The Production of Pions by Negative Pions on Hydrogen Near the Threshold 56-2-5/51

energy. At the energy 370 MeV the measured cross section is ~60% of the differential cross section of the elastic scattering. There are 9 figures, 1 table, and 12 references, 7 of which are Slavic.

ASSOCIATION: United Institute for Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

SUBMITTED: October 19, 1957

AVAILABLE: Library of Congress

1. Pions-Production 2. Scintillation counters-Applications
3. Hydrogen-Meson cross section studies

Card 3/3

ACCESSION NR: AP4037616 S/0056/64/046/005/1919/1920

AUTHORS: Zinov, V. G.; Konin, A. D.; Mukhin, A. I.

TITLE: Transfer negative muon from a proton to carbon

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1919-1920

TOPIC TAGS: muon, muon transfer, muon K capture, carbon, polyethylene, x ray line

ABSTRACT: The transfer of muons to only excited levels of a Zμ-mesic atom with further cascade transition of the system to the ground state, followed by emission of a K-mesic x-ray series, which can be useful in the study of reverse mesic-atom processes that occur in compounds or mixtures containing hydrogen, was investigated by comparing the intensities of the K series from mesic atoms of carbon, produced when negatively charged muons are stopped in carbon (graphite) and in polyethylene (CH_2). The data indicate that if it is as-

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ACCESSION NR: AP4037616

sumed that the probabilities of the muons landing on C and H are proportional to their charges, then the muons which jump over from the proton to the carbon in the cascade transitions give a K-mesic x-ray series whose intensity is 0.98 ± 0.03 of the intensity occurring in the case of direct landing of the muons on the carbon. "The authors are grateful to S. S. Gershteyn for discussions."

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy (Joint Institute of Nuclear Research)

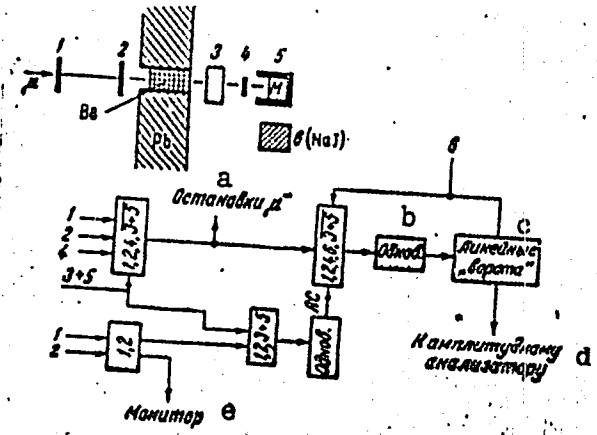
SUBMITTED: 26Feb64 DATE ACQ: 09Jun64 ENCL: 01

SUB CODE: NP NR REF SOV: 003 OTHER: 001

Card 2/3

ACCESSION NR: AP4037616

ENCLOSURE: 01



Experimental set-up and block diagram of the electronic circuitry: Pb - lead shield, Be - beryllium filter, M - sample (C or CH_2), 1,2,4,5 - counters with plastic scintillators, 3 - counter with Cerenkov radiator, a - muon stopping, b - univibrator, c - linear gates, d - to pulse-height analyzer, e - monitor

Card 3/3

ZINOV, V.G.; KONIN, A.D.; MUKHIN, A.I.

Atomic capture of negative muons in chemical compounds. IAd. fiz. 2 no.5:859-867 N '65. (MIRA 18:12)

1. Ob"yedinennyy institut yadernykh issledovaniy.

L 23257-66 EWT(m)/T

ACC NR: AP6009154 SOURCE CODE: UR/0367/65/002/005/0859/0867

AUTHOR: Zinov, V. G.; Konin, A. D.; Mukhin, A. I.

ORG: Joint Institute of Nuclear Research (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Atomic capture of negative muons in chemical compounds

SOURCE: Yadernaya fizika, v. 2, no. 5, 1965, 859-867

TOPIC TAGS: Mu meson, capture cross section, chemical compound, Pi meson, electron, oxide, probability

ABSTRACT: The authors investigated the atomic capture of negative muons in binary compounds of the type A_nB_m. Whereas earlier experimental work on the determination of the probability of atomic capture in chemical compounds was based on the method of time analysis, which entails considerable difficulties, the authors have used an experimental procedure based on measurement of the intensity of the K-mesic x-rays, both from one of the elements in pure form, and from the same element in the chemical compound. The work was performed with the OIYal synchrocyclotron, using a beam of negative particles of 190 Mev/c momentum, containing approximately equal amounts of pions, muons, and electrons (Fig. 1). The characteristics of the apparatus are described in detail. The results show that the ratio of the pro-

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L 23257-66

ACC NR: AP6009154

babilities of the atomic capture of muons in oxides varies with increasing charge of the nucleus in accordance with the periodic table, and depends on the type of the compound (MgO and MgO_2, etc.). The ratio of probabilities of the atomic capture in metal [illegible] and in [illegible] metals [illegible] [illegible] described [illegible] the [illegible] [illegible] [illegible]. The authors thank I. A. Yutlandov for supplying numerous chemical compounds and their purification, Yu. G. Budayshov, [illegible] Yu. Semenov, A. N. [illegible], N. S. [illegible] [illegible] [illegible] [illegible]

[illegible]

has: [illegible] figures, [illegible] formulas, and [illegible] tables.

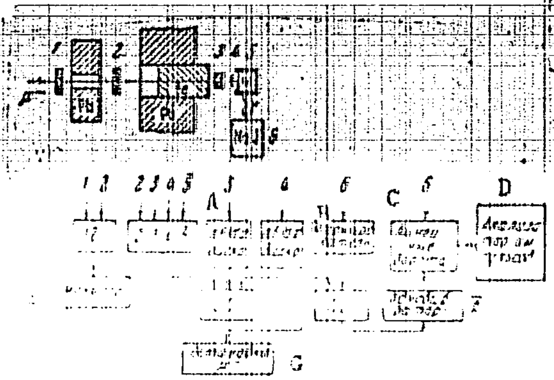

Fig. [illegible]. Geometry of experiment and block diagram of electronic equipment. A - Dis[illegible] [illegible] B - shaper, [illegible] linear gates, [illegible] analyzer, [illegible] - [illegible], F - uni[illegible] [illegible] coin[illegible]cidence circuit.

SUB CODE: 20/ SUBM DATE: 28May65/ ORIG REF: 002/ OTH REF: 007

Card 2/2

ZINOV, V.G.

Calibration of the scale of time analyzers. Prib. i tekh. eksp. 8 no.1:165-166 Ja-F '63. (MIRA 16:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Pulse techniques (Electronics))
(Electronic apparatus and appliances)

ZINOV, V.G.

Use of tubes at low electrode voltages in coincidence circuits.
Prib. i tekh. eksp. 8 no.1:173-174 Ja-F '63. (MIRA 16:5)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Electric circuits) (Electron tubes)

AUTHOR: Zinov, V.G.

TITLE: Calibration of time-analyzors

[illegible] Khrika eksperimenta, no. 1, 1963.

shown in Fig. 2. There are 2 figures.

