

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF HYDROGEN TO REDUCE A FUSED IRON CATALYST -U-
AUTHOR--(051)-LOKTEV, S.H., MUKHLENOV, I.P., DAROVSKIKH, I.F., ZVEZDKINA,
L.I., YAKOVLEVA, G.L.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(2), 108-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTROLYTIC REDUCTION, IRON, CATALYST, CATALYTIC ORGANIC
SYNTHESIS, ALIPHATIC ALCOHOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0738 STEP NO--UR/0064/70/046/002/0108/0112
CIRC ACCESSION NO--AP0119645
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119645

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS FOR THE REDN. OF THE FE OXIDE MIXT. (CONTG. FE 0.4, FE₂O₃ 32.1, FE SUB₂ O SUB₃ 64, STRUCTURE FORMING AGENTS 2.78, AND K SUB₂ O 0.5 WT. PERCENT) BY H IN THE MANUFG. OF A COM. FE CATALYST (USED IN THE SYNTHESIS OF HIGHER ALIPHATIC ALCS.) ARE: 350DEGREES, 50 ATM, LINEAR VELOCITY OF THE H IS LARGER THAN 11 CM-SEC, TIME 20 HR; THE TIME CAN BE REDUCED TO 3 HR BY INCREASING THE TEMP. TO 450DEGREES, AT 20-40 ATM. ELECTROLYTIC H (99.5 VOL PERCENT H) IS USED FOR THE REDN.; THE PARTICLE SIZE BEFORE THE REDN. SHOULD BE 1-3 MM. THE REDUCED CATALYST CONTAINS 90-5PERCENT FE AND HAS A SP. SURFACE OF 14-16 M PRIME²-G; ITS SERVICE LIFE IN SYNTHESIS PROCESSES AT 170-80DEGREES IS LARGER THAN 1000 HR.

UNCLASSIFIED

USSR

UDC: 534

ZHIVOV, V. A., RYKOV, V. I., YAKOVLEVA, G. S.

"Concerning Application of the Law of Corresponding States to Investigation of the Acoustic Characteristics of a Liquid"

V sb. Primeneniye ul'traakust. k issled. veshchestva (Application of Ultra-acoustics to the Study of Matter--collection of works), vyp. 25, Moscow, 1971, pp 222-225 (from RZh-Fizika, No 6, Jun 72, Abstract No 6Zh526)

Translation: The method of dimensional analysis is used to find expressions for the parameters of intermolecular interaction, and speeds of sound are calculated for a large number of normal liquids. When the structural coefficient is taken into account, the divergence between theoretical and experimental velocities amounts to 2%. Bibliography of 12 titles. V. Ye. Gordeyev.

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1/3 008 UNCLASSIFIED PROCESSING DATE--20NDV79
TITLE--RADIOCHEMICAL DETERMINATION OF THE SPECIFIC ACTIVITY OF ANTIMONY IN
VARIOUS SUBSTANCES -U-
AUTHOR-(03)-MAKSIMOV, I.N., SYSOYEVA, L.N., YAKOVLEVA, G.V.
COUNTRY OF INFO--USSR
SOURCE--RADIUKHIMIYA 1970, 12(1), 189-91
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ANTIMONY, CHEMICAL ANALYSIS, RADIOACTIVE ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0084 STEP NO--UR/0186/70/012/001/0189/0191
CIRC ACCESSION NO--AP0125917
UNCLASSIFIED

2/3 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE DETN. OF THE SP. ACTIVITY OF PRIME124 SB AND PRIME125 SB IN ROCKS, CLAYS, ASHES, ETC., TREAT 1 G OF THE SAMPLE IN A HOT MIXT. OF 15-20 ML HNO SUB3 AND 10-15 ML HF. TO THE SOLN., ADD 5 ML OF 1:1 H SUB2 SO SUB4 AND EVAP. UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. COOL THE PRODUCT, ADD 10 ML H SUB2 O AND HEAT AGAIN UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. DIL. WITH AN EQUAL VOL. OF H SUB2 O, ADD 10-15 ML 1:1 HCL, HEAT TO DISSOLVE THE SALTS, AND FILTER THROUGH A DENSE FILTER. WASH THE RESIDUE WITH HOT 1:1 HCL, ADD TO THE FILTRATE, AND ADJUST THE VOL. TO 50 ML WITH 1:1 HCL. AT THAT STAGE THE SOLN. IS NOT COLORED (INDICATING THE ABSENCE OF FE) ADD 1-2 ML OF A 15PERCENT FECL SUB3 SOLN. (TO SERVE AS CARRIER); NO SUCH ADDN. IS NECESSARY IF THE SOLN. IS COLORED. TITRATE WITH A 15PERCENT SNCL SUB2 SOLN. UNTIL THE DISAPPEARANCE OF THE COLOR, THEN ADD 1-2 ML OF A 5PERCENT NANO SUB2 SOLN., WAIT FOR 10-15 MIN, DIL. WITH AN EQUAL VOL. OF H SUB2 O AND ADD 1 ML OF A SATD. SOLN. OF UREA. SHAKE THE SOLN. FOR 2-3 MIN, AND ADJUST THE VOL. TO 100 ML WITH H SUB2 O. ADD 1-2 ML OF A 0.2PERCENT SOLN. OF METHYL VIOLET, MIX THOROUGHLY AND ADD 10 ML OF PHME. SHAKE FOR 3-5 MIN AND SEP. THE PHME PHASE CONTG. THE SB (REPEAT THIS OPERATION 2-3 TIMES WITH FRESH BATCHES OF PHME AND COMBINE THE PHME EXTS.). ADJUST THE VOL. OF THE PHME EXT. TO 50 ML AND DET. THE TOTAL SB CONC. BY MEASURING THE ABSORBANCE AT 620-80 NM, THEN DISTILL OFF THE PHME AND MEASURE THE ACTIVITIES OF PRIME124 SB AND PRIME125 SB WITH THE ACID OF A SCINTILLATION GAMMA SPECTROMETER, AT 1710 AND 427 KEV, RESP.

UNCLASSIFIED

3/3 008
CIRC ACCESSION NO--AP0125917

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--THE SENSITIVITY OF THE METHOD IS 10 PRIME NEGATIVE 10 CI.

UNCLASSIFIED

USSR

PSHENICHNAYA, L. E. and YAKOVLEVA, I. N.

"One Method of Using the Method of Representation of an Object as a System"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 55-59 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V825).

Translation: The task is stated of detecting errors in the semantic dictionary of the BIT information retrieval system. The errors are interpreted as phenomena disrupting the structure of the dictionary. Thus, the problem is reduced to determination of characteristics describing the semantic dictionary as a system. The article describes a procedure which can be used to produce a final set of formal characteristics describing this dictionary as a systems object.

Ye. Burgina

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YAKOULEVA, I. N.

SO: JPRS 55015
25 JAN 72

UDC: 614.1.133.13:677.463.021.5

MOBILITY INVOLVING TEMPORARY DISABILITY AMONG YOUNG WOMEN SPINNERS IN THE VISCOSE INDUSTRY

(INDUSTRIAL HYGIENE)
Article by I. B. Kravchenko, I. N. Yakouleva, Yu. A. Litvinova, F. I. Grishko; Kiev Scientific Research Institute of Hygiene and Occupational Diseases; Moscow, Sovetskoye Zdravookhraneniye, Russia, No 12, 1971, sub-
mitted 14 June 1971, pp 59-62

The manpower for the chemical industry is annually augmented with qualified workers largely referable to young people ranging in age from 18 to 20 years who have completed a vocational technical school. At this age, as shown by our studies, as well as those of V. A. Doshin, Yu. B. Kalashnikov, and others, there may be increased sensitivity to a number of chemicals encountered in recent industry.

In the spinning mills of the viscose industry, where young men and women, starting at the age of 18 years, learn the trade and work, it is observed that diverse industrial factors exert a combined influence. Among them the predominant role belongs to carbon disulfide, a toxic substance that affects the organism even in relatively low concentrations. One of the early manifestations is a rise in level of nonspecific diseases (A. N. Saf'yan and V. M. Shubik; L. M. Kushik; N. V. Petrov, and others).

Our objective included investigation of morbidity involving temporary disability among young workers during the first few years of contact with the industrial environment, determination of long term results of such contact, and of the correlation between the indices studied and working conditions. For this purpose a comparative analysis was made of morbidity involving temporary disability among young girls studying to be spinners in the viscose industry, and their peers going through apprenticeship in other than chemical enterprises (at the same age), training period, living conditions, as well as young spinners during their first years on the job in the viscose industry under diverse working conditions (some worked in mills where the carbon disulfide concentration in the building ranged from 10-30 mg/cubic meter, and others where the concentration of the same substance did not exceed 10 mg/cubic meter). Finally, a study was made of the morbidity rate among spinners in the viscose industry of different ages, i.e. at the age of 18-20 and 21-30 years, and in each of these groups, tenure constituted 10-15 years at the time

Industrial Hygiene

UDC 616.12-001.28-02:[616.132+616.142]-008.6-07

USSR

YAKOVLEVA, L. A., STEPANOV, R. P., Laboratory of Radiation Cardiology of the Central Scientific Research Roentgenology and Radiology Institute, USSR Ministry of Health, Leningrad

"Changes in Coronary Vessels of Rabbits After Single Local Irradiation of the Cardiac Region"

Leningrad, Arkhiv Anatomii, Gistologii, i Embriologii, Vol 58, No 6, Jun 70, pp 66-69

Abstract: Chinchilla rabbits weighing 2.5-3.0 kg were irradiated in the cardiac region with a single 2,400 rad dose. Test animals were killed 10 days, 3 months, and 6 months after irradiation. The coronary vessels were filled with a 35% barium suspension in a 5% aqueous gelatin solution. Angiograms from the entire cardiac region were prepared. The diameters of the coronary rami were quantitatively determined. The most marked changes were observed 10 days after irradiation: a larger number of minute open vessels were noted in the myocardium, and the capillaries started to become congested with stasis; hemorrhages and dystrophic lesions were observed in the walls of medium-size and larger vessels. All these symptoms were less pronounced in animals examined 3 and 6 months after

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USSR

YAKOVLEVA, L. A., and STEPHANOV R. P., Arkhiv Anatomii, Gistologii, i Embriologii, Vol 58, No 6, Jun 70, pp 66-69

irradiation. Nevertheless, all data confirm that the injury of the vascular bed of the myocardium after irradiation appears to lead to the development of a pathological process.

