

Contents

Characterization and properties

Transition from microstructures to nanostructures and ultimate hardening <i>S.A.Firstov, T.G.Rogul, O.A.Shut</i>	364
Superlattice nanostructures based on chalcogenide semiconductors <i>A.Yu.Sipatov</i>	374
The correlation between film structure and surface temperature <i>L.R.Shaginyan, I.V.Belousov, A.G.Sedlyar</i>	384
The thermal expansion of single-walled carbon nanotubes at low temperatures <i>A.V.Dolbin</i>	390
Effect of biatomic gas impurities on thermal expansion of fullerite C ₆₀ <i>A.V.Dolbin</i>	399
Structure and magnetic state of films deposited by laser sputtering of nickel <i>A.G.Bagmut, I.G.Shipkova, V.A.Zhuchkov</i>	405
Comparison of refractive indices of amorphous and crystalline As ₂ S ₃ <i>V.K.Miloslavsky, E.D.Makovetsky</i>	412
Phase transitions in the weak links system of granular YBa ₂ Cu ₃ O _{7-δ} HTSC <i>T.V.Sukhareva, V.A.Finkel</i>	418
Evolution of magnetic and magnetoresistive properties of sputtered NiFe/Cu/Co/Cu nanostructures under ageing and annealing <i>S.T.Roschenko, I.G.Shipkova, Yu.I.Chekrygina</i>	424
Luminescence kinetics of crystals LSO co-doped with rare-earth elements <i>N.G.Starzhinsky, O.Ts.Sidletskiy, B.V.Grinyov, A.A.Masalov, Yu.V.Malyukin, K.A.Katrunov, I.M.Zenya, D.A.Kurtsev, V.G.Bondar</i>	431
Relaxation processes in hard piezoelectric ceramics <i>D.V.Kuzenko, V.M.Ishchuk, A.I.Bazhin, N.A.Spiridonov</i>	436
Diffusion-controlled excitation annihilation in Sr ₂ CeO ₄ crystal <i>A.A.Masalov, O.G.Viagin, I.I.Ganina, Yu.V.Malyukin</i>	442
Multilayer film heterostructures. Silicides <i>S.I.Sidorenko, Yu.N.Makogon, E.P.Pavlova, S.M Voloshko</i>	445
Structure features and paramagnetic centres in oxide nanopowders <i>V.N.Shevchuk, D.I.Popovych, Yu.N.Usatenko, P.Yu.Demchenko, R.Ya.Serkiz</i>	448
Dependence of sapphire hardness on loading type and orientation <i>A.B.Sinani, N.K.Dynkin, P.V.Konevskiy, L.A.Lytvynov</i>	456

Effects of surfactants on the molecular aggregation of squaraine dye Sq-2Me in aqueous solutions <i>S.L.Yefimova, G.Ya.Guralchuk, A.S.Lebed', A.V.Sorokin, Yu.V.Malyukin, I.Yu.Kurilchenko</i>	460
Colloidal synthesis and properties of lanthanide orthophosphate nanophosphors <i>V.K.Klochkov, N.S.Kavok, Yu.V.Malyukin, A.A.Masalov, O.G.Vyagin</i>	466
Effects of liquid crystalline ordering on the luminescence spectra of model compounds with packing-sensitive molecular structure <i>L.N.Zavora, M.I.Serbina, N.A.Kasian, Yu.A. Gurkalenko, V.M.Shershukov, L.N.Lisetski</i>	470
Efficiency improvement of polystyrene-based plastic scintillators <i>A.F.Adadurov, P.N.Zhmurin, V.N.Lebedev, V.D.Titskaya</i>	475
Influence of γ -irradiation on current-voltage characteristics of TlGaSe ₂ single crystal <i>A.A.Ismailov, N.D.Achmedzade, M.M.Shirinov, S.T.Aghaliev</i>	481

Modeling and simulation

New phase inclusion growth control <i>T.V.Kulik</i>	483
Monte-Carlo simulation of random hyperbranched polymers with flexible branches <i>M.Ratner</i>	487

Technology

Magnetron sputtered coatings of AlN-TiCrB ₂ system <i>A.D.Panasyuk, I.A.Podchernyaeva, I.P.Neshpor, W.Gawalek, V.N.Ivanov</i>	492
Transient mode features at sapphire growing by horizontal directional crystallization <i>S.V.Barannik, V.N.Kanischev, S.V.Nizhankovskiy, A.M.Stepanenko</i>	498
Scintillation material on the basis of Ba _x Sr _{1-x} Si ₂ :Eu solid solutions <i>N.V.Rebrova, V.L.Cherginets, N.N.Kosinov, T.V.Ponomarenko, T.P.Rebrova, I.N.Vjunnik, O.V.Zelenskaya</i>	501
Portable radiation monitoring system on the base of CdWO ₄ scintillator <i>M.B.Kosmyna, B.P.Nazarenko, V.M.Puzikov, A.N.Shekhovtsov, B.V.Grinyov, Yu.A.Borodenko, Ye.M.Selegenev, V.D.Ryzhikov, L.A.Piven, V.A.Tarasov, Yu.S.Kozmin, V.V.Belogub, A.V.Didenko</i>	505
Spherical phosphors Lu ₂ O ₃ :Eu coated with SiO ₂ shells <i>Yu.V.Yermolayeva</i>	508

Synthesis of silicon dioxide hollow spheres
P.P.Gorbik, Yu.O. Demchenko, I.V.Dubrovin, G.N.Kashin..... 513

Synthesis of SiO₂ matrices doped with some inorganic compounds
T.A.Blank, I.I.Ganina, Yu.V.Malyukin, L.P.Eksperiandova..... 517

In Memory

To 100th anniversary of Lev Palatnik 520

Author Index, Vol. 16, № 1–4 521