



*International Conference on
Modern Applications of Nanotechnology*



The Institute of Physics
of NAS of Belarus



Institute of Heat and Mass Transfer
of the National Academy of
Sciences of Belarus



The Scientific and Practical
Material Research Centre of Belarus



Belarusian State University



Belarusian National
Technical University



Belarusian State University of
Informatics and Radioelectronics

Final Program
IBCN12

*27-29 June 2012
Minsk-Belarus*

www.physics.by
<http://ibcn12.kashanu.ac.ir/>

**Place and time: State Scientific and Production Association
«Scientific-Practical Materials Research Centre of the National Academy of
Sciences of Belarus », Minsk, Belarus, June 27-29, 2012**

NOTES FOR AUTHORS OF ORAL PRESENTATIONS

All speakers have to register for the conference. Please note that your paper will not be published without registration for the conference and the presentation of the poster in its allotted session during the conference. The conference abstracts will be published on CD ROM.

1-Introduction

The guidelines intend to assist authors in preparing oral presentations at the **International Conference on Modern Applications of Nanotechnology (IBCN12) 27-29 June 2012, Minsk, Belarus**. English is the official language of **IBCN12 Belarus**. English should be used throughout your presentation including poster materials. No simultaneous interpretation services will be available. The papers have to be prepared and presented in ENGLISH, the official language of the Conference. As standard technical equipment a computer (PC) and beamer.

2-Information for oral presenters

For **computer driven presentations** please prepare a DVD, CD-ROM or a USB memory stick with your Microsoft PowerPoint presentation. Do not compress (eg.zip) or split your presentation on several media.

The software in use will be Microsoft Windows XP (Service Pack 3) and PowerPoint 2007 (downwards compatible, UK standard, save fonts used in your document). For video and audio files only "MPEG2" and "WAV" data format can be accepted. Your file should be saved as the respective number of your presentation (i.e. "1AP1_1.ppt" or "6BO7_4.ppt"). If your presentation uses digital video or audio files (*.mpg,*.wav) check that they are saved in the same directory as your PowerPoint-file and adapt the link if needed.

You will not be able to use your own computer for presentations at the parallel sessions. The computers at the venue are equipped with Windows XP, Office 2007. Remember to test your presentation in a windows computer beforehand, to avoid unpleasant surprises!. An additional computer will be available at the presentations desk (Preview room) to check the correct functionality of your presentation prior to the session. Please label your DVD, CD-ROM or USB stick with your name and the number of your presentation as indicated in the program.

3-Opening Hours of Presenters' Desk

Oral presentations are organized in oral sessions scheduled in specific lecture rooms given in the program together with the time of presentation of each contribution including discussion and change over. Opening Hours of Presenters' Desk are as follows:

Wednesday, June 27, 2012	17-19
Thursday, June 28, 2012	9-11, 11.30-13.30, 15-17.20
Friday, June 29, 2012	9.30-10.50, 11.30-13.30

4-Other guidelines for Presenters

The computer driven presentations which will be used during your oral presentation must be checked, sorted and handed to the **technician at the Presenters' Desk at least two hours prior to the beginning of the session** of your presentation. The presentation will then be transferred to the respective auditorium. No changes will be possible from 30 minutes before the beginning of a session.

Speakers and Chairperson will meet **in the auditorium 20 minutes prior** to their session to be briefed and to get acquainted with the audiovisual equipment ect. And resolve any problems.

Speakers in Plenary Session will be allotted **a time slot of 30 minutes in total (including questions)**.

Speakers in Oral Sessions will be allotted **a time slot of 20 minutes in total (including questions)**. Please note that the Chairpersons of your session will have strict instructions to

enforce this time limit, so time your lecture carefully, considering approx. **5 minutes for questions.**

Kindly note that advertising material is not allowed to be presented in this scientific Conference. Your presentation may include a maximum of two slides containing information about your organization.

Finally we would like to ask you to help us in preparing a Conference Summary which the Topic Organizers together with the Technical Program Chairman compile at the end of the conference. Therefore we would appreciate to have some highlight material from your presentation. As it might well be that your presentation is considered as such a highlight, we would like to receive **your well conceived conclusions** out of your presentation file, or any highlight material (e.g. photo, graphs) worthwhile to be brought to the attention of the audience in the Closing Session.

5-Lecture Room Equipment

- Beamer;
- Notebook for the upload of presentations (USB Flash Drive, DVD, CD);
- VGA Panel to connect the personal notebook/MacBook with the beamer via a switch (incl. power supply)*;
- Kensington presenter to switch slides incl. laser pointer;
- Necklace speaker microphone;
- Wireless hand-held discussion microphones (larger rooms only).

We look forward to your presentation and to meeting you in Minsk.

NOTES FOR AUTHORS OF VISUAL (POSTER) PRESENTATION

Authors of posters have to register for the conference. Please note that your paper will not be published without registration for the conference and the presentation of the poster in its allotted session during the conference. The conference abstracts will be published on CD ROM.

1-Introduction

The guidelines intend to assist authors in preparing poster presentations at the **International Conference on Modern Applications of Nanotechnology (IBCN12) 27-29 June 2012, Minsk, Belarus** .

English is the official language of **IBCN12 Belarus**. English should be used throughout your presentation including poster materials. No simultaneous interpretation services will be available.

2-Information for poster presenters

When preparing the Poster, presenters should have in mind the objective of capturing the interest of attendees to the work that is being presented. The quality of the presentation stimulates the attention from the audience, and improves the overall satisfaction of the community attending the conference.

As visual presentation is a perfect medium for direct two-way communication with all interested delegates on specific topics, objects or programs.

