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BRUK, S.E., starshiy prepodavatel'

Motion of bottles in a rotary bottle-washing machine.
Trudy LTIKHP 13:114-127 '57. (MIRA 13:6)

1. Kafedra detaley mashin Leningradskogo tekhnologicheskogo instituta kholodil'noy promyshlennosti.
(Bottle washing)

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BRUK, S.I.

Transformation of nature and economy in districts having large reservoirs
Vop. geog. 27, 1951

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK S. I.

USSR/Miscellaneous - Machining

Card : 1/1

Authors : Livshits, B. I.; Bruk, S. I.; Karinskaya, F. I.

Title : Increased precision in cam machining

Periodical : Stan. i instr, 3, 9 - 14, Mar 1954

Abstract : The precision of cams made on profiling machines with automatic control is discussed and a detailed analysis of the errors which are intrinsic to such manufacturing is given together with some suggestions as to how cam precision can be improved. Diagrams and formulas.

Institution : ....

Submitted : ....

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S.I., kand.tekhn.nauk; LIVSHITS, B.I., kand.tekhn.nauk

Principles for establishing dimensions and tolerances for cams. Vzaim.i tekh.izm v mashinostr.;mezhvuz.sbor. no.2:135-159 '60. (MIRA 13:8)

(Cams) (Tolerance (Engineering))

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BARYSHNIKOVA, O.; kand.geograf.nauk; BRUK, S.I.; kand.geograf.nauk; IVANOVA, M.A., red.; CHIZHOV, N.N., red.

[The Philippines] Filippiny. Scale 1:3000000. Moskva, Gos. izd-vo geogr.lit-ry, 1959. col.map fold. [The Philippines] Filippiny. 15 p. (MIRA 13:3)

1. Russia (1923- U.S.S.R.) Glavnoe upravlenie geodezii i kartografii.
(Philippines--Maps)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

GENIN, I.; BRUK, S.I., kand.geograf.nauk; KAMENETSKAYA, T.B., red.; CHIZHOV, N.N., red.

Iran. Scale 1:2500000. Moskva, Gos.izd-vo geogr.lit-ry, 1959. col.map fol. ___Genin, I. Iran. 31 p. (MIRA 13:6)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geodezii i kartografii.
(Iran--Maps)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Solomon Il'ich; TERLETSKIY, P.Ye., red.; FONBERG, Ye.M., red.izd-va; MARKOVICH, S.G., tekhn.red.

[Population of China, the Mongolian People's Republic, and Korea: explanatory notes to the population map] Naselenie Kitaia, MNR i Korei; poiasnitel'naia zapiska k karte narodov. Moskva, Izd-vo Akad. nauk SSSR, 1959. 40 p. (MIRA 13:6)
(China--Population) (Mongolia--Population) (Korea--Population)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S.I.; PERSHITS, A.I.

Arabic peoples of Asia. Geog.v shkole 23 no.1:31-46 Ja-F '60. (MIRA 13:5)

(Asia--Arabs)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

VOSTRODOVSKIY, A.V.[deceased]; BRUK, S.I.; LIVSHITS, B.I.; MIRKIN, M.S.; ROZENFEL'D, M.A.; SIMIN, S.Kh.; TREBNIK, Ya.L.; GARBARUK, V.N., kand. tekhn.nauk, retsenzent; VAKSER, D.B., dots., red.; VARKOVETSKAYA, A.I., red.izd-va; SHCHETININA, L.V., tekhn. red.

[Technology of the manufacture of knitting machines] Tekhnologiia trikotazhnogo mashinostroeniia. [By] A.V.Vostrodovskii i dr. Moskva, Mashgiz, 1963. 266 p. (MIRA 16:8)
(Knitting machines)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S. I.

"Atlas parodov mira."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

PUZANOVA, V.P., kand. tekhn. nauk [deceased]; BRUK, S.I., kand. tekhn. nauk, retsenzent

[Indication of length dimensions on part drawings] Prostanovka razmerov dliny v chertezhakh detalei. Moskva, Mashinostroenie, 1964. 103 p. (MIRA 17:6)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

PROKOF'YEV, Nikolay Mikhaylovich; MIKHAYLOV, A.N., dots., kand. tekhn. nauk retsenzent; BRUK, S.I., dots., kand. tekhn. nauk, retsenzent; NEKHAMKIN, N.O., dots., kand. tekhn. nauk, otv.red.; ANPILOGOV, A.V., red.

[Fundamentals of the standardization of the technological processes of mechanical wood processing; technology of the production of articles from wood (for students of the Faculty of the Mechanical Technology of Wood)] Osnovy tipizatsii tekhnologicheskikh protsessov mekhanicheskoi obrabotki drevesiny; tekhnologiia proizvodstva izdelii iz drevesiny (dlia studentov fakul'teta mekhanicheskoi tekhnologii drevesiny). Lektsiia. Leningrad, Vses. zaochnyi lesotekhn. in-t, 1964. 56 p. (MIRA 18:3)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S.I.

Performance of the new distilling device D-2. Farmatsev. zhur. 19 no.6:78-80 '64. (MIRA 18:4)

1. Upravlyayushchiy aptekoy No.21 g. Zhdanova.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

GLAZKOV, P.G., inzh.; GRIGOR'YEV, F.N., inzh.; MURZOV, K.P., inzh.; SLADKOSHTEYEV, V.T., inzh.; Prinimali uchastiye: MALAKHA, A.V.; POKRASS, L.M.; DRUZHININ, I.I.; OSIPOV, V.G.; KONDRATYUK, A.M.; POLYAKOV, I.V.; GORDIYENKO, M.S.; PAVLOV, M.T.; KOPYTIN, A.V.; PARASHCHENKO, R.A.; POTANIN, R.V.; AKHTYRSKIY, V.I.; BRUK, S.M.; YEVTUSHENKO, V.V.; LEYTES, A.V.; STRELETS, V.M.

Continuous casting of 140-ton steel heats with four-channel equipment. Stal' 22 no. 6:501-504 Je '62. (MIRA 16:7)

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S. Z.

O zadache caushy dlya sistem differentsial'nykh uravneniy parabolicheskogo tipa. IAN, Ser. matem., 10 (1946), 105-120.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A.G.,
Marushevich, A.I.,
Rashevskiy, P.K.
Moscow-Leningrad, 1948

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

Bruk, S. Z.

Bruk, S. Z. The fundamental solutions of a system of differential equations of parabolic type. Doklady Akad. Nauk SSSR (N.S.) 60, 9–12 (1948). (Russian)

The fundamental solutions of the following system of equations are studied:

$$\frac{\partial u_i}{\partial t} - \sum_{j;k_1,\dots,k_n} A_{ij}^{k_1\dots k_n}(t; x_1, \cdots, x_n)\frac{\partial^M u_j}{\partial x_1^{k_1}\cdots\partial x_n^{k_n}} = 0$$

$(i, j=1, \cdots, N; \sum_{\nu=1}^{n} k_\nu = M)$, where the characteristic roots of the λ-matrix

$$\lambda E - \Big\| \sum_{k_1,\dots,k_n} A_{ij}^{k_1\dots k_n}(t; x_1, \cdots, x_n)(i\alpha_1)^{k_1}\cdots(i\alpha_n)^{k_n}\Big\|$$

satisfy $\Re\lambda(\alpha_1, \cdots, \alpha_n; t; x_1, \cdots, x_n) < -\delta < 0$ for all x_i, for $t_0 \leqq t \leqq T$ and for all real α_i such that $\sum \alpha_i^2 = 1$.

The solutions are found, following a method by E. E. Levi. In the original equations the x_i inside the parentheses are replaced by parameters y_i which are independent of the x_i. The system of equations so obtained has coefficients which depend on t only and its fundamental solutions may be constructed by Fourier analysis. If these solutions are denoted by $u_i^s(t; t-\tau; y; x-\xi)$, the fundamental solution of the original equations is

$$z_j^s(t; \tau; x; \xi) = u_j^s(t; t-\tau; x; x-\xi) + \int_\tau^t dt' \int_{-\infty}^{\infty} \sum_r u_j^r(t; t-t'; x; x-x')\varphi_r^s(t', \tau; x'; \xi)dx_1' \cdots dx_n'$$

$(j, s, r=1, \cdots, N)$. The functions φ_r^s will have to be determined from integral equations. That solutions of these integral equations exist is claimed in a lemma. Proofs of this and other essential lemmas are not given.

P. A. Lagerstrom (Pasadena, Calif.).

Source: Mathematical Reviews, Vol. 10 No. 2

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C111/C444

AUTHOR: Bruk, S. Z.

