

А B S T R A C T S

A.K. BAEV, N.S. LESHENYUK, A.S. ZHUK
CHEMICAL PROBLEMS OF CHEMILUMINESCENCE ANALYSIS OF ATMOSPHERIC AND STRATOSPHERIC OZONE

The analysis of state and chemical problems of chemiluminescence sensors development of atmospheric and stratospheric ozone has been considered. The interrelation of thermodynamic properties of dye chemiluminescent sets of the coumarin, rhodamine and luminole and their ability to hydrogen bond formation, specific intermolecular of interactions with participation of unshared $2s^2(c)$ electron pair of the oxygen atoms has been found. A quenching effect in liquid and solid solution has been shown to cause the formation of strong hydrogen bonds in associating molecules (dimers) and in solvate structures. The nature of molecular complex formation of ozone and molecular oxygen with dye molecules has been revealed. The key role of the gallic acid in chemiluminescence method of ozone analysis with coumarin and rhodamine has been found. The mechanism of these processes has been analyzed. The negative role of water and alcohol formation in not completely and completely substituted amine groups of dyes has been shown. As a results of analysis of ESR sensor signals before and after activation it has been established that during activation the intensive formation of radical complexes in sensor composition proceeded. The spectrum of sensor chemiluminescence has been established to include two maxima that indicate the existence of additional sites of luminescence formed at realization of the first step of kinetic process.

Key words: ozone, coumarin, rhodamine, luminole, gallic acid, ozone molecular complex, quenching effect, chemiluminescence mechanism, spectra

O.A. VARNAVSKAYA, G.A. KRYVSHENKO, V.P. SMAGIN
COMPLEXATION STUDY OF NEODYMIUM (III) WITH 2,2'-DIPYRIDYL IN PRESENCE OF DIMETHYLFORMAMIDE

The influence of the dimethylformamide (DMFA) on interaction of the neodymium (III) with the 2,2'-dipyridyl (2,2'-Dipy) in system of the $(CF_3COO)_3Nd - 2,2'$ -Dipy - ethyl acetate has been studied spectrophotometrically. The Nd(III) : 2,2'-Dipy ratios and stability constants have been determined for systems with various content of the DMFA. The increase of the DMFA molar fraction has been found to result in both the decrease of complex compound (1:1) yield and changing its stability.

Key words: complexation, neodymium, dimethylformamide, 2,2'-dipyridyl, ethyl acetate

T.A. LEBEDEVA, V.P. KULINICH, G.P. SHAPOSHNIKOV
HETEROLIGAND PORPHYRAZINE COMPLEXES OF ERBIUM AND YTTERBIUM OF VARIOUS COMPOSITIONS

The appropriate extra complexes of the octaphenyltetra(pyrazino)porphyrzine of composition of metal- porphyrzine ligand of 1:1 have been obtained by means of interaction of the diphenyldicyanopyrazine with the erbium and ytterbium acetate. On the base of that compounds the sandwich type complexes of 1:2 compositions containing the phtalocyanine and octaphenyltetrazopyrazino- porphyrzine ligands have been synthesized. Heteroligand complexes obtained have been characterized with elemental analysis, IR and electron spectroscopy.

Key words: synthesis, spectra, extracomplexes, heteroligand porphyrzines

V.A. SMIRNOV
SYNTHESIS OF 6-ACETYL-1,4-BENZOXAZINON-3 AND ITS DERIVATIVES

The 6-acetyl-1,4-benzoxazinon-3, 4-*n*-butyl-6-acetyl-1,4-benzoxazinon-3 and its 8-nitro- and amino derivatives have been synthesized.

