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V.V. RYBKIN, I.V. KHOLODKOV, V.A. TITOV
KINETIC PARAMETERS AND CROSS-SECTIONS OF ELECTRONS INTERACTIONS
WITH NITROGEN (II) OXIDE MOLECULE

The analysis of literature data on cross-sections of elastic and non-elastic collisions of electrons with NO molecules is given. The calculations of rate constants of ionization processes drift velocities and characteristic energies which can be compared with experimental ones have been carried out on the base of digital solutions of Boltzmann equation using chosen initial cross-sections. During calculation the optimization of cross-sections has been accomplished. As a result of optimization the set of cross sections of electron interaction with NO molecule has been proposed. The application of proposed cross-sections allows to accomplish the calculation of electron gas parameters which agree with experimental data mentioned above.

Key words: nitrogen oxide, collision cross-section, electron kinetic parameters, transport parameters

V.A. DOROSHCHUK, N.A. GONTA, M.V. DROZDOVA, S.A. KULICHENKO
MICELLAR-EXTRACTION VINPOCETINE CONCENTRATING FOR HPLC DETERMINATION
IN BIOLOGICAL LIQUIDS

The classical micellar phenol-induced extraction of the vinpocetine under heating with phases of the non-ionic surfactant Triton X-100 at turbidity temperature has been studied. The conditions of reverse-phase HPLC determination of the vinpocetine in urea in the presence of phenol additions decreasing the turbidity temperature with preliminary micellar extraction concentrating have been developed.

Key words: micellar extraction, phenol, vinpocetine determination, liquid chromatography

S.V. DOBRYDNEV, G.I. KAPAEV, V.S. BESKOV
 $\Delta_F G_{298}^0$, $\Delta_F H_{298}^0$ AND $\Delta_F S_{298}$ **CHANGE IN FORMATION PROCESSES OF CRYSTALLINE HYDRATES**
OF INORGANIC SUBSTANCES

Standard Gibbs energy's changing and standard enthalpy changing in reactions of formation some inorganic crystalline hydrates on the known reference data have been calculated. The empirical equations of dependences of $\Delta_F G_{298}^0 = f(\Delta_F H_{298}^0)$ and $\Delta_F S_{298} = f(\Delta_F H_{298}^0)$ have been obtained. Values of standard Gibbs energies of formation of anhydrous salts and crystalline hydrates missing in thermodynamic databases have been calculated.

Key words: Gibbs energy, enthalpy, hydrate formation, inorganic salts

O.V. ELISEEVA, A.A. DYSHIN
VOLUME PROPERTIES OF MIXED SOLVENTS APIPHATIC ALCOHOL-ALCANE
AT VARIOUS TEMPERATURES

The density of ethanol-heptane and ethanol-octane solutions has been measured at temperatures of 288.15K, 298.15K, 308.15K, 318.15K and 328.15K by means of densitometer Anton Paar 4500 with accuracy of $\pm 1 \cdot 10^{-5} \text{ g/cm}^3$. The excess mole volumes of mixing for given systems have been calculated on the base of experimental data. Dependencies obtained have been explained using the theory of solvophobic interaction occurring in solutions.

Key words: density, solutions, ethanol, heptane, octane, excess mole volumes of mixing

I.V. DUMAEVA
GEOMETRY OF SUBSTITUTED NITRILES AND ITS COMPLEXES WITH SALTS OF METAL
OF TRANSITIENT VALENCY

Basic parameters of substituted nitriles and its complexes which were calculated by the MNDO method are presented in given work. The correlation of calculated parameters and nitrile geometry and its complexes was studied.

Key words: nitrile complexes, parameters and geometry, MNDO method calculations

S.V. BLOKHINA, N.Yu. BOROVKOV

UV-VIS SPECTRA OF ARYL-SUBSTITUTED TETRAAMINOETHYLENES

Aryl-substituted tetraaminoethylenes (TAE) are aromatic amines being of interest as molecular partners of fullerene C₆₀. This work presents UV-vis spectra of six TAE with different structure of the amino-ethylene center and aryl fragments. In chloroaliphatic media, TAE tend to yield two cation-radical forms, mono- and di-charged ones. Stability of the neutral form of TAE depends on the molecular structure of both amine and chloroaliphatic hydrocarbon. The data acquired allow forecasting qualitatively π -donor properties of TAE and, thus, affinity of TAE for fullerene.