Good design is essential if this important part of the conference is to be a success. Authors are therefore urged to follow closely these instructions together with the instructions for preparation of papers. The poster message should be clear and understandable without oral explanation. Further, we would like to call the attention of poster presenters to the following items:

- The posters and papers have to be presented in ENGLISH, the official language of the conference.
- Your visual presentation will bear on official number as indicated in the program. This number will also appear on the panel, which has been reserved for you poster presentation.
- The maximum display area on your panel is 0.6 m wide and 1.0 m high. This allows for posters up to A0 format. The boards will be arranged in topic groups and numbered according to the conference program. Double faced adhesive tape will be available to attach your poster on the poster panels.
- The visual presentation has to be headed by the title and the author(s) name(s). A good visual presentation concentrates on the outstanding features of a project, easily grasped by the viewer, with a minimum of text (less than 50% of the total poster area) and readable at a distance of approx. 2 m (use letters at least 10 mm high).
- An envelope will be available on each poster panel to provide space for communication with other participants (exchange of business cards).
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3-Set Up Your Poster]

You will have the unique opportunity that all visual poster presentation can be presented **on all days from Thursday, June 28 through Friday, Jun 29 in the poster are, which is fully integrated in the conference are**. Thus your work and results will enjoy a very high visibility.

4-Schedule of interactive visual presentations

Authors of visual presentations are requested to be present at their posters at least during the times indicated below, in the program booklet and on our web site. This will give all conference delegates the opportunity for questions and discussion, thus fostering information exchange, which is the major objective of this event.

5-Best Poster Awards

Academic Secretariat prepares awards for best posters. International referees will review all posters on display and recommends candidates. The awards will be announced at the closing event on the last day of the conference.

We look forward to your presentation and to meeting you in Minsk.

Session Timing

Wednesday, June 27, 2012

14.00-16.00 - Registration

16.00-16.45 - Welcome Speakers

16.45-17.15 Coffee Break

17.15-19.30 - Keynote Speakers

1. Prof. Sergey V. Gaponenko

B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus

Light—Matter Interaction in Nanostructures: From Basic Science to Novel Materials and Devices

2. Prof. Sergey.A. Chizhik

A.V. Luikov Heat and Mass Transfer Institute of the National Academy of Sciences of Belarus, Minsk, Belarus

Nanomechanics and Nanodiyagnostic methods based on Scanning Probe microscopy

3. Prof. Ali Iranmanesh

Department of Mathematics, Tarbiat Modares University, Tehran, Iran

Some Topological Descriptors of Some Nanostructures

4. Prof. Nima Taghavinia - Physics Department, Sharif University of Technology, Tehran, Iran

Efficiency enhancement strategies for dye solar cells

5. Prof. Erhan Piskin

Head of Bioengineering R&D Center-Biyomedtek at Hacettepe University, Ankara, Turkey.

Gold Nanoparticles: Synthesis and Selected Medical Applications

19.15- Free evening

Thursday, June 28, 2012

08.30-9.00 - Registration

09.00-11.00

Section «Nanocomposites»

1. B. Ghanavati^{1,2}, V.A. Kukareko¹ and A.G. Kononov¹

¹ Joint Institute of Mechanical Engineering, Minsk, Belarus

² Islamic Azad University, Mashahr Branch, Mashahr, Iran

Effect of ion-beam nitriding on the structure and properties of chromium coatings containing nanosized diamond particles

2. P.Kuzhir¹, A.Paddubskaya¹, A. Plyushch¹, S. Maksimenko¹, S. Bellucci², L. Coderoni², F. Micciulla², V. Fierro³ and A. Celzard³

¹Research Institute for Nuclear problems of Belarusian State University (INP BSU), Belarus

^{1,2}INFN-Laboratori Nazionali di Frascati, Via E. Fermi 40, 00044, Frascati, Italy

³IJL – UMR CNRS 7198, Université de Lorraine - ENSTIB, France

Carbon – filled epoxy composites in microwaves

3. Ma. Ganjali, Mo. Ganjali, A. A. Kazemzadeh

Materials and Energy Research Centre, Meshkindasht, Iran

Binary Nanometal Alloy Layer Formation by Laser Induced Dual Plasmas

4. T.M. Ulyanova, N.P. Krutko, L.V. Titova, S.V. Medichenko

Institute General and Inorganic Chemistry of NAS of Belarus, Minsk, Belarus

Refractory Porous Ceramics with Nanostructured Components

5. Monireh Ganjali, Mansoureh Ganjali, M. Ganji, M. R. Rahimipour

Materials and Energy Research Center (MERC), Tehran, Iran

Laser Cladding of Fe – Tic Nano composite on Middle Carbon Steel Substrate

6. Ulyanova T.M.¹, Vitiaz P.A.², Krutko N.P.¹, Titova L.V.¹, Shevchonok A.A.³, Luchenok A.R.³

¹Institute of the General and Inorganic Chemistry of NAS of Belarus, Minsk, Belarus

²Presidium of NAS of Belarus, Minsk, Belarus

³Institute of Powder Metallurgy of NAS of Belarus, Minsk, Belarus

Nanostructured ZTA and ATZ Fibrous Powders and Ceramic Composites Based on Them

09.00-11.00

Section «Nanoparticles (synthesis and characterization)»

1. B. Shirkavand Hadavand¹, F. Najafi¹, A. Mirshokrai², Z. Oskoui Tabrizi²

¹Department of Resin and Additives, Institute for Color Science and Technology, Tehran, Iran;

²Department of Organic Chemistry, Tehran Payamenoor University, Tehran, Iran

UV-Curable Epoxy Acrylate/ Fe₃O₄ Nano Hybrid as a Smart Coatings: Synthesis, Characterization and Properties

