

GEORGIAN TECHNICAL UNIVERSITY

4th International Conference “Nanotechnologies”

October 24 – 27, 2016, Tbilisi, Georgia

Nano – 2016

PROGRAM



Tbilisi
2016

Exhibitions



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High Performance Planar Magnetron Spraying Apparatus with Rotating Magnetic Field

Author of Invention: **Dr. Zaur V. Berishvili** (Tbilisi, Georgia)

WIPO PCT/GE 2016000005 C23C 14/35 (2006.01) 26 April 2016

The proposed innovation relates to an electronic engineering and can be used to produce thin films of materials with improved physical properties using technology of magnetron sputtering in vacuum. It can be used in microelectronics, optics, quantum optics, integrated optics and nanotechnology.

As we know today in research laboratories and manufactures similar manufacturing apparatus for producing thin films do not have such a high target utilization ratio, how our device (70 – 90 %), and the ability of uniform distribution and control the discharge current density is not even considered. Despite some success in this field, to meet the new requirements of modern complex technologies it is necessary to examine in more detail the processes in a planar magnetron sputtering device with a rotating magnetic field.

Presented features and innovations of high-performance planar magnetron sputter coater show that the developed device may be competitive and interest of professionals.

Please contact us at: zaurberi7@yahoo.com

George Nikoladze Conference Hall

Administrative Campus of the Georgian Technical University, Floor 3

77 Merab Kostava Avenue, Tbilisi, 0175, Georgia

Invited Presentation: 20 min

Oral Presentation: 10 min

October 24, 2016

10:00 – 11:00 Registration

11:00 – 13:30 Session 1 – Chair Archil Prangishvili *Georgia*

Opening

Welcome Speeches

I – 138

Perspectives on the role of nanotechnology in sustainable development

F. D. S. Marquis *USA*

I – 7

Advanced and nanomaterials: Challenges and opportunities

H. Aminian *Canada*

I – 196

Tribochemistry versus nano-tribology

K. P. Thiessen *Germany*

13:30 – 14:30 Welcome Party

14:30 – 18:00 Session 2 – Chair Alex Gerasimov *Georgia*

I – 93

Nanosize clusters in compounds InAs and InP and their solid solutions $\text{InP}_x\text{As}_{1-x}$

N. Kekelidze, E. Khutsishvili, Z. Kvinikadze, Z. Davitaia, D. Kekelidze, B. Kvirkvelia, K. Sadradze, L. Nadiradze, G. Kekelidze *Georgia – Germany*

I – 133

Electromagnetics of nanocarbon structures

S. A. Maksimenko *Belarus*

I – 108

A new route to synthesize controlled-size MMn_2O_4 -type transition metal (M = Cd, Zn, Cu) nanomanganites

L. Kotai, P. Nemeth, T. Kocsis, I. E. Sajo, T. Pasinszki, M. A. Szilágyi, R. Kant, P. K. Sharma *Hungary – India*

I – 208

Electrical properties of the composite cellulose–insulating oil–water nanoparticles

P. Zukowski, K. Kierczynski, J. Subocz, M. Szrot *Poland*

I – 17

Prospects of industrial application of nanoboron as a protective material

R. Becker *USA*

O – 9

Antireflective and hydrophobic coated lenses for photovoltaic modules

I. M. Avaliani, T. I. Khachidze, G. G. Dekanozishvili, Z. V. Berishvili *Georgia*

O – 14

Ultrasonic waves and water purification from nanoparticles

A. Bakhtiari, T. Berberashvili, P. Kervalishvili, L. Klimiashvili *Georgia*

O – 20

Carbon coated (Fe-Fe₃C) and Ag-doped lanthanum manganite (Ag_xLa_{1-x}MnO₃) nanocomposites for magnetic hyperthermia of cancer cells

T. Berberashvili, Z. Buachidze, A. Chirakadze, L. Chakhvashvili, D. Jishiashvili, P. Kervalishvili, S. Aleqsanyan, H. Gyulasaryan, A. Manukyan, A. Papoyan, E. Sharoyan, L. Sajti *Georgia – Armenia – Germany*

