

**2017 IEEE INTERNATIONAL
YOUNG SCIENTISTS FORUM ON
APPLIED PHYSICS
AND ENGINEERING**



BUILDING SCIENCE

**Lviv, Ukraine
October 17-20, 2017**

www.ysc.org.ua

TECHNICAL PROGRAM	3
Tuesday, October 17th, 2017	3
Plenary Session – 1	3
Power Electronics and Industry Applications	5
Information Systems and Nondestructive Testing	7
Optics and Photonics	8
Wednesday, October 18th, 2017	8
Workshops and Panel Discussion	9
Thursday, October 19th, 2017	9
Plenary Session – 2	9
Biological and Medical Physics	11
Geoscience and Remote Sensing	12
Multiwavelength Astronomy and Astrophysics	13
Power Electronics and Industry Applications	14
Friday, October 20th, 2017	15
Plenary Session – 3	15
Solid State Physics	18
Microwave and Terahertz Electronics	19
Computational and Experimental Electromagnetics	20
Nuclear and Plasma Physics	21
Nano and Metamaterials	22
Saturday, October 21st, 2017	24
CS-oriented workshop	24

TUESDAY, OCTOBER 17TH, 2017

09:30
12:45

PLENARY SESSION – 1

Chairs: Daryna Pesina and Serhii Stepenko
Location: Grand Reading Room, 2nd floor

09:30
10:00
10:45

OPENING CEREMONY

VEHICLE ELECTRIFICATION IN IMPROVING COMFORT AND SAFETY IN AUTOMOBILES

Dr. Tomy Sebastian

Halla Mechatronics, Michigan, USA

10:45
11:30

EMERGING TOPICS IN OPTICS AND PHOTONICS

Prof. Gregory Quarles

OSA, Washington, D.C., USA

11:30
12:00

COFFEE BREAK

12:00
12:45

INTERACTIVE LECTURE ON PUBLIC SPEAKING

David Kuptsov

"Public Speaking Polygon"

12:45
14:00

GROUP PHOTO. LUNCH

14:00
16:00

POWER ELECTRONICS AND INDUSTRY APPLICATIONS – 1

Chair: Serhii Stepenko

Location: Grand Reading Room, 2nd floor

Session
Guest
Talk
PE-IA-1
PE-IA-2

R&D IN POWER ELECTRONICS FOR RENEWABLE ENERGY APPLICATIONS IN TALLINN UNIVERSITY OF TECHNOLOGY

Serhii Stepenko

Tallinn University of Technology, Estonia

EXPERIMENTAL RESEARCH OF THE MANIPULATION PROCESS BY THE OBJECTS USING BERNOULLI GRIPPING DEVICES

Roman Mykhailyshyn, Volodymyr Savkiv, Frantisek Duchon, Mykhailo Mikhalishin

Ternopil Ivan Puluj National Technical University, Ternopil, Ukraine

PE-IA-3

FORMING CONTROL OVER DISTRIBUTED SYSTEM OF TECHNOLOGICAL AGGREGATES OF CONCENTRATED ORE LINE

Volodymyr Morkun, Natalia Morkun, Vitalii Tron

SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine

PE-IA-4

NEURO-FUZZY IDENTIFICATION OF DRILLING CONTROL SYSTEM WITH ADAPTATION TO THE TYPE OF ROCK

Volodymyr Morkun, Vitaliy Tron, Dmitriy Paranyuk

SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine

- PE-IA-5 **ENERGY BALANCE OF ELECTROMECHANICAL CONVERTERS WITH COMMON MASSIVE ROTOR**
Mykola Zablodskiy, Volodymyr Grytsyuk, Yevgen Rudnev, Olga Timofeeva, Konstantin Khudobin
Donbas State Technical University, Lisichansk, Ukraine
- PE-IA-6 **OPERATING MODES OF COAXIAL-LINEAR ENGINE**
Dmytro Sorokin, Andrii Zhiltsov
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
- PE-IA-7 **PROTECTION OF ASYNCHRONOUS ELECTRIC MOTORS FROM SWITCHING OVERVOLTAGE**
Dmytro Danylchenko, Sergey Shevchenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- PE-IA-8 **ANALYSIS OF THE EFFICIENCY OF ENERGY TRANSFORMATION IN INDUCTION MOTOR ELECTRIC DRIVES WITH INDEPENDENT POWER SUPPLY**
Danylo Trinchuk, *National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine*
- PE-IA-9 **ELECTRIC MACHINES FAULTS MONITORING SYSTEM WITH HYBRID ELECTRO-OPTIC CAPACITIVE MECHANICAL SENSORS**
Ievgen Zaitsev
Institute of Electrodynamics NAS of Ukraine, Kyiv, Ukraine

16:00
16:30

COFFEE BREAK

16:30
18:30

**POWER ELECTRONICS AND
INDUSTRY APPLICATIONS – 2**

- PE-IA-10 **A REVIEW OF VEHICLE-TO-GRID TECHNOLOGY & ITS IMPACT ON THE DISTRIBUTION NETWORK RELIABILITY**
Mohammad Seif, Ibrahim Ibrahim
IEEE Industry Applications Society, Cairo, Egypt
- PE-IA-11 **MATCHING OF RENEWABLE SOURCE OF ENERGY GENERATION GRAPHS AND ELECTRICAL LOAD IN DISTRIBUTION ELECTRIC GRID**
Sergii Kravchuk, Iryna Kotylko
Vinnitsya National Technical University, Vinnitsya, Ukraine
- PE-IA-12 **PLACEMENT OF DISTRIBUTED GENERATION CONSIDERING TOPOLOGY**
Tetiana Kulko, Anatoliy Prystupa, Vadim Bodunov, Alexander Gai
Chernihiv National University of Technology, Chernihiv, Ukraine
- PE-IA-13 **DISTRIBUTION SCHEME OF NON-LINEAR SURGE ARRESTER AT WORK IN THE ZONE OF CURRENT CIRCUITS**
Dmytro Danylchenko, Sergey Shevchenko, Oleksii Ganus
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

