

ANTONOV, A. P.

Antonov, A. P.

"Investigation of highly stable magnesium cast iron as a raw material for manufacturing the facings of the moving portion of tractors under repair."
Min Higher Education. Moscow Inst of the Mechanization and
Electrification of Agriculture imeni V. M. Molotov. Moscow, 1956.
(Dissertation for the Degree of Candidate in Technical Sciences).

Sot Knishnaya letopis'

No. 25, 1956. Moscow

ANTONOV, A.P., kand.tekhn.nauk; KONONOVA, T.A.

Using cast magnesium iron for making tractor bushings. Avt. i
trakt.prom. no.9:28-30 S '57. (MIRA 10:11)

1. Novosibirskiy sel'skokhozyaystvennyy institut i Nauchno-
issledovatel'skiy avtotraktorny institut.
(Iron-magnesium alloys) (Tractors)

ANTONOV, A.P., kand. tekhn. nauk.

Antifriction properties of high-grade cast iron with globular
graphite. Vest.mash. 38 no.10:37-40 O '58. (MIRA 11:11)
(Cast iron--Testing)

34836
3/137/62/000/004/157/201
A060/A101

2270
AUTHORS: Korushkin, Ye. N., Antonov, A. P.

TITLE: Study of the quality of friction welding

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 7, abstract 4E32
("Tr. Novosib. s.-kh. in-ta", 1959, 20, no. 1, 7 - 18)

TEXT: The following problems are considered: the nature of friction welding and its application to the repair of agricultural machinery parts, the characteristic features of welding steel pipes by this method, the quality and mechanical characteristics of the joint. Conclusions: 1) Friction welding may be utilized for joining the majority of both carbon and alloy structural and tool steels. 2) As result of rapid phase processes at the welding site and the zone of thermal effect there occurs a change in the physico-mechanical characteristics of strength, hardness, and ductility. The hardness and strength increase, while the ductility and dynamic strength decrease. 3) The variations in the physico-mechanical characteristics of the welded parts increase with an increase in the content of carbon and alloy elements in the steel. 4) For parts operating under

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Study of the quality of friction welding

S/137/62/000/004/157/201
1360/A101

impact loads it is necessary to apply heat-treatment after the friction welding;
for parts from carbon steels - normalizing, for parts of alloy steels - annealing.

V. Tarisova

[Abstracter's note: Complete translation]

4

Card 2/2

ANTONOV, A.P., kand.tekhn.nauk

Metallographic investigation of products of the wear of a steel-cast iron friction coupling. Metalloved.i term.obr.met. (MIRA 15:3)
no.2:42-43 P '62.

1. Novosibirskiy sel'skokhozyaystvennyy institut.
(Mechanical wear) (Metallography)

ANTONOV, Aleksandr Petrovich; MALKOV, Il'ya Izrailevich; BORISOVA, G.A.,
red.; MEDRISH, D.M., tekhn. red.

[Household refrigerators] Domashnie kholodil'niki. Moskva, Gos-
torgizdat, 1962. 70 p. (MIRA 16:2)

(Refrigerators)

ANTONOV, A. S.

Tank [by] A. S. Antonov [i Dr.] Moskva, Voen.
Izd--vo, 1954.
606 p. illus., diagrs., ports. 23 cm.

ANTONOV, Aleksandr Sergeevich.

Academic degree of Doctor of Technical Sciences, Based on his defense, 21 December 1954, in the Council of the Military-Transport Acad imeni Kaganovich, of his dissertation: "Theory and computation of auto-tractor transmissions".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 6, 19 Mar 55, Byulleten' MVO SSSR, No. 14, July 56 Moscow pp 4-22, Uncl.
JPRS/NY-429

~~ANTONOV, A.S.~~ ARTAMONOV, B.A.; KOROBKOV, B.M.; MAGIDOVICH, Ye.I.;
POCHTAREV, M.F., inzhener-polkovnik, redaktor; KUZ'MIN, I.F.,
tekhnicheskiy redaktor.

[The tank.] Tank, Moskva, Voennoe izd-vo Ministerstva obrony
SSSR, 1954. 607 p. (MIRA 83)
(Tanks (Military science))

ANTONOV, A.S., doktor tekhn.nauk

Using the method of power flow in designing hydromechanical
transmissions. Avt.prom. no.1:13-19 Ja '60.

(MIRA 13:5)

(Automobiles--Transmission devices)

ANTONOV, Aleksandr Sergeevich, prof., doktor tekhn. nauk;
MAGIDOVICH, Yevgeniy Iosifovich, kand. tekhn. nauk, dots.;
NOVOKHAT'KO, Ivan Spiridonovich, kand. tekhn. nauk, dots.;
KOTIN, Zh.Ya., doktor tekhn. nauk, retsenzent; MIKHEYEVA,
R.N., red. izd-va; SPERANSKAYA, O.V., tekhn. red.

[Hydromechanical and electromechanical transmission systems
of transportation and traction machinery; theory, design
principles, construction and calculations] Gidromekhanicheskie
i elektromekhanicheskie peredachi transportnykh i tiagovykh
mashin; teoriya, osnovy proektirovaniya, konstruktivnaya
i raschet. Pod red. A.S.Antonova. Moskva, Mashgiz, 1963.
350 p. (MIRA 16:7)

(Hydraulic drive) (Electric driving)
(Automobiles--Transmission devices)

BARABANOV, Fedor Antonovich; KLORIK'YAN, Suren Kharenovich; ANTONOV,
Aleksandr Sergeyevich; MOROZOV, Roman Nikolayevich; SPERANTOV,
A.V., otv.red.; PROZOROVSKAYA, V.L., tekhn.red.; ALADOVA,
Ye.I., tekhn.red.

[British coal industry] Ugol'naya promyshlennost' Anglii.
Moskva, Ugletekhnizdat, 1958. 172 p. (MIRA 12:3)
(Great Britain--Coal mines and mining)

АИТЕКОВ, А.С., бригадир

Six years of work experience with carbon tile lining. Дип.пром.
37 no.6:20 Jo '69. (НИИ 15:6)

1. Охрановоchnaya brigada kommunisticheskogo truda Syas'skogo kombinata.

(Autoclaves)

(Woodpulp industry--Equipment and supplies)

GLAZKOV, Ye.N.; ANTONOV, A.S.

Hydrometallurgy of lead products by the amine leaching method. TSvet.
met. 36 no.12:28-32 D '63. (MIRA 17:2)

ANTONOV, A.S., brigadir obmurovshchikov

From the experiences of tile layers. Bum.prom. 34 no.8:
18-19 Ag '59. (MIRA 12:12)

1. Syas'skiy tsellyulozno-bumashnogo kombinata.
(Woodpulp industry--Equipment and supplies)

242600
AUGUST 1959

Galeria, J. E., Shubnikov, I. S., 1959, *Usp. Fiz. Nauk*, 69, 1000-1011
Kuznetsov, V. I., Galina, I. I., Fridkin, V. M.,
Maklarenko, V. V.

A few electrochromic layers which may be localized by means of combined electrical layers

The present paper deals with a new electrochromic process in which combined electrical layers are used in addition to "memory properties". In 1955 Fridkin et al. (Ref. 1) described electric photography by means of photoelectrics on the basis of the constant internal photoelectric polarization in dielectrics discovered by S. Kuznetsov (Ref. 2). A layer of a photoelectric conductor with relatively high photoconductivity and relatively low inertia is applied to the semi-transparent electrode. The dark resistance of this layer may be very low. The other layer of the photoelectric conductor, a layer of a dielectric with a high dielectric constant, is applied to the second electrode. A polarization is applied. The electrochromic process is then realized as follows: A constant voltage is applied to the two electrodes, with $R_1 \gg R_2$ (R_1 - dark resistance of the photoelectric conductor, R_2 - dark resistance of the dielectric) the voltage across the layer of the dielectric practically equals zero. Through the semi-transparent photoelectric conductor on large is projected on to the surface of the photoelectric conductor. As a result of the internal photoelectric effect in the photoelectric conductor, the voltage in the corresponding exposed parts of the photoelectric conductor changes, and a stable electric state is then produced in the discharge. The latent electrochromic layer may then be read by means of the electric field. Photoelectrics and thermoelectrics are used as dielectrics. The characteristics curves of the combined electrical layers may be determined by analyzing the kinetics of their operation. The electrochromic photoelectric conductor and of electric state formation. A law of mutual electrochromic conductivity of the dielectric and of the photoelectric conductor is established. If the charge of the electrode is a function of

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TITLE:
SYNOPSIS:
ABSTRACT:

Card 2/4

At slow, zero & constant the field strength of the polarizing field and τ - the duration of polarization. The authors experimented with combined electrical layers, in which conductive sulfides (activated with copper and silver) were used as photoelectric conductors, and zinc sulfide (also activated with copper and silver) served as dielectric. A diagram shows the dependence of the charge of the electrode on the field strength of the polarizing field. In the interval, under investigation the electrochromic process is realized. The electrochromic conductivity does not vary in time. The authors thank the Soviet Academy of Sciences for the material. The authors thank A. F. Shubnikov and Academician S. J. Kuznetsov for discussing the results obtained by the present paper. There are 5 figures and 17 references, 15 of which are Soviet.

