

USSR

UDC 621.382.3

FUNDUR, P.A., AKMENTYN'SH, YA.YA., BERZIN'SH, A.A., DANE, B.YA., ZOBENS, V.YA.,
KOKORISH, YE. YU., KURMIT, YA. A.

"Silicon Low-Noise High-Frequency Unencapsulated Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Technology.
Scientific-Technical Collection. Microelectronics), 1970, Issue 2(23), pp 81-
86 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No
4E245)

Translation: The construction, technology, and principal parameters are described of silicon planar unencapsulated low-noise high-frequency n-p-n type transistors for hybrid circuits.

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UDC595.771-12:616.9-036.2

DUBITSKIY, A. M., DESHEVYKH, N. D., LEVCHENKO, N. G., and DANEBEKOV, A. YE.,
Institute of Zoology, Academy of Sciences, Kazakh SSR

"A Method of Studying Natural Epizootics of Blood-Sucking Mosquitoes"

Moscow, Meditsinskaya Parazitologiya i Paraziratnyye Bolezni, No 6, 1971,
pp 701-704

Abstract: To use pathogens as a means of controlling parasites and pests requires familiarity with the natural course of epizootics among them. Since disease of mosquito larvae generally have a mosaic structure, different habitats must be investigated. Larvae should be sampled from six characteristic types of sections of ponds (open, shaded, overgrown with aquatic vegetation, not overgrown, deep shallow). Mosquitoes are collected from a number of sites relatively close together to determine the degree of infestation or infection and then inspected and dissected to assess the intensity of the disease. The procedure should be repeated every month throughout the year to study seasonal patterns. Analysis of the results of investigations of the different segments of a single infected population gives some idea of the distribution, lethality and phase of the disease in which the larvae die. The initial symptoms of the disease, their development, and increase in severity combined with the subsequent death of a certain number of

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DUBITSKIY, A. M., et al., Meditsinskaya Parazitologiya I parazitratnyye
Bolezni, No 6, 1971, pp 701-704

individuals of the population, make it possible to determine the course and
severity of the disease.

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USSR

UDC 541.183.03

MARDALEYSHCHVILI, R. YE., DANELIYA, A. P., KONI, M. YA.

"Adsorption Capacity of Higher and Lower Oxides of V, U and Mn
Obtained by Interconversion"

Vestnik Moskovskogo Universiteta, Khimiya, No 4, 1971, pp 387-397

Abstract: The absolute numbers of Me and O adsorption centers and the ratio of these numbers change with changing surface areas during oxidation-reduction conversions of the higher and lower oxides of metals. Specimens of three metals were studied: vanadium (V_2O_5 , V_2O_4 and V_2O_3), uranium (UO_3 , U_3O_8 and UO_2) and manganese (MnO_2 , Mn_3O_4 and MnO). It was found that when oxidation or reduction is performed at temperatures providing low process rate, the number of Me centers on the surface does not change, while the number of O centers changes to the same extent as the change in the number of atoms (ions) of oxygen in the oxide produced.

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MARDALEYSHVILI, R. Ye., DANELIYA, A. P., KON', M. Ya.

"Adsorption Capacity of Higher and Lower Oxides of Y, U and Mn Produced by Mutual Conversions"

Vestn. Mosk. Un-ta. Khimiya [Herald of Moscow University, Chemistry], Vol 12, No 4, 1971, pp 387-397 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 B1506 by S. Grigorovich).

Translation: The change in the surface of oxides of vanadium (V_2O_5 , V_2O_4 and V_2O_3), uranium (UO_3 , U_3O_8 and UO_2) and manganese (MnO_2 , Mn_3O_4 and MnO) during mutual adsorption-reversible redox conversions of the oxides is studied by the method of adsorption of N_2 , H_2 , Ar, NH_3 , O_2 (C_2H_5) $_2O$ and CO from the gas phase. It is shown that during these conversions, the absolute quantity of Me and O adsorption centers and their relationships are changed, while the share of surface atoms in relationship to the total number of atoms in the adsorbent does not change. In the opinion of the author's, the Me/O ratio is identical on the surface and in the volume of stoichiometric oxides. It is suggested that the degree of development of the surface be characterized by the ratio of the number of surface atoms, determined by the adsorption method, to the total number of atoms in the specimen of adsorbent.

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USSR

UDC 621.317.353.1

DANELYAN, A.G.

"Concerning Measurement Of Nonlinear Distortion Factor In Range Of Intrasonic Frequencies"

Radiotekhnika, Vol 27, No 5, May 1972, pp 105-107

Abstract: A highly-selective filter with polarized thermistors was used for measuring the nonlinear distortion factor (NDF). The filter is a T-shaped bridge scheme analogous to a T-shaped bridge LRC-filter used at sonic frequencies. The results of the experiments conducted show that the intrinsic noise in the filter (approximately 0.3 mv) limits measurement of small amounts of NDF. 4 figs. 1 tab. 7 ref. Received by editors, 7 Oct 1970.

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USSR

UDC: 621.372.54(088.8)

DANELYAN, A. G.

"A T-Shaped Bridge Filter"

USSR Author's Certificate No 264560, filed 10 Jun 68, published 25 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A298 P)

Translation: This Author's Certificate introduces a T-shaped bridge filter which contains a series branch made up of series-connected capacitors, and a parallel branch formed by a variable resistor. As a distinguishing feature of the patent, the selectivity of the proposed filter on very low frequencies is improved by connecting two parallel circuits in the series branch, one of them being made up of series-connected polarized thermistors while the other is made up of series-connected resistors. Connected between the tie points of these circuits is a controllable source of stabilized DC voltage whose control element is mechanically connected to the slide wire of the variable resistor.
E. L.

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UDC 621.386.825

DANELYAN, A.G.

"Graphicoanalytic Method Of Construction Of Static Voltampere Characteristics Of Thermistors"

Tr. metrol. in-tov SSSR (Works Of The Metrological Institutes Of The USSR), 1970, Issue 117(177), pp 146-150 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B359)

Translation: A graphicoanalytic method is recommended for construction of a family of static voltampere characteristics of thermistors at various ambient temperatures. In contrast to current methods of construction, based on the temperature characteristic of the resistance of the thermistor, for the method of construction under consideration knowledge is necessary of the initial characteristic at one point of the temperature coefficient of resistance or the dynamic leakage coefficient. The method of construction is considered for thermistors and posistors. 3 ref. 4 ill.

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1/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--INTENSITIES OF THE PARTIAL RADIATIVE TRANSITIONS TO THE ROTATIONAL AND VIBRATIONAL BANDS IN THE RESONANCES OF THE Gd PRIME155 AND Gd

AUTHOR--(03)--DANELYAN, L.S., YEFIMOV, B.V., SOTNIKOV, S.K.

COUNTRY OF INFO--USSR

D

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 2, PP 456-459

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR SPIN RESONANCE, RADIATIVE CAPTURE, NEUTRON IRRADIATION, PHOTON EMISSION, GAMMA SPECTRUM, GADOLINIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1976/2057

STEP NO--UR/0056/70/058/002/0456/0459

CIRC ACCESSION NO--AP0043585

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0043585

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOTAL INTENSITIES OF GAMMA TRANSITIONS TO THE ROTATIONAL AND VIBRATIONAL BAND LEVELS IN THE Gd PRIME155 AND Gd PRIME157 ISOTOPE RESONANCES FOR NEUTRON ENERGIES UP TO 150 EV ARE MEASURED WITH A DOUBLE CRYSTAL SCINTILLATION SPECTROMETER. AN ANALYSIS OF THE EXPERIMENTAL DATA INDICATES THE EXISTENCE OF CORRELATION BETWEEN THE INTENSITIES OF TRANSITIONS TO THE ROTATIONAL BAND AND THE SPINS OF THE INITIAL STATES IN THE Gd PRIME155 NUCLEUS. A PROBABILITY ASSIGNMENT OF CAPTURE STATE SPINS OF Gd PRIME155 IS MADE.

UNCLASSIFIED

USSR

UDC 8.74

DANELYAN, T. YA., MEDVEDEV, V. D., DROBIN, S. V.

"Possible Direction of the Construction of an All-Purpose Algorithm for Non-syntactic Analysis of Language Programs"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 369-380 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V466)

No abstract

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USSR

UDC: 681.3.06:51

DANELYAN, T. Ya.

"A Possible Method of Defining a Programming Language in Terms of a Parametrized Scheme"

V sb. Teoriya i praktika mashin. obrab. ekon. inform. (Theory and Practice of Computer Processing of Economic Information--collection of works), Moscow, 1971, pp 184-192 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V810)

Translation: A method is proposed for describing the structure of programming languages in terms of a system of parameters. A programming language (L -language) in a set of P -permissible parameters is defined as an ordered set of four elements or quadruples $FL = F(l_1, l_2, l_3, l_4)$; where l_1 is the universal set of abstract objects defined on the object region (numbers, symbols of lines, symbols of operations and functions, special symbols); l_2 is the basic set of relations given on l_1 ; l_3 is the form of the base structure of the L -language; l_4 is the set of rules for the method of representing the forms of the L -language, showing the correspondence

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DANELYAN, T. Ya., Teoriya i praktika mashin. obrab. ekon. inform., Moscow, 1971, pp 184-192

between forms of the base structure and the specific form of a relation which is perceived by the receiver. Two problems are discussed within this framework of the parametric approach to setting up a language: 1) is a parametrization of this kind unique: i.e., can any programming language be unambiguously and schematically described by the quadruplex $FL (l_1, l_2, l_3, l_4)$; 2) is the parametric system FL independent or generating: i.e., can it generate programming languages each of which differs from the given language by exactly one parameter. V. Mikheyev.

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UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--UNSATURATED LACTONES. I. SYNTHESIS OF SUBSTITUTED UNSATURATED GAMMA
LACTONES BY CONDENSING TERTIARY ALPHA OXO ALCOHOLS WITH MALONIC ESTER
AUTHOR--(05)-AVETISYAN, A.A., TATEVUSYAN, G.E., MANGASARYAN, TS.A.,
MATSQYAN, S.G., GAGYAN, M.T.

