

**XIII KHARKIV YOUNG SCIENTISTS CONFERENCE ON
RADIOPHYSICS, ELECTRONICS, PHOTONICS AND BIOPHYSICS**

CONFERENCE PROGRAM



2 – 6 December 2013
Kharkiv, Ukraine

95 РОКІВ



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Brief information about IRE NAS Ukraine

Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine (IRE NASU) is the first Academic Institute for Radiophysics in Ukraine. It was founded in September, 1955. The Institute became the leading research centre 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 the following ones: - 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 Scientist Conference (YSC) 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 scientists and the worldwide electromagnetic community. These events are traditionally supported by IEEE, OSA, SPIE, and URSI, EuMA, ESF societies and foundations.

Welcome note from the Organizing Committee

Dear Colleagues,

We are glad to welcome you at the XIII Kharkiv Young Scientist Conference on Radiophysics, Electronics, Photonics and Biophysics (YSC-2013) held in IRE NASU, Kharkiv, Ukraine. This time our conference attracted participants from many different institutions from Ukraine, Byelorussia, Russia and European Community.

We are very thankful to everybody for your interest in the YSC and believe that participation in the Conference will provide you with helpful experience and warm memories. We have done our best to make the YSC not “just another conference” but a remarkable event in the life of each participant. We hope you will acknowledge and appreciate our efforts and will come back to us the next year.

YSC-2013 Organizing Committee

Organizers and Sponsors



Scientific Council of IRE NASU
Young Scientists Council of IRE NASU
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OSA/SPIE Joint Student Chapter of IRE NASU
IEEE AP/MTT/ED/AES/GRS/NPS/EMB Societies East Ukraine Joint Chapter
Kharkov OSA Local Section

In collaboration with

IEEE MAG-S IRE Kharkiv Student Branch Chapter

Organizing and Programme Committees

Org. Committee Chairs:*Dr. Pavel Vyplavin, pavlo.vyplavin@gmail.com**Dr. Maksym Khruslov, khruslov.maksym@gmail.com***Prog. Committee Chairs:***Dr. Mikhail Balaban, mikhail.balaban@gmail.com**Dr. Pavel Krasov, pskrasov@ukr.net***Secretariat:***Ms. Daryna Pesina, e-mail: ysc.ire.2013@gmail.com**Mrs. Oksana Balaban, oksana.balaban@googlemail.com***Org. and Prog. Committees***Mrs. Liliya Egorova**Dr. Anna Linkova**Dr. Olga Vdovychenko**Mrs. Anna Slusarenko**Dr. Vladimir Kudryashov**Mr. Aleksey Kovorotniy**Ms. Evgeniya Minakova**Dr. Sergey Skuratovsky**Dr. Sergey Melnik**Mr. Sergey Lukin**Mr. Sergey Radionov**Dr. Pavel Mladenov**Mr. Denys Natarov*

Conference and workshops geography - Country (city)		Number
1.	Ukraine (IRE NASU)	34
2.	Ukraine (Kharkov)	33
3.	Ukraine (Dnipropetrovsk, Kyiv, Lviv, Zaporizhzhya)	13
4.	Belarus (Minsk)	5
5.	Russia (Krasnoyarsk)	2
6.	France	1
7.	Armenia	1
8.	Portugal	1
9.	USA	2
10.	Russia – USA	1
11.	Belarus – Russia – Ukraine	1
12.	Belarus – Ukraine	1
13.	Ukraine – Russia	1

Total : 96

PLENARY SESSION

1st Conference Hall Monday 02.12.2013 12:15 – 14:30

- 11:00– Opening Ceremony
 11:15 ORGANIZERS WELCOME NOTE: **Dr. P. Vyplavin**, *YSC-2013 Organizing committee chairman*
 TOP ADMINISTRATION WELCOME NOTE: **Academician of NAS Ukraine V. Yakovenko**, Director of Institute for Radiophysics and Electronics of NAS of Ukraine
- 11:15– 12:00 FUTURE MICRO/NANO-ELECTRONICS: TOWARDS FULL 3D AND ZERO VARIABILITY
Prof. S. Deleonibus, *CEA LETI, Grenoble, France*
- 12:00– 12:45 TELEMETALSCOPE, PULSE RADAR, NOISE RADAR, UWB RADAR AND SOME FUNDAMENTAL ISSUES OF ELECTROMAGNETISM
Prof. K. Lukin, *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
- 12:45– 13:30 GYRPTROPIC METAMATERIALS AND POLARIZATION EXPERIMENT IN MILLIMETER WAVEBAND
Prof. S. Tarapov, *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*

