

Contents

Journal of Surface Investigation: X-ray, Synchrotron and Neutron Techniques

Vol. 15, No. 4, 2021

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.

Simulation and Test Measurements on the Neutron Reflectometer and Small-Angle Instrument “Gorizont” on the IN-06 Pulsed Source

V. S. Litvin, D. A. Buchnyi, V. A. Ulianov, V. G. Syromyatnikov, A. P. Bulkin, A. A. Stolyarov, D. N. Trunov, S. N. Axenov, S. I. Potashev and R. A. Sadykov **p. 645** [abstract](#)

Simulation of A Bilayer Imitating the Inner Mitochondrial Membrane Using Coarse-Grained Molecular Dynamics

P. D. Korotkova, A. A. Yurchenko, V. I. Timofeev, A. R. Gusel'nikova, A. B. Shumm and Y. A. Vladimirov **p. 652** [abstract](#)

Studying the Radiation Stability of the Optical Properties of Polypropylene Modified with Al₂O₃ Nanoparticles

M. M. Mikhailov, V. A. Goronchko and S. M. Lebedev **p. 655** [abstract](#)

Plasma Cleaning of KU-1 Optical Quartz from Aluminum Films

A. E. Gorodetsky, A. V. Markin, V. L. Bukhovets, V. I. Zolotarevsky, R. Kh. Zalavutdinov, E. E. Mukhin and A. G. Razdobarin **p. 660** [abstract](#)

Formation and Destruction of Gas-Filled Bubbles in the Surface Layer of Glass under the Action of Electron-Proton Plasma

R. H. Khasanshin and L. S. Novikov **p. 671** [abstract](#)

Feasibility of Using Chromium as a Switching Material for CrSi₂

F. Yu. Solomkin, A. Yu. Samunin, N. V. Zaitseva, N. V. Sharenkova, G. N. Isachenko, K. L. Samusevich, V. V. Klechkovskaya, A. S. Orekhov, E. V. Rakova and E. V. Drozdova **p. 678** [abstract](#)

Mass-Spectrometry Investigation of the Kinetics of the Molecular-Beam Epitaxy of CdTe

V. I. Mikhaylov and L. E. Polyak **p. 683** [abstract](#)

Analysis of the Structural Features of Weakly Ordered Layers in Accordance with Data on X-Ray Reflectometry and Grazing Incidence Diffraction

S. B. Astaf'ev and L. G. Yanusova **p. 696** [abstract](#)

Influence of YVO_4 and $\text{BiP}_x\text{V}_{1-x}\text{O}_4$ Nanoscale Layers on the Surface of InP on the Thermal Oxidation of the Semiconductor, Phase Composition and Morphology of Films
E. V. Tomina, B. V. Sladkopevtsev, I. Ya. Mittova, S. S. Kopytin and V. A. Baranova
p. 702 [abstract](#)

Elemental Analysis of Materials by Methods of Ion-Beam Diagnostics
M. S. Afanasiev, E. V. Egorov, V. K. Egorov and G. V. Chucheva
p. 712 [abstract](#)

Coherent X-Ray Radiation Generated by a Divergent Beam of Relativistic Electrons in a Single Crystal in the Beam-Axis Direction
D. O. Shkuropat, S. V. Blazhevich, A. S. Gorlov, A. V. Noskov and A. E. Fedoseev
p. 717 [abstract](#)

X-Ray Methods for Studying the Surface of Powder Obtained by Electroerosion Dispersion of the Waste of W–Ni–Fe 95 Pseudoalloy in Kerosene
E. V. Ageev, E. V. Ageeva and N. M. Khoryakova
p. 723 [abstract](#)

Statistical Properties of the Transverse-Motion Energy Levels for Channeling Electrons in a Silicon Crystal under Dynamical Chaos Conditions
V. V. Syshchenko and A. I. Tarnovsky
p. 728 [abstract](#)

On the Microstructural Orientation of the Pore Space of Rocks: SEM Data
V. A. Kuzmin
p. 732 [abstract](#)

Correlation of Structural, Morphological and Electrochemical Impedance Study of Electrochemically Prepared *p*-Type Porous Silicon
M. M. Saadeldin, A. S. Mogoda, Soraya Abdelhaleem and M. S. Shalaby
p. 738 [abstract](#)

Effect of Lithium on the Structural-Phase State of Rapidly Solidified Al–Mg–Li Alloy During Heat Treatment
I. A. Stoliar, V. G. Shepelevich, E. Wendler and I. I. Tashlykova-Bushkevich
p. 752 [abstract](#)

Dependence of the Parameters of Cascade Particle Multiplication on the Type of Atomic Potential
A. I. Tolmachev and L. Forlano
p. 759 [abstract](#)

Study of Microscopic Residual Stresses in an Extruded Aluminium Alloy Sample after Thermal Treatment
L. Millán, G. Bokuchava, J. I. Hidalgo, R. Fernández, G. Kronberger, P. Halodova, A. Sáez, I. Papushkin, O. Garnica, J. Lanchares and G. González-Doncel
p. 763 [abstract](#)

