II INTERNATIONAL YOUNG SCIENTISTS FORUM ON APPLIED PHYSICS and ENGINEERING

BUILDING SCIENCE

Kharkiv, Ukraine
October 10-14, 2016

www.ysc.org.ua

CONTENT

Dear YSF-2016 Participants,

Those of you, who are with us for the first time, welcome on board! And those, who have returned to us this year, welcome back!

This is Chair of the 2016 II International Young Scientists Forum on Applied Physics and Engineering speaking. We are extremely delighted to have you here in Kharkiv and hope that you will enjoy all the activities we have prepared for you.

YSF is an annual scientific meeting designed to gather active young scientists who want to succeed in science, find collaborators, ideas and motivation, learn something new and have some scientific fun. We have qualified lecturers from Ukraine, USA, Germany, Israel and Estonia to share their knowledge, ideas and experience with you, so that at least one of this goals gets fulfilled. Usually we have different formats of activities, and this year is no exception. Two workshops on hot topics: scientific entrepreneurship and science popularization. How to build up your own scientific project and how to make society know about what you do and why it is important. We highly recommend not missing any of them.

Apart from the scientific program, exciting activities such as excursions, field trip to UTR-2 radio telescope and parties wait for you to join them.

I would like to express words of appreciation to all invited speakers, workshop lecturers, and sponsors for making this event possible. Special thanks go to our co-organizers from National Technical University "Kharkiv Polytechnic Institute" for hosting us and agreeing to share the responsibility of forum organization.

Organization of this year's forum has been special: while the core team has not changed much since YSF-2015, many of our previous participants have became our co-organizers, and this is how I personally evaluate the success of previous meetings. My amazing Organizing Team, thank you for the devoted work, it has been my pleasure working with you, and I so do hope somebody from YSF-2016 participants to join us for the YSF-2017 organization.

We are looking forward to having you back next year. And now, sit back, relax, and enjoy the Forum.

On behalf of Organizing Team,
YSF-2016 Chair
Daryna Pesina
IRE NASU

ORGANIZING TEAM

Organizing Committee Chairpersons:

Ms. Daryna Pesina | *IRE*
Dr. Maksym Khruslov | *IRE*

Program Committee Chairpersons:

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Dr. Mikhail Balaban | *IRE*

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Legend:

CNUT	*Chernihiv National University of Technology, Chernihiv, Ukraine*
DNU	*Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine*
IAPMM	*Institute of Applied Problems of Mechanics and Mathematics NASU, Lviv, Ukraine*
IRA	*Institute of Radio Astronomy NASU, Kharkiv, Ukraine*
IRE	*O. Ya. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine*
ISP	*Lashkaryov Institute of Semiconductor Physics NASU, Kyiv, Ukraine*
KhPI	*National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine*
KIPT	*National Science Center "Kharkov Institute of Physics and Technology", Kharkiv, Ukraine*
OIU	*Open International University of Human Development "Ukraine", Kyiv, Ukraine*
CSNB	*Center for Nanobiology and Structural Biology, Novy Hrady, Czech Republic*
ESRTC	*European Space Research and Technology Centre, Noordwijk, Netherlands*
ISTIC	*ISTIC, University of Rennes 1, Rennes, France*
PUN	*Parthenope University of Naples, Naples, Italy*
TRDF	*Technicolor R&D France, Cesson-Sevigne, France*
UC	*University of Crete, Heraklion, Greece*
UNICAMP	*University of Campinas, Campinas, Brazil*
UW	*University of Washington, Seattle, WA, USA*

O.Ya. Usikov Institute for Radiophysics and Electronics of National Academy of Science of Ukraine

National Technical University "Kharkiv Polytechnic Institute"

Young Scientists Council of IRE NASU

The Institute of Electrical and Electronics Engineers (IEEE)

Optical Society of America (OSA)

IPMash OSA Student Chapter

IEEE Ukraine Section

IEEE MTT-S, ED-S, AP-S, SSC-S, PHO-S IRE Kharkiv Student Chapters Branch

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

IEEE Ukraine Section Young Professionals Affinity Group

IEEE Ukraine Section Women in Engineering Affinity Group

Ukrainian Physical Society

IRE Young Scientists Association

VENUE

This year National Technical University "Kharkiv Polytechnic Institute" (NTU "KhPI") kindly hosts YSF-2016. The opening and closing ceremonies, SciHacks and plenary lectures will be organized at the Main Building of the university, while sections will be held at the newly renovated Library Building.

NTU "KhPI" is the largest and the oldest technical university in eastern Ukraine. Founded in 1885, it is the second-oldest technical university in the former Russian Empire (after Saint Petersburg State Institute of Technology) and in the territory of modern Ukraine (after Lviv Polytechnic). Nowadays university consists of approximately 20 buildings. Most campuses are concentrated compactly between "Pushkinskaya" and "Architect Beketov" underground stations. Old buildings functioned from the very inception of the institute. They are built of red brick and are of great architectural and even historical value. The University is unique among other Kharkiv educational institutions, since it occupies the same campus that was initially given to it at its foundation in 1885 (the area was formerly called "Technological Garden", after the former name of the university).

NTU "KhPI" is accredited as a university of the highest (IV) level. It trains full-time students in 91 fields and offers 69 fields for instruction by correspondence. The university has 21 full-time departments, departments for correspondence and new full-time students, a center for foreign students, an inter-branch institute for advanced studies and three research and design institutes. It prepares specialists in the fields of machine-building, automation, electrical engineering, electronics, chemical engineering, control systems, management, computer science, software engineering and business. All the courses and its educational and scientific programmes are provided at the level of the best national and international standards.

Scan this QR-code to get the scheme of university corps location.

Kharkiv is the largest city in eastern Ukraine and the country's second most populous. Founded in 1654 by Cossack migrants, the city was built at the joining of the Lopan and Kharkiv Rivers, the latter being the city's namesake. In the beginning, the city served a defensive purpose, protecting the Russian Empire's southern borders from the raids of nomad tribes. But the city also put its location to good use, soon becoming an important trade and industrial center. From 1919 to 1934, it was the capital of Soviet Ukraine. At that time, the city became an important industrial center, behind only Moscow and St. Petersburg.

Today, Kharkiv is the center of eastern Ukraine's science and manufacturing. Presently, Kharkiv operates as a major cultural, scientific, educational, transport and industrial centre of Ukraine, with 60 scientific institutes, 30 higher education universities and institutions, 6 museums, 7 theatres and 80 libraries. Its industry specializes primarily in machinery and in electronics. There are hundreds of industrial companies in the city, including the Morozov Design Bureau and the Malyshev Tank Factory (leaders in world tank production from the 1930s to the 1980s); Khartron (aerospace and nuclear power plants automation electronics); the Turboatom (turbines for the hydro-, thermal- and nuclear- power plants), and Antonov (the multipurpose aircrafts manufacturing plant).

The monumental Soviet-era architecture underscores the city's status and adds a harsh edge to its appearance. This severity is diluted, however, by the bright colors of numerous parks and splendid cathedrals. The heart and pride of Kharkiv is the famous Freedom Square, which is the largest in Europe and the third largest in the world. The crown jewel of its architectural ensemble is the constructivist State Industry building. Built in the early 20th century, it was the first high-rise building in Ukraine.

