CONFERENCE PROGRAM

MONDAY, 7 JUNE

8:00-9:00 **Registration**

9:00-9:10 **OPENING CEREMONY**

CONFERENCE HALL **PLENARY LECTURES OF INVITED SPEAKERS**

Chair *Dr.Nataliia Mysko-Krutik*

9:10-9:50
Keynote talk: Theoretical prediction and subsequent observation of the dynamical Casimir effect in a superconducting circuit
F. Nori
RIKEN, Saitama, Japan; and the University of Michigan, Ann Arbor, USA

9:50-10:30
Keynote talk: Dynamical Casimir Effect in Optomechanical systems: Fully Quantum and Non-Perturbative Description
S. Savasta
Dipartimento MIFT, Università degli Studi di Messina, Messina, Italy

10:30-11:00 ***General Photo and Coffee Break***

CONFERENCE HALL **OPTICS, PHOTONICS AND OPTICAL SPECTROSCOPY**

Chair *Dr.Sergii Poperezhai*

11:00-12:30
Optical Response of Airplanes with Novel Coatings
L. Illyashenko
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

Simulation of elliptically polarized light propagation in turbid tissue-like scattering media with Monte Carlo method
I.V. Lopushenko[1], M. Borovkova[1], A. Bykov[1], I. Meglinski[1,2]
[1] OPEM, ITEE, University of Oulu, Oulu, Finland
[2]College of Engineering and Physical Sciences, Aston University, Birmingham, UK

Correlation Picture in Dicke Superradiance
S. Lyagushyn
O. Honchar Dnipro National University, Dnipro, Ukraine

Transverse Anderson Localization Versus Evanescent Waves Confinement
S.S. Melnyk[1], O.V. Usatenko[1], V.A. Yampol'skii[1,2]
[1]A.Ya.Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine
[2]V.N. Karazin Kharkov National University, Kharkiv, Ukraine

Scattering of Surface Plasmon-Polaritons by a Segment of Metal-Dielectric Boundary with Randomly Fluctuating Impedance
Yu. Tarasov[1], O. Stadnyk[1,2]
[1]O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine
[2]Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

Surface Plasmon-Polaritons at Two-Dimensional Resonant Anisotropic Systems
O. Yermakov[1,2]
[1]Department of Computer Physics, V. N. Karazin Kharkiv National University, Kharkiv, Ukraine
[2]Department of Physics and Engineering, ITMO University, St. Petersburg, Russia

Spectral properties of thiacarbocyanine J-aggregates depending on formation conditions
P. Pisklova, I. Ropakova, A. Sorokin, S. Yefimova
Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine

Photoelectric properties of heterostructures with GeSn thin films
S. Derenko, S. Kondratenko
Taras Shevchenko National University of Kyiv, 64 Volodymyrs'ka St. 01601, Kyiv, Ukraine

12:30-12:50 ***LAB TOUR***

12:50-13:30 ***Time for Lunch***

13:30-14:30 POSTER SESSION I (SECTIONS #1,2,3,4,5,9)

CONFERENCE HALL **MATERIALS SCIENCE**

Chair *Dr. Yevhen Petrenko*

14:30-16:20

Lattice softening at the electric field and pressure-induced Mott insulator to metal transitions
D. Babich, L. Cario, B. Corraze, C. Adda, J. Tranchant, M.- P. Besland, J.-Y. Mévellec, P. Bertoncini, B. Humbert, E. Janod
Institut des Matériaux Jean Rouxel, Université de Nantes – CNRS, Nantes, France

Nanostructures on the (001) surface of strontium titanate
V.O. Hamalii, N.V. Krainyukova
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

Stability of $Y_2Ti_2O_7$ in ODS steels under swift heavy ions irradiation
E.A. Korneeva[1], A. Ibrayeva[2], J. O'Connell[3], A.S. Sohatsky[1], V.A. Skuratov[1]
[1]Joint Institute for Nuclear Research, Dubna, Russia
[2]Nur-Sultan Branch of Institute of Nuclear Physics, Nur-Sultan, Kazakhstan
[3]Centre for HRTEM, Nelson Mandela University, University Way, Summerstrand, Port Elizabeth, South Africa

The obtaining of $Zn_xMg_{1-x}WO_4$ nanopowders for composite scintillators
V. Tinkova, I. Tupitsyna, A. Yakubovskaya, P. Maksimchuk
Institute for scintillations materials of NAS of Ukraine, Kharkiv, Ukraine

Cryogenic scintillator based on Li_2MoO_4 single crystal
A.G. Yakubovskaya[1], I.A. Tupitsyna[1], A.M. Dubovik[1], Yu.A. Hizhnyi[2]
[1]Institute for Scintillation Materials NAS of Ukraine, Kharkiv, Ukraine
[2]Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

Influence of extreme factors (low temperatures, corpuscular and electromagnetic radiation) on the mechanical properties of polyimide Kapton H films of different thicknesses
V.A. Lototskaya[1], L.F. Yakovenko[1], E.N. Aleksenko[1], N.I. Velichko[1], G.I. Saltevskiy[1], I.P. Zaritskiy[1],. Yu.S. Doronin[1], A.A. Tkachenko[1], V.V. Abraimov[2], W.Z. Shao[2]
[1]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2]Harbin Institute of Technology, Harbin, the People's Republic of China

Hemispherical microwave X-band Fabry-Perot resonator for determining in wide band of dielectric parameters of solid materials
A. Breslavets[1], Z. Eremenko[1], O. Voitovich[1], G. Rudnev[1], Zhu Gang[2], Li Rong[2]
[1]O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine
[2]Anhui Huadong Photoelectric Technology Institute, Ltd Wuhu, China

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Yevhen Petrenko*

16:20-17:00
Keynote talk: Study of the magnetoelectric effect in multiferroic ferrite-perovskite composite ceramics
V.V. Shvartsman

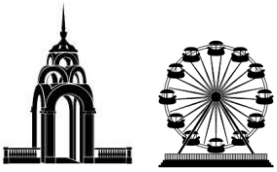
Institute for Materials Science, University of Duisburg-Essen, Essen, Germany

CONFERENCE HALL **PLENARY LECTURES OF INVITED SPEAKERS**

Chair *Dr. Valentin Koverya*

17:00-17:40
Keynote talk: Ultra-fast vortex dynamics in nanoengineered superconductors
O.V. Dobrovolskiy
Faculty of Physics, University of Vienna, Vienna, Austria

17:40-18:20
Keynote talk: High-pressure stabilized oxide perovskite structures
A.N. Salak[1], D.D. Khalyavin[2], E.L. Fertman[3], D. Delmonte[4], E. Gilioli[4]
[1]Department of Materials and Ceramics Engineering, CICECO – Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal
[2]ISIS Facility, Rutherford Appleton Laboratory, Chilton, Didcot, UK
[3]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[4]Institute of Materials for Electronics and Magnetism, Parma, Italy



18:30-… **KHARKIV-CITY WALKING TOUR**

TUESDAY, 8 JUNE

INTERNATIONAL ADVANCED RESEARCH WORKSHOP "THERMAL CONDUCTIVITY OF SOLID STATES AT LOW TEMPERATURE"

CONFERENCE HALL & LIVE STREAM

Co-chairs: Dr. Razet Basnukaeva & Dr. Maksym Barabashko

9:00 -9:15 **Opening ceremony**

9:15 -9:45 **Keynote talk: Heat transfer in molecular crystals and their solutions above or of the order of Debye temperature**
Prof. Viacheslav Konstantinov
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine,47 Nauky Ave., Kharkiv, 61103, Ukraine

9:45-10:00 **Thermal activation heat transfer in dynamically disordered phases of molecular crystals. Ethane series freons**
Dr. Anna Karachevtseva
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine,47 Nauky Ave., Kharkiv, 61103, Ukraine

10:00-10:15 **Features of transport processes in an electroconsolidated FeNi composite**
Dr. Maksim Kislitsa
V.N. Karazin Kharkiv National University, Kharkiv 61022, Ukraine

10:15-10:45
Ukraine time UTC/GMT +3
(16:15 -16:45) Japan time UTC/GMT +9
Keynote talk: Thermal Conductivity of Organic Charge Transfer Complexes with Strong Correlation in 2D π-Electrons Layers
Prof. Yasuhiro Nakazawa
Dept. of Chemistry, Graduate School of Science, Osaka University, Machikaneyama 1-1, Toyonaka, Osaka 560-0043, Japan

10:45-11:00 **Thermophysical and electrophysical characterization of exfoliated graphite - carbon nanotube composites**
Prof. Galyna Dovbeshko
Institute of Physics, NAS of Ukraine, 46 Nauky Ave., 03028 Kyiv, Ukraine

11:00-11:15
Ukraine time UTC/GMT +3 (15:00-15:15) Tomsk, RF UTC/GMT +7
Calculations of thermal gradients in hydroxyapatite composite with the additives of multi-walled carbon nanotubes
Ms. Anastasiya Rezvanova
Institute of Strength Physics and Materials Science of SB RAS, 2/4 Akademichesky Ave., Tomsk, 634055, Russia

11:15-11:45 **Keynote talk: The influence of diffusive phonon boundary scattering on the thermal conductivity of a two-dimensional sample**
Prof. Konstantin Nemchenko
V.N.Karazin Kharkiv National University, 61022, Kharkiv, Ukraine

11:45-12:00
Ukraine time UTC/GMT +3 (15:45-16:00) Tomsk, RF UTC/GMT +7
Disorder-induced localized low-energy tunneling states in the carbon nanomaterials
Dr.Alexander Ponomarev
Institute of Strength Physics and Materials Science of SB RAS, Tomsk, 34055, Russia