O – 35

Manganese oxide doping influence on the structure of hydroxyapatite layer build on the Na₂O–CaO–B₂O₃–SiO₂–P₂O₅ glass surfaces

P. Bragieli, P. Ficek, N. Veeraiyah *Poland – India*

O – 38

Effects of functional additives on the self propagating high temperature synthesis (SHS) of nano ZrB₂ and B₄C powders

M. Bugdayci, A. Turan, K. Benzesik, O. Yucel *Turkey*

O – 40

NMR technology for detection of ammonium nitrate and derivatives

T. Chachibaia, M. Pator, R. Fiala *Georgia – Spain – Czech Republic*

O – 41

Synthesis of energetic composites in Ti–Al–B–C system

M. Chikhradze, G. Oniashvili, F. D. S. Marquis *Georgia – USA*

O – 46

Metal nanoparticle producing based on electro-physical methods

V. Chumakov, O. Kharchenko *Ukraine*

O – 59

Influences of gold nanoparticles on characteristics of bone marrow mesenchymal stem cells

O. Fesenko, O. Budnyk, N. Volkova, O. Pavlovich, A. Goltsev *Ukraine*

O – 72

Effect of the nanocomposite solder with a dye on the strength of laser welds of biological tissues

A. Yu. Gerasimenko, L. P. Ichkitidze, E. S. Piyankov, I. V. Pyanov, I. B. Rimshan, D. I. Ryabkin, V. M. Podgaetskii, S. V. Selishchev *Russia*

October 25, 2016

10:00 – 13:30

Session 3 – Chair David Jishiashvili *Georgia*

I – 57

Growth and characterization of III–N ultraviolet lasers and avalanche photodiodes by MOCVD

R. D. Dupuis, J. Kim, M.-H. Ji, Y.-Sh. Liu, Th. Detchprohm, Ts.-T. Kao, Sh.-Ch. Shen, K. Mehta, P. D. Yoder, H. Xie, Sh. Wang, F. Ponce, A. Sood, N. Dhar *USA*

I – 78

Purple of Cassius: Nano gold or colloidal gold?

F. Habashi *Canada*

I – 195

New developments on high efficient solar cells

K. Thiessen *Germany*

I – 6

Comparison of synthesis methods of magnetic nanoparticles and their experimental characterization

L. Almasy, M. Yan, M. J. Henderson, J. Courtois, Q. Tian, K. Parekh, D. E. Creanga, L. Vekas *China – Hungary – India – Romania*

I – 60

Measurement of particle size distribution of fine bubbles by interactive force apparatus

T. Fujita, M. Yamane, G. Dodbiba *Japan*

O – 76

Characterization of engineered nanoparticles in simulated environmental and biological solutions

A. Godymchuk, E. Karepina, E. Yunda, D. Kuznetsov *Russia*

O – 80

The study of magnetic field sensor of high temperature superconducting ceramics

L. P. Ichkitidze *Russia*

O – 83

Charge-coupling effects in Si field-effect nano-transistors with MISIM control system and in field-effect hall elements

M. Il'nitskiy, A. Leonov, A. Malykh, V. Mordkovich, M. Pavlyuk *Russia*

O – 86

The original method for studying optical properties of semiconductor materials and structures and the setup "Polychromator"

L. Jibuti, Z. Jibuti, R. Melkadze *Georgia*

O – 87

Synthesis of In₂O₃ nanowires for gas sensor applications

D. Jishiashvili, L. Chkhartishvili, Z. Shiolashvili, N. Makhatadze, A. Jishiashvili, G. Chonishvili, A. Chirakadze, D. Sukhanov *Georgia*

O – 90

Nanocomposites based on polyurethane / poly(2-hydroxyethyl methacrylate) polymer matrix and nanofillers modified by biologically active substances for biomedical application

