Lyapin, Ye. S.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Lyapin, Ye. S. (Leningrad). On Divisibility in Semi-groups. 28-29

Makharadze, L. M. (Moscow). Locally Nilpotent Ideals in Topological Rings. 29-30

Morozov, V. V. (Kazan'). Proofs of the Theorem of Regularity 30

Mention is made of Karpelevich.

Mochul'skiy, Ye. N. (Moscow). Isomorphisms of Direct Decompositions. 30-32

There are 5 references, 3 of which are USSR, and 2 English.

Pekelis, A. S. (Sverdlovsk). The Lattice Isomorphisms of Soluble groups. 32

There is 1 English reference.
Card 10/80

*

LYAPIN, Ye. S.

SUBJECT USSR/MATHEMATICS/Algebra CARD 1/1 PG - 448
AUTHOR LJAPIN E.S.
TITLE Potentially invertible elements in semi-groups.
PERIODICAL Mat. Sbornik, n. Ser. 38, 373-388 (1956)
reviewed 12/1956

The element X of the semi-group $\mathfrak{A}$ be potentially invertible in $\mathfrak{A}$ if there exists a super semi-group $\mathfrak{G} \supset \mathfrak{A}$ such that X possesses an inverse element in $\mathfrak{G}$. The principal result of the paper consists in the following very simple assertion: In order that the element X of the semi-group $\mathfrak{A}$ is potentially invertible it is necessary and sufficient that for every $A \in \mathfrak{A}$ each of the equations

$$XS = A , \qquad S'X = A$$

possesses not more than one solution with respect to the unknowns $S \in \mathfrak{A}$ and $S' \in \mathfrak{A}$.
The obtained results are illustrated by aid of some infinite matrices.

INSTITUTION: Leningrad.

AUTHOR: LYAPIN, E.S. 20-4-8/51

TITLE: On the Existence and Uniqueness of the Solution of an Equation of General Form in Connection With the Reversibility in the Semigroups of Transformation (O sushchestvovanii i yedinstvennosti resheniya uravneniya obshchego vida v svyazi s obratimost'yu v polugruppakh preobrazovaniy.)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 116, Nr. 4, pp. 552-555 (USSR)

ABSTRACT: The author formulates without proof a great number of assertions of three kinds: Theorems on semigroups, theorems on semigroups of transformation and assertions of existence and uniqueness for the so-called equations of general form. There are the equations $S\xi = \alpha$ $(\alpha \in \Omega)$, where S is an arbitrary transformation of the set Ω and $\xi \in \Omega$ is the unknown.
Typical theorem: Let $\mathfrak{A}$ be a semigroup of transformation of Ω regular with respect to the reversibility from the right and $S \in \mathfrak{A}$. In order that $S\xi = \alpha$ is solvable in Ω for every $\alpha \in \Omega$ it is necessary and sufficient that S is an element of $\mathfrak{A}$ reversible from the right.

Card 1/2

20-4-8/51

On the Existence and Uniqueness of the Solution of an Equation of General Form in Connection With the Reversibility in the Semigroups of Transformation.

ASSOCIATION: Leningrad State Pedagogical Institute im. A.I. Gertsen (Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A.I. Gertsena)
PRESENTED BY: V.I. Smirnov, Academician, April 15, 1957
SUBMITTED: April 12, 1957
AVAILABLE: Library of Congress

Card 2/2

Lyapin, Ye. S.

16(1)
AUTHORS: Gluskin, L.M., and Lyapin, Ye.S. SOV/42-14-1-26/27

TITLE: Anton Kazimirovich Sushkevich (to his 70th Birthday)(Anton Kazimirovich Sushkevich (k semidesyatiletiyu so dnya rozhdeniya))

PERIODICAL: Uspekhi matematicheskikh nauk, 1959, Vol 14, Nr 1, pp 255-260(USSR)

ABSTRACT: This is a short appreciation of the merits and a career of life of A.K.Sushkevich, Professor of the Khar'kov University. He studied in Berlin from 1906-1911, 1913 he finished his studies at the Petersburg University, 1917 - degree of Magister of Khar'kov, 1926 - degree of Doctor of Khar'kov. Since 1921 he was Professor in Voronezh, since 1929 Professor in Khar'kov. Main domain of work: Quasigroups, semigroups. The investigations were continued by N.N.Vorob'yev, V.V.Vagner, A.I.Mal'tsev, I.S. Ponizovskiy, Ye.A.Khalezov, and others. The list of publications contains 71 papers (1922-1957). There is a photo of Sushkevich.

Card 1/1

LYAPIN, Yevgeniy Sergeyevich; AKILOV, G.P., red.; POL'SKAYA, R.G., tekhn.red.

[Semigroups] Polugruppy. Moskva, Gos.izd-vo fiziko-matem. lit-ry, 1960. 592 p. (MIRA 13:9)
(Groups, Theory of)

85942

16,2000

S/039/60/052/001/004/009 XX
C111/C222

AUTHOR: Lyapin, Ye.S. (Leningrad)

TITLE: On the Representation of Semigroups by Partial Transformations

PERIODICAL: Matematicheskiy sbornik, 1960, Vol. 52, No. 1, pp. 589-596

TEXT: Let Ω_1 and Ω_2 be subsets of the set Ω. A mapping X of Ω_1 onto Ω_2 is called a partial transformation of Ω. The subset Ω_1 is denoted with $\Pi_1 X$, Ω_2 with $\Pi_2 X$. If $\Pi_2 X = \Omega$, then X is a (complete) transformation. If $\alpha \in \Pi_1 X$, then the image of α in $\Pi_2 X$ is denoted with $X \circ \alpha$. Let X,Y,Z be partial transformations of Ω so that $\alpha \in \Omega$ belongs to $\Pi_1 Z$ then and only then if $\alpha \in \Pi_1 Y$, $Y \circ \alpha \in \Pi_1 X$, where for every $\alpha \in \Pi_1 Z$ it holds $= X \circ (Y \circ \alpha) = Z \circ \alpha$. Then Z is the product of X and Y : $Z = XY$. Let $\mathfrak{P}_\Omega$ be the set of all partial transformations of Ω ; it is a semigroup with respect to the multiplication defined above. Let $\mathfrak{S}_\Omega$ be the subset of $\mathfrak{P}_\Omega$ consisting of all one-to-

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On the Representation of Semigroups by Partial Transformations

S/039/60/052/001/004/009XX
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one partial transformations. Let γ_Ω be the subset of the complete transformations. $\mathfrak{P}_\Omega \cap \gamma_\Omega$ is the symmetric group of permutations of Ω. The homomorphism f of the semigroup $\mathfrak{A}$ into the semigroup $\mathfrak{P}_\Omega$ is called a representation of $\mathfrak{A}$ by partial transformation of Ω. Ω is called the base set of the representation f. If f is an isomorphism, then the representation is called isomorph. Let f_1 (resp. f_2) be a representation of $\mathfrak{A}$ by partial transformations of the set Ω_1 (resp. Ω_2). f_1 and f_2 are unessentially different if there exists a one-to-one mapping ξ of Ω_1 onto Ω_2, where : 1) for every $A \in \mathfrak{A}$ the element α_1 of Ω_1 belongs to $\Pi_1 f_1(A)$ then and only then if $\xi(\alpha_1) \in \Omega_2$ belongs to $\Pi_1 f_2(A)$;
2) for arbitrary $A \in \mathfrak{A}$ and $\alpha_1 \in \Pi_1 f_1(A)$ it holds:

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On the Representation of Semigroups by Partial Transformations

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C111/C222

$$\xi[f_1(A) \circ \alpha_1] = f_2(A) \circ [\xi(\alpha_1)] .$$

Let $\mathfrak{L}$ be a supersemigroup of the semigroup $\mathfrak{A}$ and $\mathfrak{L} \supset \mathfrak{L}_1 \supset \mathfrak{L}_2$, where $\mathfrak{L}_1$ is a left ideal in $\mathfrak{L}$ and $\mathfrak{L}_2$ is a left ideal or an empty set. Let $\Omega = \mathfrak{L}_1 \setminus \mathfrak{L}_2$. Let to every $A \in \mathfrak{A}$ correspond a partial transformation $\sigma(A)$ of the set Ω in the following way. The set $\Pi_1 \sigma(A)$ consists of those elements $X \in \Omega$ for which $AX \in \Omega$. For these elements let $\sigma(A) \circ X = AX$. $\sigma(\mathfrak{A}, \mathfrak{L}, \mathfrak{L}_1, \mathfrak{L}_2)$ denotes the mapping of $\mathfrak{A}$ into $\mathfrak{P}_\Omega$ which is obtained if to every $A \in \mathfrak{A}$ the partial transformation $\sigma(A)$ is adjoint.

Theorem : $\sigma(\mathfrak{A}, \mathfrak{L}, \mathfrak{L}_1, \mathfrak{L}_2)$ is a representation of the semigroup $\mathfrak{A}$ by partial transformations of the set $\Omega = \mathfrak{L}_1 \setminus \mathfrak{L}_2$.

Definition : The representation f of the semigroup $\mathfrak{A}$ is realized left-ideal in its supersemigroup $\mathfrak{L}$ if f is unessentially different from a representation $\sigma(\mathfrak{A}, \mathfrak{L}, \mathfrak{L}_1, \mathfrak{L}_2)$. If here $\mathfrak{L}_1$ and $\mathfrak{L}_2$ are two-sided

Card 3/ 4

85942

On the Representation of Semigroups by Partial Transformations S/039/60/052/001/004/009 XX C111/C222

ideals in $\mathcal{L}$ ($\mathcal{L}_2$ may also be empty) then it is said that f is two-sided ideal realized in $\mathcal{L}$.

Theorem : For an arbitrary set Σ of representations of the semigroup $\mathcal{K}$ there always exists a supersemigroup $\mathcal{L}$ of $\mathcal{K}$ so that every representation of Σ is two-sided ideal realized in $\mathcal{L}$.