12:00-12:15 **Resonance levels in electron and phonon spectra of graphene nanostructures: formation, decay, possibility of HTS appearance**
Prof. Sergey Feodosyev
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine,47 Nauky Ave., Kharkiv, 61103, Ukraine

12:15-12:30 **Thermally activated conductivity of molybdenum disulfide MoS_2 nanopowder**
Dr. Roman Rudenko
Institute of Physics, NAS of Ukraine, 46 Nauky ave., 03680, Kyiv, Ukraine

12:30-13:00 **Coffee-break/Lunch Time**

13:00-13:30
Ukraine time UTC/GMT +3 (12:00-12:30) (Wroclaw, Poland time UTC/GMT +2)
Keynote talk: Thermal conductivity of solid state laser materials: ceramics of YbAG and GAGG
Dr. Daria Szewczyk
Institute of Low Temperature and Structure Research PAS, Division of Low Temperature and Superconductivity, Okólna 2, 50-422 Wrocław, Poland

13:30-13:45 **Temperature Dependence of the Thermal Conductivity in SiO_2 with Disorder Due to Embedded Ge Nanoparticles**
Mr. Volodymyr Shmid
Taras Shevchenko National University of Kyiv, 64/13 Volodymyrska Street, 01601 Kyiv, Ukraine

13:45-14:00
Ukraine time UTC/GMT +3 (17:45-18:00) Tomsk, RF UTC/GMT +7
Electronic thermal conductivity of single and bilayer graphene with disorder
Dr. Nadezhda Bobenko
Institute of Strength Physics and Materials Science of SB RAS, 2/4 Academichesky Avenue, Tomsk 634021, Russia

14:00-14:30 **Keynote talk: Low Thermal Conductivity and the Evidence of the Glassy Behavior in $(Pb_{0.7}Sn_{0.25}Ge_{0.05})_2P_2S_6$ and $(Pb_{0.7}Sn_{0.25}Ge_{0.05})_2P_2Se_6$ Mixed Crystals**
Prof. Yulian Vysochanskii
Institute for Solid State Physics and Chemistry, Uzhhorod University, Pidgirna Str. 46, Uzhhorod, 88000, Ukraine

14:30-14:45 **Influence of Chemical Substitution on the Thermal Transport Properties in 2D layered $M^{1+}M^{3+}P_2X_6$ (M^{1+} = Cu, Ag; M^{3+} = In, Bi; X = Se, S) Compounds**
Dr. Vitalii Liubachko
Institute for Solid State Physics and Chemistry, Uzhhorod University, Pidgirna Str. 46, 88000 Uzhhorod, Ukraine

14:45-15:00 **Analysis of thermal conductivity for clathrate thermoelectrics**
Dr. Yuliia Horbatenko
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, 47 Nauky Ave, Kharkiv 61103, Ukraine

15:00-15:30
Ukraine time UTC/GMT +3 (14:00-14:30) Barcelona, Spain time UTC/GMT +2

Keynote talk: Thermal anomalies in ordered and disordered phases
Prof. Josep Lluís Tamarit
Grup de Caracterització de Materials,Departament de Física, EEBE and Barcelona Research Centerin Multiscale Science and Engineering ,Universitat Politecnica de Catalunya, Barcelona 08019, Catalonia

15:30-15:45 **Electrophysical properties of aqueous colloidal solutions of C_{60}**
Mr. Sergey, Cherednychenko
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, 47 Nauky Ave., Kharkiv, 61103, Ukraine

15:45-16:00 **Heat capacity and thermal expansion for ordered and disordered crystal materials**
Dr. Maksym Barabashko
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, 47 Nauky Ave., Kharkiv, 61103, Ukraine

16:00-16:30 **Generalized analysis of thermal conductivity for molecular solids**
Prof. Alexander Krivchikov
B.Verkin Institute for Low Temperature Physics and Engineering of NAS of Ukraine, 47 Nauky Ave., Kharkiv 61103, Ukraine

CONFERENCE HALL BIOPHYSICS AND PHYSICS OF MACROMOLECULES

Chair *Prof. Kosevich Marina*

16:30-17:00

Melatonin determination in the human organism by a breath test
D.O. Harbuz[1], A.P. Pospelov[2], V.I. Belan[1], V.A. Gudimenko[1], V.L. Vakula[1], L.V. Kamarchuk[3], Y.V. Volkova[3], and G.V. Kamarchuk[1]
[1]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2] National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
[3] SI "Institute for Children and Adolescents Health Care" of NAMS of Ukraine, Kharkiv, Ukraine

The limitations of DFT tight-binding approximation and their role in conformational analysis of DNA constituents
O.S. Husak, T.Yu. Nikolaienko
Faculty of Physics of Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

Permittivity characterization of aqueous solutions of biological active substances
K.S. Kuznetsova[1], V.A. Pashynska[1,2], Z.E. Eremenko[1], O.I. Shubniy[1], A.V. Martunov[3]
[1]O. Usikov Institute for Radiophysics and Electronics of NASU, Kharkiv, Ukraine
[2]B. Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[3]Mechnikov Institute of Microbiology and Immunology National Academy of Medical Sciences of Ukraine, Kharkiv, Ukraine

CONFERENCE HALL **PLENARY LECTURES OF INVITED SPEAKERS**

Chair *Prof. Kosevich Marina*

17:00-17:40
Keynote talk: Magnetochiral effect of phonons
S. Zherlitsyn
Hochfeld-Magnetlabor Dresden, Helmholtz-Zentrum Dresden-Rossendorf, Dresden, Germany

17:40-18:20
Keynote talk: Optical choppers with disks, with an insight in biomedical applications
V.-F. Duma
3OM Optomechatronics Group, "Aurel Vlaicu" University of Arad, Arad, Romania
Doctoral School, Polytechnic University of Timisoara, Timisoara, Romania

20:00-23:30 **WELCOME PARTY**

WEDNESDAY, 9 JUNE

09:00-21:00 MAIN EXCURSION PROGRAM AND PICNIC

THURSDAY, 10 JUNE

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Sergii Poperezhai*

9:00-09:20

Keynote talk: Implementation of a simultaneous message-passing protocol using optical vortices

M. Szatkowski[1], J. Koechlin[2], J. Masajada[1], D. Lopez-Mago[3]
[1]Wrocław University of Science and Technology, Dept. of Optics and Photonics, Wrocław, Poland
[2]University of Basel, Department of Physics, Basel, Switzerland
[3]TECNOLOGICO DE MONTERREY, ESCUELA DE INGENIERIA Y CIENCIAS, MONTERREY, MEXICO

09:20-10:00

Keynote talk: Nonlinear and chiral response of topological semimetals and other chiral media

F. Büscher[1], V. Gnezdilov[1,2], D. Wulferding[1,3], S. Müllner[1], Yu. G. Pashkevich[4], C. Felser[5], Ch. Shekhar[5], K. Manna[6], P. Lemmens[1]
[1]IPKM and LENA, TU-BS, Braunschweig, Germany
[2]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[3]IBS, Center for Correlated Electron Systems, Seoul Nat. Univ, Seoul, Korea
[4]Donetsk IPE O.O. Galkin NAS, Kyiv, Ukraine
[5]MPI Dresden, Germany
[6]Quantum Materials Magneto-Transport Laboratory, IIT, New Delhi, India

Second sound resonances in superfluid ^{3}He -^{4}He mixtures

T.G. Vikhtinskaya, N.O. Herashchenko, K.E. Nemchenko
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

CONFERENCE HALL NANOPHYSICS AND NANOTECHNOLOGIES

Chair *Dr. Maksym Barabashko*

10:00-11:10

Structural Models for the Diffraction Analysis of Various Carbon Honeycombs

D.G. Diachenko, N.V. Krainyukova
B.Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

Research of impact of presence of vitamins B2, B3, and C on calcium oxalate monohydrate crystallization processes in simulated body fluid

M. Dryhailo[1], Yu. Taranets[2]
[1]V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[2]Institute for Single Crystals of the National Academy of Sciences of Ukraine, Kharkiv, Ukraine

Fundamental description of Wannier qubits in semiconductor

K. Pomorski[1,2]
[1]Cracow University of Technology, Faculty of Computer Science and Telecommunications,Krakow, Poland
[2]Quantum Hardware Systems, Lodz, Poland

A New Method for Real-Time Selective Detection in Complex Gas Mixtures Using Yanson Point Contacts

V. Vakula[1], A. Pospelov[2], V. Belan[1], D. Harbuz[1,2], L. Kamarchuk[3], Yu. Volkova[3], G. Kamarchuk[1]
[1]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2]National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
[3]SI "Institute for Children and Adolescents Health Care" of NAMS of Ukraine, Kharkiv, Ukraine

11:10 – 11:25 ***SPIE Special Coffee Break***

CONFERENCE HALL NANOPHYSICS AND NANOTECHNOLOGIES

Chair *Dr. Maksym Barabashko*

11:25-11:45

Base Pressure Effect on Electrical Properties of Chromium Nanofilms

S.L. Udachan[1], N.H. Ayachit[1], L.A Udachan[2], S. Siddanna[3], S.S. Kolkundi[4], S. Ramya[5]
[1]Dept of Physics, Rani Channamma University, Belagavi, Karnataka, India
[2]S.S. Tegnoor Degree College, Kalaburagi, Karnataka, India
[3]Dept of PG Studies & Research in Physics, Kuvempu University Jnanasahyadri, Shankaraghatta, Shimoga, Karnataka, India
[4]Government First Grade College, Shahapur, Yadgir, Karnataka, India
[5]Shree Sangam Vidya Mandir, Kalaburagi, Karnataka, India

