NIKOLAIEV, G., prof., doktor tekhn.nauk, zaslushennyy deyatel' nauki i tekhniki.

Carbon monoxide helps welding. Sov. profsoiuzy 18 no.5:19 Mr '62. (MIRA 15:3)
(Electric welding)

NIKOLAYEV, G.A., doktor tekhn.nauk, prof.

Improvement of welding processes is an important trend in technical development. Vest.mash. 42 no.1:3-10 Ja '62. (MIRA 15:1)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR.
(Electric welding)

NIKOLAYEV, G.A., doktor tekhn.nauk, prof.

Prospects of the development of welding in the U.S.S.R. Vest.-mashinostr. 43 no.5:3-8 My '63. (MIRA 16:5)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR. (Welding)

NIKOLAYEV, G.A., doktor tekhn. nauk, prof.

New methods of welding structural metal elements. Mat. po mat. konstr. no.9:3-29 '65. (MIRA 18:11)

EPA(s)-2/EWP(k) [illegible]

[illegible] NR: AT5017709 UR/[illegible]/65/000/000/0222/0236

AUTHORS: Nikolayev, G. A.; Vinokurov, V. A.; Kurkin, S. A.; Gazaryan, A. S.; Sagalevich, V.

TITLE: Residual stresses and deformations of welded structures

SOURCE: AN UkrSSR. Institut elektrosvarki. Proyektirovaniye svarnykh konstruktsii (Design of welded structures). Kiev, Naukova dumka, 1965, 222-236

TOPIC TAGS: welding technology, steel, residual stress, titanium, tempering, [illegible] structure, residual deformation, nonferrous metal alloy, plastic property

[illegible]: Residual deformation, stresses, and associated subjects related to the [illegible] of welded structures are [illegible] [illegible] of the formation of re[illegible] stresses in joints of differ[illegible] [illegible] elements [illegible]stigated for the causes [illegible] welds. [illegible] to eliminate these fractures are proposed. The physical and mechanical [illegible] of the materials were found to have a major effect on the residual [illegible] and deformations. It was [illegible] stresses are [illegible] along the weld [illegible] [illegible]tanium. A comparison was made of [illegible] stresses and deformations resulting [illegible]

L 60253-65

ACCESSION NR: AT5017709

2

in various types of steels welded by several techniques. The deformation and stresses can be regulated by processing techniques, and particularly by the use of appropriate pressures. Residual stresses were found to be little affected by the [illegible] welding techniques using electron beam, ultrasonic waves, diffusion, etc. In very thick members the residual deformation has a unique character and is defined by complex time-dependent factors which are analyzed on the basis of their contributing components. Two theoretical-experimental methods were developed for calculating the three-axis time-temperature field and residual stresses. In the first, the weld was cut parallel to the weld axis into strips 10-15 mm wide, and the changes in the length and thickness of these strips were determined. In the second method a hole was bored, the stresses were measured, and the deformation was determined. The stresses in thick members were found to be nonuniformly distributed. Investigation of the brittle strength of the weld and in structural elements should be conducted along three lines: 1) determination of the reasons for the formation of brittle fractures in the sample by tear studies; 2) studies of the process of propagation of fissures by tests of impact inflection; 3) combined studies of the formation and propagation of brittle fractures. High temperature tempering was found to eliminate residual stresses in the examined welded structures, to increase the resistance to brittle fractures and to modify the deformation from aging and loads. Orig. art. has: 7 figures and 2 tables.

Card 2/3

ACCESSION NR: AT5017709

ASSOCIATION: IVTU im. Baumana (IVTU)

SUBMITTED: 13Jan65 ENCL: 00 SUB CODE: IM, IE

NO REF SOV: 006 OTHER: 002

Card 3/3

L 25450-66 EWA(h)/EWT(1)
ACC NR: AP6011213 SOURCE CODE: UR/0413/66/000/006/0046/0047

INVENTOR: Katsnel'son, S. M.; Nikolayev, G. A.; Tret'yak, T. P.

ORG: none

TITLE: A single-phase relaxation bridge inverter. Class 21, No. 179833 [announced by Ural Department of Scientific Research Institute of Railway Transportation (Ural'skoye otdeleniye, Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 46-47

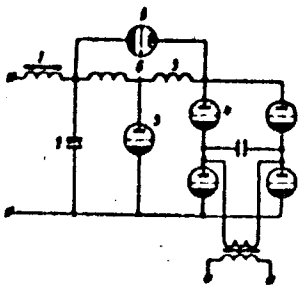
TOPIC TAGS: electric inverter, electric filter, electronic rectifier

ABSTRACT: This Author's Certificate introduces a single-phase relaxation bridge inverter with an inductance-capacitance filter at the input. The inductive reactance in the tank circuit is connected between a group of rectifiers and the filter capacitor. The filter capacitor and the inductance in the tank circuit are used for switching off the inverter in emergency conditions. The emergency disconnection speed is increased and the fixed power of the disconnection equipment is reduced by using two additional controlled rectifiers. The inductive reactance in the tank circuit is divided into two sections and one of the controlled rectifiers is connected in parallel with this reactance while the other rectifier is connected in parallel with the filter capacitor and one section of the reactance.

UDC: 621.314.572.025.
.1:621.316.9

Card 1/2

L 25450-65
ACC NR: AP6011213



1--input inductance; 2--filter capacitor; 3--inductive reactance of the tank circuit; 4--rectifier group of the inverter; 5--additional controlled rectifiers; 6--section of the inductive reactance in the tank circuit

SUB CODE: 09/ SUBM DATE: 09Feb65/ ORIG REF: 000/ OTH REF: 000

Card 2/2

ACC NR: AP6021791 (A, N) SOURCE CODE: UR/0413/66/000/012/0056/0057

INVENTORS: Nikolayev, G. A.; Tret'yak, T. P.

