

2022 IEEE 12th International Conference Nanomaterials: Applications & Properties (NAP 2022)

**Krakow, Poland
11 – 16 September 2022**



**IEEE Catalog Number: CFP22F65-POD
ISBN: 978-1-6654-8983-6**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP22F65-POD
ISBN (Print-On-Demand):	978-1-6654-8983-6
ISBN (Online):	978-1-6654-8982-9

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Track: Nanomaterials Synthesis & Self-assembly

<p>Electrical Interface between Carbon Nanotubes and Metallic Electrodes for Industrial Applications <i>Eliana Recoba Pawłowski, Anthony Combessis, Sébastien Dablement, Patrick Rybski, Nicolas Bergeal, Jérôme Lesueur, Cheryl Feuillet-Palma</i>.....</p> <p>Stability of InP/ZnSe/ZnS Quantum Dots in Light-Emitting Diodes: Role of Shell Thickness and Surface Chemistry <i>Jiyong Kim, Yohan Kim, Christine Boeffel, Hyung Seok Choi, Andreas Taubert, Armin Wedel</i></p> <p>The Versatile Synthesis of Polyhedron Core/shell/shell Cd_{0.1}Zn_{0.9}Se/CdxZn_{1-x}S/ZnS Quantum Dots <i>Liudmila Loghina, Maksym Chylii, Anastasia Kaderavkova, Jakub Houdek, Miroslav Vlcek</i></p> <p>The Thermal Mode Crucial Influence on the ZnSeS QDs Formation <i>Maksym Chylii, Liudmila Loghina, Anastasia Kaderavkova, Jakub Houdek, Miroslav Vlcek</i></p> <p>Synthesis and Characterization of Graphene Oxide from Residual Biomass <i>Adam Aberra Challa, Nabanita Saha, Fahanwi Asabuwa Ngwabebhoh, Hau Trung Nguyen, Pavel Urbánek, Haojie Fei, Petr Saha</i></p> <p>Optimization of Ligand Concentration on the Optical Properties of Colloidal MoS₂ Quantum Dots <i>Simran Lambora, Asha Bhardwaj</i>.....</p> <p>WC-based Cemented Carbides with Nanostructured NiFeCrWMo High-Entropy Alloy Binder <i>Serhii Nakonechnyi, Alexandra Yurkova, Anatoly Minitsky</i></p> <p>Impact of Interface Interactions on a Structure Formation of The Nanostructured Poly(Urethane-Urea) - Poly(Vinyl Chloride) Blends Filled with Modified Nanosilica <i>Alexander Tolstov, Tatyana Malysheva</i></p> <p>Green Synthesis of Silver-Containing Biomaterials with Effective Antimicrobial and Antiviral Activity <i>Valeriy Demchenko, Maksym Iurzhenko, Krystyna Naumenko, Serhii Kobylinskyi, Sergii Riabov, Olena Demchenko, Svetlana Zahorodnia, Nataliya Rybalchenko, Tetiana Hnatiuk, Taras Rybalchenko, Marek Kowalcuk, Grazyna Adamus</i></p> <p>Laser Growth of Multi-Walled Carbon Nanotube Thin Films <i>Ihor Virt, Piotr Potera, Bogumil Cieniek.</i></p> <p>Hybrid Biopolymer Nanocomposite Materials for Ecological and Biomedical Applications <i>Daryna Sahalai, Volodimir Lebedev, Denis Miroshnichenko, Daria Bilets, Vsevolod Mysiak, Anastasia Sinityna</i>.....</p> <p>Effect of Surfactants on the Synthesis of NiFe₂O₄/rGO Composites by Co-Precipitation Method <i>Volodymyr Kotsyubynsky, Volodymyra Boychuk, Myroslava Hodlevska, Bogdan Rachiy, Lilia Turovska, Andrii Khopta</i></p> <p>Curing Kinetics of Cyanate Ester Resin in the Presence of Different Inorganic Nanoparticles and Thermal Properties of the Nanocomposites Synthesized <i>Diana Shulzhenko, Olga Starostenko, Olga Grigoryeva, Alexander Fainleib, Daniel Grande, Laurent Michely</i></p> <p>Synthesis and Characterization of SiC-Based Thin Film Heterostructures <i>Valeriy Kidalov, Alena Dyadenchuk, C.Y. Abbasova, V.A. Baturin, O. Yu. Karpenko, O. Y. Gudimenko, Vitaliy V. Kidalov</i></p>	<p style="text-align: right;">1</p> <p style="text-align: right;">6</p> <p style="text-align: right;">15</p> <p style="text-align: right;">21</p> <p style="text-align: right;">27</p> <p style="text-align: right;">31</p> <p style="text-align: right;">35</p> <p style="text-align: right;">40</p> <p style="text-align: right;">45</p> <p style="text-align: right;">51</p> <p style="text-align: right;">54</p> <p style="text-align: right;">59</p> <p style="text-align: right;">64</p> <p style="text-align: right;">68</p>
--	---