Card 3/4

ASSOCIATION: Institute of Physical Chemistry, Academy of Sciences of the USSR (Moscow, U.S.S.R.)
Author: I. S. Shubnikov, I. I. Galina, V. I. Kuznetsov, V. M. Fridkin, V. V. Maklarenko
Title: A few electrochromic layers which may be localized by means of combined electrical layers
Research

PROCESSED: July 15, 1999, by A. F. Shubnikov, Academician
SERIALIZED: July 9, 1999

12
ANTONOV, A.S.

X-ray observation of tuberculosis in the nonorganized population of the district center of Kuybyshev District. Zdrav. Tadzh. 8 no.6:8-9 N-D '61. (MIRA 15:1)

1. Zamestitel' glavnogo vracha Kuybyshevskogo rayona.
(KUYBYSHEV DISTRICT--TUBERCULOSIS)

YEREMENKO, A.S.; GILPINSKIY, P.G.; YUSHEVICH, I.G.

Mechanism of the manifestation of junctions in silicon
photo detectors by electrochemical deposition of copper. Zhur.
fiz. khim. 39 no.9:2252-2256 S 1965. (MIRA 18-10)

ANTONOV, A.S.; BELOZERSKIY, A.N.

Comparative study of the nucleotide composition of desoxyribonucleic acids in some vertebrates and invertebrates. Dokl.AN SSSR 138 no.5:1216-1219 Je '61. (MIRA 14:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Belozerskiy).
(Desoxyribonucleic acid)

RUBIN, A. V.; ~~ANTONOV~~, A. S.

Do the specific features of the live matter really manifest themselves on the molecular level? Analele biol 15 no.6:3-8 N-D '61.

ANTONOV, A.S., assistant

Only a cell is alive. Nauka i zhizn' 29 no.4:11-12 Ap '62.
(MIRA 15:7)

1. Kafedra biokhimi rasteniy Moskovskogo gosudarstvennogo
universiteta.

(LIFE (BIOLOGY))

(CELLS)

ANTONOV, A.S.; BELOZERSKIY, A.N.

Comparative study of the composition of ribonucleic acids
in some vertebrates and invertebrates. Dokl. AN SSSR 142
no.5:1184-1187 F '62. (MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Belozerskiy)

ANTONOV, A. S.; FAVOROVA, O. O.; BELOZERSKIY, A. N., akademik

Some characteristics of the nucleotide composition of deoxy-
ribonucleic acids in animals and higher plants. Dokl. AN SSSR
147 no.6:1480-1483 D '62. (MIRA 16:1)

1. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova.

(Nucleic acids)

ANTONOV, A.S.; GIRGOR'YEVA, S.P.; IVANOVA, P.V.; BELOZERSKIY, A.N., akademik

Nucleotide composition of rapidly labeled RNA of the silk
gland of the silkworm *Bombyx mori* L. Dokl. AN SSSR 154 no.1:
216-219 Ja'64. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.

ANTONOV, A.S.; LYUTSKANOV, N.; BELOZERSKIY, A.N., akademik

Change in the amino acid composition of total protein in *Bacillus subtilis* T- grown on a medium with 5-bromouracyl, an analogue of thymine. Dokl. AN SSR 155 no. 4:944-946 Ap '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

ANTONOV, A.S.; LAYKOVA, N.F.; IVANOVA, P.V.; GRIGOR'YEVA, S.P.;
BELOZERSKIY, A.N., akademik

Changes in the amino acid composition of fibroin of the silkworm
Bombyx mori L. induced by the analogs of the nitrogen bases of
DNA and RNA. Dokl. AN SSSR 155 no. 5:1201-1204. Ap '64.
(MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

L 1147-66 EWT(1)/T/EWA(h) IJP(u) AT

ACCESSION NR: APS023690

UR/0076/65/039/009/2252/2258

541.17 + 621.376.234

40
37
B

AUTHOR: Antonov, A. S.; Osipenko, B. P.; Yuskeseliyeva, L. G.

TITLE: Mechanism of development of junctions in silicon p-i-n detectors by the electrodeposition of copper

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 9, 1965, 2252-2258

TOPIC TAGS: pn junction, silicon semiconductor, electrodeposition, copper plating

ABSTRACT: The processes of development of junctions in silicon p-i-n detectors prepared by the drifting of Li into silicon was studied by electrodepositing copper under various conditions. The development was carried out in $CuSO_4 \cdot 5H_2O$ and 45% hydrofluoric acid. Volt-ampere characteristics of the etched and polished surfaces of the detectors were recorded. The experimental results obtained relate the pattern of copper deposition to the galvanic emf arising between the n and p regions. To account for the electrochemical reactions taking place during the development of the junctions, the authors postulate that the positive copper ions are discharged on the surface of silicon by capturing electrons from the valence band. The holes

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L 1147-66

ACCESSION NR: AP5023690

3

which thus appear are used during the anodic dissolution of silicon. A phenomenological theory of the electrodeposition of copper on the p-i-n structure of the semiconductor is formulated. "The authors thank B. M. Golovin for a very helpful discussion of this work and for his valuable suggestions." Orig. art. has: 10 figures, 7 formulas.

44,55

ASSOCIATION: none

SUBMITTED: 04Jul64

ENCL: 00

SUB CODE: 85,00

NO REF SOV: 002

OTHER: 018

Cord 2/2

ANTONOV, A.S. (Moskva)

Nucleotide composition of DNA in animals; relationship between
the taxonomy of these organisms and its evolution. Usp. sovr.
biol. 60 no.2:161-177 S-O '65. (MIRA 18:10)

1. Biologicheskii fakul'tet Moskovskogo gosudarstvennogo
universiteta.

ANTONOV, A.S.: YUSKESELIYEVNA, I.G.

Study of a p -- n-junction in silicon with the aid of liquid
electrochromatic developer. Dokl. AN SSSR 164, no. 12, 1965,
1262-0 1965.

(MIRA 18:10)

1. Ob"yedinennyy institut yadernykh issledovaniy. Submitted
March 19, 1965.

YEDINA, V. B.N.; INTEREV, A.S.; BELOSHCHIKOV, A.N., authors.

Molecular mechanism of the Grazier principle in its application to
the development of polyisothermal antrale, dokl. IN SSSR 165
no.18/23-29 N 105.

(MIRA 18:10)

1. Moskovskiy gosudarstvennyy universitet.

L 15396-66 ENT(j)/ENT(m)/T/EWP(t)/EWP(h)/EWA(h) IJP(e) JD/AT
ACC NR: AP5027221 SOURCE CODE: UR/0020/65/164/006/1260/1262

58
53
B

AUTHOR: Antonov, A. S.; Yuskessilyeva, L. G.

ORG: Joint Institute of Nuclear Research (Ob'yedinnenny Institut yadernykh issledovaniy)

TITLE: The study of the p-n junction in silicon by means of liquid electrophotographic developers

7

SOURCE: AN SSSR. Doklady, v. 164, no. 6, 1965, 1260-1262, and top half of insert facing p. 1260

TOPIC TAGS: pn junction, semiconductor research, electrostatic photography

21.44.55

ABSTRACT: If a potential is applied in the blocking direction to a p-n semiconductor junction a space charge region appears within the transition layer. Because of the presence of such a space charge the transition region can be made visible and its structure studied by means of liquid electrophotographic developers (I. I. Zhilevich, Ye. L. Nemirovskiy, Elektrofotografiya, M., 1961, p. 122). The present authors investigated p-n junctions in p-type silicon produced by lithium diffusion. Results are summarized in Fig. 1 and Table 1.

Cord 1/3

UDC: 539.219.3

L 15396-66

ACC NR: AP5027221

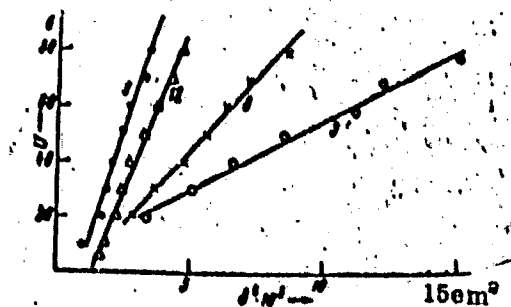


Fig. 1 The reverse potential applied to the p-n junction as a function of the square of the thickness of the region of space charges. The curve numbers correspond to sample numbers in Table 1.