2. N.A. Poklonski¹, N.I. Gorbachuk¹, V.K. Ksenevich¹, E.A. Shalaeva¹, V.E. Obukhov², E.A. Tyavlovskaya²

¹Belarusian State University, Minsk, Belarus

²SEC "Plasmoteg" of PTI of NAS of Belarus, Minsk, Belarus

Electric conduction of diamond-like carbon films modified with argon ions

3. B.Akbarian, F.Rashidi

Department of Chemical Engineering, Amirkabir University of Technology, Hafez Ave, Tehran, Iran

Organo Modified Nano Polysiloxane Role in the Enhancement of Water/Crude Oil Emulsion Separation

4. V. Goncharov, G. Gusakov, M. Puzyrev

Institute of the Applied Physics Problems, Minsk, Belarus

Characteristics of the nanostructured carbon coats deposited by laser-plasma method

5. M. Mirzaee, B. Bahramian, A. Amoli, M. Mirebrahimi

Department of Chemistry, Shahrood University of Technology, Iran

Catalytic Application of Molybdenum Hexa-Carbonyl Supported on Functionalized Nano-Boehmite

6. A. Klushko¹, E. Chubeno¹, S. Futko², V. Bondarenko¹, K. Dobrego², L. Dolgyi¹

¹Department of Micro- and Nanoelectronics, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

²Heat and Mass Transfer Institute, National Academy of Sciences of Belarus, Minsk, Belarus

Matrix micro-thrusters for nanosatellites

11.00-11.30 Coffee Break

11.30-13.30

Section «Nanocomposites»

1. Ghazban Zadeh E.

Belarusian National Technical University Minsk, Belarus

Characteristics and Applications Nanocomposite Tungsten Carbides-Cobalt (WC-10% Co) in Mechanical Industry

2. O.V. Goncharova

B. I. Stepanov Institute of Physics, National Academy of Sciences, Minsk, Belarus

The Components for Producing Detectors, Markers, Transformers of Radiation Using Films with Nano-Sized Elements

3. S.N. Terekhov¹, A.Yu. Panarin¹, I.A. Khodasevich¹, G.G. Gorokh² and V.P. Bondarenko²

¹ B.I. Stepanov Institute of Physics of NASB, Minsk, Belarus

² Micro- and Nanoelectronics Department of BSUIR, Minsk, Belarus

Plasmonic Structures for Surface-Enhanced Raman Scattering Based on Silvered Porous Substrates

4. M.H. Entezari, T. Soltani

Department of Chemistry, Ferdowsi University of Mashhad, Mashhad, Iran

Sono-synthesis of Bismuth Ferrite Nanoparticles with High Photocatalytic Activity in Degradation of Rhodamine B under Solar Light Irradiation

5. G.A. Rusetsky¹, O.Kh. Khasanov¹, N.N. Rubtsova²

¹SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

²Institute for Semiconductor Physics Siberian Branch of RAS, Lavrent’eva Ave., Novosibirsk 630090, Russia

Nonstationary optical processes in semiconductor nanostructures

6. V.S. Urbanovich

SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

High Pressure Sintering as Advanced Technology of Obtaining of Nanostructured Ceramics Based on High-Melting Point Compounds

11.30-13.30

Section « Nanoparticles (synthesis and characterization)»

1. Gh. Nasiri-Khuzani*¹, M. A. Asoodar¹, M. Rahnama¹, H. Sharifnasab²

¹Department of Agricultural Engineering, University of Agriculture and Natural Resources Ramin, Khuzestan Iran; ²Scientific Board of Agricultural Engineering Research Institute, Karaj, Alborz Iran

Tribological Performance of Nano-Diamond as Oil additives used in Massey Ferguson model 399 tractor Engines

2. A.Moosavi, A. Moghimi

Dept. Mech. Eng., Sharif University of Technology, Tehran, Iran

Numerical Study of Pinning of Contact Line on Nanometric Steps

3. S.S. Grabchikov¹, A.V. Trukhanov¹, Ali Bakouie², V.I. Gnedih³, O.E. Kozlov³, V.A. Kotcov³, P.P. Moiseev³ and A.V. Viktorov³

¹SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

²Tarbiat Modarres University, Iran

³Space Research Institute, Russian Academy of Sciences, Moscow, Russia

Application of multilayered film electromagnetic screens in space equipment

4. Kh. Fathalikhani, A. R. Ashrafi

Faculty of Mathematical Sciences, University of Kashan, Kashan, Iran

The Eccentricity Sequence of Some Carbon Nanotubes

5. R. Ashrafi

Department of Nanocomputing, Institute of Nanoscience and Nanotechnology, University of Kashan, Iran

Symmetry of Fullerenes and Nanotubes

6. A.A. Shokri^{1,3}, Sh. Nikzad²

¹Department of Physics, Payame Noor University (PNU), 19395-3697, Tehran, Iran

²Department of Physics, Islamic Azad University, Tehran, Iran

³Computational Physical Sciences Research Laboratory, Department of Nano-Science, Institute for Research in Fundamental Science (IPM), P.O. Box 19395-5531, Tehran, Iran

Effect of Opened and Closed End CNT Leads on Electrical Transport through C₆₀ Molecule

13.30-15.00 Lunch

15.00-17.20

Section «Nanocomposites»

1. H. Khorasanizadeh, J. Amani, M. Hemmat

Dept. of Mech. Eng., University of Kashan, Kashan, Iran

Numerical Study of Cu-water Nanofluid Mixed Convection and Entropy Generation in an Inclined Square Cavity with Inlet and Outlet Ports

