

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

CONFERENCE PROGRAM



4 – 7 December 2012
Kharkiv, Ukraine

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Organizing and Programme Committees

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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 of Radiophysics in Ukraine, it was founded in September in 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 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 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 scientist and the worldwide electromagnetic community. These events are traditionally supported by IEEE, OSA, SPIE, and URSI, EuMA, ESF societies and foundations.

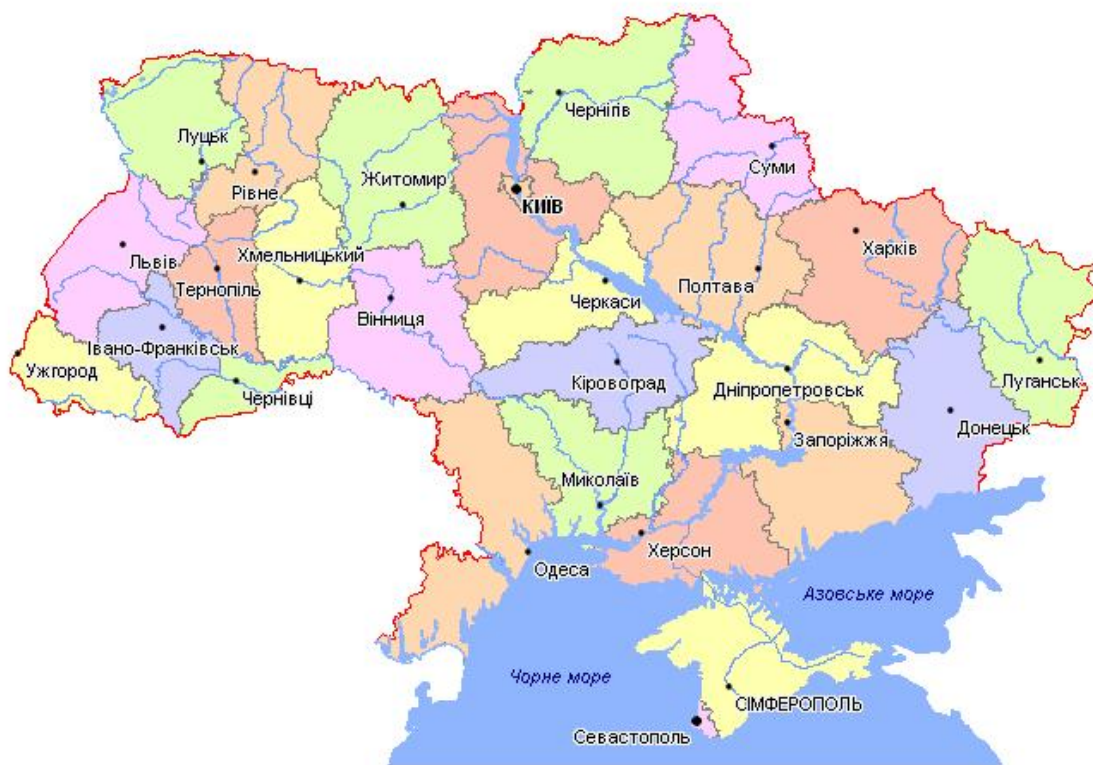
Welcome note from the Organizing Committee

Dear Colleagues,

We are glad to welcome you at the XII Kharkiv Young Scientist Conference on Radiophysics, Electronics, Photonics and Biophysics (YSC-2012) held in IRE NASU, Kharkiv, Ukraine. This time our conference has traditionally attracted participants from many different institutions from Ukraine, Byelorussia, Russia and European Community.

We are very thankful to everybody for his/her interest to the YSC and believe that participation in the Conference will provide you with helpful experience and warm memories. We did 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-2012 Organizing Committee



Conference and workshops/seminar geography - Country (city)		Number
1.	Ukraine (Kharkov)	59
2.	Ukraine (Kyiv, Dnepropetrovsk, Vinnytsia, Sevastopol)	21
3.	Russia (Novosibirsk, Dolgoprudny, Kazan, Barnaul, Moscow)	7
4.	Belarus (Minsk)	6
5.	Ukraine – Japan	2
6.	Ukraine – Mexico	2
7.	Ukraine – Russia	1
8.	Ukraine – Sweden	1
9.	Ukraine – Austria	1
10.	Ukraine – Germany	1
11.	Belarus – Russia	1
12.	Italy	1

Total : 103

PLENARY SESSION

1st Conference Hall Tuesday 04.12.2012 9:15 – 11:00

- 9:15– Opening Ceremony
 9:30 ORGANIZERS WELCOME NOTE: **Dr. M. Balaban**, *YSC-2012 Organizing committee chairman*
 TOP ADMINISTRATION WELCOME NOTE: **Associate member of NAS Ukraine P. Melezhik**, Deputy Director of Institute for Radiophysics and Electronics of NAS of Ukraine
- 9:30– 50 YEARS OF THE LASER, AND WHAT IS AFTER?
 10:15 **Prof. Yu. Machenin**, *Kharkiv National University of Radioelectronics, Kharkiv, Ukraine*
- 10:15– SEARCH OF NEW MECHANISMS, METHODS AND MODES OF EXCITATION
 11:00 OF ELECTROMAGNETIC OSCILLATIONS IN DRO DEVICES
Prof. A. Tsvyk, *Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*

