PUKHNAREVICH, G.[illegible], kand. tekhn. nauk; PARKHOMENKO, P.A.; BOTVINSKIY, V.Ya.; GAVRO, L.F.; VORONOV, Yu.F.

Behavior of hydrogen during the melting operation in 500-ton open-hearth furnaces. Met. i gornorud. prom. no.1; 28-30 Ja-F '65. (MIRA 18:3)

PUKHNAREVICH, G.P., kand. tekhn. nauk; BOTVINSKIY, V.Ya.; PARKHOMENKO, P.A.; VORONOV, Yu.F.

Studying the slag forming process during the melting period in high-capacity open-hearth furnaces. Met. i gornorud. prom. no.1:30-32 Ja-F '64. (MIRA 17:10)

S/137/62/000/006/063/163
A052/A101

AUTHORS: Taskayev, N. D., Parkhomenko, P. D.

TITLE: The dynamics of sublimation of Sb compounds from lean sulfide oxidized ores

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 24, abstract 6G186 ("Izv. AN KirgSSR. Ser. yestestv. i tekhn. n.", 2; no. 11, 1960, 159 - 164, Kirghiz summary)

TEXT: Experimental works were carried out to establish the effect of the temperature and the granulometric composition of ore on the process of Sb sublimation. At the same time the effect of the atmosphere on the depth of sublimation process was investigated. For an Sb-ore the Sb sublimation should be carried out at 1,200°C. A reducing atmosphere facilitates the process of Sb distillation and decreases the temperature of the process by more than 200°C. The granulometric composition of ore affects the depth of metal recovery at up to 1,000°C (independently of the character of the atmosphere). Steady conditions of Sb distillation at > 1,100 - 1,200°C speak for the advisability of carrying

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S/137/62/000/006/063/163
A052/A101

The dynamics of...

out the process at high temperatures, in particular, under conditions of cyclone smelting.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 2/2

TASKAEV, K.D.; PARKHOMENKO, P.D.

Investigation of the sublimation of antimony compounds from poor oxidized sulfide ores. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 2 no.11:159-164 '60. (MIRA 14:10)
(Antimony organic compounds)

PARKHOMENKO, P. G.

Voprosy kosmogonii, t. 6 (Problems in Cosmogony, Vol. 6) Moscow, Izd-vo AN SSSR, 1958. 367 p. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Astronomicheskiy sovet.

ARTICLES

REPORTS

Parkhomenko, P.G.

C-4

USSR/Nuclear Physics - Structure and Properties of Nuclei

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 480

Author : Parkhomenko, P.G.

Inst :

Title : Concerning the Problem of the Origin of Elements.

Orig Pub : Vopr. kosmogonii, 5, M., AN SSSR, 1957, 181-191

Abstract : The latest values of the binding energy of the nuclei are used to verify the correctness of the theory of equilibrium origin of the elements. The usual equation of thermonuclear equilibrium is used, and leads to a linear relation between the logarithm of the ratio of the two cosmic abundances and the difference of the corresponding binding energies; thus, there were obtained equilibrium lines, which are exactly determined by the empirical material. It is shown that the poly-neutron theory of Mayer and Teller (Mayer, M.G., Teller, E., Physical Review, 1949, 76, 1226) is not confirmed by the numerical data: the neutron

Card 1/2

PARKHOMENKO, P.G.

Maintenance of abundances during the formation of elements [with summary in English]. Vop. kosm. 6:265-268 '58. (MIRA 11:10)
(Cosmogony) (Nuclear physics)

PARKHOMENKO, P.G.

Location of the thermonuclear equilibrium medium [with summary in English]. Vop.kosm. 6:269-274 '58. (MIRA 11:10)
(Cosmogony)

Parkhomenko P.G.

USSR/Nuclear Physics - Structure and Properties of Nuclei C-4

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 481

Author : Parkhomenko, P.G.
Inst :
Title : Conservation of Equilibrium Abundances for Intermediate Atoms.

Orig Pub : Vopr. kosmogonii, 5, M., AN SSSR, 1957, 192-195

Abstract : On the basis of a recently published list of masses for the isotopes of the group of atoms from Z = 31 to Z = 41, equilibrium lines were plotted and the equilibrium temperature and the neutron concentration were determined. Comparison with the results of the earlier work (see Abstract #480) discloses a monatonic decrease in the freezing temperature with increasing atomic weight. A decrease in the corresponding concentration of the neutrons with increasing A was observed.

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PARKHOMENKO, A.P.

The origin of the elements [with summary in German]. Vop. kosm. 5: 181-191 '57. (MLRA 10:8)

(Nuclear physics) (Chemical elements)

PARKHOMENKO, P.G.

Conservation of equilibrium abundance for intermediate atoms [with summary in German]. Vop. kosm. 5:192-195 '57. (MLRA 10:8)
(Nuclear physics)

ABRAMOV, M.I.; BELIZIN, V.I.; DEVITSKIY, S.M.; ZATULA, V.I.; ZOLOTAREV, V.N.; ZOLOTAREV, I.S.; IL'INA, M.I.; KOLYSHKINA, N.S.; KUDASOV, L.P.; MAKHLIN, V.N.; MEDVEDEV, G.S.; NEKHAYEV, I.S.; OLEYNIKOV, M.S.; PARKHOMENKO, P.N.; TOMASHEVSKIY, V.I.; FEDUNETS, I.Kh.; KHRAMTSOV, V.K.; ZOLOTAREV, N.V., red.; SEVRYUKOV, P.A., tekhn.red.

[Planning on collective farms; manual] Planirovanie v kolkhozakh; spravochnik. Kursk, Kurskoe knizhnoe izd-vo, 1960. 437 p. (MIRA 14:2)

(Collective farms)

PARKHOMENKO, P.P., inzhener.

Apparatus for regulating automatically the water level of the head water at a hydroelectric power station.. Elek. sta. 26 no.1:54-56 Ja '55. (MLRA 8:3)
(Hydroelectric power stations)(Governors (Machinery))

PARKHOMENKO, P.P., inzhener.

Reducing the temperature in the abutment of a turbine-generator unit. Elek.sta.27 no.6:53 Je '56. (MIRA 9:9)
(Hydroelectric power stations)

PARKHOMENKO, P. P. and TSUKANOV, T. T.

"Problems Concerning the Automation of the Anlaysis of Relay Schemes."

report presented at All-Union Conference on Problems in the Theory of Relay Devices, Inst. for Automation and Remote Control AN USSR, 3-9 Oct 1957.
Vestnik AN SSSR, 1958, No. 1, v. 28, pp. 131-132. (autor Ostianu, V. M.)

PARKHOMENKO, P.P., Cand Tech Sci -- (diss) "Mechanization of ~~the~~ processes of analysis of relay action devices." Mos, 1959, 16 pp (Acad Sci USSR. Inst of Automation and Telemechanics) 150 copies (KL, 35-59, 114)

PARKHOMENKO, P.P.

28(1) SOV/30-59-1-48/57

AUTHOR: Morosanov, I. S.

TITLE: Development of the Theory and the Application of Discreet Automatic Systems (Razvitiye teorii i primeneniy diskretnykh avtomaticheskikh sistem)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 138-139 (USSR)

ABSTRACT: The conference dealing with this problem took place in Moscow from September 22 to 26, 1958 and was opened by V. A. Trapeznikov, chairman of the Natsional'nyy komitet SSSR po avtomaticheskomu upravleniyu (National Committee of the USSR for Automatic Control). In the Plenary Meeting Ya. Z. Tsypkin reported on discreet automatic systems and their development prospects. The work of the conference was undertaken by 3 sections. Reports were held by: 3.
G. D. Tartakovskiy and V. P. Pa..v reported on new investigation results in the case of pulse systems with variable parameters.
Fan Ch'ung-wei dealt in his report with his successful procedures of analysis of pulse systems with several elements.
V. M. Kilin spoke about the problem of an increase of the perturbation stability of the systems.

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Ya. Z. Tsypkin investigated the possibilities of pulse systems.
K. K. Krasovskiy investigated one of the possible ways of constructing an automatic control-system with a discreet correcting device.
R. A. Kregins analysed pulse systems.
L. V. Pyankin investigated the conditions of eigen oscillations (avtokolebaniye) in a system with wide range pulse modulation.
Yu. V. Dolgolenko reported on the method of determining parameters of a boundary cycle for an extreme system.
V. V. Kazakevich dealt with the results of approximation calculation methods of extreme systems.
A. A. Fel'dbaum investigated the influence of perturbations.
L. G. Butkovskiy and S. N. Domanitskiy reported on the construction of optimum-control systems for objects with retardation.
G. N. Nadzhafova investigated methods of determining the maximum ripple effect of control systems.
O. G. Varshavskiy spoke about the construction of an automatic machine for objects with retardation which permits the best possible control systems.

Card 2/3

M. A. Gavrilov analysed modern telemechanical equipment from the viewpoint of the so-called "finite automatic machines" (consisting of systems of a finite number of elements).
P. P. Parkhomenko reported on the effect and construction of a special logical machine for the analysis of relay orders.
Yu. Ya. Bazilevskiy investigated accurate "finite automatic machines" which in the case of an unvariable structure furnish arbitrary items of several arguments.
G. K. Berends and A. A. Tal' reported on a pneumatic system of elements of "finite automatic machines" with the logical elements described as "not", "and", "or" by means of which further logical functions can be put into practice.
The participants in the conference considered the technical working out of the papers presented insufficient. In the last session the heads of the committees summarized the results obtained at the conference and briefly mentioned the important tasks in further developing the theory and the application of discreet automatic systems.

