Contents

Characterization and properties

Functional nanoparticles for biomedical applications: a dsc study of membranotropic behavior
A.N.Samoilov, L.N.Lisetski, N.A.Kasian, M.Yu.Losytskyy, A.A.Golub, V.M.Yashchuk *628*

Scintillation properties of single crystals of $K(Sr_{1-x}Eu_x)_2Cl_5$ solid solutions
A.L.Rebrov, Ya.A.Boyarintseva, V.L.Cherginets, T.E.Gorbacheva, A.Yu.Grippa, T.P.Rebrova, T.V.Ponomarenko, O.I.Yurchenko, N.V.Rebrova, V.A.Tarasov, P.N.Zhmurin *633*

Photoacoustic effect and superconductivity of metals
Yu.I.Boyko, V.V.Bogdanov, R.V.Vovk, B.V.Grinev *637*

Formation of mixed types of diamonds in the Fe–Co–Mg–C growth system at HTHP-crystallization
T.V.Kovalenko, V.V.Lysakovskyi, S.O.Ivakhnenko, V.V.Strelchuk, O.O.Zanevskyy, A.S.Nikolenko *641*

Helix elastic modulus in a ferroelectric liquid crystal with varying helical pitch
E.Popova, V.Mikhailenko, V.Semynozhenko, A.Krivoshey, A.Fedoryako *645*

Effects of grain-size and specimen thickness on dislocation kinetics in uniaxially strained thin Al sheets with one grain in thickness
Ye.V.Ftomov, O.V.Shekhovtsov, E.E.Badiyan, A.G.Tonkopryad *652*

Specific heat of $Bi_2(Te_{1-x}Se_x)_3$ solid solutions
K.V.Martynova, E.I.Rogacheva, G.V.Lisachuk *662*

Effect of Zn doping on the structural and optical properties of NiO thin films deposited by spray pyrolysis technique
A.Ferdi, A.Hafdallah, B.Harkati, L.Herissi *669*

Study on the effect of TiN deposition conditions on the features of texture formation in the two-layer system $TiN/Ni_{0.905}W_{0.095}$ suitable for creating paramagnetic substrates with cubic texture for 2G HTS superconductors
T.V.Sukhareva, M.S.Sunhurov, V.A.Finkel , Yu.N.Shahov *676*

Possible conversion of the charge carriers in high-entropy alloy $Al_{0.5}CoCuCrNiFe$
V.N.Voyevodin , V.A.Frolov, E.V.Karaseva, A.V.Mats, E.S.Savchuk, V.I.Sokolenko, T.M.Tikhonovskaya, A.S.Tortika *683*

Effect of pH on the interparticle magnetic interaction in ensembles of barium hexaferrite particles
I.A.Vedernykova, A.A.Koval, M.M.Ivashura, A.A.Ivashura, O.M.Borysenko *689*

Research of properties of AlB_{12}–Al electric spark coatings on VT1-0 titanium alloy
A.P.Umanskyi, M.S.Storozhenko, V.E.Sheludko, V.B.Muratov, V.V.Kremenitsky, I.S.Martsenyuk, M.A.Vasilkovskaya, A.D.Kostenko, A.A.Vasiliev, A.E.Terentiev 694

Investigation of the glass formation region and optical properties of the phases obtained in the As_2S_3–CdSe system
I.I.Aliyev, C.A.Ahmedova, N.N.Mursakulov, N.N.Abdulzade, I.I.Abbasov, A.L.Bakhtiyarov, Kh.M.Gashimov 701

Dependence of the anocomposite "glass-ruthenium compound" electrophysical parameters on the initial component properties
Ya.I.Lepikh, N.M Sadova, V.A.Borshchak, N.P.Zatovska, A.A.Karpenko 709

Influence of modification of surical sutures with film coatings based on chitosan, polyvinyl alcohol and Na-carboxymethylcellulose dialdehyde on their capillary and physico-mechanical properties
S.V.Kryvets, G.I.Kovtun, A.G.Misyura 713

Corrosion resistance of reinforced concrete based on different cementitious materials
Tao Sun 720

Photocatalytic antibacterial performance of diatomite/nano-TiO_2 composite doped cement-based material
Gang Liao, Yuming He 729

Influence of nano-C–S–H on the mechanical properties of recycled concrete
Wei He, Gang Liao 737

Modeling and simulation

Estimating spin gap in conjugated nanomolecules by spin-flip configuration-interaction-singles approach
A.V.Luzanov 743

The slow electromagnetic wave effect induced by the interaction of dark and quasi-dark modes in microwave metamaterials
Yu.N.Savin, Z.E.Eremenko, O.A.Breslavets 751

Technology

Production of large-size polystyrene based plastic scintillators with uniform optical properties
A.Yu.Boyarintsev, A.V.Kolesnikov, S.N.Kovalchuk, I.S.Nevliudov 758

Thermodynamic and experimental studies of the growth of magnesium-aluminum spinel crystals in molybdenum crucibles
S.V.Nizhankovskyi, N.S.Sidelnikova, O.O.Vovk, Yu.V.Siryk 764

Supramolecular inclusion complexes of 2-hydroxypropyl-β-cyclodextrin with mefenamic acid: preparation and characterization
G.V.Grygorova, V.K.Klochkov, N.A.Kasian, P.V.Mateychenko, D.S.Sofronov, S.L.Yefimova 773

Materials and methods

Neutron-sensitive plastic scintillator
P.M.Zhmurin, D.A.Yelisieiev, O.V.Yelisieieva, Yu.O.Hurkalenko, V.D.Alekseev *784*

Cloud infrastructure for calculations in the field of engineering and medicine
S.V.Barannik, O.V.Dyomin, P.O.Stadnik *790*

Research and application of composite plugging technology with organic gel and inorganic gel for malignant leakage
Yao Xuyang, Xu Shengjiang, Zhou Zenan, Gong Jiaqin, Lu Tiemei, Yu Yongsheng *793*

Properties of magnesium phosphate cement as electrolyte for structural supercapacitor
Zhou Changshun, Wang Qidong, YU Zhouping *803*

Influence of environmental factors on functional properties of optical polymer films
A.Dunaieva, D.Mishurov, A.Voronkin, O.Nedilko, A.Roshal *810*

In Memory

Prof. V.D.Ryzhikov *819*
Prof. M.Z.Galunov *821*

Author Index Vol. 26, 1–4 ..... *823*