RABOTALOVA, Ye. K.

BELOVA, A. N., EKLEN'KIY, Ye. N., and Rabotalova, Ye. K.

Pnevmoentsefalografiya v detskoy psikhiatricheskoy praktike p. 128
V sb Aktual'nyye Problemy Nevropatologii i Psikhiatrii, Kuybyshev 1957.

Kuybyshev Psikhonevrologicheskoy Bol'nitsy.

RABOTALOVA, Ye. K. (Kuybyshev)

Organizatsiya Psikhonevrologicheskoy Pomoshchi b Kuybyshevskoy Oblasti i ee Zadachi.

p. 528 V sb. Aktual'n. probl. nevropatol. i psikhiatrii. Kuybyshev, 1957.

1. RABOTAY, G.

2. USSR (600)

4. Radio-Receivers and Reception

7. Tuning of band filters. Radio no. 12, 1952.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Unclassified.

L 05096-67 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AP6013291 30B SOURCE CODE: UR/0413/66/000/008/0086/0086

AUTHORS: Bovkun, K. A.; Sadov, L. S.; Rabotenko, G. F.; Bardadym, A. G.; Rybal'chenko, A. A.

ORG: none

TITLE: A potentiometer-integrator. 16 Class 42, No. 180819 [announced by Dnepropetrovsk Branch of the Institute of Automation (Dnepropetrovskiy filial instituta avtomatiki)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 8, 1966, 86

TOPIC TAGS: potentiometer, electric measuring instrument

ABSTRACT: This Author Certificate presents a potentiometer-integrator containing an electronic potentiometer. The design provides for recording of both the current value of the parameter and its average value over a fixed time interval on a single plot. A secondary slide wire is connected to the measuring circuit of the potentiometer (see Fig. 1). The sliding arm of this secondary slide wire is connected through a kinematic coupling to a ratchet. It is also connected by a switch for periodically cutting off the sliding arm of the main slide wire at

Card 1/2 UDC: 681.14

L 05096-67

ACC NR: AP6013291

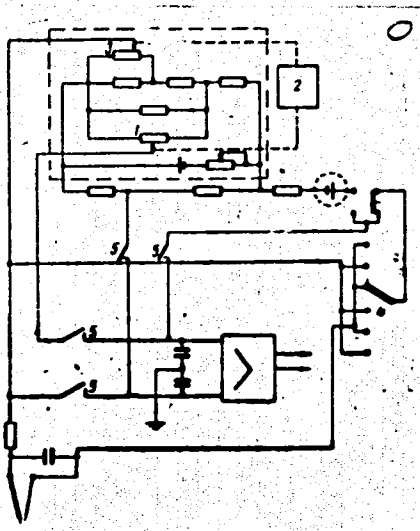

Fig. 1. 1 - secondary slide wire;
2 - kinematic coupling with the ratchet;
3 - main slide wire; 4 - switch;
5 - relay contacts

the reference position by short-circuiting the amplifier input. In this way the sliding arm of the secondary slide wire is periodically shifted to the value proportional to the position of the sliding arm of the main slide wire. In doing this the summation and storage of the average value of the input parameter is accomplished. Orig. art. has: 1 figure.

Card 2/2 SUB CODE: 09/ SUBM DATE: 21Mar64 vmb

RABOTIN, A. N.

Chistovaia obrabotka detalei mashin. [Finishing machine parts]. Moskva, Masgiz, 1952. 60 p.

SO: Monthly List of Russian Accessions, Vol. 6 No. 12 March 1954.

RABOTIN, A.N.; GORELOV, V.M., inzhener.

[Accuracy in the machining of machine parts] Tochnost' obrabotki detalei mashin. Moskva, Gos.nauch.tekh.izd-vo mashstroi.lit-ry. 1952. 43 p. (Nauch.pop.bibl.rabochego stanochnika, no.9) (MLRA 7:3)
(Machine-shop practice)

RABOTIN, A.N.

KLIMOV, V.I.; RABOTIN, A.N., inzhener; SHUMAYEV, B.K., kandidat tekhnicheskikh nauk, retsenzent.

[Machining of gears] Obrabotka zubchatykh koles. Pod red. A.N.Rabotina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1953. 63 p. (Nauchno-populiarnaia biblioteka rabochego stanochnika, no. 15) (MLRA 7:8)
(Gearing)

RABOTIN, A.N.; GORELOV, V.M., inzhener; DUGINA, N.A., tekhnicheskiy redaktor.

[Precision in machine part finishing] Tochnost' obrabotki detalei mashin. Pod red. V.M.Gorelova. 2-e izd. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 39 p. (Nauchno-populiarnaia biblioteka rabochego stanochnika, no. 20.) [Microfilm](MLRA 7:11)
(Machine-shop practice)

RABOTIN, A.N.; GORELOV, V.M., redaktor.

[Thread cutting] Narezanie rez'by. Pod red. V.M.Gorelova. 2-e izd. Moskva-Sverdlovsk, Mashgiz, 1954. 46 p. (MLRA 7:11D)

RABOTIN, A.N., GORELOV, V.M., inzhener, redaktor; DUGINA, N.A., tekhnicheskiy redaktor

[Cutting screw threads] Narezanie rez'by. Pod red. V.M.Gorelova. 2-e izd. Moskva, Gos. nauchno-tekhnicheskoe izd-vo mashinostroitel'noi i sudostroitel'noi lit-ry, 1954. 44 p. (Nauchno-populiarnaia biblioteka rabochego stanochnika, no.17) (MLRA 8:2)
(Screw cutting)

RABOTIN, A.N.; KURAMZHIN, A.V., inzhener, retsenzent; GORELOV, V.M., inzhener, redaktor; DUGINA, N.A., tekhnicheskiy redaktor.

[Finishing machine parts] Chistovaia obrabotka detalei mashin. Pod red. V.M.Gorelova. 2-e izd. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 56 p. (Nauchno populiarnaia biblioteka rabochego stanochnika, no.9). (MLRA 8:5)
(Metals--Finishing)

RABOTIN, Aleksandr Nikolayevich; GORELOVA, V.M., inzhener, redaktor; DUGINA, N.A., tekhnicheskiy redaktor.

[Counterboring and reaming] Zenkerovanie i razvertyvanie. Pod red. V.M.Gorelova. Moskva, Ges.nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1955. 36 p.(Nauchno-populiarnaia biblioteka rabochego stanochnika, no.18). (MLRA 9:6)
(Reamers) (Turning)

25(1,2) PHASE I BOOK EXPLOITATION SOV/2855

Rabotin, Aleksandr Nikolayevich

Tochnost' obrabotki detaley mashin (Accuracy in Machining Machine Elements) 3d ed. Moscow, Mashgiz, 1959. 41 p. (Series: Nauchno-populyarnaya biblioteka rabochego stanochnika, vyp. 21) 8,500 copies printed.

Ed.: V.M. Gorelov, Engineer; Reviewer: M.L. Shakhray, Professor; Tech. Ed.: N.A. Dugina; Exec. Ed. (Ural-Siberian Division, Mashgiz): M.A. Bezukladnikov, Engineer.

PURPOSE: This booklet is intended for technical personnel concerned with the accuracy of machined parts.

COVERAGE: The book contains a simplified description of the causes of inaccuracies in machining machine elements. Basic concepts of part interchangeability, fits and tolerances, classes of accuracy, and methods of measurement are discussed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

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Accuracy in Machining Machine Elements SOV/2855

AVAILABLE: Library of Congress (TI1160. R27 1959)

Card 2/2

GO/gmp
1-15-60

ROZIN, Aleksandr Iosifovich; FEDOROV, V.N., inzh., retsenzent; KLIMOV, V.I., inzh., retsenzent; KUKLIN, L.G., kand.tekhn.nauk; retsenzent; RABOTIN, A.N., inzh., retsenzent; SHABASHOV, S.P., kand. tekhn.nauk, retsenzent; UVAROVA, A.F., tekhn.red.; DUGINA, N.A., tekhn.red.

[Operator of machines for manufacturing metal-cutting tools] Slesar' - instrumental'shchik. Izd.2., perer. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 247 p. (MIRA 13:2)

(Machine-shop practice)

RABOTIN, Aleksandr Nikolayevich; GORELOV, V.M., inzh., red.; DUGINA, N.A., tekhn.red.

[Counterboring and reaming] Zenkerovanie i razvertyvanie. Pod red. V.M.Gorelova. Izd.2. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 37 p. (Nauchno-populiarnaia biblioteka rabochego-stanochnika, no.19). (MIRA 13:4)
(Drilling and boring)

RABOTIN, Aleksandr Nikolayevich; SHAKHRAY, M.L., prof., retsenzent; GORELOV, V.M., inzh., red.; DUGINA, N.A., tekhn.red.

