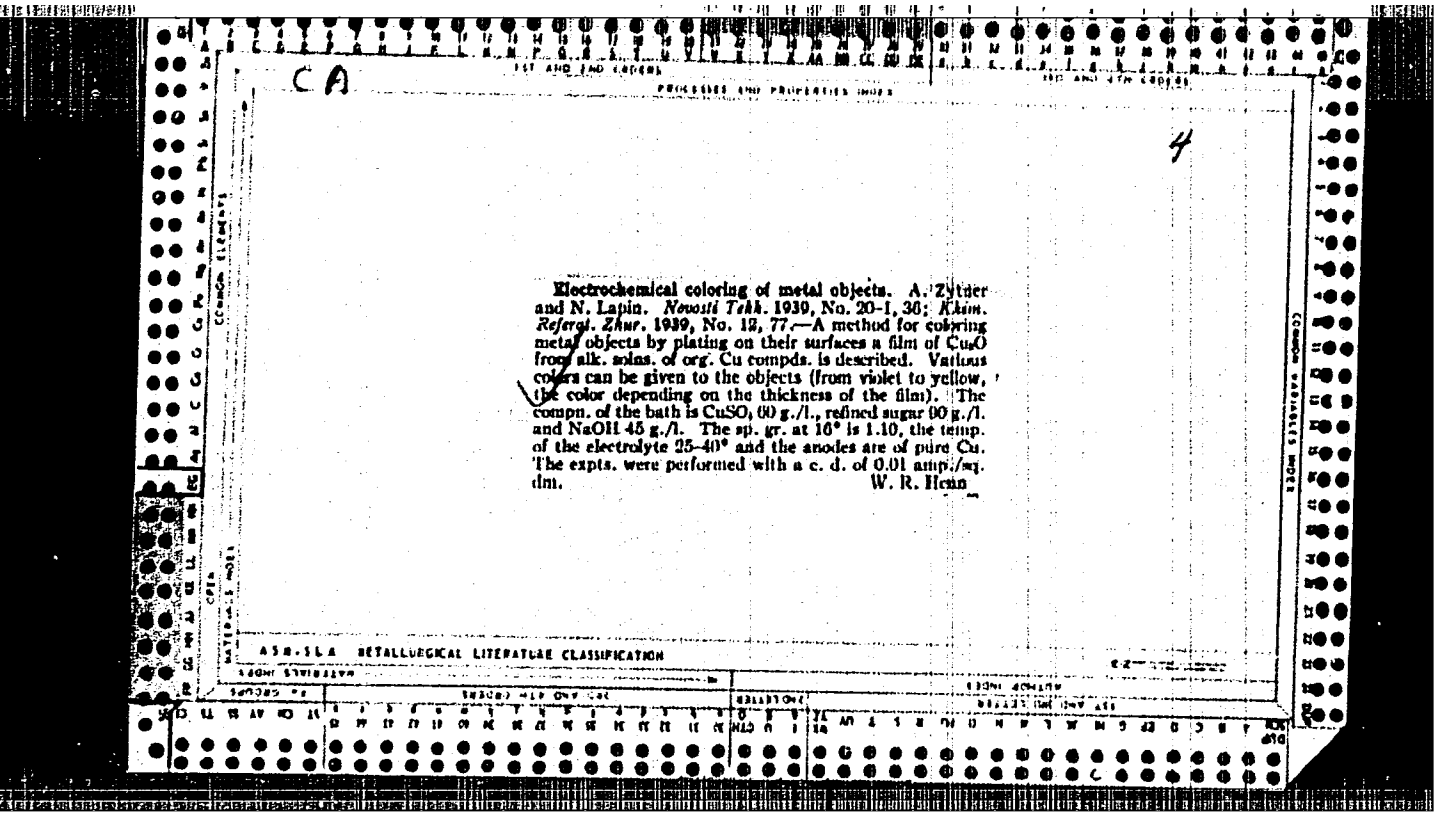


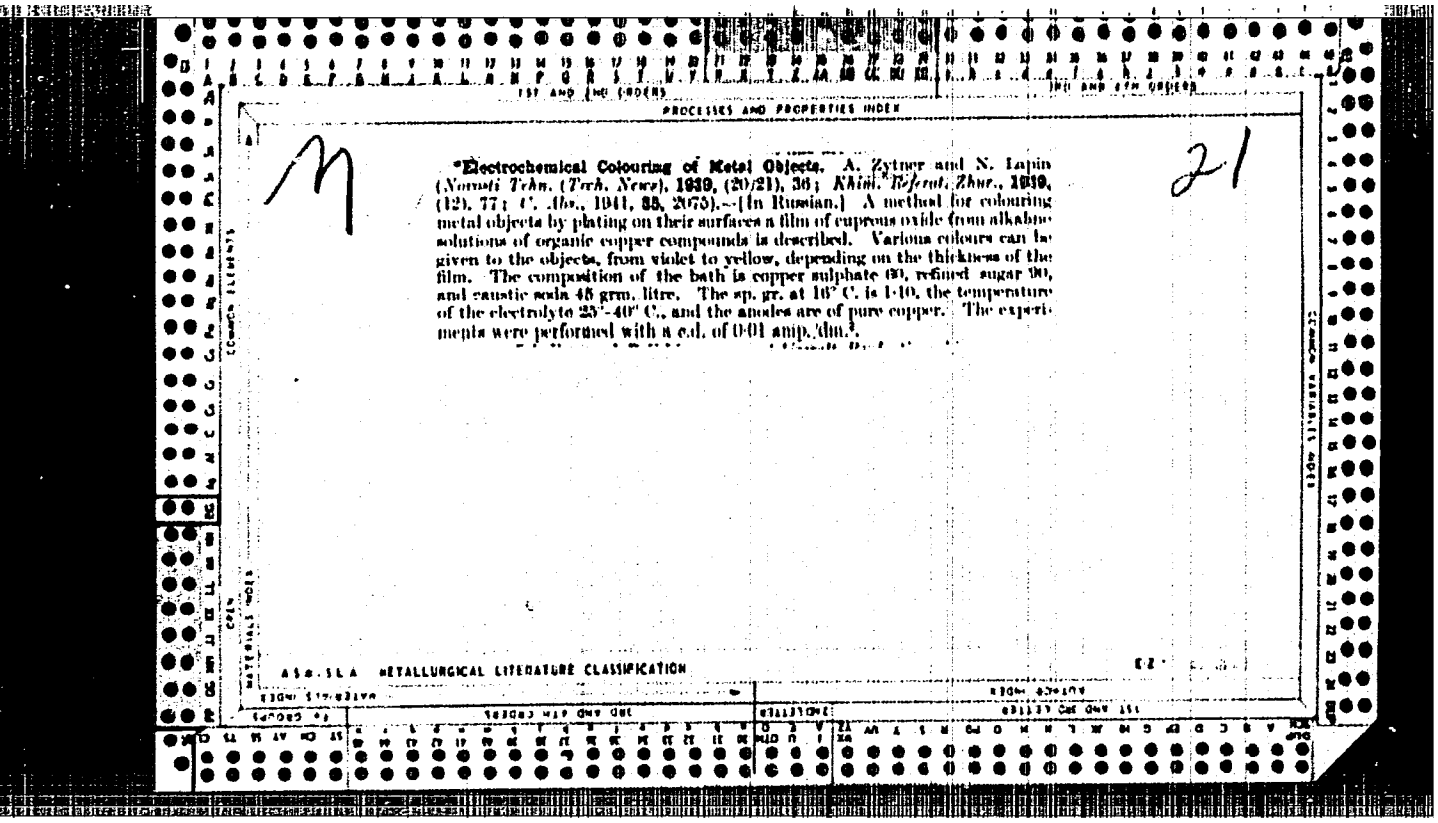
CA

4

Electrochemical coloring of metal objects. A. Zytner and N. Lapin. *Novosti Tekh.* 1939, No. 20–1, 36; *Khim. Referat. Zhur.* 1939, No. 12, 77.—A method for coloring metal objects by plating on their surfaces a film of Cu_2O from alk. solns. of org. Cu compds. is described. Various colors can be given to the objects (from violet to yellow, the color depending on the thickness of the film). The compn. of the bath is $CuSO_4$ 60 g./l., refined sugar 90 g./l. and NaOH 45 g./l. The sp. gr. at 16° is 1.10, the temp. of the electrolyte 25–40° and the anodes are of pure Cu. The expts. were performed with a c. d. of 0.01 amp./sq. dm.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

M

21

Electrochemical Colouring of Metal Objects. A. Zytner and N. Lapin (*Nowości Techn. (Tech. News)*, **1939**, (20/21), 36; *Khim. Referat. Zhur.*, **1939**, (12), 77; *C. Abs.*, 1941, **35**, 2075).—(In Russian.) A method for colouring metal objects by plating on their surfaces a film of cuprous oxide from alkaline solutions of organic copper compounds is described. Various colours can be given to the objects, from violet to yellow, depending on the thickness of the film. The composition of the bath is copper sulphate (3), refined sugar (8), and caustic soda 45 grm. /litre. The sp. gr. at 18° C. is 1·10, the temperature of the electrolyte 25°–40° C., and the anodes are of pure copper. The experiments were performed with a c.d. of 0·01 amp./dm.^{2}.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

