

FIFTH INTERNATIONAL CONFERENCE

*“PHYSICAL AND CHEMICAL PRINCIPLES OF
FORMATION AND MODIFICATION OF
MICRO- AND NANOSTRUCTURES”*



CONFERENCE PROGRAM

*KHARKIV, UKRAINE
12-14 OCTOBER, 2011*

INVITATION

Dear Colleague,

We welcome you to participate in the 5th International Conference "Physical and chemical principles of formation and modification of micro- and nanostructures" (FMMN'2011) which will take place in Kharkiv (Ukraine) from 12 to 14 October 2011.

We hope that your contribution in FMMN'2011 will be the keystone of its success.

Yours sincerely,

Prof. Illya I. Zalyubovskii

FMMN'2011 Chairman

FMMN'2011 ORGANIZED BY

- V.N. Karazin Kharkiv National University (KhNU)
- Scientific Center of Physical Technologies of MESU and NASU (SCPT)
- Sumy Institute for Surface Modification (SISM)

Information support of the Conference is provided by Scientific Journal "Physical Surface Engineering".

ADDRESS

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FMMN'2011 SECTIONS

SECTION A: "Physical problems of surface modification: interaction of different kinds of radiation with the surfaces of metals, semiconductors, and dielectrics. Ion implantation, protective coating deposition, composite nanocrystalline layers." (**WEDNESDAY, 12 OCTOBER, 2011**)

SECTION B: "Simulation of processes and phenomena in nanophysics." (**THURSDAY, 13 OCTOBER, 2011**)

SECTION C: "Low temperature plasma physics." (**THURSDAY, 13 OCTOBER, 2011**)

SECTION D: "Physical and Chemical issues of formation, investigation and usage of micro- and nanostructures. Physical and mechanical properties of nanoobjects, the technology of nanostructured materials formation. Application of nanotechnology." (**THURSDAY, 13 OCTOBER, 2011, FRIDAY, 14 OCTOBER, 2011**)

TABLE OF FMMN'2011 GEOGRAPHY

	Paper
Belarus	4
Czech Republic	1
Germany	1
Georgia	2
Kazakhstan	2
Russia	20
Russia + Brazil + Finland + USA	1
Russia + Germany	1
Turkmenistan	2
Ukraine	78
Ukraine + Russia	4
Ukraine + Slovakia	1
Uzbekistan	1
Total	118

TUESDAY, 11 OCTOBER, 2011

Registration of FMMN'2011 Participants **15.00-18.00**

ATTENTION!

*The Registration of Conference Participants will be held in the
"northern" building of V.N. Karazin Kharkiv National University.*

ADDRESS: 6, Svoboda Sq., room#326.

(Please, look at the city plan on the last page of this program.)

WEDNESDAY, 12 OCTOBER, 2011

Registration of FMMN'2011 Participants **09.00 – 10.00**

ATTENTION!

*The Registration of Conference Participants will be held in the
"northern" building of V.N. Karazin Kharkiv National University.*

ADDRESS: 6, Svoboda Sq., room#326.

OPENING AND WELCOME CEREMONY **10.00 – 10.30**

ATTENTION!

*Opening and Welcome Ceremony will be held in the "northern" building
of V.N. Karazin Kharkiv National University.*

ADDRESS: 6, Svoboda Sq., room#325"B".

SECTION A: "Physical problems of surface modification: interaction of different kinds of radiation with the surfaces of metals, semiconductors, and dielectrics. Ion implantation, protective coating deposition, composite nanocrystalline layers."

PLENARY SESSION #1 **10.30 – 13.00**

Co-Chairs: Prof. V.Ye. Strel'nitskij, Prof. N.A. Azarenkov

1. NEW CLASS OF NANOMATERIALS WITH UNIQUE PROPERTIES ON THE BASIS OF MULTICOMPONENT HIGH-ENTROPY ALLOYS. S.A. Firstov, V.F. Gorban, N.A. Krapivka, E.P.

Pechkovsky (Frantsevich Institute for Problems of Materials Science of NASU, Kyiv, Ukraine)

2. NANOTECHNOLOGY: NANOSTRUCTURAL DIAMOND-LIKE COATINGS – ORIENTANTS AND ITS TRIBOLOGICAL PROPERTIES IN INACTIVE OIL. V.A. Levchenko, I.A. Buyanovsky, Z.V.Ignatieva, A.N.Bol'shakov, K.A. Zaharov, V.A. Matveenکو (Lomonosov Moscow State University, Institute of Engineering Science of RAS, Moscow, Russia)

3. PROPERTIES OF OXIDE ZnO, MgO AND Zn_{1-x}Mg_xO THIN FILMS OBTAINED BY PULSED LASER ABLATION. I.S.Virt, I.V.Hadzaman, I.O. Rudyi, M.S. Frugynskyi, I.V. Kurilo, I.Ye. Lopatynskyi (Drogobych State Pedagogical University, Drogobych, Ukraine, L'viv Polytechnic National University, L'viv, Ukraine)

4. PROPERTIES OF NANOCOMPOSITE COATINGS BASED ON Zr, Ti, Si AND N, OBTAINED BY VACUUM ARC DEPOSITION OF THE SEPARATED ION-PLASMA FLOW. P.V.Turbin, V.M. Beresnev, A.D. Pogrebnjak, V.V. Grudnytskyi, L.V.Malikov, U.A. Nemchenko, E.V. Fursova (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine, Sumy State University, Sumy, Ukraine)

5. STRUCTURE OF NANOCRYSTALLINE DIAMOND COATINGS DOPED WITH NITROGEN RECEIVED IN GLOW DISCHARGE PLASMA BY PECVD-METHOD R.L. Vasilenko, V.N.Voyevodin, V.I. Gritsyna, S.F. Dudnik, K.I. Koshevoy, O.A. Opalev, E.N. Reshetnyak, V.Ye.Strel'nitskij (National Science Centre «Kharkiv Institute of Physics and Technology», Kharkiv, Ukraine)

