S/535/60/000/128/002/008
E036/E135

AUTHOR: Sidorov, Yu.I., Engineer

TITLE: Present Day Semiconductor Capacitors With Variable Capacitance

PERIODICAL: Moscow. Aviatsionnyy institut. Trudy, No. 128. Moscow; 1960. Primeneniye poluprovodnikovykh priborov v aviatsionnykh radiotekhnicheskikh ustroystvakh; sbornik statey. pp. 19-27

TEXT: The properties of some available American and British variable capacitance p-n junction diodes are reviewed after a brief semi-qualitative description of the features of this type of device. An extensive table gives the principal parameters of the diodes including maximum working voltage, initial capacitance, range of capacitance change, series resistance (both maximum and typical) and typical Q values of such functions produced by PSI, Transitron, Ferranti, Hughes and IRC. Type of junction is also noted, i.e. whether alloyed or diffused. In addition to this table, graphs show the temperature dependence of the capacitance at various bias voltages of a particular diode produced by PSI

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Present Day Semiconductor Capacitors With Variable Capacitance

(Pacific Semiconductors Inc.) as well as the temperature dependence of the series resistance and of the Q. Q is also plotted against frequency. The data in the table are from published information by the manufacturers.
There are 8 figures, 1 table and 22 references: 7 Soviet and 15 non-Soviet.

Latest English References:
Ref.6: Publicity material. Hughes Electronic Industries, 1959, Nos. 5 and 6.
Ref.8: Publicity material. Ferranti (Semiconductor Conference, London, 1959).
Ref.9: Publicity material. Transitron. Bull. TE-1340 A(3-59) and TE-1312.
Ref.10: Publicity material. IRC. Bull. No. SR-205.

Card 2/2

SIDOROV, Yu. P., Cand of Tech Sci -- (diss) "Investigation of the Mechanism of the Control of a Weft Thread in the Jaws of an Automatic Loom," Moscow, 1959, 12 pp (Moscow Textile Institute) (KL, 1-60, 123)

DAMASKIN, B.I., prof., doktor tekhn.nauk; SIDOROV, Yu.P., kand.tekhn. nauk, inzh.

Right way of using the control mechanisms of looms. Tekst. prom. 20 no.6:27-31 Je '60. (MIRA 13:7)
(Looms)

DAMASKIN, Boris Ivanovich, doktor tekhn. nauk; SIDOROV, Yuriy Pavlovich, SIMAKIN, V.V., retsenzent; AKSENOVA, I.I., red.; SHVETSOV, S.V., tekhn. red.

[Standardization and modernization of weft control mechanisms] Normalizatsiia i modernizatsiia mekhanizmov kontrolia utochnoi niti. Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR, 1961. 108 p. (MIRA 15:3)

(Looms)

GORITSKIY, Sergey Gennad'yevich; GLEBOV, D.V., retsenzent; SIMAKIN, V.V., retsenzent; SIDOROV, Yu.P., spets. red.; SOKOLOVA, V.Ye., red.; SHVETSOV, S.V., tekhn. red.

[Basic problems in the development of the technology and equipment of cotton weaving] Osnovnye problemy razvitiia tekhniki i tekhnologii tkatskogo khlopchatobumazhnogo proizvodstva. Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR, 1961. 121 p. (MIRA 14:11)
(Cotton weaving)

GORDEYEV, Vasiliy Aleksandrovich; NEKRASOV, Konstantin Pavlovich; VOLKOV, Pavel Vasil'yevich; SIMAKIN, V.V., retsenzent; SOKOLOV, A.F., spets. red.; SIDOROV, Yu.P., spets. red; AKSENOVA, I.I., red.; VINOGRADOVA, G.A., tekhn. red.

[Cotton weaving] Khlopkotkachestvo. Moskva, Izd-vo nauchno-tekhn. lit-ry RSFSR, 1961. 517 p. (MIRA 15:1)
(Cotton weaving) (Looms)

SIDOROV, Yuriy Pavlovich; KOKOREV, Vasiliy Aleksandrovich; BELYSHEV, Ye.V., retsenzent; CHUGREYEVA, V.N., red.; TRISHINA, L.A., tekhn. red.

[The P-105 pneumatic and G-105B hydraulic looms] Pnevmaticheskie P-105 i gidravlicheskie G-105B tkatskie stanki. Moskva, Rostekhizdat, 1962. 85 p. (MIRA 15:12)
(Looms)

AVAYEV, Sergey Aleksandrovich, kand. tekhn. nauk; BELOV, Vladimir Pavlovich; ZINGMAN, Aleksandr Abramovich; MILOVIDOV, Nikolay Nikolayevich; SIDOROV, Yuriy Pavlovich; SIMIGIN, Petr Andreyevich; GARTUNG, S.V., retsenzent; KRYLOV, A.P., retsenzent; CHUGREYEVA, V.N., red.; VINOGRADOVA, G.A., tekhn.red.

[Automatization of technological processes in the cotton industry] Avtomatizatsiia tekhnologicheskikh protsessov khlopchatobumazhnoi promyshlennosti. Moskva, Gizlegprom, 1963. 279 p. (MIRA 16:11)
(Cotton machinery) (Automation)

KOKOREV, V.A.; SIDOROV, Yu.P., kand. tekhn. nauk; BELOGUR-YASHKOVSKAYA, A.I., nauchn. red.; BORUSHKOY, I.V., red.

[Basic trends in the improvement of the design of looms and the development of a new type of weaving machinery; a survey] Osnovnye napravleniia usovershenstvovaniia konstruktsii tkatskikh stankov i sozdanie tkatskikh mashin novogo tipa; obzor. Moskva, 1963. 97 p. (Seriia III: Novye mashiny, oborudovanie i sredstva avtomatizatsii, no.67) (MIRA 17:10)

1. Moscow. Tsentral'nyy institut nauchno-tekhnicheskoy informatsii po avtomatizatsii i mashinostroyeniyu.

L 62557-65 EWT(1)/EWP(m)/EPF(c)/EPF(n)-2/EWG(m)/FCS(k)/EWA(1) Pd-1/Pr-4/Ps-4/Pi-4/Pu-4 WW

ACCESSION NR: AT5016479 UR/2649/65/000/189/0033/0041 45 44 B+1

AUTHOR: Konakov, P. K.; Kumskov, V. T.; Sidorov, Yu. P.; Sidorov, V. S. 21

TITLE: Solution to the problem of complex heat exchange in a moving Gray medium with low optical density based on boundary layer equations

SOURCE: Moscow. Institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 189, 1965. Issledovaniye teploobmena v teploenergeticheskikh ustanovkakh i v ustanovkakh dlya polucheniya poluprovodnikovykh materialov (Investigation of heat exchange in thermal power units and in equipment for producing semiconductor materials), 33-41

TOPIC TAGS: heat exchange, grey body radiation, optical density, boundary layer

ABSTRACT: This article presents a solution to the problem of complex heat exchange in a moving gray medium with low optical density. The solution is based on boundary layer equations. The complex transfer of energy from the gray medium to a plate is examined. A medium with density ρ, kinematic viscosity ν and temperature T_0 runs against the plate with velocity w_0. A boundary layer is formed near the surface of the plate. Let the temperature of the wall equal T_w. It is assumed that the boundary layer which is formed is laminar. The nonisothermal motion of the fluid is described by the following system of boundary layer equations:

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$$\frac{\partial w_x}{\partial x}+\frac{\partial w_y}{\partial y}=0;$$

$$w_x\frac{\partial w_x}{\partial x}+w_y\frac{\partial w_x}{\partial y}=\nu\frac{\partial^2 w_x}{\partial y^2};$$

$$w_x\frac{\partial T}{\partial x}+w_y\frac{\partial T}{\partial y}=a\frac{\partial^2 T}{\partial y^2}.$$

The solution to this system of equations is:

$$T=T_w+0.98(T_0-T_w)\sqrt[3]{\mathrm{Pr}}n_t-0.0982(\sqrt[3]{\mathrm{Pr}})^4 n_t^4.$$

This solution describes the temperature field in the boundary layer for convective transfer of thermal energy. In this article, the solution is obtained for the resulting flow of energy in the boundary layer during motion of an absorbing-radiating fluid medium with an absorption factor k, for the case of complex heat exchange. It was found that when the optical density of the gray medium is increased, the radiated flow of energy in the boundary layer is diminished. In the case of thermodynamic

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ACCESSION NR: AT5016479

equilibrium, the overall flow of heat energy at the wall disappears. Equations are derived for determining the overall heat flow. Orig. art. has: 3 figures, 2 tables, 21 formulas.