- PE-IA-14 **PROTECTION OF OVERHEAD LINES OF MIDDLE CLASSES OF VOLTAGE FROM ATMOSPHERIC EXPOSURE**
Dmytro Danylchenko, Sergey Shevchenko, Oleksii Ganus
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- PE-IA-15 **INCREASING THE SMALL HYDROPOWER PLANTS EFFICIENCY IN UKRAINE THROUGH THE APPLICATION OF AUTOMATIC CONTROL SYSTEM MODES**
 Oksana Dovgalyuk, Nikolay Lukhtura, Sherali Saidov, Alexander Lazurenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- PE-IA-16 **MATHEMATICAL MODEL OF TRANSIENT PROCESSES IN ELECTRIC NETWORKS IN PHASE COORDINATES**
Serhii Lebedka, Mykhailo Petrovskiy, Ilya Diahovchenko, Yuri Vepryk
Sumy State University, Sumy, Ukraine
- PE-IA-17 **OPTIMIZATION OF POWER TRANSMISSION MODE 750 KV**
 Vladimir Bondarenko, Oksana Dovgalyuk, Roman Bondarenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- PE-IA-18 **ELECTRIC ENERGY ACCOUNTING AND POWER QUALITY IN ELECTRIC NETWORKS WITH PHOTOVOLTAIC POWER STATIONS**
Illia Diahovchenko, Vitalii Volokhin, Bogdan Derevyanko
Sumy State University, Sumy, Ukraine

INFORMATION SYSTEMS AND NONDESTRUCTIVE TESTING – 1

14:00
16:00

Chairs: Liudmyla Frankevych and Victor Lysechko
 Location: Reading Room 1, 2nd floor

- IS-NT-1 **OBJECTIVE AND SUBJECTIVE MUSIC QUALITY ASSESSMENT FOR SIGNALS LIMITED BY FREQUENCY BAND**
 Igor Kotvytskyi
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine
- IS-NT-2 **METHOD OF SEGMENTATION AND RECOGNITION OF UKRAINIAN LICENSE PLATES**
Andrii Radchenko, Volodymyr Kazymyr, Ruslan Zarovsky
Chernihiv National Technological University, Chernihiv, Ukraine
- IS-NT-3 **FAULT DIAGNOSIS OF POWER TRANSFORMER USING METHOD OF GRAPHIC IMAGES**
 Oleg Shutenko, Ivan Jakovenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- IS-NT-4 **COMPARATIVE PERFORMANCE ANALYSIS OF NEURAL NETWORKS ARCHITECTURES ON H2O PLATFORM FOR VARIOUS ACTIVATION FUNCTIONS**
Yuriy Kochura, Sergii Stirenko, Yuri Gordienko
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine

- IS-NT-5 **A SCALABLE VHDL-IMPLEMENTATION TECHNIQUE OF THE BINARY ENCODER STRUCTURE INTO FPGA**
Roman Yershov, Denys Yakosenko, Serhii Yatsenko
Chernihiv National University of Technology, Chernihiv, Ukraine
- IS-NT-6 **PERFORMANCE EVALUATION OF DISTRIBUTED COMPUTING ENVIRONMENTS WITH HADOOP AND SPARK FRAMEWORKS**
Vladyslav Taran, Oleg Alienin, Sergii Stirenko, Yuri Gordienko
National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Kyiv, Ukraine
- IS-NT-7 **MARINE ELECTRIC GENERATING PLANTS CONTROL SYSTEMS SOFTWARE FUNCTIONAL TESTING**
Mahmoud Al-Suod, Alexander Ushkarenko, Olga Dorogan
Admiral Makarov National University of Shipbuilding, Nikolaev, Ukraine
- IS-NT-8 **INFORMATIONAL SECURITY SYSTEM: CYRADAR OR CYBER SITUATIONAL AWARENESS**
Valentine Nekhay, Vitaly Litvinov
Chernihiv National University of Technology, Chernihiv, Ukraine
- IS-NT-9 **THE SYSTEM OF INTELLECTUAL DATA ANALYSIS FORECASTING AND CONTROL OF INDUSTRIAL POLLUTANT EMISSIONS**
Volodymyr Morkun, Natalia Morkun, Oleksandra Serdiuk, Oleksandr Suvorov
SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine

16:00

16:30

COFFEE BREAK

16:30

18:30

INFORMATION SYSTEMS AND NONDESTRUCTIVE TESTING – 2

- IS-NT-10 **RAMAN SCATTERING DIAGNOSTICS OF MIXED $\text{Ag}_x\text{Ga}_x\text{Ge}_{1-x}\text{Se}_2$ ($0.167 \leq x \leq 0.333$) COMPOUNDS**
Yevhenii Havryliuk, Volodymyr Dzhagan, Volodymyr Yukhymchuk, Alexander Litvinchuk, Mykhailo Valakh
Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine
- IS-NT-11 **THERMOELASTICITY COMPONENT ANALYSIS IN GLASSES DURING RADIATION COOLING**
Irina Minailova, Igor Matyash, Boris Serdega, Maksym Stetsenko, Lidiya Maksimenko
V. E. Lashkarev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine
- IS-NT-12 **PHYSICAL AND MECHANICAL PROPERTIES OF HIGH-STRENGTH STEEL JOINTS PRODUCED BY LASER WELDING**
Liudmyla Markashova, Olena Berdnikova, Artemii Bernatskyi, Maksym Iurzhenko, Volodymyr Sydorets
E. O. Paton Electric Welding Institute NAS of Ukraine, Kyiv, Ukraine

- IS-NT-13 **CORRECTION OF THE OPERATING NOISE INFLUENCE ON THE CORRELATION COEFFICIENT DURING CORROSION PROCESS**
Liudmyla Frankevych
Karpenko Physico-Mechanical Institute NAS of Ukraine, Lviv, Ukraine
- IS-NT-14 **METHOD FOR ULTRASONIC CONTROL OF A PARTICLE DENSITY DISTRIBUTION OF CRUSHED ORE**
Vladimir Morkun, Natalia Morkun, Svitlana Hryshchenko
SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine
- IS-NT-15 **OPTIMIZATION OF HIGH-ENERGY ULTRASOUND SOURCE PARAMETERS FOR CAVITATION DISINTEGRATION OF ORE FLOCCULES BEFORE FLOATATION**
Volodymyr Morkun, Vitaliy Tron, Vita Ravinskaia
SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine
- IS-NT-16 **FLOTATION PROCESS CONTROL AND OPTIMIZATION USING HIGH-ENERGY ULTRASOUND**
Vladimir Morkun, Natalia Morkun, Andrey Pikilnyak
SIHE "Kryvyi Rih National University", Kryvyi Rih, Ukraine
- IS-NT-17 **THE DETECTION OF ACTUAL RESEARCH TOPICS IN PHYSICS FOR UKRAINIAN SCIENTIFIC GROUPS**
Iryna Balagura, Dmytro Lande, Nadiia Dubchak
Institute for information recording of NAS of Ukraine, Kyiv, Ukraine

