

2/2 022

CIRC ACCESSION NO--A0116091

UNCLASSIFIED

PROCESSING DATE--16OCT70

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

ABSTRACT. THE FATE OF RNA PRIME14 C OF FOWL
PLAGUE VIRUS WAS STUDIES IN UNIRRADIATED AND UV IRRADIATED CULTURES OF
CHICK EMBRYO FIBROBLASTS. UV IRRADN. OF CELLS DID NOT PREVENT VIRUS
PENETRATION INTO THE CELL AND DEPROTEINIZATION OF VIRUS RNA AND ITS
PENETRATION INTO THE CELL NUCLEUS. HOWEVER, RNA PENETRATING INTO
NUCLEI OF IRRADIATED CELLS UNDERWENT PRACTICALLY COMPLETE DEGRADATION.
RNASE ACTIVITY INCREASED 2 TO 3 FOLD IN THE NUCLEAR FRACTION OF
IRRADIATED CELLS. IT IS SUGGESTED THAT THIS RNASE MAY PARTICIPATE IN
THE DEGRADATION OF VIRUS RNA IN NUCLEI OF IRRADIATED CELLS.
FACILITY: MOSCOW RES. INST. VIRUS PREP., MOSCOW, USSR.

UNCLASSIFIED

1/2 021

UNCLASSIFIED
-U-

PROCESSING DATE--16OCT70

TITLE--SILVER ELECTROPLATING

AUTHOR--(04)-KUDRYAVTSEV, N.T., NECHAYEV, YE.A., SOLOVEV, G.S., ATAMANCHUK,
A.V.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,574

REFERENCE--OTDRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(6)

DATE PUBLISHED--26JAN70

S

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

TOPIC TAGS--CHEMICAL PATENT, ELECTROPLATING, SILVER, METAL PLATING,
CHEMICAL COMPOSITION, ELECTROLYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1994/1996

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

CIRC ACCESSION NO--AA0115795

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0115795

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROLYTIC AG COATING TAKES
PLACE AT 20-5DEGREES AND 0.1-2.5 A-DM PRIME2 IN AN ELECTROLYTE WITH THE
FOLLOWING CONC.N.: AG SALT (METALLIC) 20-45, KCN 60-90, K SUB2 CD SUB3
20-80, AND NA 2,3,DITHIOLPROPANE SULFONATE 0.005-0.05 G-L.
FACILITY: MENDELEEV, D. I., CHEMICAL TECHNOLOGICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHARACTERISTICS OF A LIGHT ION SOURCE FOR THE U-200 CYCLOTRON -U-
AUTHOR--(02)-SHELAEV, I.A., SOLOVEVA, G.M. S
COUNTRY OF INFO--RUMANIA, USSR
SOURCE--REV ROUMAINE PHYS., VOL. 15, NO. 1, P. 27-34, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ION SOURCE, ION CURRENT, GAS DISCHARGE, VOLT AMPERE
CHARACTERISTIC, LIGHT NUCLEUS, CYCLOTRON/U1U200 CYCLOTRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1738 STEP NO--RU/0032/70/015/001/0027/0034
CIRC ACCESSION NO--AP0122068
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCES OF THE ION CURRENT ON THE GAS YIELD, CURRENT AND VOLTAGE OF THE DISCHARGE AND THE VOLTAGE OF THE DEES WERE INVESTIGATED. RESULTS ARE DISCUSSED.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--090C170
TITLE--CRITERIA OF THE PITTING CORROSION TENDENCY OF TITANIUM ALLOYS -U-
AUTHOR--(03)--SOLLOVEVA, ZH.F., FOKIN, M.N., TIMONIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--ZASHCH. METAL. 1970, 6(2), 204-5
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TITANIUM ALLOY, CURRENT DENSITY, CORROSION RATE, AQUEOUS SOLUTION, SODIUM CHLORIDE, ALUMINUM ALLOY, CHROMIUM ALLOY, MOLYBDENUM ALLOY, SILICON ALLOY, HYDROCHLORIC ACID, METAL SURFACE PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1796 STEP NO--UR/0365/70/006/002/0204/0206
CIRC ACCESSION NO--AP0112782
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112782

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CREVICE CORROSION WAS STUDIED ON A TI ALLOY CONTG. AL 4.0-6.2, CR 1.5-2.5, MO 1.0-3.0, FE 0.8, SI 0.4, C 0.1PERCENT, AND THE REST TI; THE STUDIES WERE MADE IN A 3PERCENT NaCl SOLN. IN WHICH THE PH WAS SUITABLY ADJUSTED BY ADDN. OF HCL. AT 98DEGREES ACTIVATION OF THE METAL APPEARED AT PH IS SMALLER THAN 0.5. IN LESS ACID SOLNS., THE TI ALLOY WAS PASSIVE. INSIDE A CREVICE WHERE THE VOL. OF ANOLYTE PER UNIT AREA IS VERY SMALL, THE ACIDIFICATION OF THE ANOLYTE CAUSED BY THE HYDROLYSIS OF CORROSION PRODUCTS PROCEEDS RAPIDLY. THE SURFACE OF THE METAL OUTSIDE THE CREVICE IN CONTACT WITH THE SOLN. GREATLY EXCEEDS THE SURFACE INSIDE THE CREVICE, THUS A POTENTIOSTAT OF CONSIDERABLE STRENGTH IS ESTABLISHED. THE PASSIVATION OF THE INSIDE CREVICE SURFACE WAS STUDIED. BY MEANS OF DERIVED EXPRESSIONS, THE CORROSION BEHAVIOR OF THE METAL WITHIN THE CREVICES CAN BE PREDICTED BY KNOWING THE GEOMETRY AND THE ELECTROCHEM. CONSTS. THE DECISIVE FACTOR IN THIS CASE IS THE POTENTIAL OF THE METAL OUTSIDE THE CREVICE. ALLOYING ELEMENTS WHICH REDUCE THE CRITICAL C.D. OF PASSIVATION OR WHICH NARROW DOWN THE RANGE OF POTENTIAL AT WHICH ANODIC DISSOLN. OCCURS CONTRIBUTE TO THE PASSIVATION OF THE METAL WITHIN THE CREVICE.

FACILITY: MOSK. INST. STALI SPLAYOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.357.1.035(088.8)

NOVOSELOV, V. A., NELIDOV, V. B., MITROFANOV, V. S., ARCHAKOV, V. P.,
EPEL'FEL'D, F. I., SOLOVEY, I. E., PETROVSKII, P. P.

"Device for Distribution of Amalgams"

USSR Author's Certificate No 295736, filed 30/09/69, published 8/04/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract
No 4L245 from the resume).

Translation: A device is patented for distribution of amalgam in scrubber separators, consisting of a perforated grid with a circular tip, separating the upper plane of the grid into central and peripheral zones with apertures for distribution of the amalgam and output of hydrogen, differing in that in order to improve the flow of amalgam, eliminate wear of the fitting and prevent hydraulic shock, the apertures in the peripheral zone are made in the form of slits covered with a screen, while the apertures for passage of amalgam are located at the points of intersection of slots made on the lower plane of the grid and forming projections, preventing blockage of the apertures with granules of the packing.

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USSR

UDC 621.375.93.002.2

GERTSENSHTEIN, M. YE., KOSTIN, A. A., MAGNUSHEVSKIY, V. R., MARKOV, V. V.,
SOBOLEVA, O. A., SOLOVYEV, L. G., Active Members of the Society

"Plug-in Module for a Wide Band Parametric Amplifier"

Moscow, Radiotekhnika, No 11, 1971, pp 105-107

Abstract: A description is presented of a miniature modular design of a centimeter-range parametric amplifier with integral structure of the oscillatory systems. The operating principle of the module is discussed, and schematic diagrams of basic elements are presented. The primary oscillatory system comprises a varactor diode and an auxiliary lumped inductance included in series with respect to the signal frequency. The pass band of the module is actually determined by the time constant of the diode and is 8-9% of the operating frequency at a level of 1 decibel with amplification of 10-11 decibels. Further expansion of the pass band to 11-12% of the operating frequency is obtained by using a second corrector. The frequency-amplitude characteristic of the module with the additional corrector is presented. The application of a step structure as the corrector, transformer and rejector of the other frequencies permits optimal coupling of the

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USSR

GERTSENSHTEYN, M. YE., et al, Radiotekhnika, No 11, 1971, pp 105-107

primary oscillatory system to the matching quadripole in the signal circuit and realization of pass bands of the parametric module which are limiting for the diode used. This design is applicable in all cases where the series resonance frequency of the diode is between the signal frequency and the open-circuit frequency.

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Acc. Nr.: AP0040395

5

USSR

Ref. Code: UR 0108

JPRS 58248

UDC 621.396.62.029.6:621.391.822

GERTSENSHTEYN, M. YE., SOLOVEY, L. G. and VERKHOVYKH, N. P.

"Determination of the Noise Factor of a Microwave Receiver"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 70-73

Abstract: This article presents an attempt to standardize the definition of the noise factor, taking the concordance of the noise source and transmission line into account. The use of wave resistance of the transmission line as a standard impedance in the problems of noise measurement is recommended. The proposed definition states that the single channel differential noise factor of a device is the ratio of the total noise power emitted at the output load on operational frequency at standard noise temperature ($T=293^{\circ}K$) of the signal source, consistent with communication line, to the part of this power determined by the source. Justifications underlying the proposed definition are developed on the basis of tuning and operation conditions of various amplifiers and receivers considered here. Original article has 2 figures and 7 formulas.

Reel/Frame
19741844

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USSR

UDC 621.396.62.029.6:621.391.822

GERTSENSHTEYN, M. YE., SOLOVEY, L. G. and VERKHOVYKH, N. P.

"Determination of the Noise Factor of a Microwave Receiver"

Moscow, Radiotekhnika, Vol 25, No 1, Jan 70, pp 70-73

Abstract: This article presents an attempt to standardize the definition of the noise factor, taking the concordance of the noise source and transmission line into account. The use of wave resistance of the transmission line as a standard impedance in the problems of noise measurement is recommended. The proposed definition states that the single channel differential noise factor of a device is the ratio of the total noise power emitted at the output load on operational frequency at standard noise temperature ($T=293^{\circ}K$) of the signal source, consistent with communication line, to the part of this power determined by the source. Justifications underlying the proposed definition are developed on the basis of tuning and operation conditions of various amplifiers and receivers considered here. Original article has 2 figures and 7 formulas.

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Acc. Nr:

AP0036812

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 31-35

DYNAMICS OF DISCHARGE OF TYPHOID BACILLI IN CHRONIC CARRIERS IN DIFFERENT SEASONS OF THE YEAR AND ITS SIGNIFICANCE IN THE EPIDEMIOLOGY OF THE DISEASE

S. R. Khomik, Ya. M. Ferdinand, G. I. Skirda, N. S. Koualeva, N. S. Solovay, K. I. Popova, L. P. Timoshkina, M. M. Shelkovich, B. A. Pludro, Apeykina, M. D.

The feces of forty five carriers of typhoid bacillus were examined in different seasons of the year. The greatest number of bacilli was discharged from January to May (0.1 to 960 million per gm of feces were the number of bacilli found throughout the year). Therefore, the authors recommend examination of carriers to be carried out mainly during the first half of the year.

