

МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
ДВНЗ «Прикарпатський національний університет імені Василя Стефаника»
Фізико-хімічний інститут
Науково-дослідницький центр напівпровідникового матеріалознавства
АКАДЕМІЯ НАУК ВИЩОЇ ШКОЛИ УКРАЇНИ
Державний фонд фундаментальних досліджень
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Інститут хімії поверхні ім. О.О. Чуйка
Інститут металофізики ім. Г.В. Курдюмова
Інститут загальної і неорганічної хімії ім. В.І. Вернадського
Українське фізичне товариство
Університет Газі (Туреччина)

XV МІЖНАРОДНА КОНФЕРЕНЦІЯ З ФІЗИКИ І ТЕХНОЛОГІЇ ТОНКИХ ПЛІВОК ТА НАНОСИСТЕМ

Програма

Івано-Франківськ, 11-16 травня, 2015

Ivano-Frankivsk, May, 11-16, 2015

Program

XV INTERNATIONAL CONFERENCE ON PHYSICS AND TECHNOLOGY OF THIN FILMS AND NANOSYSTEMS

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
Vasyl Stefanyk Precarpathian National University
Physical-Chemical Institute
R&D Centre of Semiconductor Material Science
ACADEMY OF SCIENCE OF HIGH SCHOOL OF UKRAINE
State Fund of Fundamental Research
NATIONAL ACADEMY OF SCIENCE OF UKRAINE
V.E. Lashkarev Institute of Semiconductor Physics
Chuiko Institute of Surface Chemistry
G.V. Kurdyumov Institute of the Physics of Metals
V.I. Vernadsky Institute of General and Inorganic Chemistry
Ukraine Physics Society
Gazy University (Turkey)

ОРГАНІЗАЦІЙНИЙ КОМІТЕТ

Бюро

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Секретаріат

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ТЕМАТИКА СЕКЦІЙ / TOPICS

1	Технологія тонких плівок (метали, напівпровідники, діелектрики, провідні полімери) і методи їх дослідження
	Thin films technology (metals, semiconductors, dielectrics, conductive polymers) and their research methods
2	Нанотехнології, наноматеріали і квантово-розмірні структури
	Nanotechnologies and nanomaterials, quantum-size structures
3	Фізико-хімічні властивості тонких плівок
	Physical-chemical properties of thin films
4	Тонкоплівкові елементи електронних пристроїв, наноелектроніка
	Thin film compounds for electronic devices, nanoelectronics
5	Функціональні кристалічні матеріали: ріст, фізичні властивості, використання
	Functional crystalline materials: growth, physical properties and applications
6	Тонкоплівкові технології для енергозаощадження
	Thin films technology for energy saving
7	Інноваційні методики із викладання навчальних дисциплін
	Innovative methods for teaching

МОВИ КОНФЕРЕНЦІЇ: Українська, Англійська

LANGUAGES: Ukrainian, English

ПУБЛІКАЦІЯ МАТЕРІАЛІВ КОНФЕРЕНЦІЇ

Планується публікація тез доповідей та матеріалів конференції.

Кращі доповіді конференції будуть рекомендовані до друку у всеукраїнському науковому журналі "Фізика і хімія твердого тіла" (ISSN 1729-4428 (Print) та ISSN 2309-8589 (Online)), який є фаховим виданням із фізико-математичних, хімічних та технічних наук (постанова президії ВАК України № 2-05/9 від 14.11.2001 та №1-05/4 від 26.05.2010). Журнал індексується у Index Copernicus, Directory of Research Journal Indexing, Ulrich's Periodicals Directory, Scopus (на розгляді); DOAJ (на розгляді).

Інформація про правила оформлення матеріалів для подання у редакцію журналу ФХТТ знаходиться в оргкомітеті конференції або на веб-сторінці журналу: http://www.pu.if.ua/inst/phys_che/start/pcss.

CONFERENCE PUBLISHING

The ICPTTFN-XV materials will again be published in Journal "Physics and Chemistry of Solid State": ISSN 1729-4428 (Print) and ISSN 2309-8589 (Online). Journal is indexed by: Index Copernicus, Directory of Research Journal Indexing (certificate), Ulrich's Periodicals Directory, Scopus (in process); DOAJ (in process).

Manuscripts for the ICPTTFN-XV proceedings of Journal "Physics and Chemistry of Solid State" will be evaluated according to the same high standards as would be applied to an article for a regular issue of the journal. Authors are encouraged to read carefully and comply with the "Instructions for Authors" on the http://www.pu.if.ua/inst/phys_che/start/pcss

ГРАФІК РОБОТИ МКФТТІІІ-ХУ

Дата Година	11 травня, понеділок	12 травня, вівторок	13 травня, серета	14 травня, четвер	15 травня, п'ятниця	16 травня, субота
7 ³⁰ -9 ⁰⁰	Реєстрація учасників	Сніданок	Сніданок	Сніданок	Сніданок	Сніданок
9 ⁰⁰ -11 ⁰⁰		Відкриття конференції. Пленарне засідання	Пленарне засідання	Експурсії (поїздка у монастир Скит Манявський та піший похід на водоспад у с. Манява)	Пленарне засідання	Від'їзд учасників
11 ⁰⁰ -11 ³⁰		Кавова пауза	Кавова пауза		Кавова пауза	
11 ³⁰ -13 ³⁰		Міжнародні дослідницькі програми: огляд та досягнення (НАТО, CRDF Global, Horizon-2020)	Пленарне засідання		Пленарне засідання	
13 ³⁰ -14 ³⁰	Обід	Обід	Обід			
14 ³⁰ -15 ⁰⁰		Огляд стендів	Огляд стендів	Обід	Огляд стендів	
15 ⁰⁰ -17 ³⁰	Перегляд фільму «170 років від дня народження Івана Пулюя»	Секційні засідання	Секційні засідання	Секційні засідання	Секційні засідання	
17 ³⁰ -17 ⁵⁰		Кавова пауза	Кавова пауза	Кавова пауза		
17 ⁵⁰ -19 ¹⁰	Засідання Наукової ради	Секційні засідання		Секційні засідання	Секційні засідання	
19 ¹⁰ -19 ³⁰	«Фізика напівпровідників і діелектриків» НАН України	Обговорення стендових доповідей	Обговорення стендових доповідей	Обговорення стендових доповідей	Закриття конференції	
19 ³⁰ -20 ³⁰	Вечеря	Вечеря	Вечеря	Вечеря	Вечеря	
20 ³⁰ -22 ⁰⁰	Вечір зустрічі	Товариська вечеря	Культурний захід	Круглі столи	Прощальна ватра	

Секції:

1. Технологія тонких плівок (метали, напівпровідники, діелектрики, провідні полімери) і методи їх дослідження.
2. Нанотехнології, наноматеріали і квантово-розмірні структури.
3. Фізико-хімічні властивості тонких плівок.
4. Тонкопліткові елементи електронних пристроїв, наноелектроніка.
5. Функціональні кристалічні матеріали: ріст, фізичні властивості, використання.
6. Тонкопліткові технології для енергозаощадження.
7. Інноваційні методики із викладання навчальних дисциплін.

ICPTTFN-XV: SCHEDULE

	May 11, Mon	May 12, Tue	May 13, Wen	May 14, Thu	May 15, Fri	May 16, Sat
7³⁰-9⁰⁰	Arrival and registration	Breakfast	Breakfast	Breakfast	Breakfast	Breakfast
9⁰⁰-11⁰⁰		Opening Ceremony. Plenary session	Plenary session	Tours (trip to the monastery Skyt Manyavsky and hike to the waterfall in the Manyava)	Plenary session	Departure
11⁰⁰-11³⁰		Coffee	Coffee		Coffee	
11³⁰-13³⁰		Satellite Meeting. International R&D Programs (NATO, CRDF Global, Horizon-2020)	Plenary session		Plenary session	
13³⁰-14³⁰	Lunch	Lunch	Lunch			
14³⁰-15⁰⁰		Posters	Posters			
15⁰⁰-17³⁰	Satellite Meeting. Ivan Pulyui: 170 year since birth	Oral reports	Oral reports		Oral reports	
17³⁰-17⁵⁰		Coffee	Coffee		Coffee	
17⁵⁰-19¹⁰	Special Meeting of the Scientific Board 'Physics of Semiconductors and Dielectrics' NAS of Ukraine	Oral reports			Oral reports	
19¹⁰-19³⁰		Discussions posters	Discussions posters		Discussions posters	
19³⁰-20³⁰	Dinner				Dinner	
20³⁰-22⁰⁰	Welcome Evening	Friendly Dinner	Dinner	Programme Committee Meeting	Award Ceremony	

Topics:

1. Thin films technology (metals, semiconductors, dielectrics, conductive polymers) and their research methods.
2. Nanotechnologies and nanomaterials, quantum-size structures.
3. Physical-chemical properties of thin films.
4. Thin film compounds for electronic devices, nanoelectronics.
5. Functional crystalline materials: growth, physical properties and applications.
6. Thin films technology for energy saving.
7. Innovative methods for teaching.

ПРОГРАМА ЗАСІДАнь

**Відкриття конференції
12 травня 2015 року**

Вступне слово

ректор ДВНЗ «Прикарпатський національний університет
імені Василя Стефаника», доктор політичних наук, професор
Цепенда Ігор Євгенович

Фізика напівпровідників в Україні: досягнення та перспективи
директор Інституту фізики напівпровідників ім. В.Є. Лашкарьова НАН України,
член-кореспондент НАН України

Беляєв Олександр Євгенович,
заступник директора Інституту фізики напівпровідників
ім. В.Є. Лашкарьова НАН України, член-кореспондент НАН України
Кладько Василь Петрович

До 110-річниці від дня народження В.Є. Лашкарьова
керівник відділення Інституту фізики напівпровідників
ім. В.Є. Лашкарьова НАН України, член-кореспондент НАН України
Литовченко Володимир Григорович

**Завдання міжнародної конференції з фізики і технології
тонких плівок та наноструктур**
голова Оргкомітету, заслужений діяч науки і техніки України,
доктор хімічних наук, професор
Фреїк Дмитро Михайлович

PROGRAM OF SESSIONS

Opening Ceremony
May, 12, 2015

Opening address

Rector of the Vasyl Stefanyk Precarpathian National University,
Doctor of Science, Professor
Ihor Tsependa

Semiconductor Physics in Ukraine: Achievements and Prospects

Director of the V.E. Lashkaryov Institute of Semiconductor Physics
NAS of Ukraine, Corresponding Member of NAS of Ukraine

Alexander Belyaev,

Deputy Director of the V.E. Lashkaryov Institute of Semiconductor Physics
NAS of Ukraine, Corresponding Member of NAS of Ukraine

Vasyl Kladjko

110-Anniversary of the V.E. Lashkarev

Head of the Division of surface physics and microelectronics
of the V.E. Lashkaryov Institute of Semiconductor Physics,
Corresponding Member of NAS of Ukraine

Volodymyr Lytovchenko

The task of the International Conference on Physics and Technology of Thin Films and Nanosystems

Head of Organizing Committee, Doctor of Science, Professor

Dmytro Freik

**СПЕЦІАЛЬНЕ ЗАСІДАННЯ:
ПЕРСПЕКТИВИ МІЖНАРОДНОГО СПІВРОБІТНИЦТВА
12 травня 2015 р.**

**SPECIAL SESSIONS:
PROSPECTS OF INTERNATIONAL COLLABORATION
May 12, 2015**

11³⁰-13³⁰

Science for Peace & Security (SPS) Programme of NATO

1. «NATO Science for Peace Program: conditions for participation and perspective for Ukraine»
Vytautas Magnus University, Kaunas, Lithuania
Dr. Sci., Prof. Juozas Augutis

2. NATO SFPP Project «New dosimetry for classification of victims after ionizing radiation» (2014-2017)
Lviv Polytechnic National University, Lviv, Ukraine
Dr. Sci., Prof. Sergii Ubizskii, Project Director

3. NATO Project SfP-977982 "X-ray generator based on Compton backscattering"
*National Science Center "Kharkov Institute Physics and Technology",
Kharkiv, Ukraine*
Senior Researcher Alexander Shcherbakov, Project Director.

4. NATO Project SFPP 984655 "Hand-Held Gamma Detector Based on High-Pressure Xenon Gas"
*National Science Center "Kharkov Institute Physics and Technology",
Kharkiv, Ukraine*
Dr. V. Kutny, Project Director.

5. NATO Project SFPP 984536 "Thermoelectric Materials and Devices for Energy Saving and Security" (2014-2015)
Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine
Dr. Lyubomyr Nykyruy, Project Director.

EU Program – Horizon-2020

1. Horizon-2020 for Ukrainian researchers
Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine
Dr. Sci. Volodymyr Kotsuybynsky, manager of NCP 'Nanomaterials' of the EU Program Horizon-2020 in Ukraine.

PLENARY SESSIONS

May 12-15, 2015

1. **Aksimentyeva O.I., Horbenko Yu.Yu., Soronovych I.I., Dyakonov V.P.** Hybrid Nanostructures with Magnetic, Luminescent and Conductive Functions for Biomedical Application (*Ivan Franko National University of Lviv, Lviv, Ukraine; Lviv Medical Institute, Lviv, Ukraine; Institute of Physics, Polish Academy of Science, Warsaw, Poland*) aksimen@ukr.net 60
2. **Anatychuk L.I., Gorsky P.V., Vikhor L.N.** Nanostructured and Film Materials for Thermoelectricity (*Institute of Thermoelectricity, Chernivtsi, Ukraine*) vikhorl@ukr.net [10]
3. **Andrievski R.A** Nanomaterials in Extreme Conditions: New Approaches and Non-Resolved Problems (*Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia*) ara@icp.ac.ru [5]
4. **Blonskyi I.V., Kadan V.M., Shpotyuk O.I., Korenyuk P.I., Yarusevych O.I., Shynkarenko E.V.** Bulk and Surface Micro- and Nanostructures in Chalcogenide Glassy Semiconductors Induced by Femtosecond Laser Pulses (*Institute of Physics NAS of Ukraine, Kyiv, Ukraine; Scientific Research Company 'Carat', Lviv, Ukraine*) blon@iop.kiev.ua [120]
5. **Boichuk V.I., Bilynskiy I.V., Pazyuk R.I.** Electrical and Optical Properties of 1d-, 2d- and 3d-Dimensional Spherical Semiconductor Quantum Dots Superlattices (*Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine*) ri.pazyuk@gmail.com 345
6. **Brodyn M., Liakhovetskyi V.** Plasmonic Spectra and Cubic Optical Nonlinearity of Nanostructured Gold Films (*Institute of Physics NAS of Ukraine, Kiev, Ukraine.*) brodyn@iop.kiev.ua [6]
7. **Cheshko I.V., Protsenko S.I., Shumakova N.I.** Spin-Valve Film Structures with Nanoparticles Layers (*Sumy State University, Sumy, Ukraine*) i.protsenko@aph.sumdu.edu.ua [197]
8. **Dmitruk N., Romanyuk V., Kondratenko O., Taborska M., Charnovych S., Kokenyesi S.** Surface-Enhanced Photophysical Phenomena in Surface Metal-Amorphous Semiconductor Composite (*Institute for Physics of Semiconductors NAS of Ukraine, Kyiv, Ukraine; University of Debrecen, Debrecen, Hungary*) dmitruk@isp.kirv.ua [188]
9. **Dudkina V.V., Zabludovsky V.A., Shtapenko E.Ph.** Mechanical Properties of Composite Electrolytic Nickel Coatings Obtained by Pulsed Current (*Dnepropetrovsk National University of Railway Transport named after academician V. Lazaryan, Dnepropetrovsk, Ukraine*) dudkina2@ukr.net [42]
10. **Duryagina Z., Tepla T., Pleshakov E., Bohun L., Semenuk O.** Teaching material Science Subjects Using SES Program from Granta Design, UK National University (*National University "Lviv Polytechnic", Lviv, Ukraine*) teplatanya@mail.ru 103
11. **Fedotov A.S., Poznyak S.K., Tsybulskaya L.S., Svito I.A., Shepelevich V.G., Mazanik A.V., Fedotov A.K., Gaevskaya T.V.** Polycrystalline Bismuth Films: Fabrication, Structure and Electrophysical Properties (*Belarusian State*

