Overall Stability of the Equilibrium State of Relay-type Control Systems

as W_1, which satisfies the equation:

$$dV_1/dt = \sum_{s,r=1}^{n} \frac{\partial V}{dx_s} p_{sr} x_r = - W_1 \qquad (30),$$

Further, it is shown that if the elements $\beta_{ij} = \beta_{ji}$ (such that $i \neq j$) of the determinant D_{n-1}, whose diagonal elements satisfy Eqs (35)-(37), can be chosen in such a way that all the successive minors of the element are positive, the equilibrium state of the system described by Eqs (6) and (7) and satisfying Eqs (5) is asymptotically stable (as regards the overall stability). The above theorems are suitable for constructing the simplified stability criteria of high-order systems. The systems with n ranging from 4 to 6 are considered.

The author thanks Ye.A. Barbashin for directing this work.

Card3/4

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E192/E382

Overall Stability of the Equilibrium State of Relay-type Control Systems

There are 13 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskiy institut
(Ural Polytechnical Institute)

SUBMITTED: June 8, 1959

4

Card 4/4

ALIMOV, Yu.I.

Determining the periodical movements of a class of relay systems of noncontinuous control. Nauch.dokl.vys.shkoly; fiz.-mat.nauki no.3:83-86 '59. (MIRA 13:6)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova.
(Electric relays) (Automatic control)

24(3)

AUTHORS: Skrotskiy, G. V., Alimov, Yu. I. SOV/56-36-4-44/70

TITLE: The Influence of the Shape of the Specimen on Ferromagnetic Resonance in a Strong Radio-Frequency Field (Vliyaniye formy obraztsa na ferromagnitnyy rezonans v sil'nom radiochastotnom pole)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 4, pp 1267-1271 (USSR)

ABSTRACT: Experimentally (Refs 1, 2) it was shown that the magnetization component M_z decreases slowly in the direction of the constant field H_o with growing microwave power. This effect was theoretically investigated by Suhl (Refs 3, 4) and derived by using the Landau-Lifshits equation (1): $\dot{\vec{m}} + \gamma\left[\vec{m}\vec{H}^{ef}\right] + \alpha\left[\dot{\vec{m}}\,\vec{m}\right] = 0$, $\vec{m} = \vec{M}/M_s$, $\alpha > 0$, $\gamma > 0$, for an r.f. field h_o, the amplitudes of which are great compared to the threshold field h_c: $h_c = \Delta H(3.08\,\Delta H/4\pi M_s)^{1/2}$. The authors of the present paper analyze the exact solutions

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of (1) for nonspherical ferromagnetic specimens in an r.f. field of arbitrary amplitude (they had already derived the solutions in a previous paper (Ref 5). It is found that above a certain value of h_c the motion of the magnetization vector becomes unstable. The slow decrease of the magnetization component and the shift of the resonance field for field strengths $h_0 > h_c$ are explained. At $h_0 > h_c$ the height of the absorption peak decreases and its width increases. The results agree essentially with those obtained by Suhl. The dependence of m_z on ξ at $\xi_N = 10$ for different values of a is shown by figure 1; figure 2 shows the influence exercised by the nonsphericity of the specimen upon m_z in dependence on a^2 with $\xi_N = 100$; the diagram for comparison contains the curve $m_z(a^2)$ for a homogeneously magnetized spherical specimen. The denotations apply to a system of coordinates rotating round $H_0 = H_z$ with the frequency ω, where (1) has the form

The Influence of the Shape of the Specimen on Ferromagnetic Resonance in a Strong Radio-Frequency Field

SOV/56-36-4-44/70

$\left[\vec{i}_0\vec{\xi}\right] + \left[\vec{m}\left[\vec{m}\vec{\Omega}\right]\right] = 0$, with $\vec{\xi} = (\gamma\vec{H}^{ef} - \vec{\omega})/\alpha\omega$,

$\vec{\Omega} = \vec{\omega}/\omega$; $a = \frac{\gamma h_0}{\alpha\omega}$, $\xi_N = \gamma\frac{N_\parallel - N_\perp}{\alpha\omega}M_s$

There are 2 figures and 6 references, 1 of which is Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnic Institute)

SUBMITTED: October 28, 1958

Card 3/3

ALIMOV, Yu.I.

Problem of the stavility of relay systems in automatic control. Izv.vys.ucheb.zav.; mat. no.1:3-10 '60. (MIRA 13:6)

1. Ural'skiy politekhnicheskiy institut imeni S.M.Kirova. (Automatic control)

ALIMOV, Yu.I.

New method of arriving at simplified criteria of absolute stability. Inzh.-fiz.zhur. no.6:35-41 Je '60. (MIRA 13:7)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova, g. Sverdlovsk.
(Automatic control)

16.9500

77488
SOV/103-21-1-19/22

AUTHOR: Alimov, Yu. I.

TITLE: Letter to the Editor. Remarks on the Study by Yu. S. Sobolev "On Absolute Stability of Some Control Systems"

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol 21, Nr 1, pp 143-144 (USSR)

ABSTRACT: The study under discussion was published in Avtomatika i telemekhanika Vol 20, Nr 4, 1959. In this study, a theorem establishes conditions for absolute stabilty at certain types of control systems. The writer of the letter shows that there are systems of this type which are stable according to Rouse-Hurwitz conditions, but which do not satisfy the conditions of the above theorem. It is stated that the theorem derived by Yu. S. Sobolev is insufficient to be used for solution of problems of absolute stability. There are 2 Soviet references.

Card 1/1

85648

S/103/60/021/006/020/027/XX
B019/B063

16.9500 (1024, 1132, 1344)

AUTHOR: Alimov, Yu. I. (Sverdlovsk)

TITLE: Determination of Lyapunov Functions for Control Relay Systems

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 6, pp. 720-728

TEXT: The author first gives the transmission function of an automatic control system in matrix representation, and studies the stability of the system in the phase space after introducing the term "trajectory of the system". The states of equilibrium of a class of control relay systems are determined, and the relation $V(x) = \sum_{i,j=1}^{n} \alpha_{ij} x_i x_j + sk_p \varphi(\sigma)\sigma$ is obtained for the Lyapunov function after extensive calculation. This function holds for the systems most frequently studied in control theory, which are described by the matrix equation $\dot{x} = Ax + b\varphi(\sigma)$, $\sigma = k'x$ (3), where A is a quadratic column matrix, and x, b, and k are n-dimensional column

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Determination of Lyapunov Functions for Control Relay Systems

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matrices. The criteria derived for the stability of these systems are expressed by the coefficients of the transmission function. As the Lyapunov function is represented in an invariant form, the above-mentioned criteria can be represented by elements of the matrices A, b, and k. I. G. Malkin, A. I. Lur'ye, and A. M. Letov are mentioned. Ye. A. Barbashin is thanked for guidance and help. There are 15 Soviet references.

Card 2/2

ALIMOV, Yu. I.

Cand Phys-Math Sci -- (diss) "Several problems of the dynamics of relay systems in automatic control." Sverdlovsk, 1961. 10 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Ural State Univ imeni A. M. Gor'kiy); 170 copies; price not given; bibliography at end of text; (KL, 7-61 sup, 217)

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S/199/61/002/001/001/008
B112/B218

AUTHOR: Alimov, Yu. I.

TITLE: Determination of the Lyapunov function for systems of linear differential equations with constant coeffiqient

PERIODICAL: Sibirskiy matematicheskiy zhurnal, v. 2, no. 1, 1961, 3-6

TEXT: The criteria for the asymptotic stability of systems of linear differential equations with constant coefficient are based on the existence of a Lyapunov function whose total derivative with respect to time is a definite form. These criteria are generalizations of I. G. Malkin's criteria for absolute stability. In the present paper, the author proves existence theorems for the Lyapunov function of nonstable linear systems. The proofs are analogous to corresponding proofs of A. M. Lyapunov and N. N. Krasovskiy. The system of differential equations considered:

$$dx_s/dt = \sum_{k=1}^{n} p_{sk}x_k,\ p_{sk} = \text{const}\ (s = 1, \ldots, n) \quad (1)$$

exhibits the function:

$$dV/dt = \sum_{s,k=1}^{n} \frac{\partial V}{\partial x_s} p_{sk}x_k = -W(x_1, \ldots, x_n) \quad (2)$$

Card 1/2

Determination of ...

as a derivative with respect to time of the Lyapunov function: $V(x_1, \ldots, x_n)$. The theorems proved are: 1) If all roots of the characteristic equation of system (1) have a negative real part, then there exists exactly one form V of degree m for every positive definite form $W(x_1, \ldots, x_n)$ of this degree, which is no integral of system (1). This form V satisfies condition (2). V must be positive definite. 2) If among the roots λ_i of the characteristic equation of system (1) there is at least one with a positive real part, and if for non-negative integers $m_1, \ldots, m_n$ which satisfy the condition $\sum_{i=1}^{n} m_i = m$, $\sum_{i=1}^{n} \lambda_i m_i$ will never vanish, then there exists exactly one form V of degree m for every positive definite form W of this degree, which is no integral of system (1). This form V satisfies condition (2) and is positive definite. 3) If among the roots of the characteristic equation of system (1) there is at least one with a positive real part, then there exists a form V of degree m and a positive number α for every positive definite form W of this degree, which is no integral of (1). Thus, $\alpha V/dt = \alpha V - W$, V being positive definita Professor Ye. A. Barbashin is thanked for guidance. There are 7 Soviet-bloc references.
SUBMITTED: November 20, 1959
Card 2/2

23955
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D252/D302

16.8000 (1031, 1121, 1132)

AUTHOR: Alimov, Yu. I. (Sverdlovsk)

TITLE: Application of Lyapunov's direct method to differential equations with non-unique right-hand sides

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 7, 1961, 817-829

TEXT: A mathematical model is constructed for relay control systems which expresses better their physical meaning than the usual model (differential equations with discontinuous right-hand sides). The obtained mathematical model is considered as a system of equations in contingencies to which Lyapunov's direct method can be applied. This method which is an extension of Lyapunov's stability theorems, consists among others of a theorem by Krasovskyy, of the Ye. A. Barbashin and N.N. Krasovskyy theorems, (Ref. 13: Nekotoryye zadachi teorii ustoychivosti dvizheniya (Some Problems in Stability Theory), Fizmatgiz, 1959), and D. Veksler's theorem (Ref. 16: O teoremakh ustoychivosti dlya sistem statsionarnykh differentsial'nykh

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uravneniy, Revue des Mathématiques pures et appliquees, vol. 3, no.1). The normalized equations of motion of relay systems are:

$$x = f(t,x) = f[t,x,\varphi(\sigma)], \quad \sigma = \sigma(t,x) \qquad (2)$$

where $f(t,x,\ )$ and $\sigma(t,x)$ are continuous functions, and $\varphi(\sigma)$ is the characteristic of the relay element. For convenience, only one relay element is considered for the time being. Continuity is understood with respect to all the arguments of the functions. x and f are n-dimensional column-matrices. In the neighborhood of the switching surfaces $\sigma = \sigma(t,x) = \sigma_k \quad (k = k_1, k_2, \ldots) \qquad (3)$ the function $\varphi(\sigma)$ can be considered as discontinuous only under operating conditions which involve a sufficiently fast passage of the coordinate $\sigma(t)$ through the switching surface. The author proceeds from the following simple approximation of the relay characteristic at the switching points $\varphi(\sigma_k) = \xi_k, \quad (k = k_1, k_2, \ldots) \qquad (6)$ where ξ_k can be any number of the interval $\left[\underline{\lim}_{\sigma\to\sigma_k} \varphi(\sigma), \ \overline{\lim}_{\sigma\to\sigma_k} \varphi(\sigma)\right] \qquad (7)$ ($\underline{\lim}$ and $\overline{\lim}$ denote $\lim_{inf}$ and $\lim_{sup}$ respectively). The author

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sets himself the task of showing how an approximation of type (6) and (7) can be used as a basis for a "continuous" theory of relay control-systems. It follows from (6) and (7) that on the switching surfaces (3) the right-hand sides of Eq. (2) give not one direction, but an entire cone of directions (Fig. 1), viz: the set $\{f[t,x,\varphi(\sigma_k)]\}$ of vectors $f(t,x,\xi_k)$, corresponding to all ξ_k of the interval (7). The obtained system is not sufficient for determining $\dot{x}(t)$ as a function of t,x. The simplified model has such a disadvantage, but actual relay links, too, cannot be uniquely characterized by functional or differential output or input versus time relationships. The above mathematical model construction is similar to the theory of equations in contingencies. To consider, proceeding from (6) and (7), system (2) as a system of equations in contingencies would permit obtaining a concrete model of a relay system without necessitating a detailed construction of its phase space; but this is conditional on a requirement of the existence theorem for the solution. In order to apply Lyapunov's direct method to equations in contingencies, a theorem is stated on the boundedness of the continuous and continuously differentiable func-

tion $V = V(t,x)$, such that for the scalar many-valued function

$$W(t,x) = \frac{\partial V}{\partial t} + \frac{\partial V}{\partial x} f(t,x) \qquad (18)$$

everywhere in the closed and bounded domain $\bar{G}(t,x)$ the relation

$$W(t,x) \leqslant 0 \qquad (19)$$

holds. The validity of Lyapunov's stability theorems with respect to equations in contingencies can be proved (in a way analogous to proofs of classical theorems) on the basis of Ref. 13 (Op. cit) and of the present article, the derivative of Lyapunov's V-function being replaced by (18); such a replacement leads to essential information about the solutions of Eq. (2). To illustrate the fact that equations in contingencies determined (under certain natural conditions) a generalized dynamic system, another theorem is proved:
The system of equations $\dot{x} \in f(x)$, $0 \in \{f(0)\}$ (29)
is shown to have asymptotically stable equilibrium. As an example, illustrating a possible method of more accurate stability investigations, the equations in contingencies

Application of Lyapunov's direct...

$$\dot{x} = F(x) + a\varphi(x), \quad F(0) = 0, \quad 0 \in \{\varphi(0)\}, \qquad (30)$$

are given; to such a form can be reduced the equations of control systems with one link and a non-unique characteristic. There are 3 figures and 16 references: 14 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: November 26, 1960

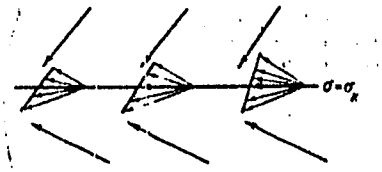

Рис. 1

Fig. 1

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S/020/61/140/001/001/024
C111/C222

AUTHORS: Barbashin, Ye.A., and Alimov, Yu.I.

