"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

controlled quantity. Hence, the author determines the value of inertia of the object for which oscillations occur, together with the period of free oscillations. The following parameters are required for the analysis: the time constant of the controlled object, the gain, the time constant of the servomotor, and losses for hill climbing. There are 4 figures and 1 table.

SUBMITTED: January 24, 1962

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

BARANCHUK, Ye.I.; ROMANOV, V.A., kand. tekhn. nauk, retsenzent; AREF'YEV, B.A., kand. fiz.-mat. nauk, red.; MITARCHUK, G.A., red. izd-va; SPERANSKAYA, O.V., tekhn. red.

[Design and adjustment of electronic controllers]Proektirovanie i nastroika elektronnykh reguliatorov. Moskva, Mashgiz, 1963. 370 p. (MIRA 16:3)
(Electronic control) (Electric controllers)
(Automatic control)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

S/146/63/006/001/004/014
D201/D308

AUTHOR: Aref'yev, B. A.

TITLE: The use of the action integral criterion in some control problems

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 6, no. 1, 1963, 47-53

TEXT: The author discusses a method of determining the action integral and shows that it is possible to use the minimum of this integral as a performance criterion of some control systems and that there is a relationship between such a criterion and normal integral criteria. The action integral criterion is applied to the problem of stabilization of the platform by means of a direct and an indirect astatic controller and shows results more accurate on the whole as compared with those obtained for the same problems with the usual integral criteria. There are 2 figures and 2 tables.

~~Card 1/2~~ Leningrad Inst. Precision Mechanics + optics.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4017041 S/0141/63/006/006/1249/1257

AUTHOR: Aref'yev, B. A.

TITLE: Stability of extremal control systems with a constant search speed

SOURCE: IVUZ. Radiofizika, v. 6, no. 6, 1963, 1249-1257

TOPIC TAGS: control system, extremal control system, trial for extremum, search for extremum, search speed, representative point, representative point trajectory, commutator effect, external switching effect

ABSTRACT: The response of an extremal system to a disturbance is considered under the assumption that the controlled object has inertia and the search speed has a constant absolute value; the system characteristics also have a constant rate of change in either coordinate. The case when a special reversing system (commutator)

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ACCESSION NR: AP4017041

is used in conjunction with the control system drive to prevent interruption of the search is considered. The representative point trajectories resulting from the combined action of the control system and the commutator are analyzed, and conditions under which the trajectory misses the extremal point on the characteristic are obtained. Orig. art. has: 7 figures and 20 formulas.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 02Feb63 DATE ACQ: 18Mar64 ENCL: 00

SUB CODE: CG NO REF SOV: 005 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, B.A.; KRITSKIY, Ye.L.; PROTSUTO, V.S.

Extremal regulation of ore dressing machines according to the principle of occasional trial runs. Obog. rud. 8 no.3: 33-35 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ROMANOV, Vladimir Andreyevich; AREF'YEV, B.A., dots.

[Automation of standard industrial processes] Avtomatizatsiia tipovykh proizvodstvennykh protsessov. Moskva, Energiia, 1964. 287 p. (MIRA 17:12)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4013544 S/0102/64/000/001/0003/0007

AUTHOR: Arefyev, B. A. (Aref'yev, B. O.) (Leningrad)

TITLE: Quick-response optimized controller for inertial plants

SOURCE: Avtomaty*ka, no. 1, 1964, 3-7

TOPIC TAGS: automatic controller, quick response automatic controller, optimized automatic controller, inertial controlled plant, controller optimization

ABSTRACT: A theoretical analysis is presented of the possible behavior of a system consisting of an inertial plant with an optimized characteristic and a controller with a constant-speed servomotor. It is found that only one trial motion of the final control element and one reverse motion are required to obtain all the necessary information about the distance to its extremum position. Hence, the control element can be sent forthwith into its final position for the entire search process, thus obviating lengthy oscillations associated with searching the optimum position by conventional means. As the speed of operation of the control element is not restricted, the travel of this element can be performed by using forcing methods which should enhance the controller quick response. It is

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ACCESSION NR: AP4013544

suggested that the controller scheme be based on this formula:

$$x_0 = \frac{\Delta_2 - \Delta_1 e^{-\frac{\tau}{T}} - N}{K},$$

where the travel required x_0 can be determined from the increments Δ_1, Δ_2 of the controlled variable in the forward and reverse movements of the control element during an arbitrary time τ. The constants T, K, N depend on the parameters of the plant, controller, and τ. The formula is based on the assumption of a parabolic static characteristic of the plant; for other cases, the solution will be approximate. Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: none

SUBMITTED: 29Mar62 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: CG, IE NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 00009-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACCESSION NR: AR5008444 UR/ 0271/65/000/002/A015/A016 48

62-505 B

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Svodnyy tom, Abs. 2A82

AUTHOR: Aref'yev, B. A.; Kritskiy, Ye. L.; Protsuto, V. S. 55

TITLE: Extremal controller operating on a single-dither principle

CITED SOURCE: Obogashcheniye rud, no. 1(49), 1964, 31-32

TOPIC TAGS: extremal controller, automatic control, automatic control system, automatic control design, automatic control theory

TRANSLATION: Two principal circuits are considered of an extremal controller which realize the control principle arising from a solution of the plant differential equations. A control system is constructed which migrates to the extremum according to $x_0 = \frac{\Delta_1 - \Delta_2 e^{+T} - N}{K}$. The system performs the following operations: (1) turning on the actuator for a time τ and simultaneously measuring the control variable y_0; (2) reversing the actuator after time τ and measuring the control

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ACCESSION NR: AR5008444

variable y_1 at the moment of reversal; (3) measuring the increment $\Delta_1 = y_1 - y_0$ over the period τ of the dither; (4) turning off the actuator after its return to the home position and measuring the control variable y_2 at the turn-off moment; (5) measuring the increment $\Delta_2 = y_2 - y_1$ over the time of the reverse movement of the actuator; (6) decreasing the increment by $\Delta_1 be^{-\tau/T}$ times; (7) subtraction, from the increment Δ_2, of two quantities: the product $\Delta_1 e^{-\tau/T}$ and the constant N. The result determines, with an accuracy of K coefficient, the required migration of the control element. A block diagram of a controller performing all the above functions is presented, and its operation is explained; also a principal diagram of the extremal-controller computer designed with electron tubes is given. Another controller intended to realize the same principle with standard components is also presented. Figs. 3, Bibl. 2.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4018995 S/0146/64/007/001/0046/0056

AUTHOR: Aref'yev, B. A.

TITLE: Operation of a sensitivity-controlled optimum system

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 1, 1964, 46-56

TOPIC TAGS: automatic control, optimum automatic control, plant sensitivity dependent automatic control, sensitivity controlled optimum system

ABSTRACT: A theoretical study of an optimum system with a linear controller, whose speed is proportional to the sensitivity of the plant, is presented. The nonlinear part of the plant precedes its inertial part. Termed "special" by E. L. Ines, this equation describes the motion of the plant: $a\left(\frac{dy}{dx}\right)^2+y=-kx^2$, where $a=gT_0$, T_0 is the time constant, k is a parameter of the static parabolic characteristic of the plant, x and y are input and output parameters, respectively. The final solution of this equation "differs from that given by E. L. Ines only in symbols." The variation of x, y, and dy/dx depending on the variation of z is

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ACCESSION NR: AP4018995

investigated; here, z = v/x, and $v = g\frac{dy}{dx}$. Also explored are: the period of damped oscillations when the system approaches its extremum; the damping of these oscillations; and the stability of the searching operations of optimum systems. It is inferred that sensitivity-proportional-control systems require correcting devices in those cases when the extremum characteristic of the plant is liable to monotonous disturbances. Orig. art. has: 2 figures and 36 formulas.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Fine Mechanics and Optics)

SUBMITTED: 23Jan63	DATE ACQ: 23Mar64	ENCL: 00
SUB CODE: CG, IE	NO REF SOV: 008	OTHER: 001

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4041645 S/0146/64/007/003/0018/0024

AUTHOR: Aref'yev, B. A.

TITLE: Motions in the proportional optimum system

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 3, 1964, 18-24

TOPIC TAGS: automatic control, automatic control system, optimum control system, automatic control theory

ABSTRACT: An optimized inertial system which contains a controller whose speed dx/dt is proportional to the speed dy/dt of the output coordinate of the controlled plant is theoretically considered. Considering the direction of the servomotor motion also, the controller will correspond to this equation:

$$\frac{dx}{dt} = q\frac{dy}{dt}\operatorname{sign}\frac{dx}{dt},$$

where q is a coefficient of proportionality. The motions are investigated in a system that comprises the above controller and a plant whose nonlinear part precedes its linear part (e.g., a thermal power plant or — with some qualifications

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ACCESSION NR: AP4041645

— a proportional step controller). Equations of motions are set up, possible system motions with and without disturbance are investigated, and the resulting equation is solved by integrating in Bessel functions. It is found that considerable delays may occur in the searching process in the above system; regular or random disturbances shorten the delay; this conclusion was verified on an MN-7 analog computer "by Senior Instructor M. P. Troitskaya." A searching collapse is possible in the case of a long monotonous rise of the extremum level; hence, the proportional controller is applicable only in those cases when only rare step-wise changes in the extremum position can be expected. Distinguishing features of the controller based on the above equation are: (a) some motions are quasi-sliding and (b) driving toward the desired performance is possible without crossing the extremum point. Orig. art. has: 2 figures and 20 formulas.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institude of Fine Mechanics and Optics)

SUBMITTED: 20Mar63

SUB CODE: IE, DP

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OTHER: 001

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

POLONSKIY, M.S.; ZHURAVIN, M.A.; LADYZHENSKIY, Yu.B.; PINSKER, B.I.; ZUBOV, V.O.; SHESTERIKOV, A.A.; YAKUN', F.V.; KRYNITSA, M.N.; AREF'YEV, B.A.; YEVZIKOV, L.I., starshiy stroitel' sudov; PAVLENKO, I.F.; YEKOVLEV, B.M., inzh.; MARKOV, A.P., inzh.