SESSION: MICROWAVE AND TERAHERTZ ELECTRONICS

1st Conference Hall Tuesday 04.12.2012 14:30 – 16:30

- | | | | |
|----|---|--|---|
| 1. | <u>G.G. Sherstyuk</u>
O.O. Drobahin | RECOGNITION OF OBJECTS BEHIND DIELECTRIC WALL USING MULTIFREQUENCY MICROWAVE SIGNALS | <i>Oles Honchar
Dnipropetrovsk National University,
Dept. of Physics,
Electronics and
Computer System</i> |
| 2. | <u>A. Kuleshov</u> ¹
T. Idehara ²
K. Ueda ³
S. Ponomarenko ¹
S. Kishko ¹ | 400 GHZ GYROTRON OUTPUT POWER STABILIZATION USING PID CONTROLLER SCHEME | ¹ <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i>
² <i>Research Center for Development of Far-Infrared Region, University of Fukui</i>
³ <i>Institute for Protein Research, Osaka University</i> |
| 3. | <u>S.V. Trofymenko</u>
N.F. Shul'ga | ON THE INFLUENCE OF A PARTICLE'S FIELD EVOLUTION ON ITS IONIZATION ENERGY LOSSES IN THIN LAYERS OF SUBSTANCE | <i>Akhiezer Institute for Theoretical Physics of National Science Centre "Kharkov Institute of Physics and Technology"</i> |
| 4. | <u>Ye.S. Kuznetsova</u>
Z.E. Eremenko
V.N. Scresanov | PROPAGATION FEATURES OF WAVES IN LAYERED WAVEGUIDE WITH HIGH-LOSS LIQUID IN FREQUENCY RANGE OF 5-60 GHz | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

- | | | | |
|-----|--|--|---|
| 5. | <u>S.S. Ponomarenko</u>
S.A. Kishko
E.M. Khutoryan
A.N. Kuleshov
A.S. Tishchenko
B.P. Yefimov | TRANSPORTING OF THE INTENSE
NONRELATIVISTIC ELECTRON BEAMS IN
WEAK INHOMOGENEOUS MAGNETIC
FIELDS OF THE CLINOTRONS MAGNETIC
FOCUSING SYSTEMS | <i>Institute for
Radiophysics and
Electronics of NAS of
Ukraine</i> |
| 6. | <u>S.A. Kishko</u>
S.S. Ponomarenko
A.N. Kuleshov
B.P. Yefimov | CALCULATION OF PLANAR MAGNETRON -
INJECTION GUN ON THE ACCELERATING
VOLTAGE OF 5 AND 12 KV | <i>Institute for
Radiophysics and
Electronics of NAS of
Ukraine</i> |
| 7. | <u>O.O. Reutyna</u>
E.D. Prokhorov
O.V. Botsula | IMPEDANCE CHARACTERISTICS OF A
PLANAR DIODE WITH A TUNNEL BORDER
BASED ON GAAS | <i>V.N. Karazin Kharkiv
National University</i> |
| 8. | <u>O.O. Reutyna</u>
E.D. Prokhorov
O.V. Botsula | EFFICIENT GENERATION OF DIODE WITH
RESONANT TUNNELING BORDER IN
«SANDWICH» STRUCTURE BASED ON
GAAS | <i>V.N. Karazin Kharkiv
National University</i> |
| 9. | <u>M.A. Stumbra</u>
A.V. Varavin | DIGITAL PHASE MEASUREMENTS SYSTEM
IN 2-MILIMETER BAND INTERFEROMETER
FOR PLASMA DIAGNOSTICS IN TOKAMAK | <i>Institute for
Radiophysics and
Electronics of NAS of
Ukraine</i> |
| 10. | M. Teplytskyi | SYMMETRICAL PUSH-PULL DC
AMPLIFIERS WITH TWO-STAGE
INTERMEDIATE CASCADES | <i>Vinnitsia National
Technical University</i> |

SESSION: OPTICS AND PHOTONICS

2nd Conference Hall

Tuesday **04.12.2012** **14:30 – 16:30**

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|----|---|--|--|
| 1. | <u>E.G. Plakhtii</u>
S.A. Omelchenko
O.V. Khmelenko
A.E. Panasenko | DISLOCATIONS ROLE IN THE PROCESSES
OF SENSITIZED LUMINESCENCE OF
ZNS:MN CRYSTALS | <i>Oles Honchar
Dnipropetrovsk
National University</i> |
| 2. | <u>A.A. Shmatko</u>
V.K. Volosyuk
V.I. Zvorsky
E.A. Aksyonov | ESTIMATION ROUGHNESS OF THE
SPECKLE PATTERN | <i>National Aerospace
University, N.E.
Zhukovsky "KhAI"</i> |
| 3. | <u>E.A. Aksyonov</u>
A.A. Shmatko
V.K. Volosyuk
V.I. Zvorsky | METHOD OF THE CONTACTLESS TESTING
OF THE CIRCULAR PATH EXECUTION
ACCURACY | <i>National Aerospace
University "Kharkiv
Aviation Institute"</i> |
| 4. | S.I. Dorokhov | MODELLING AND ANALYSIS OF FOUR-
DIMENSIONAL LIGHT FIELD | <i>Moscow Institute of
Physics and
Technology (State
University)</i> |