TITLE: On the theory of dynamic systems with discontinuous and no single-valued characteristics

PERIODICAL: Akademiya nauk SSSR. Doklady, v.140, no. 1, 1961, 9-11

TEXT: It is shown that in certain cases the investigation of differential equations with ambiguous right sides can be reduced to the investigation of equations defined in certain linear normed spaces and the right sides of which are unique. Let R be an n-dimensional Euclidean space, let S be a closed Euclidean sphere, let φ be a unique mapping of S into R. Here the image of S is called an S-set. Let M(R) be the complete Banach space of all measurable essentially bounded φ with the norm $\| \varphi \| = \text{vrai} \max_{p \subset S} \| \varphi(p) \|_R$.

Let f(p) be an ambiguous function defined on the m-dimensional Euclidean space E and the values of which are certain S-sets of R. To the function f(p) the authors adjoin a unique function F(p) the values of which lie

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On the theory of dynamic systems ...

in M(R) ; $F(p) = \gamma$ if $\gamma(S) = f(p)$. f(p) is called continuous if F(p) is continuous. The other notions of the descriptive theory of functions are transferred to the ambiguous functions in an analogous manner. Let $f_n(p)$ converge almost uniformly to f(p) on $E' \subset E$ if for arbitrary $\varepsilon > 0$, $\delta > 0$ there exists a set $E_\varepsilon \subset E'$, mes $E_\varepsilon < \varepsilon$ and there exists a positive number $n(\delta)$ so that $\| F_n(p) - F(p) \|_{M(R)} < \delta$ holds for all $p \subset E' \setminus E_\varepsilon$ and $n > n(\delta)$. The function f(p) is called countable-valued on E' if F(E') is a countable set, where the inverse images of the points of M(R) are measurable sets for the mapping F(p) of E into M(R). f(p) is called measurable if there exists a sequence of countable-valued functions $f_n(p)$ converging almost uniformly on E' with respect to f(p). ✓

The integral of a measurable f(p) is defined by

$$\int_{E'} f(p)dp = (B) \int_{E'} F(p)dp$$

where (B) denotes a Bochner - integral. Let E be the number line. The

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On the theory of dynamic systems ... S/020/61/140/001/001/024
C111/C222

The derivative of an ambiguous $f(t)$, $t \subset E$, is defined by

$$\frac{df(t)}{dt} = \lim_{h \to 0} \frac{f(t+h) - f(t)}{h}$$

where the limit value corresponds to the metric introduced above. Given the differential equation

$$\dot{x} = f(t,x) \qquad (1)$$

where $f(t,x)$ is an ambiguous function defined for $x \subset R$, $-\infty < t < +\infty$ (the set $f(t,x)$ is an S-set of R). Let the condition (A) be satisfied : If X is an S-set of R then $f(t,x)$ is an S-set too (here $f(t,X) = \bigcup_{x \subset X} f(t,x)$) .

Beside of (1) the authors consider

$$\frac{dX}{dt} = f(t,X) \quad . \qquad (2)$$

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On the theory of dynamic systems ....

The solutions of (2) are ambiguous functions X(t) of the scalar argument t with values being S-sets of R. In the initial moment the trajectories of (2) are fixed by S-sets of R and are tubes in R. If X and f(t,X) are not considered as S-sets of R but as elements of M(R) then (2) becomes an equation with an ambiguous right side to which the theory of differential equations in Banach spaces is applicable.
There are 7 Soviet-bloc and 4 non-Soviet-bloc references. The reference to the English-language publication reads as follows : E. Hill, Funktsional'nyy analiz i polugruppy (Functional analysis and semigroups) M., 1951.

ASSOCIATION: Ural'skiy filial Akademii nauk SSSR (Ural Branch of the Academy of Sciences USSR)

PRESENTED: April 21, 1961, by L.S. Pontryagin, Academician

SUBMITTED: April 20, 1961

Card 4/4

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C111/C444

AUTHORS: Barbashin, Ye. A., Alimov, Yu. I.

TITLE: On the theory of Relais differential equations

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, no. 1, 1962, 3-13

TEXT: The paper contains a representation of the main results of (Ref. 12: S. Ch. Zaremba. Sur les équations au paratingent. Bull. sci. math., 2 sér., v. 60, p. 139, 1936) and of (Ref. 13: A. Marchaud. Sur les champs continus de demi-cônes convexes et leurs integrales. Compositio math., v. 3, f. 1, p. 89, 1936) and some new theorems which the authors assume to be fit for the investigation of relais controls. The following notations are used $X = (x_1, \ldots, x_n)^*$; $f(t, X) = (f_1(t, X), \ldots, f_n(t, X))^*$; the star indicates the transposed matrix. A mapping of $p \in E_m$ on a connected compact $\{f(p)\}$ of an n-dimensional space $E(f)$ of the $f_1, f_2, \ldots, f_n$ is called an n-dimensional multivalued vector function $f(p)$. The notion of contingence kont $X(t')$ of

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$\dot{x} = x(t)$ in $t = t'$ is introduced as usual. All integrals and measures are understood in the sense of Lebesgue.

Considered is the equation

$$\dot{x} = f(t, x) \qquad (1)$$

where $f(t, x)$ is an n-dimensional multivalued function; the equation is understood as an equation in contingences. $S(G, \varepsilon)$ denotes the ε - neighborhood of the set G. $\rho(A, B)$ denotes the distance of the sets A and B; $\beta(A, B) = \sup_{X \subset A} \rho(X, B) = \inf_{A \subset S(B,\varepsilon)} \varepsilon$; $\alpha(A, B) = \max(\beta(A,B), \beta(B, A))$. One calls $f(p)$ α- continuous in $R(p) \subset E_w$, if for every $p_0 \in R(p)$ and for every $\varepsilon > 0$ there exists a $\delta = \delta(p_0, \varepsilon) > 0$ such that $\alpha(\{f(p)\}, \{f(p_0)\}) < \varepsilon$ for all $p \in R(p)$, for which $\rho(p, p_0) < \delta$. The β - continuity is defined analogously.

Theorem 1 says that an $f(p)$, β - continuous in the bounded domain $\bar{R}(p)$ is bounded in that domain.

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Theorem 2: If $f(t,x)$ is β - continuous with respect to t and x in the bounded domain $\bar{G}(t,x)$, then all solutions of (1) satisfy the Lipschitz-condition in $\bar{G}$ with respect to t with the common constant L.

The equation (1) is said to satisfy the condition A on $G = G(t,x)$, if $f(t,x)$ is defined in every point of G, and β - continuous with respect to t, x, and if $\{f(t,x)\}$ in the space $E(f)$ is convex.

Theorem 3 says that in case (1) satisfies the condition A in G, then there exists to every interior point (t_o, x_o) in G at least a solution of (1) passing through (t_o, x_o).

Theorem 5 says that in case (1) satisfies the condition A in $\bar{G}(t,x)$, $x(t)$ is solution of (1) on $t_1 \leq t \leq t_2$ if and only if

$$(t, x(t)) \subset G(t,x), \tag{9}$$

$$x(t'') = x(t') + \int_{t'}^{t''} \varphi(\xi)\, d\xi \tag{10}$$

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$$\varphi(t) \in \{f(t, x(t))\} \qquad (11)$$

are satisfied for all t, t', $t'' \in [t_1, t_2]$.

The theorems 6 and 7 establish the possibility of the variable transformations $t = t(\tau)$ and $y = \psi(t, x)$ for (1).

Theorem 8 is an analogue of the theorem of Wintner (Ref. 18: The infinities of the nonlocal existence problem of ordinary differential equations. Amer. J. Math., v. 68, 1946) on the possibility of continuation of the solutions.

Theorem 9 is a statement on the continuous dependence of the solutions on the initial conditions and on the right hands.

In theorem 10 one considers the mapping, given by an autonomous system $\dot{x} = f(x)$.

There are 14 Soviet-bloc and 4 non-Soviet-bloc references. The reference

to English-language publications reads as follows: A. Wintner The infinities of the nonlocal existence problem of ordinary differential equations. Amer. J. Math., v. 68, 1946.

ASSOCIATION: Ural'skiy gosudarstvennyy universitet im. A. M. Gor'kogo Ural'skiy filial AN SSSR (Ural State University im. A. M. Gor'kiy Ural Subsidiary of the Academy of Sciences of SSSR)

SUBMITTED: September 30, 1960

Card 5/5

ALIMOV, Yu.I.

"Approximate Calculation of a Class of Automatic Systems with Forced Optimization of the Paramters."

Paper to be presented at the IFAC Congress held in Basel, Switzerland, 27 Aug to 4 Sep 63.

S/280/63/000/001/011/016
E140/E435

AUTHOR: Alimov, Yu.I. (Sverdlovsk)

TITLE: Approximate calculation of high speed adaptive systems with sinusoidal test and search signals

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Tekhnicheskaya kibernetika. no.1, 1963, 105-112

TEXT: Consider the system of Fig.1, where Φ_1 and Φ_2 are linear continuous filters,

$$\theta(t) = \theta \cos(\Omega t + \alpha) \qquad (1.1)$$

is a harmonic test signal at the input, and the feedback loops adjust automatically the parameters $X_i (i = 1,\ldots,N)$ of the filter Φ_2. The parameter optimization loop includes the error detector D, phase discriminators ΦD_i, averaging filters $W_{\varphi i}(p)$ and integrating networks. The task of the adaptive system is to maintain the characteristics of the two filters Φ identical with respect to the input signal (1.1) and drift of the parameters in both filters. Such systems have been previously described, for example by A.A.Krasovskiy (in the proceedings of the First

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Approximate calculation

International Congress for Automatic Control, IFAC, Moscow, 1961). The present note investigates the dynamic characteristics of such a system, using the method of small parameters and the frequency characteristics of the system. In this method it is not necessary to make the assumption that the transfer function (weighting function) of the filter Φ_2 is a function, rather than a functional of the test signals,

$$\mu\Delta x_i(t) = \mu\Delta_i \cos\Omega_i t, \quad \Omega_i > \Omega_{i-1}, \quad i = 1,\ldots,N \qquad (1.2)$$

A qualitative analysis of the mathematical model obtained in this way clarifies many aspects of the normal operation of such systems and reveals some important improvements that are possible on the basis of synchronous detectors. The analysis proceeds on the basis of the following assumptions: 1) the smallness of the test signals; 2) the filters Φ_1 and Φ_2 are assumed to be stable so that transients in them may be neglected in the steady-state analysis; 3) the variation of the system parameters over a test cycle can be neglected; 4) the state of filter Φ_2 can be described by an ordinary differential equation with coefficients analytic with respect to the filter parameters x_i.

Card 2/3

Approximate calculation ...

S/280/63/000/001/011/016
E140/E435

There are 2 figures.

SUBMITTED: June 21, 1962

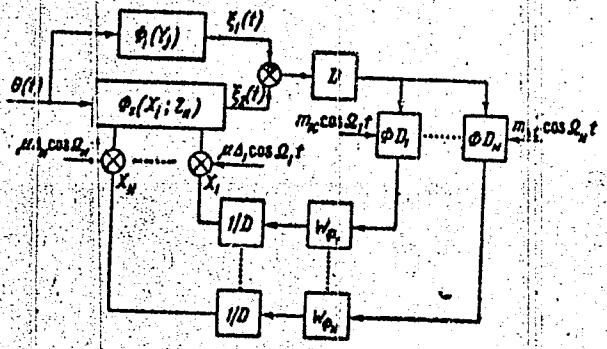


Fig.1.

Card 3/3

ALIMOV, Yu.I. (Sverdlovsk); OBABKOV, V.K. (Sverdlovsk)

Approximate calculation of high-speed automatic parameter optimizing systems with almost periodic test and search signals. Izv. AN SSSR. Tekh. kib. no.4:127-139 Jl-Ag '63. (MIRA 16:11)

L 54022-65 EWT(d)/T IJP(c)

ACCESSION NR: AR5012983 UR/0044/65/000/003/B058/B058

SOURCE: Ref. zh. Matematika, Abs. 3B339

AUTHOR: Alimov, Yu. I.