SESSION: GEOSCIENCE AND REMOTE SENSING

1st Conference Hall Monday 02.12.2013 14:30 – 16:00

- | | | | |
|----|---|---|---|
| 1. | K. Lukin
V. Palamarchuk
<u>P. Vyplavin</u> | NOISE SARs DEVELOPED IN LABORATORY FOR NONLINEAR DYNAMICS OF ELECTRONIC SYSTEMS OF IRE NASU | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 2. | <u>H. Avagyan</u>
A. Hakhoumian
Kh. Tovmasyan | QAM MAPPED OFDM SIGNAL PROCESSING ON RADAR APPLICATIONS | <i>Institute of
Radiophysics &
Electronics of NAS
of Armenia</i> |
| 3. | G.B. Veselovska | COMPARISON OF RIGOROUS AND APPROXIMATE CALCULATIONS OF ELECTROMAGNETIC SCATTERING BY NONSPHERICAL PARTICLES | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |

- | | | | |
|----|-------------------------------------|--|---|
| 4. | A.S. Rubel | ANALYSIS OF INFLUENCE OF ESTIMATION ACCURACY OF SPATIALLY CORRELATED NOISE SPECTRUM ON EFFICIENCY OF DCT-BASED IMAGE FILTERING IN REMOTE SENSING | <i>National Aerospace University</i> |
| 5. | <u>V.P. Maltsev</u>
G.I. Khlopov | COMBINED SPEED AND WHEEL SLIP SENSOR FOR AGRICULTURAL TRANSPORT | <i>O. Ya. Usikov
Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 6. | <u>O.N. Shepel</u>
V.I. Shulgin | SPATIO-TEMPORAL PROCESSING OF UTERINE ACTIVITY ELECTROMYOGRAPHIC SIGNALS DURING PREGNANCY | <i>National aerospace university named after N. Y. Zhukovsky
“Kharkiv Aviation Institute”</i> |

SESSION: MICROWAVE AND TERAHERTZ ELECTRONICS - 1

2nd Conference Hall

Monday 02.12.2013 14:30 – 16:00

- | | | | |
|----|---|---|---|
| 1. | M.Yu. Glyavin ¹
G.S. Nusinovich ²
A.S. Sedov ¹
V.E. Zapevalov ¹
N.A. Zavolskiy ¹ | NIZHNY NOVGOROD 101 | ¹ <i>Institute of Applied Physics RAS</i>
² <i>IREAP, University of Maryland</i> |
| 2. | E.O. Melezhik
J.V. Gumenjuk-Sichevska | ENERGY SPECTRUM OF THE CdTe/HgCdTe/CdTe QW WITH INVERTED BAND SCHEME AND NOISE ESTIMATION FOR USING THE QW AS DETECTOR OF THz RADIATION | <i>V. E. Lashkaryov
Institute for Semiconductor physics of NAS of Ukraine</i> |
| 3. | M.V. Sakhno
J.V. Gumenjuk-Sichevska | CMOS FET AS SUB-THz/THz DETECTOR | <i>Institute of Semiconductor Physics NAS of Ukraine</i> |
| 4. | <u>S.S. Ponomarenko</u>
S.A. Kishko
E.M. Khutoryan
A.N. Kuleshov
B.P. Yefimov | INTERACTION OF NON RELATIVISTIC ELECTRON BEAM WITH HYBRID WAVES IN THE BWO-OSCILLATOR WITH MULTISTAGE GRATING | <i>O. Ya. Usikov
Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

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|----|---|---|---|
| 5. | <u>S. Kishko</u>
S. Ponomarenko
A. Kuleshov
B. Yefimov
V. Zavertanniy | RESEARCH AND DEVELOPMENT
OF THE PLANAR MAGNETRON-
INJECTION GUN | <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i> |
|----|---|---|---|