Readers' response to the article by engineer M.A. Daikhes entitled "Method of mounting the main engines with minor deformations of the foundation frame and the cranshaft". Sudostroenie 30 no.10:57-66 O '64.

(MIRA 17:12)

1. Gruppovoy inzh.-mekhanik SSKh parokhodstva "Kaspar" (for Zubov). 2. Inzh.-inspektor Registra SSSR (for Yakun'). 3. Glavnyy inzh.-inspektor inspektsii Registra SSSR Baltiyskogo basseyna (for Aref'-yev). 4. Starshiy mekhanik teplokhoda "Tadzhikistan" (for Pavlenko).

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 23809-65

ACCESSION NR: AP5002325 S/0141/64/007/005/0949/0957

AUTHOR: Aref'yev, B. A.

B

TITLE: Determination of the characteristics of a nonlinear object during the course of its normal operation

SOURCE: IVUZ. Radiofizika, v. 7, no. 5, 1964, 949-957

TOPIC TAGS: nonlinear characteristic, system response, statistical analysis

ABSTRACT: A method is proposed for determining the operating characteristics of nonlinear objects under normal operating conditions, when it is impossible to determine the response of the object to a standard perturbation. The method is based on an analysis of the statistical properties of the input and output signals. The mathematical formulation consists of finding the connection between the statistical characteristics of the input or the output and the char-

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ACCESSION NR: AP5002325

acteristics of a system consisting of an inertial element connected in series with a nonlinear element. The problem has much in common with the determination of the response of a square-law detector to a random input signal, except that in the present problem both input and outputs are known, and the unknown quantity is the detector characteristic. It is shown that a single realization of the process is sufficient to determine the system characteristics. Orig. art. has: 2 figures and 27 formulas.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 27Jan64 ENCL: 00 SUB CODE: MA, IE

NR REF SOV: 004 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, B.A.

Correlation between the output and the circulating load of a closed cycle grinding machine. Tsvet. met. 37 no.10:16-17 O '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 44773-65 EWP(k)/EWP(h)/EWT(d)/EWP(1)/EWP(v) Pf-4/Pg-4 Pk-4/Pl-4/Po-4/Pq-4/
Pae-2 IJP(c) BC

ACCESSION NR: AP5011733 UR/0146/65/008/002/0049/0055

50
49
B

AUTHOR: Aref'yev, B.A.

TITLE: A method of improving the quality of extremum regulation

SOURCE: IVUZ, Priborostroyeniye, v. 8, no. 2, 1965, 49-55

TOPIC TAGS: automatic control, servo system, extremum regulator, continuous search system, control system stability

ABSTRACT: Among the extremum regulators with continuous search for inertial objects, the author considers those regulators in which the servomotor speed is constant (with respect to the modulus) to be the most stable in the face of external disturbances which cause a shift in the extremum characteristics of the object. Series-type electronic extremum regulators (EER) have such a constant speed. The computer device of this regulator with the local extremum memory and logical action elements participates only in the determination of the necessary moments for switching on and off the servomotor, which shifts the regulating organ at a constant speed independently of the character of the extremum transition process in the intervals between such switching operations. It is shown in the article that this method of servo-

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L 14778-65

ACCESSION NR: AP5011733

motor control is not optimal and that the transition of the system to the extremum mode can be substantially accelerated by making the speed of the actuator device dependent on the speed of the output co-ordinate of the object. In his treatment of this problem, the author considers the regulation of inertial objects of the first order, as described by the equation

$$T\dot{y}+y=-f(x),$$

where x is the input quantity, y is the output quantity and T is the time constant. The function $y_{st} = - f(x)$ is the extremum static characteristic of the object. It is demonstrated that regulation with constant actuator speed is not optimal, and that it is more rational for the regulating organ to pass through the low-efficiency segments, where the speed of the transition to the extremum mode is low, rapidly and to delay for a longer time on the more-efficient segment; that is, actuator speed should be inversely proportional to the speed of the transition to the extremum. The achievement of this function is most easily accomplished by taking an EER control system in its present form and modernizing it so that the actuator speed $\dot{x}$ decreases as the speed of the transition to the extremum mode increases. In the article, the author illustrates how this modification is not at all complex, not even requiring the use of a special differentiation unit,

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L 44778-65

ACCESSION NR: AP5011733

and can easily be carried out in regulators with a floating counter grid. Orig. art. has: 23 formulas and 1 figure.

ASSOCIATION: Leningradskiy institut tochnoy makhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 20Mar64 ENCL: 00 SUB CODE: IE, DP

NO REF SOV: 003 OTHER: 000

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, E.A.

Optimization of recirculation processes. Izv. vys. ucheb. zav.; radiofiz. 8 no.4:807-814 '65. (MIRA 18:9)

1. Leningradskiy institut tochnoy mekhaniki i optiki.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, B.P., kand.tekhn.nauk., redaktor; VOLCHOK, K.M., tekhn.redaktor

[Ways of improving the propeller propulsion of boats in inland navigation] Puti uluchsheniia vintovykh dvizhitelei sudov vnutrennego plavaniia. Leningrad, Izd-vo "Rechnoi transport," Leningradkoe otd-nie, 1955. 98 p. (MLRA 9:3)

1. Leningrad. TSentral'nyy nauchno-issledovatel'skiy institut rechnogo flota. 2. Direktor TSentral'nogo nauchno-issledovatel'skogo instituta rechnogo flota (for Aref'yev)
(Propellers)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, B.P., kand.tekhn.nauk

Closer application of science to production, school, and life.
Rech.transp. 18 no.10:52-53 O '59. (MIRA 13:2)
(Hydraulic engineering--Study and teaching)
(Inland water transportation)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, B.P., kand. tekhn. nauk, dotsent;

Waterways. Trudy LIVT no.46:title page '63 (MIRA 17:7)

1. Rektor Leningradskogo instituta vodnogo transporta.

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Leningrad. Institut inzhenerov zheleznodorozhnogo transporta

Avtomatika, telemekhanika i svyaz' (Automation, Telemechanics, and Communications) Moscow, Transzheldorizdat, 1960. 230 p. (Series: Its: Sbornik, vyp. 169) 1,000 copies printed.

General Ed.: V. N. Listov, Professor; Ed.: G. I. Marenkova, Engineer; Tech. Ed.: Ye. N. Bobrova.

PURPOSE: This book is intended for technical personnel and scientists engaged in the fields of automation, telemechanics, and communications.

COVERAGE: This collection of articles presents various methods of analysis and synthesis of electric circuits. New designs are described and ways of improving technical and economic indices of communication instruments investigated. The articles contain computations for individual types of communication and telemechanical systems. No personalities are mentioned. Some of the articles are accompanied by references.

Balagin, I. Ya., Candidate of Technical Sciences, Docent. Method of Improving Parameters of Polarized Relays With Spring Suspension of the Anchor 177

The author presents a method which makes it possible to maintain the given traction strength value of a relay constant without current and to improve other relay parameters. There are 3 references, all Soviet.

Aref'yev, D. V., Engineer, and I. Ya. Balagin, Candidate of ~~Technical Sciences~~, Docent. Analysis of the Operation of High-Speed Polarized Relays with a Differential Scheme of the Magnetic Circuit 183

The authors describe the basic parameters of both single- and double-armature high-speed polarized relays having a differential scheme of the magnetic circuit. The article is devoted to a demonstration that of the two types the single-armature relay is more advantageous.

Volkov, V. M., Candidate of Technical Sciences. The Problem of Separating Transmission and Reception Channels When Organizing Conference Call Communications Along Four-Wire Circuits and Using Crystal Amplifiers 195

The author states that the use of differential transformers in the construction of separator systems makes it possible to use crystal triodes in the amplifiers, which considerably simplifies the circuit and adds to its reliability.

Chernenko, A. P., Engineer. Design of a Linear Frequency Spectrum in Multichannel Long-Range Communication Systems 201

The author recommends the adoption of a circuit with one stage of tertiary frequency inversion for the linear frequency spectrum. This arrangement simplifies the equipment and reduces its cost. There are 4 references: 2 Soviet, 1 English, and 1 French.