TITLE: On solutions with a singularity of first order for linear elliptic differential equation systems of second order

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 64, abstract 2B265. ("Sb. tr. Mosk. inzh.-stroit. in-t," 1960, no. 30, 3-24)

TEXT: Considered is the linear differential equation system of second order

$$L_s(u) = \sum_{jkl} A_{sj}^{kl} \frac{\partial^2 u_j(P)}{\partial x_k \partial x_l} = 0 \qquad (1)$$

$(j, s = 1, 2, \ldots, N;\ k, l = 1, 2;\ A_{sj}^{kl} = A_{sj}^{lk},\ P = (x_1, x_2))$

with constant and real coefficients of elliptic type. Let $\alpha_1^{(k)}$ be the roots of the characteristic equation

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$$\Delta(\alpha_1, \alpha_2) = \det \left\| \sum_{kl} A_{ij}^{kl} \alpha_k \alpha_l \right\| = 0$$

for $\alpha_2 \neq 0$ and real. The investigation of the author is connected with the solution v_{sp} of the Cauchy problem

$$l_s(v) = \sum_j \left[A''_{sj} \frac{d^2 v_j}{dx_1^2} + 2A_{sj}^{12} i\alpha_2 \frac{dv_j}{dx_1} - A_{sj}^{22} \alpha_2^2 v_j \right] = 0$$

$$(s, j = 1, 2, \ldots, N)$$

$$v_{sp}(0) = 0, \quad \sum_s A_{sj}^{11} v'_{sp}(0) = \delta_{jp} .$$

This solution is represented in the form

$$v_{sp}(x) = \overset{+}{v}_{sp}(x_1) + \overset{-}{v}_{sp}(x_1)$$

where $\overset{+}{v}_{sp}(x_1)$ is the sum of the residues of the function E_{sp} in all

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poles $\alpha_1^{(k)}$ of the upper halfplane, $\bar{v}_{sp}(x_1)$ is the sum of the residues of E_{sp} in all poles $\alpha_1^{(k)}$ of the lower halfplane and

$$E_{sp}(\alpha_1\alpha_2) = \frac{\Delta_{sp}(\alpha_1\alpha_2)}{i\Delta(\alpha_1\alpha_2)} e^{i\alpha_1 x_1}$$

where $\Delta_{sp}(\alpha_1\alpha_2)$ denotes the corresponding algebraic complement. It is proved that $\det \| \dot{v}_{sp}(0) \| \neq 0$ is necessary in order the Dirichlet problem to be uniquely solvable in the domain $x_1 > 0$ in the class of those functions which are continuous in $x_1 \geq 0$, there possessing continuous derivatives of first order and at infinity satisfying the condition

$$u_j = O(1/2\,\varepsilon_1),\ \frac{\partial u_j}{\partial x_k} = O(1/r^{1+\varepsilon_2}),\ (\varepsilon_1 \geq 0,\ \varepsilon_2 > 0,\ r = \sqrt{x_1^2 + x_2^2}\ .$$

One constructs solutions of (1) being continuous together with all derivatives with respect to x_1 and x_2 everywhere except of the point

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On solutions with a singularity . . . S/044/62/000/002/051/092
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$x_1 = x_2 = 0$; these solutions are analogous to those given by Ya. P. Lopatinskiy (Ukr. matem. zh., 1951, 3, no. 1 and no. 3; 1953, 5, no.2) and Z. Ya. Shapiro (Dokl. AN SSSR 1945, 46, no. 4; Matem. sb. 1951, 28(70), no. 1). These solutions are expressed by the fundamental solutions of the equation (1) of Ye. Ye. Levi (Uspekhi matem. nauk, 1941, 8) by aid of linear differential operations with constant and real coefficients.

[Abstracter's note: Complete translation.]

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C111/C444

AUTHOR: Druk, S. Z.

TITLE: The problems of Dirichlet and Neumann for linear elliptic systems of second order

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 64-65, abstract 2B286. ("Sb. tr. Mosk. inzh.-stroit. in-t", 1960, no. 38, 25-46)

TEXT: For the linear elliptic differential equation system of second order with two independent variables and constant real coefficients

$$L_s(u) = \sum_{jkl} A^{kl}_{sj} \frac{\partial^2 u_j}{\partial x_k \partial x_l} = 0 \qquad (1)$$

and the conjugate system

$$M_j(u) = \sum_{skl} A^{kl}_{sj} \frac{\partial^2 u_s}{\partial x_k \partial x_l} = 0 \qquad (2)$$

$$(s, j = 1, 2, \ldots, N;\ k, l = 1, 2)$$

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one investigates the Dirichlet problem and "the first Neumann problem" which consist in the determination of that solution of (1) which satisfies the boundary conditions

$$\sum_{jkl} B_{sj}^{kl} \frac{\partial u_j(P)}{\partial x_k} \cos(x_l \bar{n}_p) = f_s(P) \quad (P \in \Gamma),$$

and of finding that solution of (2) which satisfies the boundary conditions

$$\sum_{skl} B_{sj}^{kl} \frac{\partial u_s(P)}{\partial x_l} \cos(x_k \bar{n}_p) = f_j(P) \quad (P \in \Gamma)$$

where Γ is the boundary of the domain and B_{sj}^{kl} are real constants being uniquely determined in the preceding paper of the author (Ref. 2B285). The investigation follows according to the potential method with the adjoining reduction of the corresponding problems to the investigation of systems of Fredholm integral equations of second kind.

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The problem of Dirichlet and . . . S/044/62/000/002/052/092
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One investigates the differential properties of the potentials of the single and of the double layer. The existence of the solution of the interior Dirichlet problem and of the exterior "first Neumann problem" is proved for the systems (1) and (2) under the supposition that these problems are uniquely solvable merely for (1) and that the boundary conditions are continuous and bounded. Under the supposition that (1) is strongly elliptic one proves the theorems of existence and uniqueness for the interior Dirichlet problem with discontinuous boundary conditions.

[Abstracter's note: Complete translation.]

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C111/C444

AUTHOR: Bruk, S. Z.

TITLE: The interior Dirichlet problem with discontinuous boundary conditions for elliptic systems of higher order

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 65, abstract 2B287. ("Sb. tr. Mosk. inzh.-stroit. in-t", 1960, no. 38, 47-66)

TEXT: Considered is an elliptic system of linear differential equations with the order 2m, with constant coefficients and with two independent variables:

$$L_r(D_{x_1}; D_{x_2})\, u = \sum_{jl} A_{rj}^{(2m-l\,j\,l)} D_{x_1}^{2m-l} D_{x_2}^{l} u_j = 0 \qquad (1)$$

$$\left(D_{x_k}^{\lambda} = \frac{\partial^{\lambda}}{\partial x_k^{\lambda}} ;\ r,\ j = 1,2,\ldots,\ N;\ l = 0,\ 1,\ldots,\ 2m \right) .$$

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For the system (1) the Dirichlet problem is investigated. A solution of (1) is to be found, which attains prescribed values on the boundary of the domain together with all its derivatives in direction of the normal up to (m-1)-th order. By the same method as in the preceding paper (Ref. 2B285) one obtains necessary conditions (being analogous to those formulated in Ref. 2B285) for the fact that the Dirichlet problem for (1) in the domain $x_1 > 0$ possesses a unique solution in a class of functions which consists of functions, being together with all their derivatives up to the (m-1)-th order inclusively continuous in $x_1 \geqslant 0$ and possessing the following orders

$$D^h_{x_1} D^l_{x_2} u_i(x_1, x_2) = O\left(r^{-h-l-m}\right)$$

for $r \to \infty$ $\left(r = \sqrt{x_1^2 + x_2^2}\right)$.

For the Dirichlet problem for (1) with discontinuous boundary conditions one proves the existence of the solution in a simply connected domain which has a sufficiently smooth convex boundary. The solution exists

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in a certain class of functions. For strongly elliptic systems with real coefficients

$$L_i(u) = \sum_{(jk)} A_{ij}^{(k_1,\ldots,k_{2m})} \frac{\partial^{2m} u_j}{\partial x_{k_1} \ldots \partial x_{k_{2m}}} = 0$$

$$(K_s \geqslant K_{s+1}, \quad A_{ij}^{(1,1,\ldots,1)} = \delta_{ij}, \; A_{ij}^{(k_1,\ldots,k_{2m})} = 0$$

where $2m < \sum_{p=1}^{2m} k_p < 3m$) one proves the maximum principle and the uniqueness of the solution of the Dirichlet problem in a simply connected domain which is bounded by a sufficiently smooth convex curve. (For systems of second order the maximum principle has been proved by M. M. Lavrent'yev (Rzh Mat. 1960, 1703).

[Abstracter's note: Complete translation.]

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AUTHOR: Bruk, S. Z.