2. F.F.Komarov¹, V.V.Pilko¹, A.D.Pogrebnyak²

¹Institute of the Applied Physics Problems, Minsk, Belarus

²Sumy University, Sumy, Ukraine

Formation of perspective nanocomposite coatings by magnetron deposition

3. Chekan N.M., Bahayeu S.I. Akula I.P., Parshuto A.A.

PLASMOTEG SEC of Physical-Technical Institute of the NAS of Belarus, Minsk, Belarus

Composite nanostructured materials based on alumina ceramic and diamond-like carbon

4. M.A. Britch, K.V. Dobrego and L.I. Krasovskaya

Heat and Mass Transfer Institute, National Academy of Sciences of Belarus, Minsk, Belarus

Modelling of the CNT-polymer nanocomposites

5. N.Refahati¹, A.V.Mudryi², A.Karotki³, M.V.Yakushev⁴

¹Department of Mechanical Engineering, Damavand Branch, Islamic Azad University, Damavand, Tehran, Iran

²Scientific-Practical Material Research Centre of the National Academy of Science of Belarus, 220072, Minsk, P.Brovki 19, Belarus

³Department of Physics, Strathclyde University, Glasgow, G4 0NG, UK

Characterisation of ZnO and In₂O₃:Sn-based nanoscale thin film on polyimide substrates

6. H. Bandarenka, K. Artsemyeva, V.Bondarenko

Department of Micro- and Nanoelectronics, Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus

Copper-porous silicon nanocomposites: formation, properties and applications

7. S. D. Latushkina¹, D. V. Kuis², P. V. Rudak², O. Y. Piskunova², O. I. Gapanovich¹, A. G. Zhizhchenko¹

¹Physical Technical Institute, the Academy of Sciences, the Republic of Belarus, Minsk, Belarus

²The Belarusian State Technological University, Minsk, Belarus

Generation of protective nanostructure vacuum coatings by using separated plasma flows

15.00-17.20

Section «Nanoboitechnology»

1. E. Alipour¹, H. Ghourchian¹ and S. M. Boutorabi²

¹Laboratory of Microanalysis, Institute of Biochemistry & Biophysics, University of Tehran, Tehran, Iran;

²Pishtazteb Medical Company, Tehran, Iran

Gold Nanoparticle Based Capacitive Immunosensor for Detection of Hepatitis B Surface Antigen

2. M. Salouti^{*1}, A. Ahangari², Z. Heidari¹, F. Saghatchi³

¹Biology Research Center, Zanjan Branch, Islamic Azad University, Zanjan, Iran;

²Department of Microbiology, Faculty of Sciences, Zanjan Branch, Islamic Azad University, Zanjan, Iran;

³Department of Radiology, Faculty of Paramedical and Health, Zanjan University of Medical Sciences, Zanjan, Iran

GNPs-Gentamicin Conjugate: A Targeting Contrast Agent for X-ray Imaging of Infectious Foci

3. N.Farhadian

Ferdowsi University of Mashhad, Iran

Theoretical Study of the Transport Phenomena of Ibuprofen Chiral Molecules Inside Nanopores of Lysozyme Protein Crystal

4. ¹Tcherniavskaia E.A., ¹Saetchnikov V.A., ²Schweiger G., ²Ostendorf A., ¹Saetchnikov A.V.

¹Belarusian State University, Minsk, Belarus

²Ruhr-University Bochum, Germany

Identification of biological agents and drug products on the basis of optical resonance of whispering gallery modes in dielectric microspheres

5. R.Mehrab¹, A. A Imani Fooladi², N.Amir Mozafari³, MR.Nourani⁴

¹Department of Microbiology, Science and Research Branch, Islamic Azad University, Tehran, Iran;

²Applied Microbiology, Research Center, Baqiyatallah University of Medical Science, Tehran, Iran;

³Department of Microbiology, Tehran University of Medical Sciences, School of Medicine, Tehran, Iran;

⁴Chemical Injury, Research Center (CIRC), Baqiyatallah University of Medical Sciences, Tehran, Iran

Antibacterial Activity Of Nanosilver Colloidal Solution Against ESBL-Producing Pseudomonas Aeruginosa

6. M. R. Nourani¹, A. A. Imani Fooladi²

¹Tissue Engineering Division, Baqiyatallah medical Sciences University, Tehran, Iran

²Applied microbiology Research Center, Baqiyatallah medical Sciences University, Tehran, Iran

Application of Nano-Bioglass in Bone Tissue Engineering

7. G. A. Kojouri, A. Kojouri, M. Shahnamnia

Department of Clinical Sciences, School of Veterinary Medicine, Shahrekord University, Shahrekord, Iran.

Some Physiological Aspects of Nano Selenium Particles in Compare with Sodium Selenite

17.20-17.40 Coffee Break

18.30-21.30 Conference Dinner

Friday, June 29, 2012

09.30-10.50

Section « Nanomagnetism »

1. N.A. Poklonski, S.A. Vyrko, S.V. Ratkevich and E.F. Kislyakov
Belarusian State University, Minsk, Belarus

Magnetic moments of star and ring conformations of C₁₀ molecule

2. A.V. Trukhanov¹, S.S. Grabchikov¹, S.A. Sharko¹ and N.N. Mukhorov²

¹SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus.

²B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus

Magneto-resistive properties of Co/Cu and Ni/Cu multilayered nanowires

3. M. M. Alavi Nigjeh

Department of Chemistry, Faculty of Science, Imam Khomeini International University, Qazvin, Iran

Magnetic Polyurethane Rigid Foam Nanocomposites Synthesis and Characterization

4. Govor G.A., Vetcher A.K., Mitsiuk V.I.

SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus.