COUNTRY OF INFO--USSR

D

SOURCE--ZH. URG. KHIM. 1970, 6(5), 962-4 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ESTERIFICATION, CHEMICAL SYNTHESIS, LACTONE, ALCOHOL,
CONDENSATION REACTION, MOLECULAR STRUCTURE, TERTIARY ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3006/1316

STEP NO--UR/0366/70/006/005/0962/0964

CIRC ACCESSION NU--AP0134990

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0134990

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

ABSTRACT. THE REACTION OF RR C(OH)COME WITH CH SUB2 (CO SUB2 ET) IN ABS. ETGH CNTG. NA GAVE 5,R, 5,R PRIME DISTRIBUTED 4,METHYL,DELTA ALPHA,BETA,BUTENOLIDES (R AND R PRIME ARE ME AND ME, ME AND ET OR (CH SUB2) SUB5). THE REACTION INVOLVES TRANSESTERIFICATION. THE INTERMEDIATE ESTER MECOCME SUB2 O SUB2 CCH SUB2 CO SUB2 ET WAS ISOLATED AND ITS STRUCTURE ESTABLISHED BY SYNTHESIS. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

172 014 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF LACTONES. VII. SELECTIVE REDUCTION OF
ACETYLBUTYROLACTONES BY ALUMINUM ISOPROPYLATE -U-

AUTHOR--(05)--ARUTYUNYAN, V.S., SARKISYAN, O.A., KAZARYAN, SH.A., ZALINYAN,
M.G., DANGYAN, M.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 856-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, LACTONE, CHEMICAL REDUCTION, ORGANICALUMINUM
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
DOCX REEL/FRAME--2000/2083

STEP NO--UR/0366/70/006/004/0856/0860

ARC ACCESSION NO--AP0125670

UNCLASSIFIED

2/2 014

IRC ACCESSION NO--AP0125670

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SELECTIVE REDN. OF ALPHA, (R
 SUBSTITUTED), GAMMA, ACETYLBUTYROLACTONES (R EQUALS ET, PR, ISO-PR, BU,
 ISO-BU, OSCAMYL) WITH (ISO-PRO) SUB3 AL (I) GAVE ALPHA, (R
 SUBSTITUTED), GAMMA, (ALPHA, HYDROXYETHYL) BUTYROLACTONES. THE REDN. OF
 BETA, ACETYL, BETA, CARBETHOXYBURYROLACTONE WITH I GAVE
 BETA, (ALPHA, PROPOXYETHYL), BETA, CARBETHOXYBUTYROLACTONE WHICH WAS
 DECARBOXYLATED TO BETA, (ALPHA, PROPOXYETHYL) BUTYROLACTONE (II). THE
 REDN. OF BETA, ACETYLBUTYROLACTONE WITH I ALSO GAVE II. THE REDN. OF
 ALPHA, (3, GXOBTYL) BURYROLACTONE GAVE
 ALPHA, (3, HYDROXYBUTYL) BUTYROLACTONE. ALPHA, ACETYLBUTYRO, LACTONES COULD
 NOT BE REDUCED IN THIS WAY. FACILITY: EREVAN. GOS. UNIV.,
 EREVAN, USSR.

UNCLASSIFIED

172 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF LACTONES. VIII. REACTIONS OF
ALPHA, SUBSTITUTED, DELTA, HYDROXY, GAMMA, CAPROLACTONES -U-
AUTHOR-(05)-ZALINYAN, M.G., ARUTYUNYAN, V.S., SARKISYAN, O.A., KAZARYAN,
SH.A., DANGYAN, M.T.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6 (4), 860-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, LACTONE, DEHYDRATION, CHLORINATED ORGANIC
COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2084

STEP NO--UR/0366/70/006/004/0860/0862

ARC ACCESSION NO--AP0125671

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

IRC ACCESSION NO--AP0125671

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEHYDRATION OF
ALPHA, (R, SUBSTITUTED), DELTA, HYDROXY, GAMMA, CAPROLACTONES (I) R EQUALS
ET, PR, BU, ISO-BU, ISO-AMYL) WITH HPO SUB2 GAVE
ALPHA, (R, SUBSTITUTED), GAMMA, VINYL BUTYROLACTONES. THE REPLACEMENT OF
THE OH GROUP OF I BY CL GAVE DELTA, CHLORO ANALOGS OF I WHICH REACTED
WITH ETGNA TO GIVE DELTA, ETHOXY ANALOGS OF I. FACILITY: EREVAN.
GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—REACTIONS OF DIETHYL ALKYLGLYCIDYLMALONATES WITH AMINES —U—
AUTHOR—(04)—MESROPYAN, E.G., KARAPETYAN, Z.T., AVETISYAN, D.V., DANGYAN,
M.T.
COUNTRY OF INFO—USSR
SOURCE—ARM. KHIM. ZH. 1970, 23,1, 45-8
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—ALKYL RADICAL, AMINE, ALIPHATIC ESTER
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—1999/1940 STEP NO—UR/0426/70/023/001/0045/0048
CIRC ACCESSION NO—AP0123721
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ESTERS (I) WERE HEATED WITH 1 EQUIV. DIALKYLAMINE AND 0.25 EQUIV. H SUB2 O 4 HR AT 40DEGREES TO GIVE II (R, R PRIME1, PERCENT YIELD, 8 SUB1, N 20 OVER O, AND M. P. PICRATE GIVEN) SHOWN ON MICROFICHE. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED

D

USSR

UDC 689.24.018.241.011.97

DANYSHEN, R. Y., BELYKO, N. M., PEROVNIKOV, A. T., PIROZHENOVA, V. P., KRYAZHKOVA, T. I., and SEMENOVICH, A. F., Dnepropetrovsk Metallurgical Institute.

"Nonmetallic Inclusions in Structural Titanium-Containing Steel."

Novokuznetsk, Izv. VUZ, Chern. Metallurgiya, No 10, 1970, pp 487.

Abstract: The influence of the deoxidation mode on the content of nonmetallic inclusions in structural titanium-containing steel is studied with two versions of smelting: the current technology and an improved technology involving preliminary deoxidation of the metal with aluminum, calcium-silicon alloy plus diffusion deoxidation with powders of 75% ferrosilicon (0.6%), aluminum (0.1-0.25%), and zircon (0.2-0.3%). Secondary deoxidation with aluminum (0.07-0.08%) is performed before introducing the ferroalloys. Such deoxidation favors nonmetallic inclusions predominantly composed of alumina, which facilitates their rapid removal from the metal. The improved deoxidation mode, in combination with protection of the stream of metal from secondary oxidation during casting, allowed the mean content of nonmetallic inclusions to be reduced from 0.028 to 0.0146%. Rejection of castings was reduced from 11.5% to 0.4%.

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1/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--VINYL ACETATE ETHYLENE-COPOLYMERS -U-
AUTHOR--(C2)--DANIEL, N.V., NIKOLAYEV, A.F. D
COUNTRY OF INFO--USSR
SOURCE--PLAST.MASSY 1970, (6), 7-9 (RUSS)
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--VINYL COMPOUND, ACETATE, ETHYLENE, COPOLYMER, CHEMICAL PRODUCT
PRODUCTION, INDUSTRIAL PRODUCTION, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0919 STEP NO--UR/0191/70/000/006/0007/0009
CIRC ACCESSION NO--AP0134648
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0134648
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDUSTRIAL PRODUCTION, PROPERTIES,
AND HYDROLYSIS OF ETHYLENE VINYL ACETATE COPOLYMERS OF VARIOUS MONOMER
RATIOS ARE REVIEWED BRIEFLY WITH 42 REFS.

UNCLASSIFIED

USSR

UDC 621.32:535.23

DANIEL', Ye. V., KOLPAKOVA, I. V.

"Absolute Measurements of Energy Radiated by IPKSh-580/20 Lamp in 430-920 mμ Spectral Area"

Minsk, Zhurnal Prikladnoy Spektroskopii, No 4, Apr 71, pp 610-615.

Abstract: Results are presented from absolute measurements of the radiation energy of the IPKSh-580/20 lamp (similar to the IFP-20,000) in the 430-920 mμ spectral interval, approximately corresponding to the absorption band of glass activated with Nd³⁺. The photoelectric recording method was performed, allowing time scanning to be used to determine the instantaneous power values. The data indicated that the efficiency of conversion of electric energy stored in the condensers which powered the lamp to light flux is 43%. Measurement errors were 25%.

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1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--TEMPERATURE CHANGES IN THE TRANSMISSION OF QUARTZ IN THE VISIBLE
AND ULTRAVIOLET SPECTRAL REGIONS DURING HEATING TO 1100DEGREES -U-
AUTHOR-(02)-VOROBYEV, A.N., DANIEL, YE.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2) 347-9
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--QUARTZ, IR SPECTRUM, LIGHT TRANSMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/1061 STEP NO--UR/0368/70/012/002/0347/0349
CIRC ACCESSION NO--AP0049254
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0049254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSMISSION OF 4 DIFFERENT SAMPLES OF QUARTZ WAS STUDIED AS A FUNCTION OF TEMP. (20-1100DEGREES) AT 220-550MMU. MEASUREMENTS WERE PERFORMED BOTH DURING HEATING AND COOLING OF THE SAMPLES. THE TRANSMISSION OF QUARTZ DECREASED NOTICEABLY IN THE UV REGION AT HIGH TEMP. WHEREAS ONLY A NEGLIGIBLE DECREASE WAS OBSD. IN THE VISIBLE REGION.

USSR

DANIELYAN, E. A., DIMITROV, B. N., ZAYTSEV, V. A.

"Behavior of Characteristics of Queueing Systems for High Values of a Parameter"

Sb. Rabot. Vychisl. Tsentra Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 31-54 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V90 by I. Kovalenko).