University, Minsk, Belarus; Belarusian State University, Minsk, Belarus) tsybul@bsu.by 74

12. **Feshak T.M., Tsybulenko Y.M.** The Effect of $C_3H_5(OH)_3$ Intercalation on the Electrical Properties of InSe and In_2Se_3 Layered Crystals (*Frantsevich Institute of Problems of Materials Science NAS of Ukraine, Chernivtsi Department, Chernivtsi, Ukraine*) xiang@ukr.net 57
13. **Fodchuk I.M.** Strain Tensor Measurement in Crystals Using the EBSD Technique (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) ifodchuk@ukr.net 298
14. **Freik D.M., Nykyruy L.I., Mezhylovska L.Y.** Strategy and Tactics in Thermoelectric Material Science (*Vasyl Stefanyk Precarpathian national University, Ivano-Frankivsk, Ukraine*) freik@pu.if.ua 366
15. **Horban' V.F., Andreev A.O, Firstov S.O** A New Class of Superhard Coatings Based on High Entropy Alloys (*Frantsevich Institute of Problems of Materials Science NAS of Ukraine, Kyiv, Ukraine*) gorban.1944@mail.ru 348
16. **Korbutyak D.V.** Photoluminescence of A_2B_6 Nanocrystals (*V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) kdv45@isp.kiev.ua 21
17. **Kozak M.I.** Calculation of Optical Waves Propagation Through Gyrotropic Anisotropic Media: lr- and sp-Polarization (*Uzhhorod National University, Uzhhorod, Ukraine*) kozakmi@ukr.net 149
18. **Kushnir B.V., Boledzyuk V.B., Potsiluiko R.L.** The Effect of Nickel Intercalation on the Properties of In_2Se_3 Layered Crystals (*Frantsevich Institute of Problems of Materials Science NAS of Ukraine, Chernivtsi Department, Chernivtsi, Ukraine*) KushnirBV@gmail.com 90
19. **Lepikh Ya.I., Lavrenova T.I.** Degradation Processes on the Interface of Film Systems " Glass - Klaster Ag-Pd " - Sn-Pb (*Odessa I.I. Mechnikov National University, Odessa, Ukraine*) ndl_lepikh@onu.edu.ua 161
20. **Litovchenko V.G., Melnik V.P., Romanyuk B.M., Popov V.G.** Nano-Phase Formation at Ion-Beam Synthesis (*V. Lashkarev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) lvig@isp.kiev.ua 15
21. **Marenkov V.I.** The Influence of Cylindrical Filling Volume Nanodefects on Effective Electronic Properties of Heat-Resistant Metals Thin Films (*Odessa I.I.Mechnikov National University, Odessa, Ukraine*) maren0@ukr.net 134
22. **Matveeva L.A., Kolyadina E.Yu., Neluba P.L., Venger E.F.** Electroreflectance and Electronic Processes in the Nanostructures with Fullerenes (*V. Lashkarev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) matveeva@isp.kiev.ua 4
23. **Mitsa V., Holomb R., Kondrat A., Popovich N., Veresh M, Csik A., Vondráček M., Tsud N., Matolin V., Kevin P., Fekeshgazi I.** Oxidation and Photo-Eged Studies of Graphen-Like Two Dimentional Arsenic and Germanium Sulfide Crystals and Nanostructured Glasses (*Uzhhorod National University, Uzhhorod, Ukraine; Wigner Research Centre for Physics of the Hungarian Academy of Sciences, Budapest, Hungary; Institute for Nuclear Research of the Hungarian Academy of Sciences, Debrecen, Hungary; Institute of Physics,*

Academy of Sciences of the Czech Republic, Prague, Czech Republic; Charles University, Prague, Czech Republic; Elettra-Sincrotrone Trieste S.C.p.A., Trieste, Italy) v.mitsa@gmail.com 51

24. **Molnar S., Nagy Gy., Burunkova J., Bohdan R., Rajta I., Kokenyesi S.** Comparison of Light- and Particle-Beam Surface Patterning in Amorphous Chalcogenide and Acrylic Polymer Layers (*University of Debrecen, Debrecen, Hungary; Institute of Nuclear Research Hungarian Academy of Sciences, Debrecen, Hungary; University ITMO, St.Petersburg, Russia*) kiki@science.unideb.hu 312
25. **Myronyuk I.F., Bezruka N.A., Dmytrutsa T.V.** Gas-Phase Synthesis and Structure of Needle-Shaped Silica Nanoparticles (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) myrif@rambler.ru 63
26. **Ostafiychuk B.K.** Studies of surface physics phenomena in Vasyl Stefanyk Precarpathian national University (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) bo@pu.if.ua
27. **Protsenko I.Yu., Odnodvoretz L.V., Shumakova M.O., Tkach O.P.** The Film Materials of Sensor Technique: Solid Solutions, Eutectics, Pseudoalloys (*Sumy State University, Sumy, Ukraine*) i.protsenko@aph.sumdu.edu.ua 286
28. **Ptashchenko O.O., Ptashchenko F.O.** Si and GaAs Nanostructures as Chemical Sensors (*Odessa National I.I. Mechnikov University, Odessa, Ukraine; Odessa National Maritime Academy, Odessa, Ukraine*) aptash@list.ru 105
29. **Rarenko I.M., Korbutyak D.V., Klad'ko V.P., Panchuk O.E., Fochuk P.M., Sklyarchuk O.F., Zakharuk Z.I., Dremlyuzhenko S.G., Rarenko A.I., Galochkin A.V., Shafranyuk V.P.** Schottky Photosensors on High Radiation Resistivity Semiconductors (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics NASU, Kiev, Ukraine*) microel-dpt@chnu.edu.ua 329
30. **Rogalski A.** Type-II Superlattice HOT Infrared Photodetectors (*Military University of Technology, Warsaw, Poland*) rogan@wat.edu.pl 350
31. **Romanyuk V., Dmytruk N., Kondratenko O., Taborska M., Lashkarev G., Karpyna V., Popovych V., Dranchuk M., Dovbeshko G., Dmytruk I., Pietruszka R., Godlewski M.** Optical and Electrical Properties of Al-Doped ZnO Films Deposited by ALD Process on Si and Glass Substrate (*Institute of Semiconductor Physics, NASU, Kyiv, Ukraine; Institute for Problems of Material Science, NASU, Kyiv, Ukraine; Institute of Physics, NASU, Kyiv, Ukraine; Institute of Physics, PAN, Warsaw, Poland*) geolash@materials.kiev.ua 337
32. **Rubish V.M., Rigan M.Yu., Gasynets S.M., Kyrylenko V.K., Perevuznyk V.P., Shtets P.P.** Nanocomposites in As-Sb-S-I System (*Uzhgorod Scientific-Technological Center of the Institute for Information Recording, NASU, Uzhgorod, Ukraine*) center.uzh@gmail.com 202
33. **Schukin S.O., Nosov O.V., Zabello E.I., Batrak P.O.** The Dependence of Material Atomization Degree, with Respect to Laser Source Parameters (*Kyiv Polytechnic Institute, Kyiv, Ukraine*) lorlay76@gmail.com 107

34. **Semenchuk I.I.** The Effect of Endless Activation on the Specific Characteristics of Nanoporous Carbon Materials for Supercapacitors (*Frantsevich Institute of Problems of Materials Science NAS of Ukraine, Chernivtsi Department, Chernivtsi, Ukraine*) iisemenchuk@gmail.com 79
35. **Shirinyan A.S., Wilde G., Makara V.A., Bilogorodskyy Y.S., Komisarenko O.S.** The Melting and Solidification Loops of Cu-Ni Nanoparticle (*Kiev Taras Shevchenko National University, Kyiv, Ukraine; Westfälische Wilhelms-Universität Münster, Germany; Cherkasy regional ecological-naturalistic center, Minor Academy of Sciences, Cherkasy, Ukraine*) aramshirinyan@ukr.net 308
36. **Stasyuk I.V., Velychko O.V.** Intercalated Stage-Ordered Layered Structures in the Framework of the Periodic (*Institute for Condensed Matter Physics of the National Academy of Sciences of Ukraine, Lviv, Ukraine*) ista@icmp.lviv.ua 61
37. **Stasyuk Z.V., Bihun R.I.** Quantum and Classical Size Effect in “Quench Condensed” Ultrathin Metal Films (*Ivan Franko Lviv National University, Lviv, Ukraine*) stasyuk@electronics.lnu.edu.ua 184
38. **Strikha M.V.** Frequency Limits for Graphene Conducting Channel, Imposed by Quantum Capacitance and Kinetic Inductance (*V.Lashkaroiv Institute of Semiconductor Physics, Kyiv, Ukraine*) maksym_strikha@hotmail.com 52
39. **Stronski A., Achimova E.** New Functional Materials Based on Chalcogenide Glasses, Polymers Obtained Via Modification and Nanocomposite Techniques and Their Applications (*V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine; Institute of Applied Physics AS of Moldova, Chisinau, Moldova*) stronski@isp.kiev.ua 94
40. **Tomashyk V.M., Kapush O.A., Trishchuk L.I., Tomashyk Z.F.** Influence of Dopants on the Formation and Photoluminescent Properties of Colloidal CdTe Nanocrystals (*V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) tomashyk@isp.kiev.ua 235
41. **Vaksman Yu.F., Nitsuk Yu.A.** Luminescence and Photoconductivity of Zinc Selenide Crystals, Doped with Transition Metal Elements. (*I.I. Mechnikov National University of Odesa, Odesa, Ukraine*) vaksman_yu@onu.edu.ua 23
42. **Vengrenovich R.D** Ostwald Ripening of Nanodispersed Phases in Metal Alloys (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) vengrenovich@i.ua 190
43. **Zaulychnyy Ya.V.** Effect of Particles Sizes on Electronic Structure of Nanooxides and Character of Interatomic Bonds Formation In Composites at Mechanical Activation and Pyrogenic Synthesis (*National Technical University of Ukraine “Kyiv Polytechnic Institute”, Kyiv, Ukraine*) Zaulychnyy@ukr.net 347
44. **Zayachuk D.M.** Lead Telluride: Atypical Paramagnetism of Native Defects (*Lviv Polytechnic National University, Lviv, Ukraine*) zayachuk@polynet.lviv.ua 31
45. **Zinchenko V.F.** None CVD-Composites as Perspective Film-Forming Materials (*A.V. Bogatsky Physico-Chemical Institute of NAS of Ukraine, Odessa, Ukraine*) vfzinchenko@ukr.net 24

ORAL REPORTS

Session 1

Thin films technology (metals, semiconductors, dielectrics, conductive polymers) and their research methods

May 12-15, 2015

1. **Avramenko K.A., Strelchuk V.V., Rarata S.V., Synhaiivska O.I., Pekar G.S., Osipyonok M.M., Syngaiivsky O.F., Koniakhina M.V., Tronc P.** Spectroscopic and Magnetic Characterization of ZnO:Co Diluted Magnetic Semiconductor Layers Prepared by Printed Electronics Method (*V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; Centre National de la Recherche Scientifique, Paris, France*) rarata@ukr.net 206
2. **Belyaev A.E., Boltovets N.S., Vinogradov A.O., Pilipenko V.A., Petlitskaya T.V., Solodukha V.A., Konakova R.V., Kudryk Ya.Ya., Korostinskaya T.V.** The Features of Cleavages in Au-Ti-Pd-n⁺-n-Si Ohmic Contacts (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine; State Enterprise Research Institute "Orion", Kyiv, Ukraine; Public Corporation "Integral", Minsk, Republic of Belarus*) ryn_f-m@mail.ru 56
3. **Bylina I.S.** The Process of Formation and Thermoelectric Properties of Vapor-Phase Condensates PbTe:Bi, PbTe-Bi₂Te₃ (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) vanjabylina@gmail.com 248
4. **Kavetskyy T.S.** Doppler Broadening of Annihilation Line Study of Defect Structure in Advanced Optoelectronic Materials (*Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine; The John Paul II Catholic University of Lublin, Lublin, Poland*) kavetskyy@yahoo.com 300
5. **Kavetskyy T.S., Borc J., Nowak J., Stepanov A.L.** Long-Term Radiation-Induced Improving of the Mechanical Properties in As₂S₃ Glass Probed by Nanoindentation (*Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine; The John Paul II Catholic University of Lublin, Lublin, Poland; Lublin University of Technology, Lublin, Poland; Kazan Physical-Technical Institute, Russian Academy of Sciences, Kazan, Russia; Kazan National Research Technological University, Kazan, Russia; Kazan Federal University, Kazan, Russia*) kavetskyy@yahoo.com 301
6. **Kosminska Yu.O., Perekrestov V.I.** Role of Transition From Atomically Smooth to Atomically Rough Growth Surface at Formation of Condensates Architecture (*Sumy State University, Sumy, Ukraine*) y.kosminska@phe.sumdu.edu.ua 216
7. **Kudryk Ya.Ya., Shynkarenko V.V., Slipokurov V.S., Bigun R.I., Kudryk R.Ya.** A Comparison of Methods for Determination of Schottky Barrier Height and Ideality Factor Regarding the Contacts Based on Broad-Band Semiconductors (*V. Lashkaryov Institute of Semiconductor Physics, NASU, Kyiv, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine*) kudryk@isp.kiev.ua 259

