

Contents

Vol. 5, No. 4, 2011

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 P – T Phase Diagram of Pyridinium Perchlorate by X-ray Diffraction and Raman Spectroscopy <i>S. E. Kichanov, D. P. Kozlenko, J. Wasicki, A. V. Belushkin, W. Nawrocik, P. Czarniecki, L. S. Dubrovinsky, C. Lathe, and B. N. Savenko</i> | 611 |
| Neutron Multiwave Spin Echo <i>Yu. O. Chetverikov, V. V. Pyadov, L. A. Axel'rod, A. A. Sumbatyan, and S. V. Grigoriev</i> | 619 |
| AlGa _N /Ga _N Heterostructure Study Using Rutherford Backscattering Spectrometry <i>K. L. Enisherlova, V. S. Kulikauskas, V. V. Zatekin, T. F. Rusak, N. B. Gladysheva, and I. I. Razgulyaev</i> | 626 |
| Determination of Nanoobject Sizes and Concentrations in Irradiated Metals and Alloys via Positron Annihilation Spectroscopy <i>V. I. Grafutin, E. P. Prokop'ev, V. Krsjak, R. Burel, P. Häehner, A. Zeman, O. V. Ilyukhina, G. G. Myasishcheva, S. P. Timoshenkov, Yu. V. Funtikov, and N. O. Khmelevsky</i> | 636 |
| Features of the Effect of a High-Power Ion Beam on Metal Film on Carbon Coating <i>V. S. Kovivchak, T. V. Panova, R. B. Burlakov, and N. A. Davletkildeev</i> | 647 |
| Problems of Technological Use of Coherent Bremsstrahlung Beams <i>G. L. Bochek, V. I. Kulibaba, N. I. Maslov, V. D. Ovchinnik, and S. M. Potin</i> | 650 |
| Model Description of Thermoelastic Stress in Materials under Bombardment by Heavy Ions <i>I. V. Amirkhanov, A. Yu. Didyk, D. Z. Muzafarov, I. V. Puzynin, T. P. Puzynina, N. R. Sarkar, I. Sarkhadov, and Z. A. Sharipov</i> | 655 |
| Features of the Magnetization Reversal of Fe–Cu Metal Oxide Nanostructures on the Surface of Aluminum <i>V. G. Shadrov, A. V. Boltushkin, and L. V. Nemtsevich</i> | 662 |
| Formation of Nickel Extended Surface upon Quasi-Equilibrium Steady-State Condensation <i>V. I. Perekrestov, A. A. Mokrenko, Yu. A. Kosminskaia, and D. I. Rubets</i> | 667 |
| Calculation of the Electronic Structure of Metal Island Films <i>E. R. Amanbaev, E. Yu. Zykova, A. A. Klavsyuk, T. N. Polivnikova, A. A. Khaidarov, and A. L. Klavsyuk</i> | 672 |
| Study of Nanostructured Catalysts on the Basis of Complex Oxides Deposited on a Carrier <i>A. A. Ostroushko, O. V. Russkikh, I. I. Kormil'tzev, V. Yu. Kolosov, D. S. Tsvetkov, and A. I. Vylkov</i> | 677 |
| Direct Method for Determining the Segregation in Silver–Copper Solid Solutions Not Prone to Brittle Breakage of Grain Boundaries <i>S. N. Zhevnenko, D. V. Vaganov, and D. A. Podgornyi</i> | 683 |
| Electron Energy Characteristics and One-Electron State Spectra of Surfaces of Molybdenum Oxide and Solid Solutions Thereof with Niobium and Technetium Oxides with Fluoropolymer Coatings <i>A. O. Litinskii, M. V. Petrov, and S. I. Novikov</i> | 687 |
| Estimation of Changes in Parameters of a Crystal Lattice and Energy Bands upon Variation in the Size of Nanocrystals and Nanofilms of Silicides Prepared by Ion Implantation <i>B. E. Umirzakov, D. A. Tashmukhamedova, and Kh. Kh. Kurbanov</i> | 693 |
| The Effect of Interphase Adhesion on Nanofiller Structure in Polymer/Organoclay Nanocomposites <i>B. Zh. Dzhangurazov, G. V. Kozlov, and A. K. Mikitaev</i> | 697 |
| Determination of Surface Tension Coefficient and Contact Angle Using Numerical Calculations of Equilibrium Drop Shapes <i>M. A. Ponomareva and V. A. Yakutenok</i> | 701 |
| Surface Energy and Pressure of Diamond and Silicon Nanocrystals <i>M. N. Magomedov</i> | 705 |