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USSR

UDC 632.95

PIL'MENSHTeyN, I. D., BEZUGLYY, S. F., NESTEROVS, L. A., YAKOVLEVVA, L. I.,
and STONOV, L. D.

"Adhesion of Emulsions to Treated Surface"

V sb. Khim. sredstva zashchity rast, (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 291-297 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N534 by I. Pil'menshteyn)

Translation: Factors affecting the adherence of emulsion drops of 2,4-D butyl ester to various substrates (paraffinized surface of a polished steel plate and the surface of a bean leaf) were estimated according to the flow-off angle (α_{fl} -- the angle of inclination of the surface to the horizon at which a drop applied to that surface began to flow off). The method of correlation analysis shows that α_{fl} is determined by wetting conditions for the drops of the treated surface.

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USSR

ZAPEVALOV, P. P., MILASHCHENKO, N. Z., PADZINOVSKIY, I. P., GORTLEVSKIY, A. A.,
MARINCHENKO, M. Z., YAKOVLEVA, L. I., YEMEL'YANOV, I. M.

"Results of Field Testing of Various Emulsions and Forms of 2, 4-D Butylester"

Nauch. Tr. Omsk. S-Kh. In-t. [Scientific Works of Omsk Agricultural Institute],
No 84, 1971, pp 129-131. (Translated from Referativnyy Zhurnal Khimiya, No 4,
Moscow, 1972; Abstract No 4N693 by T. A. Belyayeva).

Translation: In 1969, experiments were performed to compare the technical effectiveness of various 2, 4-D emulsions under field conditions when sprayed from the air (dose 0.4 kg/ha). Products used were: 1. 2,4-D -- technical preparate +1% OP-10 emulsifier; preparation of the emulsion was by spraying the preparate into water; 2. 2,4-D -- technical preparate +3% OP-10, spraying method; 3. 2,4-D -- "A" form (60% 2,4-D butylester, 20% OP-7, 20% diesel fuel); 4. 2,4-D type "B" (60, 10 and 30 % respectively); 5. 2, 4-D -- "C" form (60, 5 and 35 % respectively); 6. 2,4-D -- technical preparate. The effects of the herbicide were evaluated on the basis of the quantity and weight of perennial weed shoots and the wheat harvest. Versions 1 and 2 give the best results.

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USSR

YAKOVLEVA, M. A.

"Development of Flow Systems on a Graph"

Sb. tr. In-t mat Sib. otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Division Academy of Sciences USSR], No 1(18), 1971, pp 158-162, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V401 from the Introduction).

Translation: In many cases, in studying the solution of the transport problem, it is necessary to produce the result not as the flows in individual sectors of the net, but rather as transport operations on paths connecting the points of production with the points of consumption. The question of the transition from one form of assignment of the flow on the graph to the other is studied theoretically in the book of Ford and Faulkerson (RZhMat, 1966, 11V249 K). The purpose of the present work is to describe a working algorithm allowing these paths to be determined in ALGOL-60.

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USSR

UDC 632.954

SHCHEGLOV, YU. V., KOZINA, L. S., YAKOVETS, V. I., NIKISHIN, G. I., and DYUSENOV, M. I., All Union Scientific Research Institute of Phytopathology, Golitsyn-Moscow Region, Institute of Organic Chemistry, Academy of Sciences USSR, Moscow

"Herbicidal Activity of Substances Containing Trichloroallyl Group. I
Communication. 1,1,2-Trichloropropene-1-ol-3 (Trichloroallyl Alcohol),
Some of its Analogues and Derivatives"

Moscow, Agrokhimiya, No 5, May 73, pp 129-135

Abstract: The highest herbicidal activity among the chloro derivatives of allyl alcohol is exhibited by 1,1,2-trichloropropene-1-ol-3 (I) and its simple alkyl ethers. These compounds are systemic herbicides penetrating into the plants through the roots. Replacement of the hydroxyl group in trichloroallyl alcohol by various radicals and other groupings leads to the loss or to a drastic change of herbicidal activity. As a rule, the materials lose their ability to penetrate through the roots of the plants. In contrast to (I), trichlorovinylacetic acid exhibits properties of an active systemic herbicide capable of penetrating through the leaves. The parent compound (I) is about 5-10 times as active as allyl alcohol. In a field trial on buckwheat, (I) lowered by 45-55% the total weeds without any undesirable action against the buckwheat. 1/1

USSR

UDC 612.172.2

YAKOVLEVA, M. I., KATRUSHENKO, A. G., and SLAUTSITAYS, V. V., Department of Ecological Physiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"An Analysis of the Self-Regulating Mechanism of Heart Rhythmic Activity"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 9, Sep 73, pp 1403-1409

Abstract: Eleven male chinchilla rabbits were trained to decrease their heart rate by means of instrumental conditioning using feed-back with a bioregulated loop. The transition of heart rhythmic activity onto a new level involved a decrease in the number of self-reinforcement impulses. After 10 to 12 experiments a lowering of heartbeat rate by 20 to 30 percent, achieved in 2 to 3 minutes, was observed. Initial experiments required 120 to 180 minutes for any lowering of rate. The stability of the changed rate also increased with further trials. This data is said to indicate that the evolved regimens of heart activity are stable and adaptive, leading to minimization of biologically negative effects, in contrast with the classical conditioned reflex. A time link between the structures regulating positive emotions and those regulating the functional control is also proposed.

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USSR

UDC 612.821.6

YAKOVLEVA, M. I. and MEDVEDEVA, M. V., Institute of Experimental Medicine,
Academy of Medical Sciences USSR, Leningrad

"Conditioned Regulation of Cardiac Activity and Respiration and Morphological
Changes in the Brains of Pigeons Exposed to a Constant Magnetic Field"

Moscow, Zhurnal Vyshey Nervnoy Deyatel'nosti, No 2, 1972, pp 288-293

Abstract: Conditioned cardiac and respiratory reflexes elicited in response to a tone (conditioned stimulus) and ammonia fumes (unconditioned stimulus) were studied in 5 pigeons exposed to a constant magnetic field (520 oersted) for 40 minutes to 2 hours in 10 to 15 sessions extending over a period of 3 weeks. Conditioned changes in cardiac function in the form of an accelerated heart beat were observed in only three of the pigeons from the very first sessions; the respiratory rate remained unaffected. Histological examination of brain slices from these birds revealed edema of nervous tissue, especially pronounced in the region of the corpus striatum, hyperplasia and hypertrophy of the glial elements. These morphological changes suggest that a constant magnetic field affects the metabolic processes, particularly those in the central nervous system. This mechanism would seem to be responsible for the changes in CNS regulation of cardiac activity induced by a constant magnetic field.

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1/2 023

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--ENTHALPY OF FERROUS OXIDE FORMATION -U-

AUTHOR--(02)-ARIVA, S.M., YAKOVLEVA, M.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 508-12

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--IRON OXIDE, HEAT OF FORMATION, ELECTRODE POTENTIAL,
ELECTROLYTIC CELL, TEMPERATURE DEPENDENCE

CONTROL MARKING-- NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0355

STEP NO--UR/0076/70/044/002/0508/0512

CIRC ACCESSION NO--AP0104291

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PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0104291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE EMF. OF THE GALVANIC CELL, PT FE, $\text{FeO SUB1 PLUS X (S) 0.85 ZRO SUB2 PLUS 0.15 CAO}$ $\text{FeO SUB1 PLUS X PT}$, AT 1173-1310DEGREEK ALLOWED THE DETN. OF THE TEMP. DEPENDENCY OF THE ENTHALPY OF FORMATION OF FeO SUB1 PLUS X FOR VALUES OF X 0.069-0.1156. ΔH OF FORMATION IS NOT A LINEAR FUNCTION OF THE O INDEX IN THE FORMULA FeO SUB1 PLUS X . THIS FINDING INDICATES THAT FERROUS OXIDE CANNOT BE CONSIDERED FOR THE ATHERMIC SOLID SOLN. OF (REAL OR HYPOTHETICAL) IRON OXIDES.

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1/2 023 UNCLASSIFIED
TITLE--ENTHALPY OF FERROUS OXIDE FORMATION -U- PROCESSING DATE--02OCT70
AUTHOR--(02)-ARIVA, S.M., YAKOVLEVA, M.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 508-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--IRON OXIDE, HEAT OF FORMATION, ELECTRODE POTENTIAL,
ELECTROLYTIC CELL, TEMPERATURE DEPENDENCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0355 STEP NO--UR/0076/70/044/002/050R/0512
CIRC ACCESSION NO--AP0104291
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UNCLASSIFIED

PROCESSING DATE--02OCT70

GIRC ACCESSION NO--AP0104291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS OF THE EMF. OF THE GALVANIC CELL, PT FE, FEO SUB1 PLUS X (S) 0.85 ZRO SUB2 PLUS 0.15 CAO FEO SUB1 PLUS X PT, AT 1173-1310DEGREEK ALLOWED THE DETN. OF THE TEMP. DEPENDENCY OF THE ENTHALPY OF FORMATION OF FEO SUB1 PLUS X FOR VALUES OF X 0.069-0.1156. DELTA H OF FORMATION IS NOT A LINEAR FUNCTION OF THE O INDEX IN THE FORMULA FEO SUB1 PLUS X. THIS FINDING INDICATES THAT FERROUS OXIDE CANNOT BE CONSIDERED FOR THE ATHERMIC SOLID SOLN. OF (REAL OR HYPOTHETICAL) IRON OXIDES.

