

SOV 86-36 4-5470
Isomers With Millisecond Periods Formed in Reactions With Neutrons With
Energies of 14 Mev

lushov, Yu. Ye. Luptskiy, A. V. Gusev, V. S. Ionin, and
D. F. Yurintsev for their collaboration. There are 12 figures,
1 table, and 11 references, 10 of which are Soviet.

SUBMITTED: October 21, 1968

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S/056/60/039/006/026/063
B006/B056

AUTHORS: Glagolev, V. L., Morozov, A. M., Yampol'skiy, P. A.
TITLE: Reactions Leading to the Formation of the Isomer Pb^{205m}
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 6(12), pp. 1621 - 1624

TEXT: It was the aim of the authors to investigate more closely the characteristics of the short-period gamma radiation emitted from thallium irradiated by 19.2-Mev protons and from lead, irradiated by 14.7-Mev neutrons, and to prove that this radiation must be ascribed to the isomer Pb^{205m} . The experimental method is described in an earlier paper (Ref.5). From a multiple of measurements the energy of this short-period radiation could be determined as (0.97 ± 0.01) Mev; however, in the spectrum of this radiation also lines with 0.75 ± 0.01 and (0.27 ± 0.02) Mev may be observed. Investigation is rendered more difficult because of the considerable background. The half-life of the radiation with 0.97 Mev could be determined as (5.2 ± 0.3) msec, and it was shown that this isomeric radiation occurs in the reaction of Tl^{205} with

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Reactions Leading to the Formation of the
Isomer Pb^{205m}

S/056/60/039/006/026/063
B006/BC56

The minimum proton energy at which it occurs was determined as (7.7 ± 0.4) Mev. The data obtained can be explained only by assuming that the isomer is formed according to the reaction $Tl^{205}(p,n)Pb^{205m}$. With a 32.3 mg/cm^2 thick thallium target, the cross section of the reaction was determined as $\sigma_m = (20 \pm 4)$ mb for an energy of 19.2 Mev. Further investigations of the short-period radiation were made by bombarding lead by 14.7-Mev protons; in these experiments, the half-life of radiation was determined as (5.0 ± 0.2) msec, the maximum intensity corresponded to an energy of (0.94 ± 0.02) Mev. Further investigations showed that this reaction was $Pb^{206}(n,2n)Pb^{205m}$; its cross section was determined as $\sigma_m = (1.1 \pm 0.2)$ b. The results are compared with those obtained by other authors and are discussed. The authors thank A. P. Klyucharev for his interest and the accelerator team of the FTI AN USSR (Institute of Physics and Technology AS UkrSSR) as well as M. V. Nikishova for experimental help. There are 1 table and 7 references: 4 Soviet, 2 US, and 1 Dutch.

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Reactions Leading to the Formation of the
Isomer Pb^{205m}

S/056/60/039/006/026/063
B006/3056

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute
of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: July 29, 1960

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Card 3/3

28126
S/056/61/040/003/006/031
B102/B202

24.6720

AUTHORS: Glagolev, V.L., Yampol'skiy, P.A.
TITLE: Study of the reactions (n,2n) leading to the formation of isomers
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 3, 1961, 743 - 748

TEXT: The authors have presented the investigation methods and the preliminary results in previous papers (ZhETF, 36, 1046, 1959 and 39, 1621, 1960); in this paper, further details are given. The samples were bombarded with neutrons which were emitted in a pulsed bombardment by D_2^+ ions of a thick tritium zirconium target. The neutron energy spectrum had a maximum at 14.7 Mev with a half-width of 0.25 Mev. The following results were obtained: The lead isomer which had been formed in the reaction $Pb^{208}(n,2n)Pb^{207m}$ had a half-life of 0.81 ± 0.02 sec, the isomer production cross section was $\sigma_m = 1.7 \pm 0.3$ b. Similar experiments were made with

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Study of the reactions ...

S/056/61/040/003/006/031
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the reaction $\text{Bi}^{209}(n,2n)\text{Bi}^{208m}$. It was found that the energies of gamma radiation accompanying Bi^{208m} decay were 0.88 ± 0.02 Mev and 0.50 ± 0.02 Mev, the half-life was 2.6 ± 0.1 msec, the reaction cross section was 0.66 ± 0.12 b. Further experiments were made in order to determine the cross section of reactions which led to the formation of a long-lived niobium isomer as well as experiments for a more accurate measurement of the Na^{24m} half-life. 10.0 ± 0.3 d was obtained for the half-life of the isomer Nb^{92g} , 0.94 ± 0.1 Mev for the energy of gamma radiation accompanying its beta decay. The reaction cross section $\text{Nb}^{93}(n,2n)\text{Nb}^{92g}$ was found to be $\sigma_{g27} = 0.56 \pm 0.06$ b. The sodium isomer was produced in the reaction $\text{Al}^{27}(n,\alpha)\text{Na}^{24m}$; the Na^{24m} life time was found to be 18.3 ± 0.6 msec. The Y^{88m} production cross section was $\sigma_m > 0.4$ b. Furthermore, the authors calculated the cross section of lead-isomer production assuming that this

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Study of the reactions ...

isomer is produced only in the reaction $\text{Pb}^{208}(n,2n)\text{Pb}^{207m}$. The value obtained was compared with the one calculated from the strong-interaction theory by assuming a two-stage mechanism of neutron evaporation in the $(n,2n)$ reaction. In this case a Pb^{207} level scheme was used which was in agreement with the shell model: $p_{1/2}$ (ground state), $f_{5/2}$ 0.570 Mev; $p_{3/2}$ 0.894 Mev; $i_{13/2}$ 1.633 Mev (metastable state); $f_{7/2}$ 2.34 Mev; $g_{9/2}$ 2.75 Mev; $i_{11/2}$ 3.60 Mev; $d_{5/2}$ 4.42 Mev; $g_{7/2}$ 4.66 Mev; $d_{3/2}$ 5.28 Mev; furthermore a level with $(15/2)^-$ and the energy ~ 5 Mev is assumed. The relative probabilities for various types of transitions are estimated from the relation between the lifetime of a nucleus in the excited state and the transition energy. The experimental and theoretical results are in good agreement. The authors thank M.V. Nikitova for assistance in the experiments. V.N. Sakharov, B.S. Dzheleпов, L.K. Peker, N.N. Flerov, V.M. Talitsyn, A.B. Migdal, L.V. Groshev and I.S. Shapiro are mentioned. There are 1 figure and 28 references: 8 Soviet-bloc and 20 non-Soviet-bloc. The 2 most recent references to English-language publications read as follows: D. Strominger, J.M. Hollander, G.T. Seaborg,

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Study of the reactions ...

S/056/61/047/003/056/031
B102/B202

Rev. Mod. Phys. 30, 585, 1958; V.J. Asby et al., Phys. Rev. 111, 616, 1956.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of
Sciences USSR)

SUBMITTED: October 7, 1960

Card 4/4

GLADILY, V. N.,

Gladiy, V. N., Focusing of stationary current through a cylindrical magnetron. *I. 243*

It is shown that the problem of passing a stationary current through a cylindrical magnetron can be reduced to finding a solution for a one-parametrical integral equation with a parameter which depends on the ratio of the cathode radius to the maximum value of the radius of the vector of the electron trajectory. By consecutive approximation the solution of the integral equation for the limiting case of a very thin cathode has been found.

Leningrad Physics-Technical Inst.
Acad. of Sci., USSR
March 16, 1949

See: Journal of Technical Physics, (USSR) 17, No. 3 (1949)

21(0)

PLASMA BOOK EXPLANATION

00V/2001

International Conference on the Practical Uses of Atomic Energy, 24., Geneva, 1958
Dailyevy svetatish uchayshykh yadernykh fizika (Reports of Soviet Scientists;
Nuclear Physics Moscow, Atomizdat, 1959. 552 p. (Series: Inst. Study, Vol. 1)
9,000 copies printed.

Eds. (Title page): A.I. Alibekov, Academician; V.I. Wislar, Academician; and
G.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this
volume: B.I. Dzhalov and B.P. Petrov, Candidates of Physical and Mathematical
Sciences; Ed. (Inside book): G.I. Belykh; Subj. Ed.: B.I. Maslov.

FOREWORD: This collection of articles is intended for scientific research workers
and other persons interested in nuclear physics. The volume contains 4) Papers
presented by Soviet scientists at the Second Conference on Practical Uses of
Atomic Energy, held in Geneva in September 1958.

CONTENTS: It is divided into two parts. Part I contains 17 papers dealing with
plasma physics and controlled thermonuclear reactions. Part II contains 25
papers on nuclear physics, including problems of particle acceleration and of
cosmic ray physics. The first paper by L.A. Artshovich presents a survey of
Soviet work on controlled thermonuclear reactions. The remaining papers in
Part I deal with particular problems in this field.

Papers in Part II deal in detail with various problems in nuclear physics,
such as the fusion of heavy atoms and their isotopes, and with the study of
ionospheric layers excited by means of artificial earth satellites and rockets, described
in a paper by B. Vashin. The two-volume edition of the proceedings of
the conference is published in its original language edition in all the
languages presented by Soviet scientists as follows: Volume (1) German; all the
others in Russian. This volume (2), containing the papers presented by Soviet
physicists (Nuclear Physics) Volume (3), containing papers presented by Soviet
physicists (Nuclear Reactor and Nuclear Power) Volume (4), containing papers presented by
Soviet physicists (Nuclear Fuel and Reactor Metals) Volume (5), containing papers presented by
Soviet physicists (Chemistry of Radioisotopes and of Radiation Trans-
formations) Volume (6), containing papers presented by Soviet physicists (Radioecology
and Radioecology) Volume (7), containing papers presented by Soviet physicists (Pro-
tection and Use of Isotopes). The other 10 papers in this volume are presented
in English and Russian. The papers in this volume are presented in the
original language in the Russian and English languages, edition of the proceed-
ings have been added in three articles where the texts are not identical:
V.I. Andrianov, et al., "High Current Pulsed Discharge"; A.Kh. Zeynep, et al.,
"High Frequency Plasma Oscillations"; and Bopulynov, "Investigations of the High-
Current Pulsed Discharge". Reports 2204 and 2205 are presented in the
English edition. Report 2201, by Buzubekov, et al., is numbered 2150 in the
English edition.

PLASMA BOOK EXPLANATION

Reports of Soviet Scientists: Nuclear (Cont.)	00V/2001
Lakhtinov, S.N., and V.I. Skatov. Spectroscopic Study of High Temper- ature Plasma (Report 2221)	99
Zemlin, L.D., P.M. Sydlitz, D.B. Finkberg, L.F. Dubovyy, A.M. Kuznetsov, G.C. Zagonov, L.I. Gerasimov, B.G. Barinov, and B.O. Shteyn. Electron Temperature, Field Fluctuations and Parameters (Report 2222)	110
Golovitskiy, I.K., D.P. Peskov, V.D. Rittikov, D.P. Petrov, L.A. Maslov, and B.I. Maslov. Plasma Stability in a Conditional Magnetic Field (Report 2205)	120
Kozlov, V.G. Plasma Motion in Powerful Discharges (Report 2206)	130
Podgornyy, A.A., Z.P. Volkov, L.I. Makarov, S.Z. Saadovyy, V.K. Glazkov, G.A. Volynskiy, and V.V. Kozlov. Instabilities and Compensation of Plasma in a High Frequency Magnetic Field (Report 2201)	140
Bagdasaryan, B.S., B.B. Kadomtsev, L.I. Babakov, and A.I. Volynskiy. Dynamics of a Shorted Plasma in a Magnetic Field (Report 2211)	150

Card 5A3

I 11415-7 INT(1) IJP(c)
ACC NR: APG031261

SOURCE CODE: UR/0057/56/036/009/1575/1384

AUTHOR: Bazhanova, A.Ye.; Glagolev, V.M.; Shafranov, V.D.

