

**THE EIGHTH INTERNATIONAL KHARKOV SYMPOSIUM
ON PHYSICS AND ENGINEERING OF MICROWAVES,
MILLIMETER AND SUBMILLIMETER WAVES**

**WORKSHOP ON TERAHERTZ TECHNOLOGIES AND
RADIOSPECTROSCOPY OF COMPLEX MEDIA**

**WORKSHOP ON COMPLEX CONDUCTIVITY AND WAVE
SYMMETRY OF FE-BASED SUPERCONDUCTORS**



SYMPOSIUM PROGRAM

Kharkov, Ukraine, June 23-28, 2013

Invitation

Dear Colleague,

We welcome you to participate in the Eighth International Kharkov Symposium on Physics and Engineering of Microwaves, Millimeter and Submillimeter Waves (MSMW'13), Workshop on Terahertz Technologies and Radiospectroscopy of Complex Media (TERATECH'13) and Workshop on Complex Conductivity and Wave Symmetry of Fe-Based Superconductors (CCWS'13) to be held in Kharkov, Ukraine during June 23 -28, 2013.

Within the framework of the Symposium young scientists' papers awards will be held. They are sponsored by European Microwave Association and Organizing Committee of Memorial Event dedicated to the 90th anniversary of V. P. Shestopalov, academician of NAS of Ukraine, founder and the first chairman of MSMW Symposiums.

We look forward to your contributions to make MSMW'13 a success.

Hoping to see you in Kharkov in June, 2013.

Yours sincerely,

*Prof. Vladimir M. Yakovenko
MSMW'13 Chairman*



MSMW'13 Organizers and Sponsors

Scientific Council of the National Academy of Sciences of Ukraine on Radio-Physics and Microwave Electronics

in cooperation with

- *A. Usikov* Institute of Radio-Physics and Electronics of NAS of Ukraine (IRE NASU)
- Institute of Radio Astronomy of NAS of Ukraine (IRA NASU)
- *V. Karazin* Kharkov National University (KhNU)
- Kharkov National University of Radio-Electronics (KhNURE)
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- National URSI Committee of Ukraine

Technically co-sponsors

- IEEE Microwave Theory and Techniques Society

We wish to thank the following for their contribution to the success of this symposium

- IEEE AES/AP/ED/EMB/GRS/MTT/NPS Societies East Ukraine Joint Chapter
- IEEE AP and MTT Societies
- European Microwave Association (EuMA)
- Organizing Committee of V. P. Shestopalov Memorial Event

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Introduction

The Eighth International Kharkov Symposium on Physics and Engineering of Microwaves, Millimeter and Submillimeter Waves (MSMW'13), Workshop on Terahertz Technologies and Radiospectroscopy of Complex Media (TERATECH'13), Workshop on Complex Conductivity and Wave Symmetry of Fe-based Superconductors (CCWS'13) will be held in Kharkov, Ukraine on June 23-28, 2013. They are organized by the National Academy of Sciences of Ukraine (NASU) Scientific Council on Radio Physics and Microwave Electronics and the A. Usikov Institute of Radiophysics and Electronics of NASU. IRE NASU has always been one of the major research organizations in this field. It was established in 1955 with the main tasks of developing the mm-wave vacuum sources, radars, and hot-plasma diagnostic systems for Tokamak controlled fusion machines; later it was involved in the development of in-orbit remote sensing and communication systems. Main collaborating organizations are the Institute of Radio Astronomy of NASU, which branched off IRE in 1985 and leads research in the mm-wave radars and radio astronomy, Institute of Magnetism of NASU and Ministry of Education and Science, Kharkov National University (KhNU), the third oldest (since 1804) and highly reputed university in natural sciences in Ukraine, Kharkov National University of Radio Electronics (KhNURE), the only university in Ukraine entirely in electronics and computers, three Ukrainian IEEE Joint Chapters, and the Ukrainian National URSI Committee. MSMW symposia were held several times in Kharkov since 1978 as regular FSU meetings on mm and submm waves and applications. They have become a major event in this area and since 1991 have been known as the International Kharkov Symposium MSMW.

MSMW'13 Sessions

Session WT	Workshop on Terahertz Technologies and Spectroscopy of Complex Media
Session WS	Workshop on Complex Conductivity and Wave Symmetry of Fe-based Superconductors
Session A	Electromagnetic Theory and Numerical Simulation
Session B	Microwave Solid State Physics and Applications
Session C	Wave Propagation, Radar, Remote Sensing and Signal Processing
Session D	Vacuum Electronics
Session E	Microwave and Mm Wave Engineering
Session F	Radio Astronomy and Study of the Earth Environment
Session G	Scientific, Industrial and Biomedical Applications
Session H	R-functions, Atomic Functions, Wavelets, Fractals
Session J	Microwave Superconductivity

Table of MSMW'13 at a Glance Papers Geography

Entity	Papers
<i>Kharkov</i>	87
<i>Ukraine (non Kharkov)</i>	24
<i>Russia</i>	30
<i>Belarus</i>	1
<i>France</i>	2
<i>UK</i>	4
<i>USA</i>	1
<i>Germany</i>	2
<i>Japan</i>	1
<i>Mexico</i>	8
<i>Turkey</i>	1
<i>Taiwan</i>	1
<i>Sweden</i>	1
<i>Australia</i>	1
<i>China</i>	1
<i>Italy</i>	1
<i>Ukraine+Russia</i>	8
<i>Ukraine+Belarus</i>	3
<i>Ukraine+Germany</i>	6
<i>Ukraine+France</i>	2
<i>Ukraine+UK</i>	3
<i>Ukraine+Japan</i>	1
<i>Ukraine+Turkey</i>	1
<i>Ukraine+China</i>	3
<i>Ukraine+Poland</i>	2
<i>Ukraine+Finland</i>	1
<i>Ukraine+Sweden</i>	1
<i>Ukraine+Portugal</i>	1
<i>Ukraine+Canada</i>	1
<i>Ukraine+USA</i>	1
<i>Ukraine+Czech Republic+Georgia</i>	1
<i>Ukraine+Czech Republic+UK</i>	1
<i>Ukraine+China+USA</i>	1
<i>Ukraine+Poland+France</i>	1
<i>Ukraine+Mexico+Austria+Russia</i>	1
<i>Ukraine+Germany+Russia</i>	1
<i>Belarus+Kazakhstan+Russia</i>	1
<i>Russia+Taiwan</i>	1
<i>Russia+Belarus</i>	1
<i>Russia+Philippines</i>	1
Total	210

MSMW'13 at a Glance

<i>Monday, June 24</i>				
10.00-18.00	Registration of MSMW'13 Participants Lobby hall, 1 st floor			
<i>Tuesday, June 25</i>				
9.00-9.30	OPENING CEREMONY Sinelnikov Room, 7 th floor			
9.30-10.30	PLENARY SESSION: Invited Papers INV.1, INV.2 Sinelnikov Room, 7 th floor			
10.30-11.30	<i>Coffee Break</i>			
11.30-13.00	PLENARY SESSION: Invited Papers INV.3, INV.4, INV.5 Sinelnikov Room, 7 th floor			
13.00-14.30	<i>Lunch</i>			
14.30-16.00	SESSION WT Workshop on Terahertz Technologies and Spectroscopy of Complex Media Sinelnikov Room, 7 th floor	SESSION A Electromagnetic Theory and Numerical Simulation Council Room # 4-65, 4 th floor	SESSION C Wave Propagation, Radar, Remote Sensing and Signal Processing Room #3-9, 3 th floor	SESSION G Scientific, Industrial and Biomedical Applications Rector Room #2-49, 2 nd floor
	Invited Papers INV.WT-1 Oral Papers	Invited Papers INV.A-1 Oral Papers	Oral Papers	Oral Papers
16.00-16.30	<i>Coffee Break</i>			
16.30-18.00	Oral Papers	Oral Papers	Oral Papers	Oral Papers
18.00-19.00	Posters: SESSION WT, SESSION A, SESSION C, SESSION G Lobby of assembly hall, 2 nd floor			
19.00	WELCOME PARTY			

Wednesday, June 26				
9.00-10.30	PLENARY SESSION: Invited Papers INV.6, INV.7, INV.8 Sinelnikov Room, 7 th floor			
10.30-11.30	Coffee Break			
11.30-13.00	PLENARY SESSION: Invited Papers INV.9, INV.10, INV.11 Sinelnikov Room, 7 th floor			
13.00-14.30	Lunch			
14.30-16.00	SESSION J Microwave superconductivity Rector Room #2-49, 2 nd floor	SESSION B Microwave Solid State Physics and Applications Room #3-9, 3 th floor	SESSION D Vacuum electronics Sinelnikov Room, 7 th floor	SESSION H R-functions, Atomic Functions, Wavelets, Fractals Council Room # 4-65, 4 th floor
	Oral Papers	Oral Papers	Invited Papers INV.D-1, INV.D-2, INV.D-3 Oral Papers	Invited Papers INV.H-1, INV.H-2 Oral Papers
16.00-16.30	Coffee Break			
16.30-18.00	SESSION WS Workshop on Complex Conductivity and Wave Symmetry of Fe-based Superconductors Rector Room #2-49, 2 nd floor	Oral Papers	Oral Papers	Oral Papers
	Invited Papers INV.WS-1, INV.WS-2, INV.WS-3, INV.WS-4 Oral Papers			
18.00-19.00	Posters: SESSION WS, SESSION B, SESSION D, SESSION H, SESSION E Lobby of assembly hall, 2 nd floor			
19.00	CONCERT			
20.00	MSMW'13 BANQUET			