8. **Makovyshyn V.I.** Structure and Thermoelectric Properties of Doped Telluride Films Condition (*Vasyl Stefanyk Precarpathion National University, Ivano-Frankivsk, Ukraine*) makovushun@mail.ru 179
9. **Makovyshyn V.I., Jaworski J.S., Yaremkiw R.Ya., Fitkalyuk M.** Carrier Scattering in Thin Films Tin Telluride (*Vasyl Stefanyk Precarpathion National University, Ivano-Frankivsk, Ukraine*) makovushun@mail.ru 180
10. **Novytskyi S.V.** Study of Contact Structures to n-InP at Low Temperatures (*Zhytomyr Ivan Franko State University, Zhytomyr, Ukraine*) serg_nov@ukr.net 143
11. **Oberemok O.S., Melnik V.P., Nikirin V.A., Khacevych I.M., Sabov T.M.** Synthesis of WO₃ and NiO Electrochromic Thin Films with Controlled Amount of Hydrogen (*V. Lashkarev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) romb@isp.kiev.ua 261
12. **Pavlovskyy Yu., Virt I.S., Habinskij V.** Properties of Thin Metal Nitride Films Obtained by Laser Deposition (*Drogobych State Pedagogical University, Drogobych, Ukraine; University of Rzeszow, Rzeszow, Poland*) isvirt@email.ua 13
13. **Rogozin I.V.** X-Ray Photoelectron Spectroscopy Study of ZnO Thin Films Annealing in Atomic Oxygen (*Berdiansk State Pedagogical University, Berdiansk, Ukraine*) rogozin@bdpu.org 221
14. **Shcherbakov A.** NATO Project SfP-977982 "X-Ray Generator Based on Compton Backscattering" (*National Science Center "Kharkov Institute Physics and Technology", Kharkov, Ukraine*) shcherbakov@kipt.kharkov.ua 182
15. **Sizov F.F., Savkina R.K., Smirnov A.B., Udovytska R.S.** Topology of Nano-Heterostructures Ag₂O-HgCdTe (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) rgry@ukr.net 320
16. **Slipokurov V.S., Kudryk Ya.Ya.** Investigation of Ohmic Contacts to Silicon IMPATT Diodes (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) victor.slipokurov@gmail.com 243
17. **Tkachuk A., Sukach A., Tetyorkin V., Stariy S., Boiko V.** Characterization of Grain-Boundary Barriers in CdTe Polycrystalline Films (*V.Vinnichenko Kirovograd State Pedagogical University, Kirovograd, Ukraine; V.Ye. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Ukraine*) atkachuk08@meta.ua 360
18. **Tkachuk A., Tetyorkin V., Sukach A., Matiyuk I.** Properties of Schottky Contacts on Laser-Modified Surface of CdZnTe (*V.Vinnichenko Kirovograd State Pedagogical University, Kirovograd, Ukraine; V.Ye. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Ukraine*) atkachuk08@meta.ua 361
19. **Vinogradov A.O.** Physical Interpretation of Anomalous Experimental Temperature Dependences of Contact Resistivity of Ohmic Contacts to Silicon (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) vyn_f-m@mail.ru 64
20. **Virt I.S., Rudyj I.O., Lopatynskiy I.Ye.** Morphology of Surfaces of PbTe Films Grown by Pulsed Laser Deposition (*Drogobych State Pedagogical University, Drogobych, Ukraine; ²National University "Lviv Polytechnic", Lviv, Ukraine; University of Rzeszow, Rzeszow, Poland*) isvirt@email.ua 12

Session 2
Nanotechnologies and nanomaterials, quantum-size structures
May 12-15, 2015

1. **Boichuk V.I., Leshko R.Ya., Sokolnyk O.A., Kropyvnytska K.M.** Resonant Stokes Shift in CdS QD (*Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine*) leshkoroman@gmail.com 346
2. **Boruk S.D., Dremlyuzhenko X.S., Yuriychuk I.M., Tsaly.V.Z., Klad'ko V.P., Gudymenko O.I.** Properties of Low Dimensional Semiconductor Materials Obtained by Electrochemical Methods (*Chernivtsy National University, Chernivtsi, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics NASU, Kiev, Ukraine*) microel-dpt@chnu.edu.ua 328
3. **Budzulyak I.M., Vashchynsky V.M., Rachiy B.I., Nykolyuk M.O.** Energy Characteristics of Supercapacitors Based on Chemically Modified Carbon (*Vasyl Stefanyk Precarpathion National University, Ivano-Frankivsk, Ukraine*) witalik_wash@mail.ru 40
4. **Budzulyak S.I., Ermakov V.M., Kapush O.A., Korbutyak D.V., Kuryk A.O.** Photoluminescent Properties of the CdTe Nanocrystals Incorporated Into Inorganic Matrices (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) buser@isp.kiev.ua 97
5. **Bulaniy M.F., Kovalenko A.V., Khmelenko O.V.** Investigation of Properties of Nanopowder ZnS:Mn, Obtained by the Method of Selfpropagating Hightemperature Synthesis (*Oles Gonchar National University of Dnepropetrovsk, Dnepropetrovsk, Ukraine*) koval@mail.dsu.dp.ua 358
6. **Bulaniy M.F., Kovalenko A.V., Vorovsky V.Yu., Khmelenko O.V.** Doping of ZnO Nanopowders with Mn²⁺ Ions at Ultrasonic Spray Pyrolysis (*Oles Gonchar National University of Dnepropetrovsk, Dnepropetrovsk, Ukraine*) koval@mail.dsu.dp.ua 183
7. **Bylina I.S., Umantsiv R.V., Mykhailyuk V.V., Trynoga Yu.T., Mysiv A.** Mechanisms of Growth and Topology of Nanostructures in Thin Films of PbTe:Bi, SnTe:Bi (*Vasyl Stefanyk Precarpathion National University, Ivano-Frankivsk, Ukraine*) romansya@list.ru 260
8. **Dan'ko V.A., Indutnyi I.Z., Lukaniuk M.V., Myn'ko V.I., Shepeliavyi P.E.** The Features of Photolithography Process Based on Reversible Photostructural Changes in Germanium Chalcogenides (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) danko-va@ukr.net 67
9. **Dovbeshko G., Gnatyuk O.** Surface Enhanced Spectroscopy for nanotechnologies Application (*Institute of Physics, NAS of Ukraine, Kyiv, Ukraine*) gd@iop.kiev.ua 178
10. **Evtukh A.A., Bratus' O.L.** Changing the Temperature Dependence of Electrical Conductivity on the Opposite in Si Nanocluster Containing Structures IV (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) 3628793@mail.ru 131
11. **Galuschak M.O., Ruvinskii B.M., Ruvinskii M.A.** Electroconductivity and Thermopower of Quantum Semiconductor Wire by Thickness Fluctuations (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine;*

- Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine) bruvinsky@gmail.com 227*
12. **Glushko E.Ya., Stepanyuk A.M.** Photonic Crystal Resonators and Photonic Membranes as Platforms for All-Optical Signal Processing (*Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine; Kryvyi Rih National University, Kryvyi Rih, Ukraine) eugene.glushko@scientist.com 166*
 13. **Guba S.K., Peleshchak R.M., Petrovich R.Y., Nayda I.I.** Model Doping Quantum Dots InAs with Bi IMPURITY by Low-Temperature CVD-Methods (*Lviv Polytechnic National University, Lviv, Ukraine; I. Franko Drogobych State Pedagogical University, Drogobych, Ukraine) gubask@polynet.lviv.ua 311*
 14. **Gudymenko O.Y., Kryvyi S.B., Kaganovich E.B., Krishchenko I.M., Manoilov E.G., Kladko V.P.** Investigation of the Structure of Nanoporous Gold Plasmon Films by X-Ray Diffraction and Reflectometry (*V. Lashkaryov Institute of Semiconductor Physic., Kyiv, Ukraine) serkriviy@gmail.com 224*
 15. **Ivanskii B.V., Stasyk M.O.** To the Lifshits-Slezov-Wagner Theory in Metal Alloys (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) ivanskii@ukr.net 192*
 16. **Ivashchyshyn F.O., Grygorchak I.I., Shvets R.Ya.** Semiconductor N-Barrier Structures with Periodically Modulated Localization of 2D-Bioionics (*Lviv Polytechnic National University, Lviv, Ukraine) fivash@i.ua 165*
 17. **Kalinenko A.N., Kopeliovich A.I., Pyshkin P.V., Yanovsky A.V.** Inequality of 2D Magnetic Conductors Electroconductivity at Contact and Non-Contact Introducing of Electrical Current (*B. Verkin Institute for Low Temperature Physics & Engineering, NAS of Ukraine, Kyiv, Ukraine; Basque Foundation for Science, Bilbao, Spain) kopeliovich4@gmail.com 303*
 18. **Karachevtseva L., Kuchmiy S., Stroyuk A., Lytvynenko O., Sapelnikova O., Stronska E.** Light-Emitting Structures of CdS Nanocrystals on Oxidized Macroporous Silicon (*V. Lashkaryov Institute of Semiconductor Physic., Kyiv, Ukraine; L. Pisarzhevsky Institute of Physical Chemistry, Kyiv, Ukraine) lakar@isp.kiev.ua 114*
 19. **Karpenko O.S., Kartel N.T., Lobanov V.V.** The Energy of Formation Hexagon-Shaped N-Doped Clusters $C_{96-x}N_x$ (*Chuiko Institute of Surface Chemistry of the National Academy of Sciences of Ukraine, Kyiv, Ukraine) karpenkooksana@ukr.net 101*
 20. **Kizjak A.Yu., Evtukh A.A., Steblova O.V., Pedchenko Yu.M.** Peculiarities of Electron Transport Through Multilayer SiO_2 -ncSi- SiO_2 Structures (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine) anatoliy.evtukh@gmail.com 126*
 21. **Korotun A.V., Pogosov V.V., Koval A.O.** Effect of Geometry on the Fermi Energy of Metallic Nanowire (*Zaporozhye National Technical University, Zaporozhye, Ukraine) andko@zntu.edu.ua 212*
 22. **Kruglyak Yu.** Electric Current and Heat Flux in Landauer – Datta – Lundstrom Transport Model for Nanoelectronics (*Odessa State Environmental University, Odessa, Ukraine) quantumnet@yandex.ua 2*
 23. **Kurchak A.I., Strikha M.V.** High 2D Conductivity of Graphene on Relaxor Film (*V. Lashkaryov Institute of Semiconductor Physic., Kyiv, Ukraine) teoretyk0706@gmail.com 151*

24. **Matkivsky O.M., Maksymyuk M.** Thermoelectric Lead Telluride with ZnO Nanoparticles (*Vasyl Stefanyk Precarpathian University, Ivano-Frankivsk, Ukraine*) o.matkivsky@opora.org.ua 280
25. **Nechyporenko G.V., Zinchenko V.F., Dyshleva L.F., Meshkova S.B.** Optical Properties of Nano-Structures of Eu(II) Compounds in Frozen Saline Melts (*O.V. Bogatsky Physico-Chemical Institute of NAS of Ukraine, Odessa, Ukraine*) nechiporenkoanna@gmail.com 26
26. **Paiuk O., Meshalkin A., Achimova E., Stronski A., Abashkin V., Lytvyn O., Sergeev S., Prisacar A., Oleksenko P., Triduh G.** Electron-Beam Recording of Surface Relief's Using Ge₅As₃₇S₅₈-Se Nanomultilayers as Registering Media (*V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine; Institute of Applied Physics AS of Moldova, Chisinau, Moldova*) paiuk@ua.fm 75
27. **Payentko V.V., Matkovsky A.K., Kuts V.S., Matrunchik Yu.V.** The Influence of Structure Formation of the Silica Matrix on the Activity of Immobilized Cholinesterase (*Chuiko Institute of Surface Chemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine; The Institute of General and Inorganic Chemistry, National Academy of Sciences of Belarus, Minsk, Republic of Belarus*) payentko@mail.ru 199
28. **Peleshchak R.M., Kuzyk O.V., Dan'kiv O.O., Peleshchak I.R.** Acoustoelectronic Effects in Nanoheterostructures and Their Practical Significance (*Drohobych Ivan Franko State Pedagogical University, Drohobych, Ukraine; Lviv Polytechnic National University, Lviv, Ukraine*) peleshchak@rambler.ru 319
29. **Perekrestov V.I., Kornyushchenko A.S., Natalich V.V.** Regularities of Chromium Condensates Formation under Volmer-Weber Conditions and Critically Low Supersaturations (*Sumy State University, Sumy, Ukraine*) vik.natalich@ukr.net 83
30. **Romanyuk Yu.A., Yaremko A.M., Dzhagan V.M., Yukhymchuk V.O.** Raman Scattering in Superlattices with SiGe Quantum Dots (*V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) romanyuk_yu@ukr.net 88
31. **Ruvinskii M.A., Ruvinskii B.M.** Thermopower of Doped Graphene in Nanoribbons (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine*) bruvinsky@gmail.com 226
32. **Ruvinsky M.A., Kostyuk O.B., Dzumedzey R.O., Nadraha O.R.** Quantum Size Effects in Thermoelectric Parameters of Nanostructures Based on Lead Telluride (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) oksanakostuk@gmail.com 233
33. **Sanjay P., Roderick M.** Graphene Membrane Thin Films and Thermomechanical Ripples (*Wilfrid Laurier University, Waterloo, Canada*) rmelnik@wlu.ca 84
34. **Seti J.O., Tkach M.V., Pan'kiv M.V., Frankiv I.B.** Physical Properties of Three-Barrier Cascade of Terahertz Quantum Cascade Laser (*Chernivtsi National University, Chernivtsi, Ukraine*) ktf@chnu.edu.ua 141

35. **Stetsyk N.V., Antonyuk V.G., Panasyuk M.R., Rudka M.M., Dudyk I.R.** X-ray Luminescence Effects in Ag-Doped Cadmium Bromide Layered Nanostructures (*Ivan Franko National University of Lviv, Lviv, Ukraine; Lviv Polytechnic National University, Lviv, Ukraine; Lviv National University of Veterinary Medicine and Biotechnology named after SZ Gzhytsky, Lviv, Ukraine*) stetsyck_natali@ukr.net 281
36. **Tkach M.V., Seti Ju.O., Voitsekhivska O.M., Grynyshyn Y.B.** Electron-Phonon Interaction in Four-Well Nanostructure Being an Expanded Active Region of Quantum Cascade Detector (*Chernivtsi National University, Chernivtsi, Ukraine*) ktf@chnu.edu.ua 142
37. **Tkachuk O.I., Terebinska M.I., Lobanov V.V.** Structure and Formation Energies of Ge Atoms Surface Complexes on the Substrate Si(001)(4×2) (*Chuiko Institute of Surface Chemistry of NAS of Ukraine, Kyiv, Ukraine*) tkachuk_olya@bigmir.net 96
38. **Vasylyeva H., Yakovlev V., Kyliyuk Yu.** Variation of Surface Characteristics and Sorption Properties of Zirconium Silicate Under Irradiation by Bremsstrahlung Gamma Rays (*Uzhgorod National University, Uzhgorod, Ukraine; Institute of Sorption and Endoecology problems NAS of Ukraine, Kyiv, Ukraine*) h.v.vasylyeva@hotmail.com 54
39. **Zhyrovetsky V.M., Popovych D.I., Serednytski A.S.** Physicochemical Properties of Metal Oxide Nanopowders and Core-Shell Structures on Their Basis (*Pidstryhach Institute for Applied Problems of Mechanics and Mathematics NASU, Lviv, Ukraine; National University "Lvivska Polytechnika", Lviv, Ukraine*) popovych@iapmm.lviv.ua 229