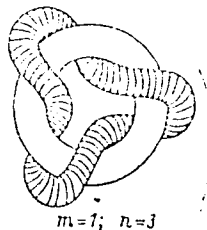
ORG: None

TITLE: Toroidal plasma traps with spatial magnetic axes

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1575-1584

TOPIC TAGS: plasma confinement, magnetic field, magnetic surface, stellarator field, mathematic physics

ABSTRACT: The authors discuss the confinement of plasma in magnetic fields of the type that can be produced by an endless solenoid wound through and about a circular torus as exemplified by the figure. These fields can be regarded as generalizations of the figure-eight type stellarator field proposed by L.Spitzer (Phys. Fluids, 1, 253, 1958), which they include as a special case. V.D.Shafranov (Yadernyy sintez, 4, 114, 1964) has previously shown that the displacement of the magnetic surfaces of the field of a solenoid in the presence of plasma is determined by the curvature and torsion of the axis of the solenoid. In the present paper formulas are derived for the curvature and torsion of solenoids of the considered type, and the distortion of their magnetic surfaces in the presence of plasma is discussed. Topo-



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L 11415-17
ACC NR: AP6031251

logically equivalent torus-solenoid configurations in which the solenoid axis consists of line segments and circle arcs are also treated. It is concluded that the distortion of the magnetic surfaces is minimum when the solenoid axis makes an angle of about 45° with the torus axis, and that a suitable value of the ratio of the gas pressure to the magnetic pressure for optimal conditions is 0.1. The authors thank Ye.G.Lariontsev for his participation in the preliminary calculation work. Orig. art. has: 40 formulas and 7 figures.

SUB CODE: 20/ SUBM DATE: 31Aug65/ ORIG REF: 005/ OPH REF: 001

Card 2/2 bab

L 1836-66 EWT(1)/ETC/EPF(n)-2/EMG(m)/SPA(w)-2 LJP(c) AT

ACCESSION NR: AT5022417

UR/3136/64/000/674/0001/0024

AUTHOR: Alikayev, V.V.; Glagolev, V.M.; Cheverev, N.S.

TITLE: High-frequency paramagnetic stabilization and heating of plasma with electromagnetic waves

SOURCE: Moscow. Institut atomnoy energii. Doklady, IAE-074, 1964. Paramagnitnaya vysokochastotnaya stabilizatsiya i nagrev plazmy elektromagnitnymi volnami, 1-24

TOPIC TAGS: plasma heating, plasma stability, plasma electron temperature, magnetic field plasma effect, plasma electromagnetic wave

ABSTRACT: It is shown experimentally that in the presence of HF stabilizing fields, convective-type macroscopic instabilities are either completely absent or are strongly attenuated in a plasma with a concentration n of 10^{11} to 10^{13} cm^{-3} located in a magnetic field having the geometry of an adiabatic trap. In the range of magnetic fields corresponding to $\frac{\omega}{\omega_p}$ from 0.5 to 1.0, a fast heating of the plasma electrons takes place, so that the plasma pressure is about 10 times as high as the pressure of the HF field on the plasma. The maximum temperature of the electrons of the heated

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ACCESSION NR: AT5022417

plasma is 1000 ev. At low plasma concentrations, when the Langmuir electron frequency is close in order of magnitude to the electron-cyclotron frequency, the lifetime of the plasma decreases in the presence of HF fields. This effect appears to be related to an accelerated escape of electrons into the "danger cone" of the magnetic trap owing to collective processes. The effect of removal of this instability was observed experimentally. Orig. art. has: 12 figures and 1 formula.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: ME

NO REF SOV: 001 OTHER: 002

Card 2/2

L 04765-67 EWT(1) IJP(c) GG/AT/WW

ACC NR: AP6018350

SOURCE CODE: UR/0039/66/020/005/0401/0407

AUTHOR: Glagolev, V. M.; Khromkov, I. N.; Cheverev, M. S.

ORG: none

TITLE: Paramagnetic effect under the influence of high frequency pressure and
electron paramagnetic resonance in a plasmaSOURCE: Atomnaya energiya, v. 20, no. 5, 1966, 401-407

TOPIC TAGS: electron paramagnetic resonance, plasma instability, pressure effect

ABSTRACT: This is a continuation of earlier work (Nucl. Fusion, Suppl., Part II, 1962, p. 687) devoted to observation of the paramagnetic effect in a plasma under the influence of the pressure of high-frequency fields. With an aim at providing a mechanism for stabilizing against flute instability, the authors investigated experimentally the interaction between microwave fields ($\omega = 2 \times 10^{10} \text{ sec}^{-1}$) of a cavity resonator with a dense plasma ($n = 10^{13} \text{ -- } 10^{14} \text{ cm}^{-3}$) in a constant magnetic field. The tests were made in the H_{013} mode with a high-frequency magnetic field amplitude up to 150 Oe, which produced a paramagnetic current in the plasma. The resultant plasma configuration is described. The increase in the static magnetic field inside the plasma, associated with the paramagnetic current, agrees well with the theoretical value. At $\omega_H/\omega = 0.5$ paramagnetic resonance of the electrons was observed, lead-

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UDC: 533.9

L 04765-67

ACC NR: AP6018350

ing to a sharp increase of the plasma pressure p_0 to a value corresponding to $\beta = 8\pi p_0 H_0^2 \approx 0.2$. The method of determining the plasma pressure is described. Resonant heating of the plasma electrons by the high frequency field, connected with the parametric resonance of the electrons, was also observed. Orig. art. has: 8 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 03Aug65/ ORIG REF: 002/ OTH REF: 003/

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Card 2/2

GLAGOLEV, V.N.

Plasmal reaction in the myelination of regenerating axons.
Dokl. AN SSSR 147 no.3:721-723 N '62. (MIRA 15:12)

1. Voenno-meditsinskaya akademiya im. S.M. Kirova. Predstavleno
akademikom N.N. Anichkovym.
(NERVES) (REGENERATION (BIOLOGY)) (PLASMAL)

GIAGNIAN, V.I.; YEREMENKO, A.I.

Technique of implanting electrodes into the auditory cortex of the skull base. Phil. L. Jour. Neuro. 30:33, 1964.

(1964 12:4)

L. Kafedra fiziologii cheloveka i zhivotnykh i inzheneriya
universiteta imeni V.I. Lenina, Sverdlovsk, SSSR.

USSR/Human and Animal Physiology (Normal and Pathological) T
Nervous System. Higher Nervous Activity. Behavior.

Abs Jour : Ref Zhur Biol., No 6, 1959, 27040

Author : Glagolev, V.P.

Inst : Kiev Veterinary Institute

Title : Obtaining Conditioned Lymph-Secreting Reflexes in Dogs.

Orig Pub : Tr. Kiyevsk. vet. in-t, 1957, 13, 113-117

Abstract : A conditioned lymph-secreting reflex to a bell reinforced by introduction into the vein of lymphagogic preparations (mercusal, celandine tincture, peptone in small doses) was produced in dogs. After 9-35 combinations of conditioned and unconditioned stimulants, a cannula was tied in into the thoracic duct and lymph secretion was measured. After the bell the lymph secretion increased by 17.1-364.3%. This data allows the utilization of the

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GLAGOLEV, V.P. Cand Bio Sci -- (diss) "Effect of the
nervous system ^{of} on lymph .". Kiev 1956, 14pp
(Min of Higher Education U.S.S.R. Kiev State Univ in T.G.
Shevchenko) 100 copies (RL, 21-58, 89)

- 19 -

GLAGOLEV, V.P.

Demonstrating the work of heart valves. Biol.v shkole no.5:
89-89 S-0 '59. (MIRA 13:9)

1. Kiyevskiy gosudarstvennyy universitet.
(HEART--VALVES)
(ANATOMY, HUMAN--AUDIO-VISUAL AIDS)

9.6150 (inc/2705)
215300

21594
S/109/60/005/010/017/031
E033/E415

AUTHORS: Breydo, I.Ya., Glagolev, V.P., Glukhovskoy, B.M.,
Korol'kova, O.S. and Leyteyzen, L.G.

TITLE: Investigation of the Stability of Multi-Stage Photo-
Electron Multipliers

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10,
pp.1698-1702

TEXT: This paper was presented at the 9th All-Union Conference on
Cathode Electronics, Moscow, October 1959.

The stability of the output signal from a photo-electron multiplier depends on a number of factors: the voltage, the current, the time of operation and so on. The purpose of this article is to clarify the effects of these factors on multipliers with emitters of different materials. Since multipliers are widely used as scintillation counters, the multipliers were tested in a special set-up which approximated to operational conditions with crystals of NaJ(Tl) irradiated by Cs¹³⁷ on the cathodes of the multipliers. Block diagrams of the test apparatus are given and the apparatus is described. The output current, which depends not only on the amplitude but also on the frequency of the
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Investigation of the Stability ... E033/E415

pulses, i.e. on the intensity of irradiation of the crystal by γ -rays, was also monitored. The results show that there are two types of instability: 1) smooth change in the average value of the amplitude of the pulses over a period of time and 2) oscillation of the amplitude about a mean value, which shows as a scatter of the recorded points for a given curve. The deviation of the points is approximately 0.3 to 1% of the value of the output pulse. Early tests showed that the stability depended to a great extent on the previous history of the multiplier. The "settling-down" time is different for different specimens and for the same specimen the settling-down time on the first day can be very much longer than on following days. This "training effect" made investigation of individual specimens impossible and statistical tests on a number of multipliers were necessary. The results on 80 multipliers of the $\Phi 3Y-35$ (FEU-35) type with Sb-Cs cathodes and emitters are presented graphically by histograms of percentage change in pulse amplitude against numbers of multipliers for output currents of 0.1 to 2.5 microamps, 0.3 to 0.5 microamps and 0.55 to 6.0 microamps. The maxima of these distributions show

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Investigation of the Stability ... ²¹⁵⁹⁴
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EO33/E415

greater percentage change for larger currents. The results for 60 antimony-cesium cathode and emitter multipliers were similar. It is concluded that during the first hours of operation the stability is directly related to the output current and reduction in the current density improves the stability. The absolute maxima of the changes in the output current of the multipliers did not exceed published figures for multipliers with Al-Mg, silver-magnesium and antimony-cesium emitters. The settling-down time was found to be proportional to the output current. Tests on multipliers $\phi 3Y-24$ (FEU-24) with aluminium-magnesium alloy emitters showed that they also have appreciable settling-down time, but the output current has little effect on it, except that it is reduced with high currents. For example, a batch of multipliers with Al-Mg emitters and bismuth-silver-cesium cathodes had an average settling-down time of 10 to 20 min, after a rest-period of 12 hours with output currents of 20 to 30 microamps. To clarify the effect of activation by cesium on the stability of alloy emitters, a multiplier with a thermo-cathode was prepared. The stability of the emitter was checked directly in a vacuum with continuous pumping before and after cesiation. The relative
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Investigation of the Stability ... ²¹⁵⁹⁴
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E033/E415

changes in the secondary emission coefficient for thermo-activation and for cesiation for one stage of a copper-beryllium alloy with 100 V and 0.3 mA output current are shown graphically. It is seen that the presence of cesium leads to an increase in both the settling-down time and also in the magnitude of the change in the secondary emission coefficient. There are 7 figures and 2 references: 1 Soviet and 1 non-Soviet.

SUBMITTED: December 21, 1959

Card 4/4

CHAGOLEV, V.P. [Hhaholev, V.P.]

Metoda formirovaniya i primeneniya v zashchite nauchnykh i
prognozov. Vostochnyye Yevropy. Seriya "Sovetskaya nauka".
(1974, 1975)

(A CRITICAL JUDGMENT)

MARKOV, V.A.; GLAGOLEV, V.S.

Effective use of the State Bank credits. Tekst.prom.
20 no.5:7-9 My '60. (MIRA 13:8)
(Textile industry--Finance)

GLAGOLEV, Yu.A.