6. EFFECT OF BIAS POTENTIAL ON THE STRUCTURE AND PROPERTIES OF Ti-Al-Y-N COATINGS DEPOSITED FROM FILTERED VACUUM-ARC PLASMA V.A. Belous, V.Ye. Strel'nitskiy, V.G. Marinin, V.V. Vasiliev, V.I. Kovalenko, A.A. Luchaninov, E.N.Reshetnyak, G.N. Tolmachev (NSC Kharkov institute of physics & technology, Kharkiv, Ukraine)

7. INFLUENCE OF AN IRRADIATION ON PARAMETERS OF THE NO AND NC MESFET ON GaAs. A.B. Bibilashvili, Z.V.Jibuti, N.D.Dolidze (I.Javakhishvili Tbilisi State University, Tbilisi, Georgia, Georgian Technical University, Tbilisi, Georgia)

DINNER BREAK

13.00 – 14.00

PLENARY SESSION #2**14.00 – 16.30***Co-Chairs: Prof. V.M. Beresnev, Dr. V.A. Levchenko*

8. INVESTIGATION OF INTERFACES CONTAINING LAYERS TWO-DIMENSIONAL NANOPARTICLES Ag^{@N} V.V. Djelali, A.J.Volyansky, G.G. Zegrya (I.I. Mechnikov Institute of microbiology and immunology, Kharkiv, Ukraine)

9. MORPHOLOGY AND ADHESION STRENGTH OF ION-PLASMA COATINGS. U.S. Nemchenko (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)

10.STRUCTURE OF ALUMINA POWDER COATINGS ON THE SURFACE OF TOOL STEEL. M.S. Prozorova, M.G.Kovaleva, M.Yu.Arseenko, Yu.N. Tyurin, V.M.Beresnev (Belgorod State University, Belgorod, Russia, E.O. Paton Electric Welding Institute, Kyiv, Ukraine, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)

11.THE STRUCTURE AND PHYSICAL-MECHANICAL CHARACTERISTICS OF VACUUM-ARC MULTI-LAYER NANOSTRUCTURED Ti/TiN COATINGS. O.V. Sobol, A.A.Andreev, S.N. Grigoriev, M.A. Volosova, V.F. Gorban, V.A. Stolbovoy, V.E. Filchikov (NTU "KPI", Kharkiv, Ukraine, NSC "KIPT", Kharkiv, Ukraine, Moscow State Technological University "Stankin", Moscow, Russia, Frantsevich Institut Problems of Materials Science, Kyiv, Ukraine)

12.NANOSTRUCTURED COATINGS TiN AND ITS USE IN CUTTING TOOLS. A.A. Andreev, O.V. Sobol, S.N. Grigoriev, M.A. Volosova, V.A. Stolbovoy (NTU "KPI", Kharkiv, Ukraine, NSC "KIPT", Kharkiv, Ukraine, Moscow State Technological University "Stankin", Moscow, Russia)

13.PHASE ANALYSIS, STRUCTURE AND STRESS STATE OF VACUUM-ARC COATING SYSTEM Mo-N. O.V. Sobol, A.A.Andreev, V.A. Stolbovoy, I.V.Serdyuk (NTU "KPI", Kharkiv, Ukraine, NSC "KIPT", Kharkiv, Ukraine)

14.PHASE ANALYSIS, STRUCTURE AND PROPERTIES OF VACUUM ARC MULTILAYER NANOCRYSTALLINE COATING OF Ti-Mo-N SYSTEM A.A. Andreev, O.V. Sobol, V.F. Gorban, V.A. Stolbovoy, V.E. Filchikov (NTU "KPI", Kharkiv, Ukraine, NSC "KIPT", Kharkiv, Ukraine, Frantsevich Institute Problems of Materials Science, Kyiv, Ukraine)

WELCOME PARTY**17.00 – 20.00**

THURSDAY, 13 OCTOBER, 2011

SECTION B: "Simulation of processes and phenomena in nanophysics."

PLENARY SESSION #3

9.30 – 11.30

Co-Chairs: Prof. V.M. Beresnev, Dr. A.Yu. Kropotov

15.MODELING OF TEXTURE DEVELOPMENT AND GRAIN MISORIENTATION DISTRIBUTION IN MAGNESIUM DURING EQUAL-CHANNEL ANGULAR PRESSING. *A.A. Ostapovets, P. Šedá, A.Jäger, P. Lejček (Institute of Physics of Academy of Sciences of Czech Republic, Czech Republic)*

16.MECHANISMS OF MISFIT STRAIN RELIEF IN HETEROEPITAXIAL STRUCTURES. *O.S. Trushin, T. Ala-Nissila, S.C.Ying, E. Granato (Institute of Physics and Technology of RAS, Yaroslavl Branch, Yaroslavl, Russia, Aalto University, Helsinki, Finland, Brown University, Providence, USA)*

17.MODELING OF ELECTRON TRANSPORT CHARACTERISTICS OF ARMCHAIR AND ZIGZAG GRAPHENE RIBBONS. *Yu. O. Klymenko (Space Research Institute of NASU and NSAU, Kiev, Ukraine)*

18.RISK ESTIMATION OF SPACE WEATHER INFLUENCE ON NANOSTRUCTURES. *V.A. Yatsenko (Space Research Institute of NASU and NSAU, Kiev, Ukraine)*

19.EFFECT OF PRESSURE ON THE TYPE OF PHASE TRANSITION BETWEEN THE KINETIC MODES OF BOUNDARY FRICTION. *I.A. Lyashenko, L.S. Metlov, A.V. Khomenko, S.N. Chepulskyi (Sumy State University, Sumy, Ukraine, A.A. Galkin Donetsk Institute for Physics and Engineering, Donetsk, Ukraine)*

20.SIMULATION OF IMPACT OF LASER RADIATION ON THE FORMATION OF REFRACTORY METALS SEDIMENT BY PYROLYTIC REDUCTION WITH HYDROGEN *I.G.Velichko, A.V.Nedolya, I.N. Titov (Zaporizhzhya National University, Zaporizhzhya, Ukraine)*

COFFEE BREAK

11.30 – 12.00

SECTION C: "Low temperature plasma physics."

