

A. Usikov Institute for Radiophysics and Electronics  
National Academy of Sciences of Ukraine  
Kharkiv, Ukraine

**Fifth Kharkiv  
Young Scientists Conference  
«Radio Physics and Microwave Electronics»**

December 14 – 16, 2005

**CONFERENCE PROGRAM  
&  
BOOK OF ABSTRACTS**

**Organizers of the Conference**



Young Scientists Council of IRE NAS Ukraine



A. Usikov Institute for Radiophysics and Electronics NAS Ukraine



East Ukraine Joint Chapter of  
IEEE Societies AP/MTT/ED/AES/GRS/NPS/EMB

Scientific Council of NAS Ukraine “RadioPhysics & Microwave Electronics”

		Conference Hall	Council Room
<b>Wed- nes- day Dec. 14 2005</b>	8:45 – 9:20		Registration <sup>1,2</sup>
	9:30 – 9:45	<b>Opening Ceremony</b>	
	9:45 – 11:15	<b>Plenary Session</b>	
	11:15 – 11:45	<i>General photo of all participants</i>	Coffee break <sup>2</sup>
	11:45 – 13:15	<b>Plenary Session</b>	
	13:15 – 14:45	<i>Time for Lunch and Accommodation</i>	
	14:45 – 16:15		<b>Poster Session (SSR &amp; Bio)</b> Coffee break <sup>2</sup>
	15:00 – 17:30	<b>Theoretical &amp; Experim. Electromagnetics</b>	
	17:45 – 19:00		Welcome Party <sup>3</sup> + Intellectual Games
<b>Thursday Dec. 15 2005</b>	8:45 – 10:30	<b>Solid-State Radiophysics</b>	<b>Plasmas and Microwave Electronics</b>
	10:30 – 11:00	Coffee break <sup>2</sup>	
	11:00 – 12:30	<b>Solid-State Radiophysics</b>	<b>Plasmas and Microwave Electronics</b>
	12:30 – 13:30		<b>Poster Session (WP/RS &amp; TEE)</b> Coffee break <sup>2</sup>
	13:30 – 15:30	<b>Wave Propagation and Remote Sensing</b>	<b>Biophysics</b>
	15:30 – 16:00	Coffee break <sup>2</sup>	
	16:00 – 18:00	<b>Wave Propagation and Remote Sensing</b>	<b>Biophysics</b>
<b>Friday Dec. 16 2005</b>	9:30 – 14:00	Bus Excursion to the “Incoherent Scatter Observatory” of the Institute of Ionosphere NAS and MES of Ukraine <sup>3</sup>	
	11:00 – 12:30	Excursion to the Museum of Nature of the Kharkov National University <sup>3</sup>	
	17:00 – 17:30	<b>Awards and Closing Ceremony</b>	
	17:30 – 18:00	Excursion to the Museum of IRE NAS Ukraine <sup>3,4</sup>	
	18:00 – 22:00		<b>Banquet</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 registered participants of YSC’05**

<sup>4</sup> 2-nd floor of the Main Building

**Brief information about IRE NAS of Ukraine**

The *Usikov* Institute for Radiophysics and Electronics of National Academy of Sciences of Ukraine (IRE NAS of Ukraine) is the first radiophysics-oriented institution in Ukraine that was established in 1955. During the 50 years the Institute has been carrying out researches in radiophysics and electronics, radiophysical investigations of solid states and bio-objects, propagation of the wide-band radiowaves in the natural media.

Nowadays the IRE is one of the leading scientific Institutes of NAS of Ukraine owing to its widely recognized achievements in radiophysics, electronics, radiophysics of solid states and biological objects, wave propagation, remote sensing of the Earth environment from air- and space-borne carriers.

The Institute is primarily concerned with the following investigations:

- generation and amplification of electromagnetic microwave-band oscillations, canalization, radiation, propagation of radiowaves of mm (millimeter)- and submm- wavelengths, their reception and processing;
- propagation of radiowaves of different frequency ranges under natural conditions, namely, in the atmosphere, over the land and sea surface;
- remote sensing of the Earth environment from space-borne carriers;
- interaction of electromagnetic waves with solids (metals, semiconductors, dielectrics) and biological objects.

The IRE is also carrying out the applied investigation in radiolocation, radionavigation, communication, medicine and other branches.

The Institute is a regular organizer of the *International Symposium "Physics and Engineering of Millimeter and Submillimeter Waves"*, the *International Scientific Conference "Mathematical Methods in Electromagnetic Theory"* and the *Kharkov Young Scientist Conference "Radiophysics and Microwave Electronics"*. These activities are aimed at free interactions of the Eastern and Western engineers and scientists. They attract participants and invited speakers from all over the world and are widely supported by IEEE and International Union of Radio Science (URSI).

**Welcome Address**

*Dear Friends,*

We are very glad to welcome, on behalf of the Organizing and Program Committee, the participants of **YSC'05** conference held in IRE NASU, Kharkov, Ukraine. This is the 5-th conference and it keeps the tradition of bringing together young scientists from different institutions of NAS and MES of Ukraine from Kharkov, Kiev, Lviv, Dnepropetrovsk, Donetsk, Sebastopol, etc. This time it is our pleasure to welcome our colleagues from Russia. Besides, we would like to mention the increasing number of joint papers written by Ukrainian young scientists in collaboration with foreign institutions.

We highly appreciate your interest in YSC. We hope that our Conference will contribute towards your professional career as well as further integration between Ukrainian and the global electromagnetic community. We also hope, by trying to make this event fruitful and remembered, to welcome you again at our future YS Conferences.