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|----|--|---|--|
| 5. | <u>I.A. Rusanova</u> | CODING OF THE INFORMATION OF OBJECT LASER PULSES IN THE OPTICAL ECHO-PROCESSOR | <i>Kazan federal university</i> |
| 6. | <u>E.V. Stolyarov</u>
O.O. Chumak | THE EFFECT OF QUANTUM IMPURITY ON PROPAGATION OF SINGLE-PHOTON PULSES THROUGH ONE-DIMENSIONAL OPTICAL WAVEGUIDE | <i>Institute of Physics of National Academy of Sciences of Ukraine</i> |
| 7. | <u>D. M. Natarov</u>
O. V. Shapoval | PLASMON AND PERIODICITY-ASSISTED RESONANCES IN THE ELECTROMAGNETIC WAVE SCATTERING BY FINITE SILVER NANOWIRE AND NANOSTRIP GRATINGS | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

PLENARY SESSION

1st Conference Hall Wednesday 05.12.2012 9:00 – 11:00

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| 9:00–
9:40 | MULTIPOINT VECTOR NETWORK ANALYZER: FROM THE BEGINNING TO MODERN SIGNAL INTEGRITY APPLICATIONS
Prof. A. Ferrero , <i>Department of Electronics, Politecnico di Torino, Torino, Italy</i> |
| 9:40–
10:20 | SEVERAL ETUDES ON MODERN SCATTEROMETRY
Prof. N. Yashina , <i>Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine</i> |
| 10:20–
11:00 | REGULATION OF GENE EXPRESSION AND PHYSICAL MAPPING OF GENOME
Prof. Yu. Nechiporenko , <i>Institute of Molecular Biology of Russian Academy of Sciences, Moscow, Russia</i> |

SESSION: ELECTROMAGNETICS - 1

1st Conference Hall Wednesday 05.12.2012 11:30 – 13:30

- | | | | |
|----|--|---|--|
| 1. | <u>A.A. Nudga</u>
A.A. Savochkin | EXAMPLE CALCULATION OF RADIATION FIELD FLAT ANTENNA | <i>Sevastopol National Technical University</i> |
| 2. | <u>Hao XiangYu</u>
M.N. Legenkiy | TEM HORN ANTENNA BASED ON NON-UNIFORM CONICAL LINE | <i>Karazin Kharkiv National University</i> |
| 3. | T.N. Parfenovich
V.B. Kirilchuk | COMPACT TUNABLE UHF ANTENNA-FEEDER CIRCUIT | <i>Belarusian State University of Informatics and Radioelectronics</i> |
| 4. | <u>R.V. Golovashchenko</u>
O.S. Plevako | DISK RESONATOR FOR INVESTIGATION OF LOW-LOSS LIQUIDS IN THE MILLIMETER WAVEBAND | <i>Institute of Radiophysics and Electronics of NAS of Ukraine</i> |

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|----|--|---|---|
| 5. | I.V. Grymalyuk | TYPES OF THE FLUCTUATIONS IN THE LONG WAVEGUIDE INSERT WITH A SMALL HEIGHT RECTANGULAR WINDOW | <i>Institute for Technical Mechanics of NAS and NSA of Ukraine</i> |
| 6. | M.V. Sakhno
J.V. Gumenjuk-Sichevska
F.F. Sizov | PRINTED ANTENNA SIMULATION FOR THE TERAHERTZ MULTIELEMENT VISION SYSTEM | <i>V.V. Ye. Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine</i> |