PLENARY SESSION #4

12.00 – 13.30

Co-Chairs: Prof. O.S. Trushin, Dr. V.G. Udovytskiy

21.IGNITION AND COMBUSTION MODE DC DISCHARGE WITH HOLLOW CATHODE. *V.A. Lisovskiy, I.A. Bogodelniy (V.N.Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

22.STRATIFICATION DC DISCHARGE IN NITROGEN. *V.A. Lisovskiy, Ye.P. Artyushenko, V.A. Koval (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

23.LOW-CURRENT MODE OF THE RF CAPACITIVE DISCHARGE IN LOW PRESSURE AMMONIA WITH INTENSIVE DISSOCIATION OF MOLECULES. *V.A. Lisovskiy (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

24.THE EVOLUTION OF THE ENERGY SPECTRA OF CHARGED PARTICLESFORMED BY THE FLOW OF THE COMBINED ION-SOURCE ELECTRON BEAM WITH A HIGH FREQUENCY SHIFT OF EXTRACTING *S.V. Dudin, D.V. Rafalskiy, A.I.Komir (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

25.INVESTIGATION OF THE CHARACTERISTICS OF THE MAGNETRON DISCHARGE WORKING WITH CHEMICALLY ACTIVE GASES *A.V. Zykov, S.D. Yakovin, A.V. Shishkov (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

DINNER BREAK

13.30 – 14.30

SECTION D: "Physical and Chemical issues of formation, investigation and usage of micro- and nanostructures. Physical and mechanical properties of nanoobjects, the technology of nanostructured materials formation. Application of nanotechnology."

PLENARY SESSION #5

15.00 – 17.00

Co-Chairs: Prof. V.M. Beresnev, Dr. V.A. Levchenko

26.LAWS OF FORMATION STRUCTURE, COMPOSITION AND PROPERTIES OF FILMS OF TRANSITION METALS. *A.A. Goncharov (Donbass State Machinery Academy, Kramatorsk, Ukraine)*

27.STRUCTURAL-MORPHOLOGICAL FEATURES OF FORMATION OF ELECTROCHEMICAL SYSTEMS Ni – In. *A.V.Zvyagintseva (Voronezh State Technical University, Voronezh, Russia)*

28.AGENCY SURFACE OF TEMPERATURE INHOMOGENEITY OF THE ELECTRODE ON HYDROGEN DISTRIBUTION IN ELECTROCHEMICAL SYSTEMS. *A.V. Zvyagintseva (Voronezh State Technical University, Voronezh, Russia)*

29.STRUCTURAL PHASE TRANSFORMATIONS IN W-B4C MULTILAYER PERIODIC COMPOSITIONS WITH 2,5 nm PERIOD ON HEATING. *I.A. Kopylets, E.N. Zubarev, V.V. Kondratenko, K.O. Anan'ev (National technical university «Kharkiv polytechnical institute», Kharkiv, Ukraine)*

30.STRUCTURAL TRANSFORMATIONS IN Mo FILMS, GROWN BY MAGNETRON SPUTTERING ON A-Si. *V.A. Sevryukova, E.N. Zubarev, V. Kondratenko, Yu.P. Pershin, V.O. Tsebenko (National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine)*

31.FORMATION OF MULTICOMPARTMENT PARTICLES AND CAPSULES WITH POLYELECTROLYTE SHELL FORMED OF POLYPEPTIDES AND ENZYME-CATALYZED DISASSEMBLY OF THESE PARTICLES. *I.V. Marchenko, A.M. Yashchenok, T.N. Borodina, T.V. Bukreeva, A.G. Skirtach, G.S. Plotnikov (Institute of Crystallography, Russian Academy of Sciences, National Research Centre "Kurchatov Institute", Moscow State University, Moscow, Russia, Saratov State University, Saratov, Russia, Max-Planck Institute of Colloids and Interfaces, Potsdam, Germany)*

32.ESPECIALLY THE CREATION TOOL MATERIALS POWDERS BASED ON ZIRCONIUM OXIDE. *E.S.Gevorkyan, S.V.Litovchenko, V.A. Chishkala, O.M. Melnyk (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Ukrainian State Academy of Railway Transport, Kharkiv, Ukraine)*

33.RESEARCH OF ZIRCONIA POWDER SINTERABILITY STABILIZED BY YTTRIUM OXIDE *M.S. Bizin, V.O. Chyshkala (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

FRIDAY, 14 OCTOBER, 2011

SECTION C: "Physical and Chemical issues of formation, investigation and usage of micro- and nanostructures. Physical and mechanical properties of nanoobjects, the technology of nanostructured materials formation. Application of nanotechnology." (Continuation)

PLENARY SESSION #6

9.30 – 11.30

Co-Chairs: Prof. V.M. Beresnev, Prof. A.A. Goncharov

34.CARBYNE – THIRD ALLOTROPIC FORM OF CARBON. *V.G.Udovutskiy, A.Yu. Kropotov (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

35.OPTIMIZATION OF SPIN-VALVE STRUCTURES FOR GMR SENSOR APPLICATIONS. *O.S. Trushin, V.V. Naumov, V.F. Bochkarev, A.S. Rudy (Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia)*