Key words: aryl-substituted tetraaminoethylenes, optical spectra, oxydation

N.M. REPKIN, T.N. NESTEROVA, I.A. NESTEROV, S.V. LEVANOVA, E.V. GOLOVIN

INVESTIGATION OF THERMAL STABILITY OF 4,4'-DI-TERT-BUTYLBIPHENYL

The investigation of thermal stability of the 4,4'-di-tert-butylbiphenyl has been carried out in the temperature range of 703-763 K. Macro kinetic characteristics of 4,4'-di-tert-butylbiphenyl transformation reactions have been determined and analyzed.

Key words: 4,4'-di-tert-butylbiphenyl, thermal stability, kinetic parameters.

A.N. PIROGOVA, R.V. GOROKHOV, F.A. KOLOKOLOV, A.A. SARADZHYAN, A.Ya. SHURYGIN, N.N. BUKOV

COMPLEX COMPOUNDS OF LITHIUM ION WITH COMENIC ACID

Complex compounds of the lithium ion with comenic (5-hydroxy-4-oxo-4H-pyran-2-carboxylic) acid of composition 1:1 and 2:1 have been synthesized and isolated in solid form. The structure of the isolated compounds has been proposed on the base of data of the TGA analysis and IR spectroscopy.

Key words: comenic acid, lithium, complexation, complex compounds

A.N. GURBANOV, F.I. SALAKHOVA

STUDY OF COMPLEXATION AND EXTRACTION OF MIXED PHENANTROLYNE-1-OXY-2-NAPHTHOIC COMPLEXES OF COBALT, NICKEL AND IRON (II)

The complexation and extraction of mixed complexes of cobalt, nickel and iron (II) and o-phenantrolyne and 1-oxy-2-naphtoic acid has been studied. By the methods of molar ratios and equilibrium shift it has been established the composition of extracting compounds at pH 5-6 corresponds to the formula $M(\text{phen})_x(1,2\text{-OHK})_2$ where $M=\text{Co}$, Ni , Fe , phen –phenantroline. Cobalt and nickel complexes are extracted at molar ratio $M:\text{phen}=1:2$ whereas iron complexes are extracted at molar ratio of 3. Molar absorbance coefficients for Co, Ni and Fe(II) complexes were equal $1.8 \cdot 10^4$ ($\lambda_{\text{max}}=560$ nm), $1.4 \cdot 10^4$ ($\lambda_{\text{max}}=420$ nm), $1.6 \cdot 10^4$ ($\lambda_{\text{max}}=510$ nm), respectively.

Key words: complexation, cobalt, nickel, iron, o-phenantrolyne, 1-oxy-2-naphtoic acid

E.S. ELISEEV, I.A. SALMANOVA, Yu.P. ZARUBIN, P.P. PURYGIN

KINETICS OF HYDROLYSIS OF 1,1-BIS(1H-IMIDAZOL-1-YL)METHANIMINE AND ITS METHYL DERIVATIVES

The kinetics of hydrolysis of 1,1-bis(1H-imidazol-1-yl)methanimine and its methyl derivatives has been investigated. The most reactive has been shown to be the 1,1-bis(1H-imidazol-1-yl)methanimine and the 1,1-bis(2-methyl-1H-imidazol-1-yl)methanimine.

Key words: kinetics, hydrolysis, 1,1-bis(1H-imidazol-1-yl)methanimine

A.V. STEPANOV, S.V. LANOVETSKYI, V.Z. POIYLOV, M.N. OSOKINA, O.K. KOCVINTZEV

KINETICS REGULARITIES OF CRYSTAL GROWTH STEP OF HEXAHYDRATE OF MANGANESE NITRATE

Results of studies of growth rate of crystal of manganese nitrate hexahydrate are presented. Data on influence of various parameters on crystal growth rate in solutions of manganese nitrate have been obtained. The temperature influence of solution on mechanism of crystal growth has been determined.