Optical response of novel structures to detect approaching vehicles

L. Illyashenko
Kharkiv National University of Radio Electronics, 14 Nauky Ave., Kharkiv, Ukraine

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Maksym Barabashko*

11:45-12:25

Keynote talk: The strain impact on ferromagnetic/graphene/ferroelectric nanostructures

M.V. Strikha[1,2], E.A. Eliseev[3], A.N. Morozovska[4]
[1]Taras Shevchenko National University of Kyiv, Faculty of Radiophysics, Electronics and Computer Systems, Kyiv, Ukraine,
[2]V.Lashkariov Institute of Semiconductor Physics NASU, Kyiv, Ukraine
[3]Institute for Problems of Materials Science NASU, Kyiv, Ukraine
[4]Institute of Physics NASU, Kyiv, Ukraine

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Marina Kolodyazhnaya*

12:25-13:05
Keynote talk: Pressure-tuned magnetic interactions in a triangular-lattice quantum antiferromagnet
S. Zvyagin
Dresden High Magnetic Field Laboratory, Helmholtz-Zentrum Dresden Rossendorf, Dresden, Germany

13:05-14:00 ***Time for Lunch***

CONFERENCE HALL & ZOOM CERN-CMS INTERNATIONAL MASTERCLASSES

Chair *Dr. Maksym Barabashko*

14:00-14:10 **Welcome**
Pedro Abreu
LIP Laboratorio de Instrumentacao e Fisica Experimental de Part,
Steven Goldfarb
University of Melbourne (AU)

14:10-14:30 **Warm-up activity**

14:30-15:30 **Keynote talk: Introduction to Standard Model, LHC, and CMS**
Leonid G. Levchuk
National Academy of Sciences of Ukraine (UA)

15:30-15:45 ***Coffee Break***

15:45-16:30 **Introduction to CMS Masterclass measurement (Zoom Online)**

16:30-17:30 **Masterclass measurement(Zoom Online)**

17:30-18:00 **Discussion of Results (Zoom Online)**

CONFERENCE HALL **PLENARY LECTURES OF INVITED SPEAKERS**

Chair *Dr. Marina Kolodyazhnaya*

18:00-18:20

Keynote talk: Massive magnetostriction of the $KEr(MoO_4)_2$

D. Kamenskyi[1,2], B. Bernath[3], S. Khmelevskyi[4], L.V. Pourovskii[5], S. Poperezhai[6], K. Kutko[6]
[1]Experimental Physics V, Institute of Physics, University of Augsburg, Augsburg, Germany
[2]Molecular Photoscience Research Center, Kobe University, Kobe, Japan
[3]High Field Magnet Laboratory (HFML-EMFL), Radboud~University, Nijmegen, Netherlands
[4]Research Center for Materials Science and Engineering, Vienna University of Technology, Vienna, Austria
[5]CPHT, CNRS, Ecole Polytechnique, Institut Polytechnique de Paris, Palaiseau, France
[6]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

19:00-20:00 **CONCERT OF CLASSICAL MUSIC**

FRIDAY, 11 JUNE

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Sergii Poperezhai*

09:00-09:40
Keynote talk: Features of the exciton self-trapping in molecular aggregates
A.V. Sorokin, I.I. Grankina, I.Yu. Ropakova, S.L. Yefimova
Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine

09:40-10:20
Keynote talk: Latest Advances in Theory of Logarithmic Fluids: Polycrystalline Metals and Superfluid Stars
K.G. Zloshchastiev
Institute of Systems Science, Durban University of Technology, Durban, South Africa

10:20-10:35 ***Coffee Break***

CONFERENCE HALL QUANTUM LIQUIDS AND QUANTUM CRYSTALS, CRYOCRYSTALS

Chair *Dr. Nataliia Mysko-Krutik*

10:35-11:50

Magnetoelectric Properties of Quantized Vortices and Vortex Rings
A.M. Konstantinov, S.I. Shevchenko
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

NMR investigation phases of 3He adsorbed on MCM-41 one-dimensional nanotubes
N.P. Mikhin, S.S. Sokolov
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

Desorption of excited H^* atoms from free clusters Ar/CH_4 and solid Ar doped with CH_4
Yu.S. Doronin, V.L. Vakula, G.V. Kamarchuk, A.A. Tkachenko, I.V. Khyzhniy, S.A. Uyutnov, M.A. Bludov, E.V. Savchenko
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

Radiolysis of Pyridine-Water-Ices by swift Ions

P. Ada Bibang[1], A.N. Agnihotri[1,2], P. Boduch[1], A. Domaracka[1], Z. Kanuchova[3], H.Rothard[1]
[1]Centre de Recherche sur les Ions, les Matériaux et la Photonique, Normandie Univ, Caen, France
[2]Indian Institute of Technology Delhi, India
[3]Astronomical Institute of the Slovak Academy of Science, Tatranska Lomnica, Slovak Republic

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CONFERENCE HALL **TECHNOLOGIES AND INSTRUMENTATION FOR PHYSICAL EXPERIMENTS**

Chair *Ms. Anna Herus*

11:50-13:05

Development of universal experimental cell for Yanson point-contact spectroscopy and sensor research

P.O. Dmitriyev[1], A.V. Savytskyi[1], A.P. Pospelov[2], E. Faulques[3], G.V. Kamarchuk[1]
[1]B. Verkin Institute for Low Temperature Physics & Engineering, Kharkiv, Ukraine
[2]National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine
[3]MIOPS, Jean Rouxel Institute of Materials, Nantes, France

Investigation of the Voltage Sensitivity of Selectively Doped Microwave Diodes on "Hot" Electrons in a Wide Temperature Range

V. Derkach[1], R. Golovashchenko[1], Y. Ostryzhnyi[1], J. Gradauskas[2,3], A. Sužiedėlis[2], M. Anbinderis[2,3]
[1]O. Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine
[2]Center for Physical Sciences and Technology, Vilnius, Lithuania
[3]Vilnius Gediminas Technical University, Vilnius, Lithuania

Phase-Resolved Visualization of Radio Frequency Standing Waves in Superconducting Spiral Resonator for Metamaterial Applications
A.P. Zhuravel[1], A. Karpov[2], A.V. Lukashenko[3], A.A. Leha[1], A.V. Ustinov[2,3]
[1]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2]National University of Science and Technology(MISiS), Moscow, Russia
[3]Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

Spatial Distribution of Resonances in rf-SQUIDs Array
A.P. Zhuravel[1], A.V. Lukashenko[2], A.V. Ustinov[2,3], Y.D. Oboznyi[1,4], S.M. Anlage[5]
[1]B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2]Karlsruhe Institute of Technology (KIT), 76131 Karlsruhe, Germany
[3]National University of Science and Technology(MISiS), Moscow, Russia
[4]V.N. Karazin Kharkov National University, Kharkiv, Ukraine
[5]Center for Nanophysics and Advanced Materials, Department of Physics, University of Maryland, Maryland, USA

Strain modulated ferromagnetic resonance technique as a powerful tool for investigating of thin films magnetoelastic properties
O.M. Chumak[1], A. Nabiałek[1], V.V. Chabanenko[2], T. Seki[3,4], K. Takanashi[3,4,5], L.T. Baczewski[1], H. Szymczak[1]
[1]Institute of Physics, Polish Academy of Sciences, Warsaw, Poland
[2]O.Galkin Donetsk Institute for Physics and Engineering NASU, Kyiv, Ukraine
[3]Institute for Materials Research, Tohoku University, Sendai, Japan
[4]Center for Spintronics Research Network, Tohoku University, Sendai, Japan
[5]Center for Science and Innovation in Spintronics, Core Research Cluster, Tohoku University, Sendai, Japan

13:05-13:25 ***LAB TOUR***

13:25-14:00 ***Time for Lunch***

14:00-15:00 POSTER SESSION II (SECTIONS #6,7,8)

CONFERENCE HALL **THEORY OF CONDENSED MATTER PHYSICS**

Chair Dr. Denis Laptev

15:00-17:00

Schrödinger-cat states generation via mechanical vibrations entangled with a charge qubit
O.M. Bahrova[1], L.Y. Gorelik[2], S.I. Kulinich[1]
[1]B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine
[2]Department of Physics, Chalmers University of Technology, Göteborg, Sweden

Resonant modes in cavity layered microwave resonator with axial symmetry
Z.E. Eremenko, I.N. Volovichev, A.A. Breslavets
O.Ya. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine

Nonlinear thermoelectric properties of a magnetic single-electron shuttle
O.A. Ilinskaya[1], I.V. Krive, R.I. Shekhter[2]
[1]B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine
[2]Department of Physics, University of Gothenburg, Göteborg, Sweden

Studying the magnetic peculiarities of the frustrated spin chain using the effective model without frustration
O.O. Kryvchikov
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

Thermal Coulomb drag between quantum wires hosting 1D Wigner crystals
M.V. Mazanov[1], S.S. Apostolov[1,2]
[1]V.N. Karazin Kharkov National University, Kharkov, Ukraine
[2]A.Ya. Usikov Institute for Radiophysics and Electronics NASU, Kharkov, Ukraine

Propagation and intensity-dependent focusing of THz laser radiation in layered superconductors
H.V. Ovcharenko[1], Z.A. Maizelis[1,2], S.S. Apostolov[1,2]
[1]V.N. Karazin Kharkov National University, Kharkiv, Ukraine
[2]O.Ya. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine

Ideal Bose gas in steep traps
A. Rovenchak, Yu. Krynytskyi
Department for Theoretical Physics, Ivan Franko National University of Lviv, Lviv, Ukraine

Approximately isospectral isomers for antiferromagnetic Heisenberg model
V.V. Tokariev
V.N. Karazin Kharkiv National University, School of Chemistry, Kharkiv, Ukraine

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Ms. Anna Herus*

17:00-17:40
Keynote talk: Thermodynamic properties of coexisting phases of carbon tetrachloride on sublimation and melting lines
L.N. Yakub, O.S. Bodiul
Thermophysics Dept., Odessa National Academy of Food Technologies, Odesa, Ukraine

17:40-18:00
Keynote talk: GHz-THz Nonlinearities in Semiconductor Superlattices
M.F. Pereira
Department of Physics, Khalifa University of Science and Technology, Abu Dhabi, UAE

CONFERENCE HALL PLENARY LECTURES OF INVITED SPEAKERS

Chair *Dr. Anastasiya Lyogenkaya*

18:00-18:40
Keynote talk: Peculiarities of dipolar ordering in mixed cation halide perovskites
J. Banys[1], S. Balciunas[1], M. Simenas[1], S. Svirskas[1], M. Kinka[1], V. Samulionis[1], R. Grigalaitis[1],

A. Garbaras[2], A. Gagor[3], M. Maczka[3], A. Sieradzki[3]
[1]Faculty of Physics, Vilnius University, Vilnius, Lithuania
[2]Mass Spectrometry Laboratory, Center for Physical Sciences and Technology, Vilnius, Lithuania.
[3]Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland

STUDENT CLUB (2, KYRPYCHOVA STR.) OSA YSW

Chair *Ms. Anna Herus*

20:00-21:00 ILTPE OSA (The Optical Society) Student Chapter is organizing Young Scientists Workshop (YSW) devoted to the failfures in scientific career development.

