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An Investigation of Heat Exchange in a Gas Combustion Chamber

governed almost uniquely by the Reynolds number and accordingly the other criteria concerned must have considerably less effect. A further way of showing the close relationship between heat exchange criteria and Reynolds number is illustrated graphically in Fig.3 from which approximate heat exchange formulae are derived. The structure of the formulae reveals the nature of the influence on heat exchange of such important factors as load and theoretical combustion temperatures. It may be concluded from the experimental graphs that under the given experimental conditions the hydrodynamic characteristics of the flow represented by the Reynolds number have a dominating influence on heat exchange. Within the range considered other factors are relatively unimportant and may be neglected. Attempts to generalise the experimental data by constructing corresponding relationships as function of the Bolzmann criterion are much less satisfactory as will be seen from the graph given in Fig.4. The general form of the relationship is obviously similar to that given in Fig.2 but the scatter of the points is much greater and there can be no questio

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An Investigation of Heat Exchange in a Gas Combustion Chamber

of there being a unique relationship. This is partly because the Bolzmann criterion does not uniquely determine the process of heat exchange in combustion chambers in general and for the given conditions in particular. Further, the inclusion of the theoretical temperature in the Bolzmann criterion as a condition of uniqueness is not sufficiently well founded as this temperature does not occur in combustion chambers. There are 4 figures.

ASSOCIATION: Energeticheskiy Institut AN SSSR (Power Institute of the Academy of Science USSR)

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ADR, ANOV, V. N.

Akademiya nauk SSSR. Energeticheskiy institut

Teploobmen i tekhnicheskaya teplofizika (Convection and Radiation Heat Exchange) Moscow, Izd-vo AN SSSR, 1960. 254 p. Errata slip inserted. 1,500 copies printed.

Ed.: M.A. Mikheyev, Academician; Ed. of Publishing House: G.B. Gorskaya; Tech. Ed.: V.V. Arsagil'.

PURPOSE: The book is intended for scientists and engineers working in various branches of science and industry concerned with thermodynamics and heat transfer problems.

COVERAGE: The book consists of 19 original articles on various problems in thermodynamics. The following subjects are discussed: mechanism of heat transfer processes, intensification of heat exchange, determination of thermophysical properties of operating media, heat transfer in supersonic flow of gas, and combustion chambers and nuclear reactors. Theory and experimental techniques are described. Each article describes the condition of the experiment and tables of the experimental data obtained are given. The data may be used for calculations of heat transfer and heat exchangers, always taking account of

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

S/124/61/000/011/027/046
D237/D305

AUTHORS: Filimonov, S.S., Khrustalev, B.A., and Adrianov, V.N.

TITLE: Measuring convective and radiant components of a complex heat transfer by two radiometers

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 95, abstract 11B630 (Sb. Konvektiv, i luchistyy teploobmen, M., AN SSSR, 1960, 133 - 144)

TEXT: The method of separate measurements of radiant and convective streams proposed by V.S. Kocho (Stal', 1950, No. 3) depends on simultaneous measurement of heat intensity on the given point of the surface by two radiometers, whose heat absorbing elements have different coefficients of absorption, assuming radiant and convective streams on the surface of the meters, are independent of each other. The results are given of an experimental check (by means of three radiometers) of applicability of the method in various combustion chambers. [Abstractor's note: Complete translation].

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ADRIANOV, V.N.; POLYAK, G.L.

Using the photographic method for the light modeling of radiant heat exchange. Zhur.nauch.i prikl.fot.i kin. 5 no.2:123-132 Mr-Ap '60. (MIRA 14:5)

1. Energeticheskiy institut AN SSSR.
(Photographic sensitometry)
(Heat—Radiation and absorption)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

S/096/60/000/06/013/025
E194/E284

AUTHOR: Adrianov, V. N., Candidate of Technical Sciences

TITLE: Some Problems of the Theory of Radiant Heat Exchange in Unidimensional Systems

PERIODICAL: Teploenergetika, 1960, Nr 6, pp 63-66 (USSR)

ABSTRACT: In the general theory of radiant heat exchange in absorbe media particular interest attaches to symmetrical boundary problems (of a flat layer, a cylinder and a sphere) when there is local radiant equilibrium. In formulating these problems one is usually given the radiation and emission parameters of the bodies that surround the system under consideration; the emission properties are given for all intermediate bodies and media within the system and the resultant radiation at each point of their volume or surface is assumed zero. It is then required to determine the distribution of resultant radiant flux on the surfaces of bodies bounding this radiating system. Accurate mathematical solution of these boundary problems is very difficult and, therefore, various approximate methods have been used which are justified to some extent by the spatial symmetry of the problems. The solutions that have been

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Some Problems of the Theory of Radiant Heat Exchange in Unidimensional Systems

obtained for flat layers may be considered satisfactory but those for cylindrical and spherical layers are not. A symmetrical system (flat cylindrical or spherical) with semi-transparent envelopes is represented diagrammatically in Fig 1; the system is bounded by two bodies between which there are a number of thin semi-transparent envelopes which contain no energy sources or sinks. Transmission and reflection coefficien for the different envelopes are given. Expression (1) is derived for the resultant radiant flux through a particular envelope whilst the radiant flux in the negative direction is given by expression (2). The resultant radiant flux allowing for absorption and reflection is then given by expression (3) which, when applied to all the envelopes in turn gives the system of Eqs(4). This is finally developed to the form of expression (9) for the resultant positive heat flow. It is then shown that this formula may be converted into existing known forms in particular cases. It is

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Some Problems of the Theory of Radiant Heat Exchange in Unidimensional Systems

valid for flat, cylindrical or spherical systems with any number of envelopes with minor modifications. Symmetrical problems in a radiation absorbing medium are then considered with reference to the diagram of Fig 2 in which it is assumed that the space between the two boundary surfaces is filled with radiation absorbing medium in a state of local radiant equilibrium. The resistance is then expressed as the limit of a sum of resistances of an infinitude of semi-transparent envelopes to obtain expression (11). This may be combined with expression (9) to obtain expression (12) for the resultant radiant flux, in symmetrical problems of this kind. Minor modifications are then made to the equation for the cases of flat cylindrical and spherical layers to obtain the final expressions (13), (14) and (15). It is then shown that these may be converted to known forms in particular conditions. The case when both envelopes and absorbing media are

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S/096/60/000/08/018/024
E194/E484

AUTHOR: Adrianov, V.N., Candidate of Technical Sciences

TITLE: The Determinations of Irradiation Coefficients by the Method of Light Modelling

PERIODICAL: Teploenergetika, 1960, Nr 8, pp 83-85 (USSR)

ABSTRACT: The method of light modelling has recently been extensively used in various countries to study processes of radiant exchange. The method depends on the identity of the laws of radiant energy transfer in the visible spectrum and at various other wave lengths. The light modelling method can also be used to determine local and integral radiation coefficients between bodies. The mutual surface of radiant exchange between two bodies of arbitrary location is given by Eq (1). It is often difficult to determine the integral in this formula for bodies of arbitrary shape and so various kinds of integrator are used. The method of light modelling is very convenient, models of the bodies are made to appropriate scale, the surface of one of them is made uniformly luminous and then measurements are made of the light falling on the other body using Eq (2). Practical

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The Determinations of Irradiation Coefficients by the Method of Light Modelling

difficulties sometimes arise in making one of the bodies uniformly luminous and in making measurements on the other if it is of complicated shape. However, these difficulties may be overcome by employing the principles of congruency and additiveness of radiant fluxes and determining, by means of a light model, the irradiation coefficients for bodies of complicated configuration. The principles of the method are explained with reference to Fig 2 and Eq (7) and (8) are derived for the integral coefficients of the radiation between the bodies. In order to use these formulae it is necessary to know the irradiation coefficients from one plane to another for four possible combinations of variables. This presents no difficulties with light modelling methods. The sequence of operations is described with reference to Fig 3. The method may also be used when the bodies are semi-transparent and the space between them is filled with a radiation absorbing medium. Special features of the model in this case are

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The Determinations of Irradiation Coefficients by the Method of Light Modelling

discussed. It is also comparatively easy to determine local and integral radiation from gas volumes of any shape which may be very useful in certain cases. The method described has given good results and has been used in the Heat Exchange Laboratory of the Power Institute of the AS USSR to determine irradiation coefficients of electric furnaces. The shape and arrangement of the heating elements in the furnaces was very complicated but nevertheless the light modelling method gave satisfactory results. There are 3 figures and 7 references 3 of which are Soviet and 4 English.

ASSOCIATION: Energeticheskiy institut AN SSSR
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AUTHORS: Filimonov, S. S., Khrustalev, B. A., Adrianov, V. N.

TITLE: On the Theoretical Principles of the Method of the Two Radiometers /9

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 6, pp. 690-698

TEXT: V. S. Kocho (Ref. 1) introduced a method for the separate measurement of the radiation flow and the convective flow (method of two radiometers). This was used in the investigation of the heat exchange in the Siemens-Martin furnaces (Ref. 1) and in the combustion chambers (Refs. 2, 3). In the present paper this method is analyzed. The heat absorption at the relevant place of heating is measured simultaneously by means of two radiometers with different degrees of blackening A_1, A_2, of the heat-absorbing elements. The formulas (1) and (2) are written down for the calculation of the heating flow. It is assumed that the density $E_{incident}$ of the incident radiation is equal for both radiometers. Furthermore, it is assumed that

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the convective flows for both radiometers are equal and = q_k. Formula (5) is derived for $E_{incident}$ and (6) for q_k which are commonly used in calculations. The constancy of $E_{incident}$ is maintained if the measuring surface of the radiometer is considerably smaller than the over-all surface of the heat exchanger. In order to prove the accuracy of the assumption of the mutual independence of the convective and the radiation current the experimental investigation described herein was carried out. This was done by means of 3 radiometers. This proof was based on the idea that, if the assumption was right, any pair of radiometers would yield the same results as the other two pairs. The investigation showed that the hypothesis of the mutual independence of the radiation flow and the convective flow in the medium boundary layer in the combustion chambers is in practice maintained with sufficient accuracy. The experiments have shown that by the method of two radiometers and by fulfilling the conditions

$\frac{A_2}{A_1} \leqslant 0.2$ and $\frac{F_{radiometer}}{F_{heating}} \ll 1$ satisfactory results were obtained.

