SAMOILOV, O.B.

JPRS 59363
22 May 73
6

DESIGN AND PRE-REACTOR TESTING OF CONTROL UNITS OF THE BN-350 REACTOR

[Paper by V. I. Yevseyev, I. I. Zhuchkov, I. A. Podtelezhnikov, O. B. Samoilov, and V. I. Shiryayev; Dimitrovgrad, Pogloshchayushchiye materialy i organy regulirovaniya bystrykh reaktorov, Russian, International Working Group for Fast Reactors Specialists Meeting, Dimitrovgrad, 4-8 June 1973]

In this paper, the basic principles of the designing and testing of rods for a fast-neutron reactor with sodium coolant, of type BN-350, are explained. The basic requirements imposed upon the control units are formulated, their characteristics are given, and also attention is directed to the design features of the control units of the BN-350 reactor. The features of the designing of control units are considered, and data concerning materials applied for the absorbent and the rod jacket are reported. The design of the control units of the BN-350 reactor is given. Brief data on the test of the rods are reported. A list of test stands intended for the testing of control units and slave mechanisms of the SUZ (reactor control and safety) devices is given. A tentative volume of the work conducted at the test stands in the testing of the rods is indicated, and also the results of the experiments obtained. The role of tests of the SUZ units on the stand is evaluated, in the selection of the optimum design of them for application in the BN-350 reactor.

1. Features of the designing of control units for the BN-350 fast reactor

The selection of the method of regulating reactivity of a fast power reactor is determined by the efficiency of this

USSR

UDC: 518.5:681.3.06

SAMOKHVALOV, K. F., NESGOVOROVA, G. P.

"Programs of Random Search With Adaptation for the BESM-6 Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 84-94 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V984)

Translation: Three programs are presented for solving problems on the BESM-6 computer: 1) "SPA" random search (with adaptation); 2) "Loss Criterion Module" random search; 3) "Pseudo" random search (random number generator). "Loss Criterion Module" random search does not depend on the "SPA" program, whereas "SPA" random search necessarily includes "Pseudo" random search. In utilizing the proposed programs, they should be recorded on any zone of the tape. The programs are described in detail, and a control example is presented.

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USSR

UDC 621.791.753.042.93.01:024.2:669.245

KAZAKOV, YU. V., Engineer, TOSHCHEV, A. N., Engineer, BELEN'KIY, A. M., Candidate of Technical Sciences, KRECHETOV, A. D., Engineer, and SAMOKHVALOV, O. A., Engineer

"Structure and Properties of Joints Obtained by Pulse Arc Welding of Thin-Walled Nickel Alloy Parts"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 35-36

Abstract: Results are presented of comparative studies of the structure and properties of welded joints obtained in welding EP199 alloy and Ep222 steel 1 to 2 mm thick by a continuous and pulsed arc in an argon atmosphere with a nonconsumable electrode. It is shown that pulsed arc welding makes it possible to improve weld formation and the mechanical properties of welded joints of EP199 alloy and EP222 steel.

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--A COMPARATIVE ASSESSMENT OF THE RESULTS OF SUBTOTAL RESECTION OF THE STOMACH ACCORDING TO SPECIAL CONSIDERATIONS AND PARTIAL RESECTION

AUTHOR-(03)-SITENKO, V.M., SAMOKHVALOV, V.I., KAZANSKY, D.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 52-55

DATE PUBLISHED----------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, STOMACH, CANCER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0136 STEP NO--UR/0531/70/000/005/0052/0055

CIRC ACCESSION NO--AP0129392

UNCLASSIFIED

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0129392 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FIVE YEAR SURVIVAL IN A GROUP OF PATIENTS COMPRISING 102 PERSONS SUBJECTED TO SUBTOTAL GASTRIC RESECTION FOR CANCER AMOUNTED TO 47 PER CENT OF CASES. OUT OF 136 PATIENTS WHO SUSTAINED PARTIAL RESECTION 43.3 PER CENT SURVIVED THIS PERIOD. HOWEVER, THIS DIFFERENCE IS STATISTICALLY INSIGNIFICANT. THERE ARE NO DATA WHICH WOULD REVEAL THE ADVANTAGE OF SUBTOTAL RESECTION IN COMPARISON WITH PARTIAL RESECTION DEPENDING ON THE STAGE, ANATOMIC TYPE AND HISTOLOGICAL FORM OF THE TUMOR. FACILITY: KLINIKA FAKUL'TETSKOY KHIRURGII VMOLKA.

UNCLASSIFIED

USSR

UDC 628.78.015:533.24

VORONIN, V. I., SAMOKHVALOV, V. V.

"Stationary Temperature Field with Porous Cooling Under Conditions of Boiling of the Coolant"

Stroit. Mekh., Gazo-aerodinamika i Proiz-vo Letatel'n. Apparatov. Vyp. 1 [Structural Mechanics, Gas-Aerodynamics and Production of Flight Vehicles, No 1 -- Collection of Works], Voronezh, 1970, pp 140-148, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.162 from the Resume).

Translation: The problem of the temperature field of a porous sector during movement of a coolant undergoing phase conversion is studied. The problem is solved by the method of conformal transforms. Numerical results of solution of the problem are presented and analyzed. 6 Figures; 5 Biblio. Refs.

USSR

UDC 539.374

LYSOV, M. I., SAMOKHVALOV, Yu. A.

"Elastic-Plastic Bending of Billets with Initial Curvature"

Tr. Kazan. Aviats. In-ta. [Works of Kazan' Aviation Institute], No 140, 1972, pp 60-69, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V461 by the author's).

Translation: The stress-strain state is studied with sign-changing bending. The peculiarities of bending of curved blanks are emphasized. The dependence between stress and deformation follows a linear-exponential rule. Analytic expressions for deformations and stresses through the height of the transverse cross section of an element consider the peculiarities of bending. Formulas are produced for the relationships between bending moment and curvature, for calculation of springing and residual curvature during bending of curved blanks with complex cross section. The formulas produced are used to study straightening of circular blanks by sign-changing bending by the method of flexible rolling. Possible plans for straightening and experimental dependences for determination of the number of passes in each step of straightening are presented.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CHROMOSOME MUTATIONS INDUCED BY SPACE FLIGHT FACTORS IN BARLEY SEEDS DURING THE FLIGHT OF THE AUTOMATIC STATIONS ZOND-5 AND ZOND-6

AUTHOR-(05)-NUZHDIN, N.I., DOZORTSEVA, R.L., PASTUSHENKOSTRELETS, N.A., SAMOKHVALOVA, N.S., CHUDINOVSKAYA, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. BIOL. 1970, 31(1), 72-83

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIATION INDUCED MUTATION, AGRICULTURE CROP SEED/(U)ZOND 5 CIRCUMLUNAR PROBE, (U)ZOND 6 CIRCUMLUNAR PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1962 STEP NO--UR/0321/70/031/001/0072/0083

CIRC ACCESSION NO--AP0123743

UNCLASSIFIED

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0123743 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEEDS OF 2 VARIETIES OF BARLEY (RADIORESISTANT, AND RADIOSENSITIVE), IRRADIATED WITH 5 OR 10 KR AND PRIME137 CS GAMMA RAYS, OR NONIRRADIATED, DURING THEIR DORMANT AND RESTING STATE, WERE PLACED IN THE ZOND-5 AND ZOND-6 SPACESHIPS, WHICH FLEW AROUND THE MOON. AFTER THE FLIGHT, THEY WERE THOROUGHLY ANALYZED. THE CYTOL. STUDIES SHOWED SIGNIFICANT DIFFERENCES BETWEEN THE EXPTL. AND CONTROL SERIES IN THE AMTS. OF ABERRANT CELLS DUE TO CHROMOSOMAL MUTATIONS CAUSED BY THE SPACE FLIGHT FACTOR (SFF). SFF CAUSED CHROMOSOMAL MUTATIONS IN THE SEEDS. THE GENETIC EFFECT OF THE COMBINED INFLUENCE OF SSF AND GAMMA IRRADN. DEPENDED ON THE PHYSIOL. STATE OF THE IRRADIATED SEEDS, AND ON THE DOSES OF IRRADN. DORMANT SEEDS WITH A HIGH RADIORESISTANCE, AFTER IRRADN. WITH LOW GAMMA RAYS DOSES, WERE MORE AFFECTED BY THE COMBINED INFLUENCE OF SFF AND GAMMA IRRADN. SEEDS IN THE RESTING STATE WITH HIGH RADIOSENSITIVITY SHOWED A SHARP INCREASE OF THE EFFECT OF SFF. THE ADDITIVE AND SENSITIZING EFFECTS OF GAMMA IRRADN. AND SFF WERE OBSD. IN THE SEEDS FROM THE SPACE SHIPS.

FACILITY: INST. BIOL. PHYS., MOSCOW, USSR.

UNCLASSIFIED

SAMOKHVALOVA, O. A.

JPRS 56003

16 May 1972

UDC 621.791.011:669.14.018.44

DEVELOPMENT OF CRACKS DURING WELDING OF EP199 ALLOY

[Article by Candidate of Technical Sciences V. P. Nolseyenko, Engineer [illegible]
Mirgorodskiy, Engineer O. G. Krasnov, Engineer O. A. Samokhvalova; Moscow,
Svarochnoye Proizvodstvo, Russian, No 8, 1970, pp 28-29]

Thermally hardened nickel-based EP199 alloy, alloyed with chromium, titanium and molybdenum, is used extensively for welded assemblies intended for operation in aggressive media at temperatures up to 950°C. According to operating conditions cracks are not permitted to form in weld seams. Welding experience indicates, however, that the most frequent defects are microcracks in the near-seam zone, appearing at the points of closing of round and annular seams, and also at the intersection of round seams with longitudinal seams. Their elimination by auxiliary welding increases weld deformations and the amount of labor involved in manufacturing the products.

One of the causes of microcracks in the near-seam zones of such seams, as is known [1], is the low plasticity of zones of the metal enriched with eutectic and their inadequate resistance to the formation of cracks as the seam cools.

The total amount of eutectic produced and the character of its distribution depend on the degree of overheating of the metal during welding and the time it spends at the dangerous temperature, i.e., on the thermal cycle of welding.

Round heads were formed for the purpose of selecting the optimum method of welding assemblies of EP199 alloy. The round form made it possible to simulate the unfavorable conditions of heating of full-scale seams. The methods and conditions of argon-arc welding with a nonfusing electrode are presented in Table 1. Metallographic analyses of templates cut from various parts of the seam (Figure 1) revealed the amount of eutectic formed, its distribution in the various parts of the near-seam zone and its influence on the formation of cracks.

The presence of a eutectic component of linear character was noted at a distance of 0.01-0.025 mm from the line of fusion in all specimens.

[1 - USSR - 1]

USSR

UDC 612.833.81+159.9+612.822.3

SAMOKHVALOVA, V. P., and SAYANOVA, YE. M.

