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S.A. KIRLAN, E.A. CANTOR, T.S. SOLOMINOVA, A.M. KOLBIN
MOLECULAR DESIGN OF HETEROCYCLIC COMPOUNDS ON BASE OF REGULARITIES OF TYPE "STRUCTURE-PHARMACOLOGICAL ACTIVITY-TOXICITY"

In this review the results of researches of dependence between a structure of nitrogen-, oxy- and sulphur- containing heterocyclic compounds and their pharmacological activity and toxic properties are given. The following perspective groups of medical compounds are presented: inhibitors of microsome ferment system, analogues of prostaglandins with anti ulcerous and uretonic activity, antioxidants, antiviral compounds, antihelminthics.

Key words: heterocyclic compounds, structure, pharmacological activity

O.M. GYULALOV, N.S. OSMANOV, M.M. AKHMEDOV
INVESTIGATION OF INTERACTION OF RHENIUM (IV) HEXAHALOGENIDES WITH *o*-NITROANILINE AND *o*-PHENYLENDIAMINE

Complexes of the rhenium (IV) with *o*-nitro aniline and *o*-phenylenediamine $[LH]_2[ReX_6]$ ($X=Cl, Br$) have been synthesized. It has been established by the methods of IR spectral, X-ray phase and thermo gravitate analyses that thermal decomposition of these compounds proceeds to several steps. In any cases the final solid phase product was the metal rhenium.

Key words: *o*-nitro aniline, *o*-phenylenediamine, rhenium, complexation, thermal decomposition

O.V. MALKOVA, B.G. ANDRIANOV, A.S. SEMEYIKIN
ACIDIC DISSOCIATION OF PROTONATED FORMS OF MESO-PHENYL DERIVATIVES OF PORPHYRINS WITH HALOGEN-GROUPS IN PHENYL RINGS

The acidic dissociation of protonated forms of diphenyl alkyl derivatives of porphyrins with halogen-groups in the position of 4 and 4* of phenyl rings in acetonitrile - perchloric acid solutions were studied at 298-318 K. The constants of stepwise dissociations of the protonated forms of these porphyrins were determined. The thermodynamic parameters of the process of the acidic dissociation of the protonated forms ($pK, \Delta H, \Delta S, \Delta G$) were calculated. It was marks the influence of electron donor and electron acceptor groups as well as micro cycle distortion on the state of electronic density on reaction site of molecule.

Key words: acid dissociation, porphyrin, substituents influence, thermodynamic parameters

N.N. MIKHAYILOVA, E.H. GINIYATULLINA, S.S. ZLOTSKIY
DIHALOGENCARBENING 2-(1-PROPENYL)-1,3-DIOXOLANE

Dihalogencarbens are capable to attach on double bonds with formation of the gem-dichlorocyclopropanes, and to introduce on C-H bonds with formation of cyclic acetals with formation of the dihalogenmethyl derivatives. Reactions of dichlorocarbening on double and on C²-H bonds as well as dibromocarbening on double bonds have been carried out.

Key words: carbens, cyclic acetals, carbening, cyclopropanes.

N.V. POPLEVINA, E.A. GRIGORIEVA, E.A. ZININA, A.P. KRIVEN'KO
OXOCYCLOHEXANEDICARBOXYLATES IN REACTIONS WITH ALIPHATIC AND HETEROCYCLIC AMINES

The amination of diethyl-2-aryl-4-hydroxy-4-methyl-6-oxocyclohexane-1,3-dicarboxylates by aliphatic amines (allylamine, adamantyl methylenamine) proceeds through the carbonyl group of the allyl cycle with formation of products of an enamine structure – diethyl-2-aryl-4-allylamino(adamantylmethylenamino)-6-hydroxy-6-methylcyclohex-3-en-1,3-dicarboxylates. Reactions with heterocyclic amines (piperidine, pyrrolidine) lead to ethyl-6-aryl-2-methyl-4-(1-piperidyl(pyrrolidyl))cyclohex-1,3-dienedicarboxylates as a result of amination-dehydration-decarboxylation.

