# Contents

**Vol. 77, No. 8, 2004**

Simultaneous English language translation of the journal is available from MAIK "Nauka/Interperiodica" (Russia). Distributed worldwide by Springer Science + Business Media, Inc. *Russian Journal of Applied Chemistry* ISSN 1070-4272

## Inorganic Synthesis and Industrial Inorganic Chemistry

A Study of the Kinetics of Conversion of Natural Langbeinit Mixed with Carnallite
*I. Yu. Kostiv and O. M. Khatsevich* 1215

Distribution of Natural Radionuclides
*N. A. Mel'nik, E. P. Lokshin, and T. A. Sedneva* 1219

Methods for $MgSiN_2$ Synthesis
*F. F. Grekov and B. V. Chernovets* 1223

Synthesis and *in situ* Gravimetric Monitoring of Formation of Titanium-Oxide Layer on Silica Surface
*A. A. Malkov, E. A. Sosnov, and A. A. Malygin* 1227

Scientific Foundations of Development of New Chemically and Radiation-Resistant Cd-containing Crystalline Materials
*A. A. Lukuttsov, M. L. Spiridonova, N. A. Kulagina, A. I. Orlova, V. I. Pet'kov, and I. A. Kulikov* 1232

Synthesis of Nanocomposites by Abrasive-Reactive Wear of Grinding Bodies in a Mechanochemical Reactor
*F. H. Urakaev* 1239

Magneto-optic and Luminescent Properties of Tellurite Glass $TeO_2$–$ZnCl_2$ Doped with Rare-Earth Elements
*I. A. Grishin, V. A. Gur'ev, E. B. Intyushin, Yu. E. Elliev, O. V. Pavlova, and A. P. Savikin* 1245

A Study of Complexation in the System Constituted by Water, Carbamide, and Sulfur Dioxide at 293 K
*R. E. Khoma, M. I. Gavrilenko, and V. I. Nikitin* 1249

## Physicochemical Studies of Systems and Processes

Thermodynamic Calculation of the Solubility of Solid Hydroxides $M(OH)_2$ in Water and Alkaline Media
*E. V. Shkol'nikov* 1255

## Sorption and Ion-Exchange Processes

Selective Ion-Exchange Sorption of $K^+$ from Aqueous Solutions Containing $Na^+$–$K^+$ Mixture on Sn(IV) Hydrophosphate
*G. I. Smirnov, L. M. Dimova, and A. A. Redchenko* 1259

Acid–Base Characteristics of Carbon Adsorbents, Determined by Potentiometric Titration
*A. M. Puzii, O. I. Poddubnaya, and S. S. Stavitskaya* 1263

## Applied Electrochemistry and Corrosion Protection of Metals

Electrodeposition of Lustrous Zinc Coatings from Sulfate Electrolyte
*G. I. Medvedev and N.A. Makrushin* 1268

Electrodeposition of $CuSe_x$ Compounds onto Carbon-containing Electrodes
*M. B. Dergacheva, V. V. Chaikin, V. P. Grigor'eva, and E. P. Pantileeva* 1273

Anodic Behavior of Aluminum–Zirconium Alloys Microalloyed with Strontium and Cerium
*I. N. Ganiev, R. O. Barotov, and M. B. Inoyatov* 1279

Fundamental Aspects of Film Formation in Electrochemical Polishing of Silver and Silver–Copper Alloys in Thiosulfate Solutions
*E. P. Grishina, S. I. Galanin, and O. A. Ivanova* 1283

Corrosion-Electrochemical Behavior of Aluminum Alloys Low-Alloyed with Magnesium and Alkaline-Earth Metals
*I. N. Ganiev, R. O. Barotov, and M. B. Inoyatov* 1287

Finding an Effective Way to Inhibit Carbon Dioxide Corrosion of Ferrous Metals in Oil-and-Gas Production Media
*L. S. Moiseeva* 1292

## Catalysis

Kinetic Features of Catalytic Decomposition of Cyclohexyl Hydroperoxide and 1-Methylcyclohexyl hydroperoxide
*A. M. Syroezhko and O. Yu. Begak* 1301

Features of Claus Treatment of Acid Gases with Low Content of Hydrogen Sulfide
*O. I. Platonov, A. G. Ryabko, and L. Sh. Tsemekhman* 1308

## Environmental Problems of Chemistry and Technology

Removal of Ni(II) with Sodium Ferrate(VI) from EDTA-containing Aqueous Solutions
*D. Yu. Stupin and M. I. Ozernoi* 1312