Pashentsev, I. D., Candidate of Technical Sciences, Docent, V. F. Volkov, Engineer, and V. A. Sobakin, Engineer. Numerical Code Noncontact Transmitter Using Magnetic Amplifiers 215

This is the description of a noncontact transmitter of numerical code designed by the authors in collaboration with Engineer A. A. Grigor'yants. The transmitter generates code pulses by means of a special circuit using magnetic amplifiers and operating under relay conditions. Its model was tested at the "Beskontaktnyye sistemy avtomatiki" laboratoriya ("Noncontact Automation Systems" Laboratory) of the LIIZhT (Leningrad Railroad Engineers Institute)

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AREF'YEV, D. V.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

S/194/61/000/008/014/092
D201/D304

9.2140

AUTHORS: Aref'yev, D.V. and Balagin, I.Ya.

TITLE: Analyzing the operation of fast-acting polarized relays with a differential magnetic circuit

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 8, 1961, 2, abstract 8 V19 (Sb. Leningr. in-ta inzh. zh.-d., 1960, no. 169, 183-194)

TEXT: Formulae are given characterizing the operation of polarized relays with differential magnet circuit. It is deduced from the formulae that because of the differential magnetic circuit, such single armature relays differ considerably from two-armature relays, the difference being a much greater effectiveness of the free magnetizing force of the windings and that of the windings themselves. 2 figures. [Abstracter's note: Complete translation] VB

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

LANIN, A.; AREF'YEV, G.

Production of beryllium in the capitalist countries. Atom. energ. 9 no.1:70-71 Jl '60. (MIRA 13:7)
(Beryllium)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

~~21,5000~~ 21,5300 66377

AUTHOR: Aref'yev, G.G. SOV/120-59-5-30/46

TITLE: Determination of Corrections in Beta-measurements

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, pp 123 - 124 (USSR)

ABSTRACT: A method is suggested for the determination of corrections in relative measurements of the activity of beta sources. The method is based on an experimental determination of specific beta activity (pulses/min:mg/cm^2) as a function of the thickness of the source (mg/cm^2). If the specific activity is plotted as a function of the thickness in the units indicated above, one should obtain a straight line parallel to one of the axes. In practice, however, one obtains curves which differ considerably from straight lines. Figure 1 shows the actual change in the specific beta-activity as a function of thickness for three sources, namely, Cs^{137}, $Sr^{89,90}$ and $RuRh^{106}$. By comparing the experimental curve with the ideal straight line, it is possible to calculate the correction coefficients and set up a correction curve. Figure 2 shows the correction curves obtained from Figure 1.

Card1/2

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

30854. AREF'YEV, G. I.

Bliyaniye rabochey pliny l'nyanoy osnovy na stanke na obryvnost' pri tkachestvo plotnykh tkaney. Nauch. - issled. trudy (Kostrom. tekstil. in-t), vyp. 8, 1949, s. 3-21.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, G.I.

Manufacture of endless (closed) belts on looms. Izv. vys. ucheb. zav.; tekh. tekst. prom. no.6:75-78 '64. (MIRA 18:3)

1. Leningradskiy institut tekstil'noy i legkoy promyshlennosti imeni Kirova.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, G.I., dotsent

Training of specialists for the light and textile industry in the S.M.Kirov Institute of the Light and Textile Industry in Leningrad. Tekst.prom. 25 no.1:14-16 Ja '65. (MIRA 18:4)

1. Rektor Leningradskogo tekstil'nogo instituta.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I., inzh.

Extracting metal piles from rocky ground. Na stroi. Mosk. 2 no.7:21 Jl '59. (MIRA 12:10)

1. Trest Mosstroymekhanizatsiya No.7.
(Moscow--Piling (Civil engineering))

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/124-58-11-13342

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 203 (USSR)

AUTHOR: Aref'yev, I. I.

TITLE: Calculation of the Rotary Support of a Crane Equipped With a Circular Swing Rail (Raschet oporno-povorotnogo ustroystva krana s povorotnym krugom)

PERIODICAL: Tr. Leningr. voyen.-mekhan. in-t, 1957, Nr 6, pp 199-216

ABSTRACT: The author establishes the law governing the distribution of the forces among the rollers of the rotary swing mechanism which supports the crane, wherefrom the greatest calculated loads acting upon a roller are determined. The problem is solved under the following assumptions: 1) The support rails lie on a rigid foundation, 2) the supporting foundations are plane, and 3) the rollers are completely uniform. The calculation is carried out for various ratios between the overturning moment and the pressure force acting on the swing mechanism of the crane. The author obtains formulas for the maximal force exerted upon a roller and the stability coefficient of the rotary part of the crane in relation to the angle of the load upon the rollers. The formulas for the

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/124-58-11-13342

Calculation of the Rotary Support of a Crane Equipped With a Circular Swing Rail

stability coefficient yields the condition at which a need arises for take-up devices to limit the loss of contact with the rollers. Analytical formulas are derived for the combined working of the rotary support mechanism and the take-up devices; the stresses in the rollers were determined according to "Gerts" (translator's comment: Hertz?). Two numerical examples are adduced.

N. P. Kashparova

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA AREF'YEV, I.I.

16

Malt grinder. I. Aref'ev. *Spirto-Vodochnaya Prom.* 16, No. 5, 25(1939).—A mill is described and illustrated which grinds 0.5 to 0.95 metric tons of malt per hr. (according to chamber diam. 16 to 94"), operating at 600–900 r. p. m.

Julian F. Smith

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.

KOMKOV, V.N.; RYCHKOV, N.S.; AREF'YEV, I.I., red.; BURMAN, M.Ye., red.; FAYNSHTEYN, Ya.I., red.; KUBANIN, Z.I., red.; KOVALEVSKAYA, A.I., red.; SOKOLOVA, I.A., tekhn.red.

["Vegetables and Canned Goods" Pavilion, a guidebook. Pavil'on "Ovoshchi i konservy"; putevoditel'. Moskva, Pishchepromizdat, 1957. 43 p. (MIRA 11:1)

1. Vsesoyuznaya promyshlennaya vystavka, 1957.
(Moscow--Exhibitions) (Canning and preserving industry)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.

Rectification of alcohol in the coming years. Spirt. prom. 23 no.4: 4-6 '57. (MLRA 10:5)

1. Ministerstvo promyshlennosti prodovol'stvennykh tovarov SSSR.
(Distilling industries)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I. I.

USSR/General Problems. Methodology. History. Scientific Institutions and Conferences. Instruction. Questions Concerning Bibliography and Scientific Documentation A

Abs Jour : Ref Zhur-Khimiya, No 3, 1958, 2827

Author : I. I. Aref'yev, (1), Ya. D. Fayershtern (11)
Inst :
Title : Forty Years of Alcohol and Liqueur-Vodka Industries. (1) Alcohol Industry. (11) Liqueur-Vodka Industry

Orig Pub : Spirt. prom-st', 1957, No 7, 1-10, 10-18

Abstract : No abstract

Card 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.

Development of the alcohol, liqueur-vodka and butyl-acetone industries in 1959-1965. Spirt.prom. 24 no.7:27-30 '58. (Distilling industries) (MIRA 11:11)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.; KRUCHININ, V.F.

Objectives of the alcohol, liqueur and vodka, buty alcohol-acetone, and alcohol-free beer industries in 1961. Spirt.prom 27 no.1:1-4 '61. (MIRA 14:2)

(Distilling industries)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

DIKKER, G.L.; DRUZHININA, L.N., kand. tekhn. nauk, dots.; ISKENDEROV, A.A., kand. tekhn. nauk, dots.; KLYUYEVA, T.K., kand. tekhn. nauk, dots.; LOGOTKIN, I.S., kand. tekhn. nauk; MEL'MAN, M.Ye., kand. tekhn. nauk, dots.; MISNIK, I.A., kand. tekhn. nauk; RUSH, V.A., dots.; RUKOSUYEVA, A.N., dots., red.; KAFKA, B.V., prof., retsenzent; FERTMAN, G.I., dots., retsenzent; SOBOLEVA, M.I., dots., retsenzent; BUDNITSKAYA, R.S., kand. tekhn. nauk, retsenzent; VOLKOV, Ye.N., kand. tekhn. nauk, retsenzent; AREF'YEV, I.I., inzh., retsenzent; KHARITONOV, A.F., retsenzent; GUREVICH-GUR'YEV, Ye.S., retsenzent; KUZ'MINSKIY, M.M., retsenzent; INIKHOV, G.S., prof., retsenzent; KHOMUTOV, B.I., dots., retsenzent; BORODINA, Z.N., dots., retsenzent; BORISOVA, G.A., red.; MEDRISH, D.M., tekhn. red.

[Starch, sugar, honey, confectionery products, condiments, fats, milk, and milk products] Khrakhmal, sakhar, med, konditerskie, vkusovye tovary, zhiry, moloko i molochnye produkty. Moskva, Gos. izd-vo torg. litry, 1961. 750 p. (MIRA 14:7)

(Food industry)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.