SESSION: MICROWAVE AND TERAHERTZ ELECTRONICS - 2

2nd Conference Hall

Monday 02.12.2013 16:30 – 17:45

- | | | | |
|-----|---|---|--|
| 6. | <u>T.N. Rokhmanova</u> ¹
S.S. Apostolov ^{1,2}
Z.A. Maizelis ^{1,2}
V.A. Yampol'skii ^{1,2} | NONLINEAR THZ-WAVES
TRANSMISSION THROUGH A
FINITE-LENGTH LAYERED
SUPERCONDUCTOR PLACED
INSIDE A VACUUM
RECTANGULAR WAVEGUIDE | ¹ <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i>
² <i>Karazin Kharkiv</i>
<i>National University</i> |
| 7. | M.M. Movchan | SIMULATION OF
MAGNETICALLY TUNED
MAGNETODIELECTRIC
RESONANCES OF DISK-SHAPED
FERRITE RESONATOR IN HFSS | <i>Taras Shevchenko</i>
<i>National University</i>
<i>of Kyiv</i> |
| 8. | <u>A.O. Penkina</u>
E.M. Kuleshov
V.K. Laptiy
V.N. Savchenko | OBSERVATION OF THE
PHOTOACOUSTIC EFFECT IN
THE TERAHERTZ RANGE | <i>O. Ya. Usikov Institute</i>
<i>for Radiophysics and</i>
<i>Electronics of NAS of</i>
<i>Ukraine</i> |
| 9. | <u>S.Y. Serebriansky</u> ¹
A.A. Galuza ²
I.V. Kolenov ³
E.M. Kuleshov ¹ | QUASIOPTICAL MULTYANGLE
TERAHERTZ ELLIPSOMETR | ¹ <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS of</i>
<i>Ukraine</i>
² <i>Institute of</i>
<i>Electrophysics &</i>
<i>Radiation</i>
<i>Technologies of NAS</i>
<i>of Ukraine</i>
³ <i>The National</i>
<i>Technical University</i>
<i>"KhPI"</i> |
| 10. | <u>O.S. Kosiak</u>
V.I. Bezborodov
Ye.M. Kuleshov
M.S. Janovski | DETECTION OF
COMPOSITEMATERIALS
SURFACE CONTAMINATIONS
USING INTERNAL REFLECTION
REFLECTOMETRY METHOD | <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS of</i>
<i>Ukraine</i> |

SESSION: RADIO ASTRONOMY AND ASTROPHYSICS1st Conference Hall Monday 02.12.2013 16:30 – 17:45

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|----|---|--|---|
| 1. | <u>A.A. Koval</u>
A.A. Stanislavsky
A.A. Konovalenko | LOW-FREQUENCY ANGULAR
PATTERNS OF SOLAR TYPE III
BURSTS FROM UTR-2
RADIOHELIOGRAPH OBSERVATIONS | <i>Institute of Radio
Astronomy of NAS
of Ukraine</i> |
| 2. | <u>L.A. Stanislavsky</u> ¹
I.N. Bubnov ²
A.A. Stanislavsky ² | MICROCONTROLLER SYSTEM
OF THE ACTIVE ANTENNA
ARRAY FOR TRACKING COSMIC
OBJECTS | ¹ <i>Kharkiv Radio
Engineering College</i>
² <i>Institute of Radio
Astronomy of NAS
of Ukraine</i> |
| 3. | <u>K. Mylostna</u>
V.V. Zakharenko | TOPICAL QUESTIONS OF
EXTRATERRESTRIAL LIGHTNING
ACTIVITY INVESTIGATIONS | <i>Institute of Radio
Astronomy of NAS
of Ukraine</i> |
| 4. | L. A. Berdina | GRAVITATIONAL MICROLENSSES
AND THEIR CAPABILITIES | <i>Institute of Radio
Astronomy of NAS
of Ukraine</i> |
| 5. | S. Doroshkevich | STRUCTURAL THEORY OF THE
STRUCTURE OF MATTER | <i>MI Orikhivska CDH,
family medicine</i> |