*Organizing Committee of YSC'05*

Dr. Kostyantyn Ilyenko, *IRE NASU*  
 Dr. Artem Boriskin, *IRE NASU*  
 Maxim Ivakhnychenko, *IRE NASU*  
 Yelena Melezhhik, *IRE NASU*  
 Yuriy Goncharenko, *IRE NASU*  
 Aleksey Kuleshov, *IRE NASU*  
 Michail Balaban, *IRE NASU*

Organizing Committee Chairman  
 Technical Program Committee Chairman  
 Web-design

	<b>The list of the YSC'05 participants' affiliations</b>	<b>Abbreviation</b>	<b>City</b>
1.	<i>Bogolyubov</i> Institute for Theoretical Physics NAS Ukraine	<i>ITP NASU</i>	<i>Kyiv</i>
2.	<i>B. Verkin</i> Institute for Low Temperature Physics and Engineering NAS Ukraine	<i>ILTPE NASU</i>	<i>Kharkiv</i>
3.	Dnepropetrovsk National University	<i>DNU</i>	<i>Dnepropetrovsk</i>
4.	Dnepropetrovsk State Medical Academy	<i>DSMA</i>	<i>Dnepropetrovsk</i>
5.	Institute of Ionosphere NAS and MES Ukraine	<i>II NAS &amp; MESU</i>	<i>Kharkiv</i>
6.	Institute for Problems of Cryobiology and Cryomedicine NAS Ukraine	<i>IPCC NASU</i>	<i>Kharkiv</i>
7.	<i>A.Usikov</i> Institute of Radiophysics and Electronics NAS Ukraine	<b><i>IRE NASU</i></b>	<i>Kharkiv</i>
8.	Institute of Physics of Mining Processes NAS Ukraine	<i>IPMP NASU</i>	<i>Donetsk</i>
9.	Institute of Solar-Terrestrial Physics SD RAS	<i>ISTP RAS</i>	<i>Irkutsk, Russia</i>
10.	Institute of Radio Astronomy NAS Ukraine	<i>IRA NASU</i>	<i>Kharkiv</i>
11.	Institute for Semiconductor Physics NAS Ukraine	<i>ISP NASU</i>	<i>Kyiv</i>
12.	<i>Ivan Franko</i> Lviv National University	<i>LNU</i>	<i>Lviv</i>
13.	Joint Research Institute of Armed Forces	<i>JRIAF</i>	<i>Kharkiv</i>
14.	Kharkiv Air Force University	<i>KhAFU</i>	<i>Kharkiv</i>
15.	Kharkiv Design Office of Automation "Himavtomatika"	<i>KHDOA</i>	<i>Kharkiv</i>
16.	Kharkiv National University of Radio Electronics	<i>KhNURE</i>	<i>Kharkiv</i>
17.	Kyiv National University	<i>KNU</i>	<i>Kyiv</i>
18.	National Aviation University	<i>NAU</i>	<i>Kyiv</i>
19.	National Science Center "Kharkov Institute of Physics and Technology "	<i>NSC «KIPT»</i>	<i>Kharkiv</i>
20.	National Scientific Center " Institute for Soil Science and Agrochemistry Research <i>named after O.N. Sokolovsky</i> " UAAS	<i>NSC «ISSAR» UAAS</i>	<i>Kharkiv</i>
21.	National University of Kyiv-Mohyla Academy	<i>NU «KMA»</i>	<i>Kyiv</i>
22.	National Technical University "Kiev Polytechnic Institute"	<i>NTU «KPI»</i>	<i>Kyiv</i>
23.	National Technical University "Kharkov Polytechnic Institute"	<i>NTU «KhPI»</i>	<i>Kharkiv</i>
24.	Optima-Service communication, Ltd.	<i>Optima-Service</i>	<i>Sebastopol</i>
25.	Scientific Centre of Physical Technologies of MES & NAS Ukraine	<i>SCPT MESU &amp; NASU</i>	<i>Kharkiv</i>
26.	Sebastopol National Technical University	<i>SNTU</i>	<i>Sebastopol</i>
27.	Tomsk State University	<i>TSU</i>	<i>Tomst, Russia</i>
28.	V.N. Karazin Kharkov National University	<i>KhNU</i>	<i>Kharkiv</i>
29.	Autonomous University of Puebla	<i>AUP</i>	<i>Puebla, Mexico</i>
30.	Center of Low Temperature Physics, Faculty of Sciences, P. J. Safarik University	<i>CLTP</i>	<i>Kosice, Slovakia</i>
31.	Institut d'Electronique et de Télécommunications de Rennes, Université de Rennes 1	<i>IETR URI</i>	<i>Rennes, France</i>
32.	Technical University of Koszalin	<i>TUK</i>	<i>Koszalin, Poland</i>
33.	Technical University Hamburg-Harburg	<i>TUHH</i>	<i>Hamburg, Germany</i>
34.	Vienna University of Technology, Institute of Chemical Technologies and Analytics	<i>VUT ICTA</i>	<i>Vienna, Austria</i>

**YSC'05 SCIENTIFIC PROGRAM**

**OPENING CEREMONY**

**Conference Hall** **Wednesday, Dec. 14, 2005** **9:30 – 9:45**

Welcome address from **V.M. Yakovenko**, Prof., Academician NAS Ukraine, Director of IRE NAS Ukraine.