14:00
16:00

OPTICS AND PHOTONICS

Chair: Pavlo Krasov

Location: Reading Room 2, 3rd floor

- OP-1 **NEW TYPE OF PLASMONIC BIOSENSORS BASED ON MODULATION POLARIMETRY TECHNIQUE**
Maksym Stetsenko, Svitlana Rudenko, Igor Matyash, Irina Minailova, Lidia Maksimenko
V. E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine
- OP-2 **RESONANCE SCATTERING AND ABSORPTION OF LIGHT BY A SILVER TUBE OF LARGE DIAMETER AND NANOSCALE THICKNESS**
Elena Velichko
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- OP-3 **ADOPTING OF DC MAGNETRON SPUTTERING METHOD FOR PREPARING SEMICONDUCTOR FILMS**
Michail Kirichenko, Roman Zaitsev, Andrei Dobrozhan, Gennadiy Khrypunov, Mykola Kharchenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- OP-4 **HYBRID SOLAR GENERATING MODULE**
Roman Zaitsev, Michail Kirichenko, Gennadiy Khrypunov, Ruslan Migushchenko, Liliia Zaitseva
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

- OP-5 **HOLOGRAPHIC SCATTERING IN PHOTOREFRACTIVE CRYSTAL $\text{Sn}_2\text{P}_2\text{S}_6:\text{SB}$**
Yaroslav Skrypka
Institute of Physics NAS of Ukraine, Kyiv, Ukraine
- OP-6 **SYNTHESIS AND STRUCTURE FEATURES OF THE COMPOUNDS**
Alina Slepets, Tetiana Voitenko, Sergiy Neditko, Mykola Zelenko, Oksana Chukova
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
- OP-7 **INCREASING OF OPTICAL RESOLUTION OF PHOTOS**
Oleksandr Burlayenko, Oleksii Lukianchuk
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- OP-8 **IMPROVING THE QUALITY OF DIGITAL INTERFEROGRAM**
Yurii Kotsiuba, Halyna Petrovska, Volodymyr Fitio, Yaroslav Bobitski
Lviv Polytechnic National University, Lviv, Ukraine
- OP-9 **ONLINE MEASUREMENTS IN HIGH PRESSURE FLUIDS BY ATR-FTIR SPECTROSCOPY**
Gurbuz Comak, Martyn Poliakoff
Konya Necmettin Erbakan University, Konya, Turkey
- OP-10 **MOLECULAR ORBITAL TOMOGRAPHY THROUGH HIGH ORDER HARMONIC EMISSION FROM NITROUS OXIDE N_2O GAS**
Raffaele Prioriello, Giacomo Piazza
Polytechnic University of Milan, Milan, Italy
- OP-11 **ANNEALING TEMPERATURE EFFECT ON OPTICAL PROPERTIES OF TCO THIN FILMS OBTAINED BY SPIN-COATING METHOD FROM ZnO SOL-GEL**
Meymoun Belaoui, Moustafa Debbab, Zakaria Bouzid, Nassera Ghellai, Nasr-Eddine ChabaneSari
URMER, Tlemcen, Algeria
- OP-12 **STUDY AND REALIZATION OF DYE-SENSITIZED SOLAR CELL USING STRAWBERRY JUICE**
Moustafa Debbab, Zakaria Bouzid, Maymoun Belaoui, Nassera Ghellai, Nasr-Eddine ChabaneSari
URMER, Tlemcen, Algeria

19:00
23:00

WELCOME PARTY

WEDNESDAY, OCTOBER 18TH, 2017

↓ Grand Reading Room

↓ Reading Room 2

09:30 10:30	SCIENTIFIC WRITING AND TRANSLATION: THE ART OF WORD- HUNTING	09:30 10:00	COFFEE BREAK
10:30 11:00	BUILDING YOUR CAREER PATH	10:00 12:30	PUBLIC SPEAKING
11:00 11:30	COFFEE BREAK		
11:30 12:00	LIBRARY EXCURSION		
12:00 13:00	GRANT PROPOSALS WRITING	12:30 13:00	LIBRARY EXCURSION
13:00 14:00	LUNCH		
14:00 15:00	GRANT PROPOSALS WRITING	14:00 14:15	NATO GRANTS
15:00 15:15	NATO GRANTS	14:15 15:00	EUROPEAN UNION FUNDING FOR RESEARCH AND INNOVATION POSSIBILITIES
15:15 15:45	COFFEE BREAK		
15:45 16:45	SCIENTIFIC WRITING AND TRANSLATION: THE ART OF WORD- HUNTING	15:00 15:15	COFFEE BREAK
16:45 17:30	EUROPEAN UNION FUNDING FOR RESEARCH AND INNOVATION POSSIBILITIES	15:15 17:45	PUBLIC SPEAKING
17:30 18:00	COFFEE BREAK		
18:00 20:00	PANEL DISCUSSION		

THURSDAY, OCTOBER 19TH, 2017

09:30
13:00

PLENARY SESSION – 2

Chairs: Kateryna Arkhypova and Serge Yerin
Location: Grand Reading Room, 2nd floor

09:30
10:15

REMOTE SENSING USING GNSS BISTATIC RADAR OF OPPORTUNITY

Dr. Valery Zavorotny

NOAA Earth System Research Laboratory, Boulder, Colorado, USA

10:15
11:00

AMYLOID FIBRILS: THE EIGHTH WONDER IN THE PROTEIN UNIVERSE

DSci. Valeriya Trusova

V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

11:00
11:30

COFFEE BREAK

11:30
12:15

MODULATION METHODS FOR ADVANCED POWER ELECTRONIC INTERFACES

Dr. Carlos Roncero-Clemente

University of Extremadura, Badajoz, Spain

12:15
13:00

PHASED ANTENNA ARRAYS FEATURES ON THE EXAMPLE OF LOW-FREQUENCY RADIO ASTRONOMICAL SIGNALS

Serge Yerin

Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine

13:00
14:00

LUNCH

14:00
15:45

BIOLOGICAL AND MEDICAL PHYSICS – 1

Chairs: Kateryna Arkhypova and Valeriya Trusova
Location: Grand Reading Room, 2nd floor

Session
Guest Talk
BMP-1

WHAT MAKES MICROWAVE DIELECTROMETRY VALUABLE FOR MEDICAL DIAGNOSTICS

Kateryna Arkhypova, Pavlo Krasov

O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine

BMP-2

DESIGNING OF BROADBAND MICROWAVE APPLICATOR FOR THE BRONCHIAL ASTHMA DIAGNOSIS DEVICE

Ivan Semernik, Alexander Demyanenko, Yaroslav Nevstruev

Southern Federal University, Taganrog, Russia

BMP-3

THEORETICAL MODEL FOR CALCULATION OF ELECTROPHYSICAL PROPERTIES OF ERYTHROCYTES AND ITS APPLICATION IN BIOMECHANICS

Liliya Batyuk, Natalia Kizilova, Ganna Chovpan

Kharkiv National Medical University, Kharkiv, Ukraine

BMP-4

DESIGNING THE DATABASE FOR MICROARRAY EXPERIMENTS METADATA

Liliya Batyuk, Natalia Kizilova, Oleksandr Lykhenko, Alina Frolova, Maria Obolenska