Carbon Nanotubes Growth in Converted Gas Atmosphere on Dispersed Iron Catalyst Obtained as Result of Ferrocene Decomposition

- Maksym Barabash, Anatolii Minitskyi, Alexander Khovavko, Denis Filonenko, Alexey Sviatenko, Andriy Nebesnyi, Guochao Nie* 72

Nanocomposites Poly(o-anisidine)-Graphene Oxide

- Olena Aksimentyeva, Oksana Konopelnik, Yuliia Horbenko, Hrygorii Starykov* 76

Physical & Chemical Water-sorption Processes in the MgAl₂O₄ Ceramics

- Halyna Klym, Ivan Karbovnyk, Ivanna Vasylchyshyn* 80

Composite of Polydimethylsiloxane(PDMS) and 2D Vanadium Carbide MXene (V₂CTx) as a Flexible and Free-Standing Surface-Enhanced Raman Scattering Substrate

- Monidipa Pramanik, Mukta Limaye Vinayak, Shashi Singh Bhushan* 84

Characteristics of Nanostructures Formed during the Heat Treatment of Titanium (IV) Isopropoxide Precipitates in the Presence of Noble Metals

- Olena Lavrynenko, Maksym Zahornyi, Olesja Pavlenko, Sergii Korichev* 88

Track: Electrochemistry of Nanomaterials

Stable Metal-Organic Framework Based Electrode for Electrochemical Applications

- Shi Wun Tong, Darren Chi Jin Neo, Wei Peng Goh, Changyun Jiang* 94

Thermal Modeling of Electrolyte in a Li-ion Battery for Self-powered Nanosystems

- Joaquin Guillamon Moreira, Reza Nekovei, Amit Verma* 98

Synthesis of Diamond-Like Arsenolite Crystallites on Surface of Gallium Arsenide

- Yana Suchikova, Anatoli Popov, Sergii Kovachov, Ihor Bohdanov, Aleksandra Moskina, Tamara Tsebriienko* 102

Design and Characteristics of Doughnut-Like Porous-CdO/Porous-CdS Nanostructures

- Yana Suchikova, Ihor Bohdanov, Sergii Kovachov, Aleksandra Moskina, Tamara Tsebriienko, Anatoli Popov* 107

Corrosion Properties of Nanostructured Multilayer [(Cu-Zn)₁/(Cu-Zn)₂]_n Coatings

- Antonina Maizelis* 112

Modeling the Composition of the Pre-Cathode Layer in Dicyanoargentate Buffer Electrolyte without Excess Ligand

- Oksana Bersirova, Valeriy Kublanovsky, Stanislav Bersirov* 116

Unveiling the Role of Cu in Carrier Transport and Dielectric Relaxation using Impedance and Modulus Spectroscopy in TiO₂ Thin Film Electrodes