**PLENARY SESSION - 1**

**Conference Hall** **Wednesday, Dec. 14, 2005** **9:45 – 11:15**

- O.I. Sukharevsky**, «Scattering characteristic calculation method for aeral groun and subsurface radar objects», *Joint Research Institute of Armed Forces, Kharkov.*
- S.V. Boriskina**, «Electromagnetic theory in the shrinking world of moder n technology: What does it take to go to nanoscale?», *School of Radiophysics, V. Karazin Kharkov National University.*
- A.V. Katz**, «Nanophotonics: the role of surface waves and localized exitations», *Dept. of Theoretical Physics, IRE NAS Ukraine.*

**PLENARY SESSION - 2**

**Conference Hall** **Wednesday, Dec. 14, 2005** **11:45 – 13:15**

- N.N. Beletzky**, «Magnetic nanostructures in spintronics», *Dept. of Solid-State Electronics, IRE NAS Ukraine.*
- M.Y. Tolstorukov**, «Sequence dependence of DNA structural properties: from protein-DNA recognition to genome packaging», *Dept. Biological and Medical Physics, V. Karazin Kharkov National University.*
- V.B. Razskazovsky**, «Radiowaves propagation. State-of-the-art and Problems», *Dept. of Statistical radiophysics, IRE NAS Ukraine.*

**SECTION: THEORETICAL AND EXPERIMENTAL ELECTRODYNAMICS**

**Conference Hall** **Wednesday, Dec. 14, 2005** **14:30 – 16:15**

- A.V. Boriskin**<sup>1</sup>, **G. Godi**<sup>2</sup>, THE EVOLUTION OF INTEGRATED DIELECTRIC LENS ANTENNAS *IRE NASU, IETR URI*
- E.V. Krivenko**, **A.Ya. Kirichenko**, **V.N. Kutuzov**, *et al.*, AXIALLY FLAKY QUASI-OPTICAL DIELECTRIC RESONATORS – ELEMENTS OF THE DIELECTROMETER *IRE NASU*
- S.V. Nechitaylo**<sup>1</sup>, **A.Z. Sazonov**<sup>2</sup>, **Y.A. Belevshchuk**<sup>1</sup>, ASYMPTOTICAL CALCULATION METHOD FOR NEAR-ZONE FIELDS OF REFLECTOR ANTENNA WITH NON-PLANAR EDGE *KhNU, JRIAF*
- V.I. Pritula**, HOMOGENIZATION OF THE ELECTROSTATIC PROBLEMS IN WEAKLY NONLINEAR MEDIUM WITH COMPLEX MICROSTRUCTURE *IRE NASU*
- S.S. Sekretaryov**, MODELING AND ANALYSIS OF 100 KW COAXIAL MICROWAVE PLASMATRON DESIGN *KhNU*
- I.O. Sukharevsky**<sup>1</sup>, **S.V. Kukobko**<sup>2</sup>, RADIATION PATTERNS OF 2D REFLECTOR-TYPE ANTENNA SYSTEM WITH SHARP-NOSE DIELECTRIC RADOME *KhNU, JRIAF*
- V.L. Pazynin**, **M.M. Khruslov**, THE FEATURES OF RADIATION PATTERN FORMATION OF THE MONOPOLE ANTENNA WITH FINITE SCREENS *IRE NASU*
- R.E. Chernobrovkin**, PROBE DESIGN NEAR-FIELD MEASUREMENTS IN THE MILLIMETRE WAVELENGTH RANGE *IRE NASU*

- E.N. Shaforost**, **A.A. Barannik**, **I.A. Shipilova**, RADIALLY TWO-LAYERED QUASI-OPTICAL DIELECTRIC RESONATORS WITH ETHYL ALCOHOL AND WATER *IRE NASU*
- M.V. Ivakhnichenko**, METHOD OF FRACTIONAL OPERATORS IN THE PROBLEM OF RADIATION IN PRESENCE OF PLANE INTERFACE *IRE NASU*

**POSTERS: THEORETICAL AND EXPERIMENTAL ELECTRODYNAMICS**

**Lobby of the Council Room** **Thursday, Dec. 15, 2005** **12:30 – 13:30**

- I.L. Pankratova**, HOMOGENIZATION OF MAXWELL'S EQUATIONS IN DOMAINS WITH GRIDS *IRE NASU*
- A.F. Rozvadovskiy**, APPLICATION OF THE WAVEGUIDE MODEL FOR CALCULATION OF PARASITIC RADIATION OF POWER-LINE COMMUNICATIONS *«Optima-Service»*
- B. Blagitko**, **V. Brigylevich**, **I. Jarmolovskyj**, IDENTIFICATION DETERMINATE SIGNALFROM MEDLEY SYGNAL-NOISE WITH USING OF DUFING OSCILLATORS *LNU*