Key words: growth rate, crystal, manganese nitrate hexahydrate

A.E. CHALYKH, A.A. BORISEVICH, T.F. PETROVA, A.P. BELOKUROVA

SORPTION AND DIFFUSION OF WATER WAPOR BY POLYACRYLIC ACID AND HYDRATE NUMBERS OF CARBOXYL GROUP

The sorption kinetics of water vapor by films and powders of the poly acrylic acid (PAA) of various molecular mass has been studied. The diffusion coefficients characterizing a translation mobility of sorbed molecules in PAA have been calculated. Sorption isotherms have been constructed. The sorption capacity of the PAA with respect

to the water vapor has been shown not to depend on molecular mass of polymer. The hydrate numbers of carboxyl group have been calculated. Compositions of solutions at which there is localization of one, two and three water molecules on the carboxyl group of monomer unit of polymer have been determined.

Key words: sorption, water vapor, film, powder, poly acrylic acid

N.P. OGORODNIKOVA, N.N. STARKOVA, Yu.I. RYABUKHIN

**DIRECT METHOD OF SYNTHESIS OF COPPER (II) COMPLEXES WITH AMINOACIDS
IN NON-AQUEOUS SOLUTIONS**

The stoichiometric interaction of metal copper with natural aminoacids in medium of organic solvents (dimethylsulphoxide and dimethylformamide) has been studied. The formation of inter complex compounds of $CuL_2 \cdot 2H_2O$ composition (LH is aminoacid) has been shown.

Key words: copper, aminoacids, organic acids, complexation

G.A. BAGIRZADE

**REACTION ABILITY OF o-XYLENE AND ITS 4-SUBSTITUTED COMPOUNDS
UNDER HETEROGENEOUS-CATALYTIC AMMONOLYSIS**

The comparative analysis of results of oxidative ammonolysis of the o-xylene and its 4-bromine and 4-phenyl substitutes at the same conditions has been carried out. The introduction as substitutes of the bromine atom and phenyl group has been found to decrease the o-xylene conversion. Phenyl substitute has been shown to act less negatively. The theoretic generalization of influence of steric and electron factors of substitute in 4-position on reaction ability of the o-xylene has been done.

Key words: xylene and its 4-bromine and 4-phenyl substituted derivatives, ammonolysis

M.N. BOBROV, T.V. GOREVA, Yu.P. KHRANILOV

**PRODUCT QUALITY STABILIZATION AT ELECTROLYSIS ON EXHAUSTION IN UTILIZATION
PROCESSES OF CONCENTRATED WASTES OF GALVANIC PRODUCTIONS**

The methods of product quality stabilization have been theoretically developed for two processes of periodic electrolysis in galvanic wastes utilization. The stable quality of cathode copper is reached by reduction of current density according to the definite law. The stable composition of lead crown is reached by introduction of acetic acid in the electrolyte.

Key words: quality stabilization, cathode copper, lead crown

I.V. MEKAEVA, B.A. KHORISHKO, E.I. VINOGRADOV, O.V. IVANOVA,

K.E. RUMYANTSEVA, K.V. STANISLAVCHIK

ELECTROCHEMISTRY OF MAGNETITE ANODE IN SOLUTION OF SODIUM SULFATE

The results of the thermodynamic analysis and potentiostatic, galvanostatic and alternative current research of magnetite interaction with neutral water solution of the Na_2SO_4 without and at anode polarization are given. The behavior of magnetite in the studied interval of potentials is identified with behavior of passivating materials. The general estimation of kinetic regularities of processes proceeding on Fe_3O_4 is given.