[Precision in the tooling of machine parts] Tochnost' obrabotki detalei mashin. Pod red. V.M.Gorelova. Izd.3. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 41 p. (Nauchno-populiarnaia biblioteka rabochego stanochnika, no.21) (MIRA 12:7)

(Machinery)

KOZIN, B.G.; TRET'YAKOV, V.B.; RABOTIN, A.N., inzh., retsenzent; BELINICHER, I.Sh., kand. tekhn. nauk, red.; GARANKINA, S.P., red.izd-va; DEMKINA, N.F., tekhn. red.

[Screw-thread machining; handbook] Rez'boobrabotka; spravochnik. Moskva, Mashgiz, 1963. 100 p. (MIRA 17:2)

ZAGURSKIY, Vitaliy Ivanovich; RABOTIN, A.V., inzh., retsenzent; SHABASHOV, S.P., kand.tekhn.nauk, red.; DUGINA, N.A., tekhn.red.

[Advanced methods for shaping screw threads] Progressivnye sposoby obrabotki rez'by. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1960. 163 p. (MIRA 14:2)
(Screw cutting)

RABOTINA, Ye.P., kand.med.nauk (Leningrad)

Clinical aspects and treatment of acute interstitial pneumonia.
Klin.med. 35 no.12:51-55 D '57. (MIRA 11:2)

1. Iz leningradskoy bol'nitsy imeni Sverdlova (glavnyy vrach V.G.Yermolayev)
(PNEUMONIA, PRIMARY ATYPICAL
clin. manifest. & ther. (Rus))

RABOTINA, Ye.P., kand. med. nauk

Bronchial changes in focal pulmonary tuberculosis. Prob. tub. no.1:46-50 '65. (MIRA 18:12)

1. Leningradskaya bol'nitsa imeni Ya.M. Sverdlova (glavnyy vrach A.N. Shakunov).

14(5) SOV/20-126-2-32/64

AUTHORS: Melik-Gaykazyan, V. I., Baychenko, A. A., Rabotkin, V. L., Gorban', A. N.

TITLE: Investigation of the Mechanism of the Action of Non-Polar Reagents in the Flotation of Coal (Issledovaniye mekhanizma deystviya nepolyarnykh reagentov pri flotatsii uglya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 2, pp 341 - 343 (USSR)

ABSTRACT: One must not generalize the methods which serve for the estimation of the reagents distribution on the surface of mineral particles. There are two possibilities: a) The reagents chemically interact with the surfaces and are absorbed as single molecules, b) the reagents are deposited as drops - this happens on coal particles. The rules pertaining to case a) must not be applied to case b). This is explained by the fact that the drops of non-polar flotation reagents are less firmly fixed on the surface of non-polar particles. For many reasons the tests of other researchers (Refs 1-5), are not very convincing in their applicability to small coal. Therefore the authors have agreed to use the luminescent pro-

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Investigation of the Mechanism of the Action of Non-Polar Reagents in the Flotation of Coal

SOV/2o-126-2-32/64

perties of petroleum to estimate the distribution of the reagent on coal-particles. Figure 1 shows micro-pictures of particles, which lie 3-5 mm under the water-surface. By contrasting the micro-pictures a and b (Fig 1) it becomes obvious that petroleum in strong concentrations is in visual light practically undetectable under water (Fig 2). The formation mechanism of a "hem" around a particle is explained. Figure 1 b-d shows pictures taken with ultra-violet light with and without a small infusion of visual light (Fig 1 g). From the results obtained, the authors conclude that by the use of luminescence a few details on the distribution of a non-polar reagent on the surface of coal particles, under the reaction of outside influences may relatively simply be observed. Moreover the conditions governing this case have a very close connection to those met with in flotation. There are 2 figures and 7 references, 6 of which are Soviet.

ASSOCIATION: Tomskiy politekhnicheskiy institut (Tomsk Polytechnic Institute)
PRESENTED: February 2, 1959, by P. A. Rebinder, Academician
SUBMITTED: January 29, 1959

Card 2/2

S/051/60/008/02/031/036
E201/E391

AUTHORS: Rabotkin, V.L. and Sokolov, V.A.

TITLE: "Anisotropy" of a Brightness Wave from a Polarized Electroluminescent Cell

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 276 - 277 (USSR)

ABSTRACT: The authors describe properties of a polarized electroluminescent cell prepared as follows. A ZnS-Cu, Pb phosphor was suspended in molten paraffin wax between two electrodes, one of which served as a metal base and the other was made of conducting glass. Paraffin wax was allowed to solidify with 2 000 V DC across the electrodes. A cell prepared in this way was excited with periodic unipolar pulses. If the polarity of the exciting field coincided with the field used to prepare the cell, then the brightness (luminance) wave had the form shown in Figure 1, i.e. the two peaks in each period were of approximately the same height. When the exciting pulse polarity was opposite to that of

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S/051/60/008/02/031/036
E201/E391

"Anisotropy" of a Brightness Wave from a Polarized Electroluminescent Cell

the field used to prepare the cell, the second of the brightness (luminance) peaks became sharper and higher than the first (Figure 2). This effect was observed both in a freshly prepared cell and several days after preparation. There are 2 figures.

SUBMITTED: July 18, 1959

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S/048/61/025/004/031/048
B117/B212

24.3500

AUTHORS: Rabotkin, V. L. and Sokolov, V. A.

TITLE: Investigation of the electroluminescence of various phosphors excited with unipolar pulses of the electric field

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, v. 25, no. 4, 1961, 524-526

TEXT: The present paper was read at the 9th Conference on Luminescence (crystal phosphors). The authors have investigated the form of the brightness wave of the luminescence belonging to ZnS-Mn and ZnS-Cu,Pb phosphors which have been excited by a unipolar pulse that is a section of the sine wave and also by direct current. The luminescence has been recorded on an oscillograph of the type МПО-2 (MPO-2) with the help of a photomultiplier of the type ФЭУ-19М (FEU-19M) and via a direct-coupled amplifier. The ZnS-Mn phosphors have been obtained by annealing a compound consisting of ZnS, "pure for luminophors", and a corresponding amount of $MnCl_2$ in glass ampoules at 1200°C and 30 minutes. Metallic manganese had a concentration

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Investigation of the...

of 10^{-3}, 10^{-2}, 10^{-1} g/g ZnS in this compound. If excitation was brought about by ultraviolet rays (λ = 3600 A) the first phosphorus showed a light blue band, the second a light blue and orange, and the third an intense orange band in the luminescence spectrum. If excitation was brought about by an electric field, orange bands would occur only and the luminosity was especially bright near the cathode. The second maximum can be referred to the polarization effect of the dielectric which had been put during the tests between cathode and castor oil and the suspended luminophor in it. Using cellophane nearly extinguished the luminescence completely. If mica is used the second polarization maximum will be very faint. The form of the brightness wave for ZnS-Cu,Pb phosphorus is similar to that of ZnS-Mn with an intermediate layer of mica. Insertion of various solid dielectrics will hardly change it but any temperature variation is accompanied with a great change. The presence of two smaller maxima is very characteristic and they will disappear if the temperature is raised and the duty ratio changed by keeping the parameters of the exciting pulse unchanged. Removing the solid dielectric and changing the spacing between electrodes or changing the specific volume of the luminophor compared to the dielectric will change the ratio between the magnitudes of the principal

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maxima. The same will also occur if the castor oil is replaced by a dielectric having a lower viscosity and the amplitude of the exciting pulse is increased. The investigations allow the following conclusions: 1) The excitation mechanism of the luminescence of ZnS-Mn and ZnS-Cu,Pb phosphors differs, and is a function of the variable dielectric properties of the phosphorus grain; 2) the form of the brightness wave of ZnS-Cu,Pb phosphorus is a function of the grain quality to form "bridges" in the field and also keep them after the field has been removed. These "bridges" will extend from electrode to electrode and warrant the conductivity of the cell and its ability to luminesce in a steady field. The authors thank Z. A. Trapeznikova for supplying them with the ZnS-Cu,Pb luminophor. [Abstracter's note: Essentially complete translation]. There are 2 figures.

h2197

S/051/62/013/004/017/023
E039/E491

24350

AUTHOR: Rabotkin, V.L.

TITLE: The electroluminescence of ZnS-Cu,Pb microcrystals

PERIODICAL: Optika i spektroskopiya, v.13, no.4, 1962, 601-603

TEXT: The phosphor is contained in a cell between aluminium foil electrodes and arranged so that the electroluminescence can be observed and photographed with the aid of a microscope. The crystals are about 40 to 60 μ in size and are of different shapes. They all radiate light under the action of the field giving the appearance of luminous streaks, points, curved lines or even closed circles. The phosphor radiates in the blue and green bands, which appear under different conditions of excitation. Separate crystals radiate only blue or only green in the range of excitation frequency from 500 to 20000 c/s. As the frequency is changed the luminescence from one crystal will be quenched and in another it will be excited. Microphotographs are presented showing the form of the light emission and the influence of temperature. When the phosphor crystals are exposed to ultraviolet light λ = 3650 Å simultaneously with applying the

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L 10878-65 EWT(1)/EWT(m)/EEC(b)-2/EWP(b)/EWP(t) IJP(c)/SSD/ASD(m)-3/ESD(t)/APGC(b)/ASD(a)-5/AFWL/AFMDC/ESD(gs)/AS(mp)-2/RAEM(e)/AFTC(a) JD
ACCESSION NR: AR4046537 S/0058/64/000/008/D051/D051

SOURCE: Ref. zh. Fizika, Abs. 8D380

B

AUTHOR: Rabotkin, V. L.

