

USSR

UDC: 662.75 : 539.622

NAZARENKO, P.V. and KOZACHENKO, A.I.

"Effect of Jet Fuel Additives on Deformation of Rubbing Bodies"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Symposium of Scientific Works of Kiev Institute of Civil Aviation Engineers) 1971, vyp 2, pp 70-72 (from Referatsionnyy Zhurnal-Aviatsionnyye i Raketnyye Dvigateli, No 7, 1972, Abstract No 7.34.108)

Translation: It is shown that adding 0.01% by weight of TP and PMAM-2 antiwear additives to T-7 fuel causes a reduction of tangential friction forces and an increase of metal surface layer deformation, which is due to its surface activity. Adding of chromium oleate decreases the deformation of metal surface layers (4 illustrations, 4 references, resume).

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USSR

UDC 532.593

KOZACHENKO, L. S., KHRISTOFOROV, B. D., Moscow

"Surface Phenomena for Underwater Explosions"

Novosibirsk, Fizika gorenija i vzryva, Vol 8, No 3, 1972, pp 433-438

Abstract: Results are presented from experimental studies of the initial rate of ascent of the mushroom, the variation in its height with time and the surface wave parameters for underwater explosions of spherical charges of cast TNT weighing 100 kg at different depths in bodies of water up to 12 radii of the charge ($R_0 \approx 0.25$) meters in depth. The experimental procedures are described in detail, and the data are depicted as graphs, oscillograms and photographs. The geometric similarity law is derived for describing the surface waves for an explosion in shallow water.

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UDC 532.593 + 352.595.2

KOZACHENKO, L. S., KHRISTOFOROV, B. D., Moscow

"Parameters of a Shockwave in Water Resulting from an Explosion at the Bottom of a Reservoir"

Fizika Goreniya i Vzryva, No 1, Mar 71, pp 127-135.

ABSTRACT: Results are presented from piezoelectric measurements of shockwave parameters in a deep reservoir during explosion of spherical charges of explosive at the bottom, which consisted of air-saturated sand, polystyrene and concrete. The experimental data show that at great distances from the center of the explosion, the influence of all bottom types studied on shockwave parameters in the water are similar in general features to the influence of a free surface. The parameters of the shockwave can be calculated according to formulas presented in the article. At measurement points near the bottom, the time of action is generally greater than that calculated due to the influence of the bottom wave, the intensity of which decreases with increasing distance from the bottom. The pressure in the side and head waves is generally not over 20-30% of the pressure in the direct wave. Near the area of intersection of the leading edges of head and direct waves, the maximum pressure is 30-40% higher than that measured with an explosion in an unlimited liquid.

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USSR

UDC 575.24

MANZYUK, V. T., and KOZACIENKO, M. R., Ukrainian Scientific Research Institute of Plant Growing, Selection, and Genetics, Kharkov

"Gamma-Ray Irradiation-Induced Mutability of Barley Hybrids and Their Parent Forms"

Moscow, Genetika, Vol 6, No 7, Jul 70, pp 35-43

Abstract: Gamma-ray irradiation (10 kr) of three barley hybrids (Kombayner X Medikum 52-84, Khar'kovskiy 306 X Il'inetskiy 4), Lucilegany X Luznyy) and six parent forms induced a variety of morphological, physiological, open flowering and chlorophyll mutations. The hybrids exceeded the parent varieties in general mutability, frequency of each group of mutations, and yield of visible mutations with normal and reduced productivity. The most promising forms were obtained from the hybrids and the Medikum 52-84 variety. Combination variability coupled with mutation variability in the hybrids widened the possible diversity of forms in the hybrid populations. The varieties differed in general mutability, independently of the way they were obtained (hybrid or nonhybrid). Since the relationship between the frequency of different groups of mutations (specifically, between chlorophyll and others) may vary, the effectiveness of mutagenesis must be determined directly from the frequency of changes which are of interest in a particular

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MANZYUK, V. T., et al, Genetika, Vol 6, No 7, Jul 70, pp 35-43

investigation. The spectrum of chlorophyll mutations in mg was widened and their frequency increased by gamma-ray irradiation. The mutability of mg plants with respect to protein content was greater than in the control.

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USSR

KOZACHENKO, Yu. V., SENCHENKOVA, A. Yu.

"Sufficient Conditions for Sampling Differentiability of Random Processes"

Teoriya Veroyatnostey i mat. Stat. Mezhd. Nauch. sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], 1972, No 7, pp 75-80 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V50 by the authors).

Translation: A general theorem is presented on the existence of continuous sampling derivatives of random processes. As a result of this theorem, sufficient conditions are presented for sampling differentiability of Gaussian processes.

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USSR

UDC 519.21

KOZACHENKO Yu. V.

"Even Convergence of Certain Random Series"

Teoriya Veroyatnostey i Mat. Statist. Mezhved. Nauchn. Sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], No 2, 1970, pp 104-110 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V84 by the author).

Translation: Sufficient conditions are produced for even convergence with probability one of series with random coefficients of the form

$$\sum_{n=1}^{\infty} \xi_n P_n(x_1, x_2, \dots, x_p),$$

where ξ_n are independent random quantities, such that $M\xi_n = 0, M|\xi_n|^\gamma = b_n < \infty, 1 < \gamma < 2,$
a $P_n(x_1, x_2, \dots, x_p)$ are trigonometric polynomials of p variables. As a result, sufficient conditions are produced for sampling continuity with probability one of a Gaussian random field on a sphere in a $P+1$ -dimensional space.

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USSR

UDC 621.375.13:621.391.822

KOZACHOK, A. G., KUNOV, V. M.

"Method of Calculating the Noise Parameters of Amplifiers with Feedback"

Moscow, Elektrosvyaz', No 6, 1971, pp 45-50

Abstract: A method of calculating the noise parameters of amplifiers with feedback is developed. The method is suitable for cases where the amplifier and the feedback circuit are three-terminal networks with connected common sides. In practice, the amplifier circuits do not always satisfy this condition, but the method permits discovery of the effect of the four basic types of feedback on the noise characteristics of the amplifier. The interrelation between the noise parameters of an amplifier without feedback and with feedback can be established by the relations obtained for the four basic types of feedback. The application of these relations is illustrated by an example of series feedback with respect to voltage.

All types of feedback change the noise characteristics of the amplifier even if the noise of the feedback circuit is neglected. Analysis of frequency-independent feedback with respect to voltage shows that in this case it is possible to encompass the amplifier in a deep feedback circuit by proper selection of the feedback circuit elements without worsening the noise characteristics of the amplifier.

USSR

UDC 681.3.06:51

KOZACHKOV, L. S.

"Some Problems of the Theory of Systems of Information Flows"

Nauchno-Tekhn. Inform. Sb. Vses. In-t Nauchn. I Tekhn. Inform., [Scientific and Technical Information, Collection of All-Union Institute of Scientific and Technical Information], Series 2, No 10, pp 3-13, 49, (Translated from Referativnyy Zhurnal Kibernetika, 1970, No 5, Abstract No. 5V635 by the author).

Translation: Certain structural properties of information distributions, gnoseological problems of information relationships and the capacities of information retrieval systems based on methods of information distribution are studied.

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1/2 046

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--SEVERAL WAYS OF REDUCING THE FLAMMABILITY OF AMMONIUM NITRATE
EXPLOSIVES -U-

AUTHOR-(04)-KONDRIKOV, B.N., ANNIKOV, V.E., KOZAK, G.D., LUSHKIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--V SB. NAUCHNO-TEKH. KONFERENTSIYA, MOSK. KHIM.-TEKHVOL. IN-T IM.
REFERENCE--RZH-KHIMIYA, NO 1(11), 10 JAN 70, ABSTRACT NO 1 N351NCE, MOSCOW
DATE PUBLISHED-----70

SUBJECT AREAS--ORDNANCE, PROPULSION AND FUELS, CHEMISTRY

TOPIC TAGS--AMMONIUM NITRATE, EXPLOSIVE, COAL, LITHIUM, SODIUM COMPOUND,
AMINE DERIVATIVE, HEXOGEN, PHOSPHATE, CALCIUM FLUORIDE, LITHIUM
FLUORIDE, ALUMINUM FLUORIDE, NITROGLYCERIN, FLAMMABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0019

STEP NO--UK/0000/69/000/000/0113/0114

CIRC ACCESSION NO--AR0129319

UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AR0129319

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT IN THE PRESENCE OF COAL PARTICLES, METHODS OF REDUCING FLAMMABILITY BY MEANS OF LI AND NA FLUORIDES, CYANURIC ACID, AND MELAMINE AS ADDITIVES IN EXPLOSIVES PROVE TO BE LESS EFFECTIVE; ONLY OXALATES AND DIAMMONIUM PHOSPHATES WITHSTAND THE CATALYTIC EFFECT OF COAL. A MIXTURE OF LIF AND CAF SUB2 OR LIF AND NA SUB3 ALF SUB6 IS THE BEST SAFETY EXPLOSIVE ADDITIVE. THE FLAMMABILITY OF EXPLOSIVES RISES WITH GREATER ADDITIVE PARTICLE SIZE. IT IS ALSO POSSIBLE TO CONSIDERABLY REDUCE THE FLAMMABILITY OF EXPLOSIVES CONTAINING HEXOGEN AND NITROGLYCERIN BY THE ADDITION OF DIAMMONIUM PHOSPHATE AND LIF.

UNCLASSIFIED

USSR

UDC: 519.2

KOZAK, Josef

"The Method of Weighted Least Squares With Weights Equal to Pascal Distribution Probabilities"

Ekon.-mat. obz. (Mathematical Economics Review), 1972, 8, No 4, pp 426-433 (from RZh-Kibernetika, No 5, May 75, abstract No 5V395 by the author)

Translation: The paper deals with the feasibility of using Pascal distribution probabilities as weights in the method of weighted least squares.

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USSR

UDC: 621.373:530.145.6

KOZAK, O. V., PASECHNIK, I. L.

"Investigation of an Intense Quasistationary Discharge Plasma in a Magnetic Field"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems of Low-Temperature Plasma Physics--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 206-209 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1E186)

Translation: The paper is a report on the results of an experimental study of a dense plasma with charge concentration of 10^{12} - 10^{15} cm^{-3} created by an intense quasistationary cold-cathode discharge in a magnetic field with a strength of up to 5,000 oersteds. A study was made of the radial distribution of plasma density N_e and electron temperature T_e under various experimental conditions. The diffusion coefficient is found as a function of the magnetic field by comparing experimental and theoretical relationships for $E = N(r)$. Two illustrations, bibliography of six titles. Resumé.

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USSR

UDC 632.95

YUSUPOV, M. M., KOZAK, R. A., and ROZHKOVA, N. K.

"Synthesis of N-Ethyl-S-alkylthiobenzothiazolium Borofluorides"

Sintez Borftoridov N-Etil-S-alkiltiobenzotiazoliya [English Version Above], Tashkent, 1971, 4 pages, (Translated from Referativnyy Zhurnal, Khimiya, No 9, 1972, Abstract No 8 N574 Dep. by the Author's).

