

NANOSISTEMI, NANOMATERIALI, NANOTEHNOLOGII

FOUNDED IN OCTOBER, 2003

Volume 24, Issue 2 (2026)

CONTENTS

Editorial Announcements	Information for Subscribers	X
	Information for Contributors	XIII
	Publication Ethics	XVI
	Applications of Nanomaterials in 5G Wireless Communications: A Comprehensive Review <i>N. V. KRISHNA PRASAD, D. PRAGATHI, and A. NAGA RAJU</i>	327
	Evolution of Bounded Majorana Pairs in Superconducting Net of Quantum Nanowires in $\text{La}_{0.15}\text{Sm}_{0.85}\text{MnO}_{3+d}$ and SmMnO_{3+d} with Increase of External Magnetic Field; Relativistic Quantum Hall Effect <i>F. M. BUKHANKO</i>	343
	EPR Diagnostics of Self-Organization in Mo(V)- Containing Systems <i>V. V. TRACHEVSKY</i>	361
	A Theoretical Study of Lattice Dynamical Properties of Silicene by DFT <i>Rahul Kumar MISHRA and Mohammad Imran AZIZ</i>	409
	Studying the Optical Features of Silica Xerogel Doped with Cerium (Ce) for Gamma Ray Detection <i>Abdul-Jabbar Abbas OUDH, Mohammed Jawad H. KADHIM, Abdul Kareem ABDUL-HUSSEIN, and Zainab AL-KHAFAJI</i>	419
	Effect of $\text{Fe}_2\text{O}_3/\text{MgO}$ Nanoparticles on the Structural and Dielectric Properties of PVA for Electronic Nanodevices <i>Noor Ali SAMI, Majeed Ali HABEEB, and Halah MOHAMMED</i>	431
	Effect of Silver Nanoparticles on Solar Cell Efficiency: Size and Optical Characteristics <i>via</i> Pulsed-Laser Ablation in Liquids and Laser Energies <i>N. G. ABED, S. M. AHMAD, and Th. A. ZAKER</i>	441
	Irradiation Effect on the Optical Properties of Silver Nanoparticles Prepared by Pulsed-Laser Ablation in	

Liquid <i>Moumen AL-AZOW, Mushtaq ABED AL-JUBBORI, and Ivan B. KAROMI</i>	455
Effect of Swift Heavy-Ion Irradiation on ZnS Quantum Dots <i>Abhigyan GANGULY, Sandipan BISWAS, Nitai PAITYA, Shivnath GHOSH, and Siddhartha Sankar NATH</i>	469
Study of the Some Optical and Structural Properties of Cadmium-Oxide Thin Films Prepared Using Spin-Coating Technique <i>Mohammed AL-BADRANI, Yasir Yahya KASSIM, and Mutaz Salih Hasan ALJUBOORI</i>	477
Influence of Cr^{3+} and Mn^{2+} Activators on the Surface Morphology Formation of ZnGa_2O_4 Thin Films Obtained by RF Ion-Plasma Sputtering <i>I. I. MEDVID, I. Yo. KUKHARSKYY, I. O. BORDUN, V. G. BIHDAY, Zh. Ya. TSAPOVSKA, I. M. KOFLIUK, D. S. LEONOV, and O. M. BORDUN</i>	489
Characteristics and Parameters of a Plasma of a Pulsed Gas-Discharge Reactor with Microparticles of Nickel Flow <i>O. K. SHUAIBOV, O. Y. MINYA, R. V. HRYTSAK, Yu. Yu. BILAK, O. M. MALININ, A. O. MALININA, M. M. FELDIY, O. V. ZUBAKA, and A. R. MADIAR</i>	503
Preparation of ZnO Nanoparticles by Arc-Plasma Discharge Method <i>Olla ALSEBAI</i>	519
Catalytic Activity of TiO_2 Nanoparticles Prepared by Green Synthesis <i>Mohammad Nour Ahmad ALKHODER</i>	525
Study of the Structure of Cadmium Sulphide Nanocrystals <i>A. V. LYSYTSYA, V. O. MYSLINCHUK, M. V. MOROZ, B. D. NECHYPORUK, N. S. PAVLOVA, B. P. RUDYK, and B. A. TATARYN</i>	533
Particle-Size Calculation for Synthesis of ZnSO_4 Nanoparticles Doped with Transition-Metal Ions <i>Ahmed KADARI and Yassine SARIR</i>	549
Evaluating of Some Elastic Properties for Nanosemiconductors Under High Pressure <i>Siham J. AL-FARIS, Raghda Tareq ABDULLATEEF, Hamssa B. MOHAMMED, and Raed Hashim AL-SAQA</i>	565
Preparation and Characterization of Nanocarbon Prepared from Thermal Cracking Residues of Sawdust <i>Hamid A. SALIH, Saad F. MAHMOOD, and Mohmad M. UONIS</i>	575
Study of the Effect of Adding Nanocarbon on the Mechanical Properties of Aluminium Pistons Using the Powder-Metallurgy Method <i>Shahad Mozar SAMEEN and Ibrahim Khalaf SALMAN</i>	597
Thermodynamic Study of the Adsorption of Amaranth Dye on the Surface of a New Activated Nanocarbon Prepared from Petroleum Sources <i>Muslim Amin HASSAN, Ahmed Saeed OTHMAN, and</i>	