Translation: A one-line queueing system is studied, with several priority classes, absolute priority and preserviceing of requests. Suppose $W_k(t)$ is the distribution function of servicing time of a request from the k-th priority class, $\Pi_{k-1}(t)$ is the busy interval of the queueing system for requests with priorities over k. Under certain analytic conditions, the asymptote of both functions is found where $t \rightarrow \infty$.

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USSR

DANIELYAN, E. A.

"Queueing Systems with Many Instruments"

Sb. Rabot. Vychisl. Tsentra. Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 102-112 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V95 by I. Kovalenko).

Translation: An infinite-line queueing system is studied with arbitrary distribution of servicing time and input non-ordinary unstable flow without after effect. Suppose $v(t)$ is the number of requests in the system at moment t , $\chi(t)$ is the time from moment t until completion of servicing of requests which arrived before t . An expression is found for the function

$$Mx^{n(T)}y^{s(T+t)} \times I\{\chi(T+t) \leq z\},$$

where $I[A]$ is the indicator of event A . The two dimensional distribution of process (t) is also studied for the system $GI/G/\infty$.

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USSR

DANIELIAN, E. A.

"Virtual Time of Waiting in a Queueing System with Relative Priority and an Unreliable Instrument"

Sb. Rabot. Vychisl. Tsentra Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 80-88 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V92 by I. Kovalenko).

Translation: A one-line system with r simple flows of requests is studied, between which a relative priority order is established. The instrument fails in the free state. The distribution of waiting time of requests belonging to a given priority class is studied.

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USSR

DANIELYAN, E. A., DIMITROV, B. N.

"The Line Length of One Two-Priority Queueing System with an Unreliable Instrument"

Sb. Rabot. Vychisl. Tsentra. Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 113-124 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V96 by I. Kovalenko).

Translation: The unstable distribution of probabilities of states of a one line queueing system with two simple input flows and relative priority is studied on the assumption that the instrument may be in the down state. The distributions of servicing time, time in the operating state, counting from the beginning of the down interval, and restoration time are arbitrary. The method of solution of the problem is analysis of the behavior of the system within the busy interval.

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USSR

DANIELYAN, E. A.

"One Queueing System with an Unreliable Instrument and Priority"

Sb. Rabot. Vychisl. Tsentra Mosk. Un-ta [Collected Works of Moscow University Computer Center], 1972, Vol 18, pp 89-95 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V93 by I. Kovalenko).

Translation: A one-line queueing system with r independent simple flows of requests, forming priority classes with relative priority, is studied. The servicing instrument may fail both in the free state (with intensity dependent on the time it has spent in this state) and in the busy state (with intensity dependent on the beginning of the current servicing of requests). In the case when servicing is interrupted, the request is put back at the head of the line of its priority class. The distribution of servicing time of requests of various priority classes, time of failure free operation and time of repair of the device is arbitrary. Distributions are found for the waiting time and time a request of class k spends in the system, as well as the virtual waiting time and time spent in the system.

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- 13 -

1/2 014 UNCLASSIFIED PROCESSING DATE—300CT70
TITLE—PRODUCTION OF TETRALIN FROM NAPHTHALENE -U-

AUTHOR—(02)—DANIELYAN, M.K., INDYUKOV, N.M.

COUNTRY OF INFO—USSR

SOURCE—KHM. PROM. (MOSCOW) 1970, 46(3), 226-7

DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—NAPHTHALENE, HYDROGENATION, NICKEL, CATALYST, SATURATED
HYDROCARBON

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0824

STEP NO—UR/0064/70/046/003/0226/0227

CIRC ACCESSION NO—AP0124491

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TETRALIN (I) WAS PRODUCED IN 97-8PERCENT YIELD BY HYDROGENATION OF PETROLEUM DERIVED NAPHTHALENE (II), OVER A NI (ON KIESELGUHR) OR A NIS WS SUB2 (ON AL SUB2 O SUB3) CATALYST, IN AN AUTOCLAVE AT 220-50DEGREES-107-8 ATM, AND 1:4 (MOLE) II H. HYDROGENATION OF II OVER THE SAME CATALYSTS IN A CONTINUOUS FLOW APP. AT 120-400DEGREES-C-75 ATM GAVE 22-64PERCENT I, WHILE HYDROGENATION OF 1:2 II C SUB6 H SUB6 GAVE QUANT. DECALIN CYCLOHEXANE.

UNCLASSIFIED

USSR

UDC: 621.396.4(088.8)

MATSKOV, A. A., MUSAYELYAN, S. A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Phase-Pulse Modulation"

USSR Author's Certificate No 278777, filed 14 Jan 69, published 26 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D399 P)

Translation: A modulation device is proposed for a radio relay station with unilateral phase-pulse modulation. The device contains a low-frequency amplifier, envelope restitution circuit, comparator and output pulse shaper connected in series, and also a sawtooth reference voltage generator connected to the comparator. To reduce nonlinear distortions of the modulating signal, connected to the input of the low-frequency amplifier is a series circuit comprised of a buffer amplifier and a compensation signal shaper which may be made in the form of a modulating signal detector whose output is connected through a coupling circuit to one of the comparator outputs.
V. P.

1/1

USSR

UDC 621.386.662

DANIELYAN, S. A., MATSKOV, A. A., SUPER, Yu. M.

"A Device for Phase Automatic Frequency Control"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296212, division H, filed 2 Jun 69, published 12 Feb 71, p 179

Translation: This Author's Certificate introduces a device for phase automatic frequency control which contains cophased and quadrature channels with phase detectors, and a tunable oscillator. The frequency control input of the tunable oscillator is connected through a low-frequency filter to the output of the phase detector in the cophased channel. As a distinguishing feature of the patent, in order to reduce the phase error in the steady-state mode and to make the locking band close to the holding band, the device is equipped with a coincidence stage whose inputs are connected to the outputs of the phase detectors in the cophased and quadrature channels through a pulse shaper for voltage polarity reversal, and through a limiting bilateral clipper respectively. The voltage of the tunable oscillator is fed to the reference inputs of the phase detectors in both channels through a 180° phase keyer controlled by pulses from a counting flip-flop whose input is connected to the output of the coincidence stage.

1/1

USSR

UDC: 621.396.43

MATSKOV, A. A., MUSAYELYAN, S. A., DANIELYAN, S. A., LEBEDEV, V. F.

"A Modulation Device for a Radio Relay Station With Unilateral Pulse Position Modulation"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278777, Class 21, filed 14 Jan 69, p 43

Abstract: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse position modulation. The unit contains a low frequency amplifier, envelope restoration circuit, comparator and output pulse shaper all connected in series, and also a reference sawtooth voltage oscillator connected to the comparator. As a distinguishing feature of the patent, nonlinear distortions of the modulating signal are reduced by connecting a series circuit at the output of the low frequency amplifier consisting of a buffer amplifier and a compensation signal shaper which may be made in the form of a modulating signal detector whose output is connected in addition to one of the comparator outputs through a coupling circuit.

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USSR

UDC: 621.374.4(088.8)

DANIELYAN, S. A., MATSKOV, A. A., NESTERUK, V. V.

"A Device for Obtaining the Difference Frequency of Two Pulse Trains"

USSR Author's Certificate No 262164, filed 29 Dec 67, published 1 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G216 P)

Translation: This Author's Certificate introduces a device for obtaining the difference frequency of two pulse trains. The unit contains a flip-flop whose inputs are connected through coincidence circuits to the pulse shapers of the initial pulse trains. The output of one of these pulse shapers is connected to the input of one of the coincidence circuits through a phase inverter. To eliminate fragmentation of the output signal in the case of interference, a unit for modulating the relative position of the shaper output pulses, such as a pulse time modulator, is connected in series with the output of one of the pulse shapers. The controlling input of this modulator is connected to the flip-flop output.

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USSR

UDC 621.376.6

MATSKOV, A. A., MUSAYELYAN, S. A., LEBEDEV, V. F., DANIELYAN, S. A.

"A Modulation Device for a Radio Relay Station"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36. Soviet Patent No 288062, class 21, filed 4 Aug 69, published 3 Dec 70, p 61

Translation: This Author's Certificate introduces a modulation device for a radio relay station with unilateral pulse-time modulation. The device contains a series hook-up comprised of a low-frequency module, an envelope restitution circuit and a comparator connected to an output pulse shaper and a sawtooth voltage generator which includes a charging capacitor and a master current stage. As a distinguishing feature of the patent, mutual interference between channels is eliminated by making the comparator with two transistors of the same conductivity type. The emitters of these transistors are tied together and connected to the charging capacitor, and the collectors are also tied together and connected to the output pulse shaper, e. g. through a trigger winding. The base of one of the transistors is connected to the output of the envelope restitution circuit, while the base of the other is connected to a blanking voltage source, e. g. through a resistive divider.

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USSR

UDC: 531.8

DANIKOV, A. M., STERZHNEV, V. A., MOSKVICH, Ye. G.

"On Determining the Parameters of a Drive With Elastic Constraints"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1971, vyp. 138, pp 100-104 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7A201)

Translation: The article deals with determining the parameters of a drive with elastic constraints. The analysis is based on solution of an identification problem. A method is proposed for constructing a dynamic model of a complex oscillatory controlled system. The coefficients of rigidity and damping of the drive are determined and various problems of drive synthesis are considered on the basis of a comparison of the amplitude frequency characteristics as obtained from the equations of its dynamic model and by digital computer solution of the identification equation in the frequency region. Authors' abstract.

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1/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--DIFFUSION AND ELECTRICAL TRANSPORT OF SILVER IN LEAD -U-

AUTHOR--(03)-KUZMENKO, P.P., GRINEVICH, G.P., DANILCHEKO, B.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 318-323

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL DIFFUSION, LEAD ALLOY, SILVER CONTAINING ALLOY,
ACTIVATION ENERGY, ELECTRON MOBILITY, ELECTRIC POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0340

STEP NO--UR/0126/70/029/002/0318/0323

CIRC ACCESSION NO--AP0129572

UNCLASSIFIED

2/2 026
CIRC ACCESSION NO--A0129572

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION AND ELECTRICAL TRANSPORT OF AG ATOMS IN PB WERE STUDIED BY THE INTEGRAL RESIDUE METHOD. IN THE DIFFUSION EQUATION, THE PRE EXPONENTIAL FACTOR IS 6.4 TIMES 10¹⁰ CM²-SEC AND THE ACTIVATION ENERGY 14.4 KCAL-MOLE. AT TEMP. BELOW 280DEGREESC THE AG TENDS TO MOVE TOWARDS THE ANODE AND AT HIGHER TEMP. TOWARDS THE CATHODE. THE INVERSION IN THE DIRECTION OF ELECTRICAL TRANSPORT WAS ATTRIBUTED TO THE DIFFERENT TEMP. DEPENDENCE IN THE INTERACTION BETWEEN THE DIFFUSING AG IONS AND ELECTRONS AND HOLES, RESP.