"Problems of Age-Sex Characteristics of Establishing Higher Nervous Activity of Children"

Sb. tr. Gorkov. n-i pediatr. in-t (Gorkiy Scientific Research Pediatric Institute -- collection of works), 1970, vyp 7, pp 26-23 (from RZh-Biologiya, No 1, Jan 71, Abstract No 1P543)

No Abstract

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1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CONDENSED PYRIMIDO HETEROCYCLIC SYSTEMS. I. REACTION OF 1,2,3,5,6,7,HEXAHYDROPYRAZOLO(1,5,A)PYRIMIDINE,5,7,DIONE WITH AMINES -U-

AUTHOR-(02)-DASHKEVICH, L.B., SAMOLETOV, M.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSKIL. SOEDIN. 1970, (2), 226-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PRIMARY AMINE, SECONDARY AMINE, CONDENSATION REACTION, HYDROLYSIS, PYRIMIDINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1192 STEP NO--UR/0409/70/000/002/0226/0227

CIRC ACCESSION NO--AP0054091

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0054091

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS., EASILY PREPD. BY THE REACTION OF 3,AMINOPYRAZOLINES WITH C SUB3 O SUB2, REACT WITH PRIMARY OR SECONDARY AMINES WITH RING OPENING; THE FORMED MALONYL CHAINS REMAIN ATTACED TO THE 3,AMINO GROUP AND THE FINAL PRODUCT OF DECOMPN. AND HYDROLYSIS IS A 3,AMINO,2,PYRAZOLINE (I). II WERE PREPD. BY CONDENSING C SUB3 O SUB2 WITH 1,PH DERIV. OF I AND BY REACTING WITH AMINE (R AND M.P. GIVEN): (SHOWN ON MICROFICHE) PIPERIDINO, 192-3DEGREES; MORPHOLINO, 168-9DEGREES; ISO,BU SUB2 N, 162-3DEGREES; PHCH SUB2 NH, 148-50DEGREES; BU SUB2 N, 135-6DEGREES.

UNCLASSIFIED

USSR

UDC 612.898:612.178

IONAVICHUTE, V. I., SAMONINA, G. Ye., and UDEL'NOV, M. G., Chair of Human and Animal Physiology, Moscow State University

"Localization and Structural and Functional Organization of the Vagus Nerve Nuclei That Form the "Heart Center" of the Medulla Oblongata"

Moscow, Uspekhi Fiziologicheskikh Nauk, No 2, 1972, pp 3-23

Abstract: The article critically reviews the literature and results of the authors' own studies on the distribution of efferent and intercalary neurons in the complex of vagal nuclei (dorsal nucleus, nucleus of the solitary tract, ambiguous nucleus). It discusses the participation of the reticular formation in the central regulatory mechanism of the heart. It also presents morphological and physiological data on the cell composition of the afferent and efferent nuclei and on the distribution of the neurons that constitute the initial portion of the effector pathways of the heart. The article concludes with some ideas on the structural and functional organization of the "heart center" and assumptions as to its relationships with other CNS structures responsible for the overall regulation of the cardiovascular system.

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USSR

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UDC 632.95

MALYUTIN, P. P., RADTSEV, V. S., SAVIN, V. P., SANOKOV, V. D., STONOV, L. D., SHAKIROVA, A. M., Ufa Affiliate of the All-Union Scientific Research Institute of Agents for Plant Protection

"A Herbicidal Preparation"

USSR Author's Certificate No 311594, filed 21 Apr 70, published 19 Nov 71 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N470)

Translation: In order to intensify herbicidal activity and improve selectivity, 3-carbomethoxyaminophenyl N-(3-methyl phenyl)carbamate is used in a mixture with benzamidoxyacetic acid in ratios by weight from 1:2 to 1:6. In experiments, the mixtures inhibited the development of wild oat seedlings more actively than their components used separately.

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Receivers and Transmitters

USSR UDC: 621.376.332

SAMONTOV, I. M., TROITSKIY, B. S.

"Linear Distortions in Demodulators of FM Oscillations"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and PM Reception--collection of works), Moscow, "Sov. radio", 1970, pp 192-202 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D61)

Translation: Critical remarks are presented relative to the relationship found by certain authors between linear distortions in frequency detectors and the index of modulation. Expressions are derived which define the frequency and phase characteristics of various types of frequency detectors. It is shown that there is an increase in output voltage and phase displacements with an increase in the modulation frequency and a reduction in the band of each of the frequency detection circuits in all types of frequency detectors. Minimum linear distortions occur in frequency detectors with mutually detuned tank circuits. The condition for minimum distortion is found for such a frequency detector. Bibliography of 10 titles. N. S.

1/1

USSR

SAMORODOV, YU. D.

UDC 621.383:537.533.8

"To A Theory For Photoreceivers With Dynamic Frequency Conversion Of The Klystron--Photomultiplier And TWT--Photomultiplier Types"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 5, pp 14-25 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A203)

Translation: The results are presented of a theoretical investigation of the effectiveness of frequency conversion in photoreceivers of the klystron--photomultiplier and TWT--photomultiplier types with an arbitrary magnitude of the heterodyne signal in the gap and spirals, respectively. It is shown that a TWT--photomultiplier has the best characteristics in a regime where modulation of the photocurrent by the heterodyne signal is accomplished with the aid of a cutoff of the beam current which takes place because of scanning across the beam by the heterodyne signal. A photoreceiver of the klystron--photomultiplier type has the same effectiveness of conversion; however, it has a worst feature in the sense of distortion of the information being received. S.D.

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TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SHEVCHENKO

Translated for FSTC by ACSI

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USSR UDC 621.385.623.4

ZAKHAROVA, A. N., PETROV, D. M., and SAMORODOVA, G. A.

"Evaluation of Klystron-Type Accelerators and Transit Klystrons"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 4, pp 47-62 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8A180)

Translation: For an analysis of phenomena in transit klystrons and electron accelerators of the klystron type and their evaluation, relativistic nonlinear equations for the motion of electrons are formulated, taking account of the space charge based on a disk (1-dimensional) model of an electron stream. The problem of excitation of the cavity and the takeoff of energy is solved on the basis of the balance of the active and reactive powers for any amplitude of the microwave fields, taking account of the processes connected with turning of the electrons. A program is formulated for solution of these equations on a computer, which makes it possible to calculate the output characteristics of the devices. In the program, optimization of the output characteristics with respect to a large number of parameters is provided. Some results are presented of an evaluation of 4-cavity klystron amplifiers and 4-cavity electron accelerators. 17 ref. Summary.

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USSR

UDC 537.311.33:621.315.592

ZYKOV, A. M. and SAMORUKOV, B. YE., Leningrad Polytechnic Institute imeni M. I. Kalinin

"Electrical and Optical Properties of Gallium Phosphide Films"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, No 6, 1971, pp 54-58

Abstract: Two basic directions are being explored today in the field of film technology. Scientists are concerned first with growing epitaxial semiconductor films on monocrystalline substrates and with the production of polycrystalline films on substrate insulators with good optical and electrical properties. This article is concerned with investigating the properties of polycrystalline gallium phosphide films produced by evaporation in vacuum. The authors also use a three-temperature method and find that the properties of the films depend substantially on the method of production and the temperature of the substrate. The authors describe the production of the film samples, the method and results of the experiments, illustrating their findings in the form of a table and graphs. They find that the best electrical and optical properties are possessed by gallium phosphide films prepared by evaporation and having an ideal structure. This differs from the data of

USSR

UCHASTKIN, V. I., and SAMORUKOV, S. B., Moscow State University imeni M. V. Lomonosov

"Magnetoelastic Waves of Finite Amplitude"

Leningrad, Fizika Tverdogo Tela, No 11, Nov 70, pp 3348-3350

Abstract: The initial stage in the formation of traveling magnetoelastic waves of finite amplitude under an inhomogeneous distribution of the internal magnetic field in yttrium ferrite-garnet was studied. It is noted that spin waves of finite amplitude can be obtained in magnetoelastic ferrite systems and that a characteristic of these waves is the change in frequency along the envelop of the signal. This is attributed to expansion of the spectrum of the quasiharmonic magnetoelastic signal. In ferrite delay lines, expansion of the signal at high power levels always appears as a distortion in shape. The role of the instability of nonlinear ferromagnetic resonance in phenomena of this type was therefore studied. The study was conducted at a frequency of 3060 MHz in yttrium ferrite-garnet samples oriented along the [110] axis and having a fairly long spin relaxation time of 10^{-6} sec. The magnetoelastic waves were excited and received by a method ordinarily
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SAMORUKOV, I. A.

JPRS 57517
13 Nov 72

UDC 612.172.4-06:629.78

PROLONGED MONITORING OF HUMAN CARDIAC BIOELECTRIC ACTIVITY DURING GROUND EXPERIMENTS AND IN SPACE FLIGHT

[Article by D. G. Maksimov, V. F. Khmel'kov, [redacted] and A. N. Fitsenov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 5, September-October 1972, pp 79-84, submitted for publication 12 July 1971]

In conducting routine medical monitoring of the condition of a human subject confined in alosed ecological systems under ground conditions or during flight the methods which have won broadest recognition are electro-cardiography, pneumography and monitoring of body temperature (O. G. Gazenko; Yu. G. Nefedov, et al.; Pervyye Kosmicheskiye Polety Cheloveka (First Manned Space Flights); Weltman, et al.). Methodological difficulties arise most frequently when registering the ECG because prolonged contact of the electrodes with the body causes an irritation of the skin up to appearance of ulceration. Attempts to replace monitoring of cardiac activity by the registry of bioelectric activity by some other methods (using electromagnetic, mechanical or capacitance effects) for the time being have been unsuccessful (Fitzwater and Halvorson; Weltman, et al.; R. M. Bayevskiy).

The investigations were made using 129 subjects; 67 of these were confined in closed spaces from 3 to 70 days. 39 were in temperature chambers at an increased temperature and humidity for 4-72 hours, and 23, outfitted with special suits, for a period of two to eight hours performed different kinds of work in the pressure chamber with a rarefaction of the surrounding air corresponding to an altitude of 4-37 km (I. T. Akulinichev, et al.; D. G. Maksimov, et al.). We registered the ECG and a number of other medical indices using on-board and clinical instrumentation. In conducting the investigations we compared the electrodes used in flights of the "Vostok," "Voskhod," and "Soyuz" ships (N. A. Agadzhanyan, et al.; Pervyye Kosmicheskiye Polety; L. I. Kakurin, et al.; A. G. Zorenin, et al.), electrodes developed by different foreign firms, including those used in the "Gemini" and "Apollo" ships (Geddes and Baker; Weltman, et al.), and 19 modifications of electrodes created in the course of this study. In all subjects not less than two to five times a day we checked interelectrode resistance for d-c current, and in most cases also determined the interelectrode

USSR

UCHASTKIN, V. I., and SAMORUKOV, S. B., Fizika Tverdogo Tela, No 11, Nov 70, pp 3348-3350

applied in ferrite variable delay lines. At low levels of the magnetoelastic signal, a linear relationship was obtained between the signal and the input electromagnetic power. When the threshold of nonlinear ferromagnetic resonance was achieved, saturation of the magnetoelastic pulse was observed. Almost simultaneously with saturation there occurs a decrease in the frequency of the basic maximum of the spectrum with respect to the frequency of the input signal. This frequency detuning is explained by the reverse reaction of spin waves excited at nonlinear ferromagnetic resonance. The periodic change in the spectrum was observed to study frequency detuning in different parts of the magnetoelastic pulse. With an increase in power the period of frequency oscillations along the pulse dropped and it is concluded that even in short signals one can obtain a similar oscillation and frequency, but at higher power levels.