SESSION: PASSIVE RADARS - 11st Conference Hall Tuesday 03.12.2013 10:00 – 12:15

- | | | |
|----|--|--|
| 1. | GUEST PRESENTATION
A W-BAND PASSIVE IMAGING SYSTEM IMPLEMENTED WITH
ROTATING DIFFRACTION ANTENNA TECHNOLOGY
Prof. S. Shilo , <i>O. Ya. Usikov Institute for Radiophysics and Electronics of NAS
of Ukraine, Kharkiv, Ukraine</i> | |
| 2. | <u>I.N. Trofimov</u>
A.S. Dudush
A.F. Shevchenko | ANALYSIS OF INFLUENCE OF
TYPE OF INTRAPULSE
MODULATIONS ON THE QUALITY
OF SPACE-TIME PROCESSING IN
PASSIVE CHANNELS OF
MULTISTATIC MIMO RADAR |
| 3. | <u>V.V. Pechenin</u>
<u>K.A. Scherbina</u>
O.V. Voitenko | SOURCE MODEL OF DOPPLER
SIGNAL PRODUCED BY
REFLECTIONS FROM THE
EXTENDED SURFACE |
| | | <i>Kharkov University
Air Force named
after Ivan Kozhedub</i> |
| | | <i>Kharkiv National
Aerospace
University named
after M. Y. Zhukovsky
"Kharkov Aviation
Institute"</i> |

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|----|---|---|--|
| 4. | <u>M.Yu. Dergousov</u>
A.S. Dudush
I.N. Trofimov
A.F. Shevchenko | THE COMPARISON ANALYSIS
RESULTS OF AXIAL-
SYMMETRICAL ANTENNA
ARRAYS DIRECTIONAL
CHARACTERISTICS IN THE PCL
PROBLEMS | <i>Kharkiv University
of Air Forces of
Ukraine</i> |
| 5. | V.E. Kudriashov
<u>I.V. Melnikov</u> | PARTIAL MODEL FOR
ESTIMATION OF COORDINATES
AND MOTION PARAMETERS OF
THE FLYING TARGETS EMITTING
ELECTROMAGNETIC ENERGY | <i>Kharkiv University
of Air Forces of
Ukraine</i> |
| 6. | <u>J.A. Klevanniy</u> ¹
A.Yu. Garbar ² | ATMOSPHERIC EFFECTS ON
BRIGHTNESS TEMPERATURES
OF THE POINT-LIKE OBJECTS IN
THE FIELD OF VIEW | ¹ <i>Kharkiv University
of Air Forces of
Ukraine</i>
² <i>National technical
university “Kharkiv
polytechnic institute”</i> |

SESSION:	PASSIVE RADARS - 2
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1 st Conference Hall	Tuesday 03.12.2013 12:45 – 13:00
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|-----|--|---|--|
| 7. | V.K. Volosyuk
V.V. Pavlikov
S.S. Zhyla
<u>Nguen Van Kiem</u> | OPTIMAL METHOD OF NARROW-
BAND APERTURE SYNTHESIS | <i>National Aerospace
University named after
M. Ye. Zhukovsky
"Kharkiv Aviation
Institute"</i> |
| 8. | V.K. Volosyuk
V.V. Pavlikov
<u>Nguen The Thang</u> | OPTIMAL RADIOMETRIC
IMAGES FORMATION
IN ULTRAWIDEBAND APERTURE
SYNTHESIS SYSTEMS | <i>National Aerospace
University named after
M. Ye. Zhukovsky
"Kharkiv Aviation
Institute"</i> |
| 9. | K.A. Lukin
<u>V.V. Kudriashov</u>
S.K. Lukin
V.P. Palamarchuk | POTENTIAL AND REAL
CAPABILITIES OF BISTATIC
RADIOMETERS WHEN FORMING
AN IMAGES | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 10. | K.A. Lukin
<u>V.V. Kudriashov</u>
S.K. Lukin
V.P. Palamarchuk | THE RESOLUTION CELL SIZE OF
THE RANGE-AZIMUTH IMAGE
FORMED BY BISTATIC
RADIOMETER BESED ON
ANTENNA WITH BEAM
SYNTHESIS | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |

SESSION: OPTICS AND PHOTONICS - 12nd Conference Hall Tuesday 03.12.2013 10:00 – 12:15