Key words: synthesis, 6-acetyl-1,4-benzoxazinon-3, 4-*n*-butyl-6-acetyl-1,4-benzoxazinon-3 and its 8-nitro- and amino derivatives

A.A. GOLOVANOV, V.S. PISAREVA, M.I. PLESHCHEV
INTERMOLECULAR DEHYDRATION OF TERT-BUTANOL WITH $C_3 - C_4$ ALCOHOLS ON KU-2×8 CATIONITE

During the study of the process of inter molecular dehydration of the tert-butanol with *n*-propyl, iso-propyl, *n*-butyl and iso-butyl alcohols on cation-exchange resin it has been established that given reaction has the first order for the tert-butanol and the catalyst. The process selectivity depends on tert-butanol : alkanol molar ratio and process is inhibited by the forming water. A kinetic model of the process has been proposed.

Key words: dehydration, tert-butanol, cationite, reaction order, selectivity

A.V. MERINOV, A.V. KASHEVSKIY, A.Yu. SAFRONOV, S.B. PINSKIY
SIMULTANEOUS ELECTROCHEMICAL DETERMINATION OF NITRIC OXIDE (II)
AND MOLECULAR OXIGEN

The principle possibility of nitric oxide and molecular oxygen joint electrochemical determination in model solutions and biological systems has been shown. Concentration dependences of the studied gases have been quantitatively assessed by means of voltammetric measurements using the Nafion coated glassy carbon electrode.

Key words: nitrogen oxide (II), oxygen, electro chemical determination

O.V. ERINA, V.Yu. KHOKHLOV, G.V. SHATALOV, V.F. SELEMENEV
RUTIN EXTRACTION IN SYSTEMS WATER-SALT SOLUTION – WATER-SOLUBLE POLYMER
AND ITS THERMAL SEDIMENTATION WITH POLY-N-VINYLCAPROLACTAM

The extraction of the rutin with water-soluble polymers - poly-N-vinylpyrrolidone, poly-N-vinyl-N-methylacetamide, poly N-vinylcaprolactam- from water-salt solutions at various values of pH has been studied. Systems for effective extraction of rutin have been offered. The possibility of thermal sedimentation of the rutin in the form of its complex with poly N-vinylcaprolactam has been established.

Key words: extraction, rutin, water-soluble polymers

P.V. NAUMKIN, I.A. NESTEROV, T.N. NESTEROVA, S.V. LEVANOVA
KOVAC INDEXES AND BOILING NORMAL TEMPERATURES OF AMYL BENZENES

Kovac indexes for twelve positional and structural isomers of amyl toluenes and amyl xylenes have been determined on stationary phase SE-30 at 373 K. The boiling normal temperatures have been calculated for forty amyl benzenes isomers.

Key words: amyl toluene, amyl xylene, Kovac indexes, boiling temperature

M.V. SHULAEV, R.R. BASHIROV, V.M. EMELIANOV
STUDY OF ADSORPTION PROPERTIES OF INDUSTRIAL WASTE - USED PEARLITE

The adsorption properties of industrial waste- used pearlite-have been studied. Adsorption isotherms of phenol, ethylene glycol and nonionic surfactant obtained showed the possibility of the pearlite utilization for organic synthesis production waste water purification process.

Key words: adsorption, pearlite, waste water purification

S.V. KOVALEV, G.S. KORMILTSIN, K.S. LAZAREV, K.I. KURAKOV, P.A.CHEPENYAK
EXPERIMENTAL STUDIES OF SEPARATION COEFFICIENTS AND SPECIFIC PRODUCTIVITY
OF SULFATE-CONTAINING SOLUTIONS WITH REVERSE OSMOSIS

In the given article both the experimental reverse osmosis set up and method for study of separation coefficient and specific productivity of one- module roll apparatus has been developed. Experimental dependencies and theoretical description of separation coefficients and specific productivity of sulfate-containing solutions on pressure for the MGA-95 and OPM-K membranes have been obtained.

