

CONTENTS

REVIEWS

Maiyslish V.E.
On microheterocycles 3

CHEMISTRY

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

Tukumova N.V., Usacheva T.R., Thuan Chan, Sharnin V.A.
Formation of complexes of cobalt (II) ions with maleic acid anion in aqueous – ethanol solutions 16

Rublinetskaya Yu.V., Mazhaeva O.A., Slepshkin V.V.
Coulometric variant of local voltammetry of alloys 20

Kuliev K.A., Verdizade N.A., Abaskulieva U.B.
Spektrophotometric determination of titanium with 2,4-dithiol-4 –*tert*-butylphenol and hydrophobic amines 22

Mukovnin A.A., Talanov V.M.
On phase diagram of system $MnTi_{2-x}V_xO_4$ 27

Solodov A.S., Solodov M.S., Karpov S.I.
Effect of retraction of counter ions at adsorption on electrode of organic cations 31

Bobkov S.P., Bobkova E.S., Rybkin V.V.
Application of discrete stochastic models for chemical kinetics 35

Khayrullina V.R., Taipov I.A., Gerchikov A.Ya., Zarudiy F.S.
Computer modeling of "structure - activity" relationship in series of natural and synthetic inhibitors of catalytic activity of 5-lipoxygenase of human blood cells 39

Kochkina N.E., Padokhin V.A., Khokhlova Yu.V., Kalabin E.A., Kokina N.R., Groshev A.S.
Stochastic approach to modelling kinetics of high-molecular systems destruction. Part 2. Diffusion markov models of kinetics of polymers mechanical destruction 44

Zhansitov A.A., Martynenko A.I., Popova N.I., Khashirova S.Yu., Sivov N.A.
Synthesis of new monomers of methacrylguanidine and its hydrochloride and their ability to radical (co) polymerization 46

Ulitin N.V., Deberdeev R.Ya., Deberdeev T.R.
Kinetics of styrene radical polymerization proceeding at conditions of reversible chain transfer using trithiocarbonates 52

Konstantinova E.P., Nikolaev P.V., Rozhkova E.P.
Foamer ability of oligoetherphosphate surfactant 56

Vashurin A.S., Vershinina I.A., Gornukhina O.V., Pukhovskaya S.G.
Polypropylene materials modified with zinc complex of tetratozilate 5,10,15,20-tetrakis (4-methylpyridil) porphyrin 60

CHEMICAL TECHNOLOGY

(inorganic and organic substances.
Theoretical fundamentals)

Muravyov I.A., Krotova M.N., Kuvaeva E.Yu., Odintsova O.I.
Foundation of surfactant choice for intensification of washing process of textile materials 63

Abdrakhmanov V.I., Sakhipov V.R., Krasnov V.L., Krasnov A.V.
Improvement of industrial technology of mebicar obtaining 66

Durosov L.S., Solovyov M.E., Salnikova V.I., Kireev A.G., Kirikov A.A. Development of compositions and production technology of elastomeric compositions from rubber crumbs and oligomeric binder	68
Baryshev A.S., Vetoshkin A.B., Solovyov M.E., Gudkov S.V. Fatigue properties of rubber and rubber-metal joints at different loading conditions.....	71
Kostrykina G.I., Krutova E.A., Tsvetkov M.V., Kokoreva M.A. Oxidation of isoprene rubber ski-3 modified with silanes	74
Solovyova O.Yu., Gurylyova N.L., Timrot S.D., Korotaeva T.A. Effect of oil sludge on properties of rubber mixtures and rubbers based on styrene-butadiene rubber	77
Shekhanov R.F., Gridchin S.N. Internal stresses in nickel-iron electrolytic alloys.....	80
Barabanov N.N., Puzyryova M.S., Ermolaeva E.V., Panov Yu.T., Zemskova V.T. Calculation algorithm of carburization technological parameters of compositions with titanium dioxide participation of arbitrary composition.....	82
Kiseleva E.A., Berengarten M.G., Sevastyanov A.P., Shkolnikov E.I. Method of forming membrane-electrode unit of portable fuel cell and its investigation.....	86
Lipin A.G., Turkova N.D., Kuvshinova A.S. Modelling two-layer granules dissolution process in porous medium.....	90
Mizonov V.E., Krupin S.V., Shelatonova K.A., Barantseva E.A. Mathematical model of batch mixing granular materials with distributed feed of segregating component.....	94
Kashina O.V., Bushuev M.V., Nevsky A.V. Exergy analysis of mass loading effect at energy-resource-saving water management systems designing.....	97
Lutfullina G.G., Abdullin I.Sh., Zobov V.V., Vagapov B.R. Study of detergent properties on base of various nature surfactants.....	103