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|----|---|---|--|
| 1. | <u>I.V. Stashkevitch</u>
A.O. Tarasenko | MATRIX EFFECTS ON THE LASING CHARACTERISTICS OF NEODYMIUM IN DPSS LASERS | <i>Belarusian State University</i> |
| 2. | <u>L.A. Kochetova</u> ¹
S.L. Prosvirnin ²
V.R. Tuz ² | OPTICAL BISTABILITY IN GRATING OF METALIC BARS WITH SLITS FILLED NONLINEAR DIELECTRIC | ¹ <i>O. Ya. Usikov</i>
<i>Institute for Radiophysics and Electronics of NAS of Ukraine</i>
² <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 3. | <u>O.O. Belimenko</u>
K.A. Vytovtov | OPTICAL FREQUENCY DETECTOR | <i>Oles Honchar</i>
<i>Dnipropetrovsk National University</i> |
| 4. | <u>A.D. Arkhipov</u>
K.A. Vytovtov | NON-RECIPROCAL REFLECTION IN LAYERED ANTIFERROMAGNETIC-DIELECTRIC STRUCTURE | <i>Dnepropetrovsk national university named by O. Honchar</i> |

SESSION: OPTICS AND PHOTONICS - 22nd Conference Hall Tuesday 03.12.2013 12:45 – 13:00

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|----|---|---|---|
| 5. | <u>E.G. Plakhtiy</u>
O.V. Khmelenko
M.F. Bulanaya | DECOMPOSITION OF PHOTOLUMINESCENT SPECTRA OF CRYSTALS ZnSe: Mn INTO INDIVIDUAL CONSTITUENTS | <i>Oles Gonchar</i>
<i>Dnepropetrovsk National University</i> |
| 6. | V.A. Franiv | BASIC OPTICAL PROPERTIES OF Tl ₄ HgI ₆ , Tl ₄ CdI ₆ AND Tl ₄ PbI ₆ CRYSTALS | <i>Ivan Franko Lviv National University</i> |
| 7. | V.O. Byelobrov | NATURAL MODE OF AN ACTIVE SLAB MICROCAVITY WITH AIR-FILLED PERIODIC INCLUSIONS | <i>O. Ya. Usikov</i>
<i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

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| 12. | V.M. Morozov
<u>D.V. Lyasota</u> | ELECTROMAGNETIC
DIFFRACTION ON THIN
CONDUCTIVE STRUCTURES | <i>Oles Honchar
Dnipropetrovsk
National University</i> |
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SESSION: BIOPHYSICS - 1

2 nd Conference Hall	Wednesday 04.12.2013 12:45 – 14:15
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|----|---|---|--|
| 1. | <u>O.S. Matchenko</u>
I.V. Skresanova
D.A. Tolstoluzhsky
E.A. Barannik | SPECTRAL CHARACTERISTICS OF
MUSCULAR CONTRACTIONS:
SIMULATION AND EXPERIMENT | <i>Karazin Kharkiv
National University</i> |
| 2. | <u>N.V. Vasilyeu</u> ¹
N.G. Krylova ¹
H.V. Grushevskaya ¹
I.V. Lipnevich ¹
G.N. Semenkova ¹
T.A. Kulahava ¹
T.I. Orekhovskaya ²
B.G. Shulitsky ² | ELECTRICAL
CHARACTERISTICS OF
EMERGING CELLULAR
MONOLAYER: THEORY AND
EXPERIMENT | ¹ <i>Belarusian State
University</i>
² <i>Belarusian State
University of
Informatics and
Radioelectronics</i> |
| 3. | <u>M.A. Hliatsevich</u>
P.M. Bulai
T.N. Pitlik
S.N. Cherenkevich | PARAMETRICAL ANALYSIS OF
DESIGNED DETERMINISTIC
MODEL OF SYNAPTIC
TRANSMISSION | <i>Belarusian State
University</i> |
| 4. | <u>Y.N. Kunitskaya</u>
E.N. Golubeva
P.M. Bulai | PLASMA MEMBRANE
POTENTIAL DURING CANCER
CELLS PROLIFERATION | <i>Belarusian State
University</i> |
| 5. | M.O. Anikieieva | EFFECT OF IONIC STRENGTH ON
STREPTOCOCCUS
THERMOPHILUS MICROBIAL
ADHESION ON HUMAN
ERYTHROCYTES | <i>V. N. Karazin
Kharkiv National
University</i> |
| 6. | <u>R.R. Alieva</u> ¹
N.V. Belogurova ^{1,2}
A.S. Petrova ¹
N.S. Kudryasheva ^{1,2} | FLUORESCENCE
CHARACTERISTICS Ca ²⁺ -
INDEPENDENT DISCHARGED
PHOTOPROTEIN OBELIN | ¹ <i>Siberian Federal
University</i>
² <i>Institute of
Biophysics SB RAS</i> |

