



# Annual report

## **Institute of Radiophysics and Electronics SPIE/OSA Student Chapter Activity 2008**

**&**

## **SPIE Polish-Ukrainian Workshop on “ Photonics and Metamaterials ”**

**Kharkiv, Ukraine 2008**



**SPIE**  
Student Chapter  
Institute of Radiophysics and Electronics

Dear colleagues,

Due to support SPIE, we were able to do a step forward in our development as a Student Chapter and as young scientists.

SPIE Support in organization of conferences and workshops, allowed us to set new contacts and acquaintances for a further collaboration. And due to SPIE Visiting Lecturer Program we were able to associate with leading world specialists in area of Optics and Photonics. In our activity we tried maximally to utilize our benefits. In this report you will be able to see as it turned out.

In a report IRE SPIE/OSA Student Chapter activity 2008 and report on the SPIE Polish Ukrainian Workshop “Photonics and Metamaterials” is presented

We consider that this year was successful for our IRE SPIE/OSA Student Chapter and hope that a next year will be the same productive.

Sincerely yours

President of IRE SPIE SC Mariia Pashchenko  
and **collective of IRE SPIE SC**

# IRE SPIE/OSA STUDENTCHAPTER ACTIVITY ANNUAL REPORT 2008

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Appendix B: Info about YSC-IRE-2008 and Abstract Book of O&P Session and Metamaterials Session

Appendix C: Abstract Book of III Young Researcher Career Development Workshop

Appendix D: Abstract Book of SPIE Polish-Ukrainian Chapter meeting

Appendix E: YSC-LTP-2008+YSC-IRE-2008 Conference and Polish-Ukrainian Workshop materials

## 1. GENERAL CHAPTER INFORMATION

## Chapter Officers List

Faculty Advisor: Prof. Sergey I. Tarapov, IRE, [tarapov@ire.kharkov.ua](mailto:tarapov@ire.kharkov.ua)

President: Mariia Pashchenko, ILTPE, [p.maria1984@gmail.com](mailto:p.maria1984@gmail.com)

Vice-President: Mikhail Khodzitskiy, IRE, [khodzitskiy@ire.kharkov.ua](mailto:khodzitskiy@ire.kharkov.ua)

Treasurer: Sergey Mizrakhy, IRE, [smizrakhy@ire.kharkov.ua](mailto:smizrakhy@ire.kharkov.ua)

Secretary: Yevgeniya Minakova, IRE, [evgenia\\_minakova@mail.ru](mailto:evgenia_minakova@mail.ru)

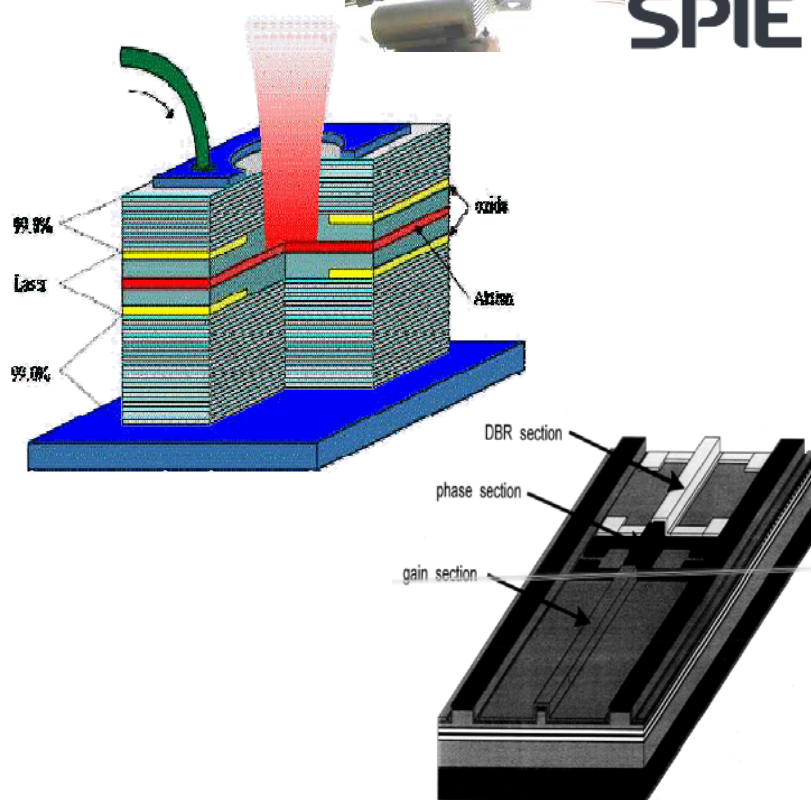
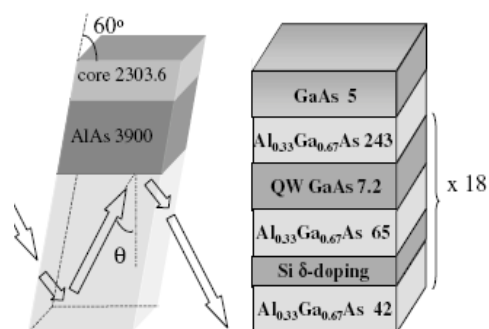
## SPIE SC Members List

№	Name	Organization	SPIE ID	E-mail
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3	Sergey Mizrakhy	IRE NAS Ukraine	3180848	<a href="mailto:smizrakhy@ire.kharkov.ua">smizrakhy@ire.kharkov.ua</a>
4	Yevgeniya Minakova	IRE NAS Ukraine	3180644	<a href="mailto:evgenia_minakova@mail.ru">evgenia_minakova@mail.ru</a>
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6	Tatyana Bagmut	IRE NAS Ukraine	3194997	<a href="mailto:bagmut@ire.kharkov.ua">bagmut@ire.kharkov.ua</a>
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9	Iryna Lutsenko	IRE NAS Ukraine	3194996	<a href="mailto:irene-lutsenko@ukr.net">irene-lutsenko@ukr.net</a>
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11	Stanislav Andrenko	IRE NAS Ukraine	3214067	<a href="mailto:ukraine_gaijin@yahoo.com">ukraine_gaijin@yahoo.com</a>
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14	Sergey Poperedjay	ILTPE NAS Ukraine	3213001	<a href="mailto:sergey.poperedjay1986@gmail.com">sergey.poperedjay1986@gmail.com</a>
15	Ekaterina Yarko	IRA NAS Ukraine	3181048	<a href="mailto:yarkokatya@rian.kharkov.ua">yarkokatya@rian.kharkov.ua</a>
16	Mikhail Vidil	IRA NAS Ukraine	3214229	<a href="mailto:vidil_mikhail@ukr.net">vidil_mikhail@ukr.net</a>
17	Ludmila Berdina	IRA NAS Ukraine	3197584	<a href="mailto:lberdina@mail.ru">lberdina@mail.ru</a>
18	Anna Vozianova	KNURE	3197576	<a href="mailto:annavenus@mail.ru">annavenus@mail.ru</a>
19	Igor Guryev	KNURE	3214078	<a href="mailto:iguru@list.ru">iguru@list.ru</a>
20	Oleg Khmelenko	DNU	3216352	<a href="mailto:khmelenko@ukr.net">khmelenko@ukr.net</a>



## 2. SPIE INVITED LECTURER - Prof. MAURO F. PEREIRA (January 24-25, 2008)

In the frame of SPIE Visiting Lecturer Program, Prof. Mauro F. Pereira, from Sheffield Hallam University, Materials and Engineering Research Institute (MERI), UK, was invited and presented two lectures at institute of Radiophysics and Electronics NAS Ukraine on "Optical Engineering for the 21st Century" and "Controlling bosonic effects in light intersubband-excitation coupling in nanostructures". His lectures attract the attention of lots of people, who were interesting in the topic of lectures.



SPIE Invited Lecturer Prof. Mauro F. Pereira (January 24-25, 2008)

**SEMINAR**

24-25 January, 11:00am in IRE NASU, Council room (3 floor)

<http://www.ire.kharkov.ua/>**Prof. Mauro F. Pereira,**

Sheffield Hallam University, Materials and Engineering Research Institute

**Research interests:** Nonlinear and quantum optics, exciton and polariton effects, band structure engineering, many-body effects, semiconductor lasers (including quantum cascade structures), nonequilibrium Greens functions and numerical methods.

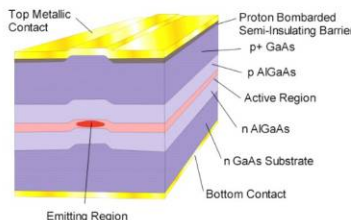
**Lecture 1. Thursday 24.01.2008, 11:00 am**

**Optical Engineering for the 21st Century:  
Microscopic Design of Semiconductor Lasers**

In the beginning of physicist would go

evolved electronics and optoelectronics to create new fiction like lasers with the basic

describe in simple terms how laser light can be generated in a semiconductor device at nanoscale. I will then compare and contrast conventional interband optics with intersubband optics and the frontier of microscopic design of semiconductor lasers: the quantum cascade laser. Results of our state of the art device simulator will be presented and the difficulties to create new mid infrared and THz devices will be explained. These are the most complex structures ever grown in a laboratory and some of them already have commercial applications. The need for advanced quantum statistical mechanics, many particle and nonequilibrium Physics to describe these devices will be explained.



the 20th Century an electrical engineer or applied very far by using simple expressions like voltage = resistance  $\times$  current. However as the century progressed into micro electronics to nano electronics and now sophisticated simulation methods are required advanced devices. Devices that were part of science are now on our every day life. In this talk I will start principle of operation of semiconductor lasers and then

**Lecture 2. Friday 25.01.2008, 11:00 am**

**Controlling bosonic effects in light intersubband-excitation coupling in nanostructures**

Excitons and polaritons play a major role in interband optics and since in the last decade semiconductor optics has been steadily evolving towards the less explored field of intersubband transitions, it is of general interest to understand how light couples with an intersubband excitation. A recent theory predicted the possibility of intersubband polaritons for oblique incidence by means of a cavity created by total internal reflection at the air interface. Indeed the microcavity polarity splitting of intersubband transitions has been observed experimentally. Stimulated by the striking good agreement between theory and experiments, a Hamiltonian approach based on a bosonic approximation for the intersubband excitation has been developed to treat the quantum vacuum properties of the intersubband cavity polariton field. However, this paper demonstrates that the coupling between light and intersubband excitations in semiconductors is fundamentally different from the well understood coupling to interband transitions that leads to excitonic polaritons and a more general *intersubband antipolariton* concept is introduced.

More details are available at M.F. Pereira Jr., Phys. Rev. B 75, 195301 (2007).

Organizers of the seminar: OSA/SPIE IRE Student Chapter and YS Councils of IRE NASU and ILTPE NASU

**Information about the Seminar with SPIE Invited Lecturer Prof. Mauro F. Pereira**



### 3. SPIE LEADERS MEETING IN STRASBOURG (April 7-11, 2008)

As a president of our IRE SPIE Student Chapter, I was lucky to visit France, in one of political the capitals of Europe – Strasburge. One of the largest conferences of SPIE Europe Photonics Europe 2008 passed there, and meeting of leaders of SPIE Student chapters passed within the framework of this conference. Exactly on this meeting I set out, taking advantage of special grant in 1000\$ from SPIE. President SPIE Karazin National University Student Chapter– Alexey Galan set out on the same program.

There was a lot of interesting at conference, but all one after another.

A place for a conference was chosen very successfully. Strasburg is a very quiet small and old city. It's very right place to discuss scientific achievements.

A conference passed 5 days from 7 to 11 of April in Palais de la Musique et des Congres, within the framework of conference the enormous exhibition of modern equipment, newest materials and scientific achievements was organized.