Key words: reverse osmosis, separation coefficient, specific productivity, membrane

S.V. VYAZOVOV, S.I. LAZAREV, Yu.A. VOROGEYKIN
WATER PENETRATION FACTOR AT REVERSE OSMOSIS CONCENTRATING WATER SOLUTIONS
CONTAINING BELOFOR

Experimental researches of factor of water penetration of various types of industrial membranes have been carried out at the reverse osmosis concentrating water solutions containing befor, taking into account the influence on them of pressure and concentration.

Key words: reverse osmosis, water penetration factor, membrane.

M.Kh. ANNAGIEV, S.M. ALIDZHANOVA
STUDY OF ELECTRON-ACCEPTOR SITES OF Se AND Sn FORMS OF CLYNOPTILLOLITE
AND MORDENITE ON ACETONE ADSORPTION

Electron-acceptor sites on the surface of the Se and Sn forms of the natural clynoptillolite and mordenite on acetone adsorption have been studied. It has been established that on the surface of studied sorbents the different electron-acceptor sites differing on each other energetically exists.

Key words: electron-acceptor sites, Sn, Se, surface, clynoptillolite, mordenite, acetone

V.N. AFANASIEV, A.N. USTINOV, V.A. GOLUBEV
STRUCTURAL PARAMETERS OF HYDRATE COMPLEXES OF POTASSIUM BROMIDE

The molar adiabatic compressibility has been determined on the base of data on density of aqueous solutions of the potassium bromide and ultrasound velocity in the temperature range of 283.15-308.15 K at concentration from 0.01 up

to 0.05 mole fraction. Data obtained together with data on isobaric heat capacity of solutions have been used for determination structural parameters of electrolyte hydrate complexes. Numbers of hydration, water molar volumes in hydrate sphere and in stoichiometric mixture of ions without hydrate environment have been determined.

Key words: density, aqueous solutions, potassium bromide, hydration numbers

I.S. FAIYSRAKHMANOV, I.M. BORISOV, G.R. SHAYAKHMETOVA, R.F. TALIPOV, N.Z. YAGAFAROV
**OXIDATION OF OIL SULPHIDES. PART 2. INFLUENCE OF METHOD OF CATALYST PREPARATION
ON KINETICS OF PEROXIDE OXIDATION OF SULFIDES**

The preliminary forming of active forms of the catalyst at keeping of the molybdenic acid in hydrogen peroxide has been shown to increase the process rate and sulphoxides yield at oxidation of oil sulphides.

Key words: oil sulphides, oxidation, hydrogen peroxide, peroxomolybdenic acid, kinetics, mechanism

A.A. KOLESNIKOV, E.E. PISKUNOVA
**EFFECT OF CHEMICAL STRUCTURE OF POLYFUNCTIONAL UNSATURATED COMPOUNDS
ON RADIATION VULCANIZATION OF ELASTOMERS**

Radiation cross-linking a number of elastomers in the presence of poly-functional unsaturated acrylic compounds has been considered. The compounds used are active sensitizers of radiation cross-linking. They decrease optimum absorbed doses of radiation and take part in the formation reactions of cross links between elastomers macromolecules.

Key words: radiation cross-linking, elastomers, unsaturated acrylic compounds

O.A. FRIDMAN
PLASTICIZATION OF CELLULOSE ACETATE

Three types of plasticization of the cellulose acetate have been considered- internal, external and temporal. Peculiarities of each method of plasticization have been revealed. It has been established that as under the plasticization as under «antiplasticization» the changing of properties of plasticized materials can be satisfactorily explained by competition of two factors: structural and relaxation ones.

Key words: cellulose acetate, plasticization, structure

A.V. ZAIKINA, E.I. YARMUKHAMEDOVA, Yu.I. PUZIN, Yu.B. MONAKOV
**STUDY OF POLY METHYL METHACRYLATE POLYMERIZATION INITIATED WITH N,N-DIMETHYL –
N – BENZYLAMINE - BENZOYL PEROXIDE SYSTEM**

The polymerization of the methyl methacrylate in the presence of initiating system N,N-dimethyl-N-benzylamine and benzoyl peroxide was studied. It was established that the polymerization rate is accelerated at small conversion degree and is decelerated at higher one. The kinetic parameters of polymerization were determined. The formation of stable intermediate complex during the amine interaction with peroxide was determined by spectral method. The scheme of complex formation was proposed.