Several special cases of the representation $\sigma(\mathcal{K}, \mathcal{L}, \mathcal{L}_1, \mathcal{L}_2)$ are given, e.g. If $\mathcal{L}$ is a semigroup with a right cancellation, then $\sigma(\mathcal{K}, \mathcal{L}, \mathcal{L}_1, \phi)$ is the isomorphic representation of $\mathcal{K}$ by complete transformations.

The author mentions V.V. Vagner, There are 3 references: 2 Soviet and 1 American.

SUBMITTED: January 10, 1959

Card 4/4

LYAPIN, Ye.S.

Abstract characteristic related to the minimal ideals of a semigroup containing all partial transformations of a set. Uch. zap.Ped.inst.Gerts. 218:13-21 '61. (MIRA 14:10)
(Aggregates)

LIBLIN, Yu.V.; LYAPIN, Ye.S.; YANOVICH, V.A.

Vladimir Abramovich Tartakovskii on his 60th birthday. Uch. zap. mat. nauk 16 no.5:225-230 S-O '61. (MIRA 14:10)
(Tartakovskii, Vladimir Abramovich, b. 1901)

LYAPIN, Ye.S.

Relations determining order in ordered semigroups. Izv. AN SSSR. Ser. mat. 25 no.5:671-684 S-O '61. (MIRA 14:10)
(Topology)

LYAPIN, Ye.S.

Relations determining the ordered state of continuous functions.
Izv. AN SSSR, Ser. mat., 25 no.6:797-808 N-D '61. (MIRA 14:11)
(Functions, Continuous)

LYAPIN, Ye.S.

Some endomorphisms of ordered sets. Izv.vys.ucheb.zav.; mat. no.2:87-94 '62. (MIRA 15:8)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni A.I.Gertsena.

(Aggregates)

LYAPIN, Ye.S.

Conditions for close imbedding in semigroups. Uch.zap.Ped. inst.Gerts. 238:3-20 '62. (MIRA 16:4)
(Groups, Theory of) (Aggregates)

LYAPIN, Ye.S. (Leningrad)

Maximal bilaterally stable ordering in semigroups. Izv. vys. ucheb. zav.; mat. no.3:88-94 '63. (MIRA 16:4)

(Groups, Theory of)

LYAPIN, Ye.S. (Leningrad)

Ordering of linear transformations made consistent with superposition. Mat. sbor. 63 no.1:122-136 Ja '64. (MIRA 17:3)

AEDURASHITOV, S.A.; LYAPIN, Yu.N.; GAFAROV, B.S.

Proportioning DN-2 pump. Izv.vys.ucheb.zav.; neft' i gaz 5 no.12: 77-79 '62. (MIRA 17:4)

1. Azerbaydzhanskiy institut nefti i khimii imeni Azizbekova i Nauchno-issledovatel'skiy i proyektnyy institut "Neftekhimavtomat".

LYAPIN, Yu.N.

Some results of stand tests of a multicomponent proportioning unit. Za tekh.prog. 3 no.12:29-32 D '63. (MIRA 17:2)

1. Nauchno-issledovatel'skiy i proyektnyy institut "Neftekhimavtomat".

PODOSYNKIN, P.A.; POSTORONKO, A.I.; GRIZODUB, A.P. [Hryzodub, A.P.]; KAL'NA, Z.P.; LYAPINA, A.G. [Liapina, A.H.]

Purification of waste waters from the washing of the electric filters of lime kilns. Khim. prom. [Ukr.] no.3:82-84 Jl-S '63. (MIRA 17:8)

1. Slavyanskiy sodovyy kombinat.

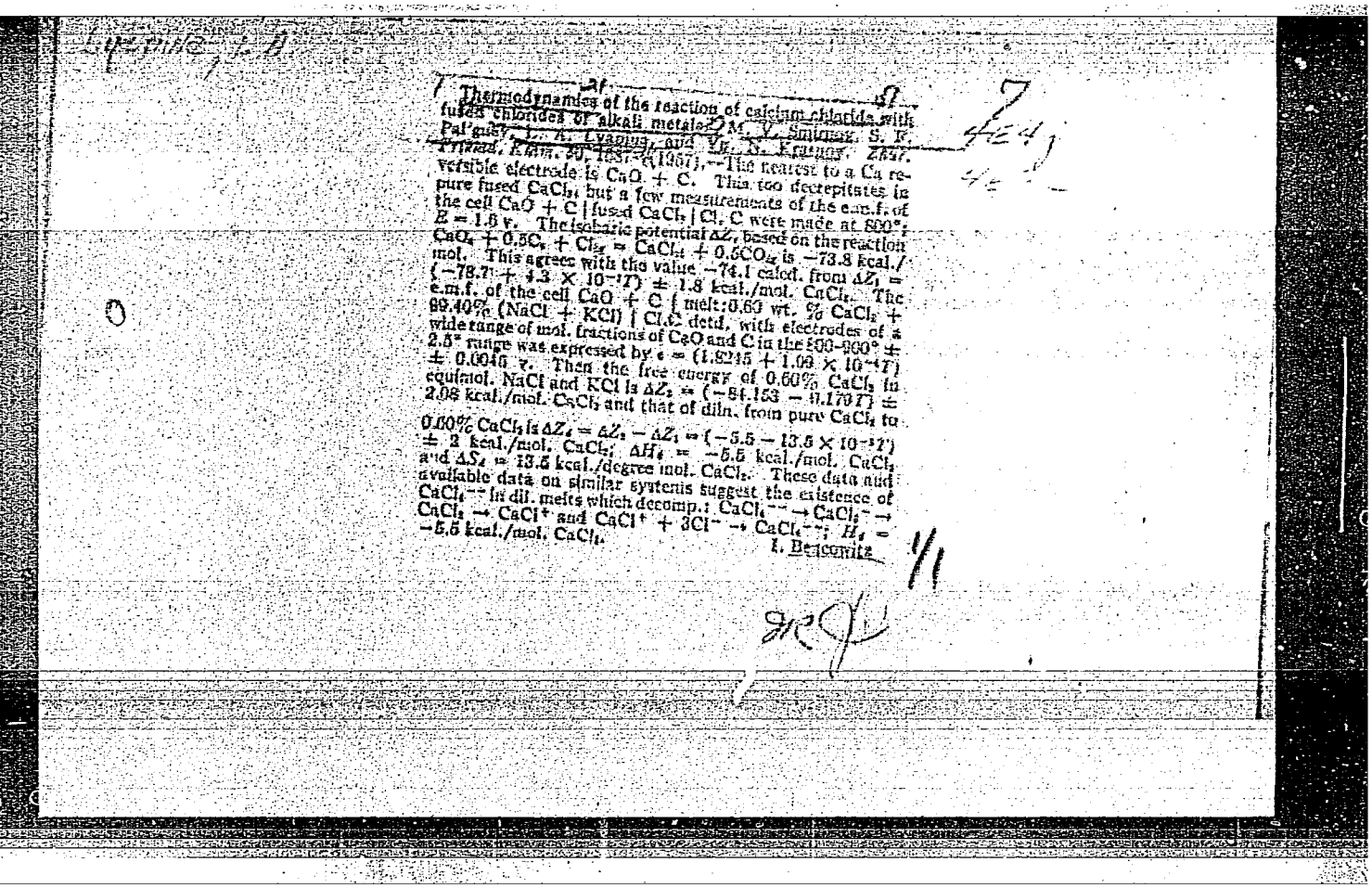
ZEMLYANOVA, L.I.; LYAPINA, A.M.

Structure of the surface of porous and powder objects. Zav.lab. 29 no.8:960-962 '63. (MIRA 16:9)
(Electron microscopy) (Porous materials)

ZEMLYANOVA, L.I.; ZIMAKOV, I.Ye.; LYAPINA, A.M.; SPITSYN, Vikt. I.; DOBROSEL'SKAYA, N.P.

Electron microscope study of the effect of radioactivity of elementary sulfur on the structure of its surface.
Radiokhimiia 5 no.3:392-394 '63. (MIRA 16:10)

(Sulfur isotopes) (Electron microscopy)



Thermodynamics of the reaction of calcium chlorides with fused chlorides of alkali metals. M. V. Smirnov, S. F. Pal'guev, L. A. Lyapina, and V. E. Komarov. Zh. Fiz. Khim. 30, 1681–9(1956).—The nearest to a Ca reversible electrode is CaO + C. This too decrepitates in pure fused $CaCl_2$ but a few measurements of the e.m.f. of the cell CaO + C | fused $CaCl_2$ | Cl_2, C were made at 800°; $E = 1.6$ v. The isobaric potential ΔZ_t, based on the reaction $CaO_t + 0.5C_t + Cl_{2g} = CaCl_{2l} + 0.5CO_{2g}$ is −73.8 kcal./mol. This agrees with the value −74.1 calcd. from $\Delta Z_t = (-78.7 + 4.3 \times 10^{-4}T) \pm 1.8$ kcal./mol. $CaCl_2$. The e.m.f. of the cell CaO + C | melt:0.60 wt. % $CaCl_2$ + 99.40% (NaCl + KCl) | Cl_2,C detd. with electrodes of a wide range of mol. fractions of CaO and C in the 500–900° ± 2.5° range was expressed by $\epsilon = (1.8245 + 1.09 \times 10^{-4}T) \pm 0.0046$ v. Then the free energy of 0.60% $CaCl_2$ in equimol. NaCl and KCl is $\Delta Z_2 = (-84.153 - 0.1707) \pm 2.08$ kcal./mol. $CaCl_2$ and that of diln. from pure $CaCl_2$ to 0.60% $CaCl_2$ is $\Delta Z_4 = \Delta Z_2 - \Delta Z_1 = (-5.5 - 13.6 \times 10^{-4}T) \pm 2$ kcal./mol. $CaCl_2$; $\Delta H_4 = -5.5$ kcal./mol. $CaCl_2$ and $\Delta S_4 = 13.6$ kcal./degree mol. $CaCl_2$. These data and available data on similar systems suggest the existence of $CaCl_4^{--}$ in dil. melts which decomp.: $CaCl_4^{--} \rightarrow CaCl_2^{-} \rightarrow CaCl_2 \rightarrow CaCl^{+}$ and $CaCl^{+} + 3Cl^{-} \rightarrow CaCl_4^{--}$; $H_t = -5.5$ kcal./mol. $CaCl_2$.

