STUDENT CHAPTER ANNUAL REPORT 2013

Officers:

President     Anna Vozianova     vozianova@gmail.com
Vice president    Maria Serikova        serikovamg@gmail.com
Treasurer     Elizaveta Buyanovskaya lee.buyanovskaya@gmail.com
Secretary/Act.coordinator     Mikhail Khodzitsky     khodzitskiy@yandex.ru
Scientific Adviser    Prof. Sergey A. Kozlov     kozlov@mail.ifmo.ru

List of current Student Chapter members:

1  Alexander Ageyskiy
2  Shakhrisayar Allakhverdiev
3  Andrey Anisimov
4  Alyona Chshelokova
5  Alaudi Denisultanov
6  Anna Ezerskaya
7  Dmitriy Filonov
8  Yaroslav Grachev
9  Egor Gurvitz
10  Leonid Konev
11  Sergey Korolenko
12  Egor Kryshkovets
13  Maxim Kulya
14  Nadezda Lapshina
15  Aleksandr Litvin
16  Leonid Lyalyushkin
17  Yaroslav Lyaskovsky
18  Anton Maraev
19  Julia Nesgovorova
20  Maria Osipova
21  Anastasiya Prikhodko
22  Roman Saveliev
23  Oleg Scherbakov
24  Egor Sedykh
25  Alexey Slobozhanuk
26  Maria Tsurkan
27  Anton Tsypkin
28  Tatiana Turgalieva
29  Vladislav Vasilyev
30  Dmitrii Vavulin
31  Pavel Voroshilov
32  Anna Vozianova
33  Elizaveta Yankovskaya
34  Innokenty Zhdanov

List of current Alumni Chapter members:

1  Pavel Belov
2  Elizaveta Buyanovskaya
3  Mikhail Khodzitsky

Chapter activities since last report

Used benefits:

• Activity Grant
• Officer Travel Grant (A.Vozianova, O&Ph 2013)
• Visiting Lecturer Grant (Norman Laman)
This year our members worked for extending their study to the following directions:

- Holography
  - Volume holography
  - Digital holography
  - Holographic polymeric recording media analysis
- Optical object sensing
  - Optical coherence tomography (OCT)
  - Terahertz optics and spectroscopy in medical and biological applications
- Nonlinear optics
  - Optics of femtosecond pulses
  - Spectral analogues of Maxwell equations for dielectric media with non-resonance dispersion and instantaneous electronic nonlinearity
    - Theoretical research of THz pulses near-field diffraction by circular aperture
    - Nonlinear interaction of extremely-short light pulses
  - Experimental studies of electromagnetic radiation scattering amplification effect in 'probenanoobject' system; development of tungsten probe etching technique
    - Experimental studies in laser and nonlinear optics: eye-safe laser project, stimulated Raman scattering, solid-state lasers
  - Nonlinear interaction of pulses of a small number of oscillations
- Interferometry
  - Dynamic stochastic filtering in interferometry
  - Speckles-field analysis
- Optical materials
- Optical-electronic systems
  - Stereoscopic optical-electronic systems for the control of linear displacements
  - High precision shift and angular control optical-electronic measurement methods and systems
    - Influence analysis of initial errors on accuracy of optical-electronic systems
  - Development of measured system based on CCD and CMOS sensors
- Computer vision and image processing
- Metamaterials
  - Transformation optics
  - Photonic crystals

Grants and awards of chapter members:

Egor Gurvitz – SPIE Scholarship 2013
Dmitry Vavulin – SPIE Scholarship 2013
Alaudy Denisulatanov – SPIE Scholarship 2013
Alexey Slobozhanyuk – SPIE Scholarship 2013
Alyona Chshelokova – SPIE Scholarship 2013
Aleksandr Litvin – SPIE Scholarship 2013
and e.t.c.
Planned activities for the future