UNCLASSIFIED

USSR

Extraction and Refining

UDC:669.35.046.54/55

YAKOVLEVA, N. G., PANCHENKO, I. G. and OSINTSEV, V. G.

"Refining of Oxygen-Free Copper"

Moscow, Tsvetnyye Metally, No 2, Feb 74, pp 56-58

Abstract: The most difficult task in the refining of oxygen-free copper is the elimination of endogenic nonmetallic inclusions in the form of tiny gas pores located around the periphery of the cross section of the ingot at a depth of 5-35 mm. The use of the method of pouring through a mixer allows the reject rate due to ingot porosity to be reduced while increasing the productivity of the installation.

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USSR

UDC 541.49

NIKOLAYEV, A. V., YAKOLEVA, N. I., GAL'TSOVA, E. A., and MAZALOV, L. N.

"Correlation of the Extraction Properties of Organophosphorus Compounds with A Charge At the Phosphorus Atom"

Novosibirsk, Izv. Sibirskogo Otdeleniya Akademii Nauk SSSR,
Ser. Khimicheskikh Nauk, No 6, 1972, pp 118-119

Abstract: Organophosphorus compounds are used extensively for extraction of uranyl nitrate, plutonium and americium. The experimental investigation was conducted on the efficiency of extraction and distribution coefficients of organophosphorus compounds as a function of charge on the phosphorus atom. Fitting the newly obtained data, as well as some of the data reported in literature by the method of least squares a linear relationship is found between the logarithm of the effective extraction constants and the charge on the phosphorus atom. A test of the equation shows that for all cases the correlation coefficient is 0.99.

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USSR

POLYAK, I. I., MESHCHERSKAYA, A. V., YAKOVLEVA, N. I.

"Calculation of Primary Components in a System of Random Vectors"

Tr. Gl. Geofiz. Observ. [Works of Main Geophysical Observatory], No 289, 1971, pp 11-19, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V727 by the author).

Translation: An algorithm and program (in the input language of the TA-1M translator) are presented for reduction of random vectors to an orthogonal bases. The program is written considering the specifics of its utilization for solution of the problem of expansion of meteorological fields with respect to natural orthonormalized functions.

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1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--APPLICATION OF STATISTICAL MAIN COMPONENTS WITH AIMS OF OBJECTIVE
CLASSIFICATION OF METEOROLOGICAL SITUATIONS AND FIELDS -U-
AUTHOR--YAKOVLEVA, N. I.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 2, PP 23-32
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--ATMOSPHERIC TEMPERATURE, WEATHER STATION, STATISTICS, PRESSURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1223 STEP NO--UR/0050/70/000/002/0023/0032
CIRC ACCESSION NO--AP0103111
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PROCESSING DATE--18SEP70

2/2 021

CIRC ACCESSION NO--AP0103111

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE PAPER EXAMPLES OF USING THE METHOD OF MAIN COMPONENTS (EMPIRICAL FUNCTIONS OR NATURAL ORTHOGONAL FUNCTIONS) WITH AIMS OF QUANTITATIVE CLASSIFICATION AND ZONING IN METEOROLOGICAL PROBLEMS ARE GIVEN AS WELL AS EXAMPLES OF METEOROLOGICAL FIELD TYPISATION. DISPERSIONS OF PRESSURE AND TEMPERATURE AT THE STATIONS ARE USED AS ESTIMATION OF THE DEGREE OF TYPE HOMOGENEITY. AN EXAMPLE OF COMPUTING COMPLEX STATISTICAL PARAMETERS FROM SEVERAL INITIAL METEOROLOGICAL CHARACTERISTICS AT STATIONS IS GIVEN. THE RESULTS OF APPLYING THE GIVEN METHOD TO THE PROBLEM OF CLIMATIC ZONING ARE DISCUSSED.

UNCLASSIFIED

Acc. Nr.: AM 0105455

Ref. Code: UR 0000

Meshcherskaya, A. V.; Rukhovets, L. V.; Yudin, M. I.; Yakovleva, N. I.

Natural Components of Meteorological Fields (Yestestvennyye sostavlyayushchiye meteorologicheskikh poley) Leningrad, Gidrometeoizdat, 1970, 199 pp (SL:2015)

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Acc. Nr.: AM 0105455

In the monograph main results of a statistical analysis of meteorological elements with the aid of the methods of expansion in natural orthogonal functions are generalized.

A brief survey of modern works is given, in which the method of natural orthogonal functions was used. Much of the paper deals with the presentation of original studies of many meteorological elements with an analysis of their horizontal, vertical and temporal distribution. Discussion is given of this method as applied to a number of practical problems in meteorology and climatology, including the problems of hydrodynamical and statistical weather forecast.

As an enclosure to the monograph, one can find *The Atlas of Maps of Dispersions, Mean Values and Most Significant Natural Components of Basic Meteorological Elements*. Such an Atlas is published for the first time. It gives an idea of forms of variations in the atmosphere, their seasonal differences and other peculiarities of large-scale regularities.

The monograph and the Atlas could be used by specialists in the field of climatology, synoptical meteorology, aerology, and adjacent subjects, as well as by students who are interested in using the modern statistical methods in natural sciences.

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REEL/FRA

19880445

USSR

UDC 612.744.2

YAKOVLEVA, N. N., KRASNOVA, A. F., LENKOVA, R. I., SAMOZHANOVA, G. I., and CHAGOVETS, N. R., Biochemistry Sector, Leningrad Research Institute of Physical Culture

"Restoration After Muscular Activity Under Different Temperature Conditions"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. K. Sechenova, No 4, 1971, pp 556-561

Abstract: Fifteen minutes swimming in water at 32°C produced in rats previously trained (3 months) for this activity a more economical consumption of glycogen, creatine phosphate, and mitochondrial protein, smaller increase in blood and muscle lactate and blood sugar levels, and less intense enzymic activity compared with untrained controls. Moreover, the biochemical changes occurring in the rest period were indistinct or absent (e.g., no supercompensation of glycogen and creatine phosphate content, hypolactacidemia, decrease in cytochrome oxidase activity) in the trained animals. On the other hand, swimming in water at 22° produced far greater biochemical changes in the muscles of the trained rats than swimming in water at an optimum temperature (32°) did in the untrained animals. And during the recovery period the trained rats

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USSR

YAKOVELVA, N. N., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, No 4, 1971, pp 556-561

exhibited marked supercompensation of the glycogen content of the muscles, mitochondrial protein, and creatine phosphate, distinct hypolactacidemia, decrease in muscle lactic acid below the original level, and increased activity of the redox enzymes.

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012 015 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--MECHANISM OF THE ELECTROREDUCTION OF ORGANOMERCURY SALTS --U-

AUTHOR--(05)--YESIKOVA, I.A., FERKIN, D.N., TOMILOV, A.P., FLID, R.H.,
YAKOVLEVA, N.N.

COUNTRY OF INFO--USSR

SOURCE--Zh. Fiz. Khim. 1970, 44(1), 264-5 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, ORGANOMERCURY COMPOUND, CHEMICAL
REACTION MECHANISM, ALCOHOL, ETHANOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2063

STEP NO--UR/0076/70/044/001/0264/0265

ARC ACCESSION NO--AP0125050

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

IRC ACCESSION NO--APC125650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF THE ELECTROCHEM. STAGE OF THE ADDN. OF VARIOUS MOLS. TO OLEFINS IN AN ELECTROCHEM. SYSTEM IN THE PRESENCE OF HG SALTS WAS STUDIED: C SUBN H SUB2M PLUS HX YIELDS C SUBN H SUB2N POSITIVE 1 X, WHERE X EQUALS OH, OR, RC(O)O, NHR. THE INTERMEDIATE SIGMA ORGANOMETALLIC COMPS. ARE FORMED FROM OLEFINS AND HG SALTS IN HX SOLNS. AT THE ELECTROLYSIS OF MERCURIOETHANOL SALTS ON A CU AMALGAM CATHODE (PH 14, 0.01 A-CM PRIME 2) THE PROCESS OCCURRED IN STEPS. THE MECHANISM OF THE FORMATION OF ALC, AND C SUB2 H SUB4 AT 1.7-1.9 V IS AS FOLLOWS: HG(C SUB2 H SUB4 OH) SUB2 PLUS E PRIME NEGATIVE YIELDS H SUB2 O HGC SUB2 H SUB4 OH PLUS ETOH; HG C SUB2 H SUB4 OH PLUS E PRIME NEGATIVE YIELDS (FAST) (HGC SUB2 H SUB4 OH) PRIME NEGATIVE YIELDS (SLOW) HG PLUS C SUB2 H SUB4 PLUS CH PRIME NEGATIVE. THE SYM. PRODUCT DIETHANOLMERCURY WAS OBTAINED BY ELECTROLYSIS OF 4M MERCURIOETHANOL CHLORIDE SOLN. IN ALK. MEDIA AT 0.8 V. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LGMONOSOVA, MOSCOW, USSR.

1

USSR

UDC: 528.526.6

LAVROV, V. N., ZHITOMIRSKIY, I. B., LUKOVATYY, Yu. S., YAKOVLEV, N. P., VASIL'YEV, Yu. F., All-Union Scientific Research Institute of Mining Geomechanics and Surveying

"A Miniaturized Surveyor's Gyrocompass"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331253, Division G, filed 21 Jul 67, published 7 Mar 72, p 117

Translation: This Author's Certificate introduces a miniaturized surveyor's gyrocompass which contains a theodolite with autocollimation system, a trigger and a gyro attachment with pendulum sensing element on a torsion suspension and strip current feed. As a distinguishing feature of the patent, the design provides for compensation of the torque of the torsion suspension and the current feed. The current feed is made in the form of strips bent in the vertical or horizontal plane with their ends fastened to the sensing element at a distance r from its axis of rotation, where r is defined by the formula

$$r = aD \left(\frac{\sqrt{DK}}{IE} + b - c \right)$$

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USSR

LAVROV, V. N. et al., USSR Author's Certificate No 331253

where D is the distance between the fixed ends of the current feed strips, K is the stiffness of the torsion suspension, a , b and c are numerical coefficients which depend on the shape of the bend in the strips, and IE is the rigidity of the current feed strips.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--MOLECULAR NITROGEN FIXATION BY ACELLULAR EXTRACTS OBTAINED FROM BACTERIODS OF LUPINUS LUTEUS MODULES -U-

AUTHOR--(04)-MANORIK, A.V., STARCHENKOV, E.P., DATSENKO, V.K., YAKOVLEVA, N.S.