TITLE: Boundary value problems for elliptic systems of higher order

PERIODICAL: Referativnyy zhurnal, Matematika, no. 2, 1962, 65, abstract 2B288. ("Sb. tr. Mosk. inzh.-stroit. in-t", 1960, no. 38, 67-78)

TEXT: For the elliptic system with constant coefficients

$$\sum_{jl} A_{ij}^{(2m-l,l)} D_{x_1}^{2m-l} D_{x_2}^{l} u_j = 0$$

$$(i,j = 1,2,\ldots, N;\ l = 0, 1,\ldots, 2m;\ D_{x_k}^{\lambda} = \frac{\partial^{\lambda}}{\partial x_k^{\lambda}})$$

one investigates the "homogeneous Dirichlet problem" with the boundary conditions $D_{n_p}^{h} D_{s_p}^{m-1-h} u_i(P) = f_i^{h}(P)$ $(P \in \Gamma)$, $(h=0,1,\ldots,m-1,\ i=1,2,\ldots N)$;

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for the problem conjugate with (1) one investigates the "homogeneous first Neumann problem" with the boundary conditions

$$\sum_{s\lambda} B_{sj}^{h\lambda}(\eta_p)\, D_{\eta_p}^{\lambda}\, D_{s_p}^{m-\lambda}\, u_s(P) = f_j^h(P) \quad (P \in \Gamma)$$

$$(s,\ j = 1, 2, \ldots, N;\ \lambda,\ h = 0, 1, \ldots, m-1)$$

where η_p is the normal vector, s_p is the positively directed tangent vector, D_{η_p} and D_{s_p} are the derivatives in the directions η_p and s_p, Γ is the boundary of the domain, $B_{sj}^{h\lambda}(\eta_p)$ are uniquely determinable real functions, satisfying a certain condition. The investigation follows according to the same method as in the paper of the author (Ref. 2B286) i. e. one constructs potentials for (1) and for the conjugate system, corresponding to the potentials of the single and double surface distribution, and by aid of it the boundary value problems are reduced to the investigation of Fredholm integral equations of second kind. For a finite simply connected domain

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with sufficiently smooth boundary Γ one proves the existence of the solutions of the interior "homogeneous Dirichlet problem" for system (1) and of the exterior "homogeneous first Neumann problem" for the system conjugate with (1); one supposes:

1. the uniqueness of the solution of the "homogeneous first Neumann problem" for the system conjugate with (1) in the class of functions C_{m-1} in the domain $CG + \Gamma$; where the functions are to satisfy the conditions $D^k_{x_1} D^{m-k}_{x_2} u_i \to 0$ for $r \to \infty$; 2. the uniqueness of the solution of the interior "homogeneous Dirichlet problem" in the function class C_{m-1} in the domain $G + \Gamma$. For the usual Dirichlet problem for (1) one proposes a new solution method consisting of a reduction of this problem to the corresponding "homogeneous Dirichlet problem".

[Abstracter's note: Complete translation.]

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, S.Z.

Reducing the homogeneous Dirichlet problem for linear elliptic systems with n independent variables to a system of second-order Fredholm integral equations. Sbor.trud.MISI no.38:79-85 '60. (MIRA 14:10)

(Boundary value problems) (Differential equations, Linear)

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BRUK, S. Z., Dr. Phys-Math Sci (diss) "Investigation of Elliptical System of Linear Differential Equations with Two Dependent Variables," Moscow, 1961, 12 pp. (Moscow Order of Lenin and Order of Toiling Red Banner State University im M. V. Lomonosov), 200 copies (KL Supp, 12-61, 248

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

DIOGENOV, G.G.; BRUK, T.I.; NURMINSKIY, N.N.

System Li, Cs || CH_3COO, NO_3. Zhur. neorg. khim. 10 no.6: 1496-1498 Je '65. (MIRA 18:6)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, T.N., inzh.

Automatic disc-type weight feeder. Ogneupory 18 no.1:43-44 '53. (MIRA 11:10)

(Refractories industry--Equipment and supplies)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Vadim Arkad'yevich; GARSHENIN, V.V.; KURNOSOV, A.I.; SUSHCHIK, A.S., nauchn. red.; RABINOVI-VIZEL', A.A., nauchn. red.; SIL'VESTROVICH, G.A., red.; PERSON, M.N., tekhn. red.

[Manufacture of transistor devices] Proizvodstvo poluprovodnikovykh priborov. Moskva, Proftekhizdat, 1963. 205 p. (MIRA 16:11)

(Transistors)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

AUTHOR: Bruk, V. G., Engineer SOV/119-58-9-15/18

TITLE: ~~Tuned Reed~~ Relay With Fixed Contacts (Chastotnoye vibratsionnoye rele s zhestko fiksiruyushchimi kontaktami)

PERIODICAL: Priborostroyeniye, 1958, Nr 9, pp. 30-30 (USSR)

ABSTRACT: The relay described is protected by patent Nr 103 674. It works on the principle of electromechanic resonance. It is distinguished by a reliable hold of the contacts without any auxiliary relay. The normal and off-normal positions, and the return to the normal position, are represented in a figure. Figure 2 shows how the relay tripping frequency depends on the voltage for both the ascending and the descending branch of the curve. The relay may be built with direct as well as with secondary energizing. For direct energizing, the tripping power required is 0.3 VA, and the time lag is 0.25 sec. For secondary energizing the corresponding values are 0.05 VA, resp. 0.4 sec. Adjustment limits of the vibrator are 3 - 10 cycles, tripping bandwidth 0.5 - 3 cycles, the temperature coefficient of the vibrating nickel steel reeds is below 0.2 % in the -20 to +70°C temperature range.

Card 1/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

KANTAROVICH, L.I., dotsent; BRUK, V.M.

Hemoplacental therapy of premature infants in the first weeks after birth. Zdrav.Belor. 3 no.10:38-40 O '57. (MIRA 13:6)

1. Iz akushersko-ginekologicheskoy kliniki (zav. - prof. L.S. Persianinov) Minskogo meditsinskogo instituta.
(INFANTS (PREMATURE)) (BLOOD AS FOOD OR MEDICINE)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, V.V., inzh.; NAYMAN, Ya.M., inzh.

Erection of a television tower 353 m. high. Mont. i spets. rab. v stroi. 25 no.5:9-12 My '63. (MIRA 16:7)

1. Kiyevskoye spetsializirovannoye upravleniye No.21 tresta TSentrostal'konstruktsiya.
(Vinnitsa--Television--Transmitters and transmission)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, YA.M.

0

EFFICIENT CONSTRUCTION OF GRAIN DRYERS FOR AGRICULTURE. Fedorov, I.M. and Bruk, Ya. M. (Sel'khozmashina (Agric. Machine). Aug. 1951, 4-13).

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

MERKULOV, N.Ya.; BRUK, Ya.S.

The PKS-3 coal-mining combine. Biul.tekh.-ekon.inform. no.7:3-4 '60. (MIRA 13:7)
(Coal mining machinery)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

MERKULOV, N.Ya.; BRUK, Ya.S.

The ShK-1 combine. Biul.tekh.-ekon.inform. no.8:6-8 '60.
(MIRA 13:9)

(Coal mining machinery)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

[illegible]LOV, N.Ya.; BRUK, Ya.S.

The A-3 coal-mining unit. Biul. tekh.-ekon. inform. no. 2:9-11 '61. (MIRA 14:2)

(Coal mining machinery)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Ya.S.; SOKOLOV, A.I.

The KTSTG coal mining combine. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.2:9-10 '64. (MIRA 17:6)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

SOKOLOV, A.I.; BRUK, Ya.S.

Introducing the KN-3 equipment set. Biul.tekh.-ekon.inform. Gos.nauch.-issl.inst.nauch. i tekh.inform. 17 no. 5:17-19 My '64. (MIRA 17:6)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Ya.S.; SAMSONOV, G.N.; SOKOLOV, A.I.

Sets of equipment with the K-52M narrow-range cutter-loaders. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.3:13-15 '64. (MIRA 17:9)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

SAVELOVA, V.A.; BRUK, Ye.S.; KLIMKINA, N.V.

Experimental basis for the maximum permissible cyclohexene concentration in the water of reservoirs and rivers. San. okhr. vod. ot zagr. prom. stoch. vod. no.6:46-63 '64.

(MIRA 18:3)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny imeni F.F.Erismana.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

SAVELOVA, V.A.; BRUK, Ye.S.; KLIMKINA, N.V.; PINUS, A.A.

Experimental basis for the maximum permissible sodium adipic acid in the water of reservoirs and rivers. San. okhr. vod. ot zagr. prom. stoch. vod. no.6:118-133 '64. (MIRA 18:3)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny imeni F.F.Erismana.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Yu.A.; RACHINSKIY, F.Yu.

Hindered phenols. Part 1: Reaction of 3,5-ditert-butyl-4-hydroxybenzyl bromide with amines. Zhur. ob. khim. 34 no.9:2983-2987 S '64. (MIRA 17:11)

1. Voyenno-meditsinskaya akademiya im. S.M. Kirova.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 34588-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RPL JW/RM

ACCESSION NR: AP5008198 S/0286/65/000/005/0070/0070

AUTHORS: Bruk, Yu. A.; Rachinskiy, F. Yu.; Potapenko, T. G.; Matveyeva, Ye. N.; Kremen', M. Z.; Lazareva, N. P.