Distillation of alcohol in a minimum thermometer. Freddy NIEMMP
no.7:105-109 150. (MIRA 13:5)
(Thermometers)

YEPINGOV, A.N., glav. red.; BACHURIN, A.V., red.; VOLODINSKIY, L.N., red.; GERSEBERG, S.R., red.; GILZHEG, S.Z., red.; DUMENKOV, G.F., red.; KIRZHEVA, E.N., red.; KLIMENKO, K.I., red.; KOGALOV, F.V., red.; KOGOL'KOV, A.N., red.; KRYLOV, I.N., red.; LIVANSKAYA, F.V., red.; LICHNIK, E.Yu., red.; OLSOVITSYANOV, K.V., red.; POSYANINSKIY, S.S., red.; RUDNITSKIY, G.A., red.; SAMUKOV, N.A., red.; SEMENOV, A.F., red.; TATUL, S.K., red.; SHUKHAL'INA, L.Ya., red.; BAZALOVA, G.V., starshiy nauchnyy red., kand. ekon. nauk; KISEL'MAN, S.M., starshiy nauchnyy red.; GLAGOLEV, V.S., nauchnyy red.; TURANOVA, N.L., nauchnyy red.; MLAGODANSKAYA, Ye.V., mlad. red.; SHUSTKOVA, V.M., mladshiy red.; GAYDUKOV, Yu.A., kand. ekon. nauk, red.; ZHARSKIY, M.I., red.; LOSOVY, Ya.D., red.; SEIGETTER, A.V., dots., red.; KHEIFETS, L.N., kand. tekhn. nauk, red.; LYUCVICH, Yu.O., kand. ekon. nauk, red.; SYSOYEV, I.V., red.; KOSTI, S.D., tekhn. red.

[Economic encyclopedia; industry and construction] Ekonomicheskaia entsiklopediia; promyshlennost' i stroitel'stvo. Chleny red. Kollegii: A.V. Bachurin i dr. Moskva, Gos. nauchn. izd-vo "Sovetskaiia entsiklopediia." Vol. 1. A - Z. 1962. 951 p. (MIRA 15:10)

(Russia--Industries--Dictionaries)
(Construction industry--Dictionaries)

21781

S/170/61/004/004/013/014
B125/B20326.2181
11.9300

AUTHOR: Slagolev, Yu. A.

TITLE: Surface of mutual irradiation between a body and a thin cylinder

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 4, 1961, 116-119

TEXT: The author gives a practically useful, general equation for a system consisting of a thin cylinder and an arbitrary body. The general expression for the surface of mutual irradiation H_{12} of two nontransparent

bodies 1 and 2 reads, as is known:
$$H_{12} = \int_{s_1} ds_1 \int_{s_2} \frac{\cos \varphi_1 \cos \varphi_2}{\pi r^2} ds_2 \quad (1),$$

where s_1 and s_2 are the mutually visible surfaces of the first and second body, respectively, φ_1 is the angle between the perpendicular to the element of the first surface and the segment r of the straight line connecting the first and second surface elements ds_1 and ds_2 on the first

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S/170/61/004/004/013/014
B125/B203

Surface of mutual irradiation...

and second surface, respectively, φ_2 is the angle between the perpendicular to ds_2 and the same segment of the straight line. The integrals (1) are not taken in the general form but have to be calculated for each case by a different method. To calculate the expressions of interest here, s_2 is taken as the surface of a cylinder segment, and s_1 as the surface of any body in mutual irradiation with the cylinder. The origin of the cylindrical coordinate system is assumed at any point of the cylinder axis, and the z-coordinate is directed along the cylinder axis. The surface element of the cylinder in this coordinate system is $ds_2 = (d/2)dz da$ (2), where d is the cylinder diameter. The origin of the mobile spherical coordinate system (φ, β, R) is connected with the element dz . The plane perpendicular to the cylinder axis is used as plane of the angle β of this system. Then,

$$H_{12} = \frac{d}{2\pi} \int_{z_1}^{z_2} \int_{\varphi_1}^{\varphi_2} \int_{\beta_1}^{\beta_2} \cos^2 \varphi \cos(\beta - \alpha) dz d\varphi d\beta, \quad (5)$$

is found for the cylinder segment $l = z_2 - z_1$, where φ_1 and φ_2 are the
Card 2/6

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S/170/61/004/004/013/014

B125/B203

Surface of mutual irradiation...

integration limits for α , β_1 and β_2 are the integration limits for β . The integration limits for β and α are interrelated, and are compiled in Table 1. In this table, the first line corresponds to the range where the surface element ds_2 of the cylinder is irradiated only by part of surface s_1 of any body, and where the perpendicular to ds_2 is directed so that $0 < \alpha < \pi$. The tangential surface to ds_2 intersects with surface s_1 . The second line corresponds to the range where the element ds_2 is irradiated by the entire surface s_1 . The third line corresponds to the same range, but for $0 > \alpha > -\pi$. Strictly speaking, the integrals of Eq. (5) for any s_1 must not be used. But for the mean values of the angles $\bar{\varphi}_1$, $\bar{\varphi}_2$, $\bar{\beta}_1$, and $\bar{\beta}_2$, under which the contours of the surface s_1^0 of the body are visible from segment 1 of a thin cylinder, the author obtains

$$H_{12} = \frac{d_1}{4\pi} [2(\bar{\varphi}_2 - \bar{\varphi}_1) + \sin 2\bar{\varphi}_2 - \sin 2\bar{\varphi}_1](\bar{\beta}_2 - \bar{\beta}_1) \quad (6).$$
 This sufficiently simple equation is suited for practical purposes. The limiting values of Card 3/6

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S/170/61/004/004/013/014
B125/B203

Surface of mutual irradiation...

angles β_1 and β_2 are a function of φ and z ; φ_1 and φ_2 also depend on z . The surface of the body s_1 may be of such quality that the simultaneous determination of the angles $\bar{\varphi}_1$, $\bar{\varphi}_2$, $\bar{\beta}_1$, and $\bar{\beta}_2$ for the entire body is inconvenient. Then, it is necessary to assume s_1 to be divided in individual areas, and determine the values of these angles for each area separately. In this case,

$$H_{12} = \frac{dI}{4\pi} \sum_{i=1}^n \left\{ [2(\varphi_2 - \varphi_1) + \sin 2\bar{\varphi}_2 - \sin 2\bar{\varphi}_1] (\bar{\beta}_2 - \bar{\beta}_1) \right\}_i \quad (7)$$

holds for the surface of mutual irradiation. This formula may also be used if the surface of mutual irradiation between a cylinder segment 1 and several bodies is required. The general formula (6) may be considerably simplified; this is demonstrated here for various special cases of practical interest. At first, the cylinder surface is assumed lying perpendicular to a circular area and passing its center. Then, $\varphi_2 = \pi/2$, $\bar{\beta}_2 = \bar{\beta}_1 = 2\pi$, and Eq.(6) becomes $H_{12} = (\bar{\varphi} - \sin \bar{\varphi}) dI/2$, where $\bar{\varphi} = \pi - 2\bar{\varphi}_1$. If s_1 is an infinite plane and the cylinder is parallel or

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S/170/61/004/004/013/014
B125/B203

Surface of mutual irradiation...

perpendicular to it, $H_{12} = \pi d l / 2$ (9) holds for both cases. This also applies with any orientation of the cylinder with respect to this plane. For the calculation of the heat exchange by radiation, the coefficients of the degree of irradiation of bodies 1 and 2 are of interest, which are related to the surface of mutual irradiation by $\varphi_{12} = H_{12} / s_1'$,

$\varphi_{21} = H_{12} / s_2'$, where s_1' and s_2' are the surface areas of the (gray or black) bodies investigated if the bodies are convex. If the (black) bodies are not convex, s_1' and s_2' denote the areas of the convex minimum surfaces enclosing these bodies. For thin cylinders, φ_{12} is practically 0. The

relations found here are suitable for calculating the radiative heat exchange not only in thermometry but also in heat engineering. There are 1 table and 2 Soviet-bloc references.

SUBMITTED: July 26, 1960

Card 5/6

INIKHOV, Georgiy Sergeyevich, zasluzhennyy deyatel' nauki i tekhniki, doktor khimicheskikh nauk; AZIMOV, G.I., retsenzent; AFANAS'YEV, P.V., retsenzent; GLAGOLEV, Yu.F., retsenzent; D'YACHENKO, P.F., retsenzent; KRETOVICH, V.L., spetsredaktor; AKIMOVA, L.D., redaktor; GOTLIB, R.M., tekhnicheskii redaktor

[Biochemistry of milk] Biokhimiia moloka. Moskva, Pishchepromizdat, 1956. 342 p. (MLRA 10:3)

(MILK--ANALYSIS AND EXAMINATION)

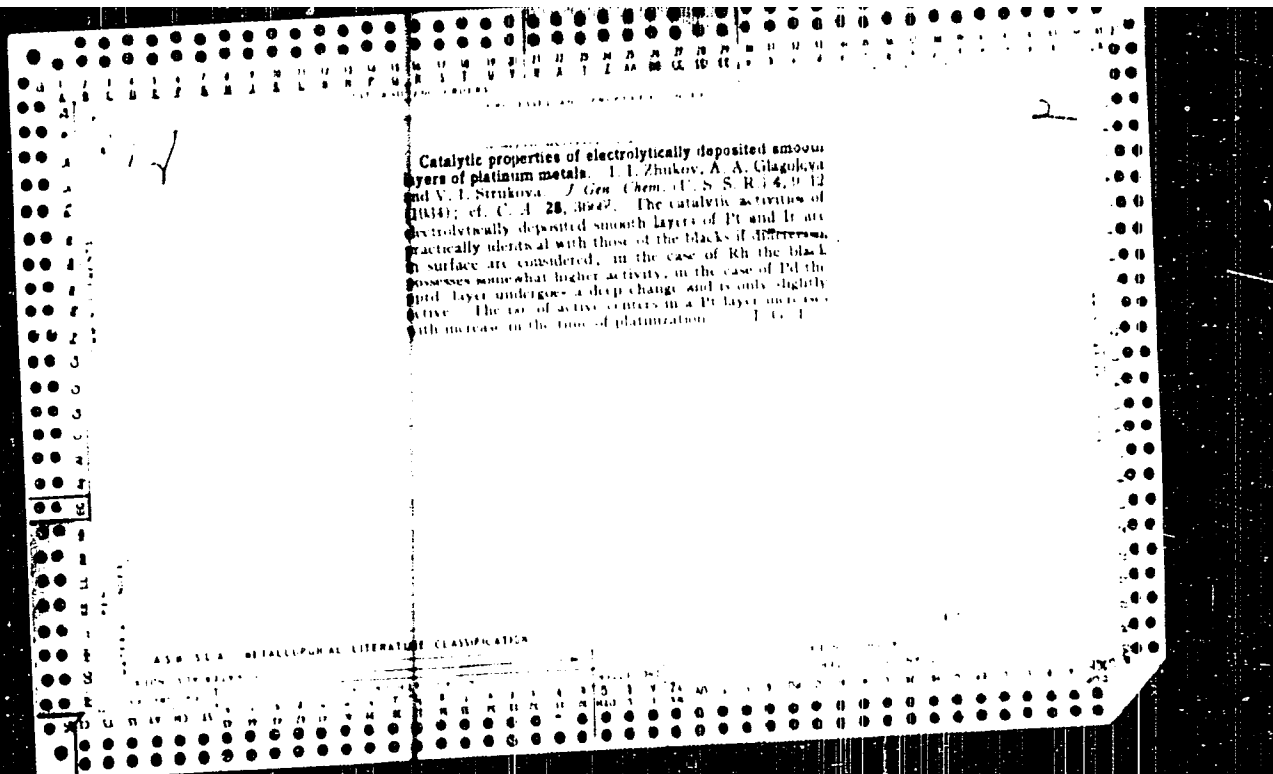
GLAGOLEVA, A. A.