ORG: none

TITLE: A device for the automatic repetitive triggering of a self-triggering inverter. Class 21, No. 182792 [announced by Ural Branch of the All-Union Scientific Research Institute of Railroad Transportation (Ural'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 56-57

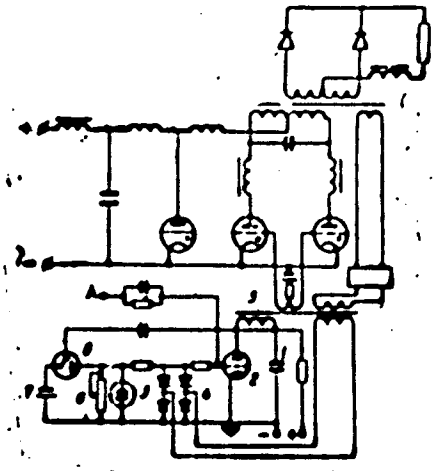
TOPIC TAGS: trigger circuit, automatic regulation

ABSTRACT: This Author Certificate presents a device for the automatic repetitive triggering of a self-triggering inverter which contains a capacitor and a controlled rectifier. The device is used for triggering the inverter and is designed to increase its reliability and response time. A capacitor, the output of a rectifying bridge which is fed from a separate winding of the grid transformer of the inverter, a regulated discharge resistance, and a circuit containing the source of the negative grid bias connected in series to a thyratron (see Fig. 1), are connected in parallel to the grid-cathode circuit of the triggering rectifier.

Card 1/2 UDC: 621.314.572.032.434:621.316.9

ACC NR: AP6021791

Fig. 1. 1 - triggering capacitor; 2 - triggering controlled rectifier; 3 - capacitor; 4 - rectifying bridge; 5 - grid transformer; 6 - discharge resistance; 7 - source of the negative grid base; 8 - thyratron



Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 07Apr65

Card 2/2

NIKOLAYEV, G.F., aspirant.

Designing percussion locks. Trudy LVMI no.6:389-399 '57.
(Firearms--Locks) (MIRA 11:5)

1. NIKOLAYEV, G. I.

2. USSR (600)

4. Almashi Region - Geology

7. Final report of the Almashi geological-surveying party. [Abstract] Izv.Glav. upr.geol.fon. No. 3, 1947.

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

AUTHORS: Bruk, B. I., and Nikolayev, G. I. 20-1-21/44

TITLE: On the Possibility of Using Tritium in the Radiographic Investigation of the Distribution of Hydrogen in Titanium and Zirconium (O vozmozhnosti primeneniya tritiya dlya radiograficheskogo issledovaniya raspredeleniya vodoroda v titane i tsirkonii).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 1, pp. 78-80 (USSR).

ABSTRACT: When the two latter metals are used as construction material, great attention is paid to the problem of the distribution of H_2 in them, since it sharply reduces their plasticity and increases their stress-concentration index. The current metallographic methods give no complete conception of the true distribution of H_2 in the alloys. Therefore the experiment of the use of tritium (= dadioactive H_2-isotope) for this purpose comes at the right time. There exist no published data on the possibility of this use. The chied difficulty to produce radiograms with it lies in the small decomposition energy of this isotope. In order to be able to act upon the photo-emulsion, either tritium with a very high specific activity has to be used or the alloy to be investigated has to be saturated with tritium to the highest

Card 1/4

On the Possibility of Using Tritium in the Radiographic Investigation of the Distribution of Hydrogen in Titanium and Zirconium. 20-1-21/44

possible concentration. The task of producing tritium-autoradiograms of titanium and zirconium is facilitated by a high solubility of H_2 (e. g. compared with steel) in these two metals. Quite distinct radiograms of it were also obtained, when the samples of the metals were saturated with a tritium-H_2-mixture to a concentration of 700-1000 ml gas per 100 g metal. The figures 1 - 3 show "negative" autoradiograms. their darker sections correspond to the higher concentration of H_2 and inversely. From the comparison of this radiogram with an optical microphotograph of a titanium sample follows that the structural image in commercially pure titanium is connected with the occurrence of titanium hydrides. The position of the structural components in titanium with a comparatively high content of H_2 indicates a phase-recrystallization-process according to the type of the Widmannstedt structure. This position of the structural components, one of whom (titanium hydride) is very brittle, must naturally lead to the initially mentioned impairment of the plastic properties etc. Furthermore from the stronger darkening of the photoemulsion in the places where eutectoid is deposited (H_2-content near to 40 %) it may be seen that

Card 2/4

On the Possibility of Using Tritium in the Radiographic Investigation of the Distribution of Hydrogen in Titanium and Zirconium. 20-1-21/44

the solubility of H_2 in the α-phase at room temperature is very small. It is known, that the verification of this fact by means of other methods is very diffidult. In the autoradiogram of zirconium (figure 3) the microstructural image does not render the distribution of the hydride-inclusions, as it was the case in titanium. A complete analogy of the systems Ti - H and Zr - H is apparently completely lacking. The elaboration of the method of autoradiograms with tritium made it possible to determine a number of important laws governing the distribution of H_2 in titanium and zirconium alloys which metallographically often remain invisible. By the same method the distribution of H_2 in titanium welding was investigated and it was found that the H_2-transition from the basic metal into the metal of the weld seam takes place uniformly and without any marked concentration of the hydride phase on the boundary of fusion.

There are 3 figures (8 microphotographs) and 6 references, 3 of which are Slavic.

Card 3/4

20-1-21/44

On the Possibility of Using Tritium in the Radiographic Investigation of the Distribution of Hydrogen in Titanium and Zirconium.

PRESENTED: By G. V. Kurdyumov, Academician, April 24, 1957.

SUBMITTED: April 22, 1957.

AVAILABLE: Library of Congress.

Card 4/4

NIKOLAYEV, G. I., insh.; ERIK, B. I., kand.tekhn.nauk

Use of the radioactive isotope of hydrogen, trittium to investigate certain metallurgical and metallographic problems. Metallovedenie 2:74-81 '58. (MIRA 13:9)
(Hydrogen--Isotopes) (Metals--Hydrogen content)

NIKOLAYEV, G.I.; ALEKSOVSKIY, V.B.