36.INELASTIC-ELASTIC PROPERTIES OF POLYETHYLENE-CARBON NANOCOMPOSITE. *S.L. Revo, F.V. Lozovyi, O.I. Boshko, T.G. Avramenko, E.A. Ivanenko (T. Shevchenko Kyiv National University, Kyiv, Ukraine)*

37.ELECTROPHYSICAL AND MAGNETORESISTIVE PROPERTIES OF NANOSTRUCTURED FILM MATERIALS. *O.V.Vlasenko, D.M. Kondrahova, L.V. Odnodvoretz, O.V. Pilipenko, I.Yu.Protsenko, O.P. Tkach, Yu.M. Shabelnik (Sumy State University, Sumy, Ukraine)*

38.STUDY OF JOINT SORPTION OF Ln_{3+} ($\text{Ln-Nd} \div \text{Lu}$) AND Ag^+ IONS FROM SALT SOLUTIONS ON CALCIUM APATITE
A.V.Nechiporenko, V.F. Zinchenko (A.V. Bogatsky Physico-Chemical Institute of NAS of Ukraine, Odessa, Ukraine)

39.HETEROGENEOUS INTERACTION BETWEEN TITANIUM CARBIDES OR OXYCARBIDES AND GASEOUS SILICON MONOXIDE. *E.I. Istomina, P.V. Istomin, A.V. Nadutkin (Institute of Chemistry of Komi Scientific Centre of the Ural Division of the Russian Academy of Sciences, Syktyvkar, Russia)*

40.PROPERTIES OF HEAVY-AGGREGATE HIGH-STRENGTH NANOCONCRETE. *A.A. Smolikov, V.I. Pavlenko, I.I. Kiriya (V.G. Shuhov Belgorod State Technological University, Belgorod, Russia)*

COFFEE BREAK **11.20 – 12.00**

PLENARY SESSION #7 **12.00 – 13.30**

Co-Chairs: Prof. V.M. Beresnev, Prof. E.G. Petrov

41.USING OF POROUS SILICON TO EVALUATE THE ABILITY OF BIOLOGICAL AND BIOLOGICALLY ACTIVE SUBSTANCES TO INDUCE REACTIVE OXYGEN SPECIES. *YU. V. Pivovarenko, V.B.Shevchenko, A.I. Datsenko, V.A. Makara, O.V.Shablykin, T.V. Osadchuk, A.M. Lyakhov (NSC "Physical and Chemical Material Science" of Taras Shevchenko Kyiv National University and NASU, Taras Shevchenko Kyiv National University, Institute of Bioorganic Chemistry and Petrochemistry, Kyiv, Ukraine)*

42.QUARTZ RESONATOR AS METHOD OF IN-SITU STUDY OF EDUCATION AND THE TEMPERATURE STABILITY OF LIQUID PHASE IN NANOSYSTEMS. *M.M. Kolendovsky, A.P. Kryshtal, S.I. Bogatyrenko (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

43.FEATURES OF CONTACT MELTING IN NANOSCALE THIN-FILM OF Al-Ge, Ag-Ge SYSTEMS. *A.A. Minenkov, A.P. Kryshtal, R.V. Sukhov (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

44.ELECTRON PROPERTIES AND DEEP TRAPS OF IRRADIATED EPITAXIAL GaN FILMS. *V.N. Brudnyi, S.S. Verevkin, N.G. Kolin, A.V. Korulin, A.Ya. Plyakob (National research Tomsk State*

University, Tomsk, Russia, L. Ya. Karpov SPhChI, Obninsk, Russia, State Institute of Rare Metals, Moscow, Russia)

45.HIGH FREQUENCY PHOTODETECTOR ON THE BASE OF SILICON WITH GERMANIUM QUANTUM DOTS. *V.N. Brudnyi, V.A. Donchenko, A.A. Zemlyanov (National Research Tomsk State University, Tomsk, Russia)*

46.SOME FEATURES OF PRODUCTION OF LOW-AGGLOMERATED STABILIZED NANOSIZE ZIRCONIA. *O.O.Pasenko, V.G. Vereshchak, O.V. Kozhura, N. Zavhorodnia (Ukrainian State Chemical and Technological University, Dnepropetrovsk, Ukraine)*

DINNER BREAK **13.30 – 14.30**

POSTER SESSION **15.00 – 16.00**

Co-Chairs: Dr. V.G. Kirichenko, Dr. V.G. Udovytskiy

1.LIMITS OF APPLICATION OF MODEL OF NONLOCAL THERMOELASTIC PEAK FOR ANALYSIS OF PHYSICAL PROCESSES IN SOLID AT ION BOMBARDMENT *A.I. Kalinichenko, S.S. Perepelkin, V.Ye. Strel'nitskij (NSC Kharkov institute of physics & technology, Kharkiv, Ukraine)*

2.LOW-TEMPERATURE SINTERING OF ZIRCONIA FROM AMORPHOUS POWDERS. *S.V. Gabelkov, R.V. Tarasov, N.S. Poltavtsev, A.P. Kryshchal, A.V. Pilipenko, A.G. Mironova (State scientific and technical centre for nuclear and radiation safety, Kharkiv, Ukraine, Kharkiv Institute of Physics and Technology National Scientific Center, Kharkiv, Ukraine, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

3.STRUCTURE MODEL OF POROUS BODY COMPACTED FROM AGGLOMERATED POWDERS. *S.V. Gabelkov (State scientific and technical centre for nuclear and radiation safety Kharkiv, Ukraine)*

4.CRYSTALLIZATION OF AMORPHOUS ZIRCONIA NANOPOWDER *S.V. Gabelkov (State scientific and technical centre for nuclear and radiation safety Kharkiv, Ukraine)*

5.SPECIFIC SURFACE AREA CHANGE DURING OXIDE NANOSIZED POWDERS PRODUCTION. *S.V. Gabelkov, T.K. Grigorova, A.G. Mironova, R.V. Tarasov (State scientific and technical centre for nuclear and radiation safety, Kharkiv, Ukraine, National science centre "Kharkiv Institute of Physics and Technology", Kharkiv, Ukraine)*