Key words: amination, diethyl-2-aryl-4-hydroxy-4-methyl-6-oxocyclohexane-1,3-dicarboxylates, aliphatic and heterocyclic amines

M.A. KRIUSHKINA, E.V. KOTOVA, A.V. BORISOV, I.V. PIMKOV, O.A. GOLUBCHIKOV, G.P. SHAPOSHNIKOV
SYNTHESIS AND PROPERTIES OF METAL COMPLEXES OF HEPTYLOXYSUBSTITUTED TETRAANTHRAQUINONEPORPHYRAZINES

Tetra-(6-heptyloxyanthraquino)-, tetra-(5,8-diheptyloxyanthraquino)- and tetra-(5,7-diheptyloxyanthraquino)porphyrines were synthesized by alkylation of tetra-(6-hydroxyanthraquino)-, tetra-(5,8-dihydroxy-anthraquino)- and tetra-(5,7-dihydroxyanthraquino)porphyrines of copper and nickel with heptyl bromide. The spectral and catalytic properties of synthesized compounds were investigated.

Key words: synthesis, heptyloxy-substituted tetraanthraquinoneporphyrines, metal complexes, hydrolysis, alkylation, catalysts

A.A. RZHEVSKIY, E.M. ALOV, N.P. GERASIMOVA, Yu.A. MOSKVICHEV, O.S. KOZLOVA, A.S. DANILOVA, A.S. SHEVCHUK
SYNTHESIS OF NEW 2-AMINO-4-(ARYLSULFONYLMETHYLENE)THIAZOLES ON BASE OF ARYLSULFONYLPROPANONES

A number of new 2-aminethiazole derivatives have been synthesized via arylsulfonylpropanone bromination and further condensation of α -bromine ketones with thiourea by Gunch method.

Key words: synthesis, 2-aminethiazole, bromination, condensation

E.E. LAKONTSEVA, M.Yu. KRASAVIN
ANTI-TUBERCULAR ACTIVITY OF MONO AND DIALKYL DERIVATIVES OF HYDRAZIDE
OF PYRAZINE AND PYRIDINE-4-CARBOXYLIC ACIDS

New hydrazides of pyrazine and pyridine-4-carboxylic acids (including for the first time obtained and characterized methyl esters) have been tested on bacterial culture M. Tuberculosis at concentration of 33 $\mu\text{mole/L}$. The tests have shown the remarkable anti-tubercular activity. The most active compounds did not show the cytotoxicity on HEK293 cells at the same concentration.

Key words: hydrazides, pyrazine and pyridine-4-carboxylic acids, anti-tubercular activity

A.V. MERINOV, A.V. KASHEVSKIY, A.Yu. SAFRONOV, S.B. PINSKIY
ELECTROCHEMICAL DETERMINATION OF NITRIC OXIDE AND MOLECULAR OXYGEN
IN BIOLOGICAL TISSUE SAMPLES

The possibility of electrochemical determination of the nitric oxide and molecular oxygen jointly containing in biological systems has been realized on an example of sample tissue of the thyroid gland. Concentration dependences of the studied gases in the "dry" samples and in homogenates have been quantitatively obtained within the range of concentrations of $10^{-3} - 10^{-6}$ M by means of the voltammetric and chronoamperometric measurements using Nafion coated glassy carbon electrode. The estimation of NO diffusion characteristics in the "dry" sample shown that the biological objects of this type demonstrate an adequate electrochemical behavior and appropriateness for direct electrochemical measurements.

Key words: nitric oxide, oxygen, determination, tissue

T.N. BOKOVIKOVA, A.V. PIRUZYAN, L.A. MARCHENKO, Yu.V. NAYDENOV
USING MIXED COAGULANT FOR WASTE WATER PURIFICATION OF MEAT-PROCESSING ENTERPRISES

The process of waste water coagulation of meat-processing enterprises with various coagulants has been studied. The most effective coagulant has been revealed. The technological parameters of coagulation process have been obtained. These parameters allow to recommend given coagulant for waste water purification of meat-processing enterprises.

