an auxiliary rectifier. To improve the quality of welding and for controlling the pulse-shaping unit, a voltage feedback circuit is employed for the welding arc, using a peak transformer; the primary winding of the transformer is connected in parallel to the welding arc, while the secondary winding is connected to a slave multivibrator with a thyratron at the output. The pulse-shaping unit consists of a screw connected variable resistor and capacitor which, in turn, are connected in parallel to the auxiliary rectifier. A switching device circuit, such as an ignition, a variable discharge choke coil, and a resistor are connected with the pulse shaping unit (see Fig. 1). Orig. art. has: 1 figure. [Translation]

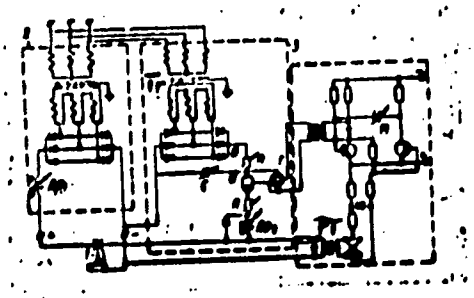

Fig. 1. Rectifying device for pulse arc welding.
1--Consumable electrode; 2--rectifier; Dr_1--choke coil; 3--pulse shaping unit; Tr--transformer of power-supply unit; B--auxiliary rectifier; PT--peak transformer; M--slave multivibrator; T--thyratron; R--controlled resistors; C--capaci-

L 09430-67
ACC NR: AP6032407

tor; I--ignition; Dr_2--variable discharge choke coil.

SUB CODE: 13/ SUBM DATE: 11Jul63/

Card 3/3 LC

COUNTRY : USSR

CATEGORY : MEADOW CULTIVATION L

ABS. JOUR. : REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15536

AUTHOR : Larin, I.V.; [illegible], T.K.

INST. : All-Union [illegible] Sciences

TITLE : [illegible] Results [illegible] [illegible] in the [illegible] of the [illegible] [illegible] [illegible]

ORIG. PUB. : Dokl. VASKhNIL, 1958, No.4, 3-6

ABSTRACT : No abstract

CARD: 1/1

11

Grodko, L. N.

350. Grodko, L. N., Forced vibrations of a rod in bending with linear damping at a restrained support (in Russian), *Prikl. Mat. Mekh.* 17, 3, 607-610, Sept./Oct. 1953.

Author considers a cantilever beam or rod with an arbitrary forcing function acting along it. One end is free and the other is built-in in such a way that there is damping proportional to the angular displacement. The solution is developed in terms of the eigenfunctions of the beam free from damping. The general solution is obtained and the limiting cases, when the coefficient of damping approaches zero or infinity, are discussed.

E. Saibel, USA

ACC NR: AP6029984 SOURCE CODE: UR/0413/66/000/015/0194/0194

INVENTOR: Grodko, L. N.; Leykand, M. A; Bakhov, O. P.; Kurova, I. V.

ORG: none

TITLE: Helicopter rotor-blade damper. Class 62, No. 184142

SOURCE: Izobret prom obraz tov zn, no. 15, 1966, 194

TOPIC TAGS: vibration damping, helicopter rotor, helicopter, rotary wing aircraft

ABSTRACT: An Author Certificate has been issued for a helicopter-rotor shock absorber, consisting of a hydraulic damping cylinder, a piston, and a rod connected by a bracket to the rotor hub. To increase the damping of the low-frequency rotor-blade vibrations during ground resonance and to decrease the stresses on the rotor blade and hub by vibrations arising during flight, the damper is connected to an auxiliary resilient element (for example, spring or rubber), which is placed on the rod or in the cylinder in series with the main shock-absorbing cylinder.

SUB CODE: 01/ SUBM DATE: 06Jul64/

Card 1/1 UDC: 629.135/138.62-567

GRODKO, L.N. (Moskva)

Plane problem of surface waves of a heavy incompressible liquid caused by the vibration of a flexible wall in a channel with finite depth. Inzh.zhur. 1 no.4:6-10 '61. (MIRA 15:4)
(Waves)

ACC NR: AM6032642 (A) Monograph UR/

Mil', Mikhail Leont'yevich; Nekrasov, Andrey Vladimirovich; Braverman, Aleksandr Samoylovich; Grodko, Lev Naumovich; Leykand, Matvey Abramovich

Helicopters; design and construction. v. 1: Aerodynamics (Vertolety; raschet i proyektirovaniye. t. 1: Aerodinamika). Moscow, Izd-vo "Mashinostroyeniye", 1966. 454 p. illus., biblio. Errata slip inserted. 4800 copies printed.

TOPIC TAGS: helicopter, aerodynamics, rotary wing aircraft, helicopter rotor, helicopter rotor blade, mechanical vibration, helicopter design

PURPOSE AND COVERAGE: This is Book One of a three-book series on helicopters. Book Two is on Vibrations and Dynamic Stability, and Book Three is on Planning. The book is intended for engineers of design bureaus, for scientific workers, and for fellows and instructors of higher educational institutions. It can also be of use to engineers of helicopter-building plants and students studying aerodynamics and helicopter stability. Many parts of the book will also be useful to flight and technical personnel in helicopter flying units. The book discusses the course of helicopter development, principles of their design, and their place among other aircraft not requiring airports. Various theories on rotors are covered, along with methods for determining their aerodynamic characteristics, including: the pulse theory of an ideal rotor and its application to the energetic method of calculation; the classic theory, in the case where numerical integration methods are used; the vortex theory; and methods of experimentally determining a rotor's characteristics during flight tests and in wind tunnels. There is a

Card 1/4 UDC: 629.135.4:533.6.001.12

ACC NR: AM6032642

detailed discussion of the various methods for the aerodynamic calculation of the helicopter and the theory of rotor flutter. Methods are explained for calculating flutter while hovering and in forward flight. Special attention is devoted to the calculation of friction in the hub's feathering hinges and to the transmission of blade vibrations through the automatic pitch control. Experimental research on flutter is described. The authors express gratitude to engineers F. L. Zarzhevskaya, R. L. Kreyer, and L. G. Rudnitskiy for their help in preparing the manuscript, and to R. A. Mikheyev for his review. There are 42 references, 35 of which are Soviet.

TABLE OF CONTENTS (Abridged):

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ACC NR: AM6033042

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ACC NR: AM6032642

References - 449

SUB CODE: 01/ SUBM DATE: 04Mar66/ ORIG REF: 033/ OTH REF: 009/

Card 4/4

CHERTKOVA, F.A.; GRODKO, N.A.; USHAKOVA, A.A.; DENISOVA, I.YA.; KATS, F.M.; DUDARENKO, G.V.

Standard antibotulism serum type E. Zhur. mikrobiol. epid. i immun. 31 no. 4:84-87 Ap '60. (MIRA 13:10)

1. Iz Gosudarstvennogo kontrol'nogo instituta meditsinskikh biologicheskikh preparatov imeni Tarasevicha i Khar'kovskogo instituta vaktsin i syvorotok imeni Mechnikova.
(BOTULISM)

Gradko, N.D.