SHORT COMMUNICATIONS

Jasiński R., Sharnin V.A., Barański A. UV spectra of e-2-aryl-1-cyano-1-nitroethenes	107
--	-----

SCIENTIFIC AND METHODOLOGICAL PROBLEMS

Aleshin V.A., Tretyakov Yu.D. Information and communication technologies for independent training on inorganic chemistry	110
Lutsyk V.I., Lutsyk V.I. Competence as ability to recognize errors in chemical texts and in tasks solution submitted for checking	113
Lisun N.M., Sutyagin A.A. Integrated approach to learning process of inorganic chemistry of students of non-chemical qualification in high school	119
Rumyantsev E.V., Makarov S.P., Zakharov A.G. Department of inorganic chemistry: from 1918 to now days. Role of G.A. Krestov for formation and development of department	122
Rumyantsev E.V., Zakharov A.G. All-russian meeting of heads of inorganic chemistry departments	129

А Б С Т Р А К Т С

**V.E. MAIYSLISH
ON MICROHETEROCYCLES**

The review of publications concerning synthesis, properties and possible areas of applications of microheterocycles of various structures is given.

Key words: microheterocycles, porphyrines, porphyrazines, phthalocyanines, crown esters, cyclic polyamines, heterocycles, properties, synthesis

**N.V. TUKUMOVA, T.R.USACHEVA, CHAN THUAN, V.A. SHARNIN
FORMATION OF COMPLEXES OF COBALT (II) IONS WITH MALEIC ACID ANION
IN AQUEOUS – ETHANOL SOLUTIONS**

The composition and stability of complex compounds of cobalt (II) ions with maleic acid anion in aqueous- ethanol solutions was determined by means of potentiometric titration at 298.15 K and ion force of $I=0.1$ (NaClO₄). The increase in the stability for mono complex of Co²⁺ with maleic acid anion occurs under the increase in ethanol content in solution. The results obtained were compared with the literature data on related compounds. The ions of Co²⁺ were found to form with the anion of maleic acid less stable complexes than Ni²⁺ at studied compositions of solvent that corresponds to the conventional Irving-Williams series.

Key words: maleic acid, stability constant, coordination compounds, solvation contribution

**Yu.V. RUBLINETSKAYA, O.A. MAZHAeva, V.V. SLEPUSHKIN
COULOMETRIC VARIANT OF LOCAL VOLTAMMETRY OF ALLOYS**

Coulometric variant of local voltammetry of alloys was considered for zinc-cadmium thermal alloys.

Key words: local electrochemical analysis, zinc-cadmium alloy, electricity quantity

**K.A. KULIEV, N.A. VERDIZADE, U.B. ABASKULIEVA
СПЕКТРОФОТОМЕТРИЧЕСКОЕ ОПРЕДЕЛЕНИЕ ТИТАНИЙ С 2,4-ДИТИОЛ-4 –ТЕРТ-
БУТИЛФЕНОЛ И ГИДРОФОБИЧЕСКИМИ АМИНАМИ**

The 2,6-dithiol-4-*tert*-butylphenol (DTBPh) forms with titanium a colored complex insoluble in non-polar organic solvents. Experiments on electro-migration both in U-like tube and anion exchange on EDE-10 P anionite showed the anion character of homogeneous ligand complex. At introduction into the system the hydrophobic amines an extraction of this compound to organic phase was observed in the form of different-ligand complex. Aniline, N-methylaniline and N,N-dimethylaniline were used as hydrophobic amines. Maximal extraction degree of different-ligand complexes was observed at pH of 1.3-3.2. A maximal light absorption of complexes was observed at 430-44 nm. Molar adsorption coefficients were $(2.6-2.8) \cdot 10^4$.

Key words: titanium, extraction -spectrophotometric method, determination

**A.A. MUKOVNIN, V.M. TALANOV
ON PHASE DIAGRAM OF SYSTEM MnTi_{2-x}V_xO₄**

Within the frame of the phenomenological theory of second-order phase transitions for thermodynamic potential which is invariant with respect to group of transformations of C_{3v} (3m), conditions of destroy of tetra-critical point were obtained. The phase diagram of such destroy corresponding to experimentally received diagram of system MnTi_{2-x}V_xO₄ was considered in details. Conditions of occurrence of tricritical and triple points were formulated. The equations for calculation of their coordinates are given.