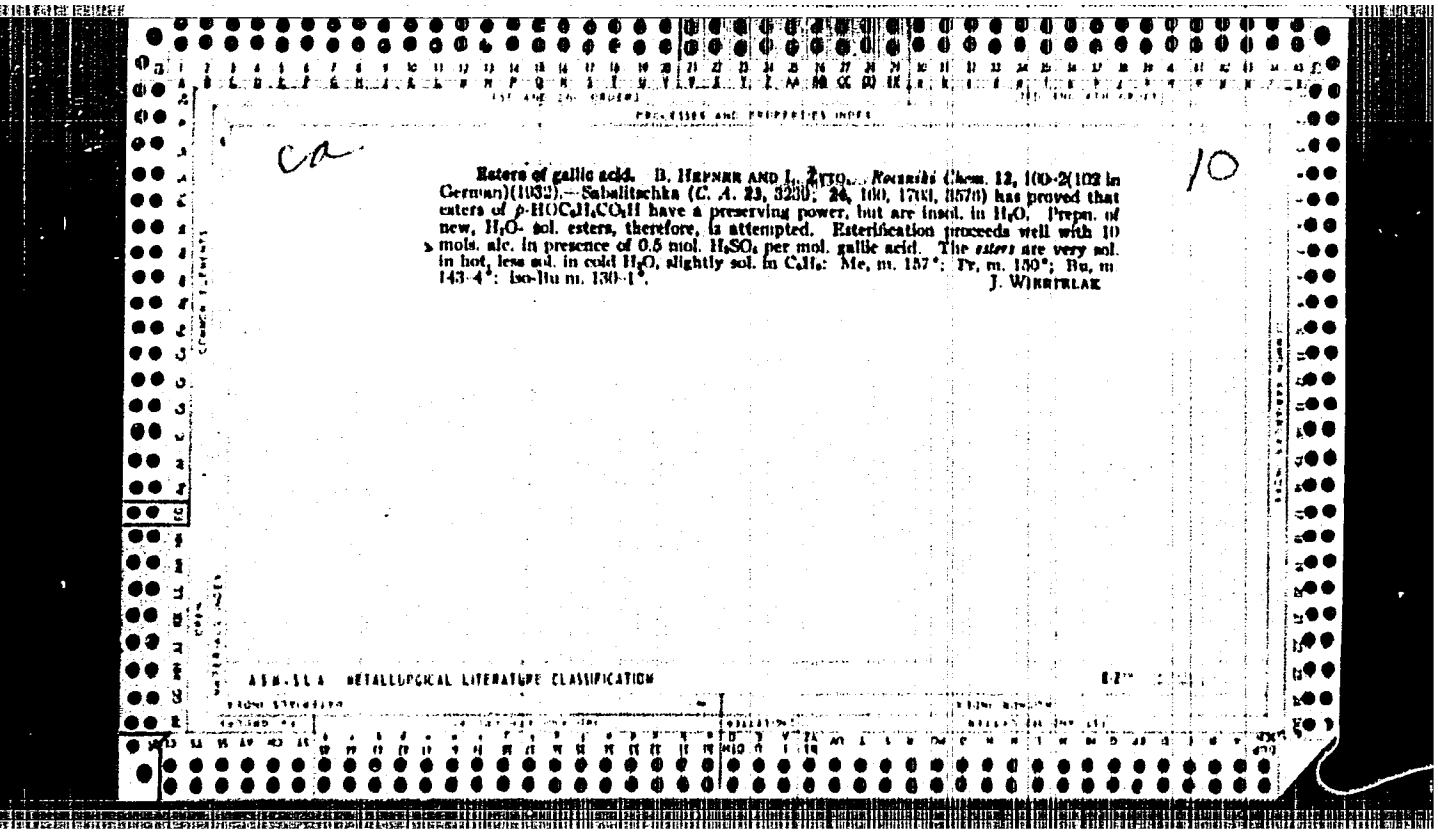
MA

Zyiner, A. Ya., and N. P. Lapin. *Treatment of Metals by Chemical and Electrochemical Coloring.* [In Russian.] Pp. 100. 1940. Moscow and Leningrad: Mashgiz. (3.50 Rbl.)

1941

ZYTNOWSKI, Bogdan, mgr inz.

Combustion of heavy oils in ship engines. Biul techn Cegielski 5:98-102 Special issue '61.



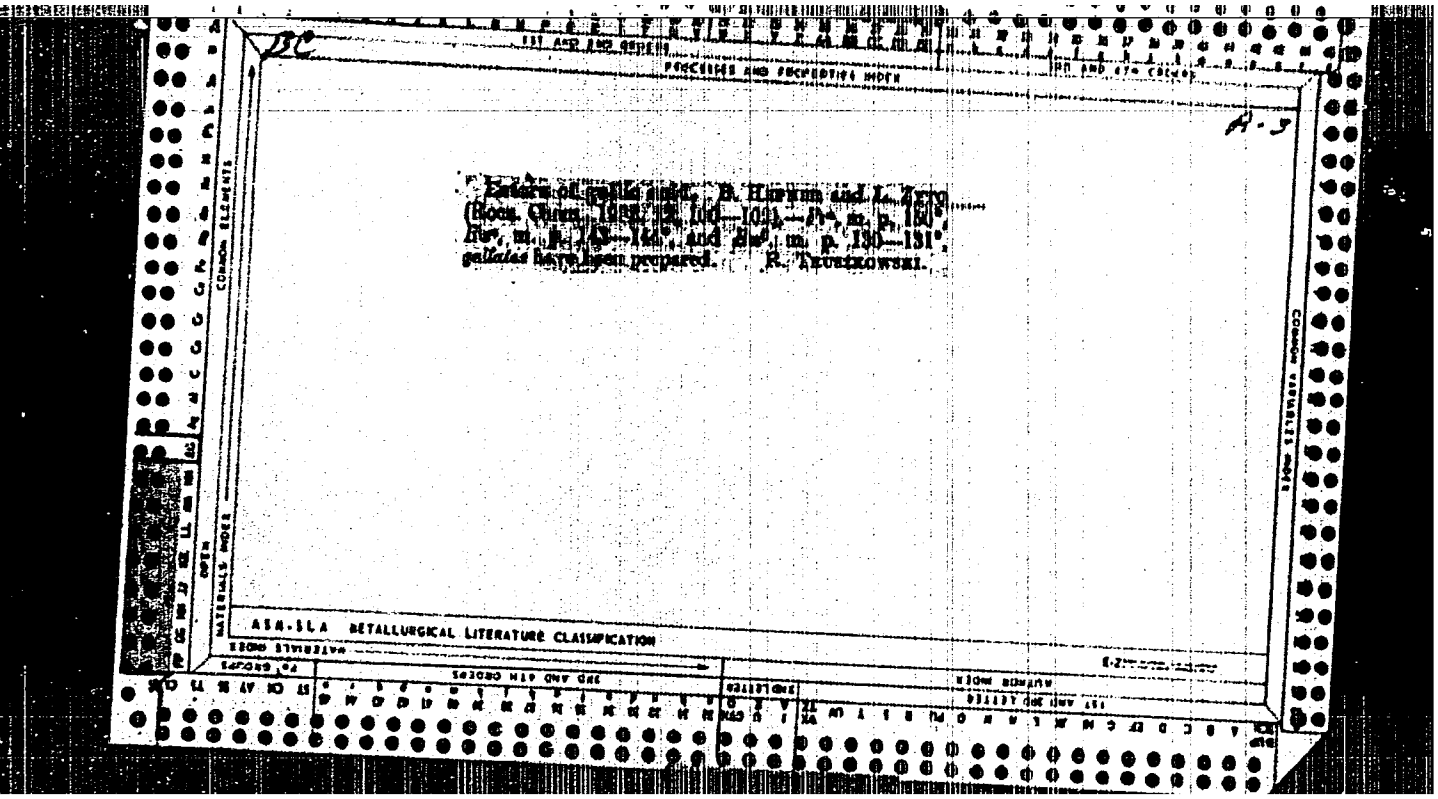
CA

10

Esters of gallic acid. B. Hefner and L. Zitko. *Roczniki Chem.* 12, 100-2(102 in German)(1932).—Sabalitschka (*C. A.* 23, 3230; 24, 100, 1761, 3570) has proved that esters of p-$HOC_6H_2CO_2H$ have a preserving power, but are insol. in H_2O. Prepn. of new, H_2O- sol. esters, therefore, is attempted. Esterification proceeds well with 10 mols. alc. in presence of 0.5 mol. H_2SO_4 per mol. gallic acid. The *esters* are very sol. in hot, less sol. in cold H_2O, slightly sol. in C_6H_6: Me, m. 157°; Pr, m. 130°; Bu, m. 143-4°; iso-Bu m. 130-1°.

J. Wiktelak

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



ALEKSANDROV, B.M., nauchnyy sotrudnik; ALEKSANDROVA, T.N., nauchnyy sotrudnik; BELYAYEVA, K.I., nauchnyy sotrudnik; GORBUNOVA, Z.A., nauchnyy sotrudnik; GORDEYEVA-PERTSEVA, L.I., nauchnyy sotrudnik; GORDEYEVA, L.N., nauchnyy sotrudnik; GULYAYEVA, A.M., nauchnyy sotrudnik; DMITRENKO, Yu.S., nauchnyy sotrudnik; ZABOLOTSKIY, A.A., nauchnyy sotrudnik; MAKAROVA, Ye.F., nauchnyy sotrudnik; NOVIKOV, P.I., nauchnyy sotrudnik; POKROVSKIY, V.V., nauchnyy sotrudnik; SMIRNOV, A.F., nauchnyy sotrudnik; STEFANOVSKAYA, A.F., nauchnyy sotrudnik; URBAN, V.V., nauchnyy sotrudnik. Prinimali uchastiye: BALAGUROVA, M.V., nauchnyy sotrudnik; VEBER, D.G., nauchnyy sotrudnik; POTAPOVA, O.I., nauchnyy sotrudnik; SOKOLOVA, V.A., nauchnyy sotrudnik; FILIMONOVA, Z.I., nauchnyy sotrudnik; POPENKO, L.K., nauchnyy sotrudnik; ZYTSAR', N.A., red.; PRAVDIN, I.F., red.; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[Lakes of Karelia; natural features, fishes, and fisheries] Ozera Karelii; priroda, ryby i rybnoe khoziaistvo; spravochnik. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1959. 618 p. (MIRA 13:8)

(Continued on next card)

ALEKSANDROV, B.M. --- (continued) Card 2.
1. Russia (1917- R.S.F.S.R.) Karel'skiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva. 2. Karel'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta ozernogo i rechnogo rybnogo khozyaystva (for Aleksandrov, Aleksandrova, Belyayeva, Gorbunova, Gordeyeva-Pertseva, Gordeyeva, Gulyayeva, Dmitrenko, Zabolotskiy, Makarova, Novikov, Pokrovskiy, Smirnov, Stefanovskaya, Urban). 3. Karel'skiy filial AN SSSR (for Balagurova, Veber, Potapova, Sokolova, Filimonova, Popenko).
(Karelia--Lakes)

ZYUBAN, V.I., nauchnyy sotrudnik

Susceptibility of the agent of fowl typhoid to furanolidone. Veterinariia 39 no.10:48-50 O '62. (MIRA 16:6)

1. Stavropol'skaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

(Oxazolidinone) (Fowl typhoid)

ZYUBAN, V.I., nauchnyy sotrudnik

Tetracycline in poultry pasteurellosis. Veterinariia no.12:55-57, D '63. (MIRA 17:2)

1. Stavropol'skaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

ZYUBAN, V.I.