Atomic-absorption micromethod for determining aluminum in pure metals and alloys. Zhur.anal.khim. 18 no.7:816-821 Jl '63.
(MIRA 16:11)

ACCESSION NR: AP4009723 S/0075/64/019/001/0063/0068

AUTHOR: Nikolayev, O. I.

TITLE: Atom absorption method for zinc determination in metals and alloys

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 1, 1964, 63-68

TOPIC TAGS: zinc determination, flame photometry, metal vapor, metal vapor photometry, optical density, zinc determination statistical error

ABSTRACT: Flame-photometric determination, using heating rather than the flame for vaporization of the substance, is described. Heating was carried out under argon (4 atm.) in a graphite cuvette (50 mm length) whose interior surface was screened with a tantalum foil. The equipment, procedure and optimal conditions are described and figured. A temperature somewhat higher than the dissociation temperature of the zinc compounds was used. The absolute sensitivity of zinc determination by the line 3075.9A was 4×10^{-9} g, by the line 2138.6a

Card 1/2

ACCESSION NR: AP4009723

1 10^{-12} g. Statistical evaluation of results showed that the experimental error, on measuring optical densities within 0.15-0.60, was $\sigma = 0.01$ (standard error of reproducibility). This rapid technique (20-30 minutes for 10 samples) affords sinc determination within a wide range of concentrations (from 10^{-8} % to dozens of percents). "In conclusion, I wish to thank A. I. Bodretsov for placing the light sources at my disposal." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 10Apr63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 002

Card 2/2

ACCESSION NR: AP4039866 S/0057/64/034/004/0753/0756

AUTHOR: Nikolayev, G.I.; Alekseevskiy, V.B.

TITLE: An absorption spectroscopic method for determining the diffusion coefficients of metal atoms in an inert gas

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.4, 1964, 753-756

TOPIC TAGS: atomic diffusion, diffusion measurements, diffusivity, diffusion coefficient, diffusion temperature variation, zinc argon diffusion

ABSTRACT: The diffusion coefficient of zinc in argon was measured at temperatures from 1100 to 2600°K and pressures from 0.22 to 4 atm. The measurements were undertaken because of the present lack of high temperature diffusion data. The measurements were performed by the atomic absorption method of B.V.L'vov (Inzhenerno-fizicheskiy zhurnal,2,No.8,44,1959). The diffusion took place in a graphite tube 36 mm long and 3 mm in internal diameter, mounted in a larger vessel containing argon. The graphite cylinder was heated electrically, and its temperature was measured with an optical pyrometer. The interior of the graphite diffusion tube was coated with tantalum foil to prevent diffusion into the wall. A minute quantity of zinc, vapor-

Card 1/2

ACCESSION NR: AP4038906

ized in a carbon arc, was injected into the center of the diffusion tube through an opening in the wall. The decrease in the quantity of zinc vapor in the tube as it gradually diffused out through the ends was followed by measuring the intensity of the Zn I 76 Å line. For this purpose, the beam from a lamp having a hollow zinc cathode was modulated and directed axially through the graphite diffusion tube. The line was isolated with a monochromator, and its intensity was continuously recorded. The quantity of zinc remaining within the tube was found to decrease exponentially with time. The diffusion coefficient was calculated from the relaxation time thus found; it was assumed that the zinc concentration always remained a linear function of the distance from the center of the diffusion tube. The diffusion coefficient was measured at 1740°K at argon pressures from 0.22 to 4 atm and was found to be inversely proportional to the pressure. From this it is concluded that only diffusion was responsible for escape of zinc vapor from the diffusion tube. The diffusion coefficient was found to be independent of zinc vapor concentration over a range of concentrations differing by more than a factor 10^3. The Zn 2138.3 Å resonance line was employed instead of the Zn 3076 Å line for the measurements at the lowest concentrations. The diffusion coefficient was measured at temperatures from 1100 to 2600°K at a pressure of 1 atm. The temperature dependence of the diffusion coeffi-

Card 2/3

ACCESSION NR: AP4028206

cient was well represented by a simple power law with the exponent 1.6. The data were also well represented by Sutherland's expression $AT^{3/2}/(T+B)$, where T is the absolute temperature and A and B are constants. The best fit was obtained with the value 200°K for B. The values of the constants A and B in Sutherland's expression calculated from the molecular weights and volumes by the formula of J.H.Arnold (Ind. Eng.Chem.22,1091,1930) lead to values of the diffusion coefficient some 20 to 30% lower than the observed values. This is regarded as satisfactory agreement, in view of the inaccuracy of the theoretical derivation and the possibility of systematic errors in the experiments. "In conclusion we consider it our pleasant duty to express our gratitude to B.V.L'vov for a valuable discussion of some aspects of the work, and to A.N.Sadretseva for making the hollow cathode tube available." Orig. art.has: 11 formulas, 6 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 08Apr63 DATE ACQ: 22Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 004 OTHER: 008