Card 3/3

SOV/24-59-3-27/33

AUTHOR: Parknomenko, P. P. (Moscow)

TITLE: A Large-Capacity Logical Analyzer for Use with Relay Systems

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 3, pp 179-180 (USSR)

ABSTRACT: This brief note outlines the purpose and functions (but not the design or operation) of a machine for testing relay circuits; the results are recorded manually. The figure shows the various functional units in the machine, but the functions of most of these units are not indicated. The machine was designed and is used at the Institute of Automation and Telemechanics, Academy of Sciences USSR, at which Institute the author works. The paper contains 1 figure and 5 references, of which 3 are Soviet and 2 are English.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, Academy of Sciences USSR)

SUBMITTED: July 17, 1958.

Card 1/1

PARKHOMENKO, P.P. (Moskva)

Analyzing relay circuits by means of a machine [with summary in English]. Avtom. i telem. 20 no.4:486-497 Ap '59. (MIRA 12:5)

(Electric network analyzers)

8(3)
AUTHOR: Parkhomenko, P. P. SOV/20-124-1-23/69

TITLE: The Principles of the Mechanization of the Analysis of Relay Contact Circuits (Printsipy mekhanizatsii analiza releyno-kontaktnykh skhem)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 1, pp 83-86 (USSR)

ABSTRACT: In the general case a relay circuit consists of receiving, intermediate, and executive elements. The contact double poles of the class π ($p > 0$, $q = 0$, $r = 1$) can be represented in form of a Bul's function of p variables and therefore they may be expanded in the following manner:

$$f(a_1,\ldots,a_i,\ldots,a_p) = \sum_{l=0}^{2^p-1} h_l \prod_{i=1}^{p} \tilde{a}_i$$

Σ and Π are the symbols for Bul's sum and Bul's product respectively. The coefficients h_l may assume the values 1 or zero. The structural analysis of such double poles on the basis of operational conditions consists of the separation of all combinations of the states of the receiving elements

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$\prod_{i=1}^{p} \tilde{a}_i = \left\{\tilde{a}_1,\ldots,\tilde{a}_i,\ldots,\tilde{a}_p\right\}$ from the aforementioned expansion. The following holds: 1) Every contact double pole of class H can be transformed into a contact double pole of class $\widehat{\Pi}$. 2) Every circuit can , when determining the chains f $[Z_k]$ and f $\{Z_k\}$, be reduced to the form of a double pole.

According to what has just been said, the method of decomposition into unit constituents (konstituyent yedinitsy) is also suited for the analysis of circuits of a general nature. This method, which is natural for one-cycle circuits, can easily be generalized for multi-cycle circuits if represented in form of a "one-cycle equivalent". This notion is explained more in detail by the author. For multi-cycle circuits it is of importance, apart from carrying out a structural analysis, also to determine the order with respect to time of the effect produced by the elements. The course of calculations is followed step by step. The principles discussed here were used in connection with the construction of a special logical

machine for the analysis of relay circuits. In conclusion, the advantages of such a logical machine are pointed out. There are 2 figures and 8 references, 7 of which are Soviet.

ASSOCIATION: Institut avtomatiki i telemekhaniki Akademii nauk SSSR (Institute for Automation and Telemechanics of the Academy of Sciences, USSR)

PRESENTED: July 17, 1958, by V. S. Kulebakin, Academician

SUBMITTED: July 17, 1958

PARKHOMENKO, P.P.

report to be presented at the 1st Intl Congress of the Intl Federation of Automatic Control, 25 Jun-5 Jul 1960, Moscow, USSR.

BYKHOVSKIY, M. L. - "Ultra stability in electronic calculating devices
in the solution of nonlinear equations in indefinite form"
CHELYUSTKIN, A. B. - "Use of calculating devices in systems for
the automatic control of rolling mills"
CHICHINADZE, V. K. - "Concerning some problems of the organization of
self-adjusting and self-teaching systems of automatic control,
based on principles of random search"
DAVYDOV, E. I. - "Development of automatic control systems for boiler
units"
DUDNIKOV, Ye. G. - "Determination of optimum adjustments of industrial
automatic regulation systems according to initial data obtained from
experience"
DUR'YE, A. I., and ROZENVASSER, E. N. - "Methods of organizing Lyapunov
functions in the theory of nonlinear regulating systems"
DEMCHENKO, N. N. - "Balanced regulation and inter-communications of
a multi-motor electric drive and technology in continuous rolling
mills"
FEL'DBAUM, A. A. - "Problems of statistical theory of automatic
optimization systems"
FETISOV, V. I. - "Automation of a reversible cold rolling mill for
nonferrous metals"
FILIPPOV, A. F. - "Application of the theory of differential equations
with a discontinuous right side to nonlinear problems of automatic
regulation"
GAVRILOV, M.A. - "Structural surplus and operational reliability of
relay devices"
GANKIN, M. Z. - "Automation of irrigation systems"
GERSHENGORN, G. R., KASHTELYAN, V. E., KOSTYUKOV, M. P., KERMAN, L. R.,
and SIRYY, E. S. - "Power regulation of disturbance and problems of
the stability of electric power systems"
GINZBURG, S. A. - "Logical method of synthesis of functional converters"
IL'IN, V. A. - "Methods of transmission of information and the structure
of telemechanical systems for dispersed structures"
ISAKOV, V. L., and LUTSKIY (fnu) - "The code-impulse system of tele-
measurement for dispatched operations of trunk-line gas pipe lines"
IVAKHNENKO, A.G. - "Concerning the application of the theory of combined
regulation systems for cybernetic adaptation systems"
KARANDEYEV, K. B., and SHTAMBERGER, G. A. - "A quasi-equilibrated bridge
as an element in a system of automatic control"
KAZAKEVICH, V. V. - "Concerning the process of extra regulation of inert
objects in the presence of disturbance"
KAZAKOV, I. E. - "Some problems of the theory of statistical linearization
and its application"
KOLIN, F. M. - "Some problems of the theory of impulse systems with
time selectors"
KOBRINSKIY, A. E., BOLKHOVITIN, S. V., VOSKOBOYNIKOV, L.M., IOFFE, D. M.,
POLYAN, E. P., POPOV, B. P., SLAVUTSKIY, Ya. L., SYSIN, A. Ya., and
YAKOBSON, Ya. S. - "The problem of bioelectric control"
KOLOMIYETS, B.T., - "New types of photo resistances and their field of use"
KOROBKO, M. L., MIKHAYLOV, B. G., and SHUMILOV, K. A. - "System of
automatic control and regulation of blast distribution in the tuyeres
of blast furnace"
KORNDOCHKIN, B. L. - "Investigation of the dynamics of the hydraulic
duct of a copying lathe"
KRASOVSKIY, A. A. - "Dynamics of continuous systems of automatic
regulation with extra self-adjustment of corrective devices"
KRASOVSKIY, N. N. - "Concerning the selection of parameters of
optimum stability systems"
KUKHTENKO, A. I. - "The dynamics of devices imitating living organisms"
KULEBAKIN, V. S. - "The invariant theory of automatic regulation and
control systems"
LAKIN, I. D. - "Pneumatic calculating devices as a means of insuring the
reliability of complex automation systems"
LAZAREV, V. G., and PARKHOMENKO, P.P. - "Mechanization of processes
of analysis and synthesis of the structure of relay devices"

Parkhomenko, P.P.

PHASE I BOOK EXPLOITATION SOV/5781

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki

Promyshlennaya telemekhanika (Industrial Telemechanics) Moscow, 1960.
284 p. Errata slip inserted. 4,000 copies printed.

Resp. Ed.: N.A. Gavrilov; Ed. of Publishing House: Ye.N. Grigor'yev;
Tech. Ed.: N.G. Shevchenko.

PURPOSE: This collection of articles is intended for scientific workers and engineers in the field of telemechanics.

COVERAGE: The book contains studies completed in 1957 by the workers of the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, Academy of Sciences USSR). They include telemechanic equipment, the theory of bridge tactless systems and systems for distributed equipment, the design of telemechanic signal systems, problems of synthesizing minimizing in relay circuitry, and methods of synthesizing contactless components. No personalities are mentioned. Most of the articles are accompanied by references.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress (TJ 213.A325)

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PARKHOMENKO, P.P.

PHASE I BOOK EXPLOITATION SOV/4411

Konferentsiya po voprosam teorii i primeneniya diskretnykh avtomaticheskikh sistem, Moscow, 1958

Teoriya i primeneniye diskretnykh avtomaticheskikh sistem; trudy konferentsii (Theory and Application of Discrete Automatic Systems; Transactions of the Conference) Moscow, AN SSSR, 1960. 572 p. 5,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Natsional'nyy komitet SSSR po avtomaticheskomu upravleniyu. Institut avtomatiki i telemekhaniki.

Editorial Board: M.A. Gavrilov, Doctor of Technical Sciences, Yu.V. Dolgolenko, Doctor of Technical Sciences, V.A. Kotel'nikov, Candidate of Technical Sciences, A.Ya. Lerner, Doctor of Technical Sciences, I.S. Morosanov (Scientific Secretary), G.S. Pospelov, Doctor of Technical Sciences, A.A. Fel'dbaum, Doctor of Technical Sciences, A.V. Khramoy, Candidate of Technical Sciences, and Ya.Z. Tsypkin, Doctor of Technical Sciences; Resp. Ed.: Ya.Z. Tsypkin, Doctor of Technical Sciences, Ed. of Publishing House: M.L. Podgoyetskiy; Tech. Ed.: S.G. Markovich.