Effectiveness of tetracycline in avian pasteurellosis.
Antibiotiki 9 no.2:161-165 F '64. (MIRA 17:12)

1. Stavropol'skaya krayevaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

ZYUBAN, V.I., mladshiy nauchnyy sotrudnik

Using antibiotics in the prophylaxis and therapy of typhoid fever in poultry. Ptitsevodstvo 9 no.8:39-41 Ag '59. (MIRA 12:12)

1. Stavropol'skaya nauchno-issledovatel'skaya veterinarnaya stantsiya.
(Poultry--Diseases and pests) (Typhoid fever)
(Antibiotics)

ZYUBAN, V.I., nauchnyy sotrudnik

Experimental infection of chicks and turkeys with the fowl typhoid pathogen. Veterinariia 37 no.10:44 O '60. (MIRA 15:4)

1. Stavropol'skaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

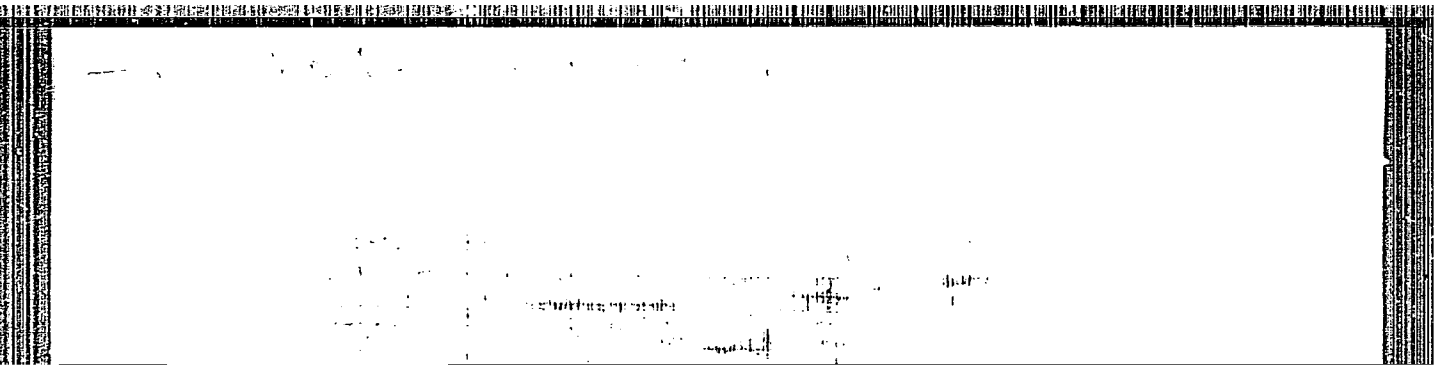
(Salmonella gallinarum)

ZYUZENKO, V., inzh. (Volgograd)

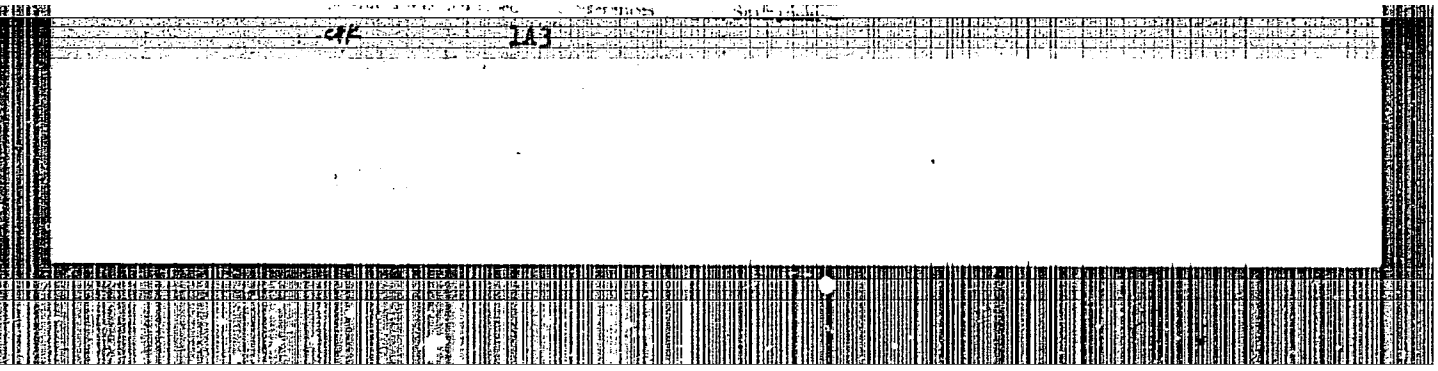
Mobile motor-vehicle community. Avt. transp. 43 no.6:30-31 Je '65. (MIRA 18:6)

ZYUZIN, Yu.; PETROV, Ye.

"Bloknot" small-sized tape recorder. Radio no.8:47-49 Ag '65.
(MIRA 18:7)



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002065810018-0"



ZYUBENKO, V.D.; IPATOV, V.I.

Network of a shock-excited generator. Izv. vys. ucheb. zav.; radiotekh. 8 no.3:355-357 My-Je '65. (MIRA 18:9)

L 6396-66

ACC NR: AP5020927 SOURCE CODE: UR/0102/65/008/003/0355/0357

AUTHOR: Zyubenko, V. D.; Ipatov, V. I.

ORG: none

TITLE: A shock excitation oscillator circuit

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 3, 1965, 355-357

TOPIC TAGS: semiconductor diode, periodic pulse, shock wave, electron tube

ABSTRACT: Two alternative semiconductor diode circuits are presented that form pulses of a sinusoidal wave by shock excitation. One has a positive, the other a negative initial half period. The diode generator is more advantageous at higher frequencies than the transistor and electron tube pulse forming circuits in that it has a much higher back breakdown voltage than the former and lower impedance than the latter. An experimental diode pulse forming circuit produced pulses of a sinusoidal voltage with a frequency of 10 Mc. Fig. 1 shows the schematic diagrams of the two alternatives, and fig. 2 shows the respective control and output voltages for both alternatives. Orig. art. has: 2 figures.

Card 1/2

SUB CODE: EE, EC/ SUBM DATE:

Card 2/2

L-6396-66
ACC NR: AP5020927

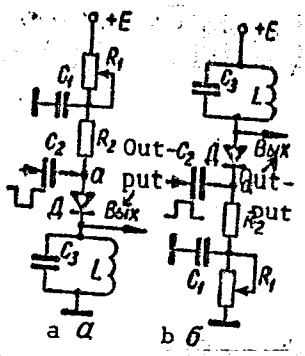


Fig. 1. Circuit of shock excitation oscillator; a - for generation of voltage with negative first half period; b - for generation of voltage with positive first half period.

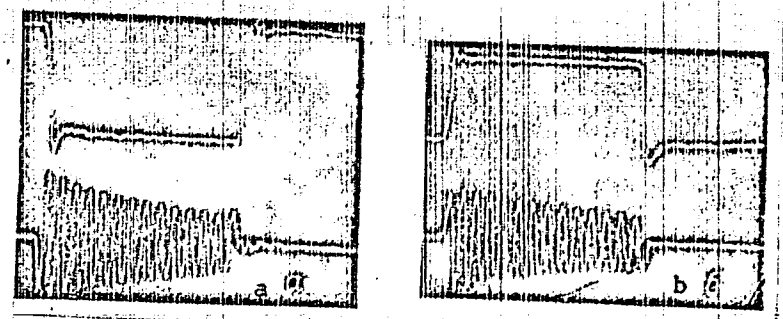


Fig. 2. Oscillograms of control and output voltages for circuits shown in Fig. 1, a and b.

SUB CODE: EE, EC/ SUBM DATE: 21May64/ ORIG REF: 000/ OTH REF: 000
UDC: 621.373

Card 2/2

ZYUBIN, L.M.

The relation between the pupil's intellectual activity and conscious attitude to studies. Uch.zap.Len.un.no.214:89-103 '56. (MLRA 10:3)

(Learning, Psychology of)

ZYUBIN, L. N.

ZYUBIN, L. N. - "A psychological analysis of intellectual activity of pupils during teaching" (Using the teaching of pupils in the fifth class as an example). Leningrad, 1955. Leningrad Order of Lenin State U imeni A. A. Zhdanov, Philosophy Faculty. (Dissertations for degree of Candidate of Pedagogical Sciences.)

SO: Knizhnaya letopis', No 48. 26 November 1955. Moscow.

ZYUBIN, M., mayor

Side wind. Av. i kosm. 47 no.2:9-12 F '65. (MIRA 18:4)

ZYUBIN, M.

Cooling the electric motors of the VM-200 and SVM-5 ventilators.
Muk.-elev. prom. 29 no.6:25-26 Je '63. (MIRA 16:7)

1. Glavnyy inzh. Rossoshanskogo khlebopriyemnogo punkta.
(Corn (Maize)--Drying) (Electric motors--Cooling)

ZYUBIN, N.

With the active members' help. Prof.-tekh.obr.13 no.6:23 Je '56.
(MIRA 9:9)

1.Zaveduyushchiy metodicheskim kabinetom pri Stalingradskom oblastnom upravlenii trudovykh rezervov.
(Stalingrad Province--School discipline)

BABIY, Ye.; ZYUBIN, S.; ANTYUKHOV, A.; KAMCHATOV, K.; DOLGOVA, L.; KASTORNOV, M., mekhanik; GOL'TSEV, M.; KUZ'MIN, I., mekhanik; PAVLOV, N., mashinist kombayna; SMETANKIN, P., mashinist kombayna; SAFONOV, M., mashinist kombayna; KOZLOV, N., brigadir gornorabochikh; BUYAK, I., brigadir gornorabochikh; SOLDATOV, N., brigadir gornorabochikh.

Not into the records but into practice. Sov.shakht. 12 no.12:17-18 D '63. (MIRA 17:3)

1. Shakhtoupravleniye No.3-25 tresta Donskoyugol' kombinata Tulaugol'. 2. Nachal'nik shakhtoupravleniya No.3-25 tresta Donskoyugol' kombinata Tulaugol' (for Babiy). 3. Sekretar'partorganizatsii shakhtoupravleniya No.3-25 tresta Donskoyugol' kombinata Tulaugol' (for Zyubin). 4. Glavnyy inzh. shakhtoupravleniya No.3-25 tresta Donskoyugol' kombinata Tulaugol' (for Kamchatov). 5. Sekretar' komsomol'skoy organizatsii shakhtoupravleniya No.3-25 tresta Donskoyugol' kombinata Tulaugol' (for Dolgova).