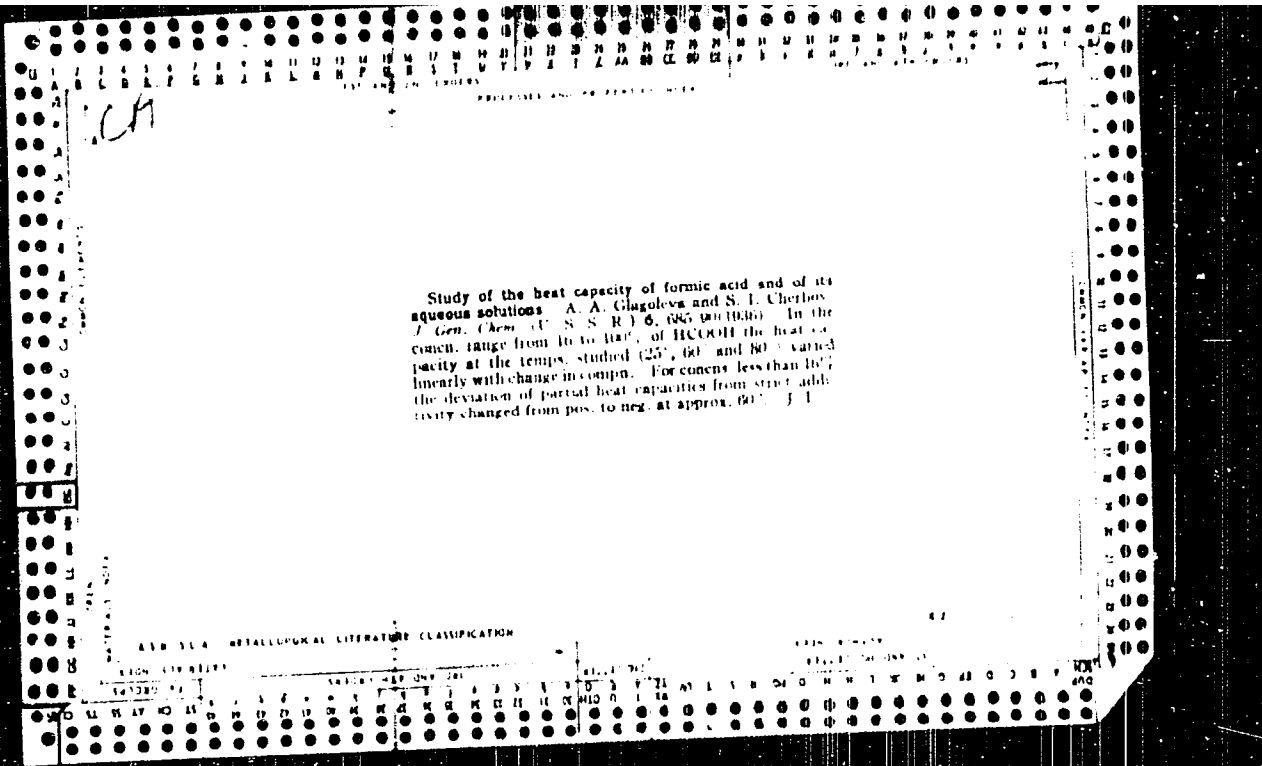
Oshibka shteynera v reshenii odnoy geometricheskoy zadachi. L., Trudy nauchnotekhn. Konfer. voyenno - transp. akad., SB. 2 (1938), 51-60.

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

ANDREYEV, P.P.; GLAGOLEVA, A.A., professor, redaktor; TSVETKOV, A.T.,
redaktor; AKHILAMOV, S.N., tekhnicheskii redaktor.

[Course in elementary geometry for technical schools] Kurs elemen-
tarnoi geometrii dlia tekhnikumov. Pod.red. A.A.Glagoleva. Moskva,
Gos. izd-vo tekhniko-teoret. lit-ry, 1954. 266 p. (MLRA 7:10)
(Geometry--Study and teaching)





The image shows a microfilm frame with a central document snippet. The document is titled "PROCESSES AND PROPERTIES INDEX" and contains a paragraph about the heat of dissolution and dilution of formic acid. The text is as follows:

BC

Heat of dissolution and dilution of formic acid. A. A. GLAGOLEVA (J. Gen. Chem. Russ., 1936, 6, 1780—1777).—The heat of dilution passes through a max. for 1:1.2 HCO₂H-H₂O mixtures at 25° and 60°. The results agree with those calc. from Kirchhoff's formula. R. T.

R-1

Below the text, there is a section titled "ASB. S. L. A METALLURGICAL LITERATURE CLASSIFICATION" followed by a grid of classification codes. The grid has columns labeled with letters and numbers, and rows labeled with letters. The classification codes are arranged in a pattern that appears to be a grid of dots, with some letters visible in the first few rows.

2

PHYSICAL AND CHEMICAL PROPERTIES

Physical-chemical analysis of the system formic acid water. A. A. Glagoleva. *Sov. Phys. Chem.* 1959, No. 3-4, 41-2. *Dokl. Akad. Nauk SSSR*, 1959, No. 8, 15. --For the vapors of HCOOH and its aq. solns. the d., the total and the partial vapor pressures and the mol. wt. of the acid were detd. (at 60° and 80°); the vapor pressure was at a min. at 50-72 wt. % of the acid). The liquid phase was studied from the heat capacities (the 25°, 60° and 80° isotherms were straight lines with curvatures in the regions of small concns.), the heats of formation (at 25° and 60°); the curves had 1 max. in the region 1 HCOOH + H₂O and 1 HCOOH + 2 H₂O and the elec. conductivities (at 25° and 60°); the isotherms had 2 min. 1 HCOOH + H₂O and 1 HCOOH + 2 H₂O). A fusion diagram was obtained which had 2 dystectics for compns. corresponding to the min. of the elec. cond. isotherms. The values for the partial heat capacities, the integral and differential heats of soln. and of diln. of HCOOH were found. It is concluded that the compns. HCOOH + H₂O and HCOOH + 2H₂O are formed. W. R. Himm.

AIEN 51.4 METALLURGICAL LITERATURE CLASSIFICATION

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APR 1960

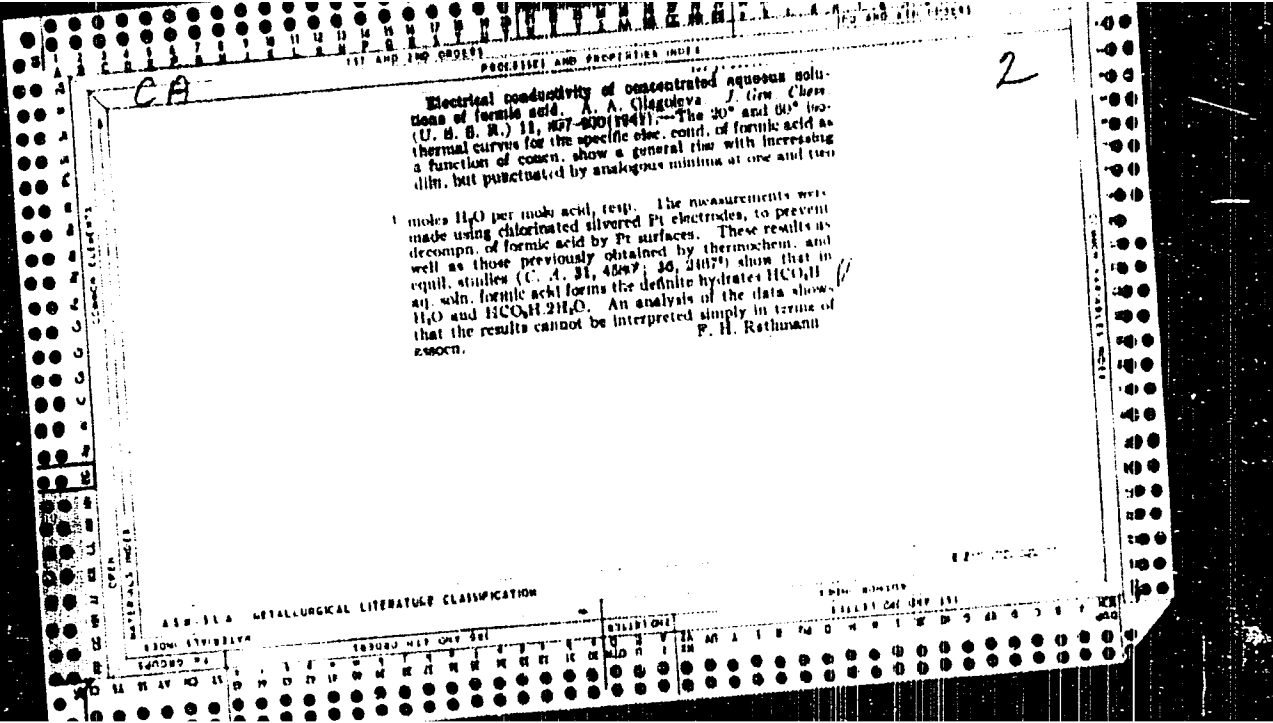
3 11.

Equilibrium of the system formic acid-water

A. A. Glagoleva
*(J. Gen. Chem. Russ., 1941, 11, 765-767).--*The f.p.-composition diagram of the system $\text{HCO}_2\text{H}-\text{H}_2\text{O}$ shows two distinct max. corresponding to $\text{HCO}_2\text{H}\cdot\text{H}_2\text{O}$ and $\text{HCO}_2\text{H}\cdot 2\text{H}_2\text{O}$ (m.p. -30.7° and -31.3°) and three eutectic min. (-39.7° , -44.6° , and -39.3° at 0.53, 1.33, and ~ 2.8 mol. H_2O per mol. HCO_2H). The times of eutectic crystallisation vary from 0.1 to 1.6 min. per g. Results are discussed with reference to vals. of integral heats of mixing previously reported (A. 1037, I, 240). F. A. H.

11/11/86
Heats of Vaporization of the System Formic Acid-Water

Heats of vaporization of the system formic acid-water at 80.
A. A. Glagoleva (*J. Gen. Chem. Russ.*, 1941, 11, 708-772). Heats
of vaporization of HCO₂H-H₂O mixtures, measured by an accurate
electro-thermal, air-current method decrease from 347 to 190 cal
per g. when the concn. of HCO₂H is increased from 10 to 97%
Vreski's equation $l = l_1 + (1-x)l_2 + xB_1 + (1-x)B_2$, where
 l is the heat of vaporization, x is the wt. fraction of one component
in the vapour, l_1 and l_2 are the latent heats of vaporization of the two
components, and B_1 and B_2 are the differential heats of dilution
and of mixing, all measured at one temp., is accurately obeyed and
thus applies to systems involving associated components. Devia-
tions of l and x from additivity are plotted. (A. H.)