Key words: phase diagram, phase transition, multicritical point, tricritical point, triple point

A.S. SOLODOV, M.S. SOLODOV, S.I. KARPOV
**EFFECT OF RETRACTION OF COUNTER IONS AT ADSORPTION ON ELECTRODE
OF ORGANIC CATIONS**

In the framework of the Alekseev-Popov Kolotyrkin model added by the Frumkin isotherm, the influence of countering the ions into a dense part of the electrical double layer on the curves shape of differential capacitance at the adsorption on electrode of organic cations was considered. The accounting the retraction effect along with a back electrolyte assymetry at model calculation was shown to improve a quantitative agreement with experimental data.

Key words: model, adsorption, differential capacitance curve, electric double layer, counter ions retraction

S.P. BOBKOV, E.S. BOBKOVA, V.V. RYBKIN
APPLICATION OF DISCRETE STOCHASTIC MODELS FOR CHEMICAL KINETICS

Attempts of stochastic approach application based on the theory of discrete Markov chains to modeling chemical reaction kinetics were considered. The description of chemically reacting system in the terms of the proposed mathematical tool was proposed.

Key words: Markov's chains, stochastic approach, modeling, chemical reactions kinetics

V.R. KHAIYRULLINA, I.A. TAIPOV, A.YA. GERCHIKOV, F.S. ZARUDIY
**COMPUTER MODELING OF "STRUCTURE - ACTIVITY" RELATIONSHIP IN SERIES
OF NATURAL AND SYNTHETIC INHIBITORS OF CATALYTIC ACTIVITY
OF 5-LIPOXYGENASE OF HUMAN BLOOD CELLS**

Using a computer system SARD-21 (Structure Activity Relationship & Design) the structural features were revealed for high -, medium and low efficiency inhibitors of the catalytic activity of 5-lipoxygenase (5-LOX) of human blood cells. Degree of their influence on the efficiency of inhibiting action was estimated. Two models M1 and M2 differing with the interval level of forecast and recognition of inhibiting activity of various classes of compounds with respect to 5-LOX were created. These models provide the level of reliable prediction of 83% and 88% for models M1 and M2, respectively.

Key words: leukotrienes, 5-lipoxygenase, method theory of imagine recognition

*N.E. KOCHKINA, V.A. PADOKHIN, YU.V. KHOKHLOVA, E.A. KALABIN,
N.R. KOKINA, A.S. GROSHEV*
**STOCHASTIC APPROACH TO MODELLING KINETICS OF HIGH-MOLECULAR SYSTEMS
DESTRUCTION. PART 2. DIFFUSION MARKOV MODELS OF KINETICS OF POLYMERS
MECHANICAL DESTRUCTION**

On the base of the theory of stochastic differential equations the stochastic diffusion models of polymer macromolecules destruction kinetics were "constructed". In special case the simplest diffusion model was shown to cause the polymer macromolecules differential molecular weight distribution, named by Kramer-Lansing distribution.

Key words: Markov's processes, diffusion model, stochastic differential equations

A.A. ZHANSITOV, A.I. MARTYNENKO, N.I. POPOVA, S.YU. KHASHIROVA, N.A. SIVOV
**SYNTHESIS OF NEW MONOMERS OF METHACRYLGUANIDINE AND ITS HYDROCHLORIDE
AND THEIR ABILITY TO RADICAL (CO) POLYMERIZATION**

New approaches to synthesis of guanidine containing monomers and polymers are considered. New monomers methacryloyl-guanidine and its hydrochloride as well as N,N'-dimethacryloyl-guanidine were synthesized. The possibility of radical (co) polymerization of synthesized monomers was shown.

Key words: methacryloyl guanidine, methacryloyl guanidine hydrochloride, radical (co) polymerization, NMR spectroscopy

N.V. ULITIN, R.Ya. DEBERDEEV, T.R. DEBERDEEV
**KINETICS OF STYRENE RADICAL POLYMERIZATION PROCEEDING AT CONDITIONS
OF REVERSIBLE CHAIN TRANSFER USING TRITHIOCARBONATES**

Kinetics of polystyrene obtaining by radical polymerization was modeled on mechanism of addition-fragmentation kinetics at dibenzyltrithiocarbonate presence. Model correctness was proved by good correlation of calculated and experimental values of polymer average molecular mass distribution parameters.