**SECTION: SOLID STATE RADIOPHYSICS - 1**

**Conference Hall** **Thursday, Dec. 15, 2005** **8:45 – 10:30**

- T. V. Bagmut**, MAGNETORESISTANCE A MILLIMETER SPECTROSCOPY GRANULOUSE NANOSTRUCTURES  $\text{Co}_x(\text{NbLiO}_3)_{1-x}$  *IRE NASU*
- V.V. Zavrazhin**, THE INFLUENCE OF HIGH TEMPERATURES ON THE DYNAMICS OF VARIATION OF COAL NMR-SPECTRA *IPMP NASU*
- I. Bolesta**<sup>1</sup>, **G. Fafilek**<sup>1</sup>, **I. Karbovnyk**<sup>2</sup>, ANALYSIS OF THE ELECTRICAL TRANSPORT MECHANISMS IN  $\text{Ag}_2\text{Mel}_4$  ( $\text{Me}=\text{Hg}, \text{Cd}$ ) SUPERIONIC CONDUCTORS VIA IMPEDANCE SPECTROSCOPY *LNU, VUT ICTA*
- E. V. Kovaleva**, **M. F. Bulaniy**, **S. A. Omelchenko**, THE ESR SPECTRA FEATURES OF  $\text{ZnS}$  CRYSTALS DOPED BY Li *DNU*
- O. Kravchyna**<sup>1</sup>, **M. Orendach**<sup>2</sup>, *et al.*, MAGNETIC PROPERTIES OF QUASI-TWO-DIMENSIONAL  $S = 1/2$  HEISENBERG MAGNET  $(\text{CuSO}_4)_2(\text{en})2\text{H}_2\text{O}$  *ILTPE NASU, CLTP*
- A.A. Bulgakov**, **V.K. Kononenko**, **O.V. Kostilyova**, THE INFLUENCE OF THE DISSIPATION ON THE SEMICONDUCTOR SUPERLATTICE ZONE STRUCTURE IN THE MAGNETIC FIELD *IRE NASU*
- Yu.E. Natanzon**<sup>1,2</sup>, **L.S. Brizhik**<sup>2</sup>, *et al.*, DYNAMICS OF DAVYDOV'S SOLITONS IN ELECTROSTATIC FIELD *NU «KMA», ITP NASU*

**SECTION: SOLID STATE RADIOPHYSICS - 2**

**Conference Hall** **Thursday, Dec. 15, 2005** **11:00 – 12:30**

- A.V. Kats**, **M.L. Nesterov**, **A.Yu. Nikitin**, *et al.*, SURFACE JOSEPHSON PLASMA WAVES IN LAYERED SUPERCONDUCTORS AND THEIR TUNNELING EXCITATION *IRE NASU*
- A.V. Kats**, **M.L. Nesterov**, **A.Yu. Nikitin**, TRANSFORMATION OF LIGHT POLARIZATION UNDER RESONANCE EXCITATION OF SURFACE PLASMONS IN MODULATED METAL FILMS *IRE NASU*
- A.A. Bulgakov**<sup>1</sup>, **Y.A. Olkhovskiy**<sup>2</sup>, **O.V. Shramkova**<sup>1</sup>, ZONAL SPECTRUM OF HELICONS IN THE SEMICONDUCTOR LAYERED-PERIODICAL STRUCTURE *IRE NASU, NTU «KHPI»*
- O. V. Khmelenko**, **S. O. Omelchenko**, THE INFLUENCE OF THERMAL ANNEALING ON THE CONCENTRATION OF  $\text{Mn}^{2+}$  IONS IN ZIN CRYSTALS *DNU*

- |     |  |  |                             |
|-----|--|--|-----------------------------|
| 12. | <u>M.K. Khodzitskiy</u> <sup>1</sup> ,<br>S. Yu. Polevoy <sup>2</sup> ,<br>S.V. Chernovtsev <sup>1,2</sup> | APPLICATION OF ELECTRONIC SPIN RESONANCE IN INVESTIGATION OF PROPERTIES OF SPIN – VALVE NANOSTRUCTURES | <i>IRE NASU, KhNURE</i>     |
| 13. | <u>S.V. Chernovtsev</u> ,<br>M.K. Khodzitskiy,<br>S.V. Nedukh  | THE CONTROL OF SPECTRAL PROPERTIES OF MAGNETIC STRATIFIED PERIODICAL STRUCTURE                         | <i>IRE NASU</i>             |
| 14. | <u>A. Stervoyedov</u> ,<br>V. Farenik  | X-RAY PHOTOELECTRON SPECTROSCOPY OF ULTRATHIN FUNCTIONAL FILMS FOR NANO-ELECTRONICS APPLICATIONS       | <i>SCPT MESU &amp; NASU</i> |

**POSTERS: SOLID STATE RADIOPHYSICS**  
**Lobby of the Council Room Wednesday, Dec. 14, 2005 14:45 – 16:15**

- |     |  |   |                       |
|-----|--|---|-----------------------|
| 15. | B Andriyevsky <sup>1</sup> , W. Ciepluch-Trojanek <sup>1</sup> ,<br><u>S. Velgosh</u> <sup>2</sup>   | BAND ENERGY STRUCTURE OF Ag <sub>2</sub> CdI <sub>4</sub> SUPERIONIC COMPOUND   | <i>TUK, LNU</i>       |
| 16. | <u>I. V. Gomiiko</u> , A. V. Degtyaryov, A. Yu. Lyashkov, <i>et al.</i>                              | ELECTRICAL PROPERTIES OF POSISTOR POLYETHYLENE-GRAPHITE COMPOUNDS AND THEIR DEPENDENCE ON THE PRODUCTION TECHNIQUE                  | <i>DNU</i>            |
| 17. | <u>D.N. Zubova</u> <sup>1</sup> ,<br>T.M. Slipchenko <sup>2</sup> ,<br>V.A. Yampol'skii <sup>2</sup> | THE SIZE EFFECT CAUSED BY THE NONLINEAR INTERACTION OF INCIDENT AND REFLECTED WAVE IN HARD SUPERCONDUCTOR                           | <i>KhNU, IRE NASU</i> |
| 18. | T.S. Kulay   | ON A FREQUENCY DEPENDENCE OF THE ELECTRICAL CONDUCTIVITY OF Ag <sub>2</sub> CdI <sub>4</sub> IN FAR INFRARED SPECTRAL RANGE         | <i>LNU</i>            |
| 19. | <u>K.S. Omelchenko</u> ,<br>M.D. Volnyanskii   | PARAMAGNETIC CENTERS OF Mn IN LiNaGe <sub>2</sub> O <sub>3</sub> CRYSTALS   | <i>DNU</i>            |
| 20. | <u>A.I. Rykova</u> ,<br>A.S. Cherny,<br>E.N. Khatsko   | RELAXATION PROCESSES IN QUASI ONE DIMENSIONAL ISING MAGNET Co[(CH <sub>3</sub> ) <sub>3</sub> NH]Cl <sub>3</sub> *2H <sub>2</sub> O | <i>ФТИИТ</i>          |
| 21. | V.A. Belous,<br>I.M. Neklyu-dov,<br><u>M.G. Holomeev</u> , <i>et al.</i>                             | NUCLEAR TRANSMUTATION DOPING OF PHOTOCATALYTIC TiO <sub>2</sub> FILM COATINGS WITH TRANSITION 3D METALS                             | <i>NSC «KIPT»</i>     |