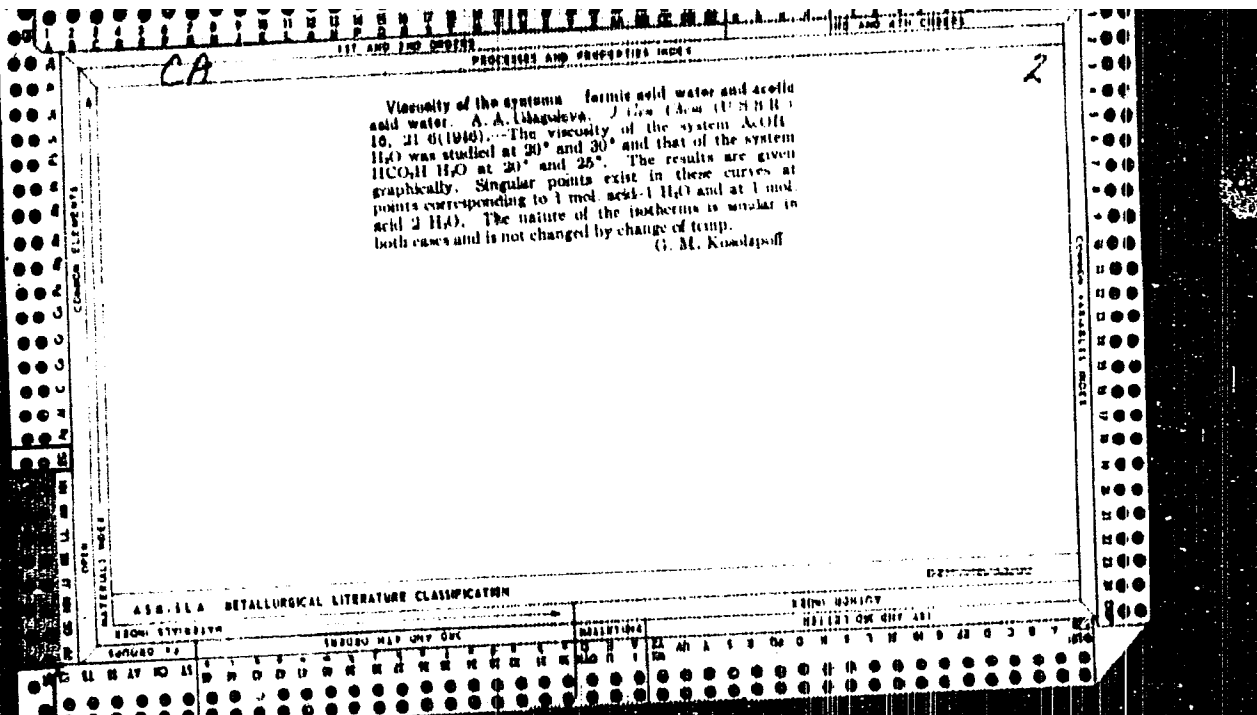


BC

Specific gravity of aqueous solutions of formic and acetic acids. A. A. Glagoleva (*J. Gen. Chem. Russ.*, 1945, 15, 131—134). Sp. gr. of aq. solutions of HCO_2H (I) have been determined at 20° (10 concns.) and 15° (18 concns.) and the results are tabulated against wt.-% of (I) and no. of g.-mols. of H_2O per g.-mol. of (I). Corresponding graphs show steep falls of sp. gr. with dilution, but kinks occur at the compositions (I) + H_2O and (I) + $2\text{H}_2\text{O}$. The data for 15° (Landolt's tables) merely indicate a small departure from the additivity rule between 60 and 75% of (I). In the case of AcOH (II), Wiedemann's data (Landolt's tables), plotted similarly, show that the sp. gr. curves for 20°, 30°, and 40° all rise with dilution to a max. at the composition (II) + H_2O and give, as they fall with further dilution, a singular point at the composition (II) + $2\text{H}_2\text{O}$.

G S S

Physics-Chem. Dept., Pennsylvania State Univ., University Park, Pa.



2

Surface tension of the binary systems formic acid-water and acetic acid-water. A. A. Glagoleva. J. Gen. Chem. (U.S.S.R.) 17, 1044-7(1947)(in Russian); cf. C.A. 40, 6042¹.—In the HCOOH-H₂O system, the surface tension-concn. curves at 30 and 25° exhibit two max., one at about 50 wt. % H₂O and one at about 70 wt. % H₂O, corresponding to the compds. HCOOH.H₂O and HCOOH.2H₂O. In the CH₃COOH-H₂O system at 20 and 30°, there are no max., but discontinuities occur at about the same concns. as in the HCOOH-H₂O system; this indicates the formation of the compds. CH₃COOH.H₂O and CH₃COOH.2H₂O. Arild J. Miller

ASR-11A METALLURGICAL LITERATURE CLASSIFICATION

2

CA

Electric conductivity in the binary system acetic acid water. A. A. Glagoleva. *Zhur. Obshch. Khim.* 37, 18, 1965, 8019-1983. Measurements were made at 20, 30, 40, 50, and 60°. The curves of sp cond vs concn are similar at all temps studied, and are charly affected by successive sharp rises in concn, followed by a levelling off. Thus, at 30°, values for wt % AcOH and sp cond $\times 10^4$ are: 46.8, 1.3370; 51.8, 1.0900; 58.1, 0.8740; 59.0, 0.8100; 63.1, 0.6670; 62.2, 0.6670; 68.5, 0.5740; 72.4, 0.5828; 76.8, 0.2270; 79.3, 0.2161; 82.7, 0.1168; 85.5, 0.04665; 95.0, 0.00312; 99.0, 0.00241. The appearance of the curves is attributed to the formation of the hydrates AcOH.H₂O and AcOH.2H₂O. Arkh. I. Miller

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

Phys. Chem. Dept, State Natural Sci. Inst

KOLDOBSKIY, A.G.; MEDVEDEV, S.I.; PISKOPPEL', F.G.; YAKOBSON, M.G. Prinimali uchastiye: BERKHIN, I.B.; OSKOVSKAYA, Ye.S.; PEKISLOVA, A.M.; LITVIN, V.M.; PARKHOMENKO, Ye.V.; STOTIK, A.M.; SHAPIRO, T.I.; STRUMILIN, S.G., akad., glav. red.; ALEKSENKO, G.V., red.; ANISIMOV, N.I., red.; VLODARSKIY, L.M., red.; GERSHBERG, S.R., redaktor; red.; PETROV, A.I., red.; POSVIANSKIY, S.S., red.; BAZAN, G.V., kand. ekonom. nauk, starshiy nauchnyy red.; KISEL'MAN, S.M., starshiy nauchnyy red.; LIVANSKAYA, F.V., kand. ekonom. nauk, starshiy nauchnyy red.; GLAGOLEV, V.S., nauchnyy red.; NEDBAYEV, V.I., nauchnyy red.; TUMANOVA, N.L., nauchnyy red.; TOVMASYAN, M.E., red.; BLAGODARSKAYA, Ye.V., mladshiy red.; SHUSTROVA, V.M., mladshiy red.; ZENTSEL'SKAYA, Ch.A., tekhn. red.

[The economic life of the U.S.S.R.; chronicle of events and facts, 1917-1959] Ekonomicheskaya zhizn' SSSR; khronika sobytii i faktov 1917-1959. Glav. red. S.G.Strumilin. Chleny red. kollegii: AlekSENKO i dr. Moskva, Gos. nauchn.izd-vo "Sovetskaya entsiklopediya," 1961. 779 p. (MIRA 14:10)

1. Tsentral'naya nauchnaya sel'skokhozyaystvennaya biblioteka Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. Lenina (for Litvin, Parkhomenko, STOTIK, Shapiro).

(Russia--Economic conditions)

PAVLOVSKIY, Ye.N., general-leytenant meditsinskoy sluzhby, akademik; NIZOVKIN,
V.K., dotsent; PERVOMAYSKIY, G.S., polkovnik meditsinskoy sluzhby;
BUKHMANN, L.B.; GLAGOLEV, V.V.

New repellent ointment. Voen.-med.zhur. no.7:46-49 J1 '56. (MLRA 9:11)
(INSECT BAITS AND REPELLENTS)

AUTHOR: Glagolev, V. V., and Ieteliev, A. M. 1957

TITLE: Investigation into feasibility of construction of an instrument for the automatic counting of tracks of photographic emulsions. *Uchenye Zapiski Kazanskogo Universiteta. Seriya Fiziko-Matematicheskie Nauki*. Kazan: Kazanskii Universitet, 1957, no. 2, pp. 114 - 116 (USSR)

PERIODICAL: *Priroda i Tekhnika* (Experimental), 1957, no. 2, pp. 114 - 116 (USSR)

ABSTRACT: Thick photographic emulsions are often used in studies of elementary particle interactions. It is often necessary to follow tracks of charged particles in emulsions. The speed of this does not exceed 0.1 cm per day. In order to obtain statistically accurate results, weeks of work of an investigator are needed. In recent years (see 1 and 2) automatic track counters have been described. In the present article the authors discuss the possibility of constructing an instrument which would automatically inspect a track. An attachment, with two photomultipliers is added to the type 13-3 microscope (M1). The picture of the slot with the track being inspected is on the cathode of one of the photomultiplier tubes and the largest part of the background on the other. The deflection of a micrometer determines therefore the track-background

Card 1/2

1956-72/39

Investigation into the Possibility of Constructing an Instrument for the Automatic Counting of thick Films of Photographic Emulsions.

difference. The reproducibility is about 2% of CND. The possibility of using the instrument for relativistic particles (grain density 10-25 per 100 micron) is of some interest. It is found that, when working with relativistic particles, it is necessary either to increase the density and size of the grains or to introduce summation over several inspection fields. The experiments have shown that it is possible to obtain, even for relativistic particles, a stable signal source for automatic inspection of tracks. One circuit diagram and four graphs of experimental results are given. M.I. Podgoretskiy, E.D. Dolstov, and I.V. Shtrunikh took part in the evaluation of the obtained results. There are 2 references, none of which is Slavic.

SUBMITTED: June 31, 1956

AVAILABLE: Library of Congress

Card 2/2

21 (2)

AUTHORS:

Karashenkov, V. G., Beljanov, V. A., SOV/89-7-4-12/28
Van Shu-fen', Glagolev, V. V., Dolkhazhav, M., Kirillova, L. P.,
Lebedev, R. N., Mal'tsev, V. M., Markov, P. K., Tolstov, K. D.,
Psyganov, E. N., Shafranova, M. G., Yao Ch'ing-hsieh

TITLE:

The Interaction of Fast Nucleons With Nuclei of the Photo-
emulsion NIKFI-R

PERIODICAL:

Atomnaya energiya, 1959, Vol 7, Nr 4, pp 376-377 (USSR)

ABSTRACT:

The present paper deals with the interaction between 9 Be⁺-
protons, which were accelerated in the beam of the synchro-
phasotron of the Ob'yedinennyi institut yadernykh issledovaniy
(Joint Institute of Nuclear Research), and the nuclei of a
photoemulsion of the NIKFI-R type. The results of these
measurements are shown by a table. On the basis of the data
thus found it is possible to draw several conclusions as to
the mechanism of the interaction between a fast proton and a
nucleus. If the primary nucleon-nucleus collision is an
interaction between nucleon and channel, the velocity of the
center of mass in an interaction of silver and bromine with
the channel will be considerably less than in an interaction
with light nuclei. Therefore, also the number of s-particles

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The Interaction of Fast Nucleons With Nuclei of the
Photoemulsion NIKFI-R

807/89-7-4-12/28

must be considerably greater. In the experiment, the numbers of s-particles for light and heavy nuclei are, however, nearly the same. This is explainable on the basis of the cascade mechanism of interaction, in which the energy of the s-particles decreases rapidly in cascade collisions. The multiplicity of the particles produced decreases simultaneously. In the case of the greater number of g-particles, nucleons are concerned, which may be explained by the cascade mechanism of nucleon - nucleus interaction. Also the agreement between the transversal momentum p_{g+p} for g-protons originating from interactions with

light and heavy nuclei points in the direction of the interaction cascade mechanism. Besides, a search was made for strange particles by employing the method of investigating according to areas. The cross section of the production of k^+ -particles with an energy of $E \leq 140$ Mev in a medium-weight nucleus of the photoemulsion amounts to

$(5 \pm 2)10^{-27}$ cm². Besides, the amount of the production cross section, the wide angular distribution of the k-mesons, as well as other facts indicate that a noticeable fraction of

Card 2/3

The Interaction of Fast Nucleons With nuclei of the
Photoemulsion NIKFI-R

197/65-7-4-12/23

slow strange particles is produced in an intranuclear cascade process. Furthermore, the medium-weight energy losses of a fast nucleon are evaluated in the case of a single nucleon-nucleon collision. A 9Bev-proton gives up an average of (5.1 ± 0.8) Bev to a medium-weight nucleus of the photoemulsion, which amounts to (60 ± 10) % of its initial energy. 4.05 Bev are used for the production of pions, and 1.05 Bev are transferred to the nucleons of the nucleus. As a proton in a medium-weight nucleus undergoes approximately 2 collisions, the proton, in one single nucleon-nucleon collision, loses $\Delta E = 35 \pm 10$ % of its initial energy. By means of other measurements of the pion energy spectrum carried out independently of the present paper in a nucleon-nucleus collision $\Delta E = 40 \pm 10$ % is obtained. The statistical theory of multiple production furnishes $\Delta E = (40 - 50)$ %. The authors thank G. Beznogikh, V. Vaksina, Z. Kuznetsova, and N. Metkina for their help in the measurements, and L. Popova for his assistance in analyzing measuring results. There are 1 table and 1 reference.

