

Annual report
Institute of Radiophysics
and Electronics SPIE
Student Chapter Activity
2014

Dear colleagues,

IRE SPIE Student Chapter congratulates you with the new season! 2014 was hard for us, but we had done a lot of activities during this year and got new unique experience. We hope that the results of our work will be useful for us and other young scientists and students.

Because the 2015 is the International Year of Light, we have a lot of plans and new creative ideas for next season and expect that support of SPIE will help us realize our plans.

New Year 2015 gives hope on new achievements and interesting meetings. We also want to wish you success and fulfillments in the new season.

Sincerely yours

President of IRE SPIE SC Sergii Poperezhai

Mariia Pashchenko

And collective of IRE SPIE SC

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1. General Information about IRE SPIE Student Chapter Chapter Officers List in 2015

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2. Travel Grants for chapter members participating in conferences 1 half-year

The International Student and Young Scientists Conference in Theoretical and Experimental Physics Heureca-2014

In May 2014 Svitlana Golovko and Natalia Mysko participated in the International Student and Young Scientists Conference in Theoretical and Experimental Physics Heureca-2014. The conference took place in the Ivan Franko National University of Lviv and was grouped in three main areas within which was allocated thematic blocks:

Theoretical Physics

Applied and Experimental Physics

Electronics and Information Technologies.





Unmatched architecture of Lviv



Name of the conference	The International Student and Young Scientists Conference in Theoretical and Experimental Physics Heureca-2014
Name	Svitlana Golovko Natalia Mysko
Date	May 15-17, 2014
Location	Ivan Franko National University of Lviv

3. V International Conference for Young Scientists “Low Temperature Physics” (June 2-6, 2014)

General Information



Despite the difficult political situation in Ukraine the V International Conference for Young Scientists – Low Temperature Physics 2014 was held. Students and young scientists from different universities and institutes of Ukraine, Poland, Czech and other European countries were involved in the conference work with oral and poster reports. The conference topics covered different fields of Low Temperature science, including optics and photonics, physics of nanostructures; quantum crystals and quantum liquids, cryocrystals; biophysics etc. Bright invited lectures and Young Scientist Workshop devoted to international collaboration made this conference cognitive and informative for students and young scientists.

As usual, session on Optics and Photonics (OP) and Young Scientist Workshop in Round Table format were held due to the support of SPIE Student Chapter of Institute of Radiophysics and Electronics.

Below we show the brightest moments of the conference in the photos, they can sometimes say more than the most vivid epithets

Registration



Opening ceremony and Plenary session

Head of Institute speech.



Chairman of Organizing Committee speech



First plenary session:

Dr. Sergei Zherlitsyn, Dresden
High Magnetic Field Laboratory,
Helmholtz-Zentrum Dresden-
Rossendorf (Dresden, Germany)
*"SPIN-LATTICE EFFECTS IN
SELECTED MAGNETIC
MATERIALS"*



Dr. S.V. Malykhin, National Technical
University «KhPI» (Kharkiv, Ukraine)
*"THE EVOLUTION OF THE STRESS
STATE AND TUNGSTEN STRUCTURE IN
A THERMONUCLEAR REACTOR"*



Program of the Optics & Photonics Session included:

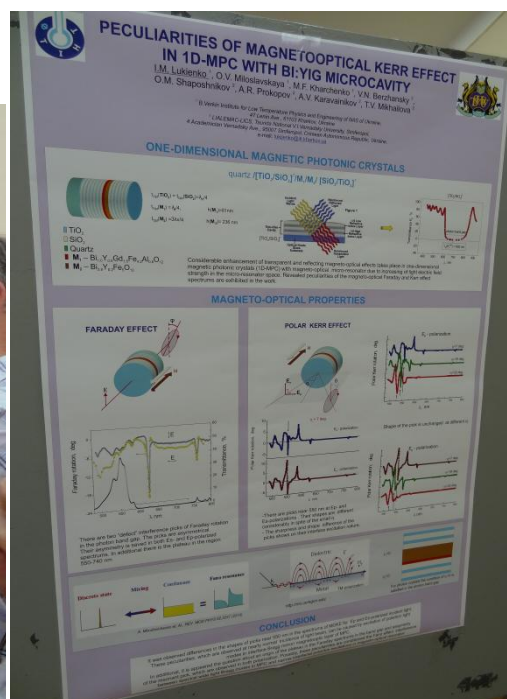
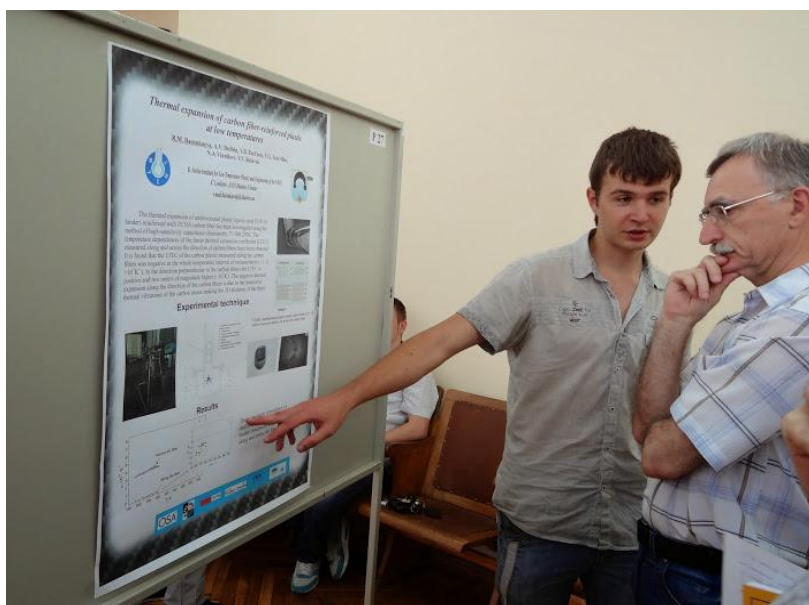
- Invited Lecturer: Svetlana Yefimova (Institute for Scintillation Materials, Kharkiv, Ukraine). Lecture “**LAMBDA-RATIOMETRIC FLUORESCENCE DETECTION AS AN EFFECTIVE TOOL TO STUDY NANOCARRIERS INTERACTIONS WITH LIVING CELLS IN DYNAMICS.**”
- Oral and poster presentations of the young scientists – participants of the ICYS-LTP-2014