There was established no association between the seasonal distribution of the incidence of the disease and the intensity of bacterial discharge.

D.V.

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REEL/FRAME
19721729

USSR

UDC 621.397.132:621.382:621.375.4

BRITANISESKIY, R. G., SOLOVEY, V. F., and KHANOVICH, I. G.

"SEKAM Chromaticity Block With Integrated Circuits"

Moscow, Tekhnika kino i televideniya, No. 11, 1971, pp 48-52

Abstract: Stressing the advantages and usefulness of integrated circuits, this article offers as an example of those advantages the experimental model of a printed circuit for decoding chromaticity signals in the SEKAM system of color television. This circuit contains two integrated circuit units: one, type K2TS241, is a bistable flip-flop; the other, type K2KT241 is an electronic switch. Both can be used either in the SEKAM or the PAL systems. The schematics of both are given together with a schematic of the ensemble, and their operation is explained. The schematic of an alternative switching circuit that can be used in the chromaticity block is also provided. Among the new components in this block is a delay line, external photographs and an internal drawing of which are shown. Other illustrations are a block diagram of the chromaticity circuits and oscillograms of the signals at various points in the block diagram. The authors are associated with the M. A. Bonch-Bruyevich Electrical Engineering Communications Institute of Leningrad.

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USSR

UDC: 621.165.536.24.001.5

PAVLOVSKIY, G. I., PAVLOVSKIY, V. G., SOLOVEY, V. V.,

"Study of Heat Exchange in the Intershell Space of a Turbine"

Issledovaniye Teploobmena v Mezhekorpusnom Prostranstve Turbiny [English version above], Institute of Problems of Machine Building, Khar'kov, 1973, 7 pp (Translated from Referativnyy Zhurnal Turbostroyeniye, No 11, 1973, Abstract No 11.49.24 Dep)

Translation: This work presents a method for experimentation and experimental data on the investigation of heat exchange under unstable conditions on a model of the K-300-240 steam turbine. The criterial equation

$$Nu_{f,d} = 0.077 Re_{f,d}^{0.8} \left(\frac{T_w}{T_f} \right)^{0.45}$$

is produced, where the defining dimension used is the clearance between the walls of the inner and outer cylinders, the defining temperature is the mean temperature of superheated steam over the time interval of heating of the turbine body. The equation is recommended for determination of the heat exchange factor in the intershell space in the turbine. 2 Figures; 3 Biblio. Refs.

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USSR

MEYERSON, G.A., IOFIS, N.A., NURMUKHAMEDOV, V.KH., SOLCWEYCHIK, A.I.
"Material For Cathodes"

UDC 621.385.032.21 (088.8)

USSR Author's Certificate No 299887, filed 2 Oct 68, published 7 June 71
(from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1487P)

Translation: According to the invention, the cathode material differs from well-known materials in the fact that it consists of a solid solution of borides of rare earth and alkali-earth metals in which the borides in question are taken in the ratio: boride of rare-earth metal, from 60 to 95 molar percent; boride of alkali-earth metal, from 5 to 40 molar percent. The solid solutions of rare-earth and alkali-earth metals have smaller vapor pressures than separated borides and therefore evaporate more slowly than separated borides and consequently also their mixture. With a solution of a boride of an alkali-earth metal, e.g., BaB₆ in a boride of a rare-earth metal, e.g., LaB₆, in the solid solution which is formed a metallic type of conduction remains, the emissive properties of which are better than in a boride of rare-earth metal. A reduction of the work function with LaB₆ because of the diffusion of BaB₆ into LaB₆ is accounted for by the fact that at the cathode surface a monatomic film is produced of the more active metal Ba, the work function of which is lower than with La. Tests of the emissive properties of the solid solutions showed that during operation of the cathode at 1400-1550° C the current

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MEYERSON, G. A. et al, USSR Author's Certificate No 299887

density of the emission for a composition containing 40 molar percent BaB_6
the residual LaB_6 is twice as high and for a composition with 50 molar percent
 BaB_6 the residual LaB_6 is 1.5 times as high as with the same conditions for
pure LaB_6 . A.F.

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- 115 -

USSR

SOLOVEYCHIK, D. I.

UDC 51

"Planning the Delivery of Production under Conditions of Establishing the Maximum Number of Long-Term Economic Relations of the Consumers and Suppliers of Production"

Nauch. tr. Mosk. in-t nar. kh-va (Scientific Works of Moscow Institute of the National Economy), 1972, vyp. 101, pp 159-169 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V394)

Translation: A study was made of the application of the transport problem scheme with fixed payments.

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USSR

UDC 621.397

SOLOVEYCHIK, I.YE., DRAEKIN, R.I., YARMARKIN, K.K., LEUSSKAYA, G.V., SHARGORODSKAYA, F.M., KORNYTENKO, G.G., TSEDIK, A.S.

"Electronic Device For Information Display"

Elektrosvyaz', No 1, Jan 1972, pp 59-63

Abstract: The paper describes an information display device of the desk type, intended for operation with an electronic computer through a telegraph communication channel. A block diagram of the device and the basic parameters of the unit are presented. The authors report that a new information display device was developed on the basis of the unit described, but few details are given. (An exterior view of the device is shown on the journal cover.) In the new device it is possible to reproduce 512 symbols (16 lines, 32 symbols to the line) of an ELT231K9B screen. The set of reproducible symbols includes the Russian alphabet, figures, and special symbols--altogether 64 symbols. With an individual keyboard which has 47 figure-letter keys and 21 functional, it is possible to feed information into an electronic computer and to accomplish complete editing of the text with the aid of an electronic carriage (marker). The device contains a special exchange unit which makes it possible to operate with an electronic computer in GOST 10859-64 code and in code MTK-2. In addition, this unit provides coupling with the "Minsk-32" computer for the slow channel. 5 fig. 1 tab.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF GRINDING SPINDLE IMBALANCE ON SURFACE WAVINESS DURING
INFED GRINDING -U-
AUTHOR--(021)-RUBINCHIK, S.I., SOLOVEYCHIK, YA.S.

COUNTRY OF INFO--USSR

SOURCE--MGSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 4-6

DATE PUBLISHED--70

S

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

TOPIC TAGS--METAL GRINDING, GRINDING MACHINE, SURFACE FINISHING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1295

STEP NO--UR/0121/70/000/002/0004/0006

CIRC ACCESSION NO--AP0123254

UNCLASSIFIED

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CIRC ACCESSION NO--AP0123254
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--300GT70

ABSTRACT. CAUSES OF GRINDING SPINDLE IMBALANCE ARE INVESTIGATED AND ITS EFFECT ON SURFACE WAVINESS OF A HOLE UNDER MACHINING. MATHEMATICAL DEPENDENCIES ARE GIVEN WHICH MAKE IT POSSIBLE TO MAKE A QUANTITATIVE EVALUATION OF THE INDIVIDUAL COMPONENTS OF WAVINESS CCNDITIONED BY IMBALANCE. AN ANALYSIS IS GIVEN OF THE EFFECT OF RPM VARIATION AND OVERHAND OF THE GRINDING SPINDLE ON WAVINESS DURING CHANGEVER FROM TRUING UP AND DRESSING THE GRINDING WHEEL TO GRINDING. THE GIVEN DATA MAKE IT POSSIBLE TO DETERMINE THE SUBSTANTIATED REQUIREMENTS FOR GRINDING DISCS AND FOR THE DESIGN OF INTERNAL GRINDING MACHINES WITH RESPECT TO THOSE PARAMETERS WHICH DETERMINED THE EFFECT OF IMBALANCE ON THE QUALITY OF THE WORK PIECE.

UNCLASSIFIED

USSR

UDC 541.49+542.91

TETERIN, E. G., SHESTERIKOV, N. N., KRUTIKOV, P. G., and SOLOVKIN, A. S.

"IR-Spectroscopical Study of Uranyl di-n-Butylphosphates"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 16, No 3, Mar 71, pp 780-784

Abstract: Compounds forming during the reaction of di-n-butylphosphoric acid (DBP or NA) in nitric acid solutions, with the composition of $U:NO_3:A = 1:0:2$, $1:1:4$, and $1:1:2$ were reinvestigated spectroscopically in the IR range. On the basis of the data obtained, speculations were made regarding the structure of such compounds. It has been stated that DBP acts as a bridge group in reactions with metals in nitric or hydrochloric acid solutions, its functional groups binding various metal atoms.

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Uranium and Plutonium

USSR

SOLOV'KIN, A. B., ZHURAVEV, A. V., and ERKINOV, E. M.

"Calculation of the Number of Theoretical Extraction Stages in the Extraction of Several Macrocomponents With Tri-n-butyl Phosphate (Simplified by Nitric Acid, Uranyl Nitrate and the Nitrate of Trivalent Plutonium)."

Leningrad, Zhurnal Prikladnoy Khimii, Vol. 43, No. 9, Sep. 70, pp. 1795-1801

Abstract: The article uses the example of the extraction of hexavalent nitrate of uranium (VI) and plutonium (IV) and trace amounts of strontium from nitric acid to show that the extraction constants [Russian subscript = *K_{ex}*; *K_{ex}* is not known] can be used instead of the classical concentration based constants for the calculation of the number of theoretical extraction stages in the extraction of several components from nitric acid solutions in tri-n-butyl phosphate dissolved in kerosene.

Thorium and Uranium

USSR

UDC 546.791.6 - 38

KRUTIKOV, P. G., and SOLOVKIN, A. S.

"Uranyl Di-n-butylphosphates"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 6, Jun 70, pp 1610-1613

Abstract: Aqueous solutions of di-n-butylphosphoric acid [HA] react with $UO_2(NO_3)_2$ dissolved in water or in molar HNO_3 , forming insoluble compounds with the composition UO_2A_2 . In this paper the effect of the concentration of HA and HNO_3 on this complex formation was studied, using a 0.2 and a 6 molar aqueous solution of HNO_3 . From the 0.2 molar HNO_3 a solid light yellow, almost white, amorphous precipitate with a composition UO_2A_2 was obtained. From the 6 molar HNO_3 dark yellow viscous liquids were obtained, which, when washed with water, turned into a glassy substance with a composition of $UO_2(NO_3)(HA)_2$, $UO_2(NO_3)(HA)_2(HA)_2$, or their mixture. These two products are interconvertible: the viscous material gives the solid when placed in a 0.2 molar HNO_3 , and conversely the solid will turn into

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USSR

KRUTIKOV, P. G., et al, Zhurnal Neorganicheskoy Khimii, Vol 15,
No 6, Jun 70, pp 1610-1613

glass when treated by 6 molar HNO_3 . Data on solubility of the
isolated complexes in n-decane, in a mixture of HA and n-decane,
and in 0.2 and 6 molar HNO_3 are reported. It is proposed that uranyl
may be extracted from nitric acid media by means of the HA solutions
in n-decane.