6. PHYSICAL FOUNDATIONS OF METHOD OF DETERMINATION OF VOLUMES OF PORE CHANNELS IN POWDERS AND POROUS BODIES. *S.V. Gabelkov (State scientific and technical centre for nuclear and radiation safety Kharkiv, Ukraine)*

7. CHEMISTRY OF SURFACE OF MULTILAYER CARBON NANOTUBES. *A.S. Kondratyuk, V.V. Trots, I.M. Ivanenko, T.A. Dontsova (National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine)*

8. SYNTHESIS AND STRUCTURE OF NANOCOMPOSITES OF TIN (IV) OXIDE - MULTILAYER CARBON NANOTUBES. *S.V. Nagirnyak, V.V. Trots, I.M. Ivanenko, T.A. Dontsova (National Technical University of Ukraine "Kyiv Polytechnic Institute", Kyiv, Ukraine)*

9. KINETICS OF CHEMICAL SILVERING PROCESS WITH AUTOCATALYTIC DEPOSITION OF METAL NANOLAYERS ON ACTIVATED DIELECTRIC SURFACE. *V.D. Kalugyn, N.S. Opaleva, O.V. Sydorenko, O.A. Beshentseva, (Institute for Chemistry at V.N. Karazin Kharkiv National University, Kharkiv National Automobile and Highway University, G.S. Scovoroda Kharkiv National pedagogical University, University of civil defense of Ukraine, Kharkiv, Ukraine)*

10. STRUCTURE AND PHASE FORMATION IN TITANIUM ALLOYS TINI AFTER DOUBLE IMPLANTATION N^+ *L.V. Malikov (Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

11. THE OPTICAL PROPERTIES OF SUBMICRON SILICON OXID FILMS AFTER HIGH TEMPERATURE TREATMENT. *V.V. Lytvynenko, V.E. Rodionov, N.A. Rodionova, I.N. Shmidko (Institute of electrophysics and radiational technologies NAS of Ukraine, Kharkiv, Ukraine, V. Lashkarev Institute of semiconductor physics NAS of Ukraine, Kyiv, Ukraine)*

12. EFFECT OF IRRADIATION ON THE STRUCTURE OF ZIRCONIUM ALLOYS. *V.G. Kirichenko, S.V. Starostenko (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

13. TWINNING IN FULLERITE FILMS IRRADIATED ARGON IONS *(A.I. Bazhin, A.N. Trotsan, S.V. Chertopalov, V.A. Stupak (Donetsk National University, Donetsk, Ukraine))*

14. SIMULATION OF THE RESONATOR CAVITY AND THE TOPOLOGY OF THE ELECTRIC FIELD MICROWAVE

REACTOR FOR DIAMOND COATINGS. *Yu.Ya. Volkov, V.A. Ushakov, D.Yu. Zaleski, V.A. Kushnir, V.Ye. Strel'nitskiy (NSC Kharkov institute of physics & technology, Kharkiv, Ukraine)*

15.CORRELATION OF PARTICLE FLUXES AND DIAMOND LIKE CARBON FILM PROPERTIES USING AN ARC PLASMA SOURCE ADJUSTABLE FROM CATHODIC TO ANODIC MODE. *O. Filipov, Volker Buck (University of Duisburg-Essen, Duisburg, Germany)*

16.MECHANISM FORMATION HOT AND COLD SPOTS OF ULTRAVIOLET TARGETED MUTATIONS MODEL. *H.A. Grebneva (Donetsk Physical and Technical Institute, Donetsk, Ukraine)*

17.FORMATION OF A COVERING WITH THE OPEN, VERTICALLY ALIGNED PORES. *I.V. Sinev, A.V. Smirnov, S.D. Syakina, A.I. Grebennikov, V.V. Simakov, V.V. Kisin (Saratov State Technical University, N.G. Chernyshevsky Saratov State University, Saratov, Russia)*

18.X-RAY ANALYSIS OF CHEMICALLY-PRECIPITATED BARIUM TITANATE. *A.I. Akimov, G.K. Savchuk, A.K. Letko, S.V.Kostamarov (SSPA "Scientific-Practical Materials Research Centre of NAS of Belarus", Minsk, Research Institute of Physical and Chemical Problems, BSU, Minsk, Belarus)*

19.THE PHYSICAL PROPERTIES OF MICROWAVE CERAMIC MATERIALS FOR COMPACT ANTENNAS. *A.I. Akimov, G.K.Savchuk, A.K. Letko (SSPA "Scientific-Practical Materials Research Centre of NAS of Belarus", Minsk, Research Institute of Physical and Chemical Problems, BSU, Minsk, Belarus)*

20.USAGE OF MECHANICAL ACTIVATION METHOD FOR FORMATION OF CERAMIC DIELECTRIC MATERIALS BASED ON BA_{0.4}SR_{0.6} (R_{0.5}NB_{0.5}) O₃ (R = HO, ER, TM, YB AND LU) SYSTEMS. *L.A. Bliznyuk, A.A. Klimza (SSPA "Scientific-Practical Materials Research Centre of NAS of Belarus", Minsk, Research Institute of Physical and Chemical Problems, BSU, Minsk, Belarus)*

21.THE STUDY OF HEAT STRUCTURAL CHANGES OF CR-C ALLOYS ELECTRODEPOSITED BY PULSED CURRENT. *A.S.Baskevich, N.Yu. Philonenko (Ukrainian State University of Chemical Engineering, Dnepropetrovsk, Ukraine)*

22.THIXOTROPIC PROPERTIES OF HIGH CONCENTRATED SUSPENSION ON THE BASE OF MECHANOCHEMICAL

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23.AMORPHOUS COMPOSITES OF CALCIUM-MAGNIUM ORGANOPHOSPHATHES AND CARBOXYMETHYL-CELLULOSE.