Thursday, June 27		
09.00-10.30	SESSION E Microwave and MM Wave Engineering Rector Room #2-49, 2 nd floor	SESSION F Radio astronomy and study of the Earth environment Room #3-9, 3 rd floor
	Invited Paper INV.E-1, Oral Papers	Oral Papers
10.30-11.00	Coffee Break	
11.00-13.00	Oral Papers	Oral Papers
13.00-14.30	Lunch	
14.30-15.30	PLENARY SESSION: Invited Papers INV.12, INV.13 Sinelnikov Room, 7 th floor	
15.30-16.00	CLOSING CEREMONY Sinelnikov Room, 7 th floor	

Friday, June 28	
10.00-15.00	SYMPOSIUM BARBEQUE

Opening Ceremony **9.00-9.30**

Plenary Session **Chair: K. Ilyenko**

Invited Papers **9.30-10.30**

- INV.1 **TAMM STATES AND VARIETY OF THEIR ANALOGS IN ELECTRODYNAMICS**
S. I. Tarapov, D. P. Belozorov, *Kharkov, Ukraine*
- INV.2 **DEVELOPMENT OF HIGH FREQUENCY GYROTRONS IN FIR FU COVERING SUB-THz TO THz RANGE FOR APPLICATIONS TO HIGH POWER THz SPECTROSCOPY**
Toshitaka Idehara, S. P. Sabchevski, *Fukui-shi, Japan*

COFFEE BREAK **10.30-11.30**

Invited Papers **Chair: N. Cherpak**

Invited Papers **11.30-13.00**

- INV.3 **HIGH-HARMONIC THz GYROTRONS AND GYRO-MULTIPLIERS**
 I. V. Bandurkin, V. L. Bratman, A. E. Fedotov, Yu. K. Kalynov, A. V. Savilov,
Nizhny Novgorod, Russia
- INV.4 **CONTROL OF ELECTROMAGNETIC WAVES IN METAMATERIALS: FROM MICROWAVES TO OPTICS**
Y. S. Kivshar, *Canberra, Australia*
- INV.5 **POWERFUL FREE-ELECTRON MASERS WITH NOVEL BRAGG RESONATORS**
N. Yu. Peskoy, N. S. Ginzburg, A. S. Sergeev, A. V. Arzhannikov, S. L. Sinitsky,
 A. K. Kaminsky, S. N. Sedykh, *Nizhny Novgorod, Russia*

LUNCH **13.00-14.30**

Session WT **Workshop on Terahertz Technologies and Spectroscopy of Complex Media**

Invited Papers **Chair: S. Tarapov**

Invited Papers **14.30-16.00**

- INV.WT-1 **MODERN RESONATOR SPECTROSCOPY AT SubMM WAVELENGTHS**
V. Parshin, M. Tretyakov, M. Koshelev, E. Serov, *Nizhny Novgorod, Russia*

Oral Papers

- WT-1 **NONLINEAR SWITCHING OF TERAHERTZ PULSES IN THE STRUCTURES WITH GRAPHENE LAYERS**
Yu. Rapoport, V. Grimalsky, Yu. Kivshar, S. Koshevaya, C. Castrejon-M.,
Kiev, Ukraine; Cuernavaca, Mexico; Canberra, Australia; St.- Petersburg, Russia
- WT-2 **DIRECT DETECTION MM-WAVE LINEAR ANTENNA ARRAY ON THE BASE OF HEMISPHERICAL LENS ANTENNA ELEMENTS COUPLED WITH NARROW-GAP HOT-CARRIER BOLOMETERS**
V. A. Petriakov, F. F. Sizov, O. Golenkov, S. A. Dvoretzkii, D. S. Krasilnikov,
Kiev, Ukraine; Novosibirsk, Russia
- WT-3 **APPLICATION OF THE METHOD OF INTEGRAL FUNCTIONALS FOR EVALUATION OF THE CFRP POLARIZATION-FREQUENCY RESPONSE IN SUB-THz FREQUENCY RANGE AND EXPERIMENTAL VERIFICATION OF THE RESULTS**
 V. V. Yachin, V. K. Kiseliov, Ye. M. Kuleshov, P. K. Nesterov, T. L. Zinenko, *Kharkov, Ukraine*
- WT-4 **TERAHERTZ DIODE ON GALLIUM NITRIDE MICROCATODE**
N. M. Goncharuk, N. F. Karushkin, V. V. Malyshko, V. A. Orehovskiy, *Kiev, Ukraine*
- WT-5 **3D SUB-TERAHERTZ ANAGLYPHIC RADIOMETRIC IMAGING SYSTEM**
 A. Vertiy, A. Pavlyuchenko, F. Hacizade, A. Kholmatov, *Kiev, Ukraine; Gebze-Kocaeli, Turkey*

COFFEE BREAK **16.00-16.30**

Tuesday, June 25

Oral Papers

16.30-18.00

- WT-6 **DETECTION OF HIDDEN METALLIC TARGETS BY RADIOMETRIC SYSTEM AND LOW ABERRATION LENS DESIGN**
S. B. Panin, M. Tekbas, B. Turetken, *Gebze-Kocaeli, Turkey*
- WT-7 **MICROWAVE PENETRATION AND MAGNETIC STATE OF COBALT-CONTAINING MAGNETOPHOTONIC CRYSTALS**
A. B. Rinkevich, D. V. Perov, M. I. Samoylovich, S. M. Klescheva, E. A. Kuznetsov, *Ekaterinburg, Moscow, Nizhny Tagil, Russia*
- WT-8 **FREQUENCY DISPERSION OF THE POLARIZATION PROPERTIES OF CHIRAL STRUCTURE IN THE MILLIMETER WAVEBAND**
S. Yu. Polevoy, S. I. Tarapov, *Kharkov, Ukraine*
- WT-9 **STRUCTURE, OPTICAL AND ELECTRICAL PROPERTIES OF POLYURETHANE WITH CARBON NANOMATERIALS FOR PROTECTION FROM ELECTROMAGNETIC RADIATION**
F. F. Komarov, M. A. Ksenofontou, H. A. Abdullin, R. M. Krivosheev, A. G. Tkachev, L. E. Ostrovskaya, V. N. Rodionova, A. K. Togambaeva, *Minsk, Belarus; Almaty, Kazakhstan; Tambov, Russia*
- WT-10 **ANALOG OF TAMM STATE IN PLANAR PHOTONIC CRYSTAL, BOUNDED BY THE PLASMA-LIKE MEDIUM**
A. A. Girich, S. V. Nedukh, D. P. Belozorov, S. I. Tarapov, *Kharkov, Kiev, Ukraine*
- WT-11 **DESIGN OF EXTRA-LOW POWER CONSUMPTION READOUT AMPLIFIERS FOR TERAHERTZ MATRIX RECEIVERS, BOLOMETER ARRAYS AND QUBITS BELOW 1 K**
A. M. Korolev, V. M. Shulga, S. I. Tarapov, *Kharkov, Ukraine*
- WT-12 **MAGNETIC RESONANCE AND ANTIRESONANCE IN 3D NANOCOMPOSITES BASED ON OPAL MATRICES**
A. B. Rinkevich, D. V. Perov, M. I. Samoylovich, S. M. Klescheva, E. A. Kuznetsov, *Ekaterinburg, Moscow, Nizhny Tagil, Russia*

Poster Papers

18.00-19.00

- WT-13 **SPATIAL-ENERGY FIELD CHARACTERISTICS FOR SYMMETRIC MODES OF METALLIC WAVEGUIDE RESONATOR OF TERAHERTZ LASER**
O. V. Gurin, A. V. Degtyarev, V. A. Maslov, V. S. Senyuta, V. A. Svich, A. N. Topkov, *Kharkov, Ukraine*
- WT-14 **SPATIAL DISTRIBUTION OF THE ELECTROMAGNETIC FIELD IN THE VICINITY OF TAPERED WIRE MEDIUM METAMATERIAL**
L. I. Kozhara, S. Yu. Polevoy, I. V. Popov, S. V. Nedukh, *Kharkov, Ukraine*
- WT-15 **TEMPERATURE CONTROL AND STABILIZATION IN THE CRYODIELECTROMETER FOR TEMPERATURES 0.5 – 300 K**
V. N. Derkach, R. V. Golovashchenko, N. K. Zaetz, V. G. Korzh, A. S. Plevako, S. I. Tarapov, *Kharkov, Ukraine*
- WT-16 **SUBMILLIMETER DIODE ON GALLIUM ARSENIDE NANOSTRUCTURE**
N. M. Goncharuk, N. F. Karushkin, V. V. Malyshko, V. A. Orehovskiy, *Kiev, Ukraine*
- WT-17 **1D WIRE GRATINGS TRANSMISSION AND REFLECTION CHARACTERISTICS IN THE THZ RANGE**
S. A. Andrenko, Yu. E. Kamenev, *Kharkov, Ukraine*

