

CONTENTS

CHEMISTRY

(inorganic, organic, analytical, physical, colloid
and high-molecular compounds)

Kuzmenko N.Ya., Kuzmenko A.N. Calculation method of average summary formula of hydrolytic etherification products of alkyl-, alkyltrichloro- and tetrachlorosilanes	3
Osipova G.V., Petrov O.A., Maiyzlish V.E., Martynyuk T.A. Acid properties of tetrakis-4-[sulfonyl-4'-(N,N- dibuthylbenz-amid)]-phthalocyanine	7
Filimonov D.A., Bazanov M.I., Yudina T.F., Ershova T.V., Shchennikov D.V. Electrochemical investigations of thermal expanded graphite in alkaline medium.....	10
Morozov L.N., Kotova K.E., Smirnov A.I., Umenushkina S.I. Methanol dehydrogenation to formaldehyde on supported ZnO·CuO·K ₂ O/SiO ₂ catalysts	13
Tvardovskiy A.V., Nabiulin V.V., Fomkin A.A. Kinetics of adsorption deformation of granulated microporous carbon adsorbent at adsorption of hydro- carbons from flow of carrier gas	17
Veliev M.G., Mustafaev S.A., Mamedova N.A., Shakhmamedova A.G., Niyazova N.K. Synthesis of saturated and unsaturated esters of oil naphthene acids and study of its properties	19
Dorozhko E.V., Krivoshechekov S.V., Yusubov M.S., Guriev A.M., Basova E.V. Precipitating isolation of acidic polysaccharide from polysaccharide complex of <i>Acorus calamus L.</i>	25
Kochetova L.B., Klyuev M.V. Quantum chemical simulation of 2,6-dimethylnitrobenzene reductive acylation mechanism.....	29
Simonova T.N., Fedotov A.N., Dubrovina V.A., Musaeva M.V., Portnyansky V.Yu. Selective extraction of thiocyanate complexes of metals using aqueous two-phase systems	32
Gusev V.Yu., Gorbunov A.A. Stability of α -dialkylaminoketones to oxydation by air oxygen.....	39
Efremov E.V., Fillippov D.V., Sharonov N.Yu. Kinetics of maleic acid and 4-nitrotoluene liquid-phase hydrogenation on skeleton nickel and on supported palladium catalysts.....	42
Kochergina L.A., Lytkin A.I., Krutova O.N., Chernov A.S. Standard enthalpies of formation of d,l- tryptophan and its dissociation products in aqueous solution.....	46
Khashirova S.Yu., Zhansitov A.A., Turova A.T., Sultygova Z.Kh., Pakhomov S.I., Ligidov M.Kh. Study of thermal characteristics of montmorillonite modified with acrylate and methacrylate of guanidine.....	49
Petrova N.P., Tarasov N.A., Ushmarin N.F., Reznikov M.S., Koltsov N.I. Investigation of influence of fire retardants combinations on combustion kinetics of rubber on base of butadiene-nitrile rubber	52

CHEMICAL TECHNOLOGY

(inorganic and organic substances.
Theoretical fundamentals)

Khelevina O.G., Malyasova A.S., Ishutkina M.V. Structurization of oligodimethylsiloxandiols with polybutyltitanate.....	56
Bulgakova S.A., Zhukova O.V. Obtaining modified poly- <i>tert</i> -butyl methacrylate for use as carrier of anticancer drugs.....	60
Zapornikov V.A., Osipchik V.S., Red'kina A.A. Influence of modifying additives on processability and physical-mechanical properties of polycarbonate.....	65