SESSION: ELECTROMAGNETICS – 2

1st Conference Hall Wednesday 05.12.2012 14:30 – 16:30

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|-----|---|--|--|
| 7. | V.I. Shcherbinin ¹
G.I. Zaginaylov ^{1,2}
V.I. Tkachenko ^{1,2}
K. Schuenemann ³ | UNIFIED DISPERSION EQUATION FOR MAGNETIZED PLASMA-FILLED WAVEGUIDES WITH DIFFERENT CROSS-SECTIONS | ¹ <i>National Science Center «Kharkov Institute of Physics and Technology» NASU</i>
² <i>V.N. Karazin Kharkov National University</i>
³ <i>Technical University Hamburg-Harburg</i> |
| 8. | L.D. Shostenko ²
V.O. Goryashko ¹
Yu.V. Tarasov ² | WAVE PROPAGATION THROUGH A WAVEGUIDE SECTION WITH CORRUGATED WALLS: CRITICAL ROLE OF THE CORRUGATION SHARPNESS | ¹ <i>Uppsala University</i>
² <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 9. | S.N. Yerin
P.L. Tokarsky | MATRIX APPROACH TO ESTIMATION OF PHASED ANTENNA ARRAY EFFICIENCY PLACED NEAR AIR-GROUND INTERFACE | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 10. | V.V. Khardikov ^{1,2}
S.L. Prosvirnin ^{1,2} | TRAPPED MODE RESONANCES IN DOUBLE PERIODIC PLANAR METAL-DIELECTRIC AND ALL-DIELECTRIC OPTICAL STRUCTURES | ¹ <i>Institute of Radio Astronomy of National Academy of Sciences of Ukraine</i>
² <i>Karazin Kharkiv National University</i> |
| 11. | E.A. Velichko | PLANE ELECTROMAGNETIC WAVE SCATTERING BY A METAL CYLINDER COATED WITH THE DIELECTRIC AND METAMATERIAL | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 12. | A.V. Tinekov | APPLICATION OF HEURISTIC OPTIMIZATION METHODS FOR ANTENNA SYNTHESIS | <i>Altai State University</i> |
| 13. | M.A. Popov
I.V. Zavislyak | ELECTRIC FIELD TUNABLE YTTRIUM-IRON GARNET BAND-PASS FILTER | <i>National Taras Shevchenko University</i> |

SESSION: BIOPHYSICS - 12nd Conference Hall

Wednesday 05.12.2012 11:30 – 13:30

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|----|---|---|---|
| 1. | <u>M.P. Evstigneev</u> ¹
A.S. Buchelnikov ¹
D.P. Voronin ¹
Yu.I. Prylutsky ² | COMPLEXATION OF C ₆₀ FULLERENE WITH AROMATIC DRUGS | <i>¹Sevastopol National Technical University
²ESC "Institute of Biology", Taras Shevchenko Kyiv National University</i> |
| 2. | <u>E.L. Usenko</u>
V.A. Valeev
V.A. Sorokin | EFFECT OF TRANSITION METAL IONS ON NATURAL DNA METALLIZATION | <i>B. I. Verkin Institute for Low Temperature Physics and Engineering of NASU</i> |
| 3. | A.S. Khrebtova | CALCULATION APPROACHES FOR ANALYSIS OF LIGAND TO DNA BINDING PARAMETERS FROM DSC EXPERIMENT | <i>Institute for Radiophysics and Electronics of NASU</i> |
| 4. | A.A. Gerus | MODELING OF DNA-LIGANDS HEAT CAPACITY CURVES AT COMPETITIVE BINDING | <i>Vasyl Karazin Kharkiv National University</i> |
| 5. | A.U. Koritskaya | MELTING OF DNA IN THE COMPLEXES WITH MULIMODAL BINDING LIGANDS | <i>Vasyl Karazin Kharkiv National University</i> |
| 6. | <u>A.S. Buchelnikov</u> ¹
L.E. Rodriguez Oropeza ²
M.P. Evstigneev ¹ | GENERALIZED MODEL OF COMPETITIVE BINDING IN DRUG-INTERCEPTOR-DNA SYSTEMS | <i>¹Sevastopol National Technical University
²Clinica de Medicina Familiar - CECIS - CIS</i> |
| 7. | <u>K.A. Simonov</u> ¹
S.N. Volkov ² | CONFIGURATIONAL MECHANICS OF DNA MACROMOLECULE IN VARIOUS AGGREGATE STATES | <i>¹Kyiv National Taras Shevchenko University
²Bogoliubov Institute for Theoretical Physics</i> |

SESSION: BIOPHYSICS - 22nd Conference Hall

Wednesday 05.12.2012 14:30 – 16:30

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| 8. | <u>Yu.S. Govorova</u>
A.V. Zinchenko | INFLUENCE OF SOME CRYOPROTECTANTS ON CONFORMATIONAL STABILITY OF HEMOGLOBIN | <i>Institute for Problems of Cryobiology and Cryomedicine of NAS of Ukraine</i> |
| 9. | <u>Y.V. Dichenko</u>
A.V. Yantsevich
D.V. Mukha
A.A. Gilep
S.A. Usanov | HOMOLOGY MODELLING AND ANALYSIS OF CYTOCHROME'S P450 7B1 STRUCTURE | <i>Institute of bioorganic chemistry of NAS of Belarus</i> |