20:10-20:30

Prof. V.-F. Duma, OSA Travelling Lecturer
3OM Optomechatronics Group, "Aurel Vlaicu" University of Arad, Arad, Romania
Doctoral School, Polytechnic University of Timisoara, Timisoara, Romania
"3OM Optomechatronics Group & Projects_2021"

20:30-20:50

Prof. C. López-Mariscal, OSA Travelling Lecturer
Department of Physics and Astronomy, Appalachian State University, Boone, NC, USA, and Underwater Photonics, Cozumel, Mexico
"Why Science Communication matters"

Dr. Nataliia Mysko-Krutik
ILTPE NASU, Kharkiv, Ukraine
"Writing a motivation letter for students"

Ms. Diana Hurova, President of ILTPE OSA SC

Ms. Anna Herus, President of IRE SPIE SC

SATURDAY, 12 JUNE

CONFERENCE HALL **MATERIALS SCIENCE**

Chair *Dr. Yevhen Petrenko*

09:40-11:40

Hydrogen storage properties, structural analysis, elastic and electronic properties of K_2PdH_4

S. Al[1], C. Kurkcu[2]
[1]Department of Environmental Protection Technologies, Vocational School, Izmir Democracy University, Izmir, Turkey
[2]Department of Electronics and Automation, Kirsehir Ahi Evran University, Kırşehir, Turkey

Phase transitions, elastic and electronic properties of hydrogen storage Na_2PdH_4

S. Al[1], C. Kurkcu[2]
[1]Department of Environmental Protection Technologies, Vocational School, Izmir Democracy University, Izmir, Turkey
[2]Department of Electronics and Automation, Kirsehir Ahi Evran University, Kırşehir, Turkey

Synchrotron diffraction study of the high-pressure behaviour of the multiferroic $BiFe_{0.5}Sc_{0.5}O_3$ perovskite

J.P. Cardoso[1], D.D. Khalyavin[2], D. Delmonte[3], E. Gilioli[3], A. Barbier[4], M.R. Soares[1], J.M. Vieira[1], A.N. Salak[1]
[1]Department of Materials and Ceramics Engineering and CICECO - Aveiro Institute of Materials, Aveiro, Portugal
[2]ISIS Facility, Rutherford Appleton Laboratory, Chilton, Didcot, UK
[3]Institute of Materials for Electronics and Magnetism, Parma, Italy
[4]SPEC, CEA, CNRS, Université Paris-Saclay, CEA-Saclay, Gif-sur-Yvette Cedex, France

Influence of aluminum ion substitution on EPR spectra of lithium ferrites

L. Kaykan[1], J. Mazurenko[2], N.V. Ostapovych[2], I.R. Pavliuk[2]
[1]G.V. Kurdyumov Institute for Metal Physics, NAS. of Ukraine, Kyiv, Ukraine
[2]Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine

CH_4 trapping ability of double vacancy graphene Cu-embedded surface: A DFT study
H. Küçük
Gazi University, Department of Physics, Emniyet Mahallesi, Teknikokullar, Ankara, Turkey

Comparative study of Tl-1223 superconductors prepared by the sol-gel route and solid-state reaction
I.R. Metskhvarishvili[1,2], T.E. Lobzhanidze[3], G.N. Dgebuadze[1], B.G. Bendeliani[1], M.R. Metskhvarishvili[2], M.Sh. Rusia[3], G.R. Giorganashvili[1], V.M. Gabunia[1,4]
[1]Ilia Vekua Sukhumi Institute of Physics and Technology, Laboratory of Cryogenic Technique and Technologies, Tbilisi, Georgia
[2]Georgian Technical University, Faculty of Informatics and Control Systems, Department of Microprocessor and Measurement Systems, Tbilisi, Georgia
[3]Ivane Javakhishvili Tbilisi State University, Faculty of Exact and Natural Sciences, Department of Chemistry, Tbilisi, Georgia
[4]Petre Melikishvili Institute of Physical and Organic Chemistry of the Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia

2-D multifunctional nanostructures of layered double hydroxides assembled in magnetic field
D.E.L. Vieira[1], E.L. Fertman[2], A.V. Fedorchenko[2], R.Yu. Babkin[3], Y.G. Pashkevich[3], C.M.A. Brett[4], J.M. Vieira[1], A.N. Salak[1]
[1]Department of Materials and Ceramic Engineering, CICECO – Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal
[2]B. Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[3]O.Galkin Donetsk Institute for Physics and Engineering, NASU, Kyiv, Ukraine
[4]Department of Chemistry, CEMMPRE, Faculty of Sciences and Technology, University of Coimbra, Coimbra, Portugal

11:30-11:50 ***Special Coffee Break***

CONFERENCE HALL **PLENARY LECTURES OF INVITED SPEAKERS**

Chair *Dr. Maksym Barabashko*

11:50-12:30
Keynote talk: Influence of pressure and stoichiometry on the Ginzburg-Landau parameter in superconducting YB_6
S. Gabáni[1], K. Flachbart[1], E. Gažo[1], J. Kačmarčík[1], M. Marcin[1], T. Mori[2], M. Orendáč[1], Z. Pribulová[1], G. Pristáš[1], P. Samuely[1], N. Shitsevalova[3], N. Sluchanko[4]
[1]Institute of Experimental Physics, SAS, Košice, Slovakia
[2]National Institute for Materials Science, ICMN & CFSN, Tsukuba, Japan
[3]Frantsevich Institute for Problems of Materials Science, NASU, Kyiv, Ukraine
[4]Prokhorov General Physics Institute, RAS, Moscow, Russia

CONFERENCE HALL **ELECTRONIC PROPERTIES OF CONDUCTING AND SUPERCONDUCTING SYSTEMS**

Chair Dr. Valentin Koverya

12:30-13:10

Fractal analysis of the critical state of the NbTi superconductor
O.M. Chumak[1,2], V.V. Chabanenko[1], V.F. Rusakov[3], O.I. Kuchuk[1], I. Abaloszewa[2], O. Abaloszew[2], A. Nabiałek[2], R. Puźniak[2]
[1]O.Galkin Donetsk Institute for Physics and Engineering NASU, Kyiv, Ukraine
[2]Institute of Physics, Polish Academy of Sciences, Warsaw, Poland
[3]Vasyl' Stus Donetsk National University, Vinnytsia, Ukraine

Shift of the electronic bands in Fe(Se,Te) in the vicinity of the superconducting transition
Yu.V. Pustovit[1,2], D.P. Menesenko[1], A.A. Kordyuk[2]
[1]T.Shevchenko National University of Kyiv, Kyiv, Ukraine
[2]Kyiv Academic University, Kyiv, Ukraine

Possibility for the anisotropic acoustic plasmons in LaH_{10} and their role in enhancement of the critical temperature of superconducting transition
E.A. Pashitskii, V.I. Pentegov, A.V. Semenov
Institute of Physics NASU, Kyiv, Ukraine

The unusual microwave response of chalcogenide $FeSe_{1-x}Te_x$ film compared to other superconductors
Y. Wu[1], A.A. Barannik[2], L. Sun[1], Y-S. He[1], N.T. Cherpak[2]
[1]Institute of Physics of Chinese Academy of Sciences, National Laboratory for Superconductivity, Beijing, China
[2]O. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine

13:10-14:00 ***Time for Lunch***

CONFERENCE HALL **THEORY OF CONDENSED MATTER PHYSICS**

Chair Dr. Denis Laptev

14:00-15:15

Depending on the angle of the functionalization of twisted graphene
A.A. Belosludtseva, Y.A. Chymakov, N.G. Bobenko
Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of Sciences (ISPMS SB RAS), Tomsk, Russia

Strong drag force fluctuations in disordered ensembles of scatterers and effects of nonlinear dynamical screening
O.V. Kliushnichenko, S.P. Lukyanets
Institute of Physics NASU, Kyiv, Ukraine

Landau-Zener-Stückelberg-Majorana quantum logic gates
A. I. Ryzhov[1], O. V. Ivakhnenko[1], S. N. Shevchenko[1,2], Franco Nori[3,4]
[1]B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine
[2]V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[3]Theoretical Quantum Physics Laboratory, RIKEN Cluster for Pioneering Research, Wakoshi, Saitama, Japan
[4]Physics Department, University of Michigan, USA

Low-temperature phases of SU(4)-symmetric fermionic mixtures in optical lattices
V.I. Unukovych[1], A.G. Sotnikov[1,2]
[1]V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[2]Akhiezer Institute for Theoretical Physics, NSC «Kharkov Institute of Physics and Technology», Kharkiv, Ukraine

Thermoelectric and vibronic effects in tunneling of spin-polarized electrons in amolecular transistor
A.D. Shkop
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

CONFERENCE HALL MAGNETISM AND MAGNETIC MATERIALS

Chair *Dr. Marina Kolodyazhnaya*

15:15-15:45
Magnetic frustration in insulating Jahn-Teller manganite crystals
L. Gonchar[1,2]
[1]Ural State University of Railway Transport, Yekaterinburg, Russia
[2]Ural Federal University named after First President of Russia B.N.Yeltsin, Yekaterinburg, Russia

Effect of Kink Scattering on their Confinement in Quasi One-Dimensional Magnetically ordered quantum spin systems
S.B. Rutkevich
Bergische Universität Wuppertal, Wuppertal, Germany

CONFERENCE HALL SPIE YSW

Chair *Dr. Nataliia Mysko-Krutik*

15:45-16:10 IRE SPIE (The International Society for Optics and Photonics) Student Chapter is organizing Young Scientists Workshop (YSW) devoted to the failfures in scientific career development.