TITLE: A method for producing stabilizers for vinyl polymers. Class 39, No. 168877

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 70

TOPIC TAGS: vinyl, polymer, stabilization

ABSTRACT: This Author Certificate presents a method for producing stabilizers for vinyl polymers by azomethyne derivatives from aldehydes and phenylenediamines. For obtaining effective and practicable stabilizers, aromatic aldehydes are used, such as benzoin, 2, 6-di-tert-butyl-n-oxybenzoin and others, and, for the phenylenediamine, ortho-, meta-, or paraphenylenediamine is used.

ASSOCIATION: Leningradskiy nauchno-issledovatel'skiy institut polimerizatsionnykh plastmass (Leningrad Scientific Research Institute for Polymerization Plastic); Voyenno-meditsinskaya ordena Lenina Akademiya im. S. M. Kirova (Military-Medical Order of Lenin Academy)

SUBMITTED: 06Feb63 ENCL: 00 SUB CODE: MT, OC

NO REF SOV: 000 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 43927-65 EWT(m)/EPF(c)/T Pr-4 WE

ACCESSION NR: AT5008624 S/2933/64/007/000/0047/0057

AUTHORS: Rachinskiy, F. Yu.; Bol'shakov, G. F.; Bruk, Yu. A.; Kremen', M. Z.; Pavlova, L. V.; Potapenko, T. G.; Slavachevskaya, N. M.

24
22
B+1

TITLE: Synthesis and antioxidant properties of sulfur- and nitrogen-bearing Ionol derivatives

SOURCE: AN SSSR. Bashkirskiy filial. Khimiya seraorganicheskikh soyedineniy, soderzhashchikhsya v neftyakh i nefteproduktakh, v. 7, 1964, 47-57

TOPIC TAGS: antioxidant, sulfur, nitrogen, thermooxidation/ Ionol

ABSTRACT: The retardation of oxidative degradation of hydrocarbon fuels, polyolefins, fats, and many synthetic and derived products was studied. In the present work the authors have synthesized and studied the antioxidant properties of a number of Ionol structural analogs, including azomethynes, hydrazones, amines, sulfides, and disulfides. The properties and compositions of these products are tabulated in the article. The treatment of Ionol with bromine and the condensation of 3,5-di-tert-butyl-4-oxybenzyl bromide with primary, secondary, and tertiary amines takes place with the formation of intermediate compounds of 2,6-

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L 43927-65

ACCESSION NR: AT5008624

di-tert-butyl-4-methylene quinone. Synthetic nitrogen- and sulfur-bearing structural analogs of Ionol are able to retard oxidation reactions not only during degeneration but during development. This results from a capacity to react with the primary radicals of the oxidized substance and also from a capacity to decompose the peroxide and to bind metallic ions of variable valence. Many of the synthesized substances cause effective retardation of thermooxidation of polyolefins and fats, inhibit radiation-chemical oxidation of fats, and some become effective additives for increasing the thermooxidizing stability of jet fuels. Orig. art. has: 1 figure and 4 tables.

ASSOCIATION: none

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

NO REF SOV: 008 OTHER: 010

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 18000-66 EWT(m)/T WE
ACC NR: AP6007932

SOURCE CODE: UR/0065/66/000/003/0052/0054

AUTHOR: Bol'shakov, G. F.; Bruk, Yu. A.; Rachinskiy, F. Yu.

ORG: none

54
B

TITLE: Additive designed to improve the thermal-oxidative stability of hydrocarbon [jet] fuels

55,44

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 3, 1966, 52-54

TOPIC TAGS: fuel additive, antioxidant additive, anticorrosion additive, fuel deposit formation, jet fuel

ABSTRACT: A study has been made of the antioxidant effectiveness in [jet] fuels of an Ionol derivative, 3, 5-di-tert-butyl-4-hydroxybenzylmercaptan (designated BOBM in the source). 0.01—0.05% BOBM was added to the standard hydrocarbon [jet] fuels T-1, TS-1, T-2, and T-5. The thermal-oxidative stability of the fuels with or without BOBM was tested on a LSA RT apparatus (not described) at 100—180C for 4 hr in airtight vessels in the presence of VB-24 bronze. The criteria used for thermal-oxidative stability were: insoluble sediments formed (mg/100 ml), fuel optical density, fuel corrosivity (g/m^2), oxygen absorption (ml), peroxide number (mg O_2/ml), and acidity (mg KOH/100 ml). It was found that BOBM was superior to Ionol with respect to insoluble sediments and corrosivity. BOBM also prevented peroxide and carboxylic acid formation and slowed down yellowing and oxygen absorption. It is

Card 1/2

UDC: 665.521.2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 18000-66

ACC NR: AP6007932

noted that, unlike Ionol, BOBM reacted with hydroperoxides thereby terminating the chain of the oxidation, and that BOBM actively inhibited oxidation not only at the initial stage but also in the course of this autocatalytic process. Orig. art. has: 5 figures. [SM]

SUB CODE: 21/ SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 4213

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 35342-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6009872 (A) SOURCE CODE: UR/0413/66/000/004/0068/0068

INVENTOR: Rachinskiy, F. Yu.; Bruk, Yu. A.; Matveyeva, Ye. N.; Polushkina, O. V.; Kremen', M. Z.; Lazareva, N. P.

ORG: None

TITLE: Stabilization of polyolefins. Class 38, No. 178979 [announced by State Scientific-Research Institute of Polymerization Plastics, Experimental Plant (Gosodastvennyy nauchno-issledovatel'skiy institut Polimerizatsionnykh plastmass eksperemental'nyy zavod); Military-Medical Academy, Order of Lenin, im. S. M. Kirov (Voyenno-meditsinskaya ordena Lenina Akademiya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 68

TOPIC TAGS: polyolefin, stabilization, heat resistant polymer

ABSTRACT: An Author Certificate has been issued describing a method of stabilizing polyolefins. In order to make heat resistant polymers, N-substituted parahydroxybenzylamines with a shielded hydroxy group are used as the stabilizer. [LD]

SUB CODE: 11/ SUBM DATE: 12Aug64

Card 1/1

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Ye.L., inzh; MESHENGISSER, M.Ya., inzh; SHTEYNBERG, D.I., inzh.

Dewatering coal flotation products on automatic filter presses. Ugol' 33 no.12:29-33 D '58. (MIRA 11:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po obogashcheniyu i briketirovaniyu ugley (for Bruk, Shteynberg). 2. Ukrainskiy nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya (for Meshengisser).

(Coal preparation) (Filter presses)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, YEM

CA

PROCESSES AND PROPERTIES INDEX

Changes in the glutathione level in the blood in diseases which are accompanied by a disturbance of the water economy. N. Ya. Chervyakovskii and E. M. Bruk. *Sovet. Vrachebnyi Zhur.* 41, 1481-6(1937); *Chem. Zentr.* 1938, I, 4072.—The glutathione content of the blood falls under the normal value in diseases of the liver and kidneys, and in certain cardiac disorders. For concns. under 10 mg. % the prognosis is serious. In circulatory disorders accompanied by serious cyanosis the glutathione level in the blood is abnormally high. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

B-III-5

Determination of nitrates in water by means of diphenylamine. S. V. [illegible] and E. S. [illegible] (J. Appl. Chem. Russ., 1957, 30, 2144–2152). [illegible] may be determined by [illegible] H_2O, or [illegible] may be coagulated with [illegible] but the [illegible] found for the nitrates are the actual [illegible] R.T.

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

1ST AND 2ND LETTER

3RD AND 4TH ORDERS

2ND LETTER

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

A-4

[illegible] B. A. [illegible] and E. S. Bruk [illegible] 1949, [illegible] 507—510). [illegible] in water were kept in the dark [illegible] The biochemical O_2 demand [illegible] at 0° and 16° with regular [illegible] especially at 16°. The org. P [illegible] of the suspension [illegible] and N were converted into PO_4^{3-} and NO_3^-, NO_2^-, etc. to extents of [illegible] respectively, within 17—20 days. The observed [illegible] of the plankton resembles that occurring with org. matter in sewage waters. F. O. H.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

14

Oxidation processes in water during aerobic decomposition of phytoplankton. B. A. Skopintsev and E. S. Bruk. *Microbiology* (U. S. S. R.) 9, 595-606 (in English, 606-7) (1940).—Oxidation of dead fresh-water plankton follows the stages occurring in water polluted by sewage. Color and turbidity are decreased but the odor lasts. The const. K_D for biochem. O demand is 0.085 at 16°. Ammonification is at a max. at 5-10 days, and its const. K_A is 0.108. Nitrites are at a max. at 9-22 days from the beginning of incubation. After that nitrates increase sharply. Phosphates reach a max. at 20-22 days. At 6° the O demand is lower: K_D = 0.035; K_A = 0.061 and nitrification is retarded. At 20 days the org. matter of decaying plankton contains 60-70% P and 83% N. In 53 days at 16° 82% of the chlorophyll had decompd., and 52% at 6°. The amt. of bacteria reached a max. in 2-5 days. T. Laanes

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 36461-66 EWT(1) IJP(c) GG/WW

ACC NR: AP6018822 SOURCE CODE: UR/0056/66/050/005/1420/1424

53
B

AUTHOR: Andreyev, A. F.; Bruk, Yu. M.