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L 15396-66

ACC NR: AP5027221

5

Table 1 Concentration of N_a acceptors in p-type silicon

(a)	$N_a \cdot 10^{-10}, \text{cm}^{-3}$			(a)	$N_a \cdot 10^{-10}, \text{cm}^{-3}$		
	(c)	(d)	(e)		(c)	(d)	(e)
1	1,77	—	1,06	8	4,23	3,47	1,42
2	1,80	1,77	3,21	9	4,83	5,79	4,01
3	1,94	1,84	0,69	11	6,32	—	14,6
4	2,33	3,19	1,1	12	7,15	—	3,22

a - sample number; c - according to specific resistivity; d - according to capacitance measurements (I. S. Berman, *Nelineynaya polyprovodnikovaya yemkost'*, M., 1963); e - according to electrophotography of the p-n transition.

The authors are deeply indebted to B. P. Osipenko, V. M. Fridkin, and A. B. Dravin for a detailed discussion of the paper and their cooperation, and L. B. Kreynin for his interest. The paper was presented by Academician N. N. Bogolyubov, 19 Mar 65. Orig. art. has: 7 formulas, 4 figures, and 1 table.

SUB CODE: 20 / SUBM DATE: 02Mar65 / ORIG REF: 002 / OTH REF: 003

Cord 3/3 PC

L 06552-67 INT(m)/EXT(t)/INT IJR(c) JD

ACC NR: AP6015445

(A)

SOURCE CODE: UR/0181/66/008/005/1325/1328

AUTHOR: Antonov, A. S.ORG: Joint Nuclear Research Institute, Moscow (Ob'yedinennyy institut yadernykh issledovaniy)TITLE: Distribution of impurity concentrations in an electrical field in the drift zone of silicon p-i-n detectors

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1325-1328

TOPIC TAGS: drift mobility, electric field, pn junction, silicon semiconductor, *impurity level*

ABSTRACT: The concentration of impurities in the drift zone of silicon p-i-n detectors is determined by measuring their capacitance as a function of an applied inverse voltage. The distribution of the electric field in the drift zone is found. A general expression for the electric field strength is obtained from an analysis of the experimental results. Experimental curves are plotted, and it is shown that under real drift conditions the impurity concentration $N(\delta) = N_{\text{donor}} - N_{\text{acceptor}}$ grows with distance δ from the p-n junction. The curve becomes very steep near the boundary between the i and n regions. The electric field in the drift zone is not homogeneous and the electric field strength decreases with distance from the p-n junction. It follows therefore that the "dead" layer is thicker than the n layer, and the differ-

Card 1/2

L 06552-67

ACC NR: AP6015445

ence is greater the smaller the applied voltage. The author thanks B. P. Osipenko for his assistance and interest. Orig. art. has: 4 figures, 16 formulas.

SUB CODE: 20,09/

SUBM DATE: 19Apr65/

ORIG REF: 001/

OTH REF: 004

Card 2/2

L 01828-67 EWT(m)/T/EWP(t)/ETI LJP(c) JD

ACC NR: AP8030947 SOURCE CODE: UR/0181/66/008/009/2527/2531

AUTHOR: Yuskeseliyeva, L. G.; Antonov, A. S.

56
B

ORG: none

TITLE: Electrophotographic method for determining the coefficient of diffusion of lithium in p-type silicon

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2527-2531

TOPIC TAGS: silicon, lithium, diffusion, semiconductor, semiconductor impurity, diffusion coefficient, electrophotographic developer, negative space charge, pn junction, p type silicon

ABSTRACT: An experimental method is described for determining the coefficient of diffusion. The method employs electrophotographic developers to measure simultaneously both the location of the diffusion p-n junction and the width of the region of negative space charge. This method was used to determine the coefficient of diffusion of lithium in silicon as a function of temperature. The results obtained showed that in the 180-560C range, $D = 2.1 \cdot 10^{-3} \exp \left(-\frac{13000}{RT} \right) \text{ cm}^2 \cdot \text{sec}^{-1}$.

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Card 2/2 Ev

L 07840-67 FSS-2/EWT(1)/EWT(m)/EWP(t)/ETI IJP(o) JGS/JD

ACC NR: AP6024669

SOURCE CODE: UR/0070/66/011/004/0622/0627

AUTHOR: Antonov, A. S.; Yuskeliyeva, L. G.

61
60
B

ORIG: none

TITLE: Display of p-i-n structure in silicon single crystals with the aid of dry electrophotographic developers 0° 27 18

SOURCE: Kristallografiya, v. 11, no. 4, 1966, 622.627

TOPIC TAGS: electrophotography, silicon semiconductor, single crystal, pn junction, space charge

ABSTRACT: The authors propose a method for investigating the drift of lithium ions in silicon crystals with p-type conductivity and determine thereby the depth of the p-n junction produced in it by lithium-ion diffusion with the aid of electrophotography. The method is based on the fact that a space charge region is produced when a voltage is applied to such a structure in the inverse direction. It is claimed that, unlike existing analogous methods (for example, US patent 2669692 of G. L. Pearson), the described method is faster, more effective and more sensitive, and the development process does not change the electric properties of the crystals.

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UDC: 548.4

L 07840-67
ACC NR: AP6024669

The sample is clamped between two electrodes connected to a DC source (40 -- 200 V) connected in the inverse direction relative to the pn junction. The end surface perpendicular to the pn junction is in contact with the electrophotographic developer. If a positive developer is used (such as PS-1), then the developer particles, being positively charged, are deposited on the p-region of the junction. If a negative developer is used (BST-3), then the negatively charged particles are deposited on the n-region of the junction. The field is made more homogeneous through the use of a third electrode in the form of an aluminum-foil cuvette in which the developer powder is placed and which is connected directly to one of the electrodes. The preliminary experiments leading to the proper choice of geometry and voltage are described. The accuracy in the determination of the depth of the pn junction was within 20 microns for a drift junction and 10 microns for a diffuse junction. Another valuable property of the method is the possibility of investigating the geometry of the junction and the fact that no additional surface finish of the samples is necessary. The authors thank V. M. Fridkin for collaboration. Orig. art. has: 6 figures.

SUB CODE: 20/ SUBM DATE: 15Oct65/ ORIG REF: 003/ OTH REF: 006

Card 2/2 bc

307/08-19-7-4/33

AUTHOR: Antonov, A.T.

TITLE: Yasinovskiy Coking Works During the Current Seven Years

PERIODICAL: Koks i kaimiya. 1959, Nr 7, pp 10 - 12 (USSR)

ABSTRACT: A short review of the development of the Works since it started operating in November 1953 and an outline of the planned development during the next seven years is given. Main points: in 1958 the largest battery in the world (77 ovens of 30m³ capacity each for carbonising 850 000 tons/year of dry coal) was put into operation; in the next seven years the output of the plant should increase by 75%; new batteries with ovens of 36 - 40m³ are being designed by Giprokoks; reconstruction of coal beneficiation plant which will increase its throughput by two million tons; a new plant for the desulphurisation of coke oven gas; pipe still for the debenzolising of absorption oil; complete automation of benzole recovery plant; erection of a plant for the hydropurification of benzole. The actual and planned development of the plant during the period 1954 - 1965 is shown graphically; increase in the total output - Figure 1, increase in labour productivity -

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SOV/68-19-7-4/33

" Yasinovskiy Coking Works During the Current Seven Years

Figure 2, and the decrease in production costs - Figure 3.
There are 4 figures.

ASSOCIATION: Yasinovskiy koksokhimicheskiy zavod (Yasinovskiy
Coking Works)

Card 2/2

BRUK, A.S.; OBUKHOVSKIY, Ya.M.; VOLKOVA, Z.A.; BELETSKIY, V.G.; ANTONOV, A.T.;
SHEVCHENKO, A.I.

Effect of bulk weight of coal charges on the mechanical properties
of coke. Koks i khim. no.11:20-25 '60. (MIRA 13:11)

1. Dnepropetrovskiy metallurgicheskiy institut (for Bruk, Obukhov-
skiy, Volkova, Beletskiy). 2. Yasinovskiy koksokhimicheskiy zavod
(for Antonov, Shevchenko).

(Coke)

ANTONOV, A.T.

Glorious tenth anniversary. Koks i khim. no. 11:7-11 '63. (MIRA 10:12)

1. Direktor Yasinovskogo koksokhimicheskogo zavoda.

ANTONOV, A. V., ISAKOV, A. I., MURIN, I. D., NEUFOKOYEV, B. A., FRANK, I. M., SMIRNO, P. I.
and SHTRANIK, I. V.

"A Study of Neutron Diffusion in Beryllium Graphite and Water by the Impulse Method," a paper presented at the Atoms for Peace Conference, Geneva, Switzerland, 1955

ANTONOV, A.V.; ISAKOV, A.I.; MURIN, I.D.; NEUPOKOYEV, B.A.; FRANK, I.M.;
SHAPIRO, F.L.; SHTRANIKH, I.V.

[Neutron diffusion in beryllium, graphite, and water, studied
by the pulse method] Issuchenie diffuzii neutronov v berillii,
grafite i vode impul'snym metodom. Moskva, 1955. 27 p.