Inside Shevchenko Park, located not far from the square, you will find an impressive cascade of fountains and see the monument to the most famous Ukrainian, Taras Shevchenko. After that, you can get acquainted with Kharkiv's terrific sacral architecture. Perhaps the most remarkable is the Annunciation Cathedral, which is distinguished by its uncommon striped patterns and Byzantine shape. Right behind it, you can see the city's oldest orthodox church, the Russian Baroque-style Assumption Cathedral, built in the 18th century. Its bell tower, built to commemorate the Russian victory over Napoleon's forces in the War of 1812, is the highest man-made point in the city and one of the highest bell towers in Ukraine. An organ was recently installed in the cathedral itself, and it now hosts numerous concerts.

Walking along Sumskaya Street, the main street of the city, will bring you to the Constitution Square, where lots of interesting statues and objects are concentrated. The most remarkable of them is the huge thermometer, under which local citizens like to meet. You will also see two tanks there, a Soviet and an English one, commemorating the Civil War of 1918 - 1922.

On Sumskaya Street, in front of the Opera House, you will find a unique Mirror Stream fountain, which is one of the main Kharkiv's symbols. It looks like a pavilion, from under which a mirror-like stream of water comes down. In the evening, when the colored lights turn on, the fountain looks especially impressive.

Materials from www.discover-ukraine.info, www.en.wikipedia.org were used

All attendees must wear their name badges at all times to have access to all forum sessions and social events.

WI-FI ACCESS

Wi-Fi internet connection is available throughout the venue. Please refer to the Registration Desk for information.

YSF-GO GAME

This is a unique opportunity to get a gift from YSF for just having fun and communicating! On the back cover of this program you will find letters "YSF" filled with different tasks. Compete the task and get the sticker from a person mentioned in it. Once you collect them all, find any of the organizers with the yellow badge string for recording your success. Be among the first five participants to collect all the stickers and make sure to be present at the closing ceremony, and your hard work will be appreciated with valuable prizes!

SOCIAL PROGRAM

- **WELCOME PARTY**
  Monday, October 10, 2016
  18:30-22:00
  "Oblomov" anti-café,
  10 Marshala Bazhanova Str.
  Free of charge

- **KHARKIV WALKING TOUR**
  Tuesday, October 11, 2016
  18:00-20:00
  guided by Max Rozenfeld
  Price: 70 UAH

- **FAREWELL PARTY**
  Thursday, October 13, 2016
  19:30-23:00
  buterBROdina bar
  64 Pushkinskaya Str.
  Price: 150 UAH

- **POST-CONFERENCE FIELD TRIP TO UTR-2 RADIO TELESCOPE**
  Friday, October 14, 2016
  10:30-19:00
  Price: 150 UAH
  Meeting place: parking of Sun City Plaza, 199A Moskovskyi Ave.

DR. M. I. ANDRIYCHUK
Institute of Applied Problems of Mechanics and Mathematics NASU
Lviv, Ukraine

Dr. Mykhaylo Andriychuk received the M.Sc. degree in the computational mathematics from Lviv National University, and the Ph.D. degree in the mathematical modeling from the Kyiv National University in 1976 and 1987 respectively. Currently, he is in position of the senior scientist at the department of the Numerical Methods in Mathematical Physics of the Pidstryhach Institute for Applied Problems of Mechanics and Mathematics. His professional performance includes more than 130 papers in the scientific journals and international conference proceedings that concern the diffraction and scattering of EM and acoustic waves, antenna synthesis theory optimization methods and nonlinear integral and matrix equations. His professional experience includes also the teaching in two Lviv Universities. He is in a position of visiting professor at the Lviv Polytechnic National University now. Dr. Andriychuk has been IEEE Member since 1995, and IEEE Senior Member since 2003. He served the IEEE MTT/ED/AP/CPMT/SSC West Ukraine Chapter as the Chapter Chairman in 1999-2005, and he was elected to this position for two year term in January, 2016. E-mail: andr@iapmm.lviv.ua.

DR. O. A. VELIHORSKYI
Chernihiv National University of Technology, Chernihiv, Ukraine

Dr. Oleksandr Velihorskyi received the B. Sc. and M. Sc. degrees in electronic systems from Chernihiv State University of Technology in 2001 and 2002, respectively. He received doctoral degree in semiconductor power converters from National Academy of Sciences, Institute of Electrodynamics, Kiev, Ukraine in 2007.
Oleksandr is currently the Head of Biomedical Radioelectronic Apparatus and Systems Department of Chernihiv National University of Technology. He has authored more than 20 published papers on power converters and is the holder of several Utility Models. His research interests include semiconductor power converters, photovoltaic, biomedical electronics.
E-mail: oleksandr.veligorsky@inel.stu.cn.ua.

PROF. S. N. VOLKOV
Bogolyubov Institute for Theoretical Physics NASU, Kyiv, Ukraine

Prof. Sergey Volkov received the M.Sc. degree in theoretical physics from Kiev State University. He defended his Ph.D. thesis on “Theoretical study of the hypochromic effect in DNA” in 1978, and doctoral thesis on ”Collective conformational excitations in macromolecules of DNA” in 1993 at the Institute for Theoretical Physics NASU. From 1977 to 2008 he has worked as junior researcher, senior researcher, leading researcher of the Institute, and in 2008 became its chief researcher. In the same year Prof. Volkov received National State Prize of Ukraine in Science and Technology. Starting from 1996 he has served as a Chairman of Kiev branch of the Ukrainian Biophysical Society, and from 2002 he has also been working as the visiting professor of Physical Faculty of Kiev National University. Currently he is the head of the Laboratory of Biophysics of Macromolecules of

BITP. He is the author of 86 papers in the scientific journals, 2 contributed chapters in books and 69 international conference proceedings. His research interests include DNA physics, conformational mechanics of biological macromolecules and macromolecular systems, and biomolecular spectroscopy. E-mail: snvolkov@bitp.kiev.ua.

PROF. Yu. D. FELDMAN
The Hebrew University of Jerusalem, Jerusalem, Israel

Prof. Y. Feldman is at the Department of Applied Physics, The Hebrew University of Jerusalem. He received his M.Sc. degree in radio physics and the Ph.D. degree in Molecular Physics from the Kazan State University, USSR, in 1973 and 1981 respectively. From 1973 to 1991 he was with Laboratory of Molecular Biophysics of Kazan Institute of Biology of the Academy of Science of the USSR. In 1991 he immigrated to Israel and since 1991 he has been with the Hebrew University of Jerusalem, where he is currently the Full Professor and the Head of the Soft Condensed Matter Laboratory. His current interests include broadband dielectric spectroscopy in frequency and time domain; theory of dielectric polarization and relaxation; relaxation phenomena and strange kinetics in disordered materials; dielectric properties of biological systems.He is an internationally acknowledged expert in the area of soft condensed matter physics and dielectric spectroscopy. He has spent over 30 years in this field and has more than 250 scientific publications related to dielectric spectroscopy and its applications. He holds 11 patents in the areas of Electromagnetic properties of the matter. In 1992 and 2010 the Israel Government acknowledged his work with an award for the outstanding contribution to the development of Israel Science, in 1998 he received the Kaye Award for the best innovation and invention. Feldman is a Director of The Center for Electromagnetic Research and Characterization (CERC); he is a Secretary and Member of the International Dielectric Society Board. E-mail: yurif@mail.huji.ac.il.