10. T.A. Kulahava¹
N.G. Krylova¹
G.N. Semenkova¹
O.V. Balynska²
V.M. Kavsan² CHI3L1 PROTEIN ROLE IN CELL REDOX-
STATE FORMATION ¹Belarusian state
university
²Institute of molecular
biology and genetics
of NASU
11. N.G.Krylova¹
T.A. Kulahava¹
V.T. Cheshchevik²
I.K. Dremza³
I.B. Zavodnik² THE MECHANISMS OF MITOCHONDRIA
FUNCTIONING REGULATION BY
QUINONES ¹Belarusian State
University
²Yanka Kupala State
University of Grodno
³Grodno State
Medical University
12. N.V. Vasilyeu¹
N.G. Krylova¹
H.V. Grushevskaya¹
I.V. Lipnevich¹
G.N. Semenkova¹
T.A. Kulahava¹
T.I. Orekhovskaya²
B.G. Shylitsky² THE REGISTRATION OF CELLULAR
FUNCTIONAL STATE BY MEANS OF
IMPEDANCE ANALYSIS ¹Belarusian State
University
² Belarusian State
University of
Informatics and
Radioelectronics
13. D.V. Grigorieva¹
I.V. Gorudko¹
A.V. Sokolov^{2,3}
S.N. Cherenkevich¹
O.M. Panasenko³ REDUCED RESISTANCE OF
ERYTHROCYTES TO HEMOLYSIS IN THE
PRESENCE OF MYELOPEROXIDASE ¹Belarusian State
University
²Institute for
Experimental
Medicine, Russian
Academy of Medical
Sciences
³Research Institute
of Physico-Chemical
Medicine
14. T.P. Firaha
T.A. Kulahava
S.V. Marchenko
Y.G. Shanko ASSESSMENT OF NEUTROPHIL OXYGEN-
ACTIVATING CAPACITY IN PATIENTS
WITH ISCHEMIC STROKE ¹Belarusian State
University
²Minsk City
Emergency Hospital
³Republican
Research Center of
Neurology and
Neurosurgery
15. G.V. Baryshnikov¹
V.A. Minaeva¹
B.F. Minaev¹
O. P. Cherkasova²
V.A. Volodin³ TERAHERTZ TIME-DOMAIN VIBRATIONAL
SPECTROSCOPY OF PROGESTERONE AND
CORTISONE CORTICOSTEROID
HORMONES ¹Bogdan
Khmelnitskij
National University
²Institute of Laser
Physics SB RAS
³Institute of
Semiconductor
Physics SB RAS

SESSION: BIOPHYSICS - 32nd Conference Hall

Wednesday 05.12.2012 16:45 – 18:00

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| 16. | <u>D.M. Rotko</u>
S.V. Prylutska | COMPARATIVE STUDY OF
MEMBRANOTROPIC ACTION OF SINGLE-
AND MULTI-WALLED CARBON
NANOTUBES | <i>Taras Shevchenko
National University
of Kyiv</i> |
| 17. | <u>E.A. Kozii</u>
A.G. Misura | LASER ABSORPTION DETECTION OF
MOLECULES OF PENTANE AND ITS
DERIVATIVES IN THE EXHALED BREATH | <i>Institute of Applied
Problems of Physics
and Biophysics,
Academy of Sciences
of Ukraine</i> |
| 18. | <u>A. G. Misura</u>
J. O. Tolok | RESEARCH OF PROBLEMS OF USING
DIAGNOSTIC METHODS BASED ON
HUMAN ORAL LIQUID | <i>Institute of Applied
Problems of Physics
and Biophysics,
Academy of Sciences
of Ukraine</i> |
| 19. | <u>V.B. Havrylyak</u>
K.I. Bogutska | pH INFLUENCE ON THE SKELETAL AND
CARDIAC MUSCLES CONTRACTILE
PROTEINS | <i>Taras Shevchenko
Kiev National
University</i> |
| 20. | I.A. Rusanova | RESEARCH DIFFUSION OF PROCESSES OF
SURFACE EPITHELIUM | <i>Kazan federal
university</i> |
| 21. | <u>Y.Y. Sdobnikov</u>
S.A. Mamilov
A.G. Misura | OPTOSENSOR DETECTION AND CONTROL
OF SKIN NEOPLASM CHANGES PROCESSES
ALGORITMIZATION | <i>Institute of applied
problems of physics
and biophysics NAS
Ukraine</i> |

PLENARY SESSION1st Conference Hall

Thursday 06.12.2012 9:00 – 11:00

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|-----------------|---|
| 9:00–
9:40 | INVESTIGATION OF DECAMETER SOLAR RADIO EMISSION FOR THE
STUDY OF SPACE WEATHER IN THE INTERNATIONAL PROJECT
"SOLSPANET"
Prof. V. Dorovsky , <i>Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine</i> |
| 9:40–
10:20 | CHIRAL METAMATERIALS
Prof. A. Bulgakov , <i>Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine</i> |
| 10:20–
11:00 | NEW RESULTS IN SOLID STATE PHYSICS
Prof. S. Prosvirin , <i>Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine</i> |