(MIRA 14:7)

(Neutrons—Scattering)

(Beryllium)

(Graphite)

ANTONOV, A. V. Cand Phys-Math Sci -- (diss) "Study of the processes of diffusion and moderation of neutrons in different media and multiplication of neutrons in uranium-graphite heterogeneous systems ~~with the aid~~ of the impulse method." Mos, 1957. 14 pp (Acad Sci USSR. Physics Inst im P.N. Lebedev), 125 copies (KL, 42-57, 91)

-1-

Antonov, A.V.

AUTHORS: Antonov, A.V., Bergman, A.A., Isakov, A.I., 89 -1-6/18
Murin, I.D., Neupokoyev, B.A.

TITLE: The Investigation of the Slowing-Down of Neutrons in Graphite and Heterogeneous Uranium-Graphite-Systems by the Momentum Method (Issledovaniya samedleniya neytronov v grafite i v uran-grafitovoy geterogennoy sisteme s pomoshch'yu impul'snogo metoda).

PERIODICAL: Physics and Thermotechniques of Reactors (Fizika i teplotekhnika reaktorov), Supplement Nr 1 to Atomnaya energiya, 1958, (USSR)

ABSTRACT: On the strength of experimental results the following may be said about the time needed for neutron slowing-down:
During the first 80 to 90 μ s slowing-down of neutrons in graphite takes place as a consequence of elastic collisions with free carbon nuclei. After this time interaction between neutrons and the crystal lattice of graphite begins. It may be assumed that after about 160 μ s the shape of the neutron spectrum nearly attains Maxwell's shape $M(T,E)$, which corresponds to a temperature $T(t)$ at that moment. In the further course of events the difference $T(t) - T_p$ decreases experimentally.

Card 1/2

$$T(t) - T_p \approx e^{-\beta t}$$

SOV-120-58-1-7/43

AUTHORS: Antonov, A. V., Korshunov, Yu. V., Meleshko, Ye. A. and Panasyuk, V. S.

TITLE: Stabilisation of the High Frequency Voltage on the Dee of a Cyclotron (Stabilizatsiya napryazheniya vysokoy chastoty na duante tsiklotrona)

PERIODICAL: Priroda i Tekhnika Eksperimenta, 1958, Nr 1, pp 41-46 (USSR)

ABSTRACT: Nuclear reaction studies which are being carried out at the present time require high stability in cyclotron parameters. The following quantities require stabilisation: intensity of the magnetic field, frequency of the h.f. voltage which is applied to the dee, amplitude of the h.f. voltage on the dee and the magnitude of the reflecting potential. It is also desirable to stabilise the ion current from the source. Thus the stabilisation of the dee potential must be looked upon as one of a set of problems associated with the stabilisation of the cyclotron parameters. A comprehensive dee voltage stabilisation should include a stabiliser of the dee voltage relative to the earth as well as

Card 1/2

SOV-120-58-1-7/43

Stabilisation of the High Frequency Voltage on the Dee of a Cyclotron.

an inter-dee voltage stabiliser. A description is given of the principle and a circuit of an amplitude stabiliser for the h.f. voltage on one of the dees. The stabiliser can be used either continuously or with a modulated signal. The circuit diagrams are given in Figs.3 and 5. The h.f. voltage stabiliser was applied to the "attracting" dee and was tested on a working machine. Introduction of the stabiliser led to a real improvement in the stability of the ion beam at the cyclotron target. In addition, destabilising factors such as random surges are eliminated which ensures smooth running of the machine. The regulation characteristic is given in Fig.4. I. P. Vyazovetskiy, D. A. Kuznetsov, V. Z. Loskutov, R. A. Ariskina, B. V. Rybakov and V. A. Sidorov collaborated. There are 5 figures and 7 Soviet references.

SUBMITTED: June 15, 1957.

1. Voltage stabilizers--Performance
2. Voltage stabilizers--Circuits
3. Cyclotrons--Equipment

Card 2/2

ANTONOV, A.V.; BERGMAN, A.A.; ISAKOV, A.I.; MURIN, I.D.; NEUFOKOYEV, V.A.

Pulse technique for the investigation of neutron slowdown in
graphite and in uranium-graphite heterogeneous systems. Atom.
energ. Supplement no.1:82-95 '58. (MIRA 11:5)
(Neutrons) (Nuclear reactors)

ANTONOV, A.V.; KORSHUNOV, Yu.V.; MELESHKO, Ye.A.; NEMENOV, L.M.;
PANASYUK, V.S.;

[Ferrite frequency variator for changing from a
cyclotron to a synchro-cyclotron mode of acceleration]
Ferritovyi variator chastoty dlia perevoda tsiklotrona v
fazotronnyi reshim uskoreniia. Moskva, Glav. upr. po
ispol'zovaniiu atomnoi energii, 1960. 18 p.
(MIRA 17:2)

PLASMA BOOK EXTRACTION 807(555)

Publister, G. M., ed.
Mikhailov, V.A., I.A. Gotsmanov, P.M. Lydlits, and A. Ya. Tolstoy.
Soviet Atomic Energy Press, Moscow, 1965. 121 p. 3,000 copies printed.

Scientific Ed.: B.N. Yabluchov; Ed.: G.M. Mikhailov; Tech. Ed.: B.A. Vlasov.
PREFACE: This collection of articles is intended for scientists and engineers engaged in the construction and operation of particle accelerators.

CONTENTS: These original articles treat specific problems arising in the operation of present-day accelerators, particularly linear electron accelerators. A new acceleration principle operating at the Ultraviolet Photo-Relaxation Institute (UVRP) (Ultraviolet Photo-Relaxation Institute) is described, and problems in the dynamics of particles in linear electron accelerators are discussed. New methods are discussed for the extraction of particles from accelerators. Problems associated with the shielding of permanent magnetic fields and the acceleration of multicharged ions are also treated. The changeover of the series cyclotron to the phaseotron acceleration mode with a view to increasing the energy of accelerated particles is described, and some problems connected with the burning of particles are elaborated. No personalities are mentioned. References accompany each article.


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S/058/61/000/007/007/086
A001/A101

AUTHORS: Antonov, A.V., Korshunov, Yu.V., Meleshko, Ye.A., Nemenov, L.M.,
Panasyuk, V.S.

TITLE: Ferrite frequency changer for conversion of a cyclotron to the
phasotron system of acceleration

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 37-38, abstract 7B34 (V
sb. "Uskoriteli", Moscow, Atomizdat, 1960, 60 - 72)

TEXT: In order to bring about the proposal on the conversion to the pha-
sotron operation of acceleration of the mass-produced cyclotron with the diame-
ter of electromagnet poles 1,200 mm and to produce 30-Mev protons (instead of
12.6 Mev) in it, the frequency in the acceleration process must be changed by
about 5%. The authors have constructed; for modulation of cyclotron frequency,
a circuit with ferrite core and radio engineering equipment connected with it. 
The change of resonance frequency of the dee circuit is brought about by connect-
ing with it an inductance with ferrite core and excitation of the core by alter-
nate current with a frequency equal to that of acceleration cycles. The problem
of selecting the ferrite and the method of connecting the circuit with the fer-
Card 1/2

Ferrite frequency changer ...

S/058/61/000/007/007/086
A001/A101

rite are discussed. The equipment was tested by acceleration of deuterons. Frequency variation in this case amounted to 1.8%. At the final diameter the average stream of deuterons with 2 - 3 μ amp was obtained. The current pulse amounted to 60 - 90 μ amp.

A. Talyzin

[Abstracter's note: Complete translation]

Card 2/2

32000
S/089/62/012/001/003/019
B102/B138

26.2243

AUTHORS: Antonov, A. V., Granatkin, B. V., Merkul'yev, Yu. A.,
Smolik, Ch. K.

TITLE: Pulse method study of neutron diffusion and thermalization
in water and ice in a wide temperature range

PERIODICAL: Atomnaya energiya, v. 12, no. 1, 1962, 22 - 29

TEXT: The method, apparatus and results are described, of the investiga-
tion of non-steady neutron diffusion in water and ice at 0.5 - 286°C and
down to -196°C. The pulse method used has been described by Dardel

(Phys. Rev, 96, 1245, 1954) and I. M. Frank. The neutrons, from $T(d,n)He^4$
reactions, were modulated with a repetition frequency of 250 cps at a
pulse duration of 15 μ sec. The neutrons were recorded with a $B^{10}F^3$
counter, the counter pulses were fed to a 20-channel time analyzer (dead
time 10 μ sec), designed by I. V. Shtranikh, A. Ye. Voronkov, A. M. Volkov
and K. P. Dudareva. An apparatus was designed for studying neutron
diffusion in water at 0.5, 3, 7, 20, 71, 98, 136, 138, 159, 200, 250 and

Card 1/4

Pulse method study of...