ASSOCIATION: Institut inzhenerov zheleznodorozhnogo transporta, Moscow (Institute of Railroad Transportation Engineers)

SUBMITTED: 00 ENCL: 00 SUB CODE: TD, ME

NO REF SOV: 000 OTHER: 000

Card 3/3

L 62556-65 EWT(1)/EPF(c)/EPF(n)-2/EWG(m)/ Pr-4/Ps-4/Pu-4 WW UR/2649/65/000/189/0041/0052 43 42 B+1
ACCESSION NR: AT5016480

AUTHOR: Konakov, P. K.; Kumskov, V. T.; Sidorov, Yu. P.; Sidorov, V. S. 21

TITLE: Complex heat exchange and hydraulic drag in a moving gray fluid with high optical density

SOURCE: Moscow. Institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 189, 1965. Issledovaniye teploobmena v teploenergeticheskikh ustanovkakh i v ustanovkakh dlya polucheniya poluprovodnikovykh materialov (Investigation of heat exchange in thermal power units and in equipment for producing semiconductor materials), 41-52

TOPIC TAGS: thermodynamic analysis, heat exchange, grey body, optical density, boundary layer, laminar flow

ABSTRACT: This article examines the problem of complex heat exchange and hydraulic drag in a moving gray fluid with high optical density. Let a stream of incompressible gray fluid with high optical density strike a plate with velocity w_0 (see fig. 1 of the Enclosure). Near the surface of the plate a laminar boundary layer is formed of thickness $\delta = \phi(x)$. During nonisothermal motion of a medium with temperature T_0 a temperature boundary layer $\delta_T = \phi(x)$ is also formed near the wall. Physi-

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cal characteristics of the medium: density Q coefficient of heat conductivity λ, coefficient of absorption K coefficient of kinematic viscosity ν are assumed constant. Transfer of heat energy in the gray fluid is determined by convective and radiant components. Because of this, the energy equation must be completed by a term which takes account of radiant heat exchange. These considerations are used in setting up laminar boundary layer equations. On the basis of these equations calculated relationships are derived for hydraulic resistance and heat exchange during movement of gray fluids. Variation in the optical density of the fluid to a significant degree determines the value of the radiation components of the complex heat exchange. Analysis of the solutions shows that hydrodynamics is a determining factor for intensification not only of convective but also of complex heat exchange. For gray fluids with very high optical density the share of radiant transfer of energy is diminished. Orig. art. has: 1 figure, 35 formulas.

ASSOCIATION: Institut inzhenerov zheleznodorozhnogo transporta, Moscow (Institute of Railroad Transportation Engineers)

SUBMITTED: 00 ENCL: 01 SUB CODE: TD, ME

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L 62556-65
ACCESSION NR: AT5016480

ENCLOSURE: 01

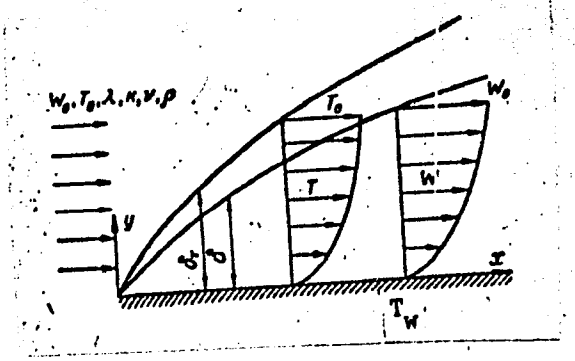

Fig. 1. Diagram of the hydraulic and temperature layers.

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GORDEYEV, Vasiliy Aleksandrovich; GOR'KOV, V.K., kand. tekhn. nauk, retsenzent; ISAKOV, N.P., kand. tekhn. nauk, retsenzent; SIDOROV, Yu.P., kand. tekhn. nauk, retsenzent; AGADZHANOVA, I.A., red.;

[Dynamics of the mechanisms for warp releasing and tensioning in looms] Dinamika mekhanizmov otpuska i natiazheniia osnovy tkatskikh stankov. Moskva, Legkaia industriia, 1966. 223 p. (MIRA 18:10)

Sidorov, Yu. S.

21(4) PHASE I BOOK EXPLOITATION SOV/2583

International Conference on the Peaceful Uses of Atomic Engergy. 2nd, Geneva, 1958.

Doklady sovetskikh uchenykh; yadernyye reaktory i yadernaya energetika. (Reports of Soviet Scientists; Nuclear Reactors and Nuclear Power) Moscow, Atomizdat, 1959. 707 p. (Series: Its: Trudy, vol. 2) Errata slip inserted. 8,000 copies printed.

General Eds.: N.A. Dollezhal, Corresponding Member, USSR Academy of Sciences, A.K. Krasin, Doctor of Physical and Mathematical Sciences, A.I. Leypunskiy, Member, Ukrainian SSR Academy of Sciences, I.I. Novikov, Corresponding Member, USSR Academy of Sciences, and V.S. Fursov, Doctor of Physical and Mathematical Sciences; Ed.: A.P. Alyab'yev; Tech. Ed.: Ye. I. Mazel'.

PURPOSE: This book is intended for scientists and engineers engaged in reactor designing, as well as for professors and students of higher technical schools where reactor design is taught.

COVERAGE: This is the second volume of a six-volume collection on the peaceful use of atomic energy. The six volumes contain the reports presented by Soviet scientists at the Second International Conference on Peaceful Uses of Atomic Energy, held from September 1 to 13, 1958 in Geneva. Volume 2 consists of three parts. The first is devoted to atomic power plants under construction in the Soviet Union; the second to experimental and research reactors, the experiments carried out on them, and the work to improve them; and the third, which is predominantly theoretical, to problems of nuclear reactor physics and construction engineering. Yu. I. Koryakin is the science editor of this volume. See SOV/2081 for titles of all volumes of the set. References appear at the end of the articles.

SIDOROV, Yu. V. Cand Phys-Math Sci -- (diss) "Solution of Cauchy's problem for systems of linear differential equations in partial derivatives weighing more than unity." Mos, 1957. 8 pp (Mos Order of Lenin and Order of Labor Red banner State Univ im M. V. Lomonosov. Mechanical-Math Faculty), (KL, 43-57, 86)

SIDOROV, Yu.V.

Solving Cauchy's problem for the equation $\frac{\partial^2 u}{\partial t^2} + \Delta\Delta u = 0$.
Usp.mat.nauk 12 no.4:341-348 Jl-Ag '57. (MIRA 10:10)

(Differential equations, Partial)

SIDOROV Yu V

20-4-10/51

AUTHOR: SIDOROV, Yu.V.

TITLE: The Cauchy Problem for Systems of Linear Partial Differential Equations With the Weight Greater Than One (Zadacha Koshi dlya sistem lineynykh differentsial'nykh uravneniy v chastnykh proizvodnykh s vesom bol'she edinitsy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol.116, Nr.4, pp.560-563 (USSR)

ABSTRACT: The author considers the Cauchy problem

$$(1)\quad \frac{\partial^{n_i} u_i}{\partial t^{n_i}} = \sum_{(k_s)} \sum_{j=1}^{p} A_{ij}^{(k_0,k_1,..k_n)}(t)\, \frac{\partial^{k_0+k_1+..+k_n} u_j}{\partial t^{k_0}\, \partial x_1^{k_1} \ldots \partial x_n^{k_n}} \qquad (i=1,2,..p)$$

$$(2)\quad \left.\frac{\partial^k u_j}{\partial t^k}\right|_{t=0} = \varphi_i^{(k)}(x_1, x_2, \ldots, x_n) \qquad (i=1,2,..,p;\ k=1,2,..n_i-1).$$

Here $\sum_{(k_s)}$ denotes a sum over all $k_0, k_1, \ldots, k_n$ for which $\sum_{s=0}^{n} k_s \leq L$, L - integral, positive; $k_0 < n_j$; A and φ - complex functions of real arguments.

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The Cauchy Problem for Systems of Linear Partial Differential Equations With the Weight Greater Than One 20-4-10/51

The equations

$$(3)\quad \left\{\left\| \sum_{(k_s,\,)} A^{(k_0,k_1,\ldots,k_n)}(t)\,\lambda^{k_0}(i\alpha_1)^{k_1}\ldots(i\alpha_n)^{k_n}\right\| - \left\| \begin{matrix} \lambda^{\sigma_0} & & 0 \\ & \lambda^{\sigma_2} & \\ 0 & & \lambda^{\sigma_N} \end{matrix} \right\|\right\} = 0,$$

where α_i are real parameters and $\sum_{(k_s,\beta)}$ is summed up over all k_i for which $k_0\sigma + \sum_{s=1}^{n} k_s \geq n_j\sigma - \beta$, are called characteristic equations. σ is the weight of (1). It is assumed that for $\beta = 0$, $\sum_{k=1}^{n} \alpha_k^2 = 1$ and $0 \leq t \leq T$ not all roots of (3) are vanishing and that their real parts are not negative.

By introducing a new variable $u_{p+1}, u_{p+2}, \ldots u_N$ instead of the $\frac{\partial^k u_i}{\partial t^k}$ $(i=1,2,\ldots,p;\ k=1,2,\ldots,n_i-1)$, (1) is reduced to a partial system of first order. This system is submitted to a Fourier transformation and one obtains

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The Cauchy Problem for Systems of Linear Partial Differential Equations With the Weight Greater Than One 20-4-10/51

$$\frac{dv_i}{dt} = \sum_{k_s} \sum_{j=1}^{N} A_{ij}^{(k_o,k_1,\ldots,k_n)}(t)(i\alpha_1)^{k_1}(i\alpha_2)^{k_2}\ldots(i\alpha_n^{k_n})v_j \quad (i=1,2,\ldots N).$$

By investigating the fundamental solution

$$v_i^{(1)}\Big|_{t=0} = \begin{cases} 0 & i \neq 1 \\ 1 & i = 1 \end{cases}$$

of this system the author obtains several assertions. 1. Estimation of $|v_i^{(1)}(t, \alpha_1, \alpha_2, \ldots, \alpha_n)|$, 2. Conditions for the correctness of the problem (1)-(2) in the sense of Petrovskiy, 3. Conditions for the incorrectness, 4. Conditions that (1)-(2) is an analytic function of the x_i and that it can be differentiated with respect to t as often as $\frac{d^2}{dt^2}$.