Krivosos O.I., Nosenko V.N., Plaksin G.V. Composition and properties of cambrian pyroshales of Olenek basin	68
Levashov A.S., Novikov D.O., Kasatkina T.B., Gorokhov R.V., Bukov N.N. Determination of concentration of grafted amino groups on mineral fillers surface	71
Ivanova T.E., Povetkin V.V., Ismagilova A.V. Electrodeposition and properties of copper-thallium alloys from trilonate electrolytes	74
Bychkova E.V., Belyaeva O.A., Panova L.G. Investigation of components interaction of fire-retardant system with viscose fibre by method of infrared spectroscopy	78
Alekseeva O.V., Bagrovskaya N.A., Ivanov K.V., Agafonov A.V., Sitnikova O.G., Nazarov S.B. Study on influence of silicon dioxide on lipid peroxidation in biological fluids <i>in vitro</i>	83
Luchinina M.A., Agafonov A.V. Influence of polyvinylpyrrolidone molecular mass on dimensional parameters of nano rod system of titanium dioxide obtained with polyol method of synthesis	87
Litvyak V.V., Butrim S.M. Features of cationization of tapioca starch by 3-chloro-2-hydroxypropyltrimethylammonium chloride	90
Dyomina M.A., Garkushin I.K., Bekhtereva E.M., Martynova A.D. Study of phase equilibria in KCl-KBr-K ₂ CrO ₄ ternary system	94
Konstantinov A.A., Mironov V.P., Smirnov N.N. Application of zonal method for determination of thermalphysic parameters of natural polymers	97
Shkurin Yu.M., Lipin A.G., Lipin A.A. Drying of polyethylene powder in filter-bed mode	101
Sokolova T.P., Rot R.I., Prokofiev V.Yu., Gordina N.E. Ssis yntheof potassium aluminates in process of preparation of catalyst carriers for high temperature processes	104

А B S T R A C T S

N.Ya. KUZMENKO, A.N. KUZMENKO

CALCULATION METHOD OF AVERAGE SUMMARY FORMULA OF HYDROLYTIC ETHERIFICATION PRODUCTS OF ALKYL-, ALKYLTRICHLORO- AND TETRACHLOROSILANES

The calculation method of average summary formula of hydrolytic etherification products of alkyl-, alkyltrichloro- and tetrachlorosilanes was developed. This method has simplified the use these products for a synthesis of new compounds and the explanation of properties of polymer materials based on these compounds.

Key words: silanes, hydrolytic etherification, average summary formula

G.V. OSIPOVA, O.A. PETROV, V.E. MAIYZLISH, T.A. MARTYNYUK

ACID PROPERTIES OF TETRAKIS-4-[SULFONYL-4'-(N,N-DIBUTHYLBENZ-AMID)]-PHTHALOCYANINE

Acid-basic interaction of tetrakis-4-[sulfonyl-4'-(N,N-dibutylbenzamid)]phthalocyanine with nitrogen contained bases and with dimethylsulfoxide in benzene was studied. Dependence of acid properties of substituted phthalocyanine on base nature was revealed. It was showed that proton transfer complexes of tetrakis-4-[sulfonyl-4'-(N,N-dibutylbenzamid)]phthalocyanine possess a high kinetic stability in proton acceptor media.

Key words: tetrakis-4-[sulfonyl-4'-(N,N-dibutylbenzamid)]phthalocyanine, acid-basic interaction, proton transfer complexes, nitrogen containing bases, dimethylsulfoxide, electron absorption spectra

D.A. FILIMONOV, M.I. BAZANOV, T.F. YUDINA, T.V. ERSHOVA, D.V. SHCHENNIKOV

ELECTROCHEMICAL INVESTIGATIONS OF THERMAL EXPANDED GRAPHITE IN ALKALINE MEDIUM

The study of the electrochemical and electrocatalytic properties of the thermal expanded graphite (TEG) was carried out by the method of cyclic voltammetry in an alkaline solution. Data of study conditions choice were presented. The estimation of electro catalytic activity was accomplished for a reaction of molecular oxygen reduction in an alkaline solution. The effective number of electron was determined for given process. Data on a choice of optimal ratios of components of active mass are presented.

Key words: cyclic voltammetry, thermal expanded graphite, alkaline medium

L.N. MOROZOV, K.E. KOTOVA, A.I. SMIRNOV, S.I. UMENUSHKINA

METHANOL DEHYDROGENATION TO FORMALDEHYDE ON SUPPORTED ZnO-CuO-K₂O/SiO₂ CATALYSTS

Catalytic properties of the supported model samples containing zinc, copper and potassium oxides were studied for the reaction of methanol dehydrogenation to formaldehyde. Along with the target reaction the number of side ones occurs accompanied by catalyst coking. The composition complication of zinc-containing catalysts by introduction of copper and potassium oxides results in a selectivity enhancement with respect to target product.

Key words: methanol, formaldehyde, heterogeneous catalysis

A.V. TVARDOVSKIY, V.V. NABIULIN, A.A. FOMKIN

KINETICS OF ADSORPTION DEFORMATION OF GRANULATED MICROPOROUS CARBON ADSORBENT AT ADSORPTION OF HYDROCARBONS FROM FLOW OF CARRIER GAS

For the first time, the wave sorption striction of micro porous carbon adsorbent AR-V was investigated at adsorption of n-hexane, n-nonane and carbon tetrachloride from the flow of the carrier gas nitrogen at the temperature of 373-473 K.