TITLE: Influence of ultraviolet irradiation on the electroluminescence of zinc sulfide phosphors

CITED SOURCE: Mezhvuz. sb. tr. Zap.-Sib. sovet po koordinatsii i planir. nauchno-issled. rabot po tekhn. i yestestv. naukam, 1963, vy*p. 2, 157-158

TOPIC TAGS: zinc sulfide optic material, ultraviolet irradiation, electroluminescence, luminor, luminescence center, impact ionization

TRANSLATION: The effect of ultraviolet light (λ = 3,650 Å) on the current waveform and on the electroluminescence brightness of ZnS-Mn, ZnS-Cu, and ZnS-Cu, Pb was investigated. No noticeable change in

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L 10878-65
ACCESSION NR: AR4046537

the brightness waves and in the current waves was observed in this case. It is concluded on this basis that the excitation of the glow centers in luminescence by impact ionization has a low probability.
N. Maksimova.

SUB CODE: OP, SS ENCL: 00

Card 2/2

L 9854-63 EWP(q)/EWT(l)/EWT(m)/BDS--AFFTC/ASD/ESD-3/SSD--WH

ACCESSION NR: AP3000592 S/0051/63/014/005/0729/0731

58

AUTHOR: Rabotkin, V. L.

TITLE: Concerning the influence of the dielectric material filling the electroluminescent cell on the electroluminescence brightness

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 729-731

TOPIC TAGS: electroluminescence, crystal phosphors, ZnS-Mn

ABSTRACT: In an earlier paper (Rabotkin, V. L. and Sokolov, V. A., Izv. AN SSR, Ser.fiz., 25, 524, 1961) it was pointed out that the qualityof the dielectric filling the electroluminescent capacitor affects the shape of the brightness waves and the light response of the element. In the present study there was used the same phosphor, ZnS:Mn, which has a simple brightness wave and appreciableconductivity; the dielectrics were castor oil (to prevent discharges in air) and liners of mica and cellophane. Mica has good dielectric properties; cellophane poor ones. Accordingly, the cells were classified as "lossless" and "lossy". Lossless cells exhibit brightness waves with two

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L 9854-63
ACCESSION NR: AP3000592

peaks, the heights of which at room temperature depend on the thickness of the phosphor-in-oil layer. Lossy cells have only one brightness peak, which is shifted to the trailing edge of the voltage pulse. A lossy cell connected in series with a mica capacitor behaves like a lossless cell. These and other experiments show that it is essential to take into account the properties of the dielectric used as the filler or suspension in investigating electroluminescence of crystal phosphor powders. It is suggested that the proposed method of two capacitors in series can be employed for determining the influence of the dielectric. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 18Oct62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: 004 NR REF SOV: 002 OTHER:

Card 2/2

L 33197-66 EWT(1)/EWT(m)/EWP(j) IJP(c) RM
ACC NR: AR6016213 SOURCE CODE: UR/0058/65/000/011/D061/D061

AUTHOR: Rabotkin, V. L.; Grebennikova, A. A.; Vetrova, Ye. M.

TITLE: New copperless electroluminors based on zinc sulfide

SOURCE: Ref. zh. Fizika, Abs. 11D469

REF SOURCE: Sb. Proboy dielektrikov i poluprovodnikov, M.-L., Energiya, 1964, 356-359

TOPIC TAGS: electroluminescence, luminor, zinc compound optic material, transition element, light excitation, complex molecule

ABSTRACT: The authors note that neither the existing theories of electroluminescence (EL) nor the treatment of EL within the framework of the band scheme is satisfactory. The aging of luminors in an electric field is considered, especially at increased temperature. It is assumed that besides the non-inertial excitation process there exist also slow processess, connected for example with motions of the ions. A new mechanism of excitation is proposed, connected with the destruction of the complexes produced by activator ions of variable valence with cation vacancies, with ions of the co-activator flux residues, etc. The complexes can be broken up either by the field, by heat, or by both. It is stated that the previously established laws of EL do not contradict the proposed model. To confirm the presented considerations, a ZnS-Cr luminor was synthesized without Cu. It was assumed that the interaction of the transition metal (co-activator) should contribute to the formation of complexes,

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ACC NR: AR6016213 O

without contributing to the development of excitation mechanisms within the framework of the existing theories. The obtained luminor had blue EL at a Cr concentration 5×10^{-4} - 10^{-5} g/g. A similar luminor without Cr has no EL. The experiment is regarded as proof of the possibility of existence of an ion-hole excitation mechanism of electroluminors by a field, and of the special role played by the transition metals as activators and co-activators in EL of ZnS. Bibliography, 12 titles. A. Burlakov. [Translation of abstract]

SUB CODE: 20 /

Card 2/2 pla

ACC NR: AP7004988 SOURCE CODE: UR/0048/66/030/009/1511/1513

AUTHOR: Rabotkin,V.L.; Stroganova,T.N.

ORG: Tomsk Polytechnic Institute im.S.M.Kirov (Tomskiy politekhnicheskiy institut)

TITLE: Electroluminescence of BaS base phosphors /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1511-1513

TOPIC TAGS: electroluminescence, photoluminescence, roentgenoluminescence, barium compound,sulfide, copper, bismuth, manganese

ABSTRACT: The authors investigated the electro-, photo- and roentgenoluminescence of copper, bismuth and manganese activated barium sulfide phosphors. The phosphors were prepared by the Lenard-Zhirov technique: a mixture of BaS, the activator, a flux, and reducing agent was heated for 30 minutes at 1200° C with limited access of air. X-ray studies showed that the phosphors had the cubic structure of the BaS lattice with traces of a second phase consisting of $BaSO_4$ and the sulfide of the activator. The cubic BaS structure was obtained, however, only when the initial mix included a flux and was heated above 900° C. The activator concentrations were varied over the range from 10^{-4} to 10 percent by weight. The ac and dc electroluminescence spectra, the photoluminescence spectrum excited at 3660 Å, and the roentgenoluminescence

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ACC NR: AP7004988

spectrum excited at 1.79 Å were recorded for each specimen. For most of the specimens the electro-, photo- and roentgenoluminescence spectra were nearly identical. The luminescence properties of the BaS phosphors were found to be rather similar to those of the well-investigated ZnS phosphors. The BaS phosphors, however, require a higher voltage for excitation of electroluminescence than do the ZnS phosphors, and the electroluminescence brightness of the BaS:Mn phosphors decreased with increasing frequency. Orig. art. has: 1 figure and 1 table.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 001 OTH REF: 001

Card 2/2

24.3500

27747
S/058/61/000/007/031/086
A001/A101

AUTHORS: Litvinova, P.S., Rabotkina, L.R., Razmazanov, P.Ye.

TITLE: Investigation of initial stages of electroluminescence rise in ZnS-Cu, Al phosphor

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 155, abstract 7V422 ("Dokl. Mezhvuz. nauchn. konferentsii po spektroskopii i spektr. analizu". Tomsk, Tomskiy-un-t, 1960, 112 - 113)

TEXT: The authors investigated the rise of electroluminescence of Zns-Cu, Al phosphor excited by a sinusoidal electric field of various frequencies at 800 v within the temperature range 113-430°C. It is established that in the entire range of temperatures and frequencies, the variable component of electroluminescence rises during 7 - 8 periods, and the constant component considerably more slowly. Regularities in the rise can be explained from the viewpoint of the theory of impact ionization of luminescence centers.

A. Burlakov

[Abstracter's note: Complete translation]

Card 1/1

30612
S/058/61/000/008/013/044
A058/A101

24.3410

AUTHORS: Belyakina, R. V., Litvinova, P. S., Rabotkina, L. R., Razmazanov, P. Ye.

TITLE: Investigation of the thermofluorescence of a ZnS-Cu,Al phosphor incident to excitation by an AC field

PERIODICAL: Referativnyy zhurnal, Fizika, no. 8, 1961, 150-151, abstract 8V406 (Dokl. Mezhvuz. nauchn. konferentsii po spektroskopii i spektr. analizu. Tomsk. Tomskiy un-t", 1960, 114-115)

TEXT: The investigated ZnS-Cu,Al electroluminescent phosphor was excited by UV light and a 40-20000 c, 50-900 v sinusoidal voltage. Incident to thermofluorescence of the phosphor after UV excitation there were observed two maxima at 138° and 150°K, respectively, while only one maximum was observed after excitation by the electric field. In the latter case the curves are shifted to the high temperature side. Increase of the excitation voltage and frequency leads to an increase of the total amount of stored light. Determination of

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Investigation of the thermofluorescence ...

the depth of localization levels leads to a value of 0.18 - 0.19 ev for weak fields; in strong fields the depth of the levels differs for different voltages and frequencies.