Tuesday, June 25

- WT-18 **MICROWAVE EFFECTIVE PERMEABILITY TENSOR OF PARTIALLY MAGNETIZED TWO-COMPONENT LOSSLESS FERRITE-LIKE METAMATERIALS**
O. Rybin, L. Girinova, *Kharkov, Ukraine*
- WT-19 **FMR AND STRUCTURE CHARACTERIZATION OF COBALT MICROGRANULE ARRAYS**
Iu. I. Chekrygina, S. V. Nedukh, B. A. Savitsky, I. G. Shipkova, S. I. Tarapov,
Kharkov, Ukraine
- WT-20 **ELECTRON SPIN RESONANCE OF MANGANITE INCLUDED INTO THE PEROVSKITE COMPOSITE IN MILLIMETER WAVEBAND**
T. V. Kalmykova, S. V. Nedukh, S. Yu. Polevoy, S. I. Tarapov, V. N. Krivoruchko,
Kharkov, Donetsk, Ukraine
- WT-21 **TRANSMISSION AND REFLECTION OF ELECTROMAGNETIC WAVES FROM FERRITE-SEMICONDUCTOR PERIODIC MULTILAYERED STRUCTURES**
A. A. Bulgakov, A. A. Girich, O. V. Shramkova, S. I. Tarapov,
Kharkov, Ukraine; Belfast, United Kingdom
- WT-22 **TECHNIQUE FOR ELECTRON SPIN RESONANCE REGISTRATION BASED ON AUDIO CARD SYNCHRODETECTOR**
A. S. Vakula, S. Yu. Polevoy, *Kharkov, Ukraine*
- WT-23 **HYPERSOUND SPIN-WAVE RESONANCES IN STRAINED CRYSTAL OF IRON BORATE**
V. I. Khizhnyi, T. M. Khizhnaya, V. V. Tarakanov, *Kharkov, Ukraine*
- WT-24 **SIMULATION OF ORBOKLYSTRON OSCILLATORS AND AMPLIFIERS OF 0.3, 0.6, 1.0 THz**
A. V. Aksenchyk, I. F. Kirinovich, A. A. Kurayev, V. D. Yeryomka,
Kharkov, Ukraine; Minsk, Belarus
- WT-25 **0.18 -THz ORBICTRON-AMPLIFIER**
V. D. Yeryomka, A. A. Kurayev, A. K. Sinitsyn, *Kharkov, Ukraine; Minsk, Belarus*
- WT-26 **MILLIMETER- AND SUBMILLIMETER-WAVE AMPLIFIERS ON SHEET-BEAM ORBOKLYSTRON**
A. V. Aksenchyk, V. D. Yeryomka, I. F. Kirinovich, A. A. Kurayev,
Kharkov, Ukraine; Minsk, Belarus
- WT-27 **ELECTRON SPIN RESONANCE STUDY OF MIXED MAGNETIC STATES IN BULK SAMPLES OF (La,Bi)MnO_{3+delta} SYSTEM**
A. M. Pogorily, A. I. Tovstolytkin, D. M. Polishchuk, T. I. Polek, *Kiev, Ukraine*

Session A

Electromagnetic Theory and Numerical Simulation

Chairs: G. Grane, N. Yashina

Invited Paper

14.30-16.00

INV.A-1

APPLICATION OF HEISENBERG'S UNCERTAINTY PRINCIPLE AND C-METHOD TO THE STUDY OF FRAUNHOFER DIFFRACTION BY A METALLIC RIBBON

J. Chandezon, A. M. Gavaix, J.-P. Plumey, *Clermont-Ferrand, France*

Oral Papers

A-1

ELECTROMAGNETIC WAVE SCATTERING BY A CRACK TYPE DEFECT

Z. Nazarchuk, Ya. Kulynych, *Lviv, Ukraine*

Tuesday, June 25

A-2 **ELECTROMAGNETIC-WAVE DIFFRACTION BY A STRIP GRATING WITH A LAYER OF PLANAR-STRATIFIED MEDIUM S**
S. B. Panin, A. V. Brovenko, P. N. Melezhik, A. Ye. Poyedinchuk, *Kharkov, Ukraine*

A-3 **REFLECTION AMPLIFICATION BY A FISH-SCALE METAMATERIAL PLACED ON AN OPTICALLY GAIN SUBSTRATE**
P. L. Mladyonov, V.R. Tuz, S. L. Prosvirnin, *Kharkov, Ukraine*

Review Paper

A-4 **NONLINEAR LAYERS WITH CONTROLLABLE PERMITTIVITY AT FREQUENCIES OF SCATTERING AND GENERATION**

L. Angermann, V. V. Yatsyk, *Clausthal-Zellerfeld, Germany; Kharkov, Ukraine*

A-5 **THE RELATIVE Q-FACTOR OF THE EIGENMODES AND THE ENERGY OF HIGHER HARMONICS GENERATED BY NONLINEAR LAYERS**

L. Angermann, V. V. Yatsyk, *Clausthal-Zellerfeld, Germany; Kharkov, Ukraine*

COFFEE BREAK

16.00-16.30

Oral Papers

16.30-18.00

A-6 **APPLICATION OF CASCADED METHODS FOR INVERSE PROBLEM**
Jhuo-Ro Li, Chien-Ching Chiu, Chih-Min Chuang, *Tamsui, Taiwan*

A-7 **WIENER-HOPF TECHNIQUE APPLICATION TO SOME DIFFRACTION PROBLEMS IN CONICAL REGION**
D. B. Kuryliak, *Lviv, Ukraine*

A-8 **CHERENKOV RADIOEMISSION OF ELECTROMAGNETIC WAVES BY THE MOVING POINT CHARGE IN THE MAGNETOACTIVE PLASMA**
I. O. Anisimov, V. O. Kulish, *Kiev, Ukraine*

A-9 **ELECTROMAGNETIC FIELD FOCUSING INSIDE DIELECTRIC BIAXIAL ELIPSOID ILLUMINATED BY PLANE LINEAR POLARIZED WAVE**
N. N. Stasiuk, N. N. Gorobets, *Kharkov, Ukraine*

A-10 **ANALYSIS OF ELECTROMAGNETIC WAVE INTERACTION WITH QUANTUM-DOT GAIN MATERIAL IN 3D PHOTONIC CRYSTALS**
N. Sydoruk, *Kharkov, Ukraine*

A-11 **FAST PULSE GUIDED WAVE IN AN OPTICAL WAVEGUIDE**
M. N. Legenkiy, A. Yu. Butrym, *Kharkov, Ukraine*

Poster Papers

18.00-19.00

A-12 **AUTOCOLLIMATION MODE AT DIFFRACTION OF THREE-DIMENSIONAL GAUSSIAN BEAM ON TWO-DIMENSIONAL-PERIODIC REFLECT ARRAY**
A. V. Gribovsky, O. A. Yeliseyev, *Kharkov, Ukraine*

A-13 **RESONANT PLANE WAVE SCATTERING BY A GRATING OF RECTANGULAR BARS AND A METAMATERIAL**
O. P. Kusaykin, P. N. Melezhik, A. Ye. Poyedinchuk, *Kharkov, Ukraine*

A-14 **MAGNETIC-TYPE EIGENOSCILLATIONS OF AN OPEN RESONATOR WITH A SPHERICAL DIELECTRIC INSERT**
Yu. V. Svishchov, *Kharkov, Ukraine*

A-15 **ASYMPTOTIC SOLUTION FOR BRAGG REFLECTION OF SURFACE AND VOLUME WAVES ON NONPERIODICALLY INHOMOGENEOUS IMPEDANCE ROD**
V. F. Borulko, *Dnipropetrovsk, Ukraine*

A-16 **ON THE PROBLEM OF AMBIGUITY OF ELECTROMAGNETIC POTENTIAL**
A. V. Gritsunov, *Kharkov, Ukraine*

Tuesday, June 25

- A-17 **OPTIMIZATION OF GYROTROPIC DOUBLE-PERIODIC PERFORATED LAYER FOR BREWSTER'S ANGLE POLARIZER DESIGN**
T. L. Zinenko, V. V. Yachin, V. K. Kiseliiov, M. Marciniak,
Kharkov, Ukraine; Warsaw, Poland
- A-18 **WAVE PROPAGATION THROUGH A WAVEGUIDE SEGMENT WITH CORRUGATED WALLS: THE CRITICAL ROLE OF THE CORRUGATION SHARPNESS**
V. O. Goryashko, Yu. V. Tarasov, L. D. Shostenko, *Kharkov, Ukraine; Uppsala, Sweden*
- A-19 **EIGEN-OSCILLATIONS OF COMPOSITE DOUBLE-SLOT IRIS IN A SQUARE WAVEGUIDE AND MANIFESTATION OF ENHANCED TRANSMISSION AND "OPTICAL ACTIVITY"**
A. A. Kirilenko, A. O. Perov, N. G. Kolmakova-Don, S. A. Prikolotin, *Kharkov, Ukraine*
- A-20 **AXIALLY SYMMETRIC EIGENVALUE PROBLEM FOR A DIELECTRIC BODY**
V. S. Bulygin, A. Vukovic, Ph. Sewell, T. M. Benson,
Kharkov, Ukraine; Nottingham, United Kingdom
- A-21 **ELECTROMAGNETIC WAVE SCATTERING BY A GRAPHENE-SANDWICHED THIN DIELECTRIC DISK ANALYZED USING THE GENERALIZED BOUNDARY CONDITIONS**
M. V. Balaban, A. Vukovic, T. M. Benson, *Kharkov, Ukraine; Nottingham, United Kingdom*
- A-22 **NUMERICAL DETERMINATION OF EIGENMODES OF AN ARBITRARY WAVEGUIDE WITH COORDINATE BOUNDARIES IN CYLINDRICAL COORDINATE SYSTEM**
S. O. Steshenko, S. A. Prikolotin, D. J. Kulik, A. A. Kirilenko, L. A. Rud, L. P. Mospan,
Kharkov, Ukraine