Session 3
Physical-chemical properties of thin films
May 12-15, 2015

1. **Bogatyrenko S.I., Minenkov A.A., Sukhov R.V., Kryshstal A.P.** Enhanced Solid-State Solubility of Components in Nanosized Au-Ni Film System (*V.N. Karazin Kharkiv National University, Kharkov, Ukraine*) alexey.a.minenkov@univer.kharkov.ua 35
2. **Diychuk V.V., Dremlyuzhenko S.G., Rarenko A.I., Yuriychuk I.M., Tsaly V.Z., Ziółkowska D., Shyichuk A.** The Studies of Chemical Etching Processes of Highly Radiation Stable Hg₃In₂Te₆ Single Crystals for Applying Thin Films Coatings for Schottky Diode (*Chernivtsy National University, Chernivtsy, Ukraine; UTP University of Science and Technology, Bydgoszcz, Poland*) microel-dpt@chnu.edu.ua 330
3. **Dmitriev A.I., Lashkarev G.V., Radchenko M.V., Bugaiova M.E., Slynko E.I., Timofeeva I.I., Knoff W., Story T.** Nontrivial Damping of Ferromagnetic Resonance in Nanocomposites Co/Al₂O₃ (*I.M. Frantsevych Institute for Problems of Material Science, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*) dmitr.kiev@gmail.com 100
4. **Doroshenko T.** Solid-Phase Interaction in the Bilayer Eutectic Nanofilms (*V. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kiev, Ukraine*) tompavl54@gmail.com 376
5. **Dzundza B.S.** Thermoelectric Properties of Thin Films of Pure and Doped Tin Telluride (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) BDzundza@gmail.com 155
6. **Fedorenkova L.** The Influence of Silicon on the Boride Coatings Formation (*Dnepropetrovsk national University, Dnepropetrovsk, Ukraine*) luba.fed@gmail.com 314
7. **Freik D.M., Saliy Ya.P., Bylina I.S., Lishchynskyy I.M.** Orientation Peculiarities Vapor-Phase Condensation PbTe-Bi₂Te₃ on Substrates of Mica and Pyroceram (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) saliyyaroslav@gmail.com 256
8. **Gomeniuk Y.Y., Gomeniuk Y.V., Nazarov A.N., Nazarova T.M., Monaghan S., Cherkaoui K., O'Connor É., Povey I., Hurley P.K.** Electrical Diagnostics of h-k Dielectrics on InGaAs (*ISP NAS of Ukraine, Kyiv, Ukraine; NTUU "KPI", Kyiv, Ukraine; Tyndall NI, Lee Maltings, Cork, Ireland*) nazarov@lab15.kiev.ua 215
9. **Gorbanyuk T.I., Litovchenko V.G., Soltsev V.S.** Features of Adsorption and Electrical Properties of Nanostructured Composites Based on Porous Silicon and Metal/Oxide Nanoclusters (*V. Lashkaryov Institute of Semiconductor Physics, National Academy of Science of Ukraine, Kiev, Ukraine*) tatyanaigor@mail.ru 269

10. **Grytsyshche I.V., Loya V.Yu.** Electrophysical Properties of Indium Doped $\text{As}_2\text{S}(\text{Se})_3$ Thin Films (*Institute of Electron Physics, Ukr. Nat. Acad. Sci., Uzhhorod, Ukraine*) grytsyshche@ukr.net 27
11. **Jaworski R.S.** Structure and Thermoelectrical Properties of Vapor-Phase Condensates LAST at Sital (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) ppshans@ukr.net 275
12. **Karachevtseva L.A., Onyshchenko V.F., Karas' M.I., Lytvynenko O.O., Stronska O.J., Parshin K.A., Konin K.P.** The Photoelectric Characteristics of Thermally Oxidized Macro Porous Silicon Structures on the Intensity of Incident Light (*Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine, Kyiv, Ukraine*) onyshchenkovf@mail.isp.kiev.ua 317
13. **Koman B.P., Kulik B.Ya., Rovetskii I.M.** The Structure and Morphology of the Copper Film on the Monocrystalline Silicon Surface Ivan Franko (*Lviv National University, Lviv, Ukraine*) koman@electronics.lnu.edu.ua 196
14. **Konopelnyk O.I., Aksimentyeva O.I., Horbenko Yu.Yu., Savytsky N.S.** The Optic Absorption Spectra of Polytoluidine Thin Films Doped with Inorganic Nanoclusters (*Ivan Franko National University, Lviv, Ukraine*) konopel@ukr.net 162
15. **Konstantinovich A.V., Konstantinovich I.A.** Radiation Spectrum of Electrons Moving Along a Spiral in Medium (*Chernivtsi National University, Chernivtsi, Ukraine; Institute of Thermoelectricity, NAS of Ukraine, Chernivtsi, Ukraine*) aconst@hotbox.ru 106
16. **Kostylyov V.P., Chernenko V.V., Slusar T.V., Vlasyuk V.M., Korkishko R.M., Semenov O.V.** Passivation Properties of Nanostructured SiC Films on Silicon (*V.E. Lashkarev Institute of Semiconductor Physics, Nat. Acad. of Sci. of Ukraine, Kyiv, Ukraine; Institute for Single Crystals, National Academy of Sciences of Ukraine, Kharkov, Ukraine*) vkost@isp.kiev.ua 207
17. **Kostyuk O.B.** The Surface Influence to the Thermoelectric Properties of Vapor-Phase Condensates LAST Pb-Ag-Sb-Te (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) oksanakostuk@gmail.com 209
18. **Meshalkin A., Robu S., Prisacar A., Shepel D., Boiarinov Yu., Achimova E.** Carbazole-Based Azo Polymer: Characterization and Surface Relief Grating Formation (*Institute of Applied Physics AS of Moldova, Chisinau, Moldova; State University of Moldova, Chisinau, Moldova; Institute of Chemistry AS of Moldova, Chisinau, Moldova*) alexei@asm.md 169
19. **Minenkov A.A., Kryshstal A.P.** Eutectic Temperature Lowering in Nanoscaled Ag/Ge Films (*V.N. Karazin Kharkiv National University, Kharkov, Ukraine*) alexey.a.minenkov@univer.kharkov.ua 34
20. **Novosiadlii S.P., Melnyk L.V., Varvaruk V.M., Novosiadlii S.V., Marchuk S.M.** Modern Problems of CAD Topology Speed VLSI Structures (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) lj_3d@rambler.ru 375
21. **Pidhirnyi D., Dovbeshko G., Kaplas T., Svirko Yu., Lange S., Kiisk V., Dolgov L., Jaaniso R., Sildos I.** Graphene Enhanced Raman Scattering from DNA Constituents (*Institute of Physics, NAS of Ukraine, Kyiv, Ukraine;*

University of Eastern Finland, Joensuu, Finland; University of Tartu, Tartu, Estonia) den_podg@mail.ru 124

22. **Ptashchenko O.O., Ptashchenko F.O., Gilmutdinova V.R., Bogdan O.V.** Effect of Surface Doping on the Gas Sensitivity of Si and GaAs p-n Junctions (*Odessa National I. I. Mechnikov University, Odessa, Ukraine; Odessa National Maritime Academy, Odessa, Ukraine; Odessa State Academy of Building and Architecture, Odessa, Ukraine*) aptash@list.ru 108
23. **Stetsenko M.A., Maksimenko L.S., Rudenko S.P., Maksimenko L.S., Rudenko S.P., Krischenko I.M., Manoilov E.G., Kaganovich E.B., Serdega B.K.** Localized Surface Plasmon Resonance in Gold Porous Films (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) StetsenkoMax@gmail.com 112
24. **Stetsenko M.A., Maksimenko L.S., Rudenko S.P., Vozny A.A., Opanasyuk A.S., Serdega B.K.** The Diagnostics of Nanosized Tin Disulfide Films by Modulation Polarimetry Technique of Surface Plasmon Resonance (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine; Sumy State University, Sumy, Ukraine*) StetsenkoMax@gmail.com 113
25. **Synhaivska O.I., Lytvyn P.M., Yaremiy I.P., Prokopenko I.V.** The Influence of an External Magnetic Field on the Stripe Domains in Epitaxial YIG Films Studied by Force Gradient Microscopy (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) degi9871@gmail.com 204
26. **Vlasenko O.I., Veleschuk V.P., Kisselyuk M.P., Vlasenko Z.K.** Electroluminescence Spectra of Light-Emitting $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{GaN}$ Heterostructures at Reverse Bias at $T = 300$ K and 77 K (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) yvvit@ukr.net 341

1. **Fekeshgazi I.V., Sidenko T.S., Mitsa A.V., Petsko V.I.** Space and Polarization Dependences of Light Transmission by Multilayer Interference Systems (*V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Uzhgorod State University, Uzhgorod, Ukraine*) fekei@yahoo.com 82
2. **Gorbach T., Smertenko P., Melakh V., Roshchina N., Kostilyov V., Wisz G.** Some Peculiarities of Hybrid Organic-Inorganic Silicon-Based Solar Cells Formation (*V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Institute of Physics, Rzeszow University, Rzeszow, Poland*) vkost@isp.kiev.ua 336
3. **Khrypunov G., Kopach G., Khrypunova A** Scientific School B.T. Boyko in the Field of Thin Film Solar Cells (*National Technical University "Kharkiv Polytechnical Institute", Kharkiv, Ukraine*) gkopach@ukr.net 159
4. **Lishchynskyy I.M., Kaban I., Klanichka V.M., Zapukhliak R.I., Varvaruk V.M., Vasylyshyn I.D.** Thermophysical and Structural Investigations of Ge-S-Ag Chalcogenide Glasses (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; Leibniz Institute for Solid State and Materials Research, Dresden, Germany*) igor.lishchynskyy@gmail.com 351
5. **Petrushenko S.I., Dukarov S.V., Sukhov V.N., Churilov I.G.** Mutual Solubility in Thin Cu-Pb Film (*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*) petrushenkokhnu@gmail.com 89
6. **Sklyarchuk V.M., Melnik V.V., Sklyarchuk O.F.** Devices Based on Silicon Carbide with a Quantum Structure (*Yuriy Fedkovich Chernivtsi National University, Chernivtsi, Ukraine*) microel-dpt@chnu.edu.ua 326
7. **Sklyarchuk V.M., Zakharuk Z.I., Fochuk P.M., Rarenko A.I., Danilchenko B.A., Klad'ko V.P.** The Use of Semi-Insulating Crystals Cd (Zn) Te: In Detectors for Ionizing Radiation (*Yuriy Fedkovich Chernivtsi National University, Chernivtsi, Ukraine; Institute of Physics of NASU, Kiev, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics NASU, Kiev, Ukraine*) microel-dpt@chnu.edu.ua 327

Functional crystalline materials: growth, physical properties and applications

May 12–15, 2015

1. **Berestok T.O., Kosyak V.V., Kshnjakina S.I., Opanasyuk A.S.** Quasi-Chemical Model of Point Defect Equilibrium in ZnO Single Crystal (*Sumy State University, Sumy, Ukraine*) taisya.berestok@ukr.net 323
2. **Borcha M., Fodchuk I., Baidakova M, Klimko G, Sedova I, Sokolov R, Sorokin S, Yagovkina M** Characterization of Zn(Mn)Se/GaAs(001) Layers by Multi-Beam X-Ray Diffraction (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; Ioffe Physical-Technical Institute of the Russian Academy of Sciences, St.-Petersburg, Russia*) m_borcha@ukr.net 299
3. **Danylenko M., Gorban V.F., Firstov S.O.** Studying of Fine Structure of Coatings and Deformed High Entropy Alloys with the Using of Analytical Electron Microscopy (*Frantsevich Institute of Problems of Materials Science NAS of Ukraine, Kyiv, Ukraine*) myd3@ukr.net 148
4. **Dzumedzey R.O., Boryk V.V., Kal'ka O.Yu, Zapuhliak J.R.** Calculation of thermoelectric parameters PbTe:Ag (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) kepa@nashemisto.if.ua 66
5. **Fochuk P.M.** The inclusions' behavior in Cd(Mn,Zn)Te crystals (*Chernivtsi National University*) fochukp@gmail.com 359
6. **Galushchak M.O., Krynytsky O.S.** Technology and Thermoelectric Properties of Semiconductor Materials Based Systems Pb-Sb-Te (*Ivano-Frankivsk National Technical University of Oil and Gas, Ivano-Frankivsk, Ukraine*) galuschak@nung.edu.ua 220
7. **Gudyma Iu.V., Ivashko V.V.** Pressure Influence on Transitions in Spin-Crossover Nanostructures (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) yugudyma@gmail.com 210
8. **Hurhula H.Ya, Vintoniak T.P., Yaremiychuk O.** Defective Subsystem and Modification of Crystals' Properties of Compounds A^2B^6 (*Vasyl Stefanyk Precarpatian National University, Ivano-Frankivsk, Ukraine*) babushchak@mail.ru 3
9. **Karpets M.V., Myslyvchenko O.M., Rokitska O.A., Krapivka M.O., Marchenko S.V.** The Structure of the Surface Layers of Wear-Resistant High-Entropy Alloys VCrMnFeCoNix (*Institute for Problems of Materials Science NAS of Ukraine, Kyiv, Ukraine; National Technical University of Ukraine "KPI", Kyiv, Ukraine; Sumy State University, Sumy, Ukraine*) zvyagina-47@yandex.ru 125
10. **Koval Yu.V., Zakharchuk D.A., Yashchynskyy L.V., Fedosov S.A.** The Radiation Stimulated Rise of Mobility of Current Carriers in the Cadmium Antimonid Monocrystals, Alloyed by Indium (*The State Technical University of Lutsk, Lutsk, Ukraine; Lesya Ukrainka East European National University, Lutsk, Ukraine*) zachdim@mail.ru 332
11. **Kupchak I.M., Serpak N.F., Korbutyak D.V.** Vibrational Spectra of Co-Doped Hexagonal ZnO (*V. Lashkarev Institute of Semiconductor Physics of NAS of Ukraine, Kiev, Ukraine*) kupchak@isp.kiev.ua 78
12. **Mar'yan M.I., Yurkovych N.V.** Fractal Approach to Non-Crystalline States (*Uzhhorod National University, Uzhhorod, Ukraine*) yurkovich@i.ua 331

13. **Parashchuk T.O.** First Empirical Investigations of the Thermodynamic Properties in II-VI Chalcogenide Crystals (*Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine*) taras-parashchuk@i.ua 297
14. **Pavlovska O.B., Vasylechko L.O., Ubizskii S.B.** Anomalous Lattice Expansion of $\text{Sm}_{0.5}\text{Pr}_{0.5}\text{FeO}_3$ Derived From X-Ray Synchrotron Powder Diffraction Data (*Lviv Polytechnic National University, Lviv, Ukraine*) crystallov@polynet.lviv.ua 344
15. **Raransky M.D., Balazyuk V.N., Gun'ko M.M., Gorda O.M.** Abnormal Deformation Properties of Some Single Crystals of Tetragonal System (*Yu.Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) ftt2010@bigmir.net 310
16. **Horitchok I., Semko T., Mateik G.** Thermoelectric Properties of $\text{AgPb}_{18}\text{SbTe}_{20}$ (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) t.semko@i.ua 238
17. **Tovstyuk N.K., Savchyn V.P., Krushelnytska T.D., Demkiv L.S., Mykytyuk O.Yu.** Appearance of Electret Effect in the Cathodoluminescence of Intercalated GaSe (*National University "Lvivska Politehnika", L'viv, Ukraine; Ivan Franko National University of L'viv, L'viv, Ukraine; Bukovinian State Medical University, Chernivtsi, Ukraine*) ntovstyuk@gmail.com 315
18. **Volochanska B.P.** Cluster Models and *Ab Initio* Calculations of Thermodynamic Parameters of Lead Chalcogenides (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) bvolochanska@i.ua 128
19. **Yurchyshyn L.D.** New Areas of Optimization of Thermoelectric Parameters of Lead Telluride And Germanium Telluride Based Solid Solutions (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) ld67@ukr.net 283
20. **Zayachuk D.M., Mikityuk V.I., Shlemkevych V.V., Kaczorowski D.** Superconductivity of Surface Layers of PbTe Crystals Grown From Melt by a Bridgman Technique (*Lviv Polytechnic National University, Lviv, Ukraine; Yuri Fedkovich Chernivtsy National University, Chernivtsy, Ukraine; Institute of Low Temperature and Structure Research, Polish Academy of Sciences, Wroclaw, Poland*) zayachuk@polynet.lviv.ua 32
21. **Zhydachevski Ya., Luchechko A., Martynyuk N., Morgun A., Ubizskii S., Chumak V., Berkowski M., Suchocki A.** Dosimetry Application of the $\text{YAlO}_3:\text{Mn}$ Based Materials (*National University "Lvivska Politehnika", L'viv, Ukraine; Institute of Physics, Polish Academy of Sciences, Warsaw, Poland; Ivan Franko National University of L'viv, L'viv, Ukraine; National Research Centre for Radiation Medicine, Kyiv, Ukraine; University of Bydgoszcz, Bydgoszcz, Poland*) ubizskyy@lp.edu.ua 343