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1/2 025

TITLE--ON SURGICAL TREATMENT OF HEMANGIOMAS IN CHILDREN -U- UNCLASSIFIED PROCESSING DATE--16OCT70

AUTHOR--SOLOVKO, A.YU. S

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 119-120
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, BLOOD VESSEL, LESION, HEMORRHAGE, SUTURE, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0045

STEP NO--UR/0589/70/104/004/0119/0120

CIRC ACCESSION NO--A0105144

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105144
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON THE STUDY OF IMMEDIATE AND LATE RESULTS OF SURGICAL TREATMENT OF HEMANGIOMAS IN 146 PATIENTS IT IS CONSIDERED THAT RESECTION OF LARGE CAVERNOUS AND RACEMOSE HEMANGIOMAS IS INHERENT IN HEMORRHAGE HAZARDOUS TO PATIENT'S LIFE, WHEREAS IN NONRADICAL REMOVAL OF GROWING COMMON HYPERTROPHIC HEMANGIOMAS FREQUENT RECURRENCES ARE OBSERVED. IN EXTENSIVE CAVERNOUS AND RACEMOSE ANGIOMAS TO THE END OF LESSENING BLEEDING THE TREATMENT SHOULD BE INITIATED WITH INJECTIONS OF SCLEROSING SOLUTIONS, ELECTROPUNCTURING, ETC., WHILE DURING THE OPERATION IT IS NECESSARY TO INFILTRATE THEIR TISSUE WITH A MIXTURE OF BLOOD SERUM AND NOVUCAIN, TO PUT INTERRUPTED SUTURES ON THE LATTER, OR TO APPLY A HEMOSTATIC TOURNIQUET PROXIMALLY. HOWEVER, GROWING COMMON HYPERTROPHIC HEMANGIOMAS SHOULD BE FIRST RESECTED, AND THEN IF SURGICAL INTERVENTION PROVED TO BE NONRAIDCAL INJECTIONS OF SCLEROSING SOLUTIONS SHOULD BE USED.

UNCLASSIFIED

UNCLASSIFIED

TITLE--CHARACTERISTICS OF DUST CARRIED OUT OF A FLUIDIZED BED FURNACE
DURING THE ROASTING OF A NICKEL CONCENTRATE -U-
AUTHOR-(02)-SOLOVOV, N.I., ASTAFYEV, A.F.

PROCESSING DATE--18SEPT70

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 22-4

DATE PUBLISHED-----70

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

TOPIC TAGS--ROASTING FURNACE, AIR POLLUTION, CHEMICAL COMPOSITION,
FLUIDIZED BED, NICKEL, COPPER, LEAD, SULFIDE, ORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0556

STEP NO--UR/0136/70/043/002/0022/0024

CIRC ACCESSION NO--AP0107161

UNCLASSIFIED

2/2 016

CIRC ACCESSION NO--AP0107161
ABSTRACT/EXTRACT--(U) GP-O-

UNCLASSIFIED

PROCESSING DATE--18SEPT70

ABSTRACT. PHYS. CHEM. AND MINERALOGICAL CHARACTERISTICS OF DUST CARRIED OUT OF A FLUIDIZED BED FURNACE DURING THE ROASTING OF NI CONC. PREPD. DURING THE FLOTATION SEPN. OF CU-NI CONVERTER MATTE WERE EXAMD. DUST SAMPLES WERE TAKEN DIRECTLY FROM THE GAS STREAM BY USING STANDARD TECHNOLOGY. SAMPLES WERE TAKEN ALSO FROM OTHER PARTS OF THE ENTIRE ASSEMBLAGE. BASED ON ITS PARTICLE SIZE, THE DUST IS SIMILAR TO THE STARTING NI CONC. THE FUNDAMENTAL SIZE OF THE GRAINS IS SMALLER THAN OR EQUAL TO 0.01 MM, AND IS RELATIVELY LIGHT WITH RESPECT TO ITS BULK D.; THE REMAINING DUST IS SOMEWHAT COARSER, AND HAS A SLIGHTLY HIGHER BULK D. THE COLLECTED DUST BECOMES SOMEWHAT IMPOVERISHED WITH NI DURING THE MOVEMENT OF THE GASES, AND AT THE SAME TIME BECOMES SOMEWHAT ENRICHED WITH S. ESP. SIGNIFICANT IS THE INCREASE IN THE SULFATE S. THE AS CONTENT IN THE DUST INCREASES BY 2 TIMES, AS COMPARED WITH THE STARTING CONC., THAT OF PB INCREASES BY 5 TIMES, AND THAT OF SE BY 7 TIMES. THE DUST CONTAINS PRIMARILY THE FINEST NIO PARTICLES, WHICH ARE PARTIALLY ROASTED, AS WELL AS FREE SULFIDE COMPONENTS OF THE CONC. MANY PARTICLES IN THE DUST ARE IN THE FUSED STATE. ALL THE INCRUSTATIONS IN THE GAS CONDUIT SYSTEM HAVE A WELL EXPRESSED LAMELLAR STRUCTURE WITH DIFFERENT PHYS. CHEM. CHARACTERISTICS OF THE LAYERS. SOME OF THE LAYERS CONSIST ALMOST ENTIRELY OF NIO WITH INDIVIDUAL SULFIDE INCLUSIONS PRESENT, WHEREAS OTHER LAYERS CONSIST PRIMARILY OF SULFIDES. THE ABS. AMT. OF DUST CARRIED OUT INCREASED WITH INCREASED CONSUMPTION OF THE BATCH.

UNCLASSIFIED

ACC. Nr:

AP0051525

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0136

102247q Reprocessing of arsenic-containing products at the Severonikel combine. Alekseeva, R. K.; Ivanova, L. S.; Solovcy, N. I. (USSR). *Isvet. Metal.* 1970, 43(1), 17-19 (Russ). The material of anodes in electrolytical refining of Ni metal must be virtually As free, otherwise As contaminates the final product. In the Severonikel metallurgical combine operations most of the As is accumulated in so called iron cake and in dust collected by electroprecipitators. These materials are recycled because of their relatively high content of Ni, Cu, Co, Cd, etc. and, therefore, As should be removed from the cycle. At the same time, water pollution by As must be avoided. Based on lab. expts., a combined process for treating these materials was suggested. The Fe-cake is dissolved in H₂SO₄ and simultaneously SO₂ is introduced to reduce Fe(III). The liquor is decanted and the filtrate is combined with a clear soln. resulting from the filtration subsequent to the electroprecipitator dust repulped in H₂O and then acidified to pH = 2.6-2.7 (1st pptn.). The filter cake contg. all of the As in the form of insol. Ca arsenates is removed. The filtrate is subjected to 2nd pptn. (CaO or CaCO₃, air, and Na₂CO₃ to pH = 7.0-7.2). Both the sepd. solid phase, i.e. a concentrate (3-5% of Ni), and the mother liquor contain virtually no As.

V. Dvorak

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USSR

UDC 615.28:547.333.4

PANARIN, Ye. F., SOLOVSKIY, M. V., and EKZEMPLYAROV, O. N., Institute of High Molecular Compounds of the USSR Academy of Sciences, Leningrad

"Synthesis and Antimicrobial Properties of Polymers Containing Quaternary Ammonium Groups"

Moscow, Khimiko Farmatsevticheskiy Zhurnal, Vol 5, No 7, July 1971, pp 24-26

Abstract: The synthesis and antimicrobial effect of copolymers of N-vinylpyrrolidone with (2-methacryloxyethyl)triethylammonium iodide and bromide are described. The degree of effect of the macromolecule, its size and the number of ammonium groups in it, is determined. The physical and chemical properties and antimicrobial activity of the mentioned copolymers are tabulated. With an increase in the proportion of the (2-methacryloxyethyl)-triethylammonium halides in the initial mixture, a reduction in the characteristic viscosity of the copolymer is observed. It was found that the polymers dissolve well in water in any ratio, and are strong polyelectrolytes.

The antimicrobial activity was determined by the method of serial dilutions using staph. aureus 209P and B.coli as the test culture. The values of the $1/2$

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PANARIN, Ye. F., et al., *Khimiko Farmatsevticheskiy Zhurnal*, Vol 5, No 7,
July 1971, pp 24-26

minimum bacteriostatic concentration for the monomers and copolymers of different composition and molecular weight are tabulated. The monomers turned out to be low-active compounds whereas their homopolymers demonstrated highest activity which in the case of the iodide exceeds the monomer activity by more than two orders. Copolymers with N-vinylpyrrolidone also exhibited noticeable activity which increased with an increase in the ammonium group content in the copolymer. Introduction of ammonium groups into polyvinylpyrrolidone did not lead to a sharp increase in toxicity.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CORRELATION BETWEEN STRUCTURE AND ACID STABILITY IN
PHENOXYMETHYLPENICILLINS -U-
AUTHOR--(02)-PANARIN, YE.F., SOLOVSKIY, M.V. S
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 426-431
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PENICILLIN, CHEMICAL STABILITY, MOLECULAR STRUCTURE,
HYDROLYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/0146 STEP NO--UR/0297/70/015/005/0426/0431
CIRC ACCESSION NO--AP0114542
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO ELUCIDATE THE CORRELATION BETWEEN THE STRUCTURE AND THE ACID STABILITY OF PENICILLINS, NUCLEAR SUBSTITUTED PHENOXYMETHYLPENICILLINS WERE SYNTHESIZED AND THEIR HYDROLYSIS AT PH 2.0 WAS STUDIED. IT WAS FOUND THAT SIMILAR TO PHENYLPENICILLINS ELECTRONE DONOR SUBSTITUENTS INCREASED THE REACTION RATE, WHILE THE ELECTRONE ACCEPTOR ONES DECREASED IT. SATISFACTORY CORRELATION BETWEEN THE LOGARITHMS OF THE REACTION RATE CONSTANTS AND HAMMET DELTA CONSTANTS WAS SHOWN. CONSTANT REACTIONS (P) WERE EQUAL TO MINUS 0.358, MINUS 0.350 AND MINUS 0.295 FOR 30, 35 AND 40DEGREES RESPECTIVELY. THE VALUE OF THE TRANSMISSION COEFFICIENT (PI) EQUAL TO 0.271 FOR, OCH SUB2 GROUP CORRESPONDED TO THE LITERATURE DATA FOR OTHER REACTION SERIES. THIS MAKES IT POSSIBLE TO USE THE CORRELATION ANALYSIS FOR PREDICTION OF ACID STABILITY OF NEWLY SYNTHESIZING PENICILLINS. FACILITY: INSTITUTE FOR HIGH MOLECULAR COMPOUNDS OF ACADEMY OF SCIENCES OF THE USSR, LENINGRAD.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70
 TITLE--ANOMALOUS REFLECTIONS OF ELECTROMAGNETIC WAVES FROM A DIFFRACTION
 GRATING WITH A DIELECTRIC LAYER -U-
 AUTHOR-(02)-PANCHENKO, B.A., SOLOVYANDVA, I.P. S
 COUNTRY OF INFO--USSR
 SOURCE--TZV VYZ RADIOFIZIKA, VOL. 13, NO. 3, 1970, P. 467-470
 DATE PUBLISHED-----70
 SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
 TOPIC TAGS--ELECTROMAGNETIC WAVE, DIFFRACTION GRATING, DIELECTRIC LAYER,
 GREEN FUNCTION, DIELECTRIC WAVEGUIDE, HARMONIC GENERATOR
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1991/0145 STEP NO--UR/0141/70/013/003/0467/0470
 CIRC ACCESSION NO--AP0110111
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

2/2 023

CIRC ACCESSION NO--AP0110111

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

ABSTRACT. INVESTIGATION OF THE INCIDENCE OF A PLANE ELECTROMAGNETIC WAVE ON A CONDUCTING SCREEN HAVING A PERIODIC ARRAY OF RECTANGULAR HOLES WITH A DIELECTRIC COATING. ON THE BASIS OF THE FLOQUET THEOREM, THE PROBLEM FOR AN INFINITE ARRAY IS REDUCED TO THE CASE OF DIFFRACTION ON A SINGLE PERIOD OF THE STRUCTURE. THE GREEN'S FUNCTION OF THE PROBLEM AUTOMATICALLY ACCOUNTS FOR THE EFFECTS OF NEIGHBORING HOLES. EXPRESSIONS ARE GIVEN FOR THE TRANSMISSION AND REFLECTION COEFFICIENTS, AND NUMERICAL RESULTS ARE PLOTTED FOR THE CASE OF NORMAL WAVE INCIDENCE. THE DATA SHOW THAT THE PASSAGE OF ELECTROMAGNETIC WAVES HAS A RESONANT CHARACTER WITH TWO TYPES OF RESONANCES: REGULAR FUNDAMENTAL AND HIGHER ORDER RESONANCES AND ANOMALOUS RESONANCES. THE ANOMALOUS RESONANCES ARE EXPLAINED BY THE ORIGIN OF PROPAGATING HIGHER HARMONICS OF WAVEGUIDE MODES IN THE DIELECTRIC LAYER.