- Manish Kumar Vishwakarma, Puneet Jain* 120

Track: Multifunctional Thin Films & Coatings

The Concept of Miscellaneous DCSBD Plasma Technique To Accomplisch Suitable Structural Properties of Tire Rubber

- Silvia Ďurišová, Mariana Pajtášová, Róbert Janík, Andrej Dubec, Jana Šulcová, Iveta Papučová, Jana Pagáčová, Darina Ondrušová* 124

Polypropylene Mesh Implants Modified by Nanostructured PVD Coatings

- Anton Taran, Igor Garkusha, Olexander Tymoshenko, Ivan Misiruk, Yaroslav Kravchenko, Petro Vorontsov, Jurij Gnidenko* 130

Optical and Electrical Properties of Prepared by Spray Pyrolysis CuMnO ₂ Thin Films <i>Ivan Orletskyi, Ivan Koziarskyi, Eduard Maistruk, Dmytro Koziarskyi</i>	134
Nano-Heterostructured Materials - Based Sensors for Safety and Biomedical Applications <i>Oleg Lupan, Nicolae Magariu, Helge Krüger, Alexandr Sereacov, Nicolai Ababii, Serghei Railean, Lukas Zimoch, Rainer Adelung, Sandra Hansen</i>	138
Application of Wear-Resistant Nanostructures Formed by Ion Nitridizing & Electrosparck Alloying for Protection of Rolling Bearing Seat Surfaces <i>Viacheslav Tarelnyk, Ievgen Konoplianchenko, Oksana Gaponova, Oleksandr Radionov, Bogdan Antoszewski, Czeslaw Kundera, Nataliia Tarelnyk, Taras Voloshko, Sergey Bondarev, Vladislav Gerasimenko, Olha Ryasna, Bogdan Sarzhanov, Anton Polyvanyi</i>	142
Nanoparticle Retention in Ambipolar Electric Field <i>Valeriy Lisovskiy, Stanislav Dudin, Pavlo Platonov</i>	150
Electrical Properties of p-CuFeO ₂ /n-Si Heterojunction <i>Dmytro Koziarskyi, Eduard Maistruk, Ivan Koziarskyi</i>	154
Temperature Limits of the Existence of the Liquid Phase of Bismuth Particles that are in Contact with Nanocrystalline Vanadium Films <i>Sergey Petrushenko, Sergey Dukarov, Sukhov Volodymyr</i>	158
Effect of CaP-particles on Ceramic-like Coatings Formed on Magnesium via Anodisation <i>Yevheniia Husak, Vladlens Grebnev, Sahin Altundal, Alicja Kazek-Kęsik, Anna Yanovska, Viktoriia Korniienko, Roman Viter, Maksym Pogorielov, Wojciech Simka</i>	163
Improvement on the Microstructural and Nanomechanical Properties of (TiAlZrNbY)N-based Multiphase Coatings by Compositional and Structural Design <i>Olga Maksakova, Vyacheslav Beresnev, Serhiy Lytovchenko, Denys Horokh</i>	167
Formation of Oligoperoxide Coatings on Amorphous Alloys <i>Oksana Hertsyk, Tetiana Hula, Myroslava Kovbuz, Olga Ezerska</i>	173
Non-metal Interfaces in Superhard Nanocomposite Coatings: a First-principles Study <i>Volodymyr Ivashchenko</i>	177
Formation of Copper Coating on Polymer Granules by Chemical Method <i>Volodymyr Moravskyi, Anastasiia Kucherenko, Marta Kuznetsova, Ludmila Dulebova, Tomasz Garbacz</i>	182
Track: Nanoscale Characterization & Imaging	
Nanostructure Characterization and Film Thickness Measurements at the Fabrication Line <i>Jonas Madsen Skovlund, Raimo Korhonen, Petri Peltonen, Olga Rodenko, Søren Jensen Alkærsg</i>	187
Optical and Electron Microscopy Studies of Al ₂ O ₃ Nanomatrices with Embedded ADP and KB5 Nanocrystals <i>Nazariy Andrushchak, Dmytro Vynnyk, Volodymyr Adamiv, Volodymyr Haiduchok, Viktor Strelchuk, Andrii Nikolenko, Yaroslav Zhydachevskyy, Yaroslav Shchur, Anatoliy Andrushchak</i>	191