PURPOSE: These transactions are intended for the members of the conference and other specialists in automatic control.

COVERAGE: The Conference on the Problems of Theory and Application of Discrete Automatic Systems took place in Moscow from September 22 to 26, 1958. It was the first conference devoted to discussions of the present status of the theory and techniques of discrete automatic systems and to planning for future development. The papers discussed at the conference have been divided into four groups. In the first group optimization switching circuits are discussed as well as methods of relay control systems, in particular plant lag control systems in which are realized optimal processes as to quick response. The second group of papers is devoted to the analysis and synthesis of pulse systems with variable parameters, of pulse systems with several pulse components, to the study of self-oscillation phenomena in nonlinear pulse systems, and to the methods of calculating linear pulse systems. Problems of simulating pulse systems and descriptions of some pulse regulators have also been included. The third group of papers deals with digital systems. Problems of using elements of digital technique and [illegible] computers for the automation of various fields of engineering, i.e., [illegible] engineering, mining, radio communication, metallurgy, etc., are discussed. Problems of analog-digital conversion and vice versa as well as problems of developing specialized functional converters have been included in this group. The fourth group of papers includes theoretical elements and certain practical applications of the simplest types of self-adjusting systems, optimalizing control systems, which are developed as relay, pulse and digital devices. Here are also found papers describing various methods of investigating steady state conditions in optimalizing systems, results of studying the effects of random factors on the process of automatic scanning, and examples of existing optimalizing control systems. Some of the more interesting communications and observations made during the discussion of the various conference papers have also been included in the Transactions. Personalities and references accompany most of the papers.

Brik, V.A. (Moscow). Digital Computer For Programmed Control 352

The author describes a simple computer for controlling machine tools producing details consisting of straight lines and circles. There are no references.

Mel'shikov, G.G. (Leningrad). A Machine For Computing Linear Combinations of Functions Which is Based on Methods Excluding Multiplication 360

There are no references.

Parkhomenko, P.P. (Moscow). High Capacity Universal Machine For Analyzing Relay Circuits 365

The author describes the machine which he developed under the supervision of Professor M.A. Gavrilov, Doctor of Technical Sciences. There are 6 references: 4 Soviet and 2 English.

Bazilevskiy, Yu.Ya. (Moscow). Certain Transformations of Finite State Automata 371

The paper discusses finite deterministic automata with a fixed structure representing arbitrary events determined by several states. The author formulates a system of equations based on conceptions of logical time functions. He introduces ideas on transition matrices, equivalence and equipollence of automata and describes some branching experiments. There are 6 references; 5 Soviets (including 3 translations) and 1 English.

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S/044/62/000/003/075/092
0111/0333

AUTHOR: Parkhomenko, P. P.

TITLE: A universal machine with large capacity for the analysis of relay circuits

PERIODICAL: Referativnyy zhurnal, Matematika, no. 3, 1962, 53, abstract 3V279. ("Teoriya i primeneniye diskretn. avtomat. sistem". M., AN SSSR, 1960, 365-370)

TEXT: Described is the principle of the method of operation and the structure of a special logical machine for the analysis of relay devices. The general form of the formulas is given which describe the contact two-terminal network and the circuits acting on the element of the relay device. The notion of the single-cycle equivalent of a multi-cycle relay device is introduced. The principle of decomposition into the constituents is described which serves as the base for the working of the machine in the analysis of a single-cycle circuit or of a single-cycle equivalent. The algorithm of the working of the machine in the determination of the successive timely action of the elements of the relay circuit and in the control whether the working of the devices corresponds to a given cut-in table is described. The principle of an

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S/044/62/000/003/075/092
C111/C333

A universal machine with large ...

automatic verification of real relay devices with the aid of the machine is presented. The complete block diagram of the machine is given and its working is described. Bibliography with 6 titles.

[Abstracter's note: Complete translation.]

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S/569/61/003/000/007/011
D201/D305

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AUTHORS: Lazarev, V.G., and Parkhomenko, P.P. (USSR)

TITLE: Mechanization of analysis processes and of the structure synthesis of switching circuits

SOURCE: International Federation of Automatic Control. 1st Congress, Moscow, 1960. Statisticheskiye metody issledovaniya. Teoriya struktur, modelirovaniye, terminologiya, obrazovaniye. Moscow, IZd-vo AN SSSR, 1961, 357 - 367

TEXT: The authors present certain results of research on the mechanization of the processes of analysis and of synthesis of switching circuits as obtained at the Institut avtomatiki i telemekhaniki AN SSSR - IAT (Institute of Automation and Telemechanics, AS USSR) and at the Laboratoriya sistem peredachi informatsii AN SSSR - LSPI (Laboratory of Information Transmitting Systems, AS USSR). The machine for analysis of relay switching circuits was developed in 1957 at IAT by P.P. Parkhomenko, under the leadership of Professor M.A. Gavrilov. The first model of the machine for the synthesis of

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Mechanization of analysis processes ...

switching circuits, consisting of four relays with two output circuits each, was developed in 1956 at the LSPI by a group consisting of V.G. Lazarev, A.A. Arkhangelskaya and S.S. Kraynov under the leadership of V.N. Roginskiy. The second perfected model was developed in 1957-1959 at LSPI by A.A. Arkhangelskaya, O.F. Sergeyeva and S.S. Kraynov under the leadership of V.N. Roginskiy and V.G. Lazarev. The circuit analysis of a system consists in determining states of operating components, including their interdependence in time. In practice, this reduces to checking the circuit structure and determining the sequential operation of multi-contact circuits in time. Determination of sequential time operation of components of a multi-contact circuit may be made from the results of structural analysis of its single-contact equivalent. The bloc diagram of the machine designed using this principle is shown in Fig. 2, where B - external disturbance unit, determining the initial state of input components and changes of states of reacting components occurring in the steady-states of the circuit; 3-delay unit, used for simulating delays in operation and release of the circuit components; O - feedback unit for transmitting from the output to the input the intermediate component state combinations.

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Mechanization of analysis processes ...

$$\overset{1}{\uparrow} B\Gamma(Y_B(t) \rightarrow \text{output}, M)M(Y_B(t) \sim Y_M(t)) \overset{2}{\downarrow} \Gamma(Y_M(t) \rightarrow 3)$$

is the logic of the algorithm realized by the machine, for obtaining the table of commutations of a multi-contact switching system. The synthesis of a relay switching arrangement is actually the design of the switching part of the circuit together with, for a multi-contact system, choosing the intermediate relays and their sequence of switching. The design of such a machine was made possible by the graphical method of obtaining the required synthesis algorithm given by V.N. Roginskiy (Ref. 10: Graficheskiy metod postroeniya skhem kontaktnych (1, k) - polyusnikov (Graphical Method of (1, k)-Pole Switching Network Design). Problemy peredachi informatsii, Izd-vo AN SSSR, 1959). This graphical method lies at the basis of design of the fully automatic machine for synthesis of relay systems. From the conditions of connections between the input and each of two outputs, the machine makes it possible to construct a switching system of two operating circuits, consisting from the contacts of not more than 4 relays. The synthesis conditions are supplied as a set of numbers on a special board. The results of synthe-

sis are displayed on a light grid. The machine has 204 relays type РКН (RKN). The synthesis time of one variant is about 1 mm. The second model of the machine produces not only the synthesis of the switching system but also the process of checking whether the commutation table can be realized or not, the process of choosing the minimum necessary number of intermediate relays and the process of constructing the commutation table itself. The machine incorporates a counter, automatically consisting of the number of contacts of each relay and the overall number of contacts. There is a safety device included, protecting the machine against the operator's mistake. The second machine has about 1000 relays type RKN and five type ШИ-11 (ShI-11) and ШИ-25 (ShI-25) selectors. The design of a machine for the synthesis of systems with a larger number of relays (9 - 10) is limited by the operating speed and dimensions of the machine. These are the reasons why the electronic variant of the machine is under devlopment at LSPI. A discussion followed in which the following took part: Shcheglovitov (USSR), R.K. Belikov (USSR), B.L. Timofeyev (USSR) and V.D. Kazakov (USSR). There are 5 figures and 13 references: 11 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows:
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PARKHOMENKO, P. P. and TOMFELD, Yu. L.

"Minimizing number of substantial connections between rows of flow table"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

ACCESSION NR: AT4031767 S/0000/63/000/000/0128/0144

AUTHOR: Parkhomenko, P.P.; Tomfel'd, Yu. L.