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S/039/61/054/004/001/002
C111/C333

AUTHOR: Sidorov, Yu. V. (Moscow)

TITLE: The Cauchy problem for some systems of linear partial differential equations

PERIODICAL: Matematicheskiy sbornik, v. 54, no. 4, 1961, 453-468

TEXT: The author considers the Cauchy problem

$$\frac{\partial^{n_i} u_i}{\partial t^{n_i}} = \sum_{j=1}^{} \sum_{(k_s)} A_{ij}^{(k_0,k_1,\ldots,k_n)}(t) \frac{\partial^{k_0+k_1+\ldots+k_n} u_j}{\partial t^{k_0} \partial x_1^{k_1} \ldots \partial x_n^{k_n}} \quad (i=1,2,\ldots, p) \qquad (I)$$

$$\left.\frac{\partial^k u_i}{\partial t^k}\right|_{t=t_0} = \varphi_i^{(k)}(\vec{x}) \quad (i=1,2,\ldots,p;\ k = 1,2,\ldots, n_i-1) \qquad (II)$$

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The Cauchy problem for some systems ...

where $\sum_{(k_s)}$ is extended over all integers $k_s \geqslant 0$, the sum of which is $\leqslant L$; $k_0 < n_j$; $A_{ij}^{(k_0,k_1,\ldots,k_n)}(t)$, $\varphi_i^{(k)}(\vec{x}) \equiv \varphi_i^{(k)}(x_1,x_2,\ldots,x_n)$ are complex functions of real arguments; $0 \leqslant t \leqslant T$.

The author sets up a characteristic equation for those terms for which $k_0\sigma + \sum_{s=1}^{n} k_s = n_j\sigma$, it reads as follows

$$d_1(\lambda,\vec{\alpha}) \equiv \det\left\| \sum_{(k_s,1)} A_{ij}^{(k_0,k_1,\ldots,k_n)}(t)\lambda^{k_0}(i\alpha_1)^{k_1}\ldots(i\alpha_n)^{k_n} \right\| - \left\| \begin{matrix} \lambda^{n_1} & & 0 \\ & \lambda^{n_2} & \\ 0 & & \ddots\lambda^{n_p} \end{matrix} \right\| = 0, \qquad (III_1)$$

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The Cauchy problem for some systems... a second characteristic equation refers to terms for which $k_0\sigma + \sum_{k=1}^{n} k_s > (n_j-1)\sigma'$, it reads as follows:

$$d_\sigma(\lambda, \vec{\alpha}) \equiv \det \left\| \sum_{(k_s,\, \sigma)} A_{ij}^{(k_0, k_1, \ldots, k_n)}(t)\, \lambda^{k_0} (i\alpha_1)^{k_1} \ldots (i\alpha_n)^{k_n} \right\| - \left\| \begin{matrix} \lambda^{n_1} & & 0 \\ & \lambda^{n_2} & \\ 0 & & \ddots\ \lambda^{n_p} \end{matrix} \right\| = 0, \qquad (III_\sigma)$$

Here σ is the weight of (I), i. e. the smallest of the numbers satisfying $k_0\sigma + \sum_{s=1}^{n} k_s \leq n_j\sigma$ $(j = 1,2,\ldots,p)$. Let not all the roots of

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The Cauchy problem for some systems ...

(III_1) be equal to zero for $0 \leq t \leq T$ and $\sum_{k=1}^{n} \alpha_k^2 = 1$, and their real parts be not positive. Then σ is an integer.

The uniform correctness of the problem (I) - (II) is investigated, i. e. when the condition (A) of J. G. Petrovskiy is satisfied.

Theorem 1: Let the following conditions be satisfied:

a.) let the $A_{ij}^{(k_0,k_1,\ldots,k_n)}(t)$, $0 \leq t \leq T$, be continuous together with the first derivatives if $k_0\sigma + \sum_{s=1}^{n} k_s > (n_j-1)\sigma$, and be continuous if $k_0\sigma + \sum_{s=1}^{n} k_s \leq (n_j-1)\sigma$.

b.) Let the roots of (III_1) be different for $0 \leq t \leq T$ and $\sum_{k=1}^{n} \alpha_k^2 = 1$ and their real parts be not positive.

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The Cauchy problem for some systems ...

c.) There exists an $\alpha_0 \geq 0$ such that the real parts of all roots of (III_2) are not positive for $\sum_{k=1}^{n} \alpha_k^2 \geq \alpha_0^2$ and $0 \leq t \leq T$.

Then (I) - (II) is uniformly correct, i. e. condition (A) is satisfied.

Theorem 2: Let the following conditions be satisfied:

a.) identical with a) from theorem 1.

b.) Let the roots of (III_1) be purely imaginary and different for $0 \leq t \leq T$ and $\sum_{k=1}^{n} \alpha_k^2 = 1$.

c.) Let σ be odd.

d.) Let the $A_{ij}^{(k_0,\ldots,k_n)}(t)$ be real for $k_0\sigma + \sum_{s=1}^{n} k_s > (n_j - 1)\sigma$ if the number $n_j\sigma - k_0\sigma - \sum_{s=1}^{n} k_s$ is even, and be equal to zero or

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The Cauchy problem for some systems ...

purely imaginary if this number is odd.

Then (I) - (II) is uniformly correct, i. e. (A) is satisfied.

Theorem 3: Let the following conditions be satisfied:

a.) let the coefficients of (I) be constant.

b.) The roots of (III_1) are purely imaginary, different and $\neq 0$ for $\sum_{k=1}^{n} \alpha_k^2 = 1$.

c.) There exists an α_o so that the roots of (III_2) are purely imaginary for $\sum_{k=1}^{n} \alpha_k^2 \geq \alpha_o^2$.

d.) $\sigma > 1$.

e.) $\varphi_i^{(k)}(x)$ are continuous in the entire space and absolutely integrable, and also all their partial derivatives with respect to the

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The Cauchy problem for some systems ...

combinations of the $x_1, x_2, \ldots, x_n$ up to the order

$$2\varkappa = 2 + 2E\left[\frac{n + \sigma(\mu - 1)}{2}\right], \qquad (21)$$

where $\mu = \max_k \{n_k\}$ and E(a) is the integer part of a.

f.) For arbitrary $C_1 > 0$, $C_2 > 0$ it holds

$$|\Delta^{\varkappa} \varphi_i^{(k)}(\vec{x})| \leq C_1 e^{-C_2 |\vec{x}|^{\sigma'}}, \qquad (22)$$

where $\Delta = \sum_{k=1}^{n} \frac{\partial^2}{\partial x_k^2}$ is the Laplace operator and $\frac{1}{\sigma} + \frac{1}{\sigma'} = 1$.

Then the solution of (I) - (II) for $t > t_o$ consists of analytic functions of the $x_1, \ldots, x_n$ which are arbitrarily often differentiable

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The Cauchy problem for some systems ... C111/C333

with respect to t.

The author thanks S. A. Gal'pern for the guidance of the paper.

There is 1 figure and 6 Soviet-bloc references.

SUBMITTED: November 25, 1959

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15577

S/658/62/000/009/008/013
A059/A126

16980

AUTHOR: Sidorov, Yu.V.

TITLE: Cauchy's problem for the equation $\frac{\partial^2 u}{\partial t^2} + \Delta^2 u = 0$

SOURCE: Moscow. Fiziko-tekhnicheskiy institut. Trudy. no. 9, 1962. Issledovaniya po mekhanike i prikladnoy matematike. 92 - 100

TEXT: The initial conditions for the treatment of the equation:

$$\frac{\partial^2 u}{\partial t^2} + \Delta^2 u = 0 \qquad (1)$$

are:

$$u\big|_{t=0} = \varphi(x), \quad \frac{\partial u}{\partial t}\Big|_{t=0} = 0, \qquad (2)$$

where Δ is the Laplacian, $x = (x_1, x_2, \ldots, x_n)$, and t varies in any finite range $0 \leq t \leq T$. At first, the following conditions are postulated: 1) $\varphi(x)$ and all its particular derivatives of various combinations of $x_1, x_2, \ldots, x_n$ up to the order $\lambda > \frac{n}{2} + 2$ are steady functions; 2) the functions

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Cauchy's problem for the equation ....

$$(1 + |x|)^{-q} D^q \varphi(x), \quad (q = 0, 1, \ldots, \lambda - 1)$$

can be absolutely integrated over the whole area, where

$$D^q \varphi(x) = \frac{\partial^{k_1+k_2+\ldots+k_n} \varphi(x)}{\partial x_1^{k_1} \partial x_2^{k_2} \ldots \partial x_n^{k_n}}, \quad k_1 + k_2 + \ldots + k_n = q;$$

and 3) the function

$$(1 + |x|)^{-\lambda+4} D^\lambda \varphi(x)$$

can be integrated over the whole area. Then, the solution of the problems (1) and (2) is:

$$u(t, x) = \int \varphi(\xi) S_{n,0}(t, r)\, d\xi = (4\pi t)^{-\frac{n}{2}} \int \varphi(\xi) \cos\left(\frac{r^2}{4t} - \frac{\pi n}{4}\right) d\xi, \quad (2)$$

where $\int f(x)\, dx$ means integration over the whole area. If conditions 1) and 3) are assumed to hold, we obtain:

Card 2/3

Cauchy's problem for the equation ....

$$u(t, x) = \varphi(x) - \frac{t^2}{2!}\Delta^2\varphi(x) + \ldots$$

$$\ldots + \frac{(-1)^{\left[\frac{\lambda-2}{4}\right]}}{\left(2\left[\frac{\lambda-2}{4}\right]\right)!} t^{2\left[\frac{\lambda-2}{4}\right]} \Delta^{2\left[\frac{\lambda-2}{4}\right]} \varphi(x) + R_{n,\lambda}(t, x), \qquad (22)$$

where

$$R_{n,\lambda}(t, x) = \int \Delta^{\frac{\lambda}{2}} \varphi(\xi)\, S_{n,\frac{\lambda}{2}}(t, r)\, d\xi, \qquad (23)$$

when λ is even, and

$$R_{n,\lambda}(t, x) = -\int \frac{\partial \Delta^{\frac{\lambda-1}{2}} \varphi(\xi)}{\partial r} \frac{\partial S_{n,\frac{\lambda+1}{2}}}{\partial r}\, d\xi, \qquad (24)$$

if λ is uneven. $|a|$ is an integral part of a.