Session C

Wave Propagation, Radar, Remote Sensing and Signal Processing

Chair: G. I. Khlopov

Oral Papers

14.30-16.00

- C-1 **TRANSIENT ELECTROMAGNETIC SCATTERING BY AERIAL AND GROUND OBJECTS**
O. Sukharevsky, V. Vasilets, *Kharkov, Ukraine*
- C-2 **ADVANCED MICROWAVE NEAR-FIELD TECHNIQUE FOR INVESTIGATION OF MATERIAL PROPERTIES**
S. A. Vitusevich, V. A. Sydoruk, S. Jahnke, *Jülich, Germany*
- C-3 **SFCW GPR SENSOR WITH PHASE PROCESSING FOR LANDMINE DETECTION AND RECOGNITION**
V. G. Sugak, A. V. Sugak, *Kharkov, Ukraine*
- C-4 **A MICROWAVE/MILLIMETRE RADAR APPROACH TO SHOE SCREENING FOR AIRLINE PASSENGER SECURITY**
N. D. Rezgui, D. Andrews, N. Bowring, S. Harmer, M. Southgate, *Manchester, United Kingdom*
- C-5 **NEW POSSIBILITIES OF THE USE OF SYNTHETIC APERTURE MILLIMETER-WAVE RADIOMETRIC INTERFEROMETER FOR PRECIPITATION REMOTE SENSING FROM SPACE**
Ya. A. Ilyushin, B. G. Kutuza, *Moscow, Russia*
- C-6 **RESEARCH OF POLYDISPERSE MEDIUM BY DOUBLE-FREQUENCY RADAR**
G. B. Veselovska, *Kharkov, Ukraine*

COFFEE BREAK

16.00-16.30

Tuesday, June 25

Oral Papers

16.30-18.00

- C-7 **STUDY OF NONUNIFORM VERTICAL PROFILE OF CLOUD WATER CONTENT IMPACT ON BRIGHTNESS TEMPERATURE**
T. Tkacheva, A. Linkova, G. Khlopov, *Kharkov, Ukraine*
- C-8 **SIMILAR PATCH SEARCH IN RS IMAGES USING DIFFERENT METRICS**
A. S. Rubel, V. V. Lukin, *Kharkov, Ukraine*
- C-9 **EDGE DETECTION EFFICIENCY IN SINGLE-LOOK SAR IMAGES BY ELEMENTARY AND NEURAL NETWORK BASED DETECTORS**
A. V. Naumenko, V. V. Lukin, K. O. Egiazarian, *Kharkov, Ukraine; Tampere, Finland*
- C-10 **RESOLUTION OF INVERSE APERTURE SYNTHESIS IN THE NEAR-FIELD ZONE OF THE HORN ANTENNA RADIATION**
O. O. Drobakhin, G. G. Sherstyuk, *Dnepropetrovsk, Ukraine*
- C-11 **DIAGNOSING OF HAZARDOUS PROCESSES ON DRAINED-OUT WETLANDS BY RADAR, THERMAL IR AND OPTIC AIRBORNE REMOTE SENSING METHODS**
D. M. Bychkov, V. K. Ivanov, V. N. Tsymbal, S. Ye. Yatsevich, *Kharkov, Ukraine*

Poster Papers

18.00-19.00

- C-12 **THE CHOISE OF SOLUTION DURING MEASURING THE ELEVATION ANGLES OF LOW-ALTITUDE TARGETS WITH USE OF THE ROOT-MUSIC ALGORITHM**
Yu. A. Pedenko, *Kharkov, Ukraine*
- C-13 **IMAGE RESOLUTION INCREASING IN SHADOW TOMOGRAPHIC MICROSCOPY VIA PRELIMINARY PROJECTION FILTERING**
E. A. Blushtein, A. O. Manturov, *Saratov, Russia*
- C-14 **A DESIGN APPROACH TO BUILDING A PSEUDO-COHERENT HIGH-DUTY CYCLE KA-BAND RADAR**
V. D. Yeryomka, I. M. Mytsenko, *Kharkov, Ukraine*
- C-15 **DETECTION OF RETURNED SIGNALS WITH AN UNKNOWN INITIAL PHASE WHEN USE OF RANDOM SOUNDINGS RADIO-FREQUENCY SIGNALS**
A. A. Mogyla, G. I. Khlopov, *Kharkov, Ukraine*
- C-16 **VARIATIONS OF THE LOWER IONOSPHERE HEIGHT DEDUCED FROM MEASUREMENTS OF TWEAK-ATMOSPHERICS**
Y. V. Gorishnya, *Kharkov, Ukraine*
- C-17 **PLASMA ANTENNA OF TRAVELING WAVE WITH AXIAL RADIATION**
Yu. V. Kirichenko, Yu. F. Lonin, I. N. Onishchenko, *Kharkov, Ukraine*
- C-18 **RADAR SENSORS FOR HUMP YARD AND RAIL CROSSING APPLICATIONS**
G. P. Ermak, A. S. Vasilev, A. V. Varavin, V. Ya. Noskov, K. A. Ignatkov, *Kharkov, Ukraine; Ekaterinburg, Russia*
- C-19 **DENOISING EFFICIENCY FOR MULTICHANNEL IMAGES CORRUPTED BY SIGNAL-DEPENDENT NOISE**
V. V. Lukin, S. K. Abramov, R. A. Kozhemiakin, M. L. Uss, *Kharkov, Ukraine; Lannion, France*
- C-20 **EFFICIENCY OF LOSSY COMPRESSION OF NOISY AND PRE-FILTERED REMOTE SENSING IMAGES**
V. V. Lukin, A. N. Zemliachenko, M. K. Tchobanou, *Kharkov, Ukraine; Moscow, Russia*
- C-21 **METHOD AND RIKDEDIN SOFTWARE PACKAGE FOR INTERPRETATION OF REMOTE SENSING DATA**
O. M. Dumin, V. A. Katrich, Y. A. Koltunov, *Kharkov, Ukraine*

Tuesday, June 25

- C-22 **MODEL OF MAPPING FUNCTION FOR THE CALCULATION OF ZENITH TROPOSPHERIC DELAY**
V. I. Lutsenko, I. V. Lutsenko, D. O. Popov, A. G. Laush, V. N. Gudkov,
Kharkov, Smela, Ukraine

Session G

Scientific, Industrial and Biomedical Applications

Chair: G. Ermak

Invited Papers

14.30-16.00

- INV.G-1 **MILLIMETER WAVES FOR DETERMINATION OF COMPOSITION OF BIODISEL FUEL**
V. V. Meriakri, E. E. Chigryai, M. P. Parkhomenko, R. N. Denisyuk, S. V. von Gratowski,
Fryazino, Russia
- INV.G-2 **TOWARDS MICROWAVE AND MILLIMETER WAVE BIOSENSORS**
N. Klein, T. H. Basey-Fisher, W. J. Otter, N. Guerra, C. Triulzi, A. Gregory,
S. M. Hanham, S. Lucysecyn, *London, Teddington, United Kingdom*
- INV.G-3 **MICRODOSIMETRY AND PHYSIOLOGICAL EFFECTS OF MILLIMETER WAVE IRRADIATION IN ISOLATED NEURAL GANGLION PREPARATION**
S. Romanenko, P. H. Siegel, V. Pikov, *Pasadena, USA*

Oral Paper

- G-1 **DIELECTRIC PROPERTIES OF NANOPOROUS METAL-ORGANIC FRAMEWORK MATERIALS IN THE MILLIMETER-WAVE BAND**
V. V. Meriakri, M. P. Parkhomenko, N. A. Fedoseev, Lu-Kuang Lieh,
Fryazino, Russia, Changhua, Taiwan

COFFEE BREAK

16.00-16.30

Oral Papers

16.30-18.00

- G-2 **HIGH SENSITIVITY CAVITY FOR PERMITTIVITY MEASUREMENT OF STRONGLY ABSORBED LIQUIDS**
Z. Eremenko, V. Skresanov, *Kharkov, Ukraine*
- G-3 **NOVEL APPROACH TO THE THEORY OF LONGITUDINALLY INHOMOGENEOUS LOSSY WAVEGUIDES**
G. I. Zaginaylov, V. I. Shcherbinin, K. Schuenemann, M. Yu. Glyavin,
Kharkov, Ukraine; Hamburg, Germany; Nizhny Novgorod, Russia
- G-4 **A NEW-TYPE THz NULL-ELLIPSOMETER BASED ON QUASI-OPTICAL TRANSMISSION LINE AND COMPONENTS**
A. A. Galuza, V. K. Kiseliyov, I. V. Kolenov, Ye. M. Kuleshov, S. V. Mizrakhy,
S. Yu. Serebryanskiy, *Kharkov, Ukraine*
- G-5 **TWO-WAVELENGTH MILLIMETER WAVE "UNAMBIGUOUS" HETERODYNE INTERFEROMETER**
G. P. Ermak, A. V. Varavin, A. S. Vasilev, M. Stumbra, A. S. Fateev, F. Zacek,
J. Zajac, N. Varavin, V. Shevchenko,
Kharkov, Ukraine; Prague, Czech Republic; Abingdon, UK
- G-6 **USAGE OF CIRCULARLY POLARIZED ELECTROMAGNETIC MM-WAVES FOR PRESOWING SEED TREATMENT**
N. V. Pushkina, V. A. Karpovich, N. V. Liubetski, *Minsk, Belarus*

Poster Papers

18.00-19.00

- G-7 **Q-FACTOR OF LAMINAR QUASIOPTICAL DIELECTRIC RESONATORS IN MILLIMETER RANGE OF WAVELENGTHS**
A. Ya. Kirichenko, G. V. Golubnichaya, I. G. Maximchuk, V. B. Yurchenko,
Yu. V. Bludov, *Braga, Portugal; Kharkov, Ukraine*