FACILITY: URAL'SKII POLITEKHNICHESKII

INSTITUT, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 041 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--OPTICAL CHARGE EXCHANGE AND THERMAL STIMULATION EFFECT IN GAAS WITH
FE -U-
AUTHOR-(04)-LMELYANOVSKIY, E.M., PALOV, N.M., SOLOVYER, N.N., SOLOVYER,
N.N.
COUNTRY OF INFO--USSR
SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, MAR. 1970, P. 527-532
DATE PUBLISHED---MAR70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL OPTIC PROPERTY, OPTIC PROPERTY, CHARGE EXCHANGE,
THERMAL EFFECT, SIMULATION, IRON IMPURITY, GALLIUM ARSENIDE, ELECTRON
PARAMAGNETIC RESONANCE, ELECTRON TRIPLET STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1855 STEP NO--UR/0449/70/004/000/0527/0532
CIRC ACCESSION NO--AP0116819

UNCLASSIFIED

2/2 041

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0118819

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. DISCUSSION OF EXPERIMENTS IN WHICH OPTICAL CHARGE EXCHANGE AND THERMAL STIMULATION EFFECTS WERE OBSERVED IN IRON DOPED GALLIUM ARSENIDE CRYSTALS. THE ROLE OF THE IRON CONTENT IN THESE PROCESSES IS DETERMINED BY APPLYING THE EPR METHOD TO THE STUDY OF THE SPECTRA OF TRIPLY CHARGE IRON IONS. AN INVESTIGATION OF THE PROPERTIES OF GALLIUM ARSENIDE DOPED WITH VARIOUS AMOUNTS OF IRON SHOWED THAT THE POSSIBILITY OF OBSERVING THERMAL STIMULATION EFFECTS ASSOCIATED WITH THE CHARGE EXCHANGE OF THE IRON LEVEL IS DETERMINED BY THE DEGREE OF COMPENSATION OF THE MATERIAL AND BY THE PRESENCE OF OTHER DEEP SEATED LEVELS. PARALLEL INVESTIGATIONS OF THERMALLY STIMULATED CURRENTS AND CHANGES IN IRON CONCENTRATION (TRIPLY CHARGED IRON IONS) FROM THE INTENSITY OF THE EPR SPECTRA REVEALED THE EXISTENCE OF AN 0.2 EV ACCEPTOR LEVEL IN THE CRYSTAL. THE EXPERIMENTAL DATA OBTAINED LEAD TO CERTAIN QUANTITATIVE ESTIMATES OF THE PARAMETERS OF DEEP LYING LEVELS IN GALLIUM ARSENIDE. FACILITY: GOSDARSTVENNIYI NAUCHNO-ISSLEDOVATEL'SKII I PROEKTNYI INSTITUT REDKOMETALLICHESKOI PROMYSHLENNOSTI, MOSCOW, USSR.

UNCLASSIFIED

UDC 533.6.013.42

USSR

SOLOV'YEV, A. A.

"The Problem of the Analytical Design of an Optimal Regulator for an Elastic Flying Object"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1971, No. 135, pp 57-63 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V491)

Translation: The problem of the analytical design of an optimal regulator for an elastic flying object when its perturbed motion is controlled with the aid of a concentrated moment is discussed. The flying object is depicted as a straight nonhomogeneous beam which is deformed under the action of elastic, aerodynamic and gravitational forces. A numerical example is given for the simplified problem when aerodynamic forces and normal compression from mass forces are absent. Optimal quenching of only the first tone of the oscillations is achieved and the controlling moment is applied to the end section of the beam. 6 ref.
G. S. Aronin.

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UDC 621.315.592:546.19'681

USSR

KOVTONYUK, N. F., KURBATOV, L. N., NOZDRIN, V. V., ORLOV, V. S., RYABENKO, Ye. A., RASKIN, A. A., ROSTUNOVA, R. P., SOLOV'YEV, A. A., SEVAST'YANOV, V. G., UMYYAGIN, A. M., SHALUMOV, B. Z., and SHAULOV, Yu. Kh.

"Some Problems of a Technological Formulation of the Process of Obtaining Epitaxial Films of Gallium Arsenide by the Gas Phase Method"

V sb. Protsessy rosta kristallov i plenok poluprovodn. (Procedures for the Growth of Semiconductor Crystals and Films -- Collection of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B130)

Translation: The epitaxial films of GaAs obtained were produced by the gas phase method with the use of AsH₃, Ga, and HCl. GaAs wafers served as substrates. The surface of a wafer was subjected to chemical--mechanical processing and etching with H₂SO₄: H₂O₂: H₂O in the ratio 3: 1: 1. Synthesis of the GaAs was conducted in a reaction apparatus which was thoroughly scavenged by H₂ and etched by HCl at 950° C for 30 minutes. After cooling, the Ga was loaded into the chamber. The chamber was heated to a temperature of 850° C for activation of the Ga surface. After reduction of the temperature to 100--150° C, the GaAs substrate was introduced into the reaction zone. After heating the Ga area and the GaAs area, etching of the GaS was performed by HCl gas in a stream of AsH₃ and H₂. The films were doped by Se.

JSSR

KOVIIONYUK, N. F., et al., Protsessy rosta kristallov i plenok poluprovodn.
(Procedures for the Growth of Semiconductor Crystals and Films -- Collection
of Works), Novosibirsk, 1970, pp 341-350 (from RZh-Elektronika i yeye
primeniye, No 7, July 1971, Abstract No 7B130)

The best specimens of film had n-type conductivity and a mobility of 4000--5000
 $\text{cm}^2/\text{v. sec.}$ Films doped by Se had a concentration of $5 \cdot 10^{17}$ -- $5 \cdot 10^{18}$ at/cm^3 and
a mobility of 2000 $\text{cm}^2/\text{v. sec.}$ 8 ref. V.B.

2/2

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--STATE OF ORGANOSILICON COMPOUNDS ON CELLULOSE FIBERS -U-
 AUTHOR--(03)-GUBINA, S.M., SOLOVYEV, A.A., MELNIKOV, B.M.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 252-5
 DATE PUBLISHED--70
 SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--ORGANOSILICON COMPOUND, CELLULOSE RESIN, IR SPECTRUM, NATURAL FIBER, UREA FORMALDEHYDE RESIN
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3005/0182 STEP NO--UR/0153/70/013/002/0252/0255
 CIRC ACCESSION NO--AT0132459 UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132459

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF COTTON (I) CLOTH AND I CONIG. CARBAMOL (UREA HCHO RESIN) (II); (HESIETO) SUBN (III), OR II AND III SHOWED THAT II REACTS WITH III, GIVING IV DURING THE FINISHING OPERATION. THERE IS ALSO H BONDING BETWEEN II AND III.
FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

USSR

UDC 621.374.5

NEUSTROYEV, S. N., BARBASOV, V. M., PLAVSKIY, I. A., SOLOV'YEV, A. K.

"An Amplitude-Time Converter"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrastyy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327584, Division H, filed 8 Jun 70, published 26 Jan 72, p 165

Translation: This Author's Certificate introduces a nanosecond pulse amplitude-time converter which contains an input emitter-follower, a discharge device, a storage capacitor, a discharge current stabilizer and a pulse shaper. As a distinguishing feature of the patent, the linearity and stability of the conversion factor are improved and the dynamic range of convertible amplitudes is extended by connecting the storage capacitor to the output of the emitter-follower through a series circuit made up of a differentiating stage and a charging device based on a diode-transistor switching circuit. The input of the pulse shaper is connected to the storage capacitor through a series circuit made up of a decoupling stage and a nonlinear differentiating stage.

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USSR

UDC 621.382.333.34

MAKAROV, V. A., KORONEVSKIY, I. M., SOLOV'YEV, A. K.,
CHARYKOV, N. A.

"Investigation of the Input Impedance of a Thyristor in a Circuit
With a Common Gate"

Moscow. Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-
issled. rabot za 1968-1969 gg (Apr 1970 g). Sekts. Elektron.
tekhniki. Podseks. poluprovodnikovyykh priborov (Reports on the
Scientific-Technical Conference on the Results of Scientific-
Research Work for 1968-1969. April 1970. Electronic Technology
Section, Semiconductor Devices Subsection), 1969, pp 144-159
(from RZh -- Elektronika i yeye primeneniye, No 2, Feb 70,
Abstract No 2B241)

Abstract: The final magnitude of the resistance to spreading
of the p-base of a thyristor, and the inertia of minority carriers
depend on the inductive character of the input resistance. The
active component can be negative, which makes it possible to use
a thyristor as an inductance with a high Q. Calculations of the
dependency of the active and reactive components are given.
3 ill. 6 ref. S.A.

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USSR

UDC 621.382:621.317.799

SOLOV'YEV, A. K., CHARYKOV, N. A.

"Measurement of the Time Constant of the Transfer-Characteristic of a PNP Transistor of Thyristor Structure"

Moscow, Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg (Apr. 1970 g). Sekts. Elektron tekhniki. Podsekts poluprovodnikovyykh priborov (Reports on the Scientific-Technical Conference on the Results of Scientific-Research Work for 1968-1969. April 1970. Electronic Technology Section, Semiconductor Devices Subsection), 1969, pp 140-143 (from RZh -- Elektronika i yeye primeneniye, No 2, Feb 70, Abstract 2B449)

Abstract: An indirect method is proposed for measuring the time constant of the transfer characteristic of the current of a p-n-p type transistor of the thyristor structure τ_{β_n} , based on a determination of the stability limits of a thyristor connected in a circuit with a common gate. It is assumed that the inertness of all the structure is determined by the constituents of the p-n-p transistor. The analysis of the stability presented 1/2

USSR

SOLOV'YEV, A. K., et al, Dokl. Nauchno-tekhn. konferentsii po
itogam nauchno-issled. rabot za 1968-1969 gg. (Apr. 1970 g).
Sekt. Elektron tekhniki. Podsekt. poluprovodnikovyykh priborov,
1969, pp 140-143 (from RZh -- Elektronika i yeye primeneniye,
No 2, Feb 70, Abstract 2B449)

Abstract: is applicable if the time constant differential of
the transfer characteristic of the current is considerably less
than the magnitude $\tau\beta_n$. If these magnitudes are commensurate,
more detailed analysis leads to different stability conditions,
not permitting a determination of $\tau\beta_n$. Non-unidimensional
effects appearing with large currents and leading to a reverse
bias of part of the cathode of the p-n junction also hinder
measurements. 2 ill. 1 ref. V.G.