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S/089/62/012/001/003/017
B102/B138

286°C. The following parameters were measured: neutron life (T) and diffusion coefficient (D), coefficient of diffusion cooling (C) non-diffusion correction (d) (N. Sjöstrand. Arkiv fys. 15, 147 (1959)) transport free path (λ_{tr}), transport cross section (σ_{tr}), diffusion length (L)

and mean cosine of neutron scattering angle ($\overline{\cos \theta}$). For water at 21°C the following diffusion parameters were measured: $T = 207 \pm 7 \mu\text{sec}$,

$D = (0.35 \pm 0.01) \cdot 10^5 \text{ cm}^2/\text{sec}$, $C-d = (0.04 - 0.01) \cdot 10^5 \text{ cm}^4/\text{sec}$. The diffusion parameters for ice at -196°C are given in the table. The experimental values were approximated by means of the following formulas: ✓

$$\frac{D(T^\circ\text{C})}{D(21^\circ\text{C})} = (0,034 \pm 0,028) + \\ + (0,280 \pm 0,009) 10^{-2}t + \\ + (0,106 \pm 0,03) 10^{-4}t^2. \quad (5)$$

$$\overline{\cos \theta} = 1 - \lambda_g / \lambda_{tr} \quad (\lambda_g - \text{scattering mean free path}),$$

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B102/3130

Pulse method study of...

$$\frac{L(t)}{L(22^\circ\text{C})} = \frac{1}{v} \left[\frac{t+273.1}{204.1} \right]^{1/2} \times \left[\frac{1.0611}{1+0.0611 \left[\frac{t+273.1}{204.1} \right]^{1/2}} \right]^{1/2} \quad (9)$$

$$\frac{(C-d)(t)}{(C-d)(21^\circ\text{C})} = (0.987 \pm 0.098) + (0.619 \pm 0.031) 10^{-3} t + (0.348 \pm 0.104) 10^{-4} t^2 \quad (10)$$

$$\epsilon = \frac{1}{6} \frac{D^2}{C} \frac{\bar{\lambda}_s}{v} \left(1 + v \frac{d \ln \bar{\lambda}_{tr}}{dv} \right) \times \left(2 \frac{E_n}{kT} - 3 \right) \quad (11)$$

(ϵ - energy transferred by one neutron per collision). The heat-exchange constant $\gamma = D^2/C$ was $(3.10 \pm 0.35) \cdot 10^5 \text{ sec}^{-1}$, $\epsilon = 0.23 \pm 0.07$. Conclusions: Anisotropy in the angular distribution of scattered neutrons increases with temperature. In water at room temperature neutron thermalization satisfies Dardel's theory (Trans. Roy. Inst. Technol. No. 75, 1954) when the deviation of the neutron temperature from equilibrium is only small. In ice at -196°C the neutron gas is in equilibrium with the ice. Equilibrium is established 45 - 75 μsec after slowing down begins. This

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B102/B138

Pulse method study of...

slowing-down time is much greater than in water. The authors thank I. M. Frank for interest, B. V. Makarov, V. M. Gulikov, V. V. Talakvadze, and Ye. A. Velichenkova for assistance. There are 7 figures, 1 table, and 17 references: 3 Soviet and 14 non-Soviet. The four most recent references to English-language publications read as follows: K. Beckurts, Symposium on "In Pile Neutron Spectra and Pulsed Neutrons Methods". Denmark, 1960; D. Hughes et al. Phys. Rev., 119, 872 (1960); D. Hughes, R. Schwarts, Neutron Cross Sections. New York, 1958; K. Rockety, S. Skolnik, Nucl. Sci. Engng, 8, 62 (1960).

SUBMITTED: July 1, 1961

Table

$t, ^\circ\text{C}$	$\rho, \text{g/cm}^3$	T, msec	$10^3 D, \text{cm}^2/\text{sec}$	$(C-d), \text{cm}^2/\text{sec}$	L, cm	σ_{11}, barn	λ_{11}, cm	$\cos \theta$
-106	$0,917 \pm 0,010$	215 ± 10 222	$0,095 \pm 0,004$ $0,103 \pm 0,001$	$0,02 \pm 0,01$ $0,025 \pm 0,10$	$1,43 \pm 0,07$ $1,53 \pm 0,08$	140 ± 8 132 ± 6	$0,224 \pm 0,009$ $0,245 \pm 0,010$	$0,10 \pm 0,05$

Card 4/4

ANTONOV, A.V.; GRANATKIN, B.V.; MERKUL'EV, Yu.A.; PUZANOV, V.V.; STOLIK,
Ch.K.

Neutron diffusion for water and ice at temperatures near 0°C and -
80°C. Atom. energ. 13 no.4:373-374 0 '62. (MIRA 15:9)
(Neutrons--Scattering)

L 16137-63

EPR/EPF(o)/EPF(n)-2/EWP(q)/EWT(m)/BDS APTTC/ASD/SSD Pe-L/

Pr-4/Pu-4 WH/WW/JD/JQ/K

ACCESSION NR: AT3001853

S/2504/62/014/000/0147/0223

AUTHOR: Antonov, A. V.

TITLE: Investigation of diffusion processes and neutron moderation in various media and of the multiplication of neutrons in heterogeneous Uranium-graphite systems by means of the pulse method

SOURCE: AN SSSR. Fizicheskly Institut. Trudy, v. 14, 1962, 147-223

TOPIC TAGS: neutron, slow, diffusion, multiplication, reactor, moderation, Be, graphite, U, water, pulse, pulse method, nonstationary, attenuation, Ag, filter, transmittance

ABSTRACT: This theoretical paper, based in part on experimental measurements performed under the guidance of L. M. Frank (Corr. Member, AN SSSR) in the Nuclear Laboratory of the Fizicheskly Institut AN SSSR (Physics Institute, AS USSR) in 1953-54, deals with the elaboration of the pulse-type method for the determination of nonstationary diffusion and its application to the investigation of decelerating and multiplying media. The paper comprises essentially the author's dissertation for the degree of Candidate of Physico-Mathematical Sciences, submitted at the Institute in 1957. The method of nonstationary diffusion has

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ACCESSION NR: AT3001853

subsequently achieved broad application; its basic concepts have remained unchanged. The paper takes into consideration the deviations occurring in complex processes, such as those occurring in thermal reactors, from the picture corresponding to the single-group theory of diffusion, and introduces corrections derived from a study of the process of neutron moderation. The paper is focused on the following problems involved in the behavior of slow neutrons (thermal and epithermal) in decelerating and multiplying media: (1) Study of the process of non-stationary diffusion of neutrons in small moderator blocks and the employment of the results of these investigations for an analysis of the process of the establishment of an equilibrium between neutron gas and moderating medium (Chapters I and III); determination from these experiments of diffusion parameters (especially of precise values of the diffusion coefficient) for a number of moderators, namely, water, graphite, and Be (Chap. II). (2) The direct study of the moderation process of neutron in graphite in a heterogeneous U-graphite system, by means of direct measurement of the mean velocities of neutrons at various time points after inception of moderation (Chapter III). (3) Development or elaboration of a pulse method for the investigation of systems that multiply neutrons and its application to the study of heterogeneous U-graphite systems (Part II). The paper comprises two Parts with the following Sections: Part I. Nonstationary diffusion processes and neutron moderation in various media by means of the pulse method. Chapter I.

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ACCESSION NR: AT3001853

Theory of the nonstationary diffusion processes of slow neutrons in pure moderators. Sec. 1. Single-group study of the process of nonstationary diffusion of slow neutrons and fundamental principles of the pulse method. Sec. 2. Two-group study of the process of nonstationary diffusion of slow neutrons. Sec. 3. Examination of the process of the establishment of an equilibrium state on the basis of the generalized Dardel conception. Sec. 4. Multi-group theory of the diffusion of slow neutrons. Chapter II. Experimental investigation of the process of the diffusion of slow neutrons in Be, graphite, and water. Sec. 5. Description of equipment. Sec. 6. Measurements. Sec. 7. Discussion of results obtained. Chapter III. Investigation of the moderation of neutrons and the process of the establishment of an equilibrium state between neutron gas and medium. Sec. 8. On the use of the pulse method for the investigation of slow neutrons. Sec. 9. Measurement of the transmittance coefficient of a Ag filter for neutrons issuing from graphite prisms and heterogeneous U-graphite systems. Sec. 10. Discussion of the test results on the measurement of the transmittance coefficient of a Ag silver. Sec. 11. Examination of the process of the moderation of neutrons in graphite from data of diffusion measurements, and comparison with experimental results on the measurement of the filter transmittance coefficient. Sec. 12. Terminal stage of the moderation process of neutrons in water. Sec. 13. Comparison of the values of the diffusion parameter, C , for various media. Part II. Application of the pulse method for

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ACCESSION NR: AT3001853

the investigation of heterogeneous U-graphite systems. Sec. 1. Fundamental principles of the method. Sec. 2. Solution of the problem of the nonstationary diffusion of neutrons in multiplying systems ("method of generations"). Sec. 3. On the mean speed of a group of thermal neutrons in a multiplying system. Sec. 4. Moderation of neutrons in multiplying systems. Sec. 5. Consideration of effects relating to the equilibrium energy of neutrons with the dimensions of a prism ("A"-type effects). Sec. 6. Peculiarities of the experimental arrangement in the investigation of U-graphite multiplying systems. Sec. 7. Measurements. Sec. 8. Processing of measurement results and determination of reactor parameters. Sec. 9. Discussion of results. In summary, the method proposed affords a possibility of determining, with satisfactory accuracy, the parameters that characterize multiplying systems. It affords means for the determination of the parameters of unbounded systems by means of tests with systems of small size, far from the critical state. Other methods, such as the prism method, require much larger test systems. The pulse-method version proposed by N. G. Sjöstrand (Proc. Int. Conf. Geneva, August 1955, v. 5, 1955) can afford an extremely elevated accuracy in the investigation of system close to the critical state; however, it is not suitable for the investigation of systems that are far from the critical state. Thus, the method proposed here and Sjöstrand's method are not mutually exclusive, but are mutually supplementary, so that their combined use appears advisable.