Card 3/3

64388

S/026/60/

24.6900

AUTHORS:

Belyakov, V. A., Van Shu-Fen', Gindlev, V. Y., Likhannov, N., Lebedev, R. M., Mel'nikova, N. N., NIKITIN, V. A., Petrzilka, V., Sviridov, V. A., Suk, M., Tolstov, K. D.

TITLE.

Inelastic Interactions of 7 Bev π^- -Mesons and Nucleons

PERIODICAL.

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 39, No. 4(10), pp. 937-947

X

TEXT. The inelastic interaction of 7-Bev π^- -mesons with nucleons is studied in this paper. The preliminary results were communicated to Kiyevskaya konferentsiya po fiziki vysokikh energiy (Kiyev Conference on the Physics of High Energies). The emulsion chamber consisted of 240 НИКФИ-Р (NIKFI-R) layers with a thickness of 400 μ . 5300 interactions with the nuclei of photoemulsion were observed. Of these, 535 inelastic interactions were analyzed (Table 1). The theoretical distribution of the charged particles was calculated by V. S. Barashenkov. Spurious scattering was eliminated by special measurements (Table 2). 459 pions and 134 protons

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84388

Inelastic Interactions of 7 Bev π^- Mesons
and Nucleons

S/O50/63/077/31
R004/R075

were identified. The angular distribution of pions and the total distribution of all stars (in c.m.s.) are shown in Fig. 1. For smaller number of charged particles, the asymmetry increases strongly. This is principally due to pions with large momenta (Fig. 2). Therefore, the angular distributions are very different for fast and slow pions (Fig. 3). Pions with momenta < 0.5 Bev show an almost isotropic distribution. From the angular and total distributions of protons (Fig. 4) it is seen that the protons conserve their initial direction. From the momentum distributions of pions and nucleons, the authors conclude that the average momentum of the nucleons and of the charged pions does not depend on the increase of the number of charged particles. The same result follows from the data for the average transverse momenta \bar{p}_T of protons and pions given in Table 3. Fig. 7 shows the number of neutral mesons as a function of the number of charged particles. The results can be interpreted only partly by the statistical theory. The asymmetry of the angular distribution of the secondary pions can only be explained by a peripheral collision of the pion with a pion of the nucleon shell (Figs. 8 and 9). An estimate of the radius of the nucleon core gave the

X

Card 2/3

Subject

Inelastic Interactions of Protons with Nucleons

S/056/60/1048
1048

maximum value of $4 \cdot 10^{-14}$ cm. The authors summarize the results as follows: Average momentum of protons $= (0.89 \pm 0.04)$ Bev/c, average transverse momentum $= (0.37 \pm 0.04)$ Bev/c; asymmetry of angular distributions of all pions $= 1.56 \pm 0.10$; pions with $p \gg 0.5$ Bev/c are emitted in the forward direction, their average momentum equaling (0.87 ± 0.06) Bev/c and agrees, therefore, with that of the protons. The authors thank B. I. Blokhintsev and V. I. Veksler for discussion and advice. There are 9 figures, 3 tables, and 23 references: 9 Soviet, 8 US, 1 British, 1 German, 4 Italian, 1 Japanese, and 1 Polish.

X

ASSOCIATION. Ob'yedinennyi institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED. May 11, 1960

Card 3/3

S/020/62/144/006/004/015
B108/B102AUTHOR: Glagolev, V. V.

TITLE: Tests for block circuits

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 134, no. 6, 1962, 1237-1240

ABST: On the basis of an earlier paper (I. A. Chernis, S. V. Yablonskiy, Tr. Matem. Inst. im. V. A. Steklova AN SSSR, 51, 270 (1958)) the author considers the establishment of tests for a specific class of contact systems, viz. for block circuits. Any 1-terminal network is called a block if the 1 terminals can be divided into inputs and outputs. A block circuit is a succession of blocks, the outputs of which are each connected to the input of the next blocks. A block circuit is called limited if the number of contacts in each block does not exceed a certain number K and if different blocks depend on different variables. The following two theorems are demonstrated: (1) If a limited block circuit fulfills a certain condition, then for this circuit one single interruption test of a length not greater than $\log_2 n$ can be set up (n being the number of blocks). (2)

Card 1/2

Tests for block circuits

S/020/62/144/006/004/015
B108/B102

The length of a minimum single connection test for a limited block circuit is not less than n . There are 1 figure and 1 table.

ASSOCIATION: Institut matematiki s vychisitel'nym tsentrom Sibirskogo
otdeleniya Akademii nauk SSSR (Institute of Mathematics at
the Computer Center of the Siberian Department of the
Academy of Sciences USSR)

PRESENTED: January 5, 1962, by S. L. Sobolev, Academician

SUBMITTED: December 9, 1961

Card 2/2

L 16076-65 EWL(d)/T Ph-4 IJP(c)/RAEM(1)/ESD(dp)/SSI/AFWL/ASL(a)-5/AFMD(p)/
AFEIR/AFTC(b)
ACCESSION NR: AP4047312 S/0020/84/158/004/0770/0773

AUTHOR: Glagolev, V. V.

TITLE: An estimate for the complexity of reduced disjunctive normal forms for almost all logical functions

SOURCE: AN SSSR. Doklady*, v. 158, no. 4, 1984, 770-773

TOPIC TAGS: symbolic logic, disjunctive normal form, irreducible, reduce normal form, computer logic

ABSTRACT: The statement that some property Q(f) is true for almost all logical functions means the following: let $\Psi(n)$ be the number of functions (x_1, \dots, x_n) with the property Q(f); then $\Psi(n) \sim 2^{2^n}$ ($n \rightarrow \infty$). The author proves that for almost all logical functions the number of intervals I(f) in a reduced disjunctive normal form (dnf) satisfies the inequalities

$$n^{\log \log n (1-\delta')} \cdot 2^n < I(f) < n^{\log \log n (1+\delta')} \cdot 2^n \quad (\delta', \delta'' \rightarrow 0, n \rightarrow \infty)$$

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L 16076-65
ACCESSION NR: AP4047312

Moreover, he also proves that the number $\rho(f)$ of irreducible dnf is strictly less than $2^{c_1 \log n \cdot \log \log n}$ for almost all logical functions. For the purpose of estimating the efficiency of algorithms, the author notes that a minimal dnf contains no less than

$$\frac{2^n}{c_1 \log n \cdot \log \log n}$$

intervals, i. e., is no more than $(c_1 \log n \cdot \log n)$ times different from any irreducible dnf. Orig. art. has: 1 figure and 2 equations

ASSOCIATION: Institut matematiki Sibirskogo otdeleniya Akademii nauk SSSR
(Mathematics Institute of the Siberian Division of the Academy of Sciences, SSSR)

SUBMITTED: 16Apr64

ENCL: 00

SUB CODE: MA

NO REF SOV: 004

OTHER: 000

Card 2/2

L 45662-65 EWT(d)/I IJP(c)

ACCESSION NR: AR5011508

08/0372/65/000/002/7053/7053

SOURCE: Ref. zh. Kibernetika. Sv. 6., Abs. 2V135

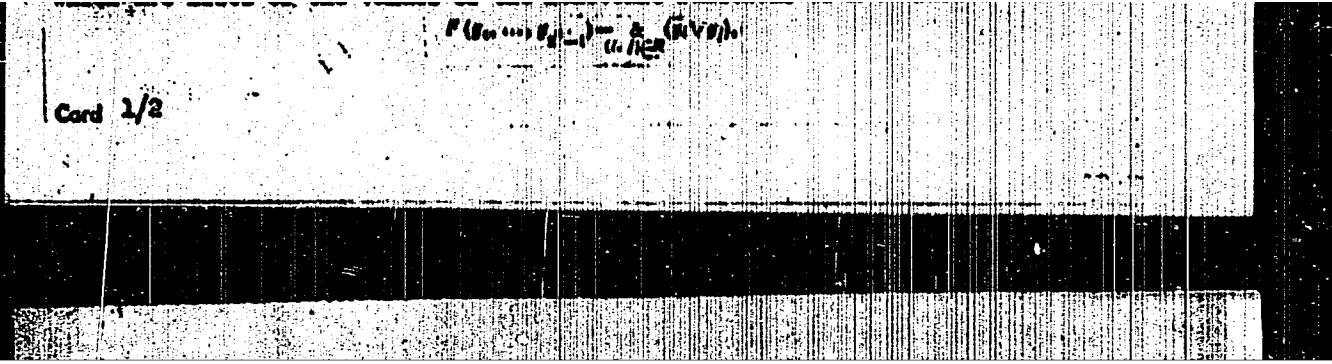
AUTHOR: Glagolev, V. V.

TITLE: Function of algebraic logic with a number of ones equal to the number of monotonic functions of n variables

CITED SOURCE: Sb. Diskretn. analiz. Vyp. 2, Novosibirsk, 1954, 10-11

TOPIC TAGS: algebraic logic, algebraic logic function, monotonic function, binary number

TRANSLATION: It is shown that the problem of evaluating the number of monotonic functions of algebraic logic of n variables can be reduced to a calculation of the



Card 2/2 CC

GLAGOLEV, V.V.

Lower bound of dead-end disjunctive normal forms for almost all
functions of algebra of logic. Disk. anal. no.3:31-40 '64.
(MIRA 18:9)

ACC NR: AR6026515

SOURCE CODE: UR/0372/65/000/004/V021/V021

AUTHOR: Glagolev, V. V.

TITLE: Upper estimate of complexity of the minimum disjunctive normal form for nearly all functions of algebraic logic

SOURCE: Ref. zh. Kibernetika, Abs. 4V106

REF SOURCE: Sb. Diskretn. analiz. Vyp. 5. Novosibirsk, 1965, 3-5

TOPIC TAGS: algebraic logic, function analysis, ~~computer-program logic~~, mathematic analysis

ABSTRACT: The realization of functions of algebraic logic by means of minimum disjunctive normal forms (d. n. f.) is considered. As was shown by O. B. Lupanov (Ref. Zh. Mat., 1962, 5V321) the Shannon function $L(n)$ for this problem ($L(n)$ being the minimum number of letters required to realize any function of algebraic logic of n variables) is $n \cdot 2^{n-1}$. It is characteristic of the known problems of synthesis that, along with estimating $L(n)$, it is established that nearly all these functions are realized with a complexity of at least $(1-\epsilon)L(n)$ (for any $\epsilon > 0$). As is shown in the abstracted article, this situation does not occur in the event of

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ACC NR: AR6026515

realization by means of d. n. f. The article establishes that, for nearly all functions of algebraic logic, the number $p(f)$ of conjunctions in the shortest d. n. f. (i. e. in the d. n. f. with a minimum number of conjunctions) satisfies the inequality

$$p(f) = C \cdot \frac{\log_2 \log_2 n}{\log_2 n} \cdot 2^n .$$

Hence for $r(f)$ letters we have $r(f) \leq \frac{C \cdot \log_2 \log_2 n}{\log_2 n} \cdot n \cdot 2^n$ with respect to the minimum

d. n. f. Taking into account the author's earlier finding (Ref. Zh. Mat., 1965, 3V119), we have

$$\frac{C'}{\log_2 n \cdot \log_2 \log_2 n} \cdot n \cdot 2^n < r(f) < \frac{C \cdot \log_2 \log_2 n}{\log_2 n} \cdot n \cdot 2^n$$

V. Kudryavtsov. [Translation of abstract]

SUB CODE: 12, 09, 06

Card 2/2

ACC NR: AR6024040

SOURCE CODE: UR/0044/66/000/004/V021/V021

AUTHOR: Glagolev, V. V.