Specially for the representatives of SPIE Student Chapters the program was made which plugged in itself:

1) Student Lunch with the Experts

2) SPIE Student Chapter Breakfast

3) 2 educating course at choice. For us it were:

a) Diffractive Optics Technology for Product Development, etc.

b) Hands-on-Optics: Making an Impact with light: Terrific Telescopes.

4) tickets for the visit of poster sections of conference, exhibition and lunches.

5) free of charge advertising posters and booklets about SPIE were given, which then we successfully used for the holding of conferences.

In the first day in Strasburge we register oneself and met with one of our curator – Dirk Fabian, very nice young person. He helped us to be oriented in a conference at all time.

There was a lot of interesting acquaintances at conference, as on scientific directions so with the representatives of SPIE Student Chapters from other countries. I consider, what leaders meeting and conference passed at high level to which it is needed all aims.

Unfortunately, it was prohibited to take pictures on none of measures of conference, but some pictures succeeded to be done ☺:



Inside & outside Palais de la Musique et des Congres



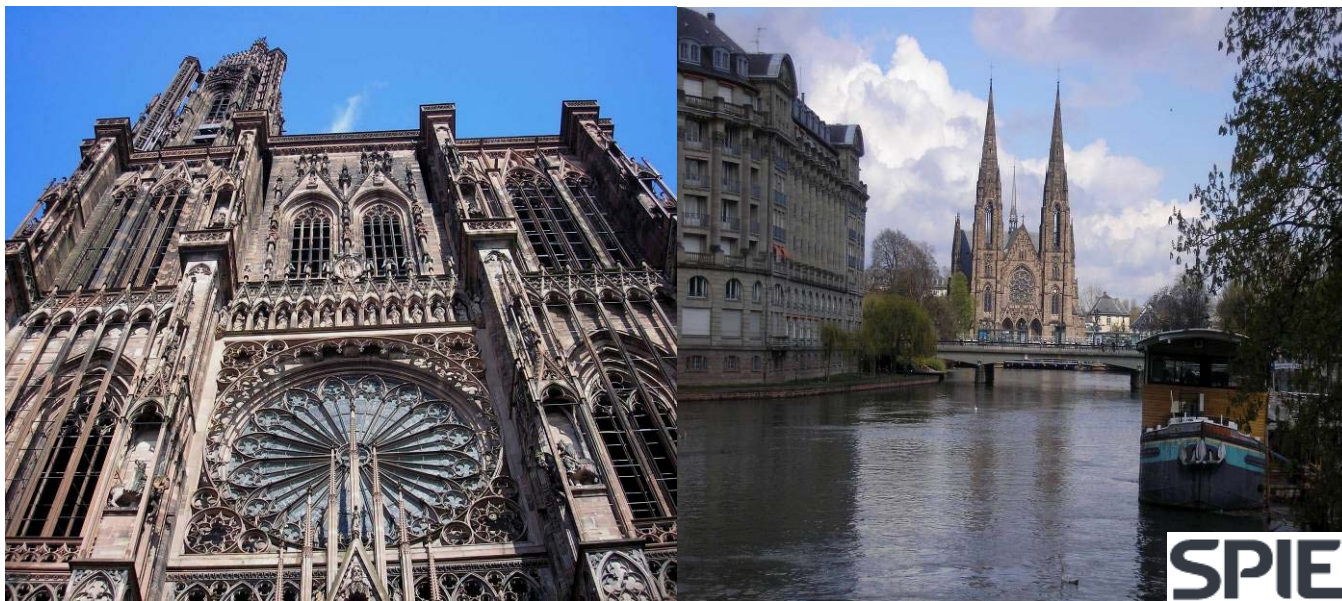


I & Alexey Galan with Dirk Fabian after course "Hands-on-Optics: Making an Impact with light: Terrific Telescopes. "



My walks on a city





Catholic cathedrals of city



European parliament



## 4. IV Kharkiv Young Scientists Conference on “Low Temperature Physics” (May 20-23, 2008)



### A. Program of Event

The IV Kharkiv Young Scientist Conference on Low Temperature Physics (YSC-LTP-2008) was held at the Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine (ILTPE NASU) which is a leading National Ukrainian scientific center with deep expertise in fields including low temperature materiology and instrument making, the mathematical physics and the mathematical analysis, physics of quantum liquids, liquid and cryocrystal, low temperature magnetism, biophysics, low temperature physics of macromolecules etc. The main goals of the conference were to help young scientists and students from different research institutes and universities to get in touch with each other, to listen to review talks on hot topics presented by leading scientists, and to try their own skills in scientific presentations. This year the YSC-LTP-08 conference gathered over 130 young scientists from different parts of Ukraine as well as from FSU and European Countries and provided an opportunity of both scientific discussions and informal communication.

The Optics & Photonics (OP) has been included to the list of topics of the YSC thanks to the initiative from SPIE/OSA Joint Chapter of Institute of Radiophysics and Electronics and with the support of SPIE/OSA Joint Chapter of Kharkiv National University and IEEE LEOS SC of Kharkiv National University of Radioelectronics .

The Contest for the Best master's thesis in Optics&Photonics was organized jointly by the SPIE/OSA SCs of IRE and KhNU and by the IEEE LEOS SC of KNURE. Students from of these universities were invited to participate in the Contest in order to attract attention to investigations in Optics&Photonics field and to stimulate students to take part in scientific research. Besides, this activity was expected to highlight the activities of local SPIE/OSA chapters among students. The Contest was organized in two steps: (i) first, on-line submission of abstracts was organized and then (ii) five best theses were chosen and their authors have been invited to make presentation in frame of the OP session. The winners were determined according to the level of the work and quality of presentations. The decision was made by a jury consisting of leading scientists from IRE and ILTPE. The winners were awarded by Honorary Diplomas and prizes. Such a contest was organized for the first time by the initiative of IRE SPIE/OSA SC.

Program of the events organized by IRE SPIE/OSA SC:

- Invited talk of the OSA Traveling Lecturer Prof. Irving J. Bigio ( Boston University, Departments of Biomedical Engineering, Electrical & Computer Engineering, Physics) titled “Elastic light scattering spectroscopy for the detection of early cancer and precancer”
- Oral and poster presentations of the young scientists – participants of OP session
- Oral and poster presentations of participants of contest for the Best MSc's Thesis
- Welcome party and SPIE/OSA special coffee-break



*B. Invited talk on biooptics*

The Lecture of OSA Traveling Lecturer Prof. Irving Bigio from Boston university was scheduled as an Invited talk within the Special Session on Optics&Photonics held in frame of YSC-LTP-2008. It was a bright talk describing the advantages and perspectives of a simple and at the same time very powerful diagnostic tool based on elastic light scattering and capable of real time noninvasive study of tissue properties aimed at pre-cancer detection. The lecture was well-structures and clearly presented. It was interesting both for professionals and young scientists.

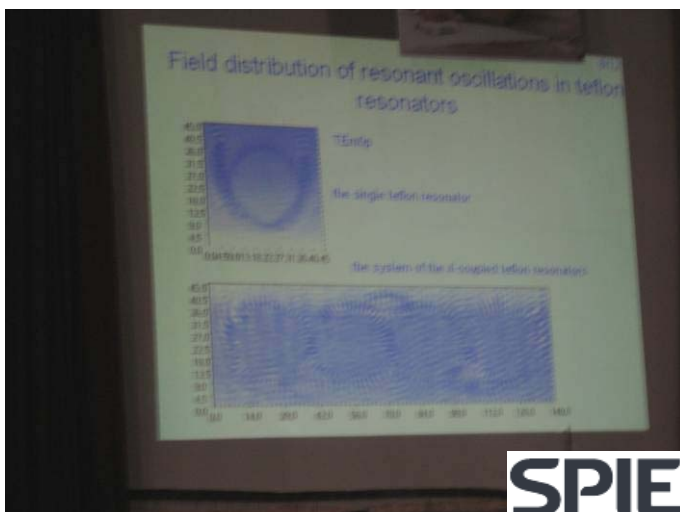
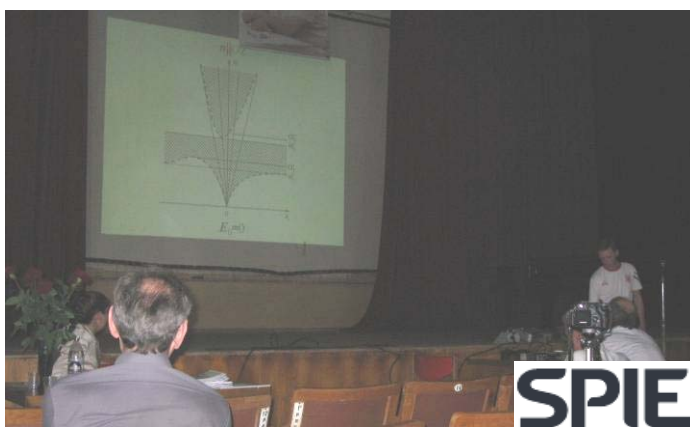
From this lecture participants gained some knowledge in the state of the art in pre-cancer diagnostics including the general description of the problem, up-to-date challenges, and methods of diagnostics. The presentation of Prof. Bigio highlighted an indicative example of a successful multi-disciplinary research which combined physics, engineering, and medicine and finally resulted in development of an advanced and highly demanded medical instrument. This example will help young scientists to look wider at the problems they work on and will stimulate the search for possible applications of scientific results they obtain within their MS and PhD studies.



Prof. Bigio presenting the invited talk during the Optics and Photonics session



Prof. Bigio and some IRE SPIE SC members

*C. Oral presentations (Optics and Photonics Session)*

The working language of the Session was Russian and English. The total number of abstracts submitted for the OP Session was 22 (15 oral and 7 posters) and the number of presented paper was 22, including 5 paper – participants of the Best MSc These Contest (the candidates for the Best MSc Thesis award).

The detailed program of the OP Session is provided in Appendix A.

Geography of the participants of the OP Session included 6 institutions from Ukraine:

*IRE NASU*, Kharkiv;

*KNURE*, Kharkiv;

*KNU* Kharkiv;

*ILTPE NASU* Kharkiv;

*Institute of Monocrystals*,

Kharkiv; *NTI* Donetsk.

A number of the presented papers were prepared in collaboration with colleagues from Gwangju IST, Korea; FIMEE, Mexico.

Presentations were followed with hot and fruitful discussions which made a great impact to the success of the event.

Oral presentations during the OP Session

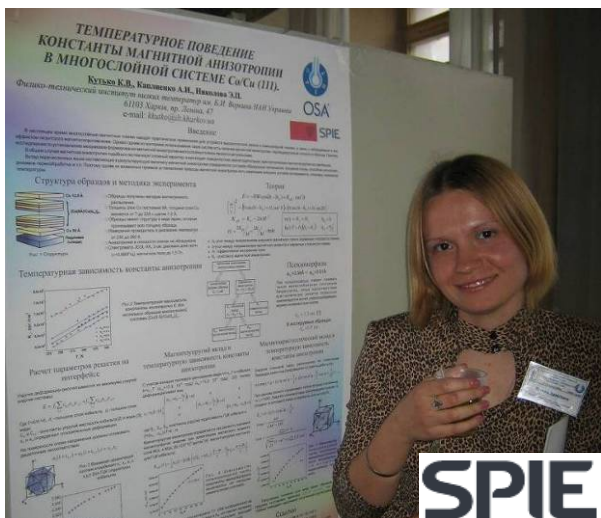


#### D. Poster presentations (Optics and Photonics Session)

Posters related to the Optics & Photonics were presented at the joint poster session which was organized in the lobby of the conference hall and combined with a coffee break. The informal atmosphere helped participants to communicate more easily.