TITLE: Minimization of the number of essential connections between the lines of a flow table

SOURCE: AN SSSR. Strukturnaya teoriya releyny*kh ustroystv (Structural theory of relay devices). Moscow, Izd-vo AN SSSR, 1963, 128-144

TOPIC TAGS: control system, automation, automatic control, feedback, flow table, relay, relay structure

ABSTRACT: The authors have arbitrarily broken down the process of relay device structural synthesis into the following five stages: (1) The verbal description of the problem; that is, the verbal exposition of the relations between the assigned sequences of input influences and the required sequences of output influences corresponding to them, as well as instructions regarding additional requirements and constraints. (2) The representation of the verbal assignment of the future relay device in formal language, suitable for the further processing of the problem. (3) Feasibility check of the assigned operating conditions,

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ACCESSION NR: AT4031767

determination of the necessary number of secondary (intermediate) elements, and the ordering of their state combinations so as to exclude impermissible race conditions. (4) The construction of a truth table (table of states, table of a single-cycle equivalent of a multi-cycle (i.e., "sequential") system), with consideration of the secondary elements. (5) The construction of a structure to satisfy the derived truth table and the additional requirements and constraints. It is noted that, as a rule, and in a certain sense optimal solution must be achieved in the second, third and fifth synthesis stages, with the criteria of optimality, in the simplest case, being minimum sequence length, minimum state number and minimum element number. The present article deals with problems relating, primarily, to the third stage in the synthesis of relay device structure. The synthesis problem using flow tables is considered on the basis of the following example: a relay device is to be constructed which will provide a means whereby any of three water-pipe filters will be switched over for washing in the same order (sequence) in which they become clogged. The filters are to be switched for this washing operation one at a time. State and flow tables, corresponding to this problem, are calculated and analyzed. General rules for joining the lines of the tables are derived and applied. The compression operation is discussed in terms of the selection of the possible variants of line union. It is demonstrated that the problem of

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minimizing the number of lines of a flow table reduces itself in this case to a reordering of the lines and columns of the compression matrix in such a manner as to obtain from the given matrix a minimal quantity of diagonal blocks, having no empty non-diagonal cells. The authors described how this operation is accomplished in actual practice, and then turn their attention to the problem of the determination of the necessary number of secondary elements and the arrangement of the combinations of their states; that is, the matching of these combinations to the numbers of the states of the secondary elements of the device (the line numbers of the compressed flow table). The method described is essentially that proposed by S. Caldwell (S. Caldwell, Logicheskiy sintez releyny*kh ustroystv. M., 1962). A method is explained for minimizing the number of ribs of a flow graph, based on the possibility (described in the article) of redistributing the connections (relations) between the lines of the flow table. The possibility of such minimization in general is shown to flow from the ambiguity of the solution of the problem. In the given case, the ambiguity is present when there are three or more single sate numbers (one of which is normally steady) in at least one column of the flow table. Extensive flow variation tables are given in the article and their use is explained in detail. It is pointed out that when compiling such a table, the different constraints imposed on the flows (transitions) can be taken into account. For example, transitions of more than two cycles

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to steady states can be forbidden for part or for all of the lines. The table of variants should not include those flow variants which do not satisfy the limitations adopted. Consequently, the minimization of the number of ribs of a flow graph is reduced to a rational selection of l lines (one line from each group corresponding to one steady state) of the table of variants. The point is further made that all possible solutions of the minimization probably can be achieved by representing the table of variations in the form of a certain algebraic formula (similar to the McClusky formula representing a Quiné table in the minimization of Boolean functions) and subsequent transformation of this formula to the form of the sums of the products of the logical variables, which in the case considered in the article are the flows (transitions) between the lines of the compressed flow table. The limitations and peculiarities of this method are noted and analyzed. Orig. art. has: 5 figures and 11 tables.

ASSOCIATION: none

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POSTCARD

ACCESSION NR: AT4031767

SUBMITTED: 14Nov63 DATE ACQ: 16Apr64 ENCL: 00

SUB CODE: EC, IE NO REF SOV: 005 OTHER: 001

0

Card 5/5

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.; KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.; BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERNSHTEYN, S.I.; YEMEL'YANOV, S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I., FITSNER, L.N.; CHELYUSTKIN, A.B.; ZHOZHIKASHVILI, V.A.; IL'IN, V.A.; AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TTSER, L.V.; PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO, P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI, I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic control at the Institute of Automatic and Remote Control during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64. (MIRA 17:7)

ACCESSION NR: AP4041470 S/0103/64/025/006/0963/0979

AUTHOR: Parkhomenko, P. P. (Moscow)

TITLE: Synthesis of relay structures consisting of functionally complete systems of logical elements

SOURCE: Avtomatika i telemekhanika, v. 25, no. 6, 1964, 963-979

TOPIC TAGS: relay system, switching theory, automatic control, automatic control theory

ABSTRACT: A method for constructing relay (switching) structures is suggested which is based on certain assertions of the information theory; the method is tentatively termed "the method of maximum increments of knowledge." It can be used for synthesizing many types of structures from different logical elements. At each step of the synthesizing process, only such experiment as yields a maximum increment of knowledge is materialized. This principle corresponds to

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L 51317-65 EWP(e)/EWP(k)/EWP(h)/EWT(d)/T/EWA(1)/EWP(1)/EWP(v) Pf-4

ACCESSION NR: AP5009212 UR/0020/65/161/001/0059/0062

AUTHOR: Karibski, V. V.; Parkhomenko, P. P.; Sogomonyan, Ye. S.

TITLE: Checking the operability of and detecting faults in finite automata

SOURCE: AN SSSR. Doklady, v. 161, no. 1, 1965, 59-62

TOPIC TAGS: finite automaton, automaton operability, fault detection

ABSTRACT: A list of n faults can be specified in such a way that every fault somehow alters the flow diagram or flow table of the good (sound) automaton M_0. Each flow diagram corresponds to an automaton M_i where $i = 1, \ldots n$. Then, the problem of checking operability or locating the fault is reduced to a problem of determining which automaton, in the class $\{M_0, M_1, \ldots M_n\}$, is dealt with by the experimenter. A. Gill gives a solution to this problem ("Introduction to the Theory of Finite-State Machines, 1962) for the case when the automata, corresponding to a specified list of faults, belong to a so-called "exclusive class"; they are characterized by the fact that no state of the automaton M_i is equivalent

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to any state of M_j when $i \neq j$, each automaton of this class being minimal. In a specific case, if M_i is strong-coupled and minimal and no $M_1, \ldots, M_n$ is equivalent to M_0, the classes $\{M_0, M_1\}, \ldots, \{M_0, M_n\}$ are exclusive. Nevertheless, in the general case, it cannot be said that the class $\{M_0, M_1, \ldots M_n\}$ is exclusive. This article considers the case free from the above limitations, i.e., when the faulty automata class is not exclusive, the sound automaton is not strong-coupled (or not minimal), and when the equivalent automata having "essential" faults differ from each other. Orig. art. has: 1 figure and 10 formulas.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics, AN SSSR)

SUBMITTED: 21Sep64 ENCL: 00 SUB CODE: EC, IE

NO REF SOV: 001 OTHER: 002

Card 2/2

L 04983-67

ACC NR: AT6030873 SOURCE CODE: UR/0000/66/000/000/0269/0276

AUTHOR: Gorovoy, V. R.; Kucherov, V. M.; Parkhomenko, P. P.; Tomfel'd, Yu. L.

ORG: none

TITLE: A logic machine for automatic synthesis of (1, k)-terminal switching networks

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Abstraktnaya i strukturnaya teoriya releynykh ustroystv (Abstract and structural theory of relay devices). Moscow, Izd-vo Nauka, 1966, 269-276

TOPIC TAGS: switching theory, automatic machine, automaton, finite automation, automatic synthesis, machine synthesis

ABSTRACT: The authors describe a special-purpose machine ("Parus-1") intended for automatic synthesis of (1, k)-terminal switching networks by combinational logic. The automaton developed at the Institute of Automation and Telemechanics is capable of synthesizing (1, 4)-terminal networks using 6 variables, (1, 8)-terminal networks with 5 variables, and (1, 12)-terminal networks with 4 or fewer variables. The synthesized network may contain a maximum of 14 nodes with at most 10 switching elements connected between any two nodes. Input data (logical requirements) in the form of a truth table are introduced through 16 groups of 3-position switches (16 switches per group). The three positions correspond to the D, 1, and don't-care

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L 04983-67

ACC NR: AT6030873

outputs of the synthesized network. Results are displayed on a board containing signal lights each of which represents one contact between two nodes. It was established that of the synthesized networks 60% contained the same number of contacts as the reference structures, 3% had fewer contacts, and 37% had more contacts. The number of redundant contacts usually did not exceed one. Orig. art. has: 2 tables.
[BD]

SUB CODE: 09/ SUBM DATE: 06Jun66/ ORIG REF: 003/ OTH REF: 003/

Card 2/2

ACC NR: AP7004243 SOURCE CODE: UR/0103/67/000/001/0100/0111

AUTHOR: Parkhomenko, P. P. (Moscow)

ORG: none

TITLE: Synthesizing relay systems by the method of substitution of input variables

SOURCE: Avtomatika i telemekhanika, no. 1, 1967, 100-111

TOPIC TAGS: relay system, automatic control system, logic element, optimization, algorithm

ABSTRACT: A "universal" algorithm is described which is intended for synthesizing any type of single-output or multi-output relay structure consisting of any logic elements (contact or contactless) under any input conditions (with or without negation of input variables, with or without constants). Headed from

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ACC NR: AP7004243

inputs to outputs, the algorithm is a multistep process of constructing the relay system; at each step, the solution is optimized. The resulting structure is not minimal, in the general case, but sufficiently economical insofar as its number of elements is concerned. The algorithm permits imposition of additional conditions and constraints on both logic elements and synthesized structures (cascade structure, various points of application of input variables, topography of signal sources, load capacities of logic elements, structures corresponding to Boolean functions, contact parallel-series and bridging structures, etc.). "The author wishes to thank Yu. L. Tomfel'd for his useful comments and advice." Orig. art. has: 19 formulas and 4 tables.

SUB CODE: 09, 12 / SUBM DATE: 18Jan66 / ORIG REF: 007 / OTH REF: 001

Card 2/2

ACC NR: AT6030872 SOURCE CODE: UR/0000/66/000/000/0189/0224

AUTHOR: Karibskiy, V. V.; Parkhomenko, P. P.; Sogomonyan, Ye. S.