POSTER REPORTS

Session 1

Thin films technology (metals, semiconductors, dielectrics, conductive polymers) and their research methods

May 12, 2015

1. **Balovsyak S.V., Lutsyk I.V., Fodchuk I.M.** Methods of Reconstruction and Restoration Image (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) clavikfire@gmail.com 291
2. **Demko P.Yu., Bendak A.V., Studenyak I.P., Kovalchuk O.V., Lisý V., Kopčanský P., Timko M., Tomašovičová N., Gdovinova V., Miskuf J.** Preparation and Dielectrical Studies of “Liquid Crystal – Superionic Nanocrystals” Composites (*Uzhgorod National University, Uzhhorod, Ukraine; Kyiv National University of Technologies and Design, Kyiv, Ukraine; Institute of Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Technical University of Košice, Košice, Slovakia; Institute of Experimental Physics, Slovakian Academy of Sciences, Košice, Slovakia*) studenyak@dr.com 353
3. **Diachenko O.V., Opanasyuk A.S., Kurbatov D.I.** Substructure Properties of MgO Thin Films Obtained by Spray-Pyrolysis Technique (*Sumy State University, Sumy, Ukraine*) alexey.dyachenko@ukr.net 236
4. **Drapikovskiy M.A., Kulish M.P., Zabolotny M.A., Barabash Y.M.** A Model of Light-Activated Changes in Reaction Centers of Purple Bacteria (*National Taras Shevchenko University of Kyiv, Kyiv, Ukraine*) drapikovskiy.maksym@gmail.com 44
5. **Fedosov S.N., Sergeeva A.E.** Charging of Thin Polymer Electrets in Corona Discharge (*Odessa National Academy of Food Technologies, Odessa, Ukraine*) fedosov@optima.com.ua 355
6. **Fedosov S.N., Sergeeva A.E.** Non-Uniformity of Polarization in Thin Ferroelectric Polymer Films (*Odessa National Academy of Food Technologies, Odessa, Ukraine*) fedosov@optima.com.ua 305
7. **Il'chuk H.A., Kusnezh V.V., Petrus' R.Yu., Rodych V.M.** Gold Nanoparticles Arrays in CdS Matrix: Fabrication and Properties (*Lviv Polytechnic National University, Lviv, Ukraine*) ilchukg@gmail.com 252
8. **Kaganovich E.B., Krishchenko I.M., Manoilov E.G.** Plasmonic Nanoporous Films With Gold Nanoparticles (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) dept_5@isp.kiev.ua 257
9. **Karpets M.V., Makarenko E.S., Rockitskaya E.A., Gorban' V.F., Krapivka N.A., Tsebrii R.I., Kantsyr E.V.** Formation of Coating on High-Entropy FeCoCrNiVAl Alloy During Annealing (*Institute for Problems of Materials Science, NAS of Ukraine, Kiev, Ukraine; Ternopil National Economic University, Ternopil, Ukraine; National Technical University of Ukraine "Kyiv Polytechnic Institute", Kiev, Ukraine*) olena.maluhina@gmail.com 313
10. **Kavetskyy T.S., Kukhazh Y.Y., Borc J., Stepanov A.L.** Nanoindentation Study of Boron-Ion Implanted Polymethylmethacrylate With Ultra Nano Hardness Tester: Methodological Aspects (*Drohobych Ivan Franko State*

- Pedagogical University, Drohobych, Ukraine; The John Paul II Catholic University of Lublin, Lublin, Poland; Lublin University of Technology, Lublin, Poland; Kazan Physical-Technical Institute, Russian Academy of Sciences, Kazan, Russia; Kazan National Research Technological University, Kazan, Russia; Kazan Federal University, Kazan, Russia) juljakhj@mail.ru 302*
11. **Kogut I.T., Kotyk M.V., Virstyuk V.V.** Sensory Elements and Devices Operational Diagnostic Blood Glucose (*Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) mikot@i.ua 225
 12. **Malyk O.P., Rodych V.M., Il'chuk H.A.** Electron Mobility in Cadmium Sulfide (*Lviv Polytechnic National University, Lviv, Ukraine*) ilchukg@gmail.com 253
 13. **Ovcharenko O.P., Gaman D.A., Bilozertseva V.I., Khlyap H.M.** Optical Properties of Vacuum Condensates Manufactured by Oblique Deposition (*V.N. Karazin Kharkov National University, Kharkiv, Ukraine; National Technical University "Kharkiv Politechnical Institute", Kharkiv, Ukraine; University of Technology, Kaiserslautern, Germany*) biloz@mail.ru 85
 14. **Panarina H.Y., Yefimov Y.L., Olyasyuk O.P., Kulish M. P., Dmytrenko O.P.** Photoluminescent Properties of Composites Based on Polymers With Thiophene Groups and Functionalized Fullerene C₆₀ (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*) parallelepiped_9@mail.ru 272
 15. **Pylypiv V.M., Garpul O.Z., Solovko Ya.T.** Simulation of Structural Defects and Strains in a Single Crystal Nd₃Ga₅O₁₂ (*Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) ogorishna@ukr.net 163
 16. **Ráti Y.Y., Kutsuk M.M., Neimet Yu.Yu., Izai V.Yu., Makauz I.I., Studenyak I.P., Kökényesi S.** Temperature Studies of Optical Parameters of (Ag₃AsS₃)_{0.6}(As₂S₃)_{0.4} Thin Films (*Uzhgorod National University, Uzhhorod, Ukraine; University of Debrecen, Debrecen, Hungary*) studenyak@dr.com 354
 17. **Saliy Ya.P., Freik I.M., Bushkov N.I.** The Impact of Technology on the Crystallographic Form Nanostructures PbTe: Sb on Ceramics (*Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) illja_81@mail.ru 222
 18. **Studenyak I.P., Bendak A.V., Demko P.Yu., Studenyak V.I., Izai V.Yu., Vorokhta M., Matolin V., Lisý V.** Optical Studies of Cu₇GeS₅I Superionic Thin Films (*Uzhgorod National University, Uzhhorod, Ukraine; Charles University, Prague, Czech Republic; Technical University of Košice, Košice, Slovakia*) studenyak@dr.com 218

1. **Ananina O.Yu., Severina E.V., Lvova N.A.** The Adsorption Properties of the Diamond Surface (111)-2×1 with the Vacancy Defect: Quantum-Chemical Simulation (*Zaporizhzhya National University, Zaporizhzhya, Ukraine; Federal State Budgetary Institution “Technological Institute for Superhard and Novel Carbon Materials”, Troitsk, Russia*) ananyina@znu.edu.ua 102
2. **Balabai R.M., Barilka A.G.** The Flow Behavior of Organic Liquids Inside Carbon Nanotube (*Kyvyi Rih National University, Kryvyi Rih, Ukraine*) barilkaalena@gmail.com 39
3. **Barlas T.R., Dmitruk N.L., Kotova N.V., Mamykin S.V.** Surface-Barrier Heterostructures on the Base of Nanoporous InP and GaAs Films With Au Nanoparticles (*Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) barlas@isp.kiev.ua 152
4. **Barsukov V.Z., Khomenko V.G., Mandzyuk V.I., Myronyuk I.F., V.M. Sachko** Lithium Power Sources on Porous Carbon Material Bases (*Kyiv National University of Technologies and Design, Kyiv, Ukraine; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) mandzyuk_vova@ukr.net 49
5. **Boltovets P.M., Manilo M.V., Snopok B.A., Barany S., Lebovka N.I.** Direct Observation of the Empty Liquids Formation by Surface Plasmon Resonance (*Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine; Institute of Biocolloid Chemistry NAS of Ukraine, Kyiv, Ukraine; Hungary and The Transcarpathian II. Ferenc Rakoczi Hungarian Institute, Hungary*) paraskeva2013@gmail.com 87
6. **Bovgyra R.V., Popovych D.I., Bovgyra O.V., Kovalenko M.V.** Ab Initio Study of Structural and Electronic Properties of ZnO Nanoclusters (*Pidstryhach Institute for Applied Problems of Mechanics and Mathematics NAS Ukraine, Lviv, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine*) bovhyra@gmail.com 208
7. **Boychuk T.Ya., Budzulyak I.M., Ivanichok N.Ya.** Electrochemical Properties of Hybrid Supercapacitors Formed From Nanosized Spinel $\text{LiMn}_{1.5}\text{Fe}_{0.5}\text{O}_4$ (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) tanjusja29@rambler.ru 167
8. **Chobal I., Grebenyuk A., Chobal O., Rizak V.** Ab Initio Investigations of High-Pressure Behaviour of $\text{Li}_6\text{B}_4\text{O}_9$ Nanoclusters (*Uzhhorod National University, Uzhhorod, Ukraine; Institute of Materials Research, Košice, Slovakia; Chuiko Institute of Surface Chemistry of National Academy of Sciences of Ukraine, Kyiv, Ukraine*) iryinka.chobal@gmail.com 254
9. **Danylov A.B., Petrus’ R.Y., Semkiv I.V., Haiduchok V.G., Zhydachevskii Y.A.** Spectral and Morphology Analysis of Ultrathin Gold Films on Glass Substrate (*Lviv Polytechnic National University, Lviv, Ukraine; Scientific Research Company “Carat”, Lviv, Ukraine; Institute of Physics of the Polish Academy of Sciences, Warsaw, Poland*) andanylov@yahoo.com 258
10. **Demchenko V.L.** The Effect of a Constant Magnetic Field on the Structure and Thermomechanical Properties of Ternary Polyelectrolyte–Metal Complexes and

Nanocomposites Based on Them (*Institute of Macromolecular Chemistry, Natl. Acad. of Sci. of Ukraine, Kiev, Ukraine*) dvaleriyl@ukr.net 72

11. **Filonenko N.Yu., Pilyaeva S.B.** The Effect of Intense Plastic Deformation on Phase Composition and Structure of Pearlite in Boron-Bearing Alloys (*Dnipropetrovsk State Medical Academy, Dnipropetrovsk, Ukraine; Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine*) natph@mail.ru 80
12. **Gasinets S.M., Gorina O.V., Guranich P.P., Maryan V.M., Mykaylo O.A., Solomon A.M., Rigan M.Yu., Rubish V.M.** Structure and Dielectric Properties of Glasses And Nanocomposites in As₂Se₃-SbSI System (*Uzhgorod Scientific-Technological Center of the Institute for Information Recording, NASU, Uzhgorod, Ukraine; Uzhgorod National University, Uzhgorod, Ukraine; Institute of Electron Physics NASU, Uzhgorod, Ukraine*) center.uzh@gmail.com 116
13. **Goncharenko A.V., Rokhmistrov D.V., Zyman Z.Z., Eppl M.** The Effect of Carbonate on the Crystallization, Phase Composition and Thermal Behavior of Amorphous Calcium Phosphate With Ca/P=1 (*V.N. Karazin Kharkiv National University, Kharkiv, Ukraine; University of Duisburg-Essen, Essen, Germany*) gavial88@meta.ua 135
14. **H. Klym, A. Ingram, O. Shpotyuk** Nanovoid Characterization of NiMn₂O₄-CuMn₂O₄-MnCo₂O₄ Ceramics (*Lviv Polytechnic National University, Lviv, Ukraine; Opole University of Technology, Opole, Poland; Vlokh Institute of Physical Optics, Lviv, Ukraine; Scientific Research Company "Carat", Lviv, Ukraine*) klymha@yahoo.com 138
15. **Holovatsky V.A., Bernik I.B.** Effect of Magnetic Field on Energy Spectrum of Electron in Spherical Multi-Shell Quantum Dots (*Chernivtsi National University, Chernivtsi, Ukraine*) v_hol@rambler.ru 173
16. **Hrushka V.I., Peleshchak R.M., Stara O.V., Radlovska N.S.** Effect of Stressed Heteroborder Quantum Dot - Matrix for Polaron State of a Particle With Degenerate Band Spectrum (*Drohobych Ivan Franko state pedagogical University, Drohobych, Ukraine*) grushka_vira@rambler.ru 160
17. **Ilkiv V.Ya., Zaulychnyy Ya.V., Yavorsky Yu.V., Gun'ko V.M., Zarko V.I.** Formation of Interatomic Bonds on the Fumed Synthesis of Composites x-SiO₂+y-Al₂O₃ (*National Technical University of Ukraine "Kyiv Polytechnical Institute", Kyiv, Ukraine; Chuiko Institute of Surface Chemistry, Kyiv, Ukraine*) born1987@ukr.net 277
18. **Ivanskii B.V., Panko I.I., Stasyk M.O., Kryvetskyi V.I.** Size Distribution of Quantum Dots on the Surface of Artificially Grown Quantum Crystals (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) ivanskii@ukr.net 193
19. **Karachevtseva L.A., Onyshchenko V.F., Karas' M.I., Lytvynenko O.O., Stronska O.J., Parshin K.A., Konin K.P.** The Effective Concentration of Non-Equilibrium Charge Carriers in Macroporous Silicon With Various Arrangements of Macropores (*Lashkaryov Institute of Semiconductor Physics of NAS of Ukraine, Kyiv, Ukraine*) onyshchenkovf@isp.kiev.ua 132
20. **Kelesh I.** Properties of Nano-Track-Containing Foils (*South-Ukrainian National Pedagogical University, Odessa, Ukraine*) iik-12@ukr.net 364
21. **Kondrat O., Holomb R., Popovich N., Tsud N., Mitsa V.** Compositional Investigations of the As-Se Nanolayers Using X-Ray Photoelectron

