

**Orientation Effects of the Neutrons Yield Increase in the $d(d, n)^3\text{He}$ Reaction
at Energies 7–12 keV in TiD_2 Crystals***V. M. Bystritsky, G. N. Dudkin, S. I. Kuznetsov, Yu. L Pivovarov,
T. A. Tukhsatullin, V. A. Nevedomsky*

5

**Study of Internal Structure of the Ancient Copper Coins
by Means of Neutron Tomography***S. E. Kichanov, K. M. Nazarov, D. P. Kozlenko, I. A. Saprykina,
E. V. Lukin, B. N. Savenko*

11

**Molecular Dynamics Simulation of Structural Changes in Metals under Irradiation
of High-Energy Heavy Ions***A. Yu. Didyk, S. N. Dimova, E. G. Nikonov, I. V. Puzynin, T. P. Puzynina,
Z. K. Tukhliev, Z. A. Sharipov*

16

**Modeling the Glow Discharge Cathode Sheath and the Cathode Surface Sputtering
in a Mixture of Argon with Mercury Vapor***M. S. Dubinina, D. O. Savichkin, M. R. Fisher, V. I. Kristya*

22

Effect of Irradiation with 15 MeV Protons on Compensation of Ge⟨Sb⟩ Conductivity*V. V. Kozlovski, A. E. Vasil'ev, V. V. Emtsev, G. A. Oganesyan, N. V. Abrosimov*

29

**Atomistic Simulation of Alloying Elements Segregation Nearby Radiation Defects
in Irradiated Fe–Cr–Ni BCC Alloys***A. V. Bakaev, D. A. Terentyev, E. E. Zhurkin*

34

**Formation of Charge Distribution of Fast Multicharged Ions Passing
Through Carbon Target***Yu. A. Belkova, N. V. Novikov, Ya. A. Teplova*

43

**Optical and Electrical Properties of Synthetic Single Diamond
under High-Fluence Ion Irradiation***A. M. Borisov, V. A. Kazakov, E. S. Mashkova, M. A. Ovchinnikov,
Yu. N. Palyanov, V. P. Popov, E. A. Shmytкова*

49

**Influence of Temperature and Annealing Atmosphere on Properties
of Zinc Implanted with Silicon***V. V. Privezentsev, V. S. Kulikauskas, V. V. Zatekin, K. D. Shcherbachov,
N. Yu. Tabachkova, K. B. Eidelman, S. V. Ksenich, A. A. Batrakov*

56

Opal's Phase Transformations during Thermal and Thermobaric Impact*V. A. Somenkov, S. S. Agafonov, M. N. Shushunov, V. P. Filonenko,
V. M. Masalov, G. A. Emelchenko*

66

**Simulation of the Interaction of free Cu–Bi Clusters with Low-Energy
Argon Single Atoms and Clusters***D. V. Shyrokorad, G. V. Kornich, S. G. Buga*

71

**The Resonance Capture of Electrons and Positrons into the Axial Channeling
Regime at the Crystal Surface***N. P. Kalashnikov, A. S. Olchak*

79

**Quantum Size Effect at the Reflection of an Electron Beam Incident
at the Small Angle on a Single Crystal Film with Account of Average
Inner Lattice Potential***S. M. Shkorniyakov*

83

To the Investigations of Generation Radiation at Grazing Interaction
of Internal Beam of a Betatron with Periodic Layered Structures

M. M. Rychkov, V. V. Kaplin, S. I. Kuznetsov, K. V. Suharnikov, I. K. Vaskovsky

93

Parameter Optimization for Self-Assembly of Linear Carbon Chain
by Molecular Dynamics in the Reactive Force Field

F. N. Mikhailov

98

The Scattering of Particle on the Atom in the Crystal Structure

G. M. Filippov, V. A. Aleksandrov

101

Investigation of TiAlSiN Coatings Deposited by Reactive Magnetron Sputtering
under High-Current Ion Assistance

N. V. Gavrilov, A. S. Kamenetskikh, A. V. Chukin

106

Mechanical Activation and Electrical Properties of Pb(Zr_{0.58}Ti_{0.42})O₃

M. A. Sirota, K. G. Abdulkakhidov

113

Features of Interaction of Silicon Surface and Yeast *Saccharomyces cerevisiae*
Suspension in Ethanol under the Influence of Magnetic Field

*L. P. Steblenko, A. I. Nizhelska, S. N. Naumenko, A. N. Kuryliuk,
Yu. L. Kobzar, A. N. Krit*

116