Poster session



#### E. Young Scientist Contest for the Best presentations

Diplomas and prizes (books on Optics, USB-flash drives, and laser pointers) for the best papers presented at the OP session have been provided by IRE SPIE/OSA and KNU SPIE/OSA student chapters and awarded to:

Strelchuk S.V. Constructing POVM operators for superconducting flux qubit

*Kyiv National Technical University of Ukraine "KPI"*

Sotnikov A.G. Microscopic description of slowing of electromagnetic pulses in BEC of alkali atoms

*Akhiezer Institute for Theoretical Physics, NSC "KIPT" NANU, Kharkiv*

T.V. Lapyeva Features of SH-waves propagation in the nonmagnetic crystal caused by accounting of the rotational invariance

*Donetsk Institute for Physics&Engineering,*

**F. Contest for the Best MSc's Thesis in Optics&Photonics field**

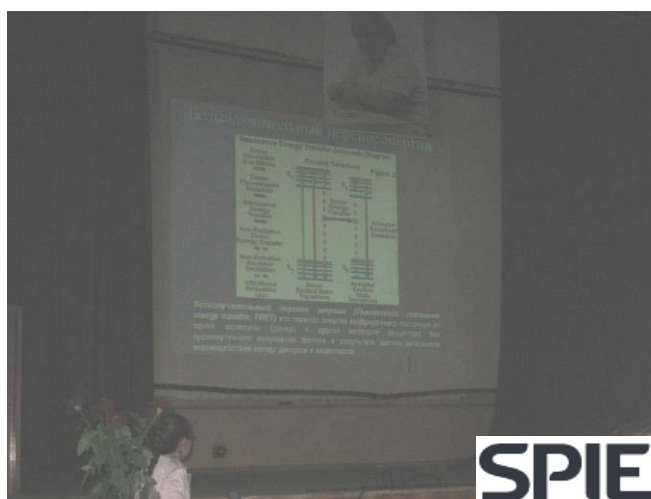
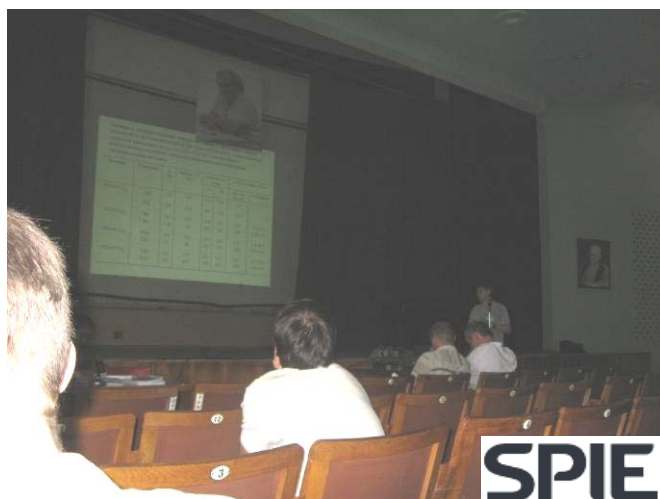
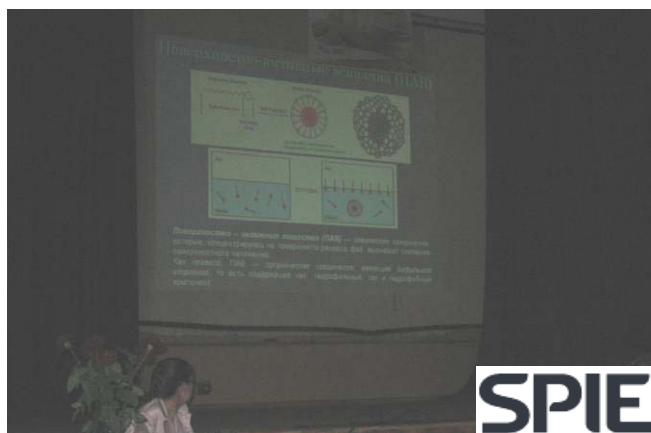
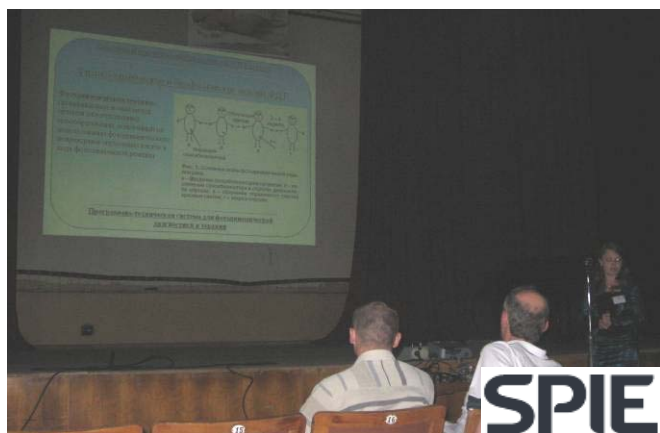
In the final part of the Contest, 5 students from different Kharkiv institutions were invited to participate in the OP session and present their master's thesis. By decision of the jury, the winners were determined with account for both the level of the MSc These and quality of presentation. The winner got Honorary Diplomas, money prizes and free OSA membership for one year, provided by IRE SPIE/OSA, KNU SPIE/OSA, and KNURE IEEE LEOS SCs.

List of participants:

- Kachkovskii A. N., Kharkov National University of Radio Electronics
- Gnatenko A., Lipkina, V., Kharkov National University of Radio Electronics
- Poperedjay S.N., V. I. Kutco, Karazin Kharkov National University
- Belogyrova N. A., Stervoedov N. G., Sergeeva N.V., Kharkov National University
- Lubiana A. S., Guralchuk G.Ya., Yefimova S.L., Karazin Kharkov National University

Winners:

Winners: 1 prize	Belogyrova N. A	<i>PROGRAM AND TECHNICAL MAINTENANCE FOR PHOTODYNAMIC DIAGNOSTICS AND THERAPY</i>
2 prize	Poperedjay S.N.	<i>RESEARCH OF LONG-WAVE IR-SPECTRUMS TO THE CRYSTAL <math>KTm(MoO_4)_2</math></i>
3 prize	Gnatenko A.	<i>INFLUENCE OF OPTICAL AND GEOMETRIC PARAMETERS OF 1D PHOTONIC CRYSTALS ON THEIR SPECTRAL PROPERTIES</i>



Presentations of contest participants



*G. Social program*

During the YSC-LTP-2008 a special coffee-break was organized jointly by IRE SPIE/OSA and KNU SPIE/OSA student chapters. During this coffee break with light foods, beverages, and a specially baked fancy cake were served. The opportunity was used to advertise the SPIE and local SPIE/OSA Student chapters by distributing the SPIE/OSA promoting materials and information leaflets. The foods and beverages were free for all the participants of the conference – thanks to support of OSA and SPIE.



Participants of the YSC-LTP-2008, Prof. Bigio and Dr. Boriskin, a series of photos taken during the SPIE/OSA coffee break.



IRE SPIE SC President (Mariia Pashchenko) is cutting the fancy cake



### H. Afterword

A combination of three activities, namely the lecture of OSA Distinguished Lecturer, the Optics & Photonics Session, and the First Contest for the Best MSc These organized in the frame of the YSC-LTP-2008 conference, enabled us fully achieved the important goals of professional training of young scientists and attraction of attention of the scientific youth community to SPIE/OSA and its local SPIE/OSA chapters. This Event joint together the efforts of two local SPIE/OSA SCs and IEEE LEOS SC and provided an opportunity for students and young scientists from different institutions to listen to invited talks, to try their own skills in the Scientific Contest organized within the OP Section, and to get in touch with the scientific community.



Mariia Pashchenko & ILTPE YSCouncil Chairman (left)

Mariia Pashchenko & Conference Orgcommittee (right)



## *I. Financial Report*

Expenses related to the Optics & Photonics Session of the YSC-LTP-2008 conference and the Contest for the Best master's thesis in Optics&Photonics field, ILTPE NASU, Kharkiv, Ukraine, May. 20-23, 2008.

Organized by the IRE SPIE/OSA Student Chapter (in collaboration with the SPIE/OSA KNU student chapter and KNURE IEEE LEOS Student chapter)

### Young Scientist Contest for the Best presentations on Optics and Photonics Session

	Amount, USD	Description
1.	25	Stationery and printing materials
2.	80	Conference fees for IRE SPIE/OSA SC members
3.	70	Special SPIE/OSA fancy cake
4.	50	Coffee-breaks
5.	175	Banquet
6.	50	Printing of English version of conference book for O&P session participants
7.	200	Prizes on O&P session (4 Gb USB-flash storage drives, books on Optics, etc.)

**Total spent: 650 USD**

**Amount Requested and spent by IRE SPIE SC: 250 USD**

**Provided by KNU OSA SC: 200 USD**

**Provided by IRE OSA SC : 200 USD**

### Contest for the Best Master's Thesis in Optics&Photonics

	Amount, USD	Description
8.	50	Conference fees for students participating in the Best Master's thesis contest
9.	10	Printing materials
10.	320	Prizes for the winners of the Contest for the Best Master's thesis

**Total spent: 380 USD**

**Amount Requested and spent by IRE SPIE SC: 100 USD**

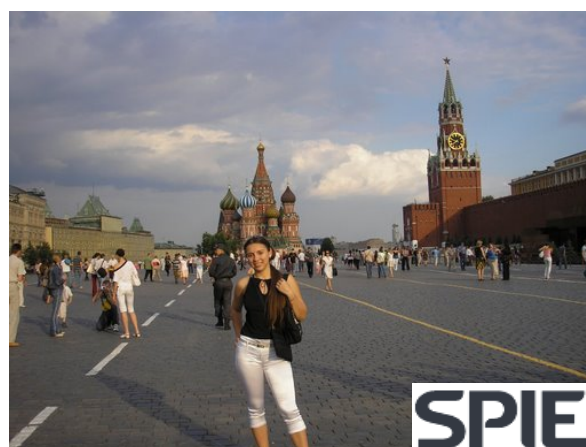
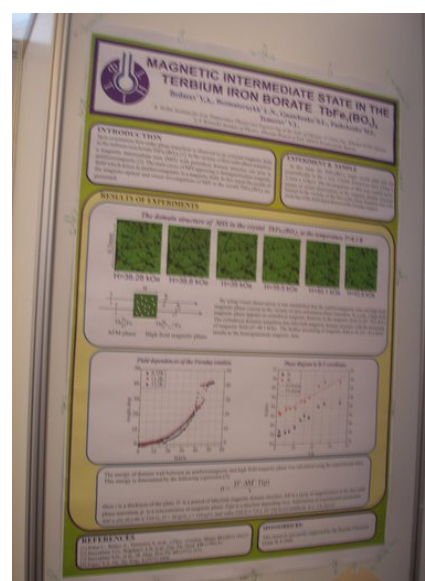
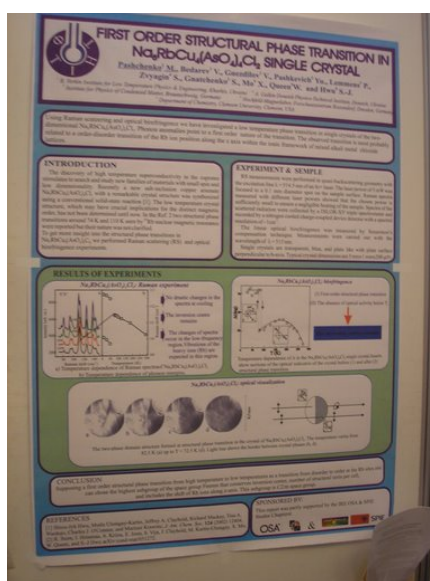
**Provided by IRE OSA SC : 200 USD**

**Provided by KNURE IEEE LEOS SC : 80 USD**

## 5. Presentation of SPIE and IRE SPIE/OSA Student chapter during Moscow International Symposium on Magnetism held at Lomonosov Moscow State University (20-25 June, 2008)



President of IRE SPIE SC (Mariia Pashchenko) participated in the Moscow International Symposium on Magnetism held at Lomonosov Moscow State University with 50\$ SPIE support (20-25 June, 2008) and made the SPIE and IRE SPIE/OSA Student Chapter Presentation at this conference using SPIE and IRE SPIE/OSA SC leaflets and booklets.