COUNTRY OF INFO--USSR

SOURCE--ADPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(2), 177-82

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LEGUME CROP, PLANT PHYSIOLOGY, NITROGEN ISOTOPE, BACTERIA, CHEMICAL LABELLING, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/1220

STEP NO--BU/0442/70/032/002/0177/0182

CIRC ACCESSION NO--AT0134894

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0134894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLYING PRIME15 N TECHNIQUES, CRUDE ACELLULAR AND BIO GEL EXTS. OF BACTERIODS OF L. LUTEUS NODULES SHOWED A N FIXATION OF 244.4 MU G OF N PER MIN PER MG OF PROTEIN, PROFIDED THE REACTION MIXT. CONTAINS AN EXCESS OF AN ATP REGENERATING SYSTEM, MG PRIMEPOSITIVE POSITIVE, AND NA SUB2 S SUB2 O SUB4 IN THE PRESCENCE OF POLYCAPROLACTAM (II). WHEN PHENOL COMPOS. ARE NOT ELIMINATED FROM EXTS. THE FIXING ABILITY DECREASES TO 27 MU G OF N PER MIN PER MG OF PROTEIN, AND STOPS ALTOGETHER WHEN I IS REVOED. THE POS. N FIXATION BY A CRUDE EXT. IN THE PRESENCE OF CREATINE (CR) AND CREATINE PHOSPHOKINASE MAY BE EXPLAINED BY THE REACTION OF ATP WITH CREATINE WITH THE FORMATION OF CREATINE PHOSPHATE (CRP) AND ADP. AS A RESULT, ADP WHICH IS AN INHIBITOR OF N FIXATION, IS NOT ACCUMULATED IN THE REACTION MIXT. WITH CR AND CRP IN THE REACTIONS MIXT., N FIXATION IS DOUBLED.

FACILITY: INST. FIZIOL. ROSLIN, KIEV, USSR.

UNCLASSIFIED

YAKOVLEVA, R.V.

Power + Energy Plants

714-72
[unclear]
[unclear]
[unclear]
[unclear]

Some specific features of controlling energetic plants as distributed plants are considered. The analysis of the plant as a multidimensional multicircuit control object and that of its separate circuits (flow charts) have been made. Some problems appearing in designing and developing power and energetic plant control systems are considered. Some ways of solving these problems have been outlined. A new method of approach to designing the above plants consisting of distributed elements or objects is given. The principle of "building" of plant thermal flow charts has been formulated. The criterion of "dynamic distribution" is given. The flow chart solution has been demonstrated and the plant dynamics has been demonstrated. The main principle of control system (constructive) building is proposed as well as the ways of engineering realization. The use of principle of invariance for distributed plant control has been shown. The principle of optimal control has been developed. The algorithms of plant control have been obtained.

CONFIDENTIAL

USSR

UDC 629.12.002.3:691.3

MISHUTIN, V. A., FEDIN, YE. I., YAKOVLEVA, R. V.

"The Influence of Steam-Drying Regimes Upon the Strength and Frost Resistance of Shipbuilding Concrete"

Leningrad, Sudostroyeniye, No 12, 1970, pp 12-14.

Abstract: An investigation is made of the possibility of a considerable increase in the strength, longevity (100 years and more), and frost resistance of shipbuilding concrete due to optimization of the steam-drying regimes in the production of thin-walled reinforced-concrete ship structures. 1 figure, 4 tables.

1/1

USSR

UDC 547.341

ZUBTSOVA, L. I., RAZUMOVA, N. A., and YAKOVLEVA, T. V., Leningrad Technological Institute imeni Lensovet

"Phosphorus-Containing Heterocycles. A Kinetic Study of the Reaction of Certain Phosphites With Isoprene"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,424-2,428

Abstract: The nature of the effect of electron and steric factors on the reactivity of both cyclic and acyclic phosphites toward dienes is not fully clear. The kinetics of condensation of dichloromethyl-, ethylenechloro- and diethylchlorophosphites with isoprene was studied. Reaction rate was checked by the infrared spectrometric method, based on intensity of a certain absorption band. Reactions were carried out in excess isoprene, with initial concentration of 1.7 mole percent of phosphite -- a close simulation of pseudo-monomolecular conditions. On the basis of kinetic data obtained, it was concluded that the phosphorus component in these reactions is definitely electrophilic. Comparison of the kinetic parameters for cyclic and for acyclic phosphites supported the presumption of a significant degree of conjugation of unshared electron pairs of oxygen with 3d orbits of trivalent phosphorus, in acyclic phosphites.
1/1

USSR

Heat, Combustion, Detonation

UDC 629.7.036.54-66:536.46

VOVCHUK, YA. I., SHEVCHUK, V. G., and YAKOVLEVA, T. YA.

"Determination of the Lag Time of the Ignition of a Metal Particle in a Track Device"

Odesa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, pp 33-34) (from Referativnyy Zhurnal -- Aviatcionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.150. Resume)

Translation: A method is proposed for calculating the lag time of the ignition of a spherical metal particle along the dark zone with account taken of acceleration of the particle during the motion of an entraining stream in a vertical pipe. Calculation of the ignition lag time on the basis of a known stream velocity, under the assumption that the particle instantaneously acquires the velocity of the stream, introduces a substantial degree of error. Thus, for boron particles with a diameter on the order of 50 microns, the error in determination of the ignition lag time reaches 60%. An equation of the motion of a spherical particle in a vertical stream of entraining gas is obtained, the solution of which makes it possible to obtain the relationship of the path traversed by the particle to the time. Analytic solutions are obtained for

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USSR

VOVCHUK, YA. I., et al., 11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, pp 33-34

cases in which the resistance forces of the medium are described by the Stokes and Oseen formulas. To solve the equation for Reynolds-number values at which the resistance of the medium is described by the Klyachko formula, a program for the M-220 electronic computer is compiled. Calculation tables are obtained for the motion of boron particles, from 5 to 160 microns in size, in an entraining airstream.

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1/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--EFFECT OF HEATING ON CATALYTIC AND ALLOSTERIC PROPERTIES OF
GLUTAMATE DEHYDROGENASE IN BULL LIVER -U-

AUTHOR-(02)-YAKOVLEVA, V.I., GUBNITSKIY, L.S.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 19011

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATALYSIS, LIVER, DEHYDROGENASE, ENZYME ACTIVITY, BIOLOGIC
THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1087

STEP NO--UR/0020/70/190/001/0231/0234

CIRC ACCESSION NO--AT0115106

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0115106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ENZYME IN PHOSPHATE BUFFER AT PH PRIME 7 AND FREED OF SALTS BY PASSAGE THROUGH A SEPHADEX COLUMN WAS HEATED TO VARIOUS TEMPS. FOR 0.5 HR AND ITS ACTIVITY WAS STUDIED AFTER EXPOSURE TO TEMPS. FROM 39-49 DEGREES. THE ACTIVITY DECLINED RATHER SHARPLY AFTER HEATING TO 41-3 DEGREES. THE THERMAL TREATMENT FIRST AFFECTED THE ABILITY OF THE ENZYME TO UNDERGO ALLOSTERIC CHANGES, THEN THE CATALYTIC ACTIVITY DROPPED. HEATING WITH OR WITHOUT ADDED ADENOSINE DIPHOSPHATE (ADP) RESULTED IN VERY SIMILAR DEGREES OF DECLINE IN ACTIVITY BUT THE KINETIC CURVES HAD DIFFERENT SLOPES; IN THE PRESENCE OF ADP THE ALLOSTERIC REACTIONS WERE ALTERED AT LOWER TEMPS. THAN THEY WERE IN THE ABSENCE OF ADP. FACILITY: MOSK. GOS. UNIV. IM. LGMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--RELIABLE SEMIKILLED 18GPS STRUCTURAL STEEL -U-
 AUTHOR--SOKOLOVSKIY, P.I., BARYNINA, I.M., YAKOVLEVA, V.S.
 COUNTRY OF INFO--USSR
 SOURCE--PROM. STROIT. 1970, (2), 30-2
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--STRUCTURAL STEEL, IMPACT STRENGTH, DUCTILITY, CHEMICAL
 COMPOSITION, CARBON, MANGANESE STEEL, SILICON STEEL, FATIGUE
 STRENGTH/(U)18GPS STRUCTURAL STEEL
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1989/0584 STEP NO--UR/0227/70/000/002/0030/0032
 CIRC ACCESSION NO--AP0107181
 UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107181

ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. IMPACT AND FATIGUE TESTING OF HOT ROLLED ANGLES, CHANNELS, AND PLATES OF C 0.15-0.22, MN 0.80-1.26, SI 0.03-0.10PERCENT SEMIKILLED STEELS SHOWED THEIR STRENGTH AND DUCTILITY WERE HIGHER THAN THOSE OF KILLED AND SEMIKILLED STEELS WITH MN LOWERED TO 0.60PERCENT; THE TRANSITION TEMP. WAS 10-20DEGREES LOWER.

UNCLASSIFIED

Therapy

USSR

YAKOVLEVA, Ye.