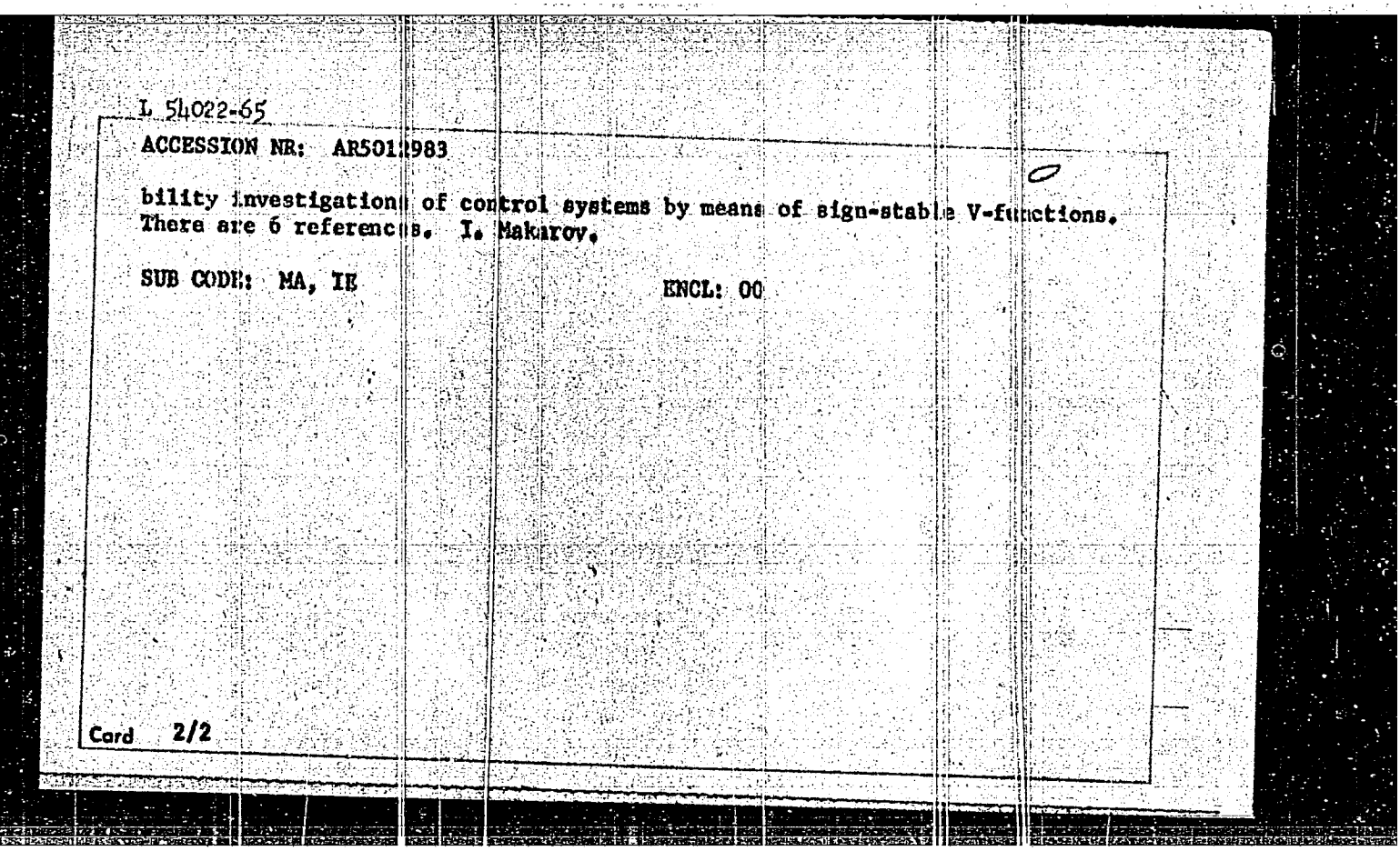
TITLE: Generalization of the A. M. Lyapunov theorem concerning the establishment of the Lyapunov function for stable linear systems

CITED SOURCE: Tr. Ural'skogo politekhn. in-ta, sb. 139, 1964, 50-51

TOPIC TAGS: Lyapunov theorem, Lyapunov function, linear system, asymptotic system, control system stability

TRANSLATION: An asymptotically stable system with constant coefficients is investigated. Let $W(x_1, x_2, \ldots, x_n)$ be the total derivatives of the unknown function $V(x_1, x_2, \ldots, x_n)$ characterizing the system. A proof is given that if W is a positive sign form of order m, then there exists a unique corresponding form V of the same order, which must likewise be positive and which becomes zero only over a subgroup H of the group $W(x_1, \ldots, x_n) = 0$ consisting of all integral half-trajectories of the system. The results obtained may be used for the sta-

Card 1/2



L 54022-65

ACCESSION NR: AR5011983

bility investigation of control systems by means of sign-stable V-functions. There are 6 references. I. Makarov.

SUB CODE: MA, IE ENCL: 00

Card 2/2

L 8230-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AR5018104 SOURCE CODE: UR/0271/65/000/001/A015/A016

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Svodnyy tom, Abs. 7A108

AUTHOR: Alimov, Yu. I.; Obabkov, V. K.

TITLE: Dynamics of self-optimizing linear filters having search-modulation forced gain adjustment

CITED SOURCE: Dokl. 1-y Sibirsk. konferentsii po matem. i mekhan., 1964. Tomsk, Tomskiy un-t, 1964, 247-248

TOPIC TAGS: automatic control system, adaptive automatic control

TRANSLATION: A particular case of an adaptive control system is investigated which has been examined in a number of Soviet papers devoted to the extremal correction topics (A. A. Krasovskiy, report at the 1-st International IFAK Congress, Moscow, 1960, and others). At variance with the usual approximate methods of "freezing" the parameters of the principal loop in the above adaptive system, an exact integral equation of the system dynamics in the frequency region is developed. Bib 3.

Card 1/1 SUB CODE: 13 UDC: 62-506

L 27598-66

ACC NR: AP6018480 SOURCE CODE: UR/0103/66/001/002/0028/0036

AUTHOR: Alimov, Yu. I. (Sverdlovsk) 44 B

ORG: none

TITLE: Statistical description of signal filtration

SOURCE: Avtomatika i telemekhanika, no. 2, 1966, 28-36

TOPIC TAGS: electric filter, signal processing, statistics

ABSTRACT: A discussion of the methodological aspects of the problem. For description in terms of the the theory of cases, when in fact only the time averages of the signals are measured, it is suggested that the probability space be interpreted as a time axis and not as a set of experiments. The inapplicability in this case of statistical evaluations derived from a series of independent experiments is pointed out. The essential inaccuracies in the analysis of the dynamics of adaptive systems caused by the uncalled-for use of traditional "frequency-statistical" concepts are noted. The author thanks Ye. A. Barbashin for discussing the work. Orig. art. has: 31 formulas and 1 figure. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 09, 12 / SUBM DATE: 04Aug65 / ORIG REF: 018

Card 1/1 UDC: 621.391.072

ACC NR: AP6033945 SOURCE CODE: UR/0280/66/000/004/0177/0184

AUTHOR: Alimov, Yu. I. (Sverdlovsk); Obabkov, V. K. (Sverdlovsk)

ORG: none

TITLE: On dynamics of systems with automatic adjustment of the gain coefficient by means of search modulation

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 4, 1966, 177-184

TOPIC TAGS: automatic control system, automatic control theory, self adaptive control

ABSTRACT: More accurate equations of the motions in continuous control systems with extremum self-adjustment of the general gain coefficient with near-periodic test signal are derived in terms of the frequency spectrum. It is assumed that the linear system components are described by their frequency characteristics. A method for analyzing system stability without resorting to differential equations is proposed.. The resulting equations are compared to those obtained by the method of coefficient "freezing". Figure 1 shows a single loop, self adaptive system with search type parameter modulation. In this system it is assumed that all parameters, except gain, of the filters W_1 and W_2 are fixed. The reference filter W_1 and the adjustable filter W_2 are both linear. In the time domain, such a system can be represented by a system of nonlinear and

Card 1/3

non-stationary differential equations which can be solved by "freezing" the variable equations. The paper deals with the initial assumptions which are necessary for rigorous derivation of linear stationary equations for the system shown in figure 1 with regard to parameter $k_1(t)$ and $x_2(t)$ variation with respect to time. The analysis is limited to the case when:

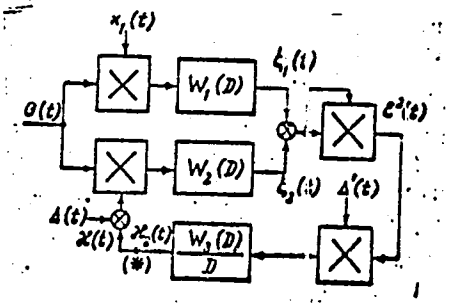


Fig. 1.

$$\theta(t) = \sum_{k=0}^{N} \theta_k \cos(\omega_k t + \alpha_k), \quad \Delta(t)\varphi = \cos \Omega t,$$

$$\Delta'(t) = \cos(\Omega t + \beta), \quad \omega_k \geq \omega_{k-1} \geq 0,$$

and the elements W_1, W_2, and W_3 are stable. The differential equations describing this system in time domain can be converted into frequency domain using the classical Fourier transform. Unfortunately, the resulting equations do not lend themselves to rigorous analysis using the above mentioned assumptions. However, if ordinary, rather than integro-differential equations, are used to describe the system in the frequency domain, using the assumptions that the individual system's elements are stable in terms of frequency, a relatively simple technique

of analyzing such system results. A complete mathematical analysis of this solution with reference to the system in figure 1 and a comparison of this technique to the method of coefficient "freezing" is included. Orig. art. has: 2 figures, 32 formulas.

SUB CODE: 09,13/ SUBM DATE: 24Dec65/ ORIG REF: 007/ OTH REF: 002

APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R000101120001-5"

ALIMOV, Z.Z. (Kazan')

Diagnostic significance of Zakharin-Head and Viliamovskii zones and of viscerocutaneous-vasomotor reflexes in acute appendicitis. Klin.med. no.9:115-121 '62. (MIRA 15:12)

1. Iz 1-go khirurgicheskogo otdeleniya (nauchnyy rukovoditel' - prof. V.N. Shuin) Respublikanskoy klinicheskoy bol'nitsy (glavnyy vrach K.L. Svechnikov) Ministerstva zdravookhraneniya Tatarskoy ASSR.

(APPENDICITIS) (PAIN) (REFLEXES)

ALIMOV,Z.Z.

Significance of periappendicular changes in the development of early complications after appendectomy. Kaz.med. zhur. no.2:42-44 Mr-Ap'63 (MIRA 16:11)

1. I-oye khirurgicheskoye otdeleniye(nauchnyy rukovoditel'- prof. V.N. Shubin) Kazanskoy respublikanskoy klinicheskoy bol'nitsy (glavnyy vrach - Sh.V.Bikchurin [deceased]).

ALIMOV, O.D.; ALIMOVA, A.A.; DVORNIKOV, L.T.

Investigating hole drilling conditions with the use of nomograms. Fiz.-tekh. probl. razrab. pol. iskop. no.4:81-84 '65.

(MIRA 19:1)

1. Institut gornogo dela Sibirskogo otdeleniya AN SSSR, Novosibirsk i Tomskiy politekhnicheskiy institut. Submitted April 15, 1965.

MILITSKOVA, Ye.A.; Prinimali uchastiye: ALIMOVA, D.U., inzh.-khimik; KRYSANOVA, V.A., laborant; ABRAMOVA, K.I. laborant

Problems in stabilizing and regulating the granulometric composition of suspension polymers. Plast.massy no.8:6-11 '61. (MIRA 14:7)

(Polymers)

ALIMOVA, G.K.

Cytochemical studies on the development of pollen grains in corn plants with the Texan and Moldavian types of cytoplasmic male sterility. Bot. zhur. 47 no.10:1522-1527 O '62.
(MIRA 15:12)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.
(Hybrid corn)
(Pollen)
(Sterility in plants)

BATYGINA, T.B.; TEREKHIN, E.S.; ALIMOVA, G.K.; YAKOVLEV, M.S.

Genesis of male sporangia in Gramineae and Ericaceae. Bot. zhur. 48 no.8:1108-1120 Ag '63. (MIRA 16:10)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Leningrad.
(Sporangium) (Gramineae) (Heather)

41633
S/080/62/035/009/001/014
D202/D307

11.4100

AUTHORS: Konstantinov, B.P., and Alimova, I.A.

TITLE: The amalgam exchange of K and Na

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 9, 1962, 1908 - 1916

TEXT: The present work is the first of a series of studies concerned with the separation of alkali and alkaline earth metals by the amalgam exchange method. The exchange of K and Na between amalgams and aqueous solutions of hydroxides were carried out, in the range -7 to 60°C. The concentrations of the Na, K amalgams were varied between 0.08 and 1.5 N and those of the aqueous KOH, NaOH phases between 0.07 and 6.37 N. The distribution coefficient, α, was found to be a function of temperature and of the concentrations in the two phases, passing through a value of 1, but not exceeding 4.1 (the ratio α was generally calculated to be greater than 1). The equilibrium constant of the exchange reaction in the same system was measured as 1.93 ± 0.01 at 21°C, and the heat of reaction was calculated from its temperature dependence as -3600 cal/mole. The ratios

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D202/D307

The amalgam exchange of K and Na

of the activity coefficients of Na and K were measured in the two phases in dependence on the concentrations of the two components. The exchange current density was of the order of tens of Ka/m^2 and increased linearly with increasing rate of stirring. It is concluded that effective Na-K separations are feasible by the above method, using a multistage process. There are 10 figures and 2 tables.

SUBMITTED: June 15, 1961

X

Card 2/2

KONSTANTINOV, B.P.; ALIMOVA, I.A.

Amalgam exchange between Li - K, Li - Na, and Li - Ca. Zhur. prikl.khim. 35 no.10:2266-2271 O '62. (MIRA 15:12)
(Amalgams)

ALIMOVA, L.A., aspirant

Change in the protein fractions in animals under the influence of dysenterial toxin. Med. zhur. Uzb. no.2:25-29 F '62. (MIRA 15:4)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof. M.N.Khanin) Tashkentskogo gosudarstvennogo meditsinskogo instituta i Instituta krayevoy eksperimental'noy meditsiny AN UzSSR (direktor - doktor meditsinskikh nauk G.M.Makhkamov).
(DYSENTERY) (TOXINS AND ANTITOXINS) (BLOOD PROTEINS)

ALIMOVA, L.A.

Effect of the somatotropic hormone on the changes of blood protein fractions in experimental liver cirrhosis. Vop.biol.i kraev.med. no.3:207-211 '62. (MIRA 16:3)
(LIVER—CIRRHOSIS) (SOMATOTROPIN) (BLOOD PROTEINS)

ALIMOVA, L.A.

Effect of the somatotropic hypophyseal hormone on morpho-logical changes in the liver in experimental cirrhosis. Vop. biol. i kraev. med. no.4:360-365 '63. (MIRA 17:2)

ALIMOVA, L.A. (Tashkent)

Effect of the pituitary somatotropic hormone on the development of experimental liver cirrhosis. Pat. fiziol. i eksp. terap. 7 no.4:56-60 Jl-Ag '63. (MIRA 17:9)

1. Iz kafedry patologicheskoy fiziologii Tashkentskogo meditsinskogo instituta (zav.- prof. M.N. Khanin) i Instituta krayevoy eksperimental'noy meditsiny (dir.- prof. G.M. Makhamov) AN UzSSR.