L. V. Karabanova, Yu. P. Gomza, S. D. Nesin, O. M. Bondaruk, I. I. Geraschenko, E. F. Voronin, L. V. Nosach *Ukraine*

O – 92

Peculiarities of “alloy” scattering in semiconductors

N. Kekelidze, E. Khutsishvili, D. Kekelidze, B. Kvirkvelia, L. Nadiradze, K. Sadradze *Georgia*

O – 100

Effective segregation coefficient of impurities in Si at pulling from MG-Si melt

E. Khutsishvili, G. Tavadze, L. Gabrichidze, N. Kobulashvili, G. Mikaberidze, N. Kekelidze *Georgia*

O – 101

Photodynamic effect on DNA in the complex with intercalators

I. Khutsishvili, T. Giorgadze, V. Bregadze *Georgia*

O – 104

Luminescence of F-centers in CeO_{2-x} nanocrystals

N. V. Kononets, V. V. Seminko, P. O. Maksimchuk, E. N. Okrushko, A. A. Masalov, I. I. Bespalova, A. V. Aslanov, Yu. V. Malyukin *Ukraine*

13:30 – 14:30

Coffee Break

14:30 – 18:00

Session 4 – Chair Onuralp Yucel *Turkey*

I – 91

Controlling emission of nano-scale particles from engines with particle-grouping concept

D. Katoshevski *Israel*

I – 79

Characterization of boron nitride coatings

T. Hacaloglu, B. Kaftanoglu *Turkey*

I – 126

The interaction of copper and cobalt spinel ferrite nanopowders with organic liquids containing oleic acid

O. M. Lavrynenko, O. Yu. Pavlenko, Yu. S. Shchukin, P. A. Kosorukov, O. V. Legenchyk *Ukraine*

I – 141

Special features of radiation effects in nano-dimensional Si layers and in Si-based structures and devices

V. N. Mordkovich *Russia*

I – 96

Nanotechnology-based remediation of petroleum impurities from water

B. I. Kharisov, H. V. Rasika Dias, O. V. Kharissova *Mexico – USA*

O – 105

Silver nanoparticles in the branched water-soluble polymers dextran–polyacrylamide matrix

O. Korychenska, M. Bezugly *Ukraine*

O – 109

Brain tumor research methods

K. Kotetishvili, A. Gogishvili *Georgia*

O – 117

Nano-layer sensor for single-photon detection in a wide range of the electromagnetic spectrum

A. S. Kuzanyan, A. A. Kuzanyan, V. R. Nikoghosyan, V. N. Gurin, M. P. Volkov *Armenia – Russia*

O – 118

Investigation of nanoskin peculiarities formed during oxidation of liquid gallium surface

G. Kvinikadze, E. Kutelia *Georgia*

O – 124

Thermostable phosphate matrix for nanocomposite materials

K. N. Lapko, A. N. Kudlash, A. A. Sokal, N. S. Apanasevich, D. N. Boiba, V. A. Lomonosov, P. P. Kuzhir, S. A. Maksimenko *Belarus*

O – 125

Ag vs Au in core-shell type nanocomposites FeFe_2O_4 & precious metal: Putative background of different activity in biological environment

O. M. Lavrynenko, G. A. Dolynskiy *Ukraine*

O – 129

Identification of turbostratic bilayer graphene in carbon tribolayers

A. Mailian, Zh. Panosyan, Ye. Yengibaryan, N. Margaryan, M. Mailian *Armenia*

O – 134

Functionalization of the multiwall carbon nanotubes to obtain the strengthening additives for concrete

E. Y. Malikov, O.H. Akperov, M.B. Muradov *Azerbaijan*

O – 136

Investigation of surface properties of chemical vapor deposited and tribological carbon nanostructured films

N. Margaryan, Zh. Panosyan, A. Mailian, S. Voskanyan *Armenia*

O – 146

Nanotechnology and the effect on petroleum engineering education and research

N. Nabhani *Iran*

19:00 – 22:00

Gala-Banquet

October 26, 2016

Trip in Gori city and Interior Kartli region

October 27, 2016

10:00 – 13:30

Session 5 – Chair Lina Sartinska *Ukraine*

I – 201

Tailor-made plasmonic nanoparticles for surface-enhanced raman spectroscopy and imaging