Translation: N-Ethyl-S-alkylthiobenzothiazolium borofluorides were manufactured by the interaction of the corresponding S-alkylthiobenzothiazoles with triethyloxonium borofluoride as part of the continuing search for new defoliant and studies of the dependence of defoliant activity on structure.

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USSR

UDC: 621.372.01-503.2

KOZAKOV, M. I.

"An Investigation of Coupled Circuits"

Uch. zap. Vladimir. Gos. ped. in-t (Scientific Notes of Vladimir State Pedagogical Institute), 1971, 32, pp 75-78 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A115)

Translation: The paper presents the results of an experimental study of a system of two tank circuits with inductive and capacitive coupling on radio frequencies. A special case of such a system in which the coupling coefficients are equal, where the presence of coupling does not change the frequencies of oscillations in the composite system, is considered in papers by L. I. Mandel'shtam and S. P. Strelkov. Identical loops with a Q of 100 and a normal mode of 750 kHz were experimentally studied. The normal mode is considered as a function of mutual inductance, and it is shown that a characteristic change in the resonance properties of the system is observed with large coefficients of inductive coupling. It is mentioned that the investigated properties of the system could be used in automation and radio engineering. For instance if resonators with induc-

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KOZAKOV, M. I., Uch. zap. Vladimir. gos. ped. in-t, 1971, 32, pp 75-78

tive and capacitive coupling were to be used in multicavity klystrons, considerable tuning of the resonators would be possible under certain conditions by changing the coupling capacitance. Use of a large tuning spread is also possible in coupled systems based on microwave strip lines. Five illustrations. Ye. R.

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KOZAKOVA, A. G.

SO:IPRS 55402
18 June 71

UDC: 614.88(47-21)

EXPERIENCE IN ORGANIZING HOSPITALIZATION AND HOSPITAL PHASES OF EMERGENCY SERVICES IN A LARGE INDUSTRIAL CITY

(Article by A. G. Kozakova, ^{Senior Specialist} ~~Senior Specialist~~ Health)

Article by A. G. Kozakova, ^{Senior Specialist} ~~Senior Specialist~~ Health, Ministry for Municipal Department of Public Health, Moscow, ~~500000~~ ¹²⁵⁰⁰⁰ ~~Zhukovskiy~~ ^{Novokosynskiy} ~~oblast'~~ ^{oblast'}, Russian, No 5, 1971, submitted 20 October 1970, pp 17-21)

The emergency service plays an extremely important part in the system of Soviet public health services. In no other nation of the world has this form of aid to the population been developed on the enormous scale it has in the USSR.

In the last few years, public health agencies have instituted a number of measures directed toward improving emergency services. Organization thereof is today one of the most important problems in Soviet public health service.

Until recently not enough attention was given in the special literature and official documents to the emergency service in the general public health system and especially to its links with other characteristically public institutions. It is only with the decision of the Board of the Ministry of Health dated 31 January 1968 and the order of the USSR Minister of Health, No 104, dated 6 August 1968, that this matter has been clarified, and organization of emergency aid was defined as an extremely important link in the general public health system. The organic tie between emergency services and other forms of medical aid, as spelled out by order No 104 of the USSR Minister of Health, broadening of the very concept of "emergency aid" and the inclusion therein of all forms of emergency services at all of its levels, fit in the best of the manner to the specialized institutions) are the only correct way toward further development of improvement of emergency services.

Submitted for purposes of discussion to Editor's note.

Electrochemistry

USSR

UDC 621.357.1.035.14.661.418

KOZANEVICH, Z. Ya.**"Electrolysis Bath as an Object with Distributed Parameters"**

Khim Tekhnologiya Nauch-proizv Sb. [Chemical Technology, Scientific and Production Collection, No 5, 1971, pp 49-52. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4L242 by Ye. I. Khrushcheva).

Translation: In order to decrease the gradient of conductivity along a chlorine bath with an Hg cathode, decrease uneven anode wear and equalize the current mode, a mathematical model of an electrolysis bath as an object with even distribution of concentration and temperature has been developed. Using this model, it has been established that the change in NaCl concentration in the VGKR-101 bath is about 40 kg/m³, temperature 20°, specific conductivity 8 ohm⁻¹.m⁻¹. The increase in conductivity at the "hot" end of the bath causes an increase in the current through the "hot" end and uneven anode wear. These defects can be partially eliminated by a new method of feeding fresh brine into the bath. The brine is fed in through a pipe in the electrolyte at the "hot" end of the bath. As it passes through the pipe, the fresh brine is heated by heat exchange with the electrolyte and it enters the electrolyzer at a higher temperature. This reduces the temperature gradient in the electrolysis zone. The temperature drop along the bath is decreased by approximately 6°, equalizing the conductivity and current load.

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UDC 621.317.335.3

USSR

KOZAR', A. I., KHIZHNYAK, N. A.

"Problem of Exact Measurement of Large Values of the Dielectric Constant of Ferroelectrics"

Radiotekhnika. Resp. mezhd. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 118-128 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A303)

Translation: The method of integral equations is used to solve the internal problem of electrodynamics of scattering of electromagnetic waves in dielectric spheres with a large value of ϵ in a rectangular wave guide. On the basis of solution of the problem a new method of measuring large values of the dielectric constant ϵ of ferroelectrics with high accuracy is proposed. It is demonstrated that this method can be used for precision measurements of ϵ in a wide frequency and temperature range. There are 4 illustrations and a 6-entry bibliography.

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USSR

UDC 576.368.8

SHELUD'KO Yu. M. and KOZAR, F. Ye.

"The Intracellular Development of Phytopathogenic Viruses"

Abstract: This work is a survey of modern data on the intracellular development of phytopathogenic viruses. Facts which give an idea of the various stages of this process are considered: penetration of the source of infection into the cell, release of viral RNA from the coat proteins, transportation of viral RNA that has passed into the cell, the place of synthesis of viral RNA and protein, and the assembling of the viral particles and their migration between cells. The role of various cellular organelles in the biosynthesis of plant viruses and the changes in the ultrastructure of the plant cell under the influence of a viral infection are examined. The following problems are also considered: the place and form of localization of viral masses in the cell, pathological changes in cellular organelles, and the ultrastructure of X-bodies and other inclusion bodies. To a considerable extent the authors present their own previously published electron microscope research on ultrastructural changes in the plant cell caused by the replication of some phytopathogenic viruses.

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JPRS 50345

28 February 1973

Kozak M.

FOURTH ALL-UNION CONFERENCE ON SPACE BIOLOGY AND MEDICINE

Article by N. Gurevskiy, doctor of medical sciences and M. Kozak, candidate of medical sciences, Moscow, Meditsinskaya Gazeta, Russkaya, 19 January 1973, 1-3.

The Fourth All-Union Conference on Space Biology and Medicine was held at Veliky in accordance with a resolution of the Directorate, Physiology Division, USSR Academy of Sciences. The conference was opened by G. Gagarin, Corresponding Member USSR Academy of Sciences.

In his report he summarized the principal results of developments in space biology and aerospace medicine during the three years which have elapsed since the Third All-Union Conference. He noted that specialists are solving complex problems in space conquest and the medical support of space flights. A total of 236 reports were presented at three plenary and 24 section meetings.

An analysis of the materials reveals an increase in the relative percentage of investigations in the field of aerospace medicine directed to solution of problems in the solution of an atmosphere aboard flight vehicles. Of practical importance to this problem is combined with its great theoretical and scientific importance. The extensive experimental data presented at the conference enriched our ideas concerning the physiology of respiration and blood circulation, on the toxic effect of oxygen, the effect of inert gases, etc.

P. Grammatitskiy presented a report providing a general review of the physiological basis for forming a rational atmosphere in the cabins of spacecraft. He noted that the principal problems involving maintaining a high level of performance by cosmonauts during a prolonged spaceflight and an increase in its stability under external conditions during emergency

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situations. Second, it is very important to prevent decompression disorders at times when cosmonauts emerge into open space in space suits.

G. Gurvich, T. Kartera, V. Barancy, and others described in their reports that not only flight activity, but also high neuromuscular stress under terrestrial conditions substantially change body reactivity and functioning of other-MSA breathing.

At the conference great attention was devoted to the problems involved in the medical support of prolonged manned spaceflights. The center of attention is focused on problems in functional diagnosis, expert medical examinations of crews in flightcraft, and the selection and training of cosmonauts. Three special section meetings were held on these questions.

An enlarged discussion was evoked by a report of I. Kozlov that concerned the intimate mechanisms of body reactions to some agents in dependence on diurnal rhythm. These problems are attracting the attention of a broad range of clinical specialists and physiologists.

G. Krupina, et al. presented the basic directions in work on prediction of the possible functional changes and assessed during spaceflights of a definite duration. In the discussions on the matter of selecting and training cosmonauts the author pointed out the desirability of also incorporating into the flight medical support system measures for preventing traumatic damage and rendering in-flight assistance.

A report by Yu. Belitskiy on the influence of space factors on the indices of the hemogram of flight participants evoked considerable interest. The collected data on changes in hematological indices in healthy persons under normal conditions during different phases of the solar activity cycle are useful in determining the normal figures for the hemogram of healthy persons; this is important for selecting donors and in occupational screening.

The system for medical support of space flights is always a broad spectrum of preventive measures for dealing with the unfavorable influence of flight factors upon health prior to the flight and during it. In connection with these issues in flight duration, there are new medical problems to be discussed at the conference.

USSR

UDC 612.833.81

KOZAROVITSKIY, L. B., PETROV, O. P., and STARODUBTSEV, Yu. D., Department of Physiology of Higher Nervous Activity, Moscow State University

"Formation of a Food-Obtaining Reflex to a Chain Stimulus in the Dolphin and Some of Its Behavioral Characteristics"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 4, 1971, pp 700-704

Abstract: Report on the dynamics of formation of a conditioned reflex to a chain acoustic stimulus (3 tones each sounded for 2 sec) in an unrestrained adult female Black Sea dolphin (*Tursiops truncatus* Mont). At the signal the animal swam to a lever and was immediately rewarded with a fish if it pressed the lever correctly. The reflex was formed to the complex stimulus as quickly as to a similar simple reflex and the process was approximately the same as in other higher animals. The location of the dolphin at the time the stimulus was presented and especially the position that it took under the lever served as unique signals that had an effect on the animal's conditioned activity. Experiments were performed with another dolphin to study the reciprocal influence of food and play reactions, competitive relations, and capacity for imitation.

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USSR

KOZDOBA, L. A.; CHUMAKOV, V. L. (Institute of Engineering Heat Physics,
~~Ukrainian~~ Academy of Sciences)

"Use of the Method of a Small Parameter in the Solution of Quasilinear Problems of Nonstationary Thermal Conductivity with Significant Nonlinearities"

Moscow, *Teplofizika Vysokikh Temperatur*; May-June, 1971; pp 557-62

ABSTRACT: The authors present a method of solving quasilinear problems of nonstationary thermal conductivity by the method of a small parameter when a preliminary approximation of the laws for the variation of the thermo-physical characteristics make it possible to linearize a problem in such a way that a perturbation would be weak for any significant nonlinearities. Such an approach extends the possibilities of the perturbation method to the class of problems with significant nonlinearities. An example is given which illustrates the method and shows that the error in the solution after the first approximation obtained by the perturbation method, compared with the numerical solution, is fully compatible with engineering practice.