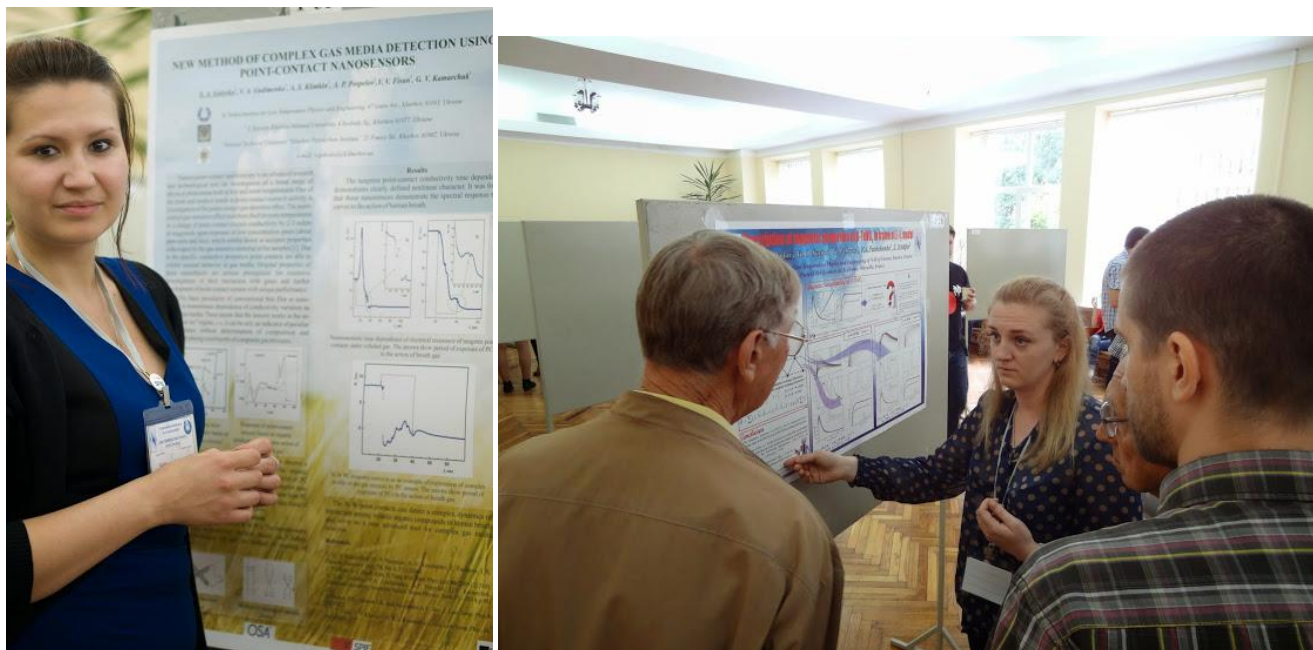
Optics & Photonics session as it was:

Invited talk– Svetlana Yefimova (Institute for Scintillation Materials, Kharkiv, Ukraine). Lecture “**LAMBDA-RATIOMETRIC FLUORESCENCE DETECTION AS AN EFFECTIVE TOOL TO STUDY NANOCARRIERS INTERACTIONS WITH LIVING CELLS IN DYNAMICS.**”



Poster presentation at O&P session –
Several photos during the session:





The working language of the Session, as well as the language of the conference, was English.

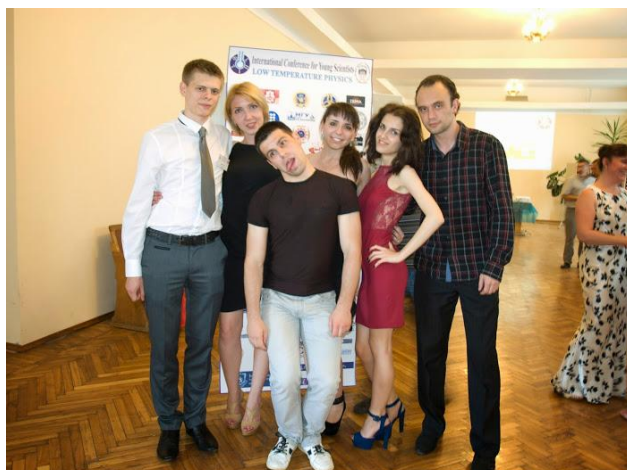
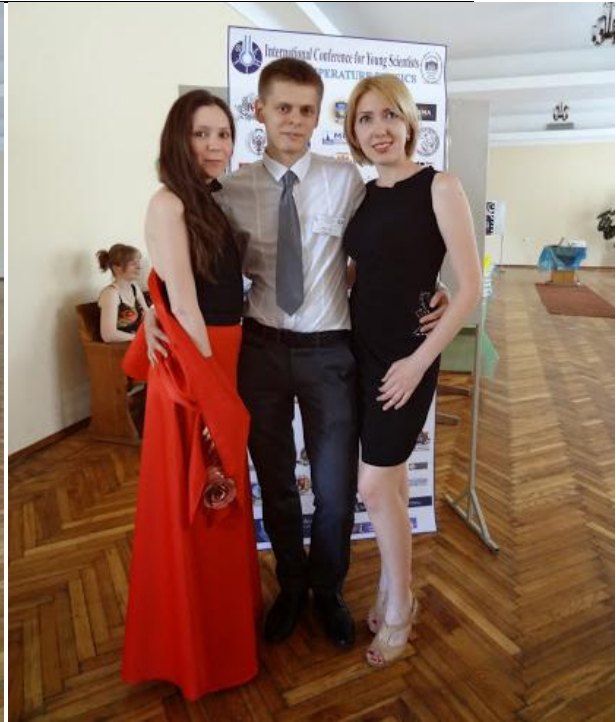
Geography of the O&P Session participants included 3 institutions:

- *ILTPE NASU, Kharkiv, Ukraine;*
- *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*
- *Institute for Scintillation Materials, SSI “Institute for Single Crystals”, NASU, Kharkiv, Ukraine*

These Ukrainian institutes are considered among the strongest in field of optics and crystal optics.

Social program.

This year we did our party as Oscar Ceremony. Thanks to support of SPIE, the party was free for all Optic and Photonic session reporters. All participants had great possibility for well time spending. You can see it on bright photos below:



Closing and awards.

Traditionally at all session during the conference organizing comity choose the best presentation. At the closing ceremony the winners were awarded. This year the USB Digital Microscope was as a prize.



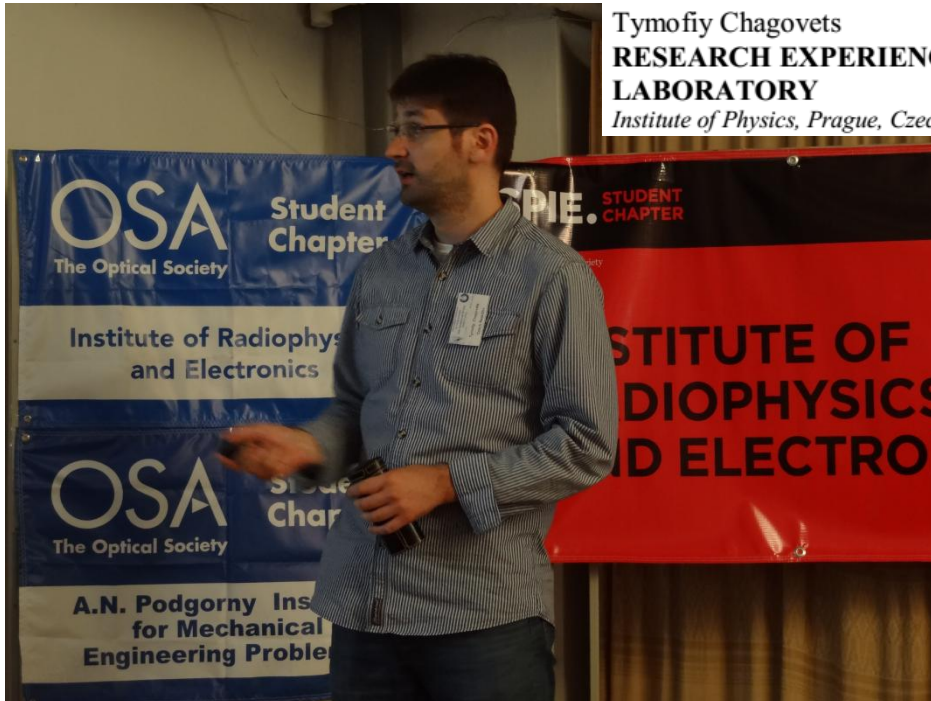
4. Young Scientists Workshop (5 June 2014)

Over the past few years the popularity of workshops where discuss about the international scientific societies, opportunities for career and international exchange of experience has increased.