Development and application new composite soft magnetic materials with nanoscale coatings

09.30-10.50

Section « Nanosensors »

1. S. Nikmanesh^{1,2}, M. M. Doroodmand^{2,3}, M.H. Sheikhi^{1,2}

¹School of Electrical and Computer engineering, University of Shiraz, Shiraz, Iran

²Nanotechnology Research Institute, University of Shiraz, Shiraz, Iran

³Department of Chemistry, College of Sciences, Shiraz University, Shiraz 71454, Iran

Fabrication of CH₄ Sensor Using Inter-Digitated Electrode, Modified with Tungsten Carbide/Tin Oxide Core-Shell

2. S.E. Demyanov, E.Yu. Kaniukov and A.V. Petrov

SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

Nano- and Microelectronic Systems Based on Flexible Polymer Films with Swift Heavy Ion Tracks

3. S.E. Demyanov, N.A. Kalanda and L.V. Kovalev

SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

Devices based on Magnetic Tunnel Junctions of Sr₂FeMo_{6-d} Complex Oxides for Spintronic Applications

4. S.E. Demyanov, E.Yu. Kaniukov and A.V. Petrov

SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus

Low-Temperature Magnetic Field Sensors Based on Si/SiO₂/Metal Nanostructures

10.50-11.30 Coffee Break

11.30-13.30

Section « Nanophotonics »

1. M.R. Khanlary^{1*}, A. Hajinorozi¹, S. Baghshahi²

¹Physics Department, Imam Khomeini International University, Qazvin, Iran

²Material Science Department, Imam Khomeini International University, Qazvin, Iran

Influence of dopant concentration on the characterization of sole-gel derived ZnO:Ce nanostructures

2. S.F.Akhtarian far, A.Ramazani – Institute of Nanoscience and Nanotechnology, University of Kashan, Kashan, Iran

Effect of Y_2O_3 Nanoparticles on Propagation of Ultrashort Pulse in Silica Optical Fibre Made by Solution Doping Technique

3. E. V. Klyachkovskaya, S.V. Vaschenko, N.D. Strekal, and S.V. Gaponenko

B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus

Nanoplasmonic Enhancement of Raman Scattering from Inorganic Crystallites

4. O. S. Kulakovich

B.I. Stepanov Institute of Physics, National Academy of Sciences of Belarus, Minsk, Belarus

Nanoengineering of colloidal structures for ultrasensitive spectral-analytical applications

5. H.R. Zangeneh¹, M. Asadniafard Jahromi¹, F. Karimi Moghadam^{1,2}

¹Department of photonics, University of Kashan

²Department of Physics, Malayer Branch, Islamic Azad University

Investigation of Photonic Crystal Slabs by FDTD Method

6. M. Nikoufard¹, A. Mirzaei², M. Omid Roozbahani²

¹Department of Electrical Engineering, Faculty of Engineering, University of Kashan, Kashan, Iran

²Department of Electrical Engineering, Faculty of Engineering, South Tehran Branch, Islamic Azad University, Tehran, Iran

Photonic Crystal-Based Polarization Splitter on InP substrate

11.30-13.30

Section « Nanosensors »

1. A.V. Trukhanov¹, A.I. Stognij¹, S.V.Trukhanov¹, N.N.Novitskij¹, A.N.Vasiliev² and V.A.Ketsko³

¹ SSPA “Scientific-Practical Material Research Centre of NAS of Belarus”, Minsk, Belarus.

²Low temperatures physics and superconductivity department, MSU named after M.V. Lomonosov, Moscow, Russia

³Kurnakov Institute of General and Inorganic Chemistry, Russian Academy of Sciences, Moscow, Russia

Structure, magnetic and magnetotransport properties of $Mg(Fe_{0.8}Ga_{0.2})_2O_{4-d}$ thin films on Si substrates

2. V.V. Khatko¹, G.G. Gorokh², I.A. Taratyn^{1,3} and Yu.M. Pleskachevskij¹

¹ Belarussian National Technical University/Micro- and NanoEngineering Department, Minsk, Belarus

² Belarus State University of Informatics and Radioelectronics/Research Laboratory of Nanotechnology, Minsk, Belarus

³ Minsk Research Institute of Radiomaterials/MicroMechanics Department, Minsk, Belarus

Low-Power Chemical Sensors Based on Nanoporous Anodic Alumina Substrates

3. L.P. Grakovich, M.I. Rabetsky, D.A. Tulin and L.L. Vasiliev
Heat and Mass Transfer Institute, National Academy of Sciences of Belarus, Minsk, Belarus
Heat pipe evaporations with nanoporous coating

4. V. Labunov, B. Shulitski, A. Tymoshchyk, Y. Tamashevich
Belarus State University of Informatics and Radioelectronics, Minsk, Belarus
Synthesis of aligned carbon nanotubes arrays for field emission application

13.30-15.00 Lunch

15.00-16.30 - Interactive Visual Presentations

16.30-17.15 - General discussion on closing the conference

Poster presentation

International Conference on Modern Applications of Nanotechnology (IBCN12) 27-29 June 2012, Minsk, Belarus

1. Development & Synthesis of Nickel–Nylon Smart Nanocomposites

Ma. Ganjali¹, Mo. Ganjali², A. Naimzad³

^{1,2}Materials and Energy Research Centre, Nanotechnology and Advanced Materials Department, Meshkindasht, Karaj, Iran

³Tarbiat Modares University, Faculty of Engineering, Jalal Ale Ahmad Highway, Tehran, Iran