Key words: adsorption, adsorbent, adsorbents adsorption deformation, dilatometric method of measuring the relative linear adsorption deformation, adsorption deformation kinetics

M.G. VELIEV, S.A. MUSTAFAEV, N.A. MAMEDOVA, A.G. SHAKHMAMEDOVA, N.K. NIYAZOVA
SYNTHESIS OF SATURATED AND UNSATURATED ESTERS OF OIL NAPHTHENE ACIDS
AND STUDY OF ITS PROPERTIES

The results of systematic researches of synthesis of saturated and unsaturated mono- and bi- esters of oil naphthene acids were presented. The possibility of synthesis of monoesters of oil naphthene acids was shown by interaction of naphthenate of oil naphthene acids (alkaline wastes) with 1,4- butane and 1,4-butindiol at conditions of interphase catalysis in the presence of triethylbenzylammonium chloride with high yield. The received esters of oil naphthene acids were undergone to different chemical conversions with a formation of functional substituted derivatives which possess by antimicrobial and modifying properties.

Key words: naphthene acids, chloroanhydrides, glycidil esters, butanediol, triethylbenzylammonium chloride, oxyrane ring, overvinylation

E.V. DOROZHKO, S.V. KRIVOSHCHEKOV, M.S. YUSUBOV, A.M. GURIEV, E.V. BASOVA
PRECIPITATING ISOLATION OF ACIDIC POLYSACCHARIDE FROM POLYSACCHARIDE
COMPLEX OF ACORUS CALAMUS L

The scheme of the precipitating isolation of acidic polysaccharide from the *Acorus calamus* L polysaccharide complex was proposed. According to the proposed scheme the acidic polysaccharide was obtained. Its chemical characteristic was given. Molecular weight distribution was given by exclusion chromatography. The structure of acidic polysaccharide (fraction V) was confirmed by NMR.

Key words: *Acorus calamus* L polysaccharide complex, exclusion chromatography, molecular weight distribution, acid polysaccharide

L.B. KOCHETOVA, M.V. KLYUEV
QUANTUM CHEMICAL SIMULATION OF 2,6-DIMETHYLNITROBENZENE REDUCTIVE
ACYLATION MECHANISM

A quantum chemical simulation of potential energy surface of 2,6-dimethylaniline acylation stage in reaction of 2,6-dimethylnitrobenzene reductive acylation and also of adsorption of reactants on a palladium cluster surface was carried out. The 2,6-dimethylaniline acylation was shown to proceed on consistent bimolecular mechanism. It was established that the catalyst role in the investigated process is to change the frontier orbitals energies of the reactants.

Key words: reductive acylation, reactions mechanisms, quantum chemical simulation

T.N. SIMONOVA, A.N. FEDOTOV, V.A. DUBROVINA, M.V. MUSAEVA, V.Yu. PORTNYANSKY
SELECTIVE EXTRACTION OF THIOCYANATE COMPLEXES OF METALS USING AQUEOUS
TWO-PHASE SYSTEMS

Regularities of extraction of Pd(II), Ru(III), Cr(III), V(IV), Mo(V), Zn(II) in $(\text{NH}_4)_2\text{SO}_4 - \text{KSCN} - \text{H}_2\text{O} - \text{C}_3\text{H}_7\text{OH}$ (PEG) aqueous two-phase system and regularities of extraction of Sc(III), Zr(IV), Hf(IV) in $\text{NaNO}_3 - \text{KSCN} - \text{H}_2\text{O} - \text{C}_3\text{H}_7\text{OH}$ (PEG) aqueous two-phase system were investigated. The composition of extractable compounds and mechanism of extraction were studied by methods of IR-spectroscopy, MNR ^1H -spectroscopy, spectrophotometry, equilibriums shift, chemical analysis. Methods of selective extraction, separation followed by their determination in water, soils, alloys using spectrophotometry, atomic absorption spectroscopy, chelatometry were proposed.