W. Xie, Y. Zhang, M. Salehi, B. Walkenfort, S. Schlucker *Germany*

I – 206

Synthesis and characterization of thin films for wear-resistance, mechanical, optical and optoelectrical applications: A review

O. Yucel, T. Tavsanoğlu *Turkey*

I – 58

Calcinated, ZnO nanoparticle: An effective heterogeneous nanocatalyst for the synthesis of 10-imino-1,3-thiazolo[3,4-c]pyrimido[1,2-a]pyrimidine-2,4-dione derivatives

A. M. M. El-Saghier, M. M. Ahmed *Egypt*

I – 75

On the physical nature of the long-range interaction through the boundary nanometry layer

A. Gerasimov, M. Vepkhvadze, G. Kvesitadze, G. Chiradze *Georgia*

I – 1

Self-propagating high-temperature synthesis of boride containing composites

R. Abdulkarimova, Z. Mansurov *Kazakhstan*

I – 95

Chemically tailored nanostructured semiconductor materials

P. K. Khanna *India*

O – 150

Influence of the shape of magnetic particles on magneto-optical properties of nano-dispersive cobalt

O. Nakashidze, L. Kalandadze *Georgia*

O – 152

Development of nanotechnology based biosensors for environmental monitoring

N. Naumova, S. Vitusevich *Ukraine – Germany*

O – 154

Luminescent properties of redox active $Zr_{1-x}Ce_xO_2$ nanoparticles

E. N. Okrushko, V. V. Seminko, P. O. Maksimchuk, I. I. Bespalova, N. V. Kononets, Yu. V. Malyukin
Ukraine

O – 158

Investigation of diamond-like carbon films and preparation of carbon nanotubes

Zh. R. Panosyan *Armenia*

O – 163

Structural, thermal, electrical and morphological characterization of $(Bi_2O_3)_{1-x-y}(Er_2O_3)_x(Tm_2O_3)_y$ nanostructures prepared by solid state synthesis

Y. Polat, Y. Dagdemir, M. Arı *Turkey*

O – 164

Silver and gold nanoparticle doped polymer and liquid crystal nanocomposites for the thermo- and photo-optical applications

N. Ponjavidze, G. Petriashvili, M. P. De Santo, R. Hamdi, R. Gary, R. Barberi *Georgia – Italy – Tunis*

O – 165

Preparation of nanolayers by low temperature plasma arc technology

A. Prangishvili, Z. Gasitashvili, P. Kervalishvili, D. Gelenidze, G. Gogia, M. Gelenidze, T. Berberashvili *Georgia*

O – 170

Third order nonlinear optical spiropiran containing polymer solutions and layers

I. Radkowska, P. Bragieli, Z. Bak, I. Fuks–Janczarek *Poland*

O – 171

Preparation of ultradisperse crystallites of modified natural clinoptilolite with the use of ultrasound and its application as a catalyst in the esterification reaction of salicylic acid with methanol into methyl salicylate

Ts. Ramishvili, V. Tsitsishvili, R. Chedia, N. Jalagonia, E. Sanaia *Georgia*

O – 172

New approach in development of drugs for multi-drug resistant tuberculosis treatment: metal nanoparticles effectiveness

L. Rieznichenko, S. Dybkova, S. Bilous, T. Gruzina *Ukraine*

13:30 – 14:30

Coffee Break

14:30 – 18:00

Session 6 – Chair Levan Chkhartishvili *Georgia*

I – 29

Quantum dots: Genesis, the excitonic zoo, and nano-photonics

D. Bimberg *Germany – Saudi-Arabia*

I – 178

Properties of nanostructures after effect of concentrated light

L. L. Sartinska, A. M. Kasumov, I. I. Timofeeva, A. Yu. Koval', E. V. Voynich, G. A. Frolov *Ukraine*

I – 115

Mechanical alloying and processing of nanomaterials by high energy mechanical milling