Key words: polymerization, methyl methacrylate, N,N-dimethyl-N-benzylamine, benzoyl peroxide

A.E. ZAVADSKIY
**PARTICULARITIES OF ANALYSIS OF CRYSTALLITES ORIENTATION IN COTTON FIBERS
BY X-RAY DIFFRACTOMETRY**

Method of X-ray diffraction analysis of crystallite formations in fibres by the use of special holder for sample was developed. Contribution of spiral twisting of fibrils in cotton fibres during analysis of the crystallite orientation was estimated. It was proved experimentally that this factor has essential influence on the orientation indexes.

Key words: crystallite, cotton fibre, X-ray diffraction analysis, orientation

***I.P. CHIKHACHEVA, V.P. ZUBOV, E.I. NIKOLAEVA, G.M. KUZ'MICHEVA, I.V. KUBRAKOVA,
E.S. TOROPCHENOVA, T.P. PURYAEVA***
EFFECT OF MICROWAVE RADIATION ON PHASE STATE AND PROPERTIES OF POLY (VINYL) ALCOHOL

The effect of microwave radiation on structural peculiarities and properties of poly (vinyl) alcohol has been studied. Unlike thermal heating already at short time MW-heating of the non-plasticized polymer its water proof is increased due to the growth of crystallinity degree. The polar plasticizer input increases the macromolecular mobility, amount of absorbed energy and sample temperature but results in the decrease of order of permolecular structure. The competition of that processes determines properties of plasticized samples.

Key words: microwave radiation, phase state, poly (vinyl) alcohol

V.G. STOKOZENKO, Yu.V. NEMANOVA, E.L. ALEKSAKHINA
STUDY OF HS⁻ NUCLEOPHILIC ANION EFFECT ON CELLULOSE DESTRUCTION

Using cotton, flax and wooden cellulose as an example, it has been shown that the presence in “cellulose substrate - sodium hydroxide” system of the nucleophilic hydrosulfite-ion results in the yield sharp increase of the glucose (mono-

mer of cellulose macromolecule) into the solution. The conclusion has been drawn about the activation of destruction process of glycoside bonds by hydrosulfite-ion. Special features of hydrolytic destruction under investigated conditions have been explained.

Key words: cellulose, glucose, sodium hydroxide, hydrosulfite-ion, glycoside bond

E.S. TARAÏMOVICH, Yu.V. MITASOVA, A.B. KORZHENEVSKIY, O.I. KOIFMAN, P.A. STUZHIN
STUDY OF TETRA (2,3-THIONAPHTHENE)PORPHYRAZINE COMPLEXES BASICITY WITH METAL OF ALUMINA SUBGROUP

The spectral study of the tetra (2,3-thionaphtheno) porphyrzine complexes state in $\text{CH}_2\text{Cl}_2\text{-CF}_3\text{COOH}$ medium has been carried out. Stability constants of forming acidic forms have been determined by spectrophotometric titration. The annelation of the thionaphthene has been established to results in the decrease of the N meso-atoms basicity approximately in the one order of magnitude and the lowest basicity being typical for gallium complex.

Key words: tetra (2,3-thionaphtheno) porphyrzine, complex, spectrophotometric titration, basicity

Yu.V. NEMANOVA, Yu.V. TITOVA, N.A. ERMOLAEVA, V.G. STOKOZENKO, M.V. KONYCHEVA, A.I. MAXIMOV
TREATMENT INFLUENCE IN PLASMA-SOLUTION SYSTEM ON PROPERTIES OF BAST FIBER CELLULOSE

The influence of preliminary treatment with an atmospheric pressure gas discharge which was treated inside electrolyte on the detachment reaction of cellulose end groups at subsequent chemical treatment has been studied. It has been shown that at the plasma-solution treatment the cellulose destruction on that mechanism is not predominate over the macro-molecule de-polymerization process with chain breaking. It confirms by the content change of aldehyde and carboxyl groups of cellulose after plasma-solution action.