UNCLASSIFIED

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S/019/60/000/016/095/134
A152/A029

AUTHOR: Danil'chenko, I.A.

TITLE: A Method of Producing Equally Probable Binary Digits and a Device for Its Accomplishment

PERIODICAL: Byulleten' izobreteniy, 1960, No. 16, p 52

TEXT: Class 42m, 14. No. 131141 (644100/26 of November 14, 1959). 1. This method of producing equally probable binary digits is distinguished by the following special feature: in order to increase the speed of shaping and raise the degree of stabilization of the probability near the required value, each digit is shaped by a code during a random interval of time. 2. The device for accomplishing the method given in 1 is distinguished by the following special feature: in order to obtain a random interval of time, it contains a static trigger, one of whose inputs is connected up to a source of synchronizing signals and the second to the generator of random pulses.

Card 1/1

9.7/00

S/019/61/000/015/073/101
A154/A126

AUTHORS: Sukhov, Yu.P.; Akushskiy, I.Ya.; Antonov, V.S.; Danil'chenko, I. A.; Zinevich, V.F.

TITLE: A generator of random binary digits with a uniform law of distribution

PERIODICAL: Byulleten' izobreteniy, no. 15, 1961, 50 - 51

TEXT: Class 42m, 14. No. 140270 (686467/26 of November 24, 1960). A generator of random binary digits with a uniform law of distribution for the use of a source of random pulses, a random-interval former, a gate circuit, a source of regular pulses and a single-discharge binary counter, all connected in series, distinguished by the fact that, in order to increase the reliability of forming a given law of distribution, to increase the speed of generation and to simplify the circuitry, the former of the random interval, the gate circuit and the source of regular pulses are made in the form of a dynamic trigger, one of whose inputs is connected with a source of noise and the second with the circuit of the signal determining the beginning of the process of formation of the random digit.

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Card 1/1

40859

S/O19/62/000/O16/O44/O56
A156/A126

9.7/50

AUTHORS: Danil'chenko, I. A., Trifonov, B. S.

TITLE: A device for coupling a digital computer to a telegraph line

PERIODICAL: Byulleten' izobreteniy, no. 16, 1962, 56

TEXT: Class 42m, 14. No. 149623 (692455/26 of January 9, 1961). This device for coupling a digital computer to a telegraph line is in its basic design similar to the CTA-35 (STA-35) telegraph apparatus and contains a buffer register. Its novel feature consists in that it permits one to arbitrarily code and decode information without interrupting the process of computation by input and output of same. It is provided with a unit for arbitrary coding and decoding, and with a mutually-inverse synchronization unit connected with a selected stop contact and with the STA-35 starting mechanism. The separated information contacts of the latter are directly connected to a register that converts the sequential code into a parallel one, or vice versa.

[Abstracter's note: Complete translation]

Card 1/1

USSR

UDC 533.6:621.4

DANIL'CHENKO, K. P., SURUS, V. I.

"A Method of Combatting Suction Forces on Turbojet VTOL Aircraft"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. temat. nauch.-tekhn. sb.
(Aircraft Construction and Technical Activities of the Air Force,
Republic Interdepartmental Thematic Scientific-Technical Collection),
1972, No. 27, pp 8-12 (from RZh-Mekhanika, No 8, Aug 72, Abstract No
8B540)

Translation: One of the possible methods for combatting suction forces on turbojet vertical takeoff and landing aircraft in take-off and landing and transitional flight regimes is discussed. The method consists of rotating the wing around an axis parallel to the plane of the earth in such a way that small angles are maintained between the cord of the wing and the thrust vector of the engine. A physical picture of the method is described and graphs are given supporting the fact that this method is more universal and effective as compared with familiar methods. It is noted that the method can be simply achieved on VTOL aircraft with engines in the fuselage. Authors abstract.

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USSR

LAGUTINA, A. G., DANIL'CHENKO, K. P., SHEVCHENKO, O. F., and BARANNIK, V. P.

"Corrosion Study of Shipbuilding Materials in Sea Water"

Moscow, Zashchita Metallov, Vol 6, No 1, Jan-Feb 70, pp 48-51

Abstract: Comparative data on the corrosion resistance of metallic materials most commonly used in shipbuilding (ZS steel, AMT_g-9-2, NMZhTs-28-2.5-1.6 monel metal, AM_g-61, 1Kh18N10T, OKh17N7Yu stainless, L-62 brass) in natural (sea water) and laboratory (synthetic and natural sea water) conditions are given. The following was established: a) the corrosion rate of some shipbuilding materials tested in sea water at complete immersion is much higher than the corrosion rate of the same metals tested under laboratory conditions both in synthetic and sea water. After one year of testing, the corrosion rate of brass and AM_g-61 alloy at sea is 5 to 6 times higher than in nonrunning water under laboratory conditions; b) tests of stainless and monel metal revealed not only a difference in corrosion rate but also in its nature. 1Kh18N10T and OKh17N7Yu stainless as well as monel metal did not corrode in natural sea water in the laboratory but underwent strong pitting corrosion at sea; c) the basic factors accelerating the corrosion of shipbuilding materials under natural sea water conditions are biological, which are conducive to changes in the physico-chemical properties of sea water, as well as mechanical (natural mixing of sea water accelerating the cathodic reaction of the corrosion process).

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Acc. Nr:

AP0049341

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

URO365

D

103580e Corrosion of ship structural materials in sea water.
Lagutina, A. G.; Danil'chenko, K. P.; Shevchenko, O. F.;
Barannik, V. P. (USSR) - Zashch. Metal. 1970, 6(1), 48-51
 (Russ). Sea exposures were operated at a 40 m depth with daily
 elevation by 1.5 to 4 m/day; the samples became badly covered
 with seaweed and various marine deposits, and with Fe the cor-
 rosion layer assumed a yellow color. Synthetic sea waters were
 less corrosive. Under lab. conditions, natural sea water (pH
 8.7) was most corrosive with rapid circulation and aeration, but
 in any case more corrosive than synthetic sea water. Results in
 flowing sea water were: St 3C 0.053; AlMg-61 0.012; Monel
 NiMoFeMn-28-2.5-1.6 0.009; brass L-62 0.007; Br AlMn-9-2
 0.000; 1Cr18Ni10Ti 0.0; and 0 Cr17Ni7Al 0.0 g/m²/day corro-
 sion loss. Some variation was noted in the Black Sea tests, pre-
 sumably from greater biol. action.

H. Marshall

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18

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UR-0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

241734 LIQUID LEVEL RECORDER is mounted in a feeder tank which is separated by a partition in two parts. The upper part contains a chart feed mechanism and the lower part is filled with water and carries a float with an arm and pen. An air tube communicates from above the water level of the lower part to the water level of the main tank and water from the feed tank will be stopped from leaving the latter as soon as the main tank level has covered the lower opening of the air tube.

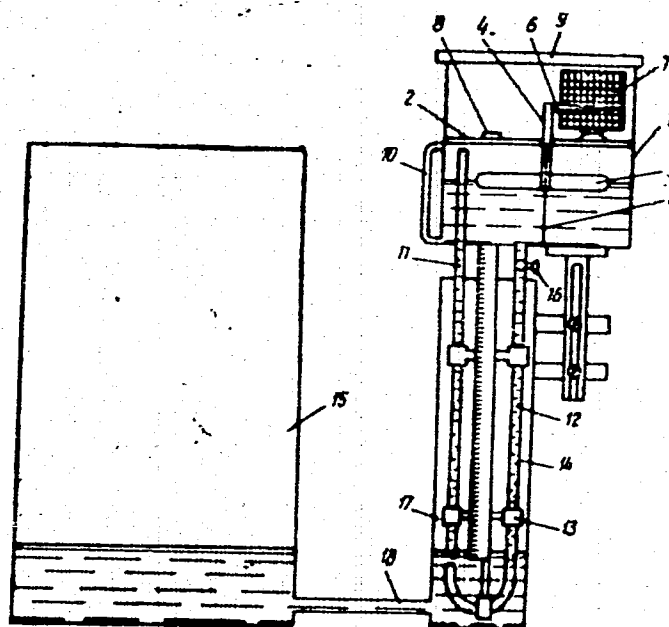
29.1.68 as 1213868/18-10. N.V. DANILCHENKO, et alia.
KAZAKH WATER SUPPLY RES. INST. (2.9.69) Bul 14/
18.4.69. Class 42e. Int. Cl. G 01 f.

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AA0044744

AUTHORS: Danil'chenko, N. V.; Pak, I. V.; Kandrachuk, V. F.

Kazakhskiy Nauchno - Issledovatel'skiy Institut Vodnogo Khozyaystva

9/20
19771502

USSR

UDC 576.809.518

VERBINA, N. M., SMIRNOVA, L. S., and DANIL'CHENKO, R. N., All-Union Correspondence Institute of the Food Industry, Moscow

"The Antibacterial Activity of Some Quaternary Ammonium Compounds"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 9, No 4, 1973, pp 575-578

Abstract: An investigation is made of the antiseptic properties of some new surface-active quaternary ammonium salts with respect to typical brewery microflora. The antibacterial action of Bradozol (an imported preparation) and four domestic preparations, namely Cationate 2B, Cationate C12, cetylpyridinium chloride, and sulfoureide, was tested against three cultures: beer sarcina (*Pediococcus damnosus* and *Pediococcus pernicius*), intestinal bacilli (*Escherichia coli*), and slime-forming bacteria comprising a mixture of cultures of *Pediococcus viscosum* and bacteria of the *Pseudomonas* genus. It was established that the least bactericidal activity was found in sulfoureide, and high activity was manifested by Cationate 2B, Cationate C12 and Bradozol. 2 tables. 3 references.