ALIMOVA, L.A., aspirant

Effect of the pituitary somatotropic hormone on the fat and glycogen content of the liver in experimental cirrhosis. Med. zhur. Uzb. no.5:25-29 My'63 (MIRA 17:4)

1. Iz kafedry patologicheskoy fiziologii (zav. - prof. M.N. khanin) Tashkentskogo meditsinskogo instituta i Instituta krayevoy eksperimental'noy meditsiny AN UzSSR (dir. - prof. G.M. Makhkamov).

L 7794-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP5027631 SOURCE CODE: UR/0109/65/010/011/2074/2077

AUTHOR: Avak'yants, G. M.; Alimova, L. I.; Murygin, V. I.; Skripnikov, Yu. S.; Tserfas, R. A.

43
B

ORG: none

TITLE: Selective properties of silicon diodes with gold-doped base

SOURCE: Radiotekhnika i elektronika, v. 10, no. 11, 1965, 2074-2077

TOPIC TAGS: silicon diode, semiconductor diode

ABSTRACT: Results are reported of an experimental investigation of an Au-doped-base silicon diode used as a parallel oscillatory circuit thanks to the falling-off branch of its I-V characteristic (N. Holonyak, Proc. IRE, 1962, 50, 12, 2421). Biased to the negative-resistance region, the diode behaved like a high-Q oscillatory circuit; biased to the edge of the positive-resistance region, it

UDC: 621.382.2:546.28:621.391.8

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L 7794-66
ACC NR: AP5027631

exhibited the characteristics of a low-Q oscillatory circuit. In addition to the fundamental resonance curve, a number of resonance peaks at various multiple frequencies were observed; higher applied voltages resulted in distorted (asymmetrical) resonance curves. A compound peaked high-Q resonance curve was exhibited by some specimens. As a rule, the resonance frequency increased with the bias current. As a parametric amplifier the silicon diode developed a voltage gain of 15—25. A transistor circuit, in which the resonant silicon diode was connected in lieu of the collector load, could be operated as an amplifier from a 9—12-v supply-voltage source. Orig. art. has: 7 figures.

SUB CODE: 09 / SUBM DATE: 05Jun64 / ORIG REF: 004 / OTH REF: 001

nw

Card 2/2

S/166/62/000/006/007/016
B104/B186

AUTHORS: Starodubtsev, S. V., Ablyayev, Sh. A., Alimova, L. Ya., Sokolova, Yu. E.

TITLE: An investigation of the molecular transformations in natural gas occurring under the action of electrodeless high-frequency discharges. IV. Study of the kinetics of transformation and destruction of some free radicals

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 6, 1962, 61-65

TEXT: An investigation with the ИСП-51 (ISP-51) spectrograph is made to elucidate the formation and destruction of the radicals H, C_2, and CH which are formed in natural gas, containing 96% methane, at 0.2 - 30 mm Hg under electrodeless high-frequency discharges. Results: The CH radical is formed principally from the methane molecule by electron bombardment. The acetylene molecule is formed from this radical. The C_2 radical results from the HC_2 radical by splitting off the H atom. The acetylene

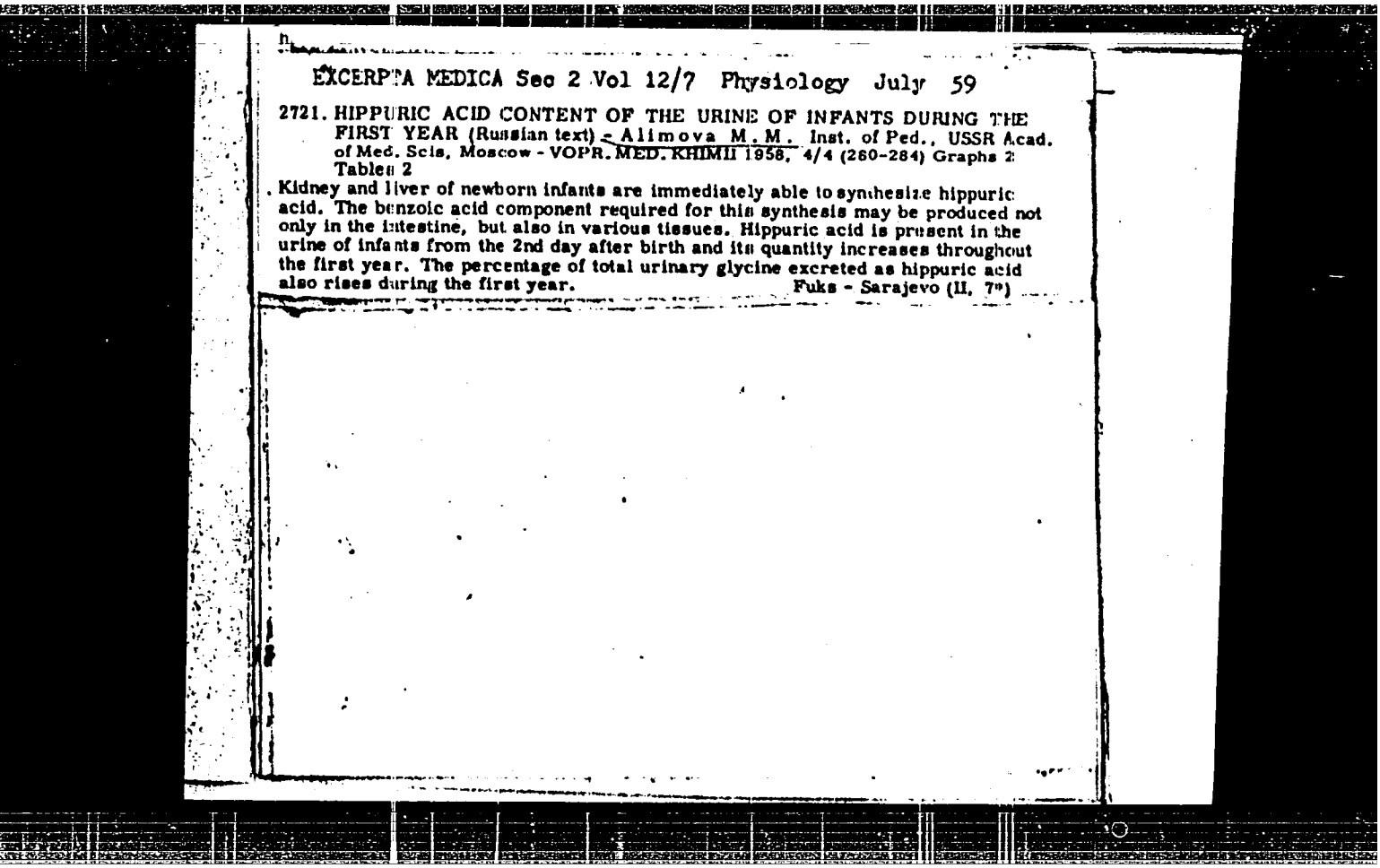
An investigation of the molecular ...

molecule is formed also from the C_2 radical. There are 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR
(Physicotechnical Institute AS UzSSR)

SUBMITTED: July 13, 1962

Card 2/2



EXCERPTA MEDICA Sec 2 Vol 12/7 Physiology July 59

2721. HIPPURIC ACID CONTENT OF THE URINE OF INFANTS DURING THE FIRST YEAR (Russian text) - Alimova M.M. Inst. of Ped., USSR Acad. of Med. Scis, Moscow - VOPR. MED. KHIMII 1958, 4/4 (280-284) Graphs 2 Tables 2

Kidney and liver of newborn infants are immediately able to synthesize hippuric acid. The benzoic acid component required for this synthesis may be produced not only in the intestine, but also in various tissues. Hippuric acid is present in the urine of infants from the 2nd day after birth and its quantity increases throughout the first year. The percentage of total urinary glycine excreted as hippuric acid also rises during the first year. Fuks - Sarajevo (II, 7*)

ALIMOVA, M. M., Cand Bio Sci — (diss) "Characteristics of glycine metabolism in 1-year old children," Moscow, 1960, 15 pp, 250 cop. (Academy of Medical Sciences USSR)

ALIMOVA, M.M.; MIKHEYEVA, G.A.

Study of the acetylating ability of the blood in vitro. Lab. delo no.3:159-160 '65. (MIRA 18:3)

1. Institut pediatrii AMN SSSR, Moskva.

ALIMOVA, M.M.

Glycocoll and glyoxylic and oxalic acids in urine in normal infants during their first year of life. Vop.med.khim. 6 no.2:151-157 Mr-Ap '60. (MIRA 14:5)

1. Institute of Pediatrics, the U.S.S.R. Academy of Medical Sciences, Moscow.

(GLYCINE) (OXALIC ACID) (GLYOXYLIC ACID)

ALIMOVA, M.M.; TOLKACHEVSKAYA, N.F.

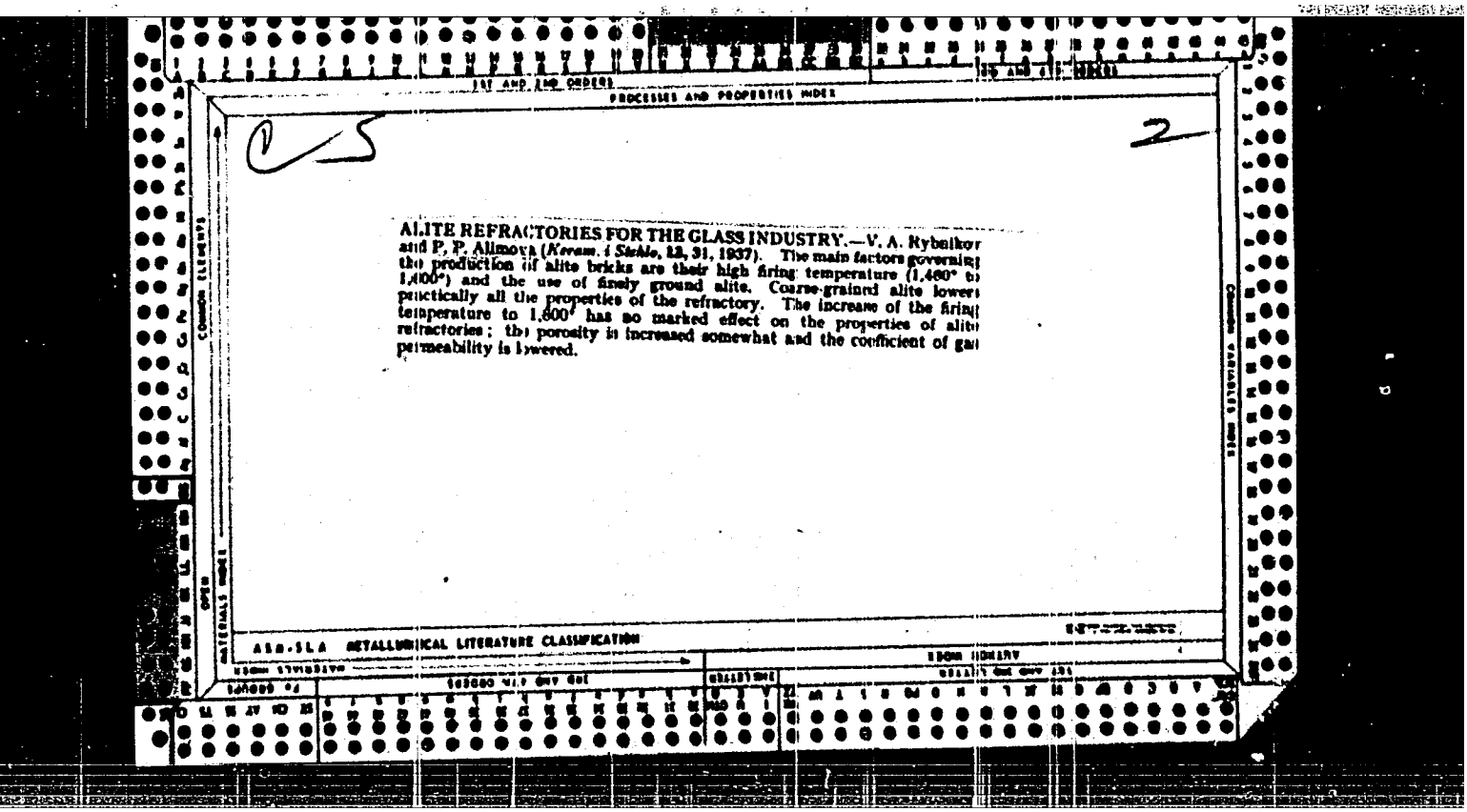
Modification of the methods for determining the acetylation capacity of the body. Lab.delo 8 no.8:6-10 Ag '62. (MIRA 15:9)