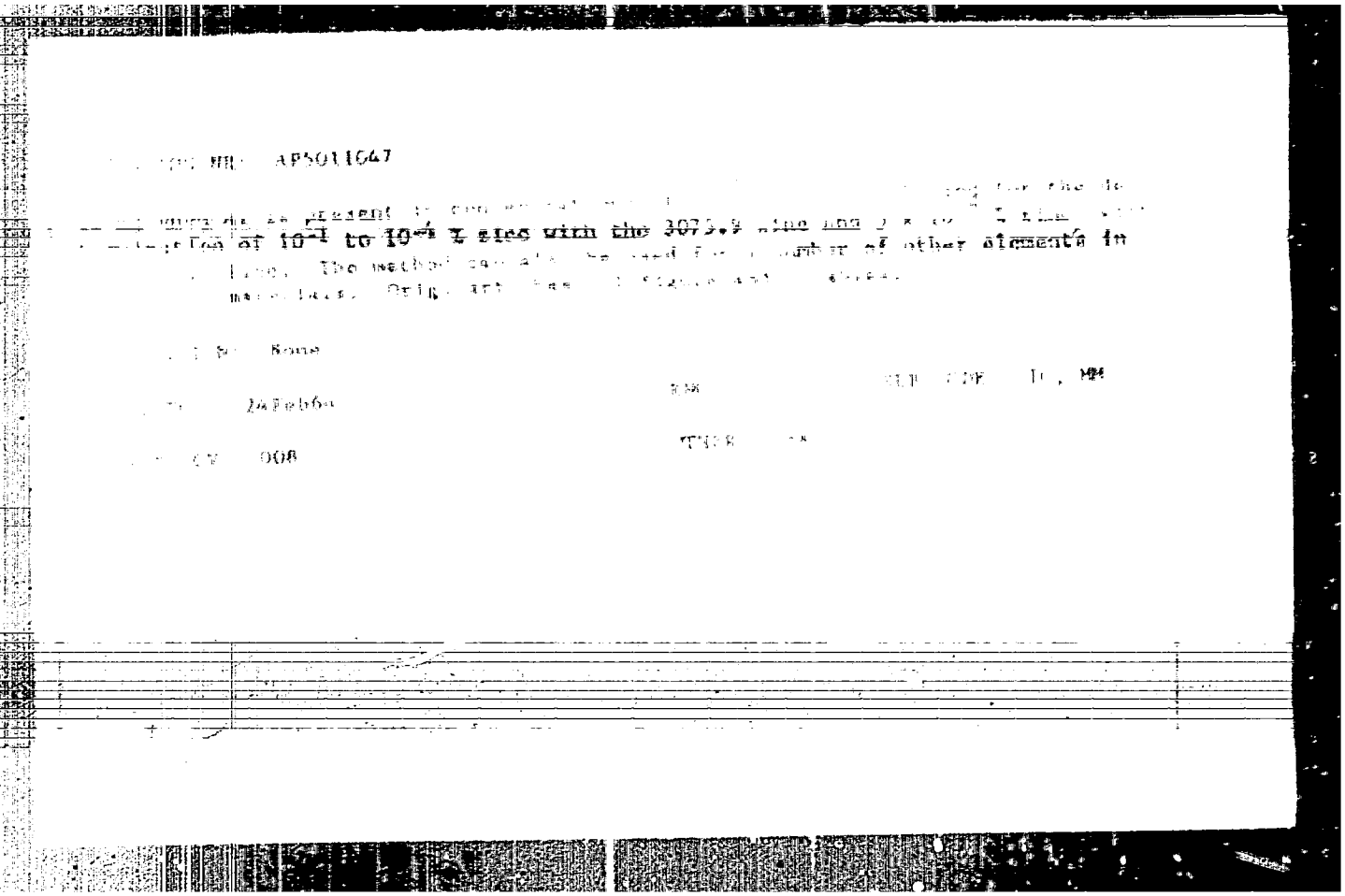
Card 2/3

ACCESSION NR: AP5011047 UR/0075/65/020/004/0445/0447

Nikolayev, G. I.

A...ic absorption method ... determining ... impurities in samples of refractory metals

aluminum determination ... metal analysis,



NIKOLAYEV, G.K.

Universal set, pass inserts, and die checks for crank presses in forging. Kuz.-shtam.proizv. 5 no.4:12-16 Ap '63. (MIRA 16:4)

(Dies (Metalworking)) (Power presses)

YARYGIN, N. Ye.; NIKOLAYEV, G. M. (Yaroslavl')

Pathomorphology of the vascular system in acute radiation injury. Arkh. pat. no.8:24-32 '61. (MIRA 15:4)

1. Iz kafedry patologicheskoy anatomii (zav. - prof. N. Ye. Yarygin) Yaroslavskogo meditsinskogo instituta.

(RADIATION SICKNESS) (BLOOD VESSELS)

NIKOLAYEV, G.M., insh.; UDOV, V.A., insh.

Frequency manipulator for checking receivers. Vest. sviazi 21 no.1:11-13 Ja '61. (MIRA 15:5)

1. Radiostantsiya Irkutskogo radiotsentra.
(Radio--Testing)

NIKOLAYEV, G. M.

Cand Med Sci - (diss) "Pathomorphology of the nervous apparatus of the heart and thoracic aorta in acute experimental radiation disorder." Smolensk, 1961. 15 pp; (Ministry of Public Health RSFSR, Smolensk State Med Inst); 200 copies; price not given; (KL, 10-61, sup, 226)

KUCHAROVA-SHCHUKINA, G. P.; NIKOLAYEV, G. M.

"The supra-annular effect in cycloheximide compounds."

Report presented for the 2nd Intl. Symposium on the Chemistry of Natural Products (IUPAC), Kyoto, Japan, 12-18 April 1964.

NIKOLAYEV, G.M.

Outcome of the campaign and contest for inventions and efficiency promotion at the plants of the Russian Office of the Sugar Industry. Sakh. prom. 31 no.2:40-44 F '57. (MLRA 10:4)

1. Ruglavsakhar.
(Sugar industry)

NIKOLAYEV, G.M.

Using steam from labyrinth packings of the OR-1.5-3 turbine for vacuum heat exchangers. Sakh. prom. 32 no.4:42-43 Ap '58. (MIRA 11:6)

(Steam turbines) (Heat exchangers)

NIKOLAIEV, G.M.

Turniquet for massecuite discharge. Sakh. prom. 37 no.3:50-53 Mr '63. (MIRA 16:4)

1. Gosplan RSFSR.

(Sugar machinery)

[redacted], O.M.