ORG: none

TITLE: Failure analysis of combined systems

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Abstraktnaya i strukturnya teoriya releynykh ustroystv (Abstract and structural theory of relay devices). Moscow, Izd-vo Nauka, 1966, 189-224

TOPIC TAGS: circuit failure, material failure, signal analysis, mathematic analysis

ABSTRACT: Problems in analyzing memory-less digital systems for the purpose of checking on their efficiency and predicting failure are discussed. The proposed tests are in the form of minimum sets of input variables intended to produce a measurable response of the controlled system. In the present paper, the problem is extended to general combined multi-output systems which may consist of arbitrary logic elements or any combination of subsystems. The methods for constructing minimum verifying and diagnostic sets are given for: a) sets of input variable values, or input variables, for a given number of controllable output poles and internal subsystems (minimum verifying and diagnostic tests); b) sets of controllable output poles and internal subsystems for a given number of input variable sets; c) sets of pairs, i. e., input set-

ACC NR: AT6030872

-output pole, input set-internal subsystem, from the total number of such sets used in checking the system. Methods for the construction of approximate verifying and diagnostic sets of the three types are reported. A table listing failure functions for different probabilities of the system's states is used. Also considered are the methods for the construction of optimum verification programs with regard to the intermediate information obtained in the process of system control, the relative "weight" of the input sets, output poles and internal subsystems, as well as the probability of given defects. A three-input gate is used as an example for the application of *minimum diagnostic sets* for the analysis of defects. The possible defects are enumerated and functions are assigned to identify these failures. Truth tables are used for the generation of eight minimum test sets designed to reveal the nature of the failure. The *approximate test sets* are used to determine the particular state of the system from a multitude of possible states on the basis of assigned probabilities. The *conditional diagnostic test sets* are based on consideration of the available intermediate information concerning the state of the system. The procedure consists in dividing the possible states of a system into subsets and choosing the subsets for further division in accordance with the decision that the particular subset does or does not account for a particular state. An example illustrates the application of this method. The authors thank L. A. Sholomov for his participating in discussions of the work, and for valuable advice, and A. P. Yevseyeva, Ye. A. Adoyan, and Z. F. Baranova for their assistance in carrying out the calculations. Orig. art. has: 7 formulas, 8 figures.

SUB CODE: 09,12/ SUBM DATE: 06Jun66/ ORIG REF: 005

Card 2/2

PROCESSES AND PROPERTIES INDEX

CA

7

Iodometric method for determination of ferrous iron in the presence of organic substances R. C. Parkhomenko [illegible]. *J. Applied Chem.* (U. S. S. R.) **13,** [illegible] (in French) [illegible] In the iodometric method of Molir [illegible] *Chem. Pharm.* **105,** [illegible] 2:1 parts of HCl to 1 part Fe was found advantageous. A. A. Podgorny

METALLURGICAL LITERATURE CLASSIFICATION

PARKHOMENKO, S.

Parkhomenko, S. "The Problem of the Uralo-Kuznetsk Combine and the Phenomena of Permanently Frozen Ground." Sovietskaia Azia, Moscow, No. 3/4, 1931, pp. 116–119.

PARKHOMENKO, Stepan Antonovich; kandidat tekhnicheskikh nauk; BIRYUKOV, Yu.P., redaktor; VOLCHOK, K.M., tekhnicheskiy redaktor.

[New alloys for ship machinery bearings] Novye podshipnikovye splavy dlia sudovykh mekhanizmov. Leningrad, Izd-vo "Rechnoi transport," Leningradskoe otd-nie, 1956. 86 p. (MLRA 9:6)
(Alloys) (Bearings (Machinery)) (Naval engines)

PARKHOMENKO, S.A., kandidat tekhnicheskikh nauk.

New materials for founding bearings used in steam piston and internal combustion engines. Mech.transp.15 no.2:17-19 F '56. (MLRA 9:6)

(Bearings (Machinery)) (Steam engines) (Gas and oil engines)

PARKHOMENKO, Stepan Antonovich

EPP.
.R93146

NOVYYE PODSHIPNIKOVYYE SPLAVY DLYA SUDOVYKH MEKHANIZMOV (NEW BEARING ALLOYS FOR SHIP MECHANISMS) LENINGRAD, "RECHNOY TRANSPORT", 1956. 86, (2) p. ILLUS., DIAGRS., TABLES. "LITERATURA": p. 87.

PARKHOMENKO, S. A.

Parkhomenko, S. A. — "Investigation of New Antifriction Alloys on Lead and Zinc Bases and Their Use in Ship Maintenance." Min River Fleet USSR, Leningrad Inst of Engineers of Water Transport, Leningrad, 1955 (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No 24, 11 June 1955, Moscow, Pages 91-104

PARKHOMENKO, S.G.

Freezing of soils and loose rocks. Mat.k osn.uch.o merz.zon. zem.kory no.3:40-84 '56. (MIRA 13:9)
(Soil freezing)

PARKHOMENKO. S. G.

25512. O Zadachakh Inzhenerno-Geologicheskikh Issledovaniy, Proizvodimykh V Svyazi S Vypolneniyem Nivelirovaniya I Klassa. Sbornik Nauch.--Tekhn. I Proizvod. Statey Po Geodezii, Kartografii, Topografii, Aeros''yemke I Gravimetrii, VYP. 23, 1949, s. 89-92

SO: Letopis' Zhurnal'nykh Statey, Vol. 34, Moskva, 1949

SHPUNT, L.I.; PARKHOMENKO, S.R.

Denser loading of rosin in boxcars. Gidroliz. i lesokhim. prom. 8 no.6:22 '55. (MLRA 9:1)

1.Nachal'nik otdela snabzheniya Borisovskogo lesokhimicheskogo zavoda (for Shpunt). 2.Zamestitel' nachal'nika zheleznodorozhnoy stantsii Borisov (for Parkhomenko).
(Loading and unloading)

PARKHOMENKO, V.

From the history of the petroleum industry. Neftianik 6 no.1:29 Ja '61. (MIRA 14:4)

(Petroleum--Transportation)

PARKHOMENKO, V.

March. Nauka i zhyttia 11 no.3:47 Mr '62. (MIRA 15:8)
(Ukraine--Spring)

PARKHOMENKO, V.

April. Nauka i zhyttia 12 no.4:46 Ap '62. (MIRA 15:8)
(Spring)

PARKHOMENKO, V.

May. Nauka i zhyttia 12 no.5:55 My '62. (MIRA 15:7)
(Ukraine—Spring)

KOSTRIN, K., prof. (Ufa); PARKHOMENKO, V., dotsent (Yaroslavl')

Museum needs support. NTO 4 no.10:42-43 O '62. (MIRA 15:9)

1. Pochetnyy chlen soveta muzeya neftepererabatyvayushchego zavoda imeni D.I.Mendeleyeva (for Parkhomenko).
(Yaroslavl--Industrial museums)

SHUPIK, P.; LAVRIK, S.; SHUMADA, I.; LESHCHENKO, P.; MEDYANIK, R.; RADCHENKO, P.; PANCHENKO, V.; YESINENKO, L.; CHEBOTAREV, D.; BRATUS', V.; ISHCHENKO, I.; KOMISSARENKO, I.; KOLOMIYCHENKO, I.; MAKARCHENKO, A.; AMUTYUNOV, A.; SKRIPNICHENKO, D.; RODZAYEVSKIY, A.; PAVLENKO, K.; LEONENKO, K.; KOZYRENKO, N.; PARKHOMENKO, V.; CHERNEN'KO, M.

Aleksandr Kirillovich Gorchakov; obituary. Vrach. delo no.8:144-145 Ag '60. (MIRA 13:9)

(GORCHAKOV, ALEKSANDR KIRILLOVICH, 1900-1960)

PARKHOMENKO, V.

Mushrooms. Nauka i zhyttia 12 no.10:46 O '62. (MIRA 16:1)
(Mushrooms)

PARKHOMENKO, V.

July. Nauka i zhyttia 11 no.7:50-51 Jl '61. (MIRA 14:8)
(Ukraine—Nature)

PARKHOMENKO, V.

December. Nauka i zhyttia 11 no.12:52 D '61. (MIRA 15:2)
(Ukraine--Nature study)

PARKHOMENKO, V.

January. Nauka i zhyttia 11 no.1:61 Ja '62. (MIRA 15:2)
(Nature study)

PARKHOMENKO, V.

August. Nauka i zhyttia 11 no.8:31 Ag '61. (MIRA 14:12)
(Nature study)

PARKHOMENKO, V.

September. Nauka i zhyttia 11 no.9:45 S '61. (MIRA 14:10)
(Nature study)

PARKHOMENKO, V.

June. Nauka i zhyttia 11 no.6:54 Je '61. (MIRA 14:7)
(Spring)

PARKHOMENKO, V.

October. Nauka i zhittia 11 no.10:31 O '61. (MIRA 15:1)
(Wildlife, Conservation of)

PARKHOMENKO, V.

November. Nauka i zhyttia no.11:60 N '61. (MIRA 14:12)
(Nature study)

PARKHOMENKO, V., dots.

D. I. Mendeleev on the transportation of petroleum products in tank vessels. Rech. transp. 19 no.7:52 Jl '60. (MIRA 13:8)

(Petroleum--Transportation)

PARKHOMENKO, V.

First petroleum refinery in Bashkiria. Neftianik 5 no.11:30-31 N '60. (MIRA 13:11)

(Bashkiria--Petroleum refineries)

PANOV, Pano, inzh.; MELAMED, Zhuli, inzh.; KURCHEV, Stefan, inzh.; PARKHOMENKO, Vadim, inzh.

The corrosion and abraison-resistant pumps. Tekhnika Bulg 12 no.4:19-21 '63.