Dr. M. Szatkowski, SPIE Visiting Lecturer
Wrocław University of Science and Technology, Dept. of Optics and Photonics, Wrocław, Poland
"Name"

16:20-16:40 CLOSING CEREMONY

POSTER SESSION I
MONDAY, 7 JUNE | 13:30-14:30
(SECTIONS #1,2,3,4,5,9)

ELECTRONIC PROPERTIES OF CONDUCTING AND SUPERCONDUCTING SYSTEMS

P1 **Low field high-harmonic generation in $Mo_6S_6I_2$ Chevrel-phase superconductor**

I.R. Metskhvarishvili[1,2], B.G. Bendeliani[1], G.N. Dgebuadze[1], G.R. Giorganashvili, M.R. Metskhvarishvili[2], T.E. Lobzhanidze[3]

[1]Ilia Vekua Sukhumi Institute of Physics and Technology, Laboratory of Cryogenic Technique and Technologies, Tbilisi, Georgia

[2]Georgian Technical University, Faculty of Informatics and Control Systems, Department of Microprocessor and Measurement Systems, Tbilisi, Georgia

[3]Ivane Javakhishvili Tbilisi State University, Faculty of Exact and Natural Sciences, Department of Chemistry, Tbilisi, Georgia

P2 **Spin Nernst effect in the platinum and tungsten samples**

Yu.N. Chiang, M.O. Dzyuba

B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P3 **Superconductivity in hole-doped Ge detected by Point-Contact Spectroscopy**

N.V. Gamayunova[1], P. Szabó[2], J. Kačmarčik[2], P. Samuely[2], O.E. Kvitnitskaya[1], L.V. Tyutrina[1], Yu.G. Naidyuk[1]

[1]B.Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

[2]Centre of Low Temperature Physics, Institute of Experimental Physics SAS, Košice, Slovakia

P4 **The influence of magnetic field on phase dynamics of stacks of long Josephson junctions**

A. Grib

V. N. Karazin National University, Kharkiv, Ukraine

P5 **Magnetic transition in $RuSr_2(Eu_{1.5}Ce_{0.5})Cu_2O_{10-\delta}$ ceramic samples and VRH law**

E.Yu. Beliayev, I.G. Mirzoev, V.A. Horielyi

B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P6 **The effect of hydrogen thermo diffusion on the superconducting properties of $FeTe_{0.65}Se_{0.35}$ single crystals**

S.I. Bondarenko[1], A.I. Prokhvatilov [1], R. Puźniak[2], J.Piętosa[2], A.A. Prokhorov[3], V.V. Meleshko[1], V.P. Timofeev[1], V.P. Koverya[1], D.J. Gawryluk[2,4], A. Wiśniewski[2]

[1]B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

[2]Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland

[3]Institute of Physics of the Czech Academy of Sciences, Praha, Czech Republic

[4]Laboratory for Scientific Developments and Novel Materials, Paul Scherrer Institute, Villigen, Switzerland

P7 **Josephson properties of phase-slip centers in narrow channels made of a bimetallic superconducting-normal film**

A.G. Sivakov, S.O. Kruhlov, A.S. Pokhila

B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P8 **Magnetic and structural properties of $La_{1-x}Gd_xCoO_3$ compounds**

A.S. Panfilov[1], A.A. Lyogenkaya[1], G.E. Grechnev[1], V.A. Pashchenko[1], L.O. Vasylechko[2], V.M. Hreb[2], A.V. Kovalevsky[3]
[1]*B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine*
[2]*Lviv Polytechnic National University, Lviv, Ukraine*
[3]*Department of Materials and Ceramic Engineering, CICECO - Aveiro Institute of Materials, University of Aveiro, Aveiro, Portugal*

P9 **Magnetoresistive study of the excess conductivity in YBCO monolayers**

E.V. Petrenko[1], L.V. Omelchenko[1], A.L. Solovjov[1], N.V. Shitov[1], K. Rogacki[2]
[1]*B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine*
[2]*Institute for Low Temperatures and Structure Research, Polish Academy of Sciences, Wroclaw, Poland*

P10 **Effect of MWCNT content on electrical properties of ternary PVDF/PANI/MWCNT nanocomposite at low temperature**

R.M. Rudenko[1], O.O. Voitsihovska[1], V.M. Poroshin[1], M.V. Petrychuk[2], A.S. Nikolenko[1], N.A. Ogurtsov[3], Yu.V. Noskov[3], D.O. Sydorov[3], A.A. Pud[3]
[1]*Institute of Physics NASU, Kyiv, Ukraine*
[2]*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*
[3]*V.P. Kukhar Institute of Bioorganic Chemistry and Petrochemistry NASU, Kyiv, Ukraine*

P11 **Electrical properties of molybdenum disulfide MoS_2 nanopowder**

R.M. Rudenko, O.O. Voitsihovska, G.I. Dovbeshko, V.M. Poroshin
Institute of Physics, NASU, Kyiv, Ukraine

P12 **Generalized nonlinear magnetic susceptibility of superconductive disk in transverse AC field and its dependence on the pick-up coil size**

A.V. Semenov
Institute of Physics NASU, Kyiv, Ukraine

P13 **Challenge in microwave study of unconventional superconductors in normal state and near the critical temperature**

A.A. Barannik[1], S.A. Vitusevich[2], M.V. Vovnyuk[1], A.I. Shubnyi[1], S.K. Dukhnovskiy[1,3]
[1]*O. Usikov Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine*
[2]*Institute of Biological Information Processing (IBI-3):Bioelectronics, Forschungszentrum Juelich, Juelich, Germany*
[3]*National University of Radioeletronics, Kharkiv Ukraine*

MAGNETISM AND MAGNETIC MATERIALS

P14 **Magnetocaloric effect in [Ni(fum)(phen)] – the ferromagnetic Dimer with Spin 1**

P. Danylchenko[1], V. Tkáč[1], A. Orendáčová[1], E. Čižmár[1], A. Uhrinová[2,3], M. Orendáč[1], R. Tarasenko[1]
[1]*Institute of Physics, Faculty of Science, P.J. Šafárik University, Košice, Slovak Republic*
[2]*Institute of Chemistry, Faculty of Science, P.J. Šafárik University, Košice, Slovak Republic*
[3]*Department of Chemistry, Biochemistry, and Biophysics, Institute of Pharmaceutical Chemistry, University of Veterinary Medicine and Pharmacy, Košice, Slovakia*

P15 **Low Temperature Thermodynamics of the Finite Spin-1/2 XX Chain Decorated by Some Ising Impurities**

O. Dzhenzherov[1], E. Ezerskaya[1]
[1]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*

P16 **The Antiferromagnetic Phase Transition in the Lamellar $Cu_{0.15}Fe_{0.85}PS_3$ Semiconductor: Experiment and DFT Modeling**

V. Pashchenko[1], O. Bludov[1], D. Baltrunas[2], K. Glukhov[3], Yu. Vysochanskii[3]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering, Kharkiv, Ukraine*
[2]*Department of Nuclear Research Center for Physical Sciences and Technology Savanoriu, Vilnius, Lithuania*
[3]*Institute for Solid State Physics and Chemistry, Uzhhorod University, Uzhhorod, Ukraine*

P17 **Antiferromagnetic spin chains formed in novel TCNQ-based organic magnets**

M. Holub[1], E. Čižmár[1], T.N. Starodub[2], A. Feher[1], V.A. Starodub[2]
[1]*Institute of Physics, Faculty of Science, P. J. Šafárik University, Košice, Slovakia*
[2]*Institute of Chemistry, Jan Kochanowski University, Kielce, Poland*

P18 **On the Spin-Wave Analysis of Narrow Graphene Nanoribbons with Periodically Embedded Impurities**

E. Ezerskaya, A. Kabatova, V. Zaytseva
V.N.Karazin Kharkiv national University, Kharkiv, Ukraine

P19 **Giant fourfold magnetic anisotropy in nanotwinned NiMnGa epitaxial film**

J. Kharlan[1], P. Bondarenko[1], A. Marinchenko[2], V. Golub[1]
[1]*Institute of Magnetism NAS of Ukraine and MES of Ukraine, Kyiv, Ukraine*
[2]*National Aviation University, Aerospace faculty, Kyiv, Ukraine*