K.I. Imanbekov, K.M. Tamtiyeva, G.I. Kurbanova (JSC "A.B. Bekturov Institute of Chemical Sciences", Almaty, Kazakhstan Republic)

24.MAGNETOMETRIC INVESTIGATION OF THIN RIBBONS OF THE FE-NI ALLOYS. V.Ju. Danilchenko, R.M. Delidon (G.V. Kurdyumov Institute of Metal Physics NAS of Ukraine, Kyiv, Ukraine)

25.GRAIN STRUCTURE OF THE 60N23 ALLOY REVERTED AUSTENITE FORMED BY α - γ -TRANSFORMATION. V.Ju.Danilchenko, V.V. Tarasov, (G.V. Kurdyumov Institute of Metal Physics NAS of Ukraine, Kyiv, Ukraine)

26.EFFECT OF MICROSTRUCTURE HETEROGENEITY OF HIGHSPEED-QUENCHED FE-NI ALLOYS ON THE CHARACTERISTICS OF MARTENSITE TRANSFORMATIONS. Ie.M. Dzevin (G.V. Kurdyumov Institute of Metal Physics NAS of Ukraine, Kyiv, Ukraine)

27.THE NON-SIMETRIC, NON-STATIONARY TUNNEL JUNCTION. D. V. Abdulkadyrov, N. N. Beletskii (Usikov Institute of Radiophysics and Electronics of NASU, Kharkiv, Ukraine)

28.EROSION OF VACUUM-ARC TIN-COATINGS AND STAINLESS STEEL UNDER IMPACT OF STATIONARY PLASMA OF MAGNETRON TYPE DISCHARGES IN AIR. G.P. Glazunov, A.A. Andreev, M.N. Bondarenko, A.L. Konotopskiy, V.E. Moiseenko, V.A. Stolbovoy (National science center "Kharkiv institute of physics and technology", Kharkiv, Ukraine)

29. THE INFLUENCE OF COPPER NANOPARTICLES MIXED IN OINTMENT BASE IN VARIOUS CONCENTRATIONS ON WOUND REPARATION PROCESSES. O.A. Bogoslovskaya, A.A.Rakhmetova, A.N. Ganzhigaeva, M.J. Mbasha, I.P. Olkhovskaya, N.N. Glushchenko (Institute for Energy Problems of Chemical Physics, Russian Academy of Sciences, Moscow, Russia, "Bioinzheneriya" Center, Russian Academy of Sciences, Moscow, Russia)

30. INFLUENCE OF IMPLANTATION BY PHOSPHOROUS IONS ON PHASE TRANSITION IN $\text{Cu}_6\text{PS}_5\text{I}$ CRYSTALS. I.P.Studenyyak, V.Yu. Izai, V.V.Panko, P. Kúš, A. Plecenik, M. Zahoran,

J.Greguš, T. Roch (Uzhhorod National University, Uzhhorod, Ukraine; Comenius University, Bratislava, Slovakia)

31. FORMATION FEATURES OF THE STRUCTURE ON FE-B-C ALLOYS CRYSTALLIZATION. I.M. Spiridonova, S.V. Pilyaeva (O.Gonchar Dnipropetrovsk national university, Dnipropetrovsk, Ukraine)

32. GEOMETRICAL MODEL TO ANALYZE HIERARCHICAL STRUCTURE OF COLLAGEN OF BIOGENIC ORIGIN. Yu.S. Dzyazko, E.R. Mokrousova, Yu.M. Volfkovich, N.F. Nikolskaya, V.E. Sosenkin (V.I.Vernadskii Institute of General & Inorganic Chemistry of the NAS of Ukraine, Kyiv, Ukraine, Kyiv National University of Technology & Design, Kyiv, Ukraine, A.N. Frumkin institute of Physical Chemistry & Electrochemistry of the RAS, Moscow, Russia)

33. HYBRID NANOCOMPOSITES BASED ON CATION-EXCHANGE RESINS AND ZIRCONIUM HYDROPHOSPHATE. L.N. Ponomareva, Yu.S. Dzyazko, Yu.M. Volfkovich, N.N. Scherbatyuk, Yu.A. Litvinenko, V.N. Belyakov (V.I. Vernadskii Institute of General & Inorganic Chemistry of the NASU, Kyiv, Ukraine, A.N. Frumkin Institute of Physical Chemistry & Electrochemistry of the RAS, Moscow, Russia, N.G. Kholodnii Botany Institute of the NASU, Kyiv, Ukraine, N.P.Semenenko Institute of Geochemistry, Mineralogy and Ore-Formation of the NASU, Kyiv, Ukraine)

34. CLASSIFICATION OF TYPES OF MODIFICATION OF MULTIWALLED CARBON NANOTUBES. E.O. Koval's'ka (O.O.Chuiko Institute of Surface Chemistry Institute of the NAS of Ukraine, Kyiv, Ukraine)

35. INFLUENCE OF DEFECT NANOSTRUCTURE CHANGING ON INELASTIC AND ELASTIC CHARACTERISTICS OF NANOCOMPOSITES BASED ON MULTIWALL CARBON NANOTUBES AND POLYMERS. A.P. Onanko, N.P. Kulish, O.V. Lyashenko, G.T. Prodayvoda, S.A. Vyzhva, Y.A. Onanko (Taras Shevchenko Kyiv national university, Kyiv, Ukraine)

36. SHFEROIDIZATION OF PEARLITE STEELS AFTER SHOCK WAVE TREATMENT. L.V. Gryaznova, A.G. Lisnyak (National Mining University. Dnipropetrovsk, Ukraine)

