

A B S T R A C T S

*A.V. RAZUVAEV***FINISHING OF TEXTILES WITH BIOCIDES PREPARATIONS**

For ordinary Russian consumers and even for most of textile chemists and technologists the matter of biocide finishing is almost unknown. In the frame of given article the problems of antimicrobial, antifungal, antiputrefactive and repellent finishing with the help of biocide preparations of various chemical structure for action against different microorganisms (bacteria, fungi) and insects (dust mites, mosquitoes, louses, fleas) on the textile materials are considered.

Key words: biocide, antimicrobial, antifungal, antiputrefactive and repellent finishing, textile hygienic protection

*K.S. RODYGIN, S.A. RUBTSOVA, I.N. ALEKSEEV, A.V. KUTCHIN***NEW CHIRAL SHIFF BASES ON BASE OF 2-AMINO-1-(4-NITROPHENYL)PROPANE-1,3-DIOL**

The interaction of 2-amino-1-(4-nitrophenyl) propane-1,3-diol with various salicylic aldehydes has been studied. A number of new Shiff bases which are perspective for the use in asymmetric sulfoxidation has been obtained.

Key words: 2-amino-1-(4-nitrophenyl) propane-1,3-diol, aldehydes, Shiff bases

*N.CH. MOVSUM-ZADE, K.B. MAMEDJAROVA***SYNTHESIS AND COMPLEXATION OF SUBSTITUTED PROPIONENITRILES**

Syntheses of substituted propionenitriles have been considered. Syntheses of acrylonitrile complexes with salts of metals of transition valency have been presented. Also, complexes of the same salts with substituted propionenitriles have been shown.

Key words: complexes, propionenitrile, transition valency metals

*S.A. KON'KOV, I.K. MOISEEV***SYNTHESIS AND SOME CHEMICAL PROPERTIES OF 1,3-DIACETYLDAMANTANE AND 1,3-DIACETONYLDAMANTANE**

The synthesis method of 1,3- diacetyldamantane (1) and 1,3-diacetonyldamantane (2) has been proposed. Their some chemical properties have been considered: reactions on carbonyl groups and reactions on hydrogen active atoms of methyl groups.

Key words: synthesis, 1,3- diacetyldamantane, 1,3-diacetonyldamantane, chemical properties.

*R.I. ASTAPOVICH, M.O. TEL'MANOVA, V.A. NAZAROV, V.V. EGOROV***BROMHEXYNE-SELECTIVE ELECTRODE AND ITS ANALYTICAL APPLICATION**

The influence of membrane composition (ion-exchanger and plasticizer nature) upon the bromhexyne-selective electrode main analytical characteristics has been studied. Methods of bromhexyne determination in an active substance, pills and syrup by means of direct potentiometry method and potentiometric titration method with the sodium tetraphenylborate have been proposed.

Key words: bromhexyne hydrochloride, ion-selective electrode, potentiometric analysis.

*T.N. SIMONOVA, V.A. DUBROVINA, L.I. DENISOVA***EXTRACTION-PHOTOMETRIC DETERMINATION OF CHROMIUM (VI) WITH DIPHENYLCARBAZIDE IN WATER USING BIPHASE AQUEOUS SYSTEMS**

The extraction system ethyl (isopropyl) alcohol – water – ammonium sulphate was proposed for selective extraction and spectrophotometric determination of chromium (VI) with diphenylcarbazide in water. The relative standard deviation is not higher than 0.07. The duration of determination is 20 min.

Key words: extraction, chromium determination, spectrophotometric method

*V.F. NIKOLAEV, A.N. SATGARAEV, G.I. ISMAGILOVA, S.V. PEROVA,
Yu.A. ZHELEZINA, R.B. SULTANOVA*

**INTERPOLATION METHOD FOR FORECASTING OF TEMPERATURE DEPENDENCES
OF MIXING ENTHALPIES OF BINARY MIXTURES ON BASE OF MODEL
OF CONTRIBUTION BALANCE OF IMAGINARY ENDO - AND EXOTHERMS**

For forecasting of form of isotherms of mixing enthalpies of binary mixtures inside of temperature range for which extreme points have been obtained the model of contribution balance of imaginary endo - and exotherms has been used. The analytical form of a required isotherm is determined on the base of the joint solution of the system including the equations for invariants of model of balance and integral-invariants of an isotherm for the corresponding temperature, determined by interpolation on the experimental isotherms in extreme points of a temperature range. Working capacity of algorithm has been shown on an example of "restoration" of isotherms of mixing enthalpies of system cyanobenzene - toluene.