**SECTION: PLASMAS AND MICROWAVE ELECTRONICS - 1**  
**Council Room Thursday, Dec. 15, 2005 8:45 – 10:30**

- |    |   |  |                             |
|----|---|--|-----------------------------|
| 1. | T.L. Volkhova   | THE TWO-DIMENSIONAL MODEL OF SUPERHIGH FREQUENCIES AUTOPHASE AMPLIFIER   | <i>NTU «KPI»</i>            |
| 2. | N.A. Azarenkov,<br><u>A.V. Gapon</u>  | GAS DISCHARGE SUSTAINED BY SURFACE WAVES PROPAGATING ALONG HYBRID SYSTEMS  | <i>KhNU</i>                 |
| 3. | <u>G.M. Gorbik</u> ,<br>K.V. Ilyenko  | THE CYLINDRICAL WAVEGUIDE EXCITATION BY A POINT CHARGE MOVING ALONG AN ARBITRARY TRAJECTORY                                    | <i>IRE NASU</i>             |
| 4. | <u>V.O. Goryashko</u> <sup>1</sup> ,<br>K.V. Ilyenko <sup>1</sup> ,<br>A.N. Opanasenko <sup>2</sup> | UBITRON UNDER THE GYROTRON MODE OF OPERATION   | <i>IRE NASU, NSC «KIPT»</i> |
| 5. | <u>V.N. Zheltov</u> ,<br>A.V. Varavin,<br>A.S. Plevako  | INVESTIGATIONS OF RESONANCE CHARACTERISTICS OF DRO ELECTRODYNAMIC SYSTEMS WITH AUTOMATIZED MEASURING SYSTEM IN 4 MM WAVE RANGE | <i>IRE NASU</i>             |
| 6. | M.I. Ayzatskiy,<br><u>K.Yu. Kramarenko</u>  | CALCULATION OF COUPLING COEFFICIENTS IN ACCELERATING STRUCTURES  | <i>NSC «KIPT»</i>           |
| 7. | <u>A.N. Kuleshov</u> ,<br>B.P. Yefimov,<br>V.V. Zavertanniy,<br>V.I. Karpenko                       | MAGNETIC FOCUSING SYSTEM WITH HOMOGENEOUS FIELD FOR UHF DEVICES  | <i>IRE NASU</i>             |

**SECTION: PLASMAS AND MICROWAVE ELECTRONICS - 2**  
**Council Room Thursday, Dec. 15, 2005 11:00 – 12:30**

- |     |  |  |                 |
|-----|--|--|-----------------|
| 8.  | <u>Yu.M. Litvin</u> ,<br>D.O. Mazunov,<br>A.A. Klimovskay  | ELECTRON FIELD EMISSION FROM PHOSPHOROUS DOPED SILICON NANOWHISKERS  | <i>ISP NASU</i> |
| 9.  | <u>D.O. Mazunov</u> ,<br>Yu.M. Litvin                      | POSSIBILITY OF MICROWAVE OSCILLATIONS GENERATION IN ANNEALED THIN SiO <sub>2</sub> FILMS WITH SILICON NANOCRYSTALS | <i>ISP NASU</i> |
| 10. | S.V. Mizrakhly   | AUTOMATED SUBMILLIMETER LASER POWER STABILIZING  | <i>IRE NASU</i> |
| 11. | <u>V.P. Ruban</u> ,<br>V.N. Petrechenko                    | THE TESTING SYSTEM FOR SAMPLING MEASURING UNITS  | <i>IRE NASU</i> |
| 12. | V.L. Pazynin,<br><u>K.Yu. Sirenko</u>                      | THE NEW SCHEME OF THE "SLICER" FOR RADIATORS OF PICOSECOND PULSES  | <i>IRE NASU</i> |
| 13. | <u>M.O. Khorunzhiy</u> ,<br>A.N. Kuleshov,<br>B.P. Yefimov | EXPERIMENTAL INVESTIGATIONS OF DISCHARGE PROCESSES IN WATER SOLUTIONS WITH ADMIXTURES                              | <i>IRE NASU</i> |
| 14. | <u>E.M. Khutoryan</u> ,<br>A.I. Tsvyk                      | INTERACTION OF ELECTRON BEAM WITH SLOW WAVE SYSTEMS FIELDS WITH ACCOUNT OF LOSS BY RADIATION                       | <i>IRE NASU</i> |

