

Contents

Vol. 17, No. 2, 2023

Investigation of Modification of the Internal Surface of Polysulfone Hollow Fiber Channels under their Irradiation by a 10-keV Electron Beam

L. V. Myshelovka, K. A. Vokhmyanina, A. D. Pyatigor, V. S. Sotnikova, A. A. Kubankina, V. Yu. Novikov, and Yu. V. Grigoriev 323

Features of the Effect of a High-Power Ion Beam of Nanosecond Duration on Polyethylene Terephthalate

V. S. Kovivchak 328

Modification of the Properties of Surface Layers of Aluminum Alloys under the Action of a High-Power Ion Beam

T. V. Panova and V. S. Kovivchak 332

Surface Nanorelief of Thin Films of Al–Mn and Al–Ni Alloys in the Case of Ion-Assisted Deposition on Glass

I. I. Tashlykova-Bushkevich and I. A. Stolyar 338

Effect of Ba⁺-Ion Implantation on the Composition and Electronic Structure of Silicate Glasses

D. A. Tashmukhamedova, A. N. Urokov, G. Abdurakhmanov, and B. E. Umirzakov 352

Change in the Local Atomic Structure of the Fe–Ni Alloy due to Irradiation by Argon Ions

I. K. Averkiev, A. A. Kolotov, and O. R. Bakieva 357

Formation of Nanoclusters in Zinc-Implanted Crystalline Quartz

V. V. Privezentsev, A. A. Firsov, V. S. Kulikauskas, V. V. Zatekin, and A. N. Tereshchenko 363

On Monitoring the Position of a Charged Particle Moving near a Metal Sphere by Means of Diffraction Radiation

V. V. Syshchenko and A. I. Tarnovsky 368

Effects of the Resonant Scattering of Channeled Particles with the Generation of Electron and Phonon Excitations

E. A. Mazur 371

On a Mathematical Model of the Diffusion of Excitons in a Semiconductor Taking into Account Their Variable Lifetime

E. V. Seregina, M. A. Stepovich, and M. N. Filippov 376

Carbon Monoxide Oxidation on the Surface of Palladium Nanoparticles Optimized by Reinforcement Learning

M. S. Lifar, A. A. Tereshchenko, A. N. Bulgakov, A. A. Guda, S. A. Guda, and A. V. Soldatov 381

Influence of Growth-Equipment Vibrations on Convective Processes in Growing Doped Semiconductor Crystals

V. N. Vlasov, V. I. Strelov, and E. N. Korobeynikova 388

Study of the Surface Morphology of Microfluidic-Chip Channels via X-Ray Tomography and Scanning Electron Microscopy

S. V. Chapek, I. A. Pankin, D. V. Khodakova, A. A. Guda, A. S. Goncharova, and A. V. Soldatov 392

Effect of the Electron-Irradiation Temperature on the Formation of Radiation Defects in Silicon Carbide

V. V. Kozlovski, A. E. Vasil'ev, A. A. Lebedev, K. S. Davydovskaya, and M. E. Levinshtein 397

Spectroscopic and Kinetic Studies of the Permeability of Membrane Surface Layers during the Microfiltration Separation of Aqueous-Organic Solutions