"Diagnosis Determines the Apparatus in Cardiac Surgery"

Kiev, Rabochaya Gazeta, 23 Dec 70, p 4

Abstract: The diagnostic methods developed and used at the Laboratory of Intracardiac Research, Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, are described. The large number of possible cardiac disorders and the complexity of heart operations, particularly when performed with the aid of extracorporeal circulation, make diagnostic precision imperative. Electronics, optics, electrochemistry, and television are used to provide the surgeon with exact information regarding the nature and locale of the disorder. The most widely applied method developed at the Laboratory involves the use of platinum electrodes (inserted into the arteries and veins) and hydrogen gas. The gas is carried through the organism by the blood and, on the basis of the normal time of passage of the blood through any of the vessels, deviations become apparent through the electrochemical reaction of the platinum with the hydrogen. Such deviations serve as indicators of a cardiac disorder. Another method involves

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USSR

YAKOVLEVA, Ye., Rabochaya Gazeta, 23 Dec 70, p 4

measuring the rate of blood flow. An ultrasound transmitter in a probe is used together with a blood flow meter designed by Engineer Dmitriy Matsiyevskiy to determine the precise rate of blood flow through any blood vessel. This method makes it possible to detect cardiac valve insufficiency, atrioventricular dissociation, the phenomenon of dissociated pressure and ejection, other disorders in cardiac physiology, and the physiological limits of the organism.

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USSR

UDC 547.558.1

YAKOVLEV, YE. A., ISAYEVA, G. G., MAKHAMATKHANOV, M. M., ZHIDKOVA, A. M.,
TSVEIKOV, YE. N., KARACHNIK, M. I., and SHATENSHIEV, A. I., Physicochemical
Institute imeni L. Ya. Karpov and Institute of Organoelemental Compounds,
Academy of Sciences USSR

"Partial Rate Factors for Protophilic Deuteroexchange of Dimethylphosphine
with Liquid Ammonia under Potassium Amide Catalysis"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1626-1631

Abstract: The authors undertook to determine the partial rate factors for
deuteroexchange with liquid ammonia (KNH_2 catalyst, 25°) for all ring positions
of dimethylphosphine. The deuterated dimethylphosphines were synthesized by the
reaction of the corresponding organomagnesium compounds with dimethylphosphinic
chloride and subsequent reduction of the resultant oxides with silicobloro-
form. The structure of the isomers was confirmed by IR spectra. The partial
rate factors were calculated on the basis of measurements of the dedeuteration
reaction rate constants for dimethyl-o-m-, and p-deuterophenylphosphine.

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USSR

YAKOVLEVA, Ye. A., et al., Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70,
pp 1626-1631

Approximate comparative data were also obtained on the protophilic dedeuteration rates for dimethyl-m- and p-trideuterotolylphosphines. The results indicated that the $(\text{CH}_3)_2\text{P}$ group was an electron acceptor in the reaction of protophilic isotopic hydrogen exchange with a strong base.

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USSR

UDC 669.1:541.015

YAKOVLEV, P. Ya., YAKOVLEVA, Ye. F., and ORZHEKHOVSKAYA, A. I.

Opredeleniye Ugleroda v Metallakh (Determination of Carbon in Metals), Metallurgiya, Moscow, 1972, 288 pp

Translation of Annotation: Theoretical fundamentals and detailed practical recommendations are given on chemical, physicochemical, and physical methods of determining large and small quantities of the total carbon in steels, alloys, ferroalloys, pure metals, and other materials of metallurgical production, as well as the bonded and free (carbon in a solid solution) carbon. New and different methods of carbon determination tested by the authors are recommended. This book is intended for personnel of analytical laboratories of industrial enterprises and scientific research and teaching institutes for metallurgy and other branches of industry. It may also be used as a textbook by students in chemical and chemical-metallurgical specialties of institutions of higher learning. 35 figures, 35 tables, 197 bibliographic references.

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Analysis and Testing

USSR

UDC 669.1.541.015

LASHKO, N. F., SASLAVSKAYA, L. V., KOZLOVA, M. N., MOROZOVA, G. I., SOROKINA, K. P., KHAKHLOVA, N. V., and YAKOVLEVA, YE. F.

"Physical and Chemical Methods of Phase Analysis of Steels and Alloys"

Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov (English version above), Moscow, Metallurgiya Press, 1970, 476 pages

Translation of Annotation: Methods of combined physical and chemical phase analysis are systematized and summarized, including methods of phase separation and their chemical and x-ray structural analysis.

Problems of the theory of electrochemical separation of phases, the principles of selection of electrolytes, and methods of phase analysis are analyzed as applicable to various steels and alloys.

The book is designed for scientific workers of scientific research institutes and plant laboratories involved in the development of steels and alloys, as well as the study of their properties depending on their phase composition. 99 figs, 100 tables, 708 biblio refs.

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USSR

LASJKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages.

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LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

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USSR

LASHKO, N. F., et al., Fiziko-Khimicheskiye Metody Fazovogo Analiza Staley i Splavov, Metallurgiya Press, 1970, 476 pages

Chapter 14.	Methods of Phase Analysis of Aluminum Alloys	396
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1/2 012 UNCLASSIFIED PROCESSING DATE--300CT70
TITLE--EQUILIBRIUM AND KINETIC ACIDITY OF P CARBORANE -U-
AUTHOR--(05)--PETROV, E.A., YAKOVLEVA, YE.A., ISAYEVA, G.G., KALININ, V.N.,
ZAKHARKIN, L.I.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 617-19 (CHEM)
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBORANE, ISOMER, ISOTOPE EXCHANGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0694 STEP NO--UR/0020/70/191/003/0617/0619
CIRC ACCESSION NO--AT0124366
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM METALATION EX PTS. WITH P CARBORANE IN (CH SUB2 OME) SUB2 AND CYCLO,C SUB6 H SUB11 NH SUB2 THE FOLLOWING PKA OF ISOMERIC CARBORANES WERE D4DUCED: O 233.3, M 27.9, P 30.0; FROM REACTIONS OF ISOTOPIC H EXCHANGE IN LIQ. NH SUB3 THESE WERE 19.2, 27, 29.4. THE RATE FOR THE P ISOMER HAD THE RATE CONST. K 4.2 TIMES 10 PRIME NEGATIVE6 SEC PRIME NEGATIVE1 AT 120DEGREES, AND 8.5 TIMES 10 PRIME NEGATIVE7 SEC PRIME NEGATIVE1 AT 50DEGREES. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/4 013 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--IN THE WATER AND ON THE LAND, SPECIAL GEOLOGISTS DAY -U-
AUTHOR--YAKOVLEVICH, K.
COUNTRY OF INFO--USSR
SOURCE--RIGA, SOVETSKAYA LATVIYA, 5 APRIL 1970, P 1
DATE PUBLISHED--05APR70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--GEOLOGY, METALLURGIC INDUSTRY, PETROLEUM INDUSTRY, GEOLOGIC
PERSONNEL, MARINE GEOLOGY, MINING GEOLOGY, PETROLEUM EXPLORATION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAME--1989/1632 STEP NO--UR/9019/70/000/000/0001/0001
CIRC ACCESSION NO--AN0109043
~~ZZZZZZZZZZ~~ UNCLASSIFIED

2/4 013

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0108043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WE CAN BE PROUD OF THE PEOPLE WE HONOR TODAY. THEIR RESERVES OF MINERALS DISCOVERED BY GEOLOGISTS HAVE ENSURED THE VIGOROUS DEVELOPMENT OF FERROUS AND NONFERROUS METALLURGY, THE PETROLEUM, COAL AND GAS INDUSTRY IN THE USSR. WITH EACH PASSING YEAR THERE IS AN INCREASING ROLE PLAYED BY SCIENTIFIC RESEARCH ORGANIZATIONS WHOSE TASK IT IS TO SUPPLY THE SEARCHERS FOR MINERAL RESOURCES WITH THE MOST MODERN WORKING METHODS, RELIABLE RECOMMENDATIONS AND FORECASTS. HERE IS WHAT WE WERE TOLD BY DOCTOR OF GEOLOGICAL AND MINERALOGICAL SCIENCES KARL YAKOVLEVICH SPRINGIS, DIRECTOR OF THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF MARINE GEOLOGY AND GEOPHYSICS. "OUR INSTITUTE WAS ESTABLISHED THREE YEARS AGO ON THE BASIS OF THE RIGA INSTITUTE OF GEOLOGY AND THE DIVISION OF MARINE AND GEOPHYSICAL WORK OF THE MOSCOW ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GEOPHYSICS. EIGHTEEN VESSELS OF THE INSTITUTE ARE DOING MUCH WORK IN THE SEAS WASHING THE SHORES OF THE COUNTRY AND SAIL INTO THE MEDITERRANEAN SEA AND THE ATLANTIC OCEAN. WE ARE INVESTIGATING THE GEOLOGICAL STRUCTURE OF THE SEA FLOOR AND AFTER A CAREFUL ANALYSIS OF THE COLLECTED DATA WITH THE MAXIMUM ACCURACY WE NOTE THE SITES OF SURMISED PETROLEUM AND GAS DEPOSITS. MARINE GEOLOGISTS ARE INTERESTED IN ROCKS CONTAINING TITANIUM, GOLD, TIN AND OTHER METALS. ALL WORK IS DONE WITH VERY PRECISE INSTRUMENTATION. THE COMPLEXITY OF MARINE GEOLOGICAL PROSPECTING CAN BE ILLUSTRATED IN ONE EXAMPLE. QUITE RECENTLY UNDERWATER SHOTS, WHICH DESTROY FISH, WERE REPLACED BY PNEUMATIC SONIC SOURCES.