Key words: mixing enthalpy, temperature dependence, binary system, imaginary endo - and exotherms

S.V. NATAREEV, T.E. NIKIFOROVA, V.A. KOZLOV, A.E. KOCHETKOV

ION-EXCHANGE SORPTION OF HEAVY METAL CATIONS WITH CATIONITE LEWATIT S-100

Equilibrium and kinetic regularities of ion-exchange sorption of Cd (II), Fe (II), Ni (II) and Zn (II) ions on the cationite Lewatit S-100 in the systems sorbent - water solutions of metal sulphates have been investigated. Concentration constants of equilibrium and mutual diffusion coefficients in cationite have been found. The limiting cationite sorption capacity value with respect to metal ions has been established to decrease in the series $Fe^{2+} > Ni^{2+} > Zn^{2+} > Cd^{2+}$ whereas mutual diffusion coefficients increased in process of operation of ion-exchange material.

Key words: ion exchange, heavy metal ions, cationite Lewatit S-100.

Yu.E. ROMANENKO, E.V. LOPATKIN, A.A. KOMAROVA, O.V. LEFEDOVA

**KINETICS OF o-CHLORANILINE DEHALOGENATION ON NICKEL CATALYSTS
IN AQUEOUS SOLUTIONS OF PROPANOL-2**

In given article the peculiarities of dehalogenation reaction of o-chloraniline on skeletal and porous nickel catalyst in aqueous solutions of propanol-2 including additions of acetic acid and sodium hydroxide have been considered. Experimental data obtained are the base for validation of adequate kinetic model of dehalogenation reaction of chloranilines on nickel catalysts.

Key words: dehalogenation, o-chloraniline, nickel catalyst

S.A. LEMESHEVA, O.A. GOLOVANOVA, R.R. IZMAIYLOV, S.V. TURENKOV, I.V. MUROMTZEV

**THERMODYNAMIC BASES OF HYDROXYLE APATITE FORMATION
FROM SYNOVIAL SOLUTION**

The thermodynamic calculation of formation possibility of mineral phases in the human model articular synovial liquid has been carried out. In the model frame the influence of ion force and pH has been taken into account. The data obtained have been compared with the model experiment in vitro. It has been established that at the pH increase the formation probability of basic mineral of bone tissue -hydroxyl apatite is increased. The ion force and medium pH influence on a character of precipitation of the β - $Ca_3(PO_4)_2$, $MgHPO_4 \cdot 3H_2O$, $Ca_4H(PO_4)_3 \cdot 2.5H_2O$, $CaHPO_4 \cdot 2H_2O$, $CaCO_3$ at model conditions. According to model experiment the β - $Ca_3(PO_4)_2$, $Ca_4H(PO_4)_3 \cdot 2.5H_2O$ and $CaHPO_4 \cdot 2H_2O$ phases can be the precursors of apatite.

Key words: thermodynamics, theoretical and experimental modeling, biological media, phase formation

I.Kh. KHIZRIEVA, Z.M. ALIEV, A.F. ALAFERDOV, T.A. KHARLAMOVA

**SILICON DIOXIDE COLLOID SOLUTION OBTAINING BY NEUTRALIZATION OF SODIUM
SILICATE SOLUTION WITH CO₂ UNDER PRESSURE AND ITS USE FOR SOFTENING
NATURAL WATERS**

Physical-chemical properties of colloid solution of silicon dioxide obtained with neutralization of sodium silicate solution with CO₂ under pressure have been studied. The size of colloid particles and their micellar structures have been determined. The high efficiency of that solutions application as a sorbent of heavy metal cations from natural fresh waters has been shown.

Key words: colloid solution, silicon dioxide, water softening

P.A. CHEPENYAK, V.L. GOLOVASHIN, S.I. LAZAREV
**DIFFUSIVE PERMEABILITY OF SODIUM THREE POLYPHOSPHATE THROUGH
ULTRAFILTRATION MEMBRANES FROM AQUEOUS SOLUTION**

Experimental researches on the determination of diffusive permeability of sodium three polyphosphate from aqueous solutions on ultra filtration membranes UPM-100 and UFM-100 have been carried out. It was marked that the diffusive permeability decreases with the increase of concentration and the diffusive permeability increases with the temperature increase.