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1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--METHODS OF ELECTRIC MODELLING OF MOVABLE TEMPERATURE FIELDS -U-

AUTHOR--KOZDOBA, L.A.

COUNTRY OF INFO--USSR *K*

SOURCE--INZHENERNO-FIZICHESKIY ZHURNAL, 1970, VOL 18, NR 1, PP 167-171

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TEMPERATURE DISTRIBUTION, TEMPERATURE GRADIENT, ELECTRONIC
CIRCUIT MODELING, ELECTRONIC SIMULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1701

STEP NO--UR/0170/70/018/001/0167/0171

CIRC ACCESSION NO--AP0118679

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118679

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SCHEME OF EXPERIMENTAL VOLUME (A) AND KNOB OF R GRID (BAR U) FOR ELECTRIC MODELLING OF SOLUTION OF EQUATION (2). SUMMARY EXPRESSIONS (16) ALLOW CALCULATION OF THE PARAMETERS OF R GRID OF ELECTRIC MODEL FOR SOLUTION OF EQUATIONS OF UNSTEADY HEAT CONDUCTION WITH VARIABLE HEAT SOURCES WRITTEN IN THE MOVABLE COORDINATE SYSTEM AT BOUNDARY CONDITIONS OF THE I-IV KINDS. SUBSTITUTION USED IN THE PAPER SIMPLIFIES THE MODELLING METHODS IN COMPARISON WITH THE METHODS PROPOSED IN (1).

UNCLASSIFIED

USSR

UDC: 621.375.82

KOZEL, S. M. and KUZNETSOV, Ye. P.

"Effects of Spontaneous Radiation in High-Amplification Lasers With Wavelength of 3.39 Microns"

Tr. Mosk. fiz.-tekh. in-ta (Transactions of the Moscow Physico-Technical Institute) 1971(1972), pp 82-91 (from RZh—Fizika, No 4, 1973, Abstract No 4D1234)

Translation: The effect of spontaneous radiation on the characteristics of a coherent light amplifier with a high amplification factor is considered. It is shown that the linear mode of amplification is determined by the condition of smallness of the external signal compared with the amplified spontaneous radiation in each point of the amplifier. A computation is made of the distribution of the characteristics of the active medium for the case of the comparable quantities of uniform and nonuniform broadening of spectral lines. Relationships are given for the amplification factor along the tube length for various lengths of the amplifier and for the amplification spectrum. Results of the computation are compared with the experimental data obtained for a He-Ne laser (3.39 μ). Ye. A.

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USSR

UDC: 621.378.525

KOZEL, S. M. and KUZNETSOV, Ye. P.

"Nonlinear Interaction of a Spontaneous Radiation Field With the Active Medium of a Gas Laser With High Amplification"

Gor'kiy, Izvestiya VUZ--Radiotekhnika, No 10, 1972, pp 1486-1492

Abstract: The spontaneous radiation of laser quantum amplifiers, abnormally high where the amplification is high, is explained by its nonlinear interaction with the active medium. The result is nonuniform density distribution of the inverse population and thus a reduction in the amplification factor and distortion of the frequency characteristic. The purpose of the present paper is to investigate theoretically the phenomenon of the spontaneous radiation field interacting with the laser medium on the basis of the semi-classical method. The results of a numerical calculation of the problem on the computer for a laser using a He-Ne mixture and operating at a wavelength of 3.39 microns are also presented. The analysis begins with a system of equations describing the parameter distribution of the laser, using a simple model of the device in which the spontaneous radiation field is considered as a set of

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KOZEL, S. M., et al, Izvestiya VUZ--Radiotekhnika, No 10, 1972,
pp 1486-1492

noncorrelated plane waves propagated along the laser axis, with an attenuation factor to account for the angular dispersion of the field and the multiple reflections from the walls. It is noted that neglecting this interaction between the spontaneous radiation and the medium may lead to substantial errors in computing the laser characteristics and in the treatment of experimental results. The authors express their thanks to A. S. Gorinov for the computations and to I. P. Mazan'ko and A. V. Shelagin for their useful comments.

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USSR

BAKANINA, L. P.; KOZEL, S. M.; LOKSHIN, G. R. (Moscow Physicotechnical Institute)

"Photodetection of Coherent Radiation Scattered by a Moving Diffusion Surface
by a Receiver with a Finite Aperture"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy: Fizika; July, 1971; pp 52-8

ABSTRACT: The question of the effect of the size and shape of the aperture of a receiver on the spectral properties of a photocurrent, with photodetection of scattered coherent radiation, is explored theoretically and experimentally. It is shown that this effect is substantially different in near and distant wave regions. Equations are obtained for the photocurrent spectra with various sizes of receiver apertures.

The article includes 24 equations and two figures. There are 8 references.

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1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SPECTRAL CHARACTERISTICS OF A RANDOM INTENSITY FIELD OBTAINED
DURING SCATTERING OF COHERENT RADIATION ONTO A MOVING DIFFUSE SURFACE
AUTHOR--(03)-ANISIMOV, V.V., KOZEL, S.M., LOKSHIN, G.R.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, 1970, PP 539-545

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER RADIATION, LIGHT SCATTERING, LINE INTENSITY

CONTROL MARKING--NO RESTRICTIONS

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UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0123308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF AN EXPERIMENTAL STUDY OF CERTAIN STATISTICAL PROPERTIES OF A RANDOM INTENSITY FIELD PRODUCED DURING SCATTERING OF LASER RADIATION BY A MOVING DIFFUSE SURFACE.

UNCLASSIFIED

JSSR

UDC 533.916

ROZHKOV, V. V. and KOCEL, V. A.

"Motion of Charged Particles in a Random Electric Field"

Kiev, Ukrainskiy Fizicheskii Zhurnal, vol. 16, No. 6, June 1971,
pp 1033-1034

Abstract: The problem of the motion of charged particles in stochastic electric fields is pertinent to several branches of physics such as astrophysics, plasma physics, and electronics. In this short theoretical study, the particles are assumed to have the same charge, the same mass, and to move under the influence of a random electric field and in a constant magnetic field at right angles to the particle motion. The analysis begins with a presentation of the equations for the orthogonal components of the electric field with the simplifying assumption that the nonrandom component is zero and that the electric field is a function of time only. Since this problem is connected with the problem of the emission of thermoelectrons from a plasma-beam system, the authors use the method developed by V. V. Rozhkov and given in earlier articles by him (ZhTF -- Journal of Theoretical Physics -- 39, 1969, p 1360; UFZh -- Ukrainian Journal of Physics -- 12, 1968, p 1712). Notice that the asymptotic value of the velocity

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ROZHKOV, V. V. et al, Ukrainskiy Fizicheskiy Zhurnal, vol. 16, No. 6, June 1971, pp 1033-1034

energy of a particle, as $t \rightarrow \infty$, and the diffusion coefficient of the particles across the external magnetic field are of interest, the authors derive the equation for each. They express their gratitude to A. I. Akhiezer and R. V. Polovin for their interest in the work. They are connected with the Physico-Technical Institute of the Ukrainian Academy of Sciences at Kharkov.

2/2

USSR

UDC: 621.374.75(088.8)

MEL'NIKOV, V. F., SEMUTIN, V. S., KOZEL'CHIKOV, V. V., and
KOROLEV, B. G.

"Balanced Diode Regenerative Comparator"

Avt. sv. SSSR (Author's Certificate USSR) Class 21a¹, 36/19, (H 03
K 5/20), No. 272308, Application 1.08.67, Publication 10.09.70
(from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A355E)

Translation: A balanced diode regenerative comparator, containing
a comparison circuit of diodes and a blocking oscillator using a
transistor triode. The comparator is distinguished in that, for
the purpose of raising the duration of the output pulse, an addi-
tional winding of positive feedback, connected through a diode to
the transistor base, is introduced. E. L.

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USSR

UDC: 621.396.6.019.3

SHEVTSOV, G. A., KOZELETSKIY, E. I.

"Selecting the Duration of Industrial Preoperation of Radio Electronic Equipment"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry-- collection of works), Vyp. 4, Moscow, 1970, pp 37-39 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7V267)

Translation: The authors consider the possibility of determining the optimum duration of industrial pre-operation of radio equipment before putting it into production. Graphic material is given which may be used in production practice.
Resumé.

1/1

USSR

UDC 615.216.6:547.521.6:012.1

YEMELO, I. A., GUSEVA, A. YA., ABLITOKAYA, E. V., and NYCHEN, I. N.,
All-Union Scientific Chemical-Pharmaceutical Research Institute named G.
Orzhonikidze, Local Branch, Sverdlovsk

"Synthesis of 4[18]-Quinolone Derivatives. II. 1-(N',N'-dialkylaminoalkyl)-4-
quinolones and Their Quaternary Salts"

Moscow, Khimiko-Farmatsevticheskii Zhurnal, Vol 6, No 4, Apr 72, pp 25-30

Abstract: A mixture of 1.45 g 4-hydroxyquinoline, 4.74 g β -diethylaminoethyl chloride hydrochloride (obtained from diethylaminoethanol and ethyl chloride), and 50 ml absolute ethanol was refluxed for 10 hrs. The mixture was cooled and a sodium ethoxide solution prepared from 1 g sodium and 15 ml ethanol was added; the mixture was refluxed again for a long time, filtered, and evaporated. The residual oil was dissolved in ethanol and acidified with ethyl chloride, precipitating the crystalline dihydrochloride of 1-(β -diethylaminoethyl)-4-quinolone, m.p. 166-169° (I). Similarly, the 1-(β' -dimethylaminoethyl)- (II), and 1-(γ -diethylaminoethyl)-4-quinolone (III), m.p. 246-250° and 211-212°, respectively, were obtained. To obtain the di-(methiodides) of these compounds (I), (II), or (III) were dissolved in benzene, methyl iodide was added, the mixture was kept for 5 hrs at 35-40°, cooled, and benzene was evaporated. Lit. 1/2

USSR

KOZELLO, I. A., et al., Khimiko-Farmatsevticheskly Zhurnal, Vol 6, No 4, Apr 71,
pp 28-30

residual oil was suspended in alcohol, and the solid formed was filtered at
60° in the dark. The product -- di-(methiodides) of (I), (II), and (III) melt
at 227-28°, 204°, and 205° respectively.

USSR

UDC 669.15'24-194:620.17

BERESNEV, G. A., KOZEL'SKIY, A. V., LUK'YANOV, V. V., MALAFIYEV, A. S. and PERKAS, M. D.