For steady progress of the industry. Spirt. prom. 27 no.6:4-6 '61. (MIRA 14:9)

(Distilling industries)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.I.; PYKHOV, V.G.

Combining the sugar and distilling industries and developing facilities for the production of dry feed yeasts. Spirt.prom. 29 no.2:27-28 '63. (MIRA 16:3)
(Industrial organization) (Feeds)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, I.M.; MALYSHEV, V.I.

Hydrogen bonds of hydrohalides. Opt.i spektr. 13 no.2:206-211 Ag '62. (MIRA 15:11)
(Hydrogen bonding) (Hydrogen halides--Spectra)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 22261-66

ACC NR: AR6005173 SOURCE CODE: UR/0058/65/000/009/A018/A018

AUTHORS: Aref'yev, I. M.; Malyshev, V. I.; Rautian, S. G.

30
B

TITLE: Vacuum spectrometer for the far infrared

10

SOURCE: Ref. zh. Fizika, Abs. 9A146

REF. SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 2, vyp. 1, 1964, 650-655

TOPIC TAGS: ir spectrometer, vacuum, diffraction grating

TRANSLATION: A vacuum long-wave ir spectrometer is described, for the region 60 - 1000μ with four interchangeable echelettes with d = 0.25, 0.5, 1.2 mm, measuring 300 x 300 mm.

SUB CODE: 20

Card 1/1 nst

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4020974 S/0051/64/016/003/0540/0541

AUTHOR: Myasnikova, T.P.; Aref'yev, I.M.

TITLE Low-frequency absorption spectra of some ferroelectrics

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 540-541

TOPIC TAGS: ferroelectric, ferroelectric transition, optical mode, absorption spectrum, ammonium sulfate, rubidium bisulfate, lithium hydroselenite, sodium hydroselenite, lattice vibration

ABSTRACT: It is known from the work of P.Anderson (Physics of Dielectrics, Trudy Vsesoyuznoy konferentsii 1958,M.1960), W.Cochran (Adv.Phys.9,387,1960) and V.L.Ginzberg (FTT 2, 2031,1960; Usp.fiz.nauk 77,621,1962) that phase transitions in ferroelectrics affect a small number of optical modes, the frequency of which decreases greatly at the Curie point. It is of interest to identify these modes. In investigating the temperature behavior of the bands of the ferroelectric materials $(NH_4)_2SO_4$, $RbHSO_4$, $LiH_3(SeO_3)_2$ and $NaH_3(SeO_3)_2$ by observation of their Raman spectra (P.A. Bazhulin, T.P.Myasnikova and A.V.Rakov, Ftt 5, 1783, 1963) no low-frequency vibrations sensitive to the ferroelectric transition were detected. Accordingly, the pre-

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4020974

sent investigation of the infrared absorption spectra was undertaken to seek such low-frequency vibrations. The present paper describes the preliminary results obtained for the 55 to 170 cm^{-1} region with observation at room temperature. The spectra were obtained by means of a special long wavelength spectrometer constructed in the Physical Institute of the Academy of Sciences (SSSR) with a 4 lines/mm echelette grating; the infrared source was a PRK-4 mercury discharge tube. The detected absorption bands are listed in the table (Enclosure 01). The bands are tentatively identified. Definite identification of the "ferroelectric modes", however, must await further studies involving observation of their temperature behavior. "The authors are grateful to P.A.Bazhulin for his interest in the work and discussions." Orig.art.has: 1 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 24Jun63 DATE ACQ: 02Apr64 ENCL: 01

SUB CODE: PH NR REF SOV: 004 OTHER: 006

Card 2/3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4043024 S/0051/64/017/002/0300/0302

AUTHOR: Aref'yev, I. M.

TITLE: Use of spectroscopy of negative light fluxes in the far infrared region of the spectrum

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 300-302

TOPIC TAGS: ir grating measurement device, ir measurement, ir radiation spectrum, ir research, light source

ABSTRACT: The author first explains why "cold" sources, using infrared radiation from the receiver operating at room temperature, should be more effective than "hot" sources, which have a very large short-wave component which in turn must be filtered out. This premise was checked using a vacuum long-wave infrared spectrometer (I. M. Aref'yev et al., Tezisy* dokl. 15 soveshch. po spektr. p. 12, Minsk, 1963) in the 40--120 μ range, using an echelette grating of

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4043024

6 lines/mm. The receiver was a vacuum bolometer at room temperature (M. N. Markov, Kand. diss. M., 1957). The radiation source was a Kovar beaker with liquid nitrogen (external surface temperature -180C). Plots of the resultant energy distribution are presented and interpreted. The results show in spectrometers having receivers operating at room temperature, the replacement of a mercury lamp with a cold source can lead to a gain in light flux in the near region of the far infrared. It is also pointed out that cold sources are stable and can be chosen to have arbitrary dimensions. "The author is grateful to P. A. Bazhulin and V. I. Maly*shev for interest in the work and for discussions." Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 30Nov63 ENCL: 00

SUB CODE: OP NR REF SOV: 008 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 3147-66 EWT(d)/EWT(1)/EEC(k)-2/T/EED(b)-3 IJP(c)

ACCESSION NR: AP5016050 UR/0368/65/002/005/0462/0464
535.345.62

52
43
B

AUTHOR: Aref'yev, I. M. 44,55

TITLE: On the choice of filters and on the determination of the spectral purity of radiation in long-wave infrared spectroscopy 21,44,55

SOURCE: Zhurnal prikladnoy spektroskopii, v. 2, no. 5, 1965, 462-464

TOPIC TAGS: light filter, ir analysis, ir spectrum, ir measurement, spectral energy distribution 9,44

ABSTRACT: It is shown on the basis of an analysis of the intensity distributions of the principal maxima in infrared spectra of first, second, and third orders, that in order to obtain a radiation purity close to 100 per cent in the entire first-order spectrum it is necessary to choose filters having a transmission such that the energy distribution in the spectrum of the first order begin with $\lambda \geq 0.67\lambda_1$ (λ -- wavelength of the light, λ_1 -- wavelength in the first-order spectrum). This corresponds to the point of intersection of

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L 3147-66

ACCESSION NR: AP5016050

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the intensity-distribution curves of the first and second orders. This premise was checked experimentally with a vacuum long-wave infrared spectrometer previously described by one of the authors (Aref'yev, Tezisy dokladov na XV sovesshchanii po spektroskopii [Abstracts of papers at the Fifteenth Conference on Spectroscopy] Minsk, 1963, p.12) with different echelettes. The experiments confirmed the analytic deductions. It is therefore concluded that the curves obtained from the theoretical calculations can be used to estimate the spectral purity of radiation in the entire spectrum. From the form of the energy distribution it is possible to determine with the aid of these curves the region in which there is no spurious radiation, and to estimate with its aid the fraction in other regions in the case when the energy distribution in the first-order spectrum begins earlier than at $\lambda = 0.67\lambda_1$. It is also shown that for evaluation of the spectral purity of the radiation in the long wave infrared spectroscopy one can use the curves of energy distribution from echelettes calculated in accordance with the Kirchhoff method. The authors thank P. A. Baxhulin for interest in the work and remarks, and V. I. Malyshev

44,55

44,55

Card 2/3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 3147-66

ACCESSION NR: AP5016050

3

and S. G. Rautian for remarks.' Orig. art. has: 2 figures and 1 formula

44,55

ASSOCIATION: None

SUBMITTED: 13Jul64 ENCL: 00 SUB CODE: OP

NR REF SOV: 006 OTHER: 002

Card 3/3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 37687-65 EWT(1)

ACCESSION NR: AP5[illegible] [illegible]/0407/0413

AUTH: Arefiyev, [illegible]

TITLE: Investigation of the temperature dependence of low-frequency Raman spectra of KH_2PO_4 and $NH_4H_2PO_4$ crystals

21

SOURCE: Fizika tverdogo tela, v. 7, no. 2, 1965, 407-413

TOPIC TAGS: deuterated phosphate, potassium compound, Raman spectrum, KDP, ADP

[illegible] The purpose of the study was to determine the low-frequency Raman spectra of [illegible] and ADP crystals near the Curie [illegible]

[illegible]

the system for varying the temperature [illegible] where (Bazhulin et al., Opt. i spektr. v. 16, [illegible], 1964). The samples investigated were analytically pure, in the form of small crystals, from different batches.

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

[illegible]-65

ACCESSION NR: AP5005275

sample temperature was maintained constant within 3K. Three to five spectra were taken for each temperature. The normal oscillations of the crystals are calculated by group theory, and it is shown that oscillations which are active up to the ferroelectric phase transition can appear also in the Raman spectra. The temperature dependence of the oscillation frequency and the temperature dependence of the scattering intensity do not contradict the the retical values, and agree als with recent results on infrared reflection spectra [illegible] Phys. v. 38, 2257, 1964). Both crystals exhibit oscillations whose frequency varies anomalously near the Curie point, in accordance with the predictions of the theory [illegible] of single crystals is necessary. "The authors thank G. F. Motulevich for [illegible] sion of some aspects of the present work." Orig. art. has: 2 figures, 1 formula, and 2 tables. [02]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute, AN SSSR)

SUBMITTED: 14Jul64 ENCL: [illegible] SUB CODE: SS, GP

NO REF SOV: 011 OTHER: [illegible] ATD PRESS: 3218

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 6451-66 EWT(1)/T/EED(b)-3 IJP(c)

ACCESSION NR: AP5019858 UR/0181/65/007/008/2413/2416

AUTHOR: Aref'yev, I. M.; Bazhulin, P. A.; Mikhal'tseva, T. V.