1. Institut pediatrii AMN SSSR (dir. - dotsent M.Ya.Studenikin).
(SULFANILAMIDES) (BENZOIC ACID) (ACETYLATION)

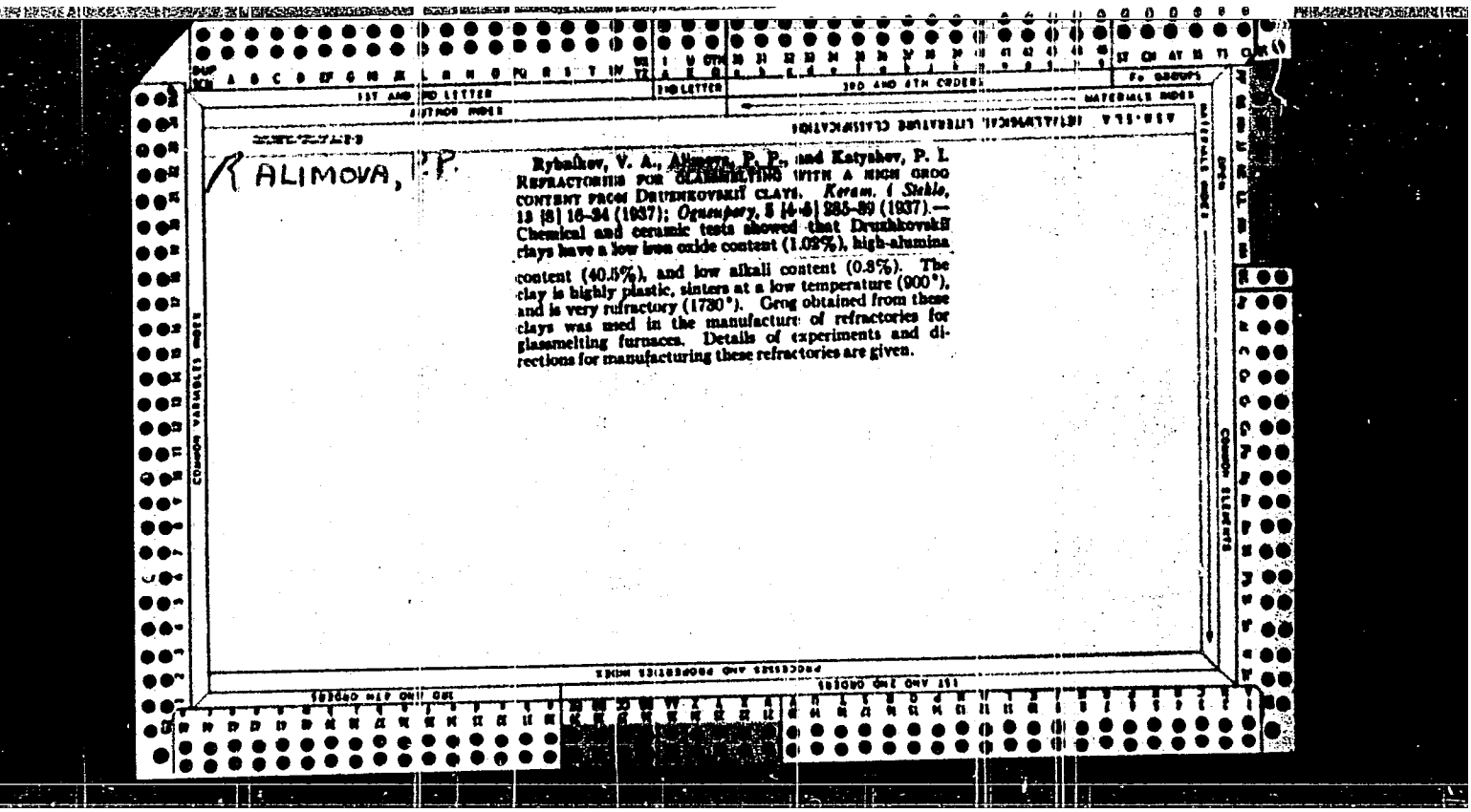
ALIMOVA, M.M.

Study of the distribution of haptoglobin types.
Vop.med.khim.11 no.5:68-70 S-O '65.
(MIRA 19:1)

1. Institut pediatrii AMN SSSR, Moskva. Submitted
May 15, 1964.



ALITE REFRACTORIES FOR THE GLASS INDUSTRY.—V. A. Rybalkov and P. P. Allmova (*Keram. i Steklo*, 13, 31, 1937). The main factors governing the production of alite bricks are their high firing temperature (1,460° to 1,400°) and the use of finely ground alite. Coarse-grained alite lowers practically all the properties of the refractory. The increase of the firing temperature to 1,600° has no marked effect on the properties of alite refractories; the porosity is increased somewhat and the coefficient of gas permeability is lowered.



KALIMOVA, P.

Rybalkov, V. A., Alimova, P. P., and Katyshev, P. I. REFRACTORIES FOR GLASSMELTING WITH A HIGH GROG CONTENT FROM DRUZHKOVSKII CLAYS. *Keram. i Steklo*, 13 [8] 16-24 (1937); *Ogneupory*, 5 [4-5] 285-89 (1937).—Chemical and ceramic tests showed that Druzhkovskii clays have a low iron oxide content (1.03%), high-alumina content (40.5%), and low alkali content (0.8%). The clay is highly plastic, sinters at a low temperature (900°), and is very refractory (1730°). Grog obtained from these clays was used in the manufacture of refractories for glassmelting furnaces. Details of experiments and directions for manufacturing these refractories are given.

ALLMOVA, P. P.

Rybnikov, V. A., and Allmova, P. P. VITRIFIED BRICK WITH A HIGH GROG CONTENT. Keram. i Steklo, 14 (4) 10-11 (1938).- Tests showed that vitrified grog brick has low apparent porosity (0.18 to 2.4%), low gas permeability (<0.01), high mechanical strength, incipient softening under load beginning at 1500° to 1600°, considerable shrinkage (5.3 to 6.3%), and low thermal stability. The firing temperature of these brick is somewhat below 1650°.

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

05

2

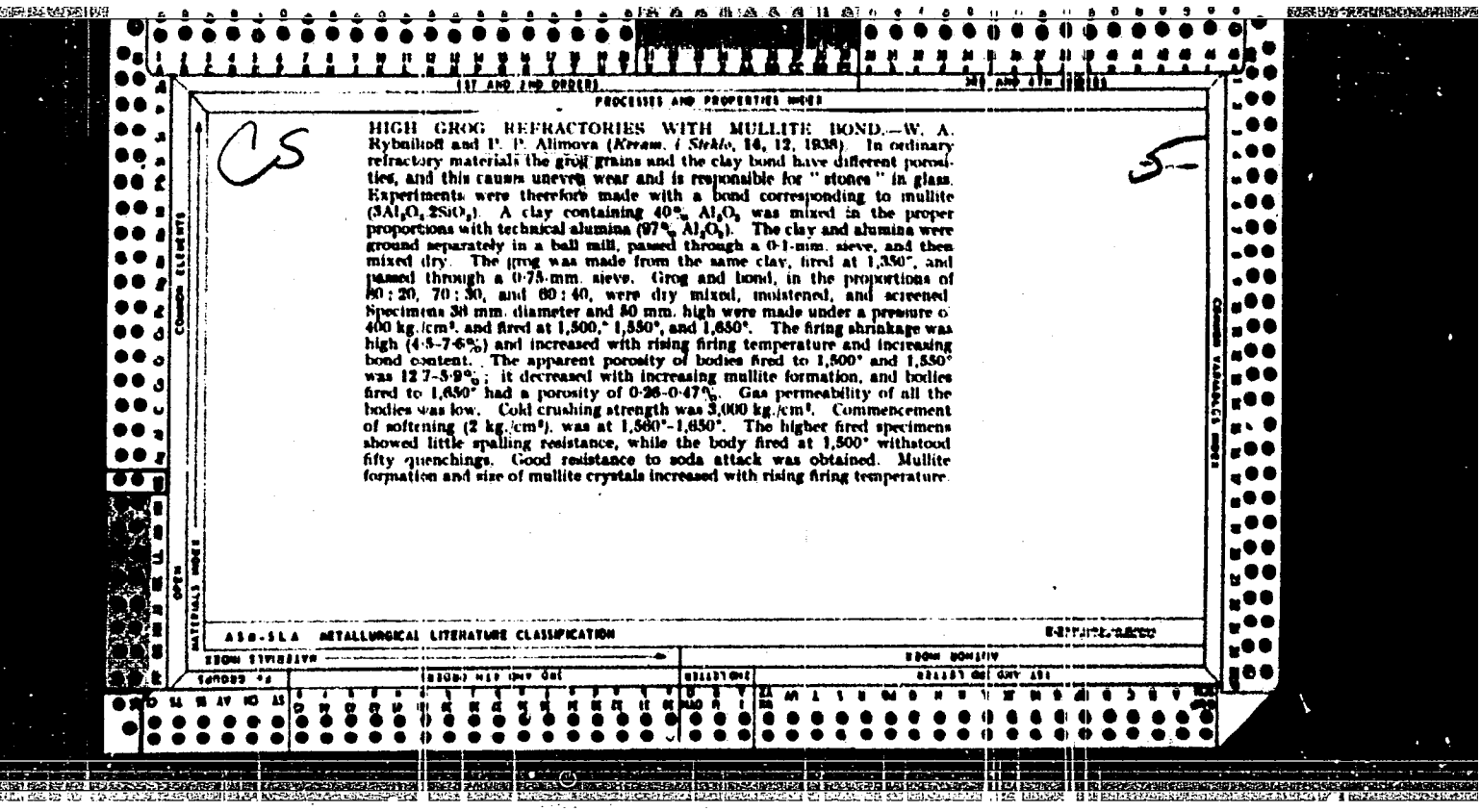
VITRIFIED HIGH GROG PRODUCTS.—W. A. Rybnikoff and P. P. Alimova (*Keram. i Steklo*, 14, 10, 1938). With the object of reducing the porosity of certain high grog bodies, the usual method of raising the firing temperature was tried. A number of bodies of the same composition were fired first to 1,500° and then to 1,650°. The effects on the physical properties of seven bodies are tabulated. The higher firing temperature reduced the porosity and gas permeability very considerably, the apparent porosity from a maximum of 24.6% to a minimum of 0.15%, and the gas permeability from 10.8 to 0.01; it also increased the cold crushing strength, commencement of softening under load, and the shrinkage, but decreased the spalling resistance. In the practical application of the measure it was only necessary to alter the usual method of kiln setting.

(Ref. Kart. Sil. Lit., No. 5942, 1938.)

COMMON ELEMENTS

MATERIALS INDEX

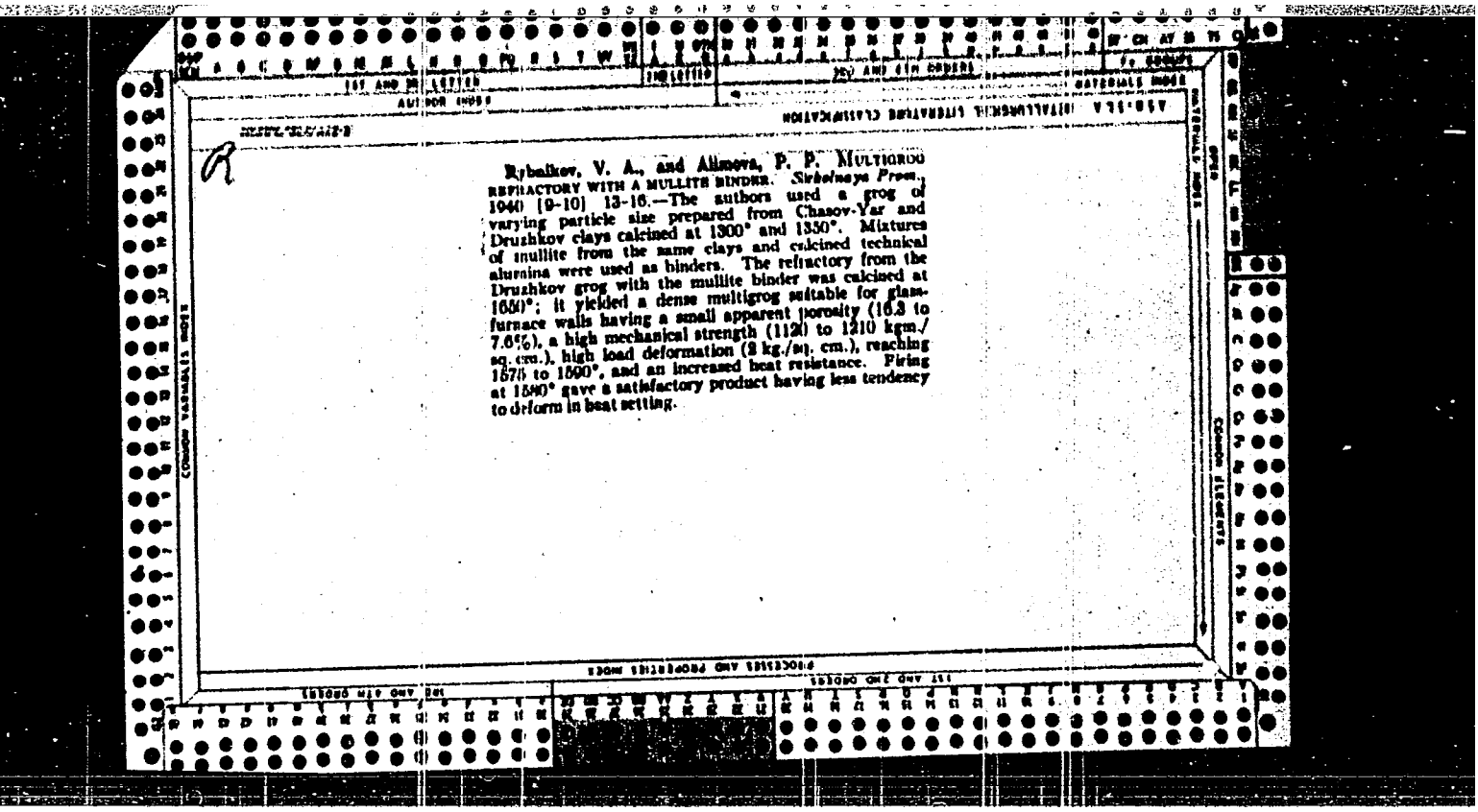
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