NOVIKOV, F.; ZYUBIN, S.N., veter. vrach; KOCHMAR, A.G., veter. vrach (Zolotonoshskiy rayon, Cherkasskoy oblast)

From work practices in the prophylaxis of sterility in cows. Veterinariia 42 no.11:72-77 N '65. (MIRA 19:1)

1. Direktor Rovenskoy oblastnoy veterinarnoy poliklinika (for Novikov). 2. Kalacheyevskaya stantsiya po bor'be s boleznyami zhivotnykh, Voronezhskoy oblast (for Zyubin).

UGAY, Ya.A., ZYUBINA, T.A.

Preparation and electric properties of semiconductor poly and single crystals of $CdAs_2$ and Cd_3As_2. Izv. AN SSSR. Neorg. mat. 1 no.6:860-867 Je '65. (MIRA 18:8)

1. Voronezhskiy gosudarstvennyy universitet.

L 29777-66 EWT(m)/T/EWP(t)/ETI LJP(c) JD

ACC NR: AP6015071 (A) SOURCE CODE: UR/0363/66/002/005/0876/0880

58
B

AUTHOR: Ugay, Ya. A.; Zyubina, T. A.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Continuous solid solutions in the $ZnAs_2$-$CdAs_2$ system and electric properties of $Zn_xCd_{1-x}As_2$ single crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 5, 1966, 876-880

TOPIC TAGS: zinc compound, cadmium compound, arsenide, solid solution, Hall constant, thermal emf, semiconductor single crystal, electric property, phase diagram, x ray diffraction analysis

ABSTRACT: The phase diagram of the $ZnAs_2$-$CdAs_2$ system was constructed on the basis of thermographic and x-ray analyses of samples which had undergone zone leveling. Continuous substitutional solid solutions were found to be formed in this system. X-ray diffraction analyses showed that the change in interplanar distances with the composition in $Zn_xCd_{1-x}As_2$ solid solutions obeyed Vegard's law. The $ZnAs_2$ structure is retained from 0 to 25% $CdAs_2$; solid solutions based on a tetragonal lattice with parameter ratio a/c = 0.57 are formed in the range of 40 to 100% $CdAs_2$, and defect

UDC: 548.55

Card 1/2

L 29777-66

ACC NR: AP6015071

structures based on lattices of the compounds $ZnAs_2$ and $CdAs_2$ are formed between 24 and 40% $CdAs_2$. $Zn_xCd_{1-x}As_2$ single crystals homogeneous in composition and electrical resistivity were prepared and their electrophysical properties were studied. Those which had a p-type conductivity showed an inversion of the Hall constant and differential thermal emf when the range of intrinsic conductivity was reached; n-type single crystals retained the charge carrier sign over the entire interval of measurements (from -10 to +550°C). The results obtained in the study confirm an earlier hypothesis that substances similar in crystallographic properties and bond type form continuous substitutional solid solutions even when their structures are different. Orig. art. has: 7 figures.

SUB CODE: 20,07/ SUBM DATE: 13Jun65/ ORIG REF: 006/ OTH REF: 006

Card 2/2

24.7700
5.2610

24054
S/020/61/138/004/015/023
B103/B203

AUTHORS: Ugay, Ya. A., Dolgova, Yu. Ya., and Zyubina, T. A.

TITLE: The intermetallic compound Cd_4Sb_3

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 4, 1961, 856-858

TEXT: Within the systematic study of semiconductor compounds, the authors studied the system Cd—Sb. In addition to the known compounds CdSb (stable) and Cd_3Sb_2 (metastable), they detected Cd_4Sb_3 (similar to Zn_4Sb_3) in the system Cd—Sb. They studied this system thermographically and by X-rays, and examined its microstructure and microhardness. They studied the electrical conductivity and the thermo-emf on cadmium alloys with a maximum of $5 \cdot 10^{-3}$% impurities, and antimony of the type Cy 000 (Su000). КД0 (Kd0 cadmium and Cy00(Su00) antimony were used for other determinations. Three series of alloys were heated to 650°C in evacuated (to $7 \cdot 10^{-3}$ mm Hg) Pyrex ampuls, and shaken at 500-550°C for 5 hr. Series 1 was cooled in the air, series 2 together with the furnace, series 3 was annealed between 250 and 420°C for one week. Kurnakov's pyrometer of the type ФПК-55

Card 1/4

The intermetallic compound ...

(FPK-55) with an evacuated Stepanov vessel [Abstracter's note: Stepanov vessel not stated] was used for taking thermograms. Debye patterns were recorded with a standard camera. Fig. 1 shows the phase diagram of the system Cd—Sb on the basis of all results. The new compound Cd_4Sb_3 (44.9% by weight of Sb) is pointed out. It melts congruently at 460°C. Both the microhardness (180 kg/mm^2) and the microstructure of Cd_4Sb_3 deviate from the values of known compounds. The microstructure indicates perfect homogeneity. In contrast to other compounds of the system Cd—Sb, Cd_4Sb_3 is formed under quick cooling. Its existence is confirmed by X-ray examination. Cd_4Sb_3 has a tetragonal lattice, probably of the rutile type, namely: a = 8.1, c = 13.0 Å, c/a = 1.6, whereas CdSb crystallizes in the rhombic, and Cd_3Sb_2 in the monoclinic system. Cd_4Sb_3 forms, in a pure state, silver-gray, brilliant, very brittle crystals with a fracture reminding of germanium. When heated in the air, they oxidize much less than other phases of the system Cd—Sb, and they have a specific conductivity of 20 ohm^{-1}.cm^{-1} at room temperature. Their highest

The intermetallic compound ...

thermo-emf observed was 420 μv/degree, which decreased strongly at high temperature. The temperature dependence of Cd_4Sb_3 shows typical semiconductor features. Dislocations of the spiral type are visible on the surface of Cd_4Sb_3 single crystals produced by Bridgman's method (V. D. Kuznetsov, Ref.4: Kristally i kristallizatsiya (Crystals and crystallization),1953,p.338). Cd_4Sb_3 crystals will become much larger when cooling is accelerated. Cd_4Sb_3 can dissolve excessive Sb amounts (up to 2% at room temperature). On a decrease in temperature, the excess is separated out again. Excess cadmium is practically not dissolved in Cd_4Sb_3. Both pure Cd_4Sb_3 and solid solutions of Sb in it are hole conductors. On the other hand, CdSb with excess Sb shows electron conductivity. There are 4 figures and 5 Soviet-bloc references.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

PRESENTED: January 20, 1961, by I. I. Chernyayev, Academician

SUBMITTED: January 15, 1961

Card 3/4

UGAY, Ya.A.; DOLGOVA, Yu.Ya.; ZYUBINA, T.A.

Intermetallic compound of Cd_4Sb_3. Dokl.AN SSSR 138 no.4:856-858 Je '61. (MIRA 14:5)

1. Voronezhskiy gosudarstvennyy universitet. Predstavleno akademikom I.I.Chernyayevym.

(Cadmium-antimony alloys)

ZYUBOV, I. Z.

"To the use of the X-ray apparatus URPN-70-1."

Veterinariya, Vol. 37, No. 7, 1960, p. 68

Vet-Dr. – Azerbaydzhan SSR

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

B2

B/4

Photometric method of studying surfaces. N. M. Zyuckin (*Zav. Lab.*, 1948, 14, [illegible]; *Chem. Abstr.*, 1949, 18, 511).—Improvements in the method described previously (*ibid.*, 1947, 13, 1143) for measuring surface irregularities by photometering transparent replicas are described. R. B. CLARKE.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZYUEV, G.I.

On hearing functions in mold breakers. Gig.i san. 26 no.1:97-101 Ja '61. (MIRA 14:6)

(VIBRATION--PHYSIOLOGICAL EFFECT)
(NOISE--PHYSIOLOGICAL EFFECT) (HEARING)
(FOUNDRYMEN--PHYSIOLOGICAL EFFECT)

L 17596-66 EWA(h)/EWT(1)
ACC NR: AP6000570 SOURCE CODE: UR/0109/65/010/012/2264/2266

AUTHOR: Zyuganov, A. N.; Svechnikov, S. V.

ORG: none

TITLE: Photocapacitor based on cadmium sulfide

SOURCE: Radiotekhnika i elektronika, v. 10, no. 12, 1965, 2264-2266

TOPIC TAGS: photocapacitor, CdS photocapacitor

ABSTRACT: Experimental characteristics of the CdS photocapacitor which was initially developed by F. Gordon et al. (IRE Convent. Rec., 1957, 5, 3, 40) are presented and discussed. The characteristics show that the capacitance of this device varies by 150—300% when the luminous intensity varies by 3 orders of magnitude. The properties of the photocapacitor are characterized by its "reduced transconductance" whose curve has a pronounced maximum. The maximum transconductance point of the photocapacitor should be used only in medium-frequency RC-circuits. At high frequencies, the transconductance is very low. A considerable inertia (0.1 sec) is held as a serious disadvantage of the CdS photocapacitor. Orig. art. has: 4 figures and 9 formulas.

SUB CODE: 09 / SUBM DATE: 24Oct64 / ORIG REF: 000 / OTH REF: 001

Card 1/1 nst UDC: 621.383.9:621.382.29

S/185/63/008/002/011/012
D234/D308

AUTHORS: Zyuganov, A. N., Molodkin, V. B., Smirnov, A. A. and Tikhonova, Ye. A.