Card 4/64

ASSOCIATION: Physics Institute, AN SSSR

L 27307-65 EMI(m)/EPA(w)-2/EMI(m)-2 Feb-10/Pt-10 IJP(c)
ACCESSION NR: AP5002140 S/0120/64/000/006/0028/0029

40
35

AUTHOR: Antonov, A. V.; Vasil'yev, P. I.; Venikov, N. I.; Kalinin, S. P.; Sokolov, N. I.; Khaldin, N. N.; Khoroshavin, B. I.; Chumakov, N. I.

TITLE: Changing the IAE cyclotron into a controllable-ion-energy mode of operation

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1964, 28-29

TOPIC TAGS: cyclotron, IAE cyclotron

ABSTRACT: The adoption of rapid energy control in the 1.5-meter IAE cyclotron, with preservation of a good ($\pm 0.1-0.4\%$) monoenergetic characteristic and short duration (2-4 nsec) of accelerated-ion clusters, was predicated upon the following changes introduced into the cyclotron: (1) Correction of magnetic field by the currents in additional windings within 5-14 koe; (2) Provision of a dee-type slit ion optical device suitable for the entire range of accelerated ions; (3) Replacing

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ACCESSION NR: AP5002140

the VCh-200 h-f oscillator by a GU-300 which can be tuned without additional neutralization within 8--13 Mc; (4) Introduction of a remote control of dees position; (5) Correction of optical properties of the system guiding the output beam. As a result of the above measures, the type and energy of particles can be changed in less than an hour's time particulars are tabulated. Orig. art. has: 1 figure and 2 tables

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 20Nov63

ENGL: 00

SUB CODE: NP

NO REF SOV: 005

OTHER: 000

Card 2/2

L 27229-65 EWT(m)/EPA(w)-2/EWA(m)-2 Feb-10/Pt-10 IJP(c)

ACCESSION NR: AP5002141

S/0120/64/000/006/0030/0032

49

35

B

AUTHOR: Antonov, A. V.; Blokhov, M. V.; Venikov, N. I.; Kalinin, S. P.;
Kurashov, A. A.; Perov, P. Ye.; Chenatov, A. A.

TITLE: Reducing the repetition frequency of ion clusters in the IAE cyclotron

19

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1964, 30-32

TOPIC TAGS: cyclotron, IAE cyclotron

ABSTRACT: A system intended for a fourfold reduction of the repetition frequency of ion clusters on the cyclotron target is described. The ions are deflected in the vertical plane by a h-f sinusoidal voltage applied to a special deflecting system placed in the ion duct; admitting the required clusters to the target takes place at zero-voltage moments. Formulas for designing the deflecting-electrode shape and calculating the deflecting voltage are supplied. A block diagram of the electronic system is explained. The system can be tuned within 1.15--1.75 Mc.

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L 27229-65

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ACCESSION NR: AP5002141

"The authors wish to thank N. N. Khaldin, V. I. Lamunin, and P. I. Vasil'yev for designing the system; Yu. V. Korshunov for calculating the tuned circuit of the deflecting system; R. A. Ariskina, B. I. Khoroshavin, and Ye. I. Rybakov for their help in the preparation of experiments; and A. A. Ogloblin and V. M. Pankratov for their constant interest in the project." Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: Institut atomnoy energii (Institute of Atomic Energy)

SUBMITTED: 19Nov63

ENCL: 00

SUB CODE: NP

NO-REF SOV: 002

OTHER: 000

Card 2/2

YF 13508-65 EWI(d)/EWI(i)/EPA(s)-2/EEG(k)-2/EEG-4/EEG(t)/EEG(b)-2 Po-4/Pq-4/
PI-10/Pk-4/P1-4/Pg-4 IJP(c)/AFWL/AS(mp)-2/ASD(a)-4/ESD(gs)/ESD(t) JG

ACCESSION NR: AP4048931

S/0286/64/000/020/0032/0032

B

AUTHORS: Batura, V. G.; Gladyshev, G. I.; Antonov, A. V.; Kovalenko, I. I.

TITLE: Instrument for accurately measuring dielectric permeability and loss tangent in solid dielectrics. Class 21, No. 165777

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1964, 32

TOPIC TAGS: dielectric, dielectric permeability, loss tangent

ABSTRACT: This Author Certificate presents an instrument for measuring the dielectric permeability and loss tangent in solid dielectrics, previously described by the same authors in Class 0, No. 165796. In order to simplify the construction of the instrument by eliminating the vacuum, the plunger is made of platinum. Furthermore, to maintain an equal temperature along the plunger surface, the heater is made in the form of a spiral strip. Finally, a diaphragm mechanism is used to eliminate the sag and to center the specimen placed on the plunger.

ASSOCIATION: none

SUBMITTED: 26 Aug 63

SUB CODE: EM

Cord 1/1

NO REF SOV: 000

ENCL: 00

OTHER: 000

4172-66 EWT(d)/EWT(1)/EFA(a)-2/EEC(k)-2 I,IP(c) 00
ACC NR: AP5025693 SOURCE CODE: UR/0286/65/000/018/0040/0040

INVENTOR: Gladyshev, G. I.; Shuranov, V. A.; Antonov, A. V.

48
B

ORG: none

TITLE: Instrument for measuring the parameters of dielectrics at low temperatures in the centimeter wavelength range. Class 21, No. 174577

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 40

TOPIC TAGS: cavity resonator, measuring instrument, dielectric property, electronic measurement, dielectric material

ABSTRACT: The proposed instrument for measuring the parameters of dielectrics at low temperatures consists of a tunable measuring resonator, a waveguide connected to the resonator, a hermetically sealed body, and a devar. Provision is made to maintain controlled low temperatures in the working space of the resonator. The cavity of the resonator is ringed with a coiled heat exchanger linked with the devar. Temperature stabilization and control are effected by application of a controlled voltage to the end of the tubing passing into the devar. Orig. art. has: 1 figure. [DW]

SUB CODE: EC, E/SUBM DATE: 11Jul63/ ORIG REP: 000/ OTH REP: 000/ ATD PRESS: 4/79

Card 1/1 ml

UDC: 621.317.335.3

L 22738-66 EPF(n)-2/EWA(h)/EWT(1)/EWT(m)

ACC NR: AP6007959 SOURCE CODE: UR/0089/66/020/002/0164/0165

AUTHORS: Antonov, A. V.; Merkul'yev, Yu. A.; Granatkin, B. V.

45
43
B-1

ORG: none

TITLE: Temperature dependence of the diffusion parameters of neutrons in water and in ice

SOURCE: ^A Atomnaya energiya, v. 20, no. 2, 1966, 164-165

TOPIC TAGS: neutron diffusion, temperature dependence, water, neutron cross section, transport property

ABSTRACT: This is a continuation of earlier work by the authors (Atomnaya energiya v. 12, 22, 1962 and 13, 373, 1962), where they determined the temperature dependence of the diffusion coefficient $D(t)$ and of the diffusion-cooling coefficient $C(t)$ of thermal neutrons for water and ice. To reconcile the earlier results with those of W. W. Glendenin (Nucl. Sci. and Engng. v. 18, 351, 1964), the authors used the experimental values of D in water to calculate, by means of elementary formulas, the values of the transport cross

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Card 1/2

UDC: 539.125.52

L 22738-66

ACC NR: AP6007959

2
section of thermal neutrons and their temperature dependence. They also calculated the temperature dependence of the mean square of the exchange energy for water and for ice, with allowance for the non-diffusion correction of the diffusion coefficient. The calculations show that when water is heated the mean square exchange energy per hydrogen atom increases, thereby increasing the diffusion motion of the molecules in the water and weakening the interaction between the liquid molecules. The reasons for this increase are the weakening of the molecular forces that prevent the exchange of energy between neutrons with increasing temperature, and the fact that the rotational motion of the water molecules approaches the motion of the free rotator. The earlier investigation was based on the assumption that the transport cross section is proportional to the reciprocal square root of the energy, and the present results confirm this assumption. The authors thank I. M. Frank and M. V. Kazarnovskiy for reviewing the article and remarks. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 25Aug 65/ ORIG REF: 004/ OTH REF: 004

Card 902/2

ACC NR: AR0037000

(A, N)

SOURCE CODE: UR/0181/66/000/011/3397/3400

AUTHOR: Antonov, A. V.; Belyayeva, A. I.; Yermenko, V. V.