<i>Ammar Ahmed HAMDOON</i>	607
Adsorption of Toxic Gases CH ₄ , CO ₂ and NH ₃ on Copper Nanoclusters	
<i>Lekshmi R GANESH, V BAIJU, Dedhila DEVADATHAN, Abhilash S, and Y SHEENA MARY</i>	625
Structure and Properties of Polymeric Cryogel Materials Based on Polyvinyl Alcohol and Ag ₂ O Nanoparticles	
<i>V. L. DEMCHENKO, N. P. RYBALCHENKO, M. V. IURZHENKO, D. V. KUNYTSKYI, A. I. MARYNIN, V. B. DOLGOSHEY, V. O. OVSYANKINA, T. V. RYBALCHENKO, and O. A. BURYANOV</i>	637
Characterizing Crystallinity and Phase Compounds in Polyvinyl Alcohol–Montmorillonite Nanocomposites Through X-Ray Diffraction and Optical Microscopy	
<i>Blerina PAPAJANI, Elvin COMO, Albana HASIMI, and Alfred LAKO</i>	649
Synthesis and Characterization of Nanoparticles by Using Mulberry (<i>Morus alba L.</i>), Figs (<i>Ficus carica L.</i>) and Eucalyptus (<i>Camaldulensis L.</i>) Leaves' Extracts in Aqueous Medium	
<i>Mariam Abdul Razak DRAKLI and Manar Abdullah Abou HASSAN</i>	669
Recent Review on Nanoparticles-Doped Polyethylene Oxide for Biomedical and Industrial Applications	
<i>Ahmed KAREEM, Ahmed HASHIM, and Huda Bukheet HASSAN</i>	683
Development and Characterization of Stomach-Specific Gastro-Retentive Drug Delivery of Levofloxacin Hemihydrate for <i>Helicobacter Pylori</i> Eradication	
<i>N. VENKATESWARAMURTHY, R. SAMBATHKUMAR, P. MANIVASAKAM, and G ANANDHARAJ</i>	693

Scientific Editor of the Issue—*V. A. Tatarenko*

Executive Managing Editor—*V. V. Lizunov*

Technical Editors—*D. S. Leonov, I. M. Zabolotnyy*

Editorial-Publishing Department, G. V. Kurdyumov Institute for Metal Physics, N.A.S. of Ukraine

State Registration Certificate of the Printed Mass Medium: Media Identifier R30-03169

Editorial Office: 36 Academician Vernadsky Boulevard, UA-03142 Kyiv, Ukraine

Telephone: +380 44 4241221, +380 44 4249042. Fax: +380 44 4242561

E-mail: tatar@imp.kiev.ua, dsleonov@gmail.com