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- 85 -

Computers: Digital

USSR

UDC: 681.327

ZINKEVICH, V. P., KASPIROVICH, V. I., SOLOV'YEV, A. I.

"Multivalued Matrix Memories Based on Toroidal Cores"

Moscow, Magnit. elementy avtomatiki i vychisl. tekhn. XIV Vses. soveshch., 1972. Ref. dokl. (Magnetic Elements in Automation and Computer Technology. Fourteenth All-Union Conference, 1972. Abstracts of Papers), 1972, pp 366-368 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 73, abstract No 1B383 by B. K.)

Translation: The authors consider the feasibility of constructing multivalued matrix memories based on toroidal ferrite cores with data recording by the method of coincidence of half-currents. An analysis of the selection system shows that a type 2D sampling system must be used in the given memory unit. The accumulator of the memory is based on ferrite cores 1, 5VT measuring 2.5 x 1.8 x 1 mm.

In data recording, one half-current remains constant in amplitude and the second varies in accordance with the data being recorded. It is pointed out that recording ten-level information requires that cores be sorted with a precision of $\pm 1\%$. Pulse or sine-wave current is used for

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ZINKEVICH, V. P. et al., Magnit. elementy avtomatiki i vychisl. tekhn. XIV
Vses. soveshch., 1972. Ref. dokl., 1972, pp 366-368

nondestructive data readout. The principles of construction of the proposed memory were verified on a model with a capacity reaching up to 600 cores. Two illustrations.

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1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PREPARATION OF FILMS OF ORGANIC MATERIALS AS ANALYZERS FOR THE
ULTRASOFT X RAY SPECTRAL REGION -U-
AUTHOR--(05)-SOLUYEV, A.M., CHERNOBEREZHSKIY, YU.M., VANKLOVICH, A.I.,
KUZMINA, T.A., TOPOROKOV, S.A. 5
COUNTRY OF INFO--USSR
SOURCE--VESTN. LENINGRAD. UNIV., FIZ., KHIM. 1970, (1), 163-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS, MATERIALS
TOPIC TAGS--BARIUM COMPOUND, LEAD COMPOUND, X RAY SPECTRUM, STEARIC ACID,
PLASTIC FILM, BORON, CARBON, NITROGEN, MICROCHEMICAL ANALYSIS EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REFERENCE--300271175 STEP NO--08/0054720/000/001/0163/0165
CIRC ACCESSION NO--AP0124552

272 030

CIRC ACCESSION NO--AP0128952

UNCLASSIFIED

PROCESSING DATE--13NDV70

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

ABSTRACT. BY USING THE LANGMUIR BLODGETT METHOD, THE TITLE FILM ANALYZERS HAVE BEEN PREP'D. ON THE BASIS OF GA AND PB SALTS OF STEARIC, BENENIC, AND LIGNOCERIC ACIDS, WITH INTERPLANAR DISTANCES OF 50, 60, AND 65 ANGSTROM, RESP. THE SAMPLES OBTAINED HAVE GOOD REGISTRATION FOR K ALPHA LINES OF B, C, AND N; THIS ALLOWS THE MICROANAL. OF THE ELEMENTS WITH HIGH SENSITIVITY.

UNCLASSIFIED

USSR

UDC 621.397.332

S
BESPALOV, YE.S., KAPELINSKIY, I.YU., SOLOV'YEV, A.N.

"Optimization of Television Automatic Controls"

Dokl. Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. Mosk. energ. in-t, 1970. Sekts. radiotekhn. Podseks. televid. (Reports of the Scientific-Engineering Conference on Advances in Scientific-Research Studies in 1968-1969. Moscow Energetics Institute, 1970. Section on Radio Engineering. Subsection on Television), Moscow, 1969, pp 85-96 (from RZh-Radiotekhnika, No 2, Feb 70, Abstract No 2D108)

Translation: A system for automatic horizontal correction of a TV raster subject to simultaneous action of signal and noise is considered. The optimization criterion is a minimum of the random error for given memory time and given dynamic accuracy. The class of linear stationary systems is taken as the class of acceptable systems. Two processing techniques are examined: phase detection and frequency detection. Seven illustrations. Five references.
Ye.T.
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- 31 -

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CERTAIN MIXED PLANE PROBELMS OF ELASTICITY THEORY AND THEIR
APPLICATION TO THE CALCULATION OF STRAIN MEASUREMENT ERRORS -U-
AUTHOR-(02)-SOLOVYEV, A.S., ALEKSANDROV, V.M.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA JAN FEB
1970, P 122-129
DATE PUBLISHED-----70
SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS
TOPIC TAGS--ELASTICITY, YOUNG MODULUS, STRAIN GAGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0145 STEP NO--UR/0484/70/000/000/0122/0129
CIRC ACCESSION NO--AP0054941
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0054941
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. CONSIDERATION OF PLANE PROBLEMS OF TENSION OF AN ELASTIC INFINITE STRIP BY FORCES APPLIED AT INFINITY IN THE PRESENCE OF A THIN ELASTIC COVER PLATE ON ONE OF ITS SURFACES. IT IS ASSUMED THAT COMPLETE ADHESION OCCURS BETWEEN THE SURFACE OF THE STRIP AND THE COVER PLATE. THE PROBLEMS ARE REDUCED TO A DETERMINATION OF THE DISTRIBUTION FUNCTION OF THE CONTACT TANGENTIAL STRESSES FROM A CERTAIN INTEGRAL EQUATION, FOR WHICH AN ASYMPTOTIC SOLUTION IS CONSTRUCTED IN THE CASE WHERE THE RELATIVE WIDTH OF THE STRIP IS LARGE AND THE TENSION RIGIDITY OF THE COVER PLATE IS RELATIVELY LARGE. THE RESULTS OBTAINED ARE USED TO DETERMINE THE STRAIN DISTORTION FACTOR OCCURRING DURING STRAIN MEASUREMENTS OF MATERIALS WITH LOW YOUNG'S MODULI BY MEANS OF OHMIC RESISTANCE WIRE STRAIN GAUGES ON A PAPER OR FILM BASE.

UNCLASSIFIED

1/2 - 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF SOME 2,ARYL AND 2,ARYLMETHYLENE,1,3,INDANDIONES -U-
AUTHOR--(02)-SOLOVYEV, A.S., ZALUKAYEV, L.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIA. TEKHNOL. 1970, 13(3),
369-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, METHYLENE, AROMATIC KETONE, AROMATIC
ALDEHYDE, ORGANOSODIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1115 STEP NO--UK/0153/70/013/003/0369/0372
CIRC ACCESSION NO--AT0134801
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134001

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

ABSTRACT. 2,ARYL,1,3,INDANDIONES ARE SYNTHESIZED IN 60-90PERCENT YIELD BY CONDENSING THE APPROPRIATE AROMATIC ALDEHYDE WITH PHTHALIDE IN THE PRESENCE OF NAOME IN ETOAC 2 HR AT 65DEGREES. 2,ARYLMETHYLENE,1,3,INDANDIONES ARE SYNTHESIZED IN 50-74PERCENT YIELD FROM THE AROMATIC ALDEHYDE BY CONDESNSING WITH THE NA SALT OF ET 1,3,INDANDIONE,2,CARBOXYLATE. FACILITY: VORONEZH. GOS. UNIV. VORONEZH, USSR.

UNCLASSIFIED

USSR

UDC 532.501.34+532.517.2

LEVCHENKO, V. YA., and SOLOV'YEV, A. S.

"Stability of the Boundary Layer on an Undulant Surface"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 6, Nov-Dec 72, pp 11-16

Abstract: An investigation is made of stability with respect to small perturbations of flows, the velocity of which depends upon a space coordinate directed along the current. Calculations of stability are conducted for the case where the velocity distribution is obtained through the solution of boundary-layer equations. The primary flow dealt with here is the one discussed by H. Goerstler in 1947 and 1948, which is periodic with respect to the longitudinal coordinate x in the boundary layer above a weakly undulant surface. In the case of undulant walls, frequently encountered in technical applications, solution of the problem permits quantitative estimates to be made of the influence of surface undulancy upon the stability of the laminar boundary layer, 4 figures, 6 references.

1/1

USSR

UDC 8.74

SEYFULLA, I. D., SOLOV'YEV, A. V.

"Program for Analyzing Automata Implemented in Homogeneous Environments"

V sb. Avtomaty i upr. (Automata and Control--collection of works), Moscow, Nauka, 1972, pp 38-39 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V423)

Translation: An analysis program is described which permits us to obtain formulas for functions at the outputs of environmental cells participating in the implementation of an automaton circuit. The flow chart of the program is presented.

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- 52 -

USSR

SOLOV'YEV, B., Academician, Academy of Medical Sciences USSR

"Health of Our Cities"

Moscow, Trud, 11 Feb 71, p 2

Abstract: Air and water pollution have reached such proportions in the economically developed countries of the West that they present serious health hazards for man. The pessimistic attitude in Western countries is contrasted with the rational planning of the Communist Party and the Soviet Government, which has resulted in a lower degree of environmental pollution than that found in Western nations. Much remains to be done, however, and hygienists must cooperate more closely with architects and construction personnel in planning and building new urban and industrial complexes. Relaxation spots must be developed for the workers, and such factors as the prevailing noise levels in cities and towns must be considered. Standards and norms must be set up to assure the well-being of all city dwellers. Air pollution remains the biggest problem, but the Communist Party and the Council of Ministers of the Soviet Union are cooperating closely in setting up requirements for purification units of industrial

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USSR

SOLOV'YEV, B., Trud, 11 Feb 71, p 2

stacks and exhausts. The air in such cities as Moscow, Leningrad, Sverdlovsk and Gorki has in fact become cleaner as a result. Nevertheless, pollution originating from motorcars must still be dealt with. In the same way, legislation on pollution of waterways and other bodies of water has been set up. All of these measures are of extreme importance.

2/2

- 85 -

Coatings

USSR

UDC 669.14.018.85

DEGTEV, G. F., SOLOV'YEV, B. M., VASHKEVICH, F. F., MATVEYEV, O. R.

"Study of Some Oxidation-Resistant Coatings Obtained by the Plasma Deposition Method"

Dnepropetrovsk, Metallurgicheskaya i gornorudnaya promyshlennost', No 2 (74), 1972, p 37

Abstract: A study was made of the possibility of using plentiful and inexpensive materials to protect the steel elements of industrial heat exchangers. Oxidation-resistant coatings of aluminum oxide, magnesium oxide, zirconium dioxide, silicon carbide, and tungsten carbide were applied to specimens made of St. 3 carbon steel and Kh18N9T oxidation-resistant steel. The coatings were tested independently and in combination with each other. Various conditions of plasma deposition of the coatings were tested. The best results were obtained on applying aluminum oxide, aluminum-magnesia spinel, and silicon carbide to carbon steel with a sublayer of iron.