SESSION:

BIOPHYSICS - 2

1st Conference Hall

Wednesday 04.12.2013 15:00 – 16:30

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|-----|--|---|---|
| 7. | <u>A.S. Petrova</u> ¹
N.V. Belogurova ^{1,2}
R.R. Alieva ¹ | INFLUENCE OF ALCOHOLS ON
FLUORESCENT PROPERTIES OF
CA ²⁺ -DISCHARGED
PHOTOPROTEIN OBELIN | <i>¹Siberian Federal
University</i>
<i>²Institute of
Biophysics SB RAS</i> |
| 8. | <u>A.O. Krasnikova</u> ¹
O.V. Vashchenko ¹
N.A. Kasian ¹
A.V. Zinchenko ²
L.N. Lisetski ¹ | EFFECT OF GLYCEROL ON
THE PHASE STATE OF THE
MODEL LIPID MEMBRANE | <i>¹Institute
Scintillation
Materials of NAS of
Ukraine</i>
<i>²Institute for
Problems of
Cryobiology and
Cryomedicine of
NAS of Ukraine</i> |
| 9. | <u>M.F. Nezhelska</u>
I.V. Skresanova
E.A. Barannik | IMPROVING THE
DETERMINATION ACCURACY
OF THE QUANTITATIVE BLOOD
FLOW MOTION PARAMETERES
IN ULTRASOUND DOPPLER
SYSTEMS | <i>Karazin Kharkiv
National University</i> |
| 10. | <u>E.V. Zhornik</u>
L.A. Baranova
I.D. Volotovski | GENOTOXIC EFFECTS OF
TITANIUM DIOXIDE
NANOPARTICLES | <i>Institute of
Biophysics and Cell
Engineering of NAS
of Belarus</i> |
| 11. | <u>E.N. Golubeva</u> ¹
T.A. Kulahava ¹
G.N.Semenkova ¹
T.G. Kuznetsova ²
V.M. Kavsan ³ | STABLE PRODUCTION OF
CHI3L1 ONCOGEN IN CELLS 293
PROMOTES MODIFICATION OF
THEIR MORPHOLOGY AND
REORGANIZATION OF ACTIN
CYTOSKELETON | <i>¹Belarusian State
University</i>
<i>²Pirogov Russian
National Medical
Research University</i>
<i>³Institute of
Molecular Biology
and Genetics of
NANU</i> |
| 12. | <u>E.N. Golubeva</u> ¹
T.A. Kulahava ¹
U.S. Kirpich ¹
G.N. Semenkova ¹
V.M. Kavsan ² | ORGANIZATION AND
FUNCTIONAL ACTIVITY OF
MITOCHONDRION IN 293 CELLS,
STABLY PRODUCING
ONCOPROTEIN CHI3L1, IN
COMPARISON WITH CONTROL
293 CELL LINE | <i>¹Belarusian State
University</i>
<i>²Institute of
Molecular Biology
and Genetics of
NANU</i> |

PLENARY SESSION1st Conference Hall Thursday 05.12.2013 10:00 – 12:15

10:00– 10:45 TIME DOMAIN CONSIDERATION OF MODE DECOMPOSITION IN TRANSVERSE INHOMOGENEOUS WAVEGUIDE

Dr. A. Butrym, *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

10:45– 11:30 POLARIZATION AND NONLINEAR EFFECTS ENHANCEMENT IN PERIODIC STRUCTURES AND SYSTEMS WITH STRONG FIELD LOCALIZATION