PROF. F. J. YANOVSKY
National Aviation University, Kyiv, Ukraine

Prof. Felix Yanovsky was born in Kyiv, graduated with Honors from National Aviation University, Kyiv as radio-engineer in 1968, got PhD and DSc degrees in 1979 and 1992. Currently he is Full Professor and Head of Electronics Department at NAU. He is also visiting professor at: TU-Delft, Netherlands (1996-2015), and other universities in: USA (1998), Germany (2005), Jordan (2007), Korea (2008, 2015), Poland (2010-2014), and China (2010). Prof. Yanovsky is a member of NASU Scientific Council on Radio Physics and Microwave Electronics; representative of Ukraine in European Microwave Association (2004-2006), associate editor of Int. Journal of Microwave and Wireless Technologies (Cambridge Univ. Press); editorial board member of other journals. He served as Principal Investigator of many national and international R&D projects. He was Ukrainian State Prize Winner (1996) and recipient of numerous international travel grants. He authored and co-authored 10 books (Springer, Elsevier, etc), over 480 journal and conference papers, and 40 patents. His scientific interests include Radar; remote sensing of environment; Doppler polarimetry; signal processing; multi-parametric and adaptive methods; statistical methods of analysis and synthesis; inverse problems. E-mail: felix.yanovsky@ieee.org.

PROF. M. OSINSKI
Center for High Technology Materials, University of New Mexico, Albuquerque, USA

Dr. Osinski received his M.Sc. in Physics at the University of Warsaw, Warsaw, Poland. He wrote his thesis on Three-Pion Annihilation of Antiproton-Neutron Pairs in the Veneziano Model. He received his PhD in Physical Sciences at the Institute of Physics, Polish Academy of Sciences, Warsaw, Poland with his dissertation being in Application of Epstein Layer in Semiconductor Injection Laser Modeling. As program director of UNM's $3.1 million fellowship program on Integrating Nanotechnology with Cell Biology and Neuroscience (INCBN), one of Dr. Osinski's current focuses is to develop applications of rapidly evolving nanotechnologies to cell biology and neuroscience.
Dr. Osinski holds joint professorships with UNM's Physics and Astronomy and Computer Science departments. He also is an ECE member of the Optical Science and Engineering Graduate Committee, the governing body of the OSE program. As Fellow of the Society for Photo-Optical Instrumentation Engineers (SPIE) and of the Optical Society of America, Dr. Osinski has chaired or co-chaired 29 SPIE conferences and symposia, edited 24 SPIE Proceedings volumes, and served on numerous conference program committees. He has authored or co-authored more than 415 technical papers and five book chapters, and he holds five patents.

PROF. K. I. CHURYUMOV
Taras Shevchenko National University Astronomical Observatory, Kyiv, Ukraine

Prof. Klim Churyumov received his M.Sc. in Astronomy at Kyiv State University in 1960. Working at the plant "Arsenal", he participated in the development of optical components for the Soviet military and space programs. After finishing postgraduate studies at Kyiv State University (specialty "Astrophysics"), he has remained working as Fellow at the Department of Astronomy at university. As part of his work he observed the comets at the astronomical observatory of Kyiv University in the village Lisniki as well during astronomical expeditions in the highlands of Central Asia, the Caucasus, Siberia, the Primorsky Krai, in Chukotka and Kamchatka. In 1969 he discovered, with Svetlana Gerasimenko, the comet 67P/Churyumov–Gerasimenko; on 12 November 2014 the Rosetta space mission successfully landed its Philae spacecraft on its surface. In 1972 he defended his first post-graduate scientific degree with thesis "Studies of comets Ikeyya-Seki (N/1967n), Honda (C/1968), Tago-Sato-Kosaka (C/1969 T1) and new periodic comet Churyumov-Gerasimenko from photographic observations". In 1993 he defended his doctoral thesis on "Evolutionary physical processes in comets" at the Institute of Space Research, RAS (Moscow). He authored and co-authored more than 800 scientific works. Since 1998 Prof. Churyumov has been at the position of professor at Taras Shevchenko National University of Kyiv. In January 2004 he was appointed as director of the educational center "Kyiv Planetarium". He is also a member of the National Academy of Sciences of Ukraine, International Astronomical Union, New York Academy of Sciences, and president of the Ukrainian Society of astronomy amateurs.

MONDAY, OCTOBER 10TH, 2016

09:30 12:30	**PLENARY SESSION – 1** Chairs: Daryna Pesina and Mikhail Balaban Location: Main Building, Room 12
09:30	OPENING CEREMONY
09:45	MATHEMATICAL MODELING AND NUMERICAL OPTIMIZATION OF CHARACTERISTICS OF THE RADIATING SYSTEMS Dr. M. I. Andriychuk *Institute of Applied Problems of Mechanics and Mathematics NASU, Lviv, Ukraine*
10:30	MAXIMUM POWER POINT TRACKING TECHNIQUES FOR PHOTOVOLTAIC APPLICATION Dr. O. A. Velihorskyi *Chernihiv National University of Technology, Chernihiv, Ukraine*
11:15	COFFEE BREAK
11:45	SCI-HACK-1: GOOGLE SCHOLAR AND OTHERS - HOW CAN THEY HELP YOU? Dr. Serhii Stepenko *Chernihiv National University of Technology, Chernihiv, Ukraine*
12:00	SCI-HACK-2: TIPS ON CV AND MOTIVATION LETTERS WRITING Özlem Gündogdu and Cedric Reichel, *DAAD Lecturers*
12:30	LUNCH
13:30 15:30	**POWER ELECTRONICS AND INDUSTRY APPLICATIONS – 1** Chairs: Serhii Stepenko and Ievgen Pichkalov Location: Library, Room 63
Section Guest Talk PE-IA-1	IMPEDANCE-SOURCE CONVERTERS - NEW ELECTRIC ENERGY CONVERSION TECHNOLOGY Andrii Chub *Tallinn University of Technology, Tallinn, Estonia*
PE-IA-2	DESIGNING INVERTER WITH HIGH POWER DENSITY FOR LITTLE BOX CHALLENGE Evgeny Sboychakov, *Energylayer, Kharkiv, Ukraine*
PE-IA-3	COMPARISON AND VERIFICATION OF BOOST CONTROL METHODS FOR FULL SOFT-SWITCHING BIDIRECTIONAL CURRENT-FED ISOLATED FULL-BRIDGE DC-DC CONVERTER Roman Kosenko, Andrii Chub, Andrei Blinov *Tallinn University of Technology, Tallinn, Estonia*
PE-IA-4	INTEGRATION OF BATTERY AND SUPER-CAPACITOR BANKS INTO A SINGLE-POWER SYSTEM FOR A HYBRID ELECTRIC VEHICLE W. Bisschoff, Oleksandr Dobzhanskyi, Rupert Gouws *North-West University, Potchefstroom, South Africa*
PE-IA-5	COMPARISON ANALYSIS OF ELECTRIC MOTORS WITH TWO DEGREES OF MECHANICAL FREEDOM: PM SYNCHRONOUS MOTOR VS INDUCTION MOTOR Oleksandr Dobzhanskyi, Ebrahim Amiri, Rupert Gouws *North-West University, Potchefstroom, South Africa*

