

Contents

Characterization and properties

Model lipid bilayers as sensor bionanomaterials for characterization of membranotropic action of water-soluble substances

*O.V.Vashchenko, N.A.Kasian, R.Ye.Brodskii,
L.V.Budianska, D.S.Sofronov, L.N.Lisetski* 422

Effects of different concentrations of sodium ions on the self-assembly of amphotericin B and DPPC at the air-water interface

Juan Wang, Tuo Li, Yahong Ma, Zongcheng Miao..... 432

Formation of oxygen vacancies in ceria-zirconia nanocrystals studied by spectroscopic techniques

*E.N.Okrushko, V.V.Seminko, P.O.Maksimchuk,
I.I.Bespalova, Yu.V.Malyukin*..... 439

Obtaining and characterization of stilbene polycrystals for detection of charged particles

*V.Tarasov, L. Andryushchenko, I.Vlasova,
V.Shlyakhturov, O.Shpilinskaya, L.Trefilova, E.Rybka*..... 445

Mechanisms of texture formation in thin-film systems $Ni_{1-x}W_x$ | TiN

M.S.Sungurov, T.V.Sukhareva, V.A.Finkel 450

Effect of ultrasonic impact treatment on creep characteristics and evolution of Zr1Nb alloy nanostructure

*V.I.Sokolenko, V.M.Gorbatenko, E.V.Karaseva,
A.V.Mats, E.S.Savchuk, V.A.Frolov* 458

Electrical properties of photosensitive heterostructures $n\text{-FeS}_2/p\text{-InSe}$

I.G.Thkachuk, I.G.Orletsky, Z.D.Kovalyuk, P.D.Marianchuk 463

Interaction of HNO_3 -HI-citric acid aqueous solutions with CdTe, $\text{Zn}_{0.04}\text{Cd}_{0.96}\text{Te}$, $\text{Zn}_{0.1}\text{Cd}_{0.9}\text{Te}$ and $\text{Cd}_{0.2}\text{Hg}_{0.8}\text{Te}$ semiconductors

*Ye.Ye.Hvozdiyevskiy, R.O.Denysyuk, V.M.Tomashyk,
G.P.Malanych, Z.F.Tomashyk*..... 471

The effect of sintering temperature on wear resistance of alloys produced by using hot isostatic pressing method

Tulay Yildiz, Suleyman Aba 477

Current transport through ohmic contacts to indium nitride with high defect density

P.O.Sai, N.V.Safriuk, V.V.Shynkarenko, P.N.Brunkov, V.N.Jmerik, S.V.Ivanov 486

Oxidation states and microstructure of manganese impurity centers in nanosized Al_2O_3 obtained by combustion method

*I.V.Berezovskaya, O.V.Khomenko, N.I.Poletaev, M.E.Khlebnikova,
I.V.Stoyanova, N.P.Efryushina, V.P.Dotsenko*..... 490

Optimisation of properties of silicon carbide ceramics with the use of different additives <i>K.Lobach, Y.Kupriyanova, I.Kolodiy, S.Sayenko, V.Shkuropatenko, V.Voyevodin, A.Zykova, A.Bykov, O.Chunyayev, L.Tovazhnyansky</i>	496
Application of carbon as a barrier layer in Sc/Si multilayer X-ray mirrors <i>Yu.P.Pershyn, I.Yu.Devizenko, V.S.Chumak, A.Yu.Devizenko, V.V.Kondratenko</i>	505
Structure of thermally evaporated bismuth selenide thin films <i>E.I.Rogacheva, A.G.Fedorov, S.I.Krивonogov, P.V.Mateychenko, M.V.Dobrotvorskay, A.S.Garbuz, O.N.Nashchekina, A.Yu.Sipatov</i>	516
Kinetics of crystals growth under electron-beam crystallization of amorphous films of hafnium dioxide <i>A.G.Bagmut, I.A.Bagmut</i>	525
Formation of monolayer ensembles of branched gold nanoparticles <i>T.G.Beynik, N.A.Matveevskaya, D.Yu.Kosyanov, A.A.Vornovskikh, V.G.Kuryavyi, S.V.Dukarov, S.I.Petrushenko</i>	534
Corrosion resistance and protective properties of chromium coatings electrodeposited from an electrolyte based on deep eutectic solvent <i>V.S.Protsenko, L.S.Bobrova, S.A.Korniy, A.A.Kityk, F.I.Danilov</i>	539
Hybrid organo-inorganic composite materials of incorporative type based on calcium phosphates for bone surgery <i>S.P.Krivileva, O.M.Rassokha, O.Yu.Zakovorotnyi, M.G.Zincenko, N.O.Bukatenko, V.I.Zhukov</i>	546
Optimization of preparation process and performance analysis of fly ash foam glass <i>Zipeng Qin, Gang Li, Yan Tian, Yuwei Ma, Pengfei Shen</i>	554
Surface modification of calcium carbonate nanoparticles as hydraulic oil additives friction performance research <i>Yuan-sheng Ding, Hou Baoquan, Xu Zhai, Fei Lu</i>	564
Modeling and simulation	
First principles calculations of indium impurity-cadmium vacancy complex in CdTe <i>I.Yuriychuk, S.Solodin, P.Fochuk</i>	568
Influence of radiation heat transfer dynamics on crystal growth <i>V.P.Mygal, I.A.Klymenko, G.V.Mygal</i>	574
Study of the constitutive model of columnar-grained $\text{Cu}_{71}\text{Al}_{18}\text{Mn}_{11}$ shape memory alloy <i>Liu Wei, Chen Changbing</i>	581
Chemical potential of gaseous medium for corundum single crystals growth <i>Ie.Kryvonosov, L.Lytvynov</i>	586

Technology

On the features of crystallization methods used for the purification of aqueous solutions of cesium iodide
V.L.Cherginets, T.V.Ponomarenko, T.P.Rebrova, A.G.Varich, A.L.Rebrov, Yu.N.Datsko 594

Crystallization of the fusible component in Ag/Bi/Ag and Ag/Pb/Ag layered film systems
S.V.Dukarov, S.I.Petrushenko, V.N.Sukhov, R.V.Sukhov 601

Growing and X-ray diffraction pattern of single-crystal double phosphate $\text{Li}_2\text{Mn}(\text{PO}_3)_4$
P.G.Nagorny, N.S.Slobodyanik, R.V.Lavrik, T.I.Ushchapivska 608

Quartz ceramics modified by nanodispersed silica additive
E.S.Khomenko, A.V.Zaichuk, E.V.Karasik, A.A.Kunitsa 613

Merrifield resin-linked polyazole-based sorbent for heavy metal ions extraction from water
I.M.Zviagin, S.V.Khimchenko, T.A.Blank, I.B.-Kh.Shcherbakov, E.Yu.Bryleva, Z.Yu.Bunina, D.S.Sofronov, K.N.Belikov, V.A.Chebanov..... 619

Boron removal from metallurgical grade silicon and Si-Sn alloy through slag refining with gas blowing
Rowaid Al-khazraji, Yaqiong Li, Lifeng Zhang..... 625

Dispersion and their tribological properties of molybdenum nanoparticles with different particle sizes as additive in lubricating oil
Tianhua Chen 632

Personalia

In memory of Professor Ya.E. Geguzin 637