Track: Nanophotonics

Features of Cyanine Dye J-Aggregates Formation on TiO ₂ Matrices <i>Polina Pisklova, Iryna Ropakova, Iryna Bespalova, Svetlana Yefimova, Alexander Sorokin</i>	195
Influence of Solid State Phases Interactions on Optical Properties of Oxide Glass-Ceramics Nanocomposites <i>Serhii Nedilko</i>	199
Analysis of the Fluorescence Intensity Enhancement by Magnetic-Plasmonic Nanoparticles for Biomarkers Detection <i>Anatoliy Lapchuk, Oleksandr Butok, Ivan Gorbov, Alexander Prygun</i>	204
Merging Polarization Degeneracy and High Localization With All-Dielectric Metasurfaces in Microwave and Near-Infrared Ranges <i>Oleh Yermakov, Sergey Polevoy</i>	208

Track: Transport Properties in Nanoscale Systems

Fatty Alcohol Nanoemulsions as Latent Functional Thermal Fluids for Energy Management <i>David Cabaleiro, Sonia Losada-Barreiro, Filippo Agresti, Carolina Hermida-Merino, Laura Fedele, Luis Lugo, Simona Barison, Manuel M. Piñeiro</i>	212
Magnetoresistance of Graphite Nanoplatelets Simultaneously Modified with Nickel and Iron <i>Denys Shpylk, Iryna Ovsienko, Tetiana Len, Oleksii Syvolozhskyi, Liudmyla Matzui, Ilgar Mirzoiev, Tetiana Tsaregradskaya</i>	219
Investigation of Thermal Transport Properties of Multilayer Porous Silicon Based Hybrid Nanostructures by Photoacoustic Technique <i>Pavlo Lishchuk, Lesia Chepela, Elysaveta Polishchuk, Viktoria Shevchenko, Vasyl Kuryliuk, Mykola Borovyj, David Lacroix, Mykola Isaiev</i>	225
Thermal Conductivity Evaluation of the Carbon-Based Nanofluids with Photoacoustic Approach <i>Kateryna Dubyk, Pavlo Lishchuk, Andrey Kuzmich, Sergei Alekseev, Boris Zousman, Olga Levinson, Aleksey Rozhin, Alain Geloen, Mykola Isaiev, Vladimir Lysenko</i>	229
Nitrogen Donor in Silicon: Towards Room Temperature Operation of Single Electron Tunneling Devices <i>Pooja Yadav, Hemant Arora, Arup Samanta</i>	235

Track: Nanomagnetism & Magnetic Materials

Imaging Magnetic Domain Structure of a High Entropy Alloy: Effect of Applied Magnetic Field <i>Anthoula Poulia, Aleksander Larsen, Joachim Graff, Spyridon Diplas, Anette Eleonora Gunnæs, Pavlo Mikheenko</i>	238
Stochastic Generation Regime of an Antiferromagnetic Spin Hall Oscillator <i>Denys Slobodianiuk, Oleksandr Prokopenko</i>	243
Influence of Temperature on the Noise-Handling Properties of a Sub-Terahertz Detector Based on an Antiferromagnetic Tunnel Junction <i>Volodymyr Prokopenko, Oleksandr Prokopenko</i>	247
Subterahertz Frequency Signal Source Based on an Antiferromagnetic Tunnel Junction Embedded in a High-Q Dielectric Resonator <i>Oleh Shtanko, Oleksandr Prokopenko</i>	252