H. Kurama *Turkey*

I – 176

SHS metallurgy of cast alloys: state-of-art, challenges, and recent advancements

V. N. Sanin, V. I. Yukhvid *Russia*

I – 42

Planar clusters of identical atoms in equilibrium: Diatomic model approach for boron

L. Chkhartishvili *Georgia*

I – 2

Feasibility study on the use of Gen5 PECVD reactors for manufacturing of high-efficiency silicon heterojunction solar cells

S. Abolmasov, A. Abramov, D. Andronikov, K. Emtsev, G. Ivanov, I. Nyapshaev, D. Orekhov, A. Semenov, I. Shakhray, G. Shelopin, E. Terukov, B. Strahm, G. Wahli, P. Papet, T. Söderström, Y. Yao, T. Hengst, G. Bubnov, G. Kekelidze *Russia – Switzerland*

O – 174

Silver and gold nanoparticles: efficacy for treatment of maxillofacial injuries and their complications

A. Rybachuk, L. Rieznichenko, L. Panchenko, S. Dybkova, T. Gruzina, V. Malanchuk *Ukraine*

O – 182

Ni nanotubes: influence of deposition parameters on structure and magnetic properties

A. Shumskaya, E. Kaniukov, A. Kozlovskiy, M. Zdorovets, A. Tikhonov, G. Kalkabay *Belarus – Kazakhstan*

O – 185

Usage of intelligent data processing for nanomaterials structure analysis

V. V. Slyusar, O. V. Nikolaev *Russia*

O – 187

Metal oxide nanopowder synthesis by nanohydrometallurgical methods

M. S. Sonmez *Turkey*

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Injectable biopolymer–hydroxyapatite hydrogels

L. B. Sukhodub, L. F. Sukhodub *Ukraine*

O – 191

Geometry induced doping in thin silicon nano-grafting layer

A. Tavkhelidze, L. Jangidze, M. Mebonia, G. Skhiladze, D. Ursutiu, C. Samoila, Z. Taliashvili, L. Nadaraia *Georgia – Germany – Romania*

O – 192

Synthesis of nanostructured ZnO doped SiO₂ thin films by sol–gel dip coating technique

T. Tavsanoglu *Turkey*

O – 193

Hybrid organic / GaN nanowire structures for solar cell applications

G. Tchutchulashvili, K. Klosek, M. Sobanska, K. P. Korona, Z. R. Zytkeiwicz *Poland*

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A study on the effects of functional additives on the self-propagating high-temperature synthesis of nano scale TiB₂

A. Turan, M. Bugdayci, K. Benzesik, O. Yucel *Turkey*

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Titanium manganese oxide synthesis by sol–gel combustion route

E. Yilmaz, S. P. Basag, O. Yucel, M. S. Sonmez *Turkey*

O – 207

Nano-complexes DNA / cationic biodegradable polymers for potential applications in gene therapy

N. Zavrashvili, C. Sarisozen, T. (Tengiz) Kantaria, G. Otinashvili, M. Gurielidze, D. Tugushi, V. Torchilin, R. Katsarava *Georgia – USA*

Concluding Remarks

Poster Presentations

P – 3

X-ray scattering study of the propanoate ester of hydroxypropyl cellulose in the liquid crystal state subjected to shear flow

Kh. H. B. Alammam *Iraq*

P – 4

Effect of Cu doping on structural and some optical studies of nano NiO films prepared by sol–gel technique

F. Sh. H. Al-Gburi *Iraq*

P – 5

Novel preparation of nanofilm suitable to fabrication solar cell from Al–Ni–Cr alloy by thermal evaporation technique

Kh. H. A. Al-Kafajy *Iraq*

P – 8

Theoretical study of the adsorption properties of porous boron nitride nanosheets

O. Yu. Ananina, N. A. Lvova, A. P. Kotlyarov *Ukraine – Russia*

P – 10

Main types of condensed phosphates obtained in open systems from solution – melts of phosphoric acids