30-12-42/45

AUTHOR: None given

TITLE: Defense of Dissertations (Zashchita dissertatsiy) (January-July 1957) (Yanvar'-iyul' 1957 goda) Section of History (Otdeleniye istoricheskikh nauk)

PERIODICAL: Vestnik AN SSSR, 1957, Vol. 27, Nr 12, pp. 123-126 (USSR)

ABSTRACT: At the Institute for Orientalism (Application for the degree of Doctor of Economic Sciences: N. D. Gradko - Credit and currency systems in India (Kreditno-denezhnaya sistema Indii). N. Zhagvaral - Contemporary Arat (Cattle-Raising) Economy in the Mongolian People's Republic (Sovremennoye aratstvo i aratskoye khozyaystvo v Mongol'skoy Narodnoy Respublike). Application for the degree of Doctor of Philological Sciences: A. M. Mirzoyev - Binoi (Binoi). Applications for the degree of Candidate of History: Ye. A. Belov - Chinese Revolution 1911-1913 (Revolyutsiya 1911-1913 gg v Kitaye). Applications for the degree of Candidate of Philological Sciences: F. S. Babayev - Critical Text of the "Iqbal Name" by Nizami Gandzhevi (Kriticheskiy tekst "Iqbal-Name" Nizami Gyandzhevi). E. Rustamov - On the importance of the work of Uzbek poets of the first half of the 15th century

Card 1/5

Defense of Dissertations (January - July 1957) 30-12-42/45
Section of History

(O znachenii tvorcheskogo nasledstva russkikh poetov pervoy poloviny 19-go veka). Sh. Niyazov - Uzbek epic poetry during the Great National War (1941 - 1945) (Sovetskaya epicheskaya poeziya v gody Velikoy Otechestvennoy voyny (1941-1945)). At the Institute for History (Institut istorii) Applications for the degree of Doctor of History: M. N. Dobrotvor - Revolutionary work of the Bolsheviks in the 3-d State Duma (Revolyutsionnaya rabota bol'shevikov v 3. Gosudarstvennoy dume). P. A. Lavrov - The labor movement in the Ukraine in the years (1910-1914) of the new revolutionary progress (Rabocheye dvizheniye na Ukraine v gody novogo revolyutsionnogo pod"yema (1910-1914 gg)). V. M. Gurak-Popov - An outline of the history of Austria in the years 1918 - 1929 (Ocherki istorii Avstrii 1918-1929 gg). A. B. Shumatayev - The victory of the Kolkhoz order in Kazakhstan (Pobeda kolkhoznogo stroya v Kazakhstane). K. V. Ustyugov - Soldiers' Salt Industry in the 17th century (on the question as to the genesis of capitalist relations in Russian industry in the 17th century) (Solevarennaya promyshlennost' Rossii v XVII. veke (K vopros o

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genezise kapitalisticheskikh otnosheniy v russkoy promyshlennosti 17. veka). Applications for the degree of Candidate of History: N. V. Voronov - Moscow brick factories in the 18th century (Moskovskiye kirpichnyye zavody v 18. veke). V. M. Dalin - Strikes and crisis of syndicalism in pre-war France (Stachki i krizis sindikalizma v predvoyennoy Frantsii). M. F. Demidova - The rising in Bashkiria 1735 - 1736 (Bashkirskoye vosstaniye 1735-1736 godov). I. G. Senkevich - The national rising for liberation in Albania 19o8 - 191o (Natsional'no osvoboditel'noye dvizheniye v Albanii v 19o8-191o godakh). N. D. Smirnova - The founding of the People's Republic of Albania (Obrazovaniye Narodnoy Respubliki Albanii). M. M. Yakhyayev - Collectivization of agriculture in the Tadzhik SSR 193o - 1935 (Kollektivizatsiya sel'skogo khozyaystva v Tadzhikskoy SSR 193o - 1935 godov).

At the Institute for the History of Art (Institut istorii iskusstv). Applications for the degree of Doctor of the History of Art: A. V. Bunin - The history of town-building (Istoriya gradostroitel'nogo iskusstva). I. S. Zil'bershteyn

Defense of Dissertations (January - July 1957) 30-12-42/45
Section of History

- Nikolay Bestuzhev and his pictural heritage (Nikolay Bestuzhev i yego zhivopisnoye naslediye). G. A. Avenarius - Charles Spenser Chaplin. An account of his early work (Charl'z Spenser Chaplin. Ocherk rannego tvorchestva).
At the Institute of the History of Material Culture (Institut istorii material'noy kul'tury). Application for the degree of Doctor of History: M. G. Levin - Ethnic anthropology and problems of the ethno-genesis of the peoples of the Far East (Etnicheskaya antropologiya i problemy etnogeneza narodov Dal'nego Vostoka). Application for the degree of Candidate of Historical Sciences: D. A. Krainov - Tash-Air 1 Station as base for the determination of the periods of the post-paleolythic cultures of south-west Crimea (Stoyanka Tash-air 1 kak osnova periodizatsii poslepaleoliticheskikh kul'tur yugo-zapadnogo Kryma).
At the Institute for Slavic Languages and Civilization (Institut slavyanovedeniya). Application for the degree of Doctor of Philology: Yu. S. Maslov - The verbal aspect in the modern Bulgarian language (Glagol'nyy vid v sovremennom bolgarskom yazyke). Application for the degree of Candidate of History: N. T. Todorov - The development of capitalist

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relations in the textile industry of Bulgaria in the 1. half of the 19th century (Narozhdeniye kapitalisticheskikh otnosheniy v tekstil'nom proizvodstve Bolgarii v pervoy polovine 19. veka).
At the Institute for Ethnography imeni N. N. Miklukho-Maklay (Institut etnografii imeni N. N. Miklukho-Maklaya).
Application for the degree of Doctor of History: Kh. M. Khashayev - The social order of Dagestan in the 19th century Obshchestvennyy stroy Dagestana v 19. veke). Application for the degree of Candidate of History: A. V. Smolyak - The material culture of the Ulch people (dwellings, clothes, food, means of transport from the middle of the 19th century to the first quarter of the 20th century) (Material'naya kul'tura ul'chey (Zhilishche, odezhda, pishcha, sredstva peredvizheniya (s serediny 19. - pervoy chetverti 20. vekov).

AVAILABLE: Library of Congress

Card 5/5 1. Sinology 2. History 3. Literature 4. Labor 5. Art

GRODKO, N. S.

Central State Sci. Control Inst., (-1944-)

"Titration of the sera against B perfringens by the method of Nagler-T sekhrovitser."

Zhur. Mikrobiol., Epidemiol., i Immunobiol, No. 9, 1944.

USSR/Medicine - Gas Gangrene Feb 53

"Investigation of the Strain Isolated by M. R. Mechayevskaya," N. Grodko, State Control Inst of Sera and Vaccines imeni L. A. Tarasevich

"Zhur Mikrobiol, Epidemiol, i Immunobiol" No 2, pp 57, 58

Describes the properties of B. anaerobius pigmentosus, which was isolated by M.R. Mechayevskaya. Investigation showed that this microorganism belongs to the Clostridium genus and that it resembles the species B. oedematiens, except that it cannot be neutralized by the serum counteracting

246T13

B. oedematiens and does not ferment glucose or maltose. Points out the necessity of preparing an antitoxic serum immediately after a strain of a new species of gangrene-producing microorganism has been isolated, because pathogenic anaerobes frequently lose their toxicity very rapidly after isolation.

246T13

"Combine Bivalent Immunization Against Gas Gangrene," by N. S. Grodko, State Control Institute of Sera and Vaccines Imeni Tarasevich, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Supplement, 1957, pp 30-31

"Investigations conducted in 1940 by Chertkova, Grodko, and Ponomareva indicated the presence of common antibodies in sera against Vibrion septique and B. histolyticus and also in sera against B. perfringens and oedematiens. To investigate this problem in detail, we performed cross-titration experiments on 11 specimens of dry anaerobic sera against various forms of pathogenic gas gangrene at the Control Institute and 38 samples of therapeutic antitoxic antigangrene sera. The results obtained verified the presence of common antibodies in the sera against Vibrion septique and B. histolyticus. Giomi and coworkers (1956, 1949, 1951, and 1952) made use of these observations in obtaining bivalent sera. To resolve the question of the possibility of immunizing a given producer with different antigens in preparing bivalent sera, we immunized two groups of rabbits: the first, with Vibrion septique toxin; the second, with B. histolyticus antigen. Both groups were immunized according to the same schedule. First, preliminary immunization was carried out i. e., two injections of toxin in lanolin of 5 and 10 MLD with 5 days between. Within 15 days, each group of rabbits

was immunized with corresponding antigen in doses of 20-40-80-100 MLD (at intervals of 5 days); and within 15 days, 50-100-200 MLD (at the same intervals). Eksanguination was effected on the 9th day. In rabbits of the first group, the average titer of Vibrion septique was 9 AE and of B. histolyticus, less than 0.1 AE. In rabbits of the second group, the average titer of B. histolyticus was greater than 0.1 and less than 0.3 AE and of Vibrion septique less than 0.1 AE

"Later, the rabbits of each group received two injections (30 and 60 MLD) of heterologous toxin.