TITLE: Effect of lattice distortions on scattering of slow neutrons in alloys

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 2, 1963, 256-263

TEXT: A theoretical investigation of the intensity of neutron scattering in alloys with body-centered cubic lattice of β-brass type and with face-centered cubic lattice of AuCu and $AuCu_2$ type. The case of one scattering amplitude being negative is discussed in detail, and conditions are established for which $F^2_{str} - 4\overline{A}^2_0$ is positive. Conclusions: The fact that lattice distortions decrease the intensity of regular structural reflections when both amplitudes [illegible] the same sign is taken into account. An increase of intensity

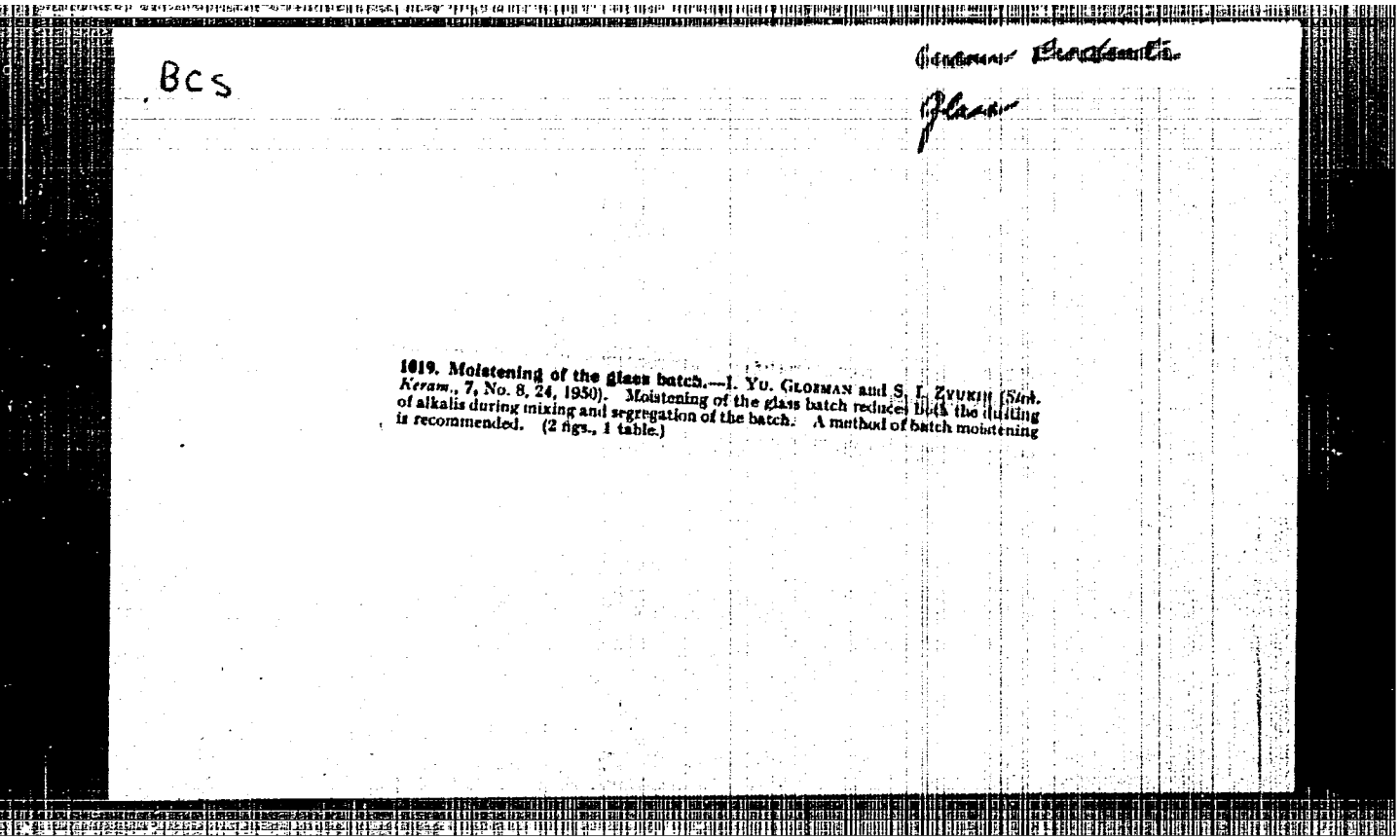
Card 1/2

Effect of lattice ...

is possible in some intervals of concentrations when one of the amplitudes is negative. The intensity of superstructural reflections can increase in both cases. Formulas for the intervals of concentrations are given. There are 2 figures.

ASSOCIATION: Institut metallofiziki AN USSR (Institute of Metal Physics, AS UkrSSR, Kiev

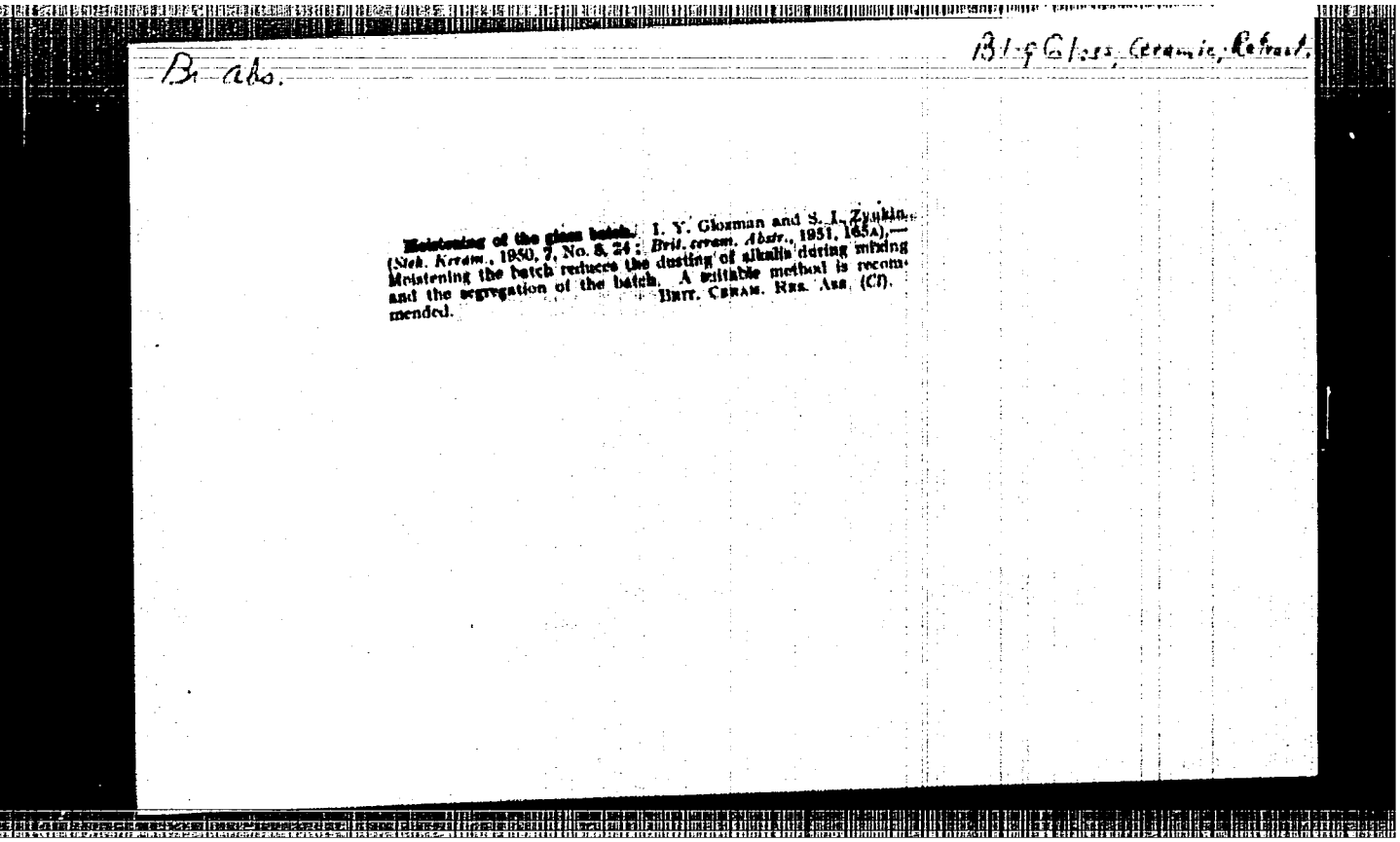
Card 2/2



Bcs

Glass

1019. Moistening of the glass batch.—I. Yu. GLOZMAN and S. I. ZVUKIN (*Stekl. Keram.*, 7, No. 8, 24, 1950). Moistening of the glass batch reduces both the dusting of alkalis during mixing and segregation of the batch. A method of batch moistening is recommended. (2 figs., 1 table.)



B-abs.

B1-f Glass, Ceramic, Cement

Moistening of the glass batch. I. Y. Glozman and S. I. Zyukin. (*Steklo. Keram.*, 1950, 7, No. 8, 24; *Brit. ceram. Abstr.*, 1951, 165A).—Moistening the batch reduces the dusting of alkalis during mixing and the segregation of the batch. A suitable method is recommended. INST. CERAM. RES. ASS. (C).

SOURCE CODE: UR/0000/66/000/000/0053/0059

ACC NR: AT6034349

AUTHOR: Zyuganov, A. N.

ORG: Institute for Semiconductors, AN UkrSSR (Institut poluprovodnikov AN UkrSSR)

TITLE: Photopotentiometer in the regime of a functional transformer

SOURCE: AN UkrSSR. Poluprovodnikovaya tekhnika i mikroelektronika (Semiconductor engineering and microelectronics). Kiev, Naukova dumka, 1966, 53-59

TOPIC TAGS: potentiometer, photoresistance, photoconductor, semiconducting film

ABSTRACT: The possibility of using a transverse conductivity photopotentiometer as a functional transformer is analyzed. The photopotentiometer consists of a resistive layer σ on which an external current source generates a potential U_1. Contact with resistive layer is accomplished by a photoconductor $\sigma_{\varphi 0}$. The output potential U_2 is a function of the light probe coordinate x. Kirchoff's law for the photopotentiometer can be expressed by the equation

$$\frac{d^2\varphi}{dx^2}+\frac{1}{W(x)}\cdot\frac{dW(x)}{dx}\cdot\frac{d\varphi}{dx}=\frac{\sigma_\phi b_\phi}{ab}\cdot\frac{\varphi(x)-U_1(x)}{W_\phi W(x)},$$

where b_ϕ = is the photolayer thickness. For the case where $\sigma_{\varphi 0} = 0$ and the beam

is narrow, the solution of the above equation can be given by

$$W(x) \approx \approx \frac{-\frac{2}{m_0}\varphi'(x)}{\varphi'(x)\left\{1 \pm \frac{F(L_R) - \frac{m_0}{2\varphi(x)}}{\sqrt{\frac{F(L_R)}{4}[F(L_R)+4m_0] + \frac{m_0}{4\varphi^2(x)}[m_0 - 2\varphi(x)F(L_R)]}}\right\}}$$

In the laboratory the resistive layer for such a sin-cos-phototransformer consists of SnO_2, and the conversion error does not exceed 5%. Orig. art. has: 19 formulas and 2 figures.