Key words: diffusive permeability, ultra filtration, membrane, mass transfer

N.M. ALYKOV, E.Yu. SHACHNEVA
STUDY OF SORPTION PROCESS OF FLOCCULANTS ON SORBENT SV-1-A

The flocculants adsorption on the sorbent SV-1-A obtained on the base of calfskin of the Astrakhan region has been studied. Isotherms of substance static sorption from water solutions have been obtained. The changes of enthalpy (DH), isobaric-isothermal potential (DG)) and entropy (DS) of sorption have been calculated. Study results can be used for water purification from flocculants.

Key words: sorbent, sorption, flocculants, water purification.

S.V. BAIYKOV, V.V. SOSNINA, G.G. KRASOVSKAYA, A.S. DANILOVA, E.R. KOFANOV
SYNTHESIS OF DICARBOXYLIC ACIDS CONTAINING 1,2,4 – OXODIAZOLE FRAGMENT

On the base of 4-methylbenzotrityle the dicarboxylic acids of 1,2,4-oxodiazole series have been synthesized. The products obtained are interest as potential monomers for polycondensation

Key words: synthesis, dicarboxylic acids, 1,2,4-oxodiazole, 4-methylbenzotrityle

*M.A. OBREZKOVA, I.B. MESHKOV, E.V. GETMANOVA, A.M. MUZAFAROV,
V.M. NOVOTORTZEV, I.L. EREMENKO*
NEW SILICON-ORGANIC HARDENER-MODIFIER OF EPOXY COMPOSITIONS

The synthesis of new silicon organic hardener-modifier of epoxy oligomers with the method of polycondensation of organoalkoxysilanes in active medium has been presented. The synthesized substance with high yield has been characterized with methods of gel-penetrating chromatography, IR and NMR spectroscopy. The usage of mercaptopropylsilyles groups as functional ends provided a possibility of slow curing of epoxy oligomers at the cold or accelerated at raised temperature. Prospects of new hardener-modifier application have been discussed.

Key words: hardener-modifier, silicon-epoxy compositions, epoxy oligomers curing

A.L. TARAN, V.E. KUCHINSKY, D.A. KUZINA, Yu.A. TARAN
**CHECK OF MATHEMATICAL FORMULATION OF ADEQUACY OF GRANULAR PROCESS OF
POROUS AMMONIUM NITRATE IN TOWERS TO REAL PROCESS PROCEED**

On the base of cycle of research works the mathematical description of porous ammonium nitrate granulation process in towers has been offered and the checking its adequacy for real process has been done.

Key words: granulated porous ammonium nitrate, obtaining, modeling

V.P. DMITRIENKO, A.A. ANDROSOV, M.E. SIDOROV, V.F. SHESTAEV
GOLD SORPTION FROM SOLUTIONS OF DENSE LEACHING

The laboratory and pilot tests of ionite PuroGold have been considered in comparison with the ionite AM-2B which is used in gold-mining industry. On the base of data obtained the comparative technological parameters and characteristics of gold sorption from solutions of dense leaching and regeneration of saturated sorbents have been calculated.

Key words: gold, sorption, regeneration, selectivity, sorbent capacity

A.V. ODINTSOV, A.G. LIPIN, N.D. TURKOVA
**ESTIMATION OF PROLONGING EFFECT OF GRANULES COMPOSITION COATS
OF MINERAL FERTILIZER**

The dissolution process of nitrogen-containing fertilizer of prolonged action has been studied. The influence of composition and thickness of composition coat on the time of liberation of useful components has been established.

Key words: fertilizer of prolonged action, washout, capsulation, composition coats

A.N. LOPANOV, A.YU. SEMEYKIN, E.A. FANINA

REOLOGICAL PROPERTIES OF GRAFITE DISPERSIONS IN CEMENT PASTE

Rheological characteristics of electrically conductive cement pastes based on graphite dispersion were investigated. The peculiarities of structure formation of graphite dispersion in cement pastes with plasticizer addition were studied. The interrelation between rheological characteristics of pastes (ultimate dynamic stress, plastic viscosity) and electrical characteristics of specimens of conductive concretes was shown.