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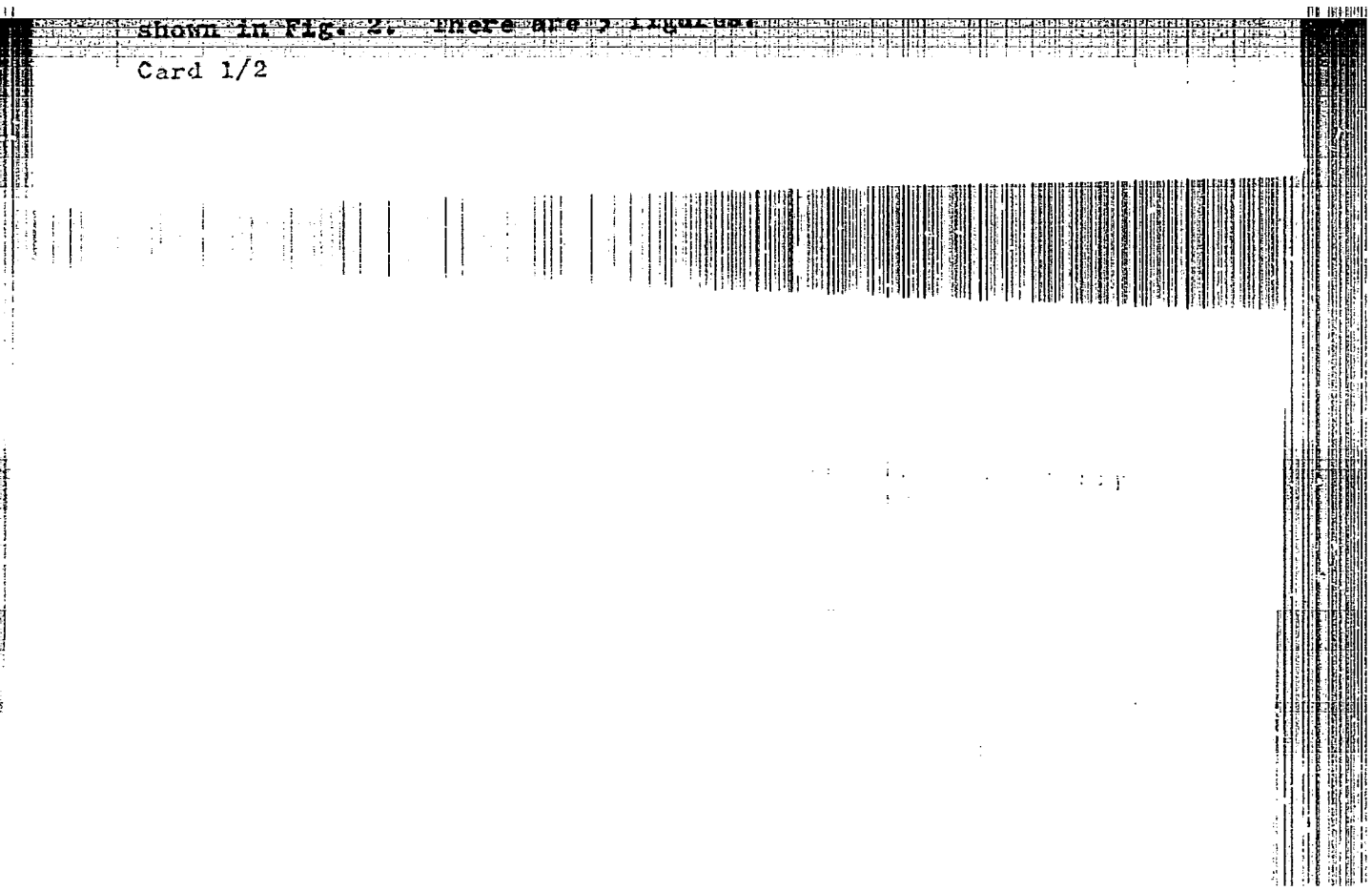
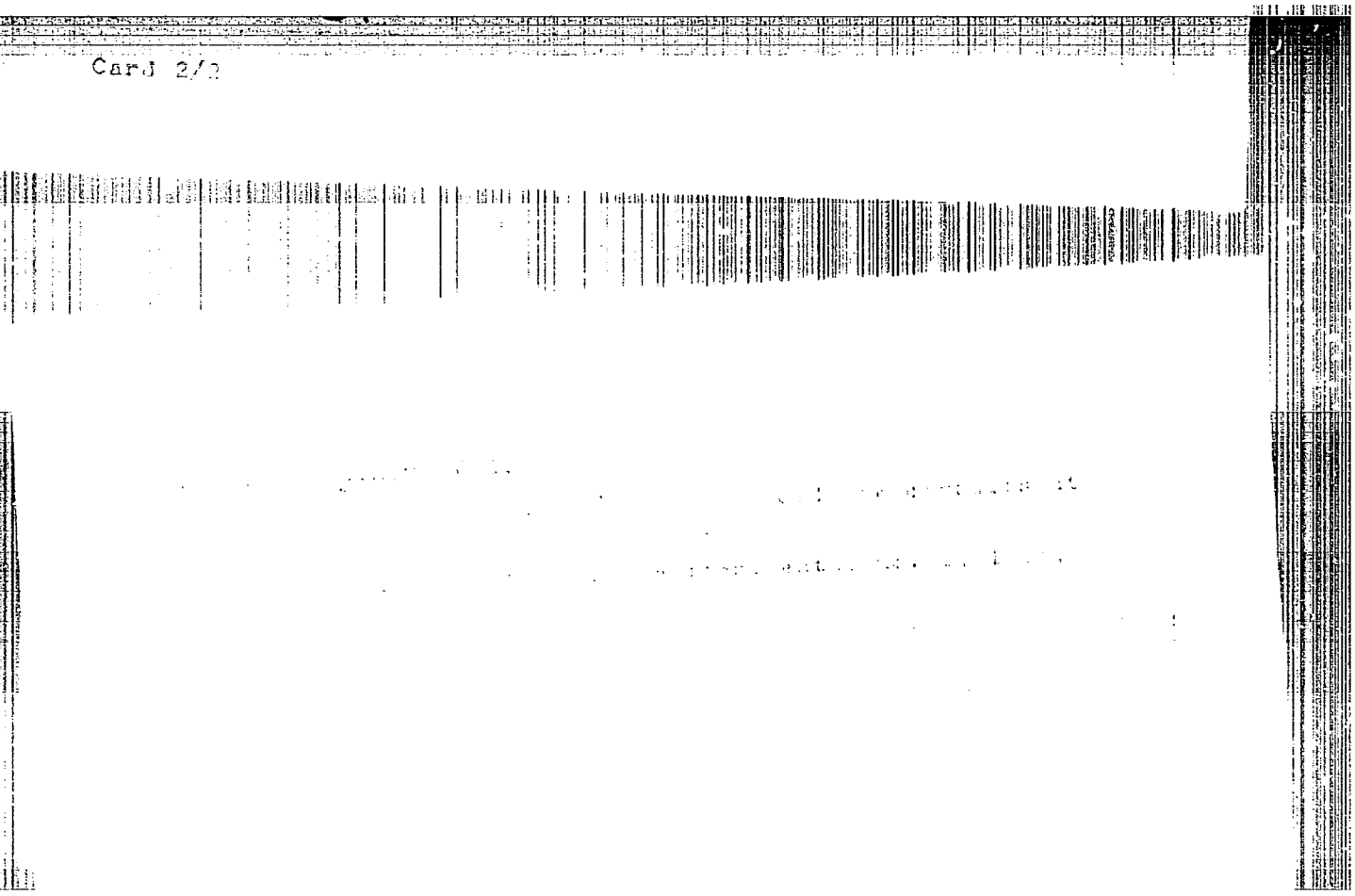
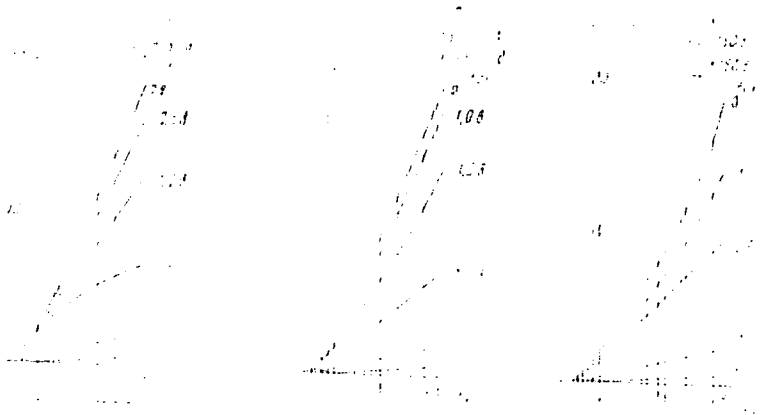




Use of vacuum tubes ....

S/120/63/000/001/052/072
E192/E382

Similar results were obtained with ashar tubes by using the first grid and the cathode



S/120/62/000/005/017/036
E192/E382

AUTHORS: Zinov, V.G. and Medved', S.V.

TITLE: Smoothing of the time intervals between randomly distributed pulses

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962, 104 - 105

TEXT: Smoothing of the time intervals between randomly distributed pulses can be done by a circuit consisting of: a forming stage; integrating circuit; limiter-amplifier and a pulse-generator. The forming stage produces "standard" pulses such that each pulse imparts an arbitrary unit charge to the integrating circuit. The capacitance of the integrating circuit discharges linearly and the discharge time is equal to $\tau = CV/I$, where C is the capacitance, V is the voltage to which a standard pulse charges the capacitor and I is the discharge current. If m pulses are rapidly applied to the system, the overall discharge time is $T = mCV/I$. T is therefore dependent on the number of input pulses and is independent of the instant of their appearance. The limiter

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amplifier then generates a pulse whose duration is $m\tau$. This pulse actuates the generator, whose natural period is also equal to τ. The operation of the generator is only possible in the presence of the pulse from the limiter. The number of output pulses from the generator is therefore equal to the number of input pulses but the spacing between them will always be equal to or longer than τ. A detailed circuit diagram of the integrating-circuit amplifier and the generator is shown in Fig. 2. The authors express their gratitude to A.A. Tyapkin for valuable advice. There are 3 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research)

SUBMITTED: January 18, 1962

85677

S/056/60/038/006/019/049/XX
B006/B070

24.6900 (1138, 1191, 1559)

AUTHORS: Zinov, V. G., Konin, A. D., Korenchenko, S. M., Pontekorvo, B.

