

Student Chapter Annual Report

Saint-Petersburg State University of Informational Technologies, Mechanics and Optics

Names and e-mail addresses of chapter officers:

President: *Paul Petrosenko*, chloory@mail.ru

Vice-president: *Ravil Zakirov*, zakirov@rain.ifmo.ru

Secretary: *Elizaveta Yankovskaya*, e.raag@mail.ru

Treasurer: *Alexander Alekseev*, alekseev@ysa.ifmo.ru

Chapter Scientific Adviser: *Sergey A. Kozlov*, kozlov@mail.ifmo.ru

List of current Student Chapter members:

1. Abdusalamov Arsen
2. Alekseev Alexander
3. Antonov Oleg
4. Buyanovskaya Elizaveta
5. Chernov Ilya
6. Tsipkin Anton
7. Tsygankova Ekaterina
8. Fyodorov Fyodor
9. Kaplanov Vadim
10. Kiselev Alexei
11. Kiselev Andrei
12. Lashkin Daniil
13. Lesnichiy Vasiliiy
14. Mohnatova Olga
15. Novoselov Evgeny
16. Pantas' Yaroslav
17. Petrosenko Pavel
18. Sidtikov Vladimir
19. Travin Denis
20. Volinskiy Maxim
21. Yankovskaya Elizaveta
22. Zakirov Ravil
23. Zlatov Anrei

Chapter activities since last report:

This year our members worked for extending their study to the following directions:

- Analytical study and numerical modeling of the femtosecond supercontinuum generation;
- Analytical study and numerical modeling of few-cycle pulses propagation and reflection;
- Investigation of few-cycle pulses collision in waveguides and possibilities of received effects' use in ultrafast optoinformatics;
- Modeling of light propagation along rows of nanospheres and nanocylinders;
- Investigation of structures of permitted and forbidden zones in periodical system of intensifying an isotropic layers;
- Modeling of nanotubes growth;
- Investigation of holographic technologies for artificial intelligence creation.

Most part of the Chapter's members took part in XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, in III Interuniversity Conference of Young Scientists of St.Petersburg State University ITMO, 10-13 April, 2006. Also few members of our Chapter have acted on the All-Russia school - seminar « Waves 2006 », 22-26 May, 2006, Moscow.

Publications:

- Mokhnatova O.A., Berkovsky A.N., Kozlov S.A. «Interaction of extremely short light pulses at nonlinear reflection», In materials of the X All-Russian school-seminar "Wave phenomena in multivendor mediums", 2006
- Buyanovskaya E. M., Kozlov S. A. «Generation of triple frequencies during the interaction of counter-propagating pulses consisting of few field oscillations in nonlinear dielectric mediums», In materials of the X All-Russian school-seminar "Wave phenomena in multivendor mediums", 2006
- Alekseev A.M., Pavlov A.V., «Linguistic modeling by Fourier-holography technique: implementation of non-monotonic semantics», In materials of the 11-th International Conference «Speech and Computer», 2006

Conferences:

- Kiselev A.S., Kiselev A.S., Nazarov V.N., «RESEARCH OF INFLUENCE OF THE ERROR OF ASSEMBLY AND ADJUSTMENT OF SCOPE SIGHTS ON RESULT OF SHOOTING », XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia
- Mokhnatova O.A., Berkovsky A.N., Kozlov S.A., «Nonlinear paraxial reflection of extremely short light pulses from dielectrics», XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia
- Buyanovskaya E. M., Kozlov S. A. «Interaction of counter-propagating femtosecond pulses with continuum spectra in nonlinear dielectric mediums», XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia
- Kiselev A.S., Kiselev A.S., «POLARIZATION OF RADIATION AT THE RELATIVE MECHANISM OF THE SCATTERING», III Interuniversity Conference of Young Scientists of St.Petersburg State University ITMO, 10-13 April, 2006
- Tsygankova E.V., «FEATURES OF ETCHING OF LASER CRYSTAL LiYF_4 IN SOLUTIONS H_2SO_4 », XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia
- Mokhnatova O.A., Berkovsky A.N., Kozlov S.A. «Interaction of extremely short light pulses at nonlinear reflection.», X All-Russian school-seminar "Wave phenomena in multivendor mediums", Zvenigorod, Moscow region, Russia, 22 - 27 May, 2006
- Alekseev A.M., Konstantinov A.M., Pavlov A.V., «Logic & linguistic modeling by a method of Fourier -holography: realization of nonmonotonic reasonings», XXXV Scientific and Education Conference of St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia
- Buyanovskaya E. M., Kozlov S. A. «Generation of triple frequencies during the interaction of counter-propagating pulses consisting of few field oscillations in nonlinear dielectric mediums», X All-Russian school-seminar "Wave phenomena in multivendor mediums", Zvenigorod, Moscow region, Russia, 22 - 27 May 2006
- Tsygankova E.V., «FEATURES OF ETCHING OF LASER CRYSTAL LiYF_4 IN SOLUTIONS HCl », III Interuniversity Conference of Young Scientists of St.Petersburg State University ITMO, 10-13 April, 2006
- Zlatov A.A., «Spectral and luminescent properties of high-concentration phosphatic and silicate ytterbium-doped glasses», XXXV Scientific and Education Conference of

St.Petersburg State University ITMO, "Achievements of scientists, post-graduate students and students of SPb SU ITMO in science and education ", 31 January – 3 February, 2006, Saint-Petersburg, Russia

- Kiselev A.S., Kiselev A.S., « ABOUT THE PROBLEM OF ACCURACY OF ASSEMBLY AND ADJUSTMENT OF THE SCOPE SIGHTS», III Interuniversity Conference of Young Scientists of St.Petersburg State University ITMO, 10-13 April, 2006
- Mokhnatova O.A., Berkovsky A.N., Kozlov S.A., «Nonlinear paraxial reflection of few-cycle pulses from dielectrics», International seminar "Days on Diffraction", Saint Petersburg, Russia, 30 May – 2 June, 2006
- Zlatov A.A., «Research of parameters of semi-conductor lasers», III Interuniversity Conference of Young Scientists of St.Petersburg State University ITMO, 10-13 April, 2006
- Rosanov N.N., Semenov V.E., Vissotina N.V., Kiselev A.S., Kiselev A.S., «AMPLIFIED SELF-INDUCED TRANSPARENCY AND FEW CICLE PULSES AND DISSIPATIVE SOLITONS», International seminar "Days on Diffraction", Saint Petersburg, Russia, 30 May – 2 June, 2006

Planned activities:

In September 2006 we are planning to combine traditional V SPIE Student Chapters Meeting (<http://ysa.ifmo.ru/spie/MEETINGS>) with ICO Topical Meeting on Optoinformatics and Photonics'2006 (<http://ysa.ifmo.ru/tmo2006>) and to participate in work of Organizational committee of School for young scientists in the field of Photonics and Optoinformatics.

We are going to continue:

- Conducting our theoretical and scientific research;
- Attending conferences and SPIE Student Chapters Meetings;
- Increasing number of the Chapter's members;
- Developing our chapter's web page;
- Renovation of the Chapter's library.