SUB CODE: 09, 14/ SUBM DATE: --May65/ ORIG REF: 001/ OTH REF: 001

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002065810018-0"

L 06390-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6010289 (N) SOURCE CODE: UR/0103/66/000/003/0142/0147

AUTHOR: Zyuganov, A. N. (Kiev); Oleksenko, P. F. (Kiev); Svechnikov, S. V. (Kiev)

ORG: none

TITLE: The effect of load resistance upon the transient characteristics of photoresistances

SOURCE: Avtomatika i telemekhanika, no. 3, 1966, 142-147

TOPIC TAGS: photoresistance, photoconductive cell, electronic feedback, cadmium selenide, cadmium sulfide

ABSTRACT: The photocurrent of CdS and CdSe single-crystal photoconductive cells with linear In-Ga contacts is analyzed. The CdS cells were tested with dc and with ac (f = = 100 kc) on a simulated circuit model under transient conditions. The space charge plays an important role in the nonlinear behavior of the photocurrent. The load of photoresistance may distort considerably its transient characteristics, partially on account of the feedback. This is an important consideration in the design and calculation of hardware used in correction circuits and compensation networks. Formulas that are adequate for the computation of the transient characteristics of photoresistances are developed. Orig. art. has: 5 figures, 22 formulas.

SUB CODE: 09/ SUBM DATE: 10Apr64/ ORIG REF: 002/ OTH REF: 001

Card 1/1 UDC: 621.383.42

ACCESSION NR: AT4012721 S/2981/63/000/002/0111/0118

AUTHOR: Mel'nikov, Yu. V.; Zyukin, V. V.; Oboturov, V. I.

TITLE: Welding of SAP-1

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2. Spechenny*ye splavy*. Moscow, 1963, 111-118

TOPIC TAGS: powder metallurgy, aluminum, sintered powder, aluminum powder, sintered aluminum powder, welding, resistance welding, flash welding, spot welding, roller welding

ABSTRACT: Welding of SAP-1 by the flash and resistance methods was performed with 1.5 mm sheets made of preliminarily treated brickets. Comparison of the strength and structure of the weld joints showed that manual argon arc welding of SAP-1 using AF-4A flux is possible with high temperature annealing of the brickets. The strength of the weld joints equals 95% of the strength of the base material at room temperature and 70% at a temperature of 500C. Both roller and spot welding of SAP-1 may also be used. The strength of the weld joints is the same as of high-strength aluminum alloys of the type D19A-T, D20A-T and D16A-T. "The work was carried out under the guidance of K. P. Koryagin; O. B. Martishin, M. V. Korotkova and F. T. Leonov also took part in the work." Orig. art. has: 9

Card 1/2

ACCESSION NR: AT4012721

tables and 10 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 13Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 000 OTHER: 000

Card 2/2

ZYURC, A. G.

ZYURC, A. G. -- "TRANSMISSION CAPACITY OF RADIO LINES AND INTERFERENCE REJECTION OF A RECEIVER IN A LARGE AREA OF FLUCTUATION NOISE." SUB 23 DEC 52, MOSCOW ELECTRICAL ENGINEERING INST OF COMMUNICATIONS (DISSERTATION FOR THE DEGREE OF CANDIDATE IN TECHNICAL SCIENCES)

SO: VECHERNAYA MOSKVA, JANUARY-DECEMBER 1952

USSR/Electronics - Information Theory FD-2499

ZYUKO, A. G.

Card 1/1 Pub. 90-7/9

Author : Zyuko, A. G., Active Member, VNORiE

Title : Comparative evaluation of communication channels for different systems modulation by their transmission capacity

Periodical : Radiotechnika, 10, 58-66, Jun 55

Abstract : The article discusses the fundamental relations of the statistical theory of communication. On the basis of this theory formulas are derived for calculation of the transmission capacity of two following cases: when the signal is limited in its amplitude and when the signal is limited in its mean power. A comparison with respect to their relative transmission efficiencies is made of the following systems of signal modulation: single-sideband, amplitude, frequency, pulse time, pulse width and pulsecode. Tranmission capacity of a channel depends on the statistical wave spectrum of the signal and the intensity of noise. For certain conditions, frequency modulation and code modulation have greater transmission capacity than the other modulation systems investigated. The author thanks I. Ye. Goron for the advice given on this work. Graphs. Eight references; 6 USSR

Institution : All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. Popov (VNORiE)

Submitted : June 20, 1953

Zyuko, A.G.

Category : USSR/Radiophysics - Application of Radiophysical Methods I-12

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4695

Author : Zyuko, A.G.
Title : Noise Rejection and Effectiveness of Radio Facsimile Communication Under Fluctuating Noises.

Orig Pub : Radiotekhnika, 1956, 11, No 8, 14-24

Abstract : The author determines the maximum possible noise rejection and the communication effectiveness of the modulation systems used for the transmission of facsimile signals by wireless. A comparative estimate is made of these systems relative to their noise rejection and effectiveness under fluctuating noise.

Card : 1/1

ZYUKO, A.G.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1598
AUTHOR ZJUKO, A.G.
TITLE On the Computation of the Noise Immunity of a Radio Receiver at a High Level of Fluctuation Disturbances.
PERIODICAL Radiotechnika, 11, fasc.10, 77-78 (1956)
Issued: 11 / 1956

The real capacity of the channel C_p and the quantity of the information H_p that can be reproduced at the output of the receiver are determined by the following equations: $C_p = TF \lg\delta (\sigma + 1)$, (1)

$$H_p = TF_m \lg\delta_m (S + 1) \quad (2)$$

where T denotes the length of the signal, F - the transmission zone of the channel which is equal to that of the receiver, F_m - the transmission zone of the receiver at low frequency, S and σ - the ratio between the average signal performance and the average noise at the out- and input of the receiver, δ and δ_m - coefficients which depend on the statistic properties of the signal and of the disturbance. The analysis of the relations of (1) and (2) for different modulation systems shows that with a reduction of the ratio between signal and disturbance at the receiver output the channel capacity is reduced more rapidly than the quantity of information reproduced at the output of the receiver. At a certain value of σ it is true that H=C. As, however, H cannot become greater than C, this equation is a limiting equation, the so-called threshold relation between the signal and the disturbance σ_n. A further reduction of σ leads to a considerable decrease

SOV/142-58-4-23/30

AUTHOR: Zyuko, A.G., Docent

TITLE: Novosibirsk Electro-Engineering Institute for Communications (Novosibirskiy elektrotekhnicheskiy institut svyazi)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy- Radiotekhnika, 1958, Nr 4, p 513 (USSR)

ABSTRACT: In the last two years 5 research laboratories have been opened in the Department for Radio Communications and Broadcasting of the Department for Radio Broadcasting and Acoustics - under the direction of Docent B.A. Shwarts - the method and apparatus were worked out for automatic control of the qualitative indices in radio broadcast channels. In laboratory Nr 2 under the direction of Candidates of Technical Sciences E.A. Demin and L.A.Chinenkov research was done on the applications of semi-conductor equipment and ferrites in communication apparatus. The same laboratory is developing an electronic telegraph apparatus. The

Card 1/2

SOV/106-58-5-4/13

AUTHOR: Zyuko, A.G.

TITLE: Noise Stability and Effectiveness of Radio-telegraphic Communication with Automatic Correction of Errors (Pomekhoustoychivost' i effektivnost' radiotelegrafnoy svyazi s avtomaticheskoy korrektsiyey oshibok)

PERIODICAL: Elektrosvyaz', 1958, Nr 5, pp 23 - 27 (USSR)

ABSTRACT: The correction system is one in which comparison is made with control signals. A signal of either sign is reckoned to be undistorted if its envelope over a certain interval of time is entirely contained within the control pulse of that sign. Signals which do not fulfil this condition are rejected and an "enquiry" signal made to the point of origin, whereupon the doubtful portion of the message is repeated. The present analysis examines the effect of fluctuation noise upon such a system used in frequency-shift telegraphy. It is supposed that one channel of the system contains signal and noise and the other noise only. The probability of erroneous reception of a signal is given by (1). The probability of erroneous reception of a coded combination is given by (2) and the chance that such an error will be detected is given by (3). The calculation of these probabilities depends on the charge that the noisy

Card1/3

Noise Stability and Effectiveness of Radio-telegraphic Communication with Automatic Correction of Errors

signal is less in amplitude than the control pulse and on the chance that the noise amplitude is greater than that of the control signal. The first is expressed in terms of a modified Bessel function of the first kind and zero order and the second is an exponential function. Figure 2 shows curves of the probability of non-revelation of an error for a system in which the signal/noise ratio is 2 (in amplitude), the pass-band is such that third-order side-bands are admitted and the comparison time-interval is either 1/2 or 1/3 of the basic pulse interval. The code is five-unit. Curves are also plotted for comparison of an ordinary 5-unit and a 7-unit code with automatic correction. The effectiveness of communication is defined as $1 - R$ where R is the total probability of repetition of messages. Figure 3 compares the effectiveness of 5-unit and 7-unit systems, assuming that 3 coded combinations are involved in each repetition. It is concluded that: 1) at low noise levels (signal/noise amplitude ratio > 7) the noise stability of a 5-unit code with error detection by the form of the signal and of a 7-unit code with automatic correction are typically

Noise Stability and Effectiveness of Radio-telegraphic Communication with Automatic Correction of Errors

similar. At high noise levels, the 7-unit code is preferable; 2) For the two systems compared in (1) above, the 5-unit code has the higher effectiveness. There are 3 figures and 6 references, 5 of which are Soviet and 1 English.

SUBMITTED: December 9, 1957

SOV/106-59-5-7/13

AUTHOR: Zyuko, A.G.

TITLE: The Potential Interference-Stability of Multi-Channel Radio-Telegraph Communication Systems in the Presence of Fluctuation Interference (Potentsial'naya pomekhoustoychivost' mnogokanal'nykh radiotelegrafnykh sistem svyazi pri fluktuatsionnykh pomekhakh)

PERIODICAL: Elektrosvyaz', 1959, Nr 5, pp 54-57 (USSR)

ABSTRACT: The article analyses the potential interference-stability against fluctuation interference of two types of radio-telegraphy systems:
1. An ultra-short-wave, frequency-telegraphy, two-channel system with time-sharing, e.g. a 300 Baud system, transmitting 30 Baud signals, giving effectively 10 channels.
2. A u.s.w, frequency-telegraphy, system using sub-carriers.
The interference-stabilities of such systems are analysed, using the basic theory of V.A.Kotel'nikov (Ref 1) and comparison is made between the two systems. It is concluded that the two-channel system has greater

Card 1/2

The Potential Interference-Stability of Multi-Channel Radio-Telegraph Communication Systems in the Presence of Fluctuation Interference

potential interference-stability than the system with sub-carriers and also has the advantage of more efficient use of the transmitter power. The frequency bands occupied by the signal in the two-channel system and in the sub-carrier system (for 10 effective channels) are approximately the same and the efficiency of the system, defined as the degree of utilisation of the capacity of the communication channel (Ref 2), is not worse in the two-channel system than in the sub-carrier system. There is 1 figure, 1 table and 2 Soviet references.