"High-Strength Carbon-Nickel Steel"

Moscow, Metallovedeniye, No 9, Sep 72, pp 64-66

Abstract: The mechanical properties of C-Ni steels with 10-14% Ni were investigated. The chemical compositions of the steels are as follows:

	C	Ni	Mo	W	V	Co	Si	Mn	S+P
UN-10	0.32	10	----	----	----	----	0.15	0.20	0.012
UN-12	0.32	12	----	----	----	----	0.12	0.21	0.010
UN-14	0.33	14	----	----	----	----	0.17	0.21	0.011
UNS	0.40	14	0.35	0.55	0.4	----	0.10	0.80	0.040
UNS-20	0.17	14	0.38	0.60	0.4	----	0.11	0.05	0.020
UNS-20K	0.17	13	0.22	0.43	0.15	5.5	0.10	0.06	0.020
UNS-50K	0.54	10	0.68	----	0.3	4.3	0.10	not determined	

Ingots weighing 30 kg were vacuum-induction melted and rolled into strip 5 mm thick, which was subjected to normalization at 950°C and high-temperature tempering at 500°C. In the hardened state, the UN and UNS steels have high strength and ductility. The highest strength of UN steels can be achieved by quenching
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USSR

REBRESNEV, G. A., et al., Metallovedeniye, No 9, Sep 72, pp 64-66

from 675°C. Also, the impact strength is lower than after quenching from 750°C. High-nickel steels with a tensile strength of 190-223 kgf/mm² had an impact strength of 5-8.5 kgf-m/cm². UNS-50K steel had the highest strength but less elongation and reduction in area. Alloying C-Ni steels with Mo, W, and V (0.2-0.5%) significantly increases their resistance to tempering, while alloying with cobalt causes additional strengthening with $\Delta\sigma \approx 20$ kgf/mm² at 5.5% Co, identical in magnitude in the hardened and tempered state. The increased strength as a result of increased carbon content is high only in the hardened state or after low-temperature tempering. The change of ductility properties with increased strength shows that UNS and UNS-50K C-Ni steels have an elongation of 7-15% and reduction in area of 30% for a strength of 200 kgf/mm². For UNS-50K steel adequate ductility is provided by low-temperature tempering, while very high strength (265-280 kgf/mm²) is preserved. All investigated steels had a fine granular structure, which contributes significantly to their high mechanical properties. 2 figures, 2 tables.

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1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALL ROUND ASSESSMENT OF PRODUCT QUALITY -U-
AUTHOR--(02)-BARBASH, S.M., KOZENKO, A.V. 
COUNTRY OF INFO--USSR
SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 58-61
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--QUALITY CONTROL, INDUSTRIAL STANDARD, INDEX, PRODUCTION
STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0114

STEP NO--UR/0422/70/000/005/0058/0061

CIRC ACCESSION NO--AP0122380

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD SUGGESTED IN THE
ARTICLE PERMITS THE QUALITY LEVEL OF A PRODUCT TO BE ASSESSED WITHOUT A
COMPLETE KNOWLEDGE OF THE ABSOLUTE VALUES OF INGREDIENT INDICES. BIBL.
10.

UNCLASSIFIED

USSR

UDC 669.721.5.884.018.28.29

KOZENKO, P. S., GORSHKOV, A. A.

"Study of Hot Brittleness of Magnesium-Lithium Alloys"

Usadochn. Protsessy v Splavakh i Otlivkakh [Shrinkage Processes in Alloys and Castings -- Collection of Works], Kiev, Nauk. Dumka Press, 1970, pp 306-308. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, 1688 by the authors).

Translation: Results are presented from studies of hot brittleness of Mg-Li alloys; recommendations are given for its reduction. 3 figs; 5 biblio refs.

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USSR

UDC 669.721*834.042.6

KOZENKO, P. S., GORSHKOV, A. A.

"Shrinkage of Magnesium-Lithium Cast Alloys"

Usadochn. protsessy v splavakh i otlivkakh -- V sb. (Shrinkage Processes in Alloys and Castings -- collection of works), Kiev, Naukova Dumka Press, 1970, pp 336-337 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G222)

Translation: A study was made of the linear shrinkage of Mg alloys with Li in the β -solid solution region as a function of the alloying additives. The linear shrinkage of the indicated alloys is close to the shrinkage of standard alloys based on Mg.

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USSR

UDC: 62-52

KOZEYEV, V. A. and YUSUPOV, R. M.

"An Algorithm of the Gradient Method for Synthesizing Nonlinear Control Systems"

Leningrad, Priborostroyeniye, No 5, 1972, pp 34-38

Abstract: To begin their search for an algorithm of the gradient method for designing nonlinear control systems, the authors write a system of nonlinear differential equations describing the perturbed motion of an automatic control system. Having developed an expression for the optimality criterion, they then use the gradient method for optimizing the parameters in the system of differential equations, first finding the criterion by the method of B. G. Dostupov and then finding its gradient. A formula for the time required by an electronic computer for synthesizing optimal nonlinear systems is obtained, and the authors show how that time can be reduced by the use of the gradient system for developing the partial linearization method in the algorithm for synthesizing nonlinear stochastic control systems. An example of the use of the algorithm is provided.

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USSR

UDC: 517.946

KOZHAGULOVA, S. O.

"First Boundary Value Problem for an Equation With Discontinuous Coefficients"

V sb. Differents. uravneniya i ikh primeneniya (Differential Equations and Their Applications--collection of works) Alma-Ata, "Nauka," 1970, pp 31-38 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B240)

Translation: A proof is given for the existence of a solution of the boundary value problem for the equation

$$\frac{\partial}{\partial \xi} \left(a \frac{\partial u}{\partial \xi} + b \frac{\partial u}{\partial \eta} \right) + \frac{\partial}{\partial \eta} \left(b \frac{\partial u}{\partial \xi} + c \frac{\partial u}{\partial \eta} \right) - \frac{\partial^2}{\partial \eta^2} \left(d \frac{\partial^2 u}{\partial \eta^2} \right) = 0,$$

with sufficiently smooth coefficients with discontinuities of the first kind along the straight line $\eta = 0$, where it satisfies the defined conjugation conditions. A proof is also given of the existence of the boundary value problem for the equation

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USSR

KOZHAGULOVA, S. O., sb. Differents. uravneniya i ikh primeneniye, Alma-Ata, "Nauka," 1970, pp 31-33

$$\frac{\partial}{\partial \xi} \left[a \left(\frac{\partial u}{\partial \xi} - \varphi' \frac{\partial u}{\partial \eta} \right) \right] - \varphi' \frac{\partial}{\partial \eta} \left[a \left(\frac{\partial u}{\partial \xi} - \varphi' \frac{\partial u}{\partial \eta} \right) \right] - \frac{\partial^2}{\partial \eta^2} \left(a \frac{\partial^2 u}{\partial \eta^2} \right) = 0$$

in the case of a fairly smooth curve for the line of discontinuity of the coefficients, with the defined conditions of conjugation with it. Author's abstract

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USSR

UDC 542.91+661.718.1

BARABASH, N. D., DZHUNDUBAYEV, K. D., PORTKOVA, G. V., and KOCZHAKHMETOVA, R. I., Institute of Organic Chemistry, Academy of Sciences Kirgiz SSR

"Synthesis of New Ammonium Salts of Derivatives of Phosphonic Acids"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 2, Mar-Apr 72, pp 61-62

Abstract: On reacting the aminophosphonate $(EtO)_2P(=O)-\overset{Me}{CH}-NEt_2$ (I) with alkyl halides RX in a sealed tube for 3-5 hrs at $110-150^\circ$, O,O-diethylphosphonoethyl (N,N,N-diethylalkyl)ammonium halides $[(EtO)_2P(=O)-\overset{Me}{CH}-NEt_2]^+ X^-$ (II) with R=Et, X=Br ($d^{20}_{40} 1.1700$, $n^{20}_D 1.4660$); R=Pr, X=Br ($d^{20}_{40} 1.1654$, $n^{20}_D 1.4800$); R=Pr, X=I ($d^{20}_{40} 1.2460$, $n^{20}_D 1.4804$); and R=Am, X=Br ($d^{20}_{40} 1.0986$, $n^{20}_D 1.4565$) were obtained in the form of thick oils that crystallized on standing. I was prepared by the methods described by E. K. Fields (Fields?, J. Am. Chem. Soc., 74, 1528, 1952, and G. M. Kosolapoff, J. Am. Chem. Soc., 70, 1971, 1948. The newly synthesized compounds II are of interest because many phosphonylammonium halides exhibit physiological activity to a greater

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USSR

BARABASH, N. D., et al., Izvestiya Akademii Nauk Kirgizskoy SSR, No 2,
Mar-Apr 72, pp 61-62

or lesser extent (cf. N. N. Mel'nikov, "Khimiya Preditel'stvo" - Chemistry of
Pesticides -, Khimiya, Moscow, 1968, and USSR Author's Cert. 179315, Byull.
Izobret. , No 5, 1966). The work described is a continuation of research in
an earlier stage of which (Barabash et al., Izv. AN Kirgiz. SSR, No 1,
1972) some phosphorylammonium halide analogs were synthesized.

2/2

USSR

UDC 546.26:118.07

RYSKULOV, T., BEYSHEKEYEV, ZH., KOZHAKHMETOVA, R., DZHUNDUBAYEV, K., and
ASHIMBAYEVA, B., Institute of Organic Chemistry, Academy of Sciences Kirgiz.
SSR

"Organophosphorus Derivatives of Piperazines"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 4, Jul-Aug 73, pp 47-49

Abstract: Reaction of monosubstituted amyl- and benzylpiperazines with phosphonic acid dichlorides and phenylamidophosphoric acid chloride in presence of dry triethylamine yields novel amidophosphonates and amidophosphates. All of the amidophosphonates are crystalline products; the di(1-amylpiperazinyl-4)phenylamidophosphate is an oily product which can be isolated by conversion to a picrate. Another possible synthetic method for amidophosphates is based on the reaction of monoamylpiperazine with dialkyl(aryl)phosphoric acid chlorides in benzene and in presence of dry triethylamine.

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USSR

UDC 542.91+661.718.1

DZHUNDUBAYEV, K. D., BEYSHEKEYEV, Zh., ALDASHEVA, A., ~~KOZHAKHMETOVA, R. I.~~
SULAYMANOV, A., TOKTOBEKOVA, T., Institute of Organic Chemistry, Academy of
Sciences of the Kirgiz SSR

"Synthesis of Mixed Phosphites Based on 10- β -Hydroxypropyl(ethyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 337-340

Abstract: The authors studied the reaction of 10-(β -hydroxypropyl)phenothiazine and 10-(β -hydroxyethyl)phenothiazine with alkyl(aryl)phosphorous acid dichlorides, phosphorus trichloride and dimethylamidophosphorous acid dichlorides:

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USSR

UDC 542.91+661.718.1

BEYSHEKEYEV, ZH., DZHUNDUBAYEV, K., ALDASHEVA, A., KOZHAKHMETOVA,
R. I., TOKTOBEKOVA, T.

"Phosphorylation of 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 10, 1971,
pp 2207-2209

Abstract: In a continuing search for physiologically active phenothiazine derivatives, a study was made of the reaction of 10-(2,3-epoxypropyl)phenothiazine with β -alkoxyvinylphosphonic anhydrides, thio- and dithioanhydrides. A series of previously unknown crystalline heterocyclic esters were prepared by the cited reaction. The reaction with thioanhydrides gave the esters with a 1,2,3-oxaphosphathiazole ring structure, as indicated by their IR spectra. The yields, mp, and elemental analysis data of the products are tabulated and their preparation is described.