Key words: modeling, reversible chain transfer, polystyrene, radical polymerization

E.P. KONSTANTINOVA, P.V. NIKOLAEV, E.P. ROZHKOVA
FOAMER ABILITY OF OLIGOETHERPHOSPHATE SURFACTANT

The method of quantitative estimation of air-mechanical foams stability based on kinetics of emission of water solutions of surfactant was proposed. The ratio of instability constants of spherical and polyhedral foams was found. Properties of foams obtaining from water solutions of aliphatic and aromatic oligoetherphosphates were compared. Advantages of foams on the base of oligoetherphosphates solutions – derivatives of epoxy oligomers and orthophosphoric acid were shown.

Key word: oligoetherphosphate surfactant, air-mechanical foams, kinetics of spherical and polyhedral foams destruction

A.S. VASHURIN, I.A. VERSHININA, O.V. GORNUKHINA, S.G. PUKHOVSKAYA
**POLYPROPYLENE MATERIALS MODIFIED WITH ZINC COMPLEX OF TETRATOZILATE
5,10,15,20-TETRAKIS (4-METHYLPYRIDIL) PORPHYRIN**

The stability constants of molecular complexes ZnTPyP with pyridine, piperidine, and creatinine were determined with the spectrophotometric titration. The possibility of using non – woven polypropylene material modified with ZnTPyP for purification of biological liquids from the nitrogen – containing metabolic products was shown.

Key words: metalloporphyrins, polypropylene materials, surface modification, axial complexes

I.A. MURAVYOV, M.N. KROTOVA, E.YU. KUVAEVA, O.I. ODINTSOVA
**FOUNDATION OF SURFACTANT CHOISE FOR INTENSIFICATION OF WASHING PROCESS
OF TEXTILE MATERIALS**

The most important properties of new surfactants were studied: foaming, emulsifying and wetting properties, stability in high-alkaline environment. The washing ability of surfactants solutions was estimated by means of determination of whiteness degree increase of artificially polluted fabric after washing. The complex assessment of washing ability of traditional oxyethylated alkylphenols and new surfactants on the base of oxyethylated fatty alcohols in the processes of fabrics washing was carried out.

Key words: non-ionic surfactants, wetting, foaming, detergency, emulsifying, washing action

V.I. ABDRAKHMANOV, V.R. SAKHIPOV, V.L. KRASNOV, A.V. KRASNOV
IMPROVEMENT OF INDUSTRIAL TECHNOLOGY OF MEBICAR OBTAINING

The advanced industrial technology of 2,4,6,8-tetramethyl-2,4,6,8-tetraazabicyclo[3,3,0]octanedion-3,7 (substance of medicinal preparation mebicar) obtaining was developed. Process includes the interaction of N,N'-dimethylurea with glyoxal in water solution in the presence of sulfuric acid, neutralization of reaction masses in an ion-exchange column, filled with strong alkaline anionite, with the following azeotrope distillation of water with butylacetate.

Key words: mebicar, obtaining technology, N,N'-dimethylurea, glyoxal, anionite

L.S. DUROSOV, M.E. SOLOVYOV, V.I. SALNIKOVA, A.G. KIREEV, A.A. KIRIKOV
**DEVELOPMENT OF COMPOSITIONS AND PRODUCTION TECHNOLOGY OF ELASTOMERIC
COMPOSITIONS FROM RUBBER CRUMBS AND OLIGOMERIC BINDER**

The possibility of creating new compositions based on rubber crumb and isocyanate prepolymers was investigated. The optimal receipt and technological parameters providing the properties of compositions to requirements for flooring coverings of sports ground were determined. By finite element method the deformation behavior of the final product (floor slab) was approximated.

Key words: secondary raw materials, milling, rubber, crumb, modification, composition materials

A.S. BARYSHEV, A.B. VETOSHKIN, M.E. SOLOVYOV, S.V. GUDKOV
FATIGUE PROPERTIES OF RUBBER AND RUBBER-METAL JOINTS
AT DIFFERENT LOADING CONDITIONS

The level of fatigue endurance of rubber determined at complex stress-strain conditions, appears considerably below of level which is defined with standard methods under conditions of one-dimensional stretching. At the same time that parameter determined for rubber-metal composites takes an intermediate place between these two conditions of testing. The method of testing in complex stress-strain conditions gives us an opportunity to know more about properties of boundary layers of rubber in rubber-metal joints.