P20 **Hidden magnetism of superconducting iron chalcogenides**

V.D. Fil[1], D.V. Fil[2,3], G.A. Zvyagina[1], K.R. Zhekov[1], I.V. Bilych[1], D.A. Chareev[4,5,6], M.P. Kolodiazhna[1], A.N. Bludov[1].
[1]*B.Verkin Institute for Low Temperature Physics and Engineering, Kharkiv, Ukraine*
[2]*Institute for Single Crystals, NAS of Ukraine, 60 Nauky Avenue, Kharkiv, 61072, Ukraine*
[3]*V.N. Karazin Kharkiv National University, 4 Svobody Square, Kharkiv, 61022, Ukraine*
[4]*Institute of Experimental Mineralogy, RAS, Chernogolovka, 142432, Russia*
[5]*National University of Science and Technology "MISiS", Moscow, 119049, Russia*
[6]*Ural Federal University, Ekaterinburg, 620002, Russia*

P21 **Electric and Magnetic Properties of $Fe_{7-x}A_xSe_8$ Single Crystals**

Y.T. Konopelnyk[1], M. Pękała[2], I. Radelytskyi[1], P. Iwanowski[1]
[1]*Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*
[2]*Chemistry Department, Warsaw University, Warsaw, Poland*

P22 **Pressure induced modification of the magnetic properties of triangular antiferromagnet $KFe(MoO_4)_2$**

D. Kamenskii[1,2], K. Kutko[3], L. Prodan[1], T. Sakurai[2], H. Ohta[2]
[1]*Experimental Physics V; Center for Electronic Correlations and Magnetism; Institute of Physics; University of Augsburg, Augsburg; Germany*
[2]*Molecular Photoscience Research Center; Kobe University; Kobe; Japan*
[3]*B.Verkin Institute for Low Temperature Physics and Engineering, Kharkiv, Ukraine*

P23 **Temperature Evolution of Magnetooptic Spectra of YIG:Co as a Marker of Changes of Magnetic Anisotropy**

E. Kychka[2], O.V. Miloslavskaya[1], Yu.M. Kharchenko[1], M.F. Kharchenko[1]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering, Kharkiv, Ukraine*
[2]*V.N.Karazin Kharkiv National University, Kharkiv, Ukraine*

P24 **The study of lattice dynamics in $Cu(en)_2SO_4$ - the low-dimensional Heisenberg quantum antiferromagnet with spin ½**

O. Vinnik[1], L. Lederová[1], R. Tarasenko[1], L. Kotvytska[1], K. Zakuťanská[2], N. Tomašovičová[2], A. Orendáčová[1]
[1]*Institute of Physics, P. J. Šafárik University, Košice, Slovakia*
[2]*Institute of Experimental Physics of SAS, Košice, Slovakia*

OPTICS, PHOTONICS AND OPTICAL SPECTROSCOPY

P25 **Impurity-based emitting centers of different types in doped molecular crystals: formation and spectral multiplicity**

M.D. Curmei, V.I. Melnyk, G.V. Klishevich, T.V. Bezrodna, V.V. Nesprava, O.M. Roshchin
Institute of Physics, NAS of Ukraine, Kyiv, Ukraine

P26 **Absolute cross sections of bremsstrahlung induced by 0.3–1 keV electron scattering by free xenon clusters.**

Yu.S. Doronin, A.A. Tkachenko, V.L. Vakula, G.V. Kamarchuk
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P27 **Effect of annealing on optical properties of cadmium sulfide thin films**

A. Kashuba[1], R. Guminilovych[1], H. Ilchuk[1], B. Andriyevsky[2], V. Kordan[3], I. Semkiv[1], R. Petrus[1], T. Malyi[3]
[1]*Lviv Polytechnic National University, Lviv, Ukraine*
[2]*Koszalin University of Technology, Koszalin, Poland*
[3]*Ivan Franko National University of Lviv, Lviv, Ukraine*

P28 **Effect of titanium doping on the structural and optical properties of spinel crystals**

V. Gritsyna[1], V. Kobyakov[1], V. Hryshko[1], Yu. Kazarinov[1,2]
[1]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*
[2]*NSC "Kharkov Institute of Physics and Technology", Kharkiv, Ukraine*

P29 **IR spectrometric studies of recondensates CCL_4 obtainedbythemethodof cryomatrics isolation.**

E. Korshikov, D. Sokolov, A. Nurmukan, D. Zhaxybekov
Al-Farabi Kazakh National University, Institute of Experimental and Theoretical Physics, Almaty, Kazakhstan

P30 **Features of light absorption by a model molecular aggregate**

I.Yu. Ropakova[1], A.A. Zvyagin[2,3]
[1] *Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine*
[2] *B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[3] *Max-Planch für Physik komplexer Systeme, Dresden, Germany*

P31 **X-ray luminescence spectra of the undoped ZnTe crystal**

M. Rudko[1], V. Kapustianyk[1], V. Mykhailyk[2]
[1]*Ivan Franko Lviv National University, Lviv, Ukraine*
[2]*Diamond Light Source, Harwell Campus, Didcot, UK*

P32 **Photoluminescence of Ag_8SnSe_6 argyrodite**

I. Semkiv[1], H. Ilchuk[1], M. Pawłowski[2], N. Kashuba[1]
[1] *Lviv Polytechnic National University, Lviv, Ukraine*
[2] *Warsaw University of Technology, Warszawa, Poland*

P33 **Single-photon switch controlled by an artificial atom in an engineered electromagnetic environment**

E.V. Stolyarov
Institute of Physics of the National Academy of Sciences of Ukraine, Kyiv, Ukraine

P34 **New opportunities of the optical investigation of distant scattering objects**

V.M. Tkachuk
Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine

QUANTUM LIQUIDS AND QUANTUM CRYSTALS, CRYOCRYSTALS

P35 **Low-temperature features in heat capacity of complex molecular crystals**
Yu.V. Horbatenko, O.A. Korolyuk, A.I. Krivchikov, O.O. Romantsova
B. *Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine*

P36 **Mean squared displacement of molecules in the low-temperature phase of solid Nitrogen**
L.A. Alekseeva[1], E.S. Syrkin[1], D.E. Hurova[1], N.A. Aksenova[1,2], N.N. Galtsov[1]
[1]*B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine*
[2] *Ukrainian State University of Railway Transport, Kharkiv, Ukraine*

P37 **Thermal activation heat transfer in dynamically disordered phases of molecular crystals**
A.V. Karachevtseva, V.A. Konstantinov, A.I. Krivchikov, V.V. Sagan
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P38 **V(T) Phase diagrams of the Fluoroethanes**
V.V. Sagan, V.A. Konstantinov, A.V. Karachevtseva
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P39 **Radiation-induced non-stationary processes in solid Ar doped with CH_4**
I.V. Khyzhniy, E.V. Savchenko, S.A. Uyutnov, M.A. Bludov
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P40 **Vibrations Localized on Defects in One-Dimensional Atomic Structures Adsorbed on Bundles of Carbon Nanotubes**
E.V. Manzhelii, S.B. Feodosyev
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P41 **Based on cluster model analysis of the oreintational order in CO-Ar alloys**
N.S. Mysko-Krutik, A.O. Solodovnik
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P42 **Nanostructured phases in Ar-Kr condensed mixtures**
A.O. Solodovnik, N.S. Mysko-Krutik
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P43 **The Structure and Collective Mibrations of Electronic Systems Consisting of Several Chains**
V. Syvokon, E. Sokolova, S. Sokolov
B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine

P44 **Viscosity measurement of superfluid solutions ^{3}He - ^{4}He using a quartz tuning fork**
V.A. Vrakina[1], S.S. Kapuza[1], V.K. Chagovets[1,2]
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[2]*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

NANOPHYSICS AND NANOTECHNOLOGIES

P45 Influence of the Aharonov-Bohm Effect on the Eigenmodes Spectra of a Semiconductor Nanotube With a Dielectric Filling

Yu. Averkov[1,2], Yu. Prokopenko[1,3], V. Yakovenko[1]
[1]*O.Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine*
[2]*V.Karazin Kharkiv National University, Kharkiv, Ukraine*
[3]*Kharkiv National University of Radio Electronics, Kharkiv, Ukraine*

P46 Influence of grinding and oxidation of carbon nanotubes on their heat capacity

M.S. Barabashko[1], D. Szewczyk[2], M.I. Bagatskii[1], V.V. Sumarokov[1], A. Jeïowski[2], V.L. Kuznetsov[3,4], S.I. Moseenkov[3], A.N. Ponomarev[6]
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[2]*W. Trzebiatowski Institute of Low Temperature and Structure Research, Wroclaw, Poland*
[3]*Boreskov Institute of Catalysis, Novosibirsk, Russia*
[4]*National Research Tomsk State University, Tomsk, Russia*
[5]*National Research Tomsk Polytechnic University, Tomsk, Russia*
[6]*Institute of Strength Physics and Materials Science of SB RAS, Tomsk, Russia*

P47 Preparation of colloidal aqueous solution of C_{60} fullerene by the sublimation method

R.M. Basnukaeva, A.V. Dolbin, N.A. Vinnikov, A.M. Plohotnichenko, V.B. Esel'son, V.G. Gavrilko, S.V. Cherednychenko
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P48 Analysis of energy spectrum of tunable superconducting flux qubit intended for single microwave photon counting

A.P. Boichenko[1], O.G. Turutanov[1], V.Yu. Lyakhno[1], A.A. Soroka[2], V.I. Shnyrkov[3]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*National Science Center "Kharkiv Institute of Physics and Technology", Akhiezer Institute for Theoretical Physics, Kharkiv, Ukraine*
[3]*Kyiv Academic University, Kyiv, Ukraine*