Dr. V. Tuz, *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

11:30– 12:15 OUTSIDE THE SOLAR SYSTEM

Dr. V. Zakharenko, *Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine*

SESSION: SOLID STATE RADIOPHYSICS & NANO AND METAMATERIALS - 11st Conference Hall Thursday 05.12.2013 12:45 – 14:45

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|----|--|--|---|
| 1. | <u>V.V. Baibak</u> ¹
A.A. Bulgakov ¹
I.V. Fedorin ² | POLARIZATION CONVERSION BY DIELECTRIC PERIODIC STRUCTURE, LOCATED ON A SEMICONDUCTOR SUBSTRATE IN AN EXTERNAL MAGNETIC FIELD | ¹ <i>O. Ya. Usikov
Institute for Radiophysics and Electronics of NAS of Ukraine</i>
² <i>National Technical University “Kharkiv Polytechnic Institute”</i> |
| 2. | <u>E.G. Plakhtiy</u>
O.V. Khmelenko
T.M. Bulanaya | THERMAL TREATMENT INFLUENCE ON LUMINESCENCE SPECTRUM OF CRYSTALS ZnSe:Mn | <i>Oles Gonchar
Dnepropetrovsk National University</i> |
| 3. | <u>O.A. Reutina</u>
E.D. Prokhorov
O.V. Botsula | FREQUENCY MULTIPLICATION BY DIODES WITH A LONG TUNNEL BORDER BASED ON GAAS IN PLANAR OPTION | <i>Karazin Kharkiv National University</i> |
| 4. | N.I. Gvozdev | TM-ELECTROMAGNETIC WAVES IN HALF A LIMITNESS RIGHT DEFECTIVE PERIODIC LAYERED STRUCTURE BORDERING UPON A PLASMA-LIKE MEDIUM | <i>O. Ya. Usikov
Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

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| 5. | <u>D.V. Kadygrob</u> ¹
V.A. Yampol'skii ^{1,2} | EXCITATION OF SURFACE
PLASMA WAVES
ACROSS THE LAYERS OF
INTRINSIC JOSEPHSON
JUNCTIONS | ¹ <i>O. Ya. Usikov</i>
<i>Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i>
² <i>V.N. Karazin</i>
<i>Kharkiv National
University</i> |
| 6. | <u>M.A. Popov</u>
I.V. Zavislyak | VOLTAGE-CONTROLLED
MODIFICATION OF YTTRIUM-
IRON GARNET DOMAIN
STRUCTURE | <i>Taras Shevchenko
National University
of Kyiv</i> |

SESSION: SOLID STATE RADIOPHYSICS & NANO AND METAMATERIALS - 2

1st Conference Hall

Thursday 05.12.2013 15:30 – 17:00

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| 7. | S.Yu. Polevoy | MAGNETICALLY
CONTROLLABLE BULK CHIRAL
METAMATERIAL: EXPERIMENT | <i>O. Ya. Usikov</i>
<i>Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 8. | <u>N.P. Stognii</u> ¹
N.K. Sakhnenko ^{1,2} | INFLUENCE OF THE
ENVIRONMENT ON THE
COUPLED METAL NANOWIRE
PLASMON RESONANCES | ¹ <i>Kharkiv National
University of Radio
Electronics</i>
² <i>O. Ya. Usikov</i>
<i>Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 9. | <u>S.L. Golovynskyi</u>
G.G. Tarasov | LATERAL
PHOTOCONDUCTIVITY IN
InGaAs/GaAs DOT-CHAIN
STRUCTURES UNDER
DIFFERENT EXCITATION
INTENSITIES | <i>Institute of
Semiconductor
Physics of NAS of
Ukraine</i> |
| 10. | <u>A. Moskaltsova</u> ^{1,2}
A.V. Silva ^{1,2}
D.C. Leitao ¹
Z. Hou ¹
R. Ferreira ³
E. Paz ³
S. Cardoso ^{1,2}
P.P. Freitas ^{1,3} | NANOFABRICATION OF
DEVICES BASED ON MgO
TUNNEL JUNCTIONS | ¹ <i>INESC-MN</i>
² <i>Instituto Superior
Técnico (IST)</i>
³ <i>INL</i> |