X-Ray Reflectometry for Comparison of Structural Organization of Fullerenes $\text{C}_{60}/\text{C}_{70}$ in Polystyrene Thin Films
T. V. Tropin, M. L. Karpets, Ye. Kosiachkin and V. L. Aksenov
p. 768 [abstract](#)

Specular Reflectometry Studies of Alcohol-Induced Densification for Thin Films of Single-Walled Carbon Nanotubes
O. V. Tomchuk, D. V. Krasnikov, Ye. N. Kosiachkin, D. A. Ilatovskii, M. V. Avdeev and A. G. Nasibulin
p. 773 [abstract](#)

Galvanomagnetic Properties of Bismuth–Antimony Films under Conditions of Plane Tensile Strain

V. M. Grabov, E. V. Demidov, V. A. Komarov, S. V. Senkevich and A. V. Suslov p. 777 [abstract](#)

Structural Stability of Dispersions of Magnetic Nanoparticles in Aqueous Solutions of Polysorbate-80

A. V. Nagornyi, M. V. Avdeev, O. I. Ivankov, Y. Y. Shlapa, S. O. Solopan, T. V. Nagorna, A. V. Shulenina, Yu. L. Zabulonov, A. G. Belous and L. A. Bulavin p. 781 [abstract](#)

Structural Studies of Electrochemical Interfaces with Liquid Electrolytes Using Neutron Reflectometry: Experimental Aspects

Ye. N. Kosiachkin, I. V. Gapon, A. A. Rulev, E. E. Ushakova, D. Merkel, L. A. Bulavin, M. V. Avdeev and D. M. Itkis p. 787 [abstract](#)

Structure and Magnetism in Multilayer Fe/MgO/Cr/MgO/Fe Nanosystems

E. M. Yakunina, E. A. Kravtsov, Yu. N. Khaydukov, N. O. Antropov and V. V. Proglyado p. 793 [abstract](#)

Efficiency of Heating Magnetite Nanoparticles with Different Surface Morphologies for the Purpose of Magnetic Hyperthermia

O. E. Polozhentsev and A. V. Soldatov p. 799 [abstract](#)

Submicron Iron-Garnet Films on Lithium-Niobate Substrates Obtained by Ion-Beam Deposition

A. I. Serokurova, S. A. Sharko, E. N. Galenko, V. A. Ketsko and M. N. Smirnova p. 806 [abstract](#)

On Synchrotron Radiation for Studying the Transformation of Toxic Elements in the Soil–Plant System: A Review

V. S. Tsitsuashvili, T. M. Minkina, A. V. Soldatov and D. G. Nevidomskaya p. 814 [abstract](#)

Prospects for Using a Binding Agent to Improve the Adhesion of a Bioactive Coating on Surfaces with Different Structures

E. A. Bogdanova, V. M. Skachkov and K. V. Nefedova p. 823 [abstract](#)

Influence of the Surface Orientation on the Spectral Characteristics of Liquid-Crystal Photonic Crystals

P. V. Dolganov, K. D. Baklanova and V. K. Dolganov p. 829 [abstract](#)

Study of a Near-Surface Quartz Layer Sequentially Implanted with Zinc and Fluorine

V. V. Privezentsev, A. A. Firsov, O. S. Zilova and D. A. Kiselev p. 833 [abstract](#)

Effect of an Antimony Sublayer on the Structure and Galvanomagnetic Properties of Thin Bismuth–Antimony Films (3 and 5 at % Sb) on Mica Substrates

D. D. Efimov, V. A. Komarov, V. M. Grabov and E. V. Demidov p. 841 [abstract](#)

Effect of Pulsed-Electron-Beam Irradiation on the Surface Structure of a Non-Equiatomic High-Entropy Alloy of the Al–Co–Cr–Fe–Ni System

K. A. Osintsev, V. E. Gromov, S. V. Konovalov, Yu. F. Ivanov, I. A. Panchenko and X. Chen p. 846 [abstract](#)

Identification of Microstructural Heterogeneities on the Surface of OFAM-K and OPMN-P Nanofiltration Membranes

S. I. Lazarev, D. N. Konovalov, S. V. Kovalev, O. A. Kovaleva and V. Yu. Ryzhkin p. 851 [abstract](#)

Change in the Optical Properties Near the Interface of Self-Focusing Nonlinear Media Depending on the Intensity of a Localized Light Beam

S. E. Savotchenko p. 862 [abstract](#)

Quantum-Mechanical Modeling of the Interaction between Carbon Nanostructures and Metal Ions

V. V. Tytarenko, E. Ph. Shtapenko, E. O. Voronkov, V. A. Zabludovsky, V. Kolodziejczyk, K. S. Kapusta and V. N. Kuznetsov p. 866 [abstract](#)

Subsurface Corrosion as the Main Degradation Process of 17GS Pipeline Steel after 50 Years of Operation

D. V. Zhukov, K. K. Chaplygin, S. V. Konovalov, D. Chen and S. V. Voronin p. 872 [abstract](#)

Determining the Optimal Processing Time for Tantalum Surface Modification through Plasma Electrolytic Nitridation

S. Padervand, S. Sarihi, S. M. Mousavi Khoei and N. Shakiba p. 877 [abstract](#)