PARKHOMENKO, V.A., uchitel'

Relationship between the schools and the chemical industry. Khim. v shkole 15 no.5:82-85 S-O '60. (MIRA 13:10)

1. Srednyaya shkola No.42, g.Krasnodar.
(Chemical industries—Study and teaching)

L 10217-66 EWT(1)/EWP(m)/T-2/EWA(m)-2 IJP(c)
ACC NR: AP5028470 SOURCE CODE: UR/0286/65/000/020/0043/0044

AUTHORS: Garbazov, V. N.; Parkhomenko, V. A.; Strishak, V. Ye.; Yantovskiy, Ye. I. 44,55

ORG: none

TITLE: 'A magnetohydronynamic generator. Class 21, No. 175583 [announced by Scientific Research Electrical Engineering Institute (Nauchno-issledovatel'skiy elektrotekhnicheskiy institut)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 43-44

TOPIC TAGS: mhd generator, Hall effect

ABSTRACT: This Author Certificate presents a conduction-type magnetohydrodynamic generator. The generator employs the Hall effect. In order to increase reliability, the channel is made of alternate metallic and insulating frames at an angle

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UDC: 538.4;621.313.12.024

L 10217-66
ACC NR: AP5028470

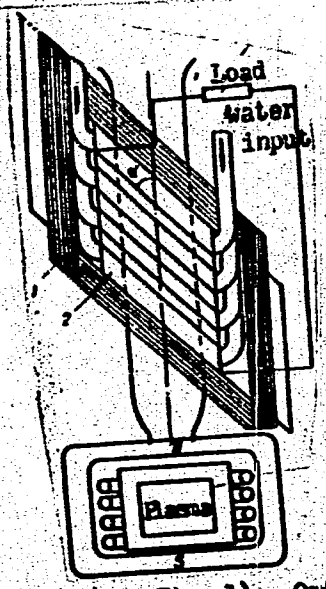

Fig. 1. 1 - Metallic frames; 2 - insulating frames.

to the axis of the generator (see Fig. 1). Orig. art. has: 1 figure.

SUB CODE: 10/ SUBM DATE: 05Jun64

Card 2/2

GANZ, S.N. [Hanz, S.N.]; PARKHOMENKO, V.B.

New antifriction and chemically stable materials. Khim. prom. [Ukr.] no.4:20-24 O-D '63. (MIRA 17:6)

GANZ, S.N.; PARKHOMENKO, V.D.

Physicomechanical properties of antifriction polyfluoroethylene resin materials. Plast. massy no.8:28-31 '64. (MIRA 17:12)

ACC NR: AT7004081 (N) SOURCE CODE: UR/3244/66/000/004/0097/0100

AUTHOR: Parkhomenko, V. D.; Ganz, S. N.; Golubenko, L. A.; Volodin, I. S.

ORG: Dnepropetrovsk Institute of Chemical Technology (Dnepropetrovskiy khimiko-tekhnologicheskiy institut)

TITLE: Linear expansion and thermal conductivity coefficients of fluoroplastic material

SOURCE: Dnepropetrovsk. Khimiko-tekhnologicheskiy institut. Khimicheskaya tekhnologiya, no. 4, 1966, 97-100

TOPIC TAGS: thermal conduction, thermal expansion, temperature coefficient, filler, linear expansion, fluoroplastic material

ABSTRACT: Expansion and thermal conductivity with $BaSo_4$, MoS_2, graphite, and coke used as fillers. It was shown that a very complex relationship exists between the linear expansion coefficient and the temperature, type and concentration of a filler. Generally, the increased film concentrations contribute toward lowering of the linear expansion coefficient. Thermal conductivity is determined by the filler.

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ACC NR: AT7004081

The increased concentration of the filler in the mixture usually increases the thermal conductivity of the fluoroplastic material. Orig. art. has: 4 figures and 1 table. [AM]

SUB CODE: 11/SUBM DATE: none/ORIG REF: 005/

Card 2/2

GANZ, S.N.; PARKHOMENKO, V.D.

Antifriction properties of fluoroplast-4 filled with ground coke. (MIRA 18:4)
Plast. massy no.1:40-41 '65.

GANZ, Semen Naumovich; YEMEL'YANOV, Miney Stepanovich; PARKHOMENKO, Vladimir Dmitriyevich; PANASYUK, V.G., doktor tekhn. nauk, prof. retsenzent; BLOKH, G.A., doktor khim. nauk, prof., retsenzent; KOZOPOLYANSKIY, N.S., dots., otv. red.; DEREVYANCHENKO, R.M., red.

[Plastics in the instrument industry] Plastmassy v apparatostroenii. Khar'kov, Izd-vo Khar'kovskogo univ., 1963. 198 p. (MIRA 18:6)

GANZ, S.N., kand. tekhn. nauk; GLOZMAN, L.P., inzh.; PARKHOMENKO, V.I., inzh.; MORGUN, V.S., inzh.

Using packing composed of filled flouroplastic materials on oxygen compressors. Khim. i neft. mashinostr.no.5:39 N '64 (MIRA 18:1)

GANZ, S.N.; PARKHOMENKO, V.D.

Shrinkage of filled thermoplast. Plast. massy no.3:36-38 '65.
(MIRA 18:6)

L 6170h-6 EWG(j)/EPF(c)/EPR/EWP(j)/EWP(s)/EWT(h)/EWP(l)/T/EWP(b)/EWP(e)/EWP(w)/
EWA(d)/EW(t) c,h/Pr-h/Ps-h RM/WH/WW/MJW/JD

ACCESSION NR: AP5015965 UR/0314/65/000/006/0030/0033
678.743:620.178.162

AUTHORS: Gans, S. N. (Doctor of technical sciences); Parkhomenko, V. D. (Candidate of technical sciences)

TITLE: Friction and abrasion testing of filled fluoroplastic-4 in agressive media

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 6, 1965, 30-33

TOPIC TAGS: plastic, fluoropolymer, plastic coating, friction, ductile material/ C 1 colloidal graphite, 1Kh18N9T steel, B fluoroplastic 4

ABSTRACT: Friction coefficients and wear of the "B" fluoroplastic-4 (filled with molybdenum-disulfide, boron nitride, pure $BaSO_4$, ground coke, carbon black, talcum, colloidal graphite C-1, and anhydrous aluminum oxide) were determined. Filler contents varied from 10 to 45%. Technology of specimen preparation was described by S. N. Gans and V. D. Parkhomenko (Plasticheskiye massy, 1964, No. 8). Plastic specimens were rubbed against steel 1Kh18N9T in nitric and sulfuric acids of different concentrations in the testing device shown schematically in Fig. 1 on the Enclosure. The loading part of the device consisted of a sleeve (1) containing a spindle (2) with the rotating steel specimen (3); pressure was applied to the

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L 6170-65

ACCESSION NR: AP5015965

specimens through the lever system (7); velocity of the steel specimen rotation was varied by the multistep pulleys (8). The plastic specimen (4) was placed in the bath (5) filled with acid and standing on the thrust- and radial ball-bearings. Acid temperature was regulated by the heat exchanger (6) and was controlled by a thermometer. The measuring part consisted of an elastic plate with sensing elements of strain gauge (9), an amplifier (10) and an oscillograph (11). All measured results were tabulated. Maximum wear was shown by the fluoroplastic-4 without a filler; maximum resistance to sulfuric acid by the coke- and talcum-filled specimens; to nitric acid by those with molybdenum disulfide. Filled plastics gained weight by swelling during friction in acids as shown in Fig. 2 on the Enclosure. Orig. art. has: 5 tables and 2 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 02 SUB CODE: MT

NO REF SOV: 002 OTHER: 000

Card 2/2

L 6176[illegible]-65
ACCESSION NR: AP5015965

ENCLOSURE: 01

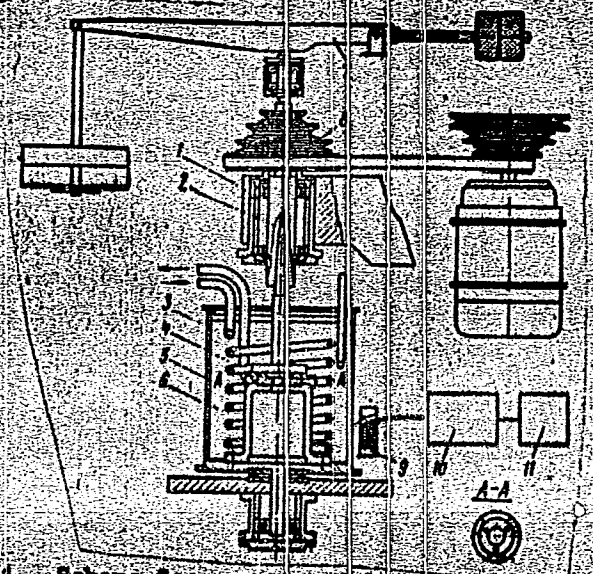


Fig. 1. Scheme for experimental testing device

Card 3/4

L 6170[illegible]-65

ACCESSION NR: AP5015965

ENCLOSURE: 02

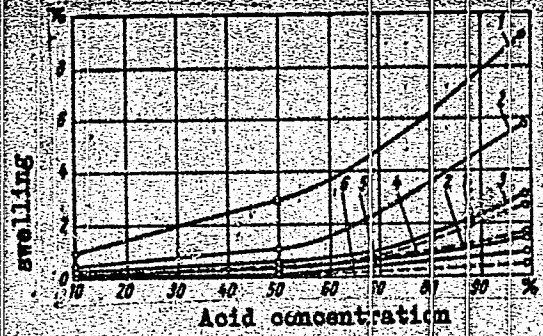


Fig. 2. Effect of acid concentration on swelling of fluoroplastic-4 with fillers: 1- ground coke (45%); 2- Al oxide (25%); 3- colloidal graphite (20%); 4- $BaSO_4$ (25%); 5- boron nitride (25%); 6- colloidal graphite (20%). _____ nitric acid; ------ sulfuric acid