Institute of Molecular Biology and Genetics NAS of Ukraine, Kyiv, Ukraine

- BMP-5 **THE NEGATIVE FEEDBACK CONNECTION IN THE HOMEOSTATIC SYSTEM OF CARBOHYDRATE EXCHANGE REGULATION**
Yevgen Sokol, Stanislav Lapta, Iryna Oharkova, Olga Solovyova, Olga Goncharova
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- BMP-6 **DETERMINATION OF THE PRODUCTIVITY OF A MEDICAL OZONE GENERATOR**
Mykola Makhonin
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- BMP-7 **USING 2.4 GHZ RADIO MODULE FOR TRANSMITTING SPIROMETERS DATA: HUMAN SAFETY TESTING**
Serhiy Batachenko, Roman Tomashevskiy, Vadim Makarov
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- BMP-8 **SYSTEM FOR RECORDING EVOKED POTENTIALS IN LIQUID BIOLOGICAL MATRIX**
Roman Tomashevskiy, Yevhen Vikarii, Zinaida Dotsenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

15:45
16:15

COFFEE BREAK

16:15
18:00

BIOLOGICAL AND MEDICAL PHYSICS – 2

- BMP-9 **PROTNA-ASA DATA BASE: NEW VERSION INCLUDING INFORMATION ABOUT ELECTROSTATIC POTENTIAL OF DNA MINOR GROOVE**
Mariia Zhitnikova
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- BMP-10 **INTERCEPTOR ACTION OF CHLOROPHYLLIN IN THE LIGAND-DNA-CHLOROPHYLLIN SYSTEM**
Anastasija Skuratovska, Polina Pisklova
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- BMP-11 **MOLECULAR DYNAMICS SIMULATIONS OF TERNARY SYSTEMS OF ETHIDIUM-FLAVIN MONONUCLEOTIDE-DNA**
Kateryna Miroshnychenko
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- BMP-12 **INTERACTION OF MAGNETITE NANOPARTICLES WITH ANTICANCER DRUG DOXORUBICIN**
Daryna Pesina, Stanislav Polozov, Kateryna Plutenko
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine

- BMP-13 **USING HYPERPOLARIZED XENON-129 IN MRI FOR CONTROLLING NANOTUBES MOVING**
Oleksii Lukianchuk, Oleksandr Burlayenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- BMP-14 **INFLUENCE OF THE TRANSVERSE GRADIENT MAGNETIC FIELDS INSTABILITY TO RECONSTRUCTION IN MR IMAGING**
Andrii Netreba, Andrii Komarov
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
- BMP-15 **STATIONARY PHOTOTHERAPEUTIC DEVICE OF A.KOROBV-V.KOROBV BARVA-SDS FOR DIABETIC FOOT SYNDROME PROPHYLAXIS AND TREATMENT. CASE STUDY**
Marina Yushkova, Anatoly Korobov, Vsevolod Korobov, Oksana Shevchenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- BMP-16 **NUMERICAL MODELING OF SYNOVIAL FLUID LAYER**
Tatiana Romanishina, Vera Deeva, Stepan Slobodyan, Svetlana Romanishina
Zhytomyr National Agroecological University, Zhytomyr, Ukraine

**14:00
15:45**

GEOSCIENCE AND REMOTE SENSING

Chairs: Sergiy Skuratovskiy
 Location: Reading Room 1, 2nd floor

- GRS-1 **MODELING OF SCATTERING OF ELECTROMAGNETIC WAVES BY SNOW CRYSTALS**
Ganna Veselovska, Grigoriy Khlopov
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- GRS-2 **PRELIMINARY RESULTS OF THE MONITORING OF THE LOWER IONOSPHERE BASED ON THE ANALYSIS OF TWEAK-ATMOSPHERICS**
Oleksii Krivonos, Alexander Shvets, Anna Hasanaliieva
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- GRS-3 **MONITORING OF THE CO MOLECULE IN THE EARTH MESOSPHERE AT LATITUDE 50.0. RESULTS OF THE OBSERVED PERIOD FROM DECEMBER 2016 TO FEBRUARY 2017**
Oleksii Patoka, Valerii Shulga, Ole Martin Christensen, Alexey Korolev, Valeriy Piddyachiy
Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine
- GRS-4 **PROCESSING TECHNOLOGY OF MULTISPECTRAL REMOTE SENSING IMAGES**
Vita Kashtan, Volodymyr Hnatushenko, Yana Shedlovska
Oles Honchar Dnipro National University, Dnipro, Ukraine

- GRS-5 **SATELLITE IMAGERY FEATURES FOR IMAGE SIMILARITY ESTIMATION**
Yana Shedlovska, Volodymyr Hnatushenko, Vita Kashtan
Oles Honchar Dnipro National University, Dnipro, Ukraine
- GRS-6 **NEURAL NETWORK AND LOCAL LAPLACE FILTER METHODS APPLIED TO VERY HIGH RESOLUTION REMOTE SENSING IMAGERY IN URBAN DAMAGE CHANGES DETECTION**
Dariia Hordiuk, Vladimir Hnatushenko
National Metallurgical Academy of Ukraine, Dnipro, Ukraine
- GRS-7 **SAR DATA PROCESSING WITH SPLINE APPROXIMATION OF SURFACE ON TRIANGULAR GRID**
 Kseniia Semenova
National Aviation University, Kyiv, Ukraine
- GRS-8 **UPDATING SOLAR ENERGY MAPS AND ANALYSIS OF THE COMPLEMENTARITY OF THIS SOURCE WITH WIND ENERGY IN ALGERIA**
Zakaria Bouzid, Moustafa Debbab, Maymoun Belaoui, Nassera Ghellai
URMER, Tlemcen, Algeria

15:45
16:15

COFFEE BREAK

16:15
18:00

MULTIWAVELENGTH ASTRONOMY AND ASTROPHYSICS

Chairs: Serge Yerin and Ivan Slyusarev
 Location: Reading Room 1, 2nd floor

- MWA-1 **THE TIME DELAYS IN GRAVITATIONALLY LENSED QUASARS**
Ludmila Berdina, Victoria Tsvetkova
Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine
- MWA-2 **USING FILTERING TO FIND LONG DURATION GRAVITATIONAL WAVES FROM NEUTRON STARS**
Andrew Miller, Avi Vajpeyi, Pia Astone, Bernard Whiting
Universita di Roma La Sapienza, INFN, University of Florida, Rome, Italy
- MWA-3 **LARGE MAIN BELT ASTEROIDS FAMILIES: ANALYSIS OF HOMOGENEITY**
Ivan Slyusarev, Dmytro Shymkiv
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- MWA-4 **ENERGY SPECTRUM AND FREQUENCY RANGE OF COHERENT RADIATION BY POSITRONS FORMING SHIFTED INTERPULSE OF CRAB PULSAR**
 Victor Kontorovich, Sergii Trofymenko
NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine

- MWA-5 **ROTATION MEASURE OF INDIVIDUAL PULSES OF PSR J0243+6257**
 Oleg Ulyanov, [Alisa Shevtsova](#), Viacheslav Zakharenko, Anastasiia Skoryk, Iaroslavna Vasylieva
Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine
- MWA-6 **ANOMALOUSLY INTENSE PULSES AS A PULSAR MAGNETOSPHERE PROBES**
[Anastasiia Skoryk](#), Oleg Ulyanov, Alisa Shevtsova
Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine
- MWA-7 **ANALYSIS OF THE TRANSIENT SIGNALS IN DECAMETER SURVEY OF THE NORTHERN SKY**
[Ihor Kravtsov](#), Vyacheslav Zakharenko, Iaroslavna Vasylieva, Sofia Mykhailova, Oleg Ulyanov
Institute of Radio Astronomy NAS of Ukraine, Kharkiv, Ukraine
- MWA-8 **STUDYING A SIMPLE GENERATOR OF PSEUDO-RANDOM NUMBERS FOR MODELING THE ASTRONOMICAL OBSERVATION SYSTEM**
 Yuriy Kornienko, [Ilya Lyashenko](#)
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- Guest Talk
 MWA-9 **PRACTICAL APPLICATION OF SDR**
 Maksym Losev
KhackerSpace, Kyiv, Ukraine

**14:00
 15:45**

POWER ELECTRONICS AND INDUSTRY APPLICATIONS – 3

Chairs: Serhii Stepenko and Carlos Roncero-Clemente

Location: Reading Room 2, 3rd floor

- Session
 Guest Talk
 PE-IA-19 **INTERLEAVED SINGLE-PHASE QUASI-Z-SOURCE INVERTER: HIGH POWER DENSITY AND OPERATION RANGE FOR PHOTOVOLTAIC APPLICATION**
 Carlos Roncero-Clemente
University of Extremadura, Badajoz, Spain
- PE-IA-20 **COMPONENT DESIGN GUIDELINES FOR NEW SINGLE-STAGE BUCK-BOOST INVERTER WITH UNFOLDING CIRCUIT**
[Oleksandr Matiushkin](#), Oleksandr Husev, Carlos Roncero-Clemente, Sergey Ivanets, Artem Fesenko
Chernihiv National University of Technology, Chernihiv, Ukraine
- PE-IA-21 **THE SPECIFICITY OF ELECTRICAL ENERGY STORAGE UNIT APPLICATION**
 Evgen Sokol, Volodymyr Zamaruiev, [Bohdan Styslo](#), Mykola Makhonin
National Technical University "Kharkiv Polytechnical Institute", Kharkiv, Ukraine
- PE-IA-22 **AN APPLICATION OF FUZZY VOLTAGE REGULATOR TO A STATIC EXCITATION SYSTEM OF A PHASE COMPOUND SYNCHRONOUS GENERATOR**
 Andriy Kutsyk, [Mykola Semeniuk](#), Oleksiy Kuznyetsov
Lviv Polytechnic National University, Lviv, Ukraine

- PE-IA-23 **THE NEW CONCEPT OF OPTIMAL CONTROL PROBLEMS SOLVING**
Yuriy Romasevich, Vitalii Kurka
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
- PE-IA-24 **USING OF FOTF TOOLBOX AND Z-TRANSFORM FOR FRACTIONAL CONTROL SYSTEMS**
 Volodymyr Moroz, Taras Borovets
Lviv Polytechnic National University, Lviv, Ukraine
- PE-IA-25 **SIMULINK MODEL OF ELECTRIC MODES IN ELECTRIC ARC FURNACE**
 Orest Lozynskyy, Yaroslav Paranchuk, Oleksii Kobylianskyi
Lviv Polytechnic National University, Institute of Power Engineering and Control Systems, Lviv, Ukraine

18:30
20:30

LVIV WALKING TOUR

FRIDAY, OCTOBER 20TH, 2017

09:30
11:00

PLENARY SESSION – 3

Chairs: Pavlo Krasov and Maksym Khruslov
 Location: Grand Reading Room, 2nd floor

09:30
 10:15

ADVANCED AND NOVEL ACCELERATORS FOR DISCOVERIES

Dr. Patric Muggli
Max Planck Institute for Physics, Munich, Germany

10:15
 11:00

GRAPHENE HETEROSTRUCTURES: ELECTRONIC PROPERTIES AND POTENTIAL APPLICATIONS

Dr. Leonid Ponomarenko
Lancaster University, Lancaster, UK

11:00
11:30

COFFEE BREAK

11:30
13:15

SOLID STATE PHYSICS – 1

Chairs: Tetiana Rokhmanova and Evgen Melezhik
 Location: Grand Reading Room, 2nd floor

SSP-1

EFFECT OF WEAK IMPURITIES ON CONDUCTIVITY OF UNIAXIALLY STRAINED GRAPHENE

Igor Sagaljanov, Taras Radchenko, Valentyn Tatarenko, Yuriy Prylutskyy
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

SSP-2

SYNTHESIS OF GRAPHENE OXIDE INKS FOR PRINTED ELECTRONICS

Andrii Tencha
Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine

- SSP-3 **IMPURITY AND EXTERNAL MAGNETIC FIELD EFFECTS ON DENSITY OF ELECTRONIC STATES IN GRAPHENE LAYER**
Maryna Lazorenko, Taras Radchenko, Valentyn Tatarenko
G. V. Kurdyumov Institute for Metal Physics NAS of Ukraine, Kyiv, Ukraine
- SSP-4 **STRUCTURAL ORGANIZATION OF LITHIUM PERCHLORATE SALT IN THE POLYMER SYSTEMS BASED ON EPOXY RESINS**
 Liubov Matkovska, Maksym Iurzhenko, Gisele Boiteux
Institute of Macromolecular Chemistry NAS of Ukraine, Kyiv, Ukraine
- SSP-5 **WELDING AND WELDED JOINTS OF THE HEAT-RESISTANT PLASTICS**
Maksym Iurzhenko, Valeriy Demchenko, Mykola Korab, Anatoliy Galchun, Volodymyr Kondratenko
Institute of Macromolecular Chemistry NAS of Ukraine, Kyiv, Ukraine
- SSP-6 **INVESTIGATION OF CRYSTAL STRUCTURE AND ELECTROPHYSICAL PROPERTIES OF Ni-W ALLOYS: PERCOLATION PROCESSES**
 Valerij Derevyanko, Marat Sunhurov, Tatyana Sukhareva, Vitaly Finkel, Yurii Shakhov
NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- SSP-7 **EVOLUTION OF VORTEX STRUCTURE OF TWO-LEVEL GRANULAR HIGH TEMPERATURE SUPERCONDUCTOR $YBa_2Cu_3O_{7-\delta}$ UNDER INFLUENCE OF TEMPERATURE, MAGNETIC FIELD, AND TRANSPORT CURRENT**
 Valerij Derevyanko, Vitaly Finkel, Tatyana Sukhareva, Marat Sunhurov
NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- SSP-8 **TO LANDAU DEFINITION OF THE EFFECTIVE HAMILTONIAN**
Kseniia Haponenko, Aleksander Sokolovsky
Oles Honchar Dnipro National University, Dnipro, Ukraine