Key words: coagulants, mixed coagulant, waste water, fats, proteins, purification

A.I. LYTKIN, N.V. CHERNYAVSKAYA, V.E. LITVINENKO
THERMODYNAMIC CHARACTERISTICS OF PROCESSES OF Cd^{2+} COMPLEXATION WITH DIETHYLENTRI-
AMINE – N, N, N', N'', N''' - PENTAACETIC ACID IN AQUEOUS SOLUTION

The enthalpies of complex formation of the diethylenetriamine– N, N, N', N'', N'''- pentaacetic acid (H_5L) with Cd^{2+} ion at 298.15 K and at ionic strength values of 0.2, 0.5 and 1.0 (KNO_3) were determined by the calorimetric method. The thermodynamic characteristics of the processes of the CdL^{3-} and CdHL^{2-} complex formations at fixed and at zero values of ionic strength were calculated.

Key words: thermodynamic parameters, heat effect, complexon, cadmium

N.V. TUKUMOVA, T.R. USACHEVA, S.N. ALESHIN, V.A. SHARNIN
INFLUENCE OF SOLVENT COMPOSITION ON ACID-BASIC EQUILIBRIUMS
IN WATER-ETHANOL SOLUTIONS OF MALEIC ACID

The dissociation constants of the maleic acid in water-ethanol solutions have been determined by potentiometric titration at the ion force of 0.1 on the sodium perchlorate background at 298 K. At the ethanol content increase in solution the growth of the dissociation constants pK has been observed. The results obtained have been compared with literature data on related compounds.

Key words: maleic acid, dissociation constant, water-alcohol solution

G.I. EGOROV, D.M. MAKAROV, A.M. KOLKER
INFLUENCE OF PRESSURE ON EXCESS THERMODYNAMIC CHARACTERISTICS
OF WATER-N, N-DIMETHYLFORMAMIDE MIXTURES AT 278-323.15 K

Excess molar volumes V^E and changes of excess molar Gibb's energy $\Delta_{P_0 \rightarrow P} G_m^E$, of excess molar enthalpy $\Delta_{P_0 \rightarrow P} H_m^E$, and of excess molar entropy $\Delta_{P_0 \rightarrow P} S_m^E$ in water-N, N-dimethylformamide (DMF) mixtures at 278-323.15 K in the pressure range of 0.1-100 MPa and mixing enthalpies H_m^E of water and DMF at 298.15 and 308.15 K at pressure of 100 MPa were calculated. It was shown, that V_m^E , $\Delta_{P_0 \rightarrow P} G_m^E$, $\Delta_{P_0 \rightarrow P} S_m^E$, $\Delta_{P_0 \rightarrow P} H_m^E$ values are negative over the whole concentration range at all temperature and pressure values investigated, and their concentration dependences pass through a minimum. Pressure increase leads to growth of absolute value of mixing enthalpy of water and DMF, and $H_m^E = f(x)$ function is characterized by the extreme at $x \sim 0.33 \div 0.35$ at all values of pressure (x – mole fraction of DMF).

Key words: thermodynamic function, water-N, N-dimethylformamide (DMF) mixture

I.N. TERSKAYA, V.V. BUDANOV, L.V. ERMOLINA
PRODUCING KINETICS OF COPPER DISPERSIONS BY REDUCTION OF Cu (II) WITH FORMALDEHYDE

Using literature data and own experimental ones it has been shown that the precipitation of Cu, Co Ni dispersions by means of reduction of aqueous solutions of their salts with the formaldehyde and with derivatives of the sulfoxylic acid (sodium hydroxymethylsulfinate, urea dioxide) is described by united kinetic model basing on some settings of topochemical reactions theory supplemented with conceptions on proceeding the nucleation step in liquid phase volume.