Card 3/3

SIDOROV, Y..V.

Cauchy problem for the equation $\frac{\partial^2 u}{\partial t^2} + \Delta^2 u = 0$. Trudy MFTI no.9: 92-100 '62. (MIRA 16:5)

(Differential equations)

SIDOROV, Z.F.

Efficient sewing of bags for mechanical filters. Sakh.prom. 28 no.4: 29-30 '54. (MLRA 7:7)

1. Bushanskiy sakharnyy zavod.
(Filters and filtration)

AID P - 3714

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 19/25

Authors : Yecheistov, N. K., and D. F. Sidorov-Biryukov, Engs.

Title : Current-taking carriage of a portable lighting network

Periodical : Energetik, 12, 23-24, D 1955

Abstract : The author describes a device for supplying current for portable lighting. It consists of a carriage sliding on the bare wires, which can be easily mounted and dismounted. Three drawings.

Institution : None

Submitted : No date

YECHEISTOV, N.K., inzh; SIDOROV-BIRYUKOV, D.F., inzh.

Features of electric lighting at the Moscow subway car shop. Svetotekhnika 6 no.10:21-23 O '60. (MIRA 13:9)

1. Metrogiprotrans.
(Moscow—Subways)
(Railroads—Repair shops--Lighting)

YECHEISTOV, N.K., inzh.; SIDOROV-BIRYUKOV, D.F., insh.

Electric lighting of crosswalks in Moscow. Svetotekhnika 8 no.12:23-25 D '62. (MIRA 16:1)

1. Gosudarstvennyy proyektno-izyskatel'nyy institut po stroitel'stvu metropolitenov i transportnykh sooruzheniy. (Moscow--Street lighting)

SIDOROVA, A.

Procedure for recovering credit from a special loan account.
Den. i kred. 16 no.11:59-60 N '58. (MIRA 11:12)
(Credit)

SIDOROVA, A.

Issuing credit to trade orga isations for the delivery of goods ahead of time. Den. i kr d. 18 no.12:45-47 D '60. (MIRA 13:11)

1. Nachal'nik otdela kreditovaniya torgovli i zagotovok Arkhangel'skoy oblastnoy kontory Gosbanka.
(Archangel Province--Credit) (Archangel Province--Delivery of goods)

SIDOROVA, A., inzh.

Performance of gas-entrained slag ash concrete panels of apartment houses. Zhil. stroi. no.11:15 '65. (MIRA 18:12)

SOV/63-3-6-40/43

AUTHORS: Genkina, Ye.V., Sidorova, A.E.

TITLE: Analytic Determination of Cyclohexanonoxime (Analiticheskoye opredeleniye tsiklogeksanonoksima)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 637-639 (USSR)

ABSTRACT: An exact method for the analysis of ketoximes is the colorimetric determination of oximes in the red color caused by iron formhydroximate which is formed by the interaction of formhydroxaminic acid with iron-ammonium alums. This method cannot be used for the analysis of cyclo-hexanonoxime. It has been shown that formaline acting on cyclohexanonoxime in the presence of iron-ammonium alums causes also an intensive red color. The red color is due to the iron salt of the formhydroxaminic acid. A calibrating graph for the quantitative determination of cyclohexanonoxime has been compiled from the colorimetric measurements of artificial mixtures (Figure 2). The described method may be used also for other oximes.
There are 2 graphs and 7 references, 1 of which is Soviet, 3 German, 2 Spanish and 1 English.

Card 1/2

Analytic Determination of Cyclohexanonoxime SOV/[illegible]-3-6-40/43

A [illegible]: Gosudarstvennyy institut azotnoy promyshlennosti (State Institute of the Nitrogen Industry)

[illegible]: Jan 13, 1957

Card [illegible]/

SIDOROVA, A.D.; MITROFANOVA, V.G.

Clinical aspects of varioloid. Trudy TSIU 80:121-125 '65.
(MIRA 18:11)

[illegible], A. [illegible].

Sidorova, A. [illegible]. -- "Clinical aspects of Filatov's disease (Infectious lymphonucleosis)." Min Public Health USSR, Central Inst for the Advanced Training of Physicians, [illegible], 1955 (Dissertation for the Degree of Candidate of Veterinary Sciences)

SO: Knizhnaya Letopis', No. 24, Moscow, Jun 55, pp 91-104

SIDOROVA, A.D., kand.med.nauk:

Infectious mononucleosis (Filatov's disease). Lech. infekts. bol'. no.3:174-198 '57. (MIRA 14:5)

(MONONUCLEOSIS)

SIDOROVA, A.D., kand.med.nauk

Clinical aspects of medicinal agranulocytosis and antibiotic therapy for it. Lech. infekts. bol'. no.4:229-247 '60. (MIRA 14:5)

1. Kafedra infektsionnykh bolezney (zav. prof. G.P.Rudnev) i kafedra laboratornoy diagnostiki (zav. prof. Ye.A.Kost) TSentral'nogo instituta usovershenstvovaniya vrachey.
(AGRANULOCYTOSIS) (ANTIBIOTICS)

SIDOROVA, A. F.

Sidorova, A. F. — "Fish of the Carp Family from Reservoirs of the Irgiz-Turgay Basin." Acad Sci Kazakh SSR, Inst of Zoology, Alma-Ata, 1955 (Dissertation for the Degree of Candidate in Biological Sciences)

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

SIDOROVA, A.F.

Carassius carassius (L) and Carassius auratus gibelio (Bl.) in the Irgiz-Turgay basin waters. Sbor.rab.po ikht. i gidrobiol. no.1:172-214 '56. (MLRA 10:4)
(Turgay Gates--Carp)

Sidorova A F

GORYUNOVA, A.I.; MARTEKHOV, P.P.; SIDOROVA, A.F.

Biology of the carp in Lake Biylyu-Kul' and Lake Ak-Kul' in Dzhambul Province. Sbor.rab.po ikht. i gidrobiol. no.1:252-260 '56. (MLRA 10:4)

(Biylyu-Kul', Lake--Carp)
(Ak-Kul', Lake--Carp)

SIDOROVA, A.F.

Ide in the Irgiz-Turgay waters. Sbor.rab. po ikht. i gidrobiol. no.2: 191-207 '59. (MIRA 12:11)
(Irgiz Valley--Carp) (Turgay Valley--Carp)

POPELYUK, P.F., kandidat meditsinskikh nauk; KAMENETSKIY, V.T.; SIDOROVA, A.F.

Therapeutic effect of mineral waters from Morshin. Vrach.delo no.2: 203-204 F '56. (MLRA 9:7)

1. Morshinskiy sanatoriy VTsSPS.
(MORSHIN--MINERAL WATERS)

SOV/124-58-7-7676

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 50 (USSR)

AUTHOR: Sidorova, A.G.

TITLE: The Height of the Wave Reach on a Slope (Vysota nakata voln na otkos)

PERIODICAL: Sb. tr. Mosk. inzh. stroit. in-t, 1957, Nr 20, pp 81-87

ABSTRACT: An expression is submitted for determining the height of the wave reach on a sloping structure

$$h = (1.5 + 0.25 \frac{\lambda}{H}) h \tan \alpha \exp\left(-2 \frac{\Delta}{h}\right)$$

Here λ and h are the length and the height of the original wave, α is the angle of the slope relative to the horizon, and Δ is the absolute roughness of the structure. It is noted that h decreases when the wave approach is askew and likewise if the slopes yield under the action of the wave. With λ/h 15 the expression, according to the reviewer, produces excessive values of h.

A.S. Ofitserov

1. Water waves--Measurement 2. Water-waves--Theory
3. Mathematics--Applications

Card 1/1

SOV/124-58-3-2915

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 3, p 51 (USSR)

AUTHORS: Smirnov, G. N., Sidorova, A. G.

TITLE: Changes in the Parameters of a Wave in Motion Over a Sloping Bottom (Izmeneniye parametrov volny pri yeye dvizhenii nad naklonnym dnom)

PERIODICAL: Sb. tr. Mosk. inzh.-stroit. in-t, 1957, Nr 20, pp 103-113

ABSTRACT: Following a detailed enumeration of empirical and approximate formulae showing the dependence of the changes in the height of the wave at its passage into shallow water, the authors describe an experimental verification of such formulae. In conclusion, a series of deductions are presented. In particular, it is asserted that a result most closely corresponding to the experiment is obtained by application of Yu. M. Krylov's formula. The formulae of Bozhich, Gaillard, and Airy yield results that are greatly removed from the one observed. The authors also note that reflection must not be disregarded even in the case of a slightly-sloping bottom.

N. N. Moiseyev

Card 1/1

SIDOROVA, A.G.; KRASNOZHON, G.F.

Computation of wind wave parameters in determining the pressure of waves on hydraulic structures. Trudy Okean kom. 9:137-150 '60. (MIRA 14:1)

(Waves)

DZHUNKOVSKIY, Nikolay Nikolayevich, zasl. deyatel' nauki i tekhniki RSFSR, prof., doktor tekhn. nauk; KAUFMAN, Avgust Al'fredovich, dots., kand. tekhn. nauk; [illegible], Gleb Nikolayevich, dots., kand. tekhn. nauk; SIDOROVA, Aleksandra Grigor'yevna, dots., kand. tekhn. nauk; Prinimali uchastiye: ZEMBLINOV, S.V., doktor tekhn. nauk, prof.; PANTELEYEVV, P.I., kand. tekhn. nauk; YAVLENSKIY, S.D., inzh., retsenzent; SKOBELING, L.V., inzh., nauchn. red.

