Contents

Review

Fluorescence properties of cyanine dyes molecular aggregates in nanostructured media: A review
O. V. Sorokin, I. I. Bespalova, S. L. Yefimova *323*

Characterization and properties

Self-organization of the structure of bioactive glass-ceramic materials doped with metal ions
O. Savvova, O. Babich, O. Yefimov, M. Tymoshchuk, S. Firsov, Yu. Smyrnova *348*

Changes in heat transfer in $PbSe_{1-x}Te_x$ semiconductor solid solutions under transition to the impurity continuum
O.I. Rogachova, O.S. Vodoriz, T.V. Tavrina, K.V. Martynova, O.M. Nashchekina, V.Y. Martseniuk *361*

Resistive investigations of pressure effect on the fluctuations paraconductivity in $Y_{0.66}Pr_{0.34}Ba_2Cu_3O_{7-\delta}$ single crystals
V.Yu. Gres, M.V. Korobkov, G.Ya. Khadzhai, R.V. Vovk *367*

Synthesis, electronic structure and morphological features of composite films based on ZnO and calcium hydroxyapatite for conductive layers of solar cells with encapsulating properties
N.A. Kurgan, V.L. Karbivskyi, S.I. Shulyma, N.K. Shvachko, V.V. Zaika, V.O. Moskaliuk, L.P. Kliuienko, S.P. Starik *372*

Investigation of the mechanical characteristics of composites based on CFA and rLDPE
Prinob Aksar, Minson Simatupang, Sudarsono, Endro Sukotjo, Al Ichlas Imran, Aditya Rachman *380*

Experimental design in the study of wear properties of polymer composites
Nurlan Gurbanov, Kamala Ismayilova, Mustafa Yunus Askin *386*

Structure-properties relationship in polymer nanocomposites based on polylactic acid and carbon nanotubes
E.A. Lysenkov, V.L. Demchenko, M.M. Lazarenko *397*

Study of thermal effects in polymer coatings with increasing temperature
O.O. Sapronov, P.O. Maruschak, V.L. Demchenko, R.T. Bishchak, V.D. Sharanov, D.O. Danylenko, A.V. Sapronova, V.V. Sotsenko, P.O. Vorobiov, A.O. Sokol, K.Yu. Yurenin, V.L. Aleksenko *405*

From microstructure to properties: fractal patterns in carbon steels
D.B. Hlushkova, V.M. Volchuk, O.V. Orel, D.B. Sereda *411*

The phase composition and physical properties of melt-quenched multicomponent alloy $FeCoNiB_{0.7}Si_{0.3}Be$
O.I. Kushnerov, S.I. Ryabtsev, P.O. Galagan, V.F. Bashev *418*

Resistance of manganese steel to hydrogen sulfide embrittlement
A. Borusewicz, T. Olszewski, D. Hlushkova, V.Volchuk, A. Uzhva, I. Kyrychenko 423

Synthesis and electrophysical properties of fluoride conducting phases $Ba_{1-y-x}La_xSn_{1+y}F_{4+x}$
O.V. Lysenko, R.M. Pshenychnyi, A.O. Omelchuk. 429

Agarose gel structure study using dynamic light scattering
A. R. Imamaliyev, I. I. Abbasov, R. Sh. Rahimov, Ch. A. Imamalizade 441

Frost resistance and mesoscopic structure analysis of polystyrene granular concrete based on CT technology
Zhouping Yu, Haoting Li, Jianyu Yang, Weijun Yang. 446

Chemical properties of the 5-methyl-7-phenyl-4,7-dihydro-1,2,4-triazolo-[1,5-***a***]pyrimidin-6-carbaldehyde and its derivatives
V.V. Lipson, N.V. Svetlichnaya, V.M. Vakula, M.G. Shirobokova, S.V. Shishkina, I.S. Konovalova, O.V. Vashchenko, V.I. Musatov. 458

New pharmaceutical materials with analgesic activity based on 1,2,3-triazolo-1,4-benzodiazepine
I. Botsula, I. Kireyev, L. Perekhoda, M. Suleiman, R. Figat, Grzegorz Nalecz-Jawecki, O. Koshovyi, I. Vladymyrova, M. Mazur, V. Chebanov 471

Technology

Quaternary crystals CdZnTeSe: Growth via the vertical Bridgman method with different compositions of raw materials
S.V. Naydenov, O.K. Kapustnyk, I.M. Pritula, D.S. Sofronov, I.S. Terzin, N.O. Kovalenko 487

Synthesis, spectral properties and TD-DFT calculations of fluorescent mono and diphenyl substituted coumarin-3-carboxylic acids and their ethyl esters
P. V. Trostianko, A. V. Kyrychenko, O. N. Kalugin, S. M. Kovalenko 498