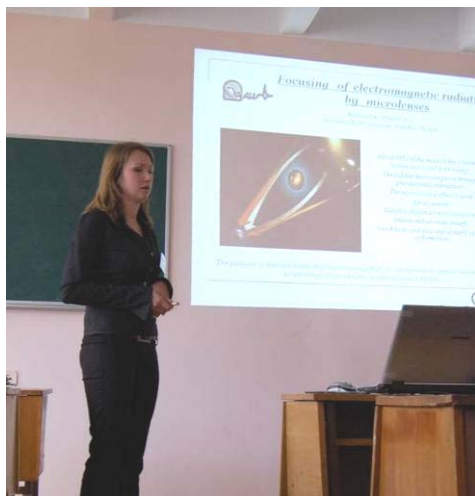


My posters at MISM-2008 and I am on Red Square



## 5. Travel Grants for Chapter members participating in conferences on Optics and Photonics

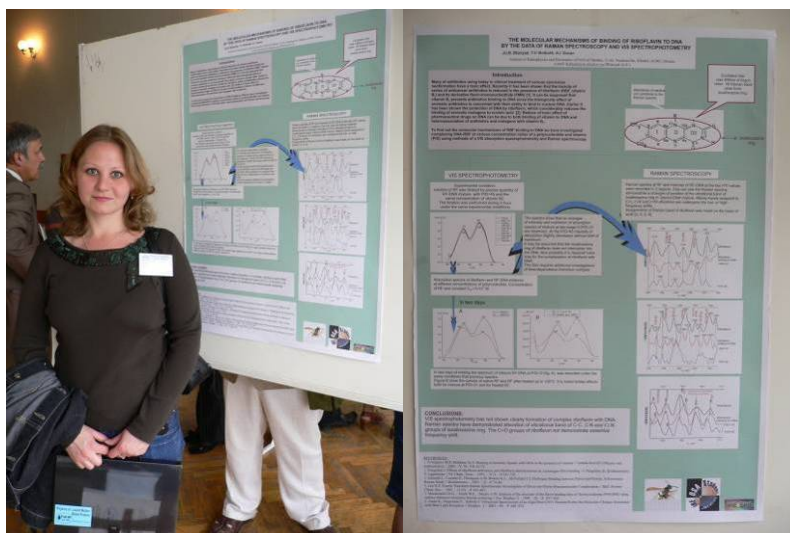
Due to SPIE support, five Student chapter members were able to go on the Ukrainian and Russian conferences on optics and photonics using IRE SPIE SC travel grants (50\$)



Ludmila Berdina ("Astronomy and Space Physics", Kyiv, Ukraine)



Y. Minakova ("Theoretical and Applied Biophysics, Physics Chemistry", Sebastopol, Ukraine)



Yuliya Bliznyuk (Physics of Liquid Matter, Kyiv, Ukraine)



Mikhail Khodzitskiy (DAYS on DIFFRACTION, St.Petersburg, Russia)



Yarko Ekaterina (MMET-2008, Odesa, Ukraine)

Some information on these Conferences:

- 1) 15th Open Young Scientists' Conference on Astronomy and Space Physics, April 14-19, 2008, April 14-19, 2008, Kyiv University, Kyiv Ukraine
- 2) IV Ukrainian conference on Theoretical and Applied Biophysics, Physics and Chemistry, April 21-26, 2008, Sebastopol National University, Sebastopol, Ukraine
- 3) International Conference: Physics of Liquid Matter: Modern Problems, May 23- 26, 2008, Kyiv National Taras Shevchenko University, Ukraine
- 4) Annual International conference "DAYS on DIFFRACTION" June 3 - 6, 2008, Steklov Mathematical Institute, St.Petersburg, Russia.
- 5) 12-th International Conference on. MATHEMATICAL METHODS. IN ELECTROMAGNETIC THEORY, June 29 – July 2, 2008, Odesa National Academy of Telecommunications Odesa, Ukraine

	Amount, USD	Description (travel expenses)
1	50	Ludmila Berdina
2	50	Yevgeniya Minakova
3	50	Yuliya Bliznyuk
4	50	Mikhail Khodzitskiy
5	50	Ekaterina Yarko

Total spent: 250 USD

Amount Requested and spent by IRE SPIE SC: 250 USD



## 7. VIII Kharkiv Young Scientists Conference on “Radiophysics and Electronics, Biophysics” IRE-YSC-2008 (November 25-27, 2008)



### A. Program of Event

The VIII Kharkiv Young Scientists Conference on “Radiophysics and Electronics, Biophysics”(IRE-YSC-2008) was held in November 25-27 at the Institute of Radiophysics and Electronics of the National Academy of Sciences of Ukraine (IRE NASU). Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine (IRE NASU) is the first Academic Institute of Radiophysics in Ukraine, it was founded in September in 1955. The institute became the leading research center with deep expertise in various fields, such as: millimeter and submillimeter wave radiophysics and electronics, interaction of electromagnetic waves with solid states and biological objects, radiowave propagation in the environment, radiophysics sensing of artificial and natural objects. The most important achievements of the institute for last years are following: - development of new methods of radiolocation used for designing of radiolocation systems for territories control, detection of alive people under ruins, subsurface remote sensing, monitoring of buildings condition; - designing of radiolocation monitoring from aerospace satellites used for monitoring and forecasting of floods, flowages and emergencies, and also for monitoring of vegetation, erosive processes and pollution of water surfaces.

The Institute is a founder of the following widely known scientific conferences: International Symposium „*Physics and Engineering of Millimeter and Submillimeter Waves*” (MSMW), International Conference „*Mathematical Methods in Electromagnetic Theory*” (MMET), and Annual Kharkiv Young Scientists Conference on “Radiophysics and Electronics, Biophysics” which traditionally gather over 100 young scientists from different parts of Ukraine as well as from FSU and European Countries. All these conferences are aimed at development of favorable conditions of communication between Ukrainian scientist and the worldwide electromagnetic community. These events are traditionally supported by IEEE, OSA, SPIE, and URSI, EuMA societies.

This year the YSC-LTP-08 conference gathered over 130 young scientists from different parts of Ukraine as well as from FSU, European Countries , Armenia, and USA.

In frame of the conference SPIE/OSA IRE Student Chapter carried out four activity:

- 1) Organization of lecture of SPIE Visiting Lecturer Anatoly B. Rinkevich ( sponsored by SPIE);
- 2) Optics and Photonics Session (talks in Russian) – sponsored by SPIE+OSA
- 3) III Young Researcher Career Development Workshop (sponsored by SPIE+OSA+IEEE)
- 4) SPIE Polish-Ukrainian Workshop on “Photonics and Metamaterials” (sponsored by SPIE+OSA+IEEE)

Conference website: [www.ysc.org.ua](http://www.ysc.org.ua)

		Conference hall	Council room (2 floor)	Council room (3 floor)
Tuesday 25.11. 2008	8:00 - 9:00			<b>Registration of participants<sup>1</sup></b>
	9:15 - 9:30	<b>Opening Ceremony</b>		
	9:30 - 11:30	<b>Plenary Session-1</b> (Prof. Rinkevich, Dr. Belov, Dr. Korsun)		
	11:30-13:30	<b>Time for Lunch and Accommodation</b>		
	13:30-15:30	<b>Radars, Propagation &amp; Remote Sensing (RPRS) -1</b>		<b>Solid-state Radiophysics (SSRM) -1</b> (Russian Session)
	15:30-16:00	<b>Poster Session: RPRS +PME+SSRM/ Coffee break<sup>2,3</sup></b>		
	16:00-18:00	<b>Radars, Propagation &amp; Remote Sensing (RPRS) -2</b>		<b>Metamaterials(SSRM) -2</b> (Dr. Belov + English Session)
Wednesday 26.11. 2008	18:00-20:00		<b>Welcome party<sup>3,4</sup></b>	
	9:15 - 9:30			<b>III YSCD Workshop Opening</b>
	9:30 - 11:00			<b>Session I</b> ( Prof. Boeck, Dr. Vallecchi)
	11:00-12:00			<b>Session II</b> (Presentation IEEE, OSA, SPIE, LEOS )
	12:00-13:00	<b>Time for Lunch</b>		
	13:00-15:00		<b>Biophysics (Bio) -1</b>	<b>Optics and Photonics (OP)-1</b> (Dr. Mergo + English Session)
	15:00-15:30	<b>Chapters Poster Session +Bio Poster Session / Coffee break<sup>2,3</sup></b>		
	15:30-17:00		<b>Biophysics (Bio) -2</b>	<b>Session III</b> (Dr.Belov,Dr.Sakhnenko, Dr.Fesenko)
	17:00-18:00			<b>Polish-Ukrainian Workshop</b>
Thursday 27.11. 2008	19:00-21:00	<b>Theatre of French Comedy<sup>4</sup></b>		
	9:00-11:00	<b>Computational and experimental electromagnetics (CEE)-1</b>		<b>Optics and Photonics (OP)-2</b> (Russian Session)
	11:00-11:30	<b>Poster Session: CEE+OP / Coffee break<sup>2,3</sup></b>		
	11:30-13:30	<b>Computational and experimental electromagnetics (CEE)-2</b>		<b>Optics and Photonics (OP)-3</b> (Russian Session)
	13:30-14:30	<b>Time for Lunch</b>		
	14:30-16:30	<b>Computational and experimental electromagnetics (CEE)-3</b>		<b>Optics and Photonics (OP)-4</b> (Dr. Mazikowski +English Session)
	16:45-17:30	<b>Plenary Session-2</b> (Prof. Evstigneev )		
	17:30-18:00	<b>Awards and Closing Ceremony</b>		

<sup>1</sup> Participants registration is obligatory

<sup>2</sup> Lobby of the Council Room (3-rd floor of the Main Building)

<sup>3</sup> FREE for all registered participants of YSC'08

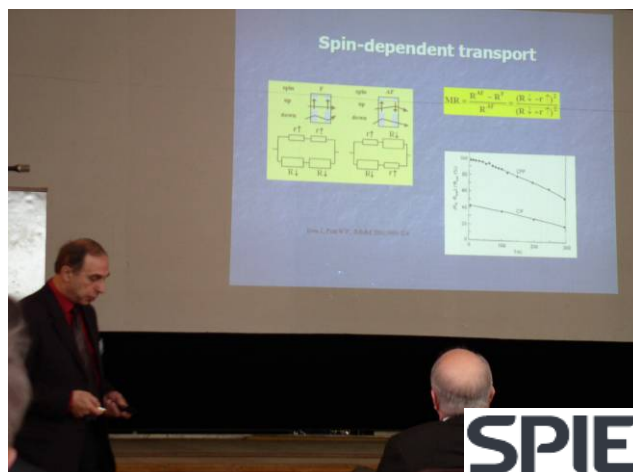
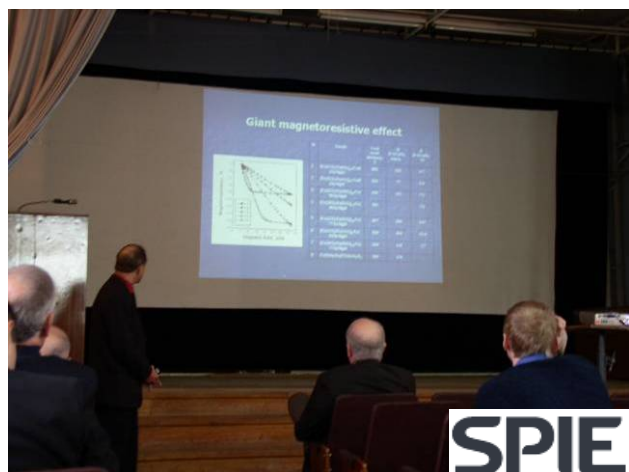
<sup>4</sup> Preliminary scheduled (can be modified later)