37. LASER RADIATION EFFECT ON NICKEL COATING STRUCTURE CREATED USING POTENTIOSTATIC MODE. V.A. Zabudovsky, V.V. Dudkina (V. Lazaryan Dnepropetrovsk National University of Railway Transport, Dnepropetrovsk, Ukraine)

38. ANALYSIS OF THE NONEQUILIBRIUM PHASES IN BINARY ALLOYS OF MOLYBDENUM AND TUNGSTEN BASED ON THE CONCEPT OF INTERATOMIC INTERACTION OF THE COMPONENTS. *T.E. Dorogan' (V. Lazaryan Dnepropetrovsk National University of Railway Transport, Dnepropetrovsk, Ukraine)*

39. COPPER FILM ELECTROLYTIC DEPOSITION IN EXTERNAL STATIC MAGNETIC FIELD. *V.A. Zabudovsky, D.I. Boroschuk (V. Lazaryan Dnepropetrovsk National University of Railway Transport, Dnepropetrovsk, Ukraine)*

40. ASSESSMENT OF SOLUBILITY OF BINARY FLUORIDE BAF₂, MGF₂ AND FORMATION OF BAMGF₄ NANOSTRUCTURE IN SALINE MELT. *S.A. Tarasenko, Ie.V. Timukhin, V.F. Zinchenko (A.V.Bogatsky Physico-Chemical Institute of NAS of Ukraine, Odessa, Ukraine)*

41. STRUCTURAL SPECIFICS OF THE OXIDE LAYER MADE IN ELECTROLYTIC PLASMA CONDITIONS. *L.I. Fedorenkova (O.Gonchar Dnepropetrovsk national university, Dnepropetrovsk, Ukraine)*

42. ROLE OF UV-RADIATION AT FORMATION OF NANOSTRUCTURED CARBON NITRIDE. *R.V.Shalaev, A.M.Prudnikov, A.N. Ulyanov, A.I. Linnik, V.N. Varyukhin (Donetsk Institute for Physics and Engineering of NASU, Donetsk, Ukraine)*

43. STRUCTURE AND MAGNETIC PROPERTIES OF ELECTROCHEMICALLY SYNTHESIZED CO-AL₂O₃ COMPOSITES *Iu.I. Chekrygina, B.A. Avramenko, Z.I. Kolupaeva, A.G. Ravlik, B.A. Savitsky, I.G. Shipkova (National Technical University "Kharkiv Polytechnic Institute", Kharkiv, Ukraine)*

44. PHOTOCHEMICAL DEPOSITION OF COPPER, SILVER AND GOLD PARTICLES ONTO QUARTZ MODIFIED BY TITANIUM(IV) BUTOXIDE FILMS. *T.B. Boitsova, I.I. Roslov, V.V. Gorbunova, E.I. Issaeva (Herzen State Pedagogical University of Russia, St. Petersburg, Russia)*

45. PHYSICAL AND CHEMICAL PRINCIPLES OF FORMATION OF NANOSIZED COATINGS AND LAYERS OF TITANIUM NITRIDE ON SILICON SUBSTRATES. *U.V. Kazakov (Moscow Institute of Electronic Technology, Zelenograd, Russia)*

46. MONTE CARLO SIMULATION OF ELECTRON MOBILITY IN SHORT CHANNEL MOSFETS WITH SHALLOW AS WELL AS

DEEP DRAINS. O.G. Zhevnyak (*Belarusian State University, Minsk, Belarus*)

47.FORMATION AND GROWTH OF NUCLEI IN STRONGLY UNDERCOOLED ALLOYS ON THE BASIS OF ALUMINUM. V.F.Bashev, A.M.Ovrutsky, A.S. Prokhoda, A.A. Esaulov (O. Gonchar Dnipropetrovsk National University, Dnipropetrovsk, Ukraine)

48.STABILIZATION OF METAL NANOPARTICLES BY DENDRIMERS. G.M. Nurgazina, A.K. Tashenov, S.S. Dosmagambetova, K.K. Nurkanova (L.N. Gumilev Eurasian National University, Kazahsky University of Technology and Business, Kazakhstan, Astana)

49.OPTICAL PROPERTIES OF ZnSe FILMS. E.M. Sofronova, D.S. Sofronov, V. Starikov, A. Opanasyuk (SSI STC "Institute for Single Crystals", Kharkiv, Ukraine, National Technical University "Kh.P.I.", Kharkiv, Ukraine, Sumy State University, Sumy, Ukraine)

50.PROCESSES CONTACT INTERACTION IN COMPOSITE MATERIALS WITH MICROCRYSTALLINE FILLER. E.V. Sukhovaya, V.A. Syrovatko, V. Syrovatko (O.Gonchar Dnepropetrovsk National University, Dnepropetrovsk, Ukraine)

51.FEATURES OF FORMATION AND MODIFICATION OF NANOSTRUCTURED CALCIUM CARBONATE PARTICLES FOR THE CREATION OF PHOTOVOLTAIC ELEMENTS AND DRUG DELIVERY SYSTEMS. D.B. Trushina, E.V. Shtykova, T.V. Bukreeva (A.V.Shubnikov Institute of Crystallography of RAS, Moscow, Russia)

52.SYNTHESIS OF ALUMINOSILICATE NANOTUBES MODIFIED BY CERIUM (IV) OXIDE. L.Yu. Kotel, A.V. Brichka, A.L. Petranovskaya, S.Ya. Brichka (A.A. Chuiko Institute of Surface Chemistry Institute of the NAS of Ukraine, Kiev, Kyiv, Ukraine)

53.ENHANCEMENT OF THE POSSIBILITY OF RADIATIONS CINTILLATION NANOCRYSTALLINE FILMS CdTe RECEIVED ON ZINC SELENIDE. S.M. Otazhonov, V.N. Alimov, O. Ikromzhonov (Fergana State University, Fergana, Uzbekistan)

54.MICROMAGNETIC MODELING OF SPIN-VALVE STRUCTURE FOR OPTIMIZATION OF MAGNETIC SENSOR. O.S.Trushin, N. Barabanova, V.P. Alexeev (Yaroslavl Branch of the Institute of Physics and Technology of RAS, Yaroslavl, Russia, Department of Physics, Yaroslavl State University, Yaroslavl, Russia)

55. PHOTOELECTRIC PHENOMENA IN Au-Ga_{1-x}Al_xAs STRUCTURES WITH DIFFERENT VALLEY Γ-X-JUNCTIONS.

D.Melebaev (Physical and Mathematical Institute, Ashgabat, Turkmenistan)

56.PHOTOSENSITIVITY SPECTRA SCHOTTKY BARRIERS Au-P-GaP.