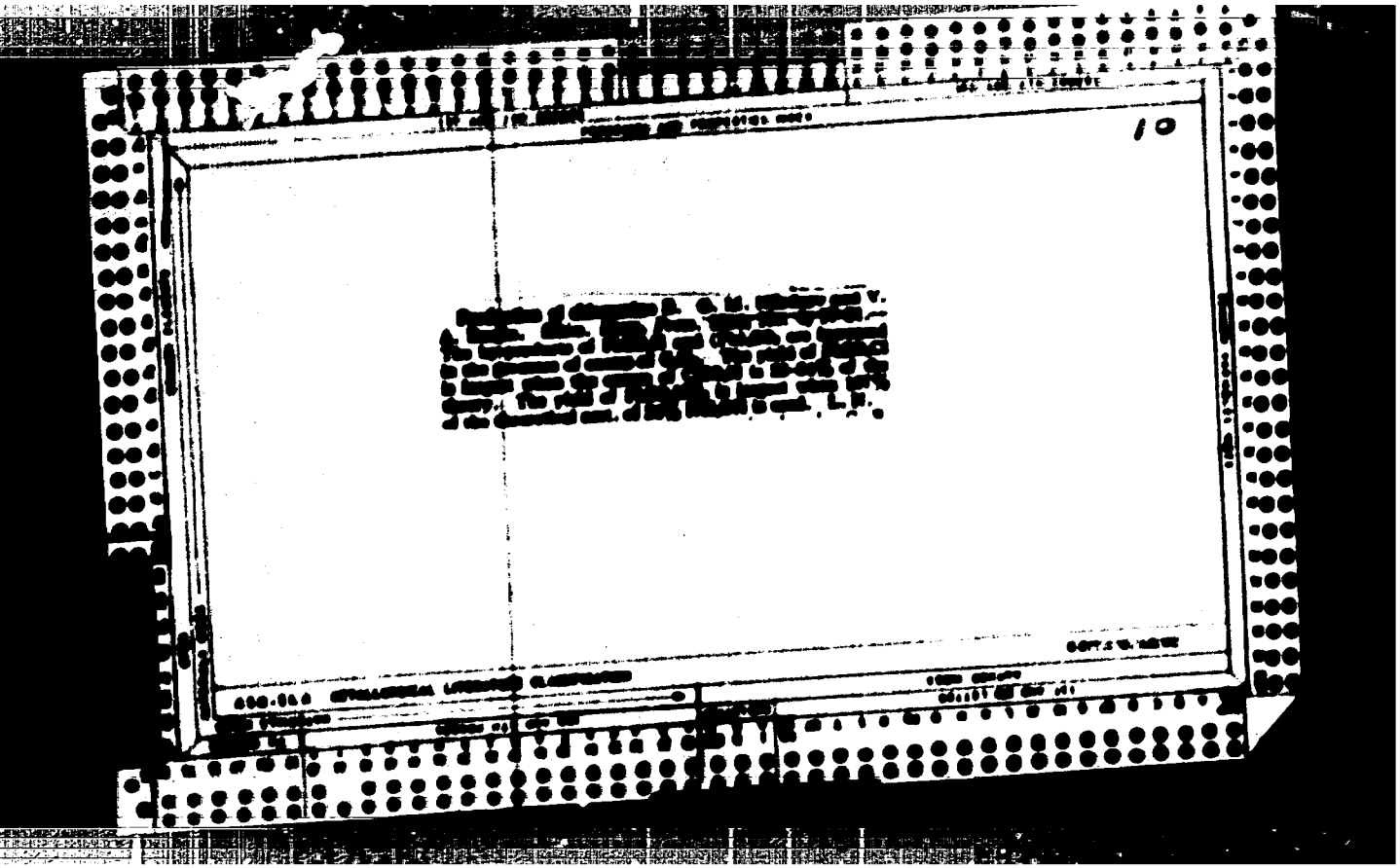
New table of the solubility of pure saccharose in water (from "Zeitschrift fuer die Zuckerindustrie, no.9, 1962). Sakh. prom. 37 no.5:69-70 My '63. (MIRA 16:6)

(Sucrose)

HOLODOVA, G.A.; IVANOV, I.D.; NIKOLAYEV, G.M.

Role of calcium ion in maintaining the conformation and active center of α-amylase in Aspergillus oryzae. Izv. AN SSSR.Ser.biol. no.3:359-367 My-Je '65. (MIRA 18:5)

1. Institut fermentnoy i spirtovoy promyshlennosti, Moskva.



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001137110009-8"

AUTHORS: Nasarov, I. N., Kruglikova, R. I., Nikolayev, G. M. SOV/79-29-6-18/72

TITLE: Acetylene-amino Alcohols and Their Esters (Atsetilenovyye aminospirty i ikh slozhnyye efiry)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1859 - 1866 (USSR)

ABSTRACT: In order to investigate the dependence of the physiological activity of the alkanolamine esters on their structure the synthesis of a number of butanol amine esters was carried out, of the saturated and of those with double and triple bonds (Scheme 1). The method recently described for synthesizing acetylene alcohols and butanol amines by condensation of the acetylene amines with ketones (Ref 1) and subsequent reduction of the acetylene-amino alcohols offers small yields only. The synthesis of the substituted butanol amines, in particular of 5-diethyl--amino-pentanol-2, the semi-product for the synthesis of acrichin, plasmochin and other products, offers good yields. This synthesis is carried out on the basis of aceto-acetic ester which, of course, limits the substitution at the carbon which is bound to the hydroxyl group (Scheme 2). In order to obtain

Card 1/2

Acetylene-amino Alcohols and Their Esters SOV/79-29-6-18/72

various amino-butanols as well as the amino-butine and amino--butenols and their esters the authors used the simple and general synthesis by Mannich with the corresponding esters of the acetylene-alcohols. The saponification of these esters with subsequent selective hydrogenation permit the synthesis of the corresponding acetylene, ethylene and saturated amino alcohols (Scheme 3). The acetylene alcohols were obtained by reaction of acetylene with acetone, methyl-ethyl-ketone, cyclohexanone and cyclopentanone. The acetates of the acetylene-amino alcohols yielded by saponification with alcoholic caustic potash solution the corresponding amino-alcohols in yields of 80-90%. Thus a number of acetates, benzoates, and phenoxy-acetates were obtained by means of Mannich's reaction with esters of the tertiary acetylene alcohols. The hydrochlorides of the benzoates and phenoxy acetates are to be investigated with respect to their anesthetic activity. There are 3 tables and 10 references, 1 of which is Soviet.