## The YSC -2008 Conference Schedule

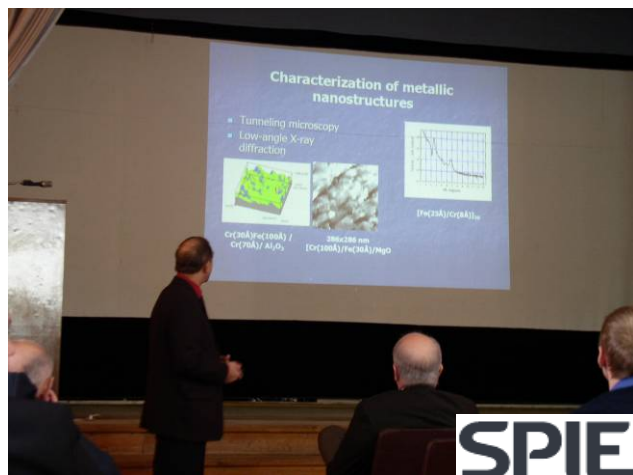
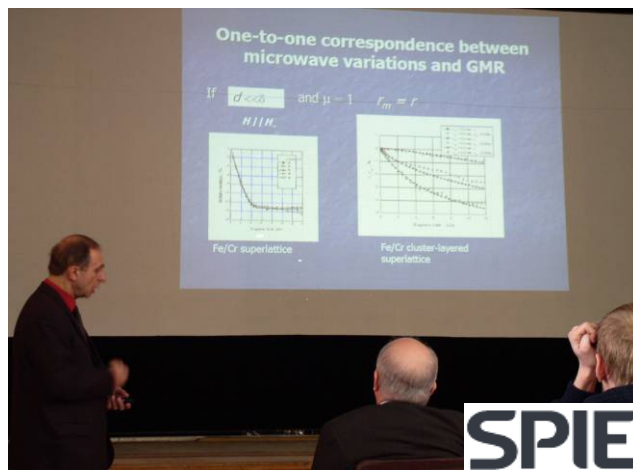
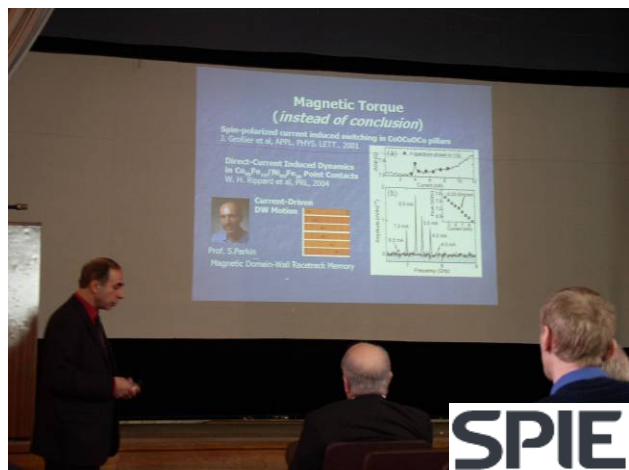


**B. SPIE Visiting lecturer Prof. Anatoly B. Rinkevich**

In the frame of SPIE Visiting Lecturer Program, Prof. Anatoly B. Rinkevich, from Institute of Metal Physics, Ural Division of Russian Academy of Sciences, Russia, was invited and presented two same lectures on “Interaction of electromagnetic waves with magnetic nanostructures” at Institute of Radiophysics and Electronics NAS Ukraine in frame of the YS conference (November 25, 2008) and at the Institute for Low Temperature Physics and Engineering of the National Academy of Sciences of Ukraine in frame of Student Chapter Seminar (November 27, 2008). His lectures attract the attention of many conference participants (students, PhD students, young scientists etc.)



Prof. Rinkevich during the lecture



## LECTURE ABSTRACT

INTERACTION OF HIGH-FREQUENCY ELECTROMAGNETIC WAVES  
WITH MAGNETIC METALLIC NANOSTRUCTURES

A.B. Rinkevich, L.N. Romashev, V.V.Ustinov

*Institute of Metal Physics Ural Division of RAS  
18 S.Kovalevskaya Str., Ekaterinburg, 620041, Russia  
e-mail: rin@imp.uran.ru*

Microwave properties of magnetic metallic nanostructures with giant magnetoresistive effect are reported about. Two main physical reasons cause microwave variations, namely the microwave analog of giant magnetoimpedance effect and ferromagnetic resonance [1,2]. If the fields are lower than magnetic saturation field, the field dependence of the transmission coefficient is mostly due to the first mechanism. This dependence looks like the DC magnetoresistive one. There is approximately one-to-one correspondence between microwave and DC relative variations. The second mechanism is observed only under perpendicular pumping. The essential resonance variations are observed only at the frequencies of millimeter waveband. The resonance amplitude is the highest in those samples where the resonance falls in the magnetically saturated state of the nanostructure. Methods of microwave magnetoresistive effect measurement are presented. The experiments in the "current perpendicular-to-plane" geometry are specially considered, and the experiments carried out in the millimeter waveband are presented. The peculiarities of the joint observation of ferromagnetic resonance and microwave magnetoresistive effect are specified. The propagation of electromagnetic waves in a rectangular waveguide containing a gyrotropic plate made of a metallic-film nanostructure was studied. Changes in the propagation constant were calculated for the cases of in-plane and normal magnetizations. In the region of frequencies and fields that is far away from the condition of ferromagnetic resonance, the changes in the absolute value of the transmission coefficient are proportional to that in resistance. Expressions were obtained for the changes in complex reflection and transmission coefficients.

The lecture is subdivided into the following items.

Metallic nanostructures and their structure and preparation.

Exchange interaction and giant magnetoresistive effect.

Magnetic resonance in nanostructures.

Reflection and penetration of high frequency electromagnetic waves through metallic nanostructures.

Penetration in a wide frequency interval.

Realization of "current-perpendicular-to-plane" geometry at microwaves.

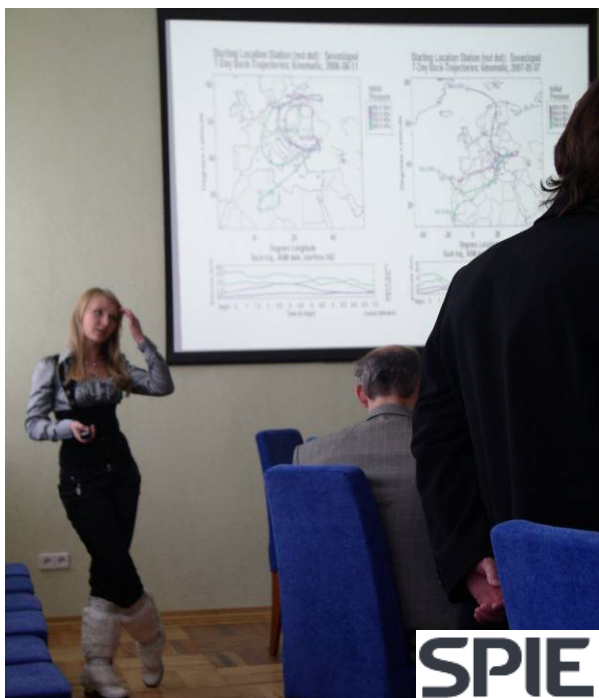
Measurement of giant magnetoresistive effect at the traveling waves.

Application of metallic nanostructures in nanoelectronics and spintronics.

Microwave methods give a unique opportunity to estimate the dynamic and relaxation parameters of nanostructures as well to study the spin - dependent transport. Application of the metallic magnetic nanostructures in microwave electronics is also discussed.

- [1] J.Krebs, P.Lubitz, A.Chaiken, and G. A.Prinz, "Magnetoresistance origin for nonresonant microwave absorption in antiferromagnetically coupled epitaxial Fe/Cr/Fe(001) sandwiches", *J. Appl. Phys.*, vol.6, No.8, Part II, pp.4795-4797, 1991
- [2] A.B.Rinkevich, L.N.Romashev, V.V.Ustinov, E.A.Kuznetsov, High frequency properties of magnetic multilayers, *JMMM*, vol. 254-255C , pp. 603-607, 2003



*C. Optics & Photonics Session (in Russian)*

Oral presentations during the OP Session

In frame of the conference, Optics and Photonics (OP) session was organized. This session was divided into two subsession: English and Russian. OP session in English was included in Polish-Ukrainian Workshop on "Photonics and Metamaterials". Russian OP Subsession was carried out traditionally as conference session in November 27, 2008.

The total number of abstracts submitted for the Russian OP Session were 20 (16 oral young scientists talks and 4 posters) and the number of presented paper was 18.

The detailed program of the OP Session is provided in Appendix B.

Thanks to SPIE Support, four travel grants per 50 \$ on OP session was given to following foreign participants:

- 1) D.A. Tsirkunov (Minsk, Byelorussia)
- 2) N.I. Teper (Saratov, Russia)
- 3) A.A. Bolshakov (Minsk, Byelorussia)
- 4) P.V. Petrov (Minsk, Byelorussia)

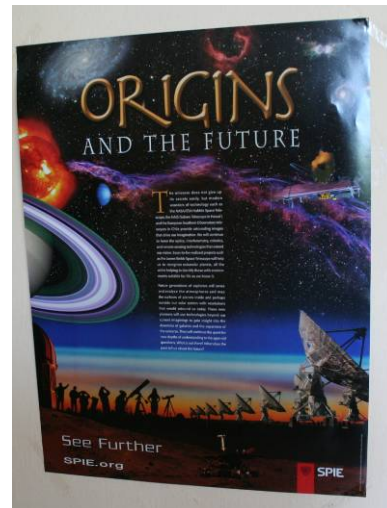
Geography of the participants of the OP Session included institutions from Ukraine, Russia and Byelorussia (see Appendix B):

Presentations were followed with hot and fruitful discussions which made a great impact to the success of the event.

Alexei Chernyshov from Chernivtsi National University, presented by the best talk on this session ("SINGULAR-OPTICAL SPECTRAL MODIFICATIONS OF THE SPECULARLYSCATTERED POLYCHROMATIC BEAMS"), was awarded the diploma and money prize (50\$) –sponsored by OSA.

#### D. Social program

During the IRE-YSC-2008 special coffee-breaks were organized by IRE SPIE/OSA Student Chapter. During these coffee-breaks with light foods, beverages were served. The opportunity was used to advertise the SPIE and local SPIE/OSA Student chapters by distributing the IRE SPIE/OSA SC poster and leaflets, SPIE/OSA promoting materials and information leaflets. The foods and beverages were free for all the participants of the conference – thanks to support of SPIE (50\$)



Participants of the IRE-YSC-2008, photos taken during the SPIE/OSA coffee break.