Key words: dispersion, copper, cobalt, nickel, reduction, aqueous solution, formaldehyde, sodium hydroxymethylsulfinate, urea dioxide

A.V. DUNAEV, S.A. PIVOVARENOK, A.M. EFREMOV, V.I. SVETSOV
KINETICS OF GaAs PLASMA ETCHING IN CHLORINE

An investigation of the GaAs etching kinetics in the chlorine plasma was carried out. The presence of the initial non-stationary etching regime was detected, which is caused probably by peculiarities of the etching of the polished layer. The plasma emission spectra with the etching products were analyzed. It was shown that the Ga 403.4 and 417.3 nm resonant lines can be used for etching kinetics control.

Key words: kinetics, etching, chlorine plasma, gallium arsenide, spectrum.

N.S. TANGYARIKOV
CATALYTIC VAPOR-PHASE HYDRATION OF ACETYLENE

New mixed poly-functional catalysts of acetylene hydration to acetaldehyde and acetone have been developed. Their properties have been studied. Different pathways of acetone formation through the reaction of acetylene hydration condensation have been proposed.

Key words: acetylene, vapor-phase hydration, acetaldehyde, acetone

A.B. SHEIN
ELECTROCHEMICAL BEHAVIOR OF $Mn_5(Ge_{1-x}Si_x)_3$ IN SULPHURIC ELECTROLYTE

The results of investigation of corrosion and electrochemical behavior of Mn_5Si_3 , Mn_5Ge_3 as well as $Mn_5(Ge_{1-x}Si_x)_3$ in sulphuric electrolyte have been presented. Anodic resistance of Mn_5Ge_3 in sulphuric electrolyte has been shown to be essentially less than that of Mn_5Si_3 because of less resistance of Ge as compared with Si and of better solubility of germanium oxides. $Mn_5(Ge_{1-x}Si_x)_3$ shows complicated electrochemical behavior and such internal factors as surface layers composition and appearance of Ge-Si bonds must be taken into consideration.

Key words: germanium silicide, corrosion, hydrogen evolution, anode dissolution

Yu.V. RUBLINETSAYA, V.V. SLEPUSHKIN, E.O. ILINYKH
FEATURES OF ANODIC BEHAVIOUR OF PERITECTIC SYSTEM OF ALLOYS TIN - ANTIMONY AT CONDITIONS OF LOCAL ELECTROCHEMICAL ANALYSIS

Regularities of process of anodic dissolution of peritectic system of alloys tin - antimony have been considered. The phase composition of alloys system and analytical expressions for dependence of partial currents of dissolution of coexisting phases on alloys composition has been established.

Key words: local electro-chemical analysis, peritectic system, anodic dissolution, polarization curve, composition-current diagram

S.L. ZAKHAROV, E.V. BELYAKOVA, A.V. EFREMOV, Kh.B. YUNUSOV, Lu YANTSIN,
V.Yu. DOMOZHILOV, A.Kh. WOLODIN
REVERSE OSMOSIS MEMBRANE OPERATION

The operation of reverse osmosis membranes during a long period of time has been considered.

Key words: reverse osmosis, capillary-porous membranes

T.S. KISELEVA, N.V. VOLKOVA, D.N. EMELIYANOV
INFLUENCE OF SOLUBILIZING ABILITY OF MEDIUM ON PENETRATION AND DISTRIBUTION OF POLYMER IN SOLID POROUS BODY

The regularities of impregnation of porous stone with solutions of polybutyl methacrylate in mixtures of solvents distinguished by solubilizing ability relative to the polymer and the regularities of subsequent removal of the polymer with a solvent from a monument were revealed. Dependent on the composition of solvent mixtures the size of a macrocoil and relative rate of capillary raising of polybutyl methacrylate solutions into the stone are extremely changed. The highest rate of impregnation and the most deep and uniform distribution of the polymer in the stone volume are observed in the case of the largest size of the macrocoil.

Key words: porous stone, solvent, polymer, impregnation

E.N. KALYUKOVA, M.V. BUZAEVA, E.S. KLIMOV
ADSORPTION OF SULFATE IONS ON NATURAL MINERAL DOLOMITE

The adsorption of sulphate ions on natural sorbents dolomite has been investigated. Quantitative adsorption characteristics such as maximum adsorption, ion extraction degree from solutions have been determined.