1/1

USSR

DANIL'CHENKO, V. A.

"Comparison of Length of Dead-End Checking Tests"

Probl. Nadezhnosti Sistem Upr. [Problems of Control System Reliability -- Collection of Works], Kiev, Nauk. Dumka Press, 1973, pp 130-135
(Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V402)

Translation: The dispersion of length of dead-end checking tests for contact circuits is studied. Dispersion of test lengths R is the ratio of the lengths of the maximum and minimum dead-end tests for contact circuit S . Let us assume $R(n) = \max R(f, S)$, where the maximum is taken with respect to all functions f of logical algebra of n variables and all dead-end circuit realizations S . Suppose $R(L) = \max R(S)$, where the maximum is taken with respect to all circuits S of complexity L . The following results are established. For flat, nonrepeating circuits $R(L) = cL$ ($1/10 \leq c \leq 1$), for parallel-series circuits $R(L) = c\sqrt{L}$ ($1/2 \leq c \leq 1$), for tests of closure (openings), $R(n) = 2^{n(1-\epsilon)}$ ($\epsilon \rightarrow 0$ as $n \rightarrow \infty$), for circuits of DNF-type, $R(n) = n(1 - \epsilon)$ ($\epsilon \rightarrow 0$ as $n \rightarrow \infty$). We use $R(f, S, A)$ to represent the ratio of the length of a dead-end test produced by algorithm A for system S , realizing function f , to the length of the minimum test of system S . Suppose $R(n, A) = \max R(f, S, A)$, where the maximum is taken with

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USSR

DANIL'CHENKO, V. A., Probl. Nadezhnosti Sistem Upr., Kiev, Nauk. Dumka Press, 1973, pp 130-135

respect to all functions f of logical algebra of n variables and their dead-end circuit realizations S . It is shown that $R(n, A2) \leq n + \ln n$ for the S. V. Yablonskiy approximate minimization algorithm $A2$.

V. Kuznetsov

2/2

USSR

UDC: 577.4

DANIL'CHENKO, V. A.

"Comparison of the Length of Truncated Verifying Tests"

Kiev, Probl. nadezhnosti sistem upr.--sbornik (Problems of Reliability of Control Systems--collection of works), "Nauk. dumka", 1973, pp 130-135 (from RZh-Matematika, No 10, Oct 73, abstract No 10V402 by V. Kuznetsov)

Translation: An investigation is made of scatter in the length of truncated verifying tests for switching circuits. The scatter R in the lengths of tests is the ratio of the lengths of the maximum and minimum truncated tests for switching circuit S . Let us assume that $R(n) = \max R(f, S)$, where the maximum is taken with respect to all functions f of logic algebra of n variables and with respect to their truncated circuit realizations S . Let $R(L) = \max R(S)$, where the maximum is taken with respect to all circuits S of complexity L . The following results are established: For planar switching circuits $R(L) \approx cL$ ($1/2 \leq c \leq 1$). for series-parallel circuits $R(L) \approx c \sqrt{L}$ ($1/2 \leq c \leq 1$). for tests of closures (breaks) $R(n) = 2^{n(1-\epsilon)}$ ($\epsilon \rightarrow 0$ when $n \rightarrow \infty$), for circuits of the disjunctive normal form type $R(n) = n(1-\epsilon)$ ($\epsilon \rightarrow 0$ when $n \rightarrow \infty$). The notation $R(f, S, A)$ denotes the ratio of the length of the truncated test

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USSR

DANIL'CHENKO, V. A., Probl. nadezhnosti sistem upr., "Nauk. dumka", 1973,
pp 130-135

obtained by algorithm A for circuit S realizing function f. to the length of the minimum test of circuit S. Let $R(n,A) = \max R(f,S,A)$, where the maximum is taken with respect to all functions f of logic algebra of n variables and their truncated circuit realizations S. For S. V. Yablonskiy's approximate minimization algorithm A2 it is shown that $R(n, A2) \leq n + \ln n$.

2/2

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USSR

UDC 577.4

DANIL'CHENKO, V. A., KIRPICHNIKOV, V. M.

"Length of an Inspection Test"

V sb. Tekhn. diagnostika (Technical Diagnostics -- collection of works), Moscow, Nauka Press, 1972, pp 194-195 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V424)

Translation: In the example of contact circuits of the disjunctive normal form type a study was made of the dependence of the test length on the nature of repetitions. The upper bound of the test length for two-dimensional systems is presented.

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USSR

UDC 547.822.5

IVASHCHENKO, Ya. N., MOSHCHITSKIY, S. D., and DANIL'CHENKO, V. P., Institute of Organic Chemistry, Academy of Sciences, ~~Ukrainian SSR~~

"Derivatives of Tetrachloropicolinic Acid"

Kiev, Ukrainskiy Kimicheskii Zhurnal, Vol XXXVII, No 5, 1971, pp 474-476

Abstract: A study was made of the reaction of ethyl ester and 3,4,5,6-tetrachloropicolinyl chloride with hydrazine hydrate. When using tetrachloropicolinic acid ester, 4-hydrazino-3,5,6-trichloropicolinic acid hydrazide is formed. Tetrachloropicolinic acid hydrazide is obtained from tetrachloropicolinyl chloride in hexane at -50 degrees, and bis-(tetrachloropiconyl) hydrazine, in alcohol. In the absence of phosphorus pentachloride, 2,5-di-(3', 4', 5', 6'-tetrachloropyridyl-2')-1, 3, 4-oxadiazol is synthesized from the latter. The procedures for obtaining 11 derivatives of tetrachloropicolinic acid are presented; and their formulas, yields and melting points are given.

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USSR

UDC 621.373.52

DANIL'CHENKO, V. P., MASLOV, D. V., SHAKHMEYSTER, L. Ye.

"A Very-Low-Frequency Square Pulse Generator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288035, class 21, filed 26 Oct 68, published 3 Dec 70, p 54

Translation: This Author's Certificate introduces a very-low-frequency square pulse generator based on Soviet Patent No 268485. As a distinguishing feature of the patent, the range of frequencies generated is extended, and provision is made for using asymmetric electrochemical converters by making the time-mark circuit on the basis of two electrochemical converters connected in series-opposition. The patent also covers a modification of this device distinguished by the fact that provision is made for remote control of the generation period with memorization of the external action. The control device is made in some such form as a controlling selector switch connected to one or two electrochemical converters respectively.

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AA0044787 - Danil'chenko, V.P. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243008 INFRA-LOW FREQUENCY PULSE GENERATOR for
shaping rectangular pulses, containing a
trigger, an electro-chemical element, two current
stabilisers and two threshold amplifiers (transistors).
To simplify the circuitry and reduce the number of
components required, the following method of connection
is adopted:

The base of each of the two transistors
forming the trigger is connected to the collector
of the other transistor in the trigger via the
collector-base junction of the amplifier transistor,
the collector-emitter junction of the current
stabiliser transistor and the resistor of the
current stabiliser, these last three being in
series. Parallel to the emitter-base junction of

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one threshold amplifier transistor are connected the base emitter junction of the other threshold amplifier transistor and the electro-chemical element. The bases of the current stabiliser transistors are inter-connected via a ballast resistor while their collectors are inter-connected by the electro-chemical element.

18.3.68 as 1227250/18-24.V.A.GOLUBEVA et alia.
(24.9.69.) Bul 16/5.5.69. Class 21c, 46/50, 21a¹,
36/02. Int.Cl.G 05f, H 03k.

243008

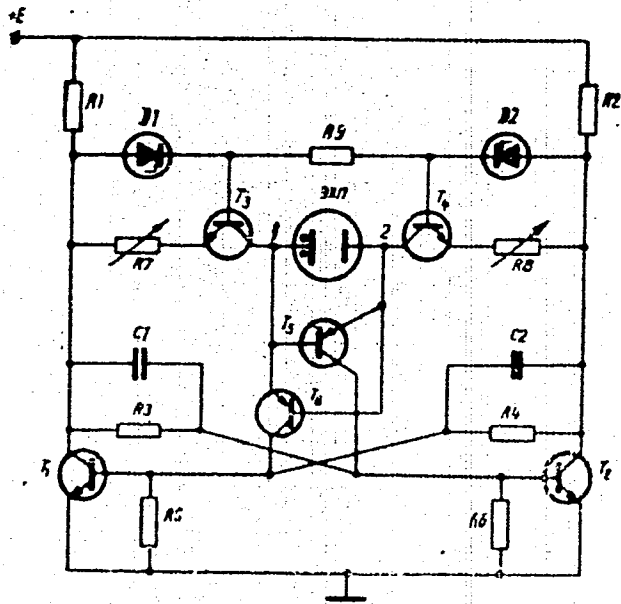
AUTHORS:

Golubeva, V. A.; Danil'chenko, V. P.; Maslov, D.V.;
Shakhmeyster, L. Ye.

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USSR

UDC: 621.373.52

GOLUBEVA, V. A., DANIL'CHENKO, V. P., MASLOV, D. V., SHAKHMEYSTER, L. Ye.

"A Very Low Frequency Square Pulse Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 1970, Author's Certificate No 268485, filed 25 Mar 68, p 37

Abstract: This author's certificate introduces a very low frequency square pulse generator which consists of a flip-flop with current-delaying circuits and an electrochemical cell connected in the load diagonal, and two threshold amplifiers. As a distinguishing feature of the patent, the operating reliability of the generator is improved and the range of controllable frequencies is extended by connecting thyristors in the collector circuits of the flip-flop transistors through transformer windings connected in opposition. One of these thyristors is shunted by an element which makes the circuit asymmetric.