"In rabbits of the first group immunized initially with B. histolyticus toxin, the titer was sharply increased with respect to both antigens: B. histolyticus, to 30 AE, and Vibrion septique to 15 AE. Rabbits of the second group immunized initially with Vibrion septique toxin then with B. histolyticus toxin were of no special interest.

"Conclusions

"1. Serum against Vibrion septique partially neutralizes B. histolyticus toxin, and conversely. Serum against B. oedematiens neutralizes B. perfringens toxin to an insignificant degree.

"2. After immunizing a given rabbit initially with B. histolyticus toxin and then with Vibrion septique toxin, the titer of both gas gangrene pathogens is increased."

GRODYO, N.S.; CHERTKOVA, F.A.

Method of control of immunogenic properties of anatoxins in mice. Zhur. mikrobiol. epid. i immun. 29 no.11:114-115 N '58. (MIRA 12:1)

1. Iz Gosudarstvennogo kontrol'nogo instituta imeni Tarasevicha.
(VACCINES AND VACCINATION,
control of immunogenic properties of anatoxins for vacc. on mice (Rus))

17 (6, 12)

SOV/16-60-4-21/47

AUTHOR: Chertkova, F.A., Grodko, N.S., Ushakova, A.A., Denisova, I.Ya., Kats, F.M. and Dudarenko, G.V.

TITLE: Standard Botulism Antiserum Type E

PERIODICAL: Zhurnal mikrobiologii, epidemiologii i immunobiologii, 1960, Nr 4, pp 84 - 87 (USSR)

ABSTRACT: The authors made a study of the standard botulism antiserum type E (batch 216/2) prepared at the Khar'kovskiy institut vaktsin i syvorotok imeni Mechnikova (Institute of Vaccine and Sera imeni Mechnikov, Khar'kov) and also of two other batches of antiserum - batch 205/1, also prepared by the same institute, and batch 16/3 prepared at the Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR (Institute of Epidemiology and Microbiology imeni Gamaleya of the AMN, USSR). A standard for the botulism antiserum type E was worked out and the size of one antitoxic unit (AU) set at 0.03 mg of dry substance. An experimental toxin dose was determined and titration of antisera was recommended at 1/10 of this experimental dose (L+/10). It was found that the experimental dose of the three batches of toxins prepared on different nutrient media contained different amounts of MLD (minimum lethal dose). Two of the three toxin

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samples studied were activated by trypsin which rather indicated non-specific activation of one of the toxin batches during its preparation. There is 1 table and 11 references, 2 of which are Soviet, 7 English, 1 Italian and 1 French.

ASSOCIATION: Gosudarstvennyy kontrol'nyy institut meditsinskikh biologicheskikh preparatov imeni Tarasevicha (State Control Institute for Medical Biological Preparations imeni Tarasevich); Khar'kovskiy institut vaktsin i syvorotok imeni Mechnikova (Institute of Vaccines and Sera imeni Mechnikov, Khar'kov)

SUBMITTED: September 24, 1958

POSIK, L.N.; BIBICHENKO, S.I.; GRODKO, A.A.

[Radiometric analysis of ores on conveyers] Radiometricheskii analiz rud na transporterakh. Moskva, Glav. upr. po ispol'zovaniiu atomnoi energii, 1960. 18 p. (MIRA 17:1)

(Ores—Radioactive properties) (Radiometry)

[illegible], Rokhil' Samuilovna

Thermal burns and their treatment.

Dissertation for candidate of [illegible] Medical Science Degree, Chair of Hospital Surgery (head prof. A.[illegible] [illegible]), Saratov Medical Institute, [illegible]

GRODKO, R.S., kandidat meditsinskikh nauk

Invagination of the small intestine into the stomach following gastroenterostomy. Khirurgiia no.7:58 Jl '55 (MLRA 8:12)

1. Iz gospital'noy khirurgicheskoy kliniki (zav.kafedroy-prof. A.N.Spiridonova) Saratovskogo meditsinskogo instituta.
(INTUSSUSCEPTION, etiol. and pathogen.
gastroenterostomy)
(STOMACH, surg.
gastroenterostomy, causing intussusception)
(INTESTINES, small, surg.
same)

S/124/61/000/012/017/038
D237/D304

24.5200

AUTHOR: Grodko, V. A.

TITLE: On the problem of determining local and average temperature stresses and the temperature of the stream in channels of uniform cross-section

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 12, 1961, 42, abstract 12B246 (Tr. Labor. dvigateley. AN SSSR, 1960, no. 5, 7-12)

TEXT: The problem of determining a series of temperature parameters of the stream in a channel of uniform cross-section is solved by means of other temperature parameters of the stream assumed known. In general, the problem is formulated as follows: Initial and final wall temperatures, stream temperature, temperature of the wall along the length of the channel, and length of the channel are known. The quantities sought are: stream tempera-

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S/124/61/000/012/017/038
D237/D304

On the problem of...

ture in any cross-section, average stream temperature, mean temperature stress, and temperature stress in any cross-section. In this formulation, the problem reduces to solving a known system of two equations with some simplifying assumptions: Temperature regime in any cross-section is assumed stable; heat transfer coefficient and specific heat capacity of the fluid at constant pressure are taken as constant along the length of the channel. In a number of particular cases (constant wall temperature, linear, parabolic, exponential and sine change of wall temperature), the formulas are obtained for stream temperature determination in any cross-section and for mean temperature stress. In the author's opinion, the numerical formulas obtained can be utilized in calculations occurring in the treatment of experimental results in the field of heat exchange in electrical heaters, nuclear reactors, etc. 5 references. [Abstracter's note: Complete translation.]

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S/109/60/005/012/025/035
E192/E582

26,2531

AUTHORS: Grodko, V.A., Zolotarevskiy, V.S., Markar'yan, B.N. and Rubanovich, I.M.