Card 4/4

L 54845-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM
ACCESSION NR: AP5016883 UR/0374/65/000/003/0057/0062
678.539.376

AUTHOR: Ganz, S. N. (Dnepropetrovsk); Parkhomenko, V. D. (Dnepropetrovsk) 30 B

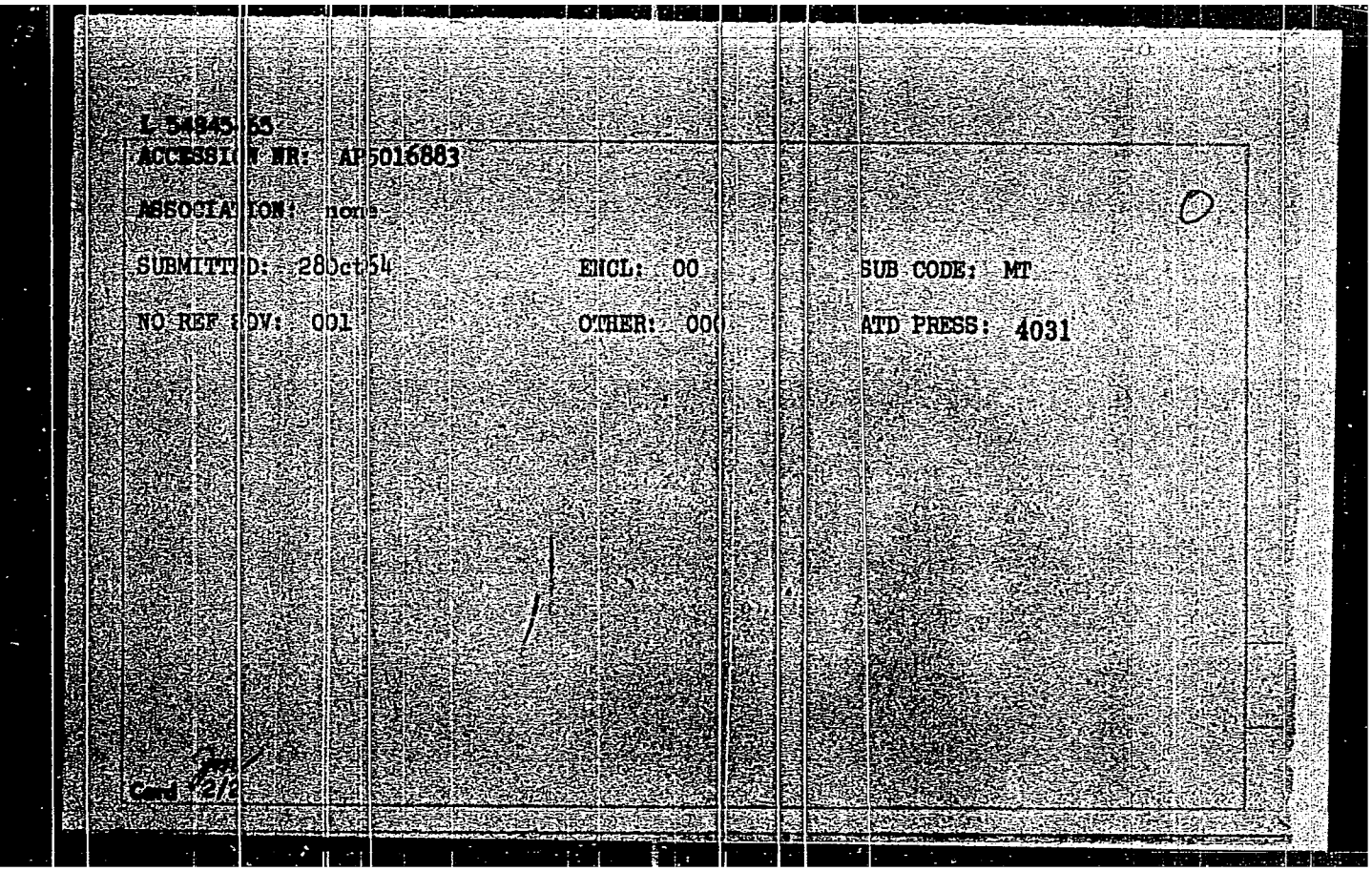
TITLE: Equations for determining the deformation of filled fluorocarbon plastic materials

SOURCE: Mekhanika polimerov, no. 3, 1965, 57-62

TOPIC TAGS: ftoroplast 4, polytetrafluoroethylene, Teflon, colloidal graphite, filled Teflon, Teflon deformation

ABSTRACT: An earlier study (Ganz, S. N., and V. D. Parkhomenko. Plasticheskiye massy, no. 11, 1964) showed that the addition of fillers sharply lowers the deformability of fluorocarbon materials, in particular, that of ftoroplast-4 (polytetrafluoroethylene, Teflon) filled with 17—30% S-1 colloidal graphite (I). In the present study, deformation of I was investigated experimentally. Equations were derived from data which make it possible to calculate the deformation of filled fluorocarbon plastic materials from the filler content, compressive stress, and testing time. The equations hold true for stresses below 200 kg/cm^2. Orig. art. has: 6 figures. [BO]

Card 1/2



L 54845-65
ACCESSION NR: AP5016883

ASSOCIATION: none

SUBMITTED: 28Oct64 ENCL: 00 SUB CODE: MT

NO REF SOV: 001 OTHER: 000 ATD PRESS: 4031

Card 1/2

L 44297-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM
ACCESSION NR: AP5006560 S/0191/65/000/003/0036/0038

26
B

AUTHOR: Ganz, S. N.; Parkhomenko, V. D.

TITLE: Shrinkage of filled 4-polyfluoroethylene resin (Teflon)

SOURCE: Plasticheskiye massy, no. 3, 1965, 35-38

TOPIC TAGS: filled resin, polyfluoroethylene resin, filled fluoroplast, resin shrinkage, graphitized resin / Teflon polymer

ABSTRACT: The article gives tabulated shrinkage values for graphitized Teflon (fluoroplast-4) compressed at 300-320 kg/cm^2 for 2-3 min at a motion rate of 6-7 cm/min. The material was caked at 360-380C raising the temperature by 75C an hour, for 2 to 5 hrs depending on the size of the object, and cooled for 1.5-2 hrs down to 150C in the oven and then in air to obtain "nonhardened" products. Tabulated data show that shrinkage across both outer and inner diameters is greater in larger tubular pieces and is less in pieces provided with metallic fixtures or cooled in molds. A diagram of shrinkage vs object diameter is plotted (see Fig. 1 of the Enclosure) which indicates that shrinkage is low (0.8-1.2%) and increases slowly in pieces with diameters up to 40 mm, but climbs sharply in pieces 45-80 mm

Card 1/1

L 40197-65

ACCESSION NR: AP5006560

in diameter, and increases almost linearly in pieces 80-300 mm in diameter. The empirical expression $G = 20.395 - \frac{29.945}{\lg D}$, where G is the shrinkage in % and D is a coefficient numerically equal to the object diameter in mm, was used for the calculations. Orig. art. has: 3 tables, 1 figure and 2 formulas.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 01 SUB CODE: MT