ORG: Institute of Physical Problems, Academy of Sciences SSSR (Institut fizicheskikh problem Akademii nauk SSSR)

TITLE: Sound absorption in the intermediate state of superconductors

SOURCE: Zh. eksper. i teor. fiz. v. 50, no. 5, 1966, 1420-1424

TOPIC TAGS: superconductor, sound absorption, heat absorption, sound propagation, intermediate frequency, eddy current

ABSTRACT: Propagation of sound in the intermediate state is accomplished by movement of the interface between the phases. As a result, eddy currents appear in the normal layers. The Joule heat which is liberated in this case leads to additional absorption of sound. It is shown that at low acoustical frequencies ($\delta \gg a$ where δ is the skin-layer thickness and a is the spacing of the intermediate state structure) the absorption is proportional to the square of the frequency, and at not very small values of a, it exceeds the ordinary absorption attributed

Card 1/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

DRACHEV, S.M., prof.; RAZUMOV, A.S.; SKOPINTSEV, B.A.; KABANOV, N.M.; BRUYEVICH, S.V.; SOSUNOVA, I.N.; GOLUBEVA, M.T.; BRUK, Ye.S.; MOGILEVSKIY, Ya.A.; RUFFEL', M.A.; KORSH, L.Ye.; ANOKHIN, V.L.; BYLINKINA, A.A.; MEL'NIKOV, Ye.B., red.; BEL'CHIKOVA, Yu.S., tekhn.red.

[Methods of studying waters from the point of view of sanitation] Priemy sanitarnogo izucheniia vodoemov. Pod red. S.M.Dracheva. Moskva, Gos.izd-vo med.lit-ry, 1960. 354 p.

(MIRA 13:11)

(Water--Analysis)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

KIBAL'CHICH, I.A.; BELOVA, I.M.; BRUK, Ye.S.; SOSUNOVA, I.N.; GUTKOVSKAYA, A.I.; ZHAKOV, Yu.A.; TIMOFEYEVA, T.Z.

Sanitary evaluation of the consequences of flooding tree plantations during the construction of reservoirs. Gig.i san. 25 no.1: 15-20 Ja '60. (MIRA 13:5)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F. Erismana Ministerstva zdravookhraneniya RSFSR.
(WATER RESOURCES DEVELOPMENT--HYGIENIC ASPECTS)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

SAVELOVA, V.A.; BRUK, Ye.S.; KLIMKINA, N.V.; RUSSKIKH, V.V.

Experimental basis for the permissible concentration of cyclohexanol in bodies of water. San.okhr.vod.ot zagr.prom.stoch.vod no.5: 78-93 '62. (MIRA 17:6)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

EFROS, M.M.; BRUK, Yu.G.; YUNISOVA, S.A.; SOKOLOV, S.L.

Investigating an industrial-test furnace for nonoxidative heating in the Leningrad Metallurgical Plant named for the 22d Congress of the C.P.S.U. Trudy VNIIT no.13:109-120 '64.

(MIRA 18:2)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Yu.M.

Multiplexed interlaced scanning of a television image. Radiotekhnika 15 no.12:61-66 D '60. (MIRA 14:9)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Television--Receivers and reception)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BAZELYAN, L.L.; BRUK, Yu.M.; ZHUK, I.N.; MEN', A.V.; SHARYKIN, N.K.

Wideband highly directional decameter wave antenna. Elektrosviaz' 18 no.5:14-21 My '64 (MIRA 17:8)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ACCESSION NR: AP4007177 S/0141/63/006/005/0897/0903

AUTHOR: Pazelyan, L. L.; Braude, S. Ya.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Ryabov, B. P.; Sodin, L. G.; Shary*kin, N. K.

TITLE: Radiation spectra of discrete radio sources Cassiopeia A, Cygnus A, Taurus A, and Virgo A at the 12.5 - 40 megacycle frequencies

SOURCE: IVUZ. Radiofizika, v. 6, no. 5, 1963, 897-903

TOPIC TAGS: radio emission, radio emission spectra, Cassiopeia A radio emission, Cygnus A radio emission, Taurus A radio emission, Virgo A radio emission, radio source spectrum, discrete radio source, radio spectroscopy, radio astronomy, radio frequency spectrum, Cassiopeia A, Cygnus A, Taurus A, Virgo A, extragalactic radiation, radiation absorption

ABSTRACT: To check on the hypothesis that a sharp change, manifest in a decrease in intensity with increasing wavelength, occurs in the radio emission spectrum of discrete radioastronomical sources below

Card 1/5

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ACCESSION NR: AP4007177

40 Mc, the fluxes of Cassiopeia-A, Cygnus-A, Taurus-A, and Virgo-A were measured in the 12.5--40-Mc range, for which no reliable absolute values are known presently. To improve the accuracy, absolute measurements were made only for the most powerful source, Cassiopeia-A, using seven sets of radio interferometers with half-wave dipole antennas. The other fluxes were determined relative to this source. The 'collapse' of the spectrum at high frequencies was noted for all but Taurus-A. The emission measure and the ratio of the normal component of the magnetic field to the number of electrons per cubic centimeter of the discrete sources calculated from these measurements are 3.5, 3.5, 5.0 and 700, 700, 120 for Cassiopeia-A, Cygnus-A, and Virgo-A. It is assumed that the decrease in the spectrum is due either to absorption in H_{11} clouds or by a decrease of the refractive index in the source. Orig. art. has: 2 figures, 4 formulas, and 4 tables.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics, AN UkrSSR)

Card 2/5

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 12469-63 EWT(d)/BDS AFFTC/ASD Ph-4

S/108/63/018/004/006/008

54

AUTHOR: Bruk, Yu. M., Active Member of Society

TITLE: Wide band (pulsating) amplifier with a combined high-frequency correction (correction of the front of the pulsations)

PERIODICAL: Radiotekhnika, v. 18, no. 4, 1963, 40-49

TEXT: A new method is proposed for correction of amplifier cascades. One concrete scheme is analyzed by this method. Stationary and transient characteristics are first investigated by known methods, and then methods are examined which permit obtaining significant supplementary gain in the amplification which, in the majority of cases, surpasses the gain of the complex induction correction (with great simplicity of the scheme). The scheme also allows one to obtain a gain in the ratio of signal to noise because of the suppresion of low-frequency containing spectra of the noise. The investigated scheme for the simple combined correction has

Card 1/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 12469-63 S/108/63/018/004/006/008

Wide band (pulsating) amplifier...

these advantages: significant gain in amplification, simplicity, anti-noise properties, possibility of independent management with frequency and time characteristic and with the amplification coefficient. For more complex schemes, there are more problems, but it is possible to obtain greater amplification gains of the order of 8-10%. The combined correction, in comparison with other schemes, does not always have to give a great gain of amplification, because supplementary amplification is possible in two cascade schemes because of strong differences in frequency or time properties of the cascades. There are 3 tables, 10 figures, and 5 foreign language references.

SUBMITTED: November 20, 1961 (initially)
October 31, 1962 (after revision)

Card 2/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

WRITE BELOW THIS LINE

ACCESSION NR: AP4037397 S/0106/64/000/005/0014/0021

AUTHOR: Bazelyan, L. L.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Shary*kin, N. K.

TITLE: Wide-band highly directional antenna for decameter wavelengths

SOURCE: Elektrosvyaz', no. 5, 1964, 14-21

TOPIC TAGS: antenna, directional antenna, highly directional antenna, wide band antenna, wide band highly directional antenna, beam-width electric control, half wave dipole, shunt dipole, cylindrical dipole, array element, antenna element, antenna efficiency, antenna gain

ABSTRACT: A receiving antenna intended for radioastronomical investigation of discrete sources and cosmic background in the 20—40-mc range is described. The antenna was designed on the principle that the electric control of the beam at large scanning angles can be realized by phasing low-directional discrete elements, whose large

Card 1/3

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ACCESSION NR: AP4037397

number insures the required degree of resolution. The antenna array, located along the W-E line, consists of 128 half-wave wide-band cylindrical dipoles arranged in 4 rows, each carrying 32 dipoles. The cylinders, formed by 18 elements of 8 mm each, are 1 m in diameter. The distance between array-element centers along and across the array is 5.5 m. The array elements are suspended 3 m above the ground. The signal excited in each element is transmitted to the output of each row through a matching balancer, three adders, and three coaxial cables with a total length of 101 m. The toroidal ferrite transformers used as adders made it possible in the 10- to 60-mc range to achieve a VSWR of 1.05 or better at a rated load with an efficiency of 95 to 97% or better. The electric control of the beam, which is accomplished by inserting delay cables between the adder and the output of each row, is carried out only in the N-S plane. The radiation pattern and gain of the antenna were determined by the simultaneous recording of signals from Cassiopea-A received with the antenna described and a standard interferometer consisting of two half-wave dipoles and subsequent comparison of the

Card 2/3

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ACCESSION NR: AP4037397

results. At the same time the effective area (gain) was calculated by computer. Good agreement of experimental and theoretical data indicates that the antenna gain calculated on the basis of the gain found experimentally for the elevation of 81° will be close to actual, at least for the case of higher elevations. Orig. art. has: 11 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 04Mar63 DATE ACQ: 09Jun64 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ACCESSION NR: AP4033119 S/0120/64/000/002/0096/0100

AUTHOR: Bruk, Yu. M.; Men', A. V.; Bazelyan, L. L.