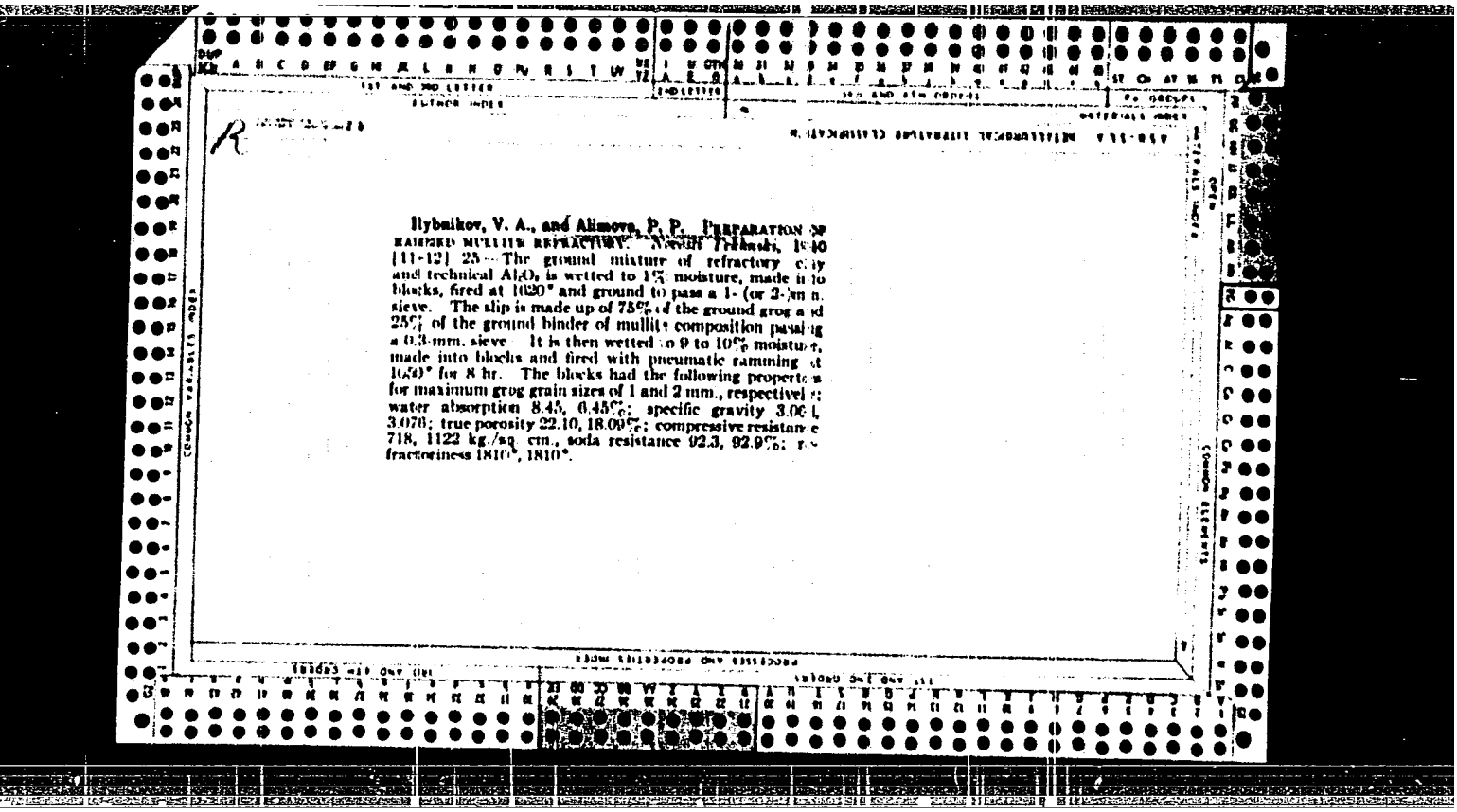
HIGH GROG REFRACTORIES WITH MULLITE BOND.—W. A. Rybnikoff and P. P. Alimova (*Keram. i Steklo*, 14, 12, 1938). In ordinary refractory materials the grog grains and the clay bond have different porosities, and this causes uneven wear and is responsible for "stones" in glass. Experiments were therefore made with a bond corresponding to mullite ($3Al_2O_3.2SiO_2$). A clay containing 40% Al_2O_3 was mixed in the proper proportions with technical alumina (97% Al_2O_3). The clay and alumina were ground separately in a ball mill, passed through a 0·1-mm. sieve, and then mixed dry. The grog was made from the same clay, fired at 1,350°, and passed through a 0·75-mm. sieve. Grog and bond, in the proportions of 80 : 20, 70 : 30, and 60 : 40, were dry mixed, moistened, and screened. Specimens 38 mm. diameter and 50 mm. high were made under a pressure of 400 kg./cm². and fired at 1,500°, 1,550°, and 1,650°. The firing shrinkage was high (4·8–7·6%) and increased with rising firing temperature and increasing bond content. The apparent porosity of bodies fired to 1,500° and 1,550° was 12·7–3·9%; it decreased with increasing mullite formation, and bodies fired to 1,650° had a porosity of 0·26–0·47%. Gas permeability of all the bodies was low. Cold crushing strength was 3,000 kg./cm². Commencement of softening (2 kg./cm²). was at 1,560°–1,650°. The higher fired specimens showed little spalling resistance, while the body fired at 1,500° withstood fifty quenchings. Good resistance to soda attack was obtained. Mullite formation and size of mullite crystals increased with rising firing temperature.

ALIMOV, P.P.

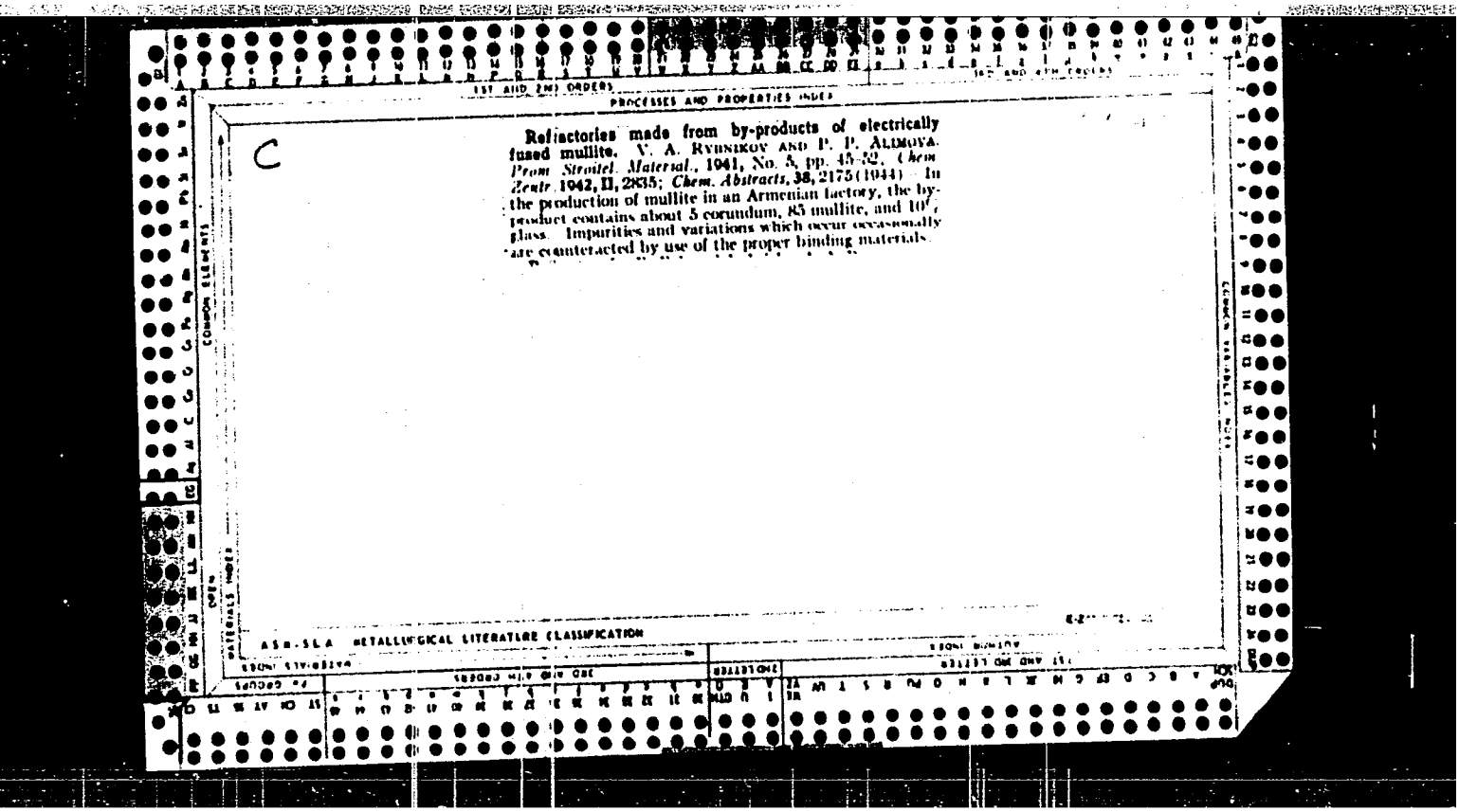
HIGH GROG REFRACTORIES WITH MULLITE BOND.—W. A. Rybnikoff and P. P. Alimova (Keram. i. Stoklo, 14, 12, 1938). In ordinary refractory materials the grog grains and the clay bond have different porosities, and this causes uneven wear and is responsible for "stones" in glass. Experiments were therefore made with a bond corresponding to mullite ($3Al_2O_32SiO_2$). A clay containing 40% Al_2O_3 was mixed in the proper proportions with technical alumina (97%Al_2O_3). The clay and alumina were ground separately in a ball mill, passed through a 0·1-mm. sieve, and then mixed dry. The grog was made from the same clay, fired at 1,350°, and passed through a 0·75-mm. sieve. Grog and bond, in the proportions of 80 : 20, 70 : 30, and 60 : 40, were dry mixed, moistened, and screened. Specimens 38 mm. diameter and 50mm. high were made under a pressure of 400 kg./cm^2, and fired at 1,500°, 1,550°, and 1,650°. The firing shrinkage was high (4·5-7·6% and increased with rising firing temperature and increasing bond content. The apparent porosity of bodies fired to 1,500° and 1,550° was 12·7-5·9%; it decreased with increasing mullite formation, and bodies fired to 1,650° had a porosity of 0·26-0·47%. Gas permeability of all the bodies was low. Cold crushing strength was 3,000 kg·/cm^2. Commencement of softening (2 kg./cm^2). was at 1,560°-1,650°. The higher fired specimens showed little spalling resistance, while the body fired at 1,500° withstood fifty quenchings. Good resistance to soda attack was obtained. Mullite formation and size of mullite crystals increased with rising firing temperature.



Rybalkov, V. A., and Alimova, P. P. MULTIGROG REFRACTORY WITH A MULLITE BINDER. *Steklonaya Prom.*, 1940 [9-10] 13-16.—The authors used a grog of varying particle size prepared from Chasov-Yar and Druzhkov clays calcined at 1300° and 1350°. Mixtures of mullite from the same clays and calcined technical alumina were used as binders. The refractory from the Druzhkov grog with the mullite binder was calcined at 1650°; it yielded a dense multigrog suitable for glass-furnace walls having a small apparent porosity (16.3 to 7.6%), a high mechanical strength (1120 to 1210 kgm./sq. cm.), high load deformation (2 kg./sq. cm.), reaching 1575 to 1590°, and an increased heat resistance. Firing at 1580° gave a satisfactory product having less tendency to deform in heat setting.



Ilybaikov, V. A., and Alimova, P. P. PREPARATION OF RAISED MULLITE REFRACTORY. Novosti Tekhniki, 1940 (11-12) 25 — The ground mixture of refractory clay and technical Al_2O_3 is wetted to 1% moisture, made into blocks, fired at 1020° and ground to pass a 1- (or 2-)mm. sieve. The slip is made up of 75% of the ground grog and 25% of the ground binder of mullite composition passing a 0.3-mm. sieve. It is then wetted to 9 to 10% moisture, made into blocks and fired with pneumatic ramming at 1650° for 8 hr. The blocks had the following properties for maximum grog grain sizes of 1 and 2 mm., respectively: water absorption 8.45, 6.45%; specific gravity 3.06, 3.076; true porosity 22.10, 18.09%; compressive resistance 718, 1122 kg./sq. cm., soda resistance 92.3, 92.9%; refractoriness 1810°, 1810°.