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USSR

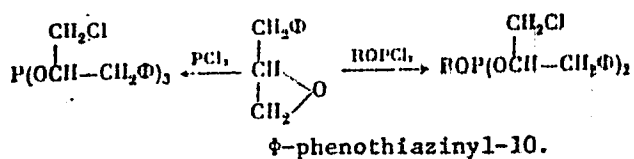
UDC 547.26'118

DZHUNDUBAYEV, K. D., ALDASHEVA, A., BEYSHEKEYEV, Zh., KOZHAKHMETOVA, R. I.
 Institute of Organic Chemistry, Academy of Sciences of the Kirgiz SSR

"Synthesis of Phosphites Based on 10-(2,3-Epoxypropyl)phenothiazine"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

Abstract: Neutral phosphites are synthesized by the reaction of 10-(2,3-epoxypropyl)phenothiazine with phosphorus trichloride and various alkyl-(aryl)phosphorous acid dichlorides. The reaction takes place in the presence of small quantities of hydrochloric acid:



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USSR

DZHUNDUBAYEV, K. D., et al., Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 340-342

The reaction with phosphorus trichloride yields tri[1-chloro-3-(phenothiazinyl-10)propyl-2] phosphite, while the acid dichloride gives di[1-chloro-3-(phenothiazinyl-10)propyl-2] alkyl(aryl) phosphites. The structure of the compounds was identified by IR-spectroscopy.

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USSR

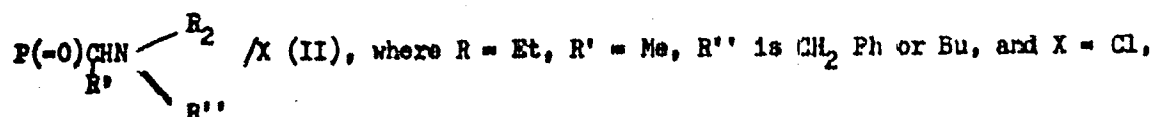
UDC 542.91+661.718.1

BARABASH, N. D., DZHUNDUBAYEV, K. D., KOZHAKHMETOVA, R. I., and FORTNOVA, G. V.,
Institute of Organic Chemistry, Academy of Sciences Kirgiz SSR

"Synthesis of O,O-Diethylethylphosphonyl/N,N,N-diethylaryl(alkyl)/ammonium
Halides"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan-Feb 72, p 60

Abstract: O,O-Diethylethylphosphonyl/N,N,N-diethylaryl(alkyl)/ammonium halides
(II) were prepared by the reaction $(RO)_2P(=O)CHNR_2$ (I) + $R''X \rightarrow (RO)_2$



Br, I. Compounds I were synthesized by known methods. Substances II may be of
value as antihelminthics, because salts of quaternary ammonium bases exhibit a
wide range of activity of this type. Introduction of a phosphoric acid ester
residue will presumably increase the physiological activity of compounds of
this class.

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1/3 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SOLUBILITY OF CERIUM IN COPPER AND ITS EFFECT ON THE PROPERTIES OF
BRASSES -U-
AUTHOR--DUISEMALIYEV, U.K., PRESNYAKOV, A.A., SAPAROV, K.S., KOZHAMBERDIN,
N.A. **K**
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 36-8, 43
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERIUM CONTAINING ALLOY, COPPER ALLOY, BRASS, ALLOY
DESIGNATION, FERROCERIUM, METAL MELTING, PLASTICITY, TENSILE STRENGTH,
ELECTRIC RESISTANCE/(U)LS642 BRASS, (U)LS991 BRASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1938/1342 STEP NO--UP/0129/70/000/002/0036/0043
CIRC ACCESSION NO--AP0106019
UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106019

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CU ALLOYS CONTG. CE 0.03-0.5PERCENT WERE MELTED 3 TIMES IN AR, THE SPECIMENS OBTAINED WERE SEALED IN EVACUATED QUARTZ AMPULS AND ANNEALED AT 800DEGREES WITH SUBSEQUENT COOLING BY 100DEGREES EVERY 24 HR AND COOLED WITH A FURNACE FROM 400DEGREES. MOREOVER, THE ANNEALED ALLOYS CONTG. CE 0.05PERCENT WERE HELD IN AMPULS AT 300, 500, AND 800DEGREES FOR 3 HR AND QUENCHED FROM THESE TEMPS. IN WATER. THE LS 64-2 AND LS 54-1 BRASSES (CU 63.7 AND 58.6; PB 1.75 AND 1.05PERCENT, RESP.) CONTG. FERROCERIUM 0.05-0.5PERCENT WERE INDUCTION MELTED UNDER A CHARCOAL LAYER, HELD IN THE MOLTEN STATE FOR 10 MIN, AND CAST INTO CU WATER COOLED MOLDS. CE IS SMALLER THAN OR EQUAL TO 0.1PERCENT CAUSES THE REFINEMENT OF CU STRUCTURE AND FORMS CU-CE SOLID SOLN. FURTHER INCREASE OF ITS CONCN. LEADS TO THE RPTN. OF THE 2ND CECU SUB6 PHASE IN FORM OF POINT INCLUSIONS. THIS INDICATES THAT THE MAX. SOLY. OF CE IN CU AT ROOM TEMP. IS 0.05PERCENT. THE METALLOGRAPHIC EXAMN. OF THE SPECIMENS QUENCHED FROM 300-800DEGREES SHOWED THE MAX. SOLY. OF 0.15PERCENT AT 800DEGREES. CE IMPROVES THE MECH. PROPERTIES OF CU BUT WHILE ITS ADDNS. UP TO 0.5PERCENT INCREASE THE TENSILE STRENGTH 22.5-5.3 KG-CM PRIME2, THE PLASTICITY (ELONGATION DELTA AND REDN. IN AREA PSI) INCREASES ONLY UP TO CE 0.1PERCENT (UP TO DELTA EQUALS 68, PSI EQUALS 82.5PERCENT) AND THEN RAPIDLY FALLS TO IS SIMILIAR TO 30PERCENT (PSI AND DELTA), AT 0.5PERCENT CE. THE ELEC. RESISTANCE OF ALLOYS INCREASES FROM IS SIMILIAR TO 1.75 TIMES 10 PRIME NEGATIVE6 TO IS SIMILIAR TO 2.25 TIMES 10 PRIME NEGATIVES OMEGA CM AT 0.5PERCENT CE. NO EFFECT OF FERROCERIUM ON THE BRASS STRUCTURE WAS NOTICED.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106019

ABSTRACT/EXTRACT--ITS ADDNS. MARKEDLY DECREASE PSI OF THE LS 64-2 BRASS AT 20-250DEGREES (FROM SIMILIAR TO 45 TO SIMILIAR TO 37PERCENT FOR 0 AND 0.5PERCENT FERROCERMIUM AT 20DEGREES), BUT BEGINNING AT 250DEGREES THE PSI VS. TEMP. CURVES FOR ALL ALLOYS ALMOST COINCIDE EXCEPT OF THAT FOR THE 0.05PERCENT FERROCERMIUM ALLOY THAT AT 400, 500, 600, AND 800DEGREES SHOWS PSI EQUALS 20, 9, 45, AND 32PERCENT, RESP., COMPARED TO SIMILIAR TO 5, 0-5, 0-5 AND 5-10PERCENT FOR OTHER ALLOYS. THE RESULTS OBTAINED FOR THE LS 59-1 BRASS SHOWED THAT MOST EFFECTIVE ARE THE FERROCERMIUM ADDNS. TOGETHER WITH THOSE OF NI, SI, AND MN. THIS ALLOY CONTG. FERROCERMIUM 0.15, NI 0.35, SI 0.11, AND MN 0.18PERCENT SHOWED TWO PLASTICITY MAX. OF 700 AND 850DEGREES (DELTA EQUALS 190 AND 170PERCENT, RESP., AND PSI EQUALS 100PERCENT). NEVERTHELESS, ITS PLASTICITY AT 20-500DEGREES, SIMILAR TO THAT OF THE LS 59-1 BRASS WITHOUT ADDNS., IS RATHER LOW (PSI 20-40PERCENT) AND SHOWED MIN. (20PERCENT) AT 100 AND 300DEGREES.

UNCLASSIFIED

Glass and Ceramics

USSR

UDC 666.1.535.37

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PUKO, R. A., PINAYEVA, M. M., KUZNETSOVA, V. V., KOZHAN, T. M., DEMIDOVICH, B. K., and KHOMENKO, V. S., Institute of Physics, Academy of Sciences, Belorussian SSR

"Luminescence of Terbium-Activated Glass"

Moscow, Neorganicheskiye Materialy, Vol. 9, No 10, Oct 73, pp 1805-1808

Abstract: Results are presented from a study of the absorption spectra and luminescence as well as the kinetics of luminescence of sodium-silicate glass with additions of Al_2O_3 , CaO and MgO and activated with Tb^{+3} ions. Glass compositions were selected close to industrial glasses used in the technology of structural materials. The spectra in kinetics of silicate glass luminescence containing 15 wt % Na_2O and varying concentrations of Al_2O_3 , CaO, and MgO with Tb^{+3} ions revealed differences associated with glass composition. The spectra of glasses containing Al_2O_3 have additional lines at 526 and 535 microns which are absent in the other glass spectra. There was observed a tendency of diminished luminescence damping time from the $5D_4$ level according to the degree of increased CaO and MgO content.

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USSR

PUKO, R. A., et al., Neorganicheskiye Materialy, Vol 9, No 10, Oct 73,
pp 1805-1808

The relaxation times were determined for luminescence levels $5D_3$ and $5D_4$
of the Tb^{+3} ion in the glasses and it was shown that the kinetics of $5D_4$

level colonization in the case of nonresonant excitation determines the
transitions from the $5D_3$ level. Two figures, two tables, seven biblio-
graphic references.

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- 17 -

USSR

UDC: 535.373.2

SEVCHENKO, A. N., KUSNETSOVA, V. V., FUKO, R. A., ENIGMENKO, V. S.,
RAZVINA, T. A., and KOZHAN, T. M.

"Intramolecular and Intermolecular Transfer of Excitation Energy
in Complex Compounds of Rare-Earth Metals"

Moscow, Izvestiya AN SSSR -- Seriya Fizicheskaya, vol 36, No 5,
1972, pp 1015-1017

Abstract: This paper gives the results of experiments for determining, through the kinetic method, the probability of intramolecular and intermolecular transfers of excitation energy in crystals of rare-earth element (REE) complexes. With excitation by short light pulses, the kinetics of the luminescence reflects the trend of the population and the deactivation of the luminescence level and yields direct information concerning the probability of these processes. A pulsed laser with molecular nitrogen was used as the excitation source, with a pulse duration of $2 \cdot 10^{-8}$ sec and a wavelength of 337.1 nm in the long-wave band of ligand absorption. The authors are connected with the Physics Institute of the USSR Academy of Sciences.