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USSR

UDC 621.396.669.8

DANILENKO, A. I. and PLAKSIYENKO, V. S.

"Device for Detecting Frequency-Modulated Radio Pulses in Noise"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, p 180

Abstract: This device contains two channels, one consisting of series-connected band filter, detector, and inverter, the other of band filter, detector, summer, differentiating circuit, and threshold device, with the second summer input connected to the output of the neighboring channel inverter. This device is distinguished by the connection of a level-controlling system between the band filter and the detector. The controlling inputs of this system are connected to the outputs of the two channel detectors, thus improving the noise immunity. The patent is claimed by the Taganrog Radio Engineering Institute.

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Receivers and Transmitters

USSR

UDC 621.396.275.4

DANILENKO, A. I. and PLAKSIYENKO, V. S.

"Improving the Reliability in Noncoherent Frequency Telegraphy
Signal Reception"

Kiev, Izvestiya VUZ--Radioelektronika, vol. 14, No. 7, 1971, pp
790-794

Abstract: This paper analyzes a method of increasing the noise stability of a broad-band receiver based on the statistical processing of realizations of the signal obtained at the filter outputs. Such processing is impossible for a narrow-band receiver because of the correlation of the realization values by extension of a single communication element. The block diagram of the receiver for this method is given and discussed quantitatively under the limitations that the voltages at the outputs of the two linear detectors in the receiver are proportional to the mathematical expectation of the envelope processes at the detector inputs, and that the transfer factors of the receiver regulator blocks fall asymptotically to zero with an increase in the controlling voltages of each. Oscillograms are given of the signals obtained at the output of this receiver compared to the output signals of ordinary broad-band telegraph signal receivers.

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172 008 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNTHESIS AND SOLVOLYSIS OF SOME DERIVATIVES OF 1 BROMOMETHYL
ADAMANTANE -U-
AUTHOR-(03)-DANILENKO, G.I., KRAYUSHKIN, M.M., SEVOSTYANOVA, V.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 444-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, BROMINATED ORGANIC COMPOUND, ADAMANTANE,
HYDROXYL RADICAL, SOLVENT ACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0849 STEP NO--UR/0062/70/000/002/0444/0445
CIRC ACCESSION NO--AP0119753
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0119753

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING
 1,PHENYL,3,ADAMANTANECARBOXYLIC ACID WITH MEOH CONCD. H SUB2 SO SUB4 4
 HR GAVE 90PERCENT ME ESTER, B SUB1 169-70DEGREES, WHICH LIALH SUB4-ET
 SUB2 O 1 HR GAVE 92PERCENT 1,PHENYL,3, (HYDROXYMETHYL) ADAMANTANE, M.
 73-4DEGREES. THIS 45PERCENT HBR IN ACOH GAVE THE 3, (BROMOMETHYL)
 ANALOG, M. 72-3DEGREES. HEATING 1,BROMO,3, (BROMOMETHYL) ADAMANTANE 3
 HR AT 100DEGREES WITH 85PERCENT HCO SUB2 H GAVE 85PERCENT 1,HYDROXY,3,
 (BROMOMETHYL) ADAMANTANE, M 88DEGREES, WHICH REFLUXED WITH SOCL SUB2 0.5
 (BROMOMETHYL) ADAMANTANE IN COND. H SUB2 SO SUB4 WAS TREATED AT
 HR GAVE 1,CHLORO,3, (BROMOMETHYL) ADAMANTANE, M 104DEGREES. 1,BROMO,3,
 (BROMOMETHYL) ADAMANTANE IN COND. H SUB2 SO SUB4 WAS TREATED AT
 0DEGREES WITH CL SUB2 C:CH SUB2 AND KEPT 1 HR AT ROOM TEMP. TO GIVE
 65PERCENT 1, (BROMOMETHYL) 3, ADAMANTANEACETIC ACID, M 124-5DEGREES,
 WHICH WAS CONVERTED AS ABOVE INTO ME ESTER, B SUB2 113-15DEGREES.
 KINETIC DATA ARE REPORTED ON THE SOLVOLYSIS OF 3 SUBSTITUTED 1,
 (BROMOMETHYL) ADAMANTANES IN 80PERCENT AQ. DIOXANE AT 150DEGREES (CF. K.
 ET AL., 1969); RATE CONSTS. (K TIMES 10 PRIMES MIN PRIMENEGATIVE)
 WERE TABULATED FOR INDICATED SUBSTITUENTS: H, 3.47; PH, 2.34; OH, 1.89;
 P,O SUB2 NC SUB6 H SUB4, 1.43; CO SUB2 H, 1.46. FACILITY: INST.
 ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.917:547.1'118].085.356:577.153.9.024

KAGAN, Yu. S., SASINOVICH, L. M., and DANILENKO, L. P., Laboratory of General Toxicology, All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymer and Plastic Substances, Kiev

"Comparative Evaluation of the Therapeutic Effect of Dipyroxime in Poisoning of the Experimental Animals With Some Organophosphorus Compounds"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 3, May-Jun 71, pp 359-362

Abstract: Dipyroxime, a cholinesterase reactivator, and an analog of TMB-4, exhibited definite therapeutic effect in rats, mice and cats poisoned with organophosphorus insecticides: chlorophos, DDVF, and phthalophos (0,0-dimethyl S-phthalimidomethyl dithiophosphate). Dipyroxime used in combination with atropine was more effective than either compound alone, except in the case of chlorophos, where atropine and dipyroxime individually had higher, nearly equal results. The combined drugs were more effective in treating cats and rats than mice. Both compounds were most effective in counteracting DDVR poisoning, less so with phthalophos, and least effective with chlorophos poisoning. Dipyroxime reactivates the cholinesterase in erythrocytes, serum and in liver of the test animals. The return to normal of the enzyme activity in brain is less dramatic.

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1/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--COMPARATIVE CHARACTERISTICS OF SOME TYPES OF ANESTHESIA AFTER
ACTIVITY OF SERUM LACTATEDEHYDROGENASE ISOENZYMES -U-

AUTHOR--(05)-DANILENKO, M.V., BORZHIYEVSKIY, TS.K., BABLYAK, D.YE.,
KALINGVSKAYA, L.S., LUCHKO, A.S.

COUNTRY OF INFO--USSR

D

SOURCE--VRACHEBNOYE DELU, 1970, NR 4, PP 139-142

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, LACTATE DEHYDROGENASE, STOMACH, SURGERY, LIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1699

STEP NO--UR/0475/70/000/004/0139/0142

CIRC ACCESSION NO--AP0129069

UNCLASSIFIED

2/2 022
CIRC ACCESSIGN NO--AP0129069

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACTATEDEHYDROGENASE WAS STUDIED IN PATIENTS UNDERGOING GASTRIC RESECTION WITH THREE TYPES OF ANESTHESIA. IT WAS FOUND THAT ALTERATIONS OF TOTAL LACTATEDEHYDROGENASE INDEPENDENT OF THE FORM OF ANESTHESIA ARE CONNECTED WITH CHANGES OF ITS LIVER FRACTION. THE DYNAMICS OF LIVER LACTATEDEHYDROGENASE LARGELY DEPENDED ON THE ANESTHESIA TYPE. IN THIS RESPECT TRICHLOROETHYLENE PROVED MORE SPARING THAN CHLOROFORM AND CYCLOPROPROPANE. FACILITY:
L'VGYSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 612.46.014.45

GEKHEMAN, B. S., LAZARETIK, A. Sh., VARSHAVER, L. G., BONDARENKO, V. P.,
DANILENKO, N. F., Kiev District Military Hospital

"The Effect of Supersonic Waves on Kidneys and Urinary Tracts"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/
Jun 70, pp 17-21

Abstract: A high-intensity source emitting a spherical supersonic wave was used for irradiating 30 dogs, ten of which were in an acute test, 19 of which had been under observation for six months, and one control. The vesical, center, and perirenal parts of the ureter, the renal pelvis, and kidney were subjected to the supersonic waves. In 12 tests, temperature gradients were measured. No significant morphological changes in the tissues of the urinary bladder or ureters were detected after short or long periods of treatment. In no case was thermocoagulation of the tissues observed. Results of histochemical studies of the kidneys were in agreement with histological data. The results were explained by the fact that a supersonic source producing a spherical wave comparatively rapidly, i.e., over short distances, loses its intensity. When a 1:5 irradiation rhythm was used, elimination of heat by the systems of the organism regulating heat exchange was assured.

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USSR

UDC 577.4

KAGAN, B. M., and DANILENKO, S. YE.

"Questions in the Development of Systems of Optimum Design"

V sb. Kibernetich. sistemy avtomatiz. proyektir. (Cybernetic Systems of Automated Design -- Collection of Works), Moscow, 1973, pp 132-136 (from RZh-Matematika, No 6, Jun 73, Abstract No 6V587 by G. LEVIN)

Translation: The article discusses the general principles for the development and structure of software for systems of optimum design. The basic software components are: a search program complex (SPC) to solve nonlinear programming problems, a library of programs of mathematical models of the object to be designed, operational programs. The SPC, in turn, includes local search programs (which are the central part thereof), programs for determining the point of an admissible region, and search area study programs.

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USSR

KAGAN, B. M., DANILENKO, S. Ye.

"Problems of the Architecture of a System of Optimal Planning"

Kibernetich. Sistemy Avtomatiz. Proyektir. [Cybernetic Systems for Automation of Planning -- Collection of Works], Moscow, 1973, pp 132-136 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V587, by G. Levin).

Translation: The general principles of construction and the structure of the software (SW) of an optimal planning system are discussed. The basic components of the SW are: a search program set (SPS) for solution of problems on nonlinear programming, a library of programs of mathematical models of the object being planned, and operational programs. The SPS in turn includes a local search program (its central portion), a program for determination of a point in a permissible area and a program for investigation of a search area.

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USSR

UDC 577.1:615.7/9

DANILENKO, V. S.