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PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0108043

ABSTRACT/EXTRACT--PRECISE AUTOMATIC INSTRUMENTS REACT VERY SENSITIVELY TO THE REFLECTION OF ELASTIC OSCILLATIONS FROM THE GROUND LAYER ON THE SEA BOTTOM, ARE REGISTERED AND ARE ANALYZED, WITH MANY FACTORS TAKEN INTO ACCOUNT. MAPS ARE COMPILED ON THE BASIS OF INSTRUMENT READINGS. WORK MUST BE DONE WITH A HIGH ACCURACY BECAUSE DRILLERS WILL GO TO WORK ON THE BASIS OF OUR RECOMMENDATIONS. WE STRIVE TO MAKE OUR RECOMMENDATIONS 100PERCENT ACCURATE. IT CAN BE SAID WITH SATISFACTION TODAY THAT THE DISCOVERY OF SEVERAL PETROLEUM DEPOSITS IN THE CASPIAN AND ON SAKHALIN IS THE RESULT OF OUR WORK. THE SERVICES OF OUR INSTITUTE ARE USED ABROAD. WE HAVE WORKED UNDER CONTRACTS WITH EAST GERMANY, BULGARIA, POLAND, CUBA, INDIA AND THE UNITED ARAB REPUBLIC. WE BELIEVE THAT THE READERS OF SOVETSKAYA LATVIYA WILL BE INTERESTED IN KNOWING THAT A BROAD FIELD OF ACTIVITY HAS BEEN OPENED FOR THE INSTITUTE WITHIN THE BOUNDARIES OF OUR REPUBLIC. THE DIRECT EXPLORATION FOR PETROLEUM IS ASSIGNED TO THE LATVIAN GEOLOGICAL ADMINISTRATION, BUT IT ADHERES TO OUR PREDICTIONS. LATVIA IS RICH IN DEPOSITS OF DOLOMITES, CLAYS, SANDS AND GYPSUM. THERE ARE MANY LIMESTONE DEPOSITS WHICH COULD BE CALLED AGRONOMIC ORE. THERE WILL ALWAYS BE A NEED FOR NEW RICH DEPOSITS OF THESE MATERIALS. THIS MEANS THAT PLENTY OF WORK EXISTS FOR THE INSTITUTE IN THIS FIELD. A PECULIARITY OF OUR PRESENT HOLIDAY, THE "GEOLOGISTS DAY," IS THAT IT IS CLOSE TO A VERY IMPORTANT DATE: THE 100TH ANNIVERSARY OF THE BIRTH OF V. I. LENIN. WE NOTE JOYFULLY THAT ALL OUR ANNIVERSARY OBLIGATIONS HAVE BEEN MET.

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4/4 013

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0108043

ABSTRACT/EXTRACT--AMONG THEM ARE THE ABOVE MENTIONED PNEUMATIC SONIC COURSES AND NEW REGISTRY INSTRUMENTS WITH RECORDING OF A PHOTOGRAPHIC LAYER. ON THE BASIS OF A WELL DEVELOPED METHOD THEY HAVE BEEN INTRODUCED IN THE BALTIC AND BLACK SEAS. HOWEVER DIFFICULT MAY BE THE GEOLOGIST'S TASK, HE WILL ALWAYS HAVE FAITH IN THE SUCCESS OF HIS SEARCH. "

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UNCLASSIFIED

USSR

UDC: 532.522.2

Yakovlevskiy. O. V.

"Properties of Turbulent Transfer in Streams of Variable Densities"

Kazan', Izvestiya Vysshikh Uchebykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1972, pp 64-71.

Abstract: An experimental study is performed of a stream of variable density, based on which the relationships of similarity are established and data are produced on the intensity of the increase in thickness of the mixing zone. Using these results and integral relationships, the distribution of the coefficients of turbulent transfer across the zone of displacement of the stream is found, and the dependence of mean values of these factors on the ratio of velocities and densities at the boundaries of the mixing zone is established. It is demonstrated in particular that the transfer coefficients are not equal to 0 with identical values of velocity at the boundaries of the mixing zone, but that their value depends on conditions in the initial cross section of the flow. Data are presented on the influence of the basic parameters on the "turbulent" Schmidt number.

1/1

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USSR

UDC: 532.525.3:532.529.4

BUKHAROV, B. L., KRASHENINNIKOV, S. Yu., ORZHEKHOVSKIY, G. Yu., YAKOV-
LEVSKIY, O. Y., Moscow

"Peculiarities of Propagation of Twisted Jets of Variable Density"

Moscow, Izv. AN SSSR: Mekhanika Zhidkosti i Gaza, No 4, Jul/Aug 72, pp
33-37

Abstract: The paper presents the results of an experimental study of a twisted jet flow which develops behind centrifugal gas nozzles. The principal flow parameters -- characteristic width of the jet, the length of the back-flow, lengthwise fall-off of concentration along the jet -- were determined from data of experiments with two-component nozzles. The characteristic frequencies of pulsations of gasdynamic parameters are determined from experiments with a single-component nozzle. The resultant empirical relations are generalized. The authors thank V. I. Furletov for constructive criticism.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--STUDY OF THE ACOUSTIC AND GASDYNAMIC CHARACTERISTICS OF A JET NOISE
MUFFLER -U-
AUTHOR-(04)-KRASHENINNIKOV, S.YU., SORKIN, L.I., TOLSTOSHEYEV, M.N.,
YAKOVLEVSKIY, O.V.
COUNTRY OF INFO--USSR
SOURCE--AKUSTICHESKII ZHURNAL, VOL. 16, JAN.-MAR. 1970, P. 88-95
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, PROPULSION AND FUELS
TOPIC TAGS--ENGINE MUFFLER, TURBOJET ENGINE, NOISE REDUCTION, EXHAUSE GAS
DYNAMICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1459 STEP NO--UR/0046/70/016/000/0088/0095
CIRC ACCESSION NO--AP0106215

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106215

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF A JET NOISE MUFFLER
CONSTRUCTED IN THE FORM OF A SET OF ADAPTERS LOCATED AT THE OUTLET
SECTION OF A JET NOZZLE. IN THIS CASE AIR OR SOME OTHER GAS IS BLOWN
THROUGH THE ADAPTERS PERPENDICULAR TO THE ENGINE EXHAUST JET. THE
EXPERIMENTALLY OBTAINED REDUCTION IN THE MAXIMUM INTENSITY OF THE NOISE
LEVEL AMOUNTS TO 4 TO 5DB. IN STUDIES ON MODELS SIGNIFICANT CHANGES IN
THE STRUCTURE OF THE EXHAUST JET, UNDER THE ACTION OF THE INJECTED GAS
ARE NOTED NAMELY, A REDUCTION IN THE LENGTH OF THE INITIAL SECTION OF
THE JET, AN INCREASE IN THE TRANSVERSE DIMENSIONS OF THE JET, AND OTHER
CHANGES.

UNCLASSIFIED

USSR

UDC 616.2-022.822.8-057-08

CHAYKA, N. A., and YAKOVSKAYA, M. YE., Institute for the Advanced Training of Physicians ineni S. M. Kirov

"Occupational Fungal Allergy and Methods of Detecting It"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1972, pp 32-36

Abstract: Since a large number of workers employed in industrial plants manufacturing citric acid suffer from upper respiratory diseases and since the mold *Aspergillus niger* is used in the industrial fermentation process, serological and allergy tests were performed on 102 workers to examine their health. The results were positive in a high percentage of workers continuously exposed to mold spores (surface fermentation shop, laboratory, and spore preparation division) but only in single cases among other workers (chemical division and deep fermentation shop). The recommendation is made to prevent the spread of the spores by enclosing the equipment in airtight casings and to install respirometers for workers in especially exposed positions.

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YAKSEN, E.O.

SO:JPRS 54354
29 OCT 1971

UDC: 616-087[362.11+362.121]:
658.562 (049.3)

EXPERT EVALUATION OF THE QUALITY OF THE THERAPEUTIC PROCESS IN HOSPITALS AND POLYCLINICS

in Russian

(Article by V. P. Bayda and E. O. Yaksen, Donetsk Oblast Central Clinical Hospital (Chief physician: V. N. Bayda, candidate of medical sciences); Moscow, Sovetskoye Zdravookhraneniye, Russian, No 9, 1971, submitted 3 March 1971, pp 21-25)

For analysis of the indices of national health and operation of medical institutions, public health organizers use data reflecting the quantitative rather than qualitative aspect of various processes. Quite often, the quality of diagnosis, therapy, prophylaxis, of the work of physicians and institutions is assessed on the basis of rather subjective and random facts.

In order to assure objective monitoring of the quality of the therapeutic process, the method of expert evaluation has been used since 1961 at the Donetsk Oblast Central Clinical Hospital. Using this method we strive first of all to demonstrate the factors on which a given adverse index depends. We then compile an expert evaluation card consisting of factor-questions that need to be checked. The expert gathers at least 100 case histories or outpatient cards and checks each question on each of these records. The end result consists of data in absolute figures and percentages obtained for each question on the expert evaluation card which are indicative of defects and flaws in the work. For precise determination of the number of case histories or outpatient cards that should be used for processing (size of sample) well known formulas may be used:

$$\Delta_{\text{min}} = \sqrt{\frac{P \cdot q}{n}} \quad \text{or} \quad \Delta_{\text{min}} = t \cdot \sqrt{\frac{P \cdot q}{n}}$$

Hence

where Δ is the maximum mean error of the index; n is the mean index error; P is the share of the trait in the general aggregate; $q = 1 - P$; n is the number of case histories or charts that should be used for processing; t is the confidence coefficient.

Published for the purpose of discussion -- editor.

MEDICINE

USSR

UDC: 629.7.036.3:533.697.4.001.4

2

SHCHUKIN, V. K., POLIKARPOV, P. A., FILIN, V. A., KHALATOV, A. A., YAKSHIN, A. P.

"Influence of Entry Conditions on Heat Exchange in Nozzles"

Tr. Kaz. Aviats. In-ta [Works of Kazakh Aviation Institute], 1972, No 151, pp 3-10 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 5, 1973, Abstract No 5.34.59).

Translation: A description is presented of an experimental installation for the study of unstable convective heat exchange in nozzles. Results are presented from an experimental study of the local heat transfer in a nozzle when a heat insulated pipe with a diameter equal to the input diameter of the nozzle and a relative length $l/d = 1, 2, 5, 10$ or 15 is connected to its input, or when a cylindrical sleeve is placed at the output of the nozzle with various central aperture diameters. 3 figures, 10 biblio. refs.