PE-IA-6 AUTOMATION OF QUASI-CLOSED SPACE METHOD BASED ON ARM MICROCONTROLLER
Roman Zaitsev, Michail Kirichenko, Lilia Zaitseva, Dmitry Prokopenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

PE-IA-7 MULTI-LOOP CONTROL SYSTEMS OF COMPENSATORS FOR POWERFUL SOUNDING PULSES GENERATORS
Elena Levon, National Technical University "Kharkiv Polytechnic Institute", Kharkiv, *Ukraine*

15:30	COFFEE BREAK Location: Library, Room 84
16:00 18:00	POWER ELECTRONICS AND INDUSTRY APPLICATIONS – 2

PE-IA-8 A REVIEW OF NON-ISOLATED BIDIRECTIONAL DC-DC CONVERTERS FOR ENERGY STORAGE SYSTEMS
Kostiantyn Tytelmaier, Oleksandr Husev, Oleksandr Veligorskyi, Roman Yershov
Chernihiv National University of Technology, Chernihiv, Ukraine

PE-IA-9 AN EXTENDED DIAGNOSTIC ALGORITHM FOR A GYROSCOPIC SENSORS UNIT
Juan Pablo Bastida, Andrey Chukhray
Zhukovsky National Aerospace University, Kharkiv, Ukraine

PE-IA-10 THE PREVENTION OF RESONANCE OVERVOLTAGES IN NONSINUSOIDAL MODES
Vladislav Kuchanskyy
Institute of Electrodynamics of NAS of Ukraine, Kyiv, Ukraine

PE-IA-11 INVESTIGATION OF THE CHARACTERISTICS OF THE SPECTROMETRIC ANALOG-TO-DIGITAL CONVERTER
Valeriia Ananieva
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

PE-IA-12 ANALYSIS OF CHANGES AND THE INSTRUMENTAL MEASURING ELASTICITY MODULUS FOR WIRES OF TRANSMISSION LINES IN OPERATION
Andrew Galyga, Anatoliy Prystupa
Chernihiv national university of technology, Chernihiv, Ukraine

PE-IA-13 IMPROVING METHODS FOR EVALUATING THE STABILITY OF ELECTRICAL SYSTEMS WITH DISTRIBUTED GENERATION
Fedir Tiutiunnyk, Anatoliy Prystupa, Vadim Bodunov
Chernihiv National University of Technology, Chernihiv, Ukraine

PE-IA-14 TECHNICAL ASPECTS OF DEVELOPING THE BLDC MOTOR ELECTRIC DRIVE AS A PART OF PRECISION ANGLE STABILIZER
Roman Yershov, Sergey Ivanets, Kostiantyn Tytelmaier, Oleksandr Korkh
Chernihiv National University of Technology, Chernihiv, Ukraine

PE-IA-15 "STRAW" POWER PLANT
Alfi Ramadhan, Dani Marbun, Raja Matondang
State Polytechnic of Medan, Medan, Indonesia

13:30 15:30	**COMPUTATIONAL AND EXPERIMENTAL ELECTROMAGNETICS – 1** Chairs: Mikhail Balaban and Maksym Khruslov Location: Library, Room 66
Section Guest Talk EM-1	**EXCITATION OF ELECTROMAGNETIC FIELD IN A ROTATING COAXIAL SPHERICAL RESONATOR** Boris Petrov, Daria Titova *Southern Federal University, Taganrog, Russia*
EM-2	**DOUBLE RING PLANAR ANTENNA** Kutsuk Kirill *O. S. Popov Odessa National Academy of Telecommunications, Odessa, Ukraine*
EM-3	**MEASURING CONVERTER FOR MATERIALS HUMIDITY CONTROL BASED ON WAVEGUIDE-COAXIAL TRANSITION** Yulia Lenko, Anatoly Prystupa, Anatoly Satukov, Serhii Stepenko *Chernihiv National University of Technology, Chernihiv, Ukraine*
EM-4	**NONEQUILIBRIUM GREEN'S FUNCTION METHOD FOR THE HARMONIC OSCILLATOR IN A HEAT BATH** Sergey Pavlik, Dmitriy Kulik, Yuriy Oseledchik *Zaporizhzhya State Engineering Academy, Zaporizhzhya, Ukraine*
EM-5	**THE FEATURES OF DIFFRACTION RADIATION OSCILLATOR OPERATING ON THE 1ST GAUSSIAN MODE OF THE OPEN RESONANT SYSTEM** Ievgen Kovalov, Volodymyr Miroshnichenko *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
EM-6	**NEAR-FIELD CIRCULAR APERTURE FORMED BY CUTTING OF A SEMI-INFINITE CONE APEX** Victor Lysechko *Karpenko Physico-Mechanical Institute of NAS of Ukraine, Lviv, Ukraine*
EM-7	**DIELECTRIC WAVEGUIDE RESONATOR WITH A DIFFRACTION MIRROR** Vladislav Senyuta, Vyacheslav Maslov, Andrey Degtyarev, Alexander Topkov *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*
15:30 16:00 17:45	**COFFEE BREAK** Location: Library, Room 84 **COMPUTATIONAL AND EXPERIMENTAL ELECTROMAGNETICS – 2**
EM-8	**OUT-OF-BAND CHARACTERISTICS OF THE PANEL ANTENNA** Sergey Siden *O. S. Popov Odessa National Academy of Telecommunications, Odessa, Ukraine*
EM-9	**RESONANCE METHOD FOR DETERMINING PERMITTIVITY OF MATERIALS IN THE X- BAND** Maksym Khruslov, Vadim Plakhtii *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

EM-10	SCATTERING OF ELECTROMAGNETIC WAVES FROM A PEC BARS GRATING WITH SLITS FILLED BY NONLINEAR DIELECTRIC Lyudmila Kochetova *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
EM-11	PROCESSING OF FDTD SIMULATION RESULTS FOR CHAOS DETECTION IN CAVITY MICROWAVE RESONATOR Ann Boguslavska, Zoya Eremenko *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
EM-12	MOTION SENSING BY MICROVAVE INTERFEROMETRY USING TWO ELECTRIC PROBES Oleg Pylypenko, Aleksey Doronin, Nicolay Gorev, Inna Kodzhespirova *Institute of Technical Mechanics of NAS of Ukraine, Dnipro, Ukraine*
18:30 22:00	WELCOME PARTY