13:15

14:15

LUNCH

14:15

16:00

SOLID STATE PHYSICS – 2

- SSP-9 **MAGNETOTRANSPORT AND DIELECTRIC PROPERTIES OF BISMUTH-CONTAINING RARE-EARTH MANGANITES**
Nikita Liedienov, Aleksey Pashchenko, Igor Fesych, Dmitriy Tatarchuk, Vasyl Kladko
O. O. Galkin Donetsk Institute for Physics and Engineering NAS of Ukraine, Kyiv, Ukraine

- SSP-10 **ON PHONON HYDRODYNAMICS OF DIELECTRICS**
Sergey Sokolovsky, Boris Dikarev
Prydniprovskya State Academy of Civil Engineering and Architecture, Dnipro, Ukraine
- SSP-11 **NON-EQUILIBRIUM EFFECTS IN NANOSCALE TUNNEL CONTACTS WITH MANGANITES**
 Aleksandr Dyachenko, Vladimir Tarenkov, Vladimir Krivoruchko, Olha Boliasova, Mark Zalutskiy
O. O. Galkin Donetsk Institute for Physics and Engineering NAS of Ukraine, Kyiv, Ukraine
- SSP-12 **IMPURITY SELF-ENERGY IN THE STRONGLY-CORRELATED BOSE SYSTEMS**
Galyna Panochko, Volodymyr Pastukhov, Ivan Vakarchuk
College of Natural Sciences, Ivan Franko National University of Lviv, Lviv, Ukraine
- SSP-13 **X-RAY LUMINESCENCE OF Tl_4CdI_6 CRYSTALS**
Mykola Solovyov, Andriy Kashuba, Volodymyr Franiv, Andriy Franiv, Olexander Futey
Ivan Franko National University of Lviv, Lviv, Ukraine
- SSP-14 **MAGNETORESISTANCE OF POLYCRYSTALLINE $Bi_{1-x}Sb_x$ ALLOYS ($x = 0 - 0.07$)**
Anna Doroshenko, Kateryna Martynova, Elena Rogacheva
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
- SSP-15 **MOSSBAUER SPECTROSCOPY OF IRRADIATED ZIRCONIUM ALLOYS**
Olga Usatova, Valeriy Kirichenko, Vladislav Kobyl'nik
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- SSP-16 **NUMERICAL SIMULATION OF 2DEG SCREENING FUNCTION IN HGTE-BASED QUANTUM WELLS FOR ARBITRARY VALUES OF WAVE-VECTOR AND FREQUENCY**
Evgen Melezhhik, Joanna Gumenjuk-Sichevska
V. E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine

16:00
16:30

COFFEE BREAK

16:30
17:30

SOLID STATE PHYSICS – 3

- SSP-17 **OBTAINING AND INVESTIGATION OF MULTICOMPONENT HEAT-RESISTANT COATINGS FOR GAS TURBINE ENGINE BLADES**
 Ielyzaveta Tymofieieva
NSC "Kharkiv Institute of Physics and Technology", Kharkov, Ukraine

- SSP-18 **ELECTRIC AND PHOTOELECTRIC PROPERTIES OF $Cd_{1-x}Mn_xTe:In$ CRYSTALS FOR GAMMA-RADIATION DETECTORS**
Oleksii Poluboiarov, Oleksii Voloshin, Sergei Sulima, Oleg Chugai
Institute for Single Crystals NAS of Ukraine, Kharkiv, Ukraine
- SSP-19 **ELECTRICAL EROSION RESISTANCE OF SERIAL AND EXPERIMENTAL CONTACTS OF ELECTROMAGNETIC RELAYS SERIES RPL-2204**
Anatolii Mrachkovskiy, Vitalii Nalyvaiko, Ivan Radko, Krystyna Fedorchenko
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
- SSP-20 **REFRACTIVE INDEX IN THE Tl_3TaS_4 : NANOSCALE APPROACH**
 Olesya Bokotey
Uzhhorod National University, Uzhhorod, Ukraine
- SSP-21 **OPTICAL APPLICATIONS OF $Hg_3X_2Y_2$ TYPE GYROTROPIC CRYSTALS**
 Olesya Bokotey
Uzhhorod National University, Uzhhorod, Ukraine

**11:30
13:15**

MICROWAVE AND TERAHERTZ ELECTRONICS

Chairs: Pavlo Krasov

Location: Reading Room 1, 2nd floor

- MTE-1 **MAGNETIC FOCUSING SYSTEM FOR COMPACT THz CLINOTRONS**
Sergey Kishko, Sergey Ponomareko, Yuriy Kovshov, Alexey Lihachev, Alexey Kuleshov
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- MTE-2 **0.1 - 0.4 THz CLINOTRON TABLE-TOP MODULES FOR SPECTROSCOPY APPLICATIONS**
 Yuriy Kovshov, Sergey Ponomarenko, Sergey Kishko, Sergey Vlasenko, Aleksandr Lihachev
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- MTE-3 **GENERATION OF THz-FREQUENCY ELECTROMAGNETIC SIGNALS IN ANTIFERROMAGNETIC MULTILAYERED NANOSTRUCTURES BIASED BY A SPIN CURRENT**
Olga Sulymenko, Oleksandr Prokopenko
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
- MTE-4 **AUTOMATED EXPERIMENTAL SET-UP FOR MEASUREMENTS OF PARAMETERS OF VACUUM ELECTRON DEVICES IN MICROWAVE AND THz RANGES**
Yurii Kovshov, Alexander Likhachev, Sergiy Kishko, Sergiy Ponomarenko, Alexei Lukash
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine

- MTE-5 **THE EFFECT OF ADDITIONAL LAYERS PARAMETERS ON THE MODIFIED BRAGG WAVEGUIDE CHARACTERISTICS**
Yana Sashkova, Eugene Odarenko
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine
- MTE-6 **INVESTIGATION OF THE METHODS TO CONTROL OF MICROWAVE DIODE CHAOS GENERATORS OUTPUT OSCILLATION**
 Ivan Semernik
Southern Federal University, Taganrog, Russia
- MTE-7 **GRADED BAND GAP InGaAs DIODES FOR TERAHERTZ APPLICATIONS**
Kyrylo Prykhodko, Valeriy Zozulia, Oleg Botsula
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- MTE-8 **ON TEMPERATURE DEPENDENCE OF MICROWAVE EFFECTIVE SURFACE IMPEDANCE OF THIN SUPERCONDUCTOR FILMS**
Maksym Vovnyuk, Nikolay Cherpak
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- MTE-9 **NEW METHOD FOR OBSERVATION FMR SPECTRA**
Ilya Govorun, Aleksandr Leksikov
Federal Research Center Krasnoyarsk scientific center SB RAS, Krasnoyarsk, Russia

13:15
14:15

LUNCH

14:15
16:00

COMPUTATIONAL & EXPERIMENTAL ELECTROMAGNETICS - 1

Chairs: Maksym Khruslov and Victor Lysechko
 Location: Reading Room 1, 2nd floor

- EM-1 **ELECTROMAGNETIC FIELD CALCULATION FOR TM MODES OF COAXIAL GYROTRON CAVITY**
Tetiana Tkachova, Viktor Tkachenko, Vitaliy Shcherbinin
NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- EM-2 **A NEW APPROACH OF THE INDUCTION MOTOR PARAMETERS DETERMINATION IN SHORT-CIRCUIT MODE BY 3D ELECTROMAGNETIC FIELD SIMULATION**
Mykhailo Kotsur, Dmytro Yarymbash, Sergiy Yarymbash, Igor Kotsur
Zaporizhzhia National Technical University, Zaporizhzhia, Ukraine
- EM-3 **MAGNETIC FIELD CALCULATION OF CABLE LINE WITH TWO-POINT BONDED SHIELDS**
Volodymyr Grinchenko, Oleksandr Tkachenko, Kostiantyn Chunikhin
Institute of Technical Problems of Magnetism NAS of Ukraine, Kharkiv, Ukraine

- EM-4 **CURRENT TUNABLE BARIUM AND STRONTIUM HEXAFERRITE MILLIMETER WAVE RESONATORS**
Maksym Popov
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
- EM-5 **NEAR ACOUSTIC FIELD OF THE FINITE RIGID CONE**
Victor Lysechko
Karpenko Physico-Mechanical Institute NAS of Ukraine, Lviv, Ukraine
- EM-6 **EXCITATION OF SUPER-GAUSSIAN MODES IN AN OPEN RESONATOR WITH A FOCUSING MIRROR COMPOSED OF PAIRED CYLINDRICAL REFLECTORS**
Ievgen Kovalov, Volodymyr Miroshnichenko
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- EM-7 **AXIALLY-SYMMETRIC WAVE DIFFRACTION FROM THE DISSECTION OF THE CONICAL WAVEGUIDE**
Oleksiy Sharabura
Karpenko Physico-Mechanical Institute NAS of Ukraine, Lviv, Ukraine
- EM-8 **PASSIVE COMPRESSION OF OPTICAL PULSES IN UNIFORM ISOTROPIC AND DISPERSIVE MEDIUM**
Maksym Maiboroda, Vadim Pazynin, Hanna Sliusarenko
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine

16:00
16:30

COFFEE BREAK

16:30
18:00

COMPUTATIONAL & EXPERIMENTAL ELECTROMAGNETICS - 2

- EM-9 **DIFFRACTION BY MATERIAL STRIPS PLACED IN PARALLEL PLANES**
Aleksandra Denisova, Mstislav Kaliberda, Sergey Pogarsky, Anna Rebrik
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- EM-10 **DIFFRACTION BY THE SEMI-INFINITE KNIFE-TYPE GRATING OF MATERIAL STRIPS**
Mstislav Kaliberda, Sergey Pogarsky, Leonid Lytvynenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- EM-11 **MODELING MAGNETIC FIELD OF THE ELECTRIC MOTOR WITH CLOSED GROOVES INCLUDING NONLINEAR MAGNETIC CHARACTERISTICS**
Andrii Zhylytsov, Viktorija Lyktej
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine
- EM-12 **PLANAR UWB SPIRAL ANTENNA WITH PERIPHERAL FEEDING BY COPLANAR WAVEGUIDE**
Tamerlan Tsaliev, Serhii Siden
O. S. Popov Odessa National Academy of Telecommunication, Odessa, Ukraine

- EM-13 **NEAR RADIATION ZONE OF SIX SHORT IMPULSE RADIATORS**
Vadim Plakhtii, Oleksandr Dumin, Oleksandr Prishchenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- EM-14 **CONTROLLED MAGNETOHYDRODYNAMIC SEPARATION OF LIQUIDS IN A TRANSVERSE MAGNETIC FIELD**
 Yuriy Shabatura, Vitalij Atamanyuk, Oleksiy Kuznyetsov, Lidiya Parashchuk
Hetman Petro Sahaidachnyi National Army Academy, Lviv, Ukraine
- EM-15 **THE ELECTROMAGNETIC FIELD OF THE THREE-PHASE CYLINDRICAL INDUCTOR IF IT RUNS OFF WITH FREQUENCY CONVERTER IN NON-STATIONARY MODES**
 Igor Kondratenko, Andrii Zhiltsov, Andrii Bereziuk
National University of Life and Environmental Sciences of Ukraine, Kyiv, Ukraine

11:30
13:15

NUCLEAR AND PLASMA PHYSICS

Chairs: Maksym Khruslov

Location: Reading Room 2, 3rd floor

- NPS-1 **THE MINI ELITPC: RECONSTRUCTION AND IDENTIFICATION OF CHARGED PARTICLES TRACKS DURING BEAM TESTS AT IFIN-HH**
 Jan Bihalowicz
University of Warsaw, Warsaw, Poland
- NPS-2 **GENERALIZATION OF THE LANDAU-VLASOV KINETIC EQUATION FOR A DISSIPATIVE RANDOMLY DRIVEN SYSTEM**
Vyacheslav Gorev, Alexander Sokolovsky
Oles Honchar Dnipro National University, Dnipro, Ukraine
- NPS-3 **MODES OF PLASMA-DYNAMICAL SYSTEM WITH CLOSED ELECTRON DRIFT AND OPEN WALLS**
 Alexey Goncharov, Andrew Dobrovolskiy, Irina Litovko, Iryna Naiko, Lily Naiko
Institute of Physics NAS of Ukraine, Kyiv, Ukraine
- NPS-4 **DEVELOPMENT OF COMPRESSOR TYPE OZONATOR BASED ON DIELECTRIC BARRIER DISCHARGE**
Aleksandr Shchebetun, Viktor Krasnyj, Andrey Klosovskyj, Anton Taran, Alina Lozina
Kharkiv Institute of Plasma Physics, NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- NPS-5 **MASSSES AND HALF-LIVES OF SUPERHEAVY ELEMENTS**
 Michal Palczewski
National Centre for Nuclear Research, Warsaw, Poland