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E081/E141

AUTHOR: Adrianov, V.N., Candidate of Technical Sciences

TITLE: The Role of Scattering in Radiant Energy Exchange Processes

PERIODICAL: Teploenergetika, 1961, No.2, pp. 63-66

TEXT: Problems in the theory of radiant energy exchange lead to integral and integro-differential equations for which strict and accurate solutions are at present impossible. In order to simplify the problem, the assumption has been made that there is no scattering of radiation (i.e. that the body is a pure absorber), and in the present paper an attempt is made to analyse the role of scattering in a plane parallel layer of a medium which attenuates radiation. It is assumed that the non-selective attenuating medium has thickness δ and an attenuation coefficient $k = \alpha + \beta$, where α and β are respectively the coefficients of absorption and scattering. The temperature is 0 °K at all points and diffuse radiation currents E_1 and E_2 fall respectively on each side of the layer (Fig.1). For a solution of the problem, the basic concepts of Schuster (Ref.2) and Schwarzschild (Ref.3)

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The Role of Scattering in Radiant Energy Exchange Processes

are used. Essentially, the method consists in dividing the radiation field in a plane layer into two discrete radiation currents flowing in opposite directions. This leads to the differential equations (1):

$$\frac{dE_+}{dx} = -\chi_+ kE_+ + \chi_+ \frac{\beta}{2} E_+ + \chi_- \frac{\beta}{2} E_- \; ;$$
$$\frac{dE_-}{dx} = \chi_- kE_- - \chi_+ \frac{\beta}{2} E_+ - \chi_- \frac{\beta}{2} E_- \; , \qquad (1)$$

where E_+ and E_- are the radiation currents in the section x of the layer; χ_+ and χ_- are given by the integral equations:

$$\chi_+ = \frac{\int_{+2\pi} I_+ (\varphi)\, d\omega}{\int_{+2\pi} I_+ (\varphi) \cos\varphi \, d\omega} \quad \text{and} \quad \chi_- = \frac{\int_{-2\pi} I_- (\varphi)\, d\omega}{\int_{-2\pi} I_- (\varphi) \cos\varphi \, d\omega}$$

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The Role of Scattering in Radiant Energy Exchange Processes

and are coefficients which allow for the dispersion of intensity I in the radiation currents E+ and E-; φ is the angle at which radiation falls on the elementary layer. In the present case, E+ and E- are diffuse in character to sufficient accuracy and $\chi_+ = \chi_- = 2$. The system of equations (1) then becomes (3) subject to the boundary conditions (4). The solution is given by Eqs (5) and (6), where α/k = Sc, the Schuster criterion, and $k\delta$ = Bu, the Buger criterion. The radiant energy flow vector is given by Eq.(7) and its divergence by Eq.(8). Eq.(9) expresses the transmission capacity D of the layer and the following equations give the value of D for the limiting cases $\alpha = 0$ and $\beta = 0$. Fig.2 shows D as a function of the Schuster (α/k) and Buger ($k\delta$) criteria. Equations (10) and (11) refer respectively to the reflecting capacity R and the absorbing capacity A = 1 - (D + R) of the layer; the limiting values of each of these expressions for $\alpha = 0$ and $\beta = 0$ are also given. The equations immediately above the table on page 65 are the radiational parameters for an optically infinitely dense layer

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The Role of Scattering in Radiant Energy Exchange Processes

($k\delta \rightarrow \infty$); the table itself gives the corresponding values of R and A for various values of the Schuster criterion a/k. The use of this limiting value of R for determining the Schuster criterion is explained, and the ratio (ξ) of the absorbing capacity of the layer to its absorbing capacity with $\beta = 0$ is derived (Eq. (12)). The relationship of ξ to the Schuster criterion and the Buger criterion for absorption ($a\delta$) is shown in Fig.3. With increasing Buger criterion, the value of ξ falls asymptotically to its minimum value given at the foot of page 65. In practice the minimum value is reached for $a\delta = 4$. The influence of scattering on the radiational heat exchange of a layer of medium contained between two walls is then considered. The medium has a temperature T_{cp} °K and the walls a temperature T_{cT} °K, and degree of blackness A_{cT} (Fig.4). The radiant flow to the walls is then given by Eq.(13). Solving the equations for $E_{пад}$ and $E_{эф}$ leads to Eq.(14) for $E_{эф}$ and to Eq.(15) for $q_{луч}$, where $E_{пад}$ is the flow of energy falling on the walls;

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The Role of Scattering in Radiant Energy Exchange Processes

$E_{эф}$ is the effective flow emitted from the wall, and $q_{луч}$ is the resulting radiant flow. In the latter equation, the effect of scattering must be allowed for by introducing ξ from Fig.3 as a correction factor, and Eq.(15) then becomes (16). The equation shows that increasing the scattering coefficient β (at constant absorption α) decreases the radiant heat exchange to the walls, because ξ decreases with increasing scattering.

There are 4 figures and 5 references: 3 Soviet and 2 non-Soviet.

ASSOCIATION: Energeticheskiy institut AN SSSR
(Power Engineering Institute, AS USSR)

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POLYAK, G.L.; ADRIANOV, V.N.

Algebra of resolvent fluxes in radiant exchange. Inzh.-fiz. zhur. 5 no.7:70-77 Jl '62. (MIRA 15:7)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo, Moskva.
(Heat—Radiation and absorption)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOV, V. N.

"Conductive and convective heat transfer with radiation."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Krzhizhanovskiy Power Inst.

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ACCESSION NR: AP4038664 S/0170/64/000/004/0074/0080

AUTHOR: Adrianov, V. N.; Polyak, G. L.

TITLE: Differential methods of studying radiative heat transfer

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 4, 1964, 74-80

TOPIC TAGS: Radiative heat transfer, heat exchange, heat radiation

ABSTRACT: The article reviews differential methods of studying radiative heat transfer which because of their relative simplicity have opened up new possibilities. The development of these methods is presented in chronological order, the names of the originators are given, and the methods are compared. Because the differential methods are based on approximate differential equations of heat radiation, they have undergone constant refinement, and this appears to be the direction in which they will continue to develop in the future. Orig. art. has: 16 formulas.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, Moscow (Institute of Power Engineering)

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SUB CODE: TD	NO REF SOV: 008	OTHER: 008

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

POLYAK, G.I., ADRIANOV, V.N.

New method for studying heat transfer by radiation. Inzh.-fiz. zhur. 7 no.6:83-89 '64. (MIRA 17:12)

1. Energeticheskiy institut imeni G.M. Krzhizhanovskogo, Moskva.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ACC NR: AT6006904 SOURCE CODE: UR/0000/65/000/000/0092/0102

AUTHOR: Adriamov, V. N.

ORG: Power Institute im. G. M. Krzhizhanovskiy (Energeticheskiy institut)

TITLE: Radiative-conductive and radiative-convective heat transfer

SOURCE: Teplo- i massoperenos. t. II: Teplo- i massoperenos pri vzaimodeystvii tel s potokami zhidkostey i gazov (Heat and mass transfe v. 2: Heat and mass transfer in the interaction of bodies with liquid and gas flows). Minsk, Nauka i tekhnika, 1965, 92-102

TOPIC TAGS: radiative heat transfer, conductive heat transfer

ABSTRACT: The article first considers radiative-conductive heat transfer in a flat layer of an absorptive and heat conductive medium. The energy equation for radiative-conductive heat transfer has the following form:

$$\operatorname{div} q_c + \operatorname{div} q_r = 0. \qquad (1)$$

For a flat layer (the one-dimensional problem) integration of Eq. 1 gives the following expression:

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$$-\lambda \frac{dT}{dx} + q_R(x) = q = \text{const.} \qquad (2)$$

Results of the subsequent calculation show that the solution given here agrees sufficiently well with previous literature data and that it is sufficiently accurate to a second approximation. At the same time, this solution is not limited with respect to the wall temperatures and to the emission characteristics of the system. The article next considers radiative-convective heat transfer in flow of the medium from the walls of a channel. Here, the energy equation for an elementary layer, evaluating the velocity and the temperature flux at their statistically average values, is written in the following form:

$$\bar{\lambda} \frac{d^2T}{dx^2} - \bar{\rho} \bar{u} c_p \gamma \frac{dT}{dx} - \frac{\alpha u}{F}(T - T_w) = 0. \qquad (20)$$

The boundary conditions are as follows:

$$\alpha = \frac{\lambda}{\delta} + \sigma_0 T_w^3 A_3 \left[1 + \frac{T}{T_w} + \left(\frac{T}{T_w}\right)^2 + \left(\frac{T}{T_w}\right)^3\right]. \qquad (22)$$

The article concludes with the following expression which can be used t

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any desired degree of approximation in analysis and calculations of radiative-convective heat transfer processes:

$$\xi = -\int_{0}^{1} \frac{d\vartheta}{\sum_{i=1}^{\infty} g_i \vartheta^i}. \qquad (34)$$

Orig. art. has: 34 formulas and 4 figures.

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B

AUTHORS: Adrianov, V. N.; Polyak, G. L.

ORG: Moscow Power Institute imeni G. M. Krzhizhanovskiy (Energeticheskiy institut)

TITLE: On the differential method for investigating radiative heat transfer

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 2, 1966, 264-267

TOPIC TAGS: radiative heat transfer, optic thickness, integral equation

ABSTRACT: This article is an answer to P. K. Konakov (whose letter was published in IFZh, 8, No. 3, 1965) who criticized the authors' previous publication (IFZh, 7, No. 4, 1964). Three points brought out by Konakov are refuted. First, according to Konakov, the formulation of boundary conditions relating the radiation flux on the wall q to the wall temperature according to the diffusion method is wrong. The authors show that this method has been generally accepted throughout the world as a proper technique and that Konakov's approach can lead to the erroneous conclusion that the equation

$$(cU)_l/4 = \sigma_0 T_w^4,$$

follows from conditions of local thermodynamic equilibrium. Second, the authors

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show that Konakov uses Buger's law but ignores radiation interaction with the medium over a photon mean free path. Third, Konakov claims that the radiation diffusion coefficient equals $c/4k$ instead of $c/3k$. The authors show that this is true only for optically thin gases where $k\delta << 1$. Finally, Konakov's attack on Hottel's mathematical analysis as "not clear" is refuted as unfounded. Orig. art. has: 3 formulas and 1 figure.

SUB CODE: 20/ SUBM DATE: 31Jul65/ ORIG REF: 010/ OTH REF: 006

Card 2/2

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ACC NR: AT6029316 SOURCE CODE: UR/0000/66/000/000/0134/0150

AUTHOR: Adrianov, V. N.; Khrustalev, B. A.; Kolchenogova, I. P. 54 8+1

ORG: none

TITLE: Radiative-convective heat transfer of a high temperature flow of gas in a channel

SOURCE: Moscow. Energeticheskiy institut. Teploobmen v elementakh energeticheskikh ustanovok (Heat exchange in power installation units). Moscow, Izd-vo Nauka, 1966, 134-150

TOPIC TAGS: radiative heat transfer, convective heat transfer, gas flow

ABSTRACT: The article is devoted to a combined theoretical and experimental treatment of the problem of complex heat transfer between a high temperature gas flow and the cold surface of a channel. The theoretical analysis arrives at a method for determining the quantities which enter into the dimensionless relationship describing the process. For the experimental investigation, a special apparatus was built to study radiative-convective heat transfer during the movement of the products of the combustion of a gaseous fuel in cylindrical channels. The article gives a diagram of the experimental apparatus. Four series of experiments were carried out in channels of different diameters. The experimental results are exhibited in extended tables. On

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the basis of the experimental data, the following relationship was arrived at:

$$\theta = \exp\{-A\varphi[1 + (1-\varphi)^{0,1}(16,3Re_{\omega}^{0,18} - 70)K_{p\omega}^{0,63}]\}. \quad (22)$$

Here θ is the dimensionless temperature of the gases; ψ is a temperature simplex; K_{pw} is the radiation criterion. Orig. art. has: 24 formulas, 5 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 05Apr66/ ORIG REF: 019/ OTH REF: 003

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ACC NR: AT6020315 O

them and for determining the distribution coefficients. The article concludes with several examples of practical applications of the theoretical equations derived. Ori. art. has: 70 formulas, 6 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 05Apr66/ ORIG REF: 012/ OTH REF: 006
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Card 2/2 nst

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

GIDON, L.M.; ADRIANOV, V.P., inzhener, redaktor; POPOVA, S.M., tekhnicheskiy redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor; GOLOVIN, S.Ya., inzhener.