Key words: adsorption, dolomite, sulphate ions, isotherm

E.A. VLASOVA, A.S. MAKAROVA, S.V. MAKAROV, E.S. AGEEVA
REDUCTION OF NITRITE BY SODIUM HYDROXYMETHANESULFINATE IN PRESENCE OF COBALT AND IRON TETRASULFOPHTHALOCYANINES

Kinetics of nitrite reduction by the sodium hydroxymethanesulfinate in the presence of cobalt and iron tetrasulfophthalocyanines in the alkaline aqueous solution was studied by spectrophotometric method. These complexes have been established to be effective catalysts of nitrite reduction by the sodium hydroxymethanesulfinate. Kinetic and activation parameters for the different reaction steps of the catalytic process were determined.

Key words: nitrite, cobalt and iron tetrasulfophthalocyanines, kinetics of nitrite reduction

S.I. NIFTALIEV, S.E. PLOTNIKOVA, N.Ya. MOKSHINA

DETERMINATION OF AROMATIC ESTERS BY METHOD OF PIEZOQUARTZ MICRO WEIGHTING

Sorption regularities of the methyl benzoat, ethyl benzoat, benzyl acetate and ethyl phenylacetate on thin films of the polyethylene glycols 2000 and 300, ethers of polyethylene glycols (sebacinate and phthalate), tetrabenzoat pentaerythrite, triphenylphosphate, tween-40, triton X-305, di-2-ethylhexylsebacinate have been studied. The mass of sorbent films has been optimised. The sensitivity and selectivity of modifiers relative to determined compounds has been estimated. «Visual images» of sorbats have been constructed.

Key words: piezoquartz micro weighting, aromatic esters, modifiers, mole sensitivity, visual images

R.I. KRAIYDENKO

SLAGS TREATMENT OF CONCENTRATING FACTORY OF COPPER-PYRITE ORES

Processes of ammonium hydro fluoride interaction with oxides of the aluminum, titanium and iron have been investigated. Kinetic parameters - energy of activation and rate constant have been determined. Thermogravimetric researches have been carried out. The technological sequence of operations has been offered and tested allowing to extract from a slag of concentrating factory of copper-pyrite ores the valuable components.

Key words: oxides, aluminum, titanium, iron, ammonium hydro fluoride, activation energy, rate constant

A.A. ILYIN, A.P. ILYIN, N.N. SMIRNOV, M.V. ORLOVA, N.E. GORDINA

MECHANOCHEMICAL SYNTHESIS AND CATALYTIC PROPERTIES OF COPPER FERRITE

The process of mechano-chemical synthesis of the copper ferrite has been studied by the methods of phase X-raying, structural X-raying, thermo gravimetry, IR spectroscopy and gas chromatography. The high catalytic activity of the copper ferrite for the reaction of medium-temperature conversion of carbon monoxide with water vapor has been established. The formation of by-products in the CO conversion reaction on the copper ferrite has been discovered. The concentration of by-products in condensate has been calculated.

Key words: copper ferrite, mechano-chemical synthesis, phase X-raying, structural X-raying

V.Yu. KUROCHKIN, A.A. ILYIN, A.P. ILYIN

INVESTIGATION OF PHYSICAL-CHEMICAL PROPERTIES OF IRON-OXIDES CATALYSTS PROMOTED WITH LANTHANIDES

The influence of lanthanides (La, Ce, Sm, Dy) on catalytic properties of iron-oxide catalyst in the reaction of CO conversion has been shown. The conditions of suppression of by-product organic compounds synthesis on catalysts promoted with lanthanides have been investigated. The quantitative and qualitative composition of by-products has been established.