TITLE: Long wave infrared transmission spectra of KH_2PO_4

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2413-2416

TOPIC TAGS: potassium compound, phosphorus containing compound, transmission spectrum, IR spectrum, optic transmission, temperature dependence, diffraction grating, absorption band, dielectric constant, Curie point, ferroelectric property

ABSTRACT: This is a continuation of earlier work (FTT v. 7, 407, 1965) on the temperature dependence of the low-frequency Raman spectra of KH_2PO_4 and $NH_4H_2PO_4$. The present study was undertaken to refine the results in the excitation-wavelength region, where the results were distorted by ghosts due to the diffraction gratings. The authors determined the transmission spectra of a polycrystalline sample constituting a suspension of the powdered KH_2PO_4 crystal in paraffin in the frequency range 20--235 cm^{-1} at room temperature. The entire band was covered with two echelettes and 4 and 2 lines/mm, and in the 160--235 section of the spectrum the 4 lines/mm echelette was used in second order. The results are plotted in Fig. 1 of the Enclosure and confirm the previously observed broad absorption band at ~ 52

Card 1/3

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 6451-66
ACCESSION NR: AP5019858

cm^{-1}. The estimate of this vibration to the static dielectric constant is estimated to be ~6. The temperature variation of the transmission coefficient was measured in the range 295--150K. Although the experimental setup did not make it possible to reach the phase transition temperature (123K), it is deduced from the shift of the absorption band (~10 cm^{-1} against the theoretical ~18 cm^{-1}) that the optical oscillations of KH_2PO_4 have an anomalous ferroelectric behavior near the Curie point. Orig. art. has: 2 figures and 2 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Institute of Physics AN SSSR)

SUBMITTED: 09Mar65 ENCL: 01 SUB CODE: EM, OP

NR REF SOV: 007 OTHER: 008

Card 2/3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 6451-66
ACCESSION NR: AP5019858

ENCLOSURE: 01

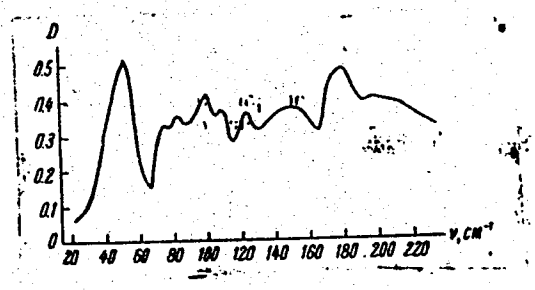

Fig. 1. Plot of optical density of KH_2PO_4.

nw
Card 3/3

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 2119-66 EWT(1)/T/EED(b)-3 IJP(c)

ACCESSION NR: AP5022732 UR/0181/65/007/009/2834/2836

AUTHOR: Aref'yev, I. M.; Bazhulin, P. A.; Zheludev, I. S.

TITLE: Longwave infrared transmission spectra of $NH_4H_2PO_4$

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2834-2836

TOPIC TAGS: transmission spectra, improved transmission spectra, dielectric

ABSTRACT: Transmission spectra of polycrystalline samples of $NH_4H_2PO_4$ were obtained in the frequency range from 20 to 235 cm^{-1}. The curve of optical density $D = -\lg K$ (where K is the transmission coefficient) showed ten absorption levels in the investigated range of the spectrum. A wide, intense level of absorption with a maximum in the region of 40—55 cm^{-1} was observed in the low-level part of the spectrum. No changes in the parameters of the 40—55 cm^{-1} level were evident from temperature measurements in the range from room temperature to 148K. The experiments demonstrated the presence of oscillations, which in [illegible] the dielectric properties of the crystal

Card 1/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 2119-66

ACCESSION NR: AP5022732

3

great measure characterize the dielectric properties of the crystal. [ZL]
Orig. art. has: 1 table, 1 figure, and 1 formula.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute, AN SSSR)

44,55

SUBMITTED: 26Apr65 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 003 OTHER: 005 ATD PRESS: 4117

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

L 21222-66 EWT(m)/EWP(t) IJP(c) JD

ACC NR: AP6003812 SOURCE CODE: UR/0181/66/003/001/0272/0274

AUTHORS: Aref'yev, I. M.; Bazhulin, P. A. (deceased); Gavrilova, I. V.; Zheludev, I. S.

ORG: Physics Institute im. P. N. Lebedev AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Temperature dependence of the intensity of light scattering in oriented single crystals of KH_2PO_4 and Rochelle salt

SOURCE: Fizika tverdogo tela, v. 8, no. 1, 1966, 272-274

TOPIC TAGS: ferroelectric crystal, phase transition, light scattering, temperature dependence, light polarization, elastic modulus, crystal lattice vibration, Curie point, paraelectricity, piezoelectric property

ABSTRACT: The purpose of the measurement of the temperature dependence was to check whether the ferroelectric phase transition in these crystals is connected with instability of the crystal against optical lattice vibrations. The experiment was made with a spectrometer

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L 21222-66

ACC NR: AP6003812

(DFS-12) whose output was photoelectrically recorded. The illuminator and the sample-cooling system are described elsewhere (A. V. Rakov, Tr. FIAN v. 27, 111, 1964). The investigated crystals were transparent with cross sections 7.5 x 7.5 mm and lengths 20, 23, and 49 mm. The Rochelle-salt crystals measured 7.5 x 7.5 x 30 mm. The intensity of scattering was measured at the maximum of the Hg 4358 Å line under smooth variation of the temperature. The results were strongly dependent on the polarization, and in the case of one type of polarization the intensity of the scattered light had a variation similar to that of the reciprocal of the elastic constant. It is concluded on this basis that the scattering is produced by anomalous acoustic vibrations. In the case of Rochelle salt, the effect is less pronounced in KH_2PO_4, and no increase in the scattering intensity is observed at the second Curie point. This indicates that the structure of the Rochelle salt crystal is different in the two paraelectric phases. No low-frequency Raman scattering spectrum was observed, and it is therefore deduced that the increase in the scattering intensity of the Curie point is connected with the anomalous behavior of the acoustic lattice vibrations. It is concluded on the

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L 21222-66

ACC NR: AP6003312

2

basis of these results and earlier data by the authors (FTT v. 7, 2413, 1965) that the ferroelectric phase transition in both salts is due to the instability of the crystal against the acoustic and optical vibrations of the lattice, which are interelated by the piezoeffect. The authors thank G. P. Motulevich and D. G. Sannikov for a useful discussion. Orig. art. has: 2 figures

SUB CODE: 20/ SUBM DATE: 02Aug65/ ORIG REF: 005/ OTH REF: 003

Card 3/3

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/96-58-11-6/21

AUTHOR: Pomerantsev, V.V., Doctor of Technical Science
Shagalova, S.L., Candidate of Technical Science
Aref'yev, I.M., Engineer

TITLE: An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame (Priblizhennaya metodika rascheta vygoraniya pyleugol'nogo fakela)

PERIODICAL: Teploenergetika 1958, Nr 11, pp 33-41 (USSR)

ABSTRACT: Previous work has established that the volatiles and coke burn simultaneously in the early stages of combustion of natural fuel. In fuel pulverised to 100 microns, the quantity of coke burned during the time of simultaneous burning of volatiles and coke is about 65 - 75%. As will be seen from Fig.1, the remaining coke burns very slowly and as the combustion time of the volatiles is so much less, the total burning time of the fuel is mainly governed by burning of the coke. For the purposes of mathematical analysis the simplifying assumptions are made that the pulverised fuel flame flows only forward and is of uniform section; also that the coke is ashless and the velocity and temperature

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/96-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

of the fuel particles are the same as the mean velocity and temperature of the gas. Tests show that these assumptions are valid for particles of up to 300 microns. The fundamentals of the calculation are explained in previously published articles and formulae are given for the combustion time of a particle of given size. On the basis of the equations that are derived, the condition of the flame at any given instant of time after a fuel particle enters the furnace is considered. Calculations are made of the quantity of fuel burning in a given time, the oxygen consumption, the oxygen concentration in the torch and the fuel particle size distribution. Finally a general solution is obtained from which are derived formulae for calculating the combustion of fuel dust in the diffusion and kinetic regions. For convenience of calculation, nomograms are constructed for equations 13, 21 and 22; these are given in Fig.4. These nomograms may be used to determine the combustion

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SOV/96-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

time of the flame provided that the elementary and fractional composition of the coal particles, the calorific value of the fuel, the kinetic constants of the coke, the amount of mechanically-incomplete combustion, the excess-air factor and the mean temperature in the furnace chamber are given. The nomograms can also serve to determine the amount of mechanically-incomplete combustion after the torch has burned for a given time and to indicate the best furnace conditions. They are likewise useful in comparing operation of various furnace arrangements and to solve a number of other problems. However, sufficient data is not available on the reaction characteristics of natural fuel. Therefore, the nomograms were first used to determine the combustion constants from data obtained during heat balance tests on industrial furnaces. The mean flame temperature enters into the calculation and the determination of this temperature is next considered.