Tuesday, June 25

- G-8 **ACCURATE PERMITTIVITY CHARACTERIZATION OF LIQUIDS BY MEANS OF WGM RESONATOR WITH MICROFLUIDIC**
I. A. Protsenko, A. A. Barannik, A. I. Gubin, A. Offenhaeuser, S. A. Vitusevich, N. T. Cherpak, *Kharkov, Ukraine; Juelich, Germany*
- G-9 **STUDY AND APPLICATION OF THE LIQUID DISK RESONATOR IN THE MILLIMETER WAVEBAND**
R. V. Golovashchenko, *Kharkov, Ukraine*
- G-10 **SENSOR FOR TWO-RESONATOR REFRACTOMETER**
A. V. Dormidontov, Yu. V. Prokopenko, *Kharkov, Ukraine*
- G-11 **A RESONANCE SYSTEM FOR MEASURING COMPLEX PERMITTIVITY OF MATERIALS**
A. Yu. Popkov, I. K. Kuzmichev, *Kharkov, Ukraine*
- G-12 **TERAHERTZ GAS-DISCHARGE LASER WITH EXIT CONE MIRROR**
V. P. Radionov, *Kharkov, Ukraine*
- G-13 **RATIONAL MODEL OF E-CROSS FOR SIX-PORT MEASUREMENTS**
V. A. Karloy, V. F. Borulko, M. V. Andreev, *Dnipropetrovsk, Ukraine*
- G-14 **ANALYSIS OF ERRORS IN THE PLASMA ROTATION VELOCITY MEASUREMENT BY THE METHOD OF MICROWAVE CORRELATION REFLECTOMETRY**
Yu. V. Kovtun, A. I. Skibenko, E. I. Skibenko, V. B. Yuferov, *Kharkov, Ukraine*
- G-15 **DYNAMICAL MODEL OF METAL CUTTING IN THE MANUFACTURING OF MICROWAVE DEVICES**
I. A. Manturova, *Saratov, Russia*
- G-16 **1D NUMERICAL MODEL OF MICROWAVE WOOD DRYING DYNAMICS FORMALISED AS INITIAL VALUE PROBLEM**
A. Fomichev, A. Manturov, *Saratov, Russia*
- G-17 **OPERATION MONITORING OF ALLERGIC REACTION TO ARTIFRIN BY MEANS OF EHF-DIELECTROMETRY METHOD**
E. Soloshenko, A. Kondakova, V. Kolesnikov, N. Khmel, Z. Shevchenko, T. Yarmak, V. Korzh, *Kharkov, Ukraine*
- G-18 **INVESTIGATION OF TERAHERTZ RADIATIONS INFLUENCE ON ENZYME α -AMYLASE**
A. K. Kondakova, N. V. Khmel, V. G. Kolesnikov, E. A. Kalekina, Yu. E. Kamenev, T. V. Telichko, V. G. Korzh, *Kharkov, Ukraine*
- G-19 **MODIFIED WAVEGUIDE SENSOR FOR MILLIMETER DIELECTRIC STUDY OF HUMAN ERYTHROCYTES IN MEDICAL RESEARCH**
K. A. Arkhypova, P. S. Krasov, A. I. Fisun, *Kharkov, Ukraine*
- G-20 **MODERNIZATION AND COLIBRATION OF INTRFEROMITER OF TOKAMAK "COMPASS"**
M. Varavin, J. Zajac, F. Zacek, S. Nanobashvili, G. Ermak, A. Varavin, A. Vasilyev, M. Stumbra, A. Vetoshko, A. Fateev, D. Soloviov, V. Shevchenko, *Kharkov, Ukraine; Prague, Czech Republic; Tbilisi, Georgia*

WELCOME PARTY

19.00

Plenary Session		Chair: D. Vavriv
Invited Papers		9.00-10.30
INV.6	SPIN-TORQUE MICROWAVE DETECTORS: FUNDAMENTALS AND APPLICATIONS <i>O. V. Prokopenko, G. A. Melkov, V. S. Tiberkevich, A. N. Slavin, Kiev, Ukraine</i>	
INV.7	TUNABLE METAMATERIAL STRUCTURES FOR CONTROLLING THZ RADIATION <i>M. Odit, I. Vendik, D. Kozlov, I. Munina, V. Turgaliev, Saint-Petersburg, Russia</i>	
INV.8	AN ENGINEERING APPROACH TOWARDS CREATING UBIQUITOUS THZ APPLICATIONS <i>S. Lucyszyn, London, United Kingdom</i>	

COFFEE BREAK	10.30-11.30
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Invited Papers		Chair: S. Lucyszyn
Invited Papers		11.30-13.00
INV.9	DEVELOPMENTS OF MICROWAVE HTS-BASED DEVICES AND SUBSYSTEMS FOR APPLICATIONS IN CIVILIAN SATELLITES <i>Y. Wu, L. Sun, C. Li, X. Zhang, Q. Zhang, J. Wang, Y. Bian, T. Yu, B. Cui, G. Li, H. Li, Y. He, Beijing, China</i>	
INV.10	INTERACTION OF HIGH-FREQUENCY AND LOW-FREQUENCY OSCILLATIONS: THREATS AND BENEFITS <i>V. A. Buts, D. M. Vavriv, Kharkov, Ukraine</i>	
INV.11	A NEW EFFECTIVE MODAL METHOD BY B-SPLINES EXPANSION FOR CROSSED SURFACE-RELIEF GRATINGS <i>G' erard Granet, Clermont-Ferrand, France</i>	

LUNCH	13.00-14.30
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Session J		Microwave Superconductivity
		Chairs: N. Cherpak, Y. He
Oral Papers		14.30-16.00
J-1	EXCITATION OF OBLIQUE SURFACE ELECTROMAGNETIC WAVES IN SEMIBOUNDED LAYERED SUPERCONDUCTORS BY MEANS OF THE ATTENUATED-TOTAL-REFLECTION METHOD <i>Yu. O. Averkov, V. M. Yakovenko, V. A. Yampol'skii, F. Nori, Kharkov, Ukraine; Saitama, Japan</i>	
J-2	PTB'S STATUS OF AC VOLTAGE METROLOGY BY MICROWAVE- AND PULSETRAIN-DRIVEN JOSEPHSON JUNCTION ARRAYS <i>J. Niemeyer, O. Kieler, F. Müller, J. Kohlmann, R. Behr, L. Palafox, D. Schleußner, M. F. Beug, J. Schurr; Braunschweig, Germany</i>	
J-3	CHARGE TRANSPORT UNDER MICROWAVE IRRADIATION IN JOSEPHSON HETEROSTRUCTURES SUPERCONDUCTOR – DOPED SEMICONDUCTOR – SUPERCONDUCTOR <i>V. Shaternik, A. Shapovalov, A. Suvorov, S. Döring, S. Schmidt, P. Seidel, Kiev, Ukraine; Jena, Germany</i>	
J-4	TRANSPORT PROPERTIES OF Nb/PdNi/Nb TRILAYERS AT MICROWAVE FREQUENCIES <i>K. Torokhtii, N. Pompeo, C. Meneghini, C. Attanasio, C. Cirillo, E. A. Ilyina, S. Sarti, E. Silva, Fisciano, Roma, Italy</i>	

Wednesday, June 26

J-5 **EXPERIENCE IN DEVELOPING Ka-BAND WAVEGUIDE FILTER WITH HTS E-PLANE INSERT**
V. N. Skresanov, A. A. Barannik, N. T. Cherpak, Y. He, V. V. Glamazdin,
V. A. Zolotaryov, A. I. Shubny, L. Sun, J. Wang, Y. Wu,
Kharkov, Ukraine; Beijing, China

J-6 **SUPERCONDUCTING SINGLE-CELL RF-CAVITY FOR ILC ACCELERATOR**
N. Azaryan, J. Boudagov, D. Demin, G. Shirkov, M. Baturitsky, N. Shumeiko,
V. Karpovich, R. Krivosheev, N. Liubetsky, S. Maximov, V. Rodionova,
Dubna, Russia; Minsk, Belarus

COFFEE BREAK **16.00-16.30**

Poster Papers **18.00-19.00**

J-7 **NONLINEAR ATTENUATION IN YBCO COPLANAR TRANSMISSION LINE IN APPLIED MAGNETIC FIELD**
A. A. Kalenyuk, S. I. Futimsky, A. L. Kasatkin, A. I. Gubin, S. A. Vitusevich,
Kharkov, Kiev, Ukraine; Julich, Germany

J-8 **MICROWAVE VORTEX RESPONSE IN THE MIXED STATE OF HTS YBCO THIN FILMS**
A. A. Kalenyuk, A. L. Kasatkin, S. I. Futimsky, V. O. Moskalyuk, V. S. Flis,
Kiev, Ukraine

Session WS **Complex Conductivity and Wave Symmetry of Fe-based Superconductors**
Chairs: N. Cherpak, A. Kordyuk

Invited Papers **16.30-18.00**

INV.WS-1 **COMPLEX ELECTRONIC STRUCTURE OF IRON-BASED SUPERCONDUCTORS AS A KEY TO HIGH TEMPERATURE SUPERCONDUCTIVITY**
A. A. Kordyuk, *Kiev, Ukraine*

INV.WS-2 **TUNNELING INTO MULTIBAND SUPERCONDUCTORS: THE CASE OF MAGNESIUM DIBORIDE AND IRON-BASED SUPERCONDUCTORS**
M. Belogolovskij, P. Seidel, *Donetsk, Ukraine; Jena, Germany*

INV.WS-3 **PSEUDOGAP IN $\text{SmFeAsO}_{0.85}$ IN COMPARISON WITH S-WAVE SYMMETRY THEORY**
A. L. Solovjoy, V. N. Svetlov, V. B. Stepanov, S. L. Sidorov, V. Yu. Tarenkov,
A. I. D'yachenko, *Kharkov, Donetsk, Ukraine; Wroclaw, Poland*