Key words: extraction, two phase aqueous systems, thiocyanate complexes, spectrophotometry, atomic-absorption spectroscopy, complexometry

V.Yu. GUSEV, A.A. GORBUNOV
STABILITY OF α -DIALKYLAMINOKETONES TO OXYDATION BY AIR OXYGEN

α -Dialkylamines of acetone and acetophenone with C_2H_5 , C_6H_{13} and C_8H_{17} -radicals were synthesised. The acetophenone derivatives were established to be oxidized during one day. Compound with ethylradical is oxidized a little during one day. Its oxidation is accelerated at temperature elevation. Acetone derivatives are more stable. Their oxidation rate at room temperature is essentially lower. α -diethylaminoacetone can be distilled without decomposition. Compounds with hexyl and octyl radicals are oxidized at increasing temperature till 150°C .

Key words: α -dialkylaminoketones, air oxygen oxydation

E.V. EFREMOV, D.V. FILLIPPOV, N.Yu. SHARONOV

KINETICS OF MALEIC ACID AND 4-NITROTOLUENE LIQUID-PHASE HYDROGENATION ON SKELETON NICKEL AND ON SUPPORTED PALLADIUM CATALYSTS

The influence of nature, liquid phase composition and kind of catalyst on maleic acid and 4-nitrotoluene liquid-phase hydrogenation was studied by a kinetic method. The observed kinetics parameters of investigated reactions were given.

Key words: skeleton nickel, supported palladium catalyst, maleic acid, 4-nitrotoluene, hydrogenation

L.A. KOCHERGINA, A.I. LYTKIN, O.N. KRUTOVA, A.S. CHERNOV

STANDARD ENTHALPIES OF FORMATION OF D,L- TRYPTOPHAN AND ITS DISSOCIATION PRODUCTS IN AQUEOUS SOLUTION

The heat effects of dissolutions of crystalline D,L- tryptophan in aqueous solutions of potassium hydroxide were determined at 298.15K by direct calorimetry. The standard enthalpies of formation of D,L- tryptophan and its products dissociation in a aqueous solution were calculated.

Key words: thermodynamics, solutions, chemistry, calorimeter, amino acids

S.Yu. KHASHIROVA, A.A. ZHANSITOV, A.T. TSUROVA, Z.Kh. SULTYGOVA, S.I. PAKHOMOV, M.Kh. LIGIDOV

STUDY OF THERMAL CHARACTERISTICS OF MONTMORILLONITE MODIFIED WITH ACRYLATE AND METHACRYLATE OF GUANIDINE

The thermal stability of montmorillonite modified with acrylate and methacrylate of guanidine was studied by thermogravimetric analysis. The characteristics of processes of deimmobilization of water and thermal transformations of organoclays of different compositions were determined and compared. The obtained organoclay was shown to have sufficiently high thermal stability which allows using it as filler for thermoplastics.

Key words: guanidine acrylate, guanidine methacrylate, montmorillonite, thermogravimetric analysis

N.P. PETROVA, N.A. TARASOV, N.F. USHMARIN, M.S. REZNIKOV, N.I. KOLTISOV

INVESTIGATION OF INFLUENCE OF FIRE RETARDANTS COMBINATIONS ON COMBUSTION KINETICS OF RUBBER ON BASE OF BUTADIENE-NITRILE RUBBER

The kinetic regularities of combustion process of rubber on the base of butadiene-nitrile rubber in depending on the various combinations of flame retardants were investigated. Rate of burning of rubber describes by kinetic equation of zero order. The values of rate constants and activation energy of the combustion process of rubber were determined. It was shown that most often used combination of chloroparaffin HP-1100 with toxic antimony trioxide can be replaced by a more effective non-toxic combination HP-1100 + barium borate + aluminum hydroxide.

Key words: rubber, butadiene-nitrile rubber, fire retardants combination, combustion kinetics, rate constants, activation energy

O.G. KHELEVINA, A.S. MALYASOVA, M.V. ISHUTKINA

STRUCTURIZATION OF OLIGODIMETHYLSILOXANDIOLS WITH POLYBUTYLTITANATE

The structurization kinetics of oligodimethylsiloxandiols, liquid siloxane rubbers, with polybutyltitanate was studied. The effective rate constants and activation energies of structurization were calculated at temperatures of 130, 140, 150 и 160⁰ C. The influence of catalyst, Sn-phthalocyanine, on the structurization by polybutyltitanate of liquid siloxane rubbers was studied as well as on properties of protective materials with covers on the base of oligodimethylsiloxandiols vulcanized with polybutyltitanate and tetrabutoxytitanium.