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/96-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

An empirical formula for the temperature change over the length of the flame is given. The position of maximum temperature under various conditions is discussed. Several methods have been proposed to determine the mean temperature but they are not sufficiently in accord with combustion conditions. An expression is given for the determination of the mean temperature. By successive numerical integration of one side of this expression with subsequent determination of the mean temperature, graphs were constructed for the mean temperature of the flame. These are given in Fig.5. Practical test data are then analysed. The method of calculation described above was used to work out test results on a number of industrial furnaces in order to determine the combustion-rate constants for cokes of natural fuels. It was assumed that the mean particle velocity is the same as the gas velocity and that particles do not re-circulate. Forty series of industrial tests, totalling about 600 sets of

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SOV/95-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

results of tests on different types of furnace, were analysed. The fuels involved range from anthracite to lignite. The test data adequately covers the range of conditions encountered in industrial furnaces. The results are plotted in Fig.6. as the relationship between the logarithm of the apparent reaction-speed constant and the reciprocal of the absolute temperature. The values of the apparent kinetic combustion constants for any given fuel are grouped round a straight line with a maximum scatter of + 60% from the mean. Individual test results in which the burners were working irregularly are excluded. Provided combustion is normal, the values of the apparent constants for any given fuel are practically independent of burner construction and arrangement because in modern furnaces with long flames the initial mixing conditions influence only the stability of ignition. Because it was assumed

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/96-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

that the flame flows only forward the constants determined are not universally applicable but they can be used for combustion calculations on furnace chambers of the type here analysed. Further test data must be worked out for various industrial furnaces and rigs so that the influence of aerodynamic factors can be assessed and the values of more generally applicable constants determined. Comparison between the test data and laboratory data given in Fig.7. shows that in both cases the values of the constants are of the same order. Therefore, very extensive data obtained with different furnaces and different kinds of fuel have confirmed the general validity of the given method of analysing combustion. The accompanying methods of calculation, including the nomogram, can be used for quantitative evaluation of the behaviour of the combustion process under particular conditions in a given furnace. They can be used

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"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/96-58-11-6/21

An Approximate Method of Calculating the Combustion of a Pulverised Fuel Flame

to compare the operation of furnaces and to determine the influence of various factors on the rate of fuel consumption and also to compare different methods of burning fuel. There are 7 figures, 1 table and 9 Soviet references.

ASSOCIATION: Tsentral'nyy kotloturbinnyy institut (Central Boiler Turbine Institute)

Card 7/7

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, K.M.

Possibility of calculating the data for the combustion of coal fines in combustion chambers. Nauch.tekh.inform.biul.LPI no.12:9-19 '58. (MIRA 13:2)
(Combustion) (Carbon)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, K. M., Candidate of Tech Sci (diss) -- "Analysis of the process of combustion of a powdered-coal flame, and the development of methods of computing it". Leningrad, 1959. 17 pp (Min Higher Educ USSR, Leningrad Polytech Inst im M. I. Kalinin), 150 copies (KL, No 21, 1959, 114)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

11.7400

S/123/61/000/008/012/013
A004/A104

AUTHORS: Aref'yev, K.M., Maslichenko, P.A., Paleyev, I.I.

TITLE: Calculating the evaporation of liquid fuel in a hot gas flow and estimating the possibility of igniting the forming mixture

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 8, 1961, 10, abstract 8I52 ("Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t", 1959, no. 8, 5 - 14)

TEXT: The authors give an account of the calculation method of the evaporation of a semi-dispersed aggregation of drops of liquid fuel taking into consideration the steam oxidation and the anisothermal character of the process. This method is somewhat conditional, but taken as a whole it presents a true characteristic of the process and a correct order of magnitudes. Calculation results are given. There are 5 figures and 8 references.

B. Zemel'man

[Abstracter's note: Complete translation]

Card 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, K.M.; MASLICHENKO, P.A.; PISKUN, L.F.

Aerosol generators. Trakt. i sel'khozmash. no.12:18-19 D '59. (MIRA 13:3)

1. Leningradskiy politekhnicheskiy institut im. M.I. Kalinina. (Aerosols)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

S/196/61/000/006/012/014
E194/E435

AUTHORS: Pomerantsev, V.V., Shagalova, S.L., Aref'yev, K.M.

TITLE: Analysis and calculation of the combustion of a pulverized fuel flame

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, 1961, No.6, p.10, abstract 6G62. (Sb. 3-e Vses. soveshchaniye po teorii goreniya. T.2., M., 1960, pp.158-160)

TEXT: Existing procedures for calculating the combustion of coal dust have not been used in engineering practice. New efforts in this direction have been undertaken in the TsKTI (Central Boiler and Turbine Institute). The procedure is based on solving the problem of combustion of a pulverized fuel flame which is of uniform particle size distribution across the section. The solution allows for the combined influence on the process of kinetic and diffusion factors and also allows for varying concentration and approximately for the temperature distribution in the flame. The main assumptions are: (1) the speed and temperature of the fuel particles are assumed to be the same as those of the gas flow in which they are carried; (2) when the fuel is milled the ash is

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separated from the combustible materials; (3) combustion of fuel particles is considered as a quasi-stationary combustion of particles of dry ashless coke. Unlike other methods of calculation in solving the problem, the kinematic equation is written at once for the flame as a whole and the equation of combustion of an individual particle is used to determine the relationship between the dimensions of particles of different particle size during the process of their combined combustion. In this way it is ultimately possible to obtain an explicit relationship between the combustion time of the flame and the amount of material not burned. A simple method of calculation has been developed which uses a nomogram. The results of 800 tests have been worked out and this has shown the correctness of the procedure of calculation and has made it possible to determine apparent combustion speed constants for various types of fuel.
Abstracted by M.Knorre.

[Abstractor's note: Complete translation]

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SHAGALOVA, S.L., kand.tekhn.nauk; AREF'YEV, K.M., inzh.

Analyzing the effects of operating conditions parameters on the magnitude of mechanical underfiring in compartment furnaces. Teploenergetika 7 no.2:41-47 F '60. (MIRA 13:5)

1. TSentral'nyy kotloturbinnyy institut.
(Furnaces)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACCESSION NR: AP4044411 S/0170/64/000/008/0003/0008

AUTHORS: ~~Areflyev, K. M.~~; Gnedina, I. A.

TITLE: Criterial formula for critical heat load in subcooled liquids under forced flow

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 8, 1964, 3-8

TOPIC TAGS: heat transfer, boiling, forced flow, buoyancy, ammonia, ethyl alcohol, Reynolds number

ABSTRACT: The critical heat flow conditions in water, ammonia, and ethyl alcohol in forced flow were investigated analytically and experimentally. Combining the critical boiling condition $d_0^2 n Z \tau_p = C$ with the specific heat flux in boiling $q \simeq \rho c_p d_0^3 \Delta t_{cp} n Z_p$ a general expression is derived for q(critical). The expression is given in terms of the similarity parameters

$$\tau_n \sim \frac{d_0}{U_0} f\left(\frac{U_0}{W}, \frac{\rho U_0 d_0}{\mu}, \frac{\mu c_p}{\lambda}, \frac{c_p T_s}{r}, \frac{\rho}{\rho_n}\right),$$

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, K.M.; GNEDINA, I.A.

Criterional formula for critical heat loads in forced motions of an undercooled liquid. Inzh.-fiz. zhur. 7 no.8:3-8 Ag '64. (MIRA 17:10)

1. Politekhnicheskiy institut im. M.I. Kalinina, Leningrad.

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACC NR: AP7002916 SOURCE CODE: UR/0170/66/011/006/0765/0772

AUTHOR: Aref'yev, K. M.; Paleyev, I. I.; Borishanskiy, V. M.; Khomchenkov, B. M.; Ivashchenko, N. I.

ORG: Polytechnical Institute im. M. I. Kalinin, Leningrad; (Politekhnicheskiy institut); Central Boiler and Turbine Institute, Leningrad (Tsentral'nyy kotloturbinnyy institut)

TITLE: Thermal diffusion of cesium gases in helium

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 11, no. 6, 1966, 765-772

TOPIC TAGS: cesium, helium, thermal diffusion, gas kinetics, helium cesium mixture

ABSTRACT: A study was made of the thermal diffusion of cesium vapor in helium using the Enskog-Chapman kinetic theory and taking into account the factor of condensation in Stefan flow. Thermal diffusion was found to comprise 55% of the concentrated diffusion and 35% of the total diffusion flow. It follows that in the case of the condensation of cesium gas from a cesium-helium mixture, thermal diffusion

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APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

ACC NR: AP7002916

must be considered to be an essential effect. Orig. art. has: 4 figures, and 7 formulas.