INV.WS-4 **MICROWAVE RESPONSE, COMPLEX CONDUCTIVITY AND EFFECT OF ORDER PARAMETER SYMMETRY IN Fe-BASED SUPERCONDUCTORS**
N. T. Cherpak, A. A. Barannik, Y.-S. He, R. Prozorov, M. Tanatar,
Kharkov, Ukraine; Beijing, China; Ames, USA

Poster Papers **18.00-19.00**

WS-1 **MICROWAVE EFFECTIVE AND BULK SURFACE IMPEDANCE OF THIN $\text{FeSe}_{0.3}\text{Te}_{0.7}$ FILM**
A. A. Barannik, Y. Wu, Y.-S. He, S. Luo, L. Cao, M. S. Kharchenko, N. T. Cherpak,
Kharkov, Ukraine; Beijing, China

WS-2 **LASER SCANNING MICROSCOPY OF SUPERCONDUCTIVE PARAMETERS OF IRON-CONTAINING CHALCOGENIDE FeTe FILMS**
A. G. Sivakov, I. S. Dudar, S. I. Bondarenko, A. S. Pokhila, A. V. Krevsun, Y. S. He,
L. X. Cao, *Kharkov, Ukraine; Beijing, China*

Oral Papers **14.30-16.00**

- B-1 **ELECTROMAGNETIC WAVES IN A DEFECTIVE PERIODIC LAYERED STRUCTURE BORDERING UPON A PLASMA-LIKE MEDIUM**
N. N. Beletskii, S. A. Borysenko, N. I. Gvozdev, Kharkov, Ukraine
- B-2 **SURFACE ELECTROMAGNETIC WAVES IN BOUNDED PERIODIC STRUCTURE NEAR THE EXCITON BANDS**
V. V. Baibak, A. A. Bulgakov, Kharkov, Ukraine
- B-3 **MAGNETOREZISTIVE EFFECT OF A NON-STATIONARY NON-SYMMETRIC MAGNETIC TUNNEL JUNCTION**
D. V. Abdulkadyrov, N. N. Beletskii, Kharkov, Ukraine
- B-4 **GENERAL METHOD FOR MODELING NONLINEAR WAVES IN ACTIVE METAMATERIAL AND GYROTROPIC LAYERED STRUCTURES**
Yu. G. Rapoport, Kharkov, Ukraine
- B-5 **SURFACE ELECTROMAGNETIC WAVES ON A SLAB OF BIAXIAL PERIODIC METAMATERIAL IN AN EXTERNAL MAGNETIC FIELD**
I. V. Fedorin, A. A. Bulgakov, Kharkov, Ukraine

COFFEE BREAK **16.00-16.30**

Oral Papers **16.30-18.00**

- B-6 **STIMULATED EMISSION OF RADIATION USING SPIN-POPULATION INVERSION IN METALS**
V. Korenivski, A. Iovan, A. Kadigrobov, R. I. Shekhter, Stockholm, Gothenburg, Sweden
- B-7 **METHOD OF THE PARAMETERS OPTIMIZATION FOR TERAHERTZ ANISOTROPIC LAYERED FILTER**
A. D. Arkhipov, K. A. Vytovtov, Dnipropetrovsk, Ukraine
- B-8 **FREQUENCY DETECTORS OF THE TERAHERTZ DOMAIN**
K. A. Vytovtov, Dnipropetrovsk, Ukraine
- B-9 **EXCITATION OF WHISPERING GALLERY MODES IN SHIELDED DIELECTRIC RESONATORS BY "SLOT-LINE"**
A. Ya. Kirichenko, A. Ye. Kogut, V. V. Kutuzov, S. O. Nosatiuk, V. A. Solodovnik, Kharkov, Ukraine

Poster Papers **18.00-19.00**

- B-10 **SLOW SURFACE MAGNETOPLASMON IN PERIODIC SEMICONDUCTOR STRUCTURE**
A. A. Bulgakov, V. K. Kononenko, Kharkov, Ukraine
- B-11 **WAVES IN ACTIVE AND PASSIVE SUB-MICRON SEMICONDUCTOR STRUCTURE. DETECTION AND GENERATION OF THE TERAHERTZ WAVES**
V. A. Abdulkadyrov, Kharkov, Ukraine
- B-12 **SELF-BIASED MILLIMETER WAVE NOTCH FILTER BASED ON SINGLE CRYSTAL HEXAFERRITE RESONATOR WITH REGULAR DOMAIN STRUCTURE FOR 45-57 GHZ REGION**
A. M. Sorochak, V. I. Kostenko, L. V. Chevnyuk, T. G. Chamor, Kiev, Ukraine

Wednesday, June 26

- B-13 **INFLUENCE OF LATERAL BORDERS LENGTH ON CURRENT VOLTAGE CHARACTERISTICS AND OSCILLATION EFFICIENCY OF PLANAR DIODE**
E. D. Prokhorov, O. V. Botsula, O. A. Reutina, *Kharkov, Ukraine*
- B-14 **IMPEDANCE OF PLANAR DIODE WITH A RESONANT-TUNNEL BORDER**
E. D. Prokhorov, O. V. Botsula, O. A. Reutina, *Kharkov, Ukraine*

Session D

Vacuum Electronics

Chairs: T. Idehara, A. Kuleshov

Invited Papers

14.30-16.00

- INV.D-1 **DEVELOPMENT AND EXPERIMENTAL INVESTIGATIONS OF HIGH POWER THZ GYROTRONS**
M. Yu. Glyavin, A. G. Luchinin, M. V. Morozkin, *Nizhny Novgorod, Russia*
- INV.D-2 **TECHNIQUES OF NON-COLLINEAR ELECTRO-OPTIC SAMPLING FOR EFFICIENT DETECTION OF PULSED TERAHERTZ RADIATION**
M. Tani, T. Kinoshita, T. Nagase, Sh. Ozawa, S. Tsuzuki, D. Takeshima, E. Estacio, K. Kurihara, K. Yamamoto, M. Bakunov,
Fukui, Japan; Quezon city, Philippines; Nizhny Novgorod, Russia
- INV.D-3 **MEDIUM POWER COMPACT SOURCES OF ELECTROMAGNETIC RADIATION IN MILLIMETER AND SUB-MILLIMETER RANGES**
A. N. Kuleshov, B. P. Yefimov, *Kharkov, Ukraine*

Oral Papers

- D-1 **SELECTION OF MODES IN A SUBMILLIMETER GYROTRON WITH A CORRUGATED CAVITY WALL**
S. E. Filchenkov, M. I. Petelin, A. S. Sedov, N. A. Zavolsky, *Nizhny Novgorod, Russia*
- D-2 **RUSSIAN GYROTRONS OF MW POWER LEVEL IN MM FREQUENCY BAND**
A. G. Litvak, V. E. Myasnikov, G. G. Denisov, E. M. Tai, V. E. Zapevalov, M. V. Agapova, A.V. Chirkov, A. N. Kuftin, V. O. Nichiporenko, L. G. Popov, E. A. Soluyanova, S. V. Usachev, *Nizhny Novgorod, Moscow, Russia*

COFFEE BREAK

16.00-16.30

Oral Papers

16.30-18.00

- Review Paper
- D-3 **DOUBLE- ROW PERIODIC STRUCTURE 2 MM OROTRON WITH TWO-FOCUS SPHERE CYLINDRICAL MIRROR**
E. A. Myasin, V. V. Evdokimov, A. Yu. Il'yn, *Fryazino, Russia*
- D-4 **TWO OPERATION MODE OROTRON WITH DOUBLE- ROW PERIODIC STRUCTURE**
E. A. Myasin, V. V. Evdokimov, A. Yu. Il'yn, *Fryazino, Russia*
- Review paper
- D-5 **THE EXPERIMENTAL INVESTIGATIONS OF DRO-ORBICTRON IN 8-MM WAVEBAND**
V. S. Miroshnichenko, M. Yu. Demchenko, Ye. B. Senkevich, *Kharkov, Ukraine*
- D-6 **METHOD OF RESONANT MATCHING IN DIFFRACTION RADIATION OSCILLATOR WITH A DOUBLE COMB**
V. S. Miroshnichenko, M. Yu. Demchenko, Ye. B. Senkevich, *Kharkov, Ukraine*

Wednesday, June 26

Review paper

- D-7 **ENERGETICS OF LADDERTRON WITH REFLECTIVE OR THROUGH-PASS GRATING IN THE REGIME OF WOOD'S ANOMALIES**
V. V. Shcherbak, *Kharkov, Ukraine*
- D-8 **CONVERSION OF TEM-WAVE IN HIGHER WAVES ON THE CASCADES FROM THREE UNEQUALLY-PERIOD DIAPHRAGMS OR GRATINGS**
V. V. Shcherbak, *Kharkov, Ukraine*
- D-9 **EXPERIMENTAL INVESTIGATIONS OF A MILLIMETER WAVE RELATIVISTIC MAGNETRON**
S. A. Berdin, N. P. Gadetski, V. G. Korenev, A. N. Lebedenko, M. I. Marchenko, I. I. Magda, O. G. Melezhik, V. G. Sinitsyn, V. A. Soshenko, K. V. Chizhov, S. N. Teryokhin, A. S. Tishchenko, *Kharkov, Ukraine*
- D-10 **OPTIMIZATION OF A MAGNETRON-INJECTION GUN FOR A PLANAR GYROTRON**
S. A. Kishko, S. S. Ponomarenko, A. N. Kuleshov, B. P. Yefimov, M. Yu. Glyavin, I. V. Zotova, I. V. Zheleznov, N. S. Ginzburg, V. N. Manuilov, V. Yu. Zaslavsky, *Kharkov, Ukraine; Nizhny Novgorod, Russia*
- D-11 **HYBRID MODE OF SURFACE-VOLUME WAVES IN BWO WITH NONUNIFORM GRATING**
S. S. Ponomarenko, S. A. Kishko, E. M. Khutoryan, A. N. Kuleshov, B. P. Yefimov, *Kharkov, Ukraine*