Key words: rheology, cement pastes, electrically conductive concretes

L.V. BELSKAYA, O.A. GOLOVANOVA, A.P. SOLONENKO

FEATURES OF HYDROXYL APATITE SYNTHESIS IN PRESENCE OF CASEIN

Experimental modeling of process of hydroxyl apatite formation in the presence of protein (casein) has been carried out. The protein presence in model solutions has been shown to slow down the process of crystallization of solid phase. The influence of the model media pH on the rate of hydroxyl apatite formation has been established.

Key words: hydroxyl apatite, protein, synthesis, crystallization, experimental modeling

*E.V. SMIRNOVA, E.A. KURGANOVA, G.N. KOSHEL, B.N. BYCHKOV,
N.D. KUKUSHKINA, S.G. KOSHEL*

**STUDY OF KINETIC REGULARITIES OF ISOPROPYLCYCLOHEXYLBENZENE
LIQUID-PHASE OXIDATION**

The reaction of liquid phase oxidation of isopropylbenzene, cyclohexylbenzene and isopropylcyclohexylbenzene in the presence of AIBN has been studied at 60 – 70 °C. It allowed to estimate the reactivity of tertiary C – H bond in isopropyl and cyclohexyl fragments of isopropylcyclohexylbenzene. The hypothesis about succession of mono- and dihydroperoxide formation has been proposed. The kinetic model of isopropylcyclohexylbenzene oxidation process has been constructed. The rate constants of separate reaction steps have been determined.

Key words: liquid phase oxidation, reactivity, oxidation kinetic model

E.A. STRIZHAK, G.I. RAZDYAKONOVA, V.I. NEDEL'KIN, N.A. DAVLETKIL'DEEV
**ESTIMATION OF RUBBERS HETEROGENEITY BY MEANS OF SCANNING ATOMIC FORCE
MICROSCOPY**

The application of scanning atomic force microscopy for estimation of dispersion degree of carbon black in vulcanized and non-vulcanized rubber mixtures has been considered. The possibility of the using the drops of heights of a relief for revealing the differences in heterogeneity of rubbers with different black carbon marks has been shown. The consent of the sizes and characteristics of the solid spots on scan surface and primary aggregates of technical carbon black has been revealed.

Key words: carbon black, primary aggregates, rubber, agglomerates, microscopy

N.A. KORNILOVA, I.M. LIPATOVA

**INFLUENCE OF MECHANICAL ACTIVATION ON REACTION RATE OF CHITOSAN
WITH BENZALDEHYDE**

The influence of mechanical activation of chitosan suspensions in rotor-impulse apparatus on the reactivity of chitosan using, as an example, the reaction with benzaldehyde at heterogeneous conditions in water or alcohol media, has been studied. The preliminary mechanical activation of chitosan suspension in appropriate solvent has been established to give the rise of interaction rate with benzaldehyde introduced after activation by the factor of 1.2-1.54. The reaction accomplishing in apparatus working chamber increased the reaction rate more then two order of magnitude.

Key words: chitosan, benzaldehyde, hydroacoustic action, rotor-impulse apparatus.

N.V. DOLGOPYATOVA, E.N. RIPACHEVA, V.YU. NOVIKOV, I.N. KONOVALOVA
**INFLUENCE OF THE NUCLEOPHILS NATURE ON HYDROLYSIS OF GLYCOSIDE BONDS
IN CRAB CHITIN**

The chitin destruction in acid, neutral and alkaline media has been investigated. Practically the same reduction of relative molecular weight of chitin has been established at its hydrolysis in solutions of NaOH, KOH, NaCl, NaI and KI. The destruction depth of polysaccharide in the presence of acids HClO₄, HCl, H₂SO₄,

H₃PO₄ and CH₃COOH depends on the ion density of hydrogen and practically does not depend on nature of anion. The rate constants of reactions of acid destruction and deacetylation of chitin have been calculated.

Key words: chitin, destruction. pH, rate constant

A.Yu. KOPYLOV, R.G. NASRETDINOV, A.F. VILDANOV, A.M. MAZGAROV

**JOINT HYDROGEN SULFIDE AND CARBON DIOXIDE ABSORPTION
BY WATER-ALKALINE SOLUTION**

The peculiarities of joint hydrogen sulfide and carbon dioxide absorption by the water solution of sodium hydroxide have been studied. The mutual influence, regularities of rate and selectivity change of the components absorption from the gas under the change of liquid-phase chemisorbent composition has been studied.

Key words: gas purification, hydrogen sulfide, chemical absorption.