Our IRE SPIE Student Chapter continues a good tradition to hold Young Scientist Workshop in Round Table format in frame of International Conference for Young Scientist - LTP. Program of this Workshop included 3 topics for discussion according the interests of conference participants:

16:00-17:00	Young Scientists Workshop in Round table format	Helium hall
Chair	<i>Mariia Pashchenko</i>	
16:00-16:15	Mariia Pashchenko INTRODUCTION: OSA & SPIE PRESENTATION <i>B.Verkin Institute for Low Temperature Physics and Engineering, Kharkov, Ukraine</i>	
16:15-16:30	Tymofiy Chagovets RESEARCH EXPERIENCES IN HIGH MAGNETIC FIELD LABORATORY <i>Institute of Physics, Prague, Czech Republic</i>	
16:30-16:45	Dmytro Kamenskyi "BIG FACILITIES" PROGRAMME AT RADBOUD UNIVERSITY (NIJMEGEN): NARROW-BAND THZ FREE-ELECTRON LASER (FELIX) COMBINED WITH HIGH FIELD MAGNET LABORATORY (HFML) <i>Radboud University, Nijmegen, Netherlands</i>	



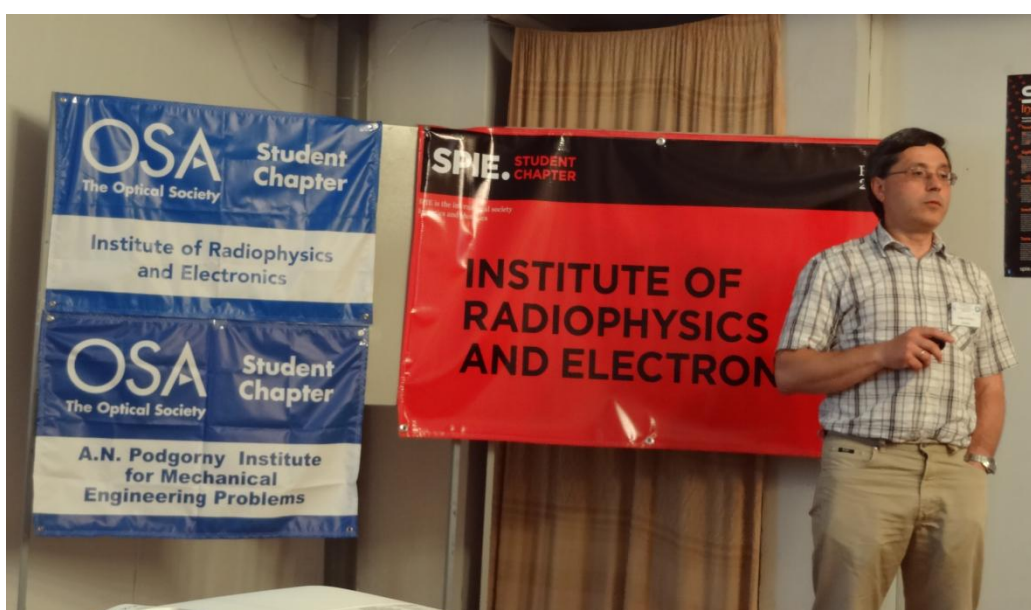


Tymofiy Chagovets
**RESEARCH EXPERIENCES IN HIGH MAGNETIC FIELD
LABORATORY**
Institute of Physics, Prague, Czech Republic

Dmytro Kamenskyi
**“BIG FACILITIES” PROGRAMME AT RADBOUD UNIVERSITY
(NIJMEGEN): NARROW-BAND THZ FREE-ELECTRON LASER
(FELIX) COMBINED WITH HIGH FIELD MAGNET LABORATORY
(HFML)**
Radboud University, Nijmegen, Netherlands



In addition to main program of Young Scientists Workshop, we were lucky to hear short lecture from **Dr. Sergei Zherlitsyn** about Dresden High Magnetic Field Laboratory.



Finally,

Our IRE SPIE Student Chapter in collaboration with IRE OSA Student Chapter made a special present for all conference participants at the end of ICYS-LTP -2014, Session “Optics, Photonics and Spectroscopy” and Young Scientists Workshop - BIG (8 kg) Sweet Cake with fresh fruits and bright logos!!!!



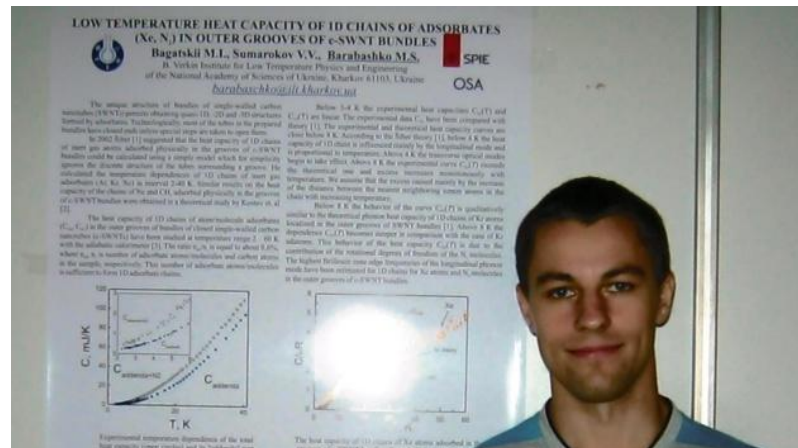
5. Travel Grants for chapter members participating in conferences 2-nd half-year

This autumn, due to SPIE support, Student Chapter members were able to go on the Ukrainian and International conferences on optics and photonics using SPIE and small IRE SPIE SC travel grants.

XII International Conference on Nanostructured Materials (NANO 2014)

The XII International Conference on Nanostructured Materials have been in Moscow, Russia July 13-18, 2014. (NANO 2014) is the international forum for the exchange of information on the latest progress in carbon nanostructures. General topics include synthesis and technology, physical properties, chemistry of carbon nanostructures, members of nanocarbon family - fullerenes, carbon nanotubes, graphene, carbide derived carbon, onions, nanographite and nanodiamonds as well as their main applications for industry, biology and medicine.

Maxim Barabashko presented reports «The Heat Capacity of Nanotube Bundles with 1D Xenon Chains. Spatial Redistribution of the Xe Atoms ».



Lomonosov Moscow State University



Exhibition of Russian Ministry of Education and Science



H. Kroto on the conference NANO 2014

Name of the conference	XII International Conference on Nanostructured Materials (NANO 2014)
Name	Maxim Barabashko
Topic of the report	« The Heat Capacity of Nanotube Bundles with 1D Xenon Chains. Spatial Redistribution of the Xe Atoms »
Date	July 13-18, 2014
Location	Lomonosov Moscow State University, Moscow, Russia

NANOTECHNOLOGY AND NANOMATERIALS (NANO-2014)

The International Summer School “Nanotechnology: from fundamental research to innovations” and International research and practice conference “Nanotechnology and nanomaterials” (NANO-2014) have been in Yaremche and Lviv, Ukraine. These events were combined and held from August 23 to August 30, 2014 in the framework of the FP7 project titled Nanotwinning. Nanotwinning project is funded by the European Union. The first 4 days of the conference were proceeded in the format of International summer school for young scientist. In the next 4 days, it was continued as an International research and practice conference that focused on the latest advances in nanoscience and promoted scientific discussion between researchers from different fields.

Maxim Barabashko presented report “The experimental heat capacity of fullerite C_{60} ”.