TITLE: The Search for the ρ^0 Meson and the Verification of Dispersion Relations in πN Scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. 1708 - 1714

TEXT: Results of π^-p interaction cross section (σ_t^-) measurements and of the energy dependence of σ_t^-, as well as a comparison of the results with those obtained by other authors are given. The object of the study was to look for anomalies in the energy distribution of σ_t^- (ρ^0 meson) and to check the Puppi-Stanghellini problem. The experimental arrangement is first described (Fig. 1). The target was liquid hydrogen in a vessel made of foam polystyrene (walls, 0.8 g/cm^2). The hydrogen density was 0.0708 g/cm^3 so that $(0.4607 \pm 0.0023) \cdot 10^{24}$

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The Search for the ρ^0 Meson and the Verification of Dispersion Relations in πN Scattering

S/056/60/038/006/019/049/XX
B006/B070

hydrogen nuclei fell in the path of the beam trajectory per cm^2. The electronic apparatus was the same as described in Ref. 3; the photomultipliers used together with the scintillation counters were of the type ФЭУ-33 (FEU-33). Due to the exactly stabilized magnetic field (±0.1%) and the exact measurement of the Hall current (0.5%), the pion momentum could be determined with an accuracy of ±1%. The energy spread of the beam was ±0.5 Mev/cm. The energy loss in hydrogen was ~3 Mev. σ_t^- was measured for about 50 pion energy values in the range 140-360 Mev with a total accuracy of 1.5 - 2%, but no anomalies could be found which would indicate the existence of a ρ^0 meson. The individual values of measurement are shown in a table; the data for accuracy refer to systematic errors. The results of the study are discussed in detail. The fact that no anomalies exceeding 3 - 4% could be found in the energy dependence of the cross section values for the energy range 140 - 360 Mev, and so no ρ^0 meson having a mass of between 270 and 410 Mev/c^2 could be found, does not mean that no such mesons exist. The data obtained are in conflict with the peaks

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The Search for the ρ^0 Meson and the Verification of Dispersion Relations in πN Scattering

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for $\sigma_t^-(E)$ ($E_2 \sim 650$ Mev and $E_3 \sim 950$ Mev) obtained by Frisch et al., but agree with the values ($E_2 \approx 610$, $E_3 \approx 880$ Mev) obtained by Brisson. The data are also in agreement with the dispersion relations for $\pi^- p$ scattering. So it can be proved that the Puppi-Stanghellini problem as such does not exist; it arises only from the inaccuracy in the measurement of the total $\pi^- p$ interaction cross section. S. N. Sokolov, A. I. Mukhin, V. A. Meshcheryakov, and N. P. Klepikov are thanked for discussions, and Yu. N. Denisov for help in the experiments. The results were already communicated to the Conference on Physics of High-energy Particles held in Kiyev in 1959. There are 4 figures, 2 tables, and 15 references: 4 Soviet, 1 British, 3 Italian, and 7 US.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: January 13, 1960

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85677

S/056/60/038/006/019/049/XX
B006/B070

E_{π^-}, MeV	σ_t^-, 10^{-27} см²	E_{π^-}, MeV	σ_t^-, 10^{-27} см²	E_{π^-}, MeV	σ_t^-, 10^{-27} см²	E_{π^-}, MeV	σ_t^-, 10^{-27} см²
158,2	56,4±2,0	220,2	52,2±1,0	254,7	39,8±0,8	302,5	28,0±0,8
171,7	67,2±1,1	225,0	50,2±0,9	258,0	38,8±0,8	307,7	28,1±0,8
178,4	67,2±1,1	228,3	48,2±0,9	261,4	36,8±0,8	313,0	28,7±0,7
185,2	67,7±1,0	231,6	49,0±0,9	266,5	35,6±0,8	318,2	27,0±0,6
189,9	67,8±0,8	234,9	44,5±0,9	271,6	33,4±0,8	323,5	26,2±0,6
196,2	64,0±1,1	238,2	44,9±0,9	276,7	31,1±0,8	328,2	26,4±0,6
201,0	63,8±1,0	241,5	42,7±0,9	281,8	32,4±0,8	334,2	26,0±0,6
205,8	59,3±1,0	244,8	43,1±0,9	286,9	31,6±0,8	345,0	24,9±1,0
210,6	58,7±1,1	248,1	41,0±0,9	292,0	30,5±0,8	361,0	25,2±1,0
215,4	55,6±1,0	251,4	39,3±0,9	297,2	29,3±0,8		

Card 4/4

ZINOV, V.G.; KORENCHENKO, S.M.; POLUMORDVINOVA, N.I.; TENTYUKOVA, G.N.

Phase shift analysis of scattering of 240-330 Mev π^+-mesons on hydrogen. Zhur.eksp.i teor.fiz. 38 no.5:1407-1418 My '60. (MIRA 13:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons--Scattering)

ZINOV, V.G.; KONIN, A.D.; KORIENCHENKO, S.M.; PONTEKOROV, B.

Search for the ρ^0-meson and a check of the dispersion relations in πN-scattering. Zhur.eksp.i teor.fiz. 38 no.6:1708-1714 Je '60. (MIRA 13:7)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons)

83573

S/056/60/038/005/006/050
B006/B070

24.6900

AUTHORS: Zinov, V. G., Korenchenko, S. M.

TITLE: Charge Exchange Scattering of π^- Mesons by Hydrogen at Energies of 240-330 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1399-1406

TEXT: From the experimentally found angular distribution of the gamma quanta resulting from pion decay, the authors have determined the angular distribution of π^0 mesons. The experimental arrangement is schematically shown in Fig. 1, and is briefly described. A detailed description is given in Ref. 1. The target was liquid hydrogen. The counters were connected partly in coincidence and partly in anti-coincidence. The gamma quanta resulting from π^0 decay were recorded at eight angles, and the ratio of the number of coincidences of the type 12346 (Q) to the number of double coincidences of the type 12 (D) was measured. (The figures indicate the counters in Fig. 1). The difference of the Q/D ratios obtained with and without hydrogen target was determined. Denoting this difference by

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Charge Exchange Scattering of π^- Mesons by Hydrogen at Energies of 240-330 Mev

S/056/60/038/005/006/050
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$(Q/D)_{diff}$, the differential charge exchange scattering cross section is calculated from the formula $(d\sigma/d\Omega)_{diff} = \frac{(Q/D)_{diff}}{N\Omega f} \cdot 10^{-6}$, where N is the average number of hydrogen atoms per cm^2 ($= 0.447 \cdot 10^{24}$), Ω is the solid angle, and f the correction for the admixture of muons in the beam (4.5 to 5.5%). The extensive experimental material is clearly shown in tabular form. Tables 1 and 2 give the measured values of Q/D with and without hydrogen at eight different angles for 240 and 333 Mev π^-mesons. Tables 3 - 6 give differential gamma-production cross sections for charge exchange scattering of 240, 270, 307, and 333 Mev π^--mesons by hydrogen. The experimentally observed production cross section of gamma quanta may be expressed in terms of the coefficients of π^0angular distribution in the following way: $(d\sigma^\gamma/d\Omega)_{exp} = \frac{1-\beta^2}{(1-\beta\cos\theta)^2} \sum_1 \varepsilon_1(\theta) k_1 A_1^0 P_1(\cos y)$. The $\varepsilon_1(\theta)$ are defined by formula (5); β is the velocity in the center-of-mass system, θ is the emission angle in the laboratory system, y is the emission

Charge Exchange Scattering of π^- Mesons by Hydrogen at Energies of 240-330 Mev

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B006/B070

angle in the center-of-mass system of the gamma quanta. The coefficients A_1^o obtained by solving this equation by the method of least squares are given in Table 7; the $\varepsilon_1(\theta)$ for 240 and 333 Mev are given in Table 8. Using the calculated values of A_1^o (Table 7, formula (4)), the angular distribution of the π^o mesons in the center-of-mass system can be obtained from the production cross section of the gamma quanta as the sum of the terms in the first three Legendre polynomials: $(d\sigma/d\omega)_{\pi^- \to \pi^o} = A_o^o + A_1^o P_1(\cos\vartheta) + A_2^o P_2(\cos\vartheta)$. The gamma-quantum recording efficiency ε as a function of the quantum energy, E, is shown in Fig. 2. The k_1 coefficients of (4) are given in Table 9; the coefficients of the angular distribution of the gamma quanta in the formula $d\sigma^\gamma/d\omega = \sum_1 A_1^\gamma P_1(\cos\gamma)$ are given in Table 10. The coefficients of angular distribution of the π^o mesons are given in Table 11. There are 2 figures, 11 tables, and 4 references: 3 Soviet and 1 US.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: November 17, 1959

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83574
S/056/60/038/005/007/050
B006/B070

24.6900

AUTHORS: Zinov, V. G., Korenchenko, S. M., Polumordvinova, N. I., Tentyukova, G. N.

19

TITLE: Phase Shift Analysis of the Scattering of π Mesons by Hydrogen in the Energy Range 240 - 330 Mev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 5, pp. 1407-1418

TEXT: In the previous paper in this issue (p. 1399), the authors have published the results of (π^-,p) charge-exchange scattering experiments. In the present paper, they give a phase shift analysis using the isotopic spin formalism which depends on the hypothesis of charge independence of the nuclear forces. The formulas are collected in the first part of the paper; in the second part, the method of phase shift analysis is briefly discussed, and the errors are determined. All calculations were performed on the fast electronic computer "Стрела" ("Strela"). The phase shift analysis, taking S and P waves into account (SP analysis), is given in part 3 of the paper. For every value of pion energy, 25 experimental points

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Phase Shift Analysis of the Scattering of π Mesons by Hydrogen in the Energy Range 240-330 Mev

S/056/60/038/005/007/050
B006/B070

were used: eight differential elastic (π^+,p) scattering cross sections, seven differential elastic (π^-,p) scattering cross sections, eight differential exchange scattering cross sections, and the two total scattering cross sections of the positive and the negative pions by hydrogen. Part of the experimental data are taken from the work of A. I. Mukhin, Ye. B. Ozerov, B. Pontekorvo, and N. A. Mitin. The phase shift data for 220-Mev pion energies, taken from a work of Ashkin et al., are given in Table 1. Depending on the kind of phase shift sets, the data are collected in seven variants in Tables 3-6 (for pion energies of 240, 270, 307, and 333 Mev). The angular distributions of the negative pions and gamma quanta for elastic and exchange scatterings calculated from the phase shifts, are drawn in Figs. 1-4. The solid curves are drawn from the results of calculation from the formula $d\sigma/d\omega = A_0 + A_1P_1(\cos\vartheta) + A_2P_2(\cos\vartheta)$; the broken lines are calculated from the SP analysis. The elements of the error matrix for pion energies of 220, 240, 270, 307, and 333 Mev are collected in Tables 7-11. The phase analysis taking S, P, and D waves into account (SPD analysis) is treated in part 4. The contribution of the D-waves (l=2) is already significant for $E_\pi \sim 300$ Mev. The numerical results of

Phase Shift Analysis of the Scattering of π Mesons by Hydrogen in the Energy Range 240-330 Mev

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the calculations are given in Tables 12 and 13. The results of the phase shift analysis are compared with those obtained from the dispersion relations in part 5. (The real part of the scattering amplitudes for 0° are determined as functions of E_π by means of the dispersion relations, see Fig. 6). The authors thank B. Pontekorvo for interest and help; A. I. Mukhin, L. I. Lapidus, S. N. Sokolov, and N. P. Klepikov for discussions; and I. V. Popova and L. A. Chudov for setting up programs for the computer. A. M. Baldin, Vasilevskiy, and Vishnyakov are mentioned. There are 6 figures, 13 tables, and 19 references: 10 Soviet, 7 US, 1 Italian, and 1 CERN.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: November 17, 1959

Card 3/3

ZINOV, V.G.; KORENCHENKO, S.M.