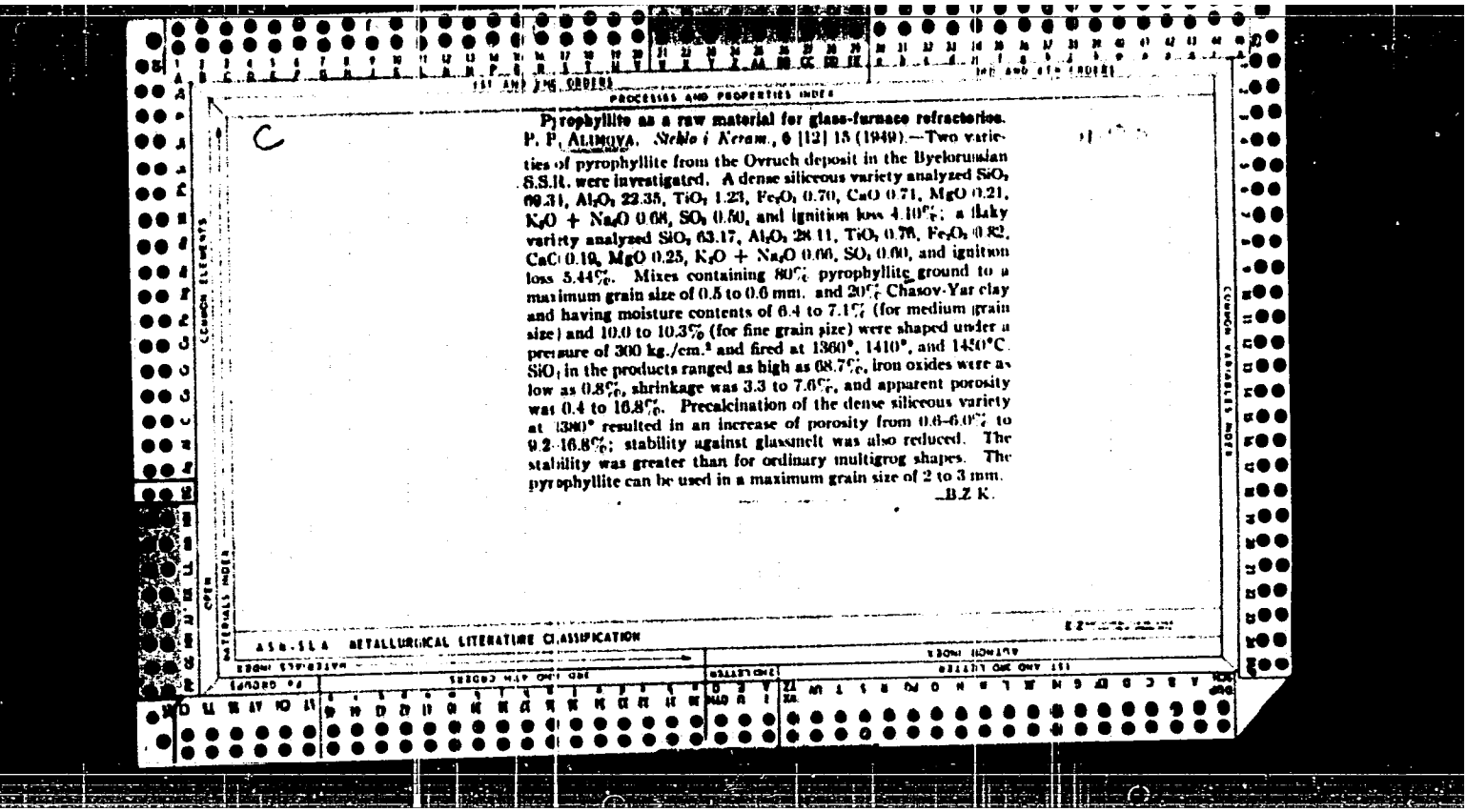


PROCESSES AND PROPERTIES INDEX

C

Refractories made from by-products of electrically fused mullite. V. A. RYNSIKOV AND P. P. ALIMOVA. *Prom. Stroitel. Material.*, 1941, No. 5, pp. 45-52. *Chem. Zentr.* 1942, II, 2835; *Chem. Abstracts*, 38, 2175 (1944). In the production of mullite in an Armenian factory, the by-product contains about 5 corundum, 85 mullite, and 10% glass. Impurities and variations which occur occasionally are counteracted by use of the proper binding materials.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Pyrophyllite as a raw material for glass-furnace refractories. P. P. ALIMOVA. *Steklo i Keram.*, 6 [12] 15 (1949).—Two varieties of pyrophyllite from the Ovruch deposit in the Byelorussian S.S.R. were investigated. A dense siliceous variety analyzed SiO_2 69.31, Al_2O_3 22.35, TiO_2 1.23, Fe_2O_3 0.70, CaO 0.71, MgO 0.21, $K_2O + Na_2O$ 0.68, SO_3 0.50, and ignition loss 4.10%; a flaky variety analyzed SiO_2 63.17, Al_2O_3 28.11, TiO_2 0.70, Fe_2O_3 0.82, CaO 0.19, MgO 0.25, $K_2O + Na_2O$ 0.66, SO_3 0.00, and ignition loss 5.44%. Mixes containing 80% pyrophyllite ground to a maximum grain size of 0.5 to 0.6 mm. and 20% Chasov-Yar clay and having moisture contents of 6.4 to 7.1% (for medium grain size) and 10.0 to 10.3% (for fine grain size) were shaped under a pressure of 300 kg./cm.^{2} and fired at 1360°, 1410°, and 1450°C. SiO_2 in the products ranged as high as 68.7%, iron oxides were as low as 0.8%, shrinkage was 3.3 to 7.6%, and apparent porosity was 0.4 to 16.8%. Precalcination of the dense siliceous variety at 1380° resulted in an increase of porosity from 0.6–6.0% to 9.2–16.8%; stability against glassmelt was also reduced. The stability was greater than for ordinary multigrog shapes. The pyrophyllite can be used in a maximum grain size of 2 to 3 mm.

—B.Z K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ALIMOVA, P.P.; TUR'YANSKIY, S.A.; FEDOROVA, K.V.

Using hydrostatic pressing techniques in manufacturing glass pots with high chamotte content. Opt.-mekh.prom. 25 no.6:46-49 Je '58. (MIRA 11:10)

(Glass manufacture--Equipment and supplies)

ACCESSION NR: AP4012359 S/0142/63/006/006/0634/0638

AUTHORS: Yermolayev, Yu. P.; Alimova, R. A.

TITLE: Calculation and analysis of the accuracy of microcircuit film capacitors

SOURCE: IVUZ. Radiotekhnika, v. 6, no. 6, 1963, 634-638

TOPIC TAGS: microelectronics, microsystem electronics, thin film capacitor, capacitor accuracy, capacitor tolerances, capacitor rating, capacitor

ABSTRACT: The errors in microelectronic film capacitor ratings due to imperfect overlap of the upper and lower electrodes are calculated, assuming constant dielectric thickness and area, and assuming that the dielectric extends beyond the limits of the two electrodes. Four variants of rectangular geometry are considered (Enclosure 01). It is shown that variant d is best from this point

Card 1/3

ACCESSION NR: AP4012359

of view, since the error in the centering of the mask for the lower electrode can be neglected. Square capacitors are best, the errors increasing with increasing ratio of the sides in the case of rectangular construction. Orig. art. has: 2 formulas and 7 graphs.

ASSOCIATION: Kazanskiy aviatsionny*y institut (Kazan' Aviation Institute)

SUBMITTED: 18Dec62	DATE ACQ: 14Feb64	ENCL: 01
SUB CODE: GE, SD	NO REF SOV: 000	OTHER: 000

Card 2/3

L 02985-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6033217 SOURCE CODE: UR/0142/66/009/004/0497/0502

AUTHOR: Yermolayev, Yu. P.; Alimova, R. A.; Chepakhin, G. A. 61 B

ORG: none

TITLE: The influence of certain manufacturing factors on the accuracy of thin-film resistors and capacitors on a common substrate 19

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 4, 1966, 497-502

TOPIC TAGS: thin film circuit, microelectronic thin film, circuit design, resistor, capacitor

ABSTRACT: The manufacture of precision thin-film resistors and capacitors 25 on the same substrate by the vacuum evaporation method is analyzed. It is shown that with increasing distance from the center of the evaporant the specific resistance of films increases and that of capacitors decreases. The authors give a quantitative analysis of these phenomena based on a geometric interpretation, assuming a finite shadow mask thickness, absence of contaminating gas molecules, and perfect positioning of the mask on the substrate. The curves of specific resistance and capacitance variations as functions of the ratio of mask aperture to mask thickness are given. Equations approximating these curves at various distances from the center of the evaporant are presented. Methods are suggested for optimum geometrical distribution of elements in the thin-film circuit design to obtain maximum accuracy for the passive elements. Orig. art. has: 5 formulas and 5 figures.

SUB CODE: 09/ SUBM DATE: 22Feb63/ ORIG REF: 003/ ATD PRESS: 5099

UDC: 621.382.8.416

Card 1/1

L 48596-65 EWG(j)/EWP(j)/EWT(m)/EWP(t)/EEC(b)/T/EWP(t)/EWP(b)/EED(b)-3/
EWA(h)/EWA(l) Pc-4/Pab/Pl-4 IJP(c) JD/RM

ACCESSION NR: AP5012029 UR/0377/65/000/001/0039/0043

AUTHOR: Kleyn, G. A.; Osipova, I. Kh.; Sultanova, M. G.; Alimova, R. I.

TITLE: Improving the properties of polymer films by infrared irradiation

SOURCE: Gallotekhnika, no. 1, 1965, 39-43

TOPIC TAGS: infrared radiation, polyamide, polyethylene, solar generator, polymer

ABSTRACT: Infrared radiation has been shown to improve the mechanical properties of polyamide and polyethylene films without changing their appearance and optical properties, and to increase somewhat their subsequent resistance to sunlight. Films of polyamide (type PK-4, 0.07 mm thick) and polyethylene (0.2 mm thick) were irradiated with infrared light at a mean temperature of 80° C for 50 to 250 hr. Their tensile strength, elongation, fatigue life, transmission coefficient, and morphology were determined and compared with those of control specimens.

It was found that infrared irradiation promoted macromolecular ordering in the films and effectively improved their mechanical properties. [JPR]

Card 1/2

L 63591-65
ACCESSION NR: AP5012023

example, 50-hr irradiation of the polyamide film increased tensile strength by 63%, fatigue life by 119%, and elongation by 25.1%. The transmission coefficient in the range 410—835 mμ changed insignificantly after irradiation for 150 hr. X-ray patterns showed that no changes occurred in microstructure. Similar but less marked improvements were obtained for the polyethylene film. The degree of order (orientation) of this film increased. The resistance to the detrimental effect of sunlight increased for both films. This work was done in connection with the recent use of polymeric films in various types of solar generators. Orig. art. has 6 figures and 3 graphs.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UzSSR (Physico-Technical Institute AN UzSSR)

SUBMITTED: 28Oct64 ENCL: 00 SUB CODE: OC, OP

NO REF SOV: 002 OTHER: 003 ATD PRESS: 3241-F

Card 2/2

USSR/Pharmacology and Toxicology. Chemotherapeutic Preparations V-7
Antitubercular Drugs

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 71293

Author : Allimova Sh.A., Abdurashitova M.T.
Inst : Uzbekistan Scientific Research Tuberculosis Institute
Title : Results of Follow-Up Observations on the Therapeutic Effectiveness of Phthivazid

Orig Pub : Sb. tr. Uzb. n.-i. tuberk. in-t, 1957, 3, 65-69

Abstract : One hundred forty-nine patients with various forms of pulmonary tuberculosis treated with phthivazid (daily dose 0.9-2 g.) were under observation. Current observations showed that the temperature normalized in 119 out of 125 patients. Improvement of the general condition occurred in 110 patients. Of 80 patients with presence of destruction, the closing of decomposition cavity was observed in 38 (45.6 percent). Tubercular bacteria disappeared from the sputum in 42 out of 72 patients. Follow-up observations during 1-4 years revealed relapses in 42 patients, mainly in patients with

Card : 1/2

ALIMOVA, T.A.

3(7) PHASE I BOOK EXPLOITATION SOV/2547

Leningrad. Glavnaya geofizicheskaya observatoriya

Voprosy dinamicheskoy meteorologii (Problems in Dynamic Meteorology) Leningrad, Gidrometeoizdat, 1959. 91 p. (Series: Its Trudy, vyp. 81) Errata slip inserted. 1,200 copies printed.

Sponsoring Agency: Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Ed. (Title page): M.I. Yudin, Doctor of Physical and Mathematical Sciences and M.Ye. Shvets, Doctor of Physical and Mathematical Sciences; Ed. (inside book): L.P. Zhdanova; Tech. Ed.: O.G. Vladimirov.

PURPOSE: This issue of the Geophysical Institute's Transactions is intended for scientific workers and specialists in dynamic and synoptic meteorology.

COVERAGE: This collection of articles treats problems in dynamic meteorology. The articles, for the most part, discuss computation methods of forecasting meteorologic elements. Closely related to this is a study aimed at determining vertical velocities according to aircraft vibration data. No personalities are mentioned. References accompany each article.

(11)

ALIMOVA, T.V., inzhener.

Defects of steam superheaters of TP-230-2 boilers manufactured by the Taganrog Boiler Works. Energetik 4 no.9:8-9 S '56. (MLRA 9:10)
(Superheaters)

ALIMOVA, T.V.

ALIMOVA, T.V., inzhener; GERSHTEYN, Ye.G., inzhener.

Principal schene for a steam boiler with supercritical parameters at the Philo power plant in the U.S.A. Teploenergetika 4 no.10:82-83 O '57. (MLRA 10:9)

(United States--Electric power plants)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

11C

Some structural peculiarities of lipides of cryptaceous microbe. E. M. Gubarev and R. K. Lubenets. *Doklady Akad. Nauk S.S.S.R.* 60, 418-10(1948); cf. *C.A.* 41, 2461*d*.—Fatty acids were isolated from the microbes by Et_2O extn. followed by exact neutralization by KOH and extn. with hot water to sep. them from the neutral fats; the free acids were liberated by 10% HCl. The neutral fat fraction was sepd. into Et_2O-sol. and -insol. portions. The carbohydrate fraction comprises 12.6% of total Et_2O ext. and contains 0.2% reducing sugar (calcd. as glucose); after hydrolysis by 5% HCl the av. sugar value is 34.9% (by Bertrand's method); pentose detn. gave 1.62%, while total N was 0.18%. The aq. sol. fraction of the carbohydrate fraction is a complex polysaccharide which gives galactose on hydrolysis; the polysaccharide can be crystd. on evapn. of the aq. soln. and it passes the dialysis membrane without difficulty. The free fatty acids have av. mol. wt. 523, Ac no. 126.9, I no. 42.9. The Et_2O-sol. fraction of neutral fat, m. 18°, is difficultly hydrolyzed and after 8-hr. reflux with 5 parts 2 *N* alc. KOH gave sapon. no. 125.9; Ac no. 96.12; I no. 43.7. The neutral fat has no reducing properties before hydrolysis, but does afterward. Because of the difficult hydrolysis the results are given after both alc. KOH and 5% H_2SO_4 hydrolysis (0.5 hr. and 4 hrs., resp.); the final content

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

LUBENETS, Ye.K.

Carbohydrates as structural components of lipids of the diphtheria microbe. Vop.med.khim. 3:82-93 '51. (MIRA 11:4)

1. Kafedra biokhimii Rostovskogo meditsinskogo instituta.
(LIPIDS) (CORYNEBACTERIUM DIPHTHERIAE) (TREHALOSE)

LUBENETS, Ye. K.

11c

Fractionation and composition of some lipide fractions of diphtheria bacteria. E. M. Gubarev, Ye. K. Lubenets, A. A. Kanchukh, and Yu. V. Galaev (Med. Inst., Rostov-). *Biokhimiya* **16**, 139–45(1951); cf. *C.A.* **40**, 1557*i*; **42**, 7126g.—A complete study of the compn. and structure of bacterial lipides may some day serve to distinguish bacteria of various degrees of virulence and pathogenicity. Extn. of dry *Corynebacterium diphtheriae* PW No. 8 with C_6H_6 for 84 hrs. in a stream of CO_2 yields 4.9% lipides. The fraction of the C_6H_6 ext. that was sol. in Et_2O and insol. in Me_2CO gave on hydrolysis the sugar trehalose and the following 2 unsatd. and 2 hydroxy high-mol.-wt. fatty acids: *α-hydroxycorinnic acid*, m. 70°, neutralization no. 100.4; acetyl no. 80.6; *β-hydroxycorinnic acid*, m. 50°, neutralization no. 100.4, acetyl no. 90.7; *α-corinnic acid*, $C_{31}H_{60}O_3$, m. 64°, neutralization no. 100.4, I no. 5.07; *β-corinnic acid*, $C_{31}H_{60}O_3$, m. 44–45°, neutralization no. 109.9; I no. 21.2. After the C_6H_6 extn., a second extn. was made with $CHCl_3$. An addnl. 1.8% lipides was obtained. This also consisted of trehalosides of higher fatty acids.