TITLE: Upper estimates of the complexity of the minimum disjunctive normal forms for almost all functions of algebraic logic /6

SOURCE: Ref zh. Matematika, Abs. 4V107

REF SOURCE: Sb. Diskretn. analiz. Vyp. 5. Novosibirsk, 1965, 3-8

TOPIC TAGS: algebraic logic, Shannon function, disjunctive normal form, function theory

ABSTRACT: The realization of the functions of algebraic logic by means of minimum disjunctive normal forms (DNF) has been investigated. As it was shown by O. B. Lupanov (RZhMat, 1962, 5V321), the Shannon function $L(n)$ for the problem under investigation ($L(n)$ - the minimum number of letters needed for the realization of an arbitrary function of algebraic logic of n -variables) is equal to $n \cdot 2^{n-1}$. The known problems of synthesis are characterized by the fact that simultaneously with the estimate $L(n)$, one discovers that almost all functions are realized with a complexity not less than $(1-\epsilon)L(n)$ (for arbitrary $\epsilon > 0$). It is shown that one does not encounter such a situation in the case of a realization by means of the DNF. It is shown that for almost all the functions of the algebraic logic, the number $p(f)$ of conjunction in shortest

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DNF (i.e., minimum over the number of conjunctions) satisfies the inequality

$$p(l) < C \cdot \frac{\log_2 \log_2 n}{\log_2 n} \cdot 2^n$$

This means that the number $r(f)$ of letters within the minimum DNF satisfies

$$r(f) < \frac{C \cdot \log_2 \log_2 n}{\log_2 n} \cdot n \cdot 2^n$$

Taking into account the results of the author (RZhMat, 1965, 3V119) obtained earlier, one can write for almost all the functions of algebraic logic

$$\frac{C'}{\log_2 n \cdot \log_2 \log_2 n} \cdot n \cdot 2^n < r(f) < \frac{C \cdot \log_2 \log_2 n}{\log_2 n} \cdot n \cdot 2^n$$

[Translation of abstract]: V. Kudryavtsev

SUB CODE: 12

NABIYEV, M.N., akademik; IBRAGIMOVA, U.I.; IL'YASOV, A.I.; KUBO, V.M.;
NOVIKOVA, F.V.; GLAGOLEV, Ye.D.; GLAGOLEVA, A.P.; EYDEL'MAN, A.S.,
red.

[Liquid mixed fertilizers produced by treating phosphates with
nitric acid] Zhidkie slozhnye duobrenia na osnove azotnokislotoi
pererabotki fosfatov. Tashkent, Izd-vo "Nauka" UzSSR, 1965.
402 p. (PILA 1848)

1. AN UzbekSSR (for Nabyev). 2. Institut khimii AN UzbekSSR
(for Ibragimova). 3. Chirchikskiy elektrokhimicheskiy kombinat
(for Il'yasov).

S/169/61/000/009/022/056
D228/D304

3.5800

AUTHOR: Glagolev, Yu. A.

TITLE: Some deliberations on the possibility of measuring the air temperature in the presence of solar radiation by several thermometers

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 9, 1961, 6, abstract 9B60 (Tr. Tsentr. aerol. observ., no. 37, 1960, 75-79)

TEXT: The possibility is considered of calculating the radiational error during measurement of the temperature of the free atmosphere by resistance thermometers. The deficiencies of schemes with the use of white and black thermometers, and also two thermometers with different wire thicknesses, are evaluated. Limiting factors are the need for taking into account the spectral selectivity of the coatings, the changes of the spectral distribution of energy in direct and reflected radiation with altitude (in the first case), and also the transmission of heat along the

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Some deliberations on...

feeding conductors (in the second case). A scheme is suggested for measuring temperature with allowance for the radiation correction, in which four resistance thermometers are used, each one being heated in a different but quite definite way by the current passing through it. The solution of the system of equations of heat-exchange at the surface of each thermometer provides the principles for the possibility of determining the air temperature by calculating the whole series of parameters entering into the equations, out of which the temperatures of the thermometers and the joule-effect dispersed in them are subject to direct measurement. [Abstracter's note: Complete translation.]

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S/165/51/000/007/058/104
A006/A101

AUTHOR: Glagolev, Yu.A.

TITLE: The possibility of measuring the temperature of free atmosphere with the aid of a fine resistance thermometer on balloons at up to 30 - 35 km altitude

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1961, 19 abstract (B117) ("Iz. Tsentr. aerol. observ.", 1960, no. 37, 62 - 74)

41

TEXT: The author discusses the expediency of using a fine resistance thermometer lifted by balloons to measure the air temperature in the free atmosphere. This concerns a thermometer used on a meteorological rocket (see RZhGfiz, 1958, no. 7, 5266). To prevent heating of the thermometer under the effect of direct solar radiation, ventilation is recommended by rotating the thermometer. Calculations show that with the aid of a thermometer constructed of 40 μ wire, the magnitude of error when measuring the temperature at 30 km altitude will not exceed 1.1°C

Y.E.T

[Abstracter's note: Complete translation]

card 1/1

GLAGOLEV, Yu.A.

Reciprocal radiant surface of an arbitrary body and a thin cylinder.
Inzh.-fiz. zhur. 4 no.4:116-119 Ap '61. (MIRA 14:5)
(Heat--Radiation and absorption)

GLAGOLEV, Yu.A.

Air temperature measurement by the use of a rotating wire
resistance thermometer. Izv. AN SSSR. Ser. geofiz. no.1:133.
137 Ja '62. (MIRA 15:2)

1. Tsentral'naya aerologicheskaya observatoriya.
(Thermometers)

GLAGOLEV, Yu.A.

Revolving aerological thermometer, Meteorol. gidrol. no.8.46-50
Zh [i.e.Ag.] '62. (MIRA 1962)

I. Tsentral'naya aerologicheskaya observatoriya,
(Thermometers)

L 8812-65 EWT(1)/FCC ESP(t) GW
ACCESSION NR: AP4041185 S/0049/64/000/006/0947/0952

AUTHOR: Glagolev, Yu. A.

TITLE: Experimental data on the microstructure of the temperature field at altitudes of 20--30 km

SOURCE: AN SSSR. Izv. Seriya geofizicheskaya, no. 11, 1964, 947-952

TOPIC TAGS: temperature gradient, vertical temperature gradient, stratospheric temperature gradient, atmospheric temperature field microstructure, stratosphere microstructure

ABSTRACT: Experimental data were obtained in 1960 by the Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory) on the microstructure of the temperature field and drift in the stratosphere using vertical soundings made with rotating aerological thermometers. Results obtained from these experiments show that the vertical temperature gradient fluctuates as follows: 1) at an altitude of 20--30 km, in layers 400--500 m thick, gradients of less than -0.8 deg/100 m and more than +0.6 deg/100 m were found to occur in less than 1% of the cases; 2) in layers 100--150 m thick, gradients

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ACCESSION NR: AP4041185

of ± 1 deg/100 m occurred quite frequently, and in layers 20--30 m thick, gradients with an absolute value of > 1 deg/100 m were normal occurrences. In the 20--30-m and 400--550-m layers, the distribution of the recurrence of vertical gradients was found to differ little from the normal, but in the 100--150-m layers it varied considerably. No differences were observed in the nature of temperature fluctuations obtained during ascent, slow descent (2--5 m/sec), or in the drift state. Orig. art. has: 3 figures, 2 tables, and 7 formulas.

ASSOCIATION: Tsentral'naya aerologicheskaya observatoriya (Central Aerological Observatory)

SUBMITTED: 02Jan63

ATD PRESS: 3100

ENCL: 00

SUB CODE: ES

NO REF SOV: 010

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Card 2/2

SECRET

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TOP SECRET (S)

WASH, D.C.

1. The following information was obtained from a review of the files of the
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ACC NR: AT6013747

SOURCE CODE: UR/2789/65/000/067/0031/0040

AUTHOR: Glagolev, Yu. A.

ORG: none

TITLE: Typical calculation of the maximum heating effect of solar radiation and electric current in thermistor and wire temperature gages for radiosondes

SOURCE: Tsentral'naya aerologicheskaya observatoriya, no. 67, 1965. Metody i rezultaty aerologicheskikh nablyudeniy (Methods and results of aerological observations), 31-40

TOPIC TAGS: electronic measurement, temperature measurement, thermistor, radiosonde, error correction

ABSTRACT: The author considers a method for calculating maximum heating of thermistor and wire temperature gages for radiosondes due to solar radiation and electric current. The effect of components in the thermocouple unit and the housing of the instrument are not accounted for. Calculations of this type are necessary for selecting a gage as a function of the probing altitude, the probing conditions and the measurement accuracy requirements. A specific example is given of calculations for an altitude of 30 km. The data given in the paper may be easily used as a basis for calculation at other altitudes. It is shown that a bead element has the lowest radiation error in the therm-

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istor gages. Thin wires have still lower radiation errors. The maximum radiation error of a bead is 1.7 degrees for transverse air flow at a rate of 4.5 m/sec around a cylinder with a diameter of 0.02 cm at an altitude of 30 km when the coefficient of radiation absorption is 0.5, while a wire with the same diameter has an error of 1.0 degrees under the same conditions. It is pointed out that air turbulence, as well as pitching and rotation of the instruments in flight causes pulsations in the velocity of the air stream in direction and magnitude with respect to the gage. Thus the true radiation errors in thermometers with miniature gages is considerably higher than the design value in the free atmosphere at altitudes of more than 25 km. When the thermometers are rotated at a rate of 15-20 m/sec, the maximum radiation error may be considerably less than the values obtained in this paper. V. N. Arbuza took part in preparing the materials for this article. Orig. art. has: 3 figures, 2 tables, 21 formulas.

SUB CODE: 08/

ORIG REF: 014

Card 2/2 12

GLAGOLEV, Yu.N., inzh.

Improvement of the technical and economic indices of the two-stroke diesel locomotive engine by means of the modification of the intensity of the scavenging vortex. Trudy KHIT no.50:14-22 '61. (MIRA 15:12)

(Diesel engines) (Heat--Transmission)

GLAGOLEV, Yu. N., inzh.

Investigating the effect of the scavenging vortex on the quality
of the scavenging of the two-stroke diesel locomotive engine.
Trudy KHIIT no.52:24-29 '61. (MIRA 15:10)

(Diesel engines--Testing)

GIAGOLEV, Yu.N., inzh.

Improving the indices of diesel locomotives by means of a modification
of the angle of incline of blow-off openings on LDC diesel engines.
Vest.TSNII MPS 20 no.8:16-19 '61. (MIRA 15:1)

1. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta
imeni S.M.Kirova.

(Diesel locomotives)

GLAMBEVA, A. A.

Glambeva, A. A. - "The... ..
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7-2-1/1

AUTHORS: Glagoleva, A. A., Feckhin, A. A.