Name of the conference	Nanotechnology and nanomaterials (NANO-2014)
Name	Maxim Barabashko
Topic of the report	The experimental heat capacity of fullerite C_{60}
Date	August 23 - August 30, 2014
Location	Yaremche and Lviv, Ukraine

“Condensed Matter in Paris 2014” CMD25-JMC14

August 24th through August 29th, 2014, Paris, France

The conference took place in the Pharmacy faculty of [Université Paris Descartes](#) just south of the Luxembourg gardens, in the very heart of downtown Paris.



Svitlana at the registration.

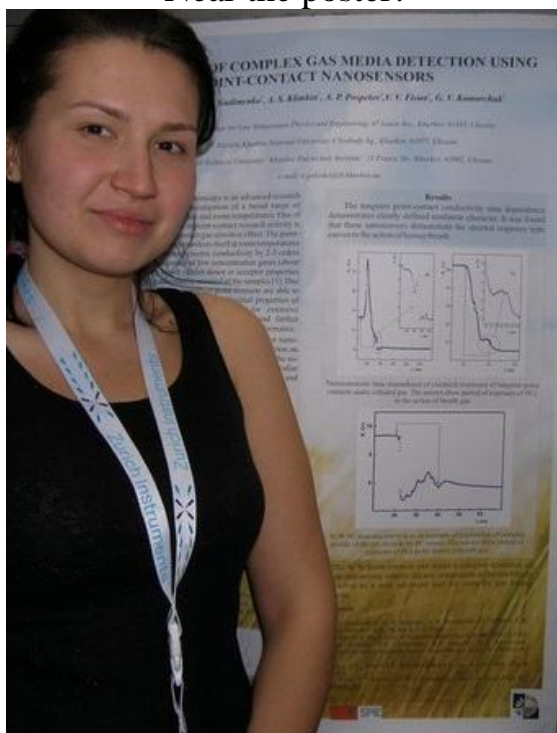


At the opening ceremony Kees VAN DER BEEK the chairman of CMD25-JMC14 welcomes the participants of the conference.

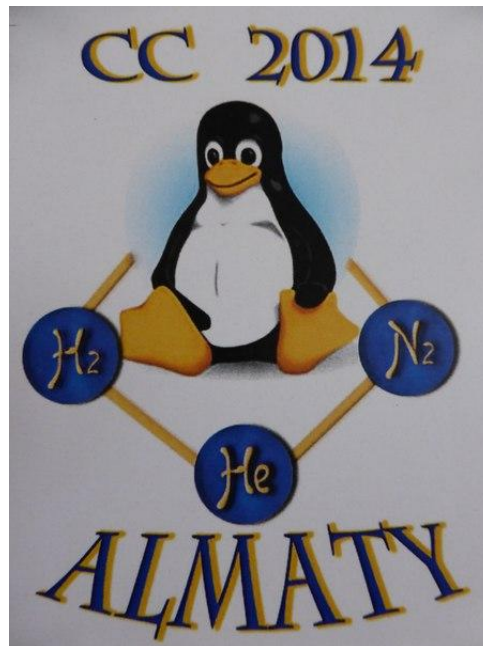


During the conference there was a lot of interesting reports on all major areas of biophysics, nano-optics, nanomaterial, nano-phononics.

Near the poster!



Name of the conference	Condensed Matter in Paris 2014 CMD25-JMC14
Name	Svitlana Golovko
Topic of the report	«Novel Approach to Gas Media Analysis Based on Yanson Point-Contact Spectroscopy»
Date	August 24-29, 2014
Location	Université Paris Descartes

**10th International Conference on Cryocrystals and Quantum Crystals
"CC-2014"***August 31-September 7, Almaty, Kazakhstan*

The conference took place in the Al-Farabi Kazakh National University



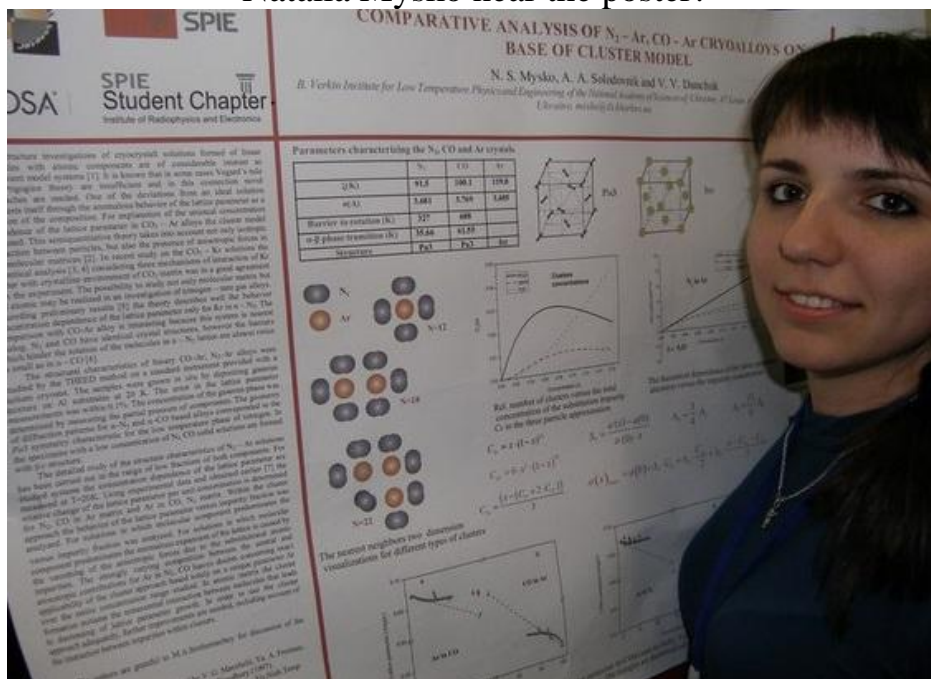
The conference was attended by representatives of 35 countries.



Unrivalled views of Kazakhstan



Natalia Mysko near the poster!



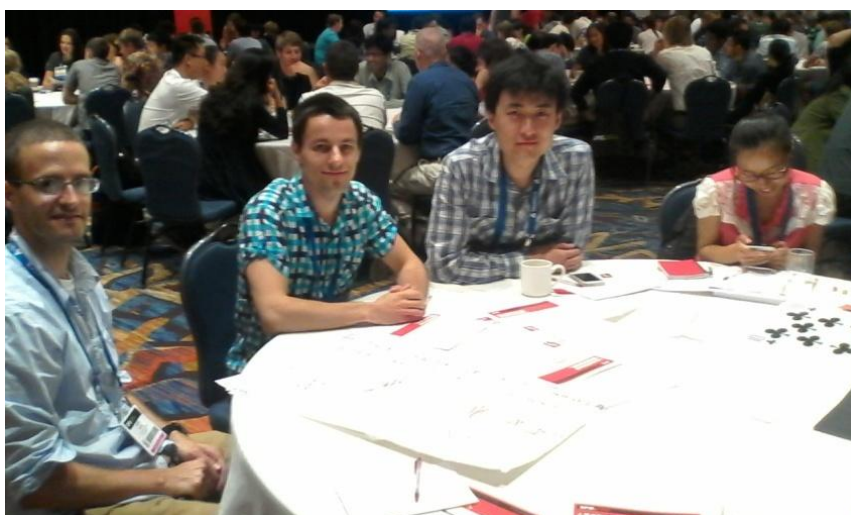
Name of the conference	10th International Conference on Cryocrystals and Quantum Crystals "CC-2014"
Name	Natalia Mysko
Date	August 31-September 7
Location	Al-Farabi Kazakh National University, Almaty, Kazakhstan