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USSR

UDC: 661.143

BOZHEVOL'NOV, V. Ye., PRISELKOVA, K. D., SOLOV'YEV, B. N.,
ZARUBIN, O. V., KARELIN, V. V.

"Preparation of Continuous-Action Brightness Standards"

Sb. Nauch. tr. VNII lyuminoforov i osobo chist. veshchestv
(Collected Scientific Works of the All-Union Scientific Re-
search Institute of Phosphors and Extra Pure Substances),
1971, vyp. 6, pp 95-98 (from RZh-Khimiya, No 15, Aug 72,
Abstract No 15L187)

Translation: New methods are proposed for making phosphor brightness standards for the green, blue and orange regions of the spectrum in the form of polymer discs and flexible screens. These methods are simpler and more reliable than conventional methods, and are suitable for all grades of phosphors. Standards based on C¹⁴ are exceptionally stable (25% brightness fall-off in three years), and also are distinguished by high brightness, mechanical strength, and will withstand being kept for several days in a ferrous sulfate dosimetric solution without losing brightness. Standards made with tritium are safe from the dosimetric standpoint and have high mechanical strength and constant brightness yield (drop in brightness only 3-4% in one year).

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USSR

SOLOV'YEV, D. I. and D'YACHEKOV, V. I.

JDC: 621.391.822

"Computing Transient Noise in a Frequency Detector With Mutually De-tuned Circuits"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) 1970, no. 1, pp 46-50 (from RZh-radiotekhnika, No. 3, March 71, Abstract No. 3A60)

Translation: A method is described for computing transient noise caused by the nonlinearity of the real demodulation characteristic of a frequency detector with mutually detuned circuits. Relationships connecting system parameters with nonlinear signal distortions are derived. Resume

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USSR

UDC: 621.374.4

KOSTAREV, V. F., SOLOV'YEV, E. A., BELYAYEVA, T. A.

"A Pulse Repetition Frequency Multiplier"

Nauch. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works of the Omsk Institute of Railway Transportation Engineers), 1970, 118, pp 3-9 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G285)

Translation: The paper discusses a method of prf multiplication. Computational relationships are given for determining time parameters, and the error is analyzed. Design recommendations are given. Bibliography of three titles. Resumé.

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USSR

UDC 621.316.542.001.5

SOLOV'YEV, F. P., Engineer, DOBRUSIN, A. I., Engineer, KERPELEV, S. G., Engineer, GROMOV, YU. I., Engineer, ZAGAYKEVICH, B. D., Engineer

"Electrical Testing of the Material of Insulating Pull Rods for VVB-750m High-Voltage Breakers"

Moscow, Elektrotehnika, No 8, 1971, pp 46-47

Abstract: Results are presented from testing the electrical properties and moistureproofness of various fiberglass rods obtained by drawing. The superiority of the developed polyester epoxy fiberglass is demonstrated, and this material is recommended for the insulating pull rods of high voltage breakers. Graphs are presented showing the moisture absorption of the new material and the variation of its specific surface drag as functions of time spent in a wet chamber. Comparative data are presented for rods 12 mm in diameter and 50 mm long using PN-1 binder with GF-82GS protective coating and without the coating, fiberglass made of polyester epoxy binder without a coating and with GF-82GS and PKE-22 protective coatings and fiberglass using an epoxy binder manufactured in Poland and presently widely used in 35 kilovolt breakers. The specific surface drag of the Polish fiberglass dropped as much in 24 hours as that of the polyester epoxy fiberglass after a month. Measurements of the electric strengths of the materials after a month in a wet chamber produced the

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USSR

SOLOV'YEV, E. P., et al., Elektrotehnika, No 8, 1971, pp 46-47

following data: for material without a coating 4 kv/cm and with the PKE-22 coating, 3.52 kv/cm.

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USSR

SOLOV'YEV, G., Professor, Director of the Institute of Organ and Tissue Transplantation, Academy of Medical Sciences USSR, and Corresponding Member of the Academy of Medical Sciences USSR

"Bank of Reserve Hearts"

Moscow, Literaturnaya Gazeta, No 36, 1 Sep 71, p 11

Abstract: Some of the scientific and moral aspects of organ and tissue transplantation are discussed. The history of this field is briefly reviewed. The difficulties encountered in connection with transplantation, such as incompatibility, immunity, and rejection, are gradually being overcome, and hundreds of people who were doomed to death are now living with foreign organs in them. The two main problems requiring solution are those of the availability of organs and their conservation. The best sources of vital organs that can be used as transplants are accident victims, especially in large cities where deaths from traffic accidents are most frequent. Therefore, city and even country banks of reserve organs could be very useful. Organs and tissues which could be used as transplants, however, must meet certain specifications, and the problem of conservation must be solved if such banks are to be organized. No satisfactory solution for this problem has yet been found, although

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USSR

SOLOV'YEV, G., Literaturnaya Gazeta, No 36, 1 Sep 71, p 11

cases of kidney preservation for as long as 50 hours are known. The best method has been suggested by nature itself. It is known that frogs and fish frozen in ice are revived when the ice melts. As yet, no satisfactory cryoprotectors which would protect the cells from being killed by water of crystallization are available. Glycerine proved to be ineffective. This is the problem presently confronting the chemists and biochemists. Laboratories and clinics in many countries are now engaged in the study of transplantation problems. Sixteen laboratories, clinics, and institutes in Moscow are working on the solution of these problems. Most of them have already formed a united organ bank which, notwithstanding many difficulties, has already proved its value. The high skill of the personnel and close contact with forensic medical expertise serves to prevent diagnostic errors as well as moral and ethical dilemmas. The organization of similar banks in Leningrad, Tashkent, Kiev, Riga, Minsk, Kharkov and other cities is urged.

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- 59 -

1/2 029

TITLE--ELECTRONOGRAPHIC STUDY OF TRANSFORMATIONS OCCURRING ON FRICTION SURFACES OF A MOLYBDENUM DISULFIDE-STEEL SYSTEM -U-
AUTHOR--(03)--VAYNSHTEYN, V.E., SEMENOVA, M.V., SOLOVYEV, G.

UNCLASSIFIED

PROCESSING DATE--16OCT70

COUNTRY OF INFO--USSR

SOURCE--FIZIKO KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 1, 1970, P. 60-63
DATE PUBLISHED-----70

S

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FRICTION COEFFICIENT, MOLYBDENUM OXIDE, MOLYBDENUM DISULFIDE, ALLOY DESIGNATION, ALLOY PHASE TRANSFORMATION, CHROMIUM STEEL/(U)2KH13
CHROMIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0935

STEP NO--UR/0369/70/006/001/0060/0063

CIRC ACCESSION NO--AP0116444

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116444

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE TRANSFORMATIONS OCCURRING ON THE SURFACES OF THE MOLYBDENUM DISULFIDE-STEEL 2KH13 SYSTEM DURING FRICTION IN AIR. IT IS FOUND THAT, DEPENDING ON THE TEST CONDITIONS, MOLYBDENUM OXIDES FORM ON THE FRICTION SURFACE AND INCREASE THE FRICTION COEFFICIENT. FACILITY: NAUCHNO-ISSLEDOVATEL'SKII INSTITUT, MASHINOVENIIA, MOSCOW, USSR.

UNCLASSIFIED

Surgery

USSR

UDC 616.12-089-78]-059:615.38]-07:612.5.02.017.1

SOLOV'YEV, G. M., RADZIVIL, G. G., KORENEVSKAYA, V. A., and MIKHEYEVA, N. Ye.,
Institute of Clinical and Experimental Surgery, Ministry of Health USSR, and
Institute of Organ and Tissue Transplantation, Academy of Medical Sciences USSR,
Moscow

"Characteristics of the Immunobiological State of Patients Operated on Under Con-
ditions of Extracorporeal Circulation"

Moscow, Kardiologiya, Vol 10, No 10, Oct 70, pp 45-50

Abstract: The immunobiological state of patients with acquired and congenital heart diseases was determined before and after surgery performed with the help of extracorporeal circulation and without it. The criteria for determining the immunological state of the patients were: the complement titer; titer of alpha- and beta-hemagglutinins; and lymphocyte transformation into blasts in a culture of phytohemagglutinins. The effect of surgery on the complement titer was studied in 30 patients, 18 of whom were operated on with the help of extracorporeal circulation and 12 without it. Blood for titration was taken before the operation and in the early postoperative period. It was found that in 25 of the 30 patients, particularly those operated on with the help of extracorporeal

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USSR

SOLOV'YEV, G. M., et al, Kardiologiya, Vol 10, No 10, Oct 70, pp 45-50

circulation, the complement titer dropped from the 0.02-0.06 presurgical norm (as determined by 100% hemolysis with a hemolytic system of a 3 percent suspension of ram erythrocytes and hemolytic serum in a triple titer) to 0.06-0.14. The titer of alpha- and beta-hemagglutinins was studied in 24 patients, 14 of whom had undergone surgery with the help of extracorporeal circulation and 10 without it. These titers were determined by the method of salt agglutination at room temperature. A sharp decline in antibody titers during the immediate postoperative period occurred, particularly in patients who were operated on with the use of extracorporeal circulation. Complete inhibition of blast formation was noted in four patients operated on with the use of artificial circulation. The data obtained permit the conclusion that heart operations, particularly when performed under conditions in which extracorporeal circulation must be used, result in a temporary decline of the immunobiological activity of the organism. Restoration normally occurs within 7-8 days after the operation.

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UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--THE PARTICIPATION OF THE LUNGS IN FIBRINOLYTIC PROCESSES OF THE ORGANISM -U-

AUTHOR--(05)-SOLOVYEV, G.M., GUSEYNOV, CH.S., GEBEL, G.YA., CHISTYAKOV, V.N., FLEROV, YE.V.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 22-25

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LUNG, BLOOD VESSEL, LACTIC ACID, INTRAVENOUS PERFUSION, ACIDOSIS, FIBRINOLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0369

STEP NO--UR/0219/70/069/005/0022/0025

CIRC ACCESSION NO--AP0121057

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0121057
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. IN EXPERIMENTS ON DOGS THE AUTHORS STUDIED THE REACTION OF PULMONARY VESSELS TO THE ADMINISTRATION OF A 30PERCENT SOLUTION OF LACTIC ACID WHICH CAUSES SPASM OF PULMONARY VESSELS AND A STATE OF METABOLIC ACIDOSIS. IT IS SHOWN THAT IN THE BLOOD OUTFLOWING FROM THE LUNGS THE CONTENT OF FIBRINOLYSIS PROACTIVATORS AND FIBRINOLYTIC ACTIVITY ARE GHIGHER IN COMPARISON WITH THOSE IN THE BLOOD INFLOWING TO THE LUNG. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF CLINICAL AND EXPERIMENTAL SURGERY, MOSCOW.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--REMOTE RESULTS OF SURGICAL TREATMENT OF INTERVENTRICULAR SEPTAL
DEFECTS -U-
AUTHOR--(03)-SOLOVYEV, G.M., BURAKOVSKIY, V.R., KAKULINA, N.M.
COUNTRY OF INFO--USSR
SOURCE--KARDIOLOGIYA 10(11): 44-52, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEART SURGERY, RADIOGRAPHY, ELECTROCARDIOGRAPHY,
PHONOCARDIOGRAPHY, HEMODYNAMICS, HYPERTENSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0548 STEP NO--UR/0495/70/010/001/0044/0052
CIRC ACCESSION NO--AP0131171
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131171
ABSTRACT/EXTRACT--(U) CP-0-