2. A Nano-scale Structural Study of Hydrophobic Nanostructured Adsorbents

A. Khosravi¹, A. Golchoobi², M. Moshtaghi³, M. Safdari⁴

¹School of Chemical Engineering, College of Engineering, University of Tehran, Tehran, Iran

²Chemical Engineering Department, Tarbiat Modares University, Tehran, Iran

³Chemical Engineering Department, Islamic Azad University of North Tehran, Tehran, Iran

⁴Chemical Engineering Department, Islamic Azad University of Dashtestan, Borazjan, Iran

3. Production, Evaluation and Usage of Zero-Gel Nano-Composite Cu-SiO₂ by Chemical Methods

A.Sattari, N.Shadanpoor, P.Ashtari

Agriculture, Medicine and Industry Research School, Karaj-Iran

4. Synthesize of ZnO Nanoparticles via a Sonochemical Method

Monireh Ganjali¹, Mansoureh Ganjali¹, A. Hassanjani¹, S. M. Kazemzadeh¹, M. R. Vaezi¹

¹Materials and Energy Research Center (MERC), Tehran, Iran

5. Preparation of Iron Oxide Ionic Ferrofluid and Investigation Its Properties

H. Asnaashari Eivari¹, Z. Sohbatzadeh¹, H. Arabi², A. Rahdar¹

¹Science department, University of Zabol, Zabol, Iran

²Science department, University of Birjand, Birjand, Iran

6. Preparation of Polypropylene Nano Composite Containing TiO₂ and ZnO and Evaluation of Antibacterial Activity Against Escherichia Coli

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7. Synthesis of TiO₂-Polyaniline Nanocomposite in Core-Shell Structure and Investigation of its Photocatalytic Activity

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8. Determination of Trichloroacetic Acid (TCAA) Using CdO Nanoparticles Modified Carbon Paste Electrode

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9. Experimental investigation of natural convection heat transfer of CuO/Turbine oil nanofluids in square enclosure

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10. Polyurethane Rigid Foams Nanocomposites Based on Surface Modified Nanosilica

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11. Synthesis and Characterization of UV-Curable Epoxy Acrylate/ZnO Nano Hybrid as an Anti Corrosion Coatings

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12. Effect of nano ZnO on Thermal and Antibacterial Properties of Polyester Powder Coatings

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13. The Effect of Nano Al₂O₃ on Properties of Metallic Bonding Powder Coatings

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14. Study on the Size and Structure of ITO Nanoparticles Prepared by Oxalate and Pechini Method

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15. The Wiener Index of Nanocones

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16. InP-Based Photonic Crystal Electro-Optic Modulator

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17. Hydrogen Sensor Based on Carbon Nano-tube Fortified by Palladium

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18. Synthesis and characterization of MWCNT/CdS nanocomposite

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19. Super Hydrophobic Property of the Nylon Fabric Using Silica Nanoparticles

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20. A Molecular Simulation Study of Stability Behavior of Charged Nanoparticles

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21. Application of Nanotechnology for Activation of Cement Replacement Materials

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22. Circuit Model Analysis of Quantum Wire Infrared Photodetectors

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23. Surface plasmon absorption of Iron nanoparticles

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24. Computational Study of Thermodynamical Characteristics and Spectroscopic properties of Nano Bio complexes of Adenine and Nicotinic Acid with Fullerenes

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25. Quantum Interference Control of Ballistic Magnetoresistance in Magnetic Nanowire Containing two Atomic-Size Domain Walls by Applying a Lateral Gate Potential

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26. Effect of GaAs/AlAs Nano Layer in Bragg Mirror on Consecutive Single Edge Diffraction with Helium-Neon Laser

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27. Economic Investigation of Alumina Nanofluid Application in an Industrial Shell and Tube Heat Exchanger

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28. Synthesis and Characterization of Nano-Sized Hexagonal and Spherical Nanoparticles of Zinc Oxide

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29. Electromagnetically Induced Transparency of a Two-Dimensional Hexagonal Quantum Dot

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30. Absorption of Water-Solute Dyes with Ferro-Fluid Modified Saccharomyces cerevisiae cells

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31. Synthesis and Studies of Magnetic Properties of Nickel and Nickel Oxide Nanoparticles

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32. Hydrostatic Pressure Effects on the Electronic Energy Levels of a Quantum Dot Confined at the Center of a Nano-wire

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33. Synthesis of Maghemite Nano-particles and Its Application As Radionuclidic Adsorbant to Purify ¹⁰⁹Cd Radionuclide

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34. Influence of Additives on the Structural and Morphological Properties of Zinc Oxide Powders

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35. Sol-Gel Derived Bioactive Glass Containing SiO₂- MgO-CaO-P₂O₅ As An Anti-Bacterial Scaffold

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36. Application of Nano-Titanium Sealants to Improve the Operational Performance of Highway Pavements

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37. Experimental Investigation of the Performance of Nano-Modified Hot Mixed Asphalt Mixtures

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38. Electrokinetic manipulation of Nano-sized materials in microfabricated Devices

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39. 3D Numerical study of motion of nanodroplets on wetting Gradients

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40. New Solid State Sensors for Gas Detection Based on Nano-Carbon Tubes–Fe₂O₃-ZnO

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41. Super Hydrophobic Property of the Polyester Fabric Using Silica Nanoparticles

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42. Magnetic Nanoparticles for Enhancing Immunosensor Sensitivity

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43. Synthesis and Functionalize Fe₃O₄ Nano-Particles with Several Coating Agents

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44. Synthesis and Characterization of Tin Oxide Nanoparticles by Solid State Chemical Reaction Method