[Assembly and repair of steam engines] Montazh i remont lokomobilei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1954. 309 p. [Microfilm] (MLRA 8:2)

1. Zaveduyushchiy redaktsiyey literatury po tyazhelomu mashinostroyeniyu (for Golovin).
(Steam engines)

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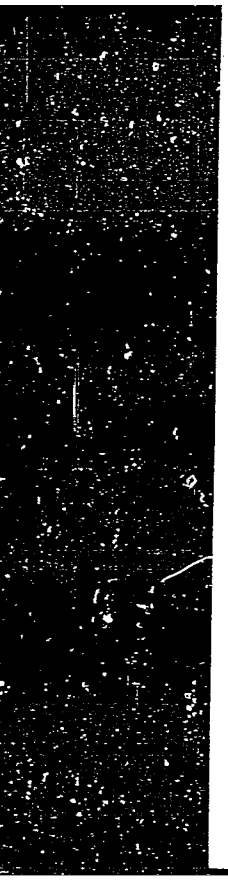

ADRIANOV, V. P., Cand Vet Sci -- (diss) "Pathomorphological alterations in the central nervous system in tuberculosis of hens." Saratov, 1960. 14 pp; (Ministry of Agriculture USSR, Saratov State Zootechnology-Veterinary Inst, Chair of Pathological Anatomy); 200 copies price not given; (KL, 17-60, 165)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOV, V.V.

Conditions of work, life, and medical service for the workers of the lumber industry of Gorno-Mariyskiy District of the Mari A.S.S.R. Nauch.trudy Ryaz.med.inst. 18 no.?:7-?? 164.

Development of medical and sanitary service in Gorno-Mariyskiy District of the Mari A.S.S.R. during the hundred years, 1861-1961. Ibid.:15-22 (MIRA 19:1)

1. Kafedra organizatsii zdravookhraneniya i istorii meditsiny (zav. - prof. V.V.Treyman) Ryazanskogo meditsinskogo instituta.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOV, V.Ya.

Results of novocain iontophoresis in peritonsillar abscess instead of preliminary incision according to Letnik's method. Vest. otorinolar., Moskva 14 no. 3:49-50 May-June 1952. (CLML 22:4)

1. Moscow.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

AUTHOR: Adrianov, Yu.A. SOV-119-58-8-23/2

TITLE: Useful School Manual (Poleznoye uchebnoye posobiye)

PERIODICAL: Mekhanizatsiya trudoyëmkikh i tyazhëlykh rabot, 1958, Nr 8, p 46 (USSR)

ABSTRACT: Doctor of Technical Sciences, Professor G.P. Grinevich publis a book under the title "Warehouses and the Mechanization of Loading and Unloading Operations in Railroad Transport". Except for minor mistakes, this book is considered of great interest for students and workers of railroad transport.

1. Railroads--USSR 2. Transportation--Instruction manual

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

KOROL'KOV, N.M., inzh. (Tbilisi); ADRIANOV, Yu.A., dotsent (Tbilisi); CHILINGAROV, D.O., inzh. (Tbilisi)

New method of quarrying. Put' i put.khoz. no.7:42-43 '62. (MIRA 15:7)

1. Vsesoyuznyy zaochnyy institut inzhenerov zheleznodorozhnogo transporta (for Adrianov).

(Georgia--Quarries and quarrying)

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128

PHASE I BOOK EXPLOITATION SOV/6246

Soveshchaniye po tseolitam. 1st, Leningrad, 1961.

Sinteticheskiye tseolity; polucheniye, issledovaniye i primeneniye (Synthetic Zeolites: Production, Investigation, and Use). Moscow, Izd-vo AN SSSR, 1962. 286 p. (Series: Its: Doklady) Errata slip inserted. 2500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Komisiya po tseolitam.

Resp. Eds.: M. M. Dubinin, Academician and V. V. Serpinskiy, Doctor of Chemical-Sciences; Ed.: Ye. G. Zhukovskaya; Tech. Ed.: S. P. Golub'.

PURPOSE: This book is intended for scientists and engineers engaged in the production of synthetic zeolites (molecular sieves), and for chemists in general.

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Synthetic Zeolites: (Cont.) SOV/6246

COVERAGE: The book is a collection of reports presented at the First Conference on Zeolites, held in Leningrad 16 through 19 March 1961 at the Leningrad Technological Institute imeni Lensovet, and is purportedly the first monograph on this subject. The reports are grouped into 3 subject areas: 1) theoretical problems of adsorption on various types of zeolites and methods for their investigation, 2) the production of zeolites, and 3) application of zeolites. No personalities are mentioned. References follow individual articles.

TABLE OF CONTENTS:

Foreword 3

Dubinin, M. M. Introduction 5

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Synthetic Zeolites: (Cont.) SOV/6246

THEORETICAL PROBLEMS OF ADSORPTION ON ZEOLITES. METHODS OF INVESTIGATION

Dubinin, M. M., Z. A. Zhukova, and N. V. Kel'tsev. Applicability of the Potential Theory to the Adsorption of Gases and Vapors by Synthetic Zeolites 7

Bering, B. P., V. V. Serpinskiy. Adsorption Isosteres for Synthetic Zeolites Within the Framework of the Potential Theory 18

Timofeyev, D. P., O. N. Kabanova, I. T. Yerashko, and A. S. Ponomarev. The Role of the Secondary Porosity of Zeolites in the Kinetics of Water-Vapor Sorption 24

Misin, M. S., B. V. Adrianova, and M. N. Adrianov. Investigation of the Adsorption and Kinetic Properties of Granular Zeolites With the Aid of Thoron 31

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, I. G.

USSR/Medicine - Blood Transfusion Jul 52

"Dry Thrombin of the Leningrad Institute of Blood Transfusion," I. G. Adrianova, Cand Biol Sci Leningrad Order of Labor Red Banner Sci Res Inst of Blood Transfusion

"Khirurgiya" No 7, p 83

Author states that in collaboration with B. N. Tugolukov she perfected a method, initiated in 1947, of producing and conserving thrombin in pulverized form. The new prepn is heterologous and nonspecific. Clinical expts have demonstrated its effectiveness in capillary and parenchymal hemorrhages.

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548.817.221 : 621.314.63

1343

The Rectifying Properties of Lead Sulphide. [Russian title] Adirovich E. I. and Sokolovskaya [Russian name] June 1951, Vol. 21, No. 6, pp. 713-717.) According to modern theory, contact rectification takes place when the metal is positive with respect to the semiconductor. Experiments with PbS and a tungsten point indicated that if the applied voltage is increased up to 1.5 V the rectified current changes its direction. Also, if the rectifying contact is placed in vacuum, the current decreases and then changes its sign. An explanation of the phenomena is advanced.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

S/046/60/006/02/02/019
B014/B014

AUTHORS: Adrianova, I. I., Popov, Yu. V., Rotenberg, B. A.

TITLE: Use of Barium Titanate Piezoceramic Materials for Ultrasonic Emission in Diffraction Light Modulators

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 2, pp. 162-170

TEXT: In the article under review, the authors study an ultrasonic emitter for 3-15 Mc/s with a view to its use for high-frequency modulators. The apparatus used to record the frequency characteristic of the emitter is described in the introduction. This apparatus provided the same conditions for the emitter as a light modulator. The authors studied ultrasonic emitters which were shaped like right-angled plates (size: 35·22 mm and 25·22 mm. Thickness: 0.28-1.5 mm). The ceramic material used was commercial T-1700 (T-1700) (95% of $BaTiO_3$ and 5% of Pb_3O_4).

The emitters oscillate both in the fundamental frequency and to odd harmonics. Weak vibrations to the second harmonic were completely avoided in secondary polarization. The frequency characteristics (Fig. 3, the

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dependence of the resonance frequency upon the thickness of the emitter (Fig. 4), the dependence of the frequency characteristic upon the polarizing field strength (Fig. 5), and the effect of the support on the frequency characteristic (Fig. 6) are described in detail. Further, 12 photographs of ultrasonic fields are described (Figs. 7 and 8). In conclusion, the authors state that the material under consideration appears to be particularly suitable for ultrasonic emitters in the frequency range 3-15 Mc/s. Above 6 Mc/s it is necessary to take account of the effect of the silver-plated electrode layer. The emitter is to be polarized successively at field strengths of 10-12 kv/cm and 15-16 kv/cm for 20 minutes. The excitation of the emitter in the resonance frequency and the determination of ultrasonic intensity are also briefly described. The voltages required at the piezoelement for the excitation of various harmonics are given. L. N. Rozina and N. A. Dranovskiy assisted in the experimental studies. The authors thank V. G. Vafiadi for his helpful advice. Publications by I. P. Golyamina (Ref. 6) are mentioned. There are 8 figures and 8 references: 6 Soviet, 1 American, and 1 Canadian.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

Use of Barium Titanate Piezoceramic Materials for Ultrasonic Emission in Diffraction Light Modulators

S/046/60/006/02/02/019
B014/B014

ASSOCIATION: Gosudarstvennyy opticheskiy institut Leningrad (State Optical Institute, Leningrad)

B

SUBMITTED: April 24, 1959

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

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B019/B056

6.4780

AUTHORS: Adrianova, I. I., Kokurina, M. V., Popov, Yu. V.

TITLE: Composite Broadband Ultrasonic Emitters for Light Diffraction Modulators

PERIODICAL: Akusticheskiy zhurnal, 1960, Vol. 6, No. 4, pp. 495 - 496

TEXT: The composite emitters investigated consisted of individual piezoceramic emitters with different resonance frequencies. The purpose of the present investigation was to obtain the broadest possible band by using such composite emitters. The individual emitters had a thickness of from 0.4 to 0.57 mm and an area of 4.18 mm, and were selected in such a manner that their resonance frequencies in each case differed by 200 - 250 kc/sec These emitters were successively placed in the path of rays of a diffraction modulator. In the figure, the frequency characteristics of four emitters with the resonance frequencies 5.9, 5.7, 5.5, and 5.3 Mc/sec (curves 1 - 4) are shown together with the frequency characteristics of the composite emitter. It was found that with increasing number of emitters, the frequency characteristic may be increased. An unfavorable effect is

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S/051/60/009/004/014/034
E201/E191

9.5300

AUTHORS: Adrianova, I.I., Popov, Yu.V., and Lapina, A.V.

TITLE: Amplitude and Phase Characteristics of an Interference Modulator of Light

PERIODICAL: Optika i spektroskopiya, 1960, Vol 9, No 4, pp 501-504

TEXT: The authors describe an interference modulator shown schematically in Fig 1. It is based on the Michelson interferometer. Light from a source S passes through a lens L_1 and is split by a cube K into two beams; one of which proceeds undeflected towards a mirror Q, while the other is deviated towards a mirror M. Both beams are reflected by their respective mirrors and interfere in the middle of K. The mirror Q is mounted on a vibrating piezoelectric plate; vibrations of this plate modulate the light beam which passes through a lens L_2 before leaving the modulator. Such an interference modulator has some advantages compared with the usual Kerr cell and diffraction modulators. Among these advantages are small light losses (not greater than 45%), high luminosity, and cheapness.

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Amplitude and Phase Characteristics of an Interference Modulator of Light

Its disadvantage is its fixed working frequency governed by the resonant frequency of the piezoelectric mirror (harmonics of this frequency can be used as well). The authors found that the amplitude characteristics obtained experimentally agreed well with the theoretical ones (Figs 2 and 3). The phase characteristics of the interference modulator were more uniform than those of other types of modulator (Fig 4).
There are 4 figures and 4 Soviet references.