| | |
|---|-----|
| Modeling the Kinetics of Lattice Defect Adsorption into the Interface of Joint Materials | |
| <i>R. V. Goldshtein, T. M. Makhviladze, and M. E. Sarychev</i> | 712 |
| Asymmetric Wave Reflection in Kinematic and Dynamic Approaches to Description of Parametric X-Radiation of a Relativistic Electron in the Crystal | |
| <i>S. V. Blazhevich and A. V. Noskov</i> | 718 |
| Graphite Foil as the Supporting Membrane of LIGA Masks | |
| <i>A. N. Gentshev, S. K. Golubtsov, B. G. Gol'denberg, V. I. Kondrat'ev, V. F. Pindyurin, and A. G. Zelinskii</i> | 725 |
| The Effect of Surface Channeling of Neutral Atoms | |
| <i>A. V. Kazakov and V. S. Malyshevskii</i> | 730 |
| Structural and Phase Transformations during Initial Stages of Copper Condensation on Si(001) | |
| <i>N. I. Plyusnin, V. M. Il'yashchenko, S. A. Kitan', and N. A. Tarima</i> | 734 |
| Projective Approximation of the Stochastic Model of Collective Motion of Minority Charge Carriers Generated by a Broad Electron Beam in Semiconducting Material | |
| <i>E. V. Seregina, A. M. Makarenkov, and M. A. Stepovich</i> | 746 |
| Localized Electron States and Magnetic Properties at the Interface of a Two-Dimensional Graphene/MnO(001) System | |
| <i>V. V. Ilyasov, I. V. Ershov, I. Ya. Nikiforov, D. A. Velikochazkii, and T. P. Zhdanova</i> | 754 |
| Simulation of Transport and Relaxation of Hot Electrons in the Near-Surface Layers of Nanostructured and Crystalline Silicon Dioxides | |
| <i>V. S. Kortov and S. V. Zvonarev</i> | 764 |
| A Study of the Influence of Surface Layers' Disordering on the Spectrum of Energy Losses of Electrons Passed through Copper Thin Single Crystal Films | |
| <i>Z. A. Isakhanov, M. K. Ruzibaeva, B. E. Umirzakov, and R. Kurbanov</i> | 769 |
| Photo- and Cathodoluminescence Investigation of ZnO Films | |
| <i>A. N. Gruzintsev, V. T. Volkov, E. E. Yakimov, and E. B. Yakimov</i> | 772 |
| Comparative Analysis of Emission and Absorption Spectra of Zinc Oxide Powders | |
| <i>M. M. Mikhailov, V. V. Neshchimenko, and Chundon Li</i> | 775 |
| Diffusion-Induced Growth and Morphological Stability of a Two-Dimensional Cavity in an Adatomic Monolayer on the Crystal Surface | |
| <i>A. V. Koropov</i> | 780 |
| Diffusion Processes in Nanoscale Two-Layer Film Systems Based on Fe and Cu or Fe and Cr | |
| <i>S. I. Protsenko, O. V. Synashenko, Y. Zabala, and M. Marszalek</i> | 787 |
| Structure of Thin-Film Nickel–Carbon Composites Formed by Microwave Plasma-Enhanced Chemical Vapor Deposition | |
| <i>V. V. Uglov, M. V. Astashynskaya, A. K. Kuleshov, M. P. Samtsov, and P. B. Barna</i> | 791 |
| Negative Secondary Ion Mass Spectra under Cs ⁺ Ion Bombardment of the <i>p</i> -SiC(B) Surface | |
| <i>I. G. Atabaev, T. M. Saliev, B. G. Atabaev, and R. Jabbarganov</i> | 796 |
| Contribution of Incoherent Effects to Bremsstrahlung of Fast Particles in Crystals | |
| <i>V. V. Syshchenko, A. I. Tarnovskii, and N. F. Shul'ga</i> | 801 |
| Implantation of Helium and Deuterium Ions into Tungsten-Coated Composite Structures | |
| <i>V. V. Bobkov, L. P. Tishchenko, A. V. Onishchenko, E. N. Zubarev, R. I. Starovoitov, Yu. I. Kovtunenkov, Yu. E. Logachev, and L. A. Gamayunova</i> | 806 |