Key words: iron-oxide catalyst, lanthanides, activity, selectivity

E.A. CHUDINOV, O.V. KARLOVA

PARAMETERS OF LITHIUM-ION ACCUMULATOR WITH SULPHUR DIOXIDE

It has been shown, that for realizations of the lithium-ionic accumulator the electrolyte on the base of propylene carbonate with SO₂ additive can be used. An electrodes reversible capacity on the base of spectral-pure graphite was more than 250 mAh/g at a number of running cycles more than 100. The lithium-ion accumulator in dimension of R 2590 at using as a material of a negative electrode the given graphite, positive LiCoO₂ and the electrolyte containing SO₂ cycles with capacity of 180 mAh.

Key words: lithium-ion accumulator, electrolyte, propylene carbonate, capacity, graphite electrode

V.A. PANKRATOV, M.N. VOLKOV, N.Yu. CHERNOUSOVA, M.E. SOLOVYEV

PROPERTIES OF PLASTICIZED RUBBERS MIXTURES OBTAINED UNDER VARIOUS MIXING CONDITIONS

Direction and deep of structural changes in plasticized rubber mixtures defines with the differences in plasticizer distribution in the mild and hard phases of polymer composition and depends on number of receipts and technological parameters. That changes are due to the rubber compatibility with plasticizer and can be connected with plasticizer part in rubber and depend on the sequence of ingredients input into rubber and, mainly, on carbon and plasticizer.

Key words: rubber, plasticizer, black carbon, mixing conditions, rubber mixture, structure, properties

I.A. BOLOTOV, V.E. MIZONOV, V.A. ZAITSEV, V.S. LEZNOV

MOISTURE DISTRIBUTION IN POROUS ROD ROTATING AROUND THE TRANSVERSE AXIS

A cell mathematical model of moisture evolution in a rotating around the transverse axis porous rod when the convection moisture transfer is governed by the gravity and centrifugal force was proposed. It is shown that there exists the optimal angular speed resulting in the most homogeneous distribution of moisture.

Key words: cell mathematical model, drying, distribution, optimal speed

A.V. ALIKOVSKIY, V.V. VASILIEVA, E.T. DAN'KO

GERMANIUM BUTHYLOXIDES INTERACTION WITH POLYPHENYLSILOXANE AND POLYDIPHENYLSILANEDIOL

It has been established that a germanium buthyloxides interaction with the polydiphenylsiloxane leads to formation of polydibutylgermaniumdiphenylsiloxanes which structure corresponds to initial molar ratio of reagents. A germanium hexabuthyloxide interaction with the diphenylsiloxane does not proceed even at reagents heating in the block at 190⁰C. It was possible to synthesize the oligomeric hexabuthyldiphenylsiloxanes by hexabuthylgermaniumoxide interaction with diphenylsilanediol.

Key words: germanium buthyloxides, polydiphenylsiloxane, germanium hexabuthyloxide, interaction

M.V. TESAKOVA, V.I. PARFENYUK

PHYSICAL-CHEMICAL PROPERTIES OF ULTRA DISPERSED COPPER CONTAINING POWDERS OBTAINED BY ELECTROCHEMICAL METHOD

Complex physical-chemical investigation of ultra dispersed copper-contained powders obtained from water-organic copper sulphate solutions with using the inert and soluble anodes was carried out. Particles size of obtained powders was determined by trans-

parent electronic microscope. The qualitative composition of powder was determined by results of electron-diffraction, X-raying and thermogravimetric methods. Anode materials influence and composition of electrolyte of water-organic solution influence on dimensioning parameters and chemical composition of obtained powders was investigated.

Key words: powder, copper, water-organic solution, electrolyte

V.A. ZLOBIN, A.K. TARASOV, I.K. KUKUSHKIN, E.V. VELIKANOVA

METHOD OF SYNTHESIS OF LOWBOILING ALIPHATIC ISOCYANATES BY CURTIUS REACTION

The simple and safe methods of synthesis of methyl and ethyl-isocyanates from chloranhydrides of carboxylic acids and sodium azide have been developed.

