraine

– Grant from IEEE/LEOS Chapter Ukraine and Organizing Committee of International Conference of Young Scientists and Specialists **"Optics-2003"** for participation in the Conference and presentation of the paper, October 20-23, 2003, Saint-Petersburg, Russia

– Grant from laboratory CEM2, University Montpellier II, Montpellier, France for work in the laboratory and participation in the 7th International Workshop on Expert evaluation&control of compound semiconductor Materials & Technologies, **EXMATEC`04**, June 1-4, 2004, Montpellier, France

– Scholarship from the Organizing Committee of the **14 Jyvaskyla Summer School** to attend the School, July 29 – August 27, 2004, Jyvaskyla, Finland

Summer School

Participated in the 14 Jyvaskyla Summer School, July 29 – August 27, 2004, Jyvaskyla, Finland (physics courses: “Spintronics: Fundamentals and Applications”, “Tunneling in Solids”, “Introduction to Nanomechanics”, “Introduction to Quantum Transport and Mesoscopics”)

References

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