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45. Improving UV Stabilization of Polyamide Nylon 6 Fabrics Using Nano ZnO

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46. Oxidation Bleaching of Antimicrobial Functionalized Non-Woven Polypropylene Fabrics Containing silver Nanoparticles

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47. Structural and Optical Properties of Cerium doped Calcium fluoride Nanoparticles prepared by Coprecipitation

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48. Preparation of ZnAl₂O₄ Nano-Particle by Hydrothermal-Assisted Sol-gel Processing

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49. The Use of TiO₂ to Enhance the Efficiency of Si Solar Cells Structures

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50. Zagreb Coindices of Some Nano Structures

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51. Structural and Optical Properties of Cerium doped Calcium fluoride Nanoparticles prepared by Coprecipitation

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52. Research and Elaboration of Ceramic Calcium-phosphate Implant Material for Replacing of Bone tissue

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53. Creating Metallic Nanostructures Using Galvanic, Membrane and Capillary Methods with Atomic Force Microscopy

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54. Defects in graphene: topology and nanophotonics applications

N.A. Poklonski, A.T. Vlassov, S.A. Vyrko and S.V. Ratkevich
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55. Carbon nanotube on silicon substrate as form of p-n junction solar cells

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56. Microstructure of indium sulfide films for thin film solar cells

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57. Peculiarities of nanorelief surface of polycrystalline columnar $Pb_{1-x}Sn_xTe$ films on glass substrates after plasma sputtering

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58. New nanosilica suspensions for chemical-mechanical polishing of monocrystalline silicon wafer

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59. Hydrophilic self-cleaning sol-gel coating based on titanium oxide and silicon

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60. Nanodispersed powders of super hard composite material

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61. Thermomagnetic properties of (Ni-Cu) nanoparticles

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62. One-dimensional nanoscale structures of PbTe – SnTe mixed crystals for optoelectronic and thermoelectric applications

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63. Optical and structural characteristics cubic boron nitride with ions Nd

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64. Influence of silicon activation conditions on the morphology of electroless deposited nickel-phosphorus coatings

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65. Effect of Initial Powder Dispersity on the Physical and Mechanical Properties of SiC Ceramics Sintered at High Pressure

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66. Anomalous retroreflection from strongly absorbing nanoporous semiconductors

S. Ya. Prislowski and S.V.Gaponenko

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67. Plasmon-enhanced Fluorescence of Alexa Fluor 488 Molecules near Silver Nanoparticles

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68. Application of sol-gel Sr(Bi_xTa_x)O₉ layers in the non-volatile memory (FRAM)

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69. The use of sol-gel method for the formation of the active ZnO layers of solar cells

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70. Effect of High Pressure Sintering Nanocarbon Conditions on Formation and Fine Structure of Superhard Phase

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71. Metallfullerene Nanocomposites

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72. Compositionally graded BST ceramics: composition, structure and properties

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73. Effect of the Crystallinity of BaTiO₃ Powders on the Properties of PTCR Ceramics

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74. Influence of Excitation Induced Shift on Lasing in Quantum Dot Lasers

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75. Polymer- Organoclay Nanohybrids Carrying Silver Ions: Synthesis and Antibacterial Properties

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76. Dressings Carrying Silver Nanoparticles: Antibacterial Properties and Cytotoxicities

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77. Dielectric characteristics of Ba_{1-x}La_xTiO₃ ceramics with submicron grain size

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78. SnS-PbS Nanorods Grown on Isochemical Thin Films for Thermoelectric and Photovoltaic Application

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79. Dielectric characteristics of Ba 1-XLaXTiO3 ceramics with submicron grain size

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80. Polymer-Dispersed Liquid Crystal Films: Homogeneous and Inhomogeneous Adhesion of Liquid Crystal Molecules on the Interface Polymer-Liquid Crystal

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81. Mononuclear Morphometry as Indicator to Distinguish Between Acute Lymphoid and Myeloid Leukemias

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82. The Absorption of Light in Solar Cells Based on Multilayer Structures of Dispersed Silicon: Theoretical Analysis

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83. HEAT PIPE EVAPORATORS WITH NANOPOROUS COATING

L.L. Vasiliev, L.P. Grakovich, M.I. Rabetsky, D.A. Tulin

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84. Electronic and Optical Properties of Doped Titanium Dioxide

Sh. Khaleghi, V.L. Shaposhnikov, D.B. Migas, U.B. Butsko, V.E. Borisenko

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85. Calculation of Electronic Properties of Pure and Defected Molybdenum Disulfide Nanostructure

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86. Plasmonic Nanostructures Based on Metallized Porous Silicon for SERS

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87. Nanostructured porous silicon in solid-state microreactors

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88. Nickel - porous silicon magnetic nanocomposite

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89. Hydrothermal deposition of ZnO nanostructures on silicon wafers

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90. Temperature dependence of resistivity of porous silicon formed on n+ substrates

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91. Nanostructurizatio of Intercalation Compounds with Accounting of Fluctuation

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92. Preparation and Characterization of Nanostructured ZnO Thin Films for Solar Cell Application

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93. Plasmachemical Synthesis of Antibacterial Nanocomposite Coatings

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94. Finite-Difference Time-Domain Simulation of Light Propagation in 2D Periodic and Quasi-Periodic Photonic Structures

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95. Technology for Multichip Modules on Aluminum Substrates with Nanostructured Dielectric Layers

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96. Synthesis of Nanostructured High hard Wear-Resistant Ceramic Coating on the Details of Friction Pairs of Aluminum Alloys

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97.Zagreb Coindices of Some Nano Structures