INTERNATIONAL SPIE STUDENT CHAPTER WORKSHOP. SAN DIEGO, USA 2014

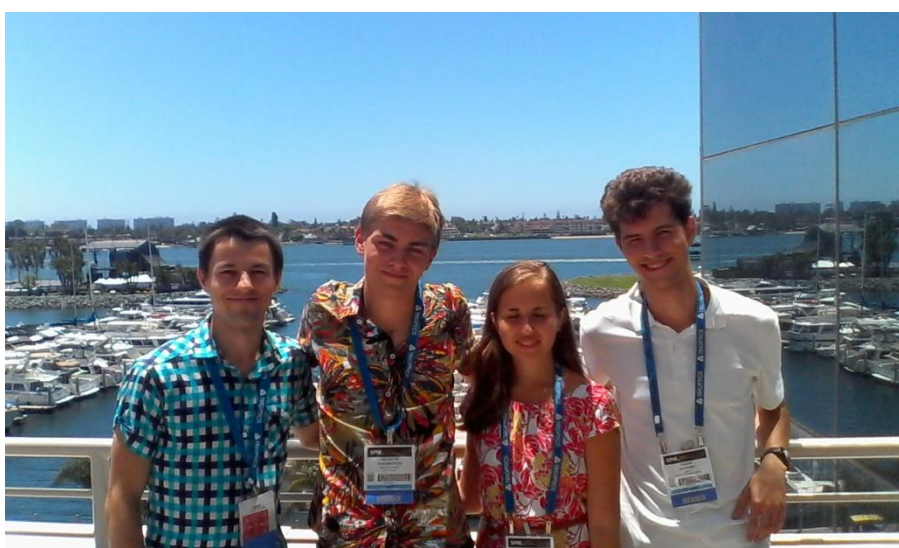
The SPIE Leadership Workshop "What is leadership?" was held in the beautiful city San Diego, California. Were Dirk Fabian and Tasha Chicovsky welcomes the participants of the Workshop from Organizing committee.

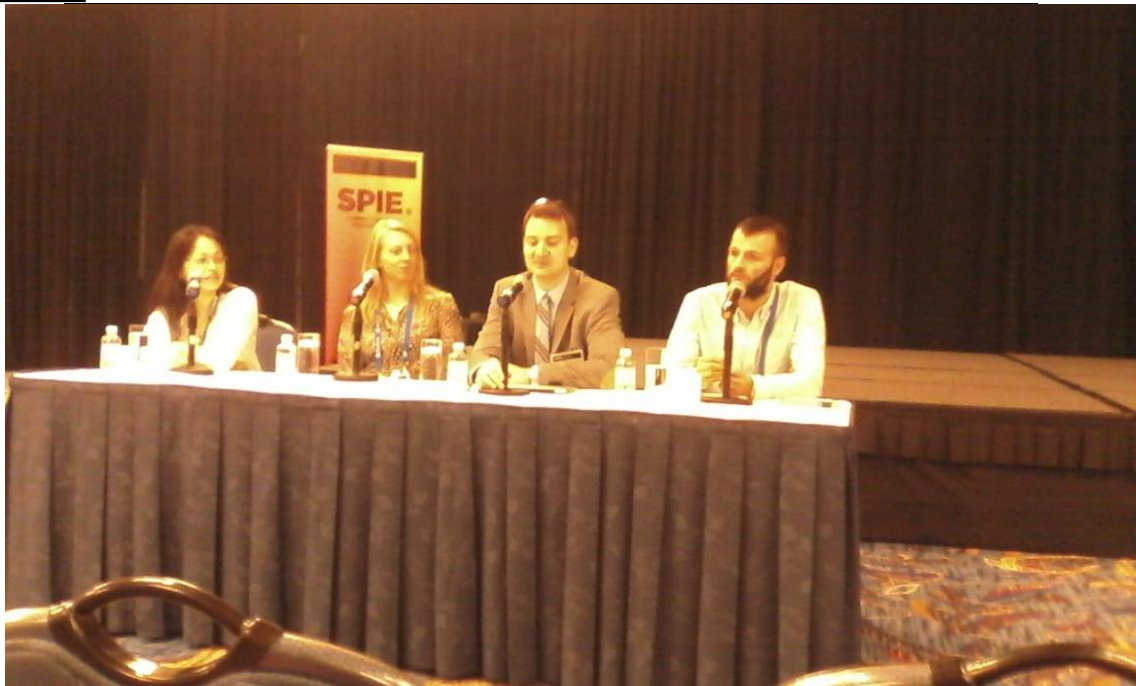


Maxim Barabashko and other participants of the Workshop

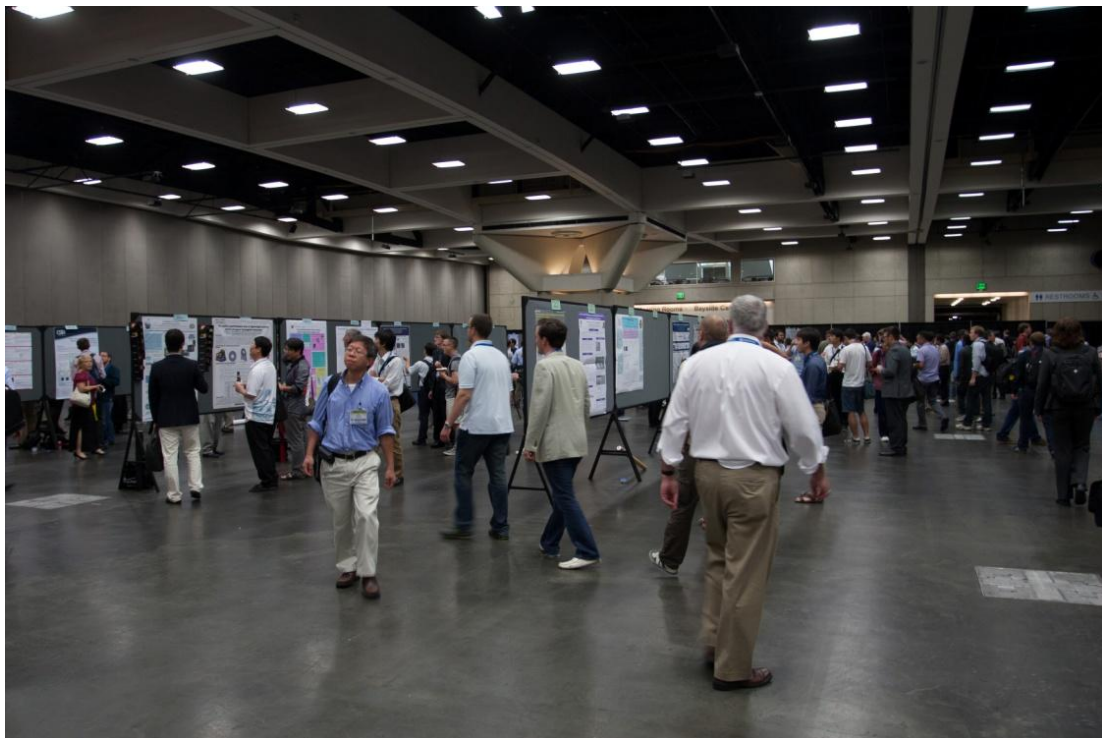


...during the discussion "What is leadership?" in the International Workshop.





Meeting with the experts in science and hi-tech industry.