Scattering of π^-mesons on hydrogen at energies of 240 and 270Mev.
Zhur.eksp. i teor.fiz. 36 no.2:618-619 F '59. (MIRA 12:4)

1. Ob"yedinennyy institut yadernykh issledovaniy.
(Mesons--Scattering) (Hydrogen)

21 (1)

AUTHORS: Zinov, V. G., Konin, A. D., Korenchenko, S. M., Pontekorvo, B. SOV/56-36-6-59/66

TITLE: A Possible Method of Searching for ρ^0-Mesons (Vozmozhnyy metod poiska ρ^0-mezonov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 6, pp 1948 - 1950 (USSR)

ABSTRACT: Baz', Okun', and Smorodinskiy drew the attention of the authors of the present "Letter to the Editor" to certain singularities in the energy dependence of cross sections. As this promised to be a possibility of detecting ρ^0-mesons, the authors systematically investigated these cases and give a report on the results obtained. The intensity of a relatively narrow singularity in the energy dependence of the π^-p-interaction cross section might, in principle, indicate the existence of a ρ^0-meson. It might be expected that in the reactions $\pi^- + p \to \pi^- + p$ and $\pi^- + p \to \pi^0 + n$ an anomaly occurs in the energy dependence on the threshold of the reaction $\pi^- + p \to \rho^0 + n$. The

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width of the singularity depends on the interaction radius and may be obtained from the condition $kR \ll 1$; here k denotes the wave vector of the ρ^0-mesons formed in the c.m.s. This possibility is briefly discussed. It is assumed that the life of the ρ^0-mesons is long as against $\hbar/m c^2$. The relative amplitude of the singularity $\Delta\sigma/\sigma$ may amount to some %. The ρ^0-meson is assumed to differ from the π^0-meson only by the isotopic spin ($T = 0$). The ρ^0-meson cannot decay quickly into 2 pions because of the conservation of parity, and because of the conservation of the quantum number G also not into 3 pions, so that the decay $\rho^0 \to \gamma + \gamma$, or, if the mass is sufficiently large, $\rho^0 \to \pi + \pi + \gamma$. If $m_{\rho^0} > 560$ Mev/c^2, it may also decay into four pions. Finally, several further problems connected with the mass of the ρ^0-meson are discussed. Ya. B. Zel'dovich pointed out that the existence of an exchange scattering of antiprotons ($\bar{p} + p \to \bar{n} + n$) indicates a difference between the

A Possible Method of Searching for ρ^0-Mesons SOV/56-36-6-59/66

masses of π^0- and ρ^0-mesons. The authors finally thank L. I. Baz', V. B. Belyayev, B. N. Zakhar'yev, L. B. Okun' and Ya. A. Smorodinskiy for discussions. There are 6 references, 3 of which are Soviet.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: March 23, 1959

Card 3/3

21(7) SOV/56-36-2-43/63

AUTHORS: Zinov, V. G., Korenchenko, S. M.

TITLE: The Scattering of π^- - Mesons on Hydrogen at the Energy of 240 Mev, 270 Mev (Rasseyaniye π^- - mezonov na vodorode pri energii 240 MeV, 270 MeV)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 2, pp 618 - 619 (USSR)

ABSTRACT: The authors investigated the elastic scattering and the exchange scattering of negative pions on hydrogen at the energies of 240 and 270 Mev. They used a negative pion beam of the synchrocyclotron of the OIYaI (United Institute of Nuclear Research) and the measurements were carried out by means of scintillation counters. Liquid hydrogen was used as a target. The values of the differential cross sections found are given in 2 tables (in the present abstract given in an abbreviated form:

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The Scattering of π^--Mesons on Hydrogen at the Energy of 240 Mev, 270 Mev

SOV/56-36-2-43/63

(240 ± 7) Mev			
ϑ^0(c.m.s.)	$\left(\frac{d\sigma}{d\omega}\right)_{\pi^- \to \pi^-}$	ϑ^0(c.m.s.)	$\left(\frac{d\sigma}{d\omega}\right)_{\pi^- \to \gamma}$
39.9	1.60 ± 0.16	19.7	9.91 ± 1.21
97.8	0.82 ± 0.09	114.9	3.47 ± 0.43
158.1	1.97 ± 0.19	157.0	4.56 ± 0.60

270 ± 7) Mev			
ϑ^0(c.m.s.)	$\left(\frac{d\sigma}{d\omega}\right)_{\pi^- \to \pi^-}$	ϑ^0(c.m.s.)	$\left(\frac{d\sigma}{d\omega}\right)_{\pi^- \to \gamma}$
40.6	1.40 ± 0.13	20.0	7.78 ± 0.94
98.8	0.60 ± 0.06	115.9	2.31 ± 0.30
158.4	1.56 ± 0.16	157.4	3.10 ± 0.42

Card 2/3

If only S- and P- waves are assumed to take part in the scattering, the angular distribution can be written down as

The Scattering of π^--Mesons on Hydrogen at the Energy of 240 Mev, 270 Mev SOV/56-36-2-43/63

$$d\sigma/d\omega = AP_0 + BP_1 + CP_2$$

where P_0, P_1, P_2 are Legendre (Lezhandr) polynomials. The values of the coefficients A, B, C are given in a table. The total cross sections of the interaction of negative pions with hydrogen at the energies of 240 and 270 Mev are equal to

$(48.3 \pm 3.3).10^{-27}$ cm^2 and $(36.5 \pm 2.4).10^{-27}$cm^2, respectively. There are 3 tables.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (United Institute of Nuclear Research)

SUBMITTED: August 26, 1958

Card 3/3

SOV/128-59-10-11/24

18(5)

AUTHOR: Zinov, V.M., Engineer

TITLE: Hydromonitors for Cleaning Castings

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 10, pp 31-32 (USSR)

ABSTRACT: The author presents several schemes of hydromonitors for cleaning castings. The simplest construction is shown in fig.1. Through a pipe #1, closed up by a spheric abutment bearing #2, passing through pipe #3, the water enters the chamber under high pressure. Fig.4 shows a complete mechanized hydromonitor, developed by Uralmashzavod. The hydromonitor constructed by Novo-Kramatorskiy zavod tyazhelogo mashinostroyeniya (Novo-Kramatorsk Factory for Heavy Machines) (Fig.5) has a transportation drive which consists of two telescopic jointed rods. Fig.6 shows a hydromonitor constructed by Ukrgiprotyazhmash. This one gets its alternate motion from a pneumatic drive. There are 6 diagrams.

Card 1/1

05463
SOV/120-59-3-34/46

AUTHOR: Zinov, V. G.

TITLE: Improvement of a Decade Scaler with Binary Scales (Uluchsheniye dekadnogo perescheta na dvoichnykh yacheykakh)

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 3, p 135-136 (USSR)

ABSTRACT: A valve with two control grids (the second valve in Fig 2) is included in the back-coupling circuit to improve the reliability (ie to reduce the dependence on supply voltages and on size of input pulse). The pulse from the first scale-of-two is allowed to pass to the second only when the fourth is in its first stable state (ie unless the scaler reads 8 or 9). When the reading is 8, the unit functions as a simple scale of 2, with the output pulse appearing when the tenth pulse arrives. A delay is inserted in the loop back to the extra (gating) valve in order to prevent the gate from opening before the circuits have settled back to their normal states just after the tenth pulse.

Card 1/2

05463
SOV/120-59-3-34/46

Improvement of a Decade Scaler with Binary Scales

The device is said to work reliably up to 400,000 c/s (regularly spaced). There are 2 figures and 1 Soviet reference.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Nuclear Research Institute)

SUBMITTED: May 4, 1958

Card 2/2

ZINOV, V.M.

Pedal valves. Mashinostroitel' no.3:40 Mr '59. (MIRA 12:3)
(Valves)

25(2) SOV/117-59-3-30/37

AUTHOR: Zinov, V.M.

TITLE: A Pedal Valve (Pedal'nyy klapan)

PERIODICAL: Mashinostroitel', 1959, Nr 3, p 40 (USSR)

ABSTRACT: The short note describes and illustrates a special pedal-actuated valve which replaced the conventional stopper valves on water pipelines (for the water washing dirt from the visor and lighting windows of hydraulic chamber). The valve will be installed on the floor of the work platform and actuated by the operator by pressing on the pedal. A spring shuts the valve when the foot releases the pedal. There is 1 diagram.

Card 1/1

ZINOV, V.M.