ABSTRACT. PATIENTS (110) AT PERIODS FROM 1-7
YR AFTER THE OPERATION FOR ISOLATED INTERVENTRICULAR SEPTAL DEFECT WERE
EXAMINED. APART FROM ROENTGENOLOGICAL ECG AND PHONOCARDIOGRAPHIC
INVESTIGATIONS, 47 PATIENTS WERE SUBJECTED TO CATHETERIZATION OF RIGHT
REGIONS OF THE HEART. IN 85.4PERCENT OF PATIENTS THERE WERE GOOD
RESULTS WITH PRACTICAL RECOVERY IN MOST CASES. UNFAVORABLE RESULTS WERE
DUE TO OPERATIVE AND POSTOPERATIVE COMPLICATIONS: COMPLETE TRANSVERSE
BLOCK, RECANALIZATION OF THE DEFECT, AND TRAUMATIC AORTIC INCOMPETENCE.
NORMALIZATION OF THE HEMODYNAMICS WAS ALSO OBSERVED IN PATIENTS WITH
HIGH PULMONARY HYPERTENSION IN ITS HYPERKINETIC FROM. A COMPARATIVE
EVALUATION OF THE REMOTE RESULTS OF OPERATIONS PERFORMED WITH DIFFERENT
APPROACHES DEMONSTRATES THAT EACH APPROACH HAS ITS RELATIVE MERITS AND
SHORTCOMINGS. THE TRANSATRIAL APPROACH IS ESPECIALLY VALUABLE WHEN
OPERATING ON PATIENTS WITH HIGH PULMONARY HYPERTENSION.
FACILITY: INST. CARDIOVASC. SURG., ACADEM. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 616.45-001.1/3-07:616.12-008.944.52-074

SOLOV'YEV, G. M., and MATLINA, E. Sh., Institute of Transplantation of Organs and Tissues, Academy of Medical Sciences USSR; Laboratory on Control Problems of Functions of Human and Animal Organisms imeni N. I. Grashchenkov of the Academy of Sciences USSR, Moscow

"Catecholamines in the Heart During Stress Reactions"

Moscow, Kardiologiya, Vol 13, No 1, 1973, pp 140-152

Abstract: Domestic and foreign literature is reviewed regarding the function, concentration, and synthesis of catecholamines in the heart muscle. Noradrenalin is the most abundant catecholamine in the mammal heart and adrenalin accounts for only 25-35%. There is a definite relation between functions of the heart and adrenal glands with respect to catecholamine metabolism during stress reactions. In the presence of stress the heart muscle is capable of concentrating adrenalin from the blood immediately after the application of stress; all succeeding phase changes in the accumulation of adrenalin depend on the specificity of stresses. When resources of adrenalin in the adrenal glands are exhausted the heart muscle can probably synthesize it. Experiments with guinea pigs showed that accumulation of adrenalin in the heart muscle after the application of stress secures activation of metabolic processes and

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USSR

SOLOV'YEV, G. M. and MATLINA, E. Sh., Kardiologiya, Vol 13, No 1, 1973, pp 140-152

myocardial contraction. Noradrenalin is released from adrenergic nerve endings at the beginning of stress and it serves as mediator in the synthesis of catecholamines. Activities of DOPA and tyrosine, the precursors of catecholamines, are also discussed.

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USSR

UDC 53.07/.08+53.001.5

SOLOV'YEV, G. N., Editor, Moscow Engineering Physics Institute

"Study of the Applications of Digital and Analog Computers in Nuclear Physics and Engineering"

Issledovaniye primeneniya tsifrovyykh i analogovykh vychislitel'nykh mashin v yadernoy fizike i tekhnike (cf. English above), Collection of articles, No. 1, Moscow, Atomizdat, 1967, 115 pp, ill., 38 kop. (from RZh-Fizika, No 1, Jan 71, Abstract No 1A515K)

Translation: The collection presents the development of a computer complex for processing the results of physical experiments on powerful accelerators, considers problems in the development of special-purpose analog computers for automatic control of the operating mode of linear electron accelerators, and also theoretical problems of the development and application of digital and analog computers in these regions, and presents the results of modeling and investigating the most essential problems and components. 35 references.

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1/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--BEHAVIOR OF THIOUREA IN CYANIDE ELECTROLYTES FOR SILVER PLATING -U-

AUTHOR--(103)--SOLOVYEV, G.S., NECHAYEV, E.A., KUDRYAVTSEV, N.T.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(4), 496-500

5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--METAL PLATING, SILVER, ELECTROLYTE, THIOUREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1156

STEP NO--UR/0364/70/006/004/0496/0500

CIRC ACCESSION NO--AP0121715

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121715
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STRUCTURAL, ELECTROCHEM., AND RADIOCHEM. STUDIES WERE PERFORMED ON THE BEHAVIOR OF THIOUREA DURING AG PLATING AT 25DEGREES FROM CYANIDE SOLNS. CONTG. AG 46% KCN (FREE) 26, K SUB2 CO SUB3 46 G-L. FROM THE CHEM. ANAL. AND RADIOCHEM. MEASUREMENTS, THIOUREA WAS FOUND TO BE REDUCED DURING AG DEPOSITION TO EVOLVE H AND S PRIME2 NEGATIVE. THE BRIGHTENING EFFECT OF THIOUREA WAS DUE TO ITS ADSORPTION BUT NOT THE ADSORPTION OF ITS REUN. PRODUCTS. FROM THE DOUBLE LAYER CAPACITY DATA, THE MAX. VALUE OF THE PLATE BRIGHTNESS OCCURRED UNDER CONDITIONS THAT CORRESPONDED TO A MAX. SURFACE COVERAGE BY THIOUREA OF SIMILAR TO 1. FACILITY: MOSK. KHIM. TEKHNDL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

Molecular Biology

USSR

UDC 576.858.6.098

~~SOLOV'YEV, G. Ya., ANDZHAPARIDZE, O. G., and STEPANOVA, L. G.,~~ Moscow Scientific Research Institute of Viral Preparations

"Some Physicochemical Properties of Virions of an Oncogenic RNA-Containing Virus (LPV Strain) Isolated From Man"

Moscow, Voprosy Virusologii, No 6, 1972, pp 682-686

Abstract: An RNA-containing virus (LPV strain) was isolated from a patient with acute leukemia and cultured in human diploid cells. Attempts to fully isolate the virus to determine its properties were unsuccessful, as complexes between virus particles and normal cell components could not be broken down. It was determined indirectly by centrifugation that the virus is composed predominantly of 70S RNA. Thus the virus probably belongs to the oncogenic virus group. The nature of peaks produced by labeled RNA at 46, 50S, and in the 28S zone remains unclear, though these could represent fragments of viral RNA. The presence of an enzyme system responsible for DNA synthesis and detected previously in other oncogenic viruses was sought. RNA-dependent DNA-polymerase was detected after breakdown of virions with dithiothreitol and addition of H³-thymidine phosphate.

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USSR

UDC 576.858.73.093.396.07

MARKUSHIN, S. G., and SOLOV'YEV, G. Ya., Moscow Scientific Research Institute of Virus Preparations

"A Study of the Structural Proteins of Newcastle Disease Virus by Electrophoresis in Polyacrylamide Gel"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 394-397

Abstract: Newcastle disease virus (the epizootic Kuz'minka strain) was grown in a medium of chick embryo fibroblasts and labeled with C^{14} -tagged amino acids of hydrolyzed chlorella. After purification and dissolution of the virus, the samples were subjected electrophoresis in polyacrylamide gel columns for 6-hour long at 1.5 v/cm, 5 ma. The gels were then removed from the glass columns, stained, frozen, and cut into sections; the sections were dissolved in hydrogen peroxide and placed on a 3 mm chromatographic paper; and the radioactivity was measured with the USS-1 counter (Maizel's method). The analysis revealed that the capsid of Newcastle disease virus is composed of three main polypeptides with molecular weights of 90,000, 60,000, and 45,000 dalton and of a group of polypeptides with electrophoretic mobility and a molecular weight of about 6,000 dalton.

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 UNCLASSIFIED
 PROCESSING DATE--13NOV70
 TITLE--EFFECT OF AMINOADAMANTANE ON THE PENETRATION OF INFLUENZA VIRUS
 INTO A CELL -U-
 AUTHOR-(03)-BALODE, T., SOLOVYEV, G.YA., GENDON, YU.Z.
 COUNTRY OF INFO--USSR
 SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 136-46
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--INFLUENZA VIRUS, ADAMANTANE, TISSUE CULTURE, FOWL PLAGUE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAHE--3001/0525
 CIRC ACCESSION NO--AP0126273
 STEP NO--UR/0197/70/000/002/0138/0146
 UNCLASSIFIED

272 018
CIRC ACCESSION NO--4P0126273
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. AMINOADAMANTANE DID NOT AFFECT THE
AMT. OF FOWL PLAGUE VIRUS THAT PENETRATED CULTURES OF CHICK FIBROBLAST
CELLS. EVIDENTLY ITS ANTIVIRAL EFFECT DOES NOT INCLUDE PROTECTION OF
THE CELL AGAINST VIRUS PENETRATION.
14. KIRHENSTEINA, RIGA, USSR.
FACILITY: INST. MIKROBIOL.

UNCLASSIFIED

USSR

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UDC 574.858-06:616.988.75-092.9

BALODE, T. A., SOLOV'YEV, G. Ya., and GENDON, Yu. Z., Institute of Microbiology, imeni Avgust Kirkhenshteyn, Academy of Sciences, Latvian SSR, and Moscow Scientific Research Institute of Viral Preparations

"The Effect of Amantadine on Penetration of Fowl Plague Virus into the Cell"
Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 2, 1970, pp 138-146

Abstract: Experiments were conducted to determine the effect of amantadine, the inhibitor of myxovirus reproduction, on the penetration and deproteinization of fowl plague virus in chick embryo fibroblasts using labeled (with C14-uridine and C14 - amino acids) and highly purified virus. Within two hours of the start of incubation, the control cells and cells treated with amantadine contained the same amount of virus labeled with C14 - amino acids. The results of experiments with virus labeled with C14 - uridine showed that the same amount of labeled RNA penetrated into the nuclei of the cells regardless of the presence or absence of amantadine. The content of deproteinized RNA was also the same in both controls and treated cells. Thus, amantadine has little effect on the cell penetration and deproteinization of fowl plague virus.

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1/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--SYNTHESIS OF THE VIRUS SPECIFIC PROTEINS OF A CONDITIONALLY LETHAL
MUTANT OF POLIOVIRUS UNDER NONPERMISSIVE CONDITIONS -U-

AUTHOR--GENDON, YU.Z., BABUSHKINA, L.M., MIKHEYEVA, A.Y., SOLOVYEV, G.YA.