- Spectroscopy (*Uzhhorod National University, Uzhhorod, Ukraine; Charles University, Prague, Czech Republic*) kon_alex@gala.net 9
22. **Kondryuk D.V., Derevyanchuk O.V., Kramar V.M.** Temperature Changes of Exciton Absorption Spectra in Semiconductor-Based Flat Nanofilms (*Yuriy Fed'kovych Chernivtsi National University, Chernivtsi, Ukraine*) v.kramar@chnu.edu.ua 172
 23. **Koshel V.I., Poplavskyy O.P., Poplavskyy I.O.** Nanosafety in the Manufacture and Study of Semiconductive Nanomaterials Control (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) omeliantru@gmail.com 365
 24. **Koshel V.S., Dzundza B.S.** Assessment Problems of the Health Risk for Employees, Who Works With Nanomaterials (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) BDzundza@gmail.com 157
 25. **Kotsyubynsky V.O., Poplavsky I.O.** Nanostructured Mg(OH)₂ With the Primary Particle Size Control (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) omeliantru@gmail.com 362
 26. **Kotsyubynsky V.O., Hrubciak A.B., Moklyak V.V.** Electrochemical Properties of Mesoporous γ -Fe₂O₃ (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; G. V. Kurdyumov Institute for Metal Physics, Kiev, Ukraine*) v_kotsyubynsky@mail.ru 45
 27. **Krupko O.V., Khalavka Yu.B., Shcherbak L.P.** Effect of pH of Synthesis on CdS/L-Cys Colloidal Solutions Optical Properties (*Bukovinian State Medical University, Chernivtsi, Ukraine; Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) y.khalavka@chnu.edu.ua 357
 28. **Kryuchenko Yu.V., Korbutyak D.V.** A New Approach for Calculating Excitonic Emission Characteristics of Hybrid “Spherical Semiconductor Quantum Dot+Spherical Metal Nanoparticle” Nanosystem (*V.E. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) kryuyu@gmail.com 69
 29. **Kryvoruchko Y.** Interaction of Electromagnetic Radiation With Multi-Layer Coatings (*National University of Life and Environmental Science of Ukraine, Kyiv, Ukraine*) krayana@ukr.net 177
 30. **Kulyk B., Kapustianyk V., Sahraoui B.** Optical Harmonic Generation in Nanostructured and Nanocomposite ZnO Films (*Ivan Franko National University of Lviv, Lviv, Ukraine; Institute of Sciences and Molecular Technologies of Angers MOLTECH Anjou, Angers, France*) bohdan_kulyk@yahoo.com 117
 31. **Lashkarev G.V., Radchenko M.V., Bugaiova M.E., Knoff W., Story T.** Manipulation of Ferromagnetic Nanocomposites Properties (*I.M. Frantsevych Institute for Problems of Material Science, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Institute of Physics, Polish Academy of Sciences, Warsaw, Poland*) geolash@materials.kiev.ua 168
 32. **Lysenko A.B., Zagorulko I.V., Kalinina T.V., Lysenko A.A.** Formation of the Primary Nanocrystalline Phases in a Non-Equilibrium Crystallization Conditions of Light Lanthanides With Silver Alloys (*Dniprodzerzhinsk State Technical University, Dniprodzerzhinsk, Ukraine*) Zagorylko@ukr.net 156
 33. **Lytvyn P.M., Induntyi I.Z., Malyuta S., Min'ko V.I., Lytvyn O.S., Dan'ko V.A., Prokopenko I.V.** Mechanical Nano-Lithography Over Double Layer Chalcogenide Resist (*Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine*) plyt@isp.kiev.ua 146

34. **Makhanets O.M., Kuchak A.I., Voitsekhivska O.M., Iliniuk A.V.** Quasi-Stationary Exciton States in Open Cylindrical Semiconductor Nanotube (Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) ktf@chnu.edu.
35. **Makhniy V.P., Sklyarchuk V.M., Bodyul G.I., German I.I.** Optical Properties of Substrates With Surface GaP Quantum-Dimensional Structures (Yuri Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) ivankager@mail.ru 154
36. **Michailovska K.V., Indutnyi I.Z., Shepeliavyi P.E., Sopinsky M.V.** Polarization Memory of the Luminescence of Si Nanoparticles in Oxide Matrix (V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine) k_mich@ukr.net 36
37. **Mizilevska M.H., Kotsyubynsky V.O., B.K. Ostafiychuk, Tadeush O.Kh.** The Synthesis Conditions Influence on the Phase Stability of Nanodispersed Titanium Dioxide (South Ukrainian National Pedagogical University named after K.D.Ushynsky, Odesa, Ukraine; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) selti2109@gmail.com 147
38. **Mokhnatskij M. L., Yaremiy I.P.** Synthesis and Structure of Perovskites-Like Materials (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) mark351000@yandex.ua 237
39. **Moklyak V.V., Kolkovskiy P.I., Zbihley L.Z.** Preparation of Nanoporous $\text{FeF}_3 \cdot 3\text{H}_2\text{O}$ as Cathode Materials for Rechargeable Lithium-Ion Batteries (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) p_kolkovskyy@i.ua 93
40. **Mykytiuk A., Kondratenko S.V.** Photogeneration and recombination processes in Si/Ge heterostructures with Ge nanoclusters (Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; State enterprise of a special instrumentation "Arsenal", Kyiv, Ukraine) mykytiuk_nastya@ukr.net 171
41. **Myslin M.V., Tatarchuk T.R.** Synthesis, Structural and Colour Characterization of Nanocrystalline Chromic Oxide Green Pigment Doped With Aluminum Oxide (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) tatar_ch@inbox.ru 123
42. **Novosyadlyy S.P., Bojko S.I.** Local Transistor Isolation Using Oxidized Porous Silicon (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) sergiy1300@gmail.com 130
43. **Olenych I.B., Monastyrskii L.S., Aksimentyeva O.I., Yarytska L.I.** Sensor Properties of the Photovoltaic Structures Poly(3,4-Ethylenedioxytiophene) – Porous Silicon (Ivan Franko National University of Lviv, Lviv, Ukraine; Lviv State University of Live Safety, Lviv, Ukraine) iolenych@gmail.com 111
44. **Ostafiychuk B.K., Bushkova V.S., Yaremij I.P.** Synthesis and Structure of Nanosize $\text{Ni}_x\text{Co}_{1-x}\text{Fe}_2\text{O}_4$ Particles (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) bushkovavira@gmail.com 30
45. **Paliychuk N.D., Tatarchuk T.R.** Antistructure Modelling of CoFe_2O_4 Nanoparticles Prepared by Precipitate Method (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) tatar_ch@inbox.ru 119
46. **Panko I.I., Kryvetskyi V.I., Fesiv I.V.** Spreading of the Lifshits-Slezov-Wagner Theory on Liquid Media (Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) igaroshapanko@gmail.com 194
47. **Popovych D.I., Savka S.S., Serednytski A.S.** Gas Sensing Properties of Metal Oxide Nanopowders (Pidstryhach Institute for Applied Problems of Mechanics

- and Mathematics NASU, Lviv, Ukraine; National University "Lvivska Polytechnika", Lviv, Ukraine) serandry@gmail.com 279*
48. **Potashnyk V.Y., Zastavnyi S.P.** Structure and Properties of Porous Silicon Films Obtained by Chemical Method (*Ivan Franko National University of Lviv, Lviv, Ukraine) vasylyna487@gmail.com 255*
 49. **Regush L.** Cathode material Based on Ultradispersed Lithium Ferrite Obtained by Ion- Exchange Mechanism (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) knoopka@ukr.net 241*
 50. **Salo A.A., Lyashkov A.Yu., Khmelenko O.V.** Electrophysical Properties of Polymer-Nanocarbon Composite (*Dniepropetrovsk National University, Dniepropetrovsk, Ukraine) plushka93@mail.ua 247*
 51. **Savchuk A. I., Stolyarchuk I. D., Savchuk O. A., Cieniek B.** Magneto - Optical Properties of CdMnTe Nanoparticles Dispersed in the Polymer Matrix (*Yuriy Fedkovich Chernivtsi National University, Chernivtsi, Ukraine; University of Rzeszow, Rzeszow, Poland) istolyarchuk@ukr.net 99*
 52. **Shportko K., Wuttig M., Grueninger M., Venger E.** Influence of the Stoichiometry on Raman spectra of the Amorphous Phase Change Alloys for Future Memory and Display Applications (*RWTH University of Technology Aachen, Aachen, Germany; University of Cologne, Cologne, Germany; V.E. Lashkarev Institute for semiconductor physics of NAS of Ukraine, Kyiv, Ukraine) konstantin@shportko.com 81*
 53. **Shyyko L.O., Kotsyubynsky V.O., Budzulyak I.M.** The Synthesis of the Nanoparticles With Double-Hierarchical Structure as Promising Materials for Use in Electrochemistry (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) liudmyla.shyiko@pu.if.ua 174*
 54. **Simchenko S.V., Dyadenchuk A.F.** Obtaining Regular Porous Gallium Arsenide Surface by Electrochemical Etching (*Berdyansk State Pedagogical University, Berdyansk, Ukraine) sstehology@rambler.ru 133*
 55. **Slyotov M.M., Slyotov O.M.** Features of Optical Properties of CdSe With Quantum-Size Surface (*Yu.Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) mslyotov@mail.ru 246*
 56. **Sokolov O.L., Nagirna N.I., Potyak V.Y.** Topology of Thin Films and Nanostructures II-VI, IV-VI Received vapor Phase Methods (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; The College of Electronic Devices of Ivano-Frankivsc National Technical University of Oil and Gas; Ivano-Frankivsk, Ukraine) fcss@pu.if.ua 372*
 57. **Stepanyuk A.M., Glushko E.Ya.** Standing Wave Expansion Method: Calculation of a 2D Photonic Crystal Resonator (*Pedagogical Institute, Kryvyi Rih National University, Kryvyi Rih, Ukraine; Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine) eugene.glushko@scientist.com 309*
 58. **Tatarchuk T.R., Boyko E.V.** Sol-Gel Auto Combustion Syntesis of Nanostructured Cobalt Aluminate (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) tatar_ch@inbox.ru 121*
 59. **Terebinska M.I., Tkachuk O.I., Lobanov V.V.** The Dependence of the DOS of Ge-Atom on its Adsorption on Si (001) Surface (*Chuiko Institute of Surface Chemistry of National Academy of Sciences of Ukraine, Kyiv, Ukraine) terebinska_m.i@bigmir.net 230*
 60. **Tkachenko M., Zyman Z., Epple M., Babkina T.** Sodium-Substituted and Carbonated Calcium Phosphate Nanoceramics for Bone Substitution (*V. N.*

- Karazin Kharkiv National University, Kharkiv, Ukraine; University Duisburg-Essen, Essen, Germany) mykola.v.tkachenko@univer.kharkov.ua 98*
61. **Vengrenovich R.D.**, **Yarema S. V.** , **Moskaliyk A.V.** Ostwald Ripening of Nanocrystals in 2D- and 3D-Systems (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) vengrenovich@i.ua 195
 62. **Voznyak O.M.** For Boundary Conditions for Schrödinger Equation on Hetero-Boundary (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) freik@pu.if.ua 373
 63. **Yablon L.S.**, **Khemiy O.M.**, **Budzulyak I.M.**, **Morushko O.V.**, **Rachiy B.I.** Differential Thermal Analysis for Laser Irradiated Composite TiO₂/C (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) v_kotsuybynsky@mail.ru 367
 64. **Yablon L.S.**, **Strelchuk V.V.**, **Budzulyak S.I.**, **Morushko O.V.** Raman Scattering of Composite TiS₂/C (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; Lashkarev Institute of Semiconductor Physics, The National Academy of Sciences of Ukraine, Kyiv, Ukraine*) v_kotsuybynsky@mail.ru 369
 65. **Yavorskyi Y.V.**, **Zaulychnyy Ya.V.**, **Ilkiv V.Ya.**, **Zarko V.I.**, **Karpets M.V.**, **Kotsyubynsky V.O.** The Energy Distribution Changes of the Valence Electrons of Mixtures $x\text{-SiO}_2+y\text{-}\gamma\text{-Fe}_2\text{O}_3$ Before and After Mechanical Activation (*National Technical University of Ukraine Kyiv, Kyiv, Ukraine; Chuiko Institute of Surface Chemistry, Kyiv, Ukraine; Frantsevich Institute for Problems of Materials Science, Kyiv, Ukraine; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) yar-yra@ukr.net 58
 66. **Yuryev S.O.**, **Yuhchuk S.I.**, **Dubelt S.P.**, **Loboiko V.I.** NGR Investigations of Nanosized Powder of Magnetite (*National University "L'vivska Polytechnica", Lviv, Ukraine*) syuryev@mail.ru 139
 67. **Yuzephovych O.I.**, **Bengus S.V.**, **Sipatov A.Yu.** Features of Superconductor - Insulator Transition in PbTe/PbS and PbTe/YbS Heterostructures (*B.Verkin Institute for low temperature physics & engineering of NAS of Ukraine, Kharkiv, Ukraine; International Laboratory of High Magnetic Fields and Low Temperatures, Wroclaw, Poland; National Technical University - KhPI, Kharkiv, Ukraine*) yuzephovych@ilt.kharkov.ua 22
 68. **Zavoyko O.** No Classification a New Teoretical Comprehension in Nanotechnology (Chernivtsi Department of National Technical University "KhPI", Chernivtsi, Ukraine) Zavoyko44@list.ru 175

Session 3
Physical-chemical properties of thin films
May 12, 2015

1. **Afanasieva T.V., Petrova N.V., Yakovkin I.N.** Oxygen Adsorption on the Be-Covered Mo(112) Surface: DFT Study (*National Taras Shevchenko University of Kyiv, Kyiv, Ukraine; Institute of Physics of National Academy of Sciences of Ukraine, Kyiv, Ukraine*) petrovanata69@gmail.com 68
2. **Ahiska R., Freik D., Chavjak I., Nykyruy L., Mazur M.** Doping Semiconductors on the Base of IV-VI for Thermoelectric (*Gazy University, Ankara, Turkey; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) rasitahiska@gmail.com 295
3. **Antonyuk V.G., Bordun I.O., Kukharsky I.Yo., Polovynko I.I.** The Influence of Obtained Conditions for Fundamental Absorption Edge in Y₂O₃ Thin Films (*Ivan Franko National University of L'viv, Lviv, Ukraine*) Antonyuk@electronics.lnu.edu.ua 201
4. **Balitska V.O., Shpotyuk O.I.** Kinetics Peculiarities describing In-Situ Photodarkening in Thin As-Se Films (*Lviv State University of Vital Activity Safety, Lviv, Ukraine; Scientific Research Company "Carat", Lviv, Ukraine*) shpotyuk@novas.lviv.ua 316
5. **Bihun R.I., Buchkovska M.D., Stasyuk Z.V.** Quantum Charge Transport in Ultrathin Noble Metal Films (*Ivan Franko Lviv National University, Lviv, Ukraine*) bihun28@ukr.net 185
6. **Bihun R.I., Gavrilyukh V.M., Kravchenko O.E., Stasyuk Z.V.** Formation of the Electronic Structure in Transition d-Metal Films of Nanometer Thickness (*Ivan Franko Lviv National University, Lviv, Ukraine*) stasyuk@electronics.lnu.edu.ua 189
7. **Bihun R.I., Stroganov O.V.** Dynamic Conductivity of Ultrathin Copper and Gold Films (*Ivan Franko Lviv National University, Lviv, Ukraine*) bihun28@ukr.net 186
8. **Bonchyk O.Yu., Mohylyak I.A., Savytsky H.V., Fitsych O.I., Voitsekhovsky A.V., Izhnin I.I.** Comparison of Background Donor Concentration in HgCdTe Grown With Different Technologies (*Pidstrygach Institute for Applied Problem of Mechanics and Mathematics, Lviv, Ukraine; Army Academy named after Hetman Petro Sahaydachnyi, Lviv, Ukraine; National Research Tomsk State University, Tomsk, Russia; Scientific Research Company "Carat", Lviv, Ukraine*) surface@iapmm.lviv.ua 304
9. **Bordun O.M., Medvid I.I., Bordun B.O., Matviishyn M.V.** Dispersion of Refractive Index of Thin Films Based on β -Ga₂O₃ (*Ivan Franko Lviv National University, Lviv, Ukraine*) bordun@electronics.lnu.edu.ua 200
10. **Brusentsov V.A., Pavlenko O.L., Kulish M.P., Dmytrenko O.P., Stubrov Yu., Kachkovsky O.D.** Electronic and Vibrational Structure of Complexes Formed by C₆₀ Fullerenes and Squaraine Dyes (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Institute of Organic Chemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine*) vlbrs@ukr.net 267
11. **Dmitruk N.L., Korovin A.V., Mamykin S.V., Sosnova M.V.** Photon Crystal Defect Mode in 1D Photonic Crystal Terminated by a Metal Film for Using in