#### E. Financial Report

Expenses related to the Optics & Photonics Session of the IRE YSC-2008 conference

	Amount, USD	Description
1	50	Travel grant for D.A. Tsirkunov (Minsk, Byelorussia)
2	50	Travel grant for N.I. Teper (Saratov, Russia)
3	50	Travel grant for A.A. Bolshakov (Minsk, Byelorussia)
4	50	Travel grant for P.V. Petrov (Minsk, Byelorussia)
5	50	Coffee breaks
6	50	Award for the best presentation on OP session to Alexei Chernyshov

**Total spent: 300 USD**

**Amount Requested and spent by IRE SPIE SC: 250 USD**

**Provided by IRE OSA SC: 50 USD**



**8. III Young Researcher Career Development Workshop (November 26, 2008)****A. Program of Event**

At the third time the Young Researcher Career Development Workshop (YRCDW) was organized jointly by four Student chapters: Joint OSA/SPIE Student Chapter of Institute of Radiophysics and Electronics NAS Ukraine, Joint OSA/SPIE Student Chapter of V. Karazin Kharkiv National University, MTT-S Student Chapter "IRE-KHARKIV-MTT", IEEE LEOS Stud. Chapter of Kharkiv National University of Radioelectronics

This event helped young scientists to get to know each other, network and share ideas, and provided young scientists with knowledge and skills necessary to build a successful career in science. The Event was aimed at students and young scientists working in Radio-physics, Optics, Photonics, metamaterials, and relative fields. (Abstract Book is in Appendix C)

**III Young Researcher Career Development Workshop :**

*bridging a gap between education and career in photonics and electromagnetics''*

*organized in the frame of YSC-2008, IRE NASU, Kharkiv, Ukraine*

**Dates & Venue: Wednesday, November 26, 2008, Institute of Radiophysics and Electronics**

**Organized by :**

Joint OSA/SPIE Student Chapter  
of Institute of Radiophysics and  
Electronics NAS Ukraine



Joint OSA/SPIE Student  
Chapter of V. Karazin Kharkiv  
National University



MTT-S Student Chapter  
"IRE-KHARKIV-MTT"



IEEE LEOS Stud. Chapter of  
Kharkiv National University of  
Radioelectronics

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**Program of the Event**

**9:30 – 11:00 Session I : Lectures on electromagnetics and photonics of IEEE Distinguished microwave lecturer and SPIE Visiting lecturer**

**Design of integrated RF CMOS circuits.**

Prof. Georg Boeck,

*Technische Universitaet Chair, Microwave Engineering Lab Berlin, Germany*

**Planar designs based on tightly coupled scatterers for negative refractive index metamaterials.**

Dr. Andrea Vallecchi,

*Dept. of Electronics and Telecommunications, University of Florence, Italy*

**11:00 – 13:00 Session II : IEEE / OSA / SPIE / LEOS Presentation**

**11:00 – 12:00** *Presentation of societies benefits for students*

**IEEE Benefits for Students:** Dr. Konstantin Ilyenko, *Treasurer, IEEE East Ukraine Joint Chapter*

**LEOS Benefits for Students:** Sergei Gryshchenko, *President, IEEE-LEOS KNURE SC*

**SPIE Benefits for Students:** Katarzyna Koziel, *Representative, SPIE Gdansk SC*

**OSA Benefits for Students:** Anna Vozianova, *Representative, IRE-OSA SC*

**12:00 – 13:00** *Presentation of Ukrainian/Polish/Russian OSA/SPIE/IEEE Student chapters  
in the format of "Round table"*

- OSA/SPIE Student Chapter of IRE NAS Ukraine / Kharkiv
  - Mikhail Khodzitskiy, President of IRE OSA Chapter
  - Maria Pashchenko, President of IRE SPIE Student Chapter
- OSA/SPIE Student Chapter of the Kharkiv National University / Kharkiv
  - Aleksii Galan, President of OSA Student Chapter
  - Alexey Simachov, Treasurer of OSA/SPIE Student Chapter
- IEEE IRE-KHARKIV MTT Student Chapter/Kharkiv
  - Maxim Khruslov, President of IEEE-MTT IRE Student Chapter
- IEEE LEOS Student Chapter of Kharkiv National University of Radioelectronics/Kharkiv
  - Sergei Gryshchenko, President of IEEE-LEOS KNURE Student Chapter
- OSA/ SPIE Student Chapter of Chernivtsi National University / Chernivtzi
  - [Aleksiy Chernyshov, President of the CHU OSA/SPIE Student Chapter](#)
- SPIE Student Chapter of Gdansk University of Technology/ Gdansk
  - [Edward Marcin, President of Gdansk SPIE Student Chapter](#)
- SPIE Student Chapter of Lublin University of Technology/ Lublin
  - [Edyta Grzelak, Representative of Lublin SPIE Student Chapter](#)
- OSA Student Chapter of St. Petersburg State University of Fine Mechanics & Optics
  - [Elizaveta Yankovskaya, Representative of St. Petersburg OSA Student Chapter](#)
- 

**15:30 – 17:00 Session III: Career Development Masterclass**

**Successful career in metamaterials**

Dr. Pavel Belov,

*Dept. Electronic Engineering, Queen Mary University of London, England*

**Successful career in optics and photonics**

Dr. Natalie Sakhnenko,

*Dept. High Mathematics, Kharkov National University of Radioelectronics, Ukraine*

**From student to professor**

Dr. Vladimir Fesenko,

*Lab. "Photonics", Kharkov National University of Radioelectronics, Ukraine*



*B. Lectures on electromagnetics and photonics*

The first session of YRCDW was lectures of famous scientists on electromagnetics and photonics. Thanks to SPIE, Dr. Andrea Vallecchi from *Dept. of Electronics and Telecommunications, University of Florence, Italy* was invited by SPIE Karazin Kharkov National University SC as SPIE Visiting lecturer and gave the lecture on "Planar designs based on tightly coupled scatterers for negative refractive index metamaterials". Thanks to IEEE, Prof. Georg Boeck from *Technische Universitaet Chair, Microwave Engineering Lab Berlin, Germany* was invited by MTT-S Student Chapter "IRE-KHARKIV-MTT" as IEEE distinguished lecturer and gave the lecture on "Design of integrated RF CMOS circuits".



Prof. George Boeck and Dr. Andre Vallechi

### *C. IEEE / OSA / SPIE / LEOS Presentations*

The second YRCDW session was presentations of SPIE/OSA/IEEE benefits for students and round table (meeting) of student chapters of various societies from Ukraine, Poland and Russia



*Katarzyna Koziel (SPIE Gdansk SC)  
SPIE Benefits for students*



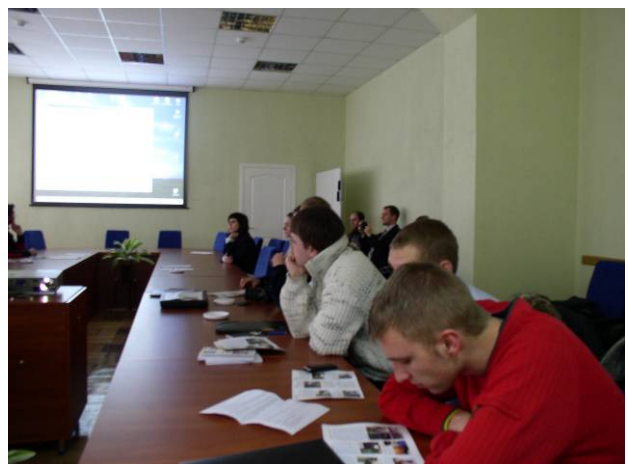
*Anna Vozianova (OSA IRE SC)  
OSA Benefits for students*



*Dr. Konstantin Ilyenko(IEEE East UA Chapter) Sergei Gryshchenko (IEEE LEOS KHNURE SC)  
IEEE Benefits for students*



*IEEE LEOS Benefits for students*





*Round table (Student chapter presentations)**Mariia Pashchenko (IRE SPIE/OSA SC)**Elizaveta Yankovskaya  
(Saint Petersburg SPIE/OSA SC)**Sergei Gryshchenko (IEEE LEOS SC)**Katarzyna Koziel (Gdansk SPIE SC)**Edyta Grzelak (Lublin SPIE SC)**Alexei Chernyshov (SPIE Chernivtsi SC)*

*D. Career Development Masterclass*

The third YRCDW session was career development masterclass presented by Dr. Pavel Belov, Dr. Natalie Sakhnenko, Dr. Vladimir Fesenko



*Dr. Pavel Belov "Successful career in metamaterials"*



**E. Financial Report**

## Expenses related to III Young Researcher Career Development Workshop

	Amount, USD	Description
1	50	Travel grant for SPIE Chernivtsi SC President - Alexei Chernyshov (UKRAINE) sponsored by SPIE
2	100	Travel grant for SPIE Saint Petersburg SC President – Elizaveta Yankovskaya (Russia) sponsored by SPIE
3	25	Site hosting and support ( <a href="http://www.ysc.org.ua">www.ysc.org.ua</a> ) sponsored by SPIE
4	50	Special Coffee-break on Workshop sponsored by SPIE
5	100	100 folders for YRCDW participants sponsored by OSA
6	50	100 notebooks for YRCDW participants sponsored by OSA
7	2000	Dr. Pavel Belov (OSA Travelling Lecturer) sponsored by OSA
8	1000	Dr. Andre Vallechi (SPIE Visiting Lecturer) sponsored by SPIE
9	1000	Prof. George Boeck (IEEE Distinguished Lecturer) sponsored by IEEE

**Total spent without lecturer expenses: 375 USD**

**Amount Requested and spent by IRE SPIE SC: 225 USD**

**Provided by IRE OSA SC: 150 USD**

## 9. Polish-Ukrainian Workshop on “Photonics and Metamaterials”

### A. Program of Event

#### **SPIE Polish-Ukrainian Workshop on «Photonics and Metamaterials»:**

*organized in the frame of YSC-2008, IRE NASU, Kharkiv, Ukraine*

*Dates & Venue: , November 25-27, 2008, Institute of Radiophysics and Electronics NASU*

**Organized by :**

**SPIE**  
Student Chapter  
Institute of Radiophysics and Electronics

**SPIE**  
Student Chapter  
Lublin University of Technology

**SPIE**  
Student Chapter  
Gdansk University of Technology

**LEOS STUDENT CHAPTER**  
KHARKOV NATIONAL UNIVERSITY  
OF RADIO ELECTRONICS

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### Program of the Event

**25.11.2008 16:00 – 18:00 Metamaterials Session (English Session)**

**Transmission of images with subwavelength resolution to distances of several wavelength in microwave, terahertz, infrared and visible frequency ranges**

Dr. Pavel Belov,

*Dept. Electronic Engineering, Queen Mary University of London, England*

**26.11.2008 13:00 – 15:00 Optics and Photonics – 1 (English Session)**

**Fabrication and characterization of specialty photonic crystal fibers**

Dr. Pawel Mergo,

*Dept. of Optical Fibre Technology, Marie Curie-Sklodowska University of Lublin, Poland*

**26.11.2008 17:00 – 18:00 SPIE Polish-Ukrainian Chapter meeting**

**Personal CV: “First step to success”**

Sergey Mizrakhi, *Vice-President, IRE-OSA SC*

**The various sources of funding available for projects in Poland**

Artur Borkowski, *Treasurer, SPIE Lublin SC*

**The possibilities of financing Polish-Ukraine scientific projects**

Marcin Endward, *President, SPIE Gdansk SC*

**The various sources of funding available for projects in Ukraine**

Mikhail Khodzitskiy, *President, IRE-OSA SC*

**27.11.2008 14:30 – 16:30 Optics and Photonics – 4 (English Session)**

**Multiband system for non-contact temperature measurement**

Dr. Adam Mazikowski,

*Dept. of Optoelectronics and Electronics System, Gdansk University of Technology, Poland*