S

COUNTRY OF INFO--USSR

SOURCE--VIRGLOGY 1970, 40(3), 595-604

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROTEIN SYNTHESIS, POLIOMYELITIS, RNA, DNA, VIRUS, MUTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/1659

STEP NO--US/0000/70/040/003/0595/0604

CIRC ACCESSION NO--AP0101714

UNCLASSIFIED

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CIRC ACCESSION NO--AP0101714
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE FUNCTION OF THE PARENTAL RNA OF A TEMP. SENSITIVE (TS) MUTANT OF POLIOVIRUS WAS STUDIED. NONE OF THE METHODS OF INVESTIGATION USED UNDER NONPERMISSIVE CONDITIONS OF THE EXPTS. COULD DEMONSTRATE SYNTHESIS OF VIRAL RNA OR FUNCTIONALLY ACTIVE RNA POLYMERASE. INHIBITION OF SYNTHESIS OF CELLULAR MACROMOLS. (RNA, DNA, AND PROTEINS) DUE TO THE FUNCTION OF THE VIRUS GENOME WAS OBSD. UNDER NONPERMISSIVE CONDITIONS AS WELL AS THE SYNTHESIS OF STRUCTURES WITH SEDIMENTATION CONSTS. OF 10 S AND 5 S WHICH REACTED WITH SPECIFIC ANTIVIRAL SERUM. IT IS SUGGESTED THAT SYNTHESIS OF THESE STRUCTURES AND OF PROTEINS INHIBITING SYNTHESIS OF CELLULAR MACROMOLS. OCCURS UNDER THE DIRECTION OF PARENTAL POLIOVIRUS RNA.

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Nuclear Physics

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PERSONAL POSSESSIONS

pp 14-15

So: *[Handwritten notes]*
Nov 1972
Approved for release
May 1975

The so-called ionization chamber method which, as is known, employs the properties of a condenser, is used to measure gamma radiation dose. The chamber consists of two electrodes insulated from each other, and the space between them is filled with air.

Before use the ionization chamber is charged with a special device up to a particular voltage. The electrode acquire charges that are identical but opposite in sign. Each of the charge values is proportional to the capacitance of the condenser chamber.

When ionizing radiation acts on the chamber, ionization ions -- occurs within it. These charges and positively charged electrodes and are neutralized when they reach them, as a result the gamma radiation dose decreases a certain amount proportional to the change in capacitance. The size of this change can serve as a measure of the radiation dose.

The electrode voltage changes depending on the radiation dose and the chamber capacitance. The greater the capacitance, the smaller is the voltage reduction. Therefore the capacitance can be measured in order to increase the size of the dose readout. This is done by connecting a capacitor with a dielectric quality dielectric in parallel with its electrodes.

There are several modifications of ionizing gamma dose meters, differing by the measured dose range, the method of reading readings, the material of the structural components, and

Oscillators and Modulators

USSR

SOLOV'YEV, I. I.

UDC: 621.373.42.089.6

"Automatic Amplitude Control in Quartz Oscillators With Tunnel Diodes"

Moscow, Izmeritel'naya tekhnika, No 4, 1972, PP 60-62

Abstract: In his analysis, the author finds that the frequency instability of a quartz oscillator is caused by variations in current amplitude. For quartz oscillators using vacuum tubes or transistors, the usual method of amplitude control by applying the amplified error signal equal to the difference between the amplified and standard voltages to an element making up the losses in the tuned circuit is effective. This, in fact, is the system used in the Soviet Government time and frequency standard. In tunnel diode systems, however, there is no direct action on the negative resistance of the diode. As a result of his work with highly stable quartz oscillators for time and frequency standards, the author has developed the method of amplitude control in such oscillators explained in this article. The theory of this amplitude control

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SOLOV'YEV, I.I., Izmeritel'naya tekhnika, No 4, 1972, pp 60-62

amplifier is clarified with the aid of a block diagram. It has been used successfully for various types of time and frequency standards developed by the Special Design Office of the All-Union Scientific Research Institute of Physical and Radio Instruments (VNIIFTRI).

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UDC 621.382.001.3

RADKOVSKIY, S. G., SOLOV'YEV, I. L.

"A Method of Attaching Leads to MOS Devices"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289462, division H, filed 15 Nov 68, published 8 Dec 70, p 173

Translation: This Author's Certificate introduces a method of attaching leads to MOS devices which contain a semiconductor crystal, an oxide layer and a gating electrode by thermocompression welding with preheating of the crystal. As a distinguishing feature of the patent, the procedure is designed to prevent breakdown of the oxide layer. Before heating the crystal and welding on the lead, an auxiliary probe is used for biasing the gating electrode negatively with respect to the crystal throughout the entire period of heating the crystal and welding on the lead.

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UDC 621.376.4-181.5

SAPRONOV, Y. I., GRANOV, V. M., SOLOV'YEV, I. L.

"Protection of Integrated Circuits Based on MOS Transistors From a High Electrostatic Potential"

Elektron. Prom-st'. Nauchno-tekhn. sb. (Electronics Industry. A Scientific and Technical Collection), 1970, No 1, pp 45-48 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 16V180)

Translation: The authors examine breakdown of the dielectric beneath the gate of an MOS-structure produced by a high electrostatic potential, where this breakdown is due to the accumulation of charges on the elements of equipment and voltage surges during transient processes. Experiments are described on protecting microcircuits of MOS structure from breakdown by using semiconductor diodes and transistors made in an integrated technological cycle with the microcircuit. Three illustrations, bibliography of two titles. N. S.

USSR

UDC 535.37

ZALESSKIY, I. YE., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Academy of Sciences Belorussian SSR, SOLOV'YEV, K. N., and SHKIRMAN, S. F., Institute of Physics of the Academy of Sciences Belorussian SSR, Belorussian State University imeni V. I. Lenin, Minsk

"Study of Chlorophyll-Like Molecule Fluorescence Due to Transitions From High Excited Levels"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 2, 1973, pp 312-315

Abstract: In the case of chlorophyll-like molecules, transitions from high excited levels are of interest because of the possibility that such states of chlorophyll molecules participate in the photosynthesis process. Quasiline spectral data for tetrabenzoporphin (TBP) show that the lifetime of the S₃ level (first component of the Soret band) is not very short, since the width of the quasilines is about 10 cm⁻¹; that is, $\tau_3 \sim 10^{-12}$ sec. The great intensity of the Soret band makes it possible to expect in this case a comparatively high yield of short-wave ("blue") fluorescence S₃ → S₀, and on

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this basis the authors undertook to search for "blue" fluorescence in TBP and metal complexes thereof. During their study the authors received from Professor M. GOUTERMAN (United States) the manuscript of an article which reported the detection of "blue" Zn-TBP fluorescence, thus agreeing with the authors' data. The present article describes results of a systematic study of "blue" fluorescence in TBP and a number of its metal complexes (zinc, cadmium, copper, vanadium (VO-TBP), palladium) as well as chlorophyll a.

The "blue" fluorescence spectrum of Zn-TBP at room temperature is approximately mirror-symmetric to the Soret band of the absorption spectrum. The excitation spectrum for this fluorescence in the region accessible to measurements coincides with the absorption spectrum. There is no quenching of "blue" fluorescence by heavy atoms. These data indicate that the fluorescence is ($S_2 \rightarrow S_0$)-fluorescence and is not attributable to an impurity. The effect of a solvent and temperature on ($S_2 \rightarrow S_0$)-fluorescence in Zn-TBP

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and the absolute quantum yield of Zn-TBP ($S_2 \rightarrow S_0$)-fluorescence were studied. The "blue" fluorescence in the case of the free base TBP is an order weaker. The radiationless transition $S_4 \rightarrow S_1$ is of a cascade character. No "blue" fluorescence was observed in the studied complexes of TBP with transition metals (V, Cu, Pd) or in the case of chlorophyll a.

The authors thank T. F. KACHURA for preparing the tetrabenzoporphin and the metal complexes thereof, M. V. SARZHEVSKAYA for providing the chlorophyll a, and A. T. GRADYUSHIKO and M. P. TSVIRKO for valuable advice.

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UDC 535.51:535.37

ZALESSKIY, I. Ye., KOTLO, V. N., SEVCHENKO, A. N., Academician of the Belorussian Academy of Sciences; SOLOV'YEV, K. N., SHKIRMAN, S. F., Institute of Physics, Minsk

Variation, with Time, of Porphyrin Fluorescence Polarization and the Shifting of Iminohydrogens in the Porphin Ring"

Moscow, Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972, pp 1314-1317

Abstract: The authors discuss experiments they have performed in which they discovered new characteristics of radiation anisotropy which, when studied in detail, may lead to the solution of certain problems in the structure of porphyrin molecules. These experiments investigated the polarized luminescence of porphyrins in frozen vitreous solutions. The principal subject of this paper is the dependence of that polarization on the time in which the excitation light operates at low temperatures. Measurement of the degree of polarization was made with an ordinary spectropolarimetric device with two monochromators. The fluorescence was excited by monochromatic, linearly polarized light. and was observed

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ZALESSKIY, I. Ye., et al., Doklady Akademii Nauk SSSR, Vol 207, No 6, 1972,
pp 1314-1317

at an angle of 40° with respect to the ray of the exciting light. It was found that the fluorescence of etioporphyrin I, tetrabenzoporphin, and phthalocyanine in frozen glass was substantially depolarized with time. Curves showing that variation are given, together with tabulated data. It was also found that the reorientation of the molecular oscillators is connected with the shift in iminohydrogens at the center of the porphin ring. Diagrams of possible isomeric forms of the porphin molecule are shown.

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SOLOV'YEV, V. F

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VI-d. DISTRIBUTION OF IMPURITY CENTERS IN DIAMOND

Article by Ye. S. Solov'ev, V. I. Ulaoyan, V. P. Solov'ev, Kovalchuk, Novozbirsk, Ill. Sibirskiy po imeni L. N. Tolstogo, Seriya 1, 1972, p. 73

Various methods (infrared and ultraviolet absorption, photographic and x-ray luminescence, double refraction, x-ray fluorescence, x-ray diffraction and diamond crystals) were used to study the distribution of impurity centers in N₁, N₂, N₃ He (III). The most detailed study was made of the natural diamond crystal type I. Here, the fine zonality with respect to the N₂ center, the zonal distribution in N₁V with isolation of the fine zones, the zonal distribution of the center N₃ (100) both with respect to content and with respect to size of the segregations. The latter fact permits the conclusion to be drawn that the formation of the segregation centers takes place during the crystal growth process. The study of the variation of the parameter α and its magnitude is determined exclusively by the concentration of the N₂ centers. The double refraction figures are also connected with the distribution of the N₂ centers; the most intense bands are attributed to the distribution of the zones with the greatest N₂ concentration drops. The zonality of the flow under the effect of x-rays is related in this crystal to the distribution of the N₂ centers (an inverse relation). In crystals of the intermediate type the zonality in the x-ray emission corresponds to the distribution of the centers N₃ (111) - a direct relation. Beginning with the dislocation nature of the centers of x-ray luminescence, the conclusion is drawn regarding the insulating effect of the N₂ centers on the formation of the growth dislocations. The analysis of the material obtained permits the conclusion to be drawn that: a) comparison of the pictures of the zonal distribution of different properties in the entire series of cases is not a proof of their belonging to the same center, but it is determined by the close interrelation of the same properties (accompanying, subordinate, and so on); b) the interaction of the different centers crystal during the growth process; the capture of nitrogen impurity enters the c) the different nitrogen centers are formed during the growth process; the predominant overexpression of any of them is determined by the growth conditions of the crystal.