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- 33 -

USSR

UDC 547.241:541.65

LASKORIN, B. N., YAKSHIN, V. V., BUCHIKHIN, Ye. P., SOKAL'SKAYA, L. I., and MEDVEDEV, V. I., Institute of Geophysics imeni O. Yu. Shmidt, Academy of Sciences USSR, Moscow

"The Donor Capacity of Neutral Organophosphorus Compounds of the Type $X_3P=O$ "

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 2, Mar-Apr 73, pp 245-250

Abstract: The donor capacity in complex-formation of neutral organophosphorus compounds of the type $X_3P=O$ (esters, ester amides and amides of P-acids) was studied on the basis of the basicity constants pK_a determined by potentiometric titration with $HClO_4$ in nitromethane, the displacement $\Delta\nu_{OH}$ of the frequency of valency vibrations in IR spectra of complexes with phenol and the enthalpy of formation of these complexes, the displacement of the absorption band by iodine $\Delta\lambda_{max}$ upon formation of complexes with iodine in CCl_4 , and the stability constants \tilde{K}_{HNO_3} of complexes

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USSR

LASKORIN, B. N., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 2, Mar-Apr 73, pp 245-250

with HNO_3 . The compounds studied, which included $\text{R}_3\text{P}=\text{O}$, $\text{R}_2\text{P}(\text{O})\text{OR}'$, $\text{RP}(\text{O})(\text{OR}')_2$, $(\text{R}'\text{O})_3\text{P}=\text{O}$, $\text{R}_2\text{P}(\text{O})\text{NHR}'$, $\text{RO}(\text{O})(\text{NHR}')_2$, $(\text{R}'\text{NH})_3\text{P}=\text{O}$, $(\text{RO})_2\text{P}(\text{O})\text{NHR}'$, and $\text{ROP}(\text{O})(\text{NHR}')_2$, where R, R' were normal alkyls $\text{C}_4\text{-C}_{10}$, were obtained by reacting P acid chlorides with alcohols and amines. The introduction of alkylamide groups increased the donor capacity of the phosphoryl group as a result of the $\text{P}\pi\text{-d}\pi$ conjugation of the unshared electron pair of N with the vacant 3d - orbitals of P. The magnitude of this interaction was not constant, but varied with the symmetry type of the molecule, the effective positive charge at P, and the competing mesomeric capacity of the substituents at P and their volumes.

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USSR

UDC 547.241'248:543.422.4'6

YAKSHIN, V. V., and SOKAL'SKAYA, L. I.

"Reaction of Trialkylphosphines With Acyl Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, p 440

Abstract: Equimolar quantities of the reagents were mixed in hexane at 0° under dry argon. The products, $[R_3P^+-C(O)R']X^-$, acetophosphonium salts are hygroscopic materials, insoluble in hexane, ether or ethyl acetate, decomposing gradually in chloroform, methanol, acetonitrile and acetic acid. They can be stored for long periods in dry, anhydrous medium.

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USSR

UDC 547.341.26'118.07

LASKORIN, B. N., YAKSHIN, V. V., KREMNEVA, Ye. V., and SKOROVAROV, D. I.

"A Method of Making Monoethers of N-Substituted α -Aminoalkylphosphonic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292986, Class C, filed 11 Oct 69, published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making monoethers of N-substituted α -aminoalkylphosphonic acids by interacting phosphites with Schiff bases in the presence of heat with subsequent treatment of the resultant product in a mineral acid such as hydrochloric acid. As a distinguishing feature of the patent, the process is simplified by using monosubstituted ammonium, alkali or alkaline earth salts of monoalkylphosphites as the phosphite, and carrying out the process in the presence of a catalyst such as triethylamine. 2. A modification of this method distinguished by the fact that heating is done to a temperature of 110-120°C.

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USSR

UDC 547.341.26'118.07

LASKORIN, B. N., YAKSHIN, V. V., KREMNEVA, Ye. V., and SKOROVAROV, D. I.

"A Method of Making Monoethers of N-Substituted Thiocarbamoylphosphonic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292987, Division C, filed 11 Oct 69, published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making monoethers of N-substituted thiocarbamoylphosphonic acids. As a distinguishing feature of the patent, monosubstituted salts of monoalkylphosphites are interacted with alkyl- or arylisothiocyanates in the presence of heat in an organic solvent such as benzene, with subsequent treatment of the resultant product in a mineral acid such as hydrochloric acid, and isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out in the presence of a catalyst such as triethylamine.

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USSR

UDC 547.26'118

YAKSHIN, V. V., and SOKAL'SKAYA, L. I.

"Reaction of Trialkylphosphites With Thiocarboxylic Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, p 484

Abstract: Reaction of trialkylphosphites with thiocarboxylic acid chlorides follows the Arbuzov mechanism, yielding thiokephosphonates. Adding equimolar quantities of trimethyl phosphite to a pentane solution of thiobenzoyl chloride at -5° in an argon atmosphere gave an 85% yield of dimethyl thio-benzoylphosphonate, a reddish-purple liquid, b.p. $101-103^{\circ}/0.01$ mm, n_D^{20} 1.5561, d_4^{20} 1.2732.

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USSR

UDC: 547.241'284:543.422.4'6

LASKORIN, B. N., YAKSHIN, V. V., SOKAL'SKAYA, L. I.

"Synthesis and Spectral Properties of Organophosphorus Compounds Containing a Keto Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1261-1269

Abstract: A series of compounds of the general formula $R_2P(O)(CH_2)_nC(O)R'$ ($R = CH_3, CH_3O; n = 0, 1, 2; R' = CH_3, C_6H_5$, substituted methyl) were synthesized as a basis for studying the electron interaction of the tetracoordinated phosphorus atom with the carbonyl group. The effect of the higher atomic orbitals of phosphorus on the physical and chemical properties of the synthesized compounds was studied. The influence of the overall induction effect of the substituents associated with the phosphorus atom on the degree of conjugation between the carbonyl group and the tetrahedral phosphorus atom was determined.

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YAKSHINA, A. S.

Biology

Biological Sciences

SO:JPRS 53509

01 JUL 71

Voprosy fiziologii cheloveka i zivotnykh (Questions of the Physiology of Man and Animals). Institute of Physiology imeni I. P. Pavlov. Leningrad, 1970, 238 pages with ill., 2400 copies, 1 r 85 k.

nc v → BSCA BIOLOGY ✓ nc

S. Malkina, Yu. L. Tsel'niker, and A. S. Yakshina. Fotosintez i dvzhanie podrostka. Metodicheskiye podkhody k izucheniyu balansu organicheskogo veshchestva (Photosynthesis and the Respiration of Second Growth. Methodical Approaches to the Study of the Balance of Organic Matter). Moscow, 1970, 184 pages, 1300 copies, 1 r 14 k.

USSR

UDC 621.771.8:669.14.018.8:621.014.5

~~YAKSHINA, O. K.~~, PERSHINA, N. F., and PAVLOV, YU. M.

"Influence of Cyclical Heating on Strength of Adhesion of Bimetal Layers"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 170-172

Translation: The capacity of bimetals with different coefficients of thermal expansion of layers to operate under cyclical heating conditions was studied. The bimetal specimens included: St3+OKh13; St3+OKh17T; St3+Kh25T; St3+Kh18N10T, and St3+Kh23N28M3D3T, tested by periodic heating to 500 and 400°C with subsequent cooling to room temperature.

The results of the tests show the possibility of using these bimetals for long service with cyclical temperature change. 2 figures; 2 tables.

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USSR

UDC 669.017.11621.771.8

MEANDROV, L. V., BYKOV, A. A., YAKSHINA, O. K., and ZAYTSEV, V. V.

"Properties of a Three-Layer Strip Produced by Explosion and Packet Rolling"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 160-163

Translation: Results are presented from comparative studies of the quality of bi-metal produced by explosive welding and by packet rolling. The strength characteristics of a three-layer strip nickel + steel + nickel, produced by explosive welding, are found to be of the level of properties of a three-layer strip produced by packet rolling. The shear resistance between layers in the explosively welded bimetallic strip is 300-400 Mn/m² (30-40 Kg/mm²). Estimation of the micro-structure of the bimetal in the initial state (after explosion) and after hot rolling confirms the good adhesion of the nickel layers to the base layer. 3 figures.

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1/2 006
UNCLASSIFIED
TITLE--STANDARDIZATION IN THE DESIGN OF 110-220KV DISTRIBUTION SUBSTATIONS
-U- PROCESSING DATE--27NOV70
AUTHOR--YAKUB, A.
COUNTRY OF INFO--USSR
SOURCE--ELEKT. STANTSII (USSR), VOL. 41, NO. 3, P. 42-52 (1970)
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--ELECTRIC NETWORK, ELECTRIC SUBSTATION NETWORK, ENGINEERING
STANDARD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0506 STEP NO--UR/0104/70/041/003/0042/0052
CIRC ACCESSION NO--AP0135989
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--27NOV70

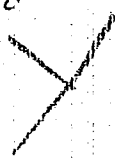
CIRC ACCESSION NO--AP0135969

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STANDARDIZATION IS CONSIDERED IN RELATION TO: ELECTRICAL CONNECTIONS OF HIGH (110-220KV) AND LOW (35 AND 6-10KV) VOLTAGE DISTRIBUTION SUBSTATIONS; DESIGN OF 35-220KV OUTDOOR AND 6-10KV INDOOR SUBSTATIONS; CENTRAL CONTROL POINTS AND AUXILIARY EQUIPMENT FOR 110-220KV SUBSTATIONS. FURTHER POSSIBLE DESIGN IMPROVEMENTS ARE INDICATED.

UNCLASSIFIED

Acc. Nr: **AP0053360** - Abstracting Service:
CHEMICAL ABST: 5-70

Ref. Code:
4A 0228



101497j Properties of hermetic sealants under hot and hot-humid climatic conditions. Pankratov, V. F.; Yakub, O. Yu.; Sadagashvili, G. R. (USSR). *Strou. Mater.* 1970, (11), 37-38 (Russ). Several polymeric sealants, e.g., nonhardening mastics UMS-50 and Secomastic (I) (British), Thiokol sealant, GS-1, Polyef, and porous Poroizol (II), Gernit P (III), and PRP-1 were tested in Tbilisi (dry climate) at -23 to +40° and in Batumi (humid climate) at -20 to +41° for 12 months. II and III deteriorated slightly in the hot-humid climate, the latter being the more stable of the 2. I, tested in Tbilisi and Batumi, formed a protective impermeable coating which inhibited its degradation. GS-1 retained adequate tensile strength and elongation at break, although its properties slightly deteriorated in Tbilisi.