I. Beiconitz

Lyapina, L.A.

Distr: 4E4j

Equilibrium potentials of calcium oxide–carbon electrodes. M. V. Smirnov, S. E. Pal'guev, Yu. N. Kryukov, and L. A. Lyapina. *Zhur. Prikład. Khim.* 31, 68–71 (1958); cf. C.A. 51, 17650g.—The equil. potential E of CaO-C electrodes in fused mixts. equimol. KCl + NaCl contg. different mol. fractions N of $CaCl_2$ was detd. at 800 ± 2.5° against a standard Cl electrode (*loc. cit.*). From 2 to 5 CaO-C electrodes contg. different proportions of CaO were placed in the electrolyte around the Cl electrode. An atm. of CO_2 was maintained over the electrolyte. The proportion of CaO did not affect E. On the other hand, E decreased linearly (slope of line 0.106) as N increased to 0.05 (16.5 wt. % $CaCl_2$) and decreased rapidly as N increased, i.e. the activity coeff. $f_{Ca}f_{Cl} > 1$. The effect of CO_2 up to $P \sim 0.25$ atm. on E was expressed by $E = C + 0.058\log P_{CO_2}$, where $C = 2.3\,RT/4F$; E was controlled by the reaction $2CaO + C - 4e \rightleftharpoons 2Ca^{++}_{sol.} + CO_2$. There was a break in the E vs. P curve at $P > 0.25$ atm. The presence of $CaCO_3$ in the electrolyte did not affect E. I. Beregovoy

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S/138/60/000/008/004/015
A051/A029

15.9200 2109, 2209
11.2211

AUTHORS: Boguslavskiy, D.B.; Epshteyn, V.G.; Ognevskaya, T.Ye.; Lyapina, L.A.; Lyubeznikov, V.K.

TITLE: The Modification of the Properties of Synthetic Rubbers, Containing Active Functional Groups, Using Resorcin-Formaldehyde Resin in the Latex Stage

PERIODICAL: Kauchuk i Rezina, 1960, No. 8, pp. 13 - 18

TEXT: The strengthening effect of resorcin-formaldehyde resin in synthetic rubbers was studied using the usual processing methods, such as coagulation, rolling and mixing, etc. It has been previously shown that in filling butadiene-styrene rubbers in the latex stage using resorcin-formaldehyde resin, the rubber mixtures produced are satisfactorily processed and the vulcanizates have sufficiently high physico-mechanical properties (Ref. 4). The properties of the filled rubbers depend to a great extent on the amount of resin, the molar ratio of resorcin and formaldehyde and on several colloidal-chemical factors. The rubbers investigated were regulated carboxyl-containing СКС -30-1 (SKS-30-1) butadiene-styrene rubbers with 1.2% methacrylic acid, and 2-methyl-5-vinylpyridine СКМВП-15 (SKMVP-15) rubbers.

Card 1/6 Association: Yaroslavl' Tire Plant.

L 46172-66 EWT(m)/EWP(j) IJP(c) DJ/RM

ACC NR: AP6021204 (A) SOURCE CODE: UR/0138/66/000/003/0016/0018

AUTHOR: Epshteyn, V. G.; Vasil'yev, G. Ya.; Serov, I. A.; Kurakin, K. A.; Lyapina, L. A.; Polyak, M. A.

ORG: Yaroslavl Technological Institute (Yaroslavskiy tekhnologicheskiy institut)

37
B

TITLE: New type of softener with an aromatic base

SOURCE: Kauchuk i rezina, no. 3, 1966, 16-18

TOPIC TAGS: rubber chemical, petroleum product, plasticizer

ABSTRACT: In order to broaden the source of raw materials for the rubber industry, an extract named "azaroplast" (Azerbaydzhan aromatic plasticizer), obtained from the furfural purification of lubricating oils of Baku crudes, was tested as a softener. Azaroplast was tested in comparison with other commonly used softeners in standard mixes based on NK natural rubber and butadiene-styrene SKS-30ARK rubber and in a tread mix consisting of 70% SKS-30ARK and 30% NK. The tests showed azaroplast to surpass the other softeners in plasticizing effect. The vulcanization rate of mixes containing azaroplast was practically the same as that of mixes with the other softeners. Vulcanizates of standard mixes based on NK and SKS-30ARK and containing azaroplast had increased strength characteristics. Replacement of mazut with azaroplast in tread mixes will permit a considerable increase in the extrusion rate and produce higher strength

Card 1/2 UDC: 678.049.37.004.12

L 46172-66

ACC NR: AP6021204 O

characteristics. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 11/ SUBM DATE: 07Oct64/ ORIG REF: 004/ OTH REF: 002

Card 2/2 pdh

SAMOYLOVICH, B.I.; LEYTMAN, Yu.S.; LYAPINA, L.I.; KOPYSITSKIY, T.I.

Economic efficiency of the introduction of an automatic-temperature control system in the reactor of a catalytic cracking device. Izv. vys. ucheb. zav.; neft' i gaz 6 no.8:83-86 '63. (MIRA 17:6)

1. Azerbaydzhanskiy institut nefti i khimii imeni M. Azizbekova i Nauchno-issledovatel'skiy i proyektnyy institut po kompleksnoy avtomatizatsii proizvodstvennykh protsessov v neftyanoy i khimicheskoy promyshlennosti.

[illegible], Yu.G.; SAMOYLOVICH, B.I.; KERBITSKIY, B.N.; LYAPINA, T.I.

Economic effectiveness of the use of a DU-1 vapor tension controller in a system for stabilizing gasoline. Izv.vys.ucheb.zav., neft' i gaz 7 no.4:101-104 '64. (MIRA 17:6)

1. Azerbaydzhanskiy institut nefti i khimii imeni Azizbekova i Nauchno-issledovatel'skiy i proyektnyy institut po kompleksnoy avtomatizatsii protsessov v neftyanoy i khimicheskoy promyshlennosti.

L 43925-65 EWT(m)/EPF(c)/T Pr-4 WE

ACCESSION NR: AT5008630 S/2933/64/007/000/0180/0188

AUTHORS: Obolentsev, R. D. (Doctor of chemical sciences); Lebedeva, M. N.; Kreys, E. A.; Lyapina, N. K.; Soskova, L. M. (Candidate of physico-mathematical sciences)

TITLE: Extraction of organo-sulfur compounds from petroleum products

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya serasorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 7, 1964, 180-188

TOPIC TAGS: petroleum, sulfur, organic compound, distillation, extracting agent, dearomatization, desulfuration

ABSTRACT: The authors point out the need of knowing the distribution of phases among petroleum products in order to solve problems concerning extraction and extractive distillation of organo-sulfur products. Investigations were made on organo-sulfur compounds dissolved in distillate fractions of high-sulfur Kazankova petroleum subjected to preliminary dearomatization and desulfuration. The characteristics of the extracting agents were tabulated. The organo-sulfur compounds were dissolved in the distillate, held at 20C for 20-30 minutes, shaken for 10 minutes, and then let stand at the same temperature till the material

Card 1/2

L 43925-65
ACCESSION NR: AT5008630

settled into distinct layers (1-6 hours). The phases were then separated, weighed, and analyzed. The concentration of organo-sulfur compounds was determined in both extracted and refined phases. The experiments show that sulfo-organic compounds may be 90% extracted from petroleum fractions and may be concentrated by a factor of 10-17 with a single run of raw material in the solvent. Best extraction was obtained for the systems: acetic anhydride--122-150C fraction--2-ethyl thiophene, and furfuryl alcohol--95-122C fraction--thiophane. Orig. art. has: 3 figures and 5 tables.

ASSOCIATION: Institut organicheskoy khimii BashFAN SSSR (Institute of Organic Chemistry, Bashkirian Branch, AN SSSR)

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

NO REF SOV: 000 OTHER: 003

Card 2/2

LYAPINA, N.V., Cand Agr Sci -- (diss) "Basic problems of the agr engineering of the non-transplantable tomato crops in the Voronezhskaya Oblast". Voronezh, 1957. 15 pp. (Min Agr USSR Voronezh Agr Inst) 100 copies.

(KL, 12-58, 100)

COUNTRY : USSR
CATEGORY : Cultivated Plants. M
Potatoes. Vegetables. Cucurbits.
ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10972

AUTHOR : Lyapina, N. V.
INST. : Voronezh Agricultural Institute
TITLE : The Principal Problems of Agricultural Technique for the Cultivation of Tomatoes by Direct Planting Under the Conditions of Voronezh Oblast'.
ORIG. PUB. : Zap. Voreonizhsk. s. -kh. in-ta, 1957, 27, No. 2, 223-229.
ABSTRACT : In the experiments of the Institute, there was observed an acceleration in the developmental stages of the tomato plant when sowing the seeds in the open ground. The number of the days from sprouting and until flowering was reduced to 42-44 (62-63 days when cultivated by transplanting the seedlings). The beginning of fruit-bearing in the case of direct planting is only 15-17 later than in the case of the cultivation by transplanting but the yield is considerably higher. In the case of the cultivation by the direct method of planting, the best results

CARD: 1/2

DZHORDZHIO, V.A., doktor geograf. nauk, prof.; LYAPINA, O.A.