Key words: magnetite, anode, polarization, passivating materials, alternative current measurements, oxygen active emission, corrosion rate, overvoltage

O.N. SHCHERBININA, N.G. SHUSTOVA, S.S. POPOVA, S.P. APOSTOLOV

**INFLUENCE OF FORMATION CONDITIONS OF Al-Bi-La-Li THIN-FILM ELECTRODES
ON THEIR CHARGE-DISCHARGE CHARACTERISTICS**

Results of investigation of the process of aluminium electrode modification in solutions of bismuth, lanthanum and lithium salts have been presented. Diffusion parameters of obtained thin-film electrodes have been calculated. The influence of oxidation and heat treatment of electrolytic alloy on process rate of implementation of cations mentioned above has been considered. Capacity and discharge current density of specimens have been determined.

Key words: method of electrochemical cathode implementation, chemical sources of current, modification, diffusion

G.I. MEDVEDEV, N.A. MAKRUSHIN
**ELECTRO DEPOSITION OF BRIGHT TIN COATINGS FROM SULFATE ELECTROLYTES
WITH ORGANIC ADDITIONS**

On the base of ionization potentials of organic substances the method of choice of organic substances for obtaining the bright tin coatings from sulfate electrolytes has been developed.

Key words: tin, sulfate electrolytes, bright coatings

F.S. FEDOROV, V.T. FOMICHEV, M. ULEMANN, A. GEBERT, L. SHULZ
ELECTROPLATING OF THIN IRON FILMS FROM PYROPHOSPHATE ELECTROLYTE

It was shown that alkaline pyrophosphate electrolytes with low concentration of metal ions are suitable for obtaining thin iron films of good quality.

Key words: electro reduction of iron ions, galvanic deposits, thin films obtaining, pyrophosphate electrolyte, alkaline electrolyte, cyclic voltammetry, Auger-spectroscopy

I.A. KURZINA
**INFLUENCE OF CARRIER NATURE AND SYNTHESIS CONDITIONS ON PALLADIUM
NANOPARTICLES FORMATION APPLIED ON SILICON NITRIDE**

Physicochemical and catalytic properties of palladium catalysts applied on silicon nitride were studied at the deep oxidation of methane. The systems studied had different structures and adsorption properties of palladium nanoparticles that influence on mechanism of surface reactions. The suggestion was made that phase composition of the carrier and nature of used precursors play a key role in the formation of the active surface of palladium catalytic systems.

Key words: palladium catalyst, silica nitride, adsorption, phase composition, active surface

O.V. KAZ'MINA, V.I. VERESHCHAGINA, A.N. ABIYAKA, A.V. MUKHORTOVA, Yu.V. POPLETNEVA
**ACTIVITY ESTIMATION OF COMPONENTS INTERACTION OF GLASS BLEND AT THERMO
TREATMENT ON CONTENT OF GLASS PHASE**

The express method of quantitative determination of crystal phase in glass crystal product has been developed. Using this method the activity estimation of interaction of blend components at thermo treatment has been carried out. The glass formation process has been established to activate not only under thin milling of the high-melting sand but efficiency proceed under mutual sand milling with soda. The obtaining the glass crystal material with amount of glass phase not less than 80% at low synthesis temperatures (less than 900°C) has been considered as a function of dispersion of silica sand on example of model blend.

Key words: crystal phase, glass crystal product, synthesis, silica sand

D.Yu. PETROV, E.A. KAS'YANOVA, Yu.P. ZARUBIN, P.P. PURYGIN
SYNTHESIS AND STUDY OF HYDROLYSIS OF BIS(2-ALKYL-1H-IMIDAZOL-1-YL)METHANE THIONES

Synthesis of bis(2-alkyl-1H-imidazol-1-yl)methane thiones has been carried out and their hydrolysis at conditions of reaction of the pseudo-first order has been studied. Presence and size of the alkyl substituent in molecules of bis(2-alkyl-1H-imidazol-1-yl)methane thiones influence on stability of compounds in aqueous medium. The rate constant of their hydrolysis decreases in the increase of volume the alkyl substituent in heterocyclic fragment.