A.M. Tashlieva (Physical and Mathematical Institute, Ashgabat, Turkmenistan)

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A.A. Drobyshevskaya, V.M. Beresnev (Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)

58.THERMAL STABILITY FILMS OF DIBORIDES OF TRANSITION METALS.

A.V. Agulov, A.A. Goncharov, A.I. Bazhin, V.A. Stupak, Yu.V. Kudelin, V.A. Turchenko (Donbass State Machinery Academy, Kramatorsk, Ukraine, Donetsk National University, Donetsk, Ukraine)

59.THE STUDY OF PLATINUM SURFACE BY SCANNING TUNNELING MICROSCOPE AFTER ION-PLASMA TREATMENT.

R.V. Selyukov, V.V. Naumov, I.I. Amirov (Yaroslavl Branch of the Institute of Physics and Technology, Russian Academy of Sciences, Yaroslavl, Russia)

60.MOLECULAR DYNAMICS SIMULATION OF LOW ENERGY SPUTTERING OF CUPRUM WITH ARGON IONS.

A.N. Kupriyanov, I.I.Amirov, O.S.Trushin (Yaroslavl Branch of the Institute of Physics and Technology, Russian Academy of Sciences, Yaroslavl, Russia)

61.INVESTIGATION OF SURFACE TOPOGRAPHY OF ORGANIC FILMS, MODIFIED BY LASER RADIATION.

A.M.Turiev (Saint-Petersburg State University, Saint-Petersburg, Russia)

62.COMPUTER SIMULATION OF THE INFLUENCE OF MAGNETIC FIELD ON THE PHYSICAL PROCESSES IN PHOTOELECTRICAL CONVERTERS

N.N. Chernyshov, N.I. Slipchenko, A.Yu. Panchenko, Liu Chan, E.L. Scherbak, E.V. Fursova (Kharkiv National University of Radio Electronics, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)

63. PHYSICAL AND MECHANICAL PROPERTIES OF MODIFIED NANOSTRUCTURED POLYMERS.

N.M. Laskovenko, V.V.Seminog, V.D. Myshak, E.V. Lebedev (The Institute of Macromolecular chemistry of the NAS of Ukraine, Kyiv, Ukraine)

64. ADHESION STRENGTH OF TiN AND Zr-Ti-Si-N NANOCOMPOSITE COATINGS, DEPOSITED BY ION-PLASMA

METHODS. *V.M. Beresnev, P.V. Turbin, M.G. Kovaleva, D.A. Kolesnikov, L.V. Malikov, V.V. Grudnitskiy, Yu.S. Stadnik, E.V. Fursova (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Belgorod State University, Belgorod, Russia)*

65. EFFECT OF NITROGEN DOPING ON THE ELECTRICAL CONDUCTIVITY AND MECHANICAL PROPERTIES OF NANOSCALE CARBON COATINGS ON SILICON. *A.Ya. Kolpakov, I.V. Sudzhanskaya, M.E. Galkina, A.I. Poplavskiy, S.S. Manokhin (Belgorod State University, Belgorod, Russia)*

66. OBTAINING OF Al_2O_3 COATINGS BY REACTIVE DEPOSITION METHOD *O.A. Krychevskaja, S.D. Jakovin (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine, Scientific Center of Physical Technologies of MESU and NASU, Kharkiv, Ukraine)*

67. CRYSTAL STRUCTURE OF SURFACE LAYERS CHANGES IN GGG SINGLE CRYSTALS IMPLANTED BY He^+ IONS DURING NATURAL OLDING. *I.P. Yaremiy, S.I. Yaremiy, V.D. Fedoriv, V.V. Kurovets (Vasyl Stefanyk Precarpathian National University, Ivano-Frankivsk, Ukraine)*

68. SYNTHESIS AND PROPERTIES OF THE POLYANILINE/CARBON NANOTUBES NANOCOMPOSITES *T.P. Dyachkova, A.V.Melezhyk, Z.G. Fetisova, E.M. Utkina, A.G. Tkachev, E.Ju. Filatova (Tambov State Technical University, Russia, Tambov)*

69. STRUCTURAL INHOMOGENEITY OF A GARNET'S THIN FILMS *V.G. Kirichenko, O.V. Kovalenko (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

70. INFLUENCE OF IRRADIATION TO THE SURFACE ZIRCONIUM ALLOYS. *V.G. Kirichenko, O.V. Kovalenko, V.N. Leonov (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

71.PREPARATION AND MECHANICAL PROPERTIES OF GdSb FILMS *Z.U. Jabua, I.L.Kupreisvili, A.V.Gigineishvili, G.N. Iluridze, T.A.Minasvili (Georgian Technical University, Tbilisi, Georgia)*

72. DISTRIBUTION OF SECONDARY PHASES PARTICLES IN AUSTENITIC STEEL *V.G. Kirichenko, O.V. Kovalenko, V.N. Leonov (V.N. Karazin Kharkiv National University, Kharkiv, Ukraine)*

PERSONAL NOTES

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PERSONAL NOTES

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*City Plan –
Location of the V.N. Karazin Kharkiv National University*