Cyclone over the Caspian Sea, photographed from a satellite. Meteor. i gidrol. no.8:23-25 Ag '64 (MIRA 17:8)

1. Problemnaya laboratoriya po struynym techeniyam Tashkentskogo gosudarstvennogo universiteta.

LYAPINA, O.A.; KANDAUROV, P.N.

Condensation nuclei at Tashkent. Nauch.trudy TashGU no.225 Fiz. nauki no.22:105-113 '64. (MIRA 18:1)

L 44147-66 EWT(1) GW

ACC NR: AT6018243 SOURCE CODE: UR/3021/64/000/259/0119/0122

AUTHORS: Lyapina, O. A.; Sitnikova, M. V.

ORG: none

TITLE: Intensity of direct solar radiation over Tashkent on smoggy days and on days of maximum visibility

SOURCE: Tashkent. Universitet. Nauchnyye trudy, no. 259. Fizicheskiye nauki, no. 23, 1964. Fizika atmosfery i aviatsionnaya meteorologiya (Physics of the atmosphere and aviation meteorology), 119-122

TOPIC TAGS: ~~atmosphere~~, atmospheric contamination, solar radiation absorption

ABSTRACT: The extent of absorption of direct solar radiation by atmospheric dust was investigated. The investigation was carried out in the city of Tashkent over the period from 1960 to 1962. The experimental results are summarized in graphs and tables (see Fig. 1). The data of N. N. Kalitin (O maksimal'nykh velichinakh napryazheniya solnechnoy radiatsii. DAN SSSR. t. 52, No. 4, 1946) were used as standards for 100% transparency. The loss of solar energy by water vapor absorption was corrected for, using the Möller method

$$S_w = 0{,}172\,(mw_-)^{0{,}303}$$

where S_w is the amount of direct solar radiation absorbed by water vapor, m - the

Card 1/2

ACC NR: AT6018243

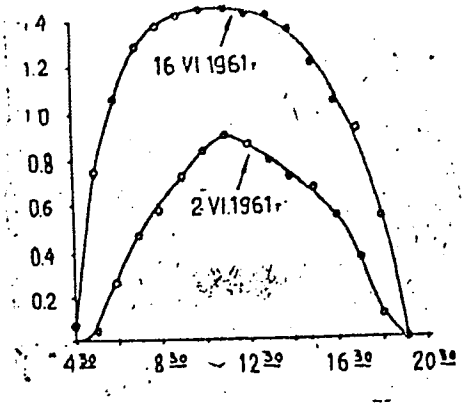

Fig. 1. Daily change in the intensity of direct solar radiation on a day with maximum visibility--16/VI--1961 and on a smoggy day--2/VI--1961. Abscissa: true solar time; Ordinate: intensity of direct solar radiation in cal cm^{-2} sec^{-1}.

mass of the atmosphere in the direction of the sun, approximately equal to sec θ (here θ is the zenith angle, and ω_{∞} is the amount of water vapor in grams contained in a column of 1 cm^2 base of the atmosphere). It is concluded that on dusty days part of the solar radiation is absorbed by the dust. Orig. art. has: 3 tables and 1 graph.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 2/2 hs

LYAPINA, R.S.; PROKOF'YEVA, L.I.

Horizontal variation of temperature gradients and humidity.
Trudy GGO no.160:113-122 '64. (MIRA 17:9)

LYAPINA, R.S.

Wind-speed gradient in the lower 2-meter layer of the atmosphere according to data of measurements at a station network. Trudy GGO no.174:187-192 '65. (MIRA 19:1)

BERKOVICH, T.M.; ISAYEVA, O.A.; BULANOVA, L.P.; LYAPINA, R.V.

Capillary water saturation of asbestos cement and its effect on the reinforcing properties of chrysotile-asbestos fibers. Trudy NIIAsbesttsementa no.19:3-20 '65.
(MIRA 18:9)

LYAPINA, S.Ye. [redaktor]; PESKOV, T.A. (Ufa) [reviewer].

About the book "Methodology of the teaching of mathematics." S.E.Liapin, ed. Reviewed by T.A.Peskov. Mat. vshkole no.5:82-86 S-O '53. (MLRA 6:9)
(Mathematics--Study and teaching) (Liapin, S.E.)

CHETKOV, V.A., inzh., [illegible]

Ventilation of [illegible] factories. Vod. i san. tekh. no.6:30-31 Je '65. (MIRA 18:8)

GETKOV, V.A., inzh. (Leningrad); LYAPINA, V.F., inzh. (Leningrad)

Localization of gases at sites of their formation in smelting plants of nonferrous metallurgy. Vod. i san. tekh. no.10:12-13 O '65. (MIRA 18:11)

CHETKOV, V.A., inzh.; LYAPINA, V.P., inzh.

Aspiration of the sinter sifting and delivery units in crushing and sintering factories. Vod. i san. tekh. no.11:33-34 N '65. (MIRA 18:12)

ZELIKMAN, A.N.; LYAPINA, Z.M.

Separating tungsten and molybdenum from solutions of sodium tungstate and molybdate by hydrogen reduction under pressure. Izv.vys.ucheb.zav.; tsvet.met. 3 no.2:119-125 '60. (MIRA 15:4)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra metallurgii redkikh metallov.
(Tungsten--Metallurgy) (Molybdenum--Metallurgy)

LYAPINA, Z. M.

TITLE: Conference on Autoclave Processes

PERIODICAL: Tsvetnyye metally, 1959, Nr 7, pp 84-87 (USSR)

ABSTRACT: On 23-28 February 1959 a conference was held in Moscow for summing-up and coordinating work on autoclave processes in the metallurgy of heavy, non-ferrous, rare and noble metals. The conference heard reports as follows: D.M. Yukhtanov, Gintsvetmet, on progress throughout the world on the use of hydrometallurgical, particularly autoclave, methods for non-ferrous and rare metal production; G. N. Dobrokhotov, Gipronikel', on nickel leaching practice

Card 1/5

at some Soviet works: N. I. Onuchkina and G. N. Dobrokhotov on the thermodynamics and kinetics of the selective reduction by hydrogen and carbon monoxide under pressure of nickel and cobalt from solution; I. Yu. Leshch and K. M. Shelepova, Gipronikel', on design decisions on the application of the flowsheets dealt with by G. N. Dobrokhotov at the Yuzhuralnikel' and Severonikel Combines and the Ufaleyskiy (Ufa) Nickel Works; I. N. Maslenitskiy, Leningradskiy gornyy institut (Leningrad Mining Institute) on the advantages of a combined flotation-autoclave method for nickel-electrolysis of slimes containing platinum-group metals; V. B. Zhilkin, Severonikel' combine, and S. I. Sobol', Gintsvetmet, on the essentials of the neutral method of oxidizing leaching of nickel concentrate from converter-matte flotation; S. I. Sobol' on preliminary investigations on the development of a sulphurous-sulphuric method for leaching nickel and cobalt from oxidized nickel ores; N. N. Maslenitskiy, Mekhanobr, on the main results of investigations of the autoclave-soda

Card 2/5

process for treating tungsten-ore beneficiation products: V. I. Popnukaylo, Mekhanobr, and D. A. Malakhov, Skopinskaya (Skopinsk) TsOF, separately, on problems in the application of an autoclave-soda flowsheet to scheelite and wolframite raw material; G. A. Meyerson, K. Ya. Shapiro, N. N. Khavskiy, R. A. Pavlyuk and A. P. Nadol'skiy, Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Non-Ferrous Metals Institute) on the treatment of tungsten concentrates in hermetical, heated ball-mills with acids or caustic alkalies; V. I. Spiridonova, S. I. Sobol', Ye. I. Gulyayeva, Z. L. Berlin, I. M. Nelen' and B. I. Rudenko, Gintsvetmet, on the treatment of prepared and unprepared sulphide molybdenum raw material by oxidizing autoclave alkaline leaching; I. M. Nelen' and S. I. Sobol' on the kinetics of oxidizing autoclave leaching; A. N. Zelikman and Z. M. Lyapina, Krasnoyarsk Non-Ferrous Metals Institute, on the results of a study of conditions for the selective separation of lower oxides of tungsten and molybdenum from their salt solutions by hydrogen under pressure; M. V. Darbinyan, Gorno-

Card 3/5

metallurgicheskiy institut (Mining-Metallurgical Institute) of the Sovnarkhoz (economic council) of the Armyanskaya SSR (Armenian SSR), on his investigations of ammoniacal autoclave leaching under oxygen pressure of molybdenum concentrates; S. I. Sobol' on technical-economic factors of ammoniacal leaching; A. I. Sinel'nikova and I. N. Plaksin, Krasnoyarsk Non-Ferrous Metals Institute, on an oxidizing autoclave process for gold-containing raw material; N. G. Tyurin, Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute) on the behaviour of noble metals in oxidizing autoclave leaching in thiosulphate solutions; A. L. Tseft and D. A. Tazaskin and A. Yu. Dadabayev. Institut metallurgii i obogashcheniya AN Kaz SSR (Metallurgy and Beneficiation Institute of the AS Kaz SSR), respectively, on the physicochemical fundamentals and on works' trials of autoclave salt leaching of polymetallic materials; I. Yu. Leshch, Gipronikel', on the unsuitability of autoclave leaching for lime-containing materials; V. A. Bernshteyn, VAMI, on industrial experience of a continuous autoclave leaching process for bauxites; V. G. Tronev, IONKh AN

Card 4/5

SSSR (IONKh AS USSR), on compounds of some rare elements in various valency states under oxygen and hydrogen pressure in the presence of anhydrous ammonia; Z. L. Berlin, Gintsvetmet, on autoclave design and operation; P. G. Yakovlev, Gipronikel', and N. Ye. Vishnevskiy, VNII neftekhim, on model studies on autoclaves and the development of mixers; M. A. Polyanov, K. B. Giredmet, on the design of an experimental high-pressure pulp pump. G. L. Shvarts, NIIKhIMMASh, on the selection of steel for acid leaching of cobalt matte and matte-flotation concentrate; Yu. I. Archakov, VNIIneftekhim, on corrosion of types IKh18N9T, 12KhGN, 10anSND and 10GND steels in soda and alkaline solutions in the presence of metal salts and oxygen at 5 - 15 kg/mm^2; V. I. Deryabina and N. N. Kalgutin, VNIIneftekhim, separately on mechanical properties of hydrogen-affected steels. The conference made recommendations aimed at the extension and improve-

LYAPINA, Z. M., Cand Tech Sci -- "Study of ~~the~~ processes of ~~precipitating~~ separation of molybdenum and tungsten compounds from aqueous solutions by ~~reducing~~ reduction with hydrogen under pressure." Mos, 1961. (Min of Higher and Sec Spec Ed RSFSR. Mos Inst of Ref Chem Technol im M. V. Lomonosov) (KL, 8-61, 246)

S/149/62/000/001/006/009
A006/A101

AUTHORS: Zelikman, A. N., Lyapina, Z. M.