TUESDAY, OCTOBER 11TH, 2016

09:30 12:30	PLENARY SESSION – 2 Chairs: Kateryna Arkhypova and Roman Tomashevskyi Location: Main Building, Room 12
09:30	MECHANISMS OF DNA DEACTIVATION IN IONIC THERAPY OF ONCOLOGICAL DISEASES Prof. S. N. Volkov *Bogolyubov Institute for Theoretical Physics NASU, Kyiv, Ukraine*
10:15	UNEXPLORED AVENUES OF HUMAN SKIN: READING PERSONAL STRESS IN THE SUB-THZ FREQUENCY RANGE Prof. Yu. D. Feldman *Hebrew University of Jerusalem, Jerusalem, Israel*
11:00	SCI-HACK-3: INTRODUCTION TO MENDELEY Dr. Sergey Prikolotin, *Fulcrum Software*
11:15	COFFEE BREAK
11:45	*Excursion around KhPI*
12:30	LUNCH
13:30 15:30	BIOLOGICAL AND MEDICAL PHYSICS – 1 Chairs: Kateryna Arkhypova and Iryna Sheina Location: Library, Room 63
Session Guest Talk BMP-1	SYSTEMS BIOLOGY - NEW ERA IN BIOLOGY Alina Frolova *Institute of Molecular Biology and Genetics of NAS of Ukraine, Kyiv, Ukraine*
BMP-2	EVALUATION OF THE RADIATION DOSE FROM THE DIAGNOSTIC AND TOPOMETRIC PROCEDURES IN RADIATION THERAPY Iryna Sheina, Mariana Obrazkova, Artyom Trofymov, Leonid Vasilyev *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

BMP-3 COMPARATIVE ANALYSIS OF DOSE DISTRIBUTIONS AT PLANNING TRADITIONAL AND CONFORMAL RADIOTHERAPY
Anna Hasanaliieva, Oleksii Krivonos
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

BMP-4 METHOD OF DIFFERENTIATION OF TUMOR AND HEALTHY TISSUES IN RADIATION THERAPY PLANNING
Anastasia Myronenko, *Grigoriev Institute for Medical Radiology NAMS of Ukraine, Kharkiv, Ukraine*

BMP-5 LEAKY INTEGRATE-AND-FIRE NEURON UNDER POISSON STIMULATION
Kseniia Kravchuk, *Bogolyubov Institute for Theoretical Physics of NAS of Ukraine, Kyiv, Ukraine*

BMP-6 QUANTITATIVE DESCRIPTION OF LYSOZYME-MODULATED AGGREGATION OF HEPTAMETHINE CYANINE DYE
Uliana Tarabara, Kateryna Vus, Valeriya Trusova, Galyna Gorbenko, Atanas Kurutos
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

BMP-7 DETERMINATION OF DRUG - MAGNETIC NANOPARTICLE BINDING CONSTANTS
Anastasiia Herus, Ekaterina Bereznyak, Natalia Gladkovskaya, Evgeniy Dukhopelnykov
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

15:30 **COFFEE BREAK**
Location: Library, Room 84

16:00
18:00 **BIOLOGICAL AND MEDICAL PHYSICS – 2**

BMP-8 NANOSTRUCTURED SILICON BIOSENSORS FOR RAPID DIAGNOSTICS OF AFLATOXIN B1
Andriy Karpiuk, N. Starodub, M. Melnichenko, T. Yatsenko
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

BMP-9 THE SYSTEM FOR RECORDING INDUCED POTENTIALS IN LIQUID BIOLOGICAL ENVIRONMENTS
Ekateryna Korneeva, Roman Tomashevskyi, Yevhen Vikarii
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

BMP-10 COMBINED ACTION OF PHARMACEUTICALS IN MODEL LIPID BILAYERS STUDIED BY MEANS OF DIFFERENTIAL SCANNING CALORIMETRY
Liliia Budianska, Olga Vashchenko, Natalia Kasian, Alina Sadchenko
Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine

BMP-11 ACTION OF PHARMACEUTICALS IN MODEL LIPID MEMBRANES: SPECTROSCOPIC AND THERMODYNAMIC ASPECTS
Alina Sadchenko, Olga Vashchenko, Natalia Kasian, Liliia Budianska
Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine

BMP-12 DEVICE FOR INTEGRATED EVALUATION OF THE ANTIOXIDANT ACTIVITY OF FOODS
Serhiy Batachenko, Roman Tomashevskyi
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

BMP-13 EFFECT OF FE(III) ON BSA AND ITS FILM TEXTURES
Dmitriy Glibitskiy, Artem Zibarov
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

BMP-14 FEATURES OF THE CONSTRUCTION OF A MEDICAL OZONE GENERATOR FOR OZONATION OF OILS
Vyacheslav Kulichenko, Mykola Makhonin
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

BMP-15 THE INFLUENCE OF DYNAMICALLY CHANGING SENSITIVITY FUNCTION OF PROBING ULTRASOUND SYSTEM ON POWER DOPPLER SPECTRUM
Oleksandr Matchenko, Evgen Barannik
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

13:30 15:30 NANO AND METAMATERIALS – 1
Chair: Liubov Ivzhenko and Borys Chernyshev
Location: Library, Room 66

Section Guest Talk HYBRID SURFACE PLASMON POLARITONS LOCALIZED AT ANISOTROPIC METASURFACE
NM-1 Oleh Yermakov, Anton Ovcharenko, Andrey Bogdanov, Ivan Iorsh, Anastasiia Babaieva
ITMO University, St. Petersburg, Russia

NM-2 THE INFLUENCE OF TECHNOLOGICAL PARAMETERS EXTRUDER ON THE QUALITY OF POLYMER NANOCOMPOSITIONS
Yulia Bardadym, Edward Sporyagin
Oles Honchar Dnipropetrovsk National University, Dnipro, Ukraine

NM-3 DESIGN AND MANUFACTURE OF HARDWARE AND SOFTWARE PLATFORM OF UNIVERSAL MEASUREMENT COMPLEX FOR RESEARCH OF DEEP LEVEL DEFECTS IN SEMICONDUCTORS
Serhii Tyshchenko, Lishchuk Igor, Vitaliy Opylat
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

NM-4 LIMITS OF SILVER NANOTUBES THAT ALLOW TO OBSERVE PLASMONS
Elena Velichko, *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*

NM-5 THE FEATURES OF EFFECT OF THE TEMPERATURE REDUCTION GRAPHENE OXIDE ON LOW-TEMPERATURE SORPTION OF 4HE
Razet Basnukaeva, Alexander Dolbin, Maria Khlistyuck et al.
B. Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, Kharkiv, Ukraine

NM-6 **WIRE MEDIUM AS METAMATERIAL WITH TUNED SPECTRAL CHARACTERISTICS**
Liubov Ivzhenko
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

NM-7 **PHASE TRANSITIONS FOR MgB_2 GRANULAR BCS - SUPERCONDUCTOR IN WEAK MAGNETIC FIELDS**
Marat Sunhurov, Valery Derevyanko, Tatyana Sukhareva, Vitaliy Finkel
NSC Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine

15:30 **COFFEE BREAK**
Location: Library, Room 84

16:00 17:30 **NANO AND METAMATERIALS – 2**

NM-8 **INVESTIGATIONS AND DEVELOPMENTS OF THE NEW TYPE STRONGLY TEXTURED PARAMAGNETIC Ni - W SUBSTRATES WITH BUFFER COATING TiN FOR CREATING 2G HTS**
Marat Sunhurov, Vitaliy Finkel, Tatyana Sukhareva
NSC Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine

NM-9 **EXCITATION OF SURFACE PLASMONS BY LOCALIZED TRANSIENT SOURCES**
Nadiia Stognii, Nataliya Sakhnenko
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

NM-10 **MICROWAVE ABSORPTION BY A RIGID DIPOLE IN A VISCOUS FLUID**
Vladyslav Reva, Taras Lyutyy
Adam Mickiewicz University, Poznan, Poland