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USSR

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UDC: 681.327.12

KOROVIN, V. G., KOTIKOV, Yu. P., REPIN, V. I., SAMORUKOV, V. A., SYSOYEV, N. V., TEL'NYKH, O. A.

"A Computer Tape-Punching Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335704, Division G, filed 3 Jul 69, published 11 Apr 72, p 210

Translation: This Author's Certificate introduces a device for punching computer tape. The device contains a perforating mechanism connected to the driven shaft of a single-turn drive clutch. The code electromagnets of the perforating mechanism are electrically connected to the program head of a readout module. The device also incorporates a tape transport mechanism with two geared drive drums and the wheel of a ratchet mechanism fastened on a common shaft. The dog of the ratchet mechanism is connected to the driven shaft of the single-turn drive clutch. As a distinguishing feature of the patent, the working precision of the device is improved by fastening the eccentric of the punching mechanism drive and the crank of a quadric-crank mechanism on the driven shaft of the single-turn drive clutch

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USSR
KOROVIN, V. G. et al., USSR Author's Certificate No 335704

and by fastening the dog of the ratchet mechanism on the rocker arm of the quadric-crank mechanism, which is mounted on the common shaft of the tape--transport mechanism.

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USSR

UDC 553.677:543.422.4.001.5

KARRYYEV, N. A., YUGOV, V. A., SAMORUKOVA, L. M.

"Spectroscopic Investigation of Slag"

Dokl. Nauchno-tekhn. seminara Metrol. v radioelektron.(Transactions of the Scientific and Technical Seminar Metrology in Radioelectronics), Tezisy, Ch 1, Moscow, 1970, pp 143-148 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.642)

Translation: Results are presented of experimental investigations of the transmission spectra in the infrared region of the crystalline films of muscovite which are used as the backing in low inertia thin-film bolometers. The observed interference phenomena cause a considerable discontinuity of the slag spectrum. Since the reflectivity and the transmission of backing change from region of spectrum to another, then the receiver will produce higher response signal at the same wave length and smaller signal at others. Thus, the radiation receiver will not satisfy the desired continuity of spectral characteristics, a fact which should be taken into consideration during designing of bolometers. 3 ill., 4 bibl. entries. V. S. K.

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SAMORUKOVA, Z. F.

SO: JPRS 55015
25 JAN 1972

UDC: 614.4(47-21):658.381.015.2

AVERAGE TIME SPENT BY THE STAFF OF EPIDEMIOLOGICAL DEPARTMENTS OF SANITARY AND EPIDEMIOLOGICAL STATIONS ON PERFORMING EXTRAMURAL EPIDEMIC CONTROL MEASURES IN MEDICAL DISTRICTS OF URBAN POLYCLINICS

(PUBLIC HEALTH)

[Article by D.B. Rozenfel'd, candidate of medical sciences, Z.F. Samorukova, I.K. Postnikova, V.V. Stepanov, M.G. Kravchenko, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 20 May 1971, pp 50-56]

The continuous perfection of forms and methods of epidemic control work and optimum planning thereof depend largely on scientific substantiation of the demands of the people with regard to various forms of extramural medical care related to infectious or suspected infectious pathology. One of the special aspects of this important problem is to determine the required scope and nature of extramural measures performed by epidemiologists and their assistants at SES [sanitary and epidemiological stations]. Determination of these data combined with investigation of annual mean work time spent on performing the necessary measures by epidemiological specialists is a mandatory prerequisite for scientifically substantiated estimates pertaining to manpower and resources of the epidemic control service.

Previously we published a method for scientific investigations on the subject of "Determination of the Scope and Nature of Extramural Medical Care for Urban Population as Related to Cases of Infectious and Suspected Infectious Disease,"* conducted in 1968-1970 at the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko. In the present report we submit the results of investigations of work time spent by epidemiologists and their assistants on performing different epidemic control measures and sets thereof. This study was conducted at several SES in Odessa and Kemerovo staffed by epidemiologists and assistants in accordance with the prevailing established staff quotas. The set of measures related to services to patients in the polyclinic districts. The chief method used was timing. Intermediate medical personnel, mainly medical feldshers with a tenure of at least three years, conducted the time studies.

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*D.B. Rozenfel'd, et al., Sov. Zdravookhraneniye, No 12, 1966, p 13.

SAMORUKOVA, Z. F.

SU:JPRS 55204
16 FEB 72

UDC: 614.4

SOME FORMS OF ORGANIZING SANITARY AND EPIDEMIOLOGICAL STATION WORK WITH REFERENCE TO EPIDEMIC CONTROL MEASURES

[Article by Z.F. Samorukova, Kemerovo Municipal Sanitary and Epidemiological Station (chief physician: A.S. Vorobkin), Honored Physician of RSFSR); Moscow, Sovetskoye Zdravookhraneniye, Russian, No. 1, 1972, submitted 29 July 1971, pp 37-39]

The wide circle of problems that epidemiologists and their assistants must solve makes it imperative to continuously improve the set of preventive measures on the basis of investigating their effectiveness.

We have gained some experience in organizing epidemiological work in the SES [sanitary and epidemiological stations] of Kemerovo. The planning method is consistent with the current official instructions (preparation of annual and quarterly plans, monthly plan graphs).

Clearcut planning permits epidemiologists to examine a larger number of therapeutic and children's institutions for the purpose of preventive treatment against various infections, to conduct systematic epidemiological analysis of morbidity rates throughout the year as well as of effectiveness of prophylactic measures, and thus to make prompt amendments in the plans.

All of the organizational methodological work with polyclinics, children's and other institutions is planned and conducted mainly by the staff of the epidemiological department of the municipal SES in order to concentrate the activities of rayon and district epidemiologists toward immediate administration of the most important prophylactic and epidemic control measures.

Analysis of the morbidity rates for the last 50 years revealed certain patterns in distribution of infectious disease in the city; it was found that 35-40 percent of all infections, with the exception of influenza and acute respiratory diseases, are referable to intestinal pathology, including dysentery. Keeping this in mind, we once treated on investigation of the epidemiological distinctions of dysentery and the effect of sanitary and hygienic conditions on distribution of acute intestinal infections, demonstration of the epidemiological distinctions of dysentery in preschool institutions, determination of

USSR

UDC 538.561

KATYSHEV, Ye. G., PANASYUK, V. S., PANKRATOV, S. G., ROMANOVSKIY, V. F., SAMOSHENKOV, Yu. K., SOKOLOV, A. A., SPEKTOR, Ya. M., STEPANOV, B. M.

"Investigation of Electromagnetic Emission of a Modulated Electron Beam"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 11, Nov 72, p 2446

Abstract: The paper gives a block diagram and the parameters of an installation for studying velocity-modulated emission of an electron beam, as well as the results of measurements. The beam energy was 33 kev, beam current in the pulse 0.25 a, pulse duration 4 μs, pulse repetation rate 25 Hz, frequency of the modulating rf field 482 MHz, length of the emission region 55 cm, and pressure in the system 10^{-4} mm Hg. It was found that the emission power received by an antenna with effective area of 750 sq. cm at a distance of 2.5 m from the beam is 1 mw. The vector of intensity of the modulating electric field lies in a plane which passes through the axis of the beam. The ratio of emission intensity on the second harmonic to that on the first harmonic is approximately 5%.

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1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ELECTROCHEMICAL PROCESS FOR REPROCESSING OFFSET BIMETALLIC FORMS -U-

AUTHOR-(03)-SOLOKHINA, V.G., SAMOSHENKOVA, K.G., BELYAYEVA, YU.I.

COUNTRY OF INFO--USSR

SOURCE--POLIGRAFIYA 1970, (3), 41-3

DATE PUBLISHED-------70

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

TOPIC TAGS--ELECTROCHEMICAL MACHINING, BIMETAL, COPPER, ZINC, CHROMIUM OXIDE, AMMONIUM SULFATE, CARBONATE, NITRIC ACID, ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0632 STEP NO--UR/0543/70/000/003/0041/0043

CIRC ACCESSION NO--AP0134394

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CU-ZN OFFSET FORMS ON AL SUPPORTS CAN BE REPROCESSED BY NEW PROCEDURES, ELIMINATING THE MECH, SURFACING STEPS. THE UPPER CU LAYER IS REMOVED BY ANODIC DISSOLN, IN CRO SUB3 AND (NH SUB4) SUB2 SO SUB4 OR (NH SUB4) SUB2 CO SUB3, IN BOTH CASES AT 5A-DM SUB2 AND 20-5DEGREES. BOTH CU AND ZN LAYERS ARE DISSOLVED IN 40PERCENT HNO SUB3 OR PREFERABLY ANODICALLY, IN 20PERCENT H SUB2 SO SUB4 AT 5 A-DM SUB2 AND 20-5DEGREES. IN BOTH CASES SMOOTH SURFACES ARE OBTAINED, READY FOR NEW COATING.

UNCLASSIFIED

Acc. Nr: AP0038112

Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1, pp 107-111

ONTOGENETIC CHANGES IN FORMATION OF THE ROOT SYSTEM OF WINTER WHEAT

A. I. ZADONTSEV, V. I. BONDARENKO, A. L. GRINCHENKO, A. A. SAMOSHKIN

All-Union Scientific Research Institute of Maize, Dnepropetrovsk

Results are briefly described of field and vegetation experiments carried out in 1957—1968 with the aim of studying the formation of the root system and aerial part of winter wheat (Mironovskaya 808 and Odesskaya 3 varieties) sown at various periods and supplied with various amounts of nutrients during growth. Data are presented on linear growth of roots and overground parts, rate of water consumption by the plants from various soil horizons, root abundance of plants, root absorbing surface and also grain productivity of wheat.

REEL/FRAME
19731163

SAMOSHKINA, N. A.

JPRS 55569
29 MAR 72

UDC: 611-013.14-065.2

IN VITRO MATURATION OF THE HUMAN OVUM

[Article by N.A. Petrov-Maslakov, A.P. Dyban, N.A. Samoshkina, A.I. Nikitin, L.N. Patrikyan, Institute of Obstetrics and Gynecology, USSR Academy of Medical Sciences, and Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 60-65]

Cytogenetic investigations of human sex cells are of substantial interest both to theoretical and clinical medicine. We know that some congenital pathological states (for example, Down's, Shereshevskiy-Turner, Klinefelter syndromes, and others) are determined by numerical chromosomal aberrations arising in parental sex cells when chromosomes do not separate in meiosis (Penrose, 1954; Lejeune et al., 1959; Lejeune et al., 1960). It was also shown that a considerable number of spontaneous miscarriages is related to chromosomal aberrations formed with nonseparation of chromosomes in meiosis or splitting of the zygote (Carr, 1965; N.P. Bochkov and N.S. Stenova, 1969). In the presence of diseases associated with prolonged fertility (Stein-Leventhal syndrome) impaired maturation of the ovum and degenerative changes therein were demonstrated (A.I. Nikitin and N.A. Samoshkina, 1969, 1970).