SUBMITTED: March 21, 1958

Card 2/2

5.3400,5.3610

77870
SOV/79-30-2-21/78

AUTHORS: Nazarov, I. N., Kruglikova, R. I., Nikolayev, G. M.

TITLE: Reduction of Acetylenic Aminoalcohols and Their Esters

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 462-469 (USSR)

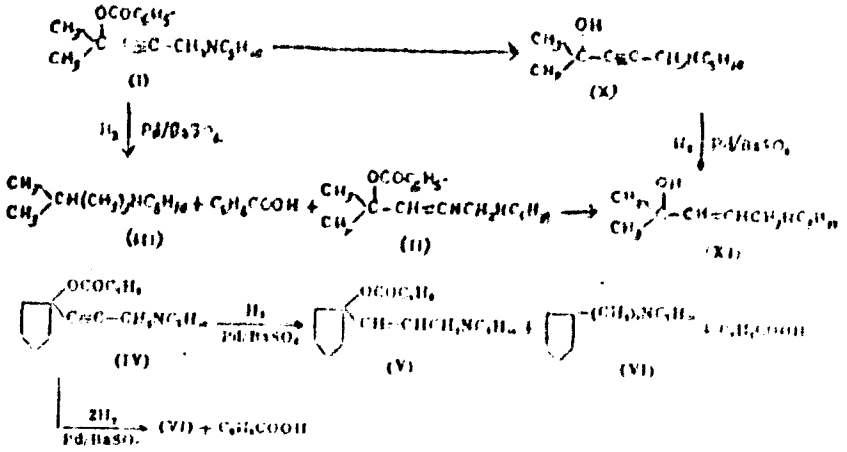
ABSTRACT: The authors studied hydrogenation of the previously synthesized α -acetylenic aminoalcohols and their benzoates (Zhur. obshchey khim., 29, 1859 (1959)). Hydrogenation of the hydrochlorides of benzoates of dimethyl- γ -piperidinepropyne-1-ol (I) and 1- γ -piperidinepropynylcyclopentanlol (IV) over 6% $Pd/BaSO_4$ (by shaking an absolute alcohol solution of the reagent in a hydrogen atmosphere) is accompanied by cleavage of the C-O bond with formation of a saturated amine and benzoic acid, along with the reduced benzoates (II) and (V), as shown in the schemes below. (In preliminary experiments, it was found that the hydrochlorides are hydrogenolyzed to a lesser extent than the

Card 1/5

Reduction of Acetylenic Aminoalcohols and Their Esters

77(?)
SOV/79-30-2-21/78

respective bases.)



Card 2/5

Reduction of Acetylenic Aminoalcohols and Their Esters

77870
SOV/79-30-2-21/78

Absorption of 1 mole of H_2 per mole of benzoate gave 25% benzoate and 26% hydrogenolysis products. When 2 moles of hydrogen are absorbed, the degree of hydrogenolysis reaches 50-70% with no reduced benzoates among the isolated products. On the other hand, hydrogenation of α -acetylenic aminoalcohols under these conditions results in α -ethylenic and saturated alcohols in 80-90% yields. Tables 1 and 2 give yields and constants of the reduced aminoalcohols. An attempt to esterify the reduced (as well as acetylenic) aminoalcohols (with acetic and benzoic anhydrides, benzoyl chloride at 20° and 130°, or by action of benzoyl chloride upon MgI-alcoholates) failed. There are 2 tables; and 6 references, 4 Soviet, 1 French, 1 U.K. The U.K. reference is: H. Huggill, J. Rose, J. Chem. Soc., 335 (1950).

ASSOCIATION: Moscow Institute of Fine Chemical Technology (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

SUBMITTED: March 2, 1959

Card 3/5

Key to Tables 1 and 2: (1) Nr of substance; (2) boiling point (pressure in mm); (3) yield (in %); (4) melting point of hydrochloride; (5) found; (6) calculated; (7) empirical formula. Table 1. Ethylene aminoalcohols.

$$R_2C(OH)-CH=CHCH_2C_5H_{10}$$

(1)	R_2C–	(2)	n_D^{20}	d_{20}^{20}	(3)	(4)	% N (5)	% N (6)	(7)
(XIV)	$(CH_3)_2C$–	70—71° (2.5)	1.4720	0.9155	85	183—184°	7.52, 7.68	7.66	$C_{11}H_{21}ON$
(XV)	$C_2H_5(CH_3)C$–	72 (2)	1.4758	0.9169	80	154—155	7.09, 6.99	7.10	$C_{12}H_{23}ON$
(XVI)		98—100 (2.5)	1.5012	0.9908	98	182—182.5	6.71, 6.88	6.70	$C_{15}H_{23}ON$
(XVII)		120 (2)	1.4973	0.9786	78	198—199	6.08, 5.98	6.30	$C_{14}H_{21}ON$

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77870, SOV/79-30-2-21/78

Table 2. Saturated aminoalcohols.