TITLE: Separation of cerium from other rare-earth elements using the method of oxidation with oxygen under pressure

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 1, 1962, 115 - 120

TEXT: The authors studied the possibility of accelerating oxidation of Ce^{3+} in aqueous pulp of rare earth element hydroxides by pressure as developed in Oranienbaum (Germany). The acceleration can be achieved by the use of oxygen, and by raising the temperature and pressure. Experimental investigations were made on a 1-liter-autoclave with a Vishnevskiy electromagnetic mixer at 2,600 rpm. The solid-liquid ratio in the pulp was 1 : 5. The necessary alkalinity of the pulp was obtained by the addition of a 40% NaOH solution. To produce a neutral or weakly acid medium the pulp was neutralized with nitric acid. The pH value was determined with a ЛП-5 (LP-5) potentiometer with a glass electrode. The effect of the oxidation medium, the temperature and the method of preparing the hydroxide, on cerium oxidation in the pulp was investigated. Studying

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S/149/62/000/001/006/009
A006/A101

Separation of cerium from...

the effect of alkalinity, partial oxygen pressure and temperature on the rate and completeness of cerium oxidation, the following optimum conditions were found: pH = 10, oxygen pressure 5 - 10 atm; temperature 130°C. Under these conditions full Ce oxidation is obtained within 30 minutes. The rate of Ce^{3+} oxidation depends on the method of preparing the hydroxides; oxidation in a mixture of hydroxides precipitated from chloride solutions with ammonia, proceeds incompletely. In a mixture of hydroxides, obtained by the decomposition of bisulfates, or precipitated with caustic soda, cerium oxidation proceeds rapidly. Cerium concentrates with up to 95% CeO_2 content can be obtained. This article was recommended by the Kafedra metallurgii redkikh metallov (Department of Metallurgy of Rare Metals) at the Krasnoyarksiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals). There are 6 figures and 11 references, 9 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATIONS: Krasnoyarsk Institute of Non-Ferrous Metals. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Scientific Research and Planning Institute of Rare-Metal Industry)

SUBMITTED: December 29, 1960

Card 2/2

S/828/62/000/000/013/017
E071/E135

AUTHORS: Zelikman, A.N., and Lyapina, Z.M.

TITLE: The separation of cerium from other rare earth elements using the method of oxidation with oxygen under pressure

SOURCE: Razdeleniye blizkikh po svoystvam redkikh metallov. Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst. red. metallov. Moscow, Metallurgizdat, 1962, 148-154.

TEXT: The authors investigated the possibility of accelerating the process by the use of oxygen at increased temperatures (25-200 °C) and partial pressures (3-15 atm), using in the experiments a mixture of alkali earth hydroxides obtained from a melt of chlorides containing, %: 29.55 rare earth elements (of which 50% was CeO_2); 7.61 CaO; 2.37 SrO; 0.51 MnO; 0.23 Fe_2O_3; 0.43 ThO_2. After solution of the chlorides in a 2% hydrochloric acid and purification from thorium and partially from iron and manganese, the rare earth elements were precipitated as acid sulphates and the latter decomposed with sodium hydroxide (in some cases directly precipitated with sodium hydroxide or with

Card 1/2

The separation of cerium from other ... S/828/62/000/000/013/017
E071/E135

ammonia). Oxidation was carried out in an autoclave fitted with an electromagnetic stirrer. The solid to liquid ratio in the pulp was 1:5. Results: it is possible to accelerate the oxidation of hydroxides of rare earth elements in an aqueous pulp with oxygen under pressure. Optimum conditions: pH = 10, oxygen pressure 10 atm, temperature 130 °C. Under these conditions complete oxidation of cerium is achieved in 30 minutes. The velocity of oxidation of Ce^{3+} depends on the method of preparation of the hydroxides. Oxidation in the mixture of hydroxides, precipitated from a solution of chlorides with ammonia, is incomplete; Ce oxidises rapidly in a mixture of hydroxides produced by decomposition of acid sulphates, or precipitated with sodium hydroxide. After the oxidation, cerium was separated from other rare earth elements by treatment with a 10% nitric acid. Concentrates containing up to 95% of CeO_2 can be obtained.

There are 6 figures.

Card 2/2

LYAPITSKAYA, S.

Living rocks. Tekh.mol.22 no.4:30-32 Ap '54. (MLRA 7:4)
(Stonecutting)

RAYZBERG, A.N.; KULAYEV, Yu.F., kand.ekonom.nauk; LYAPKALO, I.I.; SEREDA, I.A.

Uniform technology improves the standards of routing. Zhel.dor.transp. 47 no.10:21-24 O '65. (MIRA 18:10)

1. Zamestitel' nachal'nika Chelyabinskogo otdeleniya Yuzhno-Ural'skoy dorogi (for Rayzberg). 2. Zamestitel' nachal'nika zheleznodorozhnogo tsekha Chelyabinskogo truboprokatnogo zavoda (for Lyapkalo). 3. Nachal'nik stantsii Kir-Zavod Yuzhno-Ural'skoy dorogi (for Sereda).

4

36950
S/142/61/004/006/015/017
E192/E382

9,2585

AUTHORS: Bolotin, L.I., Volkov, V.I., Lesnykh, M.S., Lyapkalo, Yu.M., Merzlikin, V.A., Pipa, A.V., Sidorenko, I.S. and Chernyak, L.L.

TITLE: A high-power pulsed oscillator

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 4, no. 6, 1961, 726 - 728

TEXT: Generation of high-power bursts of ultrashort-wave frequencies is of importance in linear accelerators of heavy particles. A pulsed oscillator based on the triode, type ГИ-4А (GI-4A), was therefore developed. Constructionally, the oscillator is based on coaxial tuned circuits, in which the tube operates as a grounded-grid system (Ref. 1 - M.S. Neyman - Triode and tetrode generators for UHF (Triodnyye i tetrodnyye generatory SVCh), Sovetskoye radio, 1950). The anode-grid resonant circuit is in the form of a quarter-wave line, terminated with the interelectrode capacitance Cag (Fig. 1). Since the external diameter D = 33 cm, internal diameter d = 14 cm and Cag = 35 pF, the resonance frequency is 142 Mc/s and the length h of the anode grid-tuned circuit is 19 cm;

Card 1/3

these calculated data were verified experimentlly. The cathode-grid circuit is in the form of a short-circuited polycylindrical coaxial section of a half-wave line; this is terminated with the capacitance Cag . The feedback is provided by three non-adjustable loops positioned at angles of 120° with respect to each other, in such a manner that the loops pass through the common wall of the resonators. The separator condenser in the anod-grid circuit consists of six groups of condensers, each consisting of two condensers in series. The oscillator was tested with an 82-Ω resistive load, which was in the form of a polystyrol cylinder with a water solution of sodium carbonate. It was possible to obtain a maximum power of 1.2 MW with an anode voltage of 32 kV and pulse duration of 450 μs. The oscillator was also tested with a high-Q load formed by the resonator of a linear proton accelerator; this had a resonance frequency of 142 Mc/s and a quality factor of 50 000. It was found that at an anode voltage of 36 kV the resonator of the accelerator received a power of the order of 500 kW, so that the protons could be accelerated up to energies

4

S/142/61/004/006/015/017
E192/E382

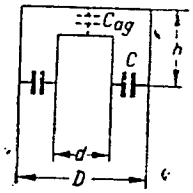
A high-temperature ....

of 5.5 MeV. There are 4 figures.

ASSOCIATION: Uchenyy sovet FTI AN UkrSSR
(Learned Council of FTI AS UkrSSR)

SUBMITTED: April 28, 1961

Fig. 1:



Card 3/3

23733
S/057/61/031/006/017/019
B116/B201

9,3130

AUTHORS: Berezin, A. K., Stupak, V. G., Bolotin, L. I., Berezina, G.P., Lyapkalo, Yu. M., Sevryukov, Yu. N.