TITLE: Influence of the Difference Between the Work Functions of the Electrode of a Thermionic Converter on its Output Parameters

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.12, pp. 2046-2051

TEXT: The dependence of the specific power w and the electron efficiency $\eta_э$ between the anode and cathode work functions, φ_K and φ_a, is investigated analytically. For the purpose of calculations it is assumed that the temperatures T_a = const and T_K = const but $T_K > T_a$; it is also assumed that φ_a = const. Further, the case when the density of the saturation current of the cathode is less than that of the anode is excluded. The voltage current characteristic of a thermionic energy converter can, therefore, be expressed by

$$i = A_K T_K^2 \exp\left(-\frac{e\Phi_K}{\kappa T_K}\right) - A_a T_a^2 \exp\left(-\frac{e\Phi_a}{\kappa T_a}\right) \qquad (1)$$

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Influence of the Difference Between the Work Functions of the Electrode of a Thermionic Converter on its Output Parameters

where Φ is the overall potential barrier of an electrode, e is the charge of an electron and k is the Boltzmann constant. The potential diagram of such a converter, illustrating the dependence of Φ_K and Φ_a on U (where $U = \Phi_K - \Phi_a$) is represented in Fig.2. It is seen that in the region I of this figure $\Phi_K = \varphi_K = \text{const}$ and $\Phi_a = \varphi_a = \text{const}$. Eq.(1) can now be written in a different form so that the current i is expressed as a function of U. Now the voltage current characteristic of the limiting case, when $\varphi_K = \varphi_a$, is shown to be in the form of an envelope for all the intermediate characteristics and the second limiting case when $\varphi_K = U_o + \varphi_a$, where U_o is the electro-motive force of the converter. Such an envelope is shown in Fig.3; this also shows three characteristics for various values of φ_K at fixed values of φ_a, T_K and T_a. From the investigation of the envelope it is concluded that the maximum specific power of the converter is numerically equal to the area of the largest possible rectangle

Influence of the Difference Between the Work Functions of the Electrode of a Thermionic Converter on its Output Parameters

which can be inscribed inside the envelope. The problem of determining this quantity is equivalent to finding the coordinate U_B of the point B of the characteristic at which the maximum power w_{max} is obtained (see Fig.3). On the basis of Eq.(1) it is shown that the specific power is expressed by

$$w = (\Phi_K - \varphi_a)\left[A_K T_K^2 \exp\left(-\frac{\varepsilon\Phi_K}{\varkappa T_K}\right) - A_a T_a^2 \exp\left(-\frac{\varepsilon\varphi_a}{\varkappa T_a}\right)\right] \quad (3)$$

There is a considerable difficulty in determining the maximum of this function since its derivative $\partial w/\partial\Phi_K = 0$ cannot be solved with respect to Φ_K. It is shown, however, that a double inequality specifying the limits for Φ_K can be determined. From this inequality it is found that the voltage at point B (see Fig.3) is approximately given by

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Influence of the Difference Between the Work Functions of the Electrode of a Thermionic Converter on its Output Parameters

$$U_B = (\Phi_K - \varphi_a)_{\omega_{MAKC}} \simeq \frac{\varkappa T_K}{\varepsilon}\left\{1 - \frac{A_a T_a^2}{2A_K T_K^2}\exp\left[1 - \frac{\varepsilon\varphi_a}{\varkappa}\left(\frac{1}{T_a} - \frac{1}{T_K}\right)\right]\times\right.$$

$$\left.\times\left[1 + \exp\left(-\frac{T_K + T_a}{T_K}\right)\right]\right\}. \qquad (5)$$

The electron efficiency $\eta_э$ (J. M. Houston, Ref.5) is taken to include only the losses due to the heat transfer by the electrons; this quantity is expressed by

$$\eta_э = \frac{iU}{i\bar{\Phi}_K + \frac{2\varkappa}{\varepsilon}(i_K T_K - i_a T_a)} \qquad (6)$$

This expression is investigated for the region of the accelerating field as well as for decelerating fields and the results are shown

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S/109/60/005/012/025/035
E192/E582

Influence of the Difference Between the Work Functions of the Electrode of a Thermionic Converter on its Output Parameters

in two figures. From the analysis it is concluded that, other conditions being equal, the highest specific power and electron efficiency can be obtained when φ_a is very low. A converter having $\varphi_a = \varphi_K$, other parameters being fixed, gives the highest specific power and electron efficiency possible with these parameters. The converters in which $\varphi_K - \varphi_a \lesssim \sim \varkappa T_K/\varepsilon$ can also give the maximum specific power but the short circuit current in this case is lower. All the converters having $\varphi_K - \varphi_a > \varkappa T_K/\varepsilon$ cannot give the maximum specific power. There are 6 figures and 6 references, 3 Soviet (one a translation from English) and 3 non-Soviet.

SUBMITTED: May 21, 1960

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L 18229-63 BDS/EPR/EPF(c)/EPF(n)-2/ENP(r)/ENT(l) AFFTC/ASD/IJP(C)/SSD Ps-4/Pr-4/Pu-4 MM

ACCESSION NR: AT3001858 S/2909/62/000/006/0042/0050

AUTHOR: Grodko, V. A.

TITLE: Method of the comparison of heat-transfer surfaces

SOURCE: AN SSSR, Institut dvigateley. Trudy, no. 6, 1962, 42-50

TOPIC TAGS: heat transfer, heat exchange, Nusselt number, Reynolds number, Kirpichev criterion

ABSTRACT: This theoretical paper seeks to find a parameter (criterion) which could serve in the comparison of the heat-transfer characteristics of given surfaces in the manner of the Kirpichev criterion, but which could represent the effectiveness of any given heat-transfer surface without requiring the introduction of data of any specific experiment, but which could be expressed solely by the criterial equations of the Nusselt number and the surface drag as functions of the Reynolds number. Such a parameter could be established by using a heat transfer surface with a given Kirpichev criterion. If then two such surfaces are compared with that stipulation, then the more effective surface will be that which has a smaller area. A comparison of all surfaces examined with one selected as a standard would permit their systematic grading according to effectiveness.

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ACCESSION NR: AT3001858

Having made a certain number of simplifying stipulations concerning the geometry, pressure distribution, and temperatures, a parameter S* can be written which does not depend on the specific experimental data and which single-valuedly determines the effectiveness of a test surface. It is proved analytically that this is indeed so. Existing test data published by 9 authors are correlated to test the application of the parameter S* to various types of heat exchangers and surface configurations. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: none

SUBMITTED:	00	DATE ACQ:	11Apr63	ENCL:	00
SUB CODE	AP, PH	NO REF SOV:	010	OTHER:	002

Card 2/2

GRODKO, V.A.

AID Nr. 979-10 29 May

THERMOELECTRIC EMISSION PROPERTIES OF ZrC-UC SOLID SOLUTION SYSTEMS (USSR)

Kul'varskaya, B. S., V. A. Grodko, B. N. Markar'yan, and I. M Rubanovich.
Radiotekhnika i elektronika, v. 8, no. 4, Apr 1963, 675-679.
S/109/63/008/004/018/030

The device used in the investigation was a diode with the cathode stamped from a tantalum strip in a shape permitting temperature compensation. The specimens were cemented to the working area of the cathode (0.10 cm^2) in thicknesses of 80 μ. After vacuum processing, the specimens were detached in a vacuum of the order of 10^{-7} mm Hg, and measurements were made. The results were plotted along Schottky curves, from which the densities of the saturation current were determined. At 120 amp/cm^2 degree, the value of emission φ (T) was calculated by the Richardson-Dushman equation, and the

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AID Nr. 979-10 29 May

THERMOELECTRIC EMISSION PROPERTIES [Cont'd] S/109/63/008/004/018/030

temperature coefficient was determined. It was found that all the investigated compounds of the system possess a rather high emitting capacity, substantially exceeding the thermoelectric emission of pure refractory metals. Compounds of the system from UC to $(ZrC)_{0.8}$— $(UC)_{0.2}$ inclusive have the highest thermoelectric emission rate. The $ZrC_{0.8} - UC_{0.2}$ compound is considered the best emitter of the whole system. Stable emission from the cathodes of the investigated system are obtained only after adequate aging at 2000°K. [DW]

Card 2/2

GRODKO, V.A.; ZOLOTAREVSKIY, V.S.; MARKAR'YAN, B.N.; RUBANOVICH, I.M.

Selection of efficient cathodic materials for a thermoelectron converter. Porosh. met. 3 no.4:79-88 Jl-Ag '63. (MIRA 16:10)

1. Institut dvigateley AN SSSR.
(Electrodes) (Thermoelectric generators)

L 30432-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/JG/RM

ACC NR: AP6025237 SOURCE CODE: UR/0057/66/036/007/1163/1165

AUTHOR: Grodko, V. A.; Markar'yan, B. N.