NM-11 **NANOPARTICLE WITH FINITE MAGNETIC ANISOTROPY IN A TIME-PERIODIC FIELD**
Olexander Hryshko, Anna Kovner, Taras Lyutyy
Sumy State University, Sumy, Ukraine

NM-12 **MAGNETIC PROPERTIES OF 2D COBALT NANOPARTICLE ARRAYS**
Vitalii Zlenko, Sumy State University, Sumy, Ukraine

NM-13 **TRANSMISSION OF SHEAR HORIZONTAL WAVES IN A PIEZOELECTRIC COMPOSITE STRUCTURE**
Davit Piliposyan
Institute of Mechanics of NAS RA, Yerevan, Armenia

13:30 15:30 **NUCLEAR AND PLASMA PHYSICS – 1**
Chair: Vitaliy Shcherbinin and Mikhail Balaban
Location: Library, Room 79

Section Guest Talk NPP-1 **ON THE GRAD PROBLEM IN PLASMA PHYSICS**
Vyacheslav Gorev, Alexander Sokolovsky
Oles Honchar Dnipropetrovsk National University, Dnipro, Ukraine

NPP-2 **FEATURES OF MICROWAVES REFRACTION ON AN INHOMOGENEOUS PLASMA CYLINDER**
Yevhen Siusko, Yuriy Kovtun, Evgeniy Skibenko, Anatoliy Skibenko
NSC Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine

NPP-3 EXCITATION OF LUMINESCENCE BY MEANS OF X-RAYS IN SILICA
Illya Mysiura, Oganez Kalantaryan, Sergey Kononenko, Vitaliy Zhurenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

NPP-4 EXTRACTION OF MOLYBDENUM COMPLEXES BY SUPERCRITICAL CARBON DIOXIDE
Andrii Korchak, Olexander Kulyk, Stella Skoromnaya, Victor Tkachenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

NPP-5 SURFACE MORPHOLOGY EVOLUTION OF ALUMINUM AS BERYLLIUM SURROGATE UNDER HIGH-FLUX LIGHT IONS BOMBARDMENT
Oleksandr Babych, Oleksii Girka, Ivan Bizyuko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

NPP-6 DIAGNOSIS OF PLASMA GLOW DISCHARGE ENERGY PARAMETERS IN THE PROCESSES OF TREATMENT SMALL DIAMETER LONG TUBES
Maksym Bolotov, Gennady Bolotov, Iryna Prybytko, Gennady Kharchenko
Chernihiv National University of Technology, Chernihiv, Ukraine

NPP-7 THE INFLUENCE OF INITIAL CONDITIONS ON UO_2^+ IONS MOTION PATHS IN ExB FIELDS
Tetiana Tkachova, Vladimir Yuferov, Vyacheslav Katrechko, Alexander Svichkar, Vira Ilichova, S. Shariy
NSC Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine

15:30 COFFEE BREAK
Location: Library, Room 84

16:00 NUCLEAR AND
17:00 PLASMA PHYSICS – 2

NPP-8 PLASMA-CATALYTIC CONVERSION OF ETHANOL-WATER MIXTURE INTO SYNTHESIS GAS
Igor Fedirchyk, Oleg Nedybaliuk, Valeriy Chernyak, Valentyna Demchina
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

NPP-9 PHOTOELECTRIC PROPERTIES OF $Cd_{1-x}Zn_xTe$ CRYSTALS FOR GAMMA RADIATION DETECTORS
Oleksii Poluboiarov, S. Sulima, O, Chugai, O. Voloshin
Institute for Single Crystals of NAS of Ukraine, Kharkiv, Ukraine

NPP-10 DATA ACQUISITION SYSTEM BASED ON ARDUINO PLATFORM FOR LANGMUIR PROBE PLASMA MEASUREMENTS
Ivan Misiruk, Oleksandr Timoshenko, Valeriy Taran, Igor Garkusha
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

18:00 KHARKIV WALKING TOUR
20:00 with Max Rozenfeld

WEDNESDAY, OCTOBER 12TH, 2016

09:30 13:30	WORKSHOP ON SCIENTIFIC ENTREPRENEURSHIP see details below
13:30 15:30	LUNCH
15:30 18:45	WORKSHOP ON SCIENCE POPULARIZATION see details on below

THURSDAY, OCTOBER 13TH, 2016

09:30 12:45	PLENARY SESSION – 3 Chairs: Ganna Veselovska and Serge Yerin Location: Main Building, Room 12
09:30	SPECTRAL POLARIMETRIC REMOTE SENSING OF NATURAL OBJECTS: FROM RAIN TO ASTROPHYSICS Prof. F. J. Yanovsky *National Aviation University, Kyiv, Ukraine*
10:15	A NEW GENERATION OF ULTRAFAST TRANSMITTERS BASED ON INJECTION-LOCKED SEMICONDUCTOR RING LASERS Prof. M. Osinski *Center for High Technology Materials, University of New Mexico, Albuquerque, USA*
11:00	COFFEE BREAK
11:30	SCI-HACK – 4: ARXIV - HOW TO MAKE YOUR ACRTILE VISIBLE FOR THE WHOLE WORLD Ievgen Melezhyk *Lashkaryov Institute of Semiconductor Physics NASU, Kyiv, Ukraine*
11:40	SCI-HACK – 5: ZOTERO - SCIENTIFIC BIBLIOGRAPHY IN ONE CLICK Pavlo Krasov *Research scientist at O.Ya. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine*
11:50	SCIENCE-COMMUNITY.ORG: HOW TO BE ABREAST OF OPPORTUNITIES JUST READING YOUR E-MAIL Ievgen Melezhyk *Lashkaryov Institute of Semiconductor Physics NASU, Kyiv, Ukraine*
12:00	RESULTS OF STUDY OF THE NUCLEUS AND ATMOSPHERE OF SHORT-PERIOD CHURYUMOV-GERASIMENKO COMET USING ROSETTA SPACE MISSION EQUIPMENT Prof. K. I. Churyumov *Taras Shevchenko National University Astronomical Observatory, Kyiv, Ukraine*
12:45	LUNCH