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| 11. | <u>O.M. Salogub</u>
A.O. Perov
Ye.M. Ostrizhnyi | COMPOSITE PANE-CHIRAL IRIS
AS PART OF METAMATERIAL
STRUCTURE | <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i> |
| 12. | <u>A.S. Vakula</u> ^{1,2}
S.Yu. Polevoy ¹
S.V. Nedukh ¹ | FERROMAGNETIC RESONANCE
AT THE TEMPERATURE 4.2 K IN
THE ARRAY OF Ni ₈₀ Fe ₂₀
NANOWIRES LOCALIZED IN
NANOPORES ALUMINA | ¹ <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i>
² <i>Kharkov national</i>
<i>university of</i>
<i>radioelectronics</i> |
| 13. | E.A. Velichko | PLASMON RESONANCES IN THE
SCATTERING AND ABSORPTION
OF LIGHT BY A CIRCULAR
GOLD NANOTUBE | <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i> |

SESSION:

BIOPHYSICS - 3

2nd Conference Hall

Thursday 05.12.2013 12:45 – 14:45

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| 13. | <u>O.S. Yasunova</u> ¹
O.A. Gorobchenko ¹
O.T. Nikolov ¹
O.V. Lipina ² | WATER STATE IN CBS AND
"CRYOCORD" PREPARATION ON
MICROWAVE DIELECTRIC
METHOD | ¹ <i>V.N. Karazin</i>
<i>Kharkov National</i>
<i>University</i>
² <i>Institute for</i>
<i>Problems of</i>
<i>Cryobiology and</i>
<i>Cryomedicine of the</i>
<i>NAS of Ukraine</i> |
| 14. | D.A. Pesina | DIELECTRIC STUDY ON
HYDRATION OF HSA AND
BSA COMPLEXES WITH
CHLOROPHYLLIN | <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i> |
| 15. | <u>A.A. Gerus</u> ¹
A.V. Fomin ² | THE STUDY OF FLAVIN
MONONUCLEOTIDE-ETHIDIUM
BROMIDE-DNA SYSTEM BY
CALORIMETRY AND
SPECTROPHOTOMETRY | ¹ <i>Vasyl Karazin</i>
<i>Kharkiv National</i>
<i>University</i>
² <i>O. Ya. Usikov</i>
<i>Institute for</i>
<i>Radiophysics and</i>
<i>Electronics of NAS</i>
<i>of Ukraine</i> |

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| 16. Iu.N. Blyzniuk | pH-DEPENDENT SELF-ASSOCIATION OF FLAVIN-MONONUCLEOTIDE | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 17. D.M. Glibitskiy | RESONANCE INTERACTIONS OF CARBONYL VIBRATIONS IN THE STRUCTURE OF FLAVIN MONONUCLEOTIDE SELF-ASSOCIATE | <i>O. Ya. Usikov
Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |
| 18. M.A. Rubinson ¹
<u>A.S. Buchelnikov</u> ^{1,2}
M.P. Evstigneev ^{1,2} | ¹ H NMR DIFFUSION-ORDERED SPECTROSCOPY AS A TOOL TO STUDY HETERO-ASSOCIATION OF DRUG MOLECULES | ¹ <i>Sevastopol
National Technical
University</i>
² <i>Belgorod State
University</i> |

VII Young Scientist Career Development Workshop

«bridging a gap between education and career in Photonics and Electromagnetics»

organized in the frame of YSC-2013, Kharkiv, Ukraine

*in collaboration with IEEE MTT-S, AP-S, SSC-S, PHO-S IRE Kharkiv Student Branch Chapters,
OSA/SPIE Joint Student Chapter of IRE NASU*

Tuesday, December 3th, 2013

14:00-15:45

- "IRE NAS Ukraine. What? Where? When?"
Dr. Irina Pochanina, Scientific Secretary IRE NAS Ukraine
- "Scientific societies' presentations (IEEE, OSA, SPIE). What they would like you to know?"
Dr. Maksim Khruslov and **Dr. Maria Paschenko**
- "A guide to publishing your work in peer-reviewed journals"
David Hagan, Professor and Associate Dean CREOL, The College of Optics and Photonics University of Central Florida

16:15-17:15

- "Massive Open Online Courses. Perspectives from young scientists"
Dr. Pavlo Krasov and **Dr. Kateryna Arkhypova**