P49 Graphene-based nanocomposite adhesive compounds

S.V. Cherednychenko, A.V. Dolbin, N.A. Vinnikov, V.B. Esel'son, V.G. Gavrilko, R.M. Basnukaeva, N.V. Isaev, P.A. Zabrodin
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P50 Study of the mechanism of the cyclic switchover effect for quantum sensing with dendritic Yanson point contacts

A.O. Herus[1], A.V. Savytskyi[1], A.P. Pospelov[2], Yu.S. Doronin[1], V.L. Vakula[1], G.V. Kamarchuk[1]
[1]*B. Verkin Institute for Low Temperature Physics & Engineering, Kharkiv, Ukraine*
[2]*National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine*

P51 Small orthovanadate nanocrystals with controlled redox-activity

K.O. Hubenko, S.L. Yefimova, P.O. Maksimchuk, N.S. Kavok, V.K. Klochkov
Institute for Scintillation Materials of NAS of Ukraine, Kharkiv, Ukraine

P52 Electron diffraction diagnostics of N_2-Kr binary cluster beams

O.P. Konotop, O.G. Danylchenko
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P53 **Gold-Fullerene Heterojunctions for Thermoelectricity**
V. Kozachenko, V. Shmid, A. Podolian, A. Nadtochiy, O. Korotchenkov
Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

P54 **Size oscillations of the frequency of surface plasmons in metal nanowires with an elliptical cross section**
A. Korotun[1], A. Babich[2]
[1]*National University "Zaporizhzhia Politechnic", Zaporizhzhya, Ukraine*
[2]*Max Planck Institute for Solid State Research, Stuttgart, Germany*

P55 **Softening of the Metastable Bi-43wt.%Sn Eutectic under Repeated Loading in the Region of Microplasticity**
V. Korshak
V. N. Karazin Kharkiv National University, Kharkiv, Ukraine

P56 **Low-temperature magnetoresistance of multiwall carbon nanotubes with perfect structure**
T. Len[1], I. Ovsiienko[1], I. Mirzoiev[2], E. Beliayev[2], V. Andrievskii[2], D. Gnida[3], L. Matzui[1], V. Heraskevych[1]
[1]*Taras Shevchenko National University of Kyiv, Department of Physics, Kyiv, Ukraine*
[2]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[3]*Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland*

P57 **Gate-controlled Electroluminescence in a Molecular Photodiode**
V.O. Leonov, E.G. Petrov, Ye.V. Shevchenko
Bogolyubov Institute for Theoretical Physics of NAS of Ukraine, Kyiv, Ukraine

P58 **High-frequency quantum interferometry for a double-quantum dot**
M.P. Liul[1], A.I. Ryzhov[1], S.N. Shevchenko[1,2]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2] *V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

P59 **Effect of defects on polarization switching in $CuInP_2S_6$ crystals**
D. Gal, H. Ban, A. Haysak, A. Molnar
Department of the Physics of Semiconductors, Uzhhorod National University, Uzhhorod, Ukraine

P60 **Split of surface plasmon resonance in metal nanodisks with a small aspect ratio**
N. Pavlishche[1], A. Korotun[1], V. Kurbatsky[1], I. Titov[2]
[1]*National University "Zaporizhzhia Politechnic", Zaporizhzhya, Ukraine*
[2]*UAD Systems, Zaporizhzhya, Ukraine*

P61 **Electron tunneling through graphene-based double-barrier structure**
V. Sakhnyuk, A. Shutovskyi, O. Zamurujeva, S. Fedosov
Lesya Ukrainka Volyn National University, Lutsk, Ukraine

P62 **New scintillation materials based on perovskite nanocrystals with intensive photoluminescence**
T.V. Skrypnyk, I.I. Bespalova, A.V. Sorokin, S.L. Yefimova
Institute for Scintillation Materials NAS of Ukraine, Kharkiv, Ukraine

TECHNOLOGIES AND INSTRUMENTATION FOR PHYSICAL EXPERIMENTS

P63 **Application of deep learning for improvement of particle flow algorithm for dijet events**
A. Charkin-Gorbulin, E. Gross, S. Ganguly
Weizmann Institute of Science, Rehovot, Israel

P64 **Creation of a remote presence robot based on the TI-RLSK development board**
V. Chekubasheva, O. Glukhov, O. Kravchuk, V. Rohovets
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

P65 **Optimized Model of Hybrid Solar PV/Thermal Systems**
K.O. Minakova, R.V. Zaitsev, M.V. Kirichenko
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

P66 **Medical masks filter resistance change measurement for their humidification monitoring**
V. Rohovets, Y. Levchenko, O. Kravchuk, V. Chekubasheva
Kharkiv National University of Radio Electronics, Kharkiv, Ukraine

P67 **Energy Storage Development for High Voltage Electromagnetic Pulse Generator**
D.S. Shkoda, M.V. Kirichenko, K.O. Minakova
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

P68 **On Determination of Neutral Oxygen Atoms Density During Testing of Spacecraft Polymer Materials in a Rarefied Plasma Flow**
V. Shuvalov, Yu. Kuchugurnyi, D. Lazuchenkov, G. Kochubei
Institute of Technical Mechanics of NAS of Ukraine and SSA of Ukraine, Dnipro, Ukraine

POSTER SESSION II
FRIDAY, 11 JUNE | 14:00-15:00
(SECTIONS #6,7,8)

BIOPHYSICS AND PHYSICS OF MACROMOLECULES

P1 **Thermodynamic model to dielectric parameters of erythrocytes: effect of temperature**
L.V. Batyuk[1], N.N. Kizilova[2]
[1] *Kharkiv National Medical University, Kharkiv, Ukraine*
[2] *Warsaw University of Technology, Warsaw, Poland*

P2 **Binding of proflavin to poly(ethylene glycol): investigation by spectroscopic methods**
Iu. Blyzniuk, E. Dukhopelnykov, E. Bereznyak, N. Gladkovskaya
O. Ya. Usikov Institute for Radiophysics and Electronics of NASU, Kharkiv, Ukraine

P3 **Assessment of the degree of BSA denaturation in solutions with $AlCl_3$ and $FeCl_3$ by the parameters of film textures**

D. Glibitskiy[1], O. Gorobchenko[2], O. Nikolov[2], T. Cheipesh[3], T. Dzhimieva[3,4], I. Zaitseva[5,6], A. Zibarov[6], A. Roshal[6], M. Semenov[1], G. Glibitskiy[1]

[1]Dept. of biological physics, Institute for Radiophysics and Electronics NASU, Kharkiv, Ukraine
[2]Dept of molecular and medical biophysics, School of radiophysics, biomedical electronics and computer systems, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[3]Chemical faculty, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[4]V.N. Karazin Kharkiv National University, Kharkiv, Ukraine
[5]O.M. Beketov National University of Urban Economy, Kharkiv, Ukraine
[6]Institute for Chemistry, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine

P4 **Protein Condensation in Solution in the Presence of Vitamin B_1**

T.O. Hushcha, M.S. Mykula, A.I. Vovk, V.P. Kukhar

V.P.Kukhar Institute of Bioorganic Chemistry and Petrochemistry of NASU, Kyiv, Ukraine

P5 **Protein phase behavior in solutions with sodium chloride**

T.O. Hushcha, A.I. Vovk

V.P.Kukhar Institute of Bioorganic Chemistry and Petrochemistry of NASU, Kyiv, Ukraine

P6 **Peculiarities of interaction of short double-stranded polynucleotide poly(A:U) with graphene: molecular dynamics simulation**

M.V. Karachevtsev

B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P7 **Interaction of organic cations with graphene oxide**

M.V. Kosevich, O.A. Boryak, A.M. Plokhotnichenko, V.S. Shekovsky, V.G. Zobnina, V.V. Orlov, V.A. Karachevtsev

B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P8 **Interaction of mixture of amino acids with graphene oxide probed by mass spectrometry**

M.V. Kosevich, O.A. Boryak, V.V. Orlov

B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P9 **The charge ordering of the heavy doped organic crystals**

E.S. Syrkin[1], V.A. Lykah[2], E.N. Trotskii[3]

[1] B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine
[2] National Technical University 'Kharkiv Polytechnic Institute', Kharkiv, Ukraine
[3] V.N. Karazin Kharkiv National University, Kharkiv, Ukraine

P10 **Molecular dynamics simulation of eosin Y and methylene blue aggregates in a water-ion environment**

K.V. Miroshnychenko[1], A.V. Shestopalova[1,2]

[1]O.Ya. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkiv, Ukraine
[2]V.N. Karazin Kharkiv National University, Kharkiv, Ukraine

P11 **PVA nanofibers containing Ag nanoparticles formed by ultrasonication**

V.A. Karachevtsev, A.M. Plokhotnichenko

B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P12 **Förster resonance energy transfer in insulin amyloid fibrils doped by Thioflavin T and novel cyanine dyes**

M. Shchuka[1], O. Zhytniakivska[1], A. Kurutos[2], U. Tarabara[1], K. Vus[1], V. Trusova[1], G. Gorbenko[1]
[1]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*
[2]*Institute of Organic Chemistry with Centre of Phytochemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria*

MATERIALS SCIENCE

P13 **Catalytic reductive amination of furfural with morpholine at presence of Cu-containing composites**

V.M. Asaula
L.V.Pisarzhevskii Institute of Physical Chemistry of NASU, Kyiv, Ukraine

P14 **The first principle study of substitutional impurities effect on elastic properties of $TlInS_2$ layered crystal**

T. Babuka[1], O.O. Gomonnai[2], K.E. Glukhov[1], L.Yu. Kharkhalis[1], A.V. Gomonnai[3], M. Makowska-Janusik[4]
[1]*Institute for Physics and Chemistry of Solid State, Uzhhorod National Univ., Uzhhorod, Ukraine*
[2]*Uzhhorod National University, Uzhhorod, Ukraine*
[3]*Institute of Electron Physics NASU, Uzhhorod, Ukraine*
[4]*Institute of Physics, Faculty of Mathematics and Natural Science, Jan Dlugosz University in Czestochowa, Czestochowa, Poland*