- NPS-6 **INTERFEROMETRY OF PLASMA BY INCLINED PROBING**
Yuriy Kovtun, Yevhen Siusko, Anatoliy Skibenko, Evgeniy Skibenko
NSC "Kharkiv Institute of Physics and Technology", Institute of Plasma Physics, Kharkiv, Ukraine
- NPS-7 **COMPRESSION ZONE FORMATION IN PLASMA STREAMS GENERATED BY MAGNETO-PLASMA COMPRESSOR**
Yuliia Volkova, Tetyana Cherednichenko, Marina Ladygina, Anna Marchenko, Dmytro Solyakov
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- NPS-8 **DYNAMICS OF ELECTRON IN TEM WAVE FIELD**
Valentina Shpagina, Yuriy Grigoriev, Andrey Zelinskiy
NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- NPS-9 **NUMERICAL CALCULATION OF THE SOFT X-RAY EMISSIVITY DISTRIBUTION IN THE U-3M TORSATRON**
Olena Turianska
V. N. Karazin Kharkiv National University; Institute of Plasma Physics, NSC "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine
- NPS-10 **SPECTRA ANALYSIS OF RUNAWAY ELECTRON SYNCHROTRON RADIATION FOR THE RECENT EAST RUNAWAY EXPERIMENT**
Volodymyr Bochko, Igor Pankratov
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- NPS-11 **THERMODIFFUSION SATURATION OF ZIRCONIUM ALLOY WITH 1% Nb USED FOR NUCLEAR FUEL CLADDING**
Vasyl Trush
Karpenko Physico-Mechanical Institute NAS of Ukraine, Lviv, Ukraine

13:15
14:15

LUNCH

14:15
16:00

NANO- AND METAMATERIALS - 1

Chairs: Pavlo Krasov

Location: Reading Room 2, 3rd floor

- NM-1 **THE INVESTIGATION OF PHYSICAL-MECHANICAL PROPERTIES OF INTERMETALLIC NI-AL CATALYST WITH NANOSTRUCTURE**
Yuriy Belokon, Karina Belokon, Aleksandr Zherebtsov, Aleksandr Fedchenok
Zaporizhzhia State Engineering Academy, Zaporizhzhia, Ukraine
- NM-2 **ENERGY DISSIPATION OF INTERACTING RIGID DIPOLES DRIVEN BY RF-FIELD IN A VISCOUS FLUID**
Vladyslav Reva, Taras Lyutyy, Andriy Yermolenko
Sumy State University, Sumy, Ukraine

- NM-3 **DEFECT MODES IN A TWO-DIMENSIONAL PHOTONIC BANDGAP WIRE STRUCTURE**
Dasha Yudina, Liubov Ivzhenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
- NM-4 **INVESTIGATION OF COEFFICIENT OF REFLECTION AND ROUGHNESS OF Ti AND TiN COATINGS DEPENDING ON DEPOSITION METHOD**
 Valeriy Taran, Renat Muratov, Anton Taran
Institute of Plasma Physics, NSC "Kharkiv Institute of Physics and Technology", Kharkov, Ukraine
- NM-5 **SCATTERING OF ELECTROMAGNETIC WAVES BY A PEC BAR GRATING WITH A NONLINEAR DIELECTRIC DEFECT IN THE SLITS**
 Lyudmila Kochetova
O. Ya. Usikov Institute for Radiophysics and Electronics NAS of Ukraine, Kharkiv, Ukraine
- NM-6 **THE INVESTIGATION OF NANOSTRUCTURE FORMATION IN INTERMETALLIC G-TIAL ALLOYS**
 Yuriy Belokon, Aleksandr Zherebtsov, Karina Belokon
Zaporizhzhia State Engineering Academy, Zaporizhzhia, Ukraine
- NM-7 **MULTILAYER MODIFIED NH₄NO₃ GRANULES WITH 3D NANOPOROUS STRUCTURE: EFFECT OF THE HEAT TREATMENT REGIME ON THE STRUCTURE OF MACRO- AND MEZOPORES**
 Artem Artyukhov, Andrii Ivaniia, Nadiia Artyukhova, Jevgeniys Gabrusenoks
Sumy State University, Sumy, Ukraine
- NM-8 **SYNTHESIS AND MAGNETIC PROPERTIES OF COBALT FERRITE NANOPARTICLES PREPARED BY CONTACT LOW-TEMPERATURE NON-EQUILIBRIUM PLASMA METHOD**
 Ruslana Shpatakova
Ukrainian State University of Chemical Technology, Dnipro, Ukraine

16:00
16:30

COFFEE BREAK

16:30
17:45

NANO- AND METAMATERIALS - 2

- NPS-9 **PLASMONIC PROPERTIES OF SELF-SIMILAR CLUSTER OF SILVER NANOWIRES**
Nadiia Stognii, Nina Butenko, Nataliya Sakhnenko
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

- NM-10 **CONSTRUCTION OF HIGH CONDUCTIVITY IN SI BY PBW TECHNOLOGY**
 Anatoliy Vasiljev, Oleg Kukharenko, Oleksandr Kozonushchenko, Taras Vasiliev, Mykola Tolmachov
Institute of High Technologies, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine
- NM-11 **POROUS NANOSTRUCTURED InP: PREPARATION AND PROPERTIES**
 Yana Suchikova, Sergey Onishchenko, Viola Vambol, Olexandr Kondratenko
Berdiansk State Pedagogical University, Berdyansk, Ukraine
- NM-12 **FORMATION AND THE COLOUR DEVELOPMENT IN NANOCRYSTALLINE CoZn PHOSPHATE**
 Liudmyla Frolova, Alena Derimova
Ukrainian State University of Chemical Technology, Dnipro, Ukraine
- NM-13 **THE INFLUENCE OF CONSTANT PHYSICAL FIELDS ON STRUCTURE AND PROPERTIES OF EPOXY COMPOSITES**
Yulia Bardadym, Edward Sporyagin
Institute of Macromolecular Chemistry NAS of Ukraine, Kyiv, Ukraine

18:15
18:45

CLOSING CEREMONY

19:00
23:00

FAREWELL PARTY

SATURDAY, OCTOBER 21ST, 2017

SEE DESCRIPTION OF THE WORKSHOP ON P. 14

10:00
11:00

UCU EXCURSION

11:00
13:00

PRESENTATIONS BY YOUNG SCIENTISTS

13:00
14:00

LUNCH

14:00
16:00

PRESENTATIONS BY IT REPRESENTATIVES

16:00
17:00

NETWORKING