TITLE: Measuring the parameters of multiple-unit antennas

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 96-100

TOPIC TAGS: antenna, multiple unit antenna, electrically steerable multiple unit antenna, musa, radioastronomic antenna, antenna parameter measurement, musa parameter measurement

ABSTRACT: A method of measuring the parameters of a multiple-unit electrically steerable antenna (musa) under operating conditions without introducing noticeable distortion into its circuit is considered. A low-loss measuring line is connected between the output point being measured and the load (radiators), and the values of loop and node voltages are noted. Then, a calibrated attenuator is connected in place of the multipole being tested, and the attenuator is adjusted until the same values of the loop and node voltages are attained. Simple formulas yield the values of the attenuation and efficiency of the antenna; the impedance,

Card 1/2

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ACCESSION NR: AP4033119

radiation power, currents, etc., can also be measured by this method. The errors involved are theoretically assessed. The method was used in practice to measure the efficiency of a 128-unit electrically steerable radioastronomic antenna described by L. L. Bazelyan, et al. (Elektrosvyaz', 1964, no. 4). A 52-ohm multiprobe automatic measuring line was used. Estimated and measured efficiency curves are shown for frequencies within 20–40 mc. "In conclusion, the authors wish to thank P. A. Mel'yanovskiy and V. V. Krymkin for their help in carrying out the experiments." Orig. art. has: 4 figures and 13 formulas.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics, AN UkrSSR)

SUBMITTED: 24May63 ATD PRESS: 3076 ENCL: 00

SUB CODE: EC NO REF SOV: 005 OTHER: 002

Card 2/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ACCESSION NR: AP4039721 S/0141/64/007/002/0215/0224

AUTHOR: Bazelyan, L. L.; Bruk, Yu. M.; Zhuk, I. N.; Men', A. V.; Sodin, L. G.; Shary*kin, N. K.

TITLE: Wide-band radiointerferometer with electric control of antenna pattern

SOURCE: IVUZ. Radiofizika, v. 7, no. 2, 1964, 215-224

TOPIC TAGS: antenna radiation pattern, antenna switching, radio astronomy, radio interferometer, radio emission

ABSTRACT: A broadband (20 — 40 Mcs) radio interferometer with a 470 meter base, oriented east and west, is described. The interferometer is intended for the investigation of radio emission from discrete sources and the cosmic background in the northern hemisphere by directivity-pattern scanning in a ± 90° elevation sector and by using the earth's rotation. The interferometer consists of 220 8-dipole plane arrays with remote digital control of the directivity pattern in the meridional plane. The description covers the principles underlying the control of the beam and the summation of the signals, the arrangement of the antenna, the control elements, the antenna directivity pattern, the antenna effective area, and the antenna gain. The large base facilitates separation of the source radio

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ACCESSION NR: AP4039721

emission from the cosmic background. The two interferometer antennas are different and can be used separately. The eastern one can be used as a transit instrument. By using the western antenna with beam scanning, it is possible to make two or three records of a source passing through the azimuthal pattern, with intervals of 10 -- 20 minutes. The resolution of the interference diagram is 1.6 -- 0.8° in direct ascension and 4° -- 2° in declination, at frequencies 20 -- 40 Mcs. It is recommended that the antennas be used separately for the radio emission of the cosmic background, in which case the resolution is 4 -- 2° in ascension and 34 -- 17° in declination for the eastern antenna, and 34 -- 17° in ascension and 4 -- 2° in declination for the western antenna (both at 20 -- 40 Mcs). Some precautions necessary in the operation of the interferometer are mentioned. Orig. art. has: 9 figures and 2 tables.

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics, AN UkrSSR)

SUBMITTED: 28Apr63 ENCL: 02

SUB CODE: AA, EC NR REF SOV: 001 OTHER: 003

Card 2/4

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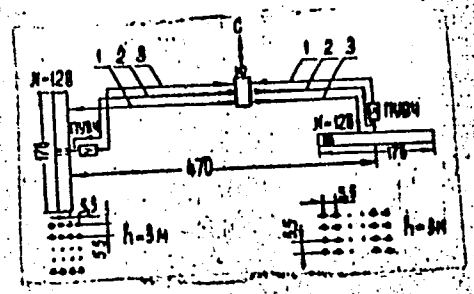
"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ENCLOSURE: 01

ACCESSION NR: AP4039721



Block diagram of the interferometer
1 - signal, 2 - calibration, 3 - control of directivity pattern

ПУВЧ - UHF receiver
C - north
Ю - south

Card 3/4

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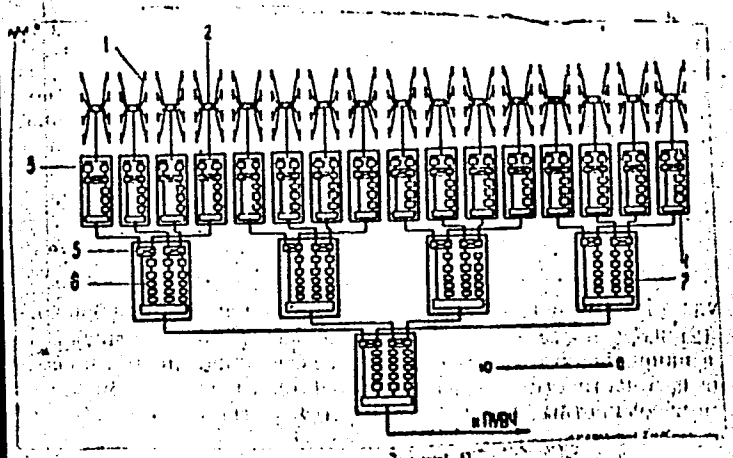
ACCESSION NR: AP4039721

ENCLOSURE: 02



Western interferometer antenna

1 - dipole, 2 - underground collector, 3 - junction for four elements, 5 - quadrant switch, 6 - binary switch cell, 7 - phase shifter

Card 4/4

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

ACC NR: AP6023856 SOURCE CODE: UR/0108/66/021/007/0016/0025

AUTHOR: Bruk, Yu. M. (Active member); Sodin, L. G. (Active member)

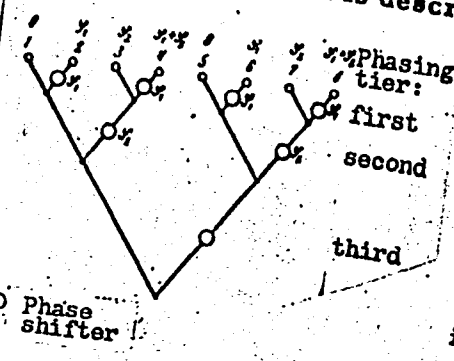
ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication (Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

TITLE: Calculating principal parameters of phased antenna arrays having discrete tier-type asynchronous control of beam parameters

SOURCE: Radiotekhnika, v. 21, no. 7, 1966, 16-25

TOPIC TAGS: antenna array, phased array antenna

ABSTRACT: A method is described of essential simplification of the time-delay system of beam-position control by using discrete delay lines arranged in a binary scheme. Both the parallel and parallel-tier ("herringbone") time systems are considered. The binary scheme yields 2^m delay discrete positions with m cells in each line. This advantage is further enhanced by using a rational phasing scheme (see figure); φ_1 and φ_2 are the phasing errors in the first and second tiers, respectively. Asynchronous control of tiers results in phase errors of radiator currents. These errors



Card 1/2

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 07450-67 EWT(m)/EWP(j) RM

ACC NR: AP6035833 SOURCE CODE: UR/0413/66/000/020/0037/0037

27

B

INVENTOR: Raver, Kh. R.; Zalikina, L. M.; Bruker, A. B.; Soborovskiy, L. Z.

ORG: none

TITLE: Preparative method for phenyl-1,1,2,2-tetrafluoroethylphosphinotributoxytitanium. Class 12, No. 187020 15

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 37

TOPIC TAGS: organic phosphorus compound, organotitanium compound, chemical synthesis

ABSTRACT: An Author Certificate has been issued for a method of preparing phenyl-1,1,2,2-tetrafluoroethylphosphinotributoxytitanium. The method involves the reaction of sodium phenyl-1,1,2,2-tetrafluoroethylphosphide with tributoxychlorotitanium at 40C in an organic solvent (e.g., toluene).