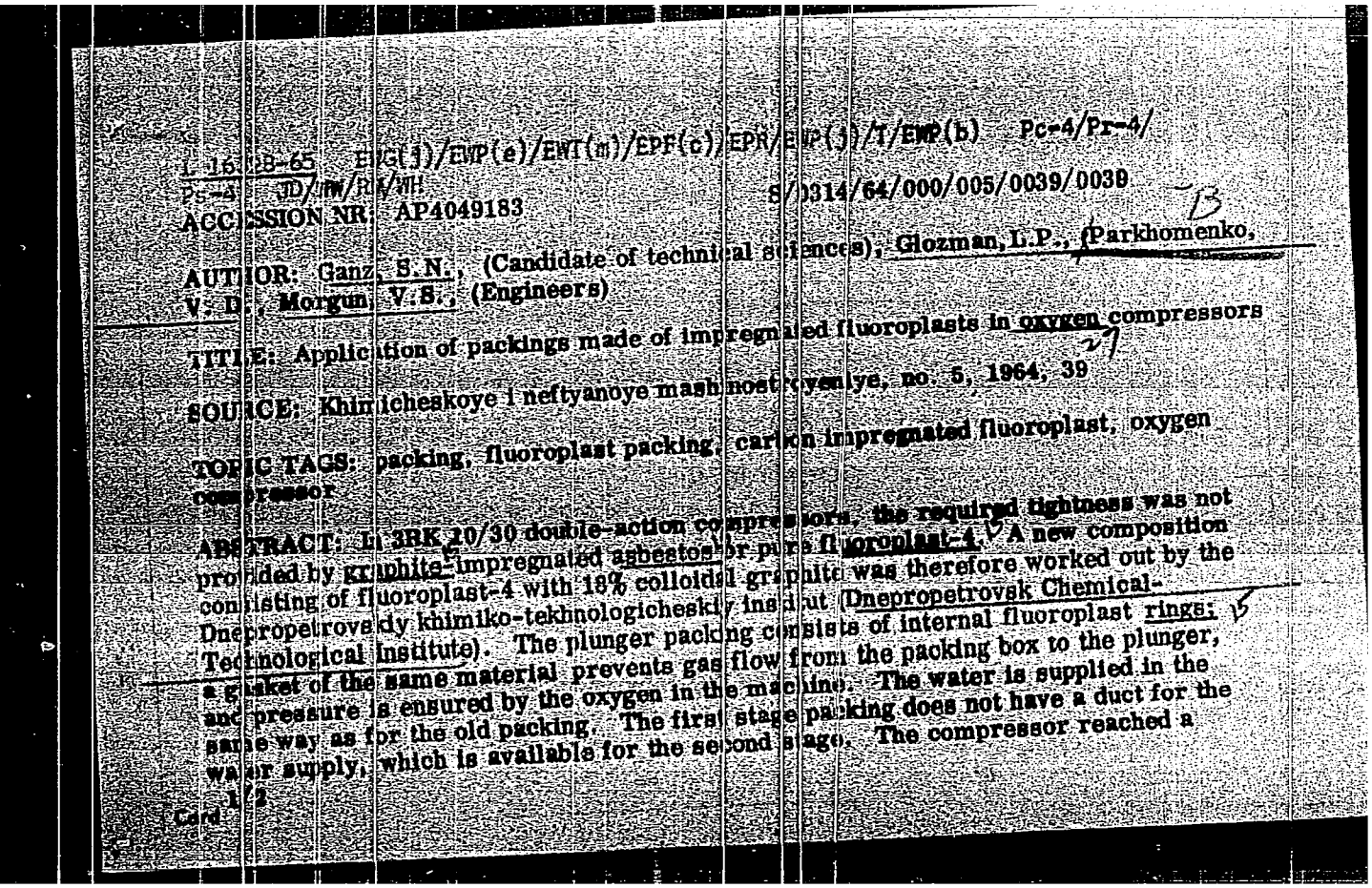
NO REF SOV: 002 OTHER: 000

Card 2/2

GANZ, S.N.; PARKHOMENKO, V.D.; PETRUNIN, Ye.P.

Device for study of the antifriction properties of materials in corrosive media. Zav. lab. 29 no.6:763-764 '63. (MIRA 16:6)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.
(Testing machines) (Friction materials)



L 16[illegible]8-65 EWG(j)/EWP(e)/EWI(m)/EPF(c)/EPR/EWP(j)/T/EWP(b) Pc-4/Pr-4/
Pc-5 JD/HW/RM/WH
ACCESSION NR: AP4049183 S/0314/64/000/005/0039/0039

AUTHOR: Ganz, S. N., (Candidate of technical sciences); Glozman, L. P., (Parkhomenko, V. D.); Morgun, V. S., (Engineers)

TITLE: Application of packings made of impregnated fluoroplasts in oxygen compressors

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 5, 1964, 39

TOPIC TAGS: packing, fluoroplast packing, carbon impregnated fluoroplast, oxygen compressor

ABSTRACT: In 3RK 20/30 double-action compressors, the required tightness was not provided by graphite-impregnated asbestos or pure fluoroplast-4. A new composition consisting of fluoroplast-4 with 18% colloidal graphite was therefore worked out by the Dnepropetrovsk khimiko-tekhnologicheskiy institut (Dnepropetrovsk Chemical-Technological Institute). The plunger packing consists of internal fluoroplast rings; a gasket of the same material prevents gas flow from the packing box to the plunger, and pressure is ensured by the oxygen in the machine. The water is supplied in the same way as for the old packing. The first stage packing does not have a duct for the water supply, which is available for the second stage. The compressor reached a

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L 16[illegible]-65
ACCESSION NR: AP4049183

capacity of 800 m^3/hr with the new packing. Tests were made with oxygen at a delivery temperature of 70C, sliding speed of 3.75 m/sec, first stage suction pressure of 1.35 and second stage pressure of 7 atm, the delivery pressure being 7 and 30 atm, respectively. Gas leakage did not exceed 5 m^3/hr. The service life of the new packing is 2,000 hours. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MT, IE

NO REF SOV: 000 OTHER: 000

Card 2/2

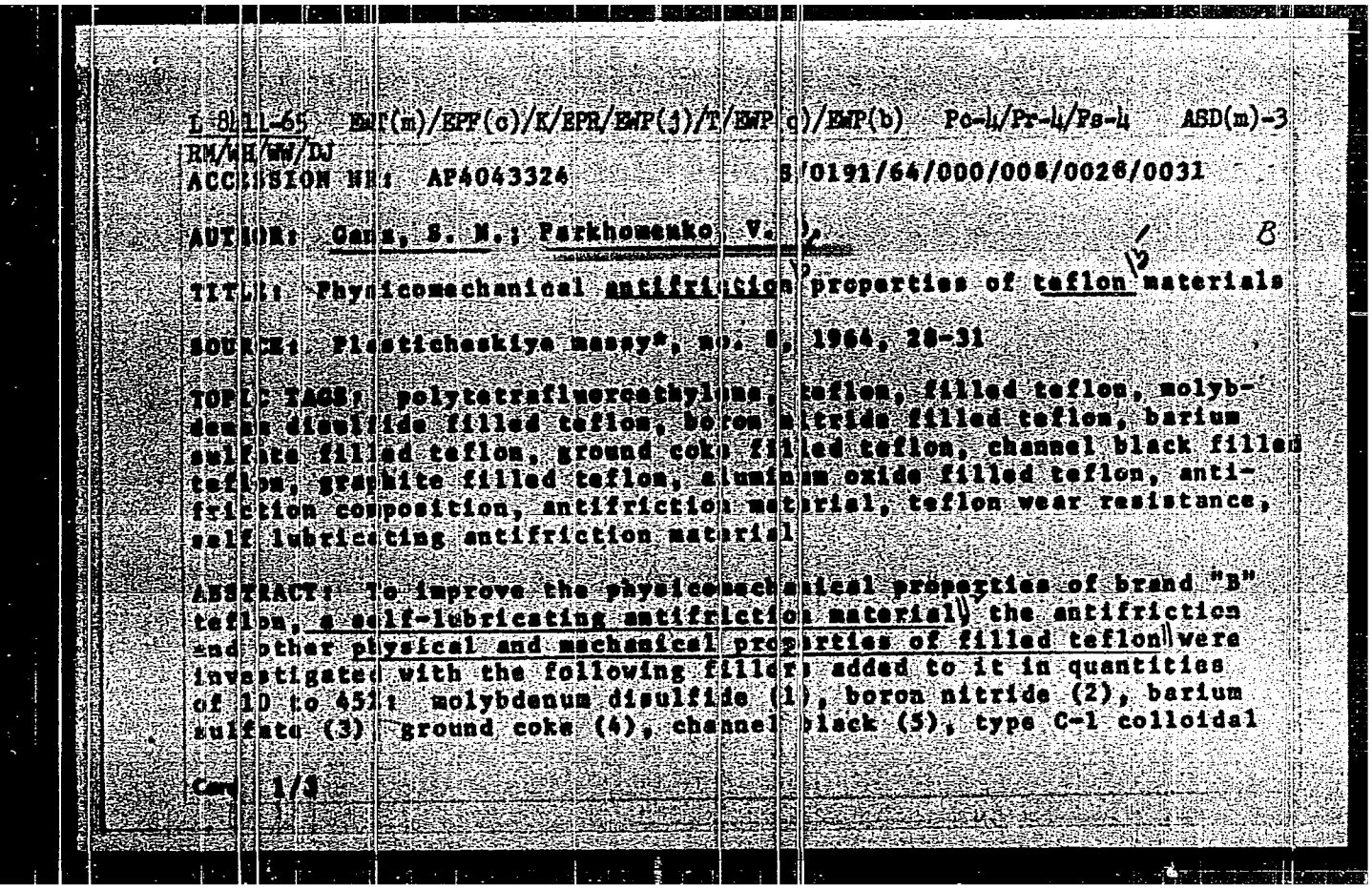
GANZ, S.N.; PARKHOMENKO, V.D.

Analyzing the deformation of filled fluoroplastic materials.
Plast. massy no.11 37-39 '64 (MIRA 18:1)

GANZ, S.N., doktor tekhn. nauk; PARKHOMENKO, V.D.

Technology of the manufacture and testing of graphitized fluoroplast piston rings. Koks i khim. no.12:50-53 '63. (MIRA 17:1)

1. Dnepropetrovskiy khimiko-tekhnologicheskiy institut.



L 8[illegible]-65 EWT(m)/EPF(c)/K/EPR/EWP(j)/T/EWP(c)/EWP(b) Pc-4/Pr-4/Ps-4 ASD(m)-3
RM/WH/WW/DJ
ACCESSION NR: AP4043324 S/0191/64/000/008/0026/0031

AUTHOR: Gann, S. N.; Parkhomenko, V. D. B

TITLE: Physicomechanical antifriction properties of teflon materials

SOURCE: Plasticheskiye massy*, no. 8, 1964, 28-31

TOPIC TAGS: polytetrafluoroethylene, teflon, filled teflon, molybdenum disulfide filled teflon, boron nitride filled teflon, barium sulfate filled teflon, ground coke filled teflon, channel black filled teflon, graphite filled teflon, aluminum oxide filled teflon, antifriction composition, antifriction material, teflon wear resistance, self lubricating antifriction material

ABSTRACT: To improve the physicomechanical properties of brand "B" teflon, a self-lubricating antifriction material, the antifriction and other physical and mechanical properties of filled teflon were investigated with the following fillers added to it in quantities of 10 to 45%: molybdenum disulfide (1), boron nitride (2), barium sulfate (3), ground coke (4), channel black (5), type C-1 colloidal

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