Origin of Exchange Bias in Nanocrystalline CoCr ₂ O ₄ <i>Suchandra Goswami, Manashi Chakraborty, Debajyoti De.....</i>	257
Size and Heat Treatment Effects in Magnetoresistive Properties of (Ni ₈₀ Fe ₂₀) ₇₀ Au ₃₀ Nanostructured Thin-film Materials <i>Iryna Pazukha, Andrii Lohvynov, Oleksandr Pylypenko, Vladyslav Zhabotynskyi, Yurii Shkurdoda</i>	261
Spin-wave Resonance in Arrays of Nanoscale Synthetic-antiferromagnets <i>Vladyslav Borynskyi, Dmytro Polishchuk, Iryna Sharai, Andrii Melnyk, Anatolii Kravets, Alexandr Tovstolytkin, Vladislav Korenivski</i>	265
Magnetic Modification of Insect Chitin Material for Various Applications <i>Oksana Kalinkevich, Aleksei Kalinkevich, Anatoly Sklyar, Oleksandr Kochenko, Vadim Chivanov, Oleksandr Kulyk, Aleksei Gudakov, Tatyana Markina</i>	268
Track: Superconductivity in Nanoscale & Mesoscopic Systems	
Controlling Dendritic Flux Avalanches by Nanostructure of Superconducting Films <i>Pavlo Mikheenko, Manoel Jacquemin, Masih Mojarrad, Fredric Mercier</i>	272
Ideal Diamagnetism in Brain Microtubules <i>Pavlo Mikheenko</i>	277
Track: Nanomaterials for Energy & Environment	
Nanocomposite Based on Natural Zeolite Containing Hydrated Iron (III) Oxide for Removal of Heavy Metal Ions from Water <i>Kateryna Kudelko, Yuliya Dzyazko, Ludmila Ponomarova, Alexey Palchik, Ludmila Rozhdesvenska, Tetyana Yatsenko</i>	281
Influence of Chemical Composition and Surface Topography of Nanostructured Epoxy Resin DER-331 on Combined Biofilm Formation in Modelling of Biofouling <i>Kostiantyn Dyadyura, Liudmyla Hrebenyk, Tatyana Ivakhniuk, Ihor Prokopovych</i>	286
Scintillation Material Based on Heterostructures of Nanocrystals CsPbBr ₃ in PMMA <i>Tamara Skrypnyk, Iryna Bespalova, Alexander Sorokin, Svetlana Yefimova</i>	292
Electrical Properties, Photoresponse, and Structural Properties of CdZnTeSe Thick Polycrystalline Films <i>Yaroslav Znamenshchykov, Denys Kurbatov, Maksym Pashchenko, Oleksiy Kononov, Anatoliy Opanasyuk</i>	296
The Effect of Expanded Graphite on the Caloric Properties of Paraffin Wax of 50 °C Melting <i>Vitaly Zhelezny, Olga Khliyeva, Yana Hlek, Dmytro Ivchenko</i>	300
Complex Experimental Investigation of the Effect of Fullerene C ₆₀ on the Thermophysical Properties of O-Xylene <i>Kateryna Khanchych, Vitaly Zhelezny, Dmytro Ivchenko</i>	304
Energy Harvesting by Mini-Converters Based on Nanostructured Silicon <i>Mykola Melnichenko, Yaroslav Zhuk, Konstantin Bozhko</i>	309
Features of Influence of Physical Field on the Structure and Properties of Polymer Materials with Metal Oxides <i>Yuliia Bardadym, Serhii Kobylinskyi, Larisa Kобріна, Sergii Riabov</i>	313