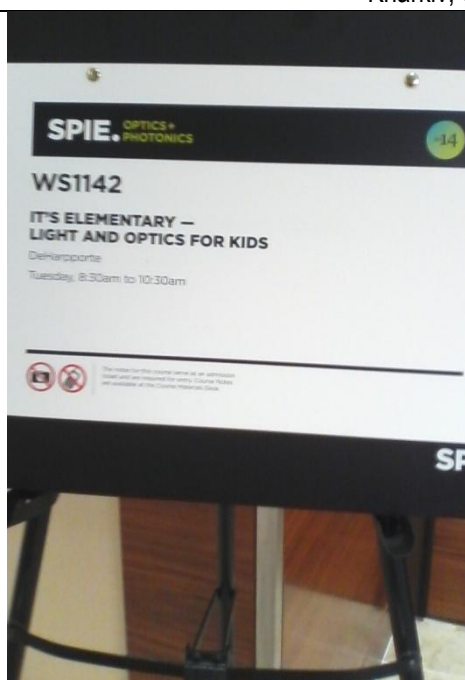


Poster session of the “Optics+Photonics 2014” conference.

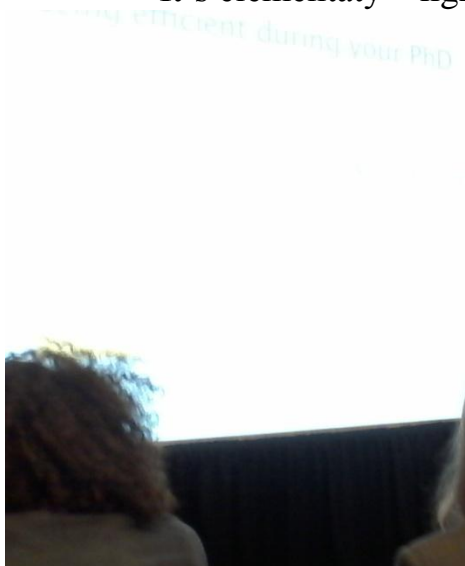


Maxim Barabashko from the IRE-OSA-SPIE Student Chapter with the poster about Chapter 2013/2014 Activity.

During the conference there were some courses dedicated to the scientific and educational topics.



It's elementaty – light and optics for kids.



Jean-luc Doumont, Principiae: Working Effectively Through your PhD.





San Diego City

6. Young Scientist Workshop on “Carrier Development”: “Bridging a gap between education and career in electromagnetics and photonics” (YSWCD)

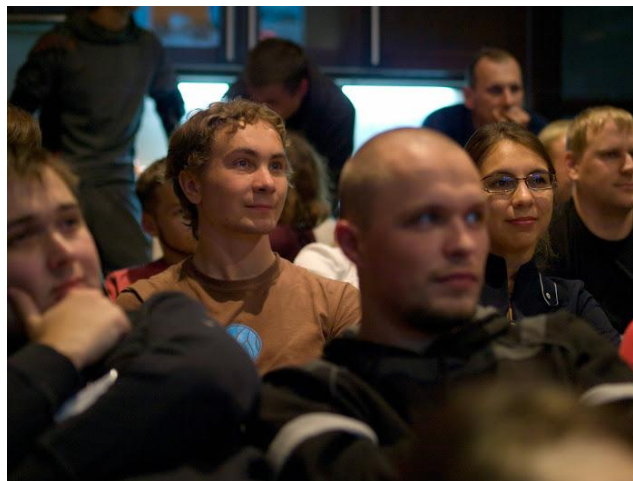
This year traditionally Young Scientist Workshop in frame of XIV Young Scientists Conference on Electromagnetics, Photonics and Biophysics was held in unusual format — as the specialized **KIT** (**Kharkiv Ideas & Technologies**) workshop in anti-café 7/9. The arrangement program included attending the lectures by young scientists and representatives of independent technological groups, who told us about scientist’s social networking and new developments in making great science and techniques.

Due to the KIT workshop student and young scientists got opportunity to know more about identifying the ways to achieve results and alternative technological and science trends. The first part of the workshop was **SciKIT/Scientific KIT/**. The main point was learning how to organize scientist’s network. Another part was

Hac**KIT**/Hacker **KIT**/ which included report by representatives of the Kharkiv Khackerspace and study of the development of modern biology. Participation in KIT workshop had enabled student and young scientists to increase the amount of faith in the future of science and to make new acquaintances with like-minded people.

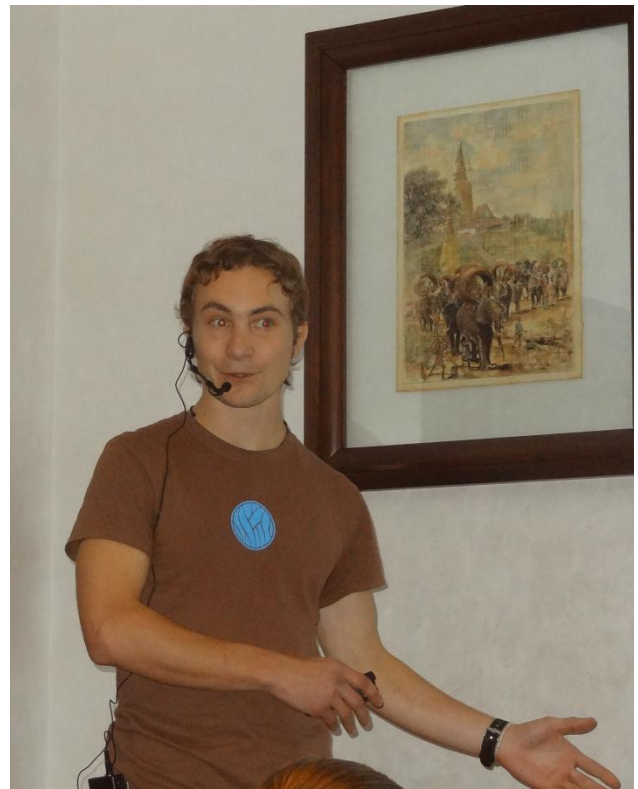
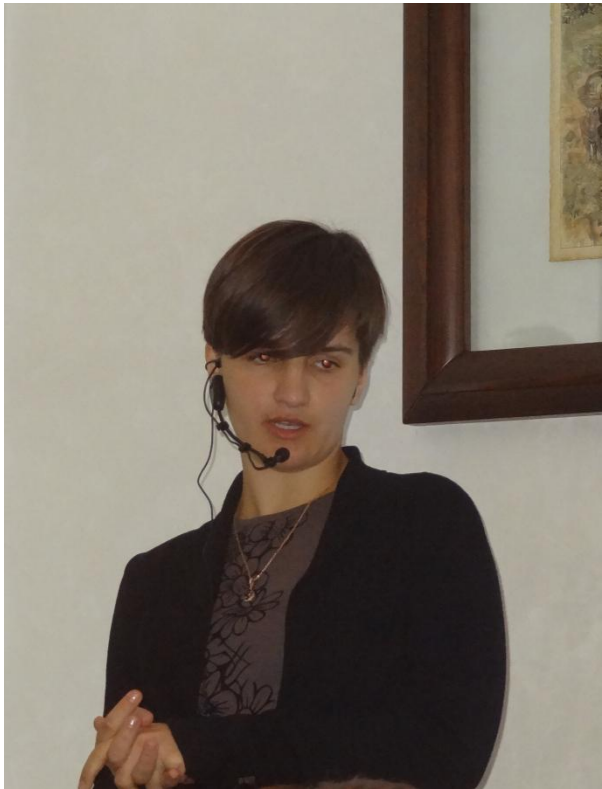
Program of this year Workshop included such reports:

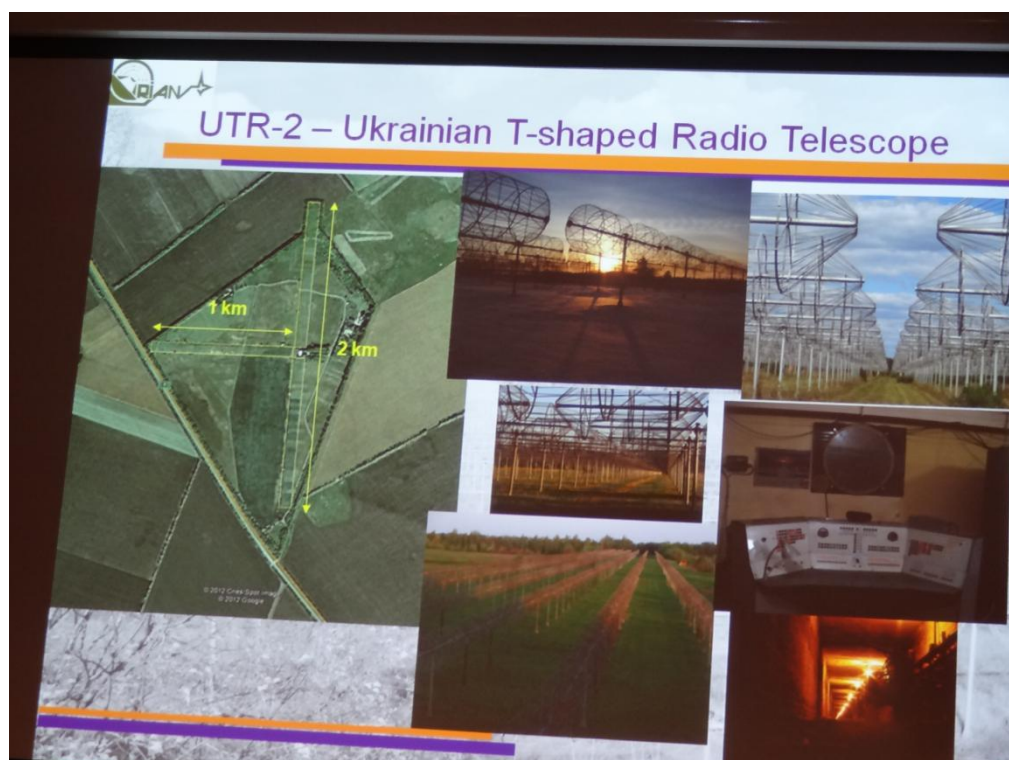
Sci**KIT**/Scientific **KIT** /



What is "**KIT**" by Pavlo Krasov

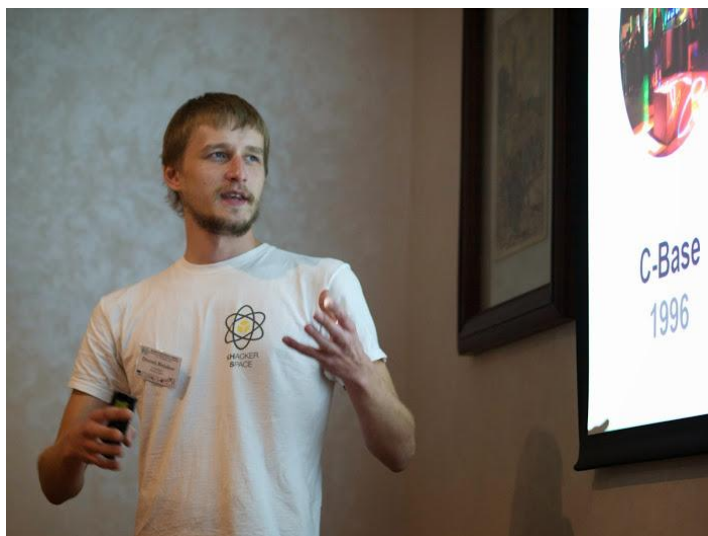


Young scientist: above and beyond by Julia Bezvershchenko and Oleksander Skorokhod**Making great science with your own hands: open source package 'Meep'** by Anna Slusarenko

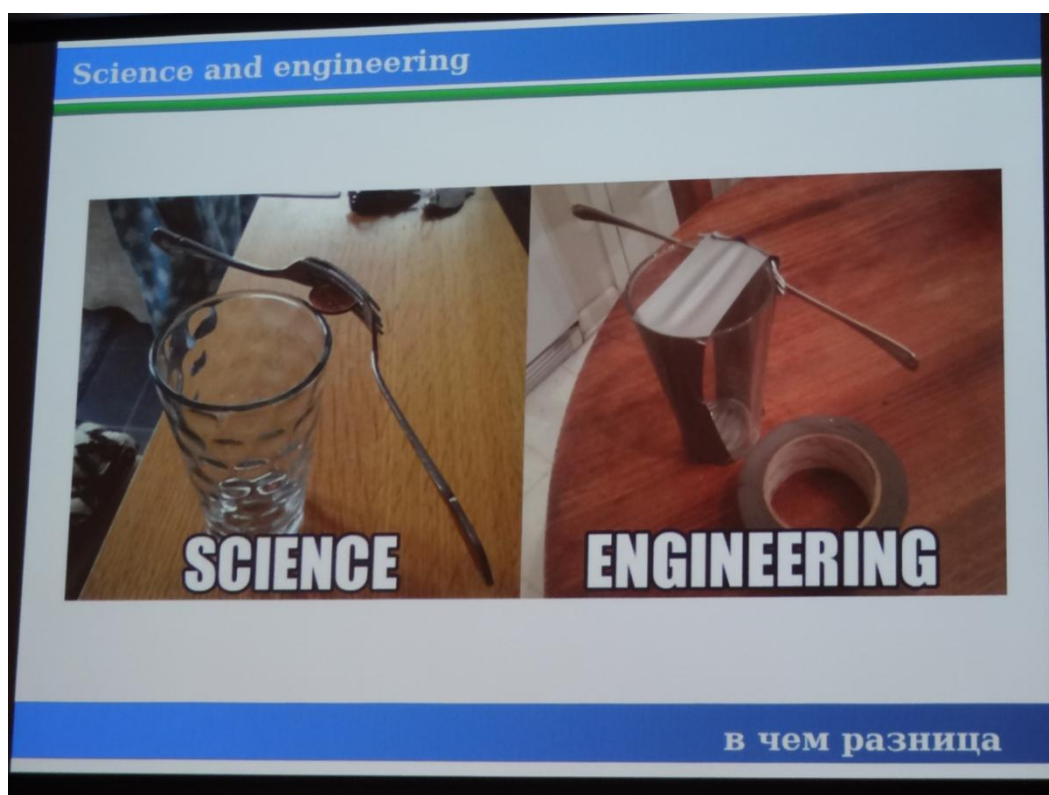
Easy Radioastronomy by Anastasia Skoryk and Serge Yerin

HacKIT/Hacker KIT /

Khackerspace by Dmitriy Birjukov, Maksym Losev, Igor Kulakevych, Ilya Shevchenko and Mykola Khrystenکو