$H_3C(CH_2)_5NC_5H_{13}$ (OH)

(1)	R_2–	(2)	n_D^{20}	d_{20}^{20}	(3)	(4)	% N (5)	(6)	(7)
(XVIII)	$(CH_3)_2C$–	69–70° (2.5)	1.4700	0.9151	85	179–180.5°	7.49, 7.62	7.56	$C_{11}H_{23}ON$
(XIX)	$C_2H_5(CH_3)C$–	98–100 (2)	1.4739	0.9166	75	181.5–182.3	6.85, 6.77	7.03	$C_{13}H_{27}ON$
(XX)		107–109 (2)	1.4966	0.9814	83	183.5–184.5	6.87, 6.90	6.64	$C_{15}H_{29}ON$
(XXI)		122–123 (2)	1.4953	0.9765	90	208–209	6.54, 6.21	6.22	$C_{16}H_{31}ON$

Card 5/5

KUCHEROV, V.F.; NIKOLAYEV, G.M.

Synthesis and conversions of unsaturated carboxylic acids. Report No.2: New method for the synthesis of unsaturated β-keto acids. Izv.AN SSSR Otd.khim.nauk no.4:632-637 Ap '61. (MIRA 14:4)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Acids, Organic)

Nikolayev, G. N. -- "State of the Phagocytic Activity of the Leucocytes of the Blood in the Presence of Gastric and Duodenal Ulcers." Kazan' State Medical Inst, Kazan', 1955 (Dissertation for Degree of Doctor of Medical Sciences.)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 97-104

NIKOLAYEV, O.M., kand.med.nauk

Use of a novocaine block of the splanchnic nerves and of the marginal sympathetic trunks in acute gastrectasis. Kaz.med. zhur. 40 no.3:18-20 My-Je '59. (MIRA 12:11)

1. Is kafedry khirurgii podfaka (zav. - prof.I.V.Dobrachev) Kazanskogo meditsinskogo instituta.
(LOCAL ANESTHESIA)
(NERVES, SPLANCHNIC)
(STOMACH--DISEASES)

NIKOLAYEV, G.M., kand.meditsinskikh nauk

Diastase content of urine following stomach resection. Kaz. med. zhur. no. 4:25-27 Jl-Ag '60. (MIRA 13:8)

1. Iz kafedry fakul'tetskoy i gospital'noy khirurgii podfaka (zav. - prof. I.V. Domrachev [deceased]) Kazanskogo meditsinskogo instituta.
(DIASTASE) (STOMACH—SURGERY) (PANCREAS—DISEASES)

NIKOLAYEV, G.M., kand.med.nauk

Pathogenic treatment of acute pancreatitis. Sov.med. 25 no.12:21-25 D '61. (MIRA 15:2)

1. Iz kafedry khirurgii pediatricheskogo fakul'teta Kazanskogo meditsinskogo instituta (zav. - zasluzhennyy deyatel' nauki RSFSR prof. I.V.Domrachev) i kafedry patologicheskoy fiziologii Kazanskogo veterinarnogo instituta (zav. - prof. N.A.Krylova).
(PANCREAS--DISEASES)

NIKOLAYEV, G. M.

Comparative characteristics of the results of using different novocaine blocks in experimental acute pancreatitis. Eksper. khir. i anest. no.2:45-48 '62. (MIRA 15:6)

1. Iz kafedry khirurgii podiatricheskogo fakul'teta (zav. - zasluzhennyy deyatel' nauki RSFSR prof. I. V. Domrachev(deceased)) Kazanskogo meditsinskogo instituta i kafedry patologicheskoy fiziologii (zav. - prof. N. A. Krylova) Kazanskogo veterinarnogo instituta.

(PANCREAS—DISEASES) (NOVOCAINE)

SABUROVA, V.A., assistent; TSVETKOVA, S.P., student; [redacted], I.A., student (Kazan'); YAKOVLEVA, K.I. (Kazan'); MAMUSH, M.G., kand.med.nauk (Kazan'); NIKOLAYEV, G.M., kand.med.nauk (Kazan'); KAZ'MINA, G.K., studentka (Kazan'); TODORTSEVA, M.S. (Saratov)

Short reports. Kaz. med. zhur. no.2:75-78 Mr-Ap '62. (MIRA 15:6)

(MEDICINE—ABSTRACTS)

NIKOLAYEV, G.M.; MARKOV, G.T. (Yaroslavl')

Fixation fluid for the impregnation of the nervous elements in tissues containing calcium. Arkh. pat. 27 no.8:82 '65.
(MIRA 18:10)

1. Kafedra patologicheskoy anatomii (zav. - prof. N.Ye.Yarygin) Yaroslavskogo meditsinskogo instituta.

KUDACHKOV, Yu.A.; NIKOLAYEV, G.M., kand. med. nauk

Effect of a new corrosion inhibitor, I-1-A, on the skin.
Vest. derm. i ven. 39 no.4:41-44 Ap '65. (MIRA 19:2)

1. Kafedra patologicheskoy anatomii (zav. - prof. N.Ye. Yarygin) i kafedra farmakologii (zav. - dotsent V.N. Salyayev) Yaroslavskogo meditsinskogo instituta i laboratoriya promyshlennoy toksikologii Nauchno-issledovatel'skogo instituta monomerov dlya sinteticheskogo kauchuka (dir. V.M. Sobolev), Yaroslavl'. Submitted Sept. 4, 1963.

NIKOLAIEV, G.N., veterinarnyy vrach; KARAKOZ, A.I., veterinarnyy tekhnik

Treating the falling of the vagina in cows. Veterinariia 37 no.10:59 O '60. (MIRA 15:4)

1. Pervomayskiy veterinarnyy uchastok Krymskoy oblasti (for Nikolayev). 2. Kolkhos "Ukraina" (for Karakoz).
(Cows—Diseases and pests) (Vagina—Diseases)

NIKOLAYEV, G.M.; AKIMOVEV, A.V.

Morphologic changes in the pancreas and liver and their alkaline phosphatase content in experimental acute pancreatitis. Eksper. khir. i anest. 9 no.5:37-40 S-O '64.

(MIRA 18:11)

1. Kafedra gospital'noy khirurgii No.2 (zav. - prof. N.P.Medvedev) Kazanskogo meditsinskogo instituta.

NIKOLAEV, G. N.