8 D
13

ORG: none

TITLE: The effect of boundary conditions on the transmission of current through a thermal cesium plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 7, 1163-1165

TOPIC TAGS: cesium plasma, work function, boundary layer plasma, vapor pressure, cathode, electrode, electric current

ABSTRACT: A qualitative analysis based on experimental data was made of the dependence of physical processes occurring in the neighborhood of the electrodes in the plasma of a cesium diode, operating at "quasi-vacuum" and diffusion modes, on the work function of cathode material in vacuum ($e\varphi$). Each experimental diode was cylindrical and the distance between electrodes (d) was 1 mm. The directly heated cathode was 1 mm in diameter and 50 mm long. The collector consisted of three sections: the central or operating section (15 mm long), and two screening sections. The dependences of the short-circuit cathode current i on the pressure of cesium vapor p at fixed cathode and anode temperatures T_c and T_a, respectively, as well as on d for different values of φ (5.0, 4.5, 4.0, 2.7 v) i.e., for different boundary con-

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L 38439-66
ACC NR: AP6025237 O

ditions on the cathode, were experimentally determined. The dependences show that in the investigated ranges of electrode temperatures and vapor pressures of cesium, the following relationships take place: at fixed T_c, T_a, d, and φ, the function $i = i(p)$ passes through a maximum; the value of short-circuit current i_0 at optimum value of cesium vapor pressure p_0 and fixed electrode temperatures is independent of $|\varphi|$; a decrease of φ from 5.0 to 2.7 under the same conditions is followed by a continuous rise of p_0; an increase of T_c at fixed φ is followed by the rise of i_0 and p_0. The dependence of the effective cathode work function $\varepsilon\psi$ on the vapor pressure of cesium p at T_c = const and different values of φ shows that with the rise of p the greatest decrease of ψ corresponds to large values of φ. Investigation of the effect of T_c on the relationship between the optimum short-circuit current and the vapor pressure of cesium at fixed values of φ shows that a correspondence exists between large values of T_c and ψ. An increase of T_c may result in an increase in the value of optimum short-circuit current. Such variation of i_0 and p_0 caused by variation of T_c is consistent with the experiment. Orig. art. has: 4 figures. [JA]

SUB CODE: 20/ SUBM DATE: 06Aug65/ ORIG REF: 006/ OTH REF: 007
ATD PRESS: 5042

Card 2/2

GRODNENSKIY, A.

Largest blast furnace in Europe goes into operation. Na stroi. Ros no.10:8-10 O '61. (MIRA 14:11)

1. Nachal'nik stroitel'stva kompleksa sooruzheniy domennoy pechi Novo-Lipetskogo metallurgicheskogo zavoda.
(Novyy Lipetsk—Blast furnaces)

GRODNENSKIY, A.I., inzh.

Nitrogen fertilizer plant will be built in 12 months. Trom. stroi. 42 no.12:13-14 D '64. (MIRA 18:3)

1. Lipetskstroy.

GRODNER, Zygmunt; KAZUBEK, Irena

A case of hemangioma of the bladder in a child (haemangioma vesicae). Pol. przegl. chir. 36 no.4a:Suppl.:627-628 Ap '64.

1. Z Oddzialu Wewnetrznego Miejskiego Szpitala Zakl. Nr 1 w Warszawie (Ordynator: dr W. Gasecki) oraz Oddzialu Chirurgicznego Miejsk. Szpitala Nr 1 w Warszawie (Ordynator: dr M.M. Kozela).

Modern cable systems in inter-urban communications. I. Gnoinski (Vestnik Svyazy, 1947, No. 2, 22-4, No. 3, 19-22). In Russian. The article deals with the design and transmission characteristics of Styroflex cables. Methods of reducing cable damping are discussed and characteristics of various types of cable insulation are tabulated. Fundamental design data are given for Russian, German, American, British, and French coaxial cables, together with basic characteristics and notes on the selection of coaxial cable design.

3821/23 6/50 21

[illegible], I. I.

Provoda i kabel i svyazi s polikhlorvinilovoy izolyatsiyey. [illegible] wires and cables with polyvinyl chloride insulation, [illegible] and [illegible]. Moskva, Svyaz'izdat, 195[illegible].

[illegible] p. illus., diagrs., "Literatura", p. 97.

Brief description of cable structures with polyvinyl chloride insulation, their electric and mechanical characteristics, exploitational capacities, as well as methods of installation and assembling. [illegible] is intended for engineers and technicians.

[illegible], [illegible].

Kabeli svyazi. (Communication cables, by I. I. Grodnev [illegible]) Moskva, Gosenergoizdat, 19[illegible].

[illegible] p. illus., tables, diagrs. "Literatura": p. [illegible].

On problems of designing and manufacturing cables utilized in symmetrical and coaxial communication systems, discusses theory of transmission of energy in cables and explains electric processes in cable circuits.

GRODNEV, I.I.

AID 1

BOOK: Author: GRODNEV, I.I. and BELORUSSOV, V.I. Call No.: TK3351.B44
Full Title: RADIO FREQUENCY CABLES
Transliterated Title: Radiochastotnye Kabeli
Publishing Data
Originating Agency: None.
Publishing House: State Power Publishing House.
Date: 1952 No. pp.: 272 No. of copies: 7,000
Editorial Staff
Editor: None. Tech. Ed.: None.
Ed.-in-Chief: None. Appraiser: None.
Text Data
Coverage: The work treats the principles, theory, design, and construction of coaxial and symmetrical radio frequency cables. Several chapters are devoted to materials, technology, and testing methods used in manufacturing radio frequency cables. Drawings, photographs, and tables. Subject index.
Purpose: A textbook for students of communications; and, a handbook for radio technicians.
Facilities:
No. of References: 15.
Available: Library of Congress.

LYUTOV, S.A.; Prinimal uchastiye GRODNEV, I.I.; VAYNSHTEYN, S.S., red.; FRIDKIN, A.M., tekhn. red.

[Industrial radio interferences and methods for their prevention] Industrial'nye pomekhi radiopriemu i bor'ba s nimi. Izd.3., perer. Moskva, Gosenergoizdat, 1952. 320 p. (MIRA 16:7)

(Radio--Interference)

GRODNEV, Igor' Izmaylovich; SOKOLOV, Vasiliy Vasil'yevich; NOVIKOV, V.A., redaktor; BUSANKINA, N.G., redaktor; KHELEMSKAYA, L.M., tekhnicheskiy redaktor.

[Coaxial cables] Koaksial'nye kabeli. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1954. 225 p.[Microfilm](MLRA 8:2)
(Electric cables)

GRODNEV, Igor' Izmaylovich; LAKERNIK, Rafail Moiseyevich; SHARLE, David Leonidovich; YEFIMOV, I.Ye., redaktor; LINKOV, A.V., redaktor; FRIDKIN, A.M., tekhnicheskiy redaktor

[Fundamentals of the theory and the production of communication cables] Osnovy teorii i proizvodstvo kabelei sviazi. Moskva, Gos. energ. izd-vo, 1956. 480 p.
(Electric cables) (MLRA 9:11)

GRODNEV, I. I.; YEFIMOV, I.Ye.; MARIMONT, L.B.; SHIRYAYEV, N.P., inzhener-kapitan, redaktor; STREL'NIKOVA, M.A., tekhnicheskiy redaktor

[Communication lines; approved by the chief signal office as a textbook for military schools of communication] Linii sviazi; odobreno nachal'nikom voisk sviazi v kachestve uchebnika dlia voennykh uchilishch sviazi. Moskva, Voen. izd-vo M-va obor. SSSR, 1956. 503 p. (MLRA 10:6)
(Telephone lines) (Telegraph lines)

GRODNIEW I.I., MILLER B.F.