Thus, investigation of maturing sex cells brings us closer to understanding the mechanism of chromosome pathology, miscarriages, and some forms of fertility in man.

In addition, one can clearly demonstrate different types of chromosomal anomalies(for example, translocations, inversions, and others) in the meiotic chromosomes of sex cells, which are unnoticeable when analyzing mitotic chromosomes of blood cells and other somatic tissues. In such cases, examination of meiotic chromosomes would permit detection of carriers of chromosomal aberrations, and this has definite diagnostic and prognostic value.

It is not surprising that contemporary cytogenetics is concentrating on the study of human sex cells (Carr, 1969; A.A. Prokof'yeva-Bel'govskaya, 1971).

USSR UDC 621.3.035.2

KRAVETSKIY, G. A., DERGUNOVA, V. S., SLAVINA, L. M., GUSEVA, N. P., and SAMOSUDOV, V. V.

"Joining Graphite With Graphite and Metal by Electric-Arc Welding"

Moscow, Tsvetnyye Metally, No 7, Jul 71, pp 44-47

Abstract: A method of joining graphite parts with graphite and metallic parts by means of a metallic interlayer deposited on the surface of the graphite part by the electric-arc welding practice is discussed. The following materials with mean linear expansion coefficient with respect to graphite and metal were investigated for their utilization as interlayers: V, Ti, Mo, W, Zr, Nb, and Kovar. It was found that Ti and Zr are the most promising interlayer materials. The use of Kovar as an interlayer material is recommended for welding graphite with stainless steel and other steel types. Three illustrations, three tables, six biblio. refs.

1/1

Pesticides

USSR

UDC 614.72+614.777/-074:632.954

SAMOSVAT, L. S., and PASHKOVSKAYA, I. I., Kiev Institute of Advanced Training for Physicians, Kiev

"Application of N-Halogenation for Rapid Determinations of Herbicides in Water and in the Air"

Moscow, Gigiyena i Sanitariya, No 1, 1973, p 115

Abstract: A rapid method was developed for the determination of residual amounts of some N-containing herbicides in air and water which is based on the ability of these herbicides to undergo N-halogenation on treatment with gaseous Cl_2 and to form colored spots in thin-layer chromatograms after spraying with KU starch reagent. The method is applicable to urea derivatives (kotoran, tenoran, patoran, neburon, meturin, gerban), thiocarbamates (eptam, tillam, yalan), picloram, and pyramine. The herbicide is extracted from air or water with an organic solvent, whereupon the resulting solution (dried on extraction from water) is evaporated and the sample subjected to chromatography on a silica gel - gypsum or Al_2O_3 plate. The chromatogram is treated with Cl_2 and then with the KU starch reagent. The sensitivity of the method is 0.5-1 gamma and 1-2 gamma for determinations in air and water,

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USSR

SAMOSVAT, L. S., and PASHKOVSKAYA, I. I., Gigiyena i Sanitariya, No 1, 1973, p 115

respectively. The solvents for the extraction from air and water of individual herbicides, the composition of the mobile liquid phase in chromatography, depending on the herbicide, and the Rf values of herbicides are listed in a table.

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USSR

UDC 632.95

SAMOSVAT, L. S., VOYNOVA, I. V.

"Colorimetric Method of Analyzing Amibene in Air, Water and Soil"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 116-119 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N505)

Translation: When analyzing air, the sample is sorted with an aerosol filter, the amibene (I) is extracted with acetone, it is diazotized with $NaNO_2$ in an acid medium, and the salt obtained is combined with 1-naphthol in an alkaline medium and colorimetrically analyzed on the FEK-56. When analyzing the water and soil, the sample is acidified, the I is extracted with ether and it is then treated as described above.

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USSR

UDC 632.95

FEDOROVA, L. N., and SAMOSVAT, L. S.

"Combining Thin Layer Chromatography and Ultraviolet Spectrophotometry to Determine Triazines in Soils and Water"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (transaction of the Second All-Union Conference on the Study of Pesticide Residue and Prevention of Their Contamination of Food Products, Fodder and the External Environment), Tallinn, 1971, pp 207-209 (from RZh-Khimiya, No 13, 19 Jul 72, Abstract No 13N540 by T. A. Belyayeva)

Translation: A method has been devised for the identification and quantitative determination of triazines by thin layer chromatography with spectrophotometric conclusion of analysis. Atrazine is extracted with $CHCl_3$ from a water or soil sample, chromatographed, the sorbent layer with the preparation has $CHCl_3$ poured on it and is filtered, 50-percent H_2SO_4 is added to the filtrate, and it is held for 15 min. on a boiling-water bath, diluted with water, washed with ether, and the optical density at 225, 240 and 255 nm is determined.

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USSR

UDC 632.954

SAMOSVAT, L. S., AVDYUSHKINA, S. I., VESELOVSKIY, I. V., and MAN'KO, YU. P., All-Union Scientific Research Institute of the Hygiene and Toxicology of Pesticides, Polymers and Plastics and Ukrainian Agricultural Academy

"Aftereffect of Linuron and Its Residues in Soil and Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 55-56

Abstract: The authors in 1966-1967 studied under field conditions the effectiveness of linuron on corn plantings and its aftereffect on other agricultural crops, and also determined residues of the chemical in the soil and plants. The experiments were conducted at the Nytnitskaya Agronomical Station of the Ukrainian Agricultural Academy. The soil is deep low-humic medium-loamy chernozem. The linuron was applied during preplant cultivation or preemergence harrowing in doses of 2,4 and 8 kg/ha. The linuron residues in the soil were determined by two methods, viz. biologically with white mustard as the indicator plant and by thin-layer chromatography. It was found that linuron in a dose of 3-4 kg/ha never penetrated deeper than 10 cm from the soil surface during the corn vegetation period, with 5-7 percent of the initial quantity found in this layer four months after application. The

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202810004-2"

USSR

SAMOSYAT, L. S., et al., Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 55-56

greater part of the herbicide (76.8-81.3 percent) decomposed the first two months following application. No linuron was found in the kernel of fully ripe corn grown with an application of 4 kg/ha of the herbicide. The green mass of corn in the flowering phase contained an insignificant quantity of the herbicide (0.13-0.14 mg per kg of plants with natural moisture content). A 3-4 kg/ha dose of linuron applied to corn had no adverse effect on the yield of oats, vetch-oat mixture, sunflowers, sugar beets or winter wheat.

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USSR

UDC 632.952

VAS'KOVSKAYA, L. F., SAMOSVAT, L. S., ZAKORDONETS, V. A., BURSHTEYN, A. L., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymer Materials and Plastics

"Determination of Residual Quantities of Keltane in Water, Fruit (Including Citrus) and Vegetables"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 10 (84), Oct 70, pp 44-46

Abstract: A method is proposed for determining residual quantities of keltane (4,4'-dichlorodiphenyltrichloromethylcarbional) in water and on plants. The procedure is based on thinlayer chromatography with appropriate selection of the mobile phase of distinguishing keltane from accompanying organochlorine poisons. The method is specific in the presence of DDT, DDE, DDD znd hexachlorocyclohexane. The method is capable of a sensitivity of 1-2 µg in a sample, which is 0.05-0.1 mg/kg in analysis of fruits and vegetables, and 0.01-0.02 mg/lirer in alaysis of water.

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1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--AFTEREFFECT OF LINURON AND ITS RESIDUES IN SOIL AND PLANTS -U-

AUTHOR-(04)-SAMOSVAT, L.S., AVDYUSHKINA, S.I., VESELOVSKIY, I.V., MANKO, YU.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(3), 215-16

DATE PUBLISHED-------70

SUBJECT AREAS--AERONAUTICS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL DECOMPOSITION, SOIL CHEMISTRY, HERBICIDE, SOIL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0184 STEP NO--UR/0394/70/008/003/0215/0216

CIRC ACCESSION NO--AP0130943

UNCLASSIFIED

2/2 012 UNCLASSIFIED

CIRC ACCESSION NO--AP0130943 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BIOASSAY BY SINAPIS ALBA AND CHROMATOG. ANAL. OF RESIDUAL LINURON FROM FIELD EXPTS. INDICATED THAT THIS HERBICIDE APPLIED AT PRESOWING CULTIVATION PENETRATED TO 10 CM OF STRONG LOW HUMUS, LOAMY CHERNOZEM SOIL. THE HERBICIDE WAS MOSTLY DEGRADED AFTER 2 MONTHS. NO RESIDUES WERE FOUND IN THE SEEDS. CROPS GROWN ON THE TREATED AREAS IN THE FOLLOWING YEARS WERE NOT AFFECTED.

FACILITY: VSES. NAUCH.-ISSLED. INST. GIG. TOKSIKOL. PESTITS., POLIM. PLAST. MASS, KIEV, USSR.

UNCLASSIFIED

USSR

Gerontology

UDC 612.81:612.67

SAMOSYUK, I. Z., Kiev Oblast Clinical Hospital

"Aging Characteristics of the Peripheral Nervous System"

Kiev, Vrachebnoye Delo, No 3, 1972, pp 111-113

Abstract: The nerves of the posterior femoral and tibial group, lumbosacral segments of the spinal cord, and corresponding nerve roots were studied in accident victims aged 10 to 82 years. The neuromorphological studies revealed that atrophy is the leading process in nerve aging which causes a premature changes in the medullated nerve fibers. Schwann's cells which produce myelin undergo aging first, and remyelization of the medullated nerve fibers become weak. A noticeable accumulation of the myelin metabolism products in the cytoplasm of Schwann's cells was found in comparatively young individuals. These cells become overloaded with metachromatically stainable particles in old people. The demyelination process leads to changes in the individual columnar cells. The reactivity of Schwann's cells and of connective tissues of fixed and mobile elements decreases with age, and this in turn slows down the elimination of myelin metabolic products. The peripheral neurons undergo aging asynchronously. The first degenerative changes occur in the nerve cells of the anterior spinal horns and at 33-35 years of age they also reach the

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USSR

SAMOSYUK, I. Z., Vrachebnoye Delo, No 3, 1972, pp 111-113

nerve roots. These changes acquire a well pronounced form after 50. A segmental perlaxonal process prevails up to the age of 65-75, and the secondary degeneration of the nerve fibers takes place at older age. The aging of the peripheral neurons occurs in the following order: spinal nerve cells (deposition of lipofuscin), Schwann's cells, myelin sheath (demyelization), axial columnar cells, and all other nerve cells.

2/2

USSR

UDC 536.46:533.6

YELYUTIN, V. P., MITIN, B. S., SAMOTEYKIN, V. V.

"Effect of High-Temperature Oxidation on the Ignition Characteristics of Slightly Dispersed Aluminum Powder"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 241-244 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B940)

Translation: An expression for the oxidation rate of slightly dispersed particles in the induction period is proposed on the basis of experimental studies made of aluminum oxidation. The expression obtained is used in calculations for the limiting conditions for ignition of aluminum as a function of particle size. The computational results are compared with data of other authors. Authors' abstract.