AUTHOR: Zinov, V.M., Engineer 118-58-4-19/23

TITLE: Centrifuges for the Dehydration of Sand (Tsentrifugi dlya obezvozhivaniya peska)

PERIODICAL: Mekhanizatsiya Trudoyëmkikh i Tyazhëlykh Rabot, 1958, Nr 4, pp 41-42 (USSR)

ABSTRACT: The author describes various centrifuges for the dehydration of sand, such as the PM-1200 and PS-1200. The Zavod "Stankolit" - Moskva (Moscow "Stankolit" Plant) uses two automatic centrifuges type AG-1800 and NOGSh. The Khar'kovskoye otdeleniye nauchno-issledovatel'skogo instituta khimicheskogo mashinostroyeniya (Khar'kov Branch of the Scientific Research Institute for Chemical Machine Construction) has designed the horizontal automatic centrifuge AG-1200-2U, the production of which has been started at the Sumskiy zavod imeni M.V. Frunze (Plant imeni M.V. Frunze in Sumy). There is 1 figure and 1 table.

AVAILABLE: Library of Congress

Card 1/1 1. Centrifuges-Applications 2. Sand-Dehydration-Equipment

ZINOVA, A. D.

62/49T41

USSR/Medicine - Marine Organisms Jul/Aug 48
Medicine - Botany

"Certain Species of the Genus Porphyra From Murmansk Shores and the White Sea and a New Species, Porphyra Helenae Zin.," A. D. Zinova, Bot Inst imeni V. L. Komarov, Acad Sci USSR, Leningrad, 3 pp

"Botan Zhur" Vol XXXIII, No 4

Gives characteristics of four species of the Porphyra genus, the Porphyra abyssicola Kjellm., the Porphyra miniata (Ag.) Kjellm., the Porphyra amplissima (Kjellm.), and the new species,

62/49T41

USSR/Medicine - Marine Organisms Jul/Aug 48
(Contd)

Porphyra Helenae. New species grows on stones and algae of the littoral zone in protected places. It is found on Sosnovets Island in the White Sea, and in Dal'niye Zelentsy, Yarnyshnaya and Kil'din in Murmansk. Submitted 12 Nov 47.

62/49T41

ZINOVA, A. D.

"Forms of Phyllitis Fasci Kutz," Bot. zhur., 34, No.2, 1949

Botanical Inst. im. Komarov, Dept. Biol. Sci., AS USSR, Leningrad

1. ZINOVA, A.D.

2. USSR (600)

4. Algae

7. A new species of brown algae, Halidrys murmanica A. Zinova sp. nova. Bot.mat. Otd. spor.rast. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953. Unclassified.

ZINOVA, A.D.

[Guide to the brown algae of the northern seas of the U.S.S.R.] Opredelitel' burykh vodoroslei severnykh morei SSSR. Moskva, Izd-vo Akademii nauk SSSR, 1953. 224 p. (MLRA 6:7)
(Algae)

Remarks - D 372691 - 23 Dec 53

KISELEV, I.A.; ZINOVA, A.D.; KURSANOV, L.I.

[Classification manual of lower plants] Opredelitel' nizshikh rastenii v piati tomakh. Moskva, Gos. izd-vo "Sovetskaia nauka." Vol. 2 [Algae] Vodorosli. 1953. 310 p. (MLRA 7:2)
(Algae)

ZINOVA, A.D.

New red alga of the genus Halosaccion (De alga rhodophytica nova e genere Halosaccion). Bot.mat.Otd.spor.rast. 9:93-95 My '53.
(MLRA 7:2)
(Algae)

ZINOVA, A.D.

New family, genus, and species of brown algae. Trudy Bot.inst. Ser. 2 no.9:223-244 '54. (MLRA 7:11)
(White Sea--Algae)

ZINOVA, A.D.

Materials on algal flora of the White Sea. Trudy Bot.inst. Ser. 2 no.9:245-258 '54. (MLRA 7:11)
(White Sea--Algae)

ZINOVA, A-D.

TOPACHEVS'kiy, O.V. [reviewer]

"Guide to lower plants." Vol. 2: Algae. I.A. Kiselev, A.D. Zinova, L.I. Kursanov. Reviewed by O.A. Topachevs'kyi. Bot.zhur.[Ukr.] 11 no.3:126 '54. (MLRA 8:7)
(Kiselev, I.A.) (Algae)

ZINOVA, A.D.; SAVICH, V.P., professor, zasluzhennyy deyatel' nauki RSFSR, redaktor; GOLOVNIN, M.I., redaktor; KRUGLIKOVA, N.A., tekhnicheskiy redaktor.

[Guide to red algae of the northern seas of the U.S.S.R.] Opredelitel' krasnykh vodoroslei severnykh morei SSSR. Moskva, Izd-vo Akademii nauk SSSR, 1955. 219 p. (MIRA 8:4)
(Russia, Northern--Algae)

ZINOVA, A.D.

Marine algae in the eastern part of the Soviet sector of the Arctic. Trudy Inst. okean. 23:146-167 '57. (MIRA 11:3)

1. Botanicheskiy institut AN SSSR.
(Arctic Ocean--Algae)

ZINOVA, A.D.

Studying species of the genus Sphaerotrichia Kyl. Bot.zhur. 43 no.10:1462-1469 O '58. (MIRA 11:11)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Leningrad. (Algae)

ZINOVA, A.D., kand.biol.nauk

Composition and nature of algal flora in shore waters of the Antarctic and near Kerguelen and Macquarie Islands. Inform. biul.Sov.antark.eksp. no.3:47-49. '58. (MIRA 12:4)

1. Botanicheskiy institut AN SSSR.
(Antarctic regions--Algae)
(Kerguelen Islands--Algae)
(Macquarie Island--Algae)

ZINOVA, A.D.

List of marine algae of southern Sakhalin and the southern islands of the Kurile chain. Issl.dal'nevost.mor.SSSR no.6:146-161 '59. (MIRA 13:3)

1. Botanicheskiy institut AN SSSR.
(Sakhalin--Algae) (Kurile Islands--Algae)

ZINOVA, A.D.

Phyllogigas and Himantothallus, two brown algae from the Antarctic. Bot. zhur. 44 no.3:372-379 Mr '59. (MIRA 12:7)

1.Botanicheskiy institut im. V.L. Komarova AN SSSR, Leningrad.
(Antarctic regions--Algae)

ZINOVA, A.D., VOZZHINSKAYA, V.B.

Finding the red alga Chordaria magellanica Kylin in the northern part of the Pacific Ocean. Bot. mat. Otd. spor. rast. 13:117-118 '60. (MIRA 13:7)
(Pacific Ocean--Algae)

ZINOVA, A.D.

New algae hitherto unknown in the Sea of Japan. Bot. mat. Otd. spor. rast. 13:113-117 '60. (MIRA 13:7)
(Japan, Sea of--Algae)

TSAPKO, A.S., otv.red.; GLIKMAN, S.A., doktor khim. nauk, prof., red.; GEMP, K.P., st. nauchn. sotr., red.; GRYUNER, V.S., doktor tekhn. nauk, red.; DANILOV, S.N., red.; YEVTUSHENKO, V.A., kand. khim. nauk, red.; ZINOVA, A.D., kand. biol. nauk, red.; KIZEVETTER, I.V., doktor tekhn. nauk, red.; KIREYEVA, M.S., kand. biol. nauk, red.; VULIKHMAN, M.A., red.; POTEKHIN, L.P., red.

[Transactions of the First All-Union Conference of Workers in the Algal Industry of the U.S.S.R.] Trudy Pervogo Vsesoiuznogo nauchno-tekhnicheskogo soveshchaniia po vodoroslevoi promyshlennosti SSSR. Arkhangel'sk, Arkhangel'skoe knizhnoe izd-vo. Vol.1. 1962. 214 p. (MIRA 17:12)

1. Vsesoyuznoye soveshchaniye rabotnikov vodoroslevoy promyshlennosti SSSR. 1st. 2. Chlen-korrespondent AN SSSR (for Danilov). 3. Vsesoyuznyy nauchnyy institut morskogo rybnogo khozyaystva i okeanografii (for Kireyeva). 4. Nachal'nik Upravleniya rybnoy promyshlennosti Arkhangel'skogo sovnarkhoza (for TSapko). 5. Saratovskiy gosudarstvennyy universiteta im. N.G.Chernyshevskogo (for Glikman).

ZINOVA, A. D.

"Features of the marine algal flora of the Black Sea."

report submitted for 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

AS USSR, Leningrad.

ZINOVA, A.D.

The red alga Dilsea integra (Kjellm.) Rosenv. Bot. mat. Otd. spor. rast. 14:82-86 Ja'61.

Index of marine algae collected by A.A. Birula in Spitsbergen. Ibid.:86-87

Algae of the Mezen Bay (White Sea). Ibid.:87-90 (MIRA 17:2)

ZINOVA, A.D.

Representatives of the family Delesseriaceae (Rhodophyta) from the islands of Kerguelen and Macquarie. Bot. mat. Otd. spor. rast. 16:52-67 '63. (MIRA 16:10)

BOBROV, Ye.G.; BONDARTSEV, A.S.; BORISOVA, A.G.; VASIL'KOV, B.P.; VASIL'CHENKO, I.T.; GOLUBKOVA, V.P.; GRUDZINSKAYA, I.A.; YEGOROVA, T.V.; ZINOVA, A.D.; IVANINA, L.I.; LEONOVA, T.G.; MATSENKO, A.Ye.; PIDOTTI, O.I.; POBEDIMOVA, Ye.G.; POLYAKOV, P.P.; POYARKOVA, A.I.; SAVICH, V.P.; SIN'KOVA, G.M.; SMIRNOVA, Z.N.; SMOL'YANINOVA, L.A.; FEDOROV, Al.A.; KHARADZE, A.L.; TSVELEV, N.N.; SHISHKIN, B.K.[deceased]; PEN'KOVA, G.A., red.; BARANOVA, L.G., tekhn. red.; FRIDMAN, Z.L., tekhn. red.