Key words: bis(2-alkyl-1H-imidazol-1-yl)methane thiones, synthesis, hydrolysis kinetics

E.A. PAZNIKOV, A.M. BELOUSOV, P.V. PETREKOV, A.D. NASONOV, M.A. KALININ
**INFLUENCE OF ALLYL FRAGMENT CONTENT ON DYNAMIC VISCOSITY-ELASTIC PROPERTIES
OF POLY-N-METHYLALLIL-5-VYNILTETRAZOLE**

The influence of allyl fragment of tetrazole-containing polymer on dynamic viscosity-elastic properties has been studied by means of method of dynamic mechanical analysis in temperature range of -80 + 80°C.

Key words: allyl fragment, viscosity-elastic properties of tetrazole-containing polymer

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L.M. PETROVA, A.G. KHANOVA*
COMPARATIVE ANALYSIS OF NON-OXYGATED BITUMENES OBTAINED WITH VARIOUS METHODS

Production of oil bitumens is accomplished with various methods – tar oxidation, mazut distillation with deep extraction of distillates, de-acphaltization of tars by propane. The compounding of products of processes mentioned above are widely used as well. Every processes have own peculiarities including positive and negative ones. And the most part part of oxidized and compounded bitumens producind in RF do not correspond to State Standard

requirements and have the quality far from EC Standards. Given bitumens have low stability to ageing processes, low adhesion to mineral materials and low plasticity.

Key words: bitumens, obtaining, properties

S.V. ALEEVA, S.A. KOKSHAROV
ACTION ESTIMATION OF HOMOGENEOUS AND POLY FERMENT PREPARATIONS
AT DESIZING OF FLAX FABRICS

The classification of dextrin, saccharification and debranching ability of multi-enzyme compositions has been carried out. The influence of industrial producing bio catalysts under conditions of semi-permanent method of removing of starch size has been differentiated. The optimal composition of ferments for woven flax clothes desizing has been determined.

Key words: multi-enzyme composition, removing of starch size

R.Kh. MUDARISOVA, L.A. BADYKOVA, E.I. KOPTYAEVA, A.A. FATYKHOV, Yu.B. MONAKOV
STUDY OF ARABINOGALACTAN COMPLEXATION OF THE SIBERIAN LARCH (LARIX SIBIRICA L.)
WITH AMIKACINUM AND GENTAMICINUM

Interactions of the arabinogalactan of the Siberian Larch in water solutions with amikacinum and gentamicinum were investigated by the physical and chemical methods. The structure and the constants of stability of formed complexes, optimal reaction conditions were established.

Key words: arabinogalactan, amikacinum, gentamicinum, complexation

Sh.M. MAMEDOV, A.A. GARIBOV, A.Kh. SALEKHOV, G.Z. VELIBEKOVA, D.Sh. MAMEDOV
TRIPLE COPOLYMERIZATION OF CHLOROPROPENE, AKRYL NITRILE AND DIETHYL ETHER
OF MALEINIC ACID IN EMULSION

Triple copolymerization of chloropropene, acrylonitrile acid and diethyl ether of the maleinic acid in emulsion has been studied. The molecular mass has been shown to decrease with increase in the conversion. By means of sol-gel analysis methods the parameters of space network of vulcanizates (value of net chains $1/M_c$, value of cross-linked molecules $1/M_{n_7}$) have been determined on base of triple copolymer. Properties of vulcanizates have been established at heat ageing (100-200°C) on changes of breakup resistance, relative-residual extension and elasticity.

Key words: triple copolymerization, chloropropene, acrylonitrile acid and diethyl ether of the maleinic acid

N.A. SAMOIYLOV, I.A. MNUSHKIN, O.A. MNUSHKINA
BOUNDARIES OF REALIZATION OF COMBINED REACTIVE DISTILLATION PROCESSES

Boundaries of realization of reactive distillation processes from viewpoint of chemistry and fractionation have been considered. It has been shown in what cases in reaction-rectification column the target products of necessary grade can be obtained. Data on modeling the ethylene glycol obtaining process in reaction-rectification column at ethylene oxide hydration are given.