A. Burlakov

[Abstracter's note: Complete translation]

Card 2/2

LITVINOVA, P.S.; RABOTKINA, L.R.; RAMAZANOV, P.Ye.

Investigation of the initial stages of the electroluminescence of ZnS-Cu, Al phosphor. Opt. i spektr. 11 no.2:264-265 Ag '61. (MIRA 14:8)

(Zinc sulfide)
(Phosphors)

ACCESSION NR: AP3004055 S/0139/63/000/003/0182/0186

AUTHORS: Rabotkina, L. R.; Litvinova, P. S.

TITLE: Effect of ultraviolet irradiation on temperature dependence of electroluminescent ZnS-Cu, Al phosphor

SOURCE: IVUZ. Fizika, no. 3, 1963, 182-186

TOPIC TAGS: ultraviolet, irradiation, electroluminescent, phosphor luminescence, quenching

ABSTRACT: An investigation has been made of constant and variable composition luminescence of ZnS-Cu, Al under electrical excitation and ultraviolet irradiation. The luminescence brightness of the phosphor as a function of temperature has been determined under separate ultraviolet irradiation and separate electro-excitation. Comparing the temperature dependence of constant composition luminescence to variable composition luminescence, the former shows a gradual decrease at -20C, whereas the latter goes through a double maximum after -20C. A plot of $I_{euv}/(I_e + I_{uv})$ versus temperature, where I_{euv} - luminescent intensity under simultaneous electrical and ultraviolet (uv) excitation, I_e - intensity under electrical

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ACCESSION NR: AP3004055

excitation alone, I_{uv} - intensity under uv irradiation alone, shown significant quenching at low temperatures (between -150C to -120C). Orig. art. has: 4 figures.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete im. V. V. Kuybyshava (Siberian Institute of Physical Technology, Tomsk State University)

SUBMITTED: 21Feb62 DATE ACQ: 15Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 002

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L 2823-66 EWT(1)/EWT(m)/EWP(t)/EWP(b) LJP(c) JD

ACCESSION NR: AP5016176 UR/0051/65/018/006/1031/1034
535.376

AUTHORS: Rabotkina, L. R.; Ramazanov, P. Ye. 44,55 42 13

TITLE: Buildup of electroluminescence of the phosphor ZnS-Cu,Al

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 1031-1034

TOPIC TAGS: luminor, zinc compound, optic material, electroluminescence

ABSTRACT: The purpose of the investigation was to obtain information on the capture centers of electroluminors and on their role in the mechanism of electroluminescence by determining the buildup of electroluminescence brightness waves in an unexcited phosphor over a wide temperature and time interval. A thin layer of phosphor, 25 μ thick, was excited with an alternating electric field of rectangular waveform, with amplitude 100 V and frequency 0.01--100 cps. The luminescence buildup was recorded with an oscilloscope during the first hundred cycles of the field, and then following 20 and 40 seconds and

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ACCESSION NR: AP5016176

1 and 3 minutes after the start of the excitation. The results show that the buildup of electroluminescence takes place in two stages. The first terminates within the first 7--10 cycles, and the second proceeds at a slower rate. This buildup by stages is related to the existence of several groups of localization levels in the phosphor. The complicated energy spectrum of the capture levels participating in the electroluminescence also gives rise to an irregular structure on the temperature dependence of the amplitude of the brightness waves, plotted at different instants of luminescence buildup. Orig. art. has: 3 figures

ASSOCIATION: None

SUBMITTED: 29Apr64 ENCL: 00 SUB CODE: OP

NR REF SOV: 003 OTHER: 000

BVK

Cord 2/2

L 26714-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6011558 SOURCE CODE: UR/0051/66/020/003/0467/0471

AUTHORS: Rabotkina, L. R.; Ramazanov, P. Ye.

ORG: none

TITLE: Low frequency electroluminescence of the phosphor ZnS-Cu,Al

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 467-471

TOPIC TAGS: zinc sulfide, optic material, electroluminescence, temperature dependence, frequency characteristic, carrier lifetime, phosphor

ABSTRACT: The authors investigated the temperature and frequency dependences of the amplitudes of the brightness waves of the phosphor by exciting the latter in the frequency range from 0.01 to 100 cps in two capacitors with different dielectrics. Various waveforms of the exciting voltage were used. Under these conditions the phosphor had practically only one green emission band, which was the only one investigated. The form of the brightness wave of the electroluminescence was found to be dependent on the waveform of the exciting voltage. A square wave gave rise to maxima corresponding to the voltage reversal. Sinusoidal or saw-tooth excitation resulted in more complicated brightness waves. The character of the temperature dependence as a function of the frequency

Card 1/2 UDC: 535.376

L 26714-66

ACC NR: AP6011558

(and also of the temperature variation of the frequency dependence) was found to be on the whole the same as for the average electroluminescence brightness at higher temperatures. Differences were observed, especially with respect to secondary peaks, in the two capacitors used for the excitation, in which the phosphor was differently imbedded in the dielectric. The results are interpreted on the basis of an assumption that all the changes occurring in the phosphor, as well as the relaxation of the frequency dependence during the excitation of the glow, are connected with the lifetime of the carriers at different types of traps. The authors thank M. P. Furman and G. G. Vergun for preparing the enamel electroluminescent capacitors, and also B. V. Nuvar'yeva for a discussion of the results. Orig. art. has: 5 figures and 1 formula.

SUB CODE: 20/ SUBM DATE: 14Dec64/ ORIG REF: 004/ OTH REF: 002

Card 2/2

[illegible]IKOV, A.I., Cand Tech Sci -- (diss) "Experimental study of the Concentration of [illegible] water-saturated [pulp] [illegible] by means of Filtration Process." Len, 1959. 13 pp (Min of Higher Education USSR. Len Polytech Inst im S.M. Kirov), 160 copies (KL,39-59, 104)

-25-

RABOTNIKOV, A. I.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

234. G. Ya. Pakhomitsmen (Moscow): Large deflections of reinforced shallow cylindrical shells.

235. V. P. Rabinovich (Moscow), Yu. N. Rabotnov (Novosibirsk): Creep strength of turbine discs.

236. A. I. Rabotnikov (Odessa): Flow and consolidation of sands under the action of seepage forces.

237. Yu. N. Rabotnov (Novosibirsk): Creep.

238. R. M. Rappoport (Leningrad): Some problems in the theory of elasticity concerning the design of rock foundations.

239. R. M. Rappoport (Leningrad): Some difference equations of structural mechanics.

240. Kh. A. Rakhmatulin (Moscow): On the propagation of elasti-plastic waves in a half-space.

241. Kh. A. Rakhmatulin (Moscow): Propagation of disturbances in continuous media.

242. V. V. Ratnov (Sverdlovsk): Earth pressure on flexible retaining walls.

243. V. L. Rvachev (Berdiansk): On the pressure of a punch on an elastic half-space.

244. P. A. Rebinder (Moscow): Types of high molecular and disperse structures and their characteristic mechanical properties.

245. G. Rozsa (Budapest): On the influence of the maximum principal stress on the fatigue strength.

246. V. G. Rekach (Moscow): The application of the method of homogeneous solutions to some two-dimensional problems of the theory of elasticity.

247. A. D. Rozenshtein (Moscow): Some three-dimensional problems of limit equilibrium in rigid, plastic solids.

248. M. I. Rozovskii (Dnepropetrovsk): On the application of the Volterra-Rabotnov principle to Arutiunian's creep theory of concrete.

249. M. I. Rozovskii (Dnepropetrovsk): Some problems of the integral operator theory of creep.

250. A. G. Rozovtsev (Leningrad): Design of wide-flange beams for bending and temperature effects.

251. B. D. Lapegin (Leningrad): The experimental study of the deformations of rock foundations.

252. O. M. Sapondzhian (Erevan): The determination of the deflections of a simply supported plate by the method of successive approximations.

253. V. S. Sarkisian (Erevan): Torsion of anisotropic prismatic bars of elongated cross section.

254. V. A. Sveklo (Kaliningrad): The impact of a double punch on a half plane.

255. I. V. Svirskii (Kazan): The use of similarity considerations for improving the convergence in the design of shells by successive approximations.

256. A. M. Sedrakov (Leningrad): Stability of cellular structures built on soft ground.

257. R. V. Semenov (Moscow): Bending of thin hinge-jointed slabs supported by an elastic layer of finite thickness.

258. B. R. Seth (Kharagpur): Finite bending of plates into cylindrical shells.

259. A. P. Sinitsin (Moscow): A beam on a two-layer half space beyond the elastic limit.

260. V. F. Sinitsin (Leningrad): Some problems of creep and consolidation of saturated soils.

261. M. G. Slobodianskii (Moscow): Determination of the natural frequencies of plates of constant and variable thickness.

262. N. K. Snitko (Leningrad): Dynamic problems of the design of retaining walls and soil foundations under impact loads.

263. N. K. Snitko (Leningrad): Solution of some dynamic problems of stringer structures by the method of initial parameters.