1. Expanding of outreach program for “School kids Festival” in the frame of University open doors
2. “English speaking club”:
   - Establishing and development of “English speaking club” to increase the ability to speak English and to break the “language barrier” by:
     - Holding video conference with another (US) Universities;
     - All OSC meetings with presentations and discussions in English;
     - Skype conferences with native speakers (students from English speaking SPIE chapters);
   * Food support provided by OSC is aimed at increasing of number of attendants.
3. Holding of all-Chapter bimonthly meetings to:
   - discuss everything and anything about the chapter;
   - give the possibility to talk to any member (everybody has a voice and everybody is heard);
   - solve all problems.
4. Combined meetings:
   Organizing of combined meetings: the idea is to attract more and more members to every meeting by combining very formal (boring) part with quite informal activity (fun part).
5. Make everyone speak!
   New members of OSC should make a small presentation about themselves and future involvement into OSC activity.
6. Alumni speakers:
Inviting of an alumni SPIE chapter members to every meeting with his/her presentation about past activities, experience, life perspectives and also about the impact of former SPIE activity on his/her career.

7. Organization of “Young Scientists Section” in the frame of LASER OPTICS –2014(June), “Young scientists conference” KMU on April 2014 and “THz workshop” in the frame of «Fundamental Problems of Optics on October 2014

8. “SPIE Student Chapter Overseas”

Financial information

<table>
<thead>
<tr>
<th>Begin (2013 SPIE Chapter budget):</th>
<th>0</th>
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<tbody>
<tr>
<td>SPIE Funding 2013</td>
<td>1500</td>
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<tr>
<td>“Terahertz Radiation Interaction with a Matter” in frame of FLAMN</td>
<td>-200</td>
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<tr>
<td>“Medicine in future ” in frame Optics 2013</td>
<td>-200</td>
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<tr>
<td>“Optical structures and metamaterials” in frame Optics 2013</td>
<td>-200</td>
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<tr>
<td>“Terahertz applications” in frame Optics 2013</td>
<td>-200</td>
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<tr>
<td>Chinese language workshop</td>
<td>-100</td>
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<tr>
<td>School kids Festivals and Magic&amp;Power of Optics show</td>
<td>-100</td>
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<tr>
<td>Developing and maintaining of chapter web page</td>
<td>-50</td>
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<tr>
<td>Organizing the internal informal Chapter Meetings to make chapter members meet each other</td>
<td>-150</td>
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<tr>
<td>English Speaking Club</td>
<td>-200</td>
</tr>
<tr>
<td>T-shirts with Chapter logo for the most active members</td>
<td>-100</td>
</tr>
</tbody>
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Total: 0

Publications

• A O Orlova¹, Yu A Gromova¹, V G Maslov¹, O V Andreeva¹, A V Baranov¹, A V Fedorov¹, A V Prudnikau², M V Artemyev² and K Berwick. Reversible photoluminescence quenching of CdSe/ZnS quantum dots embedded in porous glass by ammonia vapor. 2013. Nanotechnology, Volume 24, Number 33, doi:10.1088/0957-4484/24/33/335701

Pictures

There are pictures from our daily live and SPIE O&P 2013 conference
“School kids Festivals” with “Magic&Power of Optics” show

There are photos of activity committee and Norman Laman the visiting lecturer invited to THz workshop on June
Dr. Grebenuk K.A. (Saratov State University. Of Nikolai Chernyshevsky, Saratov, Russia), Lectures: TECHNOLOGY OF PREPARATION OF SCIENTIFIC PRESENTATIONS, CHINESE FOR PHYSICS: TO GET STARTED LEARNING CHINESE at THz application workshop in the frame of Optics-2013

There are participants of Medicine in Future Workshop on October 2013 and visiting lecturer Stelios Tzortzakis with lecture «TAMING STRONG ULTRASHORT LASER AND THZ FIELDS FORTH», & University of Crete, Heraklion, Greece

Web: http://osc.ifmo.ru/
The informal meeting “OLD GUYS PARTY” the PHD and PHD students to share their experience with “young” members

Thank you SPIE