

Contents

Vol. 8, No. 3, 2014

A simultaneous English language translation of this journal is available from Pleiades Publishing, Ltd.

Distributed worldwide by Springer. *Journal of Surface Investigation. X-ray, Synchrotron and Neutron Techniques* ISSN 1027-4510.

Study of the Structure of Carbon Matrices for Radionuclide Encapsulation by Small-Angle Neutron Scattering <i>V. M. Lebedev, V. T. Lebedev, D. N. Orlova, and V. I. Tikhonov</i>	411
On the Possibility of Increasing the Superconducting Gaps in Heterogeneous Superconductors <i>I. N. Zhilyaev</i>	418
On the Radiation of a Planar Undulator with Constant Magnetic Field on Its Axis Taken into Account <i>V. V. Mikhailin, K. V. Zhukovskii, and A. I. Kudyukova</i>	422
Observation of Small-Angle Contrast in Refraction Introscopy via Full Angular Scanning <i>A. A. Kaloyan, E. S. Kovalenko, and K. M. Podurets</i>	429
Temperature Dependence of the Circular Polarization of Electroluminescence from Spin-Polarized Light-Emitting Diodes Based on InGaAs/GaAs Heterostructures <i>M. V. Dorokhin, E. I. Malysheva, Yu. A. Danilov, A. V. Zdoroveishchev, A. V. Rykov, and B. N. Zvonkov</i>	433
Nuclear-Physical Analysis of the Contamination on the Surface of a COMPLAST Panel after 12-Year Exposure at the ISS <i>V. P. Petukhov, V. S. Kulikauskas, L. S. Novikov, D. V. Petrov, T. N. Smirnova, V. N. Chernik, A. A. Shemukhin, and A. E. Shumov</i>	440
Nonlinear Continual Growth Model of Nonuniformly Scaled Reliefs as Applied to the Rigorous Analysis of the X-ray Scattering Intensity of Multilayer Mirrors and Gratings <i>L. I. Goray and M. N. Lubov</i>	444
Nanometer-Precision Contour-Measurement Technique for the Diagnostics of Multilayer Nanostructures <i>V. B. Loginov, V. I. Troyan, A. G. Elkin, B. A. Loginov, P. V. Borisyyuk, V. D. Borman, and V. N. Tronin</i>	456
Grazing Diffraction of X-Ray Radiation in a Planar Single-Crystal Waveguide <i>I. E. Golentus and A. Yu. Gaevskii</i>	462
Studying the Physical Properties of Entangled Electron Spin States in a Solid Body <i>V. N. Petrov, A. B. Ustinov, N. S. Kan, D. V. Petrova, and A. A. Grib</i>	470
Determination of the Sheet Resistance of Semiconductor Films via Near-Field Microwave Microscopy <i>M. A. Galin, E. V. Demidov, and A. N. Reznik</i>	477
Hybrid Polymer Nanosystems Based on Selenium and Zinc-Selenide Nanoparticles: Morphology, Electronic Structure, and Thermodynamic Properties <i>T. E. Sukhanova, S. V. Valueva, M. E. Vylegzhanina, G. N. Matveeva, A. A. Kutin, M. P. Sokolova, A. Ya. Volkov, P. G. Ul'yanov, and V. K. Adamchuk</i>	484
Simulation of Radiation Energy Losses by Channeled Relativistic Electrons in a Crystal <i>S. V. Abdrashitov, O. V. Bogdanov, Yu. L. Pivovarov, and T. A. Tukhfatullin</i>	494
Effect of Long-Range Stresses on the Structure of Semiconductor Heterosystems <i>E. M. Trukhanov, A. V. Kolesnikov, and I. D. Loshkarev</i>	502
Amorphization of Ice near the Melting Point <i>V. M. Silonov and V. V. Chubarov</i>	509
On the Ion-Beam Erosion of Carbon Fibers in Composites <i>N. N. Andrianova, A. M. Borisov, Yu. S. Virgil'ev, E. S. Mashkova, and D. V. Petrov</i>	513

Formation of Relief on a Metallic Target Surface under the Action of Compression-Plasma Flows	
<i>V. M. Astashinskii, A. Ya. Leivi, V. V. Uglov, N. N. Cherenda, and A. P. Yalovets</i>	519
Computer Simulation of the Two-Stage Ionic Polishing of a Silicon Surface	
<i>S. E. Birkgan and V. I. Bachurin</i>	524
Ion-Beam Studies of Synthetic Single-Crystal Diamonds	
<i>V. K. Egorov, E. V. Egorov, and G. V. Sharonov</i>	530
Ion Scattering ($\text{Me}^+ \rightarrow \text{Me}$) by Monatomic Films	
<i>V. V. Evstifeev, N. V. Kostina, and A. N. Musatov</i>	534
Photoluminescence of Implantation-Induced Defects in $\text{SiO}_2:\text{Pb}^+$ Glasses	
<i>A. F. Zatsepin, E. A. Buntov, V. S. Kortov, V. A. Pustovarov, and N. V. Gavrilov</i>	540
Simulation of Multiple Scattering in Argon Ion Collisions with an Aluminum Target at Grazing Angles of $5^\circ\text{--}10^\circ$	
<i>P. Yu. Babenko, A. N. Zinoviev, and A. P. Shergin</i>	545
Electron Energy Spectrum and Features of Optical Absorption in Single-Layer 2D Structures Based on Silicon Dioxide with Surface Functional Groups	
<i>A. O. Litinskii and Nguyen Thi Sa</i>	549
Mössbauer Studies of Magnetite Nanoparticles	
<i>M. A. Shipilin, I. N. Zakharova, A. M. Shipilin, and V. I. Bachurin</i>	557
Investigation of the Processes of Iron-Ion Recharging on Surfaces of Natural Nanoclays (Based on Mössbauer Spectroscopy Data)	
<i>A. A. Zalutskii</i>	562
Change in the Sign of the Kerr Effect in Ion-Beam Synthesized Fe_3Si Films	
<i>V. V. Chirkov, G. G. Gumarov, V. Yu. Petukhov, V. F. Valeev, and A. E. Denisov</i>	569
Effect of the Cathode Spots of a Vacuum Arc on the Properties of the Surface Layer of Structural Materials	
<i>V. N. Arustamov, Kh. B. Ashurov, Kh. Kh. Kadyrov, and I. Kh Khudaikulov</i>	573
Interaction between Plasma and the Channel Surface in a Multichannel Hollow Cathode	
<i>V. A. Obukhov and M. V. Cherkasova</i>	581
Simulation of Blistering for Estimating the Optical Properties of Disordered Porous Media	
<i>A. L. Bondareva and G. I. Zmievskaia</i>	588
Different Coloration of the Nanostructured Silicon Surface Upon Plasma-Assisted Etching	
<i>A. A. Zalutskaya and A. V. Prokaznikov</i>	595
Peculiarities of the Plasma Sputtering of Polycrystalline $\text{Pb}_{1-x}\text{Sn}_x\text{S}$ Films	
<i>S. P. Zimin, E. S. Goralchev, I. I. Amirov, V. V. Naumov, G. A. Dubov, V. F. Gremenok, and I. N. Tsyrel'chuk</i>	602
Droplet-Phase Reduction During the Pulsed Laser Deposition of Coatings onto the Inner Surface of Tubes	
<i>A. A. Lozovan and S. S. Alexandrova</i>	607
Influence of Growth Conditions on the Surface Quality and Structural Perfection of Multicomponent Heterostructures Based on Group III–V Compounds	
<i>D. L. Alfimova, L. S. Lunin, and M. L. Lunina</i>	612