TITLE: Passage of intense pulsed electron beams through dielectric tubes

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 751 - 753

TEXT: The passage of an electron beam through metal tubes had been studied in theoretical and experimental papers by E. G. Linder and K. J. Herngvist (Ref. 1: Journ. of Appl. Phys., 21, 1088, 1950), by H. F. Ivey (Ref. 2: Advances in Electronics and Electron Physics, 6, 137, 1954), and by M. D. Gabovich (Ref. 3: UFN, 56, 215, 1955). On the passage of a beam through a tube, the residual gas is ionized, and positive ions as well as slow (secondary) electrons appear in the tube. In the case of a metal tube, these secondary electrons reach the wall, and do not participate in the further processes related to the passage of the electron beam through the tube. If the dielectric tube is "overneutralized", the secondary electrons will first reach the wall, and, after a certain time (of the order of magni-

Card 1/3 4

Passage of intense pulsed...

tude of the time required for complete neutralization of the beam), they will return to the electron-beam axis. Both the radial and the longitudinal component of the electric field are modified by this process. This, however, has an effect upon conditions on the passage of the beam through the tube, particularly upon the energy of secondary electrons. An experimental study has now been made of the passage of a pulsed electron beam through a dielectric tube. The experiment has been conducted in the following manner: A square voltage pulse having an amplitude up to 50 kv, a duration of 4.4μsec (Fig. 1a), and a frequency of 50 pulses/second was applied to the electron gun placed in a vacuum chamber at a pressure of $2 \cdot 10^{-6}$ mm Hg. The gun permitted obtaining an electron beam with an amperage of up to 1 a in the pulse. The electron beam was injected into a quartz tube with an internal diameter of 9 mm and a length of 120 mm. On the other side of the tube, the vacuum chamber was connected with a device, by which the pressure in the chamber was varied from $2 \cdot 10^{-4}$ to 10^{-2} mm Hg. Part of the beam reached the electrostatic analyzer, by which the energy spectrum of the electrons in the beam was determined. A 30-mm wide metal ring, used for measuring the radial

Card 2/3 4

Passage of intense pulsed...

current I_p was mounted on the quartz tube. The signal reaching the ring was differentiated by an RC circuit and fed to the oscilloscope. One of the oscillograms is shown in Fig. 1b. The negative half-wave on the oscillogram corresponds to the motion of secondary ions toward the wall and to the capture of ions near the electron-beam axis. If "overneutralization" takes place in the beam, the electric field will change its sign, and the ions, due to diffusion and other factors, will start moving toward the wall, while the secondary electrons migrate to the beam axis. The positive half-wave on the oscillogram corresponds to this condition. The energy spectrum of electrons passing through the quartz tube, measured with the electrostatic analyzer, permits distinguishing two separate electron groups, i.e., a group of fast electrons and a group of slow electrons. If, under the same conditions, the electron beam is allowed to pass through a metal tube, the spectrum will, as usual, consist of fast electrons only. Experiments have been conducted to determine the moment at which slow electrons of a given energy appear in the beam. The time was calculated from the beginning of the voltage pulse at the electron gun onward. The moment at which slow electrons appear at the analyzer output as a function of their energy is presented in Fig. 1c. As may be seen from Figs. 1b and 1c, slow electrons do not appear in the energy

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S/057/61/031/006/017/019
B116/B201

spectrum until the radial field has changed its sign, i.e., not until the electrons start moving from the tube wall toward the beam axis. The results presented in Figs. 1a, 1b, 1c have been obtained under the following conditions: voltage of the beam, 35 kv; beam current, 0.4 a; pressure in the chamber. $3.6 \cdot 10^{-4}$ mm Hg. It is finally pointed out that in the course of experiments described here also the energy spectrum of slow electrons as a function of pressure, intensity, and velocity of the primary electron beam has been has been determined experimentally (no details, however, are given). [Abstracter's note: Essentially complete translation.] There are 2 figures and 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Institute of Physics and Technology, AS UkrSSR, Khar'kov)

SUBMITTED: December 30, 1960

Card 4/[illegible]

LYAPKALO, Yu.M.

S/120/62/000/002/031/047
E140/E163

AUTHORS: Berezin, A.K., Stupak, V.G., Berezina, G.P., ~~Bolotin, L.I.,~~ Lyapkalo, Yu.M., Solopikhin, D.P., and Bondarenko, V.P.

TITLE: High power electron gun for operation under difficult vacuum conditions

PERIODICAL: Pribory i tekhnika eksperimenta, no.2, 1962, 136-138.

TEXT: An electron gun is described giving 20 A at 25 kV in a vacuum of 5×10^{-5} mm Hg. The cathode is a cylindrical tablet of lanthanum hexaboride, vacuum-sintered, and located in the homogeneous region of the focussing magnetic field. A grid-form anode is used, resulting in a smaller defocusing field than the more usual pierced disc (Fig.1). The transparency of such an anode is also satisfactory. The anode mesh is of tungsten wire 60 μ diameter with a pitch of 1.5 mm. In plasma interaction experiments the gun was used for several months under continuous evacuation without replacement of any of its parts. There are 4 figures.

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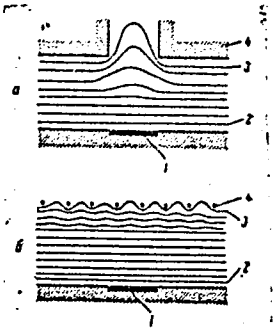
3

High power electron gun for ... S/120/62/000/002/031/047
E140/E163

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
(Physicotechnical Institute, AS Ukr.SSR)
SUBMITTED: July 26, 1961

Fig.1



Card 2/2

ACCESSION NR: AT4036049 S/2781/63/000/003/0125/0138

AUTHORS: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Lyapkalo, Yu. M.; Faynberg, Ya. B.

TITLE: Interaction of pulsed high-current electron beams with a plasma in a magnetic field

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 125-138

TOPIC TAGS: plasma research, plasma magnetic field interaction, plasma wave absorption, plasma wave reflection, electron beam, microwave plasma, plasma electromagnetic property

ABSTRACT: The investigation reported was aimed at determining the energy losses of a beam passing through a plasma, the conditions

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ACCESSION NR: AT4036049

under which oscillations are excited, the frequency spectrum, the amplification coefficients, the character of instability, and comparison of the experimental data with the theory. The electron beam had an approximate energy 15 keV and a current 5--8.5 A. It was injected in a quartz and glass plasma chamber, ionizing the air in it, producing a plasma, and interacting with the latter. After passing through the plasma the beam was electrostatically analyzed. The procedures used to measure the various parameters are described. The experiments have shown that the beam loses an appreciable part of its initial energy (~18%). This energy is consumed in excitation of oscillations and heating the plasma. Some 50--60% of the energy loss goes to excitation of longitudinal space-charge density waves and transverse electromagnetic oscillations; this agrees qualitatively with the theory. It follows from the measurements that the amplification coefficients and the maximum resonant frequency are also in satisfactory agreement with the calculated data. The longitudinal space charge density waves excited in the plasma and in the beam have

ACCESSION NR: AT4036049

phase velocities which are smaller than the velocity of light in vacuum, and have intensities which reach 50--60 kV/m at the end of the interaction region. A small group of the electrons (1--4% of the total current) experiences an increase in energy up to 50%. If the electron beam is initially modulated, its frequency experiences a Doppler shift at the end of the interaction. Orig. art. has: 7 figures and 5 formulas.

ASSOCIATION: None

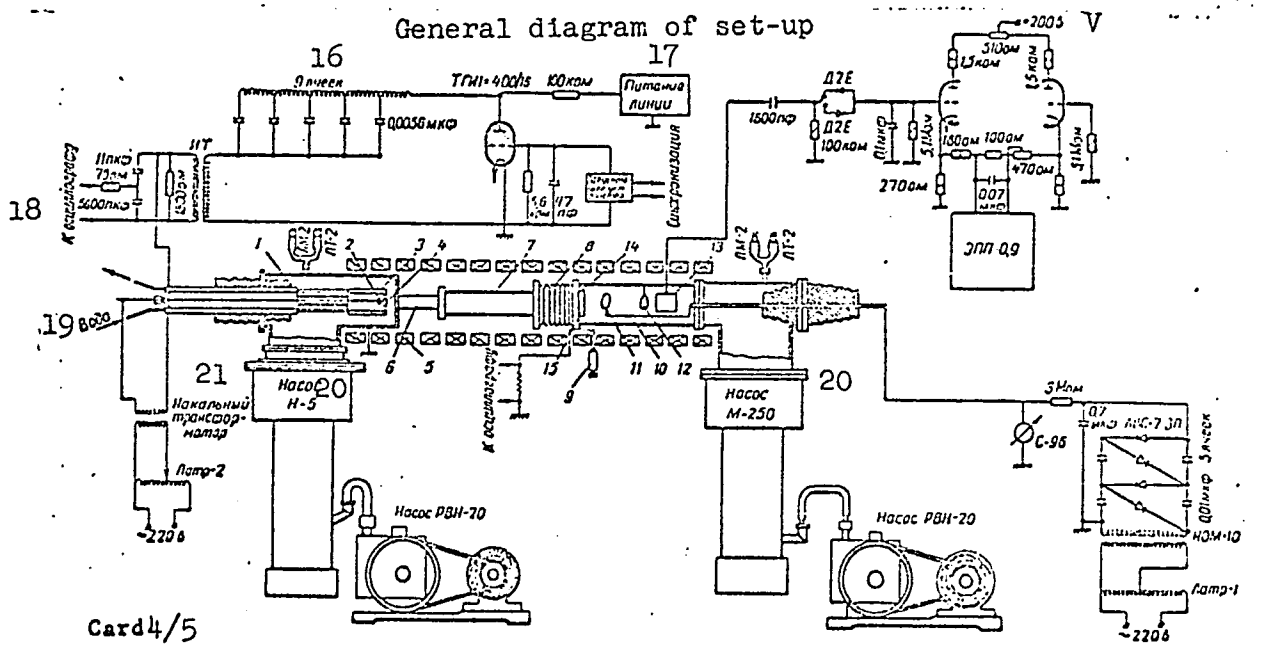
SUBMITTED: 00	DATE ACQ: 21May64	ENCL: 02
SUB CODE: ME	NR REF SOV: 016	OTHER: 005

Card 3/5

ACCESSION NR: AT4036049

ENCLOSURE: 01

General diagram of set-up



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ACCESSION NR: AT4036049

ENCLOSURE: 02

Legend to Enclosure 01:

1 - electron gun chamber, 2 - cathode heating, 3 -cathode post, 4 - cathode, 5 - solenoid for focusing longitudinal magnetic field, 6 - tube for producing pressure drop, 7 - plasma chamber, 8 - bellows,9 - mechanical leak valve, 10 - 'retarding field' analyzer, 11 - second analyzer grid, 12 - third analyzer grid, 13 - Faraday cup, 14 - entrance flange for measurement of the beam current, 15 - vacuum window for pumping out the plasma chamber, 16 - nine cells, 17 - line supply, 18 - to oscilloscope, 19 - water, 20 - pump, 21 - filament transformer, МКФ - microfarad, KOM - kilohm, OM - ohm,