Key words: atmospheric pressure plasma, solution, cellulose, destruction

I.K. KUKUSHKIN, E.V. VELIKANOVA, V.A. ZLOBIN
METHODS OF QUARTERNARY AMMONIUM AZIDE SYNTHESIS

The simple and safe methods of quarternary ammonium azide synthesis have been developed.

Key words: azides, quarternary ammonium, synthesis

A.A. YUSUPOVA, G.A. MEDVEDEVA, R.T. AKHMETOVA, A.I. KHATSRINOV, V.A. PERVUSHIN, L.T. AKHMETOVA
TECHNOLOGY OF SULFIDES AND SULPHIDE MATERIALS ON VARIOUS SILICA-CONTAINING RAW BASE

The production technology of inorganic sulphides and composition materials on its base with application of various silica-containing rows and industrial wastes has been developed. The mechanism of formation of inorganic sulfides has been in detail investigated at various methods of activation of sulfuric component.

Key words: sulfur, technology of sulfides, sulfide composition materials, industrial waste, nucleophilic activators, pyrite

A.A. ILYIN, M.V. ORLOVA, N.E. GORDINA
INFLUENCE OF MECHANICAL ACTIVATION ON IRON OXIDE REDUCTION

The influence of mechanical activation (MA) on iron oxide reduction has been studied. It has been established, that in MA process there is accumulation of material of working bodies of mill in product. The influence of the MA on microporosity of the $\alpha\text{-Fe}_2\text{O}_3$ has been shown. It has been established, that MA of the iron oxide is accompanied by processes of crushing and secondary aggregation.

Key words: mechanical activation, iron oxide, reduction

A.I. RAKHMATULLIN, I.V. ELISEEVA, A.F. NAGORNYAK, A.V. PRON'KINA, Yu.M. KAZAKOV, A.M. GAFAROV
PROCESS OF LIQUID PHASE FILLING OF SOLUTION STYRENE-BUTADIENE RUBBER WITH WHITE CARBON

The possibility of accomplishing of liquid phase filling of solution rubbers with white carbon using conventional industrial methods of degassing and isolation of composition obtained has been shown. The obtained compositions were not inferior on properties to foreign analogies.

Key words: solution rubbers, liquid phase filling, suspension of white carbon

V.N. BLINICHEV, A.M. KOZLOV, S.A. KOMAROV
**DETERMINATION OF SOARING VELOCITY OF RUBBER CRUMP AND CORD FIBER
WITH EXPERIMENTAL AND CALCULATED WAYS**

On the base of experimental studies calculation equations which describe the dependence of soaring velocity of rubber crump and cord fiber (processing products of waste tires) upon their size have been obtained.

Key words: soaring, rubber crump, cord fiber

A.V. DMITRIEV, I.R. KALIMULLIN, N.A. NIKOLAEV
**PROSPECTS OF APPLICATION OF DIRECT-FLOW VORTICAL APPARATUSES FOR PURIFICATION
OF LARGE-TONNAGE GAS EMISSIONS OF INDUSTRIAL PLANTS**

In given article the application of direct-vortex devices for purification of large scale gas emissions of industrial plants has been proposed. Data on the operating features of the direct-vortex devices are presented.

Key words: large-scale gas emission, direct-flow-vortex devices

V.N. PAVLECHKO, A.V. MINAKHMETOV, N.A. NIKOLAEV
INTENSITY RELATIONSHIP OF MIXING OF LIQUID IN SECTIONAL, DIFFUSIVE AND COMPLEX MODELS

The possibility of determination of interrelation between both cell number of ideal mixing in sectional model and the Peclet number in diffusion models with intensity mixing of liquid in complex model is considered.