SESSION: RADIO ASTRONOMY AND ASTROPHYSICS

1st Conference Hall **Thursday 06.12.2012 14:00 – 15:45**

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|----|---|---|---|
| 1. | <u>S.I. Skuratovskiy</u>
Yu.V. Kornienko | RECONSTRUCTION OF A FIELD OF ATMOSPHERE PHASE DISTORTIONS FROM THE IMAGE OF UNRESOLVABLE STAR | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 2. | <u>O.S. Pylaev</u> ²
A.I. Brazhenko ¹
V.N. Melnik ²
A.A. Konovalenko ²
A.V. Frantsuzenko ¹
V.V. Dorovskyy ²
R.V. Vashchishin ¹
H.O. Rucker ³ | REGISTRATION OF THE THREE HARMONICS OF THE SOLAR TYPE III RADIO BURSTS AT DECAMETER WAVELENGTHS | ¹ <i>Poltava gravimetical observatory of Institute of geophysics, NAS of Ukraine</i>
² <i>Institute of Radio Astronomy, NAS of Ukraine</i>
³ <i>Space Research Institute, Austrian Academy of Sciences</i> |
| 3. | L.A. Berdina | EFFECT OF THE GRAVITATIONAL FIELDS OF SUBSTELLAR OBJECTS ON A REMOTE SOURCE RADIATION | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 4. | <u>A.A. Sereckina</u>
O.M. Ulyanov
A.I. Shevtsova | THE MODELING OF PROPAGATION EFFECTS OF PULSAR PULSE RADIATION | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 5. | <u>A.I. Shevtsova</u>
I.Y. Vasylieva
V.V. Zakharenko | THE ONGOING SURVEY FOR SOURCES WITH SHORT TIME SCALES OF RADIATION IN THE DECAMETER RANGE | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 6. | K.Y. Mylostna | SEARCH AND STUDY OF ELECTROSTATIC DISCHARGES IN THE SOLAR SYSTEM | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 7. | <u>A.A. Koval</u>
A.A. Stanislavsky
A.A. Konovalenko | THE DECAMETRE HELIOGRAPHIC OBSERVATIONS OF THE QUIET SUN | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |
| 8. | O.M. Ulyanov
<u>A.I. Shevtsova</u>
A.A. Sereckina | POLARIZATION SOUNDING OF PULSAR MAGNETOSPHERE | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |

SESSION:	SOLID STATE RADIOPHYSICS		
2 nd Conference Hall	Thursday	06.12.2012	14:00 – 15:45

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| 1. | A.M. Kotelevets | RELAXATION IN PROCESSES IN DILUTED MAGNETIC SEMICONDUCTORS | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 2. | B.E. Bekirov | THE FEATURES OF MAGNETORESONANCE PROPERTIES OF THE HgSe:Fe CRYSTALS IN THE TEMPERATURE RANGE 77K <T< 300K | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 3. | <u>O.V. Khmelenko</u>
S.O. Omelchenko
D.E. Severin | FEATURES ESR SPECTRA OF CRYSTALS ZnSe:Mn BY LASER EXCITATION | <i>O. Gonchar
Dnepropetrovsk National University</i> |
| 4. | <u>A.V. Prykhodko</u> ¹
<u>M.A. Miliatiev</u> ¹
O.V. Vdovychenko ² | PECULIARITIES OF TRANSMISSION SPECTRUM OF THE DIELECTRIC PERIODIC STRUCTURE WITH DEFECT | ¹ <i>National Technical University “Kharkiv Polytechnic Institute”</i>
² <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 5. | <u>V.V. Baibak</u>
A.A. Bulgakov | ANALYSIS OF SURFACE WAVES PROPERTIES IN FINITE PERIODIC STRUCTURE WITH LAYERS THAT CONTAIN EXCITONS | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 6. | <u>O.S. Morozov</u>
M.F. Bulaniy
A.V. Kovalenko
A.R. Omelchuk | CHANGES OF PHYSICAL PROPERTIES OF ZnS:Mn MICROCRYSTALS AFTER THEIR DISPERGATING | <i>Oles Gonchar
National University of Dnepropetrovsk</i> |
| 7. | <u>A.V. Pryadko</u> ¹
T.M. Bulanaja ² | ACOUSTIC MONITORING OF PRODUCING FINE MATERIALS | ¹ <i>SHEE «National Mining University»</i>
² <i>Dnipropetrovsk National University by O.Gonchar</i> |

SESSION:	NANO AND METAMATERIALS		
1 st Conference Hall	Thursday	06.12.2012	16:15 – 18:45