Poster Papers

18.00-19.00

- D-12 **RELAY-RACE INTERACTION IN MICROWAVE DEVICES**
G. A. Alekseev, L. V. Stulova, *Kharkov, Ukraine*
- D-13 **ELECTRON-OPTIC SYSTEM PARAMETERS EFFECT ON ELECTRON BEAM FORMATION AN STRUCTURE IN DRO INTERACTION SPACE**
A. I. Tsvyk, V. N. Zheltov, E. M. Khutoryan, *Kharkov, Ukraine*
- D-14 **KLINOTRON EFFECT IN DIFFRACTION RADIATION OSCILLATOR**
V. G. Kurin, M. Yu. Demchenko, Ye. B. Senkevich, *Kharkov, Ukraine*
- D-15 **ABOUT REFLECTION DIFFRACTION RADIATION OSCILLATOR OPERATION AT SECOND SPACE HARMONIC**
E. M. Khutoryan, A. I. Tsvyk, V. N. Zheltov, *Kharkov, Ukraine*

Session H

**R-functions, Atomic Functions, Wavelets, Fractals
Chair: V. Kravchenko**

Invited Papers

14.30-16.00

- INV.H-1 **CORRELATION FUNCTIONS INTERPOLATION BY GENERALIZED KRAVCHENKO-KOTELNIKOV SAMPLING SERIES**
V. F. Kravchenko, D. V. Churikov, *Moscow, Russia*
- INV.H-2 **NOVEL METHODS IN DENOISING, RESOLUTION ENHANCEMENT AND OBJECT RECONSTRUCTION OF MULTIDIMENSIONAL SIGNALS**
V. I. Ponomaryov, *Mexico-city, Mexico*

Oral Papers

- H-1 **MULTIFRAME SUBPIXEL TARGET DETECTION IN THE PRESENCE OF FLUCTUATING BACKGROUND AND NOISE**
V. Golikov, O. Lebedeva, M. M. Alarcon, J. P. Suarez, *Ciudad del Carmen, Mexico*

Wednesday, June 26

H-2 **VIDEO-BASED DETECTION OF SUBPIXEL NO-REFLECTING OBJECTS IN THE PRESENCE OF FLUCTUATED BACKGROUND**
O. Lebedeva, E. M. Vera, V. Golikov, M. R. Blanco, Ciudad del Carmen, Mexico

H-3 **RESOLUTION ENHANCEMENT ALGORITHM BASED ON WAVELET AND EDGE EXTRACTION TECHNIQUES IN NOISE PRESENCE**
O. H. Chavez-Roman, V. Ponomaryov, I. Loboda, Mexico-city, Mexico

COFFEE BREAK **16.00-16.30**

Oral Papers **16.30-18.00**

H-4 **TOWARDS SUPER-RESOLUTION COMPUTATIONAL IMAGING WITH GEOSTAR CONFIGURED MM-BAND SENSOR ARRAY RADAR: AN AGGREGATED ADAPTIVE BEAMFORMING COMPRESSED SENSING APPROACH**
Y. V. Shkvarko, V. E. Espadas, Jalisco, Mexico

H-5 **PARTIAL RADIATION CONDITIONS IN FINITE ELEMENT ANALYSIS OF DIFFRACTION PROBLEM**
D. A. Konyaev, A. L. Delitsyn, Moscow, Russia

H-6 **STATISTICAL SYNTHESIS OF SCANNING RADIOMETER WITH MODULATION OF THE DESIRED SIGNAL**
V. K. Volosyuk, V. F. Kravchenko, V. V. Pavlikov, S. S. Zhyla, Kharkov, Ukraine; Moscow, Russia

H-7 **ALGORITHM OF OPTIMUM RESTORATION OF THE RADIOMETRIC IMAGE IN TWO-ANTENNA BROADBAND SYSTEM OF APERTURE SYNTHESIS**
V. V. Pavlikov, Kharkov, Ukraine

H-8 **MATHEMATICAL MODELING OF BI-ISOTROPIC WAVEGUIDE USING THE FINITE ELEMENTS METHOD**
A. N. Bogoliubov, Yu. V. Mukhartova, N. A. Bogoliubov, E. V. Tkach, Moscow, Russia

H-9 **RESEARCH OF SPECTRAL CHARACTERISTICS FOR PHOTONIC CRYSTALS WITH FRACTAL DEFECTS**
Z. Dombrovskaya, Moscow, Russia

Poster Papers **18.00-19.00**

H-10 **USE FINITE FUNCTIONS KRAVCHENKO-RVACHEV TO DESCRIBE THE DISTRIBUTION STATISTICS OF REFRACTIVE INDEX**
V. F. Kravchenko, V. I. Lutsenko, I. V. Lutsenko, Chen Wei, S. A. Masalov, D. O. Popov, Kharkov, Ukraine; Moscow, Russia

H-11 **STATISTICS BASED ON THE FINITE ATOMIC FUNCTIONS KRAVCHENKO-RVACHEV AND THEIR USE FOR THE DESCRIPTION OF SCATTERED SEA SIGNAL**
V. F. Kravchenko, V. I. Lutsenko, Yang Yi, I. V. Lutsenko, S. A. Masalov, D. O. Popov, Kharkov, Ukraine; Moscow, Russia

H-12 **MATHEMATICAL MODELING OF WAVEGUIDING SYSTEMS BASED ON PHOTONIC CRYSTALS**
Yu. S. Dementieva, Moscow, Russia

Wednesday, June 26

- H-13 **ESTIMATION OF SIGNAL PARAMETERS IN SCANNING RADIOMETER WITH TWO-STAGE PREDETECTION SECTION**
V. K. Volosyuk, V. F. Kravchenko, V. V. Pavlikov, S. S. Zhyla,
Kharkov, Ukraine, Moscow, Russia
- H-14 **A NEW STEGANOGRAPHIC METHOD FOR RGB COLOR IMAGES USING ESTIMATION OF VARIANCE FIELD IN THE WAVELET DOMAIN**
B. E. Carvajal-Gamez, F. J. Gallegos-Funes, V. I. Ponomaryov, R. Cruz-Santiago,
Mexico-city, Mexico
- H-15 **NUMERICAL ALGORITHM FOR ELECTRICAL IMPEDANCE TOMOGRAPHY PROBLEM USING PSEUDOANALYTIC APPROACH**
M. Robles-Gonzalez, V. Ponomaryov, M. Ramirez-Tachiquin, A. Bucio-Ramirez,
Mexico-city, Mexico
- H-16 **FEATURE EXTRACTION BASED ON WAVELET TRANSFORM USING ECG SIGNAL**
A. Palacios-Enriquez, V. Ponomaryov, *Mexico-city, Mexico*
- H-17 **A TRACKING FILTER BASED ON CIRCUIT FLL WITH IMPROVED NOISE-IMMUNITY**
V. V. Pechenin, K. A. Shcherbina, O. V. Voitenko, *Kharkiv, Zhitomir, Ukraine*
- H-18 **METHODS OF ESTIMATION SURFACE ROUGHNESS**
A. A. Shmatko, *Kharkiv, Ukraine*
- H-19 **ON THE WAVEGUIDE WITH NONLINEAR INSERT**
A. A. Belov, *Moscow, Russia*
- H-20 **TRANSFORMATION OF SPECKLE FIELDS IN COHERENT OPTICAL SYSTEMS**
V. K. Volosyuk, V. I. Zvorsky, A. A. Shmatko, E. A. Aksyonov, *Kharkiv, Ukraine*
- H-21 **FRACTAL PARADIGM AND FRACTAL-SCALING METHODS IN FUNDAMENTALLY NEW DYNAMIC FRACTAL SIGNAL DETECTORS**
A. A. Potapov, *Moscow, Russia*

Session E

Microwave and Mm Wave Engineering

Poster Papers

18.00-19.00

- E-10 **THE OPEN-ENDED WAVEGUIDE TRANSDUCER WITH WIRE IN CIRCULAR WINDOW**
I. V. Grymalyuk, O. O. Drobakhin, *Dnipropetrovsk, Ukraine*
- E-11 **DESIGN AND OPTIMIZATION OF BROADBAND RIDGED COAXIAL WAVEGUIDE POLARIZERS**
A. A. Kirilenko, D. Yu. Kulik, S. A. Prikolotin, L. A. Rud, S. A. Steshenko,
Kharkiv, Ukraine
- E-12 **THE MIXER MODULE OF RADIOMETERS OF MILLIMETER AND SUBMILLIMETER-WAVE WITH THE RESONATOR MATCHING OF THE NONLINEAR ELEMENT**
L. B. Kniazkov, N. V. Ruzhentsev, *Kharkiv, Ukraine*
- E-13 **THE PHYSICAL PROPERTIES OF THE RESONANT DIAPHRAGM IN A RECTANGULAR WAVEGUIDE WITH A SLOT PARTIALLY FILLED WITH A DIELECTRIC**
L. P. Yatsuk, A. F. Lyakhovsky, V. A. Katrich, *Kharkiv, Ukraine*