P15 **Electron microscope study with in situ video recording of crystal growth in amorphous films**

A.G. Bagmut, I.A. Bagmut
National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine

P16 **Effect of Yb-doping on structural and optical properties of CdTe thin films, their defect structure and type of conductivity**

Yu.P. Gnatenko[1], P.M. Bukivskij[1], R.V. Gamernyk[2], A.P. Bukivskii[1], M.S. Furyer[1], .M. Kolesnyk[3], D.I. Kurbatov[3], A.S. Opanasyuk[3]
[1]*Institute of Physics of NAS of Ukraine, Kyiv, Ukraine*
[2]*Lviv National University, Lviv, Ukraine*
[3]*Sumy State University, Sumy, Ukraine*

P17 **Study of the polymer - carbon composites electronic structure by positron spectroscopy**

Ye.A. Tsapko, Ye.G. Len, I.Ye. Galstian
G. V. Kurdyumov Institute for Metal Physics of NASU, Kyiv, Ukraine

P18 **Scattering by molecules of the Kapton H polymer. Amorphous films**

D.E. Hurova[1], V.G. Geidarov[1], N.A. Aksenova[1,2], N.N. Galtsov[1]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*Ukrainian State University of Railway Transport, Kharkiv, Ukraine*

P19 **Effect of annealing temperature on the elementary composition of CZTSe thin films obtained by 3D printing**

S. Kakherskyi, R. Pshenychnyi, O. Dobrozhan, A. Opanasyuk
Sumy State University, Sumy, Ukraine

P20 **Magnetic composite materials based on chitosan: low temperature synthesis, characterization and application**

O. Kalinkevich[1], Y. Zinchenko[1], V. Bilyk[1], A. Kalinkevich[1], A. Sklyar[2], S. Danilchenko[1]
[1]*Institute of applied physics of NAS of Ukraine, Sumy, Ukraine*
[2]*A.S. Makarenko Sumy State Pedagogical University, Sumy, Ukraine*

P21 **Topology of chemical bonds and electron band structure of In_6Se_7 monoclinic crystal doped by Sn atoms**

L.Yu. Kharkhalis, K.E. Glukhov, T.Ya. Babuka, M.V. Liakh
Institute for Physics and Chemistry of Solid State, Uzhhorod National Univ., Uzhhorod, Ukraine

P22 **Deviation from the Hall-Petch relationship for Cu-Mo vacuum condensates**

E. Lutsenko[1], A. Zybkov[2], M. Zhadko[2]
[1]*National Science Center "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine*
[2]*National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine*

P23 **The formation of ZrO_2-Y_2O_3-nanoparticles from fluoride solutions**

E.S. Gevorkyan[1], O.M. Morozova[1], D.S. Sofronov[2], V.P. Nerubatskyi[1], N.S. Ponomarenko[3]
[1]*Ukrainian State University of Railway Transport, Kharkiv, Ukraine*
[2]*SSI "Institute for Single Crystals" NAS of Ukraine, Kharkiv, Ukraine*
[3]*Kharkiv National Medical University, Kharkiv, Ukraine*

P24 **Estimation of iron concentration in silicon solar cell by kinetics of light-induced change in short-circuit current**

O. Olikh[1], V. Kostylyov[2], V. Vlasiuk[2], R. Korkishko[2]
[1]*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*
[2]*V. Lashkaryov Institute of Semiconductor Physic Institute of NAS of Ukraine, Kyiv, Ukraine*

P25 **Influence of the structure formed by condensation on thermal stability of Cu-Mo pseudoalloys**

V. Riaboshtan, A. Zubkov, V. Kucherskyi, M. Zhadko
National Technical University «Kharkiv Polytechnic Institute», Kharkiv, Ukraine

P26 **The effect of carbon on the microhardness of $Co_{0.25-x}Cr_{0.25}Fe_{0.25}Ni_{0.25}C_x$ alloy**

H.V. Rusakova[1], L.S. Fomenko[1], Y. Huang[2,3], E.D. Tabachnikova[1], I.V. Kolodiy[4], A.V. Levenets[4], M.A. Tikhonovsky[4], T.G. Langdon[3]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*Department of Design and Engineering, Faculty of Science and Technology, Bournemouth University, Poole, Dorset, UK*
[3]*Department of Mechanical Engineering, University of Southampton, Southampton, UK*
[4]*NSC "Kharkov Institute of Physics and Technology" of NASU, Kharkiv, Ukraine*

P27 **Forced elasticity of amorphous polymers**

V.D. Natsik, H.V. Rusakova
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P28 **Microhardness of ultrafine-grained oxygen-free copper produced by hydrostatic extrusion**

H.V. Rusakova, S.V. Lubenets, L.S. Fomenko
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P29 The effect of temperature on micromechanical properties of graphene oxide/polypropylene nanocomposite

H.V. Rusakova[1], L.S. Fomenko[1], S.V. Lubenets[1], A.V. Dolbin[1], N.A. Vinnikov[1], R.M. Basnukaeva[1], M.V. Khlistyuck[1], A.V. Blyznyuk[2]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine*

P30 The effect of casting conditions on superplastic properties of the eutectic alloy Sn-38wt%Pb

Yu.O. Shapovalov[1], V.F. Korshak[2]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*V. N. Karazin Kharkiv National University, Kharkiv, Ukraine*

P31 Some peculiarities of structural changes of the eutectic alloy Bi-43wt%Sn under conditions of superplasticity

Yu.O. Shapovalov
B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine

P32 Low-temperature physical and mechanical properties of high-entropy alloy $Fe_{50}Mn_{30}Co_{10}Cr_{10}$

T.V. Hryhorova[1], S.E. Shumilin[1], Yu.O. Shapovalov[1], Yu.O. Semerenko[1], S.N. Smirnov[1], O.D. Tabachnikova[1], M.A. Tikhonovsky[3], A.V. Levenets[3], M.I. Zehetbauer[2], E. Schafler[2]
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P33 Thermoactivated amplitude-dependent dislocation internal friction in deformed samples of pure magnesium

P.P. Pal-Val[1], O.M. Vatazhuk[1], A.A. Ostapovets[2], L. Král[2], J. Pinc[3]
[1]*B.Verkin Institute for Low Temperature Physics and Engineering of NASU, Kharkiv, Ukraine*
[2]*Institute of Physics of Materials, Czech Academy of Sciences, Brno, Czech Republic*
[3]*Institute of Physics, Czech Academy of Sciences, Prague, Czech Republic*

THEORY OF CONDENSED MATTER PHYSICS

P34 Bose-Einstein condensation of ideal gas in the external harmonic potential

E.O. Bilokon[1], A.S. Peletminskii[1,2]
[1]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*
[2]*Akhiezer Institute for Theoretical Physics, National Science Center «Kharkov Institute of Physics and Technology», Kharkiv, Ukraine*

P35 Thermodynamics of quantum Fermi gases in magneto-optical traps

V.O. Bilokon[1], A.G. Sotnikov[1,2]
[1]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*
[2]*Akhiezer Institute for Theoretical Physics, National Science Center «Kharkov Institute of Physics and Technology», Kharkiv, Ukraine*

P36 Magnetic phases and phase diagram of spin-1 condensate with quadrupole degrees of freedom

M. Bulakhov[1,2], A.S. Peletminskii[1,2], S.V. Peletminskii[1], and Yu.V. Slyusarenko[1,2]
[1]*Akhiezer Institute for Theoretical Physics, National Science Center «Kharkov Institute of Physics and Technology», Kharkiv, Ukraine*
[2]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*

P37 **Breather birth and wave radiation in the sine-Gordon systems with oscillating kinks**

O.V. Charkina[1], M.M. Bogdan[1,2]
[1]*B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkiv, Ukraine*
[2]*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*

P38 **Raman scattering and theoretical investigations of $CuInP_2S_6$ layered ferrielectric crystal**

K. Glukhov, R. Yevych, A. Kohutych, K. Medulych, V. Hryts, Yu. Shiposh, M. Kundria, Yu. Vysochanskii
Institute for Solid State Physics and Chemistry, Uzhhorod University, Uzhhorod, Ukraine

P39 **Driven quantum systems: Majorana's approach**

P.O. Kofman[1], O.V. Ivakhnenko[2], S.N. Shevchenko[1,2]
[1]*V.N. Karazin Kharkiv National University, Kharkov, Ukraine*
[2]*B. Verkin Institute for Low Temperature Physics and Engineering NASU, Kharkov, Ukraine*

P40 **Simultaneous effect of short-range atomic and magnetic orderings on magnetic phase diagrams of substitution binary alloys**

E.G. Len[1,2], T.D. Shatnii[1], V.V. Lizunov[1], M.V. Ushakov[1], T.S. Len[3]
[1]*G.V. Kurdyumov Institute for Metal Physics NASU, Kyiv, Ukraine*
[2]*Kyiv Academic University, NAS and MES of Ukraine, Kyiv, Ukraine*
[3]*National Aviation University, Kyiv, Ukraine*

P41 **Theoretical cross-sections of the ionization of the K atom by electron impact**

V. Roman
Institute of Electron Physics NASU, Uzhhorod, Ukraine

P42 **Exploration of the phase diagram of $(Pb_ySn_{1-y})_2P_2(Se_xS_{1-x})_6$ ferroelectrics within the framework of a combined BEG – ANNNI model**

V. Liubachko[1], A. Oleaga[2], A. Salazar[2], R. Yevych[1], A. Kohutych[1], Yu. Vysochanskii[1]
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