"Pressor Effect of Epinephrine in Irradiated Animals After Unithiole Treatment"

Farmakol. i toksikologiya. Resp. mezhved. sb. (Pharmacology and Toxicology. Republic Interdepartmental Collection of Works), 1970, No 5, pp 51-53 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 70, Abstract No 19 F1823)

Translation: Administration of unithiole (I) to cats intensified the pressor effect of epinephrine (II). The effect of I confirms the fact that the SH-groups participate in the reaction of the organism on II.

1/1

USSR

UDC 577.1:615.7/9

DANILENKO, V. S., KOTIY, V. N., TARNAVSKAYA, M. I., BARDIK, YU. V.

"Effect of Unithiole on the Chromaffin Tissue of the Adrenals in Acute Radiation Sickness"

Farmakol. i toksikologiya. Resp. mezhved. sb. (Pharmacology and Toxicology. Republic Interdepartmental Collection of Works), 1970, No 5, pp 76-79 (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 70, Abstract No 19 F1824)

Translation: Unithiole (I) increases the catecholamine content in chromaffin cells of the adrenals in intact animals and restores the epinephrine and norepinephrine content in the adrenals, which decreases substantially after X-irradiation. I strengthens the compensatory functions of the sympathicoadrenal system. This may explain the radioprotective and partial therapeutic effects of the thiol compounds.

Resume

1/1

USSR

UDC: 621.984.3

D
SMIRNOV, V.S., DANILEVSKIY, O.F., ALEKSANDROV, A.A., KAGAN, E.S., STOL'NIYY, V.I.,
and ZOR'KIN, YE.F.

"Stamping of Thick Two-Layer Steel-Titanium Sheets"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 1, Jan70, pp 18-19

Abstract: The Izhorskiy Plant imeni A.A. Zhdanov produces elliptical bottoms with 900-, 1000-, and 1600-mm diameters by the hot stamping of VMSt3sp - V11-0 sheets 20 mm thick. The bimetallic steel-titanium sheets were obtained by vacuum pack rolling. In the hot stamping of bimetallic steel-titanium sheets, the correct selection of billet heating conditions is very important. Repeated heating of the steel-titanium bimetal, generally leads to a growth of the transition diffusion zone between the layers and increases its hardness, thus leading to lower bimetal quality. In heating the bimetallic billets, no material titanium gas saturation should be permitted, owing to the difficulty of removing the gas-saturated layer. If the billet heating temperature before stamping does not exceed 900°C, no noticeable growth of the transition diffusion zone between the layers occurs, and at the same time, the metal possesses adequate plasticity. Good surface quality is obtained in the stamped products. The technique, conditions, and equipment used in hot stamping of the bottoms are described. Investigations of specimens cut from various sections of the bottoms showed that heating and stamping under the conditions given do not worsen the bimetal properties. An increase in the thickness of the

USSR

SMIRNOV, V.G., et al, Kuznechno-Shtampovochnoye Proizvodstvo, No 1, Jan 70, pp 18-19

transition zone was not observed. The hardness of the transition zone did not change. Metallographic sections established that the thickness of the titanium gas-saturated layer did not exceed 0.05 mm. To obtain high-quality welded seams, it is first necessary to clean the titanium surface with an abrasive disk.

2/2

1/2 007 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--MOBILITY OF TWINNING DISLOCATIONS IN CALCITE -U-
AUTHOR--SOLDATOV, V.P., STARTSEV, V.I., CHAYKOVSKAYA, N.M., DANILEVICH,
T.O.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(1) 79-82
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL DISLOCATION, CALCITE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0638 STEP NO--UR/0181/70/012/001/0079/0082
CIRC ACCESSION NO--AP0105617
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11SEP70

CARC ACCESSION NO--AP0105617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHODS OF SELECTIVE ETCHING AND IMPULSE LOAD OF THE CRYSTALS WERE USED TO INVESTIGATE THE MOBILITY OF TWINNING DISLOCATIONS IN CALCITE. THE VELOCITIES OF THE TANGENTIAL MOVEMENTS OF TWINNING DISLOCATIONS ALONG THE TWINNING BOUNDARY WERE MEASURED IN THE REGION OF SHEAR STRESS τ 30-35 G-MM PRIME². IN THE ABOVE INTERVAL OF STRESSES, THE TWINNING DISLOCATION VELOCITY v CHANGES FROM 2 TIMES 10 PRIME NEGATIVE⁴ TO 6.9 CM-SEC. THE MOBILITY CURVE FOR THE TWINNING DISLOCATIONS IN CALCITE IN THE COORDINATES LOG v VS τ HAS LINEAR (THERMALLY ACTIVATED BRANCH OF THE MOBILITY CURVE) AND NONLINEAR (ATHERMAL BRANCH) SECTIONS, WITH THE INFLECTION POINT IN THE STRESS REGION OF 45 G-MM PRIME². THE ACTIVATION VOL. (γ) FOR THE LINEAR SECTION OF THE v - γ CURVE IS 2.8 TIMES 10 PRIME NEGATIVE¹⁹ CM PRIME², AND THE SENSITIVITY (m) OF v TO THE STRESS IS 15.

UNCLASSIFIED

USSR

UDC 576.895.771:616.988.25-036.2(571.63)

FEDDER, M. L., REZNIK, YE. P., DANILEVSKIY, M. L., MANTUKHOV, A. G., and TROTSKAYA, D. F., Institute of Medicinal Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, USSR Ministry of Public Health, Moscow; Institute of Epidemiology and Microbiology, Vladivostok

"Data of the Epidemiological Evaluation of Natural Populations of Aedes togoi Theobald in the Soviet Primorye"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 301-307

Abstract: A. togoi mosquitos are carriers of Japanese encephalitis in a number of Southeast-Asian countries and also in the Primorskiy region of the Far Eastern USSR. Data on the duration of the gonotropic cycle of A. togoi in the Khasan region were collected in July-August 1969 at a number of points of the region; the cycle was found to last seven to eight days. Females, which grew for two or more gonotrophic cycles, were most dangerous, respect to Japanese encephalitis and wuchereriosis, that is 14-16 day-old females for encephalitis and 21-24 day-old females for wuchereriosis. The age composition of natural populations was determined from autopsy of 2,123 females. A total of 11.5% of attacking encephalitis-carrying mosquitos were females, while
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USSR

FEDDER, M. L., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40,
No 3, May/June 71, pp 301-307

only 2.9% of the wuchereriosis-carrying attacking mosquitos were female. At peak activity, there were 9.8 females per hour attacking one person among the encephalitis-carrying mosquitoes, while only 3.3 females per hour attacked one person among the wuchereriosis-carrying mosquitoes.

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(2)

USSR

UDC 537.521

BASOV, N. G., Academician, BELENOV, E. M., VOL'NOV, M. I., GUBIN, M. A.,
DANILEYKO, M. V., and NIKITIN, V. V., Physics Institute imeni P. N. Lebedev,
Academy of Sciences USSR, Moscow

"On the Question of Generating a Stabilized, Ring-Resonator Laser
Frequency"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 306-308

Abstract: The power resonances of a ring laser can be considerably narrower and more contrasting than in the case of a linear laser. They are based on more complex effects, and the coincidence of the center of the resonances with the central absorption frequency is not obvious. The article studies this question theoretically and experimentally. It is shown that, as in the case of a linear laser, the power resonances of a ring laser occur at the central frequency of the absorbing gas.

1/1

Lasers and Masers

USSR

BELOKRINITSKIY, N. S., GHATOVSKIY, A. V., DANILEYKO, M. V., ZAKHAROV, V. P.,
KOZLOV, A. V., and SHPAK, M. T., Physics Institute, Academy of Sciences
Ukrainian SSR

"Recording of Optical Information on Amorphous Films of Semiconducting Com-
pounds"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15,
No 4, 20 Feb 72, pp 198-200

Abstract: The article describes a new optical information method based on
local variations in structural and optical characteristics of some semiconduct-
ing compounds under the action of laser radiation. This opens up the possibil-
ity of creating carriers with a high recording speed (10^{-4} - 10^{-5} sec) and high
spatial resolution without the need for subsequent processing. Amorphous GeTe
and InSb films, vacuum-evaporated on glass and NaCl substrates, were used by
the authors as carriers for optical signal recording. Laser radiation by a
semitransparent mirror was separated into two beams approximately equal in
intensity and directed at the sample at a convergence angle of $\sim 55^\circ$ for GeTe

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USSR

BELOKRINITSKIY, N. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 198-200

and $\sim 25^\circ$ for InSb. The interference hologram grating of the radiation field was recorded on the film. Samples were exposed to radiation pulses of a free-running ruby ($\lambda = 0.69$ micron) and neodymium ($\lambda = 1.06$ microns) laser. Given a sufficiently homogeneous laser field amplitude distribution, interference gratings with a spatial frequency of up to 1000 lines/mm were obtained, representing alternating segments with different spectral and structural properties. There was found to be a relation between the sample preparation conditions and the maximum attainable spatial frequency. There are optimal radiation energies for the pulse-mode recording of gratings (e.g., ~ 0.1 j/sq mm for recording on GeTe films with pulsed neodymium laser radiation ~ 500 microseconds in duration). The authors observed two forms of film structural changes accompanying the information recording, depending on the density of the recorded grating. In the recording of gratings with a spatial frequency of ~ 100 -200 lines/mm, the lines represent bands of polycrystalline material, films in an amorphous state divided in segments. In the recording of gratings with a spatial frequency of

2/3

- 63 -

USSR

BELOKRINITSKIY, N. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 198-200

~1000 lines/mm, grain enlargement is observed over the entire area of the film segment being treated with luminous radiation, but the optical density of the interference grating lines differs, making it possible to obtain a grating with sufficient efficiency in this case as well.

Work is continuing on the further kinetic study of the amorphous state-polycrystal phase transition of the above-indicated materials and a number of others, as well as the study of their use as carriers for recording information in the visible and IR region of the spectrum.

The authors thank V. S. SAMOYLOV for useful discussions of the results.

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Masers and Lasers

USSR

UDC: 621.373:530.145.6

BASOV, N. G., BELENOV, E. M., DANILEYKO, M. V., NIKITIN, V. V.