**Eighth National Conference “X-Rays, Synchrotron Emissions, Neutrons, and Electrons
for Studying Nanosystems and Materials.
Nanobioinformative Technologies” RSNE-IBIK-2011**

Date: November 14–18, 2011
Deadline for Submitting
an Application for Participation
in the Conference and Theses
of Reports: May 15, 2011
Place: National Research Centre Kurchatov Institute, Moscow
Official Site: RSNE-IBIK 2011
Telephone number: +7(499) 135-02-29; +7(499) 135-01-00
fax: +7(499) 135-10-11
e-mail: rsne2011@mail.ru
www: <http://www.crys.ras.ru/rsne/>

Goal of the Conference:

Development of interdisciplinary approaches in studying nanosystems and new materials for nanobioinformation and cognitive technologies using X-rays, synchrotron emissions, neutrons, and electrons.

Organizational Committee:

Chair of the Organizational Committee: M.V. Koval'chuk
Chairs of the Program Committee: V.L. Aksenov and Ya.I. Shtrombakh
Chairs of the Local Committee: V.M. Kanevskii and P.K. Kashkarov
Academic Secretary: L.G. Yanusova

Organizers:

Shubnikov Institute of Crystallography, Russian Academy of Sciences
National Research Centre Kurchatov Institute The Institution of the Russian Institute
of Solid State Physics, Russian Academy of Sciences
National Committee of Crystallographers of Russia
The Scientific Council on Condensed Media Physics, Russian Academy of Sciences

Supporters

The Russian Academy of Sciences
The Ministry of Education and Science of the Russian Federation
Rosatom State Atomic Energy Corp.
The Russian Foundation for Basic Research

The program of the conference will be represented by the following sections:

I. Biomolecular Structures; Biocompatible and Organic Materials

The structure and properties of biomolecular systems, organic and biocompatible materials, self-assembly, hierarchy of structures, and specific and nonspecific interactions.

II. Surfaces and Layered Nanosystems

The structural and functional properties of a surface, near-surface layers, thin films, and nanostructured materials.

III. The Structure and Dynamics of Three-Dimensional Systems

The structure and dynamics of crystals, partially ordered and disordered systems, and nanostructured materials.

IV. Information and Cognitive Technologies

Complex and interdisciplinary research in the field of cognitive sciences with the use of X-ray and synchrotron emissions, neutrons, electrons, and information technologies.

V. Numeric Methods, Computer Modeling, Theory of Scattering and Diffraction

Theory, algorithms and programs, and numerical experiments in studying the structure and properties of nanostructures and materials.

VI. Hardware and Methodological Support of an Experiment

Experimental stations and plants based on sources of neutrons and electrons; X-ray and synchrotron emissions; systems for information control, collection, storage, and processing; and X-ray and neutron optics.

Scientific readings will also be held devoted to the memory of **Academician B.K. Vainshtein**.