Key words: sectional model, ideal mixing model, diffusion model

A.V. BAKHTIN, M.A. GOLDSHTRAKH, S.A. ZAVIALOV, Yu.I. TARASOV, A.A. ISHCENKO
AMMONIA INFLUENCE ON RESISTANCE PROPERTIES OF PHTHALOCYANINE THIN FILMS

Results of study of sensor properties of the lead (II) phthalocyanine (PbPc), as one of the most available substances of metal complexes of phthalocyanines, with respect to ammonia vapor the concentration control of which is very important from viewpoint of ecology are presented. For the PbPc films sputtered with vacuum evaporation on interdigital structure of electrodes on glassceramics substrate the calibration curves have been found. These ones show the strict function between analytical signal (the conductivity) and the ammonia concentration. Possible ways of the water and ammonia molecule coordination to the PbPc molecule have been studied. For this the quantum chemical calculation of possible adducts of the water and ammonia attachment has been carried out using the DFT method with B3LYP basis. The additional test both for DFT method and for choice of calculation bases has been carried out by means of comparison obtained geometrical parameters of equilibrium structure of the PbPc with data of crystallographic studies.

Key words: phtalocyanines, lead (II) phtalocyanine, chemical sensor, adsorption of ammonia, phtalocyanine thin films, electron scanning microscopy, sensor response, conductivity measurement, DFT method, quantum chemical calculations

M.P. TSIGANKOV, A.S. KRUCHININ
**MATHEMATICAL MODELS OF MULTIPLE-STREAM PRODUCTION OF BLACK CARBON
IN ITS OPTIMIZATION PROBLEMS**

The optimization problems of raw material distribution for carbon black production are considered. To solve the problems of optimization the application of linear programming models was proposed.

Key words: black carbon, technological line, mathematical model, distribution of raw materials, optimization

V.S. SHARUNOV, I.G. ABRAMOV, S.I. FILIMONOV, O.V. MAKOVKINA, V.V. PLAKHTINSKIY
SYNTHESIS OF 4-METHYL-5-BROMINEPHTALONITRILE

For the first time, the 4-methyl-5-brominephtalonitrile has been obtained and characterized. The compound mentioned above has been synthesized by means of the 4-methylphthalic acid functionalization.

Key words: bromination, imidization, amidization, dehydration, 4-methylphthalic acid, 4-methyl-5-bromine phthalic acid, 4-methyl-5-bromine phthalimide, 4-methyl-5-brominephtalonitrile

M.Yu. TARSHIS, L.V. KOROLEV
ON CALCULATION OF POWER OF DEVICES OF GRAVITY-POUR ACTION

The expression for engineering calculation of power spent on granular material circulation in device of gravity-pour action with arbitrary form of working surface has been obtained.

Key words: mixer, grain materials, circulation, power, calculation

O.K. SHVETSOV, E.Yu. DUROSOVA, G.V. KATYSHEVA, A.V. KOMIN
**SYNTHESIS AND SOME PROPERTIES OF COPOLYMERS OF METHACRYLIC ACID, NITRILE
OF ACRYLIC ACID AND STYRENE AS BASE OF WATER SOLUBLE LUBRICOOLANT**

Kinetic features of synthesis of copolymers of the methacrylic acid (MAA), nitrile of the acrylic acid (NAA) and styrene (ST) with various molecular mass have been studied. The developed technological conditions of synthesis have

been shown to allow to obtain dispersions of copolymers with high depth of transformation of monomers as polymer base of water soluble lubricoolant.