Kable telekomunikacyjne (Telecommunication cables) by I.I. Grodniew and B.F. Miller. Reported in New Books (Nowe Ksiazki.) March 1, 1956.

GRODNEV, I.I., dekter tekhnicheskikh nauk; SERGEYCHUK, K.Ya., kandidat tekhnicheskikh nauk.

Electric losses in the screens of communication cables. Elektrosviaz' 10 no.2:41-49 F '56. (MLRA 9:6)
(Telephone cables)

GRODNEV, I.I.; UKSTIN, E.F.

Calculation of the optimum designs of symmetrical cables in trunk communication. Elektrosviaz' 10 no.5:56-65 My '56. (MLRA 9:8)
(Radio lines)

GRODNEV, I.I.; LYUBIMOV, K.A.; UKSTIN, E.F.

Multilayer combination shields for communication cables. Elektrosviaz' 10 no.12:48-56 D '56. (MLRA 9:12)
(Electric cables)

GRODNEV, I., inzh.-podpolkovnik doktor tekhn.nauk

Wave guides and their application. Voen.sviaz. 16 no.4:9-12 Ap '58. (MIRA 11:4)
(Wave guides)

8(3) PHASE I BOOK EXPLOITATION SOV/3158

Belorussov, N. I., and I. I. Grodnev

Radiochastotnyye kabeli (Radio-Frequency Cables) 2nd ed., rev. Moscow, Gosenergoizdat, 1959. 318 p. Errata slip inserted. 10,000 copies printed.

Ed.: I. I. Yefimov; Tech. Ed.: G. I. Matveyev.

PURPOSE: The book was approved by the Administration of Secondary Specialized Schools, Ministry of Higher Education, USSR, as a textbook for tekhnikum students specializing in the production of cables and conductors. The book is also intended for engineering and technical personnel of the cable industry, design bureaus, laboratories, enterprises and departments engaged in the utilization and operation of radio-frequency cables.

COVERAGE: The authors outline the theory of coaxial and symmetrical cables, present electrical calculations and describe the basic types of radio-frequency cables. Basic information on waveguides is given. Radio-frequency

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cable materials, production processes and methods of testing and measuring these cables are described. The authors thank the following persons for their help in writing this book: Doctor of Technical Sciences I. Ye. Yefimov, Engineers V. N. Krasotkin (deceased), T. M. Orlovich and S. S. Solomonik, and Candidates of Technical Sciences K. Ya. Sergeychuk and V. I. Sushkovich. There are 39 Soviet references (including 11 translations).

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TK3351-B44, 1959)

JP/mal
3-11-60

BEZSONOV, Boris L'vovich; GORODETSKIY, Sergey Sergeyevich; GRODNEV, Igor' Izmaylovich; LINKOV, Aleksandr Vladimirovich; LYUBIMOV, Konstantin Aleksandrovich; MACHERET, Lev Il'ich; PRIVEZENTSEV, Vladimir Alekseyevich; SAPAROVA, A.L., red.; LARIONOV, G.Ye., tekhn.red.

[Cables and wires] Kabeli i provoda. Pod obshchei red. V.A. Privezentseva i A.V.Linkova. Moskva, Gos.energ.izd-vo. Vol.1. [Fundamentals of theory, calculation, and construction] Osnovy teorii, raschet i konstruirovanie. 1959. 559 p. (MIRA 13:2)
(Electric cables) (Electric wires)

MIKHAYLOV, Mikhail Ivanovich, doktor tekhn.nauk. Prinimal uchastiye: RAZUMOV, L.D., GRODNEV, I.I., retsenzent; GRACHEV, I.S., otv.red.; BELIKOV, B.S., red.; MARKOCH, K.G., tekhn.red.

[Effect of external electromagnetic fields on communication lines and protective measures] Vliianie vneshnikh elektromagnitnykh polei na tsepi provodnoi sviazi i zashchitnye meropriiatiia. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1959. 582 p. (MIRA 12:9)
(Telecommunication--Equipment and supplies)

MINTS, A.L., akademik, glavnyy red.; BURDUN, G.D., red.; VOL'PERT, A.R., red.; GORON, I.Ye., red.; GUTENMAKHER, L.I., prof., red.; GRODNEV, I.I., red.; DEVYATKOV, N.D., red.; ZHEKULIN, L.A., red.; KATAYEV, S.I., red.; MEYMAN, M.S., red.; SIFOROV, V.I., red.; CHISTYAKOV, N.I., red.; GESSEN, L.V., red.izd-va; MARKOVICH, S.G., tekhn.red.

[One hundredth anniversary of the birth of A.S.Popov; jubilee session] 100 let so dnia rozhdeniia A.S.Popova; iubileinaia sessiia. Moskva, Izd-vo Akad.nauk SSSR, 1960. 312 p. (MIRA 14:1)

1. Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi. (Information theory)

PHASE I BOOK EXPLOITATION SOV/4822

Grodnev, I.I., and K. Ya. Sergeychuk

Ekranirovaniye apparatury i kabeley svyazi (Shielding of Communication Apparatus and Cables) Moscow, Svyaz'izdat, 1960. 315 p. 6,000 copies printed.

Resp. Ed.: V.M. Lavrov; Tech. Ed.: S.F. Karabilova; Ed.: V. Ye. Petrova.

PURPOSE: This book is intended for technical personnel concerned with the development and operation of means of communications and radio engineering. It may also be used as a textbook by students in advanced related courses.

COVERAGE: The book presents the shielding theory and its application in the protection of h-f communication apparatus and cables from interference. The principles of shielding by means of flat, cylindrical, and spherical shields of single or multilayer design are reviewed and the required basic shielding parameters are established for a wide-frequency spectrum. The effect of the shield on intrinsic transmission parameters and the influence of shielded components and circuits are discussed; a description is included of a mathematical apparatus for the computation of electrical losses in shields. The shielding

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theory for stranded-cable networks is presented and electrically nonuniform shields of the braided, grid, and other types are studied. Practical measures for carrying out the shielding of communication apparatus and cables are also examined, and recommendations are given concerning the design and manufacture of shields. The investigations are based on the solution of Maxwell's equations under quasi-stationary conditions, and, in respect to the shielded objects in question, these solutions are correct for a frequency range of up to 10^7 to 10^9 cycles. The authors thank S.M. Bragin, Doctor of Technical Sciences, and V.M. Lavrov, Candidate of Technical Sciences, for their advice. There are 39 references, all Soviet (including 6 translations).

TABLE OF CONTENTS:

GRODNEV, Igor' Izmaylovich; KULESHOV, Vasiliy Nikolayevich; SOKOLOV, Vasiliy Vasil'yevich [deceased]; SERGEYCHUK, K.Ya., kand.tekhn. nauk, red.; BALAKIREV, A.F., red.; SHEFER, G.I., tekhn.red.

[Cable communication lines] Kabel'nye linii sviazi. Pod red. K.IA.Sergeichuka. Moskva, Gos.izd-vo lit-ry po voprosam sviazi i radio, 1960. 494 p. (MIRA 13:7)
(Electric cables)

ALEKSANDROV, N.V.; LARIONOV, A.N.; BRAGIN, S.M.; GRODNEV, I.I.; DROZDOV, N.G.; TAREYEV, B.M.; PENNE, V.T.; MAYOFIS, I.M.; TROITSKIY, I.D.; KABYSTINA, O.F.; SIDOROV, K.V.