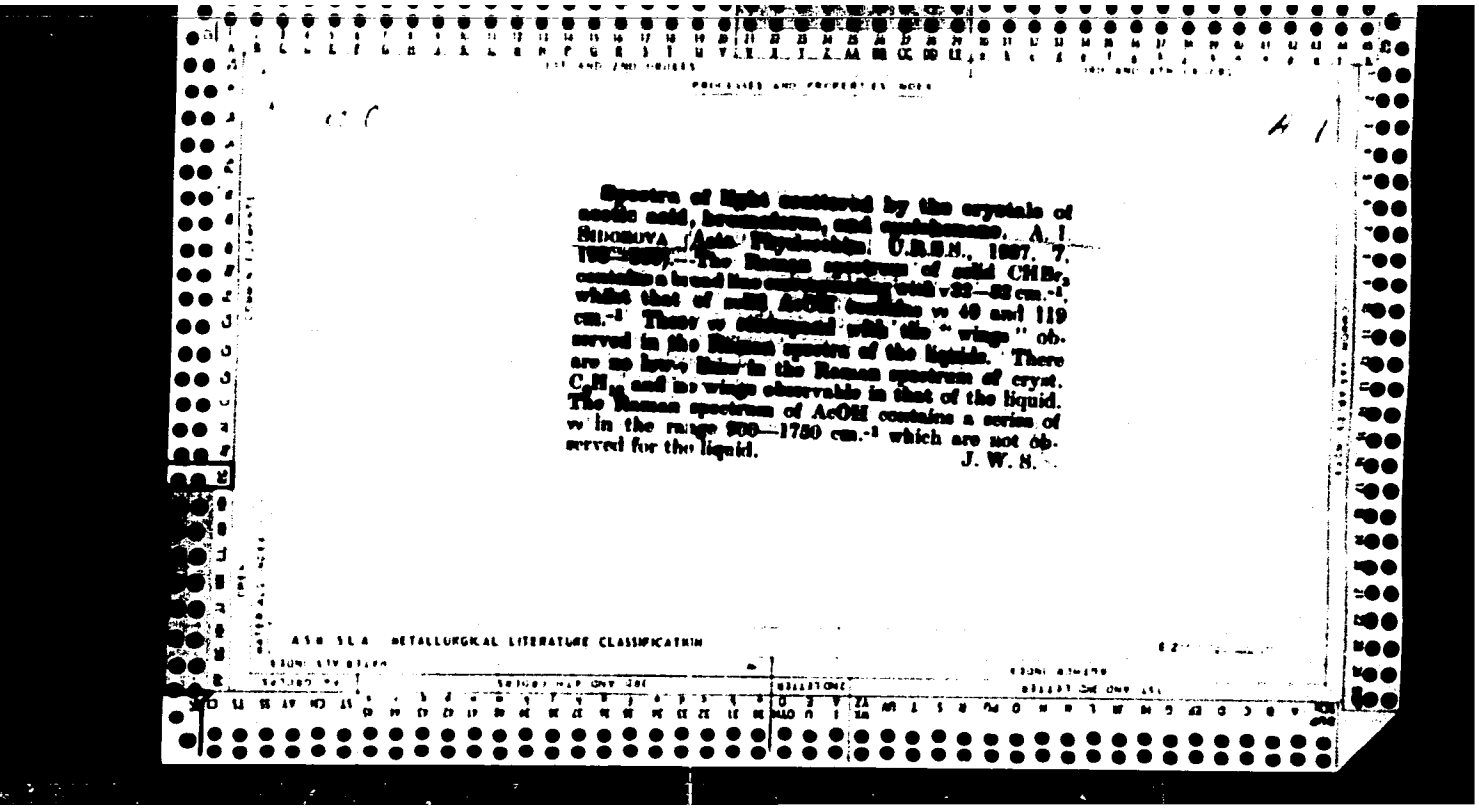
[Harbors and harbor structures] Porty i portovye sooruzheniia. [By] N.N.Dzhunkovskii i dr. Moskva, Stroiizdat. Pt.1. 1964. (MIRA 17:10)
341 p.

1 Kafedra vodnogo khozyaystva i morskikh portov Moskovskogo inzhenerno-stroitel'nogo instituta im. V.V.Kuybysheva (for all except Yavlenskiy, Skobeling). 2. Zaveduyushchiy kafedroy vodnogo khozyaystva i morskikh portov Moskovskogo inzhenerno-stroitel'nogo instituta im. V.V.Kuybysheva (for Dzhunkovskiy).

SIDOROVA, A.I.; CHAYKOVSKAYA, S.M.

Colorimetric method for the determination of florimycin (viomycin). (MIRA 17:10)
Antibiotiki 8 no.10:917-920 O '63.

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.



Spectra of light scattered by the crystals of acetic acid, benzaldehyde, and cyclohexanone. A. I. SHIROKOVA (Acta Physicochim. U.R.S.S., 1937, 7, 797).—The Raman spectrum of solid CH_3Br contains a broad line corresponding with ν 22—32 cm.$^{-1}$, whilst that of solid AcOH contains ν 49 and 119 cm.$^{-1}$. These ν correspond with the "wings" observed in the Rayleigh spectra of the liquids. There are no lines like in the Raman spectrum of cryst. C_6H_6, and no wings observable in that of the liquid. The Raman spectrum of AcOH contains a series of ν in the range 900—1780 cm.$^{-1}$ which are not observed for the liquid.

J. W. S.

Nature of the absorption-spectrum shift in the adsorption of aromatic amines on active clays. A. I. [redacted] and A. N. Terenin (Leningrad State Univ.). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 153-61.—A blue color is produced on the surface of bentonite (SiO_2 54.56, Al_2O_3 14.13, Fe_2O_3 1.35, TiO_2 0.38, CaO 2.10, MgO 3.15, Na_2O 2.40, K_2O 1.93, H_2O 6.5–12%) powder, fired at 800° and outgassed, when Ph_2NH vapor is passed over it *in vacuo* at about 150°. This color does not disappear on heating, but is destroyed immediately by passing dry NH_3 under 10 mm. Hg. Preliminary 2–4 hrs.' extn. of the clay with 30% H_2SO_4, which results in removal of Al, Mg, and Fe cations, without changing the specific surface area (87 sq. m./g.), followed by washing, drying, and outgassing, prevent the appearance of the coloring with Ph_2NH. The blue color is also obtained with dehydrated $CuSO_4$ and with CeO_2 powder, not with Al_2O_3, MgO, ZnO, TiO_2, SiO_2, Bi_2O_3, $AlPO_4$, $Al_2(SO_4)_3$, $BaSO_4$, FeC_2O_4, ZnS, and Na_3AlF_6. A yellow color is produced on a vacuum-evapd. film of $BiCl_3$, none on similar films of TiCl, $PbCl_2$, $AlCl_3$, $ZnCl_2$, $SbCl_3$, NaI, TlI, and AgCl. Passage of dry NH_3 destroys the color in all cases; passage of air reinforces it somewhat on bentonite and on CeO_2. The absorption spectrum of the blue-colored powder shows 2 maxima at 675 and at 500 mμ, the 1st of which is very close to the 680-mμ absorption max. of the mol. ion (semiquinone) $(Ph_2NH)^+$ formed by the loss of one of the 2 nonbonded electrons of the N atoms in the neutral Ph_2NH. This proves that the blue color is due to that ion, and not to the stable dye produced by the reaction of 2 or more mols. of the semiquinone. That dye, produced by oxidation of Ph_2NH in HNO_3 + H_2SO_4, has a max. of absorption in the range between 600 and 500 mμ, depending on the acidity of the medium, but always definitely beyond the 680-mμ absorption max. of the simple semiquinone ion. Nor can the max. at 500 mμ be attributed to the stable dye; it may possibly be due to neutral mols. of Ph_2NH, deformed through activated adsorption. A

3rd max., below 400 mμ, corresponds to the expected shift to longer waves of the normal absorption spectrum of Ph_2NH as a result of phys. adsorption. The film adsorbed on $BiCl_3$ has also a max. at around 650 mμ, and not in the range 500-600 mμ characteristic of the product of deep oxidation. The energy required to stabilize the semi-quinone ion, estd. to be 7 e.v., is assumed to be supplied by fixation of the electron by Fe^{+++}, Al^{+++}, or Mg^{++} ions of the bentonite. The yellow color observed in adsorption on $BiCl_3$ may be due to $BiCl_3$, known to form yellow or brown mol. compds. with aromatic mols. The yellow film of Ph_2NH on $BiCl_3$ has an absorption max. at 420-30 mμ, which can be interpreted by energy resonance between Ph_2NH^+ and $BiCl_3$ on account of the closeness of their absorption spectra, and the resulting shift to longer waves. A similar resonance effect underlies the yellow coloring of solns. of Ph_2NH in liquid SO_2 and of films of gaseous SO_2 adsorbed on solid Ph_2NH at −80°. N. T.