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|----|---|--|---|
| 1. | <u>A.A. Lyamkina</u>
S.P. Moshchenko | SELECTIVE PLASMONIC ANTENNAS FOR SINGLE N-V CENTERS IN DETONATION NANODIAMONDS | <i>A.V. Rzhanov
Institute of Semiconductor physics SB RAS</i> |
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| 2. | S.Yu. Polevoy | WAVE POLARIZATION IN THE BULK METAMATERIAL FORMED BY ARRAY OF PLANE CHIRAL STRUCTURES | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 3. | <u>V.A. Koliadenko</u> ¹
A.P. Ostroukh ²
R.A. Lymarenko ²
V.B. Taranenko ² | OPTICAL NON-RECIPROCALITY OF TWO-DIMENSIONAL PHOTONIC STRUCTURES IN ISOTROPIC MATERIALS | ¹ <i>National Technical University of Ukraine “Kyiv Polytechnic Institute”</i>
² <i>International Center “Institute of Applied Optics”, NASU</i> |
| 4. | <u>O.M. Salogub</u>
S.A. Prikolotin
N.G. Kolmakova
Ye.M. Ostrizhnyi | PLANE-CHIRAL METAMATERIAL IN A WAVEGUIDE AND FREE SPACE | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 5. | <u>D.V. Kadygrob</u> ¹
N.M. Makarov ²
F. Pérez-Rodríguez ²
T.M. Slipchenko ¹
V.A. Yampol'skii ^{1,2} | ANOMALOUS TRANSMISSION OF TERAHERTZ RADIATION THROUGH PERIODICALLY MODULATED SLAB OF LAYERED SUPERCONDUCTOR | ¹ <i>Institute for Radiophysics and Electronics of NASU</i>
² <i>Benemérita Universidad Autónoma de Puebla</i> |
| 6. | <u>O.P. Olasyuk</u>
M.P. Kulish
O.P. Dmitrenko
M.A. Zabolotny
D.A. Slisarenko | MECHANISMS OF PHOTOGENERATION AND TRANSPORT OF CHARGE CARRIERS IN PEPC-C ₆₀ NANOCOMPOSITES | <i>Taras Shevchenko National University of Kyiv</i> |
| 7. | <u>E.O. Melezhik</u>
J.V. Gumenjuk-Sichevska | COMPARISON OF ELECTRON MOBILITIES IN DIFFERENT STRUCTURES OF HgCdTe WITH DIRECT AND INVERTED BAND SCHEMES AT NITROGEN TEMPERATURES | <i>Institute of Semiconductor Physics of NAS of Ukraine</i> |
| 8. | <u>A.A. Lyamkina</u>
S.P. Moshchenko | PL ENHANCEMENT DUE TO EXCITON-PLASMON INTERACTION IN THE HYBRID SYSTEM QUANTUM DOT – METAL DROPLET GROWN BY MBE | <i>A.V. Rzhanov Institute of Semiconductor physics SB RAS</i> |
| 9. | <u>B.I. Ilkiv</u> ¹
S.S. Petrovska ¹
R.A. Sergiienko ²
Ya.V. Zauychnyi ¹ | ELECTRONIC STRUCTURE OF CARBON NANOCAPSULES | ¹ <i>Frantsevich Institute for Problems of Materials Science of NAS of Ukraine</i>
² <i>Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University</i> |

10. Y.A. Onanko MECHANICAL PROPERTIES OF Si + SiO₂ *Shevchenko Kyiv*
 G.T. Prodayvoda AFTER IRRADIATION *National University*
 S.A. Vyzhva
 A.P. Onanko
 D.A. Slisarenko
 O.P. Olasyk

PLENARY SESSION

1st Conference Hall Friday 07.12.2012 9:00 – 9:45

- 9:00– DOUBLE FREQUENCY SOUNDING OF RAINS
 9:45 **Prof. G. Khlopov**, *Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*

SESSION: GEOSCIENCE AND REMOTE SENSING - 1

1st Conference Hall Friday 07.12.2012 10:00 – 11:30

1. U.V.Zhernoklova RADAR PARAMETERS MEASUREMENTS IN *Oles Honchar*
 O.O. Drobakhin INTERMEDIATE ZONE USING *Dnipropetrovsk*
 R.V. Sukhovetsky MULTIFREQUENCY MICROWAVE SIGNALS *National University*
2. A.V. Fateev CONTINUITY OF THE FOURIER *Institute for*
 A.V. Varavin TRANSFORM ALGORITHM APPLIED TO *Radiophysics and*
 ACOUSTIC DIRECTION FINDING *Electronics of NAS*
of Ukraine
3. A.E. Miroshnikov INCOHERENT SCATTER RADAR DATA *Institute of*
 O.V. Bogomaz PROCESSING ON A REMOTE SERVER *Ionosphere of NAS*
and MES of Ukraine
4. A.V. Fesun SOME POSSIBILITIES OF MEASUREMENT *Institute of*
 T.A. Skvortsov OF THE EARTH'S MAGNETIC FIELD IN THE *Ionosphere NAS and*
 IONOSPHERE *MESYS of Ukraine*
5. D.V. Kotov ALTITUDE AND TEMPORAL VARIATIONS *Institute of*
 IN THE HYDROGEN IONS FRACTION IN *Ionosphere of NAS*
 THE TOPSIDE IONOSPHERE OVER *and MESYS of*
 UKRAINE DURING A DEEP MINIMUM OF *Ukraine*
 THE 23rd SOLAR CYCLE. COMPARISON
 WITH THE MODEL IRI-2012

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| 6. | A.S. Dudush | INFLUENCE OF TIME SYCHRONIZATION ACCURACY ON OBJECTS' SPATIAL COORDINATE ESTIMATION ERRORS IN MULTISTATIC RADARS IN CONFIGURATIONS "TRIANGLE" AND "THREE-RAYED STAR" | <i>Kozhedub Air Force University of Kharkov</i> |
| 7. | A.V. Soina
A.V. Paznukhov
Yu.M. Yampolski
Y.M. Zanimonsky | WEEKLY VARIATIONS OF ATMOSPHERIC PARAMETERS AS INDICATOR OF ANTHROPOGENIC IMPACT ON CLIMATE | <i>Institute of Radio Astronomy of NAS of Ukraine</i> |

SESSION:	GEOSCIENSE AND REMOTE SENSING - 2		
1 st Conference Hall	Friday	07.12.2012	12:00 – 13:30