264. V. V. Sokolovskii (Moscow): On some problems of the theory of plasticity and soil mechanics.

265. M. A. Sapozhnikov (Petrozavodsk): On a class of solutions of boundary value problems in plasticity.

266. L. S. Sorokin (Moscow): The effect of internal friction on the stresses in beams and plates under impulsive loading.

267. V. I. Spiridonova (Sverdlovsk): Stresses in ellipsoidal shells subjected to internal pressure.

RABOTNIKOV, A.S.

Comparison of different signaling systems employed in the operation of wharves. Koks. i khim. no. 3:31-35 '61. (MIRA 14:4)

1. Giprokoks.
(Coke industry—Equipment and supplies)

RABOTNIKOV, A.S.

Coke production machinery operated on the a.c.current. Koks i khim. no.12:53-56 '62. (MIRA 16:1)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy koksokhimicheskoy promyshlennosti.
(Coke industry--Equipment and supplies)
(Electric machinery--Alternating current)

RABOTNIKOV, T.A. doktor biologicheskikh nauk.

Work of Professor V.I. Evseev on the improvement and utilization of steppe forage lands. Zhivotnovodstvo 20 no.8:90-92 Ag '58. (MIRA 11:10)

(Evseev, Veniamin Irinarkhovich, 1905-1957)
(Pastures and meadows)

BUYAKOV, G.N., BERDICHEVSKIY, D.A., RABOTNIKOV, V.S., (Kirovograd)

Case of rare anomaly of cardiact development. Vrach.delo no.6:633 Jn '58 (MIRA 11:7)

(HEART--ABNORMITIES AND DEFORMITIES)

BEREZOV, Yu.Ye., doktor med. nauk; POTEMKINA, Ye.V., kand. med. nauk; POKROVSKIY, A.V. kand. med. nauk; RABOTNIKOV, V.S., kand. med. nauk

Surgical treatment of fistula between the innominate artery and the vein. Khirurgiia no.1:43-46 '63. (MIRA 17:5)

1. Iz otdeleniya khirurgii sosudov (zav. - doktor med. nauk Yu.Ye. Berezov) Instituta serdechno-sosudistoy khirurgii (dir. - prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev) AMN SSSR.

PETROSYAN, Yu.S.; ANANIKYAN, P.P.; RABOTNIKOV, V.S.

Evaluation of the methods of contrast examination of the aorta. Grudn. khir. 5 no.4:45-51 Jl-Ag'63 (MIRA 17:1)

1. Iz otdeleniya sosudistoy khirurgii (zav. - prof. Yu.Ye. Berezov) i rentgenologicheskogo otdeleniya (zav. - dotsent M.A. Ivanitskaya) Instituta serdechno-sosudistoy khirurgii (dir. - prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N.Bakulev) AMN SSSR, Adres avtorov: Moskva V-49, Leninskiy prosp., d. 8, Institut serdechno-sosudistoy khirurgii AMN SSSR.

BEREZOV, Yu.Ye.; DOBROVA, N.B.; POKROVSKIY, A.V.; POTEMKINA, Ye.V.; RABOTNIKOV, V.S.

Aortic surgery. Vest. AMN SSSR 18 no.9:26-32 '63. (MIRA 17:9)

1. Institut serdechno-sosudistoy khirurgii AMN SSSR.

BEREZOV, Yu.Ye., doktor med. nauk; RABOTNIKOV, V.S., kand.med.nauk (Moskva)

Surgical treatment of vascular diseases. Med. sestra 22 no.11:
28-33 N'63 (MIRA 16:12)

BEREZOV, Yu.Ye., doktor med. nauk; POKROVSKIY, A.V., kand. med. nauk; RABOTNIKOV, V.S., kand. med. nauk

Renal complications in surgery on the abdominal aorta. Khirurgiia 39 no.11:87-94 N '63. (MIRA 17:11)

1. Iz otdeleniya khirurgii sosudov (zav. - doktor med. nauk Yu. Ye. Berezov) Instituta serdechno-sosudistoy khirurgii (dir. - prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev) AMN SSSR.

BEREZOV, Yu.Ye., prof., red.; KOLESNIKOV, S.A., red.; ROVNOV, A.S., red.; POKROVSKIY, A.V., red.; RABOTNIKOV, V.S., red.; STOLYPIN, P.G., red.; TSENTSIPER, M.B., red.

[Surgery on the aorta and the main large vessels] Khirurgiia aorty i krupnykh magistral'nykh sosudov. Moskva, Meditsina, 1965. 254 p. (MIRA 18:7)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut serdechno-sosudistoy khirurgii.

BEREZOV, Yu.Ye., prof.; POKROVSKIY, A.V.; POTEMKINA, Ye.V.; RABOTNIKOV, V.S.

Diagnosis of occlusive lesions of the branches of the aortic arch. Sov. med. 28 no.3:15-21 Mr '65. (MIRA 18:10)

1. Otdeleniye khirurgii sosudov (zav. - prof. Yu.Ye.Berezov) Instituta serdechno-sosudistoy khirurgii AMN SSSR (direktor - zasluzhennyy deyatel' nauki RSFSR - prof. S.A. Kolesnikov), Moskva.

RATNER, Georgiy L'vovich; RABOTNIKOV, V.S., red.

[Restorative surgery on the aorta and main vessels] Vosstanovitel'naia khirurgiia aorty i magistral'nykh sosudov. Moskva, Meditsina, 1965. 304 p. (MIRA 19:1)

RABOTNIKOV, V.Sh., student 6-go kursa

Clinical importance of the prothrombin level of blood in testing liver function. Vrach. delo no.2:199-200 F '56. (MLRA 9:7)

1. Gospital'naya khirurgicheskaya klinika lechebnogo fakul'teta (zaveduyushchiy professor A.G.Sosnovskiy) Odesskogo meditsinskogo instituta

(BLOOD--EXAMINATION) (LIVER--DISEASES)
(PROTHROMBIN)

KARAMAN, N.V.; RABOTNIKOV, V.Sh.

Analysis of agricultural accidents in Berezno District, Rovno Province from 1931 to 1955. Nov.khir.arkh. no.6:137 N-D '58. (MIRA 12:3)

1. Khirurgicheskoye otdeleniye Bereznovskoy rayonnoy bol'nitsy.
(BEREZNO DISTRICT--AGRICULTURE--ACCIDENTS)

ZHMUR, V.A.; RABOTNIKOV, V.Sh.

Surgical treatment of chronic pancreatitis. Vest. khir. 84 no. 4:33-38 Ap '60. (MIRA 14:1)

(PANCREAS--SURGERY)

ZHMUR, V.A., prof.; RABOTNIKOV, V.Sh.

Chronic pancreatitis and lesions of Vater's ampulla. Vest.khir. 85 no.12:89-95 D '60. (MIRA 14:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki im. S.I. Spasokukotskogo (dir. - prof. A.N. Bakulev) 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova. Adres avtorov: Moskva, Leningradskiy pr., d.8., 1-ya Gradskaya bol'nitsa.
(PANCREAS--SURGERY) (DUODENUM--SURGERY)

RABOTNIKOV, V.Sh., aspirant

Surgical treatment of chronic pancreatitis; survey of the literature. Vest.khir. 85 no.9:138-144 S '60. (MIRA 13:11)

1. Iz fakul'tetskoy khirurgicheskoy kliniki im. S.I. Spasokukotskogo (zav. - akad. A.N. Bakulev) lechebnogo fakul'teta 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova.
(PANCREAS--SURGERY)

RABOTNIKOV, V. Sh., Cand Med Sci -- "Clinic and surgical treatment of chronic pancreatitis." Mos, 1961. (Min of Health RSFSR. Mos Med Stomatol Inst) (KL, 8-61, 264)

RYNEYSKIY, S.V., kand.med.nauk; RABOTNIKOV, V.Sh.

Surgical tactics in thromboembolism of the mesenteric vessels. (MIRA 15:3)
Vest.khir. no.9:113-117 '61.

1. Iz fakul'tetskoy khirurgicheskoy kliniki im. S.I. Spasokukotskogo (dir. - prof. A.N. Bakulev) 2-go Moskovskogo meditsinskogo instituta im. N.I. Pirogova.
(MESENTERY--BLOOD SUPPLY) (EMBOLISM)

RABOTNIKOV, V.Sh.

Stenosis of the common bile duct caused by chronic pancreatitis and its surgical treatment. Sov. med. 25 no.9:23-28 S '61. (MIRA 15:1)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S.I.Spasokukotskogo (dir. - akademik A.N.Bakulev) II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova (dir. - dotsent M.G.Sirotkina).
(PANCREAS--DISEASES) (BILE DUCTS--DISEASES)

SAVEL'YEV, V. S., dotsent; RABOTNIKOV, V. Sh.

New method for treating the pancreatic stump. Khirurgiia 37 no.7: 83-85 Jl '61. (MIRA 15:4)

1. Iz fakul'tetskoy khirurgicheskoy kliniki imeni S. I. Spasokukotskogo (dir. - akad. A. N. Bakulev) II Moskovskogo gosudarstvennogo meditsinskogo instituta im. N. I. Pirogova.