SUBMITTED: January 8, 1960

Card 2/2

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AUTHORS: Popov, Yu. V., Adrianova, I. I.

S/020/60/131/04/026/073
B013/B007

TITLE: A Light Diffraction Modulator With Several Ultrasonic Counter-radiators

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 813-816 (USSR

TEXT: The modulator mentioned in the title has the following advantages over a modulator with reflector: higher economy, improved phase characteristics, and a greater modulation depth than a traveling wave modulator. The latter holds also for fixed frequencies. The simplest type of the modulator described in this paper has two ultrasonic counterradiators, each of which serves as radiator and reflector at the same time. This modulator is efficient if the ultrasonic fields of the counterradiators are homogeneous. The modulator may also contain more than two radiators. The type that has four radiators may be regarded as a modulator with crossed standing ultrasonic waves. In this case the ultrasonic waves of the two pairs of radiators propagate in directions perpendicular to one another. The type of a light relay with a cylindrical ultrasonic radiator corresponds to the limiting case of an infinite number of radiators. For this purpose, a cylinder made of barium titanate is excited on the natural frequency or on the odd harmonics. The width of the frequency

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A Light Diffraction Modulator With Several Ultrasonic Counterradiators

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B013/B007

characteristics of the radiators made of barium titanate ceramics amounts to ~5% of the fundamental frequency. This permits light modulation within the above-mentioned frequency range and not only on a fixed frequency. Ultrasonic radiators made of barium titanate are excited not only on the first but also on the higher odd harmonics. Voltages of only some volts are sufficient for this purpose. When these radiators are used on higher harmonics it is possible to excite light with frequencies of from 2-3 to 20-30 Mc/sec according to the radiator used. Besides, low-frequency modulation of light is possible if the exciting high-frequency voltage is additionally modulated by a low frequency. The required intensity of ultrasonic waves is attained at lower exciting voltages than is the case with a modulator with reflector. For convenience, the diffraction modulator is filled with such a liquid, in which the ultrasonics propagates but slowly. Moreover, the velocity of ultrasonics in this liquid mus have only a low temperature coefficient. The best results are practically obtained with xylene and a 17% solution of ethyl alcohol in aqueous solution. Depth and phase of modulation in a modulator with several ultrasonic counterradiators depend only half as strongly on the velocity and frequency of ultrasonics and on the dimensions of the cuvette, as compared with a modulator with reflector. Moreover, in such a modulator, the ultrasonic counterradiators can

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A Light Diffraction Modulator With Several Ultrasonic Counterradiators

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B013/B007

be separately fed by such voltages with controllable phase difference. In this connection, the modulation depth can be kept on the maximal level, regardless of external conditions, by adopting proper measures. The phase of light modulation by means of the modulator investigated here remains constant with time, under the operational conditions investigated here. The distribution of the phase over the cross section of the modulated beam is considerably more homogeneous than in the case of a modulator with reflector. The diffraction modulator investigated here is not only suited for fluorometers, but also for optical range finders. There are 4 figures and 5 references, 3 of which are Soviet.

PRESENTED: December 10, 1959, by A. A. Lebedev, Academician

SUBMITTED: December 2, 1959

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B116/B203

9.5300 (Incl. 2105, 2605)

AUTHORS: Popov, Yu. V., Adrianova, I. I., and Korolev, I. A.

TITLE: Small-size optical range finder of the GDM-type combined with a theodolite

PERIODICAL: Geodeziya i kartografiya, no. 3, 1961, 7-13

TEXT: Optical range finders of the ГД(GD) series developed earlier at the GOI made use of the most efficient interference and diffraction light modulators. Later on, the optical system was greatly simplified, thus permitting a combination of the optical system of the range finder with a theodolite. The electric circuit was improved by frequency transformation in a photomultiplier. A model of a small-size optical range finder combined with a theodolite was built on the basis of these improvements. This ГДМ(GDM) range finder was developed to measure long distances and angles, and is described in the present paper. It makes use of a diffraction light modulator with several ultrasonic transmitters (Ref. 7; footnote on p. 7: Yu. V. Popov, I. I. Adrianova. Difraktsionnyy modulyator sveta. (diffraction light modulator). Author's certificate no. 124467.). Fig. 1 shows the path of

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Small-size optical ...

rays in the modulators used in GD range finders. Fig. 2 presents a diagram of the GDM optical range finder. The optical system of the light modulator consists of only three elements: the source of light S, the objective L_1, and the modulator M. The optical system is attached as a block above the telescope of a ТБ-1 (TB-1) theodolite. The telescope also serves to receive light for the range finder. In the focal plane of the telescope, there is a Д(D) iris diaphragm from which the light beam passes to the eyepiece and, through prisms P_2 and P_3, to the cathode of the ФЭУ-17 (FEU-17) photoelectron multiplier. The latter is attached below the theodolite telescope. Thus, the theodolite remains unchanged, and the optical range finder is only an attachment. Only the eyepiece of the theodolite is modified by introducing the iris diaphragm. The beginning of the scale of the phase shifter is determined in the GDM instrument (as in the GD instrument) by means of the so-called system of initial reading. A characteristic of phase measuring circuits is the demodulation of the signal in a modulation phase detector (Ref., footnote on p. 10: Yu. V. Popov, Modulyatsionnyy fazovyy detektor na smesitel'noy lampe. (Modulation phase detector with mixer tube). "Pribory i tekhnika eksperimenta", 1960, no. 3) after amplification and filtration of the signal. This circuit is highly immune against interference; therefore,

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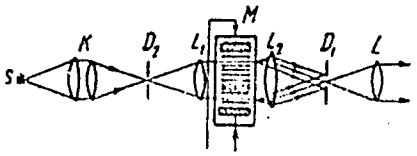
Small-size optical ...

the GDM optical range finders can be used during day and night. Tests of frequency transformation in the FEU-17 showed an efficient frequency transformation not only with a transformer coupling of the heterodyne with the feeding circuits of the emitters but also with a capacitive coupling (Fig.2). In this case, the phase measuring circuit is greatly simplified, and the amplifier stages of the heterodyne may be set up at a long distance from the photoelectron multiplier. Three fixed frequencies (nearly 20 Mc/sec, intermediate frequency 250 kc/sec) are used in the range finder. The phase measuring circuit is attached, as a separate block, to the tripod together with the theodolite. The range finder is fed by a storage battery (6 v) via semiconductor rectifier (in the phase measuring block). Total power consumption is 30 w, the total weight, 38 kg. There is no minimum range of measurement. The maximum range measured by day with the GDM was 2.4 km. The root mean square error of one reading is ±22 cm. 30 readings should be made in measuring distances, requiring no more than 1 hr. There are 4 figures, 1 table, and 8 Soviet-bloc references.

Fig 1



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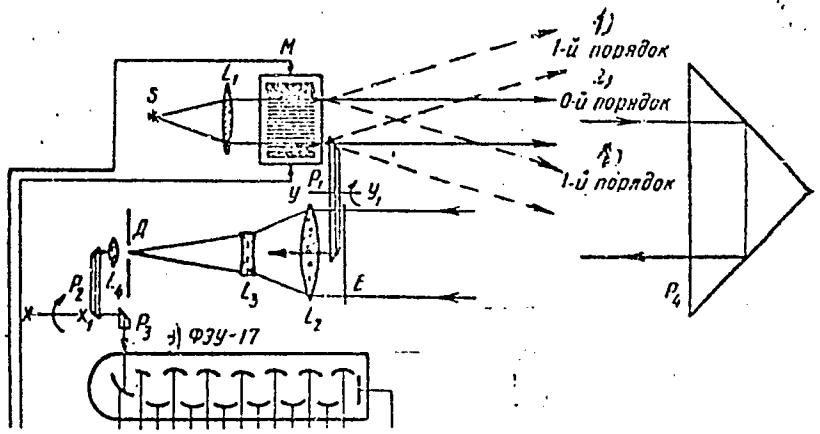
Small-size optical ...

Legend to Fig. 2: Block diagram of the GDM optical range finder. (1) First order, (2) zoroth order, (3) photoelectron multiplier, (4) amplifier of the generator, (5) generator, (6) heterodyne doubler, (7) heterodyne, (8) mixer 250 kc/sec, (9) amplifier 250 kc/sec, (10) phase shifter, (11) phase modulator, (12) phase detector, (13) sound generator, (14) synchroncus detector.

Fig. 2



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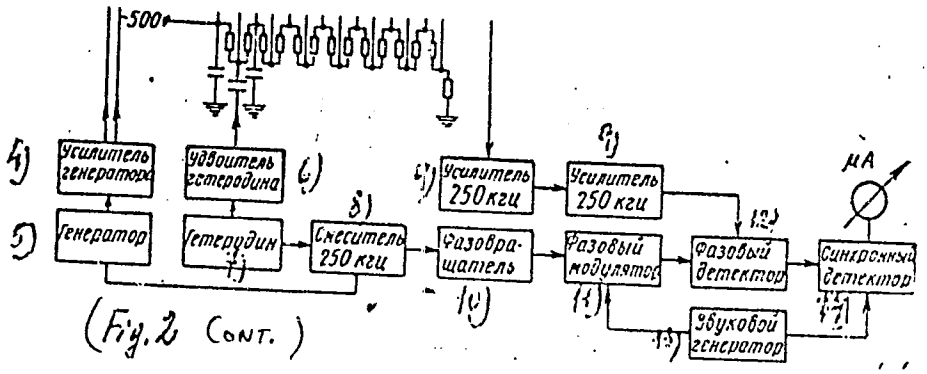
Small-size optical ...



(Fig. 2 Cont.)

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6.3000 (1051, 1057, 1106)

33614
S/051/62/012/001/012/020
E202/E492

AUTHOR: Adrianova, I.I.

TITLE: Frequency characteristics of diffraction modulators of light with ferroelectric-ceramic ultrasonic emitters

PERIODICAL: Optika i spektroskopiya, v.12, no.1, 1962, 99-105

TEXT: After a detailed review of bibliography and the underlying theory of the frequency characteristics of the diffraction modulators of light, using standing non-modulated and travelling modulated waves the author concluded that the parameters determining the depth of modulation are in both cases the same, as for example the velocity of the ultrasound and the size of the ultrasonic field parallel to the direction of the ultrasonic oscillations. It was also shown that the relative width of the frequency band of the low frequency modulation was very considerably smaller than the band width of the frequencies associated with the ferroelectric-ceramic emitters. The arrangement used by the author for the frequency characteristics studies of modulators using modulated ultrasonic waves is shown schematically (Fig.3). The calculated and the experimental frequency characteristics of the modulators with travelling wave, filled with xylene or carbon

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Frequency characteristics ...

tetrachloride showed that with the increase of the modulation frequency the signal strength was steadily decreasing, until a minimum was reached for a frequency at which the modulation wavelength in a given medium was equal to the dimension of the modulator's window. With further frequency growth, the signal increased only to decrease again reaching the consecutive minimum every time when the modulation wavelength was by an integral number smaller than the dimension of the modulator's window. The low frequency characteristics of modulators with modulated standing waves have additional minima resulting from the not fulfilled "half-wave" condition. The shape of their frequency characteristic was determined not only by the window size but also by the distance between the emitters. The frequency characteristics of the diffraction light modulators working on modulated ultrasonic waves, as developed by the author, suggest that these modulators could be used in the optical wideband communication systems, in the investigation of the inertia of photo-receivers, in the audio recording etc. Acknowledgments are expressed to M.V.Kokurina who assisted in the experimental part and to Yu.V.Popov and V.G.Vafiadi for discussing the results. There are 6 figures

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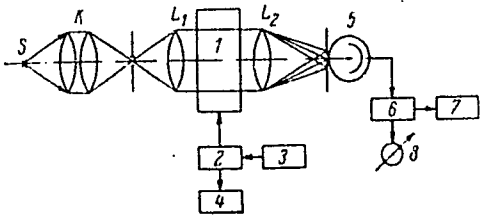
Frequency characteristics ...

and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: January 9, 1961

Fig.3.