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REEL/FRAME
19830383

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USSR

UDC 632.95

ARNOL'DOV, Ye. M., MITYAKINSKIY, V. I., GLADILIN, I. N., YAKUBA, A. R.,
KOSTITSIN, B. A., KIYASHKO, V. K., KAZ'MIN, M. F., SHUL'MAN, V. N.

"A Method of Making the Discharge Form of Copper 2,4,5-Trichlorophenoxide"

USSR Author's Certificate No 345121, filed 14 Feb 69, published 9 Aug 72
(from RZh-Khimiya, No 9, May 73, abstract No 9N509P by T. G. Chekareva)

Translation: A method is proposed for making a commerial form of copper, 2,4,5-trichlorophenoxide (I) used in making poisons. A wet paste of compound I is filtered, pressed to a moisture content of 50-55%, loaded into a crank mixer, and mixed with talc and kaolin in a ratio of 1:1:2 respectively. The mixture is agitated for 1-2 hours. It is then loaded as a powder containing 16-20% moisture into a drier with a fluidized bed of inert material. The degree of moisturizing of the dry product in the cyclone is of the order of 96-97%.

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UDC 595.775

FEOKTISTOV, A. Z., and YAKUBA, V. N., Irkutsk Scientific Research Antiplague Institute of Siberia and the Far East

"The Ability of Fleas to Receive and Transmit Tickborne Encephalitis Virus During Bloodsucking"

Leningrad, Parazitologiya, Vol 5, No 4, Jul/Aug 71, pp 374-376

Abstract: It was established in laboratory tests that *Ceratophyllus congeneroides* Wagn. fleas can receive and transmit the virus when they are on white mice. Tickborne encephalitis virus strain "Sophian" was used to infect test mice. The first infectious feeding of the fleas lasted for one hour on mice which had been subcutaneously infected for four days with a 10% brain suspension of the virus. The infected fleas were kept at a temperature of 40-22°C. On the next day, the infected fleas were placed on healthy mice for 18-20 hrs. The mice were sacrificed on the seventh day after infection and both mice and fleas were screened for virus.

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USSR:

UDC 576.858.2

ZONOV, G. B., and YAKUBA, V. N., Irkutsk State Scientific Research Antiplague Institute of Siberia and the Far East

"Uninhabited Hollows as Places of Contact Among Animals in Foci of Tickborne Encephalitis in the Baikal-Area"

Leningrad, Parazitologiya, Vol 5, No 3, May/Jun 71, pp 289-290

Abstract: In 1964-1968 trees were trimmed and felled in the southern Baikal area and 100 uninhabited tree cavities were discovered, most frequently in dry or partially dry aspens (70), pine trees (15), birches (11), and larches (4) at various heights from the ground. Most of these were woodpecker cavities and 13 of them contained ectoparasites. In all, 134 ectoparasites were collected, of which 51 were fleas and 83 gamasid mites. Almost all fleas and gamasid mites were mammalian parasites of rodents and bats except *Ceratophyllus zhovtyi*, a bird parasites. It is emphasized that in the region studied, the birds have very few ectoparasites in winter (only 4 of 120 birds observed in winter carried *C. zhovtyi* and gamasid mites). The authors believe that the ectoparasites adapt themselves easily to hosts which live in nests considerably longer than do birds, and that any study of tickborne encephalitis must include examination of uninhabited tree cavities.

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USSR

UDC 533.6.013.42

KARGAUDAS, V. I., SETKAUSKAS, V. A., YAKUBAUSKAS, V. V.

"Experimental Studies of the Forms of Free Oscillations of a Plane Deep Gate"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 116-117 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V409)

Translation: Two geometrically similar models of a gate are investigated, one of which is made from polystyrene and the other from plastic. In studying both models there were observed several frequencies different from the basic natural frequencies of the model. It is proposed that these frequencies correspond to the resonances of individual parts of models of the gate. R. A. Shipov.

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UDC 533.6.013.42

PALYUNAS, V. A., YAKUBAUSKAS, V. V.

"On the Determination of Apparent Masses of a Liquid for Rigid and Flexible Bodies by the Electrohydroanalogy Method"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 110-112 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V411)

Translation: A practical way of using the formula for determining apparent masses of a liquid by the electrohydroanalogy method for rigid and flexible bodies is presented that was obtained earlier by V. A. Palyunas (Nauch. tr. vyssh. uchebn. zavedeniy lit SSR. Vibrotekhnika (Scientific Works of Higher Educational Institutions of Latvian SSR. Vibration Engineering), 1968, No. 2, pp 69-80 -- RZhMekh, 1968, 10B428). Ye. A. Vol'mir.

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USSR

UDC 62-507

YAKUBAYTIS, E. A.

"Synchronized Model of a Discrete Device"

Riga, Avtomatika i Vychislitel'naya Tekhnika, No 4, Jul-Aug 73, pp 14-21

Abstract: The article considers the problem of eliminating all types of hazard from the model of a discrete device which has no more than one delay element, uses of internal-state code, and possesses maximum speed to response. Logic hazards can be eliminated in two ways. The first is based on the fact that each of the equations that define the model is written in disjunctive normal form and satisfies the condition of continuity. The second method is to write the equations in a special form. An example is given of each of the methods .

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UDC: 62-507

YAKUBAYTIS, E. A.

"Synchronized Finite Automata"

Riga, Avtomatika i Vychislitel'naya Tekhnika, No 3, 1973, pp 1-8

Abstract: Since the technical realization of a finite automaton at the stage of model selection requires taking into account a number of factors connected with transient processes in the actual device, the author considers the problems connected with ordered changes in the signals which guarantee elimination from the automaton of harmful competitive activity. A synchronized finite automaton is here defined as a finite automaton in which the time intervals for possible changes of state to occur depend on the change in value of the signals input to the automaton. It is assumed that these signals are double-potential and that the change in the value of each is monotonic in a finite time interval. Two types of structure for this automaton are considered: the first, with direct control, in which all controlling signals are determined by either of two degenerate expressions; the second, with indirect control, in which one of the controlling signals is not determined by either of the expressions.

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YAKUBAYTIS, E. A.

"Structure and Effectiveness of Multifunctional Logic Element"

Avtomatika i Vychisl. Tekhn. [Automation and Computer Technology], 1972, No. 5, pp 1-8 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V441, by G. Gavrilov).

Translation: The multifunctional logic element studied in this work has one output Z and several inputs B_1, \dots, B_g , some of which are used to adjust the element, while the others are used to supply certain control signals A_1, \dots, A_n . The conversion performed by the element is a dependence such as $Z = f(B_1, \dots, B_g)$, while dependence $Z = \phi(A_1, \dots, A_n)$ refers to the function realized by the element. The conversions (and functions) are called different if they cannot be produced from each other by permutation of subscripts with the letters B_1, \dots, B_g (or the letters A_1, \dots, A_n). In calculating the number of conversions and functions, only different conversions (functions) performed (realized) by the element are studied. A multifunctional element with $g = n + \eta$ inputs is called an element with parallel tuning if a change in the

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Yakubaytis, E. A., *Avtomatika i Vychisl. Tekhn.*, 1972, No 5, pp 1-8.

conversions is performed by the element is achieved by a finite number of simultaneous permutations such as: $B_i = 0$, $B_j = 1$, and $B_h = B_l$ ($h \neq l$).

Tuning is performed through n inputs (the remaining n inputs are used to supply signals A_1, \dots, A_n , carrying information). Elements with parallel tuning are rather simple, but with large n it is best to use elements with sequential tuning. In this case, tuning of an element requires only two signals. To allow sequential tuning, the structure of the element includes n cells, which output special (internal) tuning signals B_{n+1}, \dots, B_{n+n} . These internal signals are changed using the two external signals. The signals B_{n+1}, \dots, B_{n+n} are input at those points in the structure of the element where tuning such as $B_i = 0$ and $B_j = 1$ should be performed (tuning such as $B_h = B_l$ is not used in this case). Elements with sequential tuning can be looked upon (from the functional point of view) as particular cases of elements with parallel tuning. A method is described for determining all the various

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transforms and calculating their number (for an element with parallel tuning). A formula is concluded for the number of different functions represented by one conversion. An estimate is given of the maximum possible number of tunings of the element (with fixed n).

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Automata

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UDC. 62-507

YAKUBAYTIS, E. A.

"Nonredundant Coding of the Internal States of a Finite Automaton"

Moscow, Avtomaty, Gibridnyye i Upravlyayushchiye Mashiny, "Nauka", 1972,
pp 79-88

Abstract: The author considers distinguishability of stable, complete states of an asynchronous finite automaton and on this basis finds all nonredundant (including minimum) codes of internal states with guarantee of absence of dangerous states. A nonredundant code is understood to mean one in which no digit can be left out.

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UDC: 62-507

YAKUBAYTIS, E. A. and PETRENKO, A. F.

"Reducing the Number of Memory Elements in the Cyclic Model of a Discrete Device"

Riga, Avtomatika i vychislitel'naya tekhnika, No 1, 1972, pp 1-5

Abstract: A cyclic model of a discrete device is here defined as a finite automaton in which all signals and elements have certain characteristics and whose structure is of a particular type. The type of structure demanded is reproduced in the article in diagram form. The characteristics of the signals and elements are: a change in any signal may occur during a non-zero time interval; the operation time of the elements is limited but greater than zero; the moments of reaction to changes in any signal of the various elements may not coincide in time. Under the assumption that the operating conditions are specified by a normal table of transitions and that the code for the inner states is given, the authors solve the problem of reducing the number of memory elements in the model without errors arising from disagreements between output and intermediate signals. An example of the application of the procedure recommended by the authors is given.

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