**SECTION: WAVE PROPAGATION AND REMOTE SENSING - 1**  
**Conference Hall Thursday, Dec. 15, 2005 13:30 – 15:30**

- |    |  |   |                           |
|----|--|---|---------------------------|
| 1. | V.P. Burmaka   | RADAR OBSERVATIONS OF WAVE-LIKE DISTURBANCES IN IONOSPHERIC PLASMA, ACCOMPANYING LAUNCH ROCKET "PROTON" 29 MARCH 2005 | <i>II NASU &amp; MESU</i> |
| 2. | V.I. Vasylyshyn  | ESTIMATION OF SPATIAL PARAMETERS OF RADIO SIGNALS WITH USING SEPARATED SENSOR ARRAYS                                  | <i>KhAFU</i>              |
| 3. | E.I. Astafieva,<br><u>S.V. Voeykov</u> , <i>et al.</i> | GPS-DETECTING IONOSPHERIC RESPONSE TO ROCKET LAUNCHES AND EARTHQUAKES   | <i>ISTP RAS</i>           |
| 4. | <u>Ye.V. Dukhopelnikova</u> ,<br>O.O. Bezvsiilnyy      | HOMOGENEITY CRITERION FOR LEE FILTER WITH SIZE- AND SHAPE-ADAPTIVE WINDOW   | <i>IRA NASU</i>           |
| 5. | B.A. Kochetov  | OBTAINING OF DIFFRACTION IMAGE BY HOLOGRAPHIC TECHNIQUE   | <i>KhNU</i>               |
| 6. | <u>Y.V. Levadnyi</u> ,<br>A.S. Vasilev                 | COMPARISON OF EVAPORATION DUCT HEIGHT CALCULATION WITH EXPERIMENTAL DATA  | <i>IRE NASU</i>           |
| 7. | <u>I.V. Lutsenko</u> ,<br>I.V. Popov, <i>et al.</i>    | SPECTRAL METHODS OF SECONDARY SOURCE CHARACTERISTICS ESTIMATION IN A MULTYRAY CHANNEL                                 | <i>IRE NASU</i>           |
| 8. | M.V. Lyashenko   | DYNAMIC PROCESSES PARAMETERS IN IONOSPHERIC PLASMA  | <i>II NASU &amp; MESU</i> |

**SECTION: WAVE PROPAGATION AND REMOTE SENSING - 2**  
**Conference Hall Thursday, Dec. 15, 2005 16:00 – 18:00**

- |     |  |   |                  |
|-----|--|---|------------------|
| 9.  | <u>I.V. Mazura</u> ,<br>F.Y. Yanovsky                                | DIFFERENTIAL DOPPLER VELOCITY: RADAR PARAMETER FOR ESTIMATING TURBULENCE INTENSITY                      | <i>NAU</i>       |
| 10. | <u>V.V. Marchuk</u> ,<br>F.J. Yanovsky                               | DOPPLER-POLARIMETRIC PARAMETERS OF TURBULENCE IN PRECIPITATION ZONE                                     | <i>NAU</i>       |
| 11. | <u>Y.P. Ostrovsky</u> <sup>1,2</sup> ,<br>F.J. Yanovsky <sup>2</sup> | PRECIPITATION AND TURBULENCE INTENSITY CLASSIFICATION BASED ON DOPPLER-POLARIMETRIC RADAR DATA ANALYSIS | <i>NAU, TUHH</i> |

**V Kharkiv Young Scientist Conference "Radiophysics and Microwave Electronics", Kharkiv, Dec. 14-16, 2005.**

12.	S. A. Pazura	EFFECTS OF TWO SUCCESSIVE EXTREME MAGNETIC STORMS ON NOVEMBER, 7-8 AND 9-10, 2004 FROM KHARKIV INCOHERENT SCATTER RADAR OBSERVATIONS	<i>II NASU &amp; MESU</i>
13.	A. Pitertsev	THE PROBABLE ICING ZONES DETECTION WITH REMOTE SENSING OF METEOROLOGIC OBJECTS	<i>NAU</i>
14.	I.V. Popov, I.V. Lutsenko, V.I. Lutsenko	EMPLOYMENT OF DETECTION – MEASURING METHODS FOR THE MULTIRAY CHANNELS CHARACTERIZATION ANALYSES	<i>IRE NASU</i>
15.	S.I. Khomenko, D.D. halameyda, I.S. Turgenev	APPLICATION OF GEOSTATIONARY SATELLITE RADIATION FOR REFRACTION PROPERTIES OF ATMOSPHERE ESTIMATION	<i>IRE NASU</i>
16.	Y.V. Tcherniak, V.N. Lysenko	THE IONOSPHERE PARAMETERS DETERMINATION ON SPACE WEATHER VARIATIONS	<i>II NASU &amp; MESU</i>