Professor Vladimir Alekseevich Privezentsev. Elektrichestvo no.7:94 Jl '60. (MIRA 13:8)
(Privezentsev, Vladimir Alekseevich, 1900-)

PHASE I BOOK EXPLOITATION SOV/5267

Grodnev, I. I., A. N. Gumelya, M. A. Klimov, K. Ya. Sergeychuk, and V. O. Shvartsman

Inzhenerno-tekhnicheskiy spravochnik po elektrosvyazi; kabel'nyye i vozdushnyye linii svyazi (Engineering and Technical Manual in Electrocommunication; Cable and Overhead Communication Lines) [Moscow] Svyaz'izdat, 1961. 558 p. 15,000 copies printed.

Resp. Ed.: K. Ya. Sergeychuk; Ed.: G. V. Bogacheva; Tech. Ed.: G. I. Shefer.

PURPOSE: This manual is intended for technical personnel engaged in planning, building, and operating electrocommunication lines, and for students in communication schools of higher technical education.

COVERAGE: The manual reviews the systems of arrangement and operation of intercity communication lines. Construction data and detailed electrical characteristics of symmetrical and coaxial

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cables and overhead lines are given for a broad frequency spectrum. The book contains the basic definitions and engineering calculation formulas for transmission parameters and for the effect of various types of lines. Problems of protection of communication lines from mutual effects (transposition, balancing, shielding) are examined. Electrical measurements and protective measures against the influence on communication lines of power lines and atmospheric electricity are described. Basic reference data are given for the planning, construction, and operation of intercity electrocommunication lines. No personalities are mentioned. There are 50 references, all Soviet.

TABLE OF CONTENTS:

DEVYATKOV, N.D.; GRODNEV, I.I.; ROGINSKIY, V.N.; GAL'PERIN, Ye.I.

An All-Union session. Radiotekhnika 16 no.10:77-80 O '61.
(MIRA 14:10)

1. Rukovoditel' sektsii elektroniki Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova (for Devyatkov). 2. Rukovoditeli sektsii provodnoy svyazi Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi (for Grodnev, Roginskiy). 3. Rukovoditel' sektsii poluprovodnikovykh priborov Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi (for Gal'perin).
(Electronics)

GRODNEV, I. I., prof. LYUBIMOV K.A., [illegible]

Future development of wire communications technology. Vest. sviazi 22 no.1:11-13 Ja '62. (MIRA 14:12)

1. Vsesoyuznyy zaochnyy elektrotekhnicheskiy institut svyzai (for Grodnev). 2. Zamestitel' nachal'nika Nauchno-issledovatel'skogo instituta kabel'noy promyshlennosti po nauchnoy chasti (for Lyubimov).

(Telephone lines)
(Radio lines)

S/106/62/000/002/009/010
A055/A101

9,1400

AUTHOR: Grodnev, I. I.

TITLE: Propagation of impulses along real symmetrical and coaxial cable circuits

PERIODICAL: Elektrosvyaz', no. 2, 1962, 60

TEXT: The propagation of impulses a[illegible] symmetrical and coaxial cable circuits is analyzed, account taken of eddy [illegible]rent losses, of the skin effect, of the proximity effect and of the dielectr[illegible]sses in insulation (dielectric polarization). The author begins by derivin[illegible]pressions for the impedances Z_1 and Z_2 (of the inner and outer conductors [illegible] the case of coaxial cables) and then for the impedance $Z_1 + Z_2$ of the coaxial cable circuit, and also for the impedance of the symmetrical cable circuit. In the case of symmetrical circuits, two formulae are derived for the impedance: 1) account taken of the skin effect, 2) account taken of the skin effect and of the proximity effect. All these formulae are valid for the h-f range. Using these formulae, the author deduces the expressions giving the propagation factor γ for the coaxial cable and for the symmetrical cable. He finds (using the operator method) the expressions represent-

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ing the transient response of an infinitely long circuit or of a circuit with a matched load in the case of a single voltage jump. Resorting then to the superposition method, he expresses the impulse as the sum of two single jumps with a time-shift between them equal to the duration τ_0 of the impulse, and thus determines the response of the circuit to a single impulse. This response is expressed as the sum of two similar functions, time-shifted by τ_0 with respect to one another and having opposite signs. These functions can be simplified if it is possible to neglect eddy current losses. At the end of the article, the author briefly examines the attenuation and the distortion of rectangular impulses (in a coaxial and in a symmetrical circuit), due to dielectric losses, to the skin effect and to the proximity effect. There are 4 figures and 1 Soviet-bloc reference. The Soviet authors or scientists mentioned in the article are: V. N. Kuleshov and V. V. Sokolov.

SUBMITTED: July 10, 1961

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3757

S/106/62/000/005/006/007
A055/A101

9,2165

AUTHORS: Grodnev, I.I.; Lyubimov, K.A.; Sverkalova, A.P.

TITLE: Investigation of multilayer shields in coaxial cables

PERIODICAL: Elektrosvyaz', no. 5, 1962, 63 - 68

TEXT: The authors describe a mathematical method for calculating multilayer shields in coaxial cables. The shielding factor of a coaxial cable being expressed by the ratio of the electric field strength axial components on the external and internal surfaces of the cable shield, i.e.:

$$S = \frac{E_z\,(r_{ext})}{E_z\,(r_{int})} ,$$

it is necessary, in the case of a three-layer shield (copper-steel-copper), to know the field strengths at $r_{ext} = r_4$ and $r_{int} = r_1$ (Fig. 2). To solve this problem, the authors write down the Maxwell equations for the components E_z and H_φ (in the cylindrical system of coordinates) and deduce, first, the general expressions giving E_z and H_φ and, then, a set of particular expressions for

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Investigation of multilayer shields in coaxial cables

thin shields. The shielding factor of the examined three-layer shield, such as finally found by the authors, is:

$$S_{123} = \frac{1}{\operatorname{ch} k_1 t_1 \operatorname{ch} k_2 t_2 \operatorname{ch} k_3 t_3} \frac{1}{\left(1 + \frac{Z_{m1}}{Z_{m2}} \operatorname{th} k_1 t_1 \operatorname{th} k_2 t_2\right)\left(1 + \frac{Z_{m2}}{Z_{m3}} \operatorname{th} k_2 t_2 \operatorname{th} k_3 t_3\right)}$$

where $K = \sqrt{i\omega\mu\sigma}$ are the eddy currents coefficients of the corresponding shield layers; t are the thicknesses of the shield layers; $Z_m = \sqrt{\frac{i\omega\mu}{\sigma}}$ are the wave impedances of the metal of the corresponding layers. On the basis of this formula, the authors obtain also analogous formulae for the shielding factor of the two-layer and one-layer shields. The authors next deal with the calculation of the "shielding attenuation" in the case of the three-layer (copper-steel-copper) shields and for different thicknesses of the copper and steel layers, the total thickness of the shield being constant and equal to 0.2 mm; this calculation was made for the 60 - 550 kc/s range. Two graphs are presented, giving, respectively, the frequency dependence of the attenuation and its dependence on the increase of the thickness of the steel layer. Another graph shows

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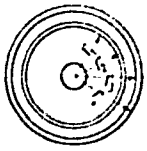
Investigation of multilayer shields in coaxial cables S/106/62/000/005/006/007 A055/A101

the relative importance of the "absorption attenuation" and the "reflection attenuation" in the case of a three-layer aluminum-steel-aluminum shield. At the end of the article, the authors reproduce a table giving the measured crosstalk attenuation between small coaxial cables, intended for the h-f multiplexing system K-300. The Soviet personality mentioned in the article is V. Mashkova. There are 5 figures and 2 tables.
SUBMITTED: December 15, 1961

Figure 2: 

4

Card 3/3

GRUDNEV, Igor' Izmaylovich, KURBATOV, Nikolay Dmitriyevich, [redacted] otv. red.; VOLOLARSKAYA, V.Ye., red.; TRISHINA, L.A., tekhn. red.

