

CONTENTS

Original articles*Chandrashekara H. D., Poornima P.*TiO₂ thin-film dielectric properties are impacted by annealing

345

Shukla S., Kamal M.

Synthesis and study of graphene oxide obtained from waste transparent polythene bags using modified Hummers method

354

Darinsky B. M., Efanova N. D., Prizhimov A. S., Surkova A. A.

Crystallographic classification of special grain boundaries

363

Ilina E. A., Kozaderov O. A., Sotskaya N. V., Vandyshev D. Yu., Polikarchuk V. A., Shikhaliev Kh. S.

Kinetics of electrocrystallization of copper from an acid sulfate solution in the presence of N-methylpolyvinylpyridine-methylsulfate

368

*Kovtunets E. V., Spiridonova T. S., Tushinova Yu. L., Bazarova T. T., Logvinova A. V., Bazarov B. G.*Ternary molybdate K₅Cu_{0.5}Hf_{1.5}(MoO₄)₆: synthesis, structure, thermal expansion, and ionic conductivity

380

Korotkov L. N., Tolstykh N. A., Popov I. I., Bocharov A. I., Kashirin M. A.

Dielectric and piezoelectric properties of ceramic material based on modified lead zirconate titanate

391

Kostyuchenko A. V., Belonogov E. K., Ievlev V. M., Nikonov A. E., Osipov E. A., Osipov P. A.

Mechanical properties of Li-Nb-O system films

398

Kruzhilin A. A., Shevtsov D. S., Dmitriev I. A., Potapov M. A., Shikhaliev Kh. S.

Synthesis of 2-alkyl-5-phenyl-4,5,6,7-tetrahydro-[1,2,4]triazolo[1,5-a]pyrimidin-7-ol derivatives from vegetable oils and their efficiency as inhibitors of hydrochloric acid corrosion of steel

409

Muratov T. T.

Refined formula for the calculation of the coefficient of efficiency of an electrochemical generator

417

Nazarovskaia D. A., Turishchev S. Yu., Titova S. S., Shatov A. A., Tyurin-Kuzmin P. A., Osminkina L. A.

Photoluminescent properties of porous silicon nanoparticles: synthesis, characterization, and cellular imaging

422

Nikitina E. V., Kaveev A. K., Fedorov V. V., Pirogov E. V., Nadtochiy A. M., Vasilkova E. I., Kryzhanovskaya N. V., Sobolev M. S.

Study of photoluminescence kinetics in bulk GaPN and GaPNAs layers on silicon substrates grown by molecular beam epitaxy

433

*Rakitin V. V., Gapanovich M. V., Rabenok E. V., Kalimullina D. R., Lutsenko D. S., Kulemetev I. D., Koltsov E. N., Stanchik A. V., Gremenok V. F.*Research on the influence of the powder stoichiometry of (Ag_xCu_{1-x})_{0.7}GaSe₂ on the phase composition, structure, and lifetime of photogenerated charge carriers

441

*Sobolev A. N., Kovtunets E. V., Spiridonova T. S., Bogdanov A. B., Subanakov A. K.*Double borate NaScB₂O₅: synthesis, thermal stability, ionic conductivity, IR spectroscopy, and electronic structure

454

Yurchenko O. A., Solonchenko K. V., Pismenskaya N. D.

Coupled effects of concentration polarization in systems with anion-exchange membranes before and after their participation in electrodialysis of tartrate-containing solutions

464

Short communication*Sadykov T. T., Mustafin A. G., Kulish E. I., Akhmetkhanov R. M.*The influence of fullerene C₆₀ on the thermal stability of polyvinyl chloride

478

Seredin P. V., Goloshchapov D. L., Peshkov Y. A., Buylov N. S., Potapov A. Y., Shikhaliev K. S., Ippolitov Yu. A., Raul O. Freitas, Francisco C. B. Maia

Infrared synchrotron nanovisualization of a biomimetic layer composed of trimethyl-dihydroquinoline and nanocrystalline hydroxyapatite

483

Boikov N. I., Chuvenkova O. A., Parinova E. V., Chumakov R. G., Lebedev A. M., Makarova A., Smirnov D., Titova S. S., Fateev K. A., Turishchev S. Yu.

Synchrotron XANES studies of epitaxial tin-silicon solid solutions nanolayers

490

Chronicle*Domashevskaya E. P.*

90 years of the scientific school of solid state physics at Voronezh State University: from solid state physics to nanophysics (Scientific and historical essay)

497