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| 8. | O.V. Dudnyk
O.D. Azarov | MULTIBIT SELF-CALIBRATING TRACKING ADC WITH WEIGHT REDUDANCY | <i>Vinnysia National Technical University</i> |
| 9. | G.B. Veselovska | INFLUENCE OF WATER DROPS ELLIPTICITY ON DOUBLE-FREQUENCY SOUNDING | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 10. | A.L. Kovtunov
S.P. Leshchenko | METHODS OF AIR TARGETS' COORDINATE MEASURING IN SURVEILLANCE RADARS USING SUPERBROADBAND SIGNALS | <i>Kharkiv Kozhedub Air Force University</i> |
| 11. | V.P. Ruban
O.O. Shuba
G.P. Pochanin | THE GPR RECEIVER. SYNC STABILITY | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 12. | A.L. Kovorotniy | REGIONAL VARIATIONS OF THE TROPOSPHERIC DELAY WET COMPONENT BY DETERMINATION OF GPS SIGNAL | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 13. | D.D. Khalameyda
S.I. Homenko
G.I. Khlopov | EXAMINATION OF TROPOSPHERIC REFRACTION USING RADIOINTERFEROMETER | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 14. | V.P. Maltsev
G.I. Khlopov | SENSING OF SOIL IN THE MILLIMETER RANGE WITH EXTREMELY LOW ALTITUDES | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |
| 15. | A.V. Odnovol | THE EVALUATION OF HEIGHT OF THE VAPOURS OF AUTOMOBILE GASOLINES BY THE METHOD OF ACOUSTIC LOCATION | <i>Institute for Radiophysics and Electronics of NAS of Ukraine</i> |

SESSION: PASSIVE RADARS1st Conference Hall

Friday

07.12.2012

14:30 – 16:30

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|----|--|--|--|
| 1. | <u>A.M. Vetoshko</u>
A.D. Abramov
K.A. Shcherbina | THE ITERATIVE ESTIMATION PROCEDURE
ANGLE PARAMETER SPACE-TIME SIGNALS
FROM THE COMBINATION OF SAMPLES
FROM ANTENNA ARRAY OUTPUT | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 2. | V.V. Pavlikov | OPTIMAL SIGNAL PROCESSING IN
SCANNING RADIOMETER | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 3. | <u>V.V. Pavlikov</u> ¹
<u>V.K. Volosyuk</u> ¹
V.F. Kravchenko ² | STATISTICAL SYNTHESIS OF ZERO-TYPE
RADIOMETER | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 4. | <u>Vu Ta Cuong</u>
V.K. Volosyuk
V.V. Pavlikov
S.S. Zhyla | OPTIMAL SPACE-TIME FIELD PROCESSING
IN APERTURE SYNTHESIS SYSTEMS | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 5. | <u>K.A. Shcherbina</u>
V.V. Pechenin
O.V. Voitenko | A CLASS OF TRACKING FREQUENCY AND
PHASE ESTIMATORS WITHOUT FEEDBACK
LOOP | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 6. | <u>V.A. Lesnoy</u>
Vu Ta Cuong
V.V. Pavlikov | SIMULATION OF OPTIMAL MODULATION
TYPE RADIOMETER WITH THE
FLUCTUATING TRANSFER
CHARACTERISTIC OF THE ENTRANCE
PATH | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 7. | <u>A.A. Bukaryev</u>
V.V. Pavlikov
S.S. Zhyla | SIMULATION OF THE OPTIMAL TWO-
ANTENNA RADIOINTERFEROMETER | <i>Kharkiv National
Aerospace
University named
after M.Y. Zhukovsky
"KhAI"</i> |
| 8. | <u>V.V. Kudriashov</u>
K.A. Lukin
V.P. Palamarchuk
P.L. Vyplavin | RANGE-AZIMUTH RADIOMETRIC IMAGING
USING KA-BAND ANTENNA WITH
SYNTHESIZED BEAM | <i>Institute for
Radiophysics and
Electronics of NAS
of Ukraine</i> |

VI Young Scientist Career Development Workshop

«bridging a gap between education and career in photonics and electromagnetics»

organized in the frame of YSC-2012, Kharkiv, Ukraine

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

Tuesday, December 4th, 2012

11:30-13:00

The first part of the workshop is devoted to "International Student Activities" and includes the following presentations:

- **Dr. Alexey Kuleshov** "Work in Science",
- **Dr. Evgen Pichkalyov** "Introduction of IEEE Student Section Ukraine",
- **Dr. Maksim Khruslov** "Introduction of IRE Kharkiv Student Branch Chapter",
- **Mrs. Maria Paschenko** "Introduction of IRE OSA/SPIE Student Chapter",
- **Dr. Sergey Popov** "Problems and career perspective of young scientists of Kharkiv region".

Thursday, December 6th, 2012

11:30-13:00

The second part is devoted to "Online Education" and includes the following presentations:

- **Dr. Pavel Krasov** "E-Learning: What would you like to learn, but did not know how",
- **Dr. Maksim Khruslov** "IEEE Web Services",
- **Mrs. Anastasia Moskoltsova** "Training program for students and PhD students, researchers, teachers and workers abroad supported by the Ministry of Education, youth and sports of Ukraine".