SUB CODE: 07/ SUBM DATE: 18Oct65/ ATD PRESS: 5104

UDC: 547.562'118' '412'72'264'182.1.07

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK-LEVINSON, T. L.

BRUK-LEVINSON, T. L.: "Investigation of methods of processing iron-containing sulfate wastes before releasing them into the city and overflow waste-water systems". Moscow, 1955. Published by the Min Communal Economy RSFSR. Academy of Communal Economy imeni K. D. Pamfilov. (Dissertation for the Degree of Candidate of TECHNICAL Sciences)

SO: Knizhnaya Letopis' No. 51, 10 December 1955

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

Bruk-Levinson, T.L.

SHUBERT, S.A.; PERLINA, A.M.; KULZHINSKIY, V.I.; SIDENKO, T.K.; ALEKSANDROV, D.N.; SOKOLOV, V.F.; PAL'KOVSKAYA, L.N.; BRUK-LEVINSON, T.L.; BELYAKOVA, A.N.; KOZHEVNIKOVA, Ye.K.; AVRUSHCHENKO, R.A., red. izd-va; VOLKOV, S.V., tekhn.red.

[Water purification for water supply to machine-tractor stations and state farms] Ochistka vody dlia vodosnabzheniia poselkov MTS i sovkhozov. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1957. 69 p. (MIRA 11:6)

1. Akademiya kommunal'nogo khozyaystva, Moscow.
(Water--Purification) (Water supply, Rural)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK-LEVINSON, T.L

133-9-22/23

AUTHOR: Radtsig, V.A. and Bruk-Levinson, T.L., Candidates of Technical Sciences.

TITLE: Neutralization of Pickling Solutions with the Removal of Liquid Phase and the Production of Heat-insulating Materials. (Neytralizatsiya travil'nykh rastvorov s ustraneniyem zhidkoy fazy i polucheniyem teploizolyatsionnykh materialov)

PERIODICAL: Stal', 1957, No.9, pp. 858 - 860 (USSR)

ABSTRACT: For neutralization of comparatively small quantities of spent pickling liquors (about 500 t/year) the use of solid lime or a lime dough is proposed. Laboratory and industrial experiments in which the neutralization with lime dough (lime powder plus some water) in a cement mixer was carried out, indicated that a solid mass (moisture content 60-65%) can be obtained which can be either disposed of or used with appropriate filling materials (asbestos, ground dry peat, straw, etc.) for the manufacture of heat-insulating materials. There are 1 table and 1 figure.

ASSOCIATION: Urals Scientific-Research Institute of the Academy of Communal Economy im. K.D. Pamfilov. (Uralskiy N.-I. Institut Akademii Kommunal'nogo Khozyaystva im. K.D. Pamfilova)

AVAILABLE: Library of Congress.

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK-LEVINSON, T.L.; LUBOCHNIKOV, N.T.; POLYKOVSKAYA, N.A. (Sverdlovsk)

Repeated use of wash waters in pickling sections. Vod. i san. tekh. no.10:9-12 '59. (MIRA 13:1)
(Sewage--Purification) (Metals--Pickling)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BARSKOV, S., inzh.; (g.Sverdlovsk); BRUK-LEVINSON, T., kand.tekhn.nauk (g.Sverdlovsk), PRAVDIN, Ye., inzh. (g.Sverdlovsk)

Investigating the performance of aeration tanks in the Ural Mountain region. Zhil.-kom. khoz. 10 no.11:20-22 '60. (MIRA 13:11)
(Sverdlovsk Province--Sewage--Purification)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

AMUSINA, Kh.M., inzh.; BRUK-LEVINSON, T.L., kand.tekhn.nauk

Efficient method of recovering copper sulfate from spent pickling solutions. TSvet. met. 33 no.6:27-30 Je '60. (MIRA 14:4)
(Copper sulfate)

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

BRUK, Yu.M.

Wide-band pulse-type amplifier with composite high-frequency compensation (pulse front peaking). Radiotekhnika 18 no.4:40-49 Ap '63. (MIRA 16:5)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Amplifiers, Electron-tube)
(Pulse techniques (Electronics))

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"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

L 00489-66 EWT(1)/T IJP(c)

ACCESSION NR: AP5020565 UR/0294/65/003/004/0623/0626

536.621:53.08

AUTHOR: Smetanina, L. I.; Matveyeva, I. I.; Bruk, Z. V.

TITLE: Calorimetric detector for measuring the energy of an ionized beam

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 4, 1965, 623-626

TOPIC TAGS: temperature detector, calorimeter, heat transfer, thermal conductivity, ion beam, electron energy

ABSTRACT: The article describes the operating principles and the construction of a calorimeter based on heat transfer by thermal conductivity under steady state conditions. The instrument is applied as a detector for measuring the energy of an ionized beam in a deep vacuum. Choice of materials for the calorimeter must meet the following requirements: 1) the heat conductor must assure the required sensitivity of the instrument and measurement of the energy over a sufficient range and 2) the pickup (the surface turned toward the ionized beam) must have a minimum capacity for "secondary emission" and a stable degree of black-

Card 1/2

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L 00489-66

ACCESSION NR: AP5020565

ness. Aluminum and molybdenum give good stability against "secondary emission". Orig. art. has: 2 formulas, 1 figure and 1 table

ASSOCIATION: None

SUBMITTED: 04Aug64 ENCL: 00 SUB CODE: TD

NR REF SOV: 001 OTHER: 002

jw

Card 2/2

APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5"

"APPROVED FOR RELEASE: 06/09/2000 CIA-RDP86-00513R000307110013-5

AUTHOR: Brukash, M.Ye., Head Librarian 3-58-7-27/36

TITLE: To Know the Book and How to Work with It (Znat' knigu, umet' s ney rabotat')

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 7, p 77 (USSR)

ABSTRACT: Almost all the 254 periodicals regularly received by the library of the Vitebsk Veterinary Institute as well as the more interesting new books, are exhibited on a special stand in the library. Special bulletins are also published. Exhibitions consecrated to the works of artists and composers are also organized.

ASSOCIATION: Vitebskiy veterinarnyy institut (The Vitebsk Veterinary Institute)

Card 1/1

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

10

Oxidation of hydrohalic salts of phenylhydrazine in the presence of copper salts. A. II. Bruker and L. Z. Soborovskii. *J. Gen. Chem.* (U. S. S. R.) 5, 1024-8(1935).—Gattermann and Helzle (*Ber.* 25, 1074 (1892)) obtained good yields of PhCl, PhBr and PhI by the oxidation of the resp. hydrohalic salts of $PhNHNH_2$ (I) with 4 mols. of $CuSO_4$. Treating $CuCl_2$ in 12% HCl in the cold, with stirring, with an equimol. amt. of I resulted in a complete decolorization of the soln. and pptn. of white, cryst. I.HCl.CuCl (II). The reaction is conceived as a partial oxidation of I with the formation of CuCl which reacts with I, giving II. This theory is supported by a nearly 100% yield of II obtained by the interaction of CuCl and I. The slight variations in the compn. of II obtained are caused by its instability to atm. O_2. Thus, II in HCl on exposure to air or addn. of $CuCl_2$ is rapidly decompd. with the formation of PhCl, but can be preserved for months by keeping it in hermetically sealed containers. The probable mechanism of the oxidation of I in HCl to PhCl with an excess of Cu^{++} salts consists of preliminary formation of II which on further oxidation forms PhN_2Cl and this with CuCl gives PhCl according to the Sandmeyer reaction.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

A-3

BC

Complex compounds formed by the reaction between phenyldichlorostibine and benzenediazonium chloride. A. B. Baukin (J. Gen. Chem. Russ., 1936, 6, 1823—1827).—Aq. PhN_2Cl, AcOH, and $SbPhCl_2$ or SbPh·OCl in AcOH, at 0°, yield the *complex*, $PhN_2Cl,SbPhCl_2$, decomp. at 58—60° to give $SbPh_2Cl_3$ and N_2. R. T.

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A-3

Complex compounds obtained from *p*-tolylstibine dichloride and *p*-tolyldiazonium chloride. II. A. B. Bruker and E. S. Machlis (J. Gen. Chem. Russ., 1937, 7, 1880—1884).—p-$C_6H_4Me{\cdot}N_2Cl$ (I) and p-$C_6H_4Me{\cdot}SbCl_2$ in AcOH yield a 1 : 1 *compound*, m.p. 90—92° (decomp.), converted by boiling 25% HCl into $(p\text{-}C_6H_4Me)_2SbCl_3$, m.p. 155° (lit. 143°). In presence of excess of (I) a 2 : 1 *compound*, m.p. 108—110°, is obtained, and this, when boiled with 25% HCl, gives $(p\text{-}C_6H_4Me)_2$, p-$C_6H_4Me{\cdot}SbCl_4$, and the double salt p-$C_6H_4Me{\cdot}SbCl_4.NH_4Cl$, not melting at 200°, and converted into p-$C_6H_4Me{\cdot}Sb(OH)_2$ by shaking with H_2O. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

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Free radicals in the Grignard reaction. L. M. Smorgonskii and A. B. Bruker. *Uspekhi Khim.* 15, 81-100 (1946).—Review with particular stress on the work published by Kharasch between 1941-1944. G. B.