## Organic Synthesis and Industrial Organic Chemistry

Synthesis and Corrosion-Protective Properties of Acetylenic Esters of Bicyclo[2.2.1]hept-5-ene-2-carboxylic Acid
*E. G. Mamedov* 1316

Reactions of Dithiocarbamic Acids Derived from Alkaloids, Morpholine, and Piperidine with Acrylic Acid and Its Derivatices
*T. S. Zhivotova, A. M. Gazaliev, M. K. Ibraev, S. D. Fazylov, and R. Z. Kasenov* 1321

Spectral-Luminescent and Generation Properties of Rhodamine Dyes in Thin Polymer Films under Optical Excitation
*V. A. Vaitulevich, N. S. Eremina, T. N. Kopylova, G. M. Mokrousov, L. G. Samsonova, and V. A. Svetlichnyi* 1325

Determination of the Deuterium Content in Organic Compounds by Gas Chromatography
*A. M. Egorov, S. A. Matyukhova, I. S. Demidova, V. V. Platonov, and V. A. Proskuryakov* 1331

Chemiluminescence in the Course of Inhibited Oxidation of Vegetable Oil
*N. I. Belaya, T. A. Filippenko, A. N. Nikolaevskii, and V. A. Zaets* 1336

## Macromolecular Chemistry and Polymeric Materials

Grafting of Poly-*N*-methacryloylaminodeoxyglucose on Poly-*N*-vinylpyrrolidone
*O. V. Nazarova, G. M. Pavlov, E. E. Kever, E. V. Afanas'eva, and E. F. Panarin* 1341

Behavior of Binary and Ternary Systems Based on Poly(Vinyl Chloride), Poly(Methyl Methacrylate), and Their Copolymers
*N. A. Bichuch, V. A. Izvozchikova, S. D. Zaitsev, A. G. Kronman, and Yu. D. Semchikov* 1345

Carbonization of Some Cellulose Ethers and Their Graft Copolymers with Polyacrylonitrile
*Yu. N. Sazanov, L. A. Nud'ga, V. A. Petrova, A. V. Novoselova, V. L. Ugolkov, G. N. Fedorova, E. M. Kulikova, and A. V. Gribanov* 1351

Controlling the Viscosity of Melts of Partially Crystalline Polyimides Used for Preparing Carbon-Reinforced Plastics
*T. A. Kostereva, Yu. N. Panov, A. L. Didenko, I. G. Silinskaya, V. M. Svetlichnyi, V. E. Yudin, and V. V. Kudryavtsev* 1355

Influence of Molecular Weight of Polyacrylic Acid on the Rate of Copper Dissolution
*V. N. Kislenko and R. M. Verlinskaya* 1359

Variation of the Parameters of Inhibited Oxidation of Polyethylene in the Region of Phase Transition
*Yu. A. Shlyapnikov and N. N. Kolesnikova* 1364

Cluster Structure of Epoxy-Phenolic Polymer Prepared by Curing a Mixture of Epoxy-4,4'-Isopropylidenediphenyl and Phenol-Formaldehyde Oligomers
*A. N. Krasovskii, D. V. Novikov, and V. N. Filippov* 1368

Radical Polymerization of the Quinone Derived from Monoethanolamine Vinyl Ether and Chloranil
*E. E. Ergozhin, B. A. Mukhitdinova, S. A. Shoinbekova, A. I. Nikitina, and G. N. Zhunusova* 1376

Sample Pretreatment and Chromatographic Determination of Benz[a]pyrene in Wastewater
*N. I. Kayutkina, I. A. Platonov, and A. V. Bulanova* 1379

Preparation and Vulcanizing Properties of 1,3,5-Trinitrosobenzene
*O. R. Klyuchnikov, F. G. Khairutdinov, and Ya. O. Klyuchnikov* 1382

## Brief Communications

Influence of Fulleroid Nanoparticles (Astralenes) on Absorption of Water by Epoxy Resin
*D. V. Kositskii, V. M. Yudovich, M. E. Yudovich, and A. N. Ponomarev* 1386

## History of Chemistry and Chemical Technology

Jons Jakob Berzelius (To 225th Anniversary of His Birthday)
*A. G. Morachevskii* 1388

## Information

Third International Scientific-Practical Conference “New Fuels with Additives”
*A. G. Morachevskii* 1392

## Book Reivews

Sergeev, G.B., *Nanokhimiya* (Nanochemistry), Moscow: Mos. Gos. Univ., 2003, 288 pp.
*A. G. Morachevskii* 1394