CA

3

Ionization of aromatic amines in the vacuum adsorption on active clays. A. I. Sokolova (A. A. Zhdanov State Univ., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 72, 327–30(1950); cf. *C.A.* 44, 6721h.—Spectral absorption curves were recorded for the colored adsorption complexes of Ph_2NH vapor on bentonite, CeO_2, and $HfCl_4$, as compared with the absorption curve of the Ph_2NH^+ ion obtained by photooxidation in soln. (Lewis and Lipkin, *C.A.* 37, 853⁹). The absorption maxima at 500 and 680 mμ, very marked on bentonite, are faint on CeO_2. On $HfCl_4$ at −180°, a purple color is produced which vanishes reversibly on heating to room temp. The curve on $HfCl_4$ at −180° shows a distinct max. at 680 mμ, which could not be detected on dehydrated $CuSO_4$ or on silica gel with Cu ions. The characteristic maxima at 500 and 680 can be made to disappear by adsorption of NH_3 under 20 mm. Hg. The semiquinone-ion maxima at 500 and 680 mμ, on bentonite, weaken increasingly on exposure to air; after 3 days, the 680 max. has disappeared completely, the 500 max. almost completely, and a new max. has appeared at 600 mμ. The latter, very distinct after a week's exposure to air, pertains to the polymol. dye formed from the Ph_2NH^+ ions. An intense rose color was obtained by vacuum adsorption of p-$Me_2NC_6H_4NH_2$ on bentonite. The absorption spectrum of the adsorption complex shows the double max. in the range 515–550 mμ, characteristic of the ion (Michaelis, *et al.*, *C.A.* 33, 7740⁹). That ion, too, is stable only in vacuo, the absorption curve becoming altered on exposure to air. N. Thon

SIDOROVA, A. I.
USSR/Chemistry

Card 1/2

Authors : Sidorova, A. I.

Title : Absorption spectra of diphenylamine on silica gels

Periodical : Zhur. Fiz. Khim. 28, Ed. 3, 525-536, March 1954

Abstract : The laminated structure of a natural oxide catalyst-bentonite- is suitable for sensitive spectral detection of the adsorption interaction of molecules with the surface of the adsorbent. Diphenylamine was selected because a comparison of its absorption spectra changes during the adsorption with bentonite (natural or electrodialized), with synthetic aluminisilicate catalyst, silica gel, etc. enables one to make a comparison of all five known adsorbents. The adsorbed molecules do not enter into any stable chemical combinations with the surface of the adsorbent or between themselves, the reaction is limited to a contact with the surface. The result of the reaction of the adsorbed molecule with the surface is the origination (in the visible and close ultraviolet zone of the spectrum) of absorption bands which are characteristic for modified states

Zhur. Fiz. Khim. 28, Ed. 3, 525-536, March 1954 (additional card)

Card 2/2

Abstract : of the molecule, expecially such an absorption band which indicates the ionization of the amine molecule. The investigated spectrial effects take place during monomolecular coating of the adsorbent, i. e. they reflect the changes experienced by the individual adsorbed molecule. Nine references. Table, graphs.

Institution : The A. A. Zhdanov State University, Leningrad, USSR

Submitted : June 29, 1953

SIDOROVA, A. I.

AUST

Spectroscopy in the infrared of molecules adsorbed on porous glass. A. N. Terenin, N. G. Yaroslavskii, A. V. Karyakin, and A. I. Sidorova (Univ. Leningrad). Mikrochim. Acta 1955, [1], 31-40. The inner surface of the pore of silica gel, especially in the modification known as porous glass, is covered by structurally isolated hydroxyl groups, characterized by small infrared bands if the surface is freed of foreign mols. by careful, continuous evacuation accompanied by heating to about 500°. When the vapors of various org. and inorg. compds. are adsorbed, the vibration frequency and intensity of these bands are altered characteristically; this may often be ascribed to a H binding with the adsorbed mols. On the other hand, the infrared spectrum of the adsorbed mol. itself is obtained, although it is somewhat modified as a result of the action of the surface. The method can be of service since it makes possible a selective enrichment of a dild. material. W. T. Hall

Sidorova, A. I.

USSR/Physical Chemistry - Molecules. Chemical Bonds. B-4

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14387

Author : A. I. Sidorova
Inst :
Title : Influence of iron cations content in bentonite on the absorption spectrum of the adsorbed amine

Orig Pub: Optika i spektroskopiya, 1956, 1, No 4, 586-587

Abstract: To establish the influence of the ions contained in bentonite (I) on the molecule of the adsorbent, a study was made of the absorption spectra (AS) of diphenylamine, adsorbed on a natural, electrodialysised, and treated H_2SO_4 samples of I and also pyrocatechin or $Fe_2(SO_4)_3$, natural and electrodialysised I; curves of AS are presented. No distinct dependence of AS change due to presence of K^+, Na^+, Ca^{2+}, Fe^{3+} was observed. Hence it was concluded that the main influence on As is shown not by these ions but by the properties of surface structures of I.

Card 1/1

SOV/54-59-3-6/21

5(3)
AUTHORS: Dodonova, N. Ya., Sidorova, A. I., Terenin, A. N.

TITLE: Photosynthesis Under the Action of Schumann Radiation

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 3, pp 33-38 (USSR)

ABSTRACT: Already 20 years ago the photochemical decomposition of simple gases such as NH_2, H_2O, CH_4, CO, which were also present in the primary atmosphere of the Earth could be observed due to the short-wave ultraviolet radiation by Terenin (Ref 4) and others (Ref 5). The absorption spectra of these gases are in the Schumann range of the wavelengths. The limiting wavelengths of the photochemical decomposition of the afore-mentioned gases, the decomposition products and the final products are given in the table. Some of the forming radicals are luminescent. Besides the reactions mentioned, more complicated reactions take place such as the formation of formaldehyde and, finally, formamide (Ref 12). The formation of amino acids from somewhat more complicated compounds could be observed by various authors (Ref 13), Pavlovskaya and Pasynskiy (Ref 14). Groth (Ref 16)

Card 1/3

recently reported on the photosynthesis of amino acids from natural gases. The authors of the present paper had made experiments for the photosynthesis of amino acids from natural gases already before the publication of the mentioned paper. For this purpose they used a hydrogen tube (Fig 1) with an energy distribution in the spectrum similar to that of sunlight. The apparatus is briefly described. A high-quality quartz window was used at the point of emergence of the beams. The transparence of this window was measured by F. I. Vilesov (Fig 2). The production of the gases is briefly described. Two experimental series were made: (1) with steam, methane, and ammonia, (2) the same with subsequent addition of carbon. Gas pressure was 100 torr, methane pressure, 500 torr. The mixture was irradiated for 24-26 hours. At the bottom of the reaction cell some liquid drops accumulated which were investigated by paper chromatography. Figure 3 shows schematically the typical chromatograms. The following amino acids could be definitely determined herefrom: α-alanine, αaminobutyric acid, valine, and nor-leucine. In experiments only with steam and ammonia no amino acids could be found. Furthermore, some problems of photochemical synthesis were discussed, and

Photosynthesis Under the Action of Schumann Radiation SOV/54-59-3-6/21

Terenin, K. Ya. Kasparov (Ref 17), Terenin and Yu. P. Solonitsyn (Ref 19) are mentioned in this connection. There are 3 figures, 1 table, and 20 references, 5 of which are Soviet.

SUBMITTED: April 15, 1959

Card 3/3

YERMAKOVA, N.M.; KORCHAGIN, V.B.; YAKULENKO, N.A.; SIDOROVA, A.I.

Physical and chemical methods for determining antibiotics. Report No.12: Comparison of physical and chemical methods in the determination of the antibiotic, erythromycin. Med. prom. 15 no.11:50-52 N '61. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(ERYTHROMYCIN)

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54500

31958
S/081/61/000/023/006/061
B108/B147

AUTHORS: Dodonova, N. Ya., Sidorova, A. I.

TITLE: Photosynthesis of amino acids from mixtures of simple gases under the action of ultraviolet radiation in vacuo

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 62, abstract 23B459 (Biofizika, v. 6, no. 2, 1961, 149 - 158)

TEXT: The authors studied the syntheses of complex organic compounds under the action of light from an H_2-lamp with a multi-line and a continuous spectrum in the vacuum UV region on the following gas mixtures: (1) NH_3, CH_4, H_2O, (2) CH_4, NH_3, H_2O, CO, (3) NH_3, H_2O, CO. The overall gas pressure was up to 600 mm Hg. All the experiments were made above liquid water. The photolysis products were analyzed by paper chromatography. It was found that the photolysis of mixture (1) yields amino acids (leucine, valine, α-aminobutyric acid, glycine), hydrazine, and formaldehyde. In the photolysis of mixtures (2) and (3), less active

Card 1/2

DODONOVA, N.Ya.; SIDOROVA, A.I.