Key words: rectification, ethylene oxide, ethylene glycol, boundary parameters

V.V. LEBEDEV, A.G. LIPIN, D.V. KIRILLOV, A.A. SHABROV
POLYMERIC GEL DRYING ACCOMPANYING WITH MATERIAL SHRINKAGE

Experimental data of drying kinetics and shrinkage both polyacrylamide gel and methyloxypropylcellulose gel are presented. The procedure of numerical calculation of drying process taking into account the material shrinkage is offered. The comparison of experimental and calculation data has been done.

Key words: drying kinetics, shrinkage, gel, polyacrylamide, methyloxypropylcellulose, modeling

D.E. SMIRNOV, A.V. SUGAK, N.I. VOLODIN
EXPERIMENTAL STUDY OF DUST CATCHER-CLASSIFIER

The construction of the duster which is able to catch the fine dust with fraction separation has been developed and has been experimentally studied. Dust separator is highly effective, has low hydraulic resistance and it is easy to manufacture and exploit.

Key words: duster, construction, fraction separation

Yu. M. SMOLIN, B.N. KOBTSEV, N.P. NOVOSELOV
METHOD OF ION MOBILITY SPECTROMETRY AND INDICATORS ON ITS BASIS

The basic data on a method of Ion Mobility Spectrometry and on creation of automatic gas-analyzer for monitoring the poison gases in air on objects of safe storage and destruction of the chemical weapon are given. Basic

technical characteristics of indicators on the basis of a method of Ion Mobility Spectrometry are considered. The tests of IMS-100 gas-analyzer sensibility, rapidity of action, time of aftereffect at various concentrations of sarin, soman, VX agent and also of selectivity to impurities have been carried out.

Key words: spectrometry of ion mobility, monitoring of poison substances, gas-analyser

P.A. CHEPENYAK, O.A. ABONOSIMOV, S.I. LAZAREV, S.V. KOVALEV

RESEARCH OF SORPTION OF POROUS POLYMERIC MEMBRANES IN WATER SODIUM CONTAINING SOLUTIONS

Experimental data on influence of temperature and concentration of solutions tri sodium phosphate and sodium tri poly- phosphate on concentration of dissolved substance in polymeric membranes UFM-100, UAM-50P are given. Researches have been carried out at change of concentration of solutions from 5 kg/m³ up to 20 kg/m³ and at temperatures of 293, 303, 313, 323K Change of concentration of the dissolved substance in membrane was established at change of concentration of initial solutions and temperature.

Key words: tri sodium phosphate, sodium tri poly phosphate, polymeric membrane, sorption

A.B. KAPRANOVA, A.V. DUBROVIN, A.I. ZAITSEV

TO QUESTION OF EXTERNAL PRESSURE ESTIMATION IN GAP OF ROLL DEAERATOR OF POWDERS WITH SPHERICAL MATRIX

Search of external pressure distribution in gap of roll deaerator of powders with spherical matrix has been carried out using movement equation of dispersion mixture in Cartesian coordinate under its compacting. Results can be used at creation of engineering methods of calculation of new deaerators of fine dispersion media of roll type for compacted granule-spheres obtaining.

Key words: roll deaerator, spherical granules, calculation

V.V. SHISHLYANNIKOV

EXPERIMENTAL DATA ON HEAT EXCHANGE IN POLYMER MELTS IN PIPES AND CHANNELS AT CONSTANT AND VARIABLE TEMPERATURE OF WALL

The heat exchange under flow of polymer melts in pipes and channels is considered. As a result of experimental data treatment criterial equations of heat exchange have been obtained. These results can be practically used for calculation and designing of equipment.

Key words: heat exchange, polymer melt, criterial equations

M.E. SOLOVIEV, D.V. LUBIMOV

QUANTUM-CHEMICAL STUDY OF MOLECULE TENSION INFLUENCE OF LOW-MOLECULAR ANALOGIES OF POLYMER UNITS ON ABSORPTION FREQUENCIES SHIFT IN VIBRATION SPECTRUM

The study of influence of deformation on absorption frequencies shift in vibration spectrum of molecules which are analogies of poly isoprene and poly propylene has been carried out with semi-empirical method PM3. The linear dependence between frequency shift of selected characteristic bands of absorption of vibrations of atoms of carbon skeleton of molecules and value of applied to their ends of mechanical force has been established to keep only in definite range of deformations. The estimation of shift coefficient of absorption frequency on mechanical tension agrees with experimental data for carbon-chain polymers.