D. N. Konovalov, I. V. Khorokhorina, S. I. Lazarev, S. A. Nagornov, A. Yu. Kornev, and S. I. Kotenev 401

Magnetic Properties of BrB-2 Beryllium Bronze Aged under a Constant Magnetic Field <i>Yu. V. Osinskaya, A. V. Pokoev, S. V. Divinsky, and S. G. Magamedova</i>	408
On the Band-Gap Width of NiSi ₂ Nanocrystals Created in the Surface Region of Si Using Ion Implantation <i>N. M. Mustafoyeva, A. K. Tashatov, and B. E. Umirzakov</i>	415
Thin-Layer InAlPSbAs/InAs Heterostructures: Growth Kinetics, Morphology, and Structure <i>L. S. Lunin, M. L. Lunina, D. L. Alfimova, A. S. Pashchenko, O. S. Pashchenko, and A. V. Donskaya</i>	419
On the Ion-Beam Surface Modification of Carbon Fibers <i>N. N. Andrianova, A. M. Borisov, E. S. Mashkova, M. A. Ovchinnikov, and I. V. Suminov</i>	426
Investigation of Thermal-Barrier Coatings of the Y–Al–O System Using Synchrotron Radiation <i>A. Yu. Nazarov, E. L. Vardanyan, A. A. Maslov, A. A. Nikolaev, K. N. Ramazanov, A. M. Khusainova, and A. N. Shmakov</i>	440
Study of the Temperature Effect in Aqueous Solutions of Trisiloxane Surfactants at the Interface with Titanium Oxide by Neutron Reflectometry <i>I. V. Gapon, M. O. Kuzmenko, M. V. Avdeev, and N. A. Ivanova</i>	445
Magnetic Structure of Dy–Co Superlattices near the Compensation Temperature <i>M. V. Makarova, E. A. Kravtsov, V. V. Proglyado, I. A. Subbotin, E. M. Pashaev, D. Kholin, and Yu. N. Khaydukov</i>	450
Debugging Software for the Acquisition and Preliminary Processing of Data for a Neutron Detector with an Architecture of two Circular Buffers <i>M. A. Golubev, A. O. Polyushkin, and V. A. Solovei</i>	455
Nanoscale Structure of Positive Electrodes for Lithium–Ion Batteries with Graphene-Based Additives According to Small-Angle Neutron Scattering <i>M. Erdauletov, M. V. Avdeev, A. A. Tomchuk, F. S. Napol'skiy, D. M. Djanseitov, and V. A. Krivchenko</i>	460
Prototype of a Two-Coordinate Position-Sensitive Detector Based on a ⁶ LiF/ZnS(Ag) Scintillator <i>M. M. Podlesnyy, V. M. Milkov, A. A. Bogdzel, V. I. Bodnarchuk, and A. A. Hassan</i>	465
Simulation of the Optical Parameters of Position-Sensitive Scintillation Detectors with an Organic Light Guide <i>D. N. Trunov, V. N. Marin, R. A. Sadykov, E. V. Altyimbaev, and T. I. Glushkova</i>	468
On a ³ He Refrigerator Based on Closed-Cycle Cryocooler Cooling <i>A. N. Chernikov</i>	473
On the Crystal Structure of Nd ₅ Mo ₃ O _{16+δ} in the Pressure Range 0–5.9 GPa <i>K. A. Chebyshev, V. A. Turchenko, and S. E. Kichanov</i>	478
Crystallographic Texture and Functional Properties of Powder Titanium Alloys after Thermomechanical Treatment <i>G. V. Markova, T. I. Ivankina, D. M. Levin, and S. S. Volodko</i>	484
Sputtering of Metal Atoms with the Wake Potential Excited by an Electron Beam <i>N. P. Kalashnikov</i>	490
Composition and Structure of fcc-Structured High-Entropy Alloys Irradiated with Helium Ions <i>V. V. Uglov, I. A. Ivanov, S. V. Zlotski, N. A. Stepanjuk, A. E. Ryskulov, A. L. Kozlovski, A. E. Kurahmedov, M. V. Koloberdin, A. D. Sapar, E. O. Ungarbaev, and K. Jin</i>	494
Focused Ion Beams and Complementary Techniques to Study the Silvering of Ancient Roman Coins <i>E. A. Sozontov, E. A. Greshnikov, I. N. Trun'kin, A. S. Pakhunov, L. I. Govor, and V. A. Kurkin</i>	500

Copper-Containing Organic-Inorganic Nanosystems Based on Biocompatible Stabilizers: Synthesis, Structure, and Morphology	
<i>S. V. Valueva, R. Yu. Smyslov, Yu. E. Gorshkova, M. E. Vylegzhanina, S. V. Amarantov, and E. F. Panarin</i>	505
Optimization of the Thermal Moderator for a New Pulsed Reactor NEPTUN	
<i>A. A. Hassan, M. V. Bulavin, V. V. Afanasyev, and M. M. Podlesnyy</i>	514
The Effect of Yttria Stabilized Zirconia on Bonding Strength and Corrosion Resistance of Bioactive Glass Coatings Prepared by Electrophoretic Deposition (EPD) Method	
<i>Nayereh Asgari, Masoud Rajabi, and Mohammad Reza Shirpay</i>	518
First-principles and Experimental Studies of Structure, Electronic and Magnetic Properties of Nickel Substituted Magnesium Ferrite Spinel	
<i>B. Khongorzul, N. Jargalan, N. Tsogbadrakh, D. Sangaa, and D. Odkhuu</i>	526