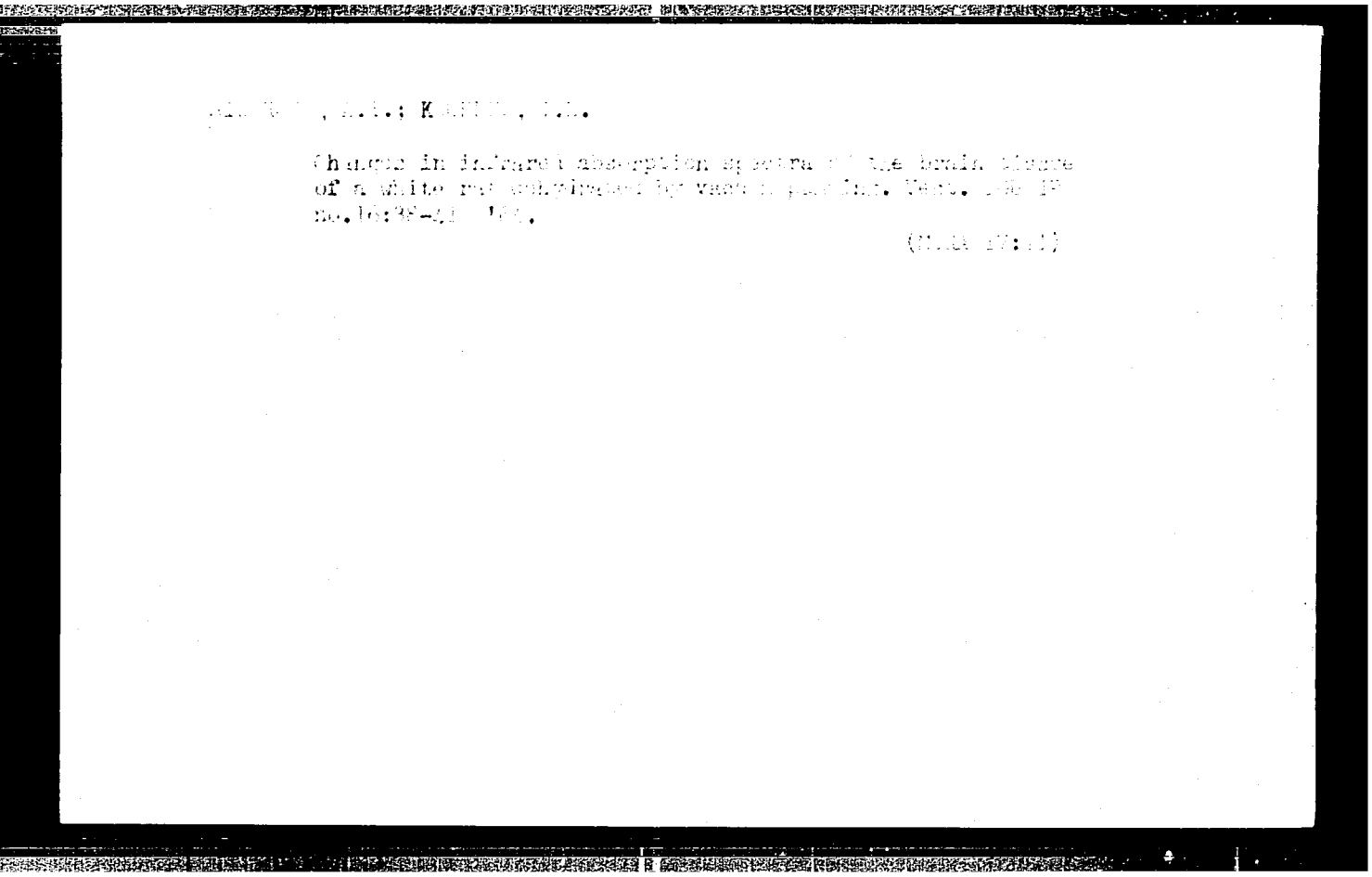
Role of ethyl radicals in the synthesis of amino acids under the influence of ultraviolet irradiations in vacuo. Biofizika 7 no.1: 31-33 '62. (MIRA 15:5)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.Zhdanova.
(AMINO ACIDS) (ULTRAVIOLET RAYS) (ETHYL)

SIDOROVA, A.I.; [illegible]

Orientational interaction and the widening of the infrared absorption band of acetonitrile in solution. Ukr. fiz. zhur. 9 no.5:548-551 '64. (MIRA 17:9)

1. Leningradskiy gosudarstvennyy universitet.



, M.D.; K , M.D.

Changes in infrared absorption spectra of the brain tissue of a white rat subjected to vacuum. Vest. AMN SSSR no.10:75-77 '55.

(Vacuum) (Brain)

SIDOROVA, A.I.

Quantitative method for the determination of florimycin (viomycin) in culture medium fluids. Antibiotiki 8 no.10:915-917 O '63. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

SIDOROVA, A.I.; VERZHBINSKAYA, N.A.

Use of infrared spectroscopy in studying the tissue metabolism of water in living organisms. Zhur. prikl. spekt. 3 no. 6:525-530 D '65 (MIRA 19:1)

1. Submitted December 15, 1964.

SIDOROVA, A. A.

"Economic-Geographical Characteristics of the Southeastern Regions of Sverdlovskaya Oblast." Cand Geog Sci, Ural State U imeni A. M. Gor'kiy, Sverdlovsk, 1955. (KL, No 18, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (18).

VLASHCHENKO, L.F.; NOVIKOV, V.M.; ZINOV'YEVA, M.M.; SIDOROVA, A.P.; KARDASHOVA, A.A.; KLEYMENOV, I.Ya.; KRASNOPOL'SKIY, N.M. [deceased]; LUKASH, Ye.G.; SAMOFALOV, P.Ye.; YASHINA, Ye.I.; KULIKOV, P.I., dots., retsenzent; MAKAROVA, T.I., kand. tekhn. nauk, retsenzent; MERENBURG, A.N., spets. red.; KOSSOVA, O.N., red.; SOKOLOVA, I.A., tekhn.red.

[Handbook for the technologist of the fishing industry] Spravochnik tekhnologa rybnoi promyshlennosti. Moskva, Pishchepromizdat. Vol.1. 1963. 589 p. (MIRA 17:3)

SIDOROVA, A. V.

PA 193T79

USSR/Medicine (Veterinary) - Infectious Diseases **Dec 51**

"Application of RSK in Diagnosing Brucellosis of Cattle and Sheep," L. G. Petrov. A. V. Sidorova, Vet Physicians, Taganrog Inter-Rayon Vet Bacteriol Lab

"Veterinariya" Vol XXVIII, No 12, pp 26-29

The official methods of diagnosing brucellosis specify RA /reaction of agglutination/ for mass investigations of cattle and the allergy reaction for sheep. On the basis of data presented by them, authors find that RSK /reaction of

LC 193T79

USSR/Medicine (Veterinary) - Infectious Diseases (Contd) Dec 51

complement fixation/ should be used together with RA in investigating cattle and RSK, RA, and the allergy reaction in the case of sheep. In carrying out RSK, authors used antigen prepd by the Rostov Oblast Vet Expt Sta. Investigated 20,722 heads of cattle.

LC 193T79

SIDOROVA, A.V.; RUBINSHTEYN, R.P.

More consideration to be given to the quality of the bookbinding board and flyleaf paper. Bum.prom. 35 no.3:10-12 Mr '60. (MIRA 13:6)

1. Nachal'nik laboratorii Pervoy Obraztsovoy tipografii im. Zhdanova (for Sidorova). 2. Nachal'nik otdela bumagi Goslitizdata (for Rubinshteyn).
(Paperboard) (Bookbinding)

IGNATOVA, M.S.; SIDOROVA, A.V.

Clinical aspects and therapy of cardiotuberculous liver cirrhosis. Pediatriia no.3:9-12 My-Je '55. (MLRA 8:10)

1. Iz kafedry pediatrii (zav.deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR; prof. G.N.Speranskiy) TSentral'nogo instituta usovershenstvovaniya vrachey dir. V.P.Lebedeva) na baze detskoy bol'nitsy imeni F.E.Dzerzhinskogo

(PERICARDITIS, ADHESIVE, etiol. and pathogen. tuberc., surg.)
(TUBERCULOSIS, CARDIOVASCULAR, compl. Pick's dis. surg.)

SIDOROVA, A.V., vrach (Moskva)

Proper training of children while in a hospital. Med.sestra 22 no.2:46-47 F '63. (MIRA 16:5)
(CHILDREN--HOSPITALS)

BURMISTROVA, A.; MOROZOV, V.; SIDOROVA, B.

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(Building)

CHUZHIK, G.Ya.; SIDOROVA, D.F.

Effect of acridine orange on nodule bacteria, Uch.zap.Len.un. no. 216:211-217 '56. (MLRA 10:3)
(ACRIDINE ORANGE) (MICRO-ORGANISMS, NITROGEN-FIXING)

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Results of the paleomagnetic study in the southern part of the Siberian Platform and adjacent regions. Trudy VNIGRI no.186: 354-364 '61. (MIRA 15:3)
(Siberia--Geology, Stratigraphic) (Magnetism, Terrestrial)

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(Siberian Platform—Geology, Stratigraphic)
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SIDOROVA, V.F.

Mitotic activity of the liver in rats following various surgical interventions. Biul. eksp. biol. i med. 59 no.4:95-98 Ap '65. (MIRA 18:5)

1. Laboratoriya rosta i razvitiya (zav. - prof. L.D. Liozner) Instituta eksperimental'noy biologii (dir. - prof. I.N. Mayskiy) AMN SSSR, Moskva.

KUCHERUK,V.V.; SIDOROVA,G.A.; ZHMAYEVA,Z.M.

Self-protection of small rodents from larvae of ixodic ticks.
Zool.zhur. 34 no.4:948-950 Jl-Ag '55. (MLRA 8:9)

1. Otdel parazitologii i meditsinskoy zoologii (zav.Ye.N.Pavlovskiy) Instituta epidemiologii i mikrobiologii imeni N.F. Gamaleya Akademii meditsinskikh nauk SSSR.
(Rodentia--Diseases) (Ticks)

YELISEYEV, L.N.; KOZLOV, I.S.; SIDOROVA, G.A.

The natural foci of cutaneous leishmaniasis of the desert type in Bukhara Province, Uzbek.S.S.R. Med.paraz. i paraz.bol. 27 no.1: 69-73 Ja-F '58. (MIRA 11:4)

1. Iz Uzbekistanskogo instituta malyarii i meditsinskoy parazitologii (dir. - prof. L.M.Isayev) i Bukharskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(LEISHMANIASIS, CUTANEOUS, epidemiology in Russia (Rus))

SIDOROVA, G.A.

The course of cutaneous leishmaniasis in greater gerbils.
Biul.MOIP.Otd.biol. 63 no.5:143-144 S-O '58 (MIRA 11:11)
(DELHI BOIL)
(GERBILS AS CARRIERS OF DISEASE)

SIDOROVA, G. A.

"Biological Characteristics of the Large Gerbil in the Reservoirs of Zoonotic Cutaneous Leishmaniasis in Bukharskaya Oblast', Uzbek SSR."

Tenth Conference on Parsitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Uzbek Institute of Malaria and Medical Parasitology, Samarkand; and the Moscow State Pedagogic Institute

SIDOROVA, G.A.