**Gdansk SPIE Student Chapter**



*Katarzyna Koziel*



*Dr. Adam Mazikowski*

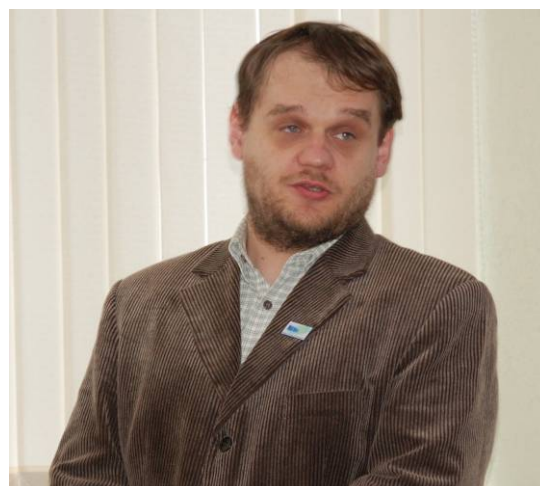


*Bartosz Barczykowski*

**Lublin SPIE Student Chapter**



*Malgorzata Gil*



*Dr. Pawel Mergo*



*Artur Borkowski*



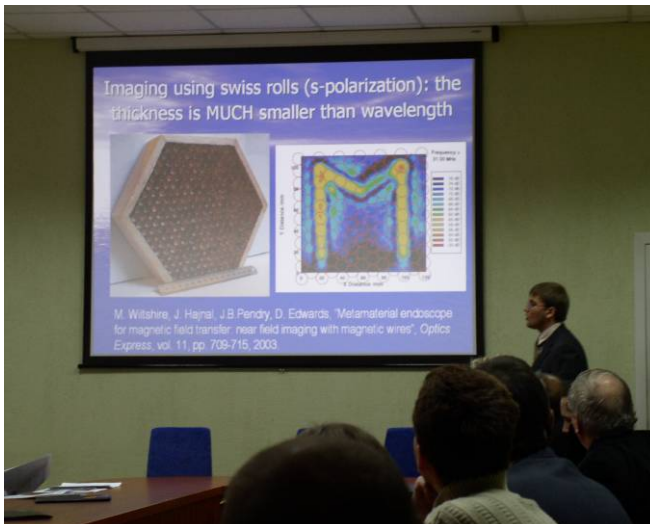
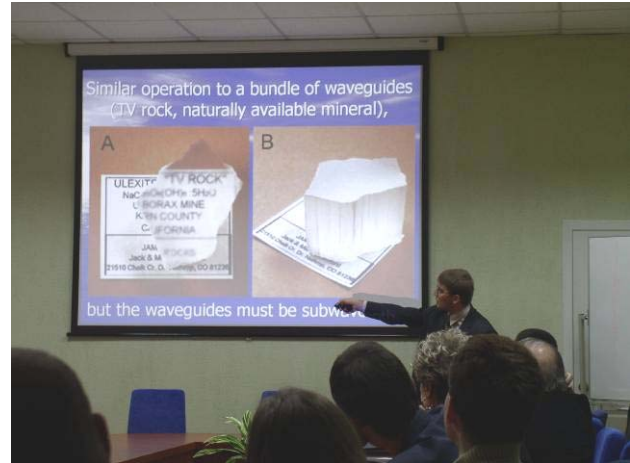
*Edya Grzelak*



*Tomasz Warzocha*

**B. Lecture of Dr. Pavel Belov on Metamaterials**

The first part of PL-UA Workshop was metamaterials session. In frame of this session Dr. Pavel Belov from Queen Mary University of London, England (OSA Travelling Lecturer) gave the lecture on « Transmission of images with subwavelength resolution to distances of several wavelength in microwave, terahertz, infrared and visible frequency

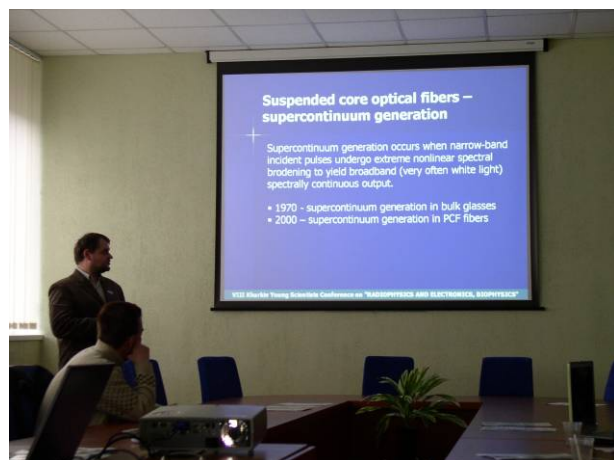


*Dr. Pavel Belov gives the lecture on metamaterials*



*C. Lecture of Dr. Pawel Mergo on Optics&Photonics*

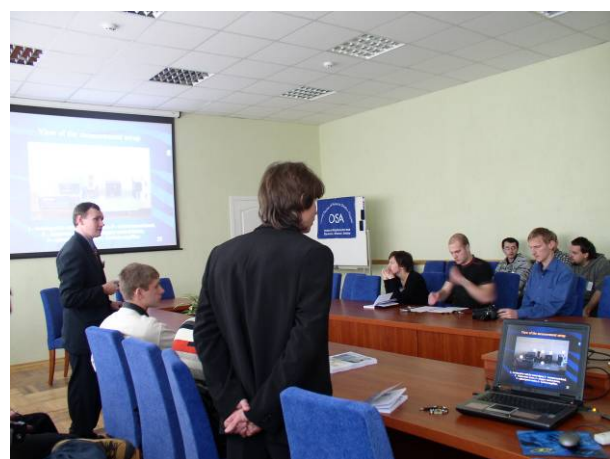
In frame of English Optics and Photonics session Dr. Pawel Mergo from Dept. of Optical Fibre Technology, Marie Curie-Skłodowska University of Lublin, Poland (SPIE Lecturer) gave the lecture on « Fabrication and characterization of specialty photonic crystal fibers »



*Dr. Pawel Mergo gives the lecture on optics and photonics*

*D. Lecture of Dr. Adam Mazikowski on Optics&Photonics*

In frame of English Optics and Photonics session Dr. Adam Mazikowski from Dept. of Optoelectronics and Electronics System, Gdansk University of Technology, Poland (SPIE Lecturer) gave the lecture on «Multiband system for non-contact temperature measurement»



*Dr. Adam Mazikowski gives the lecture on optics and photonics*



### *E. Metamaterials Session*

The first part of PL-UA Workshop was Metamaterials session devoted to artificial materials with unusual properties. It included Polish, Ukrainian and Russian talks on metamaterials. The total number of abstracts submitted for the Metamaterials Session were 8 young scientists talks and 1 poster. Presentations were followed with hot and fruitful discussions which made a great impact to the success of the event. Work language was English. The detailed program of the Metamaterials Session is provided in Appendix B.

Thanks to IEEE LEOS Support, 1 travel grant per 70 \$ on Metamaterials Session was given to Alexei Balmakov (Gomel, Byelorussia).

Anton Strashevsky from Karazin Kharkiv National University, presented by the best talk on this session ("EXPERIMENTAL VERIFICATION OF LEFT-HANDED MEDIA PROPERTIES OF THE STRUCTURE (FERRITE/FLAT WIRES), PLACED INTO WAVEGUIDE AT THE FREQUENCY RANGE OF 21- 40 GHZ"), was awarded the diploma and money prize (50\$) –sponsored by SPIE.

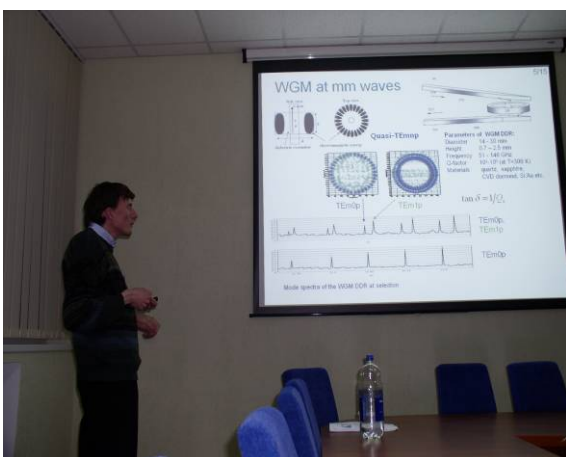
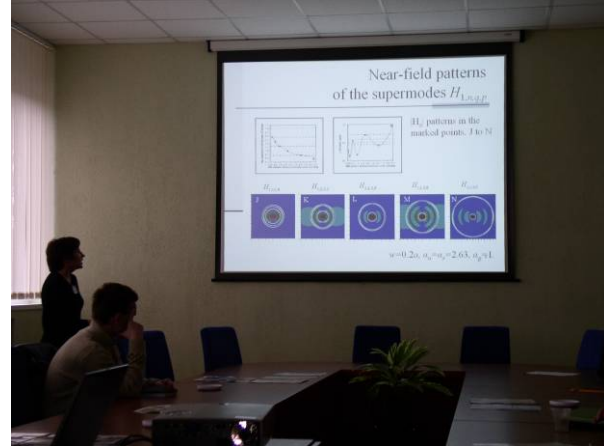


*During Metamaterials Session*

### F. Optics & Photonics Session (in English)

The second part of PL-UA Workshop was Optics&Photonics session (in English) devoted to lasers, photonic fibers, photonic crystals etc. It included Polish, Ukrainian and Russian talks on optics and photonics. The total number of abstracts submitted for the Optics&Photonics English Session were 16 oral young scientists' talks. Work language was English. Presentations were followed with hot and fruitful discussions which made a great impact to the success of the event. The detailed program of the Optics&Photonics Session is provided in Appendix B.

Mikhail Klimenko from Kharkov National University of Radioelectronics, presented by the best talk on this session ("COHERENT ELECTRON TRANSPORT THROUGH INJECTORS IN THE QUANTUM-CASCADE STRUCTURES WITH VERTICAL TRANSITIONS"), was awarded the diploma and money prize (50\$) –sponsored by SPIE.

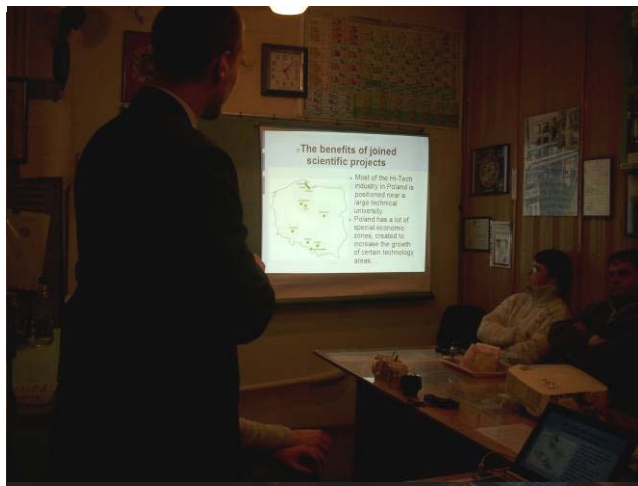


*During Optics and Photonics Session*



*G. SPIE Polish-Ukrainian Student Chapter meeting*

The last part of PL-UA Workshop was SPIE Polish-Ukrainian Student Chapter meeting devoted to CV making and discussion of POLISH-UKRAINE SCIENTIFIC PROJECTS AND THE VARIOUS SOURCES OF FUNDING AVAILABLE FOR PROJECTS IN POLAND AND UKRAINE. Each SPIE SC made the talk on these topics. The abstracts of meeting are in Appendix D.