[GC]

SUB CODE: 20/SUBM DATE: 14Jul66/ORIG REF: 007/OTH REF: 002/

Card 2/2

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, L.

Factory management helps to improve living conditions of women workers. Sots.trud 4 no.8:124-126 Ag '59.
(MIRA 13:1)

1. Zamestitel' direktora Kalininskogo kombinata iskusstvennogo volokna.
(Women--Employment)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, M.G.; KARPOV, L.I.; BLAGONRAVOV, A.A., akademik general-leytenant artillerii, redaktor.

[Manufacture of firearm barrels] Proizvodstvo stvolov strelkovogo orushiia. Moskva, Glav. red. vooruzheniia i boepripasov, 1945. 225 p. (MLRA 7:1)

(Firearms industry)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SAMOKHVALOV, Sergey Feofilovich; AREF'YEV, M.I., inzh., retsenzent; BRAYLOVSKIY, N.G., inzh., red.; USENKO, L.A., tekhn. red.

[Mechanized hand tools] Mekhanizirovannyi ruchnoi instrument. Moskva, Transzheldorizdat, 1963. 226 p. (MIRA 16:5)
(Power tools)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, M. S.

USSR/Chemistry - Electrolytes
Chemistry - Emulsions

Feb 1947

"The Influence of the Concentration of Electrolytes in Water Present in Oil, on the Dielectric Constant of the Latter," N. N. Stepanenko, N. B. Vargaftik, M. S. Aref'yev, Physics Laboratory, Institute of Construction, Mossovet, 2 pp

"Kolloidnyy Zhurnal" Vol IX, No 2

Several scientists, among them Frenkel, have advanced the theory that it might be possible to apply Golubtsov's electrical method for determining the moisture content of petroleum products. As a result, the authors describe the experiments which they conducted to determine the effect of the concentration of electrolytes in water which is found in oil, and the effect this has on the dielectric constant of the oil. In the experiments the dielectric constant determined the capacity of the condenser.

PA 34T11

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

AREF'YEV, M.S.

2

Dielectric coefficients and coefficients of absorption of palmitic acid. M. S. Aref'ev, B. A. Agranat, and A. P. Kerman (Building Inst. Moscow Soviet, Moscow). *J. Phys. Chem.* (U.S.S.R.) 21, 702-6(1947)(in Russian).—The dielec. consts., for $\lambda = 2.54$ m., of palmitic acid are 2.264, 2.286, 2.306, 2.395, and 2.402 at 19, 30, 40, 63, and 75°; there is no sudden change at the m.p. (62.5°). The coeff. of absorption at 75° and 2.54 m. is 0.015. The mol. polarization is calcd. and compared with the dipole moment of dissolved palmitic acid (cf. *C.A.* 40, 3022[6]) and with theoretical formulas. The results are discussed assuming liquid palmitic acid to be assocd. J. J. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, Mikhail Sergeyevich, dots.; MAL'CHIKOV, Yu.A., red.; NAVROTSKIY, O.G., tekhn. red.

[Practical work in physics using the method of comprehensive group studies; a textbook for laboratory work in physics for students of resident of correspondence courses at pharmaceutical institutes and faculties]Fizicheskii praktikum po metodu kompleksno-kollektivnykh issledovanii; rukovodstvo k laboratornym zaniatiiam po fizike dlia studentov farmatsevticheskikh institutov i fakul'tetov ochnogo i zaochnogo otdelenii. Moskva, 1962. 248 p. (MIRA 15:10)

1. Moscow. Pervyy meditsinskiy institut. Kafedra fiziki.
(Physics--Study and teaching)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AREF'YEV, N.A.

Ram charge loader. Stek. i ker. 19 no.2:32-34 F '62. (MIRA 15:3)

(Glass factories)

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

SOV/137-59-5-11298

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, p 259 (USSR)

AUTHOR: Aref'yev, N.P.

TITLE: Improved Operation of Metallurgical Shops

PERIODICAL: V sb.: Za novuyu tekhn. i progressivn. tekhnol., Minsk, Gos. izd-vo BSSR, 1958, pp 155 - 160

ABSTRACT: This is a description of measures to improve labor conditions and to raise efficiency of foundry, forge-pressing and heat treatment shops at domestic plants.

Ye.L.

Card 1/1

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

AUTHORS: Yurzhenko, T. I., Grigor'yeva, K. S. Aref'yev, N. V., Vilenskaya, M. R. 20-118-5-34/59

TITLE: The Synthesis of Alkylated Hydroperoxides of the 1,1-Diphenylethane Series by the Method of Chromatographical Isolation (Sintez alkilirovannykh gidroperekisey ryada 1,1-difenilletana s primeneniyem khromatograficheskogo metoda ikh vydeleniya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 5, pp. 97o-972 (USSR)

ABSTRACT: It was stated (references 1-3) that the peroxidation chiefly occurs in the place of the C-linkage of the hydrocarbons (autoxidation). The reactivity of this linkage is increased in the series of the primary, secondary, and tertiary C-atom as well as under the influence (by the α carbon atom) of several other structural factors: of ether oxygen, of the benzene nucleus, of a double linkage, of a system of double linkages, and others. It was interesting to investigate the influence of different alkyl radicals which effect the C-H linkage and the hydroperoxide group through the benzene

Card 1/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

The Synthesis of Alkylated Hydroperoxides of the 1,1-Diphenylethane Series by the Method of Chromatographical Isolation 20-118-5-34/59

elongation of the aliphatic chain at the tertiary carbon atom. The methodology of the isolation and purification according to the chromatographical method (reference 7) is described. Table 3 gives data of the reproduced peroxides (I - V). The peroxides were also characterized by chemical methods according to their decomposition products. From the data obtained here it can be concluded that these peroxide compounds represent tertiary hydroperoxides. Their structures are explained by formulae; they can be denominated as follows: I: 1-phenyl-1-p-tolylethane-hydroperoxide; II: 1-phenyl-1-p-ethylphenylethane-hydroperoxide; III: phenyl-1-cumylethane--hydroperoxide-1; IV: 1-phenyl-1-4-tributylphenylethane--hydroperoxide-1; V: 1,1-diphenyl-n-butane-hydroperoxide-1. There are 3 tables and 1o references, 5 of which are Soviet.

ASSOCIATION: L'vovskiy politekhnicheskiy institut (L'vov Polytechnical Institute)

PRESENTED: October 5, 1957, by B. A. Arbuzov, Member, Academy of Sciences USSR

Card 3/4

APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8"

"APPROVED FOR RELEASE: 06/05/2000 CIA-RDP86-00513R000101920019-8

BOOK EXPLOITATION

Akademiya nauk SSSR. Institut khimicheskoy fiziki

Okislenie uglevodorodov v zhidkoy faze; sbornik statey (Oxidation of Hydrocarbons in the Liquid Phase; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 334 p. Errata slip inserted. 2,200 copies printed.

Ed.: N. M. Emanuel', Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: L. M. Dymshyts; Tech. Ed.: I. P. Rus'min.

PURPOSE: This collection of articles is intended for chemists interested in hydrocarbon oxidation reactions, particularly for those specializing in petroleum fuels.

COVERAGE: This collection of 33 articles represents the results of investigations over a period of several years on problems of hydrocarbon oxidation. The authors present their own theoretical and experimental data and also draw from current literature. No personalities are mentioned. References accompany most of the articles.

Sergeyev, P.G. (Deceased), B.V. Kirpan, and B.I. Golovanenko [Scientific Research Institute of Synthetic Alcohols and Organic Products]. Kinetics of the Thermal Decomposition of Certain Aliphatic-Aromatic Hydrogen Peroxides 207

The kinetics of the thermal decomposition of the hydroperoxides of isopropylbenzene and of s-butylbenzene, with and without solvents, is investigated at 100-130°C. It is shown that the thermal decomposition reactions of s-butylbenzene and isopropylbenzene hydroperoxides differ greatly.

Kucher, R.V., A.I. Turzhetko, and M.A. Koynus [L'vovskiy gosudarstvennyy universitet imeni Ivana Franko (Lvov State University imeni Ivan Franko)]. Oxidation of Tertiary Hydrocarbons in Emulsions by Molecular Oxygen 212

The rate of hydrogen peroxide accumulation during the oxidation of isopropylbenzene by gaseous oxygen in alkaline emulsions of hydrocarbons was investigated. The presence of emulsifiers increases the rate of oxidation as a result of increased oxygen, hydrocarbon and hydrogen peroxide solubility in the aqueous phase. Solid bentonite emulsifiers were used. Isopropylbenzene is more easily oxidized than 1,1-diphenylethane.

Ryentova, M.S. [Moscow State University imeni M.V. Lomonosov]. Oxidation of Aromatic Hydrocarbons by Oxygen 220

The author explains the link between the structure of aromatic and naphthenic hydrocarbons and their stability with respect to oxygen at high temperatures (175-205°).