Key words: absorption frequency, vibration spectrum, poly isoprene, poly propylene

I.A. KUDINKINA, V.G. KURBATOV, A.A. ILYIN, E.A. INDEYIKIN, M.E. LADININ

UNBLOCKING OF ACID CATALYST IN VARIOUS SOLVENTS

The influence of solvents of various polarity on unblocking of acid catalyst (para-toluene sulfonic acid (PTSA)) neutralized with triethylamine (TEA)) has been studied by quantum-chemical method PM3 and potentiometric titration. It was shown what in the solvents the PTSA-TEA undergoes to additional polarization. Charges on the atoms of oxygen, hydrogen and nitrogen are increased. The length of bond H...N is decreased whereas the length of bond O-H is increased. These changes result in the increase of dissociation rate of PTSA-TEA complex.

Key words: acid catalyst unblocking, potentiometric titration, solvent influence

T.V. GUBANOVA, E.I. FROLOV, O.Yu. AFANASIEVA, I.K. GARKUSHIN

THREE-COMPONENT SYSTEMS LiF-LiBr-Li₂MoO₄ AND LiF-LiBr-Li₂SO₄

The phase equilibriums in three-component systems LiF-LiBr-Li₂MoO₄ and LiF-LiBr-Li₂SO₄ have been studied by differential thermal analysis (DTA). The eutectic compositions have been determined (mol. %): 1) for the system LiF-LiBr-Li₂MoO₄ – LiF 18.0 %, LiBr 72.0 %, Li₂MoO₄ 10.0 %, melting point 444 °C and enthalpy of melt-

ing was 206 kJ/g; 2) for system LiF-LiBr-Li₂SO₄– LiF 21.45 %, LiBr 61.0 %, Li₂MoO₄ 17.55 % melting point 423 °C and enthalpy of melting was 240 kJ/g.

Key words: differential thermal analysis, phase equilibriums, LiF-LiBr-Li₂MoO₄ and LiF-LiBr-Li₂SO₄ systems

D.Kh. KAEEM, T.G. UMERGALIN, F.B. SHEVLYAKOV, V.P. ZAKHAROV

REDUCTION OF HYDROCARBON COMPONENTS LOSSES OF ASSOCIATED OIL GASES

A method of losses reduction of high-boiling fractions of associated oil gas via absorption by crude oil in tubular turbulent devices has been proposed.

Key words: associated oil gas, absorption, high-boiling fractions

A.V. KRASNOV, N.V. KSANDROV, V.L. KRASNOV

DEVELOPMENT OF TECHNOLOGY OF UREA PYROLYSIS FOR ISOCYANURIC ACIDS OBTAINING

Thermodynamic characteristics of intermediate steps proceeding at thermal decomposition of urea have been investigated. The hypothesis of participation of the biuret as intermediate substance of reaction of isocyanuric acid obtaining has been proved with semi-empirical quantum-chemical calculations. The technology of isocyanuric acid obtaining in two-level pyrolysis reactor on a surface of isocyanuric acid recycle has been developed.

Key words: thermodynamic characteristics, urea thermal decomposition, technology of isocyanuric acid obtaining

P.A. GURIKOV, A.V. KOLNOOCHENKO, N.V. MENSHUTINA

MODELING OF POROUS BODY STRUCTURE AND DIFFUSION FROM IT ACTIVE SUBSTANCES

Two interconnected models have been developed. A porous body structure has been simulated with a system of connected spheres. A diffusion release of active (drugs) substances from porous matrix has been described by model of stochastic cell automata with Margolus neighbourhood. Modeling results allow forecasting the kinetics of active substance release.

Key words: cell automata, diffusion, release of active substances, modeling