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USSR

UDC 669.71:669.046.42.001

YELYUTIN, V. P., MITIN, B. S., and SAMOTEYKIN, V. V., Moscow

"Effect of Oxygen Pressure on Aluminum Oxidation"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 227-230

Abstract: A detailed description is given of an experimental setup developed with the purpose of studying the kinetics of oxidation manometrically. Measurements were carried out on pure (99.99%) aluminum samples at 520, 550, 570, 620, and 650°C at pressures from 6 to 200 torr. Kinetic characteristics of oxidation at various temperatures and pressures make it possible to study the initial oxidation section and to evaluate the process during the experiment. It is shown that the oxidation rate increases with temperature according to the Arrhenius law, with activation energy of 35± kilocal/mol, and that the oxidation rate decreases with increasing oxygen pressure at 650°C and in the range of pressure from 6 to 200 torr. The parabolic oxidation constant is expressed by the formula: $K = 19.5p^{-1/n}$ where $n = 2.34$ and p is the oxygen pressure.

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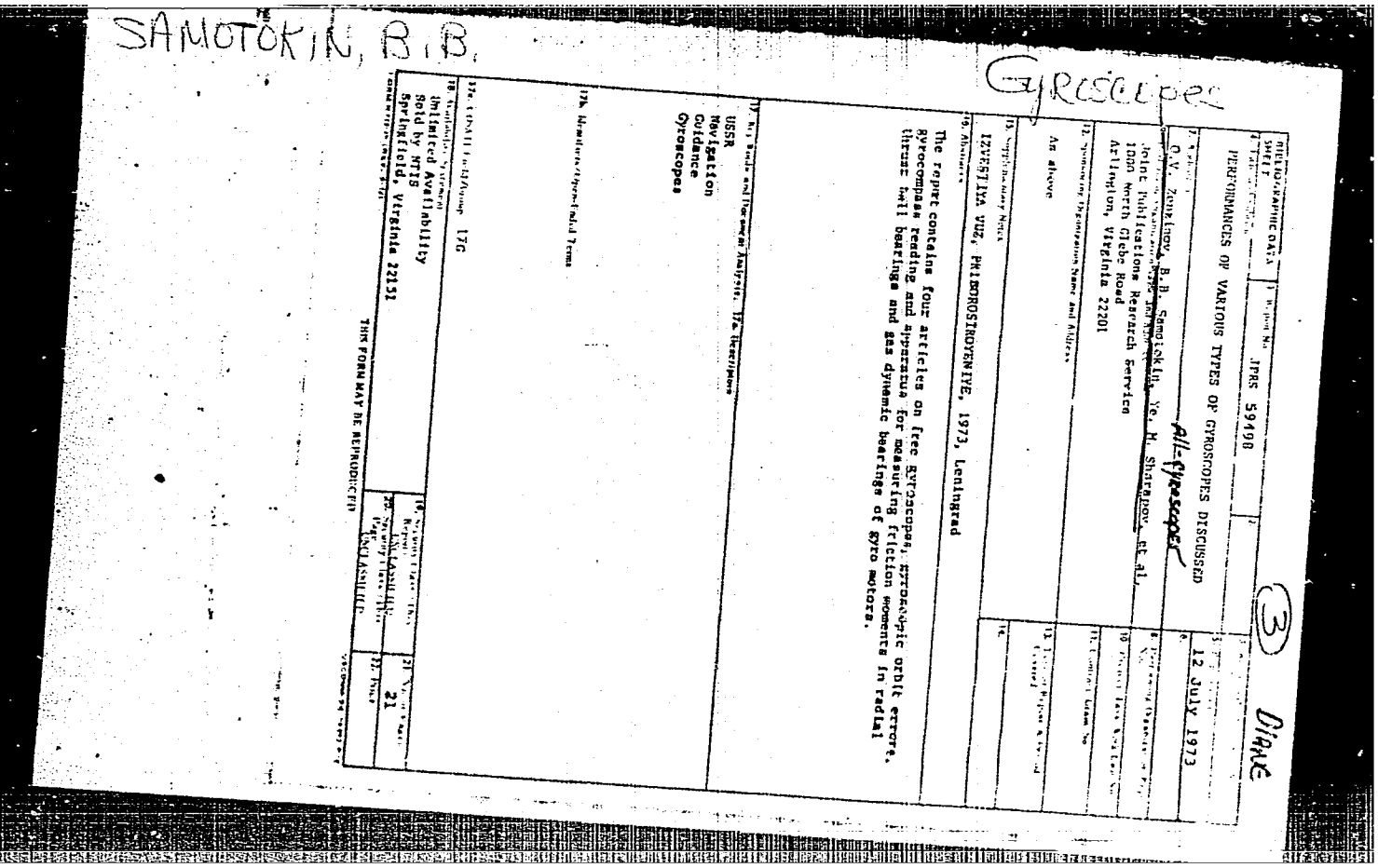

SAMOTOKIN, B.B.

Gyroscopes

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Diane

PERFORMANCES OF VARIOUS TYPES OF GYROSCOPES DISCUSSED

All-Gyroscopes

12 July 1973

JPRS 59498

V. Zuyenkov, B.B. Samotokin, Ye. M. Sharanov, et al.

Joint Publications Research Service
1000 North Glebe Road
Arlington, Virginia 22201

As above

IZVESTIYA VUZ, PRIBOROSTROYENIYE, 1973, Leningrad

The report contains four articles on free gyroscopes, gyroscopic orbit errors, gyrocompass reading and apparatus for measuring friction moments in radial thrust ball bearings and gas dynamic bearings of gyro motors.

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UDC 629.196.3:531.38

SAMOTOKIN, B. B., Kiev Polytechnical Institute

"Defects of a Gyroscopic Orbit Caused by Random Disturbances"

Leningrad, Priborostroyeniye, Vol 16, No 4, 1973, pp 71-74

Abstract: The defects of a single-rotor and a two-rotor gyroscopic orbit, caused by random errors of the vertical synthesizer and random gyroscope-drift components, are investigated with respect to an artificial earth satellite. The conclusion is drawn that when the damping coefficient k_2 of the gyroscopic-orbit correction system is decreased, this can result in a considerable increase in the errors of synthesis of the orbital plane, which are caused by random errors of the vertical synthesizer and random gyroscope-drift components. This is due to the fact that when $k_2=0$, from the viewpoint of dynamics of gyroscopic orbit becomes a conservative link, and it is well known that a random steady error at the imput of a conservative link leads to an unlimited increase of error dispersion at the output of that link. 1 figure. 3 references.

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AP0046291 - Samovarov N.A.

Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482 1/70

241295 DISCRETE MEASURING DEVICE OF TIME INTERVALS IN THE NANOSECOND RANGE, consisting of a coarse and fine reading units. The coarse reading unit comprises delay lines (1-9), pulse-potential coincidence circuits (10-19) and a ten unit memory device (20). The fine reading unit comprises a delay line (21-29), coincidence circuits (30-39), and a memory device (40). The fine reading unit comprises in addition a generator-recirculator (41) whose feed-back circuit consists of a delay line (42) and prohibition circuit (43). The delay time in the delay line (1) represents the value of one coarse reading division. The delay time in each following delay line is increased by one step. The pulse repetition period in the generator-recirculator is equal to the value of one coarse reading unit division.

29.1.68 as 1213441/26-9.SAMOVAROV.N.A.et alia. (15.8.69) Bul 13/1.4.69. Class 83d. Int.Cl.G 04f.

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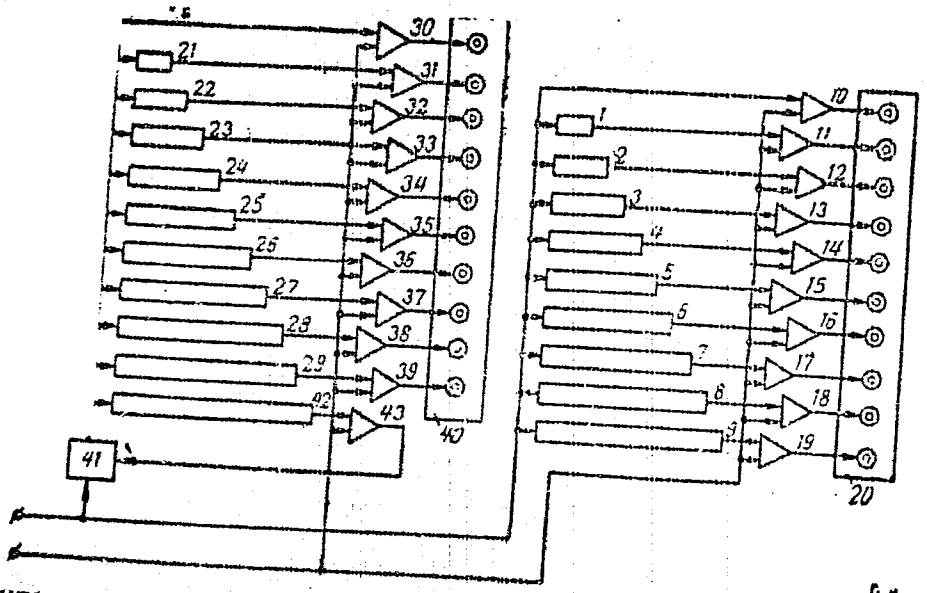
AA0046291



AUTHORS: Samovaro, N. A.; Sokolov, V. M.

19781448

USSR

UDC: 681.84:681.846.73:531.761

SAMOVAROV, N. A.

"A Coding Meter for Sequences of Time Intervals"

USSR Author's Certificate Number 285056, filed 19/05/69, published 29/04/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No A 268 P)

Translation: A coding device for measuring sequences of time intervals is suggested, containing a drive motor, magnetic drum or disk storage, magnetic head, pulse shapers, and counter with a coincidence circuit. In order to increase the resolving capacity of the device and decrease time delays related to switching of rotating speeds of the magnetic storage device, there are n universal heads along the first track of the recording device, which is divided into n sections (n = 2, 3,...), while on the second track there are a universal head, installed along a common generator line of the drum (or radius of the disk) with the first head of the first track, and a recording head installed opposite the second head of the first track and shifted in the direction opposite to the direction of rotation, as well as an erasing head. During recording, the windings of the universal heads on the first track are connected in parallel and are connected through a separation circuit to

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USSR

SAMOVAROV, N. A., USSR Author's Certificate Number 285056, filed 19/05/69, published 29/04/71 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No A 268 P)

the information and calibrating pulse shapers, while the windings of the identical head on the second track are connected to the output of the starting pulse shaper. During reproduction, the windings of the universal heads on the first track are connected through a shaping amplifier to the coincidence circuit, while the windings of the corresponding heads on the second track are connected to the input of the pulse counter, to the winding of the recording head, to the coincidence circuit, and through a shaper to the winding of the erase head.