Thickness Dependence of the Kinetic Parameters in CdTe and PbTe Thin Films <i>Tetiana Mazur, Myroslav Mazur</i>	317
ZrO ₂ -based Nanopowders for Fuel Cells and Catalysis <i>Nadiia Korsunska, Iryna Brodnikovska, Yuliia Polishchuk, Oleg Marchylo, Xavier Portier, Olivier Marie, Semyon Ponomaryov, Igor Vorona, Dmytro Brodnikovskyi, Yegor Brodnikovskyi, Ihor Polishko, Natalia Lysunenko, Oleksandr Vasylyev, Lyudmyla Melnichuk, Oleksandr Melnichuk, Larysa Khomenkova</i>	321
Synergistic Antibacterial Effects of Cellulose:TiO ₂ Nanocomposite Against Phytopathogens <i>Chhavi Sharma, Amit Kumar Kesharwani, Divya Rehani, Ritu Kesarwani, Dinesh Singh, Shailesh Narain Sharma, Ritu Srivastava</i>	328
Electrocatalytic Performance of Bimetallic Ni-Mo Alloy with Thermally Modulated Microstructure for Hydrogen Generation at Ultra-Low Overpotential in Acidic Media <i>Naznin Shaikh Mohammed Usman, Abhijit Ray</i>	333
Starch-Containing Polylactide Nanocomposites <i>Andrii Masyuk, Andrii Masyuk, Dmytro Kechur, Dmytro Kechur, Bozhena Kulish, Bozhena Kulish, Volodymyr Levitskyi</i>	337
Track: Nanobiomedical Research & Applications	
Exploiting Plasmid-Mediated Resistance: Design of Small-Molecule Inhibitors for the Disruption of the Kid-Kis Toxin-Antitoxin System in Plasmid R1 <i>Pinyu Liao</i>	341
Nanoscale Calcification of the Dura Mater <i>Anastasiia Denysenko, Oleksandr Pylypenko, Yevgen Kuzenko, Roman Moskalenko</i>	349
The Study of the Nanocrystalline Structure of Psammoma Bodies of Serous Ovarian Carcinoma <i>Ruslana Chyzhma, Artem Piddubnyi, Andriy Stepanenko, Oleksandr Pylypenko, Roman Moskalenko</i>	353
The Structure of Nanaocrystalline Apatite From the Breast Cancer <i>Olena Kolomiets, Artem Piddubnyi, Andriy Stepanenko, Roman Moskalenko</i>	357
Photocatalytic and Antioxidant Properties of Nanoceria at UV Irradiation/Pre-Irradiation <i>Vladyslav Seminko, Pavel Maksimchuk, Ganna Grygorova, Svetlana Yefimova</i>	361
Size-dependent Effect of CeO ₂ Nanoparticles on ROS Generation in Red Blood Cells <i>Volodymyr Prokopiuk, Anatolii Onishchenko, Svetlana Yefimova, Pavel Maksimchuk, Vladyslav Seminko, Oksana Nakonechna, Vladimir Klochkov, Nataliya Kavok, Anton Tkachenko</i>	365
Amphi-PIC J-Aggregate – Protein Complexes: Stability in Blood and Toxicity to Cell Cultures <i>Alexander Sorokin, Volodymyr Prokopiuk, Iryna Grankina, Igor Borovoy, Anton Tkachenko, Svetlana Yefimova</i>	369
Annealing Effect on Self-trapped Exciton Radiation of Nanosized Y ₂ O ₃ Ceramics Radioluminescence <i>Sergiy Kononenko, Eugeniy Barannik, Vitaliy Zhurenko, Oganes Kalantaryan, Volodymyr Chishkala, Ruslan Skiba, Sergiy Lytovchenko</i>	374
Reactive Oxygen Species Scavenging by Small Gadolinium-Yttrium Orthovanadate Nanocrystals <i>Pavel Maksimchuk, Kateryn Hubenko, Vladyslav Seminko, Andrey Onishchenko, Andrei Aslanov, Vladimir Klochkov, Svetlana Yefimova</i>	378