Key words: synthesis, methyl and ethyl-isocyanate

E.S. SOBOLEVA, V.S. KLEMENKOVA, S.G. KOSHEL, V.B. DOBROKHOTOV

STUDY OF FUNCTIONAL PROPERTIES OF COMPOSITE NIKEL-TEFLON COVERS

Characteristics of wear resistance of composite nickel-teflon covers obtained from electrolyte suspensions in the presence of various kinds of fine dispersive fillers have been investigated. Dependence between factor of friction and composition of composite cover has been established. The nickel-teflon cover including the fine dispersive shungit has been shown to possess the greatest stability to attrition.

Key words: nickel-teflon cover, friction coefficient, electrolyte, shungit

S.D. TIMROT, G.A. EFIMOVA, I.V. SAVITSKAYA, N.L. GURYLEVA

TECHNOLOGY OF TREATMENT OF OIL SLIME FORMING AT WASTE WATER PURIFICATION OF MACHINERY-BUILDING ENTERPRISE

The technology of oil slime treatment forming at purification of oil-containing waste water of machinery-building enterprise has been developed. The oil-slime is characterized with high water content. It does not separate at long store. It makes difficult of its utilization. The oil-slime heating with addition of "Kemelix 3307" de-emulsifier followed by centrifugation allows to separate a slime on three contents: oil, water and solid precipitate. It is supposed to use the oils with mass fraction up to 3% instead of oil and oil products.

Key words: oil-slime, waste water purification

S.D. TIMROT, N.L. GURYLEVA, N.S. YAMANINA

USING OIL CONTAINING WASTES IN HAYDITE MANUFACTURING

The results of studies of physical-chemical properties of various oil-slimes are given. The group composition of oil-slimes has been determined with liquid chromatography. A possibility of oil-slime utilization for haydite production has been shown.

Key words: oil-slime, properties, utilization, haydite

A.Yu. CHAIKA, V.N. ISAEV, E.S. SLIVCHENKO

INVESTIGATION OF THERMAL-PHYSICAL CHARACTERISTICS OF NYSTATIN MYCELIUM

Thermal diffusivity, heat conductivity and heat capacity of the nystatin mycelium (antifungal antibiotic) have been determined. The influence of moisture content of the material on behavior of thermal characteristics has been considered. The analysis of relations between thermo physical properties of mycelium and moisture state has been carried out.

Key words: nystatin, mycelium, thermal diffusivity, heat conductivity, heat capacity

A.G. LIPIN, A.V. ODINTSOV

FORECASTING OF GRAIN SIZE COMPOSITION AT PRODUCTION OF DOUBLE LAYER-GRANULES

Mathematical model of double-layer granules production process in the plate granulator was developed. Comparative analysis of the calculated and experimental data was made.

Key words: granulation, heterophase cover, grain-size composition, plate granulator, modeling

S.S. ZLOTSKIY

DI-TERT-BUTYL HYPONITRITE AS INITIATOR OF RADICAL REACTIONS OF ORGANIC COMPOUNDS

Obtaining and thermal dissociation of the di-tert-butyl hyponitrite (DTBHN) has been considered. The homolytical reactions initiated tert-butoxyle radicals forming at destruction of the di-tert-butyl hyponitrite are discussed.

Key words: di-tert-butyl hyponitrite, radical reactions, initiator

Yu.V. MITASOVA, R.E. KUZNETSOV, A.N. MUDROV, R.V. RALIS, T.A. AGEEVA, O.I. KOIFMAN

STUDY OF REACTION OF 1-VINYL-2-PIRROLIDONE AND METHYLMETACRYLATE RADICAL COPOLYMERIZATION UNDER ACTION OF MICROWAVE RADIATION

The reactions of radical polymerization of 1-vinyl-2 pyrrolidone and methylmethacrylate and their co-polymerization with an application of micro-wave and thermal heating have been studied for the research of micro-wave action on synthesis and properties of polymers. Co-polymers obtained have been studied by IR, NMR and elemental analysis methods. The action of micro-wave radiation on polymer composition, molecular mass and polymer yield has been established. The co-polymerization constants of 1-vinyl-2 pyrrolidone and methylmethacrylate have been determined.

Key words: microwave radiation, radical polymerization, molecular weight, poly dispersity, co-polymerization constants