Turzhetko, T.I., L.S. Grigor'yeva, N.V. Aref'yev, and M.R. Vilenskaya [L'vovskiy politekhnicheskiy institut (L'vov Polytechnical Institute)]. Chromatographic Synthesis of Alkylated Hydrogen Peroxides of the 1, 1-Diphenylethane Series 227

Mitskevich, N.I., and T.N. Gorenko [Institut khimii AN BSSR (Institute of Chemistry, Academy of Sciences BSSR)]. Conjugate Decarboxylization in the Autooxidation of Resin Acids 238

The authors have shown that this phenomenon is characteristic of the oxidation process of all resin acids. The results obtained are particularly important for understanding the chemistry of resin acid transformations.

Sarayeva, V.V. [Moscow State University imeni M.V. Lomonosov]. Kinetics of the Reaction of Organic Peroxides with the Iodine Ion 245

The author concludes from the kinetics of the separation of iodine by a given peroxide that it is possible to determine the peroxide qualitatively and quantitatively and to identify its class.

Obukhova, L.K. [Institute of Chemical Physics, Academy of Sciences USSR]. Quantitative Methods of Determining Fatty Acids of Normal Structure 249

The author has used paper chromatography to separate mixtures of hydroxamic acids up to C^4 and their derivatives, and the distillation method to separate methyl esters of acids above C5 with a carrier.

Moshkin, P.A. [Corresponding Member, Academy of Sciences USSR] [Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniya iskusstvennogo zhidkogo topliva (All-Union Scientific Research Institute of Petroleum and Gas Refining and of Synthetic Liquid Fuel Production)]. Oxidation of Solid Hydrocarbons to Obtain Synthetic Fatty Acids 255

The author discusses the composition of mixtures of synthetic fatty acids, data on neutral oxygen-containing compounds of "secondary nonsaponifiables" of the paraffin oxidation product, and research material on [illegible] synthesis of fats in alkaline media.

Aref'yev

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Kiyev. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy rudnoy, neftyanoy i gazovoy promyshlennosti

Nauchnyye zapiski, vyp. 1: Dobycha i pererabotka nefti (Scientific Reports of the State Scientific Research and Project Institute for the Coal, Mining, Oil, and Gas Industries, No. 1: Extraction and Processing of Petroleum) Kiyev, 1960. 91 p. 1,000 copies printed.

Sponsoring Agencies: UkrSSR Gosudarstvennaya planovaya komissiya Soveta Ministrov; Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut ugol'noy, rudnoy, neftyanoy, i gazovoy promyshlennosti "Ukrniiproyekt."

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Card 1/5

PURPOSE: This collection of articles is intended for petroleum researchers, engineers, and refiners.

COVERAGE: The collection of articles deals with the production and refining of petroleum. Individual articles discuss the effect of bound water on the depletion of petroleum deposits under dissolved gas conditions, the effect of pressure on the viscosity of degasified petroleum, the structure of high-molecular petroleum hydrocarbons, the asphaltene and tar components of Carpathian crudes and menilite shale asphalts, and the aliphatic composition of alcohols produced by selective hydrogenation of the CO and H_2 product of synthesis. Other articles describe the carbamide dewaxing method for filtrates of wax distillates, the production of flotation agents with the use of oxidized petrolatum, and the investigation of six-membered aromatic and naphthenic hydrocarbons by means of infrared absorption spectra. The remaining articles are on the relations of pressure-volume-temperature-ethylene and on the phase equilibrium in ethylene-n-hexane, ethylene-cyclohexane, and ethylene-benzene systems. Specific volumes and compression coefficients at

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PETROLEUM REFINING

Sergiyenko, S. R., Ye. V. Lebedev, and A. A. Mikhnovskaya. On the Structure of High Molecular Hydrocarbons of Petroleum 13

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Sklyar, V. T., A. P. Lizogub, A. F. Mal'nev, and G. A. Puchkovskaya. Study of Six-Membered Aromatic and Naphthenic Hydrocarbons by Infrared Absorption Spectra 25

Sklyar, V. T., L. M. Samtsova, T. G. Sokolova, and N. V. Aref'yev. Asphaltene and Tar Components of Some Carpathian Petroleums and Asphalts of Menilite Shales 30

Sabirova, G. V., G. M. Shapovalov, and V. N. Karaseva. Production of an Effective Flotation Agent Based on Oxidized Petrolatum 56

Zhurba, A. S., and T. P. Zhuze. Comparison of the Ethylene-n-Hexane, Ethylene-Cyclohexane, and Ethylene-Benzene Systems by the p-v-t-N [pressure-volume-temperature-molar fraction of ethylene in the mixture] Relations and Phase Equilibrium 68

Zhuze, T. P., and A. S. Zhurba. Specific Volumes and Compression Coefficients of the n-Hexane-Ethylene System in the Interval of Pressure to 150 atm and Temperature of 30-150°C 78

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GRINBERG, I.V.; PETRIKOVSKAYA, M.Ye.; AREF'YEV, N.V.

Study of the chemical, genetic and isotopic relationship of gas-condensate hydrocarbons in the Carpathian region. Geol. sbor. [Lvov] no.7/8:54-65 '61. (MIRA 14:12)

1. Institut geologii poleznykh iskopayemykh AN USSR, L'vov.
(Carpathian Mountain region—Hydrocarbons)

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TVERDOVA, R.A.; ASTASHOVA, A.N.; AREF'YEV, N.V.

Regularities in the change of the properties of oils and bitumens in the Devonian sediments of Volgograd Province. Geol. nefti i gaza 8 no.3:33-37 Mr '64. (MIRA 17:6)

1. Volgogradskiy nauchno-issledovatel'skiy institut neftyanoy i gazovoy promyshlennosti.

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AREF'YEV, P.

Afterwork duty at the factories and in offices. Sov. profsoiuzy 7 no.11:46-47 Je '59. (MIRA 12:9)

1.Zaveduyushchiy otdelom okhrany truda TSentral'nogo komiteta profsoyuza rabotnikov gosudarstvennykh uchrezhdeniy.
(Overtime)

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AREF'YEV, Sergey Danilovich; SVET, Ye.B., red.

[Operation of gas-fired heating boilers; handbook for stokers of gas-fired boilers] Ekspluatatsiia otopitel'nykh kotlov na gozovom toplive; posobie dlia kochegarov kotlov, otaplivaemykh gazom. Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1963. 176 p. (MIRA 17:11)

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AREF'YEV, S.S.

OLSUF'YEV, N.G.; TSVETKOVA, Ye.M.; BORODIN, V.P.; KOROLEVA, A.P.; SIL'CHENKO, V.S.; KHOROSHEV, I.G.; MYASNIKOV, Yu.A.; PERFIL'YEVA, Z.A.; KRATOKHVIL' N.I.; VAYSTIKH, M.A.; RAVDONIKAS, O.V.; BARANOVA, N.K.; ZIMINA, V.Ye.; TORMASOVA, L.N.; USTIN-PETROVA, T.F.; AREF'YEV, S.S.; KONKINA, N.S.; KUL'BA, A.P.; MAL'TSEVA, N.K.; SHELANOVA, G.M.; SORINA, A.M.; BRANITSKAYA, V.S.; PRUDNIKOVA, M.N.

Tularin from a vaccinal strain for epicutaneous use. Zhur. mikrobiol.epid. i immun. 27 no.9:22-28 S '56. (MLRA 9:10)

1. Iz Instituta epidemiologii i mikrobiologii im. N.F.Gamelei AMN SSSR i protivotuliaremiynykh stantsiy Stalingradskoy, Voronezhskoy, Tul'skoy, Plavskoy, Omskoy, Krasnodarskoy, Moskovskoy i Smolenskoy.
(TULAREMIA, diagnosis,
tularin epicutaneous test (Rus))

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OLSUF'YEV, N.G.; YEMEL'YANOVA, O.S.; UGLOVOY, G.P.; SIL'CHENKO, V.S.; KHOROSHEV, I.G.; YEZHOVA, Ye.N.; BESSONOVA, M.A. ; VEDENEYEVA, Ye. V.; AREF'YEV, S.S.; SHELANOVA, G.M.; SORINA, A.M.; BORODIN, V.P.; KOROLEVA, A.P.; SUVOROVA, A.Ye.; ONIKHIMOVSKAYA, V.A.; STOLYAROVA, A.D.; BYSTROVA, K.A.; REPINA, R.F.; MYASNIKOV, Yu.A.; LEVACHEVA, Z.A.; YEGIAZARYAN, K.K.; RAVDONIKAS, O.V.; SARMANEYV, A.P.

Optimal periods for testing skin reaction in subjects inoculated against tularemia with a dry live vaccine and vaccinal, reactogenic and immunogenic properties of this preparation. Zhur. mikrobiol. epid. i immun. 32 no.6:92-98 Je '61. (MIRA 15:5)

1. Iz otdela prirodnoochagovykh infektsiy Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR, otdelov Osobo opasnykh infektsiy Voronezhskoy, Leningradskoy, Moskovskoy, Smolenskoy, Stalingradskoy, Tambovskoy, Tul'skoy, oblastnykh sanitarno-epidemiologicheskikh stantsiy i Omskogo instituta epidemiologii, mikrobiologii i gigiyeny.
(TULAREMIA) (VACCINES)

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