Epidemiology and epizootology of cutaneous leishmaniasis of the rural type in the Karshi Oasis of the Uzbek SSR. Report No.3: Seasonal factor in the infection of Rhombomys opimus Licht with leishmaniasis. Med.paraz.i paraz.bol. no.5:599-603 '61. (MIRA 14:10)

1.Iz Uzbekistanskogo nauchno-issledovatel'skogo instituta eksperimental'noy meditsinskoy parazitologii i gel'mintologii (dir. instituta - prof. L.M. Isayev) i kafedry zoologii i darvinizma Moskovskogo gosudarstvennogo pedagogicheskogo instituta imeni V.I. Lenina (zav. kafedroy - prof. N.P. Naumov).
(KARSHI--DELHI BOIL) (GERBILS)
(RODENTS AS CARRIERS OF DISEASE)

AUTHORS: Korolev, V. V., Sidorova, I. I. SOV/89-5-1-3/28

TITLE: The Electric Simulation of a Nuclear Reactor (Elektricheskoye modelirovaniye yadernykh reaktorov)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 1, pp. 29-43 (USSR)

ABSTRACT: The use of an electric simulator for the computation of reactor-physical problems shortens the time necessary for computation. On the basis of a number of linear simulators: IPT-4, IPT-5 and MPT-9 and nonlinear simulators: MPT-11, MN-7, MN-2, MN-1, MN-8, EMU-5L in a set with EMU-5n, and MN-M in a set with NNB, it is shown what advantages can be expected and what disadvantages must be taken into account when using such a device.
The method of solving the following problems by means of the simulator of the type MN7 is described:
1.) Simulation of the isotope state of the nuclear fuel during burn-up.
2.) Simulation of non-steady processes in the reactor.
3.) Calculation of the system of the automatic control of reactor power.

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The Electric Simulation of a Nuclear Reactor SOV/89-5-1-3/28

4.) Simulation of Power reactors.
5.) Imitation of the thermal system of the reactor.
6.) Perspectives in the development of computers which can be used at atomic power stations.

There are 13 figures, 2 tables, and 27 references, 10 of which are Soviet.

SUBMITTED: February 21, 1958

1. Reactors---Simulation 2. Reactors--Properties 3. Atomic power plants---Control systems 4. Mathematical computers--Development

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25555
S/170/61/004/008/005/016
B116/B212

26.2262

AUTHORS: Bondarenko, A. V., Voznesenskiy, Yu. A., Minashin, M. Ye., Sidorova, I. I., Sharapov, V. N.

TITLE: Investigation of the automatic control system for the power level of a power reactor

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 8, 1961, 54-62

TEXT: The present paper deals with the calculation of the control system of a power reactor. A concrete example is given for the investigation of the transient processes for one of the variants of a projected reactor having an automatic power control system. A number of questions are discussed which are connected with the automatic reactor during non-steady operation. The variant mentioned is shown in Fig. 1. The control object is built similarly to that of the first atomic power plant in the USSR, namely, a heterogeneous uranium-graphite boiling reactor. This reactor has an effective neutron life of $l = 4 \cdot 10^{-4}$ sec and a negative temperature effect. Fig. 2 shows the cross section of a fuel element in the graphite

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block of the core. Three groups of equations are set up: For the change of neutron density in the reactor in time:

$$\frac{dn}{d\tau} = \frac{k_{эфф}(1-\beta)-1}{l} n + \sum_{i=1}^{6} \lambda_i c_i, \qquad (1)$$

$$\frac{dc_i}{d\tau} = -\lambda_i c_i + \frac{k_{эфф}\beta_i}{l} n,$$

$$\beta = \sum_{i=1}^{6} \beta_i, \; i = 1, 2, \ldots, 6. \qquad (2\text{-}7),$$

where τ denotes the time, n the neutron density, $k_{эфф} = k_{eff}$, λ_i the decay constant of the fragments of the i-th group of delayed neutrons, l the effective relative yield of delayed neutrons of the i-th group (taking into account the production energy), c_i the effective life of neutrons in the

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reactor. The deviation $\Delta k = k_{eff} - 1$ is caused by an external perturbation ($\Delta k_{perturbation}$) and by a change in reactivity 1) due to the motion of the control rods (automatic controller): Δk_{AR}, 2) due to the insertion of emergency protection rods into the core: Δk_{ep}; and 3) due to the deviation of the uranium, moderator and coolant temperatures: Δk_t; Δk combines additively all of these. The second group of equations expresses the change in time of the determining parameters of the automatic control system. They read: $\frac{d\Delta\varphi_1}{d\tau} = k_1[n(\tau) - 1]$ (8)

$$T_{MV}\frac{d\Delta u}{d\tau} + \Delta u = k_2(\Delta\varphi_1 - k_3\Delta\varphi_2) \quad (9) \qquad \frac{d\Delta\varphi_2}{d\tau} = x \quad (10),$$

$$T_{SW}\frac{dx}{d\tau} + x = k_4\Delta u \quad (11), \qquad \Delta k_{AR} = -k_5\Delta\varphi_2 \quad (12),$$

where $n(\tau)$ denotes the relative neutron density; φ_1 the angle of rotation,

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of the drive (of the intermediate switch mechanism); φ_2 the angle of rotation of the switch mechanism drive; u the potential at the output of the magnetic amplifier; T_{MV} the time constant of this amplifier; T_{SW} the time constant of the switch mechanism; k_1, k_2, k_3, k_4, k_5 denote the transmission coefficients of the control elements. The third group of equations makes it possible to determine the mean change of the uranium temperature ($\overline{\Delta t_u}$) in the reactor and also the change of k_{eff} when the uranium temperature changes by 1°C and by Δk_t, if the temperature coefficient of reactivity (ϱ_{temp}) is known. These equations read as follows:

$$\frac{d\Delta t_u^I}{d\tau} = -0{,}650\,\Delta t_u^I + 0{,}596\,\Delta t_f^I + 8{,}63\,[n(\tau) - 1]; \quad (13)$$

$$\frac{d\Delta t_u^{II}}{d\tau} = -0{,}654\,\Delta t_u^{II} + 0{,}600\,\Delta t_f^{II} + 16{,}2\,[n(\tau) - 1]; \quad (14)$$

$$\frac{d\Delta t_u^{III}}{d\tau} = -0{,}661\,\Delta t_u^{III} + 0{,}607\,\Delta t_f^{III} + 20{,}4\,[n(\tau) - 1]; \quad (15)$$

$$\frac{d\Delta t_u^{IV}}{d\tau} = -1{,}52\,\Delta t_u^{IV} + 20{,}4\,[n(\tau) - 1]; \qquad (16)$$

$$\frac{d\Delta t_f^{I}}{d\tau} = 1{,}77\,\Delta t_u^{I} - 7{,}64\,\Delta t_f^{I}; \qquad (17)$$

$$\frac{d\Delta t_f^{II}}{d\tau} = 1{,}69\,\Delta t_u^{II} - 4{,}99\,\Delta t_f^{II} + 3{,}04\,\Delta t_f^{I}; \qquad (18)$$

$$\frac{d\Delta t_f^{III}}{d\tau} = 1{,}48\,\Delta t_u^{III} - 5{,}67\,\Delta t_f^{III} + 3{,}33\,\Delta t_f^{II} - 0{,}015\,\Delta t_f^{III}\,\Delta t_u^{III}. \qquad (19),$$

where Δt_u denotes the deviation of the mean uranium temperature in the cross section of the core in question from a nominal value; Δt_f the deviation of the mean coolant temperature in a certain section (the active zone is divided into several sections with respect to height: I, II, III, IV). It is assumed that the heat removal is concentrated in the layer having radius r_3, and that the fuel mass will produce an additional thermal resistance. Eqs. (1) - (19) have been investigated with the help of a re-

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actor simulator considering 6 groups of delayed neutrons and with three simulating devices of type MH-7 (MN-7) for work control of reactors. The set of equations is schematically shown in Fig. 3. The following results have been obtained by a study of the automatic controller and reactor for non-steady operation: 1) Representation in one-group approximation results in an excessively high maximum reactivity jump permissible; therefore, 6 groups have been taken. 2) For a discontinuously changing reactivity, the increase of the amplification factor of the automatic controller will first decrease the power excess but will also increase the control time. Increasing the amplification factor by a factor of three will keep the system stable. 3) When the temperature effect ($\varrho_t = 0$) was not taken into account, one obtains $\Delta k_{perm} = 0.000472$ and a linear dependence of the permissible reactivity jump of ϱ_{temp}: $\delta \Delta k_{perm}/\delta \varrho_{temp} = 1.45$. 4) The maximum permissible amplitudes of reactivity pulsation in the range of 0.05 - 0.3 cps, which can be applied to the automatic controller, are given as: $\Delta k = 0.0002$ at $\varrho_t = 0$ and $\Delta k = 0.000325$ at $\varrho_t = -0.67 \cdot 10^{-4}$. Therefore, the temperature effect has to be determined accurately.

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5) Even at resonance frequencies the automatic controller is able to take the pulsation of the coolant amount, and the amplitudes of the corresponding stabilized power fluctuations will be smaller than the permissible maximum. A. K. Krasin, Academician of the AS BSSR, is thanked for interest in this work. There are 5 figures and 2 Soviet-bloc references.

SUBMITTED: April 8, 1961

Fig. 1: Block diagram of the chief components of the automatic control system.

Legend: 1) perturbation; 2) influence of the temperature effect; 3) reactor; 4) control rods; 5) neutron detector; 6) power transmitter; 7) signal amplifier; 8) intermediate switch mechanism; 9) comparator; 10) drive; 11) magnetic amplifier; 12) switch mechanism.