[Communication line structures] Linejnye sooruzheniia sviazi. Moskva, Sviaz'izdat, 1963. 578 p. (MIRA 16:8)
(Electric lines--Overhead) (Telecommunication)

GRODNEV, Igor' Izmaylovich; KULESHOV, V.N., otv. red.; VOLODARSKAYA, V.Ye., red.

[Transmission of electromagnetic energy using directional systems] Peredacha elektromagnitnoi energii po napravliaiushchim sistemam. Moskva, Izd-vo "Sviaz'" 1964. 52 p. (MIRA 17:5)

YEFIMOV, I.Ye.; GRODNEV, I.I., doktor tekhn. nauk, prof., retsenzent; SUSHKEVICH, V.I., kand. tekhn. nauk, retsenzent; SRETENSKIY, V.N., retsenzent; GOLOVANOVA, L.V., red.

[Radiofrequency transmission lines] Radiochastotnye linii peredachi. Moskva, Sovetskoe radio, 1964. 599 p. (MIRA 17:5)

GRODNEV, I.I., doktor tekhn.nauk; LYUBIMOV, K.A., kand.tekhn.nauk;
SVERKALOVA, A.P., inzh.

Small-sized coaxial cable. Elektrotekhnika 35 no.3:46-47
Mr '64. (MIRA 17:5)

VOLKOV, Boris Mikhaylovich; GRODNEV, Igor' Izmaylovich; YEREMEYEVA, Nina Yefimovna; KUZNETSOV, Nikolay Ivanovich; VOLODARSKAYA, V.Ya., red.

[Plastic coated communication cables] Kabeli sviazi v plastmasse. Moskva, Sviaz', 1965. 190 p. (MIRA 18:12)

GRODNEV, Igor' Izmaylovich; GUK, V.V., red.

[Communication cables] Kabeli sviazi. Moskva, Energiia, 1965. 279 p. (MIRA 18:9)

GRODNEV, I.I.; VOLKOV, B.M.

Shielding effect of cable sheathings. Elektrosviaz' 19 no.1: 73-75 Ja '65. (MIRA 18:4)

L 22454-66 EWT(d)

ACC NR: AP6005004 SOURCE CODE: UR/0106/66/000/001/0079/0080

AUTHOR: Grodnev, I. I.; Novozhilova, L. V.

ORG: none

TITLE: Shielding SHF electromagnetic field

SOURCE: Elektrosvyaz', no. 1, 1966, 79-80

TOPIC TAGS: electromagnetic shielding, SHF

ABSTRACT: Formulas for calculating SHF shields, for TM and TE modes, are analyzed, and a numerical example of a copper cylindrical 3-cm diameter shield (frequencies up to 10^{11} cps) is presented. The mathematical structure of the shield-design formulas for TM, TE, and TEM (lower frequencies) modes is the same. The shield-caused attenuation consists of two parts: absorption attenuation A_a due to eddy-current heat loss and reflection attenuation A_r. The shield effect due to A_a increases with frequency and shield thickness; the A_a vs. frequency curve is monotonous for all frequencies. The A_r vs. frequency curve is periodic at SHF because the wavelength becomes comparable to the shield dimensions. Orig. art. has: 4 figures and 6 formulas.

SUB CODE: 09 / SUBM DATE: 06Apr65 / ORIG REF: 001 / OTH REF: 001

Card 1/1 UDC: 621.315.212

GRODNICKI, Henryk, mgr (Warszawa)

The Warszawa Building Machinery Managing Enterprise. Przegl budowl i bud mieszk 34 no.2:115-116 F '62.

GRODNICKI, Henryk (Warszawa)

Transportation organization of prefabricated building parts in the Czechoslovak Socialist Republic. Przegl budowl i bud mieszk 35 no. 6: 274-278 Je '63.

GRODNIK, M G

24(8) PHASE I BOOK EXPLOITATION SOV/1504

Moscow. Vysshaye tekhnicheskoye uchilishche imeni Baumana

Issledovaniye protsessov i mashin glubokogo kholoda; sbornik statey (Investigation of Deep Freezing Processes and Machinery; Collection of Articles) Moscow, Mashgiz, 1958. 77 p. (Series: Its:/Trudy/ vyp. 75) No of copies printed not given.

Ed.: S.Ya. Gersh, Doctor of Technical Sciences, Professor; Managing Ed. for Literature on Machine Building and Instrument Making (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific workers and engineers concerned with deep freezing.

COVERAGE: In the present collection, a number of investigations of deep-freezing problems associated with heat-exchange processes and the design of expanders and turbocompressors are published for the first time. See Table of Contents. There are 16 references, 13 of which are Soviet, and 3 English.

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Card 6/6

GRODNIK, M.G., inzh.

Problem of uniform refluxing in designing multicell rectification columns. Izv.vys.ucheb.zav.; mashinostr. no.4:159-165 '59.
(MIRA 13:4)

1. Moskovskoye vysshoye tekhnicheskoye uchilishche im. Baumana.
(Refrigeration and refriterating machinery)

GRODNIK, M.G., inzh.; BYKOVA, E.N., inzh.; VELICHANSKIY, Ya.A., inzh.

Purification and drying of carbon dioxide gas in the systems of carbon dioxide plants. Khol. tekh. 39 no.5:35-36 S-O '62. (MIRA 16:7)

1. Gosudarstvennyy institut po proyektirovaniyu kholodil'nikov, fabrik morozhenogo, zavodov sukhogo i vodnogo l'da i zhidkoy ugleksloty.
(Carbon dioxide) (Gases--Purification)

GRECHITSKIY, P.

Unsolved problems. Avt.transp. 35 no.6:10-11 Je '57. (MIRA 10:7)

1. Upravlyayushchiy Krasnoyarskim krayavtotrestom.
(Transportation, Automotive)

HERGMAN, Ya.; GRODNITSKIY, P.; EYZENKREYN, O.

Centralized operational service. Avt. transp. 37 no.8:10-12 Ag '59.
(MIRA 12:12)

1.Leningradskiy filial Nauchno-issledovatel'skogo instituta avtomobil'-nogo transporta i Krasnoyarskiy avtotrest.
(Transportation, Automotive)

POLAND / Chemical Technology. Chemical Products and Their Applications. Chemical Processing of Solid Fossil Fuels. H

Abs Jour: Ref Zhur-Khimiya, 1959, No 4, 13115.

Author : Kalonowski, Bohdan; Grodon, Alojzy; Gregor, Antoni.
Inst : Not given.
Title : Absorbent Oil for Collecting Benzene from Coking Gas and New Possibilities of its Regeneration. Part I.

Orig Pub: Koks, smola, gaz, 1957, 2, No 4, 153-156.

Abstract: General information is given on methods for collecting benzene from coking gases, on comparative characteristics of coal and solar absorbent oils usually used and their regeneration. Reasons for production losses of these oils and steps for stopping these losses are examined.

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H.

POLAND/Chemical Technology - Chemical Products and Their Uses - Safety Methods. Sanitary Methods.

Abs Jour : Ref Zhur - Khimiya, No 11, 1958, 36757

Author : Grodon A, Gregor A.
Inst :
Title : Fire Prevention Measures in Benzene Storage.

Orig Pub : Przegl. Pozarn, 1957, 36, No 7, 15-19

Abstract : Factors favorable to the development of fires and explosions of tank-stored benzene (B) [Composition of vapor air mixtures (VAM), role of fire source, influence of inert gas impurities (N_2, CO_2) and means of extinguishing of (B) caused fires] are studied. (VAM) above the surface of technical grade (B) contains (volume %): 3.5 to 9.6-CO_2, 0.8 to 7.2-CO, 1.4-H_2, 11.5-CH_4, and 1.0 to 6.3-O_2.
Such composition of (VAM) may be explained by the oxidation of liquid benzene and its vapor under catalytic

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