Ethical and Societal Aspects of Nanotechnology Applications in Medicine <i>Natalia Inshyna, Inna Chorna</i>	383
The Effect of Silver Nanoparticles Against Formation of Enterococcus Faecalis Biofilms <i>Olesia Tverezovska, Viktoriia Holubnycha, Rafal Banasiuk, Yevheniia Husak, Anton Savchenko, Viktoriia Kornienko</i>	388
Development of Nanocomposite Antimicrobial Polymeric Materials Containing Silver Nanoparticles <i>Eduard Lysenkov, Olexander Stryutsky, Lyudmyla Polovenko</i>	393
The Kinetic of Silver Ions Release from Hydroxyapatite-AgNPs <i>Svetlana Bolshanina, Olexandra Radchenko, Anna Yanovska, Viktoriia Holubnycha, Olesia Tverezovska, Yevheniia Husak</i>	397
Thermosensitive Hydrogel Nanocomposites Based on N-Isopropylacrylamide and Acid-Activated Laponite: Swelling and Tunable Release of Doxorubicin <i>Olena Siryk, Liudmyla Kernosenko Oleksandrivna, Yurii Samchenko, Natalya Pasmurtseva, Tetiana Poltoratska, Olena Goncharuk</i>	402
The Multistep Process of Coating PCL Membranes with MXene Solution <i>Kateryna Diedkova, Viktoriia Kornienko, Sergiy Kyrylenko, Anton Roshchupkin, Yuliia Varava, Yevhen Samokhin, Veronika Zahorodna, Oleksiy Gogotsi, Ivan Baginskyi, Maksym Pogorielov</i>	407
A Highway for Nanostructure Polypyrrole Formation – Dye – assisted Synthesis with Methylene Orange as Effective Structure Guiding Agent <i>Sylwia Golba, Justyna Jurek-Suliga, Sara Krawczyk, Aleksandra Urbaniec, Maciej Zubko, Izabela Matula</i>	411
Surface Modification of Luminescent Porous Silicon by Aqueous Solutions of Amino Acids <i>Viktoria Shevchenko, Olexandr Datsenko, Petro Teselko</i>	416

Track: Theory & Modeling

Modeling of Radial Distribution Functions of Liquid Argon Film Confined Between Diamond Surfaces <i>Alexei Khomenko Vitalievych, Denis Boyko, Alexey Shikura, Kateryna Khomenko, Yaroslava Khyzhnya</i>	421
Piezoelectric Properties and Electron-Phonon Interaction in Semiconductor Arsenide GaAs/AlAs Nanosystems of Plane Symmetry <i>Igor Boyko, Mykahylo Petryk, Halyna Tsupryk, Ivan Mudryk, Yurii Stoianov</i>	425
Investigation of Transient Boiling Regime of Water and Nanofluids Heated to Saturation Temperature Using CFD Simulation (ANSYS Fluent) <i>Eugene Strativnov, Nie Guochao</i>	430
Electromigration Effects in Processes of Nano-Structured Thin Films Growth <i>Alina Dvornichenko, Dmitrii Kharchenko, Vasyly Kharchenko, Serhii Petrov</i>	434
Phase Field Modeling Radiation Induced Precipitation in Diluted Zr-Alloys <i>Vasyly Kharchenko, Dmitrii Kharchenko, Serhii Kokhan, Viktor Kuprienko, Tianyuan Xin, Lu Wu</i>	439

Track: Interdisciplinary & Miscellaneous Topics

Large Area Fabrication of Bio-Sourced Polymer Nanofibers for Food Packaging Applications <i>Silvia Schintke, Léonard Troesch, Stefan del Rossi, Eleonora Frau</i>	444
Structure Features of the Surface of Structural Alloyed Steel after Pulse-Plasma Treatment <i>Olena Berdnikova, Olga Kushnarova, Yuriy Tyurin, Oleg Kolisnichenko, Yevhen Polovetskyi, Maksym Khokhlov</i>	447
Effect of Surface Mechanical Pulse Treatment on Nanocrystallization and Properties of Structural Steels <i>Olha Zvirko, Olha Maksymiv, Volodymyr Kyryliv</i>	451
Effect of Low-Temperature Aging on Mechanical Behavior of Metastable β -Type Ti-Mo-Sn Alloys <i>Mustafa Babanli, Sayami Huseynov, Vusal Huseynov, Lesya Demchenko, Anatoliy Titenko</i>	457