TITLE: The Investigation of Aqueous Solutions of Acetic Acid by the Method of Combined Light Dispersion (Issledovanie redn'kh rastvorov uk-sannoy kisloty metodom kombinatsionnoy rasseyki sveta)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, No. 3, pp. 511 - 513 (USSR)

ABSTRACT: Certain organic acids play an important part in the living organism. Their investigation, however, is rendered very difficult due to their too low concentration. For investigating the acetic acid the authors employed the method of combined light dispersion. This acid was selected as the first, because it had already been investigated by various methods. Nevertheless the opinion is voiced as well on the change of the structure of acetic acid by dilution with water as on the formation of hydrates. The investigations were begun in highly concentrated solutions which were more and more diluted with water. The conclusions drawn from these investigations are: 1) the modification of the spectrum of the combined light dispersion of aqueous solutions of acetic acid per investigated with respect to concentration (from 20% to 1.5%). The appearance of the maximum of 1696 cm⁻¹ in the range of the infrared spectrum is due to the formation of acetic hydrates. 2) The change of the absorption of

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The Investigation of Aqueous Solutions of Acetic Acid by the Method of Diffuse
Light Scattering

band at 1700 cm^{-1} upon dilution of the acid with water. The band is associated with the stretching of the hydrogen bond in the acid. In the literature this band is not present in any structure; it is a band of a dimer and the position of the band 1700 cm^{-1} is in good agreement with the calculated value of 1700 cm^{-1} . Another band at 1340 cm^{-1} occurs in the concentration range of $1.5 - 10\%$ (concentration is defined). The position of the band 1340 cm^{-1} is associated with the molecular structure of the acid. a) The band 1430 cm^{-1} (and perhaps also 1340 cm^{-1}) is counted by the authors as the group C - O or C - OH of the carboxyl. In the dimeric acid this band does not possess any complicated structure. The latter does not change its position on dilution of the acid with water either; but according to dilution an additional maximum appears in the vicinity of 1430 cm^{-1} according to concentration occurs towards lower frequencies. b) Beginning with 1.5% and upon further dilution the band 1700 cm^{-1} which corresponds to the carboxyl group is not displaced. This band remains visible to a concentration of 1.5% . c) The group of bands $1430, 1340, 1270$ and 1130 cm^{-1} is not displaced upon dilution until the concentration of 1.5% and is not identified in its original positions either. Consequently, there exists no doubt that these bands belong to the radical of acetic acid. d) The band

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75-1-1/62

The Investigation of Aqueous Solutions of Acetic Acid by the Method of Combined Light Dispersion

692 cm^{-1} which belongs to the linkage C - C does not change until the concentration of 1,3 % either. Groups of bands which lie near 1020 and 1105 cm^{-1} and which are ascribed by some authors to acetic acid probably belong to the light source. There are 5 figures, 1 table, and 10 references, 14 of which are Slavic.

ASSOCIATION: State Institute for Natural Sciences, Institute for evolutionary Physiology AS USSR
(Gosudarstvennyy yestestvenno-nauchnyy institut i Institut evolyutsionnoy fiziologii akademii nauk SSSR)

SUBMITTED: January 29, 1957

AVAILABLE: Library of Congress

Card 3/3

5(4)
AUTHORS: Glagoleva, A. A., Ferkhmin, A. A. SOV/79-29-5-65/75

TITLE: Investigation of Aqueous Solutions of Succinic Acid by the Method of the Raman Effect (Issledovaniye vodnykh rastvorov yantarnoy kisloty metodom kombinatsionnogo rassvayaniya sveta)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 5, pp 1715-1718 (USSR)

ABSTRACT: Investigation conditions corresponded to those of an earlier investigation (Ref 1); the curves obtained with the microphotometer MP-2 (Figs 1, 2, 3) were confirmed by measurements made with the horizontal comparator IZA-2. The following was measured: water, 4.30%, 4.73% and 5.93% solution. In the authors' assumption, an intramolecular hydrogen bond is separated in a part of the succinic acid molecule at a concentration of 5.93%. In the case of a decrease in the succinic acid concentration, there is a rise in the share of the molecule with separated hydrogen bond. There are 3 figures, 2 tables, and 12 references, 5 of which are Soviet.

Card 1/2

SOV/79-29-5-65/75

Investigation of Aqueous Solutions of Succinic Acid by the Method of the Raman Effect

ASSOCIATION: Institut evolyutsionnoy fiziologii imeni I. M. Sechenova
(Institute of Evolution Physiology imeni I. M. Sechenov)

SUBMITTED: February 24, 1958

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AUTHORS: Bandel', A. A., Glagoleva, A. A., Gerasimova, B. I.,
Danilevskaya, O. A., Tchunai-Hua, and Sorokina, L. N.

TITLE: Effect of the chemical nature of the fluxes on the
luminescence properties of zinc sulfide and zinc selenide
sulfide phosphors

PERIODICAL: Izvestiya Akademii Nauk SSSR. Seriya Khimicheskaya.
7:11, no. 3, 1961. 408-410

4

TEXT: This paper was presented at the 9th conference on luminescence
(crystal phosphors) Kiev, June 23 to 25, 1960. The authors attempted to
check the hypothesis made by F. A. Kröger (Ref. 1: Kröger F. A.,
Helligman J., Smit N., Physica, 15, 990 (1949)) in which he states that in
the synthesis of sulfide luminescent phosphors a chlorine ion and the ions of tri-
valent metals act as coactivators. The authors quantitatively determined
the Na⁺ ion (by means of uranyl acetate), Li⁺ ion (in form of a sulfate
after separation of zinc with barium carbonate) and of the Cl⁻ ion
(nephelometrically in form of AgCl) in the luminescent ZnS:Mn; ZnS:Bi phosphors.

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Effect of the chemical nature...

and ZnS- $5 \cdot 10^{-5}$ Ca. The lumino-phors had been tempered in air with 5% NaCl at 650°C. The results of the analysis shown in Table 1 indicate that in the lumino-phors not only one chlorine ion but also an equivalent amount of a monovalent cation of the flux are fixed. This proves that the chlorine ion does not act as coactivator with respect to the activator introduced. Studies of the luminescence spectrum of the lumino-phor ZnS-Ag,Al which had been produced in exact accordance with the data by Kröger did not confirm the assumptions made by Kröger: the zinc band is depressed in the presence of Al on calcining in H₂S at exactly the same concentration of Ag

($1 \cdot 10^{-4}$ g/g ZnS) as on calcining with NaCl on air without addition of Al. The authors were able to prove only one effect which Kröger had described in his paper: in the presence of aluminum the zinc band does not suffer extinction when the lumino-phor had been calcined in H₂S. The mechanism of the effect of the Al flux suggested by Kröger has been studied in detail. The authors arrived at the conclusion that in ZnS lumino-phors Al^{III} cannot function as coactivator since Al₂S₃ is not formed and Al₂O₃ is not soluble in ZnS. The authors also point to the strong effect of aluminum oxide on

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Effect of the chemical nature...

the crystallization of the fundamental substance: the grain size in the presence of Al_2O_3 is considerably smaller. In the following discussion A. M. Gurvich deals with the effect of the Cl^- ions on the formation of the luminescence centers and the effect of Al^{+++} and Ca^{+++} ions as coactivators. E. Ya. Arapova is mentioned. There are 2 tables and 3 non-Soviet-bloc references.

~~Legend to Table 1: 1) luminophor 2) ratio-metal ion/ Cl ion~~

omit →

Люминофор	Cl^-	Na^+	Li^+	Отношение атомов Me к атомам Cl
ZnS — Zn(NaCl)	$5,16 \cdot 10^{-6} \pm 20\%$	$4,55 \cdot 10^{-4} \pm 15\%$	—	0,88:1,00
ZnS — Zn(LiCl)	$5,10 \cdot 10^{-6} \pm 22\%$	—	$5,60 \cdot 10^{-6}$	0,98:1,00
ZnS — $5 \cdot 10^{-6} Cu(NaCl)$	$1,6 \cdot 10^{-6} \pm 15\%$	$2,7 \cdot 10^{-6} \pm 13\%$	—	1,68:1,00
ZnS — $5 \cdot 10^{-6} Cu(NaCl)$	$4,0 \cdot 10^{-6} \pm 25\%$	$2,7 \cdot 10^{-6} \pm 15\%$	—	0,68:1,00

X

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SKRYABIN, F.A.; GLAGOLEVA, A.F.

Diagnosing the mineral requirements of the cotton plant.
Uzb. biol. zhur. no.4:9-18 '58. (MIRA 11:12)

1. Institut sel'skogo khozyaystva AN UzSSR.
(Cotton--Fertilizers and manures)

AKULOV, V.V., kand.geogr.nauk; BABUSHKIN, L.N., doktor geogr.nauk;
 ORESHINA, L.M.; SKVORTSOV, Yu.A., doktor geol.-mineral.nauk;
 PETROV, N.P., kand.geol.-mineral.nauk; CHERNEVSKIY, N.N.;
 KRYLOV, M.M., doktor geol.-mineral.nauk; KHASANOV, A.S.;
 BEDER, B.A., kand.geol.-mineral.nauk; KIMBERG, H.V., kand.
 sel'skokhoz.nauk; SUCHKOV, S.P.; GLAGOJEVA, A.F.; PIRVU-
 SHINA-GROSHEVA, A.N.; VERNIK, R.S., kand.biol.nauk; MOMOTOV,
 I.F.; GRANITOV, I.I., kand.biol.nauk; SALIKHBAYEV, Kh.S., kand.
 biolog.nauk; STEPANOVA, N.A., kand.biolog.nauk; YAKHONTOV, V.V.;
 DAVLETSHINA, A.G., kand.biolog.nauk; MURATBEKOV, Ya.M., kand.
 biolog.nauk [deceased]; KUKLINA, T.Ye.; KORZHENEVSKIY, E.L., red.
 [deceased]; GORBUNOV, B.V., kand.geologo-mineral.nauk, red.;
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 Z.P., tekhn.red.

[Materials on the productive forces of Uzbekistan] Materialy po
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 Prirodnye usloviia i resursy nizov'ev Amu-Dar'i; Kara-Kalpakskaya
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1. Akademiya nauk Uzbekskoy SSR, Tashkent. Sovet po izucheniyu
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 Yakhontov, Korzhenevskiy).
 (Amu-Darya Valley--Physical geography)

NABIYEV, M.N., akademik; GLAGOLEVA, A.F.

Kinetics of the conversion of water soluble phosphate fertilizers
to water insoluble compounds. Uzb. khim. zhur. no.3:9-14 '59.
(MIRA 12:9)

1.Institut khimii AN UzSSR. 2.AN UzSSR (for Nabiyeu).
(Phosphates) (Solubility)

NABIYEV, M.N., akademik; GLAGOLEVA, A.F.

Kinetics of the transformations of phosphorus fertilizers in
the reaction of the latter with the soil. Uzb.khim.zhur.
no.5:14-22 '59. (MIRA 13:2)

1. Institut khimii AN UzSSR. 2. AN UzSSR (for Nabyev).
(Fertilizers and manures)

NABIYEV, M.N., akademik; GLAGOLEVA, A.F.

Liquid complex fertilizers based on the decomposition of phosphates by nitric acid. Uzb. khim. zhur. no.4:3-8 '60.

(MIRA 13:9)

1. Institut khimii AN UzSSR. 2. Akademiya nauk UzSSR (for Nabiyev).
(Fertilizers and manures) (Phosphates)

NABIYEV, M.N., akademik; IBRAGIMOVA, U.I.; IL'YASOV, A.I.; RUBO, V.M.;
NOVIKOVA, F.V.; GLAGOLEV, Ye.B.; GLAGOLEVA, A.F.; BYDEL'MAN, A.S.;
red.

[Liquid mixed fertilizers produced by treating phosphates with
nitric acid] Zhidkie slozhnye duobrenia na osnove azotnokislotoy
pererabotki fosfatov. Tashkent, Izd-vo "Nauka" UzSSR, 1965.
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402 p.

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(for Ibragimova). 3. Chirchiskiy elektrokhimicheskiy kombinat
(for Il'yasov).