Key words: polybutyltitanate, structurization, oligodimethylsiloxanediol

S.A. BULGAKOVA, O.V. ZHUKOVA

OBTAINING MODIFIED POLY-TERT-BUTYL METHACRYLATE FOR USE AS CARRIER OF ANTICANCER DRUGS

The kinetics of the polymerization of tert-butyl methacrylate was studied in the presence of thioglycolic acid as a chain transfer agent. The conditions for obtaining the polymer carrier with the most optimum characteristics for the biocompatible polymer were determined: $M_n = 12400$ and $M_w/M_n = 1.35$. The kinetics of the reaction of acid hydrolysis of poly (tert-butylmethacrylate) was studied. The activation energy of the reaction was 9.34 kJ / mol. Modification of poly (tert-butyl) with folic acid was carried out and its conjugate with doxorubicin was obtained.

Key words: radical polymerization, thioglycolic acid, tert-butyl methacrylate modification, carbodiimide method, doxorubicin polymer carrier

V.A. ZAPORNIKOV, V.S. OSIPCHIK, A.A. RED'KINA
INFLUENCE OF MODIFYING ADDITIVES ON PROCESSABILITY AND PHYSICAL-MECHANICAL PROPERTIES OF POLYCARBONATE

The paper presents results of research on modification of the recycled and initial polycarbonate to improve technological and strength properties. The effect of modifiers, glass microspheres and thermoplastic elastomer was studied.

Key words: polycarbonate, glass microspheres, thermoplastic elastomer, structure, properties

O.I. KRIVONOS, V.N. NOSENKO, G.V. PLAKSIN
COMPOSITION AND PROPERTIES OF CAMBRIAN PYROSHALES OF OLENEK BASIN

Data on the composition and physico-chemical properties of the Cambrian pyroshale of Olenekscoe deposit were obtained with various instrumental methods. Thermal activity of shales kerogen was estimated. The yields of thermolysis products were determined.

Key words: pyroshales, chemical composition, kerogen thermolysis

A.S. LEVASHOV, D.O. NOVIKOV, T.B. KASATKINA, R.V. GOROKHOV, N.N. BUKOV
DETERMINATION OF CONCENTRATION OF GRAFTED AMINO GROUPS ON MINERAL FILLERS SURFACE

Chemical modification of mineral fillers is one of the most perspective ways to create new composite materials. For monitoring and controlling the mechanism of the modification it is necessary to analyze the content of the grafted groups on the surfaces of fillers. In this paper the method was proposed for analyzing an amount of amino groups on the surface of aluminosilicate fillers that avoids the difficulties appearing at the study of insoluble mineral fillers.

Key words: modified mineral filler, functional groups concentration, aminopropyltrialkoxysilane, grafted amino groups

T.E. IVANOVA, V.V. POVETKIN, A.V. ISMAGILOVA
ELECTRODEPOSITION AND PROPERTIES OF COPPER-THALLIUM ALLOYS FROM TRILONATE ELECTROLYTES

The conditions of copper-thallium alloys electrodeposition from trilonate electrolytes were investigated. Electrochemical doping of copper by thallium studied by X-ray diffraction and transmission electron microscopy methods was shown to result in a formation of oversaturated solid solutions, disintegrating its crystal structure and smoothing of surface relief of coatings. The modifying coatings structure hardens their solderability and corrosion resistance in acid media.

Key words: electrodeposition, alloys, covers properties

E.V. BYCHKOVA, O.A. BELYAeva, L.G. PANOVA
INVESTIGATION OF COMPONENTS INTERACTION OF FIRE-RETARDANT SYSTEM WITH VISCOSE FIBRE BY METHOD OF INFRARED SPECTROSCOPY

The interaction of viscose fibre with the components of the fire-retardant system was studied by IR method. The existence of chemical bond of fibre with fire-retardant was shown on the base of some changes detected in infrared spectra of the modified fibres. The existence of the interaction of viscose fibre with fire-retardant were confirmed by enough high values of the coefficient of the sorption interaction of the fibre with components of fire retardant system and the oxygen index of the modified fibres subjected to a wet treatments.