ORG: Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-
tekhnicheskiiy institut nizkikh temperatur AN UkrSSR)TITLE: Low temperature anomaly in the absorption spectra of antiferromagnetic $RbMnF_3$
and $KMnF_3$

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3397-3400

TOPIC TAGS: absorption spectrum, antiferromagnetic material, Neel temperature, tem-
perature dependence, low temperature research, line splitting, luminescence spectrum

ABSTRACT: This is a continuation of earlier work (FTT v. 6, 3646, 1964 and preceding) and is devoted to the C-group ($\sim 3900 \text{ \AA}$) of bands in the absorption spectrum of anti-ferromagnetic $RbMnF_3$ (Neel temperature $T_N = 82K$) and $KMnF_3$ ($T_N = 88K$), whose struc-ture becomes quite complicated at $T < T_N$. The measurement procedure was described earlier (FTT v. 6, 1967, 1964). Investigations were made at 4.2 - 200K. The ab-sorption spectrum was photographed with a diffraction spectrograph (DFS-8) and then photometrized (MF-2 microphotometer). The results show that with decreasing tempera-ture the number of bands in the C group increases from two to seven in the case of $RbMnF_3$ and six in the case of $KMnF_3$, in analogy with the splitting observed for other antiferromagnetic crystals. The temperature dependence of the most intense of the bands was also investigated and the connection between the anomalies in the absorp-

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ACC NR: AP6037000

tion spectrum and the anomalies in the luminescence spectrum of RbMnF_3 and KMnF_3 is discussed. It is deduced that the anomaly in the absorption spectrum, observed by the authors for the first time, can also be related to the ordering of the spins of the excited Mn^{++} ions. Particular attention is paid to the temperature dependence of the first band to appear with decreasing temperature (C_2), which exhibits an anomaly below 30K, and which is a magnon satellite of one of the original bands (C_1). Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 23May66/ ORIG REF: 004/ OTH REF: 008

Card 2/2

ANTONOV, I. YA.

Steam Meters

Measurement of high pressure steam consumption by means of welded-in diaphragm.
Elek. Sta., 23, no. 2, 1952
Insh. Kand. Tekhn. Nauk.

SO: Monthly List of Russian Accessions, Library of Congress, April ² 195~~8~~, Uncl.

ANTONOV, A. YA.

AID P - 2556

Subject : USSR/Engineering
Card 1/1 Pub. 110-a - 8/13
Authors : Filimonov, A. I., Kand. Tech. Sci., and Antonov, A. Ya.,
Eng.
Title : Influence of water cooling in gage glasses on readings
Periodical : Teploenergetika, 6, 37-39, Je 1955
Abstract : The causes for errors occurring in the readings of water
gage glasses are analyzed. The possibilities of estab-
lishing the actual water level in the drum are presented
with theoretical and mathematical equations. Suggestions
for improvements in the design of the installations are
made. Five diagrams. One American reference, 1953.
Institution: All-Union Heat Engineering Institute
Submitted : No date

ANTONOV, A. G. A.

АНТОНОВ, А. Я.

АНТОНОВ, А. Я. Inzhener; PANASKNEKO, M.D. kandidat tekhnicheskikh nauk.

Effect of steam content of the water volume on the critical altitude of the space occupied by steam in the drum of a boiler unit [with summary in English]. Teploenergetika 4 no.8:39-42 Ag '57.
(MLRA 10:9)

1. Vsesoyuznyy teplotekhnicheskii institut.
(Feed water)

KOSTRIKIN, Yu.M., kand. tekhn. nauk; ANTONOV, A.Ya., inzh.

Using radioactive isotopes in power engineering. *Energetik* 5 no.11:
34-38 N '57. (MIRA 10:12)
(Electric engineering) (Radioisotopes)

ANTONOV A. Ya.

10(4): 21(5); 24(8) PHASE I BOOK EXPLOITATION 30V/2457

Vesol'maya nachno-izobichnaya konferentsiya po primeneniyu radioaktivnykh i stabil'nykh izotopov i izlucheniya v narodnoho khozyaystva i nauke. 24. Moscow, 1957

Teplotekhnika i gidrodinamika; trudy konferentsii, tom 6 (Heat Engineering and Hydrodynamics); Transactions of the All-Union Conference on the Use of Radioactive and Stable Isotopes and Radiation in the National Economy and Science, Vol. 6. Moscow, Gosenergoizdat, 1958. 88 p. Errata slip inserted. 2,300 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR, and USSR. Glavnoye upravleniye po ispol'szovaniyu atomnoy energii.

Eds.: M. A. Styrkovich (Resp. Ed.), G. Ye. Dolodovskiy, and M. S. Puzichov. Ed. of Publ. House: L. M. Simol'nikova; Tech. Ed.: N. I. Borunov.

PURPOSE: This collection of articles is intended for scientists and laboratory workers concerned with the use of radioactive and stable isotopes.

COVERAGE: This collection of papers deals with the application of radioactive and stable isotopes as measuring tools in various types of scientific investigations. 30 personalities are mentioned. References are given at the end of the articles.

- 2. Bartolomey, G. O., Ya. G. Vinokur, V. A. Kuznetsov, and V. A. Pribludnyy. Use of Gamma Rays for Studying the Process of Diffusion 9
- 3. Kupaladze, J. S., and V. F. Kostin. Use of Gamma-Ray Scopy for Studying the Hydrodynamics of a Multifield System 12
- 4. Jiliazkin, E. G., and N. A. Shupin. Method of "Tagged" Atoms for Investigating Water and Steam Content in Surface Boiling of a Fluid 16
- 5. Andryushev, V. S. Determining the Specific Surface Area of "Tagged" Atoms by the Sorption Method With the Use of "Tagged" Atoms 22
- 6. Kozlov, Y. M., and I. I. Kuznetsov. Use of Radioactive Isotope Scopy for Studying Sulfate Corrosion of Concrete 28
- 7. Tyrovich, E. A., V. I. Parnomaki, and V. A. Lukin. Methods for Determining the Density and Moisture Content of Soils With the Aid of Radioactive Emulsions 33
- 8. Polozova, L. G., and K. F. Rozman. Study of the Processes of Moisture Transfer in Building Materials by Means of Gamma-Ray Scopy 38
- 9. Styrkovich, M. A., I. B. Khaybulin, and I. K. Khudolov. Use of Radioactive Isotopes for Investigating the Solubility of Salts in Water Vapor at High Pressures 41
- 10. Sternan, L. S., A. A. Antonov, and A. V. Burnov. Investigation of the Characteristics of Vapor at a Pressure of 124 atm. With the Aid of Radioactive Isotopes 46
- 11. Narynskiy, V. A. Use of Radioactive Isotopes for Observing the Motion of the Molten Glass Mass in Glass Furnace Tubes 52
- 12. Machinsky, V. V. Use of Radioactive Isotopes in Studying the Filtration of Fluids Through Porous Media 57
- 13. Zorunskiy, D. G., and A. Ya. Fuzil'. Radiotracer Methods for Investigating Free Processes of Fluids in a Porous Medium 62
- 14. Merts, E. A., S. S. Zorubis, V. S. Kuznetsov, and M. S. Kureva. Investigation of the Kinematics of Flow in the Central Node of a Boiling Centrifuge With the Aid of Radioactive Isotopes 67
- 15. Volarevich, N. P., N. V. Churkov, and S. Ya. Kuzov. Investigation of the Motion of Water in Post-Drying Laboratory and Field Conditions With the Use of Radioactive Isotopes 72
- 16. Arzhant'skiy, K. M. Use of Radioactive Isotopes for Investigating Suspensions of River Silt 78
- 17. Yermil, A. I., and A. S. Shubis. Use of Radioactive Isotopes for Investigating the Mechanism of the Drying Process 85

ANTONOV, A.Ya., inzh.; DIK, E.P., inzh.

Design of outdoor power plants and experience in the operation
in the USA. Teploenergetika 6 no.1:85-87 Ja '59.