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CA

Mechanism of formation of arsenic and antimony aromatic compounds in the diazo reaction. A. B. Bruker. *Doklady Akad. Nauk S.S.S.R.* 58, 803-6(1947).—Abridgement of *C.A.* 43, 4047b. G. M. Kosolapoff

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BRUKER, A. B.

Bruker, A. B. and Nikiforova, N. M., Complex compound obtained at interaction of diphenyl-antimony-chloride and triphenyl antimony with phenyldiazonium chloride. III. p. 1133

At the reaction of diphenyl-antimony-chloride in equimolecular ratio as well as with an excess of phenyldiazonium chloride a complex forms, of the composition: $C_6H_5N_2Cl.\ (C_6H_5)_2\ SbCl$, which during decomposition in dilute hydrochloric acid changes into diphenyl-antimony-trichloride.

January 10 1947

SO: Journal of General Chemistry (USSR) 18 (80) No. 6 (1948)

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BRUKER, A. B.

A. B. Bruker, 'The mechanism of formation of arsenic and antimony aromatic compounds on Diazo reaction. IV. P. 1297.

A simple mechanism is proposed and generalized consisting in: first forming a complex of aryl diazonium with compounds of trivalent arsenic or antimony, oxidation of the arsenic or antimony, with formation of a co-valent N- As-bond and a following decomposition of the co-valent compound which, evidently goes through a transitory state and not through an intermediate formation of free neutral radicals.

January 10, 1947.

SO: Journal of General Chemistry (USSR) 18, (80) No. 7 (1948).

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CA

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Complex compounds from the reaction of diphenylstibine chloride and triphenylstibine with benzenediazonium chloride. III. A. B. Bruker and N. M. Nikiforova.

Zhur. Obshchei Khim. (J. Gen. Chem.) 18, 1133-6(1948). cf. C. A. 32, 729. Reaction of Ph_2SbCl with equimol. or excess PhN_2Cl gives an equimol. complex, which on treatment with dil. HCl decomp. into Ph_2SbCl_3, N_2, and benzene, while decomp. in $CHCl_3$ gives Ph_2SbCl_3 and N_2. The interaction of PhN_2Cl with Ph_3Sb does not give a complex under these conditions and the reaction proceeds by $Ph_3Sb + 2PhN_2Cl \rightarrow Ph_2SbCl + 2N_2 + Ph_2$. PhN_2Cl (from 1.1 g. $PhNH_2$ in 1 ml. concd. HCl and 1 ml. H_2O and 1.1 g. $NaNO_2$ in 1 ml. H_2O treated with 2.1 ml. AcOH, followed at 0-2° by 3.5 g. Ph_3SbCl in 30 ml. AcOH, gave 88% *equimol. adduct*, a white powder, m. 76-7°, generally insol. and decomp. in Me_2CO, evolving N_2. Heating with 1:2 HCl gives 65% Ph_2SbCl_3, m. 172-3°. Use of excess PhN_2Cl gives the same complex. PhN_2Cl (from 1.1 g. $PhNH_2$ as above) and 20 g. AcOH treated with 4 g. Ph_3Sb in 40 ml. AcOH gave only Ph_2SbCl_3, m. 142-3° (from EtOH). In the cold, HCl does not convert Ph_3Sb into Ph_2SbCl_3 in the absence of PhN_2Cl. G. M. K.

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1ST AND 2ND ORDERS — 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

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Formation of arsenic and antimony aromatic compounds by the diazo reaction. IV. A. H. Bruker. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 18, 1297–1311(1948); cf. B. and Nikiforova, *C.A.* 43, 1737*i*.—One mechanism common to all prepns. of aromatic As and Sb compds. via *diazo* or *hydrazine compds.* is given. $M^{III}X_3$ (M = As or Sb, X = halide, OH, or Ar) first forms a complex with ArN_2X: $ArNX + MX_3 \rightarrow [ArN]^+[MX_4]^-$. M then is oxidized to form a covalent bond with N: $[ArN]^+[MX_4]^- \rightarrow ArN{=}NMX_3$. Liberation of N_2 gives the product: $ArN{=}NMX_3 \rightarrow ArMX_4 + N_2$. The process probably goes via the *syn*-diazo form Ar—N=N—MX_3. This explains why only one Ar adds to M, which could not be explained by a free-radical mechanism. Secondary and tertiary products (2 or 3 Ar or M) can be formed only if M already carries 1 or 2 Ar. In the presence of reducing agents, the following reactions lead to secondary and tertiary products: Zn $ArN_2Cl.MCl_3 \rightarrow ArMCl_4 + N_2$, $ArMCl_4 + Zn \rightarrow ArMCl_2 + ZnCl_2$, $ArMCl_4 + ArN_2Cl \rightarrow ArN_2Cl.ArMCl_3$ [$ArN_2Cl.MCl_3 \rightleftarrows ArN_2Cl + MCl_3$], $ArN_2Cl.ArMCl_3 \rightarrow Ar_2MCl_4 + N_2$, $Ar_2MCl_3 + Zn \rightarrow Ar_2MCl + ZnCl_2$, $Ar_2MCl + ArN_2Cl \rightarrow ArN_2Cl.Ar_2MCl$, $ArN_2Cl.Ar_2MCl \rightarrow Ar_2MCl_4 + N_2$, $Ar_2MCl_3 + Zn \rightarrow Ar_3M + ZnCl_2$. When *PhNHNH*$_2$ reacts with *arsenic acid*, the latter reduces to arsenious acid and $PhNHNH_2$ is oxidized to PhN_2OH, which with arsenic acid gives benzenearsonic acid: Ph—N=N—$As(OH)_4^-$ $\xrightarrow{Cu}$ $PhAs(=O)(OH)_2 + H_2O + N_2$. Similarly, diphenylarsinic acid is formed, which, after reduction to the arsenous acid, with PhN_2OH forms $PhN_2OH.Ph_2AsOH$, decompg. to $Ph_3As(OH)_2 + N_2$. Further reduction gives *triphenylarsine*. The Sb analogs from N_2H_4 derivs. are not known. To 300 ml. 1:2 HCl, 28.5 g. $SbCl_3$, and 32 g. $CuCl_2$ is added 24.8 g. 2-$C_6H_5NHNH_2.HCl$ (I) in portions with stirring and the ppt. formed after 8 hrs. of continued stirring is washed with dil. HCl, alc., Et_2O, and dried in air, giving a yellow-green powder, 2-$C_6H_5N_2Cl.SbCl_3$ (48–50 g.). To 2-$C_6H_5N_2Cl$ (II) from 14.3 g. 2-$C_6H_5NH_2$ is added 18.1 g. $AsCl_3$ in 50 ml. HCl (d. 1.19), yielding 34 g. yellow $C_6H_5N_2Cl.AsCl_3$ (III), m. 103° (decompn.), sol. in HCl, alc., insol. in abs. Et_2O, glacial AcOH, decompg. in alc. in the presence of Cu metal or on heating with dil. HCl,

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giving off N_2. Similarly 7.2 g. III is obtained from 5.5 g. $AsCl_3$ in 100 ml. HCl with 0.5 g. $CuCl_2$, 0.5 g. $FeCl_3$, and 4 g. I. III decomp. to 2-$C_6H_4AsO_3H_2$ (50°c). 2-C_6H_4-$AsCl_2$ (3.8 g.) in 15 ml. abs. EtOH with II (from 1.8 g. 2-$C_6H_4NH_2$.HCl diazotized with 1.6 g. $AmNO_2$ at −3 to 0°) yields 5.2 g. yellow $C_6H_4N_2Cl.C_6H_4AsCl_2$, m. 88° (decompn.), sol. in alc., Et_2O, Me_2CO, insol. in CCl_4, stable in air. Part of the decompn. product reduces to 2-$C_6H_4AsCl_2$, m. 67°. $(C_6H_5)_3$ (0.2 g.) is obtained from the residue. Dry $(C_6H_5N_2Cl)_2.C_6H_5SbCl_2$ (5 g.) in 100 ml. 1:1 HCl is refluxed till all the N is evolved and a black oil appears. The oil yields 10% $(C_6H_5)_3$, while addn. of a concd. soln. of NH_4Cl in concd. HCl to the filtrate ppts. 0.2-0.22 g. $C_6H_5SbCl_4.NH_4Cl$, m. above 280°. To 1 g. of this complex is added 50 ml. H_2O to obtain 0.62 g. 2-$C_6H_5SbO_3H_2$. From 18.1 g. $AsCl_3$, 50 ml. HCl, and Ph-N_2Cl (from 9.3 g. $PhNH_2$) is obtained 24 g. $PhN_2Cl.AsCl_3$, m. 83°.

Kitty Lus

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