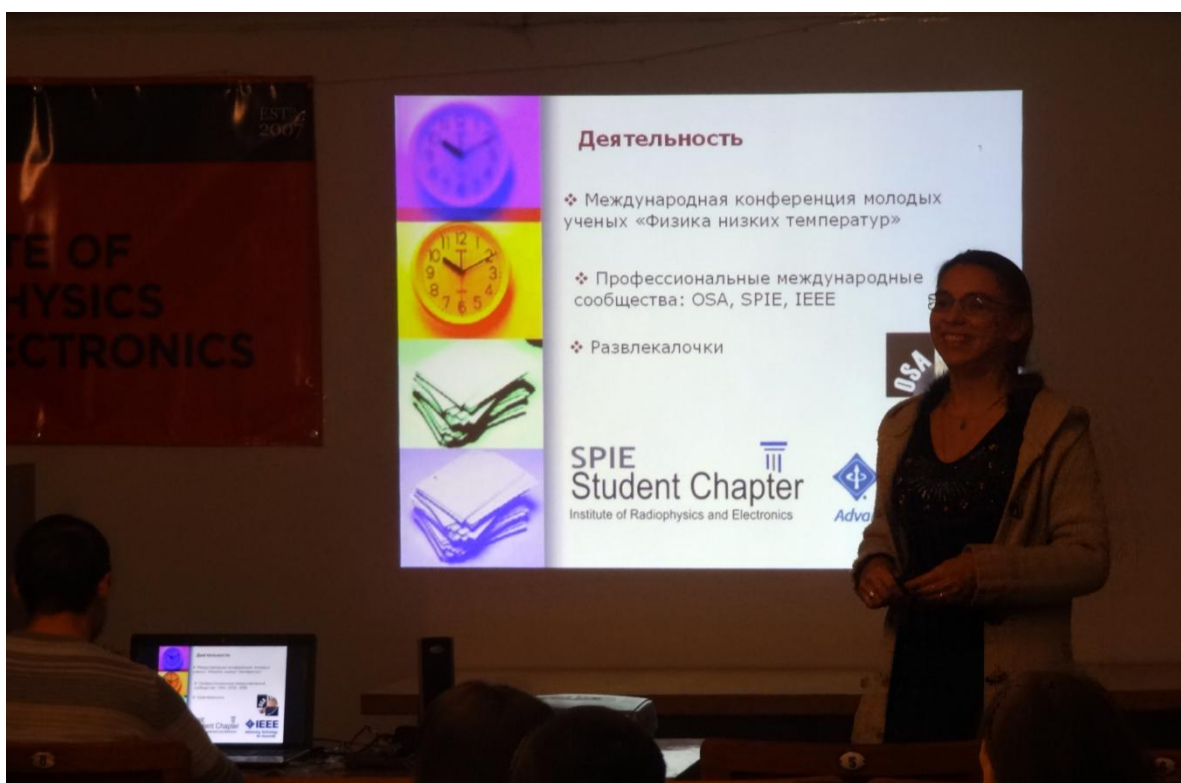
Khackerspacers with their own products:

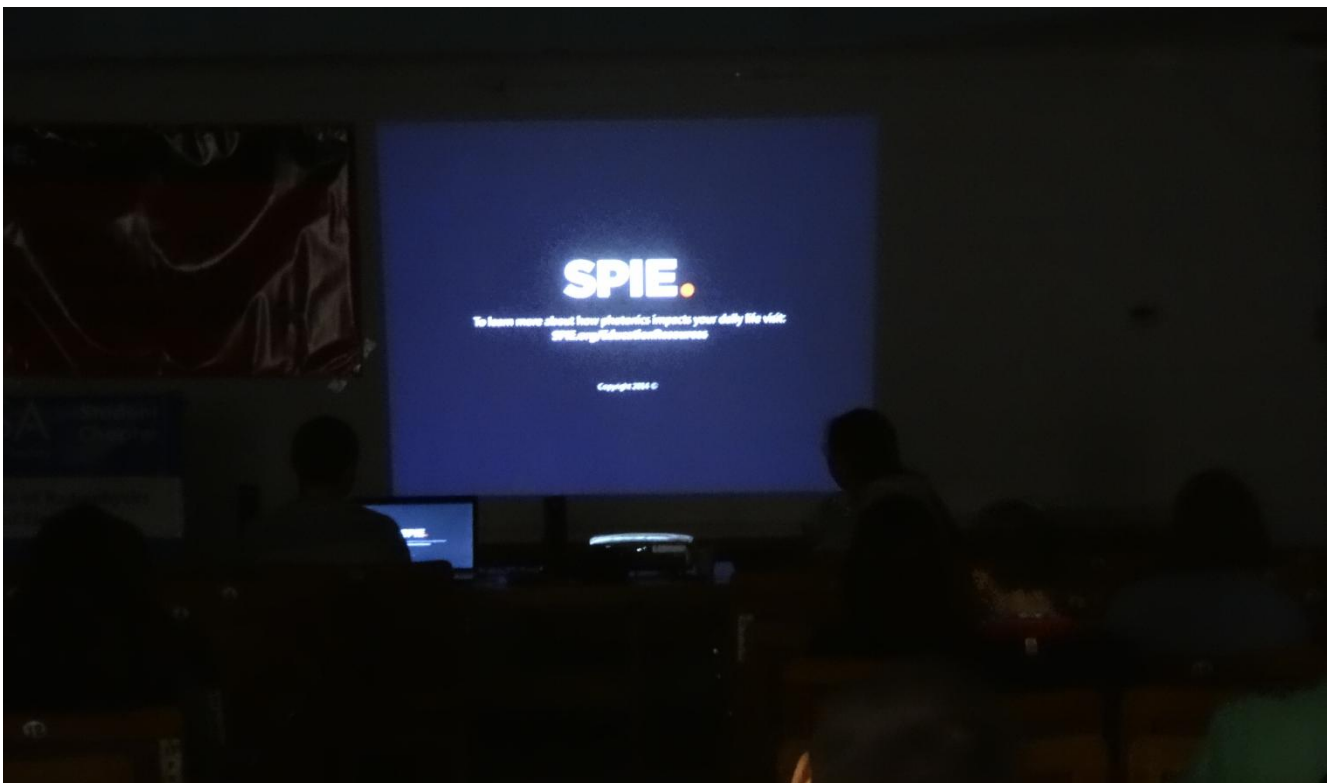
Do It Yourself Biology by Anton Kulaga

Video of the KIT Workshop lectures is now available
<https://www.youtube.com/channel/UC8RvkMQMzBwaSOXVgdTuafA>

7. Outreach activities: Day of Photonics

This year our IRE SPIE Student Chapter was the main organizer of Day of Photonics in Institute for Low Temperature Physics and Engineering. We decided support this world initiative and show to people that Photonics is everywhere! The small “cinema” hole with coffee and sweets was organized for scientists of ILTPE.







This new activity gathered a lot of young people and we hope to make such activities more often next year.

8. Summary Annual Financial Report

	Amount, USD	Description
1	100	Travel Grants for chapter members participating in conferences 1 half-year
2	300	Optics and Photonics session at V International Conference for Young Scientists on "Low Temperature Physics", Kharkiv, June 2-6, 2014
5	150	Young Scientist Workshop in frame of International Conference for Young Scientists on "Low Temperature Physics", Kharkiv, June 4, 2013
6	100	Travel Grants for chapter members participating in conferences 2 half-year
7	150	Young Scientist Workshop on "Carrier Development": "Bridging a gap between education and career in electromagnetics and photonics", Kharkiv, December 3, 2013
8	100	Outreach activities: Day of Photonics.

Amount Requested by IRE SPIE SC: 900 USD**Amount Spent by IRE SPIE SC: 900 USD**

Thanks SPIE for support!!!

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Kharkiv, Urraine
2014**