Card 5/5

L 52255-65 EPF(n)-2/EPA(w)-2/EWT(1)/EWG(m) Po-4/Pi-4/Pz-6/Pab-10 IJP(c)
WW/DM/AT

ACCESSION NR: AP5012464 UR/0089/65/018/004/0315/0322

AUTHOR: Berezin, A. K.; Berezina, G. P.; Bolotin, L. I.; Lyapkalo, Yu. M.; Faynberg, Ya. B. 50 B

TITLE: Interaction of modulated heavy-current pulse electronic beams with a plasma in a longitudinal magnetic field

SOURCE: Atomnaya energiya, v. 18, no. 4, 1965, 315-322

TOPIC TAGS: plasma beam interaction, longitudinal magnetic field, beam modulation

ABSTRACT: The authors report the results of experimental investigations of the interaction of modulated heavy-current pulse electron beams with a plasma situated in a longitudinal magnetic field. The experimental set-up is illustrated in Fig. 1 of the Enclosure. The plasma was produced by the beam itself. Frequency spectra of the oscillations excited by the interaction between the plasma and initially modulated as well as unmodulated electron beams with currents of 5, 3.8, and 2.3 amp were obtained. The results show that under certain conditions the modulated beam interacts with the plasma more strongly than the unmodulated one, and longitudinal waves with considerably larger electric field intensity (by a factor

Card 1/2

L 52255-65

ACCESSION NR: AP5012464

of approximately 7) than the beam without initial modulation are then excited in the beam and in the plasma. The distribution of the longitudinal component of the high-frequency field in the plasma along the system axis was investigated by means of the set-up shown in Fig. 2 of the Enclosure. These distributions made it possible to calculate the spatial growth increments for different values of the beam current and for different powers of initial modulation. For currents 5, 3.8, and 2.3 amp with initial modulation of 600 watts, the increments were found to be 0.13, 0.09, and 0.06 cm^{-1}, respectively. The energy loss due to the initial modulation, amounting to about 7 ±3% of the initial energy of the beam, is in agreement with earlier measurements. Orig. art. has: 7 figures, 4 formulas, and 1 table. [02]

ASSOCIATION: none

SUBMITTED: 01Jul64 ENCL: 02 SUB CODE: ME

NO REF SOV: 013 OTHER: 001 ATD PRESS: 4008

Card 2/4

L 23568-66 EPF(n)-2/EWT(1)/ETC(f)/EWG(m) IJP(c) AT/GS

ACC NR: AT6008861 SOURCE CODE: UR/0000/65/000/000/0207/0221

AUTHOR: Lifshits, Ye. V.; Berezin, A. K.; Bolotin, L. I.; Lyapkalo, Yu. M.

ORG: none

TITLE: Spectroscopic investigation of the interaction between beams of charged particles and a plasma

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova dumka, 1965, 207-221

TOPIC TAGS: electron temperature, ion temperature, plasma physics, charged particle, electron beam, spectroscopy

ABSTRACT: The authors consider the possibilities for spectroscopic analysis of the fundamental processes which take place during interaction of charged particles with a plasma and determine the basic parameters and relationships which are characteristic for this interaction. The electron temperature, ion temperature and rf field strength are determined. The measurements were made for instantaneous and time-averaged values. An electron beam (with a current of 12 a and an energy of 20 kv) was passed through a discharge tube in which the pressure was varied from $8 \cdot 10^{-4}$ to 10^{-2} mm Hg. The current pulse duration was 4.5 μsec with a prf of 50 cps. The beam was 20 mm in diameter. The density of the plasma formed during passage of the beam through the shock tube

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ACC NR: AT6008861 O

reached a value of $6 \cdot 10^{11}$ cm^{-3}. The plasma and beam were located in a constant magnetic field with an intensity of 1200 oersteds. The shock tube was filled successively with argon, helium, hydrogen, air and mixtures of gases. A detailed description is given of the experimental procedure and analytical formulas used in measuring the electron and ion temperatures. Orig. art. has: 9 figures, 4 tables, 8 formulas.

SUB CODE: 20/ SUBM DATE: 20Oct65/ ORIG REF: 009/ OTH REF: 006

Card 2/2 PB

L 29622-66 EWT(1)/ETC(f) IJP(c) AT

ACC NR: AP6018736 SOURCE CODE: UR/0057/66/036/006/1087/1093

64
60
B

AUTHOR: Lifshits, Ye. V.; Berezin, A. K.; Lyapkalo, Yu. M.

ORG: none

TITLE: Spectroscopic investigation of the interaction of plasma with charged particle beams

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 6, 1966, 1087-1093

TOPIC TAGS: plasma, plasma oscillation, plasma high frequency oscillation, plasma electron temperature, plasma ion temperature, electron beam, charged particle beam

ABSTRACT: A spectroscopic study was made of processes taking place in the interaction of beams with plasma in order to establish quantitatively the main parameters of the process and their interdependencies. Electron temperature, ion temperature, and high-frequency field strength were determined experimentally. In the electron-temperature measurements, a 12-amp, 20-kev electron beam was passed through a discharge tube at pressures from 8×10^{-4} to 10^{-2} mm Hg. Pulse duration was 4.5 μsec, frequency 50 pulses per sec, and beam diameter 20 mm. Plasma density with passage of the beam reached 6×10^{11} per cm^3. The process took place in a constant magnetic field of 0.12 emu. The discharge tube was filled successively with argon, helium, hydrogen, and air. High-frequency oscillations generated by passing an electron beam through a plasma were measured within the 600—2000 and 2400—7500 Mc ranges.

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Oscillations within these ranges occurred at pressures of 5×10^{-3} and lower, the averaged electron temperatures being 88, 65, and 66 ev at 5×10^{-3}, 4×10^{-3}, and 3×10^{-3} mm Hg, respectively. The electron temperatures at higher pressures (1×10^{-2} mm Hg), where no oscillations occurred, were 2 to 3.5 times lower. Measurements of the radiation intensity were conducted to determine the character of its relation to the current pulse. The shape of the luminosity curve suggested that it is a result of high-frequency plasma oscillations and, to a greater degree, of the collisionless heating of plasma electrons. The ion-temperature measurements were based on profiles of the spectral lines of ions and atoms. A table summarizes the results from ion-temperature measurements for oxygen, helium, hydrogen, and air and hydrogen. At higher pressures, high-frequency oscillations did not occur, while ion temperatures were about half the values given in the table. The temperature rise apparently is caused by both collisions and the effect of a constant electric field. A profile widening observed in the case of hydrogen atoms is attributed to the high-frequency Stark effect. The authors thank Ya. B. Faynberg for a continued interest in the work and for valuable discussions and V. Ye. Ivanov, L. I. Bolotin, and V. G. Padalka for interest in the work and discussion of results. Orig. art. has: 4 figures and 2 tables. [FP]

SUB CODE: 20/ SUBM DATE: 26Oct64/ ORIG REF: 011/ OTH REF: 005/ ATD PRESS: 5014

LYAPKIN, A.V., inzh.; AGAF'IN, V.I., inzh. (Dnepropetrovsk).

Using water heaters in steam locomotives on the Stalinsk railroad.
Zhel. dor. transp. 40 no.2:77 F '58. (MIRA 11:3)

1. Sluzhba lokomotivnogo khozyaystva Stalinskoy dorogi (for Lyapkin).
2. Dorozhnaya khimiko-tekhnicheskaya laboratoriya Stalinskoy dorogi.
(Locomotives)

LYAPKINA, A.A.; SHAYZHINA, I.N.

Geological and geomorphological study of the area of the "40 Let Oktiabria" Collective Farm of the Podlesnoye Village Soviet, Vologda Province. Uch. zap. VGPI 27:55-69 '62. (MIRA 16:8)

(Vologda--Geology)
(Vologda District--Geomorphology)

LYAPKINA, A.A.

Plant resources of the Sukhona Valley. Uch. zap. Ped. inst. Gerts. 267:109-130 '64. (MIRA 18:9)

DOMBROVSKAYA, Nina Maksimovna. Prinimal uchastiye NIKOL'SKIY, V.V., kand. tekhn.nauk, dots.; LYAPKINA, T.G., red.; VORONINA, R.K., tekhn. red.

[Radio engineering reader in German]Khrestomatiia po radiotekhnike na nemetskom iazyke; posobie dlia studentov, izuchaiushchikh inostrannyi iazyk. Moskva, Vysshaia shkola, 1961. 74 p. (MIRA 15:11)

(Radio)

LYAPKOV, P.D., kand.tekhn.nauk

Hydraulic efficiency of sinking centrifugal oil well pumps.
Vest.mashinostr. 45 no.9:34-37 S '65. (MIRA 18:10)

LYAPKOV, P. D.
Min Petroleum Industry USSR. All-Union Petroleum and Gas Sci Res Inst (VNII)

LYAPKOV, P. D.: -- "An analysis of some properties of the design and operation of submersible centrifugal electric pumps for mining oils and methods of calculating their working parts." Min Petroleum Industry USSR. All-Union Petroleum and Gas Sci Res Inst (VNII). Moscow, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 20, 1956

LYAPKOV, P.D.

Effect of gas on the performance of the EN-95-800 submersible centrifugal pump. Neft.khoz. 36 no.2:43-49 F '58.
(MIRA 12:4)

(Centrifugal pumps)

LYAPKOV, P.D.

Making a gas separator of a sinking centrifugal pump. Trudy VNII no.22:39-58 '59. (MIRA 15:4)
(Centrifugal pumps) (Separators (Machines))

LYAPKOV, P.D.; DUNAYEV, V.V.