SUBMITTED: 12th December 1958

6.9400
9,3273 (1049,1159)

S/142/61/004/005/014/014
E192/E382

AUTHOR: Zyuko, A.G.

TITLE: Noise immunity of the frequency radiotelegraphy during random changes of the signal frequency

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v.4, no. 5, 1961, 623 - 626

TEXT: The frequency of the signal at the input to the receiver is often subject to random fluctuations which are caused, for example, by the Doppler effect during long-distance tropospheric and ionospheric propagation of radio waves. These fluctuations invariably lead to reduction in the noise-immunity of a radio-communications system employing frequency-modulation. The quantitative evaluation of the noise-immunity under these conditions is based on the statistical parameters of the frequency fluctuation and it can be assumed approximately that these fluctuations $\varepsilon = \omega_o - \omega$ can be described by the normal probability density distribution:

Card 1/7

Noise immunity of ....

$$p(\varepsilon) = \frac{1}{\varepsilon_o \sqrt{2\pi}} e^{\frac{(\varepsilon-b)^2}{2\varepsilon_o^2}} \qquad (1)$$

where ε_o is the mean square signal-frequency deviation, and

b is the mean frequency deviation.

The noise also leads to changes in the signal frequency and these frequency changes are determined by the time derivative and the phase angle of the signal and noise waveform. If it is assumed that the noise level is comparatively low, the distribution of the phase derivative can be described by:

Card 2/7

Noise immunity of ....

$$p(\dot{\Theta}) = \frac{a}{\Omega_1 \sqrt{2\pi}} e^{-\frac{a^2 \dot{\Theta}^2}{2\Omega_1^2}} \qquad (3)$$

where $a = u_o/\sigma_n$,

u_o is the amplitude of the signal,

σ_n is the mean square value of the noise, and

$\Omega_1 = \pi F/\sqrt{3}$, where F is the passband of the receiver.

The instantaneous frequency of the received signal is thus equal to $\omega = \omega_o + \nu = \omega_o + \dot{\Theta} + \varepsilon$. The probability of incorrect reception of the frequency-modulated signal in a radiotelegraphy signal in the presence of noise and random frequency fluctuations is expressed by:

Card 3/7

Noise immunity of ....

$$P_o = \int_{-\infty}^{-\Delta\omega} p(\nu)d\nu \qquad (4)$$

where $p(\nu)$ is the probability density distribution of the random quantities ε and Θ. For small values of ν this probability density can be expressed by:

$$p(\nu) = \frac{1}{\nu_o\sqrt{2\pi}} e^{-\frac{(\nu-b)^2}{2\nu_o^2}} \qquad (5)$$

where:

Card 4/7

Noise immunity of ....

$$v_o^2 = \varepsilon_o^2 + \left(\frac{\Omega_1}{a}\right)^2 \quad .$$

By integrating Eq. (4), the following expression is obtained:

$$P_o = \frac{1}{2}\left[1 - \Phi\left(\frac{\Delta\omega - b}{\sqrt{\varepsilon_o^2 + \left(\frac{\Omega_1}{a}\right)^2}}\right)\right] \qquad (6) \; .$$

Under actual operating conditions the amplitude of the signal also undergoes random fluctuations and these can be described by the Rayleigh distribution:

Card 5/7

Noise immunity of ....

$$p(a) = \frac{2a}{\overline{a^2}} e^{-\frac{a^2}{\overline{a^2}}} \qquad (7)$$

It is therefore necessary to average Eq. (6) over all the possible values of a , in accordance with the distribution given by Eq. (7). The probability of error is therefore expressed by;

$$\overline{P}_o = \frac{1}{2} e^{-\frac{a_o^2}{\overline{a^2}}} - \int_{a_o}^{\infty} \frac{a}{\overline{a^2}} e^{-\frac{a^2}{\overline{a^2}}} \Phi(z)\, dz \qquad (9)$$

Card 6/7

Noise immunity of ....

where

$$z = \frac{\Delta\omega - b}{\sqrt{\varepsilon_o^2 + \left(\frac{\Omega_1}{a}\right)^2}} .$$

The integral in Eq. (9) cannot easily be evaluated analytically. Consequently, two special cases are considered, in particular, the case of $\varepsilon_o = 0$ and the case when the noise is small in comparison with the Doppler effect $(\Omega_1/a \ll \varepsilon_o)$.

There are 2 Soviet-bloc references.

ASSOCIATION: Kafedra radiopriyemnykh ustroystv Novosibirskogo elektrotekhnicheskogo instituta svyazi (Department of Radio-receiving Equipment of Novosibirsk Electrotechnical Communications Institute)

SUBMITTED: March 24, 1960 (initially)
February 2, 1961 (after revision)

Card 7/7

ZYUKO, A.G.; SUZDAL'NITSKIY, I.D.

Interference rejection of signal composition systems with diversity reception. Izv. vys. ucheb.; radiotekh. 5 no.1:128-131 Ja-F '62. (MIRA 15:5)

1. Rekomendovano kafedroy radiopriyemnykh ustroystv Novosibirskogo elektrotekhnicheskogo instituta svyazi.
(Radio--Receivers and reception)

9.3275
6.7110

34838

S/106/62/000/003/009/01
A055/A101

AUTHOR: Zyuko, A. G.

TITLE: Interference immunity in communication systems with pulse-position modulation

PERIODICAL: Elektrosvyaz', no. 3, 1962, 68 - 70

TEXT: The transmitted pulse-position modulated signals can be expressed as:

$$A_i(t) = u(t+k\frac{\Delta\tau}{2})\cos(\omega_0 t+\varphi_i), \quad -\frac{\tau_0'}{2} < t < \frac{\tau_0'}{2}, \qquad (1)$$

where $i = 0$, $k = 0$ correspond to the absence of keying; $i = 1$, $k = +1$ to "pushing"; and $i = 2$, $k = -1$ to "release" (for the meaning of $\Delta\tau$ and τ_0' see Figure 1). According to Kotel'nikov, the probability of error (characterizing the potential interference immunity) is here:

$$P_0 = \frac{1}{2}[1 - \Phi(\alpha)] \qquad (2)$$

Card 1/2

where

$$\alpha^2 = \frac{n}{2\sigma^2}\overline{[A_1(t) - A_2(t)]^2}, \qquad (3)$$

σ^2 being the intensity of the interference in the band equal to 1 cps, and T being the duration of the signal. For pulse-position modulated signals the author finally obtains (at $\varphi_1 = \varphi_2$):

$$\alpha^2 = \frac{u_o^2}{2\sigma^2}\theta \qquad (7)$$

where

$$\theta = \frac{\tau_o'}{u_o^2}\left[\overline{u^2(t)} - \overline{u_1(t)u_2(t)}\right]. \qquad (8)$$

The values of θ for different pulse-shapes are grouped in a table. Discussing this table, the author finds, for instance, that the potential interference immunity depends essentially on the shape of the pulses and on their relative time-shift $\Delta\tau/\tau_o'$; he also finds that, for cosinusoidal pulses, $\tau_o' = 0.5\,\tau_o$ is the optimum duration, ensuring the minimum error probability. In the second chapter of the article, the author gives some considerations on the detection of pulse-position modulated signals by the gating of pulses. In the third chapter, the author, starting from the general formula (3), deduces expressions giving α^2 for

ACCESSION NR: AP4042857 S/0142/64/007/003/0384/0385

AUTHOR: Zyuko, A. G.

TITLE: Noise immunity of diversity reception with switched antennas

SOURCE: IVUZ. Radiotekhnika, v. 7, no. 3, 1964, 384-385

TOPIC TAGS: noise immunity, diversity reception, switched antennas diversity reception, dual diversity reception

ABSTRACT: Theoretical fundamentals of dual (switched-antenna) diversity reception were given by A. H. Hausman (PIRE, 1954, 42, no. 6, 944). The present article represents a further development of the formulas for the probability of error in a frequency-telegraphy system for various values of the threshold and when fadings in the antennas are independent. It is found that the noise immunity essentially depends on the choice of the threshold, and the latter depends on the signal-to-noise ratio. With a properly selected threshold, the

Card 1/2

ACCESSION NR: AP4042857

antenna-switched system is comparable to the receiver-switched system insofar as its noise immunity is concerned. Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: none

SUBMITTED: 29Jan62 ENCL: 00

SUB CODE: EC NO REF SOV: 001 OTHER: 002

Card 2/2

ZYUKO, A.G.

Interference rejection of a diversity reception system with antenna switching. Izv. vys. ucheb. zav.; radiotekh. 7 no. 3:384-385 My-Je '64. (MIRA 17:9)

AM4037187

BOOK EXPLOITATION

S/

Zyuko, A. G.

Noise-proof features and efficiency of communication systems (Pomekhoustoychivost' i effektivnost' sistem svyazi), Moscow, Svyaz'izdat, 1963, 319 p. illus., biblio. 6,000 copies printed.

TOPIC TAGS: communications, radio telegraphy, radio engineering, discrete communication systems, static, fading

TABLE OF CONTENTS [abridged]:

Card 1/2

AM4037187

SUB CODE: EC SUBMITTED: 12Nov63 NR REF SOV: 173

OTHER: 041 DATE ACQ: 06Apr64

Card 2/2

ZYUKO, A.G.; PETROVICH, N.T., prof., retsenzent; FINK, L.M., prof., red.; KOKORIN, Yu.I., red.; ROMANOVA, S.F., tekhn. red.

[Interference refection and efficiency of communication systems] Pomekhoustoichivost' i effektivnost' sistem sviazi. Moskva, Sviaz'izdat, 1963. 319 p. (MIRA 17:3)

ZYUKO, A.G.

Determination of general technical characteristics of communication systems. Sbor. trud. NTORiE no.2:5-12 '58.
(MIRA 16:6)

(Information theory)
(Telecommunication)

ZYUKOV, A.M.

Ayukov, A.M. "The pathology and clinical treatment of chronic bacillar dysentery", Vracheb. delo, 1949, No. 1, paragraphs 85-88.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 9, 1949)

ZHUKOV, A. M.