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- 34 -

USSR

UDC 616.006.02

~~KOZHANOV~~, N. G. and MAKEYEV, D. A., Chair of Biophysics

"Effects of Polycyclic Hydrocarbons in the Initial Stage of Carcinogenesis"

Moscow, Vestnik Moskovskogo Universiteta, No 1, Jan/Feb 71, pp 104-106

Abstract: A study performed on rats into which polycyclic hydrocarbons were injected subcutaneously revealed that oxidation of liver lipids in the presence of polycyclic hydrocarbons may result in the formation of a compound whose antioxidative activity is proportional to the carcinogenic activity of the hydrocarbon. The probable substrates formed are tocopherol and other lipid antioxidants. Changes in lipids take place in the early stages of chemical carcinogenesis.

1/1

USSR

Circuit Theory

UDC 621.372.852

BOGDANOV, G. B., KOZHARIN, I. D., MEL'NIK, O. F., TROFEEV, V. A.

"Experimental Characteristics of Certain Types of Halfopen Multicircuit Ferrite Microwave Filters"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2043-2046

Abstract: The electromagnetic characteristics of multicircuit halfopen filters and the temperature functions of these filters -- direct losses, resonance curves, decoupling, suppression of spurious resonances and thermal stability characteristics -- were obtained experimentally in order to check the known theoretical principles and determine the possibilities of practical application of such filters. The ferrite resonators were installed in the round holes of metal diaphragms, and a constant magnetic field was applied. The diaphragms were arranged at a variable distance from each other, and the input and output ferrite resonators were located so that an intermediate ferrite resonator could be inserted as a third circuit. Investigations in the 3 centimeter band demonstrated that with an increase in the diameter of the ferrite resonators the minimum loss region corresponding to the critical couplings is shifted towards large distances between the filters, and it becomes less expressed as a result of relatively redistribution of the mutual losses and the losses to radiation. For the ferrite filter without an intermediate resonator the

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USSR

BOGDANOV, G. B., et al., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2043-2046

decoupling varies within the limits of 50-52 decibels, and for a ferrite filter with an intermediate resonator, within the limits of 62-63 decibels in a broad frequency range. With orientation of the ferrite filters on the [110] axis, the thermal variations of the losses are noticeable especially in the positive temperature range. The thermal effect on the parameters and characteristics of semiopen filters can be reduced significantly if the ferrite resonators of the filters are oriented independently (in the sense of coupling) along the isotropic axis. The frequency drift obtained for two coupled ferrite resonators (67 kilohertz/degree) indicates high thermal stability of the investigated halfopen filters.

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6

Kozharinov, V. I.

SPRS 56,499
14 JULY 72

As long as there is a deficit of power aboard space vehicles, there will be a deficit of power for the communication systems. The most serious problem is the lack of redundancy during the execution of long space flights.

Among these requirements, the most important are those which are imposed on medical monitoring equipment by the radio-telemetric systems of space vehicles.

The most economical, from the power-use point of view, and at the same time the most reliable means of communication are those for a stipulated noise level in the communication channel. As is well known, "low-information" communication systems.

Among these requirements, the most important are those which are imposed on medical monitoring equipment by the radio-telemetric systems of space vehicles.

The present stage in space research, characterized by continuous increase in the duration and range of space flights and also by an increase in the scope and complexity of medical investigations in space, imposes a number of qualitatively new requirements on medical monitoring systems for the surveillance of the condition of cosmonauts.

Article by V. I. Kozharinov and V. V. Kozlov, "Medical Monitoring of Cosmonauts in Space Flights", *Medical Monitoring of Cosmonauts*, Moscow, 1971, pp. 1-10.

1/2 022 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--SOME DATA CONCERNING CHANGES IN THE GASTRIC MUCOSA IN PATIENTS
HAVING SUSTAINED INFECTIOUS HEPATITIS, UNDER THE INFLUENCE OF HEALTH
AUTHOR--(02)-KOZHARSKIY, V.V., ROMANOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 28-31

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, INFECTIOUS DISEASE, BIOPSY, HISTOCHEMISTRY,
DIGESTIVE DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY LABEL/FRAME--1986/0013

STEP NO--UR/0504/70/042/001/0020/0031

CIRC ACCESSION NO--AP0102775

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0102775

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE IS DEVOTED TO THE STUDY OF THE GASTRIC MUCOSA IN PATIENTS HAVING SUSTAINED INFECTIOUS HEPATITIS AT DIFFERENT PERIODS AFTER JAUNDICE AND ITS CHANGES UNDER THE INFLUENCE OF COMPLEX HEALTH RESORT THERAPY. TAKING OF SAMPLES IS DONE BY MEANS OF ASPIRATION GASTROBIOPSY PRIOR TO AND AT THE END OF TREATMENT. OF 30 PATIENTS WHO UNDERWENT TREATMENT AT PYATIGORSK HEALTH RESORT IN 27, SUPERFICIAL GASTRITIS AND IN 3, ATROPHIC ONE WERE DETECTED. HISTOCHEMICAL FINDINGS SHOWED THAT THERE WAS A GREAT AMOUNT OF NEUTRAL MUCOPOLYACCHARIDES IN TEGUMENTAL, PITTED AND CERVICAL EPITHELIUM. ACID MUCOPOLYSACCHARIDES WERE MAINLY DETECTED IN CERVICAL EPITHELIUM AND TO A LESSER DEGREE IN PITTED EPITHELIUM. IN SUPPERFICIALLY DISPOSED CELLS OF THE GASTRIC GLANDS THERE WAS FOUND A SMALL AMOUNT OF SIALOMUCINS. AT THE END OF HEALTH RESORT TREATMENT THE CONDITION OF TEGUMENTAL, PITTED AND CERVICAL EPITHELIUM CHANGED, THERE REDUCED AND CHANGED CELLULAR INFILTRATION. IN HISTOCHEMICAL STUDIES THER WAS OBSERVED A DROP IN THE PRODUCTION OF MUCIN AND CHANGE OF ITS COMPOSITION.

UNCLASSIFIED

USSR

UDC 539.4:624

KOZHASOVA, R.

"Earthquakeproofness of an Arch Dam as Part of a Cylindrical Shell"

V sb. Seysmostoykost' zdaniy i sooruzh. (Earthquakeproofness of Buildings and Structures -- Collection of Works), Tashkent, 1970, pp 236-250 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 V793)

Translation: This article contains an investigation of the problem of oscillations of the mechanical system made up of an arch dam and a liquid caused by seismic oscillations of the base. The known system of differential equations of motion is used considering hydrodynamic pressure. The solution of the system of equations is realized by the variation method. The stress function is represented in the form of a linear combination of fundamental functions of transverse vibrations of the beams. The problem of hydrodynamic pressure caused by deformation of the shell-dam is investigated. The differential equations of free and forced oscillations of the system are presented in variation form. Formulas are presented for determining the natural frequencies
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USSR

KOZHASOVA, R., Seysnostoykost' zdaniy i sooruzh, Tashkent, 1970, pp
236-250

of the free oscillations with and without consideration of the effect
of the water. The displacements of the base during earthquakes are
taken in the form of a damping sinusoid. The bibliography has 11
entries.

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USSR

UDC 621.391:519.27

KOZHASPAYEV, N. K. *K*

"A Possibility for Utilizing the Back Channel for Improving the Reliability of Transmitted Information in a Multichannel Radio Communications System"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 88-94 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A27)

Translation: It has been demonstrated that under duplex radio communications conditions it is possible to improve the reliability of the transmitted information by automatic power regulation in the partial channels subject to fading. The individual partial back channels are used for transmitting information about the numbers of the channels subject to fading in the form of power regulation commands. There are two illustrations and a seven-entry bibliography.

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UDC 619:616.988.43:576.809.8

USSR

KOZHAYEVA, G. I., PROSTYAKOV, A. P., TOKARIK, E. F., and SYUSYUKIN, A. A.,
All Union Scientific Research Foot-and-Mouth Institute

"Purification of Cultural Foot-and-Mouth Disease Virus"

Moscow, Veterinariya, No 1, Jan 71, pp 41-42

Abstract: The starting material was A₂₂ virus replicated in a monolayer of primary trypsinized pig epithelial and calf kidney cells. The virus-containing material was subjected to a series of procedures beginning with freezing, thawing, and centrifugation and ending with filtration through Sephadex G-100 or G-200, both in order to obtain different fractions and to remove proteins and nucleic acids. Some 99.3% of the ballast proteins and 99.2% of the tissue nucleic acids were thus removed. Despite the many manipulations of the virus, its infectious titer at the end was higher than in the original suspension. The purified preparation can be lyophilized for the accumulation of virus material or for deproteinization in order to obtain infectious RNA with a molecular weight no lower than 100,000.

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USSR

UDC 612.822.3

VORONIN, L. L. and KOZHEDUB, R. G., Electrophysiology Laboratory, Institute of the Brain, Academy of Medical Sciences USSR, and Laboratory of the Evolution of Trace Processes, Institute of Biophysics, Academy of Sciences USSR, Pushchino-on-Oka

"Cellular Analog of a Conditioned Reflex to Electrical Stimulation of the Cerebral Cortex. Analysis of Spike Activity"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 4, 1971, pp 775-783

Abstract: The possibility of creating a cellular analog of a conditioned reflex was investigated in the sensorimotor cortex of alert rabbits. Spike activity of individual neurons was analyzed. Stimulation through surface cortical electrodes placed 2.5 to 12 mm from the point of implantation of the recording microelectrode served as a conditioned stimulus. Stimulation through nearby electrodes was used as an unconditioned reflex. Most of the neurons exhibited a marked intensification of the excitatory response to the conditioned stimulus after short (1 to 5 sec) intervals between presentations and fairly strong and prolonged unconditioned stimulation. However, such intensification was brief (less than 30 sec) and was generally an analog of a
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USSR -

VORONIN, L. L. and KOZHEDUB, R. G., Zhurnal Vysshey Nervoy Deyatel'nosti,
No 4, 1971, pp 775-783

pseudoconditioned reflex rather than that of a conditioned reflex because it did not require any pairings and appeared after one or more presentations of the unconditioned stimulus. Nine of 21 neurons for which longer intervals between pairings were employed (7 to 120 sec) showed "unconditioned" changes consisting of the appearance of (or change in) the response to the conditioned stimulus (and its subsequent "extinction") or appearance of the response at the time corresponding to the omitted unconditioned stimulus.

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USSR

UDC 551.463.288

BARDYSHEV, V. I., KOZHELUPOVA, N. G., and KRYSHNYY, V. N., Acoustic Institute,
Academy of Sciences, USSR

"A Study of the Laws of Underwater Noise Distribution in Sea and Ocean
Coastal Zones"

Moscow, Akusticheskiy Zhurnal, Vol 19, No 2, Mar-Apr 73, pp 129-132

Abstract: Distributions of the instantaneous values of the sound pressure of natural underwater noises were studied experimentally in the surf-noise zone 10-600 meters from the shoreline, at a depth of 2 to 20 m, within the frequency range of 100-8000 Hz, and in the far coastal zone 20 km from the coastline, at a depth of 130 m, within the frequency range of 5-11,000 Hz. In applications lasting 0.05 to 1200 seconds, the distribution law in the far coastal zone is Gaussian, and in the surf-noise zone the distribution law is non-Gaussian and is distributed by considerable excess and asymmetry. The obtained results are discussed. 3 figures. 6 references.