[Botanical atlas] Botanicheskii atlas. Moskva, Sel'khozizdat, 1963. 501 p. (MIRA 16:12)

1. Chlen-korrespondent AN SSSR (for Shishkin).
(Botany--Atlases)

ZINOVA, A.D.

Representatives of the genus Rhodoglossum J. Ag. found near the Soviet coast of the Pacific Ocean. Bot. mat. Otd. spor. rast. 15:70-74 Ja '62. (MIRA 15:10)
(Pacific Ocean—Algae)

BERNSHTEYN, S.A., inzh.; DANILOV, A.M. inzh.; ZINOVA, A.N., inzh.

Use of rapid-hardening concrete in lining ventilation shafts at the "Chaykino-Glubokaya" mine No. 1. Shakht. stroi. no.5:25-26 '58. (MIRA 11:6)

(Shaft sinking) (Concrete)

SHAFERSHTEYN, I.Ya.; ZINOVA, A.P.

Determination of sulfosalicylic acid. Ukr.khim.zhur.17 no.5:786-792 '51. (MLRA 9:9)

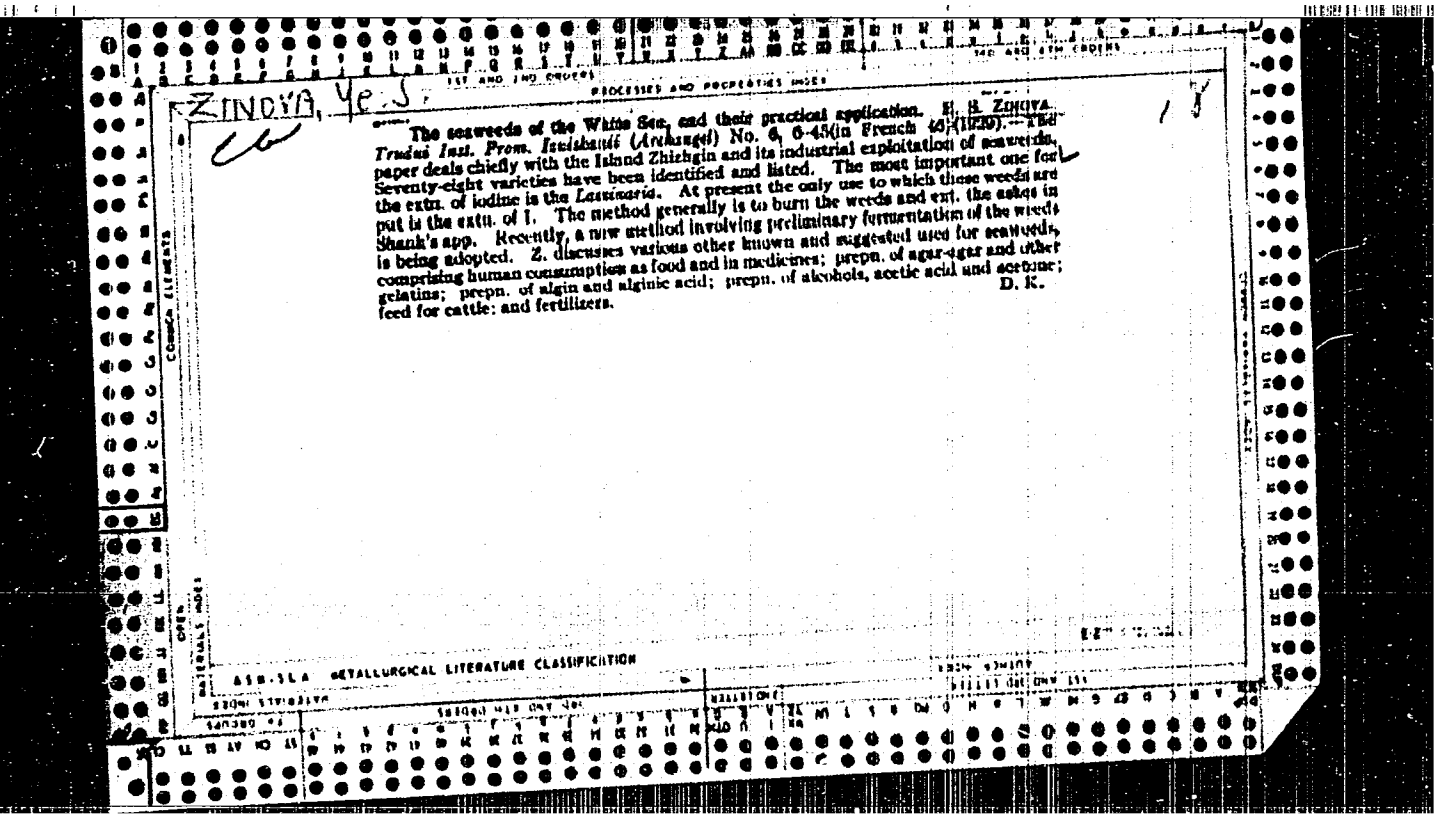
1.Khar'kovskiy gosudarstvennyy universitet.
(Salicylic acid)

ZINOVA, A-P.

British Abst.
A III
Aug. 1953
Radiations

Analysis of the combination of serum albumin and sulphosalicylate. I. Y. Shaferstein and A. P. Zinova (*Biochimia*, 1952, **17**, 7—12).—Sulphosalicylate is shown to act as a dibasic acid in reacting with serum albumin, and the mechanism of pptn. of proteins by this and other dibasic acids is discussed. D. H. Smyth.

Inst. Chem., Khar'kov State Univ.



ZINOVA, Ye. S.

The seaweeds of the White Sea, and their practical application. E. S. ZINOVA. *Trudui Inst. Prom. Issledovanii* (Arkhangel) No. 6, 6-45(in French 46)(1939).—The paper deals chiefly with the Island Zhizhgin and its industrial exploitation of seaweeds. Seventy-eight varieties have been identified and listed. The most important one for the extn. of iodine is the *Laminaria*. At present the only use to which these weeds are put is the extn. of I. The method generally is to burn the weeds and ext. the ashes in Shank's app. Recently, a new method involving preliminary fermentation of the weeds is being adopted. Z. discusses various other known and suggested uses for seaweeds, comprising human consumption as food and in medicines; prepn. of agar-agar and other gelatins; prepn. of algin and alginic acid; prepn. of alcohols, acetic acid and acetone; feed for cattle; and fertilizers. D. K.

A58-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZINOVA, Ye.S. [deceased].

Algae of the Arctic Ocean. Trudy Bot.inst.Ser.2 no.11:39-51 '56.
(Arctic Ocean--Algae) (MLRA 10:2)

ZINOVA, Ye.S.

Algae of Okhotsk Sea. Trudy Bot.inst. Ser. 2 no.9:259-310 '54.
(Okhotsk Sea--Algae) (MLRA 7:11)

ZINOVA, Ye.S.

Algae of Tatar Strait. Trudy Bot. inst. Ser.2 no.9:311-364 '54.
(Tatar Strait--Algae) (MLRA 7:11)

ZINOVA, Ye.S.

Marine algae of southeastern Kamchatka. Trudy Bot.inst. Ser. 2 no.9: 365-400 '54. (MLRA 7:11)
(Kamchatka--Algae)

ZINOVEV, N.

Pribzhenyi metod otsenki vibratsionnoi nadezhonosti turbinnykh diskov. Tallin, Izd-vo Tallinskogo Politekhnicheskogo Instituta, 1958. 14 p.

TULIMULD (Eesti PEN-klubi, Valismaine Eesto Kirjunike Liit, Ulemasilmne Eesti Kirjanduse Selts) Lund. Estonia.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no.12, Dec. 1959

Uncl.

ZINOVATNYY, V

Work practice of the permanent active production conference.
Razved. i okh. nedr 27 no.6:48-50 Je '61. (MIRA 14:9)

1. Artemovskaya kompleksnaya geologorazvedochnaya partiya.
(Prospecting)

ZINOVEYEV, I.

AUTHOR: Zinoveyev, I. 107-57-5-22/63

TITLE: The Voice of Peace and Friendship. The Whole World Listens to Moscow (Golos mira i druzhby. Moskvu slushayet ves' mir)

PERIODICAL: Radio, 1957, Nr 5, p 17 (USSR)

ABSTRACT: Dimitr Geraskov, Sofia, Bulgaria, writes about the "great interest" to Moscow broadcasts in Bulgaria. Moscow radio receives daily "hundreds of letters" from "over one hundred countries of the world". Frantishek Bogumil, Czechoslovakia, writes about a "durable peace in the whole world". A. Tanius, Lebanon, writes: "Your radio tells truth and exposes the intrigues of colonizers and warmongers..." Letters of radio listeners state that the "Voice of America", BBC, "Free Europe" are trying to obfuscate the listeners while the Moscow radio is helping correctly "orientate oneself in the political situation". P. Diversi, an Italian radio listener, believes that Moscow broadcasts favorably differ from the "warmongers' broadcasts" in discussing "peace, construction projects, life". R. Bullen, England, finds that Moscow information "corrects the wrong information offered to us here". P. Guido, Italy, speaks about "truth" of Moscow broadcasts. R. Khusto (Russian spelling), Argentine, speaks about the "hopes" inspired by the Moscow radio.