(The acute communicable diseases and helminthiasises of men) Vyd. 2., dop. Kyiv, Derzh. med. vyd-vo URSR, 1947. 392 p.

RATNER, N.A., prof.; PUSHKAR', Yu.T., st. nauchn. sotr.; SHKHVATSABAYA, I.K., st. nauchn. sotr.; ZYSKO, A.P., kand. med. nauk; VOSKANOV, M.A., kand. med. nauk; MYASNIKOV, A.L., prof., red.; CHAZOV, Ye.I., doktor med. nauk, red.; METELITSA, V.I., red.

[Hypertension and atherosclerosis of the coronary arteries; methodological instructions on diagnosis, treatment and prevention] Gipertonicheskaia bolezn' i ateroskleroz koronarnykh arterii; metodicheskie ukazaniia po diagnostike, lecheniiu i profilaktike. Moskva, 1964. 176 p. (MIRA 18:5)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut terapii. 2. Deystvitel'nyy chlen AMN SSSR (for Myasnikov).

ZYUKOV, B., instruktor podvodnogo sporta

The "Persei" sails along its course. Znan. ta pratsia no. 5:14 My '61. (MIRA 14:5)

(Barents Sea—Marine biology)

ZYUKOV, D.G.

All-Union conference on the manufacture of essential oils. Masl.-zhir. prom. 29 no.6:44-46 Je '63. (MIRA 16:7)

1. Gosudarstvennyy komitet po pishchevoy promyshlennosti pri Gosplane SSSR.

(Essences and essential oils)

ZYUKOV, D.G.

Prospects for the production and consumption of rose oil in the U.S.S.R. Masl.-zhir.prom. 27 no.5:32-33 My '61. (MIRA 14:5)
(Attar of roses)

ZYUK'KOV, I.G. [Ziul'kou, I.H.]; KAZANOVICH, Ya.N. [Kazanovich, IA.N.]; LAGUN, L.P. [Lahun, L.P.]; GODNEVA, M.T. [Hodneva, M.T.]

Effect of different growing conditions on the amount of nutritive substances in corn. Vestsi AN BSSR Ser. biial. nav. no.1:28-30 '58. (MIRA 11:5)

(Corn (Maize))

ZYUKOV, B.

On Issyk-Kul. Znan.ta pratsia no.6:8-9 Je '60.
(Issyk-Kul--Fishes) (MIRA 13:8)

ZYUKOV, D.G.

Utilization of clary sage essential oil. Masl.-zhir.prom. 27 no.3:36 Mr '61. (MIRA 14:3)

1. Soyuzglavpishcheprom syr'ye.
(Essences and essential oils) (Sage)

ZYUKOV, G.G., inzh.

Device for determining deformations of cement systems during the binder setting. TSement 30 no.4:13 Jl-Ag '64.

(MIRA 17:11)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V. Kuybysheva.

ZYUKOV, P.I., assistent

Role of B.B.Golitsyn in the development of physical optics; on the centennial of his birth. Trudy MIIGAIK no.49:61-73 '62. (MIRA 16:6)

1. Kafedra fiziki Moskovskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii.
(Golitsyn, Boris Borisovich, 1862-1916)

A. E. S. ZYUKOV, P.K.

Carmine dyes for decorating glass. P. K. ZYUKOV AND T. I. GRANKOV. *Steklo'naya Prom.*, 1940, No. 2, 10-11; *Chem. Zentr.*, 1940, II, 1341; *Chem. Abs.*, 36, 4682-83 (1942).—Ag_2CO_3 mixed with the usual coloring matter was used to produce carmine colors on glassware. Depending on the amount used, the colors obtained were violet and carmine red to dark brown. The firing temperature is 530° to 550°, the lower temperatures being used for brown and the higher temperatures for the red tones.

ZYUKOV, P.I.

B.B. Golitsyn's share in the elaboration of new discoveries in physics at the threshold of 20th century. Trudy Inst. ist. est. i tekh. 43:140-150 '61. (MIRA 15:1)
(Golitsyn, Boris Borisovich, 1862-1916)
(Physics)

ZABOROVSKIY, Aleksandr Ignat'yevich; ZYUKOV, P.I., red.; YERMAKOV, M.S., tekhn.red.

[Alternating electromagnetic fields in electric prospecting] Peremennye elektromagnitnye polia v elektrorazvedke. Moskva, Izd-vo Mosk.univ., 1960. 183 p. (MIRA 14:2)
(Electric prospecting)

ZYUKOV, P.I.

B.B. Golitsyn's early works on molecular physics. Trudy Inst. ist. est. i tekh. 22:173-201 '59. (MIRA 12:10)
(Golitsyn, Boris Borisovich, 1862-1916)

ZYUKOV, P.I.

Scientific connections of M. Planck and B.B. Golitsyn, 1889-1895.
Vest.Mosk.un. Ser.mat.mekh.,astron.,fiz.,khim. 13 no.5:83-90 '58.
(MIRA 12:4)

1. Kabinet istorii fiziki Moskovskogo gosudarstvennogo universiteta.
(Planck, Max, 1858-1947)
(Golitsyn, Boris Borisovich, 1862-1916)

ZYUKOV, P.I.

Letter from P.N. Lebedev to B.B.Golitsyn. Vop.ist.est. i tekh. no.2:253-259 '56. (MIRA 10:1)
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ZYUKOV, V. (Ternopol').

An outstanding motion picture operator in the Ukraine. Kinomekhanik no.9: 18 S '53. (MLRA 6:9)
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High-quality brigades of the film-inspection shop. Kinomekhanik no. 4, 1952.

Monthly List of Russian Accession, Library of Congress, June 1952, UNCLASSIFIED.

EWT(l)/EWT(m)/EPF(n)-2/EWG(m)/T/EWP(t) JP(c) JD/JG/AT

ACC NR: AT6006755 SOURCE CODE: UR/3158/65/000/016/0001/0010

AUTHOR: Volkov, N. V.; Gus'kov, Yu. K.; Zyukov, V. I.; Pashchenko, V. P.

ORG: Physics and Power Institute, State Committee on the Use of Atomic Energy, SSSR (Fiziko-energeticheskiy institut, Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii SSSR)

TITLE: Effect of size of interelectrode gap on the operation of cesium thermionic converter

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 16, 1965. Vliyaniye velichiny mezhelektrodnogo zazora na rabotu tseziyevogo termopreobrazovatelya, 1-10

TOPIC TAGS: cesium electron tube, cesium plasma, thermoelectric convertor, volt ampere characteristic, gas kinetics, pressure effect, impact ionization

ABSTRACT: The authors have measured the dependence of the short-circuit current, the discharge ignition voltage, the output voltage, and the thermionic-converter power, when operating in the arc discharge mode at a constant cesium pressure. Earlier investigations of the effect of the interelectrode gap were made usually at optimal cesium pressure and optimum anode temperature, and did not yield sufficient data to explain the role and character of the physical processes responsible for the optimal conditions. The measurements were made with a tube having a movable anode. The molybdenum cathode was heated with an electron gun, and the gap could be

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varied from 0.2 to 8 mm. The anode was stainless steel and its temperature was controlled by air cooling. The volt-ampere characteristics were taken both with an oscilloscope and with a pointer-type meter. The experimental plots of the saturation curve against the gap length (L) and of the output power were compared with calculations based on the kinetic theory. The tests show that the dependence of the short-circuit current on the gap and on the pressure is characterized by the presence of a maximum, confirming earlier results. An increase in the temperature of the cathode improves the ignition and combustion conditions for the arc, for both larger and smaller gaps. The output power of the converter has a stronger dependence on the gap than the short-circuit current, but in the region of $L/\lambda \approx 5$--25 (λ = electron mean free path) the power likewise changes little. A distinction is made between two types of operation -- without volume ionization ($\lambda/L \ll 1$), and the arc mode (L/λ much larger). The theoretical and experimental results are compared for both modes. Orig. art. has: 7 figures and 4 formulas.

SUB CODE: 10,20/ 1 ORIG REF: 009/ OTH REF: 007

SUBM DATE: none

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AP6028622 SOURCE CODE: UR/0057/66/036/008/1475/1480

AUTHOR: Volkov,N.V.; Gus'kov,Yu.K.; Zyukov,V.I.; Pashchenko,V.P.

ORG: none

TITLE: Influence of the length of the interelectrode gap on the operation of a cesium thermoelectric converter

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1475-1480

TOPIC TAGS: thermionic energy conversion, cesium, electric arc, cesium plasma

ABSTRACT: The authors have investigated the effect of the interelectrode gap length on the behavior of cesium vapor discharges between an electron beam heated molybdenum cathode and an air cooled stainless steel anode. Both electrodes were 12 mm in diameter, and the gap between them was varied from 0.2 to 8 mm. The cesium vapor pressure was varied at least over the range from 0.2 to 2.0 mm Hg. Meters and an oscilloscope were employed to record the discharge currents and voltages. The results are interpreted in terms of the theory of S.A.Mayev (Dissertation, FTI AN SSSR, L., 1962) and S.A.Mayev and I.P.Stakhanov (Izv. AN SSSR, ser. fiz., No. 9, 1964). The shape of the current-voltage characteristic practically did not change with change of gap length and in the undercompensated regime the pressure for maximum power was virtually the same as that for maximum current. Considerable increase of the power output in the undercompensated regime can

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be obtained by increasing the pressure and decreasing the gap length so as to keep the latter approximately equal to the electron mean free path. In the arc regime the short circuit current was maximum for a certain gap length and decreased almost linearly with increase of the gap beyond the optimum value until the arc was quenched. Considerable hysteresis in the quenching and ignition gap lengths was observed. In the arc regime the power was maximum for a gap length between 5 and 25 times the electron mean free path and decreased with decrease of the gap below this value. When increasing the cesium pressure in order to increase the power output in the arc regime, one should decrease the gap length so as to keep the ratio of the gap length to the electron mean free path approximately constant. This is in agreement with the findings of C.C.Weeks, R.C.Dahleen, and I.E.Gingrich (Adv.Energy Conv., 2, 315, 1962) and S.Kitrilakis and G.N.Hatsopoulos (Adv.Energy Conv.,2, 583, 1962). Orig. art. has: 5 formulas and 7 figures. [15]

SUB CODE: 20 SUBM DATE: 21Jun65 ORIG. REF: 009 OTH REF: 007/
ATD PRESS: 5081

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