- Sensorics (*Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) sosnova@isp.kiev.ua 136
12. **Dranenko A.S., Koshelev M.V.** High Temperature Oxidation of Nickel Silicides Films Formed From Thin Ni Films (*Frantsevich Institute for Problems of Materials Science of NASU, Kyiv, Ukraine*) aleksey30@i.ua 324
 13. **Fedoriv V.D., Kurovets V.V., Garpul O.Z.** Amorphization of Helium Implanted YIG Films (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) ogorishna@ukr.net 262
 14. **Fedoriv V.D., Stashko N.V., Moklyak V.V.** Magnetic Microstructure of Dispersed Yttrium Iron Garnet Obtained by Sol-Gel Method (*Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) nstashko@gmail.com 333
 15. **Fodchuk I.M., Dovganiuk V.V., Gutsuliak I.I., Lytvyn P.M., Safryuk N.V., Kladko V.P., Syvorotka I.M., Bonchuk O.Yu., Kotsyubynsky A.O.** Dependence of Yttrium Iron Garnets Magnetic Domain Structure on Structural Parameters (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics NASU, Kyiv, Ukraine; Scientific Research Company "Carat", Lviv, Ukraine; Institute of Applied Problems of Mechanics and Mathematics of NASU, Lviv, Ukraine; V. Stefanyk Prykarpatsky University, Ivano-Frankivsk, Ukraine*) IvanGutsuliak@mail.ru 263
 16. **Galdina A.N.** Critical Properties of Ferroelectric and Ferromagnet Models (*Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine*) alexandragaldina@gmail.com 95
 17. **Gaponov A.M., Saliy M.Ya, Busko T.O., Kulish M.P., Dmytrenko O.P., Strelchuk V.V., Stubrov Yu.Yu.** Morphology and Vibrational Structure of Multi-Wall Carbon Nanotubes (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine*) antongaponov@ukr.net 284
 18. **Golichenko B.O., Strelchuk V.V., Kravchenko S.O., Kolomys O.F.** Films Based on Colloidal Silver Nanoparticles for Surface-Enhanced Raman Scattering of Rhodamine 6G (*Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) desilor@ukr.net 289
 19. **Horvat H.T., Vlcek M, Rizak V.M.** Compositional Dependence of the Optical Properties of Amorphous $\text{In}_x(\text{Ge}_{40}\text{S}_{60})_{100-x}$ Thin Films (*Uzhhorodskyy National University, Uzhhorod, Ukraine; University of Pardubice, Pardubice, Czech Republic*) horvathalina@mail.ru 268
 20. **Khemiy O.M., Yablon L.S., Budzulyak I.M., Ostafiychuk B.K.** Electrochemical properties of composites $\text{C}/\text{Ni}(\text{OH})_2$ and $\text{C}/\text{Ni}(\text{OH})_2/\text{MoO}_3$ (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) v_kotsyubynsky@mail.ru 368
 21. **Khomenko V., Borchha M., Fodchuk I., Balovsyak S., Tkach V.** Strain Distribution in Synthesized Diamonds (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; V.Bakyl Institute for Superhard Materials of NAS of Ukraine, Kyiv, Ukraine*) primaldarkness@mail.ru 294
 22. **Konakova R.V., Okhrimenko O.B., Lytvyn O.S., Svetlichnyi A.M.** The Features of the Formation A Thin Silicon Oxide Layer on the Surface of Silicon Carbide in the Oxidation in Ozone Pairs (*Lashkarev Institute of Semiconductor*

Physics, Kiev, Ukraine; Southern Federal University, Taganrog, Russia) olga@isp.kiev.ua 91

23. **Korablov S.F., Danko D.B., Sylenko P.M., Khyzhun O.Y., Solonin Y.M.** Increase of TiO₂ Photoanodes Efficiency As a Consequence of Surface Modification With Catalyst for Dark Oxidation Reaction of Water (*Institute for Problems in Materials Science, Kyiv, Ukraine*) sergiy2@yahoo.com 86
24. **Kushnerov O.I., Bashev V.F.** Structure and Mechanical Properties of Splat-Quenched Al-Co-Cr-Fe-Ni-V Alloys Films (*Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine*) kushnrv@gmail.com 198
25. **Kuzma V.V., Bilanych B.V., Flachbart K., Lofaj F., Csach K., Bilanych V.S., Rizak V.M.** Change of Microhardness of Amorphous Thin-Films of the System Ge-As-Se Under the Influence of Laser Irradiation (*Uzhgorod National University, Uzhgorod, Ukraine; Institute of Materials Research of SAS, Kosice, Slovak Republic; Institutes of Experimental Physics of SAS, Kosice, Slovak Republic*) kuzmavasil.v@gmail.com 127
26. **L.Skatkov, L.I.Gomozov V.P., Liashok L.V., Tulskiy G.G., Deribo S.G., Tulskeya A.G.** Role of Metal Impurities in Generation of Defects in Anodic Layers Nb₂O₅ (PCB "Argo", Beer Sheva, Israel; NTU "KhPI", Kharkov, Ukraine) sf_lskatkov@bezeqint 19
27. **Lytvyn P.M., Trunov M.L., Durkot M.O., Lytvyn O.S., Rubish V.M., Prokopenko I.V.** Surface Potential Variation Under e-Beam and/or Light Induced Mass-Transport in As-Se Films (*Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Uzhgorod National University, Uzhgorod, Ukraine; Uzhgorod Scientific-Technological Center of IIR NAS Ukraine, Uzhgorod, Ukraine*) olytvyn@isp.kiev.ua 181
28. **Martinyuk G., Zakordonskyi V., Aksimentyeva O., Skoreiko N.** Effect of Filler Nature on Chemical Resistance and Microhardness of Epoxy Composite Films (*Rivne State Humanitarian University, Rivne, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine*) galmart@ukr.net 71
29. **Maryan V.M., Pop M.M., Gera E.V., Mykaylo O.A., Gatsenko A.A., Horvat Yu.A., Kostyukevych S.O., Mykulanyets-Meshko O.S., Yurkin I.M.** Optical Properties of (As₂S₃)_{100-x}(Sb₂S₃)_x Amorphous Films With Small Content of Antimony (*Uzhgorod Scientific-Technological Center of the Institute for Information Recording, NASU, Uzhgorod Ukraine; Uzhgorod National University, Uzhgorod, Ukraine; V.E. Lashkaryov Institute of Semiconductor Physics, Kyiv, Ukraine*) center.uzh@gmail.com 338
30. **Naidich Yu.V., Gab I.I., Stetsyuk T.V., Kostyuk B.D.** Dispergation Cinetics Under Annealing in Vacuum Copper Nanofilms Deposited Onto Nonmetallic Materials (*Frantsevich Institute for Materials Science Problems of NAS of Ukraine, Kyiv, Ukraine*) igab@ukr.net 77
31. **Odarych V.A.** Structure of Oxide Film Formed on ZnSe Surface at the Contact With Air (*Taras Shevchenko Kyiv National University, Kyiv, Ukraine*) wladodarych@yandex.ua 70
32. **Pavlenko M.M., Iatsunskyi I.R., Smyntyna V.A.** Luminescence and Structural Features of ALD TiO₂ Coated Porous Silicon Surface (*Odessa I.I. Mechnikov National University, Odessa, Ukraine; Adam Mickiewicz University, Poznan, Poland*) n.i.c.k.o.l.a.y.s.n@gmail.com 41
33. **Petrushenko S.I., Dukarov S.V., Sukhov V.N., Parfylo T.O.** The Influence of the Average Grain Size on the Internal Size Effect in Polycrystalline Films of

- Lead (V. N. Karazin Kharkiv National University, Kharkiv, Ukraine) petrushenkokhnu@gmail.com 339
34. **Prokopiv V.V., Pysklynets U.M., Starko I.Yu., Maliarska I.** Quasi-Chemical Analysis of Point Defects in Cadmium Telluride Crystals Doped by Bromine (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine) freik@pu.if.ua 370
 35. **Prysyazhnyuk V.I., Mykolaychuk O.G.** Magnetism of Gd-Fe System (Ivan Franko National University of Lviv, Ukraine) prysjan@i.ua 211
 36. **Ryabtsev S., Bashev V., Gusevik P., Kurdukova C.** A Structure and Physical Properties of Pure Mn, Bi and MnBi Films Obtained by Method of Triod Ion-Plasmous Sputtering (Oles Honchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine) siryabts@i.ua 266
 37. **Savchenko N.D., Shchurova T.N., Opachko I.I.** Simulation of Electronic Structure and Properties for Amorphous GeSe₂-X₂Se₃(X= As, Sb) Films (Uzhgorod National University, Uzhgorod, Ukraine) shchrv@ukr.net 250
 38. **Sergeeva A.E., Fedosov S.N., von Seggern H.** Comparison of Thin Polymer Ferroelectric Films Electrization by Constant Voltage and Constant Current (Odessa National Academy of Food Technologies, Odessa, Ukraine; Darmstadt Technological University, Darmstadt, Germany) aeserg@ukr.net 356
 39. **Sergeeva A.E., von Seggern H., Fedosov S.N.** Experimental Measurement of the Apparent Conductivity of Thin Ferroelectric Polymer Films (Odessa National Academy of Food Technologies, Odessa, Ukraine; Darmstadt Technological University, Darmstadt, Germany) aeserg@ukr.net 306
 40. **Shestopal N., Linnik O., Smirnova N.** Optical, Structural and Photocatalytic Characteristics of Iron-Doped Titania Films Synthesized by Sol-Gel Method (Chuiko Institute of Surface Chemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine) shestopalnataliya@gmail.com 176
 41. **Slyotov M.M., Gavaleshko O.S.** Nature of Edge Luminescence of α -ZnSe Heterolayers (Yu.Fedkovych Chernivtsi National University, Chernivtsi, Ukraine) mslyotov@mail.ru 170
 42. **V.A. Brusentsov, Stubrov Yu.Yu., Pavlenko O.L., Kulish M.P., Dmytrenko O.P., Strelchuk V.V., Kachkovsky O.D.** Electronic and Vibrational Structure of Complexes Formed by C₆₀ Fullerenes and Squaraine Dyes, Morphology and Vibration Structure of Multi-Wall Carbon Nanotubes (Taras Shevchenko National University of Kyiv, Kyiv, Ukraine; V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Institute of Organic Chemistry, National Academy of Sciences of Ukraine, Kyiv, Ukraine) chig-ua@rambler.ru 288
 43. **Voznyi A.A., Kosyak V.V., Opanasyuk A.S.** Structural Features of Sn_xS_y Thin Films (Sumy State University, Sumy, Ukraine) andrey.vozny@gmail.com 325
 44. Zadorozhnyi Vasil Polyschuk S. G., Keibal O. O. 1. Infra-red spectra of thin polytetrafluoroethylene films 2. Frequency dependence and dielectric permittivity of thin polytetrafluoroethylene films Odessa National Academy of Food Technologies fedosov@optima.com.ua 307
 45. **Kondrakhova D.M., Protsenko Z.M., Shamardin A.V., Protsenko I.Yu.** Structure-Phase Composition and Thermoresistive Properties of Film Systems Based on Fe and Cu (Sumy State University, Sumy, Ukraine; Sumy State Pedagogical University by name A.S. Makarenko, Sumy, Ukraine) protsenko.aph@gmail.com 287

1. **Bobrenko Yu.N., Pavelets S.Yu., Semikina T.V., Stadnyk O.A., Sheremetova G.I., Yaroshenko M.V.** n-CdTe-Based Thin-Film Solar Converters (*V. Lashkaryov Institute of Semiconductor Physics, NAS of Ukraine, Kyiv, Ukraine*) sheremet@isp.kiev.ua 43
2. **Boichuk V.I., Peleshchak R.M., Kravtsiv M.M.** Investigation of Physico-Chemical Properties of Organic Materials for Creation of Thin Film Piroelectric Elements of Infrared Radiation Detectors (*Drohobych State Pedagogical University, Drohobych, Ukraine*) m_kravtsiv@ukr.net 223
3. **Borschak V.A., Brytavskiy Ie.V., Smyntyna V.A.** Influence of Localized Charge Distribution on Thin Film CdS-Cu₂S Nonideal Heterojunction Photovoltaic Properties (*I. I. Mechnikov Odessa National university, Odessa, Ukraine*) brytav@ukr.net 104
4. **Kogut I.T., Dovhij V.V., Holota V.I.** Schematic and Topological Elements Optimization Of Transfer Signals Circuits for Analytical Microsystems-on-Chip (*Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) vitya-evil@rambler.ru 342
5. **Slyotov O.M., Gavaleshko O.S., Ulyanitskiy K.S.** The Influence of Own Point Defects on Luminescence of α -ZnSe Heterolayers (*Yu.Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) o.slyotov@chnu.edu.ua 205
6. **Tsizh B., Aksimentyeva O., Chokhan M., Konopelnyk O., Horbenko Yu.** Flexible Elements of GaS Sensors Based on Conducting Polymers (*Kazimierz Wielki University in Bydgoszcz, Bydgoszcz, Poland; Stepan GzytskyLvivNatoinalUniversityofVeterinaryMedicineandBiotechnologies, Lviv,Ukraine; ³Ivan Franko National University of Lviv, Lviv, Ukraine*) tsizhb@ukr.net 59
7. **Veleschuk V.P., Vlasenko O.I., Kisselyuk M.P., Vlasenko Z.K.** Microplasma Characteristics of the Light-Emitting InGaN/GaN Thin-Film Structures on Various Substrates at Reverse Bias (*V. Lashkaryov Institute of Semiconductor Physics, NASU, Kyiv, Ukraine*) yvvit@ukr.net 25
8. **Vuichyk M., Tsybrii Z., Svezhentsova K., Smirnov O., Bilevych O., Sizov F.** The Photosensitivity Nanostructures Based on II-VI Semiconductors (*V. Lashkaryev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) vuychik@isp.kiev.ua 38
9. **Zaitseva L.V., Khrypunov G.S., Zaitsev R.V., Momotenko O.V.** Advanced Capacitive Converters Based on Al/ITO/Polyimide/Al₂O₃ Heterostructures (*National Technical University "Kharkiv Polytechnical Institute", Kharkiv, Ukraine; OJSC «Turboatom», Kharkiv, Ukraine*) zaitsev.poman@gmail.com 53