**POSTERS: WAVE PROPAGATION AND REMOTE SENSING**

**Lobby of the Council Room Thursday, Dec. 15, 2005 12:30 – 13:30**

17.	E.И. Березин	SOME PARTICULARITIES OF THE INFLUENCE OF THE HIGH TEMPERATURE CHANNELS AT THE SONAR WORK PARAMETERS	<i>IRE NASU</i>
18.	E.L. Afraimovich, V.A.Karachenshev S.V.Voeykov, <i>et al.</i>	THE INFLUENCE OF GEOMAGNETIC DISTURBANCES ON THE OPERATION QUALITY OF THE GPS RECEIVERS	<i>ISTP RAS</i>
19.	E.L. Afraimovich, V.A.Karachenshev S.V. Voeykov	GPS-TESTING OF THE TRANSIONOSPHERIC RADIOCHANNEL IN L - FREQUENCY RANGE	<i>ISTP RAS</i>
20.	A.V. Klovov	REMOTE SENSING OF THE FOREST TRACTS	<i>TTU</i>
21.	S.N. Novik	THE EXPERIMENTAL STUDY OF RADIOWAVE PROPAGATION OF SHF RANGE IN THE FOREST	<i>TTU</i>
22.	O.A. Orlenko <sup>1</sup> , S.R. Truskavetsky <sup>2</sup> , M.M.Gichka <sup>2</sup> , <i>et al.</i>	USING VIDEOPULSE GPR FOR INVESTIGATION OF LAYER STRUCTURE OF SOIL	<i>IRE NASU, NSC «ISSAR» UAAS</i>

**SECTION: BIOPHYSICS - 1**

**Council Room Thursday, Dec. 15, 2005 13:30 – 15:30**

1.	Ju. N. Bliznyuk	INVESTIGATION OF THE BINDING OF ACTINOCIN DERIVATIVES WITH SIDE CHAINS OF DIFFERENT LENGTH TO DNA BY RAMAN SPECTROSCOPY AND SPECTROFOTOMETRY	<i>IRE NASU</i>
2.	E.N.Bobrova, L.V.Tsymbal, A.V.Zinchenko	ACTION OF LOW TEMPERATURES AND NONELECTROLYTES ON PERMEABILITY OF ERYTHROCYTES MEMBRANES FOR PARAMAGNETIC IONS	<i>IPCC NASU</i>
3.	L.V. Budko <sup>1</sup> , Ju. N. Bliznyuk <sup>2</sup>	RAMAN TECHNIQUE APPLICATION FOR INVESTIGATION OF ETHIDIUM BROMIDE – DNA COMPLEXES	<i>KhNU, IRE NASU</i>
4.	T.M.Bulanaya <sup>1</sup> , T.V.Kolesnik <sup>2</sup>	INFORMATION TECHNOLOGY OF THE ANALYSIS OF DATA OF BIFUNCTIONAL SIMULTANEOUS MONITORING EKG AND ARTERIAL PRESSURE IN PATIENTS	<i>DNU, DSMA</i>
5.	E.L. Ermak <sup>1,2</sup> , E.B. Kruglova <sup>2</sup>	NEW ASPECTS OF ETHIDIUM BROMIDE INTERACTION WITH CALF THYMUS DNA	<i>KhNU, IRE NASU</i>
6.	E.N. Zhivotova <sup>1</sup> , E.V. Dukhopelnykov <sup>2</sup>	INVESTIGATION OF WATER SOLUTIONS OF OXYETHYLATED GLYCEROL (N = 30) BY THE METHODS OF DSC AND IR-SPECTROSCOPY	<i>IIKK HAHY, IRE NASU</i>

**V Kharkiv Young Scientist Conference "Radiophysics and Microwave Electronics", Kharkiv, Dec. 14-16, 2005.**

7.	V.M. Ioffe, G.P. Gorbenko, Ye.A. Domanov	PYRENE LATERAL DIFFUSION IN LIPID BILAYER: EFFECT OF MODEL MEMBRANE COMPOSITION	<i>KhNU</i>
8.	E.A. Minakova <sup>1</sup> , E.B. Kruglova <sup>2</sup>	CALCULATED AND EXPERIMENTAL COMPARISON OF COMPLEXATION OF ACTINOCIN DERIVATIVES WITH DIFFERENT CONSTRUCTION OF SIDE CHAINS WITH DNA MOLECULES	<i>IRE NASU</i>

**SECTION: BIOPHYSICS - 2**

**Council Room Thursday, Dec. 15, 2005 16:00 – 18:00**

9.	K.V.Miroshnychenko, A.V. Shestopalova	THE CALCULATION OF PARTIAL ATOMIC CHARGES FOR THE DIVALENT CATION OF ACTINOCIN DERIVATIVE ACT3	<i>IRE NASU</i>
10.	V.V. Molokova, M.E. Cherkun, <i>et al.</i>	EPR SPECPR OF TEA	<i>DNU</i>
11.	I.A. Musina, E.V.Onischenko, I.A. Belyh, <i>et al.</i>	RESEARCH OF INFLUENCE OF OZONE ON BIOLOGICAL SYSTEMS BY METHODS OF OPTICAL SPECTROSCOPY	<i>IPCC NASU</i>
12.	S. N. Perepelitza <sup>1</sup> , S. N. Volkov <sup>2</sup>	DNA AS AN IONIC CRYSTAL	<i>GNU, ITP NASU KhNU</i>
13.	N. Sergeyeva <sup>1</sup> , N. Styervoyedov <sup>2</sup> , V. Tovstiak <sup>1</sup> , <i>et al.</i>	COMPLEX FOR STUDYING PHYSICAL AND PHYSICOCHEMICAL BASICS OF PHOTODYNAMIC DIAGNOSTIC AND THERAPY	
14.	A.S. Khrebtova	MELTING OF THE DNA COMPLEXES WITH ACTINOCIN DERIVATIVE (ActIII) AT THE DIFFERENT DNA-LIGAND CONCENTRATION RATIO	<i>IRE NASU</i>
15.	V.V. Chagovets, M.V. Kosevich, S.G. Stepanian	STUDYING OF INTERACTION OF Na <sup>+</sup> AND Cl <sup>-</sup> IONS WITH ADENINE AND CYTOSINE NITROGEN BASES	<i>ILTPE NASU</i>
16.	N.V. Sheykina <sup>1</sup> , N.I. Bogatina <sup>2</sup>	THE DEPENDENCE OF GENERATED BY BIOLOGICAL OBJECTS MAGNETIC AND ELECTRIC FIELDS ON THE PHYSICAL PROPERTIES OF MATERIALS SURROUNDING THE OBJECT	<i>KhNU, ILTPE NASU</i>