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Thermodynamics

USSR

UDC 669.018

KOZHEMYAKIN, N. V., and POPOV, L. YE., Siberian Physico-Technical Institute
Imeni V. D. Kuznetsov at Tomsk State University

"The Isothermal Start of Superdislocations in the B2 Superstructure"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 7, 1971, pp 7-12

Abstract: The purpose of this article is to compute the intensity of the start of superdislocations in the B2 superstructure, which is assumed to be an isothermal process. The author makes extensive use of mathematical formulas to discuss his assumptions and employs figures and tables to illustrate his findings. Both tables are used to predict substitutional probabilities. Figure 1 depicts the intensity of the isothermal and adiabatic start of superdislocations in the B2 superstructure of stoichiometric composition as functions of the temperature. Figure 2 shows the intensity of the start of superdislocations in a solid solution of non-stoichiometric composition as a function of the temperature: both isothermal and adiabatic start. Figure 3 gives the intensity of deceleration of the superdislocation produced by disruption of the short-range order in the melt as a function of the temperature. The author gives 3 figures, 2 tables, and 9 bibliographic entries.

1/1

Petroleum Processing Technology

USSR

UDC 665.7.038:665.765-404

KOZHEMYAKINA, N. N., and VINOGRADOVA, I. E., VNIINP (All-Union Scientific Research Institute of the Petroleum Industry

"Examination and Selection of Sulfur- and Phosphorus-Containing Additives to Oil for Hypoid Gears in Automobiles"

Moscow, Neftepererabotka i Neftekhimiya, No 1, 1973, pp 19-22

Abstract: An investigation was made of the reaction of different types of phosphoric acid derivatives with dialkyl trithiocarbonate (BTC). The stoichiometry and a number of physical and chemical properties germane to the intended use were determined. The order of activity for the different substitution groups on the phosphoric acid derivatives for anticouring, antiwearing, and antioxidation properties was listed. Optimum two- and three-component additive systems were determined.

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K Petroleum Processing Technology

USSR

UEC: 66,095.132:66.022.38

KOZHENYAKINA, N. N., VINOGRADOVA, I. E. and PEYAKINA, YE. I.

"A Study of Phosphorus-Based Adic Esters as Additives for Lubricating Oils"

Moscow, Khimiya i Tekhnologiya Topliv i Masel, No 5, 1970, pp 31-36

Abstract: The value of phosphorus-containing compounds as anti-wear and anti-seizing agents was thoroughly demonstrated in studies during the fifties. The present study was undertaken to place research in this field on a more systematic basis. Experiments were run with 16 esters of phosphorus-containing acids, with the following results: 1) The addition of sulfur to the esters does not secure any perceptible advantage in antiwear or anti-seizing properties; 2) of the esters studied, the acid esters and trialkyltrithiophosphite were superior anti-seizing agents; 3) full esters are good anti-wear additives but poor anti-seizing agents; 4) during oxidation of oils, full esters of phosphorous, and phosphoric and thiophosphorous acids are anti-oxidizers, but their acid esters, and also the full esters of phosphinic acids, are strong oxidizers; 5) acid esters of phosphorous and dithiophosphoric acids, and also the phosphinic esters, are good anti-corrosion agents for light-metal alloys; and 6) in selecting phosphorus-containing additives for oils, anti-wear and anti-seizing properties, thermochemical stability, anti-oxidant properties, and corrosion activity with respect to metals, should all be taken into account.

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USSR

UDC 669.71.053.2

VODOP'YANOV, A. G., KOZHEUNIKOV, G. M., MIKULINSKIY, A. S., and YEFREMKIN, V. V.

"The Role of Suboxides of Aluminum in Reduction Processes"

V. sb. Vakuumn. protsessy v tsvetn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 213-216 (from Referativnyy Zhurnal - Metallurgiya, No 6, Jun 71, Abstract No 63142)

Translation of Abstract: A study is made of the interaction of gaseous oxides of lower valent Al with SiO_2 and C at 1450-1700° and residual pressure of 15-22 mm Hg. Al suboxides possess reducing and oxidizing properties (Two illustrations)

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1/2 032 UNCLASSIFIED PROCESSING DATE--300CT70
TITLE--AN INVESTIGATION OF WELDED JOINTS OF THE STEAM PIPES FABRICATED
FROM KH18N9 AND KH18N12 STEELS -U-
AUTHOR--(02)-GULYAYEV, V.N., KOZHEUROVA, M.F. K

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 3, 1970, PP 14-16

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--STAINLESS STEEL, ALLOY DESIGNATION, WELD JOINT, NIOBIUM
CONTAINING ALLOY, TITANIUM CONTAINING ALLOY, METAL CRACKING, DISSIPATION
METAL WELDING, BUTT WELDING, AUSTENITIC STEEL, CARBIDE, STEAM BOILER,
STEEL PIPE/(U)KH18N12 STAINLESS STEEL, (U)KH18N9 STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1300

STEP NO--UR/0135/70/000/005/0014/0016

CIRC ACCESSION NO--AP0123259

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AP0123259

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATED WERE BUTT JOINTS
FABRICATED FROM AUSTENITIC STEELS, AFTER TWO YEARS OF THEIR
EXPLOITATION. IT HAS BEEN ESTABLISHED THAT IN BUTT JOINTS FROM K115N9
STEEL NOT CONTAINING CARBIDE FORMING ELEMENTS (TITANIUM AND NIOBIUM),
CRACKS DO NOT OCCUR. THE OCCURRENCE OF CRACKS CAN ALSO BE PREVENTED IN
THE COMPOSITE BUTT JOINTS KH1BN12T-KH1BN9 BY MEANS OF THEIR
AUSTENITIZATION AT A TEMPERATURE OF 1125DEGREEESC.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CHANGE IN THE POLARITY OF CRYSTAL BONDS DURING HEATING -U-

AUTHOR--(021)-KOZHEVINA, L.I., BATSANOV, S.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 42-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--THERMAL EFFECT, COVALENT BONDING, CHEMICAL BONDING, ALKALI METAL HALIDE, MELTING POINT, CRYSTAL LATTICE ENERGY, CHEMICAL VALENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0781

STEP NO--UR/0142/70/011/001/0042/0045

CIRC ACCESSION NO--AP0104227

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 015

CIRC ACCESSION NO--AP0104227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOND IONICITIES (I) FOR 17 ALKALI METAL AND AG HALIDES WERE CALCD. USING THE EQUATION, I EQUALS 1 MINUS Z. S SUBACT-(CN. S SUBCOV), WHERE Z IS THE METAL VALENCE, S SUBCOV AND S SUBACT ARE THE OVERLAP INTEGRALS FOR THE PURELY COVALENT BONDS AND THE ACTUAL BONDS IN THE CRYSTAL, RESP., AND CN IS THE COORDINATION NO. OF THE METAL. THE EFFECTIVE CHARGE ON THE METAL DECREASES BY SIMILAR TO 0.03 UNITS ON HEATING TO THE M.P. AND DECREASES BY SIMILAR TO 0.1 UNITS ON MELTING. THE BOND POLARITY THUS DECREASES WITH INCREASING TEMP.

UNCLASSIFIED

USSR

UDC 681.327

VOKHRYSHEV, V. Ye., KOZHEVMIKOV, I. M., and SYROCHEVA, N. K.

"Pneumatic Bypass Device"

USSR Author's Certificate No 275516, Filed 24/03/69, Published 15/10/70
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i
Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B477P)

Translation: This invention relates to computer technology and can be used in logic control machines, centralized control devices, and other computers made of pneumatic automation elements. Pneumatic bypass devices are known, consisting of standard one-cycle pulse delay circuits. However, these devices have a constant predetermined number of outputs. This does not allow them to be used to solve a number of problems in which the number of outputs of the bypass device must be changed during the operating process, either automatically or from the control board. The pneumatic bypass device suggested contains series-connected delay units for each input and OR element and differs in that in order to allow the bypass cycle to be changed, each stage (except for the last stage) contains a tube and a 3-membrane relay connected as a blocking circuit. The first inputs of the elements connected
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USSR

VOKHRYSHEV, V. Ye., et al., USSR Author's Certificate No 275516, Filed 24/03/69, Published 15/10/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B477P)

in the blocking circuit in each stage (except for the first stage) are connected to the output of the blocking element in the preceding stage. This output is also connected to the erasing input of the one-cycle delay unit in its own stage. The blocking inputs of the tubes are connected to the output tube of the device within each digit. The outputs of all tubes are connected to the inputs of an OR element; the second inputs of all tubes, like the blocking inputs of the blocking elements, are connected to the corresponding channels for supplying instructions to change the bypass cycle, while the input of the blocking element in the first stage is connected to the input for the cycle pulses. This allows the number of bypass cycles to be changed by input of external instructions, which expands the capabilities. 1 fig.

2/2

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USSR

UDC: 538.4

KOZHEVNIKOV, A. A.

"The Part Played by Curvature of Magnetic Lines of Force During Propagation of Hydromagnetic Waves in a Cold Plasma"

Tr. XV i XVI nauch. konf. Mosk. fiz.-tekhn. in-ta, 1969-1970. Ser. Aerofiz. i prikl. mat. Ch. 1 (Works of the Fifteenth and Sixteenth Scientific Conferences of Moscow Physicotechnical Institute, 1969-1970. Aerophysics and Applied Mathematics Series. Part 1), Dolgoprudnyy, 1971, pp 56-65 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B20)

Translation: Basing his analysis on solution of the problem of propagation of magneto-hydrodynamic waves in a cold plasma located in the magnetic field of an infinitely long current-carrying filament, the author considers the effect which curvature of the geomagnetic field has on the propagation of these waves in the Earth's magnetosphere. An estimate is made of the additional damping of Alfvén waves which is associated with the curvature of lines of force. B. N. Gershman.