1. **Alverdiyev I.J., Abbasova V.A., Gahramanova A.S., Yusibov Y.A., Babanly M.B.** Crystallization and Phase Transition of Solid Solutions in The Cu_8GeX_6 - Ag_8GeX_6 (X-S, Se) Systems (*Ganja State University, Ganja, Azerbaijan; Institute of Catalysis and Inorganic Chemistry ANAS, Baku*) babanly_mb@rambler.ru 47
2. **Bacherikov Yu.Yu., Zhuk A.G., Okhrimenko O.B., Kozytskyi S.V., Kardashev D.L.** Electroluminescence of Powder ZnS:Cu Obtained by the Self-Propagation High-Temperature Synthesis (*V. Lashkaryov Institute of Semicondutor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Odessa National Maritime Academy, Odessa, Ukraine*) sykozytskyi@gmail.com 321
3. **Balabai R.M., Gritsulia D.Yu., Zdeschchyts A.V.** Graphene-Based Photonic Crystal: Ab-Initio Calculation (*Kryvyi Rih National University, Kryvyi Rih, Ukraine*) balabai@i.ua 8
4. **Balabai R.M., Gritsulia D.Yu., Zdeschchyts A.V.** Photonic Crystal with Electrical Properties: Ab-initio Calculation (*Kryvyi Rih National University, Kryvyi Rih, Ukraine*) balabai@i.ua 7
5. **Bolesta I.M., Galchynsky O.V., Gloskovska N.V., Yarytska L.I.** Formation of Electro- and Photoelectret States in CdI_2 Crystals With PbI_2 Nano-inclusions (*Ivan Franko Lviv National University, Lviv, Ukraine; Lviv Medical Institute, Lviv, Ukraine; Bogolyubov Institute for Theoretical Physics, Kyiv, Ukraine; Lviv State University of Vital Activity Safety, Lviv, Ukraine*) nglosk@gmail.com 62
6. **Chekaylo M.V., Ukrainets V.O., Il'chuk G.A., Akselrud L.G., Ukrainets N.A., Semkiy I.V.** Structure and Channels of Cationic Conduction of Ag_8SnSe_6 Argyrodite (*Lviv Polytechnic National University, Lviv, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine*) chekaylo@polynet.lviv.ua 270
7. **Chobal I., Kováč F., Petryshynets I., Adamiv V., Burak Ya., Chobal O., Rizak V.** Nanoindentation Studies of LiKB_4O_7 Single Crystals (*Uzhhorod National University, Uzhhorod, Ukraine; Institute of Materials Research, Košice, Slovakia; Institute of Physical Optics named after O.G. Vlokh, Lviv, Ukraine*) iryinka.chobal@gmail.com 335
8. **Danyiuk P.S., Rizak V.M., Krasylynec V.M., Birov M.M., Chychura I.I., Turok I.I., Puga P.P.** Spectroscopic Characteristics of Er^{3+} Ions in Glassy $\text{Li}_2\text{B}_4\text{O}_7$ (*Uzhhorod National University, Uzhhorod, Ukraine; Institute of Electron Physics, National Academy of Sciences of Ukraine, Uzhhorod, Ukraine*) actinate@gmail.com 278
9. **Denysyuk N.M., Khyzhun O.Y., Bekenev V.L., Parasyuk O.V.** Electronic Structure of Tl_3PbI_5 , a Prospective Nonlinear Optical Material (*Institute for Problems of Materials Science, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Volyn National University, Lutsk, Ukraine*) denisyuck.natalia@yandex.ru 213
10. **Dmitruk N.L., Malynych S.Z., Moroz I.E., Kurlyak V.Yu.** Anisotropic Light Scattering by Magnetite Nanoparticles in a Presence of External Magnetic Field (*V. Lashkaryov Institute of Semicondutor Physics, National Academy of Sciences of Ukraine, Kyiv, Ukraine; Hetman Petro Sahaydachnyi Army Academy, Lviv,*

- Ukraine; National University "Lviv Polytechnic", Lviv, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine) s.malynych@gmail.com 322
11. **Fodchuk I.M., Novikov S.M., Yaremchuk I.V., Struk Ya.M.** Reconstitution of Residual Deformation Field From Moiré Patterns in the X-Ray Interferometry (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine*) ivanka_j@mail.ru 290
 12. **Freik D.M., Boichuk V.M., Levkun M.P.** Crystal-Chemical Analysis of Defect Subsystem at the Doped and Annealed in a Pair of Selenium Crystals ZnSe:Mn (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) bvm.79@mail.ru 334
 13. **Freik D.M., Turovska L.V., Boichuk V.M.** Crystal-Chemical Interpretation of Amphoteric Influence of Bismuth Impurity in Tin Telluride (*Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine; Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) tlv87@mail.ru 296
 14. **Galiy P.V., Nenchuk T.M., Mazur P., Poplavskyy O.P., Yarovets I.R.** Structural Phase Transitions on the Free Cleavage Surfaces of GaTe Layered Crystals (*Ivan Franko Lviv National University, Lviv, Ukraine; University of Wroclaw, Wroclaw, Poland; Vasyl Stefanyk PreCarpathian National University, Ivano-Frankivsk, Ukraine*) galiy@electronics.lnu.edu.ua 65
 15. **Galushchak M.O., Krynythy O.S., Mateik G.D.** Technology and Thermoelectric Properties of Semiconductor Materials Based System Pb-Bi-Te (*Ivano-Frankivsk National Technical University of Oil and Gas Ivano-Frankivsk, Ukraine*) oleksandr.krynytsky@gmail.com 219
 16. **Gaponov O.V., Vorobiov O.V., Vasyliiev A.M.** Effect of CaO and BaO Additions on the Electrical Parameters of SnO₂ Based Varistor Ceramics With Nano-Sized Intergranular Phase (*Oles' Gonchar Dnipropetrovs'k National University, Dnipropetrovs'k, Ukraine*) alexei_gaponov@ukr.net 109
 17. **Gentsar P.O., Vlasenko O.I.** Optical Spectroscopy of High Resistance CdTe(III) Single Crystals at the Fundamental Optical Transitions E₀ (*V. Lashkaryev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) rastneg@isp.kiev.ua 352
 18. **Gentsar P.O., Vlasenko O.I., Levytskyi S.M.** Laser-Stimulated Processes in Silicon (*V. Lashkaryev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) rastneg@isp.kiev.ua 37
 19. **Gutsul I.V., Gutsul V.I.** Non-Stationary Temperature Distribution of Anisotropic Optical Thermolement Based on Bi (*Chernivtsi National University, Chernivtsi, Ukraine*) gvibox@meta.ua 187
 20. **Gvozdiyevskij Ye.Ye., Denysyuk R.O., Tomashyk V. M., Tomashyk Z. F.** Influence of the Composition of Solutions HNO₃-HI-Glycerol on the Process of Chemical Etching of CdTe and Solid Solution Zn_xCd_{1-x}Te and Cd_xHg_{1-x}Te (*Ivan Franko Zhytomyr State University, Zhytomyr, Ukraine; V. Lashkaryev Institute of Semiconductor Physics NAS of Ukraine, Kyiv, Ukraine*) gvozd@zu.edu.ua 115
 21. **Horichok I., Pylyponiuk M., Freik N.** Thermodynamics of Point Defects and Their Electrical Activity in ZnTe Crystals (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) HorichokIhor@gmail.com 282
 22. **Imamalieva S.Z., Gasanly T.M., Mehdiyeva I.F., Sadygov F.M.** Fabrication and Some Properties of Solid Solutions in the Tl₅Te₃-Tl₉GdTe₆ System (*Institute of Catalysis and Inorganic Chemistry of ANAS, Baku; Department of General and Inorganic Chemistry, BSU, Baku*) samira9597a@gmail.com 46

23. **Ivanits'ka V.G., Shcherbak L.P., Tomashik V.M., Fochuk P.M., Tomashik Z.F.** Polishing Properties of the KIO_3 -KI-Organic Acid Etchants to the CdTe and $Zn_{1-x}Cd_xTe$ Surfaces (*Yuriy Fed'kovych Chernivtsi National University, Chernivtsi, Ukraine*) p.fochuk@chnu.edu.ua 363
24. **Kaczorowski D., Romaka V.V., Romaka L.P., Horyn A.M., Kovbasyuk T., Stadnyk Yu.V.** Peculiarities of Thermoelectric Half-Heusler Phase Formation in {Gd,Lu}-Ni-Sb Ternary Systems (*W. Trzebiatowski Institute of Low Temperature and Structure Research, Warshav, Poland; National University "Lvivska Politechnika", Lviv, 79013, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine*) romakal@franko.lviv.ua 17
25. **Kamenshchikov V.M., Suslikov L.M.** Calculation of Refractive Indices of Threefold Chalcogenide Crystals (*Uzhgorod National University, Uzhgorod, Ukraine*) kamenschickov.vladimir@yandex.ru 158
26. **Khomenko V., Borchha M., Fodchuk I., Balovsyak S., Tkach V., Yuschenko K., Zvyagintseva A.** EBSD Based Studies of Strain Distribution in Weld Joint of NiCrFe Alloy (*Yuriy Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; V.Bakyl Institute for Superhard Materials of NAS of Ukraine, Kyiv, Ukraine; E.O. Paton Electric Welding Institute, Kyiv, Ukraine*) primaldarkness@mail.ru 293
27. **Kinzerska O.V., Makhniy V.P., Mastruk E.V., Pavluk M.D.** Influence of Impurities Gd and Yb on the IR Transmission of the Crystal ZnSe (*Yuri Fedkovych Chernivtsi National University, Chernivtsi, Ukraine; Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) oksanakinzersky@rambler.ru 153
28. **Kostenko M.V., Nahorni S.S., Cheshko I.V.** Sensitive Elements of Magnetic Field Sensors Formation as Spin-Valve Type Multilayer Structures Based on Co and Cu (*Sumy State University, Sumy, Ukraine*) max.koectenko@gmail.com 145
29. **Krayovskyy V.Ya., Rogl P., Romaka L.P., Stadnyk Yu.V., Kaczorowski D., Korzh R.O., Horyn A.M.** Investigation of $Zr_{1-x}Ce_xNiSn$ Thermoelectric Material (*Ya. Pidstryhach Institute for Applied Problems of Mechanics and Mathematics National Academy of Sciences of Ukraine, Lviv, Ukraine; National University "Lvivska Politechnika", Lviv, Ukraine; Ivan Franko National University of Lviv, Lviv, Ukraine; W. Trzebiatowski Institute of Low Temperature and Structure Research, Warshav, Poland*) vromaka@polynet.lviv.ua 18
30. **Kryskov Ts.A., Lyuba T.S., Optasyuk S.V., Tsykaniuk B.I., Rachkovsky O.M.** Influence of Pressing Conditions on Thermoelectric Properties of $PbTe-Sb_2Te_3$ (*Ivan Ohienko Kamyanets-Podilsky National University, Kamyanets-Podilsky, Ukraine*) fizkaf@ua.fm 122
31. **Kuchakova T., Makara V., Kuchakova I.** Kinetic Phosphorescence of Ceramics ZnS-Cu From a Doze of a Proton Irradiation (*National University Taras Shevchenko, Kyiv, Ukraine*) irinakuchakova@gmail.com 191
32. **Kutny V.E., Rybka A.V., Pudov A.O.** SPS NATO 984655 "Hand-Held Gamma Detector Based on High-Pressure Xenon Gas (*National Science Center "Kharkov Institute Physics and Technology", Kharkiv, Ukraine*) rybka@kipt.kharkov.ua 214
33. **Matkivsky O.M.** Thermoelectric Lead Telluride With ZnO Nanoparticles (*Vasyl Stefanyk Prekarpathian University, Ivano-Frankivsk, Ukraine*) o.matkivsky@opora.org.ua 374
34. **Myronyuk I.F., Mandzyuk V.I., Sachko V.M.** Structure and Morphology of Alumina Materials Prepared by Aluminum Nitrate Nonahydrate Decomposition

(Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine)
DeMaar@ukr.net 50

35. **Myronyuk L.S., Sachko V.M., Karpets M.V., Mandzyuk V.I., Myronyuk I.F.** The Synthesis of $Ti(OH)_3Cl_2H_2O$ Crystal Hydrate Precursor (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine; Frantsevich Institute for Problems of Materials Science of NAS Ukraine, Kyiv, Ukraine) Sapphire17@ukr.net 92
36. **Ostafiychuk B. K., Umantsiv M. M., Yaremiy I. P., Tomyn U. O., Yaremiy S. I.** Taking Into Account the Orientation of Disc-Shaped Clusters in the Static Debye-Waller Factor Calculation (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) UlyaTomyn@gmail.com 265
37. **Potorij M.V., Milyan P.M., Motrya S.F., Tovt V.V.** Physico-Chemical Interaction in Systems Based on Quaternary Compounds $Cu(Ag)In(Cr)P_2S_6(Se_6)$ (Uzhgorod National University, Uzhgorod, Ukraine) pet-milyan@yandex.ru 29
38. **Pysklynets U.M.** Quasichemical Models of Point Defects in CdTe:Br (Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine) pysklynets@pu.if.ua 349
39. **Raransky M.D., Oliynych-Lysyuk A.V., Taschuk O.Yu., Kurek E.I.** Elastic and Non-Elastic Properties of Auxetic Crystals (Yuriy Fed'kovych Chernivtsi National University, Chernivtsi, Ukraine) sashatashuk@gmail.com 150
40. **Rasulova K.D., Aliyev Z.S, Yusibova I.M., Babanly M.B** Phase Relations in the YbTe-SnTe-Bi₂Te₃ System (Department of General and Inorganic Chemistry, BSU, Baku; Institute of Catalysis and Inorganic Chemistry ANAS, Baku) babanly_mb@rambler.ru 48
41. **Rybak O.V.** Vapor Phase Crystal Growth and Properties of Ag- and Cu-Doped PbI₂ Crystals (National University "Lvivska Politehnika", Lviv, Ukraine) orybak@polynet.lviv.ua 11
42. **Tikhonovsky M. Voyevodin V.N., Velikodniy A.N., Bryk V.V.** Nanooxides Strengthened Austenitic Steel (National Science Center "Kharkov Institute of Physics and Technology", Kharkov, Ukraine) tikhonovsky@kipt.kharkov.ua 274
43. **Tovstyuk C.C.** Particularities of the Thermodynamic Functions of Fermi GaS of Electrons in Strongly Anisotropic Materials (Lviv Polytechnic National University, Lviv, Ukraine) cctovstyuk@gmail.com 234
44. **Velikanova T.A., Karpets M.V., Kuprin V.V., Graivoronskii N.A., Zaslavskii A.M.** The Phenomenon of Double Diffraction at TEM-Identification of Mn-Like Phases in Fe-Based Spinning Ribbons (Institute for Problems of Materials Science, NAS of Ukraine, Kiev, Ukraine; National Technical University of Ukraine "Kyiv Polytechnic Institute", Kiev, Ukraine; National University of Life and Environmental Sciences of Ukraine, Kiev, Ukraine) mkarpets@ukr.net 285
45. **Yaremiy I.P., Kozub V.V., Yaremiy S.I., Kravets V.I.** Structural Changes in La, Ga: YIG Under Laser Irradiation (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine) jordan900@ukr.net 264
46. **Zyman Z.Z., Rokhmistrov D.V., Lytkova M.Yu., Goncharenko A.V.** Features of Structure and Phase Composition of Calcium Phosphates Synthesized From Eggshell (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine) dimonrdv@yahoo.com 129

Session 5
Innovative methods for teaching
May 15, 2015

1. **Kurta S.A., Voronych O.L., Matkivskyi M.P., Dzhura U.Ya.** Monitoring of the Cross-Border Region Ukraine-Romania in Methods of Teaching Environmental Sciences (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) kca2007@mail.ru 1
2. **Prokopiv V.V.** Special course "Physics and Technology of Thin Films" for students of specialty "Applied Physics" (*Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine*) freik@pu.if.ua 371
3. **Vasylyeva H.V.** Specific Features of Teaching a Newly Introduced Subject "Fundamentals of Radiochemistry" in Uzhgorod National University (*Uzhgorod national university, Uzhgorod, Ukraine*) h.v.vasylyeva@hotmail.com 164

Наукове видання

**ФІЗИКА І ТЕХНОЛОГІЯ ТОНКИХ ПЛІВОК
ТА НАНОСИСТЕМ**

Програма XV міжнародної конференції

**PHYSICS AND TECHNOLOGY OF THIN FILMS
AND NANOSYSTEMS**

Program of XV International Conference

Редактор *Дмитро Фреїк*

Технічна редакція *Роман Дзумедзей, Любомир Никируй, Володимир Прокопів*

Верстка *Роман Дзумедзей*

Підписано до друку 24.04.2015.

Формат 60x84/16. Гарнітура «Times New Roman».

Папір офсетний. Тираж 350.

Видавництво