1 - modulator;
2 - high frequency generator;
3 - audio generator;
4 - oscilloscope;
5 - photocell;
6 - wide band amplifier;
7 - oscilloscope;
8 - valve voltmeter;
S - the light source;
K - condenser;
L_1, L_2 - lenses.

Card 3/3

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15082

S/051/63/014/001/023/031
E039/E120

9.5300

AUTHOR: Adrianova, I.I.

TITLE: Study of a photoelastic light modulator

PERIODICAL: Optika i spektroskopiya, v.14, no.1, 1963, 137-145

TEXT: The characteristics of photoelastic light modulators have not been investigated previously, although the effect has been used in a number of applications; hence the present work was undertaken. An outline of the theory of the process is given and compared with experimental results. A parallel beam of polarized light is passed through an optically active medium such as fused quartz or ОФ-1 (OF-1) glass in which ultrasonic waves are propagated. The light then passes through an analyzer and is detected by a ФЭУ-19 (FEU-19) photomultiplier, the signal from which is fed into a two channel resonance amplifier whose output is measured on a ВКС-76 (VKS-7b) cathode voltmeter. The dependence of the value of this signal at a frequency 2f (where f = 5 Mc/s the fundamental frequency of the ultrasonic piezo-generator) on the voltage applied to the piezo-generator is determined. Good agreement is obtained between the experimental

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in CuCl and ZnS crystals, which are not encountered in nature in large sizes and which are difficult to grow artificially. An x-ray structural analysis of the grown crystals has shown that they have a cubic structure with the (120) plane perpendicular as a rule to the growth axis. Photographs illustrating the behavior of the crystals in an electric field are presented. Since the crystals obtained so far were not optically isotropic, the electro-optical coefficients were not determined. It can be assumed, however, that these coefficients are not lower than in ZnS. An optical transmission [illegible]

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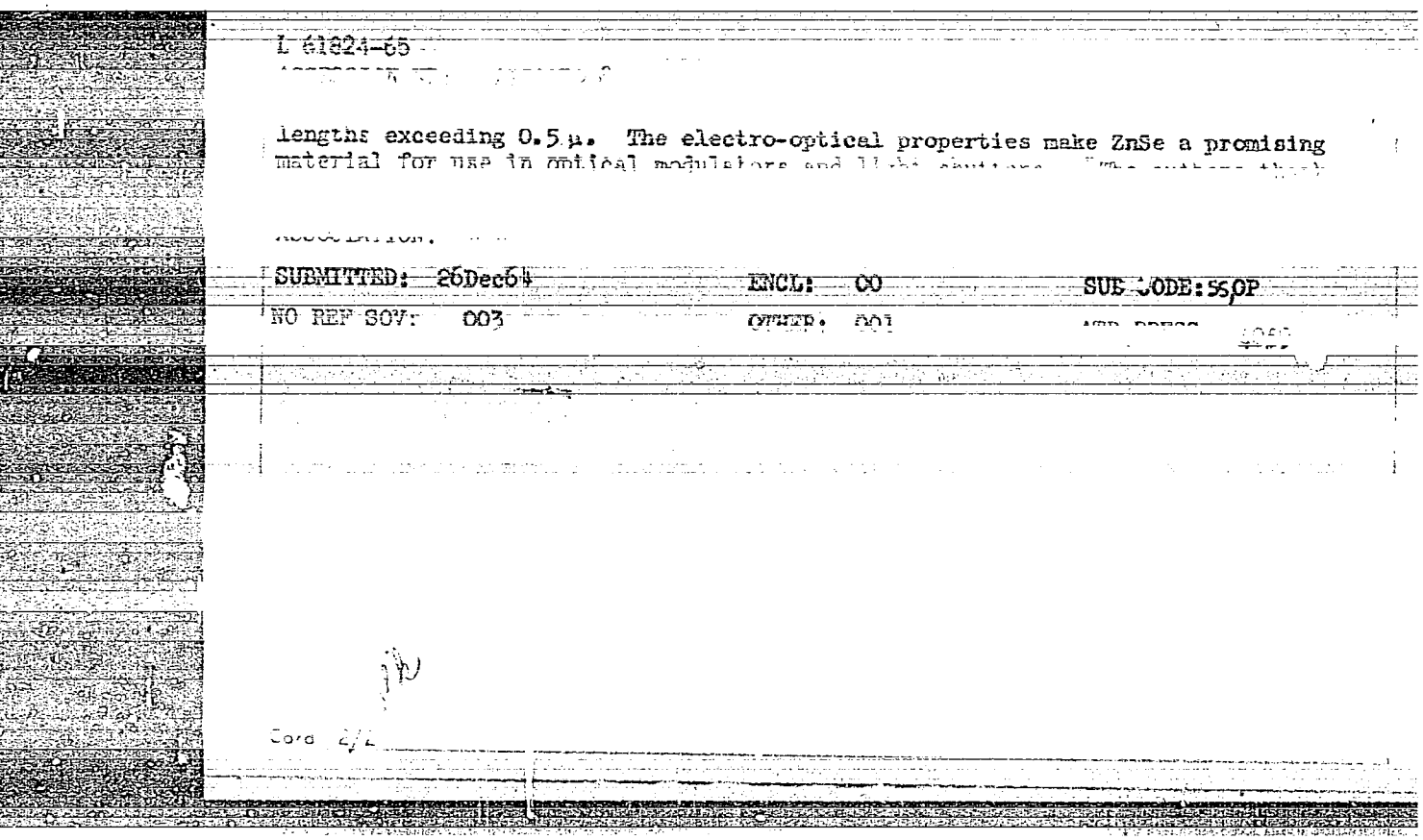

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lengths exceeding 0.5 μ. The electro-optical properties make ZnSe a promising material for use in optical modulators and light shutters. The authors thank

ASSOCIATION:

SUBMITTED: 26Dec64 ENCL: 00 SUB CODE: SS OP

NO REF SOV: 003 OTHER: 001

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L 64005-65 EWA(h)/FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(1)/T/EEC(b)-2/EWP(k)/EWA(h)/
EWA(m)-2 SOTB/IJP(c) WG/GS/WH

ACCESSION NR: AP5019773

TITLE: Generation of giant pulses in a ruby laser by means of a traveling ultra-

ABSTRACT: A light diffraction m

ultrasound, the diffraction of light leads to the disturbance of the laser action. At the instant the ultrasound excitation was discontinued, the switch opened to restore the laser action. A block diagram of the experimental setup is shown in

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L 64003-65

[illegible] at the [illegible] sure. The ruby laser [illegible] mm in diameter

energy of the uncontrolled laser pulse was 0.15 j for a pumping energy exceeding the threshold value 1.5 times. The introduction of the diffraction modulator into the interferometer changed neither the generation threshold nor the value of generated energy (within an accuracy of 10%). The generation losses due to controlling were 30%. The discussion of the variation of switching speeds, switching times, and modulation of the h-f (5 Mcs) switch supply voltage by a square 10-μsec pulse is implemented by oscillograph photographs. To increase the threshold value of pumping energy when the switch is closed, several traveling waves, particularly the mutually perpendicular ones, can be used. In the case of uncontrolled generation, pumping can exceed the threshold value by as much as 2.6 times. A pulsed ruby laser which develops 1.4 j during free generation was capable of generating 47-Mw pulses when controlled by the switch. Orig. art. has: 3 figures. [YK]

ASSOCIATION: none

SUBMITTED: 18Feb65 ENCL: 01 SUB CODE: EC,GP

NO REF SOV: 002 OTHER: [illegible] ATD PRESS: 4057

Card 2/3

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

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ACCESSION NR: AP5019778

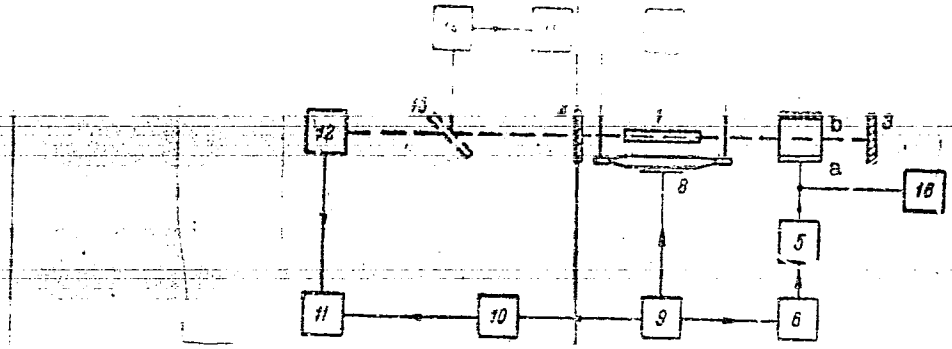

Fig. 1. Block diagram of the experimental setup

with modulator; 6 - delay line; 7 - pumping lamp supply; 8 - rod-type pumping lamp with reflector; 9 - starter; 10 - delay starter for [illegible] - pulsed

mirror; 14 - vacuum calorimeter; 15 - microammeter; 16 - cathode voltmeter; a - radiator; b - absorber.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ACC NR: AP6015444 SOURCE CODE: UR/0051/66/020/005/0924/0926

AUTHOR: Adrianova, I. I.; Popov, Yu. V.; Terent'yev, V. Ye.

ORG: none

TITLE: An experimental study of control of generation of a ruby laser by means of modulated traveling ultrasonic wave diffraction modulator

SOURCE: Optika i spektroskopiya, v. 20, no. 5, 1966, 924-926

TOPIC TAGS: laser, solid state laser, ruby, coherent light, modulation, light modulation

ABSTRACT: The possibility of modulating a laser beam by an ultrasonic wave in a diffraction modulator placed between the ruby rod and the external mirror of an interferometer is experimentally investigated. In such an arrangement, modulation would be achieved by modulating the ultrasonic wave so that as a result of diffract the laser beam would be periodically deflected from the direction normal to the mirror. The output power of the laser was 0.13 j. The presence of the xylene-fill modulator (in the absence of the ultrasonic wave) did not change the oscillation threshold or the power output of the laser. The modulating frequency of the ultrasound was 20—200 kcps and its intensity was such that the intensity of light in th zero-order maximum was 35, 25, and 5% of the maximum in the absence of ultrasound. In the absence of the ultrasonic waves the laser pulse exhibited irregular amplitu

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ACC NR: AP6015444

and repetition rate. Generation controlled by ultrasonic waves was characterized by a higher density of relaxation packets with respect to the repetition period and the amplitude. At a constant modulation frequency the number of relaxations per packet and the duration of the packet decreased and the amplitude of the relaxation increased with increasing intensity of ultrasound. At a constant intensity of ultrasonic waves the number of relaxations per packet and their duration decreased with increasing modulation frequency until at some high frequency some of the packe were not generated. At a constant modulation frequency of the ultrasonic wave the energy of the modulated light decreases with increasing intensity of the ultrasound by 10—50%. Similar results were obtained using a l-j laser. Orig. art. has: 2 figures.