(PANCREAS—SURGERY)

Rabotnikov Yu. L.

AUTHORS Ansel'm A.I., Rabotnikov Yu.L. 57-6-12/36

TITLE On the Influence of Unharmonicity on Vibrations and Waves in a Crystal (A Linear Atomic Chain).
(K voprosu o vliyanii angarmonizma na kolebaniya i volny v kristalle (Lineynaya atomnaya tsepochka) - Russian)

PERIODICAL Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 8, pp 1723 - 1730 (U.S.S.R.)

ABSTRACT With an example of a linear atomic chain the unharmonicity is taken into account by means of consecutive approaches in such a way for the solution of the equations of motion as is the case with nonlinear systems with a degree of freedom. This leads to the development of "overstone"-travelling- and standing waves. First travelling waves in an infinite atomic wave are investigated and the authors show that in this case the solution has the form of a wave with an amplitude fading exponentially in the depth of the crystal. Then the energy- and the impulse flow of travelling waves are investigated. The authors show that the impulse flow in the travelling wave is equal to zero; the mechanic stress developing on this occasion is calculated. A limited linear chain of (N+L)-atoms, where every atoms is in interaction only with its closest neighbour, is investigated and the equations for the mean relative extension of the atomic chain are deduced. By means of a scanning in series of the potential energy of the interaction of two atoms in the state of equilibrium the change of frequency in the case of atomic oscillations in a linear chain on the occasion of chang-

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On the Influence of Unharmonicity on Vibrations and Waves in a Crystal (A Linear Atomic Chain). 57-8-12/36

es of the constant lattice is determined.
(With 1 Slavic reference)

ASSOCIATION Leningrad Institute for Semiconductors of the Academy of Sciences of the USSR.(Institut poluprovodnikov AN SSSR, Leningrad).
SUBMITTED February 18, 1957
AVAILABLE Library of Congress
Card 2/2

84070
S/181/60/002/009/011/036
B004/B056

9.4300 (1035, 1138, 1143)
26.1512

AUTHOR: Rabotnikov, Yu. L.

TITLE: An Investigation of the Vibration of the Tellurium Lattice by Means of Group-theoretical Methods

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2095 - 2108

TEXT: The author intended to derive the relations by means of which a large number of interatomic force constants may be found, and herefrom to determine the vibrational spectrum of the crystal lattice. Proceeding from the experiments published in Refs. 1-3 the frequencies are to be determined as functions of the wave vector. Several equations are taken from the paper by G. H. Begbie and M. Born (Ref. 4). The following relation is written down for the radius vector of the atom in equilibrium: $\vec{r}\begin{pmatrix}l\\k\end{pmatrix} = \vec{r}^{\,l} + \vec{r}^{\,k} = p\vec{a}_1 + q\vec{a}_2 + r\vec{a}_3 + \vec{r}^{\,k}$ (p, q, r are integers, $\vec{a}_1$, $\vec{a}_2$, $\vec{a}_3$ are basis vectors, $\vec{r}^{\,k}$ characterizes the position of the atom in the unit cell). The displacement of the atom from equilibrium is expressed

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by $\vec{u}\binom{l}{k}$. By expanding the potential energy Φ of the lattice in the powers of the displacement and breaking off at the quadratic term, the equation of motion (1) is found: $\ddot{v}_\alpha\binom{l}{k} + \sum_{l'k',\beta} D_{\alpha\beta}\binom{l-l'}{k\ k'} v_\beta\binom{l'}{k'} = 0$. Substituting $\vec{v}\binom{l}{k} = \vec{V}(k) \exp(-i\omega t) \exp\left[i(\vec{q}\vec{r}^{l})\right]$, one finds $\omega^2(\vec{q})V_\alpha(k) - \sum_{k',\beta} D_{\alpha\beta}(\vec{q}_{kk'})V_\beta(k') = 0$ (1a). Here, $D_{\alpha\beta}(\vec{q}_{kk'})$ is the Hermetian form of the matrix. Three unit cells of the tellurium (or selenium) lattice are schematically represented in Fig. 1, The OZ axis is perpendicular to the surface of the figure. The axes U_2, U_2', and U_2'' pass through the atoms 2, 3, 1. On the assumption that $|\vec{a}_1| = |\vec{a}_2| \equiv a$; $|\vec{a}_3| \equiv c$, the symmetry elements in this coordinate system are discussed, and by means of the rotational operators $\hat{T}_{U_2}$, $\hat{T}_\varphi$, $\hat{T}_{-\varphi}$ the matrix $\left\|D_{\alpha\beta}(\vec{q}_{kk'})\right\|$ of the secular equation is expressed by the parameters

Card 2/5

a_{ik} and b_{ik}. For the purpose of obtaining the relations between a_{ik}, b_{ik}, and the frequencies of the lattice vibrations, equation (1a) is written down as follows: $\omega^2(\vec{q})\vec{X}(\vec{q}) = D(\vec{q})\vec{X}(\vec{q})$ (6), where $\vec{X}(\vec{q})$ is represented by nine-dimensional vectors in orthonormal basis. As $\vec{V}(k)$ is changed by displacement, $\vec{X}(\vec{q})$ cannot be considered to be an ordinary vector in immediate nine-dimensional generalization. Therefore, the matrix $M(\vec{q})$ is introduced to make the transition to the new basis possible, in which every vector corresponds to a normal vibration. Subject to the restriction that the vectors of the new basis are irreducible representations of the group of the wave vector, $D'(\vec{q})$ becomes quasidiagonal. The suitable matrix for the following cases is then selected: a) For the lines II, III, IV, V in the Brillouin zone (Fig. 2) in the case of rotation round the U_2 axis. b) For the lines VI, VII and rotation round the U_2' axis (Fig. 3). c) For the verticals I and VIII, rotation round the screw axis OZ of the third order. d) For the Brillouin points (0,0,0),

$(0,0,3\pi/c)$, $(4\pi/3a,0,0)$, and $(4/3a, 0, 3\pi/c)$. After transition to the new basis $D'(\vec{q})$ is obtained in block form (12). The track of each block is equal to the sum of the squares of the frequencies belonging to the respective block. Calculations show that the track does not contain all a_{ik}, b_{ik} values. For the purpose of finding the lacking values, the following relation is used (corresponding to Ref.11): $\mathrm{Sp}\, A^m = \sum_{i=1}^{N} \lambda_i^m$ (14), where A is an N-by-N matrix, m - the exponent, λ_i - the characteristic number of the matrix A. Thus, a system of equations is obtained, in which the unknown quantities are expressed by experimental data. The author stresses the fact that it is important to find the basis in which $D'(\vec{q})$ is quasidiagonal, as otherwise the calculation would become too complicated. Next, the occurrence of degenerate frequencies and of some other properties is dealt with, and the system of the equations for all a_{ik}, b_{ik} is given in an appendix. The details of calculations are deposited in the library of the authors's Institute. The author thanks

84070
S/181/60/002/009/011/036
B004/B056

An Investigation of the Vibration of the Tellurium Lattice by Means of Group-theoretical Methods

Yu. A. Firsov for discussions and advice. There are 3 figures and 11 references: 4 Soviet, 4 US, 2 British, and 1 Japanese.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: March 20, 1959 (initially)
February 27, 1960 (after revision)

Card 5/5

L 17238-63 BDS/FCC(w)/EWT(d)--AFFTC/IJP(C)

ACCESSION NR: AP3005660 S/0052/63/008/003/0309/0318

54

AUTHOR: Lyubarskiy, G. Ya.; Rabotnikov, Yu. L. (Kharkov)

TITLE: Theory of differential equations with random coefficients

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 8, no. 3, 1963, 309-318

TOPIC TAGS: differential equation, random coefficient, bounded mean value

ABSTRACT: The equation $\ddot{u}(t) + a_1(t)\dot{u}(t) + [a_0(t) - \alpha(t)]u(t) = 0$ is considered where the coefficients $a_1(t)$ and $a_0(t)$ are real, piecewise continuous and periodic functions with the same period T and $\alpha(t)$ is a real random function. The restrictions on the $\alpha(t)$ are essentially the following. The correlation length a is much shorter than the period T, the random function $\alpha(t)$ $(-\infty < t < \infty)$ does not exceed the value $\gamma/\sqrt{a}$ (γ = const < 1). Necessary and sufficient conditions are found for the boundedness of the mean values $M u^2(t)$, $M[\dot{u}(t)\dot{u}(t)]$ and $M\dot{u}^2(t)$. "The authors take this opportunity to thank A. I. Akhiyezer for his advice concerning these problems and many helpful discussions." Orig. art. has: 30 formulas.

Card 1/1

L 41516-65 EWT(d) Pg-4 IJP(c)
ACCESSION NR: AP4046272 S/0040/64/028/005/0935/0940

AUTHOR: Rabotnikov, Yu. L.