Wednesday, June 26

- E-14 **CHARACTERISTICS OF THE RADIATION FROM THE END OF THE TRANSMISSION LINE ON THE BASIS OF SPHERICAL LENSES MADE OF FOAM DIELECTRIC**
L. B. Kniazkov, N. V. Ruzhentsev, Kharkiv, Ukraine
- E-15 **MODELING OF A DISCRETE PARABOLIC REFLECTOR MADE OF SUB-WAVELENGTH PLASMONIC WIRES**
D. M. Natarov, M. Marciniak, R. Sauleau, Kharkiv, Ukraine; Warsaw, Poland; Rennes, France
- E-16 **ANALYSIS OF CROSS-POLARIZED RADIATION OF OPTIMIZED REFLECTOR ANTENNAS**
N. N. Gorobets, V. I. Kiyko, V. N. Gorobets, Kharkiv, Ukraine
- E-17 **SPECTRUM EXTRAPOLATION BY USING COMBINED ROOT-DEMIDENKO FAMILY OF QUASI-DURATION FUNCTIONALS**
S. M. Vovk, V. F. Borulko, Dnipropetrovsk, Ukraine
- E-18 **EXPLICIT SOLUTION OF THE LANDAU-LIFSHITZ EQUATION IN THE CASE OF ARBITRARY GENUS OF COVERING**
I. Yu. Dmitrieva, Odessa, Ukraine
- E-19 **HORIZONTAL ELECTRIC DIPOLE ABOVE A METAMATERIAL HALF-SPACE: ANALYTICAL SOLUTION AND NUMERICAL SIMULATION**
V. K. Ivanov, A. O. Silin, O. M. Stadnyk, Kharkiv, Ukraine
- E-20 **ABOUT POSSIBILITY TO CREATE A SMALL ANTENNA BASED ON INHOMOGENEOUS BICONICAL LINE**
M. N. Legenkiy, A. Yu. Butrym, M. S. Sharkova, Kharkiv, Ukraine

CONCERT

19.00

MSMW'13 BANQUET

20.00

Session E

Microwave and Mm Wave Engineering
Chair: L. Yatsuk

Invited Paper **09.00-10.30**

- INV.E-1 **A LOW PHASE-NOISE GaAs FET/BJT VOLTAGE-CONTROLLED OSCILLATOR FOR MICROWAVE APPLICATIONS**
V. Ulansky, S. F. B. Suleiman, Kiev, Ukraine; Ontario, Canada

Oral Papers

- E-1 **OPERATOR METHOD IN THE WAVES DIFFRACTION PROBLEM BY A SEMI-INFINITE GRATING OF STRIPS PLACED IN PARALLEL PLANES**
M. E. Kaliberda, L. M. Lytvynenko, S. A. Pogarsky, Kharkov, Ukraine
- E-2 **SPECTRAL PROPERTIES OF A RECTANGULAR WAVEGUIDE SECTION WITH A PAIR OF TWO TRANSVERSAL RIDGES**
L. Mospan, S. Prikolotin, A. Kirilenko, Kharkov, Ukraine
- E-3 **NARROW WAVEGUIDE-SLOT RADIATOR FILLED WITH LAYERED DIELECTRIC**
L. Yatsuk, I. Kichigin, A. Lyakhovsky, Yu. Penkin, Kharkov, Ukraine
- E-4 **THE PARAMETERS OF FILTERS BASED ON A SYSTEM OF SLOTS IN THE HOLLOW INNER CONDUCTOR OF A COAXIAL WAVEGUIDE WITH PARALLEL GENETIC ALGORITHM OPTIMIZATION**
M. E. Kaliberda, S. A. Pogarsky, V. A. Belousov, Kharkov, Ukraine

COFFEE BREAK **10.30-11.00**

Oral Papers **11.00-13.00**

- E-5 **MICROWAVE CHARACTERIZATION OF LARGE AREA GRAPHENE USING A TE_{016} DIELECTRIC RESONATOR**
O. Shaforost, K. Wang, M. Adabi, Zh. Guo, L. Hao, J. Gallop, N. Klein, London, Middlesex, United Kingdom
- E-6 **SUBSTRATE OPTIMIZATION IN MULTIELEMENT THZ IMAGING SYSTEMS**
M. Sakhno, J. Gumenjuk-Sichevska, F. Sizov, Kiev, Ukraine
- E-7 **STUDY OF INTERACTION BETWEEN ANTENNA ELEMENTS OF RADIO IMAGING ARRAY OPERATING IN RANGE OF 3-MM WAVELENGTHS**
I. A. Illarionov, Yu. I. Belov, V. I. Shashkin, P. V. Volkov, Nizhny Novgorod, Russia
- E-8 **GIGANT OPTICAL ACTIVITY IN ARTIFICIAL PLANE-CHIRAL STRUCTURES**
V. Derkach, A. Kirilenko, A. Salogub, S. Prikolotin, N. Kolmakova, Ye. Ostrizhnyi, Kharkov, Ukraine
- E-9 **RECOGNITION MULTIFREQUENCY MICROWAVE IMAGES OF SIMPLE OBJECTS BEHIND DIELECTRIC WALL USING NEURAL NETWORKS**
O. O. Drobakhin, G. G. Sherstyuk, Dnepropetrovsk, Ukraine

Session F

Radio Astronomy and Study of the Earth Environment
Chair: V. Shulga

Oral Papers **09.00-10.30**

- F-1 **THE STUDY OF SATURNIAN LIGHTNING WITH HIGH TIME RESOLUTION**
K. Mylostna, V. V. Zakharenko, A. A. Konovalenko, G. V. Litvinenko, Kharkov, Ukraine
- F-2 **FIRST RESULTS OF THE HIGH TIME RESOLUTION NORTHERN SKY SURVEY AT LOWEST FREQUENCY RANGE OBSERVABLE FROM THE GROUND**
I. Yu. Vasylyeva, V. V. Zakharenko, Kharkov, Ukraine

Thursday, June 27

F-3 **MONITORING OF OZONE AND TEMPERATURE OF MIDDLE ATMOSPHERE DURING STRATOSPHERIC WARMING IN MILLIMETER AND OPTICAL BAND**
Y. Y. Kulikov, A. A. Krasilnikov, V. G. Ryskin, V. N. Marichev, G. G. Matvienko, V. M. Demkin, *Nizhny Novgorod, Tomsk, Russia*

F-4 **TRANSPORTABLE MILLIMETER-WAVE SPECTROMETER FOR MONITORING OF THE ATMOSPHERIC OZONE**
S. B. Rozanov, A. M. Shtanyuk, O. S. Bol'shakov, A. S. Zavgorodniy, E. P. Kropotkina, S. K. Kruglov, S. V. Logvinenko, A. N. Lukin, P. L. Nikiforov, I. I. Saenko, S. V. Solomonov, *Moscow, Nizhny Novgorod, Pushchino, Russia*

F-5 **MILLIMETER-WAVE REMOTE SENSING OF OZONE VERTICAL DISTRIBUTION OVER MOSCOW IN PERIODS OF CONSIDERABLE CHANGES IN THE OZONE LAYER IN 2010-2012**
E. P. Kropotkina, S. V. Solomonov, S. B. Rozanov, A. N. Ignatyev, A. N. Lukin, *Moscow, Russia*

COFFEE BREAK 10.30-11.00

Oral Papers 11.00-13.00

F-6 **GROUND-BASED MICROWAVE SPECTRORADIOMETER FOR THERMAL SOUNDING OF ATMOSPHERE**
V. G. Ryskin, A. A. Shvetsov, V. M. Demkin, L. M. Kukin, L. I. Fedoseev, A. M. Shchitov, *Nizhny Novgorod, Russia*

F-7 **NEW MEASUREMENTS OF RYDBERG SPECTRUM OF SINGLET Mg I IN THE 120-150 GHz FREQUENCY RANGE**
A. S. Kutsenko, N. L. Pogrebnyak, S. F. Dyubko, *Kharkov, Ukraine*

F-8 **SPECTROSCOPY OF THE GROUND, FIRST AND SECOND EXCITED TORSIONAL STATES OF ACETALDEHYDE FROM 0.05 TO 1.6 THz**
I. A. Smirnov, E. A. Alekseev, V. V. Ilyushin, L. Margulés, R. A. Motiyenko, B. Drouin, *Kharkov, Ukraine; Villeneuve d'Ascq, France; Pasadena, USA*

F-9 **HIGH ACCURACY MEASUREMENTS OF METHANOL LINES OF ASTROPHYSICAL INTEREST**
E. A. Alekseev, V. V. Ilyushin, I. A. Smirnov, *Kharkov, Ukraine*

F-10 **MILLIMETER WAVE SPECTRUM OF CONFORMER I OF 1,3-PROPANEDIOL (CH₂OHCH₂CH₂OH) MOLECULE**
I. A. Smirnov, E. A. Alekseev, V. I. Pid'yachiy, V. V. Ilyushin, R. A. Motiyenko, *Kharkov, Ukraine; Villeneuve d'Ascq, France*

F-11 **PROTOTYPE OF MOBILE MICROWAVE OZONOMETER SUITABLE FOR NETWORK OPERATION**
A. A. Krasilnikov, M. Y. Kulikov, L. M. Kukin, V. G. Ryskin, L. I. Fedoseev, A. A. Shvetsov, O. S. Bolshakov, A. M. Shchitov, A. M. Feigin, *Nizhny Novgorod, Russia*

LUNCH 13.00-14.30

Plenary Session Chair: S. Tarapov

Invited Papers 14.30-15.30

INV.12 **RESONANT CHERENKOV TYPE RADIATION IN DISPERSIVE METAMATERIALS**
N. Yashina, P. Melezhhik, A. Poyedinchuk, G. Granet, *Kharkov, Ukraine*

INV.13 **ATOMIC FUNCTIONS AND GENERALIZED THUE MORSE SEQUENCE IN DIGITAL SIGNAL AND IMAGE PROCESSING**
W. Hilberg, V. Kravchenko, O. Kravchenko, Y. Konovalov, *Moscow, Russia*

CLOSING CEREMONY 15.30-16.00