Key words: fire-protection modification, viscose fibre, fire-retardant system, fire-retardant agent, IR spectroscopy

O.V. ALEKSEEVA, N.A. BAGROVSKAYA, K.V. IVANOV, A.V. AGAFONOV, O.G. SITNIKOVA, S.B. NAZAROV
STUDY ON INFLUENCE OF SILICON DIOXIDE ON LIPID PEROXIDATION IN BIOLOGICAL FLUIDS IN VITRO

The structure and textural properties of the mesoporous silica were studied. The effect of silica suspensions on lipids peroxidation of blood serum in vitro was studied with the induced chemiluminescence method. It was shown that silica suspensions possess the ability to show both pro- and anti-oxidant properties.

Key words: silica, sol-gel synthesis, suspension, in vitro, mesoporous structure

M.A. LUCHININA, A.V. AGAFONOV

INFLUENCE OF POLYVINYLPIRROLIDONE MOLECULAR MASS ON DIMENSIONAL PARAMETERS OF NANO ROD SYSTEM OF TITANIUM DIOXIDE OBTAINED WITH POLYOL METHOD OF SYNTHESIS

Polyvinylpyrrolidone was shown to bias on the formation rate of nano rods of titanium glycolate at the polyol synthesis. At the increase in molecular mass of inputted polyvinylpyrrolidone a retardation of growth rate of nano rods of titanium glycolate occurs. It can be connected with the increase in polyvinylpyrrolidone solution viscosity in ethylene glycol. The processes of thermal transformations of titanium glycolate to nano rods from titanium oxide of anatase phase were characterized.

Key words: titanium dioxide, titanium glycolate, nano rods, polyvinylpyrrolidone

V.V. LITVYAK, S.M. BUTRIM

FEATURES OF CATIONIZATION OF TAPIOCA STARCH BY 3-CHLORO-2-HYDROXYPROPYLTRIMETHYLAMMONIUM CHLORIDE

The reaction kinetics of the reception of cationic ethers of the tapioca starch in a water suspension with the help of 3-chloro-2-hydroxypropyltrimethylammonium chloride was studied in depending on molar ratio of reagents, temperature and concentration of starch suspension. The phase and morphological structures of cationic tapioca starch were studied.

Key words: tapioca starch, cationization, 3-chloro-2-hydroxypropyltrimethylammonium chloride, kinetic curves, X-ray patterns

M.A. DYOMINA, I.K. GARKUSHIN, E.M. BEKHTEREVA, A.D. MARTYNOVA
STUDY OF PHASE EQUILIBRIA IN KCl-KBr-K₂CrO₄ TERNARY SYSTEM

The ternary system of chloride, bromide and chromate potassium was studied by the differential thermal analysis. In the system phase equilibria were studied and properties of minimum were identified: composition and temperature of melting. The composition of crystallizing phases in the ternary system KCl-KBr-K₂CrO₄ was confirmed by the X-ray diffraction analysis.

Key words: differential thermal analysis, continuous series of solid solutions, phase equilibria

A.A. KONSTANTINOV, V.P. MIRONOV, N.N. SMIRNOV

APPLICATION OF ZONAL METHOD FOR DETERMINATION OF THERMALPHYSIC PARAMETERS OF NATURAL POLYMERS

The thermalphysic parameters of heat and mass transfer processes were determined at drying the soaked grains with zonal method. These data are necessary for calculation the soaking process of corn.

Key words: heat-mass transfer, grain, soaking

Yu.M. SHKURIN, A.G. LIPIN, A.A. LIPIN

DRYING OF POLYETHYLENE POWDER IN FILTER-BED MODE

Experimental data of drying kinetic of a polyethylene powder in a filter-bed are presented. The mathematical model allowing predicting rational technological parameters of drying was offered. The comparison of experimental data with results of numerical experiment was accomplished.

Key words: drying, powder, polyethylene, kinetic, filter-bed, mathematical model

T.P. SOKOLOVA, R.I. ROT, V.Yu. PROKOFIEV, N.E. GORDINA

SYNTHESIS OF POTASSIUM ALUMINATES IN PROCESS OF PREPARATION OF CATALYST CARRIERS FOR HIGH TEMPERATURE PROCESSES

The influence of the Al₂O₃ and KOH ratio in an initial mixture, as well as the influence of grinding method (separate or joint) on the potassium aluminates formation was studied. It was established that quantity of the received phase before calcination depends only on grinding method but after thermal processing a clear relationship is observed; namely the increase in KOH content in the starting mixture results in the increase in an amount of potassium aluminates.

Key words: aluminum oxide, potassium aluminate, mechanochemical synthesis