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Card 2/2

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ACC NR: AP6030177 SOURCE CODE: UR/0237/66/000/008/0022/00

AUTHOR: Adrianova, I. I.; Zaslavskaya, V. R.; Popov, Yu. V.

ORG: none

TITLE: Broadband interference light modulator with piezoelectric-ceramic mirrors

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 8, 1966, 22-24

TOPIC TAGS: interference light modulator, laser application, piezoelectric ceramic/ TsTS-19 ceramic

ABSTRACT: This is a continuation of an earlier theoretical and experimental study (Optika i spektroskopiya v. 9, 1960, no. 4, p. 501) of the modulation of the light beam by an interference modulator. The present article describes a modulator whose bandwidth has been increased to 5 - 7 MHz (compared with ~1 MHz earlier) by replacir the piezoelectric crystal mirrors with polarized piezoelectric ceramics (TsTS-19). The construction of the interferometer, which is similar to the standard Twyman-Gree design, is described. The instrument was tested both under continuous and pulsed cor ditions in modulation of light from an He-Ne laser (632.8 nm). The obtained static characteristic is such that pulsed modulation with approximate depth of 80% can be obtained at control pulse amplitude 150 - 170 v. When 1-μsec pulses are applied to both mirrors simultaneously in such a way that they are moved in opposite directions a modulation depth of 85% can be attained at 130 volts. The modulator power consump tion is less than one watt and the optical losses reached 70%, owing to the poor

Card 1/2 UDC: 621.378.33: 621.376

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ACC NR: AP7002721 SOURCE CODE: UR/0237/66/000/012/0013/0016

AUTHOR: Adrianova, I. I. (Candidate of sciences); Popov, Yu. V. (Candidate of sciences); Terent'yev, V. Ye. (Candidate of sciences)

ORG: none

TITLE: The regular generation of a ruby laser switched by a standing-wave diffraction modulator

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 12, 1966, 13-16

TOPIC TAGS: ruby laser, Q switching, diffraction modulator, xylol, carbon tetrachloride, ultrasonic modulation

ABSTRACT: This article is a continuation of an earlier study (Optika i spektroskopiya, 20, 1966, 924) on the modulation of a laser beam by an ultrasonic wave in a diffraction modulator. The present experiments were carried out using modulated standing-wave and non-modulated traveling-wave diffraction modulators at above-threshold pumping energies controlled by the ultrasonic waves. The experimental ruby laser (12 mm long and 1.4 mm in diameter) was pumped by two flashlamps in a double elliptic reflector. The external cavity consisted of two dielectric mirrors 80 and 99.5% reflective at 0.7 μ. The diffraction modulator was placed between the ruby rod and the 99.5%-reflective mirror so that the ultrasonic waves were propagated through its

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ALIYANOVA, N. I. and M. M. SOBOLEV

"The Existence of the Main Yenisey Rift." p. 407

Geologicheskiy sbornik, 3, (Collection of Articles in Geology, Vol. 3), Leningrad Gostoptekhizdat, 1958, 471pp. (Trudy, vyp 126, Vsesoyuznyy neftyanoy nauchno-issledovatel'skiy geologorazvedochnyy institut)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, L.N.; KHUTELIONOK, N.L.; CHUDNOVSKIY, N.L.

Some characteristics of the mass-produced 53LK4Ts color television kinescope. Sbor. mat. po elektrovak. tekh. no.28: 56-60 '61. (MIRA 16:8)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, L.Ya.

Reducibility of systems of n linear differential equations with quasi-periodical coefficients. Vest.LGU 17 no.7:14-24 '62. (MIRA 15:5)

(Differential equations, Linear)

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L 21734-65 EWT(d) Pg-4 IJP(c)/AFWL/ASD(a)-5/AFETR/ESD(dp)/ESD(gs)

ACCESSION NR: AP4044455 S/0043/64/000/003/0005/0017

AUTHOR: Adrianova, L. Ya.

TITLE: A rigorous estimate for the error in integrating differential equations with Stormer's method

SOURCE: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 3, 1964, 5-17

TOPIC TAGS: integration error, differential equation, numerical integration, numerical method, extrapolation method

ABSTRACT: Definitions:

$$F_{1,h} \overset{def}{=} \frac{a}{2} \max_{[t_{k-r}, t_k]} \|w(t)\| \cdot \max(\|\Delta_{k-r}\|, \ldots, \|\Delta_k\|) + \beta h^r \max_{[t_{k-r}, t_{k+1}]} \|f^{(r)}(t)\| + \max_{[t_{k-1}, t_{k+1}]} \|\Gamma(t)\|;$$

$$F_{2,h} \overset{def}{=} \frac{a}{2} \max_{[t_{k-r}, t_k]} \|w(t)\| \cdot \max(\|\Delta_{k-r}\|, \ldots, \|\Delta_k\|) + \beta h^r \max_{[t_{k-r}, t_{k+1}]} \left\| \left(f(t) \frac{t_k - t}{h} \right)^{(r)} \right\| + \frac{1}{3} \max_{[t_{k-1}, t_{k+1}]} \|\Gamma(t)\|;$$

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$$F_{2r,k} \overset{def}{=} h^4 \max_{[t_{k-2r+1},\, t_{k-1}]} \|\Gamma(t)\|^2 a'' \max\left(\|\Delta_{k-2r}\|, \ldots, \|\Delta_{k-2r+1}\|\right) + \left(1 + h^2 a \max_{[t_{k-2r},\, t_{k-1}]} \|\Gamma(t)\|\right)(q+\rho)$$

$$(k = 2r-1, \ldots, N-1, \quad 2r \leqslant N, \quad S_k \subset G),$$

$$G_D \overset{def}{=} \underset{(t,x)}{E}\,(t_0 \leqslant t \leqslant T;\ \|x - x(t)\| \leqslant D),$$

and J(t) = J(t, x(t)) is the Jacobian matrix of f(t, x).

Theorem: Let $\Gamma(t)$ and $\omega(t)$ be functions that are continuous and non-negative on the interval (t_0, T), ρ and D be non-negative numbers, $2r \leq n$, and $x_0, x_1, \ldots, x_{2r-1}$ be vectors. In addition, assume that the following conditions are satisfied

1. $G_D \subset G$
2. for $(t, x) \in G_D$ $\|J(t, x)\| \leqslant \Gamma(t)$,
$\|J(t, x) - J(t, x(t))\| \leqslant \omega(t)\|x - x(t)\|$
3. $\left\| 2x_k - x_{k-1} + h^2 \sum_{p=0}^{r} f(t_{k-p}, x_{k-p}) - x_{k+1} \right\| \leqslant \rho$

$(k = r, \ldots, 2r-2)$

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4. ε_k and $\bar{\varepsilon}_k$ are non-negative numbers related by the recurrence relations

$$\varepsilon_k = (1+h^2F_{1,k-1})\varepsilon_{k-1} + (1+h^2F_{2,k-1})\bar{\varepsilon}_{k-1} + F_{3,k-1},$$
$$\bar{\varepsilon}_{k-1} = h^2F_{1,k-1}\varepsilon_{k-1} + (1+h^2F_{2,k-1})\bar{\varepsilon}_{k-1} + F_{3,k-1},$$

when k = 2r, . . . , N and $\varepsilon_k \geqslant |\Delta_k|$, $\bar{\varepsilon}_{k-1} \geqslant |\Delta^2_{k-1}|$

when k = 0, 1, . . . 2r-1

5. $\varepsilon_k \leqslant D \quad (k=0, 1, \ldots, N)$.

Then numerical integration of the system

$$\frac{d^2x}{dt^2} = f(t, x)$$

[f(t, x) is a vector function in the class $C^{(r+2)}$ when $(t, x) \in G$ with the Stormer

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ACCESSION NR: AP4044455

method with increment h, and initial points $(t_{r-1}, x_{r-1}), \ldots, (t_{2r-1}, x_{2r-1})$ satisfying the inequalities

$$|\rho_k| \leqslant \rho \quad (k = r, r+1, \ldots, N-1);$$

can be executed on $[t_{2r-1}, t_0 + nh]$, and any system of points $(t_0, x_0), \ldots, (t_N, x_N)$ constituting the results of such integration will give us the estimate

The author gives instructions for use of this method and presents a table of quantities necessary for estimating the error; these quantities depend only on the order of the Stormer method and are independent of the right side of the equation being integrated. A numerical example is given. "In conclusion, the author would like to express her thanks to S. M. Lozinskiy for directing her work." Orig. art. has: 2 tables and 60 equations

ASSOCIATION: None

SUBMITTED: 30Nov63 ENCL: 00 SUB CODE: MA

NR REF SOV: 003 OTHER: 001

Card 4/4

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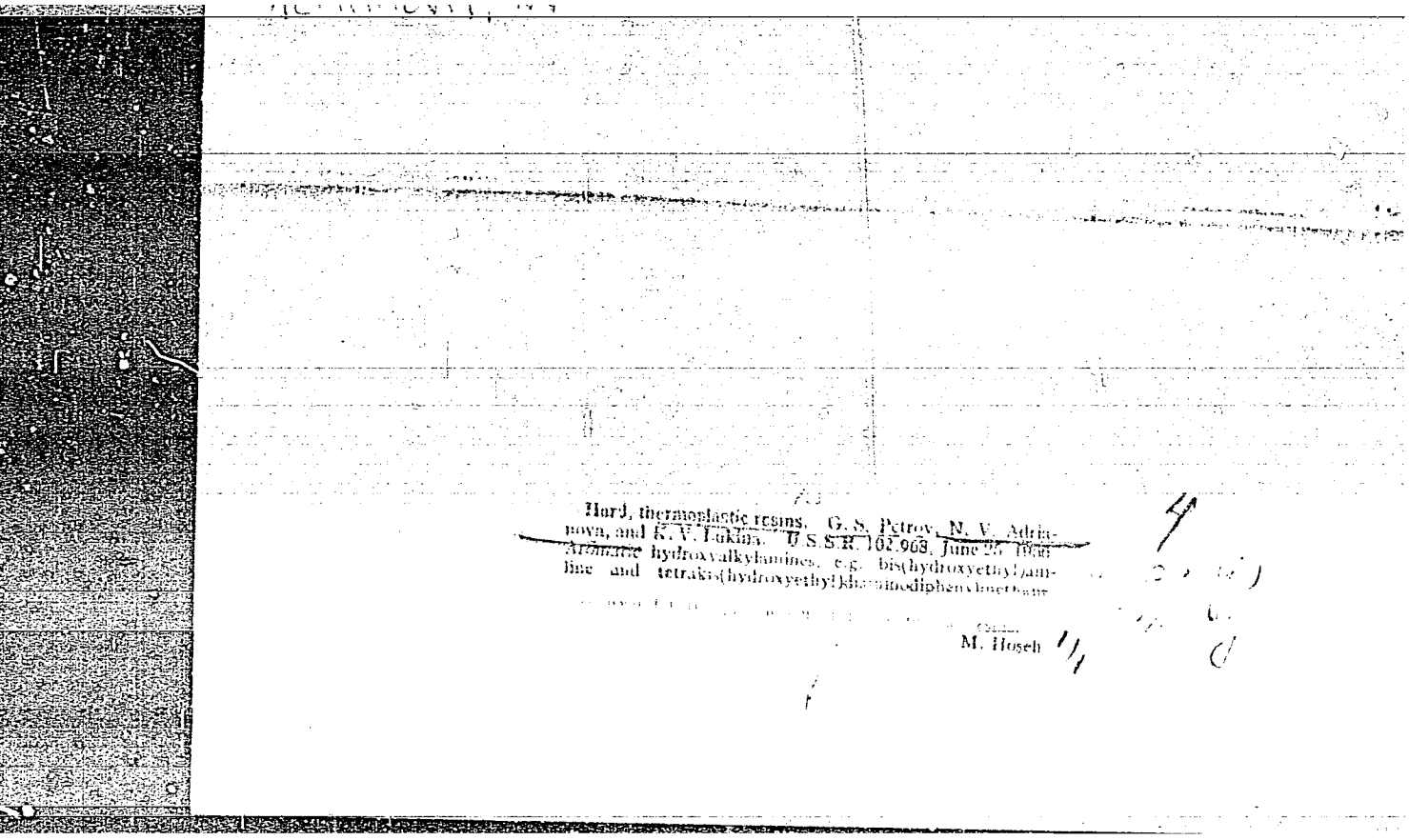