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98. Surface Plasmon Resonance Effect on the Magneto Optical Kerr Effect Enhancement in Cu/Co/Ag/SnO₂ Structure

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99. Magneto-Thermo-Electro-Elastic Stress Analysis of Smart Nanocomposite Hollow Cylinder Subjected to Complex Loadings

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100. Buckling of a Polymeric Cylindrical Shell Reinforced With CNTs Using Energy Method

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101. Application of Carbon Nanotubes Sensor for Voltammetric Determination of Sulfapyridine by Experimental Design

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102. Synthesis and Characterization of IronChromite (FeCr₂O₄) Nanoparticles Prepared by Hydrothermal Method

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103. Theoretical and Experimental Investigation on Faraday Rotation Measurement in Ferrofluid of Oil-based Cobalt- Ferrite Nanoparticles

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104. The Effect of Current Annealing on the Giant Magneto-impedance Effect in Amorphous Alloy Ribbons

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105. Experimental Investigation in Faraday Rotation Measurement on Thin Films of Co-Zn Ferrite Nanoparticles

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106. Nanostructured Electrochemical Sensor for Determination of Norepinephrine, Acetaminophen and Folic acid

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107. Multiwalled Carbon Nanotube Paste Electrode in Simultaneous Determination of Two Antioxidants Using Chemometrics

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108. Numerical Investigation of Nanoparticles Mean Diameter Effect on Mixed Convection of Nanofluid in a Cavity

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109. Study of Fractal Adsorption of Pb(II) and Cd(II) on Graphene Nano Sheets

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110. A Theoretical Kinetic Study of Graphene Synthesis by Kinetic Monte Carlo Simulation

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111. Minimizing the Lasing Threshold in High-Index-Contrast Waveguide

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112. Synthesis and luminescence characteristics of PEG – 200 mediated NaYF₄: Er/Yb nanostructure

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113. DFT Study of Cobalt Doped in Armchair (5, 0) SWCNT

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114. A New Method in Preparation of Monodisperse Magnetite Nanoparticles from Ferrous Salts in Alkylamines Solution

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115. Direct Analysis of Dopamine in Human Serum After Dispersive Solid Phase Micro-Extraction With Nano-Structured Ni–Al LDH

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116. Synthesis of Silica-Supported Preyssler Nanoparticles and their Applications for Azo Dyes Degradation

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117. Nano Titania-Supported Dawson Heteropolyacid as Green Solid Catalyst for Synthesis of Linear Alkylbenzene

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118. InP-Based Photonic Crystal Electro-Optic Modulator

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119. Hydrothermal Synthesis of Nanorods and Nanosheets Antimony trioxide

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120. Nanostructure Formation of Aromatic Thiol for Corrosion Protection of Copper

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121. Zagreb Coindices of Some Nano Structures

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122. Functionalization of Multiwalled Carbon Nanotubes through Electrophilic Addition Reactions

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123. Hydrothermal Synthesis and Characterization of Nanosized Cadmium sulfide

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124. Synthesis and thermoluminescence characteristics of CaF₂:Dy,Tm nanoparticles

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125. New Simple Method for Oxidation of MultiWalled Carbon Nanotubes Through Radical Reactions

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126. Synthesis of Nanocrystalites YBa₂Cu₃O_{6+x} by Using Improved Mechanochemical Alloying and Study of Its Microstructures

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127. Surface Stress Effects on the Bending Wave Propagation of Nanobeams Resting on a Pasternak Foundation

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128. Effect of CNTs as Reinforcer on Thermo Nonlinear Vibration of Embedded Pipes Conveying Oil Via DQM

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129. Effect of Elastic Foundation on Nonlocal Vibration of CNTs With Attached Buckyballs at Tip

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130. Nonlocal Terahertz Wave Characteristics of Embedded Single-Walled Boron Nitride Nanotubes

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131. Fabrication of Nanostructured Al/Cu_p Composite by Accumulative Roll Bonding Process

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132. Synthesize Behaviour of Nanostructured Al/Al₂O₃ Composite Powders Fabricated by Mechanical Alloying Process

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133. Monte carlo Investigation of Breast cancer protein(BRCA)with nano theoretical studies

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134. Nano Theoretical Investigation of Semi-empirical and Molecular mechanics Methods of Alzheimer's disease amyloid beta-peptide

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135. Computational Study on the Sodium and Potassium Channels and Transport properties of Ions in Membrane

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136. Nano-structural studies of human leukemia inhibitory factor (LIF)

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137. Role of Polymeric Surfactants on the Growth of Manganese Ferrite Nanoparticles Tahereh Rohani Bastami^{1,2}, Mohammad H. Entezari², Qiu Hong Hu¹, Sandy Budi Hartono¹, Shi Zhang Qiao¹

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138. Improving UV Stabilization of Polyamide Nylon 6 Fabrics Using Nano ZnO

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139. Super Hydrophobic Property of the Nylon Fabric Using Silica Nanoparticles

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140. Super Hydrophobic Property of the Polyester Fabric Using Silica

Nanoparticles

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141. Oxidation Bleaching of Antimicrobial Functionalized Non-Woven Polypropylene Fabrics Containing silver Nanoparticles

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142. Synthesis of ZnO Nanostructure by Mechanical Milling Process Using Starch as a Template

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143. Synthesis and Characterization of AgInS₂ Nanoparticles by Microwave assisted Chemical Precipitation

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144. Synthesis and Characterization of MgO Nanoparticles Using PEG as a Surface Active Agent

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145. Synthesis and Characterization of the CdO Necklace-like Nanostrands by Using Succinic acid

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146. Monte Carlo Simulations and Experimental Results of Landmine Detection using the Thermal Neutron Analysis

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