Three photos show small audiences of Moscow radio in Poland, Rumania, and Outer Mongolia.

AVAILABLE: Library of Congress

Card 1/1

BORISOVA, I.; ZIHOVEYEV, I.

The whole world tunes in to Moscow. Radio no.5:16-17 My '57.
(Moscow--Radiobroadcasting) (MLRA 10:6)

ZINOVIK, L.

Bank and community control. Den. i kred. 20 no.6:53-54 Je '62. (MIRA 15:6)

1. Nachal'nik kreditnogo otdela Oktyabr'skogo otdeleniya gosudarstvennogo banka g. Sverdlovska.
(Sverdlovsk Province--Banks and banking)
(Sverdlovsk Province--Industrial management)

ZINOVICH, Ivan Yevdokimovich; ZAVERNYAYEVA, L.V., red.; PONOMAREVA, A.A., tekhn. red.

[Economic analysis of collective-farm production]Ekonomicheskii analiz kolkhoznogo proizvodstva. Moskva, Ekonomizdat, 1962. 148 p. (MIRA 15:10)
(Khmel'nitskiy Province--Collective farms--Accounting)

MEKHEDA, M.I., redaktor; ZINOVICH, I.Ye., redaktor; ROMANENKO, K.N., redaktor; SULKOVSKAYA, M.A., redaktor; ZUBRILINA, Z.P., tekhnicheskiy redaktor; GUREVICH, M.M., tekhnicheskiy redaktor

[Our experience in studying the collective farm economy; a collection of articles based on a Khmel'nitskiy Province agricultural conference] Nash opyt izucheniia kolkhoznoy ekonomiki; sbornik statei po materialam Khmel'nitskoy oblastnoi ekonomicheskoi sel'skokhozyaistvennoi konferentsii. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 166 p.
(Collective farms) (MLRA 9:12)

LUTSEVICH, P.A.; MONGALEV, G.F.; MIKHALEVICH, N.G.; ZINOVICH, K.F.; SAFRONENKO, A.P.; KLIMENKOV, P.A.; GAYDUKEVICH, N.M.; SILIN, M.S.; BRAZOVSKIY, P.V.; KOVPAK, M.D.; MELESHKEVICH, O.A.; KAMENTSEVA, V.N.; KULIKOVSKIY, A.V.; TARAYKOVICH, P.I.; ALEYNIKOV, G.A.; SHMULEVICH, Sh.S.; GRACHEVA, K.I.; NIKOLAYEVA, Yu.N.; VOLOKHOV, M.A.; DOMASHEVICH, O., red.; KARKLINA, E., red.; ZUYKOVA, V., tekhn. red.

[Manual for livestock raisers] Spravochnik zhivotnovoda. 2., dop. i perer. izd. Minsk, Gos.izd-vo sel'khoz.lit-ry BSSR, 1963. 462 p. (MIRA 16:8)

1. Glavnyy zootekhnik Upravleniya nauki Ministerstva sel'skogo khozyaystva Belorusskoy SSR (for Safronenko).
(Stock and stockbreeding)

ZINOVICH, N.S.

5(2)125(1) PHASE I BOOK EXPLOITATION SOV/2313

Akademiya nauk SSSR. Institut mashinovedeniya

Povyshenlye stoykosti detaley mashin /sul'fidirovaniye/ sbornik statey (Increasing the Wear Resistance of Machine Parts /Sulfidization/; Collection of Articles) Moscow, Mashgiz, 1959. 126 p. Errata slip inserted. 4,500 copies printed.

Ed. (Title page): N. N. Zarushchov, Doctor of Technical Sciences; Ed. (Inside book): A.G. Nikitin, Engineer; Tech. Ed.: V.D. Kl'mind; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): K.K. Pomerantsev, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical workers of machine-building and overhauling plants.

COVERAGE: This book presents results of investigations of methods to increase the resistance of machine parts to seizure. A new method of sulfurization which improves the friction behavior of cast iron and steel and an analysis of the effect of sulfurization on the antifriction properties and wear of metal are given. These articles are the transactions of a seminar held at the Institute of Mechanical Engineering of the Academy of Sciences, USSR, in December 1956.

TABLE OF CONTENTS:

SOV/129-59-3-14/16

AUTHORS: Werner, Ye.E. and Zinovich, N.S.

TITLE: Properties of Bearing Materials at 20 - 125 °C (Svoystva podshipnikovykh materialov pri 20 - 125°)

PERIODICAL: Metallovedeniye i Termicheskaya Obrabotka Metallov, 1959, Nr 3, pp 56 - 59 (USSR)

ABSTRACT: In IC engines, the operating temperatures of bearings frequently reach 100 °C. Usually given characteristics of the mechanical properties of bearing materials refer to temperatures not exceeding 25 °C. In this paper, the results are described of mechanical tests of bearing alloys in the temperature range 20 - 125 °C. The chemical compositions (in %) of the four investigated alloys were as follows:

	Sn	Sb	Cu	Te	Ni	Cd	As	Pb
B89	base	7.8	3.8	-	-	-	-	0.10
B83	82.58	11.11	6.13	-	-	-	-	0.15
BN	9.56	14.26	1.84	-	1.25	1.73	0.65	base
BT	9.97	14.82	0.78	0.08	-	-	-	"

Of these, two are tin-base alloys and two lead-base alloys, mainly with antimony and copper additions.

Card1/3

Properties of Bearing Materials at 20 - 125 °C

The measured hardness values are entered in Table 2, the results of compression tests at temperatures up to 120 °C are entered in Table 3 and the ratios of the hardness to the yield point in compression are entered in Table 4. The measured data are also plotted in graphs, Figures 1-5. On the basis of the obtained results, the following conclusions are arrived at.

1) In tin alloys of the type B83, an increase in the temperature does not bring about a decrease in the plastic properties, characterised by the flattening of the specimen as a result of compression. In lead alloys, the magnitude of the flattening decreases appreciably with increasing temperature.

2) For alloys which contain SnSb crystals as the hard structural component, the ratio of the hardness to the compression strength was not a constant value; with increasing test temperature, this ratio also increases without any specific interrelation (it differs for each of the alloys).

3) The cracking up of the babbitt BN and the flattening of the babbitt BT observed in the operation of bearings

Properties of Bearing Materials at 20 - 125 °C

in the case of excessive tightening is explained not only by the difference in the fatigue strength but also by the fact that at elevated temperatures, the babbitt BN breaks up almost without any plastic deformation (with a low magnitude of flattening of the specimen), whilst the babbitt BT has a relatively low strength.
There are 5 figures, 4 tables and 1 Soviet reference.

Card 3/3

L 3415-66 EWP(e)/EWT(m)/EWP(w)/EWP(t)/T/EWP(t)/EWP(b) IJP(c)
MJW/JD/GS

ACCESSION NR: AT5024873 UR/0000/65/000/000/0065/0074

AUTHOR: Zinovich, N. S.

TITLE: Experience in using boronizing in tractor building

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Diffuzionnyye pokrytiya na metallakh (Diffusion coatings on metals). Kiev, Naukova dumka, 1965, 65-74

TOPIC TAGS: boron, metal heat, treatment, wear resistance, tractor

ABSTRACT: With the object of increasing the wear resistance of the blocks and link pins of caterpillar tracks and determining the effect of increasing the hardness of one member of the friction pair the author investigated the effect of the boronizing of link pins on the service life of blocks of the DT-54A caterpillar tractor, cast of G13L high-manganese steel. The boronizing was performed in a bath of borax at 950°C in the presence of electric current for 1.5-2.0 hr, resulting in the formation of a 0.12-0.18 mm deep diffusion layer on the surface of the link pins. This layer consisted of the iron borides FeB and Fe_2B and its hardness was H_V = 1400-1900. Following their boronizing, the link pins were normalized at

Card 1/3

L 3415-66

ACCESSION NR: AT5024873

820-840°C for 2 hr, surface-hardened in a high-frequency current installation, and oil-tempered at 180°C for 2 hr. Subsequent laboratory wear-resistance tests of the link pins in a friction pair with lugs revealed that, under conditions of purely abrasive wear, the boronized layer not only protects the link pin against wear but also markedly reduces the wear of the lugs. This was followed by field tests on 53 tractors of the DT-54A type, of which 12 were with non-boronized link pins. After 667 hr the boronized link pin still is hardly worn and retains its shape, whereas the non-boronized link pin becomes deformed and unfit for further operation. On chernozem soils the average service life of the boronized link pins is 2400 hr compared with 1760 hr for non-boronized link pins; the wear of the lugs operating in a pair with boronized link pins is generally 15% lower. Thus, the boronizing of link pins in the track blocks of the DT-54 tractors, designed for operation in highly abrasive soils, increases the service life of these pins by 70-80%, markedly reduces the wear of the block lugs, and hence also, by extension, slows down the wear of the coupling elements, and it should be recommended primarily for the link pins used in the track blocks of tractors operated on sandy soils. Orig. art. has: 6 figures.