Key words: complex stress-strain conditions, rubber-metal composite, fatigue endurance, fatigue endurance factor

G.I. KOSTRYKINA, E.A. KRUTOVA, M.V. TSVETKOV, M.A. KOKOREVA
OXIDATION OF ISOPRENE RUBBER SKI-3 MODIFIED WITH SILANES

The influence of high-temperature oxidation of isoprene rubber SKI-3-modified by silanes of various structures on the molar mass and viscous - elastic properties of the polymer was studied. The silanes were shown to increase in the rubber destruction degree at mixing. After oxidation the modified rubbers are characterized by higher values of intrinsic viscosity, storage modulus and loss modulus as compared with the unmodified polymer.

Key words: oxydation, isoprene rubber, silanes, modification

O.Yu. SOLOVYOVA, N.L. GURYLYOVA, S.D. TIMROT, T.A. KOROTAEVA
EFFECT OF OIL SLUDGE ON PROPERTIES OF RUBBER MIXTURES AND RUBBERS BASED ON
STYRENE-BUTADIENE RUBBER

The activating action of oil sludge from the plant "Alfa Laval" OJSC "Slavneft-Yanos" on the process of sulfuric vulcanization of mixtures based on rubber SKMS-30ARK containing the active carbon black was shown. The increase in the degree of rubbers crosslinking in the presence of oil sludge was pointed out. The possibility of reducing the effect of static strength degradation of vulcanizates containing oil sludge at high dosage due to the use of modifier of the structuring action (heksol HPI) was shown.

Key words: oil sludge, rubber SKMS-30ARK, rubber mixtures, plasticizer, filler, viscoelastic properties, deformation-strength properties

R.F. SHEKHANOV, S.N. GRIDCHIN
INTERNAL STRESSES IN NICKEL-IRON ELECTROLYTIC ALLOYS

Processes of electrodeposition of nickel and iron alloys from some sulfate-borate electrolytes were investigated. The influence of current density and electrolytes temperature on a composition of the alloys obtained was analyzed. The internal stresses in the coatings under study were measured.

Key words: electrodeposition, electrolytes, binary alloys, internal stresses

N.N. BARABANOV, M.S. PUZYRYOVA, E.V. ERMOLAEVA, YU.T. PANOV, V.T. ZEMSKOVA
CALCULATION ALGORITHM OF CARBIDIZATION TECHNOLOGICAL PARAMETERS
OF COMPOSITIONS WITH TITANIUM DIOXIDE PARTICIPATION
OF ARBITRARY COMPOSITION

The algorithm for calculating the parameters of carbidization process products based on phenol formaldehyde resin, carbon microspheres and titanium dioxide in the form of flat plate was considered. Unlike previously developed, this algorithm allows to set the mixture initial composition arbitrarily that greatly expands the practical application of the algorithm.

Key words: foam carbides, carbidization, mathematic model, heating rate, temperature gradient, titanium carbide content gradient

E.A. KISELEVA, M.G. BERENGARTEN, A.P. SEVASTYANOV, E.I. SHKOLNIKOV
METHOD OF FORMING MEMBRANE-ELECTRODE UNIT OF PORTABLE FUEL CELL
AND ITS INVESTIGATION

The method for producing the membrane-electrode unit of portable fuel cell was developed. The paper presents a brief description of developed method as well as the method and experimental results. The influence of solvent type, of the catalyst composition and the volume fraction of polymer on the specific electrical

characteristics of fuel cells was studied. The obtained membrane-electrode units of fuel cells allow to obtain the high parameters of compact power supply of portable electronic devices.

Key words: membrane, fuel cell, catalysis, electrical parameters

A.G. LIPIN, N.D. TURKOVA, A.S. KUVSHINOVA

MODELLING TWO-LAYER GRANULES DISSOLUTION PROCESS IN POROUS MEDIUM

The mathematical description of the dissolution process in porous medium of spherical particle concluded in composite shell was developed. The algorithm of solution of mathematical model equations was offered. Results of modelling were confirmed with the experimental data.