TITLE: On the impossibility of mean-square stabilization of a system by random perturbation of its parameters

SOURCE: Prikladnaya matematika i mekhanika, v. 28, no. 5, 1964, 935-940

TOPIC TAGS: impossibility system stabilization, mean square stabilization, random perturbation, parameter, differential equation solution

ABSTRACT: K. C. Samuels (J. Acoust. Soc. Am. 32, #5 (1960)) and T. K. Caughey (J. Acoust. Soc. Am. 32, #10 (1960)) have considered the following question. Let a certain solution of a differential equation of the second order with constant coefficients increase indefinitely with the argument. Is it possible for the mean square of the solution to be limited, if a random time function is added to one of the coefficients? The answer was found to be negative. The author proves that this is true also for a deterministic system described by an

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L 41516-65
ACCESSION NR: AP4046272

equation of the n-th order. The author is grateful to G. Ya. Lyubarskiy for useful suggestions. Orig. art. has: 11 equations

ASSOCIATION: None

SUBMITTED: 02Jan64 ENCL: 00

SUB CODE: MA NO REF SOV: 004 OTHER: 009

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L 54717-65 EWT(d) Pg-4 IJP(c) UR/0372/65/000/004/V009/V009
ACCESSION NR: AR5014010 519.21

12
B

SOURCE: Ref. zh. Kibernetika. Svodnyy tom, Abs. 4V45

AUTHOR: Rabotnikov, Yu. L.

TITLE: The boundedness of solutions to differential equations with random coefficients whose mean values are constant

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 138, 1964, Zap, Mekhan. matem. fak. i Khar'kovsk. matem. o-va, v. 30, 75-84

TOPIC TAGS: bounded function, unbounded function, linear differential equation, random coefficient

TRANSLATION: The author discusses linear differential equations

$$\ddot{u}(t)+a_1\dot{u}(t)+a_0u(t)=\varepsilon\alpha(t)u(t)+\varepsilon_1\beta(t)\dot{u}(t), \quad (1)$$

in which a_0 and a_1 are real constants ($a_0>0$), $\alpha(t)$ and $\beta(t)$ ($-\infty<t<+\infty$) are real

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random functions, and $\mathcal{C}=1$ while $\mathcal{C}_1=0$ or $\mathcal{C}=0$ while $\mathcal{C}_1=1$. Basically, it is assumed that:

$$M\alpha(t)=M\beta(t)=0 \qquad (2)$$

where M designates averaging in relation to the set of all realizations of $\alpha(t)$ or $\beta(t)$; and that:

$$2)\ |u(t)|<\gamma;\ |\beta(t)|<\delta\ (\gamma=\text{const},\ \delta=\text{const}); \qquad (3)$$

Sufficient conditions are written for simultaneous boundedness of functions $Mu^2(t)$, $M[u(t)\dot{u}(t)]$ and $M\dot{u}^2(t)$, and an evaluation of the progression is given for the case of

RABOTNIKOV, Yu.M.

Mechanism of the action of vikasol. Farmakol. toksik. 26 no.3: 309-313 My-Je'63 (MIRA 17:2)

1. Kafedra farmakologii (zav. - prof. Yu.S.Grosman) Permskogo meditsinskogo instituta.

RABOTNIKOV, Yuriy Nikolayevich; MARKUZON, I.A., red.; KRYUCHKOVA, V.N., tekhn. red.

[Strength of materials]Soprotivlenie materialov. Moskva, Fizmatgiz, 1962. 455 p. (MIRA 15:12)
(Strength of materials)

AUTHOR: Rabotnov, B.A. SOV-125-58-9-3/14

TITLE: Metal Toughness in Heat Affected Zones of Weld Joints in High-Chrome Steel (Udarnaya vyazkost' metalla zony termicheskogo vliyaniya svarnykh soyedineniy vysokokhromistoy stali)

PERIODICAL: Avtomaticheskaya svarka, Nr 9, 1958, pp 20-23 (USSR)

ABSTRACT: Data are presented on the toughness of metal in different portions of zones adjacent to seams of weld joints in "1Kh13" and "2Kh13" steel. Experimental tests were carried out on butt joints welded on d.c. of reverse polarity with low-carbon, chromium and austenitic electrodes, with preliminary or attendant heating of the base metal up to 550°C or without preheating. Hardness tests proved that the most friable portion of the zone adjacent to seams was situated at 1-3 mm from the weld joints.
There are 2 tables, 1 graph, and 1 set of diagrams.

SUBMITTED: August 25, 1957

1. Steel--Welding 2. Welded joints--Mechanical properties

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RABOTNOV, Boris Aleksandrovich, inzh.; RODZIKHOVSKIY, Boris Mikhaylovich, inzh.; ZUBOV, T.N., red.; SOBOLEVA, Ye.M., tekhn.red.

[Assembling and testing of high-pressure pipe lines at hydroelectric power stations] Montazh i ispytanie vysokonapornykh truboprovodov gidroelektrostantsii. Moskva, Gos.energ.izd-vo, 1959. 99 p. (MIRA 12:12)

(Hydroelectric power stations)

GUSAROV, N.N., inzh. Prinimali uchastiye: ANDREYEV, V.V., inzh.; RABOTNOV, B.A., inzh.; FEDOTOV, L.Ye., inzh., nauchnyy red. BALDIN, V.A., retsenzent; BRODSKIY, A.Ya., kand.tekhn.nauk, retsenzent; SAVALOV, I.G., kand.tekhn.nauk, retsenzent; LEVI, S.S., kand.tekhn.nauk, retsenzent; SOKOLOV, V.S., kand.tekhn. nauk, retsenzent; LEBEDEV, Yu.I., retsenzent; RAZUMOVA, E.D., inzh., retsenzent; DOLGIKH, V.G., inzh., retsenzent; MAKSIMOV, K.G., red.izd-va; PUL'KINA, Ye.A., tekhn.red.

[Provisional instructions on using gamma rays in controlling welded joints of reinforcements in reinforced-concrete construction elements] Vremennaia instruktsiia po kontroliu svarnykh soedinenii armatury zhelezobetonnykh konstruktsii prosvechivaniem gamma-luchami. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 46 p.

(MIRA 14:2)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'stva elektrostantsiy. Tekhnicheskoye upravleniye. 2. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy (for Baldin, Brodskiy). 3. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Baldin). 4. VNIIOMS (for Savalov, Levi). 5. TSentral'naya nauchno-issledovatel'skaya laboratoriya Gosgortekhnadzora (for Sokolov). 6. Zamestitel' glavnogo sanitarnogo inspektora, Sanitarnaya inspektsiya SSSR (for Lebedev). 7. TsNIP Ministerstva stroitel'stva elektrostantsiy (for Razumova). 8. Trest Sevzapenergomontazh (for Dolgikh).

(Gamma rays--Industrial applications) (Reinforcing bars--Welding)

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PHASE I BOOK EXPLOITATION SOV/5460

Leningradskiy metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Nekotoryye voprosy tekhnologii proizvodstva turbin (Certain Problems in the Manufacture of Turbines) Moscow, Mashgiz, 1960. 398 p. (Series: Its: Trudy, vyp. 7) Errata slip inserted. 2,100 copies printed.

Sponsoring Agency: RSFSR. Sovet narodnogo khozyaystva Leningradskogo ekonomicheskogo administrativnogo rayona, Upravleniye tyazhelogo mashinostroyeniya, and Leningradskiy dvazhdy ordena Lenina metallicheskiy zavod. Otdel tekhnicheskoy informatsii.

Ed. (Title page): G. A. Drobilko; Editorial Board: Resp. Ed.: G. A. Drobilko, B. A. Glebov, A. M. Mayzel', and M. Kh. Mernik; Tech. Ed.: A. I. Kontorovich; Managing Ed. for Literature on Machine-Building Technology: Ye. P. Naumov, Engineer, Leningrad Department, Mashgiz.

PURPOSE: This collection of articles is intended for technical personnel in turbine plants, institutes, planning organizations, as well as for production innovators.

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Certain Problems (Cont.) SOV/5460

COVERAGE: The experience of the LMZ (Leningradskiy metallicheskiy zavod - Leningrad Metalworking Plant) in the manufacture of modern large-capacity turbines is presented. Methods for the rationalization of basic manufacturing processes and for the mechanization and automation of manual operations are given. Descriptions of attachments and tools designed by LMZ for improving labor productivity and product quality are provided, and advanced inspection methods discussed. References accompany some articles. No personalities are mentioned. There are 26 references: 25 Soviet and 1 English.

TABLE OF CONTENTS:

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SOV/125-60-1-8/18

AUTHOR: Khomus'ko, F.A. and Rabotnov, B.A.