M. Avaliani *Georgia*

P – 11

Radiation induced nonlinear cross sections of conductive electrons scattering on charged impurities in doped graphene

A. K. Avetissian, B. R. Avchyan, A. G. Ghazaryan, Kh. V. Sedrakian *Armenia*

P – 12

Landau-quantized graphene in strong radiation field and high harmonic generation

H. K. Avetissian, A. G. Ghazaryan, G. F. Mkrtchian, Kh. V. Sedrakian *Armenia*

P – 13

Preparation and characterization of a novel gelatin / nanodiopside / nanohydroxyapatite composite scaffolds for tissue engineering applications

M. Azadi, Z. Shams Ghahfarokhi, A. Teimouri *Iran*

P – 15

Electron-stimulated desorption of excited atoms from nitrogen films

A. P. Barabashov, I. V. Khyzhniy, S. A. Uytunov, E. V. Savchenko *Ukraine*

P – 16

The effect of reduction temperature of graphene oxide on low temperature ^4He sorption

R. M. Basnukaeva, A. V. Dolbin, V. B. Esel'son, V. G. Gavrilko, N. A. Vinnikov, M. V. Khlistuck, W. Maser, A. Benito *Ukraine – Spain*

P – 18

The flow of the DC current through the high- temperature superconducting ceramics wires

M. V. Belodedov, L. P. Ickitidze *Russia*

P – 19

Synchrotron-radiation photoemission study of the Ba atomic layer deposition on multiferroic BiFeO_3

G. Benemanskaya, G. Iluridze, T. Minashvili, A. Gigineishvili, P. Kervalishvili, G. Frank-Kamenetskaya *Russia – Georgia*

P – 21

Laser-induced periodic metal structures for surface-enhanced sensing

N. Berezovska, I. Dmitruk, S.Vovdenko, N. Zubrilin, O. Dombrovskiy *Ukraine*

P – 22

Formation of copper nanoparticles in metastable iron alloys

T. I. Berikashvili, T. O. Dadiani *Georgia*

P – 23

High performance planar magnetron spraying apparatus with rotating magnetic field

Z. V. Berishvili *Georgia*

P – 24

New chemical methods to form metallic nanoparticles on semiconductor surface

V. Berkovits, V. Ulin, G. Iluridze, T. Minashvili, K. Davitadze, A. Baranov, R. Arinero *Russia – Georgia – France*

P – 25

Magnetite / silica nanocomposites as solid-phase extractants for heavy metal ions

O. Bepalko, I. Melnyk, V. Tomina, N. Stolyarchuk, Y. Zub, M. Vaclavikova *Ukraine – Slovak Republic*

P – 26

On the influence of the temperature on Ag nanoparticles water disersions in polymer matrix forming

T. Bezugla, O. Korychenska, M. Bezuglyi *Ukraine*

P – 27

Low-temperature method of formation of group III nitride (GaN , AlN) nanofilms

A. Bibilashvili, N. Dolidze, R. Gulyaev, Z. Jibuti, G. Skhiladze *Georgia*

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Nanoscale HfO_2 and ZrO_2 gate oxides in field effect transistors

A. Bibilashvili, Z. Kushitashvili, S. Sikharulidze, L. Jangidze *Georgia*

P – 30

Symmetry aspects of optical activity for $\text{Hg}_3\text{Te}_2\text{Br}_2$ crystals

O. V. Bokotey *Ukraine*

P – 31

Theoretical analysis of optical properties for Tl_3XY_4 crystals

O. V. Bokotey *Ukraine*

P – 32

The impact of vacancy defects on the electronic structure of $Hg_3Te_2Cl_2$ crystals

O. V. Bokotey, V. V. Vakulchak, O. O. Bokotey, I. I. Nebola *Ukraine*

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Degradation of the organic compounds by silver nanoparticles under local plasmon resonance conditions

P. Boltovets, S. Kravchenko, B. Snopok *Ukraine*

P – 34

Formation and growth of gold nanostructures on atomically smooth surfaces of MoS_2 , graphite, mica in the non-aqueous medium