**POSTERS: BIOPHYSICS**

**Lobby of the Council Room Wednesday, Dec. 14, 2005 14:45 – 16:15**

17.	D.A. Beshnova, M.P. Evstigneev	COOPERATIVITY EFFECTS UPON AGGREGATION OF DAUNOMYCIN WITH AROMATIC DRUG MOLECULES	<i>SHTU</i>
18.	Ye.P. Boryskina	ENTHALPY OF INTERPEPTIDE HYDROGEN BONDS IN COLLAGEN STRUCTURES	<i>IRE NASU</i>
19.	D.P. Voronin, A.G. Rybakov	APPLICATION OF THE MASS SERVICE THEORY FOR THE ANALYSIS OF METABOLIC PROCESSES	<i>SHTU</i>
20.	V.P. Evstigneev, A.O. Rozvadovska, M.P. Evstigneev	<sup>1</sup> H NMR ANALYSIS OF INTERACTION BETWEEN NICOTINAMIDE AND AROMATIC ANTHRACYCLINE ANTITUMOUR ANTIBIOTICS	<i>SHTU</i>
21.	M.P. Evstigneev <sup>1</sup> , A.A. Hernandez Santiago <sup>2</sup> , <i>et al.</i>	INFLUENCE OF THE HETERO-ASSOCIATION ON DNA OLIGOMER BINDING PARAMETERS OF ANTITUMOUR ANTIBIOTICS	<i>SHTU, AUP</i>
22.	V.V. Kostjukov, L.N. Dimant, V.I. Pahomov	STRUCTURAL CHARACTERISTICS OF INTERCALATION COMPLEX OF DEOXYHEPTA-NUCLEOTIDE HAIRPIN d(CCGAAGC) WITH ANTHRACYCLINE ANTIBIOTIC DAUNOMYCIN	<i>SHTU</i>

**V Kharkiv Young Scientist Conference "Radiophysics and Microwave Electronics", Kharkiv, Dec. 14-16, 2005.**

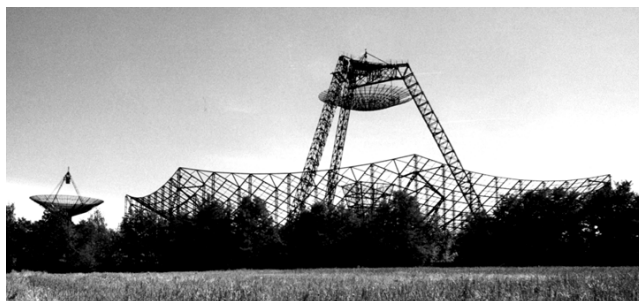
- |     |   |   |                   |
|-----|---|---|-------------------|
| 23. | <u>P. Liu</u> ,<br>A.V. Finashin,<br>G.P.Gorbenko, <i>et al</i> | INTERACTION OF A SERIES OF STYRYLPYRIDINIUM<br>PROBES WITH APO-GLUCOSE OXIDASE                                | <i>KhNU</i>       |
| 24. | <u>E.L. Usenko</u> ,<br>V.A. Sorokin,<br>V.A. Valeev            | STRUCTURAL TRANSITION IN [(POLY I-POLY C)+Mg <sup>2+</sup> ],<br>REALIZED BY FIRST-KIND PHASE TRANSITION TYPE | <i>ILTPE NASU</i> |
| 25. | <u>I. Yarynovska</u> ,<br>O. Bilyi                              | PHYSICAL PRINCIPLES OF FORMATION OF KIDNEY STONES<br>AND MECHANISMS OF THEIR EDUCATION                        | <i>LNU</i>        |

**Social Program**

**Friday, Dec. 16, 2005 9:30 – 14:00**



Bus excursion to the unique experimental research center "Incoherent Scatter Observatory" of the Institute of Ionosphere NAS and MES of Ukraine which is "the National Property of Ukraine". The center is equipped with two incoherent scatter radars.



**Social Program**

**Friday, Dec. 16, 2005 11:00 – 12:30**

Excursion to the **Museum of Nature of the Kharkov National University**. The Museum was founded in 1801. Since the date of its foundation, it has grown from a small laboratory of the natural history up to the large scientific and educational center. Nowadays, the Museum occupies more than 5 000 sq. meters and demonstrates more than 250 000 exhibits divided in five sections: geology, invertebrates, evolution of the organic world and conservancy.



Photo: © A. Boriskin, 2004.

**Awards and Closing Ceremony**

**Friday, Dec. 16, 2005 17:00 – 17:30**

The Awards & Closing Ceremony.

**Social Program**

**Friday, Dec. 16, 2005 17:30 – 18:00**

Excursion to the **Museum of the Institute of Radiophysics and Electronics of NAS Ukraine**.

**Social Program**

**Friday, Dec. 16, 2005 18:00 – 22:00**

Banquet.