Results of testing the EN-160-800 pump in a well with a free-gas drive. Neft. khoz. 38 no.12:48-51 D '60. (MIRA 14:4)
(Oil well pumps—Testing)

BLOSHANSKIY, Yu.M.; LYAPON, O.A.; FEDERMESSER, K.M.; KHVALIBOV, Ya.V.

Analgesic anesthesia with nitrous oxide in minor gynecological operations. Sov.med. 26 no.1:116-120 Ja '63. (MIRA 16:4)

1. Iz 52-y gorodskoy bol'nitsy (glavnyy vrach P.Ye.Petrushko) i rodil'nogo doma No. 26 (glavnyy vrach - kand.med. nauk Yu.M.Bloshanskiy), Moskva.
(GYNECOLOGY) (NITROUS OXIDE)

LYA[illegible], Boris

Fantasy and reality. Kryl. rod. 16 no.6:18 Je '65.
(MIRA 18:10)

SMOLIN, V.A.; KRASHENINNIKOV, I.S.; LYAPOROV, V.M.; VASIL'YEV, V.M.

Readout operation in the AI-100-1 analyzer. Mnogokan. izm. sist. v iad. fiz. no.5:187-190 '63. (MIRA 16:12)

L 4058-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACCESSION NR: AT5024112 UR/3157/64/000/099/0001/0019
681.142.621

AUTHOR: Rekhin, Ye. I.; Lyaporov, V. M.; Pankratov, V. M.

TITLE: Conversion of microsecond time intervals into digital code

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii. Doklady, no. 99, 1964. Preobrazovaniye mikrosekundnykh intervalov vremeni v tsifrovoy kod, 1-19

TOPIC TAGS: analog digital converter, time interval counter, time measurement, electronic measurement

ABSTRACT: The authors discuss converters designed for measuring the time interval (transit time) between some "zero" time determined by the starting signal and the time when the detector records a particle. Accuracy in the measurement of such time intervals is analyzed with respect to factors which may cause nonlinearity in the converter. Converter characteristics are discussed and a block diagram of a converter is given. A brief description is given of a converter consisting of three functional circuits: phasing pulse generator, channel pulse shaper and converter.

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ACCESSION NR: AT5024112

The various components which make up these sections are described and their important parameters are given. The author is grateful to L. S. Gorn for his careful examination of the manuscript. Orig. art. has: 11 figures, 29 formulas.

ASSOCIATION: none

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 002 OTHER: 004

Card 2/2

L 08381-67

ACC NR: AR6017638 SOURCE CODE: UR/0272/66/000/001/0170/0170

AUTHOR: Rekhin, Ye. I.; Lyaporov, V. M.; Pankratov, V. M. 40

TITLE: Conversion of microsecond time intervals into digital code

SOURCE: Ref. zh. Metrol. i izmerit. tekh., Abs. 1.32.1297

REF SOURCE: Tr. Soyuzn. n.-i in-ta priborostr. vyp. 2, 1965, 38-56

TOPIC TAGS: analog digital converter, particle detector, electronic measurement

ABSTRACT: Converters for changing microsecond time intervals into digital code are designed for measuring the periods of time (time of flight) between some "zero" moment determined by a start signal and the moment of particle registration by a detector. Since these periods may be comparatively long (hundreds of μsec), beginning of measurement should be shifted along the time axis to coincide with the arrival of a "delayed" start signal. Delay is achieved by scaling of timer pulses. The start signal triggers the "clock", i. e. opens the switch of the timer pulse generator so that pulses are fed to the address unit. Channel width stability is maintained by using quartz frequency stabilization. It is preferable to have both fast and slow measurement conditions. Distributions are measured cyclically in either case. Under conditions of fast time analysis, the detector pulse blocks the input to which it is fed and the timer pulse output during the registration period after arrival of the de-

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ACC NR: AR6017638

layed start signal. Upon completion of registration, the address is corrected (supplemented) by the number of channel pulses transmitted during the blocking time, i. e. during the dead time τm. Under slow analysis conditions, the input switch is opened with arrival of the delayed start signal, and the detector signals are sent to an arithmetic unit. The next channel pulse closes the input switch after which counting and recording take place. The signal for termination of recording sets the number of the following channel in the address register and opens the converter input after a brief delay. Thus the information stored in the arithmetic unit before arrival of the next channel pulse will belong to the channel whose number is determined by the preceding cycle. The accuracy in measurement of time intervals is determined, and the effect of asynchronous and delayed start signals is described as well as synchronization of the signal detector, the effect of factors d_1-d_3, the effect of instability in the fronts of the frequency divider and the effect of dead time. A description and characteristics are given for converters, phasing pulse generator, a circuit for shaping channel pulses and a conversion circuit. 1 illustration. Bibliography of 6 titles. [Translation of abstract]

SUB CODE: 09

Card 2/2 nst

ACC NR: AR6018963 SOURCE CODE: UR/0271/66/000/002/A019/A020

AUTHOR: Rekhin, Ye. I.; Lyaporov, V. M.; Pankratov, V. M.

TITLE: Conversion of microsecond time intervals into a digital code

SOURCE: Ref. zh. Avtomat telemekh i vychisl tekhn, Abs- 2A133

REF SOURCE: Tr. Soyuzn. n.-i in-ta priborostr., vyp. 2, 1965, 38-56

TOPIC TAGS: multichannel analyzer, time interval counter, time measurement, analog digital converter

ABSTRACT: The microsecond time interval to digital code converters are intended for measuring time intervals (flight transit time) between a certain initial time "zero" corresponding to a start signal and the time when a particle is registered by a detector. Since these intervals may be long (hundreds of milliseconds) it is expedient to shift the measurement start time along the time axis so that it coincides with the arrival of the "delayed" start signal. The time delay is implemented by the pulse counting method. The start signal starts the "clock," i.e., opens the gate between the pulse generator and the counter. The pulse generator uses a quartz crystal for frequency stabilization. It is expedient to have two measurement modes: fast and slow. In the fast time analysis mode the detector pulse after the arrival of the delayed start signal blocks the input at which it enters for the duration of registration. The timing pulse output is also blocked at this time. At the end of the

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ACC NR: AR6018963

registration the address is updated (complemented) by the number of pulses which were passed when the input was blocked. In the slow time analysis mode the input gate is opened with the arrival of the delayed start signal at which time the detector signals are applied to the arithmetic unit. The next pulse in line shuts the input gate. The read and write operations are executed next. The "end of write" signal determines the number of the succeeding channel in the address register and after a short delay opens the converter input. Thus, the information stored in the arithmetic unit, until the arrival of the succeeding pulse, belongs to the channel whose number is determined by the previous cycle. The accuracy of the time interval measurements is determined. The effect of asynchronism between the starting and the delayed starting signals is described along with the effect of frequency divider jitter, detector synchronization, and blocking. The description and the characteristics of the converter, phasing pulse generator, and channel pulse shaper circuits are given. [Translation of abstract] 11 illustrations and bibliography of 6 titles. N. Z.

SUB CODE: 09

Card 2/2

ZHUNODAROVA, S.M.; ADAMOVA, M.N.; LYAPOTA, L.A.

Separation of vinyl esters by paper chromatography. Qualitative determination of vinyl acetate and vinyl alkyl esters of dicarboxylic acids. Zhur. anal. khim. 18 no.2:285-287 F '63. (MIRA 17:10)

1. State Scientific-Research and Design Institute of Nitrogen Industry and Products of Organic Synthesis, Lisichansk Branch, Severodonetsk.

MALAKHOV, G.M., doktor tekhn.nauk; LYAPOTA, P.P.; SIDORENKO, A.K.

Mechanization of rock drilling. Met. i gornorud. prom. no. 2: 47-49 Mr-Ap '64. (MIRA 17:9)

BERESNEVA, V.N., kandidat biologicheskikh nauk; LYAPSHINA, Z.F., kandidat biologicheskikh nauk.

Role of soil microflora in the development and destruction of soil structure. Trudy Vses.inst.sel'khoz.mikrobiol. 13:42-50 '53. (MLRA 8:1)
(Soil microorganisms) (Soil physics)

LYAPSHINA, Z.F., kandidat biologicheskikh nauk.

Effect of liming of the development of microflora and change in the structure of turf-podzolic soil. Trudy Vses.inst.sel'khoz.mikrobiol. 13:51-55 '53. (MLRA 8:1)
(Lime) (Soil microorganisms) (Soil physics)

6

LYAPTSEV, K.V., inzh.

Choice of fuses and determination of the size of wires and cables for supplying power to asynchronous electric motors. Energetik 11 no.4:34-35 Ap '63. (MIRA 16:3)
(Electric wire, Insulated)
(Electric motors, Induction)

LEONOV, Nikolay Maksimovich; LYAPTSEV, N., red.

[Synthetic materials in the national economy] Sinteticheskie materialy v narodnom khoziaistve. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1963. 34 p.
(MIRA 17:8)

LYAPTSEV, Vasiliy Mikhaylovich, tokar'; SHABASHOV, S.P., kand.tekhn. nauk, retsenzent; ANTSIFEROV, Yu.G., red.; DUGINA, N.A., tekhn. red.

[Advanced methods for machining on lathes] Peredovye metody tokarnoi obrabotki. Moskva, Mashgiz, 1961. 20 p. (Biblioteka rabochego-mashinostroitelia. Seriia: Peredovaia tekhnika - osnova kommunisticheskogo truda, no.7) (MIRA 15:7)

1. Ural'skiy vagonostroitel'nyy zavod (for Lyaptsev).
(Turning)

BERG, A.I. (Moskva); KITOV, A.I. (Moskva); LYAPUBOV, A.A. (Moskva)

Possibilities of automating the management of the national economy. Probl. kib. no.6:83-100 '61. (MIRA 15:1)
(Economics, Mathematical) (Electronic calculating machines)