(MIRA 12:1)

(United States--Electric power plants)

SOV/96-59-10-8/22

AUTHORS: Panasenko, M.D. (Cand. Tech. Sci.) and
Antonov, A.Ya. (Engineer)

TITLE: Generalised Relationships of Mechanical Carry-over by
Steam

PERIODICAL: Teploenergetika, 1959, Nr 10, pp 44-49 (USSR)

ABSTRACT: This article is concerned only with dropwise carry-over of contaminants from water to steam and not by contamination with materials that dissolve in the steam. The process of carry-over is very complicated and not yet susceptible to mathematical treatment, and accordingly investigations of the subject have been almost entirely empirical. In particular a study has been made of separation processes in bubbling columns of various sizes and at various pressures. Dimensional analysis has been used hitherto for theoretical generalisation of experimental data. Earlier work on this subject is briefly reviewed. If the carry-over factor is plotted in log/log coordinates as a function of load, as shown in Fig 1, then the curve shows three regions of different slope. The first corresponds approximately to the first power of the load, the second to about the fourth and the third to the seventh-twentieth power of the load. Corresponding

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SOV/96-59-10-8/22

Generalised Relationship of Mechanical Carry-over by Steam

to these three zones of carry-over there should be at least four zones in the boiler drum or in the bubbling column, as shown in Fig 2. The upper zone contains steam with fine drops in it. The second contains larger drops which are, however, not transported by the steam. In this region, the wetness of the steam is governed mainly by the untransported drops. The third zone contains large heavy drops which are thrown up and fall back again, and the fourth zone contains water with a certain proportion of steam bubbles. If the salt content of the boiler water is high, the general picture is usually much the same, though the zones are displaced upwards. However, under certain conditions it is possible for stable foam to form at the boundary between the third and fourth zones; this article is concerned only with water that is pure enough not to foam. The boundary between the third and fourth zones corresponds to the true water-level, which may differ from that shown on the water-level gauge because the water in the gauge is cooler and that in the drum contains steam bubbles. The correction to be applied to the gauge reading to obtain the true reading depends mainly on the amount of steam in the boiler water.

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SOV/96-59-10-8/22

Generalised Relationship of Mechanical Carry-over by Steam

The surface separating the second and third zones is called the spray front. Separating and steam-washing devices operate differently in the different zones and so it is important to be able to locate them. The shape of the carry-over curve as a function of load is explained in the following way. At low loads or steaming rates, individual bubbles leaving the surface of evaporation do not interfere with one another and so the number of drops per unit volume of steam does not depend upon the steaming rate. At higher steaming rates the bubbles are broken up with such force that drops are carried up into the steam space, so that the steam wetness depends very greatly on the steaming rate. Finally, the upper layers of water are so saturated with bubbles that they begin to run together: considerable quantities of water are then thrown into the steam space and the wetness of the steam depends even more intensely on the loading. In many cases published data permit of approximate location of the point of transition from the second to the third region of loading so that the spray front can be located. Transition from the second to the third load region probably occurs at a volumetric

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Generalised Relationship of Mechanical Carry-over by Steam
steam content of 0.5-0.7. Methods of evaluating the
volumetric steam content near the surface are briefly
discussed. A simple mathematical analysis of the shape
of the curve of carry-over as a function of load is then
offered. Eq (8) is derived for the carry-over as a
function of steaming rate for the second region of the
curve. This is in satisfactory agreement with the
results plotted in Fig 3 which are derived from a number
of published works. It follows that the system of
criteria given here, originally published by Krachilin,
may be used to determine the point of intersection
between the second and third regions of the curve. A
collection of thirteen sets of published results on
critical loads are tabulated and were used to make
calculations of the power to which the load is raised at
the two transition points. The results are plotted in
Fig 4. The value of carry-over at the critical point may
be determined from Eq (9). Hence the critical height of
the steam space can be found, or, alternatively, the
critical load can be found from the given height of steam
space. The relationship between the critical carry-over

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SOV/96-59-10-8/22
Generalised Relationship of Mechanical Carry-over by Steam
factor and the pressure and velocity of steam and the
height of the steam space is graphed in Fig 5. The
results obtained may be used to calculate the height of
the steam space and the coefficient of salt carry-over
when the steam is bubbled through the surface of
evaporation. It is assumed that the surface of
evaporation is uniformly loaded, but it is explained
how the equations can also be used in some other cases.
There are 6 figures, 1 table and 12 Soviet references.

Card
5/5

ASSOCIATION: All-Union Thermo-technical Institute (Vsesoyuznyy
teplotekhnicheskiy institut)

SOV/96-60-1-20/22

AUTHOR: Antonov, A. Ya., Engineer

TITLE: An Automatic High-sensitivity Flame Spectrophotometer 21

PERIODICAL: Teploenergetika, 1960, Nr 1, pp 89-92 (USSR)

ABSTRACT: The principles of flame photometry are explained. Then there is a description and review of the article by W. A. Grandall and W. Nacovsky on "The development and operation of an ultrasensitive recording flame photometer" which appeared in the Proceedings of the American Power Conference, Vol 20, March, 1958. There are 5 figures, 1 table and 3 references, 2 of which are Soviet and 1 English. ✓

Card 1/1

PANASENKO, M.D., kand. tekhn.nauk; ANTONOV, A.Ya., inzh.; FOMINA, V.N., inzh.;
KOZLOV, Yu.V., inzh.

Visual observation of processes in the drum of an operating boiler.
Teploenergetika 10 no.2:23-26 F '63. (MIRA 16:2)

1. Vsesoyuznyy teplotekhnicheskii institut.
(Boilers)

ANTONCH, A.Ya., kand. tekhn. nauk; KOZLOV, Yu.V., inzh.; FOMINA, V.N., inzh.;
BUYNOVSKAYA, L.G., inzh.; BULAVITSKIY, Yu.M., inzh.; GRISHINA, Ye.A.,
inzh.

Testing of a boiler with 220 ton/hour evaporative capacity with
individual separating devices. Elek. sta. 34 no.5:7-10 My '63.

(Boilers--Testing)

(MIRA 16:7)

KRUGLIKOV, S.S.; VOROB'YEVA, G.F.; KUDRYAVTSEV, N.T.; YARLYKOV, M.M.;
ANTONOV, A.Ia.

Mechanism of surface leveling in the electrodeposition of metals.
Dokl. AN SSSR 149 no.4:911-914 Ap '63. (MIRA 16:3)

1. Moskovskiy khimiko-tehnologicheskii institut im. D.I.Mendeleeva.
Predstavleno akademikom A.N.Frumkinym.
(Electroplating)

KRUGLIKOV, S.S.; KUDRYAVTSEV, N.T.; ANTONOV, A.Ya.; DRIBINSKIY, A.V.

Use of a rotating disk electrode for the study of the mechanism of
surface leveling in electrodeposition of metals. Trudy MKHTI no.44:
74-79 '64.
(MIRA 18:1)

KRUGLIKOV, S. S.; KUDRYAVTSEV, N. T.; ANTONOV, A. Ya.; DRIBINSKIY, A. V.

"A study of levelling in nickel and copper."

Report to be submitted to the International Council For the Electrodeposition and Metal Finishing, 6th International Metal Finishing Conference, London, England, 25-29 May 64.

LIPETS, A.G., Inzh.; SHOLUDOV, Ya.S., Inzh.; LOKSHIN, V.A., kand. tekhn.
nauk; ANTONOV, A.Ya.

Use of pipes with internal longitudinal fins in an intermediate
superheater. Teploenergetika 12 no.8:23-27 Ag '65.

(MIRA 18:9)

ANTONOV, A.Ye.

Hydrological conditions in the North Sea in April 1957.
Biul.Okean kom. no.3:46-52 '59. (MIRA 13:4)

1. Baltiyskiy nauchno-issledovatel'skiy institut morskogo
rybnogo khozyaystva i okeanografii.
(North Sea--Hydrology)

ANTONOV, A.Ye.

Forecasting the time of migration of the Baltic herring to the Vistula Lagoon and the beginning of its spawning period. Vop. ikht. no.16: 131-136 '60. (MIRA 14:4)

1. Baltiyskiy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii.
(Vistula Lagoon--Herring)

ANTONOV, A.Ye.

Hydrological conditions in the southern Baltic in 1959 and the beginning of 1960 and the prediction of spawning migrations of the Baltic herring and cod. Trudy BaltNIRO no.7:67-69 '61.

(MIRA 15:2)

(Baltic Sea--Hydrology) (Baltic Sea--Herring) (Baltic Sea--Codfish)

ANTONOV, A.Ye.; VIASENKO, N.B.

Distribution of phosphates and silica in the southern Baltic in
1957-1959. Trudy BaltNIRO no.7:70-77 '61. (MIRA 15:2)
(Baltic Sea--Phosphates) (Baltic Sea--Silica)

ANTONOV, A. YE.

Dissertation defended in the Institute of Oceanography for the academic degree of Candidate of Geographical Sciences:

"Multi-Annual Changes in Hydrological Conditions in the South Baltic Sea and Their Effect on Fishing."

Vestnik Akad Nauk No. 4, 1963, pp. 119-145

ANTONOV, B., inzh.; GATEV, G., inzh.; SUCHKOV, Al., inzh.

Possibilities of manufacturing drills with plastic conic shafts.
Mashinostroene 13 no.12:34-36 D '64.

1. Higher Institute for the Mechanization and Electrification
of Agriculture, Ruse.

ANTONOV, B.

Simkin, A. and Antonov, B. - "Study of the factors which have an effect on precision springs (utilized in instrument building)." Trudy Studench. nauch.-tekh. o-vu (Moscow technical college im. Bauman), 2, 1949, p. 43-55

SO: U-4355, 14 August 53. (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)