

Contents

Characterization and properties

Luminescence of singlet oxygen generated by fullerene C ₆₀ aminopropylsilica nanocomposites <i>M.Y.Losytskiy, R.A.Kharchenko, D.V.Gryn, M.A.Dotsenko, Yu.S.Boiko, O.M.Kozachkova, A.N.Samoilov, A.A.Golub, V.M.Yashchuk</i>	189
Revealing thermomechanical properties of Al ₂ O ₃ -C-SiC composites at sintering <i>E.S.Gevorkyan, V.P.Nerubatskiy, R.V.Vovk, O.M.Morozova, V.O.Chyshkala, Yu.G.Gutsalenko</i>	193
Obtaining semiconductor structures Si-Si _{1-x} Ge _x -Si _{1-x-y} Ge _x Sn _y from the liquid phase in a single technological cycle <i>A.Sh.Razzokov, A.S.Saidov, S.I.Petrushenko, S.V.Dukarov</i>	202
Effect of heat treatment on the manifestation of a percolation phase transition in the semiconductor Pb _{1-x} Sn _x Te solid solutions <i>G.O.Nikolaenko, E.I.Rogacheva, O.N.Nashchekina, G.V.Lisachuk</i>	209
Electrochemical behavior of Co-Mo alloy <i>V.V.Shtefan, A.S.Bulhakova, N.A.Kanunnikova</i>	215
Effect of phase composition on the wear and corrosion resistances of the aluminium oxide coatings formed on the Al alloy substrate by microplasma oxidation <i>D.V.Vinnikov</i>	221
Study of nucleation and crystallization in magnesium aluminosilicate glasses during heat treatment <i>Oksana Savvova, Olena Babich, Vadym Tymofeev, Hennadii Voronov, Oleksii Fesenko, Oleksii Babich</i>	228
Structure and antibacterial property of coordination polymer [Zn(4-[(8-hydroxy-5-quinolinyl)azo]- benzenesulfonic acid)(H ₂ O) ₄] <i>Yanan Luo, Pengfei Wang, Kangming Liu, Zhengyu Yang, Mujia Song, Xueling Cao</i>	237
Optimization of rheological properties of Y ₂ O ₃ slurries for obtaining IR-transparent ceramics <i>D.G.Chernomorets, O.S.Kryzhanovska, N.A.Safronova, A.E.Balabanov, A.G.Doroshenko, I.O.Vorona, S.V.Parkhomenko, A.V.Tolmachev, R.P.Yavetskiy</i>	244
Synthetic and natural flavonols as promising fluorescence probes for β-glucosidase activity screening <i>O.O.Demidov, E.S.Gladkov, A.V.Kyrychenko, A.D.Roshal</i>	252
Detection of heptavalent manganese ions using polymethacrylic acid assisted silver nanoclusters as fluorescent probes <i>Xueling Cao, Faxian Liu, Jianfeng Hou, Danfeng He</i>	263
Investigation of the effect of recycled concrete additives on the properties of cement-based materials <i>Xuefeng Yuan, Gang Liao</i>	268
Influence of fly ash dosage over the compressive strength of rock-filled concrete <i>Changchun Wu, Jianhua Zhu</i>	274

Modeling and simulation

Prediction of mechanical properties of hot rolled strip based on DBN and composite expectile regression
Siyu Huang, Xiaoxia He, Xin Zhang, Weigang Li..... 279

Technology

Development of technology for forming vacuum-arc TiN coatings using additional impulse action
N.V.Pinchuk, V.V.Starikov, H.O.Kniazieva, S.V.Surovytskyi, N.V.Konotopska 291

Biogenic hydroxyapatite-based composites modified by magnetite and chitosan: synthesis, phase composition and structure
A.O.Synytsia, O.E.Sych, T.E.Babutina, T.V.Tomila, O.I.Bykov..... 299

Peculiarities of nanosized relief formation on the $Cd_xHg_{1-x}Te$ single crystals surface using $K_2Cr_2O_7-HBr$ -solvent etchants
M.V.Chayka, Z.F.Tomashyk, V.M.Tomashyk, G.P.Malanych, A.A.Korchovyj..... 305