"Power Resonances and Frequency Stabilization of a Gas Laser With Nonlinear Absorption Cell"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 42-52 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D181)

Translation: The paper deals with the power resonances in gas laser emission due both to the effect of spectral line burnout (laser with a Fabry-Perot resonator) and to the interaction of modes at frequencies close to the centers of lines of amplification or absorption (laser with annular resonator). In the latter case, power resonances may be appreciably narrower and more contrasting than those in a laser with Fabry-Perot resonator. Data are given on stabilization of a helium-neon laser with Fabry-Perot resonator with respect to the peak of emission caused by saturation of methane absorption. Seven illustrations, bibliography of sixteen titles.

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USSR

UDC 621.378.33

BASOV, N. G., BELENOV, E. M., DANILEYKO, M. V., NIKITIN, V. V.

"Power Resonances and Frequency Stabilization of a Gas Laser With a Nonlinearly Absorbing Cell"

Moscow, Kvantovaya Elektronika, No. 1, 1971, pp 42-52

Abstract: Power resonances of a gas laser with a nonlinearly absorbing cell that are caused both by spectral effects (in a laser with a Fabry-Perot resonator) and by competition of spectral and spatial effects (in a laser with a ring resonator) are studied. The half-width of the power resonances of a laser with a Fabry-Perot resonator and a methane absorbing cell was of the order of 300 kHz. The half-width of resonances of a ring laser was ~ 30 kHz. The laser with a Fabry-Perot resonator and a methane cell stabilized, at peak radiation displayed stability and a frequency generation equal to 10^{-11} . It is concluded that the use of power resonances of a ring laser as optical discriminators can raise the stability and generation of the radiation frequency by more than an order of 2.

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.USSR

UDC 537.521

ALEKSEYEV, V. A.; BASOV, N. G., Academician; BELENOV, E. M.;
DANILEYKO, M. V.; VOL'NOV, M. I.; GUBIN, M. A.; NIKITIN, V. V.;
TROSHAGIN, V. N.; P. N. Lebedev Physics Institute, Moscow

"Spectroscopy Inside a Uniform (Radiation) Line"

Moscow, Doklady Akademii Nauk SSSR, vol 207, No 6, 1972, pp 1306-1307

Abstract: A method is proposed and realized for finding the shift, 2Δ , between the spectral components of a line in the radiation of atoms or molecules, and in such cases when the 2Δ value is much less than the uniform or radiation width. The method is based on the concurrence of spatial and frequency attenuation effects of the medium in a ring laser. The dependence of the qualitatively different oscillation modes of the laser on the frequency difference Δ permits recording the presence of the Doppler broadening of the line for Δ by an amount much less than for the uniform width. It is found that, from the viewpoint of the accepted criterion of spectral line resolution, the sensitivity of the proposed method can be multiplied by 10^2 - 10^4 times. The theory of the method is developed, and an experiment for resolving the fine
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USSR

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ALEXSEYEV, V. A., et al, Doklady Akademii Nauk SSSR, vol 207, No 6, 1972, pp 1306-1307

structure of the line, conducted with a laser containing a mixture of Ne²⁰ and Ne²², is described.

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USSR

UDC 535.44:621.378

BELOKRINITSKIY, N. S., GNATOVSKIY, A. V., DANILEYKO, N. V., ZAKHAROV, V. P.,
and SHPAK, M. T.

"Holographic Recording of Information on Amorphous Semiconductor Films"

Leningrad, Doklady Akademii Nauk SSSR, Vol 209, No 2, 1973, pp 330-332

Abstract: This paper is a report on the application of local variations in the structural and optical characteristics of InSb, InSe, InTe, GaTe, GeTe, and Te for holographic information recording. In an earlier paper (N. S. Belokrinitskiy, et al, Pis'ma v ZhETF, 15, No 4, 1972, p 198) it was found that in GeTe films under strong light pulses a growth of crystallites was observed, accompanied by changes in the physical and optical characteristics of the compound. Similar characteristics, including the transmission and absorption spectra, were explored in the present paper for the compounds listed above. The equipment used for the holographic recording is shown in schematic form. Records of objects measuring $2 \times 2 \text{ mm}^2$ to $15 \times 15 \text{ mm}^2$ were made by illuminating them directly with neodymium and ruby lasers. Samples of the images obtained are shown. The authors thank V. N. Pavlyuk for running the experiment.

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Acc. Nr: AP0038024

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 31-36

SURFACE DESTRUCTION OF RUBY CRYSTALS BY LASER RADIATION

~~Ku-K. Danilov~~, A. A. Manenkov, A. M. Prokhorov, V. Ya. Khaimov-Mal'kov

Processes of surface destruction of ruby crystals under the action of radiation from a ruby laser are investigated experimentally. The dependence of the threshold destruction power on duration of laser pulses ranging from $3 \cdot 10^{-7}$ to $4 \cdot 10^{-4}$ sec and the effect of structure-optical properties of the surfaces on destruction threshold are studied. A theory of thermal destruction on absorbing surface defects is developed. An expression is obtained for the dependence of the destruction power on duration of the light pulses. Good agreement is found between the experimental data and the theory of thermal destruction proposed.

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REEL/FRA
19731065

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USSR

UDC $\Delta 621.3.032.269.1$

BOGDANOVICH, B. Yu., VORONKOV, R. M., GASS, V. F., and DANILICHEV, V. A.

"Autoelectronic Beam for Linear Electron Accelerators"

Moscow, Pribery i Tekhnika Eksperimenta, No. 1, January-February, 1971, pp 44-46

Abstract: The authors present the results of their measurements of electron beam parameters from a gun designed to inject electron bunches throughout a phase of $30-40^\circ$ and with an energy of 300-400 keV in the accelerating section, with a constant phase velocity equal to that of light and a field intensity of 100 kV/cm. They also describe the equipment they used to make these measurements. A cross-sectional drawing of the electron gun in this device is given and its dimensions specified. A "Nord-10" and a "Nord-100," both of them electric discharge pumps, were used to obtain the required degree of evacuation, which was from $2 \cdot 10^{-6}$ to $5 \cdot 10^{-6}$ mm Hg for the first experimental run. A block diagram of the entire equipment is given as well as curves for the equipment characteristics and for the results obtained. All measurements, lasting for 20 hours, were made with the same cathode, which underwent no change in dimensions. 1/1

Microelectronics

USSR

BOOK

357

DANILIN, Boris Stepanovich

UDC: 621.382.823

VAKUUMNAYA TEKHNIKA V PROIZVODSTVE INTEGRAL'NYKH SKHEM (Vacuum Technology in the Production of Integrated Circuits), Moscow, "Energiya", 1972, 256 pp, illus, biblio, 9 000 copies printed

The book considers the fields of application of thin films in the production of integrated circuits, interaction between the residual atmosphere and the films as they are formed, equipment for checking the rate of deposition and thickness of thin films, types and designs of equipment for depositing films, and ways to improve the parameters of installations and to increase their productivity.

The book is written for an extensive class of persons engaged in the design, installation and operation of vacuum installations for producing thin films, and also for persons working in the area of thin-film technology.

FOREWORD

When we analyze the stream of information on vacuum technology which has increased so rapidly in the Soviet and non-Soviet periodic press in recent years, as well as the subject matter of papers and reports at national and international vacuum symposiums and conferences, we can readily see that

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USSR

DANILIN, B. S., VAKUUMNAYA TEKHNIKA V PROIZVODSTVE INTEGRAL'NYKH SKHEM, Moscow, "Energiya", 1972, 256 pp, illus.

the method of making thin films and related research are presently one of the main determining areas in the development of vacuum technology. Moreover, since thin-film technology is finding wider and wider application with each passing year in a new and extremely intensively developing sector—micro-electronics—which is typified by a landslide rate of development, there is no doubt that the intensive rates of research and development in the area of vacuum technology as applied to the production of thin films will continue for the next 10-15 years.

These considerations induced the author to write this book which is based on articles which he has published in cooperation with others in 1967-1971 on various aspects of vacuum technology as applied to the production of thin-film elements in integrated circuits. In addition, in his work on this book the author made use of materials of lectures on courses in "The Principles of Vacuum and Cryogenic Technology" and "Design of High-Vacuum Installations" which he has given for a number of years at the Moscow Institute of Electronic Technology, as well as numerous Soviet and non-Soviet periodicals.

Consideration of the designs of installations for deposition of thin films is preceded by chapters dealing with the use of thin films in the

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production of integrated circuits, as well as with the nature of interaction between the residual atmosphere and thin films as they are being formed and grown.

An individual chapter in the book describes problems and equipment for automatic inspection, control, stabilization and registration of the parameters in the process of depositing thin films.

Considerable space is given over to the technical and economic aspects of designing, making and using vacuum equipment for producing thin-film elements in integrated circuits.

In order to cut down the volume of the manuscript, we have purposely omitted discussion of a number of problems (such as design of evaporators, instruments for measuring vacuum and partial pressures, the properties of vacuum construction materials and so forth) which are quite adequately covered in the books "Vakuumnoye naneseniye tonkikh plenok" (Vacuum Application of Thin Films) and "Osnovy konstruirovaniya vakuumnykh sistem" (Principles of Designing Vacuum Systems) published by "Energiya" Press in 1967 and 1971.

In his work on the manuscript, the author was given considerable assistance by candidates of technical sciences V. Ye. Minaychev, V. A. Pupko

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and M. N. Kuznetsov. Candidate of Physical and Mathematical Sciences I. N. Vozhenin and Candidate of Technical Sciences P. Ye. Kandyba took an active part in discussion of chapters 1 and 2 of the book.

The reference information cited in the book on the parameters and characteristics of Soviet vacuum equipment for application of thin films are borrowed to a great extent from materials compiled by a collective of authors under the direction of State Prize Laureate and Candidate of Technical Sciences I. G. Blinov.

The author is sincerely grateful to Academician S. A. Bekshinskiy and Honored Activist in Science and Technology of the RSFSR Professor R. A. Nilender for discussing the outline of the manuscript and the content of the individual chapters.

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