Key words: emulsion free polymerization, surfactant copolymers of methacrylic acid, acrylonitrile and styrene, lubricoolants

Yu.V. LUGOVOY, Yu.Yu. KOSIVTSOV, E.M. SULMAN, Yu.V. CHURSANOV

THERMOGRAVIMETRIC STUDY OF COBALT CHLORIDE INFLUENCE ON THERMAL STABILITY OF SECONDARY POLYMERIC CORD OF AUTOMOBILE TIRES

In the present work study results of cobalt chloride influence on thermal stability of polymeric cord are presented. Using of the cobalt chloride with the mass concentration of 2 % provides the destruction temperature decrease on 30 °C. The decrease of thermo stability of polymeric cord in the presence of the catalyst has been confirmed with the decrease of apparent activation energy of thermal destruction on 30 kJ/mol. It is possible to explain the catalytic effect of cobalt chloride with presence of the Lewis acid centres and also by electronic structure of cobalt cation.

Key words: cobalt chloride, polymeric cord, thermo destruction

M.I. GADZHIEV

PHASE DIAGRAM OF CaO – RuO₂ SYSTEM

Differential-thermal (DTA) and X-Ray phase (RFA) methods of physical-chemical analysis for the first time, the two-component system CaO–RuO has been studied. It has been established that in system the three compounds CaRuO₃, Ca₂RuO₄, Ca₄RuO₆ have been formed. The thermal stability, density and specific electric resistance of the compounds have been determined.

Key words: physico-chemical analysis, synthesis, phase diagram, thermal analysis.

V.L. CHECHULIN, S.A. MAZUNIN

ON PLANARITY OF POINTS COORDINATES OF MONO AND NON-VARIANT EQUILIBRIUMS IN FOUR- AND MORE COMPONENT WATER-SALT SYSTEMS

It has been found that in the n-components water-salt systems, which were displayed in a mass percentage (barycentric coordinates), coordinates of compositions of (n-1)-saturated solution (evtoniks) and the coordinates of (n-2)-saturated solutions, lying on the lines of non-variant and mono-variants equilibriums, were close to the plane (with an accuracy better than 1%). This regularity was valid for a broad class of systems. At extreme complexity of systems analysis with the number of components 4 and more, this regularity mentioned above facilitates the decision of the research and applications tasks.

Key words: water-salt system, evtoniks, saturated solutions, phase equilibrium

G.M. POLTORATSKIY, V.B. FRANCHUK, A.V. KURZIN, A.N. EVDOKIMOV

SOLUBILITY OF SOME TETRAALKYLAMMONIUM BROMIDES AND IODIDES IN DIMETHYL SULFOXIDE

Solubilities of the tetramethylammonium bromide and iodide, as well as the tetraethylammonium and tetrabutylammonium bromides and iodides in dimethyl sulfoxide at 27 and 55°C have been determined. It has been measured that solubilities of tetraalkylammonium salts are increased from tetramethylammonium to tetrabutylammonium ion with increasing of the temperature.

Key words: solubility, bromides and iodides of tetramethyl, tetraethyl tetrabutyl ammonium, dimethyl sulfoxide

Yu.V. RUBLINETSAYA, V.V. SLEPUSHKIN, E.O. ILINYKH

ABOUT ELECTRONIC STRUCTURE OF COPPER - NICKEL ALLOYS

Opportunities of local electrochemical analysis (LEA) in studying electronic structure of copper - nickel alloys have been considered.

Key words: local electrochemical analysis (LEA), electron work function, anode dissolution current

E.G. VINOKUROV, M.N. KARANAeva

EXPERIMENTAL VERIFICATION OF FORECAST VALIDITY OF VALUES OF TOTAL CONCENTRATIONS OF METAL IONS IN SOLUTIONS OF ALLOY PLATING

The possibility of forecast adequacy of statistical model of determination of preferable area of total concentration of metal ions in solutions for alloy plating has been shown using the optimization of solution composition for Cu-Co alloy plating as an example. The solution composition for Cu-Co alloy plating has been developed on the base of the glutamate complexes of the copper and cobalt. Experimental data obtained confirm the efficiency of mathematic models applying at developing new solution compositions for alloy plating.

Key words: plating, alloy, copper, cobalt, forecast, model