H. Priestley

Dept. Biochem, Rostov Medical Inst.

1951

LUBENETS, Ye.K.

Combined lipids in diphtherial bacteria. Ukr.biokhim.zhur. 24 no.4:457-463 '52. (MLRA 6:11)

1. Rostovskiy meditsinskiy institut. (Lipids) (Diphtheria--Bacteriology)

1. GUBAREV, YE. M.: LUBENETS, YE. K.: GALAYEV, YU. V.

2. USSR (600)

4. Diptheria - Bacteriology

7. Chemical composition of some fractions of lipids of diphtheric bacilli. Biokhimiia, 18, no. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

LUBENETS, YE. K.

Complex lipide compounds in the cells of diphtheria bacteria. E. K. Lubenets (Med. Inst., Rostov-on-Don). *Biokhimiya* 19, 11–15(1954).—The lipide complexes were extd. with 1:1 ethanol and $CHCl_3$. The extd. lipide complexes are held together by various types of bonds, some very labile, others very stable. A labile union is formed between ether-sol. (I) and ether-insol. fractions of the lipide-protein-carbohydrate complex; it is destroyed upon drying and consequent ether extn. In I is found 14.4% protein which does not split off. The ether-insol. fraction upon treatment with ethanol seps. into 2 fractions, A and B, indicating that the union between them is very labile. Part of A, (II), is of a protein-lipide type with a firm bond; part of B, (III), is of a pure protein-carbohydrate nature. The bonds between I and III, and III and II are very labile. The bonds which hold I, II, and III together as entities are firm. Colorimetric studies indicate the presence of cholesterol in A, or II.

B. S. Levine

Chair Biochem, Rostov-on-Don Med. Inst.

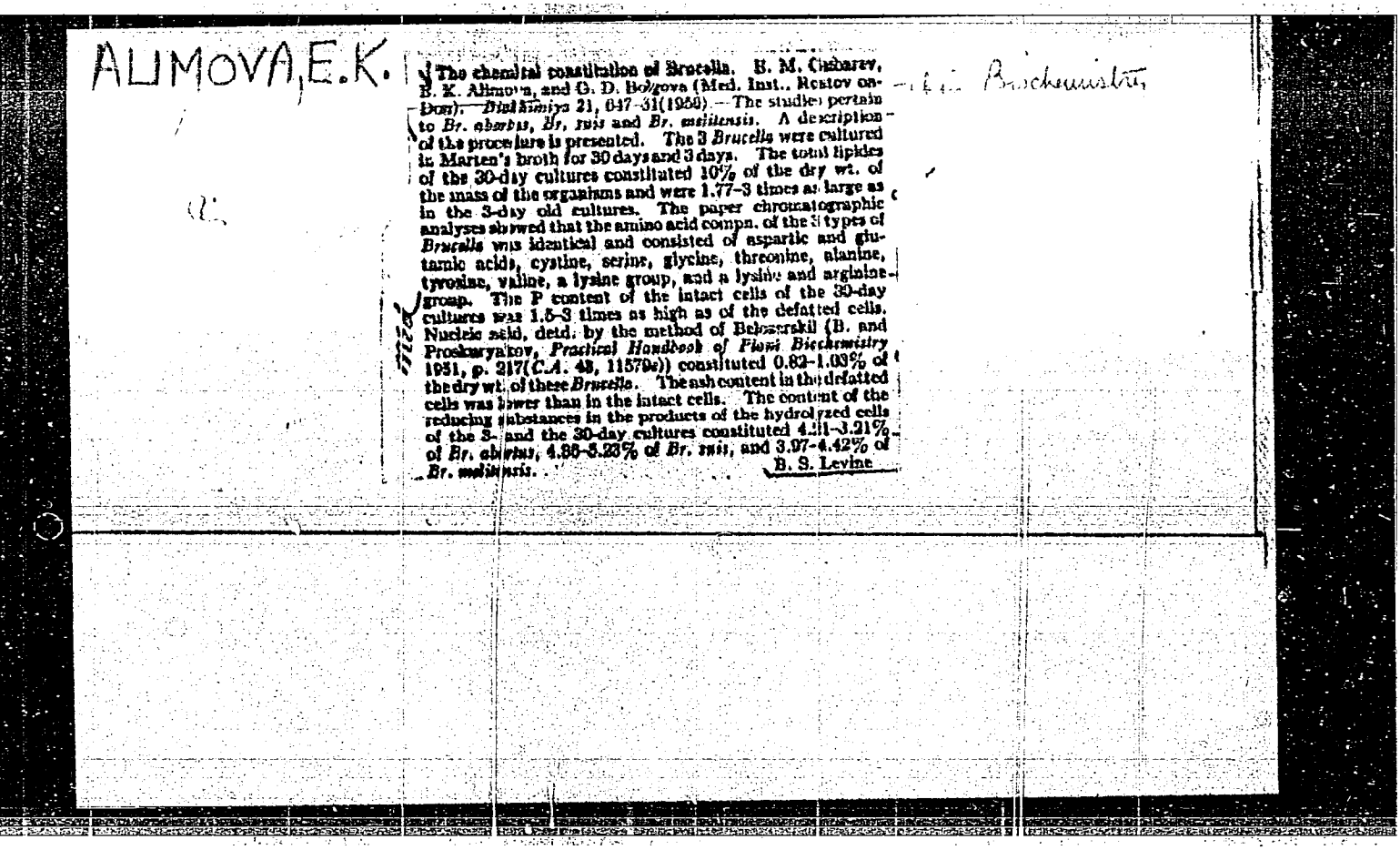
Alimova, Ye. K.

The chromatographic study of the carbohydrates of microlides (esters of carbohydrates and fatty acids). E. K. Alimova (Med. Inst., Rostov-on-Don). *Biokhimiya* 20, 516–21(1955).—Strain PW No. 8 of diphtheria was grown 7–10 days in beef peptone bouillon; the bacterial mass was sepd., washed in distd. H_2O, dried at 100°, and ground to a powder. It was then divided into two portions, one to be extd. with ether and the other with benzene. The benzene-extd. bacterial powder was then extd. with $CHCl_3$ and fractionated in order to obtain the combined lipides. Procedures are given in detail by which the following fractions were obtained: (1) acetone and MeOH insol., (2) acetone insol., (3) acetone insol. and MeOH sol., (4) Ba salts of fatty acids. Fractions 1, 2, 3 were sapond., after which they yielded a pos. Podobedov carbohydrate reaction. They were used in the identification of the carbohydrates. A procedure is described by which the free and combined lipides were treated preliminary to their being studied for the carbohydrate contained in their structure. Particulars of the chromatographic procedure used are voluminous but are adequately described. For purposes of exptl. reference the R_f values obtained under the conditions of the expts. with the chromatographic procedure at 34° and 22° are given for glycerol, arabinose, galactose, glucose, mannose, lactose, maltose, trehalose, and sucrose. Similar studies were made with lipides of nonbacterial origin. Results indicated that 2 types of microlides exist in the lipides of diphtheria microorganisms: (a) trehalose-fatty acids esters and (b) mannose-fatty acids esters. Both are present in the ether and benzene exts. of the bacteria; the $CHCl_3$ ext. contained only the trehalose-fatty acids ester. By the method of mild hydrolysis of bacterial cells 4 fractions of combined lipides were isolated: (1) contained trehalose; (2) contained trehalose and glycerol; (3) contained trehalose and mannose; and (4) contained no carbohydrates. By the same procedures of hydrolysis and chromatography it was shown that the ether ext. of the human brain contains no carbohydrates and that the alc. ext. contains a reducing disaccharide and galactose. Cf. *C.A.* 47, 7593i. B. S. L.

ALimova, E k.

2753. GALAEV Yu. V. and ALIMOVA E. K. *Use of iontophoresis in conjunction with paper chromatography for the identification of amino acids in the hydrolysates of native proteins (Russian text)* Biokhimija 1956, 21/5 (538—541) Illus. 5

Amino-acids were first separated by unidimensional chromatography and then by electrophoresis. This is particularly effective for complete partition of diamino- and dicarboxylic acids. With this method the amino-acid composition of lipoproteins of the grey and white matter of brain has been studied. The following amino-acids have been identified: cystine, arginine, lysine, histidine, aspartic acid, threonine, serine, glycine, glutamic acid, alanine, tyrosine, valine and phenylalanine. One amino-acid occurring in both hydrolysates has not been identified.



ALIMOVA, E.K.

The chemical constitution of Brucella. B. M. Chubarev, E. K. Alimova, and G. D. Bolgova (Med. Inst., Rostov on-Don). *Biokhimiya* 21, 647–51(1956). — The studies pertain to *Br. abortus*, *Br. suis* and *Br. melitensis*. A description of the procedure is presented. The 3 *Brucella* were cultured in Marten's broth for 30 days and 3 days. The total lipides of the 30-day cultures constituted 10% of the dry wt. of the mass of the organisms and were 1.77–3 times as large as in the 3-day old cultures. The paper chromatographic analyses showed that the amino acid compn. of the 3 types of *Brucella* was identical and consisted of aspartic and glutamic acids, cystine, serine, glycine, threonine, alanine, tyrosine, valine, a lysine group, and a lysine and arginine group. The P content of the intact cells of the 30-day cultures was 1.5–3 times as high as of the defatted cells. Nucleic acid, detd. by the method of Belozerskii (B. and Proskuryakov, *Practical Handbook of Plant Biochemistry* 1951, p. 217(*C.A.* 48, 11579e)) constituted 0.82–1.09% of the dry wt. of these *Brucella*. The ash content in the defatted cells was lower than in the intact cells. The content of the reducing substances in the products of the hydrolyzed cells of the 3- and the 30-day cultures constituted 4.11–3.21% of *Br. abortus*, 4.86–5.23% of *Br. suis*, and 3.97–4.42% of *Br. melitensis*.

B. S. Levine

Alimova, E. K.

The liponucleoproteins of diphtheria bacilli. E. K. Alimova (Med. Inst., Rostov-on-Don). *Ukrain. Biokhim. Zhur.* 28, 193-200(1956)(in Russian).—Diphtheria bacteria were rendered fat-free and the lipide complexes extd. with physiological saline. The ext. consisted of 10% lipides and a protein-nucleoprotein complex. Paper chromatographic analyses disclosed the presence of ribose, aspartic and glutamic acids, glycine, lysine, arginine, threonine, alanine, tyrosine, valine, and lysine. In the protein part of the nucleoprotein the presence of diphtherin and of diphtheroglobulin was demonstrated. B. S. Levine

1/ Chem Biochemistry

USSR/Microbiology. General Microbiology F

Abs Jour : Ref Zhur-Biol., No 13, 1958, 57479

Author : Gubarev Ue. M., Bolgova G. D., Alimova Ye. K.,
Inst : Rostov-on Don Medical Institute
Title : Chemistry of Brucella. Report 2. Lipids. Carbohydrate Component of Brucella Specie Suis

Orig Pub : Tr. otchetn. nauchn. konferentsii (Rostovsk. n/D med. in-ta,) za 1956, Tostov-na-Donu, 1957, 557-559

Abstract : No abstract

Card 1/1

ALIMOVA, YE.K.

EXCERPTA MEDICA Sec 2 Vol.2/6 Physiology June 58

2452. PARTITION AND IDENTIFICATION OF HIGHER FATTY ACIDS BY PAPER CHROMATOGRAPHY (Russian text) - Alimova E.K. and Bolgova G.D. Dept. of Biochem., State Med. Inst., Rostov-on-Don - BIOKHIMIJA 1957, 22/3 (568-571) Tables 1 Illus. 4

Good results have been obtained in partitioning higher fatty acids by paper chromatography after preliminary treatment of the paper strips successively with HCl, water, alcohol and ether. The spots of higher fatty acids on the chromatograms were developed with Ag- or Bi-salts. The latter method is more sensitive, revealing up to 5 μg. of acid. A simple method has been developed for identifying fatty acids by a mixture test.

Alimova, Ye. K. (Lubenets)

ALIMOVA, Ye.K. (Lubenets)

Bound lipids in Corynebacterium diphtheriae [with summary in English]
Biokhimiia 22 no.6:933-141 N-D '57. (MIRA 11:2)

Kafedra biokhimii Rostovskogo na-Donu meditsinskogo instituta.
(LIPIDS, determination,
in Corynebacterium diphtheriae (Rus))
(CORYNEBACTERIUM DIPHTHERIAE, metabolism,
lipids, determ. (Rus))

ALIMOVA, Ye. K.: Doc Biol Sci (diss) -- "The lipids of diphtheria microbes". Moscow, 1958. 32 pp (Inst of Biochem im Bakh, Acad Sci USSR), 200 copies (KL, No 13, 1959, 102)

COUNTRY :
CATEGORY :
Microbiology.
ABS. JOUR. : Ref Zhur-Biologiya, No. 4, 1959, No. 14762
AUTHOR :
INST. :
TITLE :
ORIG. PUB. :

ABSTRACT : mass of membrane consisted of protein and a complex polysaccharide in which galactose, mannose, and arabinose were present in the proportion 2:1:3. In proteins extracted with a 0.14 M solution of NaCl, 22.7% of the lipids were made up of trehalosides (saturated acids C_{20} and C_{16}) and free high molecular fatty acids (stearic, palmitic, and C_{24} acids). In proteins extracted with molar : solutions of NaCl, ~30% were lipids which

CARD: 2/3

COUNTRY
CATEGORY

ABS. JOUR. Microbiology.

Ref Zhur-Biologiya, No. 4, 1959. No. 14762

AUTHOR
INST.
TITLE

ORIG. PUB.

ABSTRACT :were composed only of fatty acids (palmitic). The author is of the opinion that the membrane represents a lipo-gluco-protein, and the protein a lipo-nucleic-protein.

-- V.K. Shil'nikova

CARD: 3/3