I.A. BOLOTOV, V.E. MIZONOV, V.A. ZAITSEV, P.V. ZHUKOV

MODELING OF MOISTURE CONTENT DISTRIBUTION IN A ROTATING POROUS CYLINDER

A cell mathematical model of evolution of moisture content distribution in a rotating around the horizontal axis a porous cylinder under simultaneous action of the gravity and centrifugal force was proposed. It was shown that there is the optimal angular speed providing the most homogeneous moisture distribution over the cross section of the cylinder.

Key words: porous cylinder, moisture distribution, cell model, matrix of transition probabilities

S.P. BOBKOV, S.S. SMIRNOV

**MODELLING OF ELASTIC WAVES PROPAGATION WITH USING CELLULAR
AUTOMATA SYSTEMS**

Possibilities of application of discrete dynamic models for the analysis of elastic waves propagation processes in solids have been considered. Models in the form of cellular automata systems have been shown to be rather convenient tool for researching wave processes in non-uniform media.

Key words: discrete models, cellular automata, elastic waves

F.V. BATSELEV, E.A. PORYSEVA, E.A. VASILENKO, T.V. MECHSHERYAKOVA, E.M. KOLTSOVA

DEVELOPMENT OF FACTUAL DATABASE ON NANOCOMPOSITES

The active development of nanotechnology and a large quantity of slight structured information on the given subjects was the stimulus for the creation of united factual database on existing nano composites, properties, and ways of obtaining and their application. The attempt of creation of the generalized classification on nano composites has been undertaken, and on its basis the database was developed. For access to the information the iterative application consisting of the top client link and a server part has been created, the module of inquiries and information search was developed.

Key words: nano composites, nano fillers, database, classification, information structuring

N.N. POLULYAKHOVA

**PRACTICAL APPLICATION OF MATHEMATICAL MODEL FOR DESCRIPTION OF IONS
SORPTION ON IONITES**

The mathematical model for the ions sorption in dynamic conditions has been presented. Kinetic parameters of sorption of cadmium and copper (II) on chemically modified sorbent with conformationally mobile amino carboxylic groups have been determined.

Key words: sorbent, filtering, dynamics, copper, cadmium

N.A. FEDOSOVA, E.B. FILIPPOVA, S.A. NAUMENKO, A.S. SKITCHKO, E.M. KOLTSOVA

**PROGRAM COMPLEX FOR ESTIMATION OF KINETIC PARAMETERS IN TASKS
OF HOMOGENEOUS CLUSTERIZATION**

The task of creation of program complex allowing obtaining estimations of kinetic parameters for the process of homogeneous clusterization with the help of various methods (genetic algorithm and method of random search) is considered. The description of that complex is given. The operation of complex is demonstrated for a search of estimations of process kinetic parameters for the obtaining two basic phosphite lead.

Key words: program complex, kinetic parameters, parameter estimation, homogeneous clusterization, optimization, genetic algorithm, random search, crystallization, obtaining two basic phosphite lead

E.S. BOBKOVA, V.I. GRINEVICH, E.A. SMOLINA, V.V. RYBKIN
**MODELING DESTRUCTION PROCESS KINETICS OF AQUEOUS SOLUTION
OF LAURYL SULFATE IN DIELECTRIC BARRIER DISCHARGE**

The results of numeric analysis of process kinetics of the laurylsulfate destruction in its aqueous solution as well as the processes of formation and losses of main active species in system plasma-aqueous solution under the action of dielectric barrier discharge are given. The analysis adequacy has been verified by means of the comparison of measured kinetic dependencies of the sodium laurylsulfate concentration on a solution residence time with discharge zone. The results of analysis of destruction process kinetics of the sodium laurylsulfate under the action of various active species are given.

Key words: dielectric barrier discharge, water purification, surfactants, modeling

V.V. KOZIK, T.S. PETROVSKAYA, L.P. BORILO
PHYSICAL CHEMICAL PROCESSES AT THIN FILMS FORMING IN P₂O₅-SiO₂ SYSTEM

Thin films have been obtained in SiO₂-P₂O₅ system by sol-gel method. Physical chemical processes in solutions and at the film thermal treatment have been studied. Kinetic parameters of SiO₂ synthesis processes have been calculated. The comparative analysis of SiO₂ synthesis processes both in thin film and in the bulk has been carried out.