Key words: dissolution, granule, capsule shell, mathematical modelling, mass-transfer, porous medium

V.E. MIZONOV, S.V. KRUPIN, K.A. SHELATONOVA, E.A. BARANTSEVA

MATHEMATICAL MODEL OF BATCH MIXING GRANULAR MATERIALS WITH DISTRIBUTED FEED OF SEGREGATING COMPONENT

A mathematical model for optimization of segregating component feed to a batch mixer is proposed. The model takes into account the increase in hold-up when the component is loaded. The optimum feed program was shown to exist providing the best mixture quality. If the optimal feed program is realized, the mixture quality only slightly depends on the segregation velocity and on coefficient of particles macro-diffusion.

Key words: batch mixing, mixture quality, segregation, state vector, transition matrix, optimal feed program

O.V. KASHINA, M.V. BUSHUEV, A.V. NEVSKY

EXERGY ANALYSIS OF MASS LOADING EFFECT AT ENERGY-RESOURCE-SAVING WATER MANAGEMENT SYSTEMS DESIGNING

The peculiarities of exergy analysis method application of water energy-resource-saving chemical process of industrial plants were considered. The analysis of influence of value change of polluting substance mass loading on value change of exergy at mixing process of water technological flows was carried out. The factors which promote the search of the best ecology-technological solution at designing of chemical process of industrial plants water management were revealed.

Key words: exergy analysis, energy-resource-saving, water-consumption, water-disposal

G.G. LUTFULLINA, I. SH. ABDULLIN, V.V. ZOBOV, B.R. VAGAPOV

STUDY OF DETERGENT PROPERTIES ON BASE OF VARIOUS NATURE SURFACTANTS

The physical-chemical and colloid-chemical characteristics of developed detergent «Kardelin UN» as well as its toxicity were studied. It was shown, that due to joint action of various nature surfactants the high wetting of treated surface, emulsification of fating substances, and washing ability to pollutions and natural fat are achieved.

Key words: surfactants, properties, toxicity, micelle formation, foaming

V.A. ALESHIN, YU.D. TRETYAKOV

INFORMATION AND COMMUNICATION TECHNOLOGIES FOR INDEPENDENT TRAINING ON INORGANIC CHEMISTRY

The forms and methods of using the information and communication technologies (ICT) for students independent training on inorganic chemistry are considered. Concepts of "virtual working office" and "electronic" workbook allowing to continuously improvement the educational content and methods of teaching were developed. The use of "electronic" note book helps to increase in the efficiency of student work in the workshop.

Key words: information and communication technologies, ICT, education, inorganic chemistry, workshop, students, site

V.I. LUTSYK, V.I. LUTSYK

COMPETENCE AS ABILITY TO RECOGNIZE ERRORS IN CHEMICAL TEXTS AND IN TASKS SOLUTION SUBMITTED FOR CHECKING

The evolution of test tasks from the choice of short alternatives to analysis of true and false statements and recognizing distortions in chemical texts was traced. The concept of innovative training system which is

based on the structuring the learning content was created. It promotes the transfer of knowledge from short-term memory to long-term memory and provides the formation of competencies.

Key words: competence, knowledge testing, measuring materials, didactic units

N.M. LISUN, A.A. SUTYAGIN

**INTEGRATED APPROACH TO LEARNING PROCESS OF INORGANIC CHEMISTRY
OF STUDENTS OF NON-CHEMICAL QUALIFICATION IN HIGH SCHOOL**

The course of general and inorganic chemistry is one of the basic disciplines that are studied by students of all disciplines of the university teacher. Its importance for the methodical training of teachers is increasing due to the increase in the chemical content of school courses of chemistry, biology and geography. Integration into the learning process of general and inorganic chemistry of other chemical disciplines, as well as methodological training will improve the quality of mastering the chemical content of the course, and will promote the improvement of the professional education of future teachers of natural sciences.

Key words: interdisciplinary communication, integration, meaningful generalization, methodical approach to teaching of inorganic chemistry

E.V. RUMYANTSEV, S.P. MAKAROV, A.G. ZAKHAROV

**DEPARTMENT OF INORGANIC CHEMISTRY: FROM 1918 TO NOW DAYS.
ROLE OF G.A. KRESTOV FOR FORMATION AND DEVELOPMENT OF DEPARTMENT**

In given article the attempt to systematize of historical data on the formation and development of department of inorganic chemistry of Ivanovo Institute of chemistry and technology (at present Ivanovo State university of chemistry and technology) was carried out. The archival materials and primary sources allowed to recover the real sequence of events, the historical data, names and etc. The role of personality of G.A. Krestov in the development of department in historical perspective is marked. The modern look of department and its mission is shown.

Key words: department, inorganic chemistry, history, G.A. Krestov, personality role