Hard, thermoplastic resins. G. S. Petrov, N. V. Adrianova, and K. V. Fokina. U.S.S.R. 102,968, June 27, 1956. Aromatic hydroxyalkylamines, e.g. bis(hydroxyethyl)aniline and tetrakis(hydroxyethyl)diaminodiphenylmethane

M. Hoseh

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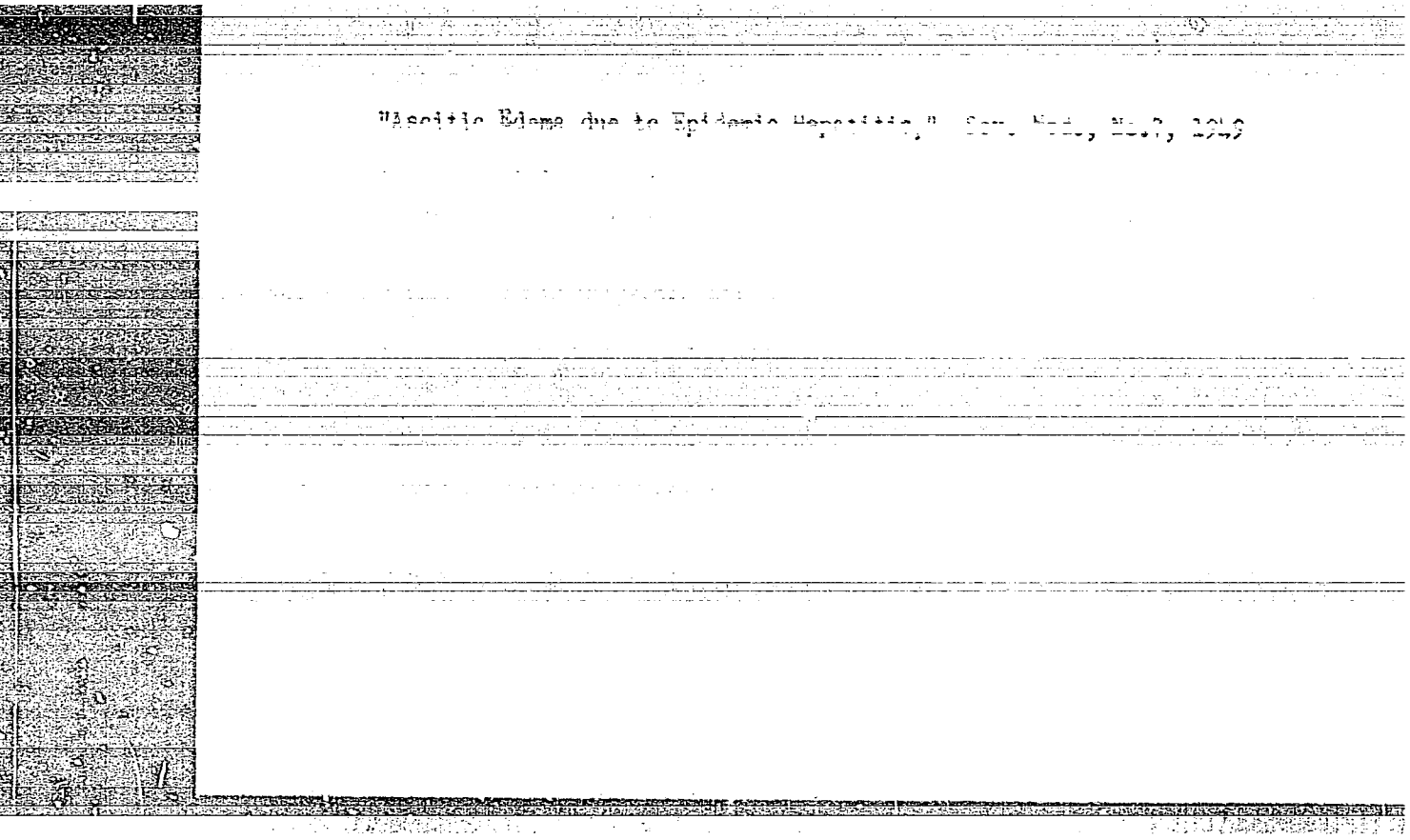

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, N.V.

Hepatopancreatic syndrome in chronic liver diseases. Klin. med. 38 no. 4:55-62 Ap '60. (MIRA 14:1)
(LIVER--DISEASES) (PANCREAS--DISEASES)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRYANOVA, N.V.; POKROVSKAYA, L.Ya.

Case of pylosclerosis with thrombosis. Arkh. pat. 23 no. 1:75-78 '61. (MIRA 14:1)

(PORTAL VEIN —DISEASES) (THROMBOSIS) (LIVER—CIRRHOSIS)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, N.V.; KOGOY, T.F. (Moskva)

Wegner's granulomatosis (necrotic granulomatosis of the upper respiratory tract with disseminated necrotic vasculitis). Klin. med. 39 no.2:122-128 F '61. (MIRA 14:3)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof. A.A. Shelagurov) i patologicheskoy anatomii (zav. - prof. I.V. Davydovskiy) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.

(ARTERIES—DISEASES)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

SHELAGUROV, A.A., prof.; ADRIANOVA, N.V. (Moskva)

Course of propedeutics of internal diseases in the third year of Medical Institutions of Higher Education. Klin. med. 41 no.7:150-152 Jl'63 (MIRA 16:12)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof. A.A.Shelagurov) lechebnogo fakul'teta II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

Dissertation: "Concerning Geometrical Isomerism of Complex Compounds of Tetravalent Platinum." Inst of General and Inorganic Chemistry imeni N. S. Kurnakov, Acad Sci USSR, 19 Nov 47.

SO: Vechernyaya Moskva, Nov, 1947 (Project #17836)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, O.N.

35197. O Geometricheskoy Izomeriitramina Sostava (En NH_3Pt Cl Br NO_2) KH. Soobshch. 2. Izvestiya Sektora Platiny I Drugikh Blagorod. Metallov (In-T Obshchey I Neorgan. Khimii Im. Kurnakova), Vyp. 24, 1949 s. 79-99.---Bibliogr: 6 Nazv.

SO: Letopis' Zhurhal'nykh Statey, Vol. 48, Moskva, 1949

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

21448 CHERNYAYEV, I. I.; i ANDRIANOVA, G. L.

O geometricheskoy izomerii triammina sostava ($Ir.Me_3Pt_3Cl_3(C_3)$
Cl. Soobshch. 1. Izvestiya Sektora platiny i drugikh blagorod.
Metallov (In - t. obshchey i neorgan. khimii im. Kurnakova),
Vyp. 23, 1949, s. 9 - 38. Bibliogr: 9 nazv.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

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ADRIANOVA, V.N.

Geometric and mirror-image isomerism of the trimmines [enNH$_3$PtClBrNO$_2$]X. I. I. I. Chernyaev and V. N. Adrianova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1953, 204–14; *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 183–91 (Engl. translation); cf. *C.A.* 45, 1896a.—The isomers [cnMeNH$_3$NO$_2$ClBrPt]Cl (I) and [enMeNH$_3$ClNO$_2$BrPt]Cl (II) were prepd. I is yellow, n_γ 1.75–1.76, n_α 1.714, extinction angle 45°. enNH$_3$ClNO$_2$BrPtCl (III) and enMeNH$_3$ClNO$_2$BrPtCl (IV) were resolved into optical isomers. The rotatory power was measured for *d*- and *l*-enNH$_3$ClNO$_2$PrPtCl (V), *d*- and *l*-enNH$_3$ClNO$_2$BrPt (VI), *d*-enMeNH$_3$ClNO$_2$BrPtNO$_2$ (VII), and *l*-enMeNHClNO$_2$-BrPt (VIII). The amido-inversion coeff., ρ, is about 6 for the reaction V $\overset{H^+}{\underset{OH^-}{\rightleftarrows}}$ VI and about 5 for the reaction VII $\overset{H^+}{\underset{OH^-}{\rightleftarrows}}$ VIII. In the presence of dichloronitrotriammines the corresponding values of ρ are 4–6 and 21–29, resp. $[\alpha]_D$, $[M]_D$, and α_T/c_0 are tabulated for I–V and VII. The tabulated max. values of molar cond. for I and II are 141 and 107 mho-cm., resp. J. W. Loweberg, Jr.

Inst Gen. & Inorg. Chem im. N.S. Kurnakov, AS USSR

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHUGAYEV, Lev Aleksandrovich, 1873-1922; CHERNYAYEV, I.I., akademik; LEBEDINSKIY, V.V.; PSHENITSYN, N.K.; GOREMYKIN, V.I., doktor khimicheskikh nauk; PIGULEVSKIY, G.V., doktor khimicheskikh nauk, redaktor; FEDOROV, I.A., kandidat khimicheskikh nauk; ADRIANOVA, O.N., redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akademii nauk SSSR. Vol.2, 1955. 555 p. (MLRA 8:12)
(Chemistry, Organic)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHERNYAYEV, I.I.; ANDRYANOVA, O.N.

Geometric isomerism of the triamine $[EnMePtClBrNO_2]X$. Part 1. Izv.Sekt.Plat.i blag.met. no.31:26-33 '55. (MLRA 9:5)
(Platinum compounds) (Isomerism)

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АНДРИАНОВА О.Н.

USSR/Inorganic Chemistry - Complex Compounds. C.

Abs Jour : Ref Zhur - Khimiya, No 9, 1957, 30315

Author : Chernyayev, I.I., Andrianova, O.N.
Inst : Institute of General and Inorganic Chemistry, Academy of Sciences. USSR.
Title : Geometric Isomerism of Triamine of Composition $[EnNH_3PtClBrNO_2]$X. Communication III.

Orig Pub : Izv. Sektora platiny IONKh AN SSSR, 1955, No 31, 34-38

Abst : To prove the correctness of the assumption of the instability of configuration with Br - Pt - Br coordinate in compounds of Pt(4+), it is shown that oxidation, with bromine, of $EnNH_3ClPtCl$ (I) results in the formation of cis-dibromotriamine $EnNH_3ClBr_2PtCl$ (II), and that the only reason of the formation of the cis-dibromocompound is isomerization of the transform which is always formed at first. I was obtained, with a 80% yield, by reduction of $EnNH_3Cl_3PtCl$ (III) with hydrazine hydrochloride

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ADRIANOVA O.N.