Key words: sol-gel synthesis method, SiO₂ – P₂O₅ – films, kinetic parameters

O.V. LEFEDOVA, R.M. NUREEV, O.V. ZAKHAROV, A.A. MERKIN
**MODULAR TECHNOLOGICAL SCHEME OF AROMATIC AMINES OBTAINING
BY LIQUID-PHASE HYDROGENATION METHOD**

On the base of study of kinetics of 4-nitrotoluene and 4-nitroaniline catalytic interaction with hydrogen in the presence of skeletal nickel catalyst in water and non-aqueous solution the scientific bases of technologies for the production of fine chemicals by liquid-phase hydrogenation method have been developed. The proposed technological scheme has been shown to allow obtaining the aromatic amines with the high yield and quality. The modular principle of scheme construction gives the opportunity to produce different products without a reconstruction of operating production.

Key words: technological scheme, 4-nitrotoluene, 4-nitroaniline, hydrogenation, skeletal nickel

N.I. YANCHENKO, A.N. BARANOV, V.V. BAYANDIN, O.L. YASKINA
**METHOD OF ESTIMATION OF HYDROGEN FLUORIDE ARRIVAL FROM ATMOSPHERE
ON WATER SURFACE**

The theoretical foundation of HF absorption in system atmosphere-natural water surface has been carried out. The Henry constant and distribution coefficient have been calculated at various temperatures. The estimation method of HF arrival on the water surface has been developed.

Key words: absorption, fluorine, surface, water, aluminum production

O.M. BALASHOVA, G.M. KURDYUMOV, V.G. LOBANOVA, T.S. TSEREVITINOVA, O.P. CHERNOVA
COMPUTER PROGRAMS FOR REMOTE TRAINING WITH CHEMICAL DISCIPLINES

The package of learning programs POSOKH for natural-science training the specialists of technological specialization has been created. Programs allow carrying out the study of processes, direct observation for which is difficult. These processes are the processes with participation of toxic, explosion and fire hazard substances and radioactive preparations. The computer modeling is the main didactic instrument. In programs the information alternates in the form of experiment imitation on display accompanied with the show of schemes, tables and figures with poly variant tasks for material assimilation and controlling the degree of its understanding.

Key words: computer programs, chemical experiment computer modeling, chemical discipline, chemical processes, chemical substances, remote learning, humanitarian shell

A.U. ISHBAEVA, R.N. SHAKHMAEV, V.V. ZORIN
**Pd-CATALYZED ARYLATION OF ACRYLONITRILE AT CONDITIONS
OF MICROWAVE IRRADIATION**

The influence of microwave irradiation on the rate and stereo selectivity of Pd-catalyzed arylation of acrylonitrile by the 4-bromoacetophenone was researched.

Key words: arylation, microwave irradiation, 4-bromoacetophenone, acrylonitrile, stereo selectivity.

T.P. LAZAREVA

ANALYSIS OF NITROGEN-CONTAINING ADDITIONS IN ELECTROLYTE FOR SYNTHESIS OF SODIUM PERBORATE

Methods for quantitative analysis of nitrate and ammonium ions and urea in electrolyte for synthesis of sodium perborate have been proposed.

Key words: carbonate-borate electrolyte, concentration, nitrate ions, ammonium ions, ion-selective electrode, optical density

A.O. CHUNAEV, A.A. DANILIN, P.P. PURYGIN, E.A. STEPANOV, I.V. BARANOVSKY
MODIFICATION OF HOUBEN-HOESCH REACTION BY CHLOROANHYDRIDES OF ADAMANTANE-CONTAINING CARBOXYLIC ACIDS

The Houben-Hoesch reaction is the powerful tool of organic synthesis allowing obtaining the acylated phenols of various structures. The possibility of modification of this reaction by introducing into the reaction mixture of chloroanhydrides of adamantane-containing carboxylic acids has been shown. Thus, it was possible to synthesize the aromatic imines of adamantane series containing in its structure the azolyte fragment.

Key words: acylation, phenol, aromatic imines, adamantane

I.K. KUKUSHKIN, E.V. VELIKANOVA, V.A. ZLOBIN
QUATERNARY AMMONIUM SALTS – REAGENTS FOR SYNTHESIS OF HALOGEN-SUBSTITUTED ORGANIC COMPOUNDS

The possibility of substitution of nitroxy groups in alcohol nitrates on halogens using salts of quaternary ammonium has been established.

Key words: alcohols, nitrates, substitution, nitroxy group, halogen