13:45 15:45	**RADIO ASTRONOMY AND ASTROPHYSICS – 1** Chair: Serge Yerin and Anastasiia Skoryk Location: Library, Room 63
Section Guest Talk RAA-1	**DYNAMICAL EVOLUTION OF ASTEROIDS** Oleksiy Golubov *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*
RAA-2	**TANGENTIAL YORP PRODUCED BY ASTEROID REGOLITH** Veronika Lipatova, Oleksiy Golubov *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*
RAA-3	**FINE STRUCTURE OF THE PSR B0809+74 INDIVIDUAL PULSES IN DECAMETER WAVE RANGE** Anastasiia Skoryk, Oleg Ulyanov, Vyacheslav Zakharenko, Alisa Shevtsova, Maksym Plakhov et al. *Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine*
RAA-4	**SOLUTION OF THE MYSTERY OF INTERPULSE SHIFT IN CRAB PULSAR** Victor Kontorovich, Sergii Trofymenko *NSC Kharkiv Institute of Physics and Technology, Kharkiv, Ukraine*
RAA-5	**USING OF PULSAR SPECTRA CATALOGUE AT FREQUENCIES BELOW 80 MHZ FOR ASTRONOMICAL CALIBRATION OF PHASED ANTENNA ARRAYS** Vyacheslav Zakharenko, Serge Yerin, Igor Bubnov, Iaroslavna Vasilieva, Ihor Kravtsov *Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine*
RAA-6	**DATA PROCESSING OF THE LOW FREQUENCY PULSARS AND TRANSIENTS SURVEY OF THE NORTHERN SKY** Ihor Kravtsov, Vyacheslav Zakharenko, Vasylieva Iaroslavna, Sofia Mykhailova, Oleh Ulyanov et al. *Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine*
RAA-7	**ON THE POSSIBILITY OF IMAGE PROCESSING ACCELERATION WITH THE GRAPHIC PROCESSING UNIT** Ilya Lyashenko, Sergey Skuratovskiy, Yuriy Kornienko, Irina Dulova, Vladimir Pugach, Liliya Stulova *O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
15:45 16:15	**COFFEE BREAK** Location: Library, Room 84
18:00	**RADIO ASTRONOMY AND ASTROPHYSICS – 2**
Section Guest Talk RAA-8	**MAGNETOHYDRODYNAMICS OF GAMMA-RAY BURST AFTERGLOWS** Uliana Pyrohova *Anton Pannekoek Institute for Astronomy, Amsterdam, Netherlands*
RAA-9	**SPORADIC PHENOMENA IN RADIO ASTRONOMY: FROM PLANETARY LIGHTNING TO GAMMA-RAY BURSTS** Krystyna Mylostna *Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine*

RAA-10 **CHARACTERISTICS OF 5 STAR-FORMING REGIONS WITH A COMPLEX STRUCTURE**
Oleksii Patoka, Valery Shulga, Lev Pirogov, Magnus Thomasson
Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine

RAA-11 **LOW-FREQUENCY RADIO RECOMBINATION LINES INVESTIGATIONS**
Alexander Konovalenko, Sergey Stepkin, Evgeniy Vasilkovskiy
Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine

RAA-12 **OBSERVATIONS OF SOLAR BURST SOURCES OCCULTED BY THE SOLAR CORONA**
Yaroslav Volvach, Aleksander Stanislavsky
Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine

RAA-13 **ANALYSIS OF TWEEK-ATMOSPHERICS SYNTHESIZED UNDER THE QUASI-LONGITUDINAL PROPAGATION MODEL IN SHARPLY BOUNDED MAGNETIZED IONOSPHERE**
Oleksii Krivonos, Alexander Shvets
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

13:45 15:45 **SOLID STATE PHYSICS – 1**
Chairs: Tetiana Rokhmanova and Ievgen Melezhik
Location: Library, Room 66

SSP-1 **MAGNETIZATION DYNAMICS IN A QUAD-LAYER SPIN-TORQUE NANO-OSCILLATOR**
Oleh Kozynets, Oleksandr Prokopenko
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

SSP-2 **MICROWAVE PHASE-LOCKING OF SEVERAL SPIN-TORQUE NANO-OSCILLATORS WITH DIFFERENT EIGEN PARAMETERS**
Olga Sulymenko, Oleksandr Prokopenko
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

SSP-3 **DIFFERENT POWER-DEPENDENT OPERATING REGIMES OF A SPIN-TORQUE MICROWAVE DETECTOR**
Serhii Sorokin, Oleksandr Prokopenko
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

SSP-4 **EFFECT OF PRESSURE DURING SULFURIZATION OF STACKED METALLIC PRECURSORS ON THE STRUCTURE PROPERTIES OF CZTS THIN FILMS**
Valerii Ganus, Ivan Babichuk
V. E. Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine, Kyiv, Ukraine

SSP-5 **THE WAVEGUIDE METHOD FOR THE DETERMINATION OF COMPLEX PERMITTIVITY OF HIGH LOSS LIQUID AT THE FREQUENCY RANGE 5-40 GHZ**
Kateryna Kuznetsova, Zoya Eremenko
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

SSP-6 THE INFLUENCE OF PHYSICAL FIELDS ON THE PROPERTIES OF POLYMER COMPOSITES
Yulia Bardadym, Volodymyr Vilensky
Institute of Macromolecular Chemistry of NAS of Ukraine, Kyiv, Ukraine

SSP-7 THE SEARCH OF NEW WAYS OF THERMOELEMENTS PRODUCTION
Gennady Kharchenko, Oleh Novomlynets, Irina Prybytko, Iryna Nahorna
Chernihiv National University of Technology, Chernihiv, Ukraine

SSP-8 FREE ENERGY OF A MAGNETIC
Kseniia Haponenko, Alexander Sokolovsky
Oles Honchar Dnipropetrovsk National University, Dnipro, Ukraine

15:45 COFFEE BREAK
Location: Library, Room 84

16:15 – 17:45 SOLID STATE PHYSICS – 2

SSP-9 TRANSMITTANCE OF THZ WAVES THROUGH FINITE-THICKNESS LAYERED SUPERCONDUCTORS IN THE PRESENCE OF EXTERNAL DC MAGNETIC FIELD
Tetiana Rokhmanova, Stanislav Apostolov, Zakhar Maizelis, Valeriy Yampolskii
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

SSP-10 THE POWER FACTOR OF BI2TE3 - SB2TE3 SOLID SOLUTIONS
Kateryna Martynova
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

SSP-11 CONCEPTION OF FLEXIBLE THIN-FILM SOLAR BATTERY FOR AUTONOMOUS HYBRID THERMOPHOTOENERGY UNIT
Michail Kirichenko, Roman Zaitsev, Lilia Zaitseva, D. Lobotenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

SSP-12 DEVELOPMENT OF KESTERITE BASED HETEROJUNCTION FOR PHOTOVOLTAICS APPLICATION
Alexandra Lukianova, Natalia Klochko, Volodymyr Kopach, Victor Lyubov
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

SSP-13 DESCRIPTION OF THE BEHAVIOR OF THE ISOCHORIC THERMAL CONDUCTIVITY IN ORIENTATIONALLY ORDERED PHASE OF 1-PROPANOL
Anna Karachevtseva, V. Sagan, V. Konstantinov, V. Revyakin
B. Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, Kharkiv, Ukraine

SSP-14 **SPIN-CURRENT INDUCED SWITCHING BETWEEN STATES OF THE NONCOLLINEAR ANTIFERROMAGNET IRMN**
Vladyslav Kuchkin, Olena Homonay
Institut fur Physik, Mainz, Germany

13:45 15:45	GEOSCIENCE AND REMOTE SENSING Chair: Aleksey Kovorotniy and Sergey Skuratovskiy Location: Library, Room 79

GRS-1 **WIENER ACOUSTIC SIGNAL DETECTION-MEASUREMENT RULE**
Maksym Onoprienko
Ivan Kozhedub Kharkiv University of Air Force, Kharkiv, Ukraine

GRS-2 **OPTIMAL SURFACE PARAMETER ESTIMATION USING SYNTHETIC APERTURE RADARS**
Vladimir Pavlikov, Simeon Zhyla, Olexiy Khaleev, Maksym Antonov
Zhukovsky National Aerospace University, Kharkiv, Ukraine