*During SPIE Polish- Ukrainian meeting*



## H. Social program (Welcome party)

Thanks to SPIE, In frame of workshop, Welcome Party was organized (270\$)



*Welcome party and Polish guys at the Kharkov train station*



*I. Financial Report*

## SPIE Polish-Ukrainian Workshop on "Photonics and Metamaterials"

	Amount, USD	Description
1	800	Stationery and printing materials
2.	192	Hotel expenses for 8 Polish participants per 3 days (1 day = 8 \$)
3	8	Taxi expenses for Polish participants
4	80	Registration fee for 8 Polish participants
5	270	Welcome party (banquet)
6	250	Conference books
7	50	Award for best presentation on Optics and Photonics session
8.	50	Award for best presentation on Metamaterials Session
9.	50	100 pens with SPIE logo
10.	50	100 Abstracts conference Book CD with SPIE logo
11.	50	50 IRE SPIE/OSA SC Poster and leaflets
12	150	Equipment (rent of room, laptops, LCD projectors)
13	70	Travel grant for Alexei Balmakov sponsored by IEEE LEOS

<b>Total spent:</b>	<b>2070 USD</b>
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<b>Amount Requested and spent by IRE SPIE SC:</b>	<b>2000 USD</b>
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<b>Provided by IEEE LEOS KNURE SC:</b>	<b>70 USD</b>
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## 10. IEEE Chapters and IRE SPIE/OSA Student Chapter Collaboration in Conferences

### A. Participation in organization of MMET-2008 (June 29-July 2, 2008)

Mikhail Khodzitskiy (Vice-President of IRE SPIE SC) helped to IEEE EAST Ukrainian Chapter to organize 12-th International Conference on. MATHEMATICAL METHODS. IN ELECTROMAGNETIC THEORY, June 29 – July 2, 2008, Odesa National Academy of Telecommunications Odesa, Ukraine

[MMET-2008 Orgcommittee Team](#)





*B. Participation in organization of CAOL/LFNM/TERA-2008 (September 29 - October 4, 2008)*

Mikhail Khodzitskiy (Vice-President of IRE SPIE SC) helped to IEEE LEOS Chapter Ukraine to organize CAOL/LFNM/TERA-2008, September 29 – October 4, 2008, Alushta, Crimea, Ukraine

CAOL/LFNM/TERA-2008 Orgcommittee Team



Some photo from CAOL/LFNM/TERA-2008 ☺

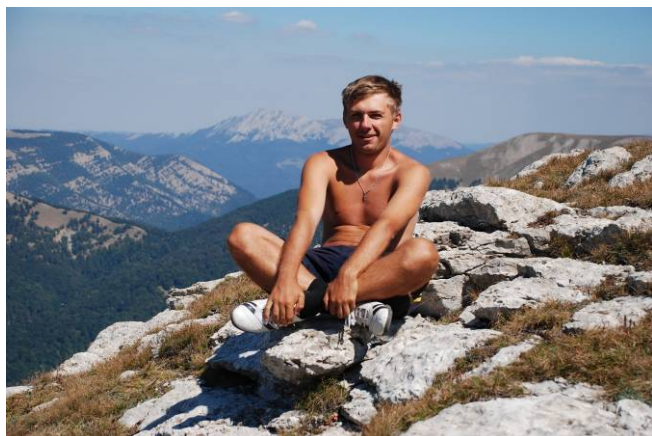


## 11. Summer rest and social meeting of IRE SPIE SC

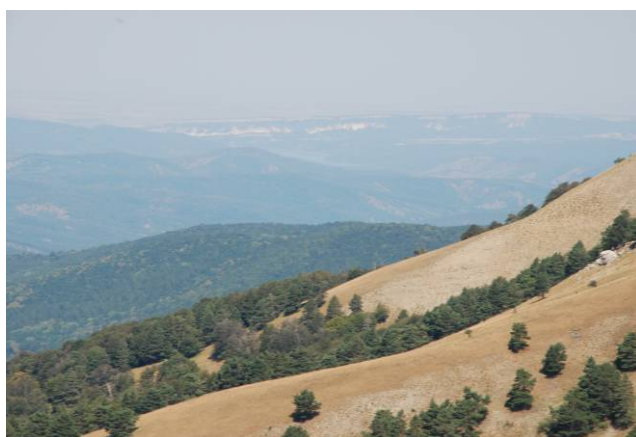
During January-December 2008 our chapter carried out 5 meeting



*SPIE IRE SC President Mariia Pashchenko & SC members*



*Alexei Girich on some Crimea peak*



*Summer rest at the Crimea – Rock-climbing trip to Crimea mountains*



**12. Summary Annual Financial Report**

	Amount, USD	Description
1	250	Optics and Photonics Session in frame of IV Kharkiv Young Scientists Conference on "Low Temperature Physics"(May 20-23, 2008)
2.	100	Contest for the Best master's thesis in Optics&Photonics field (May 22, 2008)
3	50	Presentation of SPIE and IRE SPIE/OSA Student chapter during Moscow International Symposium on Magnetism held at Lomonosov Moscow State University (20-25 June, 2008)
4	250	Travel Grants for chapter members participating in conferences on Optics and Photonics
5	225	III Young Researcher Career Development Workshop (26 November, 2008)
6	250	Optics and Photonics Session in frame of VIII Kharkiv Young Scientists Conference on "Radiophysics and Electronics, Biophysics", IRE-YSC-2008 (25-27 November, 2008)
7	2000	SPIE Polish-Ukrainian Workshop on «Photonics and Metamaterials» (25-27 November, 2008)

<b>Amount Requested by IRE SPIE SC:</b>	<b>3125 USD</b>
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<b>Amount Spent by IRE SPIE SC:</b>	<b>3125 USD</b>
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### 13. Details of Planned activities 2009

	Description	Location
1	Optics and Photonics Session in frame of V Kharkiv Young Scientists Conference on "Low Temperature Physics"(May-June, 2009)	ILTPE NASU
2.	Contest for the Best master's thesis in Optics&Photonics field (June, 2009)	KNURE
3.	Workshop -conference on "Optics, Photonics and Artificial Materials" OPAM-2009 (December, 2009)	IRE NASU



## YSC-LTP-2008



**Інститут радіофізики та електроніки  
ім. О.Я. Усикова НАН України**

**VIII конференція  
МОЛОДИХ науковців  
«Радіофізика та електроніка,  
біофізика»**

**25-27 листопада 2008р.  
м. Харків**

**UPF**

**IRE**  
KONFERENCIJA

**IEEE**

**SPIE**

SCIENCE AND TECHNOLOGY FOR HUMANITY

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ІНТУУ

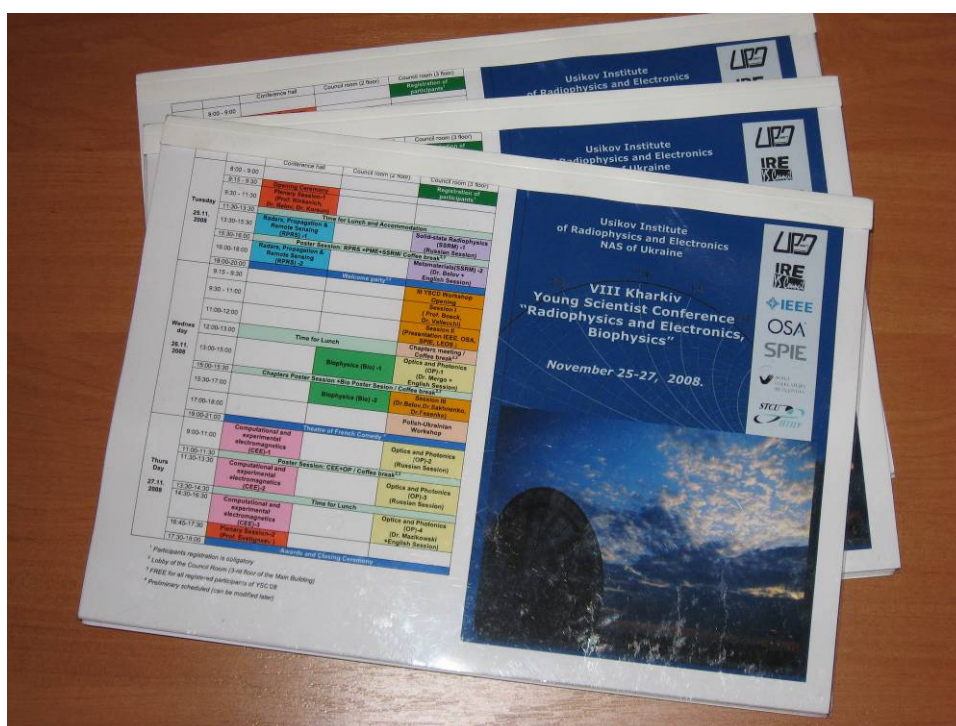
Вісник	Автоматично	Заг. матеріали (доповіді)	Заг. матеріали (лекції)
25-11-2008	9:00 - 9:40 9:50 - 9:30 9:30 - 11:30 13:30-15:30 15:30-16:00	Регістрація та оформлення Початок конференції Розкриття банкету Регістрація банкету Регістрація банкету Регістрація банкету	Вітання на обіді з посольством Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету
26-11-2008	16:00-18:00 18:00-20:30 9:00 - 9:20 9:30 - 11:30 11:00-12:00 12:00-13:00	Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення	Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету
27-11-2008	13:30-14:30 14:30-15:30 16:45-17:30 17:30-18:00	Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення Регістрація та оформлення	Розкриття банкету Розкриття банкету Розкриття банкету Розкриття банкету

\* Регістрація учасників - обов'язкова  
\* Банк банкету (банкет) - 3 банкету (банкету) учасників (банкету)  
\* ДОСТУПНО для всіх зацікавлених учасників (банкету)  
\* Представителі інформації (банкету) учасників (банкету)

*Conference Book in Russian/Ukrainian with SPIE logo*



*Abstracts conference Book CD with SPIE logo*



*Conference Books in English with SPIE logo*

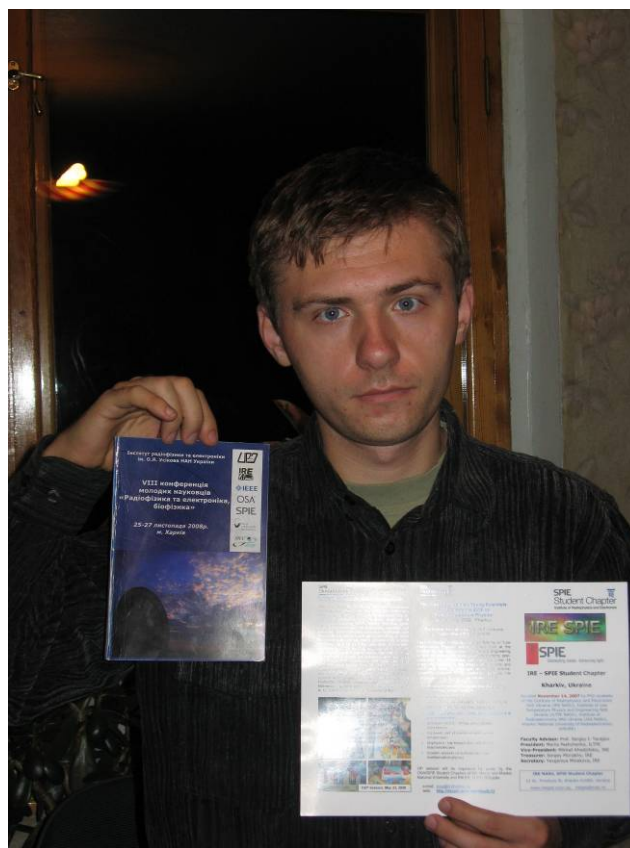




*Conference folder, notebook and pen with SPIE logo*



*IRE SPIE/OSA Student chapter booklets with SPIE logo*



*Alexei Giich with conference/workshop materials*