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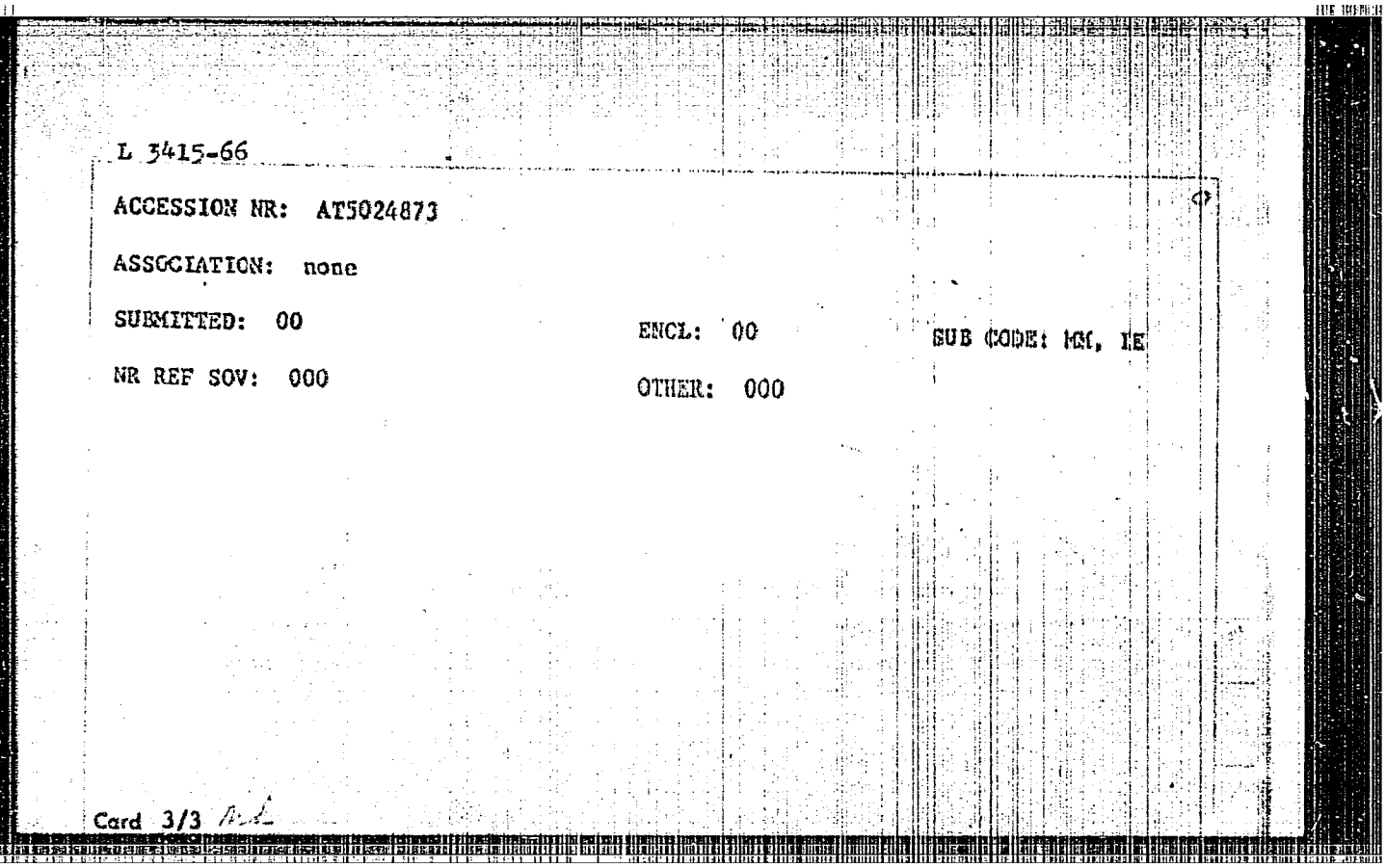

L 3415-66

ACCESSION NR: AT5024873

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, IE

NR REF SOV: 000 OTHER: 000

Card 3/3

ZINOVICH, N.S.

USSR/Engineering - Chrome plating

Card 1/1 : Pub. 12 - 8/14

Authors : Zinovich, N. S., and Avrukh, E. L.

Title : Thermodiffusion chrome-plating of precision parts for a fuel manifold

Periodical : Avt. traktor. prom. 5, 25-27, May 1954

Abstract : Thermodiffusion chrome-plating of precision parts for a fuel manifold is described. The chrome plating was conducted on components made of KhVG, ShKh15, and 38 steels in the temperature range of 900 to 1150°C. Tables; illustrations; graph.

Institution : .....

Submitted : .....

KUZNETSOV, Ye.A.; ZINOVKIN, A.D.

Geological and petrological investigation of the Sysert granite massif. Trudy Inst.geol.nauk no.147:55-141 '53. (MLRA 7:3)
(Sysert massif--Granite) (Granite--Sysert massif)

ZINOVKIN, G.

Technically based time norms for loading and unloading work.
Biul. nauch. inform.: trud i zar. plata 3 no.8:15-19 '60.
(MIRA 13:9)
(Loading and unloading--Production standards)

FROLOV, G.; ZINOVKIN, G.

Methodology of creating and using uniform norms for loading and unloading work. Sots. trud 5 no.11:102-106 N '60. (MIRA 14:1)
(Loading and unloading—Production standards)

BARABASH, M.; ZHUKOVA, N.; ZHURAVLEV, I.; ZINOVKIN, G.

Technically based time norms for loading and unloading work in refrigerators. Biul.nauch.inform.: trud i sar.plata 3 no.9:27-30 '60. (MIRA 13:9)
(Loading and unloading--Production standards) (Refrigerators)

ZINOVKIN, G.

Obligation successfully carried out. Avt. transp. 34 no.6: 27 Je '56. (MLRA 9:9)

(Transportation, Automotive)

ZINOVKIN, G.S., inzh.

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(MIRA 17:2)

ZINOVKIN, G.S., otv. za vypusk; GOL'DINA, N.I., red.; PONOMAREVA, A.A., tekhn.red.

[Unified production and time norms for ship loading and unloading operations in sea harbors] Edinye normy vyrabotki i normy vremeni na sudovye pogruzochno-razgruzochnye raboty, vypolniaemye v morskikh portakh. Moskva, Gosplanizdat, 1960. 381 p.

(MIRA 14:4)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po trudu. (Harbors) (Loading and unloading--Standards)

ZINOVKIN, G.S., otv. za vypusk; GOL'DINA, E.I., red.; GERASIMOVA, Ye.S., tekhn.red.

[Standard work and time norms for loading and unloading of railroad cars, motor vehicles, and work in warehouses] Edinye normy vyrabotki i vremeni na vagonnye, avtotransportnye i skladskie pogruzochno-razgruzochnye raboty. Moskva, Gosplanizdat, 1960. 301 p. (MIRA 14:2)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po trudu.
(Loading and unloading)

ZINOVKIN, G.S. otv. za vypusk; GOL'DINA, E.I., red.; GERASIMOVA, Ye.S., tekhn.red.

[Unified production and time standards for ship loading and unloading operations in river harbors] Edinye normy vyrabotki i vremeni na sudovye pogruzochno-razgruzochnye raboty, vypolniaemye v rechnykh portakh. Moskva, Gosplanizdat, 1960. 276 p. (MIRA 14:4)

1. Moscow. TSentral'noye byuro promyshlennykh normativov po trudu. (Harbors) (Loading and unloading--Standards)

SOROCHKIN, Igor' Mikhaylovich; GRISHIN, Leonid Ivanovich; ZINOVKIN, G.S., retsenzent; BARBASHIN, M.K., retsenzent; KORBUT, L.V., red.; SATAROVA, A.M., tekhn. red.

[Organization of work and wages in meat combines] Organizatsiia truda i zarabotnoi platy na miasokombinatakh. Moskva, Pishchepromizdat, 1963. 202 p. (MIRA 16:6)
(Meat industry--Management)
(Wages--Meat industry)

ZINOVKINA, L.N., meditsinskaya sestra (Moskva)

Spinal puncture and complications from brain and spinal cord tumors.
Med. sestra 20 no.8:51-54 Ag '61. (MIRA 14:10)
(SPINE—PUNCTURE) (SPINAL CORD—TUMORS)
(BRAIN—TUMORS)

SOV/95-59-2-8/13

AUTHORS: Zinovkina, M.M. and Krikun, V.Ya., Engineers

TITLE: Construction and Road Making Machines Equipped With New Device for Transportation Speed Reduction of Tractors S-80, Without Substitution of Tractor Gear Box (Stroitel'nyye i dorozhnyye mashiny s novoy skhemoy ponizheniya transportnykh skorostey traktora S-80 bez zameny traktornoy korobki)

PERIODICAL: Stroitel'stvo truboprovodov, 1959, Nr 2, pp 21-23 (USSR)

ABSTRACT: One of the basic equipments of construction machines and road making machines, such as rotary excavators, trench fillers, pipe-laying machines, etc, is the tractor for moving the machine. Such tractor needs to be adapted to the working conditions of the respective machines, in particular in regard to speed reduction, which so far could only be done by replacing the original gear box by a new one equipped with additional speeds. The MEMZ (Moscow Experimental Mechanical Plant) has elaborated a new scheme of reducing the transportation speeds of the tractor S-80, without replacing the tractor gear box. The reducing mechanism has been executed in the shape of a single-step planetary reducer with interior meshing mounted on the upper gear shaft. The design and

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Construction and Road Making Machines Equipped With New Device for Transportation Speed Reduction of Tractors S-80, Without Substitution of Tractor Gear Box

operation of the mechanism are fully described in the article and illustrated by a drawing. The gear box thus equipped with a planetary reducer has 5 transportation speeds "forward" and 4 transportation speeds "reverse"; it has also 4 working speeds "forward" and 4 working speeds "reverse". The experimental model of this mechanism has been tested in the plant and is now undergoing road tests.
There are: 1 photograph and 1 diagram.