GRS-3 **SHADOW REMOVAL ALGORITHM WITH SHADOW AREA BORDER PROCESSING**
Yana Shedlovska, Volodimir Hnatushenko
Oles Honchar Dnipropetrovsk National University, Dnipro, Ukraine

GRS-4 **EVALUATION OF SURFACE DAMAGE DEGREE BY SPECKLE CORRELATION TECHNIQUE**
Liudmyla Frankevych
Karpenko Physico-Mechanical Institute of NAS of Ukraine, Lviv, Ukraine

GRS-5 **ELECTROMAGNETIC WAVE SCATTERING OF HEXAGONAL SNOW CRYSTALS**
Ganna Veselovska, Grigoriy Khlopov
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

GRS-6 **STRUCTURAL OPTIMIZATION OF DICKE-TYPE RADIOMETER**
Vladimir Pavlikov, Semen Zhyla, Oleksiy Odokienko
Zhukovsky National Aerospace University, Kharkiv, Ukraine

GRS-7 **THE COMPARATIVE ANALYSIS OF THE SEVEN-DAY AEROSOL CONCENTRATION CYCLING OF THE INDUSTRIALIZED REGIONS OF WESTERN EUROPE AND NORTH AMERICA**
Anna Soina
Institute of Radio Astronomy of NAS of Ukraine, Kharkiv, Ukraine

GRS-8 **STATISTICAL RCS PROCESSING**
Vladyslav Khrychov, Maxim Legenkiy
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

GRS-9 **AERIAL NATURAL GAS LEAKS DETECTION METHODS**
Igor Kravchyshyn, Felix Yanovskiy
National Aviation University, Kyiv, Ukraine

GRS-10 **QUANTIFICATION OF PLACER MINERALS BY MODELLING OF ELECTROMAGNETIC RESPONSE USING COMPUTATIONAL TECHNIQUE: AN INNOVATIVE APPROACH**
Vijeta Jha, Muniyan Sundararajan
Technogy information, forecasting and assessment council, New Delhi, India

15:45 **COFFEE BREAK**
Location: Library, Room 84

16:15
18:15 **OPTICS AND PHOTONICS**
Chair: Den Natarov
Location: Library, Room 79

OP-1 **COMBINED SEISMIC SENSOR BASED ON DIGITAL LASER INTERFEROMETER**
Ivan Gorbov, Oleksander Britsky, Sergiy Shcherbina
Institute for Information Recording of NAS of Ukraine, Kyiv, Ukraine

OP-2 **NEAR ULTRAVIOLET PHOTODETECTOR BASED ON ELECTRODEPOSITED IN PULSE MODE ZINC OXIDE ARRAYS**
Kateryna Klepikova, Natalia Klochko, Volodymyr Kopach, Gennady Khrypunov, Viktor Lyubov et al.
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

OP-3 **CHANGING OF AN AIRY PULSE FORM DUE TO RE-REFLECTIONS INSIDE A DIELECTRIC LAYER**
Olha Kuryzheva, Alexander Nerukh
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

OP-4 **SIGNAL OF MICROSTRIP SCANNING NEAR-FIELD OPTICAL MICROSCOPE IN FAR- AND NEAR-FIELD ZONES**
Yevhenii Morozov, Anatoliy Lapchuk, Andriy Kryuchyn
Institute for Information recording of NAS of Ukraine, Kyiv, Ukraine

OP-5 **FEATURES OF LASER RADIATION EFFECTS ON BIOLOGICAL TISSUE**
Vladyslav Kotelnykov, Yuri Machekhin
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

OP-6 **INFLUENCE OF SILVER NANOPARTICLES ON FLUORESCENCE INTENSITY OF LASER DYES.**
Kirill Nikolayev, Vasil Pozhar, Sergey Nikolayev, M. Dzyubenko
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

OP-7 **PHYSICS OF A GREENHOUSE**
Oryna Ivashtenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

OP-8 **WAVE SCATTERING AND EMISSION BY A PLASMONIC STRIP PLACED INTO A CIRCULAR QUANTUM WIRE**
Olga Shapoval, Denys Natarov, Kazua Kobayashi
O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine

OP-9 **A SECOND DERIVATIVE METHOD FOR RAMAN PEAK RECOGNITION AND RANGE INDEPENDENT BACKGROUND SUBTRACTION ALGORITHM**

Andrew Huzortey, Benjamin Anderson, Alfred Owusu
University of Cape Coast, Cape Coast, Ghana

18:30	CLOSING CEREMONY Location: Main Building
19:30 23:00	FAREWELL PARTY

FRIDAY, OCTOBER 14TH, 2016

10:30 19:00	POST-CONFERENCE FIELD TRIP TO RADIO TELESCOPE UTR-2

We know what you think. “Startups might not be the best case scenario for scientific based projects”. “I am doing ‘classical’ science; there is no project in it”. “Entrepreneurship? That is so not about me!” But let’s stop being pessimistic for a moment. Have you ever thought of having scientific project aside from your general research? Do you know how its roadmap might look like? Have you ever considered intellectual property issue?
We think that “project style” thinking needs initial external push. And we are giving you it – at the Workshop on Scientific Entrepreneurship.

When: October 12 | 09:30-13:30
Where: Educational hub and co-working place “Spalah” | 6 Divocha Str.

CHAIRS

PAVLO KRASOV
Researcher,
IRE NASU, Kharkiv, Ukraine

CAN SCIENTIST BE A STARTUPER?

OLEKSANDR SKOROKHOD
Researcher,
IMBG NASU, Kyiv, Ukraine

PROJECT STEPS BY LEAN CANVAS

ULRICH SCHELLER
Managing Director, BBB Management GmbH, BiotechPark Berlin-Buch

FROM START-UPS TO MATURE ENTERPRISES

ANDRII CHUB
Junior Researcher, Tallinn University of Technology

KEEP CALM AND DO TECH.TRANSFER

DIMA GADOMSKY
CEO at Axon Partners

IP OR NOT IP

WORKSHOP ON SCIENCE POPULARIZATION

It is well known that outreach is not less important than the research itself. It can have different forms, from public lectures and days of science to blogging, making scientific picnics, quest games, and others. Our Forum has gathered famous science popularizers from Kyiv and Kharkiv, who will share their experience of bringing science to everyone.

When: October 12 | 15:30-18:30
Where: Co-working place “Fabrika” | 1 Blagovischenska Str.

SERGIY GONCHAROV
Days of Science
POPULARIZATION OR VULGARIZATION? WHAT ONE SHOULDN'T DO?

EGOR ISHTVAN
Creator of own courses in robotics and electronics
SCIENCE IN KIDS EDUCATIONAL CENTERS

OLEKSIY BOLDYREV
My Science
THE FUNCTION OF POPULARIZER BETWEEN SCIENCE AND SOCIETY

VIKTORIYA KRUGLOVA
Landau Center
CENTER FOR SCIENCE POPULARIZATION

VALERIYA LAVRENKO
Science-community.org
HYGIENE IN SCIENTIFIC ONLINE COMMUNITY

OLEKSANDR GAPAK
15x4
15 MINUTES ABOUT 15X4

ANASTASIA SKORYK and OKSANA KHVYLYA
Free University
"FREE UNIVERSITY" - A PLATFORM FOR SCIENCE AND SOCIETY COMMUNICATION

ANNA DOROSHENKO
Intellect Networking
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