2/2

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE CONCENTRATION OF IONS IN ELECTROLYTE SOLUTIONS -U-

AUTHOR--SAMOYLENKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,166

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, MEASUREMENT, IONIZATION CONSTANT, AQUEOUS SOLUTION, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1782

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132048

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132048

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN A.C. WAS PASSED THROUGH AN ELECTROLYTE SOLN. AND THE ION CONCN. WAS DETD. BY USING PASSIVE ELECTRODES HAVING DIFFERENT CONTACT SURFACES WITH THE ELECTROLYTE. TO GUARANTEE THE POSSIBILITY OF THE SELECTIVE DETN. OF ION CONCN. IN MULTICOMPONENT SYSTEMS, THE CHANGE IN THE FREQUENCY OF THE APPLIED VOLTAGE WAS ALSO MEASURED WHILE THE D.C. COMPONENT OF THE A.C. WAS KEPT UNCHANGED. THE CHANGE IN FREQUENCY WAS USED TO MEASURE THE CONCN. CHANGE. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF BASIC CHEMISTRY.

UNCLASSIFIED

MATHEMATICS

Differential and Integral Equations

USSR

UDC: 517.917

MITROPOL'SKIY, Yu. A., SAMOYLENKO, A. M., Institute of Mathematics, Academy of Sciences of the Ukrainian SSR

"On Quasiperiodic Oscillations in Nonlinear Systems"

Kiev, Ukrainskiy Matematicheskiy Zhurnal, Vol 24, No 2, 1972, pp 179-193

Abstract: A system of differential equations of the form

$$\frac{da}{dt} = \varepsilon A(a, \varphi, \varepsilon), \qquad \frac{d\varphi}{dt} = \lambda + \varepsilon B(a, \varphi, \varepsilon)$$

is considered, where $a = (a_1, \ldots, a_n)$ is an n-dimensional vector, $\varphi = (\varphi_1, \ldots, \varphi_m)$ is an m-dimensional vector, $A = (A_1, \ldots, A_n)$ and $B = (B_1, \ldots, B_m)$ are vector functions which are periodic with respect to φ with period 2π, $\lambda = (\lambda_1, \ldots, \lambda_m)$ are constants, ε is a small parameter, and t is time. A method of asymptotic integration is proposed for this system which yields approximate solutions and determines the existence of invariant toroidal sets of the system, giving asymptotic expansions of the solutions which fill the invariant

1/2

USSR

MITROPOL'SKIY, Yu. A., SAMOYLENKO, A. M., Ukrainskiy Matemnticheskiy Zhurnal, Vol 24, No 2, 1972, pp 179-193

toroidal sets. The results of the analysis are used in investigation of the quasiperiodic oscillations of a system described by n second-order differential equations. Bibliography of twelve titles.

2/2

USSR

ZVEREVA, S. V., ROMANOVA, G. P., SAMOYLENKO, A. V.

UDC 551.511

"Relationship Between the Transparency of the Atmosphere in Individual Regions of the USSR and Characteristics of Atmospheric Circulation"

Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), 1971, vyp. 38, pp 150-162 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B755)

Translation: The authors compare conditions of atmospheric transparency in different parts of baric formations on both terrestrial and altitude weather maps in the western sector of the Arctic (Kheys, Uyedineniye and Dikson Islands) and in the East Arctic (Chetyrekhstolbovaya and Dikson Islands), and also at Voyeykovo, Verkhoyansk, Yakutsk and Turukhansk stations.

In winter in the western sector of the Arctic in anticyclones and ridges, coefficients of transparency predominate which are greater than the average monthly value, while in cyclones and depressions the coefficients are less than the average monthly value. In anticyclones in summer, deviations of the coefficient of transparency from the average

1/3

USSR

ZVEREVA, S. V. et al, Tr. Leningr. gidrometeorol. in-ta, 1971, vyp. 38, pp 150-162

to either side are equally probable, while high values of the coefficient of transparency predominate in cyclones. An explanation is given for this distribution of the coefficient of transparency.

In Voyeykovo in anticyclones throughout the year, but especially in summer, high transparency of the atmosphere predominates, while in cyclonic circulation low transparency is the rule.

In the East Arctic there is pronounced repeatability of anticyclonic situations as compared with cyclonic, which is attributed to the proximity of this region to the quasistationary central arctic cyclone, resulting in very high values of the coefficient of transparency (Vrangel' Island).

In anticyclones of the East Arctic pronounced transparency of the atmosphere predominates throughout the year even in the face of high repeatability of low values of the coefficient of transparency, which is due to condensation haze in the winter and increased humidity in the summer. This is also seen in Eastern Siberia.

In cyclones of western trajectories in winter in the East Arctic, increased transparency of the atmosphere predominates, since such cyclones are mostly already occluded, high and dry, whereas cyclones from the

2/3

USSR

ZVEREVA, S. V. et al., Tr. Leningr. gidrometeorol. in-ta, 1971, vyp. 38, pp 150-162

Aleutian minimum give low transparency of the atmosphere, In summer cyclones of the East Arctic and Eastern Siberia, increased transparency of the atmosphere is usually observed, which is due to the continental origin of these cyclones.

No relation is detected between the transparency of the atmosphere and forms of the baric field on the AT_{700} map. An investigation is made of forms of the transparency of the atmosphere accompanying various forms of atmospheric circulation according to V. Ya. Vangengeym. Bibliography of 15 titles. Authors' abstract.

3/3

USSR UDC 547.241+547.835+547.821+547.558.1

SHEYNKMAN, A. K., SANOYLENKO, G. V., and BARANOV, S. N., Donets State University, Donets Department of Physical and Organic Chemistry of the Institute of Physical Chemistry, Academy of Sciences Ukrainian SSR

"Arbuzov Rearrangement Under the Action of Heteroaromatic Cations"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,377-1,378

Abstract: Recently D. REDMORE suggested the synthesis of phosphonic acids of the acridine series by the interaction of quarternary acridinium salts with diethylsodium phosphate by the Michaelis-Becker method. At the same time, the authors of the present article, which is the twelfth in the series "Reactions of Cyclammonium Cations," suggested a more general method for the synthesis of heterocyclic phosphonic acids by the reaction of trialkyl phosphites with N-acyl salts of six-membered nitrogen heterocycles. This reaction proved especially convenient with protonic salts of some six-membered nitrogen heterocycles. Thus, reaction with acridine hydrochloride yielded not only 9-acridinylphosphonic acid, but also dialkyl-9,10-dihydroacridine-9-phosphonates. Dehydrogenation of the latter gives dialkyl-acridine-9-phosphonates and then, by acid hydrolysis, acridinyl-9-phosphonic acid. The reaction is evidently common to all heteroaromatic cations.

1/1

USSR

UDC 576.851.48.095.14

PERSHINA, Z. G., and SAMOYLENKO, I. I., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Modification of the Properties of E. Coli K-12 (F^-) (287 uph^-) Induced by Repeated Irradiation With Gamma Rays"

Moscow, Mikrobiologiya, Vol 40, No 3, May/Jun 71, pp 528-531

Abstract: Repeated gamma irradiation of E. coli K-12 yields strains with increased radioresistance. While the LD-90 of the parent culture is 12.5 krad, it rises to 16.3 krad after 14 exposures and to 60.5 krad after 19 exposures. The mutants also differ from the parent strain in DNA composition (more AT-pairs in the nucleotides) and by their cultural, biochemical, serological, and auxotrophic properties. The modifications are stable and are transmitted to successive generations. Sera obtained for the initial strain and for the mutant strains give cross reactions, indicating that the mutants with increased radioresistance do not come from contaminating bacteria but are the true descendants of the initial E. coli strain.

1/1

USSR

UDC: 576.851.252.095.14.095.15

SAMOYLENKO, I. I., and PERSHINA, Z. G., Physical Chemistry Laboratory, and Radiation Immunology Laboratory, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Effect of Temperature on the Radioresistance of Staphylococcus aureus"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 57-59

Abstract: Two S. aureus strains (No. 73 and B-445) and their radioresistant mutants were used to study the effect of temperature on their growth after irradiation and the effect of irradiation combined with heat. A change in the temperature of postradiation growth (19 and 45°C) did not significantly alter the survival rate of the original cultures as compared with controls (grown at 37°C). In the radioresistant mutants, on the other hand, the survival rate at 19 and 45°C was lower than at 37°C. The bactericidal effect of ionizing radiation combined with heat was found to depend on the order in which the agents were applied. Simultaneous irradiation and heating (50°C for 15 min) was most effective, heat applied after irradiation was less effective, and irradiation at room temperature after heating was least effective.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MODIFICATION OF PROPERTIES OF STAPHYLOCOCCI AFTER REPEATED GAMMA IRRADIATION -U-

AUTHOR-(04)-TUMANYAN, M.A., PERSHINA, Z.G., PAVLOVA, I.B., SAMOYLENKO, I.I.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA 1970, VOL 39, NR 1, PP 112-117

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STAPHYLOCOCCUS AUREUS, GAMMA RADIATION, DNA, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1442 STEP NO--UR/0220/70/039/001/0112/0117

CIRC ACCESSION NO--AP0109502

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPEATED GAMMA IRRADIATION WITH SUBBACTERICIDAL DOSES OF STAPHYLOCOCCUS AUREUS RESULTED IN MODIFICATION OF ITS CULTURAL, BIOCHEMICAL AND OTHER PROPERTIES. ULTRA FINE CELL STRUCTURE CHANGED AND CELL RADIORESISTANCE INCREASED. A FALL IN ENZYME ACTIVITY, AN IMPAIRMENT OF HEMOLYTIC PROPERTIES AND A LOSS OF VIRULENCE CAUSED SAPROPHYTIZATION OF STAPHYLOCOCCI. A COMPARISON OF ULTRA FINE STRUCTURE IN THE PARENT STAPHYLOCOCCI AND IN THOSE WITH INCREASED RADIORESISTANCE REVEALED ENLARGED (2-2.5 FOLD) CELL DIMENSIONS IN THE IRRADIATED CULTURES, A DISTRUBANCE OF CELL DIVISION AND A DISAPPEARANCE OF MEMBRANE STRUCTURES TYPICAL FOR THE PARENT CULTURE. DESPITE THE CONSIDERABLE CHANGES IN STAPHYLOCOCCI WITH INCREASED RADIORESISTANCE, THEIR DNA BASE RATIO WAS IDENTIFICAL TO THAT OF THE PARENT BACTERIA.

UNCLASSIFIED

USSR S UDC 576.851.25.2.095.11

TUMANYAN, M. A., PERCHINA, Z. G., PAVLOVA, I. B., and SAMOYLENKO, I. I., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR

"Modification of Properties of Staphylococci After Repeated Gamma-Irradiation"

Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 112-117

Abstract: A study was made of the possibility of obtaining Staphylococci with increased radioresistance after repeated gamma-irradiation. Staphylococcus aureus strains 73 and V-445 were used. Experiments revealed that repeated gamma-irradiation of Staphylococcus aureus with sub-bactericidal doses resulted in modification of cultural, biochemical and other properties. Ultragine cell structure changed and cell radioresistance increased. A drop in enzyme activity, an impairment of hemolytic properties, and a loss of virulence caused saprophytization of the Staphylococci. A comparison of ultrafine structure in the parent Staphylococci and strains with increased radioresistance revealed enlarged (2-2.5 fold) cell dimensions in the irradiated cultures, disruption of cell division, and the dis-

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USSR

TUMANYAN, M. A., et al., Moscow, Mikrobiologiya, Vol 39, No 1, Jan/Feb 70, pp 112-117

appearance of membrane structures typical of the parent culture. Despite the considerable changes in staphylococci with increased radioresistance, their DNA base ratio was identical to that of the initial strain.