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1/2 010

UNCLASSIFIED -U-

PROCESSING DATE--16OCT70

TITLE--ANALYSIS OF IMPURITIES IN GASES

AUTHOR--(05)--RYBIN, E.N., KOGAN, YA.I., KOZHEVNIKOV, A.G., LYUSBKUNIN, G.G., PANKRATOVA, M.E.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,484
REFERENCE--OTKRYTIYA, IZOBRET., PROM, OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, AMINO ALCOHOL, CHEMICAL PURITY, GAS ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0182

STEP NO--UR/0482/10/000/0000/0000/0000

CIRC ACCESSION NO--AA0114568

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0114568

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE METHOD OF ANALYZING THE
IMPURITIES IN GASES DESCRIBED IN U.S.S.R. 262,484, THE LEVEL OF
DETECTION OF CONDENSATION NUCLEI, CONTG. MULS. OF AN ACID OR AN
ANHYDRIDE, IS INCREASED BY USING AMINO ALCS.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70
 TITLE--THE DIAGNOSIS AND OPERATIVE TREATMENT OF DUODENOCOLONIC FISTULAS IN
 PEPTIC ULCER AND CANCER OF THE STOMACH -U-
 AUTHOR-(04)-KOZHEVNIKOV, A.I., KOMAROV, A.S., SIDOROV, A.I., BARANOV,
 YU.F.
 COUNTRY OF INFO--USSR K
 SOURCE--KHIRURGIYA, 1970, NR 4, PP 37-40
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--DUODENUM, COLON, DIGESTIVE SYSTEM DISEASE, CANCER, EBIN, LARGE
 INTESTINE, SURGERY, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1983/1239

STEP NO--UR/0531/10/000/004/0037/0040

CIRC ACCESSION NO--AP0054134 UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--A0054134

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER FIVE OBSERVATIONS OVER PATIENTS WITH DUODENOCOLONIC FISTULAS. IN FOUR PATIENTS THE FISTULA DEVELOPED AS THE RESULT OF DUODENAL PEPTIC ULCER, IN ONE PATIENT DUE TO INFILTRATION AND DISINTEGRATION OF THE CANCEROUS TUMOR OF THE COLON. DISAPPEARANCE OR MARKED WEAKENING OF THE PAIN SYNDROME, CONSTANT DIARRHEA, CACHEXIA, AND SOMETIMES AN INCREASED APPETITE, ARE THE MAIN MANIFESTATIONS OF FISTULA. THE SURGICAL TREATMENT OF DUODENOCOLONIC FISTULAS MAY CONSIST IN SEPARATION OF THE FISTULA, SUTURING OF OPENINGS IN THE HEPATIC ANGLE OF THE LARGE INTESTINE, DUODENUM AND RESECTION OF THE STOMACH. AS A PALLIATIVE OPERATION IN DUODENOCOLONIC FISTULA DUE TO CANCER, WHEN A RADICAL OPERATIVE INTERVENTION IS IMPOSSIBLE, ONE COULD EXCLUDE THE PYLORUS, ESTABLISH GASTROENTEROSTOMY WITH AN INTERINTESTINAL ANASTOMOSIS AND ILEOTRANSVERSOSTOMY.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--040ECT0
TITLE--CONDUCTIVITY AND DIELECTRIC CONSTANT AND LOSS OF BENZOIC ACID -U
AUTHOR--KUZHEVNIKOV, A.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 831-2
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BENZOIC ACID, ACTIVATION ENERGY, ELECTRIC CONDUCTIVITY,
DIELECTRIC CONSTANT, TEMPERATURE DEPENDENCE, DIPOLE MOMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605018/B08 STEP NO--UR/0076/70/044/003/0331/0832
CIRC ACCESSION NO--AP0140794

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--040800

CIRC ACCESSION NO--AP0140794

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LOG SP. COND. BZOH IS A LINEAR FUNCTION OF $1/T$ AT 30-120DEGREES; THE SLOPE BECOMES LESS NEG. BY INCREASING THE FREQUENCY FROM 0 TO 600 GHZ. THE THERMAL ACTIVATION ENERGY OF THE COND. IS 2.26 EV. OHM'S LAW IS OBEYED UP TO A POTENTIAL GRADIENT OF 3 KV-CM AT 20DEGREES. THE DEPENDENCE OF THE DIELEC. CONST. OF BZOH ON TEMP. HAS A PLATEAU AT SMALLER THAN OR EQUAL TO 50DEGREES, WHICH IS COMMON TO ALL THE STUDIED FREQUENCIES, AND A MAX. AT 95DEGREES AT 10 MHZ OR 112DEGREES AT 70-10 PRIMES GHZ. NO SIGNIFICANT RELAXATION POLARIZATION WAS FOUND IN BZOH. THE DIMER OF BZOH, ALTHOUGH HIGHLY SYM., EXHIBITS A DIPOLE MOMENT. POLARIZATION IN BZOH IS DETD. BY ELECTRON AND ATOM SHIFTS SMALLER THAN OR EQUAL TO 50DEGREES AND AN ORIENTATION OF DIPOLES CONTRIBUTE TO IT AT 50-112DEGREES. THERMAL DISORIENTATION OF THE DIPOLES OCCURS GREATER THAN 112DEGREES. FACILITY: MOSK. VYSSH. TEKH. UCHILISHCHE IM. BAUMANA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.396.6-181.5

NAZAROV, G. V., SOKOLOV, A. V., KOZHEVNIKOV, A. P., SHANOV, A. M., NIKITIN, V. G., SAFONOV, V. A., SEREGIN, V. P., BASHARIN, V. I.

"Development of Equipment for Assembling Integrated Circuits by Welding with Pulsed Indirect Heating and Ultrasound"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering. Scientific and Technical Collection. Microelectronics), 1970, vyp. 3 (24), pp 70-76 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4V287)

Translation: A study was made of the advantages of welding by pulsed indirect heating and ultrasonic welding when assembling microcircuits. The technical characteristics of the developed equipment and the structural design of the operating tool are presented. The results of experimental operation of the devices are discussed.

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Water Treatment

USSR

UDC: 541.183.1.004.67:681.3

MARKOVA, T. S., KOZHEVNIKOV, A. V., VOL'F, I. V., KOKOREV, V. A., Leningrad Technological Institute of the Paper and Pulp Industry

"Investigation of the Effect of Various Factors on the Coefficient of Utilization of the Reductive Capacity of Electron Ion Exchange Resins in the Process of Absorption of Oxygen Dissolved in Water"

Leningrad, Zhurnal Prikladnoy Khimii, Vol. 45, No 5, May 72, pp 1046-1049

Abstract: Studies were done on optimizing the process of deoxygenating water by electron ion-exchange resins. Experimental data were analyzed to determine the relationship between the coefficient of utilization of the reductive capacity of KU-11 cation-exchange resin and a combination of six independent factors: X_1 -- grain size, X_2 -- temperature, X_3 -- oxygen concentration in the water, X_4 -- concentration of copper in the ion-exchange resin, X_5 -- rate of filtration and X_6 -- height of the filtering layer. The analysis showed that grain size could be disregarded. Calculations on the "Minsk-22" computer gave a linear regression equation after elimination of X_1 . The relative influence of different factors on the dependant variable Y_0 was accounted for by introducing coefficients of elasticity, where a_i is the regression coefficient of the i-th factor, \bar{X}_i is the average value of the i-th factor, and \bar{Y} is the average value of the dependant variable.

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Nuclear Physics

USSR

UDC 621.384.6

VOROB'YEV, A. A., NIKITIN, M. M., and KOZHEVNIKOV, A. V.

"Experimental Study of Linear Polarization of Synchrotron Radiation of High-Energy Electrons"

Moscow, Atomnaya Energiya, Vol 29, No 5, Nov 70, pp 389-391

Abstract: The article continues the authors' study of synchrotron radiation on the Tomsk Polytechnic Institute synchrotron for an energy of 1.5 GeV. The linear polarization of synchrotron radiation was studied according to the method of F. A. KROLEV, G. F. KULIKOV, and A. S. YAROV. Typical examples of the angular intensity distribution of the polarization components in the vertical plane for various accelerated electron energies are given. There is good agreement between experimental and theoretical results for the σ -component. The angular distribution of the π -component differs from the theoretical and depends on accelerator adjustment. A characteristic peculiarity of the angular distribution of the π -component is the absence of radiation in the direction of instantaneous velocity (tangent to the

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VOROB'YEV, A. A., et al., Atomnaya Energiya, Vol 29, No 5, Nov 70, pp 389-391

electron orbit). This is confirmed experimentally; however, in some cases at $\lambda = 4350 \text{ \AA}$ the intensity in the minimum of the π -component does not equal zero, though it is very small. Measurements showed good agreement between the intensity distributions of the σ - and π -components of synchrotron radiation linear polarization and theoretical results up to energies of 1 Gev.

The authors thank A. N. DIDENKO and O. F. KULIKOV for their interest and assistance.

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USSR

UDC 669.715

KOZHEVNIKOV, G. N., and VODOP'YANOV, A. G.

"Decomposition Conditions of Silicon and Aluminum Suboxides in Production of Light Metals and Alloys"

Moscow, Tsvetnyye Metally, No. 7, Jul 71, pp 37---40

Abstract: On the basis of calculations which utilized data of the reference literature and individual experimental findings, it is demonstrated that silicon and aluminum suboxides do not decompose in the temperature interval of 1,000---1,900 °C by contact with oxides of other metals, but they reduce them with production of slag and the alloy. In the presence of C, suboxides of Al and Si decompose with production of carbides and oxides of higher valency, up to temperatures of 2,025 °C and 1,500 °C, respectively. At higher temperatures, suboxides react with C with production of carbide. To decrease Si and Al losses with the gaseous phase, it is expedient to carry out the reduction process by decreased CO pressure and increased surfaces of the reducing agent and the solvent. Two illustr., two tables, sixteen biblio. refs.

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USSR

UDC 669.71.053.4

KOZHEVNIKOV, G. N., KUDINOV, B. Z., LEONT'YEV, L. I., DUBOTOLOKOV, G. P.,
KISELEV, V. A.

"Effect of Composition and Cooling Rate of Aluminum-Calcium Slags on Alumina Extraction"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Metallurgy Institute. Urals Branch of the USSR Academy of Sciences), 1970, vyp. 22, pp 41-45 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G130)

Translation: In order to obtain slags with high technological qualities it is necessary to realize the process of reduction of the initial raw material so that the slags will have the following characteristics: Si-modulus 1.5-3.0 and Ca-modulus 1.5-1.55. From these slags it is possible to extract more than 90% Al_2O_3 with soda leaching independently of the cooling rate of the slags.

There are 4 illustrations and 2 tables.

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Acc. Nr.

AA0108167

Abstracting Service:
CHEMICAL ABST.

6-70

Ref. Code

UR 0482

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134782b Briquets for silicocalcium production. Kozhaynikov,
 G. N.; Neledov, P. Ya.; Vorob'ev, V. P.; Ryss, M. A.;
 Getmanchuk, V. M.; Zaiko, V. P.; Belyaev, G. S.; Mikulinski,
 A. S. (Ural Institute of Metallurgy, Academy of Sciences,
 U.S.S.R.) U.S.S.R. 260,653 (Cl. C 212), 08 Jan 1970, Appl.
 25 Feb 1969; From *Otkrytiya, Izobret., Prom. Obratsy, Tokruaye
 Znaki* 1970, 47(4), 26. Briquets for silicocalcium production
 were made from lime 60-70 and a carboniferous reducing agent
 30-40 wt. % to reduce the losses of Si and the consumption of
 charge materials. MSCL

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UDC: 658.5.011:621.37

GEVORKYAN, M. U., KOZHEVNIKOV, I. A., SHVETSOV, K. L.

"Standardization of Power Supply Devices for Electronic Radio Equipment"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry--collection of works), vyp. 1, Moscow, 1971, pp 10-13 (from RZh--Radiotekhnika, No 6, Jun 71, Abstract No 6V293)

Translation: The paper contains a brief state-of-the-art report on the standardization and unification work being done in industry to improve the technical and economic indices of power supply devices for electronic radio equipment. Resumé.

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