TITLE: Automatic Electrode - Band Coating of the Blades of an Adjustable Blade Hydroturbine

PERIODICAL: Avtomaticheskaya svarka, 1960, Nr 1, pp 62-71 (USSR)

ABSTRACT: Detailed information is given on a new method of coating adjustable turbine blades with a protective surface layer applied by flux welding. The method was developed after the inspection of 14 hydroelectric plants using such turbines and experimental work carried out by the Institute of Electric Welding imeni Ye.O. Paton and the Leningrad Metal Plant. "1Kh18N9T" electrode band steel 0.15-0.40 mm thick and 70 mm wide (which provides reliable protection against cavitation) and pumiceous "AN-26" flux produced at the Zaporozhskiy stekol'nyy zavod (Zaporozh'ye Glass Plant) were used. The Institute of Electric Welding developed a special welding tractor for this

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Automatic Electrode - Band Coating of the Blades of an Adjustable Blade Hydroturbine

purpose [Ref 2], but its low operational speed resulted in its replacement by a suspended welder and special tilter. The article gives detailed information on the welding process and the sequence of coating. The composition of the band was non-homogeneous, and in some parts cracks appeared in the surfacing layer. The band was analyzed and the results are shown in table 1, that shows that when the ratio of chromium to nickel content was 1.9 and more there were no cracks. The experimental turbine blade (Figure 6) was made of "20GSL" steel. According to "GOST" norms, "1Kh18N9T" steel must contain not less than 17% of chromium and not more than 11% of nickel. For this reason it was necessary to find a flux that would ensure the absence of cracks at any ratio of chromium-nickel content within the "GOST" norms. Experiments were conducted with the following materials: a "1Kh18N9T"

Automatic Electrode - Band Coating of the Blades of an Adjustable Blade Hydroturbine

steel band, pumiceous "AN-26" flux of the following composition: 32.44% SiO_2; 21.4% Al_2O_3; 8.1% CaO; 15.9% MgO; 3.96% MnO; 19.05% CaF_2; 19.05% of CaF_2 alloy, consisting approximately of 80 to 85% Al and 20% iron. The experimental blade for the Bratskaya GES (Bratsk GES) was coated with the use of "AN-26" flux with 2.5-3% of "CaF_2" alloy. No cracks formed, which means that "AN-26" flux with this additive can be recommended. It has been decided to design a special device for the automatic surfacing of blades of adjustable blade-type hydroturbines. The Institute of Electric Welding has already started this work. V.S. Shirin, Chief Mechanic of the Laboratory of the Institute, and V.M. Vasyukov, a technician in the welding department of LMZ, took part in the experimental welding. Metallographic investigations were conducted in the laboratory of LMZ with the partici-

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Automatic Electrode - Band Coating of the Blades of an Adjustable Blade Hydroturbine

pation of engineer O.L. Damaskina, V.A. Lapchenko, senior designer of the Institute of Electric Welding, designed the welding nozzle for a thin band electrode. It has riffled rollers to stiffen the band by corrugation. E.Yu. Yuganson carried out the experiments with the "CaF_2" alloy as flux additive. There are 6 photographs, 4 diagrams, 3 tables, and 4 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Order of the Red Banner of Labor Institute of Electric Welding imeni Ye.O. Paton AS UkrSSR) (F.A. Khomus'ko). Dvazhdy Ordena Lenina Leningradskiy metallicheskiy zavod im. Stalina. (Twice Order of Lenin Leningrad Metal Plant imeni Stalin). (B.A. Rabotnov)

SUBMITTED: September 8, 1959

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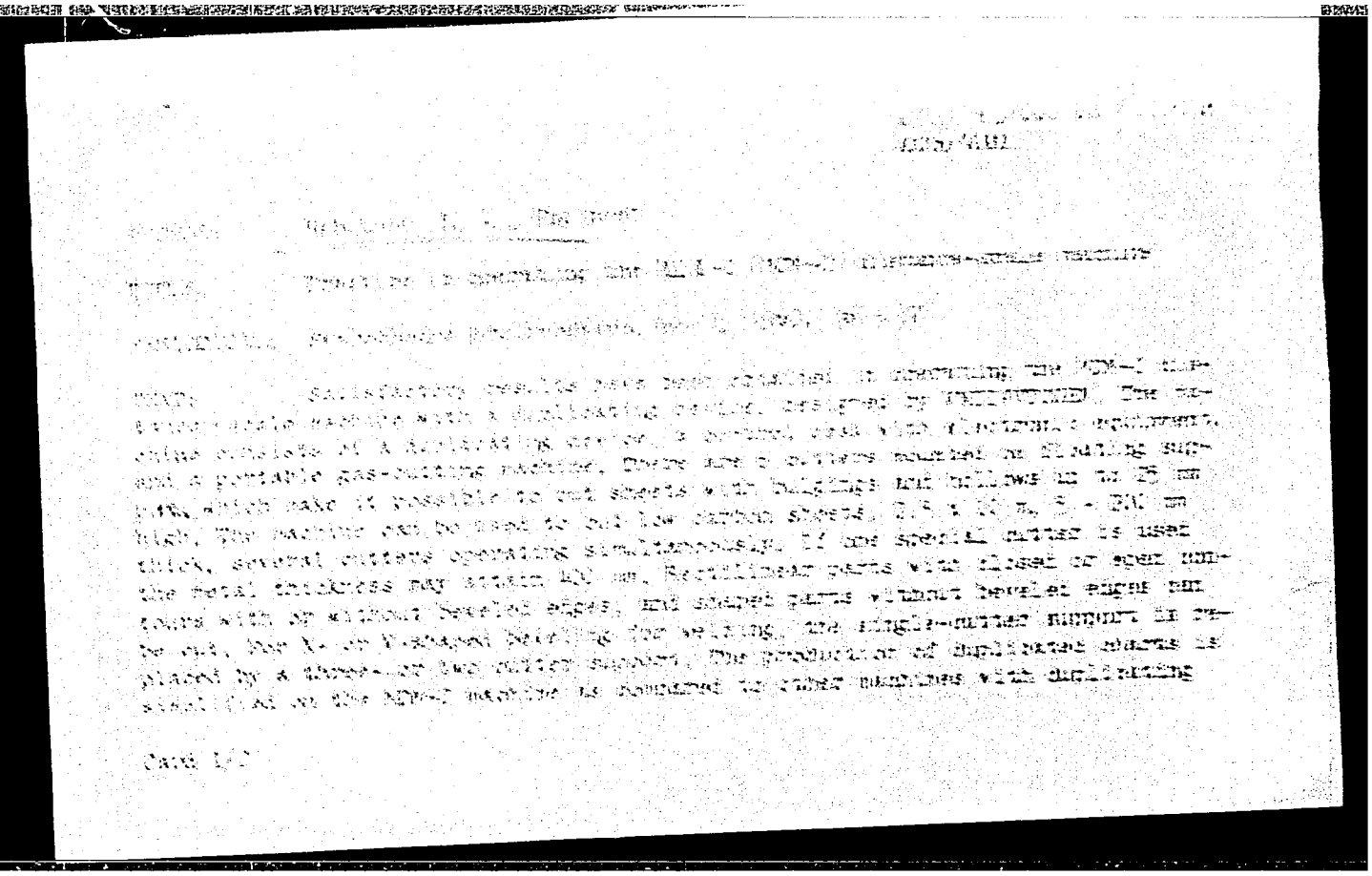
KHOMUS'KO, F.A.; RABOTNOV, B.A.

Automatic hard facing of blades for radial and axial hydraulic turbines by tape electrodes under flux. Avtom. svar. 13 no.12: 71-74 D '60. (MIRA 13:11)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.Ye.O. Patona AN USSR (for Khomus'ko). 2. Dvazhdy ordena Lenina Leningradskiy metallicheskiy zavod im. Stalina (for Rabotnov).
(Hard facing) (Hydraulic turbines--Blades)

RABTONOV, Boris Aleksandrovich; ORAKHELASHVILI, M.M., retsenzent; NAVROTSKIY, D.I., red.; ORGO, V.M., red.; ZHITNIKOVA, O.S., tekhn. red.

[Problems of the resistance of adjustable blade (Kaplan) hydraulic turbines to cavitation] Voprosy kavitatsionnoi stoikosti povorotnolopastnykh gidroturbin. Moskva, Gos. energ. izd-vo, 1961. 234 p. (MIRA 15:3)
(Hydraulic turbines) (Cavitation)



Practice in operating the... [illegible]

devices, such as e.g. the [illegible] ([illegible]) machine where the duplicating head follows a line on the chart whose thickness influences the accurate cutting of the part. In the [illegible] machine the charts have Indian-ink-traced part contours. The advantages of using the [illegible] machine are: elimination of labor consuming layout of parts; increased cutting accuracy (± [illegible] - [illegible] mm); improved labor conditions of the gas cutting operators; reduced operational cycle by elimination of metal transportation for layout and reduced cutting time; reduction of operational space and production costs for metal patterns. There are 4 figures and 1 table.

ASSOCIATION: Leningradskiy metallicheskiy zavod im. XXII, s"yezda KPSS (Leningrad Metal Plant imeni XXII Congress of CP of the Soviet Union)

Card 2/2

RABOTNOV, B.A., inzh.; SHATKIN, V.N., tekhnik

Semiautomatic welding in carbon dioxide. [Trudy]LVZ no.11:99-108 '64.
(MIRA 17:12)