2/2

USSR

UDC 621.791.756:621.879.4

SHVARTSEV, A. YA, STOYKO, V. P., and SAMOYLENKO, L. V., Donets Polytechnical Institute

"Electric Slag Welding and Casting with a Constant Slag Bath"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 70, pp 60-63

Abstract: The rapid and widespread development of electric slag welding and casting has been hindered by certain defects in the present techniques, particularly the need for bringing in the slag bath. This has made the process wasteful, especially when it is used to cast small objects in mass production. These defects have been avoided in a process developed by the Donets Polytechnical Institute, which does not require that the bath be repeatedly brought in after a casting has been made. The process can therefore be termed casting with a constant slag bath. The chemical composition of this bath varies since there is a metallurgical reaction among the metal, the slag, and the gases inside the bath as well as on the free surface of the slag. Also fresh flux must be introduced into the slag bath in the mass production of the objects, and this too changes the chemical composition. Despite this disadvantage, the constant slag bath process deserves attention.

1/1

172 042 UNCLASSIFIED

TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF DINITROXYDIETHYLNITRAMINE IN THE ABSENCE OF GAS EXHAUST FROM THE REACTION ZONE -U-

AUTHOR-(04)-SAMOYLENKO, N.G., VINOKUROV, A.A., ABRAMOV, V.G., MERZHNOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 39-42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--THERMAL DECOMPOSITION, EXHAUST GAS, ORGANIC NITRO COMPOUND, CHEMICAL REACTION KINETICS, ACTIVATION ENERGY, AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1406 STEP NO--UR/0076/70/044/001/0039/0042

CIRC ACCESSION NO--AP0116853

UNCLASSIFIED

2/2 042 UNCLASSIFIED

CIRC ACCESSION NO--AP0116853 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CALORIMETRIC METHOD IS DESCRIBED FOR DETN. OF KINETICS OF THE THERMAL DECOMPN. OF DINITROXYDIETHYLNITRAMINE WHEN REACTION PRODUCTS ARE NOT BEING REMOVED FROM THE REACTION ZONE. THE PRODUCTS ACT AUTOCATALYTICALLY, INCREASING THE REACTION RATE BY A FACTOR OF 100 AND DECREASING THE ACTIVATION ENERGY OF DECOMPN. FROM 45 TO 32 KCAL-MOLE. THE HEAT OF REACTION INCREASED 1.5 TIMES IN COMPARISON WITH THAT OBTAINED IN AN OPEN SYSTEM. THE TIME DEPENDENCE OF HEAT EVOLUTION SHOWS TWO MAX. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

SAMOYLENKO, STANISLAV

"Reduction of Noise in Complex Systems"

Riga, Nauka i Tekhnika, No 3 (128), March 1971, pp 8-10

Abstract: This article contains a very general discussion of "signal" and "logical" means of reducing the noise in information gathering, transmission, storage, and processing as related to the formation of a general theory of noise reduction in information systems. Various methods of achieving these goals, both in use and predicted for the immediate future, are mentioned. Signal and logical methods of eliminating errors in the transmission process are discussed briefly. It is pointed out that there is a sufficient theoretical base offering the possibility of constructing codes to detect and correct distortions (both in digital and analog communications) characteristic transmission channels of various types.

Radio astronomy and radar systems are considered characteristic of information gathering systems. Again signal and logical methods of reducing noise are noted: primarily methods of time, frequency, and spatial filtration of signals

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USSR

SAMOYLENKO, STANISLAV, Nauka i Tekhnika, No 3 (128), March 1971, pp 8-10

and logical methods based on using defined laws characteristic of studied objects; possible rates of variation of the studied processes with time; possible time sequences of values of the studied variables; correspondence of the received values to a known fixed set; and so forth.

On the signal level, the problem of reducing the noise of information storage consists in finding information carriers and forms of signals which will insure the least noise, and on the logical level, methods of noise-proof encoding similar to those used in information transmission have basic significance. Reliability of the computers used is closely related to reducing the noise of information processing. This includes information transmission between the individual computer modules, information storage in the ready-access and external memories, and also data conversion in the processors. Signal methods include minimization of failures by decreasing the noise level and increasing discrimination of individual signals corresponding to the binary bits of the machine words. The logical methods include control of information conversion accuracy at the level of individual machine words or series of them. Noise-proof encoding methods play a significant role here.

2/2

USSR

UDC: 51:621.391

SAMOYLENKO, S. I.

"Binoidal Codes Which Correct Repeated Errors"

Nauch. sovet po kompleks. probl. "Kibernetika", AN SSSR (Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), Moscow, 1971, 16 pp, bibliography of 2 titles, No 3383-71 Dep. (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V408 DEP)

Translation: Methods are considered for constructing binoidal codes which correct repeated errors.

1/1

USSR

UDC: 8.74

SAMOYLENKO, S. I.

"Analysis of the Region of Uniqueness of Digital Binoids With Operations With Respect to a Modulus of a Factorable Number"

Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR (Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), Moscow, 1971, 10 pp, bibliography of 1 title, No 3382-71 Dep. (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V522 DEP)

Translation: The analysis of the region of uniqueness of digital binoids given in the article is a basis for future computer analysis. Author's abstract.

1/1

USSR

SAMOYLENKO, S. I. UDC: 51:621.391

"Non-Distributive Error-Correcting Codes"

Nauch. sovet po kompleks. probl. "Kibernetika", AN SSSR (Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), Moscow, 1971, 19 pp, bibliography of 1 title, No 3384-71 Dep. (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V707 DEP)

Translation: A method is considered for constructing burst error-correcting codes based on a mathematics in which the condition of distributivity is not satisfied. The proposed method is illustrated by an example of coding of analog transmissions using transformations which do not meet the condition of distributivity.

1/1

USSR

SAMOYLENKO, S. I.

"Use of Certain Combinatorial Circuits for Construction of Interference-Resistant Codes"

Informatsiyonnye Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika" AN SSSR [Information Materials, Scientific Counsel on the Combined Problem of "Cybernetics" Academy of Sciences USSR], No 3(50), 1971, pp 4-15 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V483 by L. Bassalygo).

Translation: Codes are studied over a finite abelian group G = {g} (group operation -- addition), fixed by a test matrix of 0 and 1 ($g \cdot 0 = 0 \cdot g =$ the null of the group, $g \cdot 1 = 1 \cdot g = g$). The correcting capabilities of codes whose test matrices are formed using the incidental matrices of various types of block diagrams are studied.

1/1

SAMOYLENKO, V. I.

Radio Engineering

JPRS 54764

22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. D. Bakhrakh, corresponding member of the USSR Academy of Sciences, and V. I. Samoylenko, candidate of engineering sciences: Nelineynyye i SVCh-ustroystva radiotekhnicheskikh sistem [Nonlinear and Microwave Devices in Radio Engineering Systems], Trudy Odesskogo ordena Lenina aviatsionnogo instituta imeni Sergo Ordzhonikidze, Vol 2, No 215, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

CONTENTS

USSR

Bakhrakha, L. D., Samoylenko, V. I. M. (ed.)

"Nonlinear and Superhigh-Frequency Radio Engineering Systems"
(Nelineynye I Sverkhvysokochastotnye Radiotekhnicheskiye Sistemy)

Moscow, 1970, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

ABSTRACT: This collection of articles discusses the general theory of nonlinear oscillator systems, their application, and analyses the characteristics of nonlinear elements, nonlinear pulse circuits, and various antenna devices.

The possible application of subharmonic generators for null units (phase discriminators) in analogue-digital converters is analysed.

The development and the basics of the operating theory of superhigh frequency diodes of switching devices are given and the properties of "thinned" antenna arrays is presented. There are 22 tables, 168 illustrations, and 102 citations.

1/5

USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

The contents of the book are as follows:

USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

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USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

4/5

USSR

BAKHRAKHA, L. D., et al, Izd-vo Mashinostroyeniye, 2,300 copies, 332 pages

5/5

USSR

SAMOYLENKO, V. I.

UDC 621.372.061:538.56

"Energy Calculation of Oscillatory Systems with Nonlinear, Hysteresis and Parametric Elements"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 215, pp 25-42 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A133)

Translation: The energy method of calculating oscillatory systems of any order is discussed. The energy functions of the generator, the linear and nonlinear parts of the system are obtained in general form. The result obtained is analogous to the result obtained from the Mathieu equation. A procedure is proposed for analysis of systems with hysteresis nonlinearities. Expressions are obtained for the energy functions for hysteresis nonlinearity in general form for operation of the system on the fundamental frequency and considering the second harmonic. The possibility of using the energy method for studying systems of higher than second order with nonlinear, parametric and hysteresis elements is proved for comparative simplicity of the method itself.

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USSR

UDC 621.372.061

BAKHRAKHA, L. D., SAMOYLENKO, V. I. (Editors)

Nelineynyye i sverkhvysokochastotnyye radiotekhnicheskiye sistemy. 2. Sb. statey. (Tr. Mosk. aviats. in-ta, vyp. 215) (Nonlinear and Superhigh Frequency Radiotechnical Systems. 2. Collection of Articles. (Works of Moscow Aviation Institute. vyp. 215)), Moscow, Mashinostroyeniye Press, 1970, 332 pp, ill., 2r. 7k (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A103K)

Translation: The general theory of nonlinear oscillatory systems and application of the systems are investigated. The characteristics of the nonlinear elements, the pulsed nonlinear systems and various antenna devices are studied. The possibility of applying subharmonic oscillators as the zero element (phase descriminator) in analog-to-digital converters is analyzed. The development experience and the fundamentals of the theory of operation of diode superhigh frequency commutation devices are discussed; the properties of "sparse" antenna arrays are investigated. There are 168 illustrations, 122 tables and a 102-entry bibliography.

1/1

UDC 621.382.3:621.375.4

USSR

SAMOYLENKO, V. I., BOGDANOVA, G. A.

"Nonlinear Properties of the Input Circuit of a Transistor with Automatic Bias"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 215, pp 150-160 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D100)

Translation: The rectifying properties of the emitter-base gap of a transistor in a circuit with a common emitter are investigated. The current amplitude of the basic harmonic and the variation of the constant component of the current are determined. The input impedance of the input section of the transistor with automatic bias is found as a function of the input signal amplitude, the gain coefficient with respect to the transistor current, the magnitude of the resistance in the emitter circuit and other parameters. It is demonstrated that the variation of the input impedance of the transistor input circuit from the magnitude of the amplitude can be used to limit the oscillations in autooscillators operating in the undervoltage mode. The bibliography has 5 entries.