T. I. Borodinova, V. I. Styopkin, A. A. Vasko, V. E. Kutsenko, A. A. Marchenko *Ukraine*

P – 36

Laser-induced nano-scale fluorescence resonance energy transfer in DNA

V. Bregadze, Z. Melikishvili, I. Khutsishvili, T. Giorgadze, T. Khuskivadze, K. Sigua *Georgia*

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Adsorption and sorption characteristics of organic materials in metal ion reduction reaction and nanotechnology

V. Bregadze, T. Giorgadze, Z. Melikishvili, I. Khutsishvili, T. Khuskivadze *Georgia*

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ZnO-phthalocyanines hybrid nanostructured films as sensitive layers for chemical sensors arrays

J. Burlachenko, B. Snopok, M. Epifani, S. Capone, P. Siciliano *Ukraine – Italy*

P – 43

Photo-electrochemical properties and photocatalytic activity of nanosized nitrogen and iron doped TiO_2 films

N. Chorna, N. Smirnova, O. Linnik, V. Vorobets, G. Kolbasov *Ukraine*

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Photo stimulated fluorescent enhancement and optically controlled drug release based on gold nanoparticle conjugated organic dye nanocomposite, and the spiropyran doped liquid crystal microspheres

K. Chubinidze, L. Devadze, Ts. Zurabishvili, N. Sepashvili, G. Petriashvili, M. Chubinidze *Georgia*

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Near infrared visualization of prostate cancer cells using gold nanorode conjugated fluorescent dye complex

K. Chubinidze, B. Partsvania, A. Khuskivadze, M. Chubinidze *Georgia*

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Formation of induced anisotropy in compacted chromium dioxid nanopowders

N. V. Dalakova, E. Yu. Beliayev, V. A. Horielyi *Ukraine*

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The electrochemical method producing graphene oxide and reduced graphene oxide from multiwalled carbon nanotubes

M. O. Danilov, I. A. Rusetskii, I. A. Slobodyanyuk, G. Ya. Kolbasov *Ukraine*

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Influence of electric field on the information characteristics of films of polyazobenzene and their metallocomplexes for polarization holography

I. I. Davidenko, N. A. Davidenko, I. A. Savchenko, S. L. Studzinsky, V. A. Pavlov, L. A. Olkhovik *Ukraine*

P – 50

Photoconductivity of film polymeric composites with particles of complexes Cu (II) / Mo (VI)

N. A. Davidenko, V. N. Kokozay, H. I. Buvailo, V. G. Makhankova, I. I. Davidenko, S. L. Studzinsky, L. S. Tonkopiyeva *Ukraine*

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Fluids dynamics in the vicinity offerromagnetic solids under the influence of a DC magnetic field

D. O. Derecha, Yu. B. Skirta, I. V. Gerasimchuk *Ukraine*

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Gold micro and nano particles for surface enhanced vibrational spectroscopy of pyridostigmine bromide

L. Dolgov, O. Fesenko, V. Kavelin, O. Budnik, V. Estrela-Llopis, A. Chevychalova, T. Repan, V. Kondratiev *Estonia – Ukraine – Denmark*

P – 53

Graphene supported ceria – the new perspective catalyst for non-destructive transformations of oxygenates

G. Dovbeshko, W. Mista, P. Kraszkiwicz, V. Boiko, R. Klimkiewicz *Ukraine – Poland*

P – 54

Acoustic detection of resonance plasticization of LiF crystals under the effect of crossed magnetic fields in the EPR scheme

D. Driaev, M. Galustashvili, S. Tsakadze *Georgia*

P – 55

Organic–inorganic hybrid materials as catalysts for fine organic synthesis

O. A. Dudarko, V. V. Sliesarenko, Yu. L. Zub *Ukraine*

P – 56

Effect of the substituents upon the physicochemical properties of silica xerogels

Z. Dudas, L. Almasy, A. Len, C. Ianasi, C. Savii *Hungary – Romania – China*

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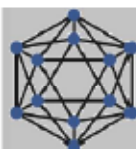
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