563

AUTHOR: Chernyaev, I.I. and Adrianova, O.N.

TITLE: Enantiomorphic Isomerism of Tetravalent-Platinum Compounds. I. Investigation of the Optical Activity of the Triamine $EnNH_3NO_2NO_2BrPtCl$. (Zerkal'naya Isomeriya Kompleksnykh Soedineniy Chetyrekhvalentnoy Platiny. I. Issledovanniye Opticheskoy Deyatel'nosti Triamina $EnNH_3NO_2NO_2BrPtCl$.)

PERIODICAL: "Zhurnal Neorganicheskoy Khimii" (Journal of Inorganic Chemist Vol.II, No.2, pp.298-306. (U.S.S.R.) 1957

ABSTRACT: This is a continuation of work to study the effect of the cor figuration and composition of enantiomorphic complex compoun of tetravalent platinum on the optical activity constants of the enantiomorphs, and deals particularly with the compound $EnNH_3NO_2NO_2BrPtCl$, recently prepared by the authors. The pr vious synthesis by Chernyaev and I.B. Litvak (2) of the corresponding chlorine compound $EnNH_3NO_2NO_2ClPtCl$ enables th effect of the replacement of chlorine by the more trans-acti bromine to be found.

It was shown that in the fractional crystallization of d- and l- camphorsulphonates of the triamine [$EnNH_3NO_2NO_2BrP$ its enantiomorphs are unstable and have the property of inte convertibility. 70-% yields of the d- and l- isomers were obtained by fractional crystallization of the salts of d-camphorsulphonic acid and of l-camphorsulphonic acid respectivel

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

AUTHOR By O.N. Adrianova PA - 2478

TITLE Research Work in Chemistry of Complex Compounds
(Izuchenie khimii kompleksnykh coyedinyeniy, Russian)

PERIODICAL Vestnik Akademii Nauk SSSR 1957, Vol. 27, No. 1, pp. 104-107, (USSR)

Received: 2 May 1957 Reviewed: 4 June 1957

ABSTRACT From 9 to 13 October 1956, the Institute for General and Inorganic Chemistry of the Academy of Sciences of the USSR organized in Leningrad jointly with the Leningrad Institute for Chemistry and Technology the Seventh Consultative Assembly on the Chemistry of Complex Compounds. I.I. Cherniayev, Member of the Academy, stated in his lecture that the in other countries recently published theoretical papers on the nature of the transeffect (theory by Chatt) were based solely on the facts of the chemistry of the complex compounds Pt(II) and therefore were in contradiction with other factors; for instance: existence of the transeffect in the complex compounds Pt(IV), Co(III). G.B. Bokiem, doctor of chemical sciences, demonstrated in his lecture on the mutual effects of atoms in crystals of the complex compounds Pt(II) the influence of the transeffect on the magnitude of the interatomic distances. V.A. Palkin, candidate for the doctor's degree of chemical sciences, lectured on investigations carried out with regard to the amoniacats of the Pt(II). Numerous other lectures

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BAILAR, John Christian, editor; BUSH, D., assist.editor; ADRIANOVA, O.N. [translator]; CHERNYAYEV, I.I., red.

[Chemistry of the coordination compounds] Khimiia koordinatsionnykh soedinenii. Moskva, Izd-vo inostr.lit-ry, 1960. 695 p. (MIRA 14:1)
Translated from the English.
(Coordination compounds)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHERNYAYEV, I.I.; ADRIANOVA, O.N.

Optical activity of the triamines $BrNH_3NO_2ClPtCl$ and $BrCH_3NH_2NO_2ClPt(NH_3CH_3NH_2)_2$
Zhur. neorg. khim. 6 no.1:34-43 '61.
(Platinum compounds--Optical properties)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHERNYAYEV, I.I.; ADRIANOVA, O.N.; LEYTES, N.Sh.

Optical activity of platinum (IV) triamines. Zhur.neorg.khim. 7 no.4:749-755 Ap '62. (MIRA 15:4)
(Platinum compounds--Optical properties) (Triamine)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

GRINBERG, A.A., akademik; ADRIANOVA, O.N.; YUAN' KAN [Yüan K'ang]

Proof of the configuration of cis-trans isomeric compounds $[PtCl_2(NH_3)_2]Cl_2$. Dokl. AN SSSR 149 no.4:842-845 Ap '63. (MIRA 16:3)

1. Institut obshchey i neorganicheskoy khimii im. N.S.Kurnakova AN SSSR i Leningradskiy tekhnologicheskiy institut im. Lensoveta.
(Platinum compounds) (Glycols) (Isomerism)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHERNYAYEV, I.I.; FEDOTOVA, T.N., ADRIANOVA, O.N.

Rotatory dispersion of mirror isomers $PtNH_3[(NH_2)_2(C_2H_5)_2]_2^{2+}$
Zhur. neorg. khim. 10 no.7:1547-1549 Jl '65.
(MIRA 18:8)

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

CHERNYAYEV, I.I.; ADRIANOVA, O.N.; FEDOTOVA, T.N.

Spectropolarimetric study of the inner-sphere chlorination reaction of amines in platinum (IV) complexes. Zhur.neorg. khim. 11 no.1:43-53 Ja '66.

(MIRA 19:1)

1. Submitted December 14, 1964.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

YAKHIMOVICH, Varvara L'vovna; ADRIANOVA, Ol'ga Sergeyevna; OLLI, A.I., prof., doktor geologo-mineral.nauk, otv.red.; POROYKOV, Yu.D., red.; SHAFIN, I.G., tekhn.red.

[Cenozoic in the Bashkirian cis-Ural region] Kainozoi Bashkirskogo Predural'ia. Ufa, M-vo geol. i okhrany nedr SSSR. Vol.1, pt.3. [Southern Ural brown coal basin] IUzhnoural'skii burougol'nyi bassein. 1959. 296 p. (MIRA 13:8)
(Southern Ural Basin--Lignite)

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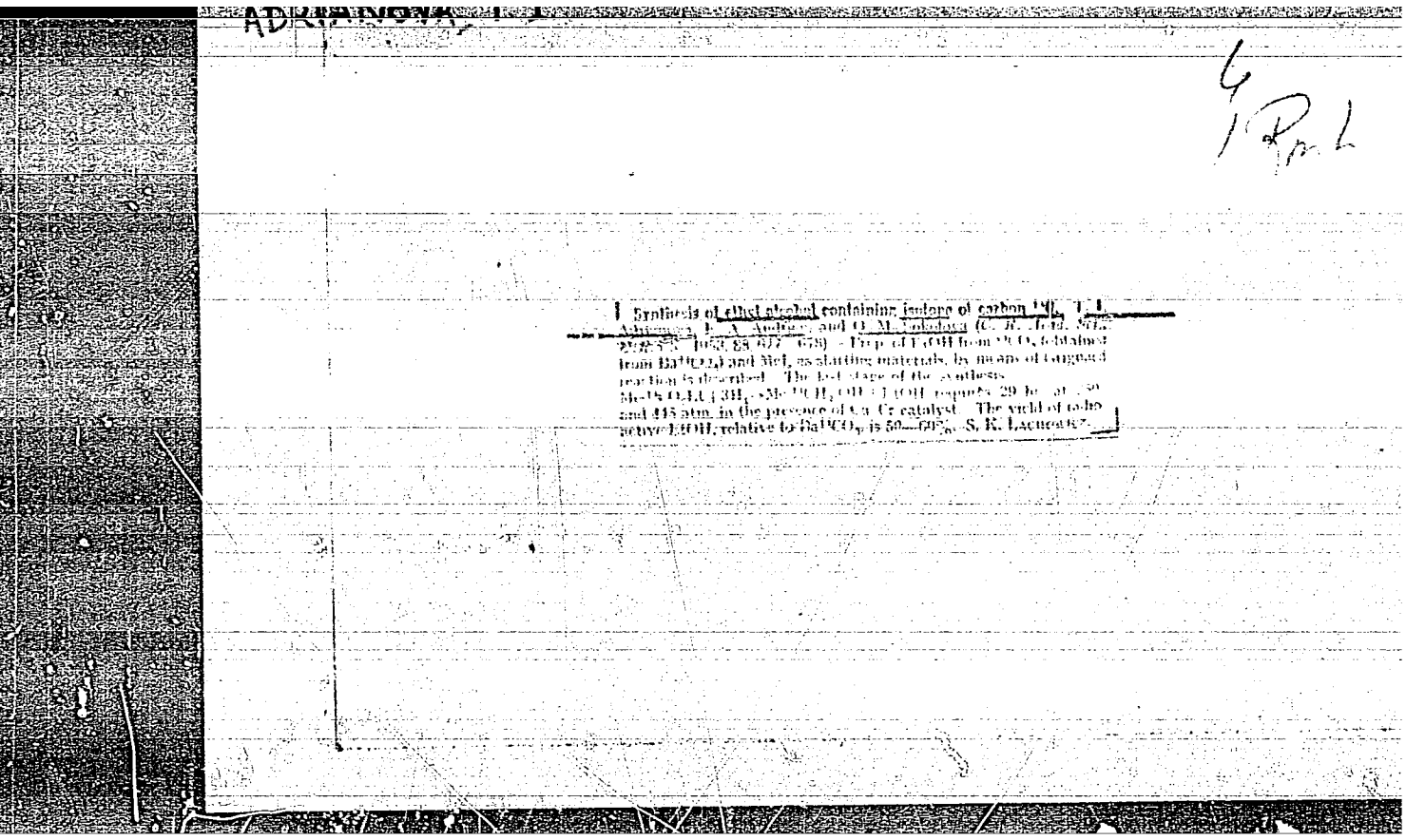

Synthesis of ethyl alcohol containing isotope of carbon [illegible]

[illegible] A. Andreev and O. M. [illegible] (C. R. Acad. Sci. [illegible] 1953, 89, 677–678). — The prep. of $^{14}C_2H_5OH$ from $^{14}CO_2$, obtained from $Ba^{14}CO_3$ and MeI, as starting materials, by means of Grignard reaction is described. The last stage of the synthesis [illegible] $3H_2 \rightarrow {}^{14}CH_3OH + H_2O$; $^{14}CH_3OH + CO \rightarrow {}^{14}CH_3COOH$; $^{14}CH_3COOH + 3H_2 \rightarrow {}^{14}CH_3CH_2OH + H_2O$ reports 29 hr. at 250° and 445 atm. in the presence of a Cu–Cr catalyst. The yield of labeled $^{14}C_2H_5OH$, relative to $Ba^{14}CO_3$, is 50—60%. S. K. Lachenal

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000100330005-9

ADRIANOVA, T. I.

The Synthesis of Ethyl Alcohol Tagged with the Isotope of Carbon C^{14}, T.I.Andrianov Ye. Andreyev, and O.N.Sokolova. DAN SSSR, Vol [illegible], No 1, pp [illegible], Feb 53.

Freshly prepd CH_3IgI was treated with $C^{14}O_2$ obtained from $BaC^{14}O_3$. The product of t reaction was hydrolized to tagged acetic acid which was [illegible] esterified with EtOH. The tagged ester was finally hydrogenated to CH_3CH_2OH, [illegible] by Acad A.N. Frumkin 25 Nov 52

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