1/1

Acc. Nr. APO 036437 Ref. Code: UR 0213

PRIMARY SOURCE: Okeanologiya, 1970, Vol 10, Nr 1, pp 3 -19

THE OCEAN UNDER THE ACTION OF THE SUN AND WIND
(ON THE NATURE OF THE PERUVIAN COLD CURRENT)

Samoylenko, V. S.

The unity of the physical processes that connect the ocean with the atmosphere is nowhere pronounced more vividly than in the nature of abnormally cold currents existing in the tropical latitudes of the oceans.

Consideration is being given to the nature of the most extraordinary Chilean-Peruvian current off the South American coasts whose temperature is 10° lower than that of the open ocean in the same latitudes. The author shows that the causes of this unusual phenomenon are purely meteorological. First, the effect produced by the heat of the sun on the ocean waters is considered to reveal a sharp discrepancy between the distribution of the sun's heat and water temperature at the ocean surface. The theoretical computations indicate also that water temperature of the Peruvian current is 8 to 10° lower than the equilibrium temperature that corresponds to the processes of radiation and turbulent heat exchange with the atmosphere. The computations show a powerful cold advection as great as 40 Cal/cm²/year.

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REEL/FRAME
19721282

12

AP0036437

Such a powerful cold flux is created by the maximum (for the Pacific Ocean) divergence of the wind field observed in this area with the values of $4 \cdot 10^{-6}$ sec^{-1} between 15 and 30° S latitudes. In this part of the ocean, the trade air flow is extremely uniform and steady, being never upset by any disturbances. This flow is parallel to the coastline and is directed south or south-south-east over the entire length. According to the laws of hydrodynamics, it creates constant lateral upwellings and maximum divergence in the surface current field which results in a constant, though rather slow, ascending to the ocean surface of the deep cold water carrying 40 Cal/cm^2 of cold per year. All other cold tropical currents of the World Ocean are evidently of the similar nature.

D.M.

19721283

3/2

USSR

UDC: 533.9...16

SAMOYLENKO, Yu. I.

"Electromagnetic Control of Charged Particles With Regard to Random and Quantum Effects"

Kiev, Upravlyayemyye sluchayn. protsessy i sistemy--sbornik (Controlled Random Processes and Systems--collection of works), 1973, pp 120-140 (from RZh-Fizika, No 6, Jun 73, abstract No 6G359 by A. Karkhov)

Translation: The paper consists of two parts. The first part deals with classical and quantum models of statiscal ensembles as models of objects of automatic control. A general outline is given of the theory of possible quantum computing devices and the order of problem solution using such devices. The second part takes up specific problems in the control of statistical ensembles according to the feedback principle. Suppression of instability is considered in a system of two interpenetrating beams (ion and electron) with the aid of a feedback system with a specially selected characteristic. It is proposed that automatic control be used to prevent stochastic destruction of magnetic surfaces in a stellarator.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SPECTRAL PROPERTIES OF CONTROLLING MEDIA WITH PERIODIC PARAMETERS -U-

AUTHOR--SAMOYLENKO, YU.I.

COUNTRY OF INFO--USSR

SOURCE--AVTOMATIKA I TELEMEKHANIKA, 1970, NR 3, PP 42-54

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LINEAR CONTROL SYSTEM, FOURIER TRANSORM, PERIODIC FUNCTION, INTEGRAL EQUATION, APPROXIMATE SOLUTION, ASYMPTOTIC SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1466 STEP NO--UR/0103/70/000/003/0042/0054

CIRC ACCESSION NO--AP0106222

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS SUGGESTED A METHOD OF INVESTIGATING THE SPECTRAL PROPERTIES OF LINEAR DISTRIBUTED SYSTEMS WITH PERIODIC PARAMETERS, THE METHOD BASED ON THE APPLICATION OF THE MULTIDIMENSIONAL TRANSFORMATION OF ROURIER WITH A DRIFT PARAMETER. AN ELECTROMECHANICAL MODEL OF THE ARTIFICIAL MEDIUM WITH A SPACE TIME PERIODICITY OF PARAMETERS IS INVESTIGATED BY MEANS OF THIS METHOD. THE INTEGRAL EQUATIONS FOR PARAMETRIC SPECTRAL FUNCTIONS THAT ARE DETERMINED IN AN ELEMENTARY CELL HAVE BEEN OBTAINED AND CERTAIN METHODS OF CONSTRUCTING APPROXIMATE AND ASYMPTOTIC SOLUTIONS ARE INDICATED. RECOMMENDATIONS CONCERNING THE SYNTHESIS OF CONTROLLING MEDIA WITH SET SPECTRAL CHARACTERISTICS ARE GIVEN.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PILOTS ARE GETTING READY FOR DEFOLIATION -U-

AUTHOR--SAMOYLIK, V.

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2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS REPORTED THAT PILOTS OF THE KAZAKH, UKRAINIAN, NORTH CAUCASIAN, WEST SIBERIAN, NEAR VOLGA, KIRGIZ AND LATVIAN ADMINISTRATIONS OF CIVIL AVIATION WILL PARTICIPATE IN THE 1,944,000 HECTARE COTTON DEFOLIATION PROGRAM.

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USSR UDC 621.0.39.58+615.7

KUDRYASHOV, Yu. B., GONCHARENKO, Ye. N., DEYEV, L. I., GORSKAYA, T. G., and SAMOYLIKOVA, T. I., Moscow State University imeni M. V. Lomonosov

"Reduction of Endogenous Radiosensitizers, LTV [Lipid Toxic Substances], as One of the Mechanisms of the Radioprophylactic Effect"

Moscow, Doklady Academii Nauk SSSR, Vol 195, No 1, 1970, pp 206-208

Abstract: A study was made of the decrease in LTV activity in tissues of white rats after introduction of highly effective radioprotectors. The same effect as is observed with hypoxic hypoxia was found. The drop in LTV activity was accompanied by a similar decrease in the tissues or by an increased inhibitor content. It was determined that the shifts observed in the period of maximum radioresistance (15 minutes) are attenuated and expire after 4-6 hours. One of the possible mechanisms for the effect produced by radioprotectors may be the reduction in the content of biogenic radiosenitizers during the period of enhanced radioresistance associated with hypoxia or with the injection of radioprotectors (such as AET, MEA).

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UDC: 621.328.002.54

SAMOYLOV, A. D., GOLOVIN, N. V., ZHEZLOV, V. V., BELIKOV, S. S.

"A Semiautomatic Device for Applying a Coating"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329600, Division H, filed 26 Nov 69, published 9 Feb 72, p 209

Translation: This Author's Certificate introduces a semiautomatic device for applying a coating on the junctions of transistor devices. The device contains a cassette-loading mechanism, a cassette-transport mechanism, and a mechanism for applying a protective coating. As a distinguishing feature of the patent, the quality of the coating is improved by making the mechanism for coating application in the form of two gears which mesh with drive racks. Fastened to the gear axles are spring clamps carrying wire loops.

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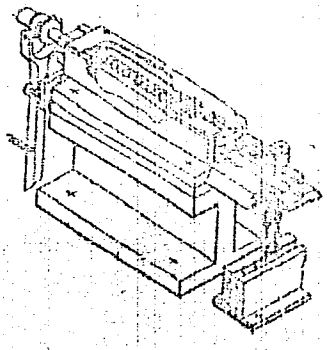
SAMOYLOV, A. D. et al., USSR Author's Certificate No 329600



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USSR

UDC 621.3.036.539.375-6

GERMAN, A. N., CHATYNYAN, L. A., SAMOYLOV, A. I., POKROVSKAYA, N. G., and YEGAN, O. M., All-Union Institute of Aviation Materials

"Investigation of the Surface Layers of 30KhGSNA Steel After Electric-Arc Alloying With Br. MTs-f Bronze and Molybdenum"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 13-16

Abstract: A study was made of the physical and chemical processes that take place in the electric-arc alloying of 30KhGSNA steel to determine if electric-arc alloying can be used to increase the wear resistance, emission capability, electrical conductivity, and other properties of metals. The steel was investigated after oil quenching and tempering for two hours at 200° C and electric-arc alloyed with Br. MTs-f bronze and Mo in a helium atmosphere using an EFI-ELEKTROM device. Metallographic studies showed that a mechanical mixture of base-metal and coating material particles is formed by this process. Microhardness achieved a maximum value in the layers where there were no bronze inclusions for the bronze-alloyed steel, and in layers where there was some molybdenum in the Mo-alloyed steel. It was noted that the concentration of coating-materials elements and base-metal vary along the depth of the alloyed
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GERMAN, A. N., et al., Fiziko- Khimicheskaya Mekhanika Materialov, Vol 9, No 6, 1973, pp 13-16

layer and were qualitatively identical. Consequently, the mechanism of electric-arc coating formation was analogous for both alloy materials. Friction tests in industrial oil showed that the wear resistance of samples after electric-arc alloying is significantly increased. Five figures, one table, six bibliographic references.

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USSR UDC 669.71:669 — 177:539.3.373

SENATOROVA, O. G., and SAMOYLOV, A. I., All-Union Scientific Research Institute of Aviation Materials

"On the Relation Between Cold Hardening and Residual Stresses in the Treatment of V96ts Aluminum Alloy by Cutting"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, pp 76-77

Abstract: A study was made of the depth and degree of cold hardening and residual stresses which occur in the treatment of aluminum alloys by cutting. Surface layers of heat-hardened pressed billets of the high-strength aluminum alloy V96ts were used for the study. These were treated by turning under identical conditions with cutters with different amounts of wear along the back edge and with different types of residual stress sheets. The stresses were determined by the Davidenkov method. The distribution of the hardening in the surface layer was estimated from the microhardness and by X-ray diffraction analysis. The microhardness was measured on a PMT-3 instrument by using two methods, viz. removing layers of the metal by electropolishing and

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SENATOROVA, O. G., and SAMOYLOV, A. I., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, pp 76-77

measuring on oblique cuts. It was found that in specimens treated with sharp cutters, i.e. with low residual stresses, the microhardness increases towards the surface. The area affected by stresses is 1.1-1.2 times greater than the hardened zone.

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UDC 620.194

AZHOGIN, F. F., and SAMOYLOV, A. I.

"Effect of Internal Stresses on the Corrosion Cracking of High-Strength Steels"

Moscow, Zashchita Metallov, Vol 7, No 4, Jul-Aug 71, pp 444-445

Abstract: The quantitative relationship between the resistance to corrosion cracking and the magnitude of internal stresses was experimentally investigated on specimens of 30KhGSNA high-strength steel. The specimens were tested by different tensile stresses in H_2SO_4(20%) + NaCl(30 g/l) and in a tropical chamber. The stresses were determined according to their diffraction line shifting relative to a calibrating device. The test results show that the corrosion cracking resistance of 30KhGSNA steel increases with increasing compression stress and decreasing internal tensile stress. The determined linear dependence of the long-term corrosion strength σ_{cr} on the magnitude of internal stresses σ_{int} is in accordance with concepts on the corrosion cracking mechanism characterized by $\sigma_{cr} = \frac{V - k\sigma_{int}}{c}$, where V, k., and c are constants. One illustr., one table, ten biblio. refs.

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