Vliianie termicheskoi obrabotki na mekhanicheskie svoistva legirovannykh serykh chugunov. (Vestn. Mash., 1948, no. 5, p. 51-54)

(Effect of heat treatment on the mechanical properties of alloyed gray iron.)

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

NIKOLAYEV, G. N., DOCENT

Cast Iron

"Alloying and heat treatment effect on the wear of grey cast iron." Vest. mash. 32, No. 1, 1952.

Monthly List of Russian Accessions Library of Congress October 1952 UNCLASSIFIED.

[redacted], A.N.; [redacted], Yu.M.; MALYSHEV, A.I.; NIKOLAYEV, G.N.; [redacted], Yu.A.; [redacted], P.P., dotsent, kand.tekhn.[redacted]; [redacted]; [redacted], V.A., kand.tekhn.nauk, retsenzent; LOSEV, I.S., inzh., retsenzent; YAKOVLEV, A.M., prof., red.; VYDRIN, P.G., inzh., red.; SOKOLOVA, T.F., tekhn.red.

[Technology of metals] Tekhnologiia metallov. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1954. 624 p.
(MIRA 13:12)

(Metals) (Metalwork)

Category : USSR/Solid State Physics - Phase transformation of solid bodies E-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1191

Author : Nikolayev, G.N.
Title : Isothermal Transformation of Supercooled Austenite in Grey Cast Irons

Orig Pub : Vopr. liteynogo proiz-va i termicheskoy obrabotki chuguni. M., Mashgiz, 1956, 129-139

Abstract : No abstract

Card : 1/1

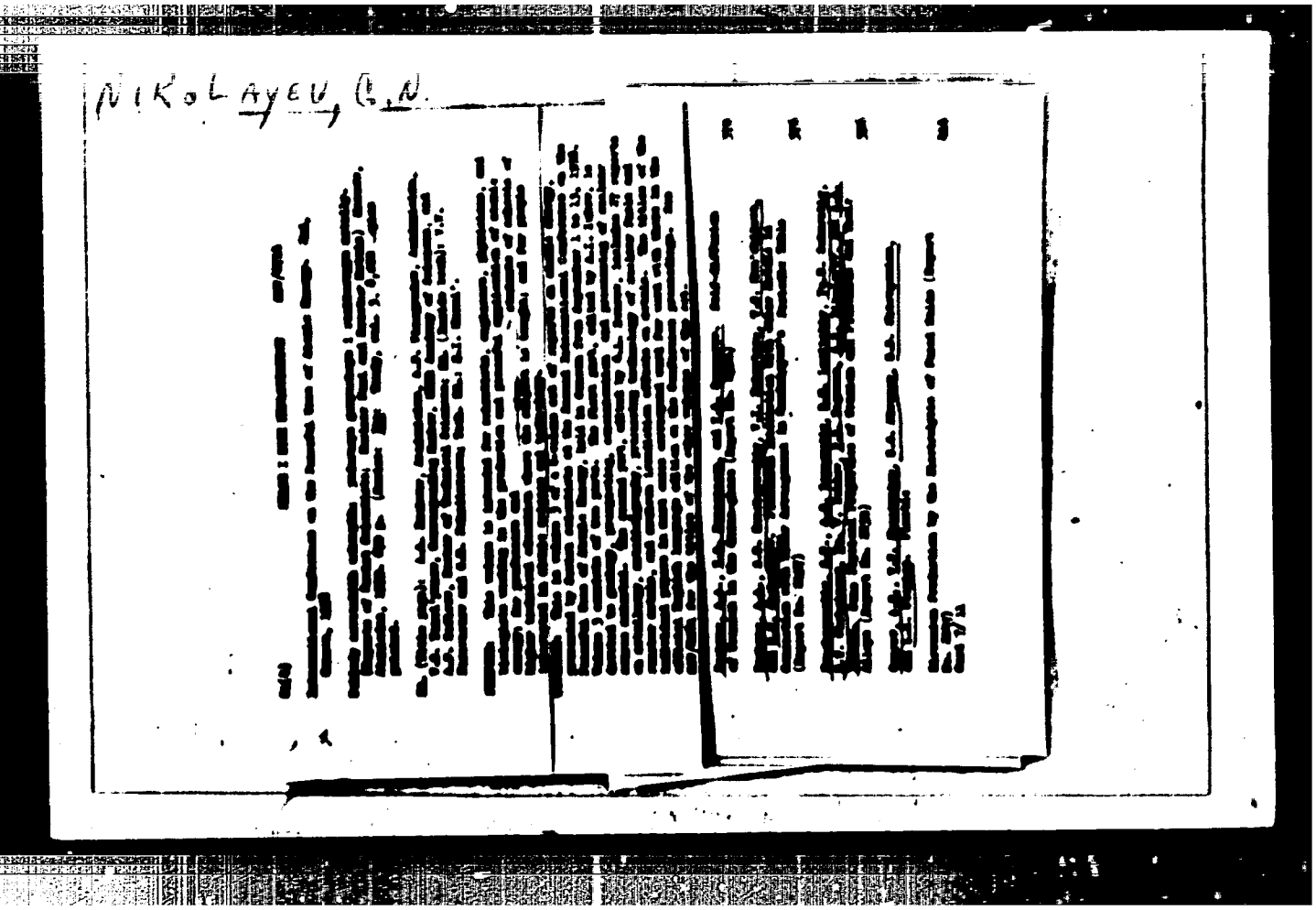
KONOBEYEVSKIY, S. T., ZYMOVSKIY, A. S., LEVITSKIY, B. M., SOKURSKIY, Y. N., CHERNOTAREV, N. T., BOBKOV, V. V., YEGOROV, P. P., NIKOLAYEV, G. N. And IVANOV, A. A.

"Some Physical Properties of Uranium, Plutonium and Their Alloys,"

paper to be presented at 2nd Un Intl.' Conf. on he peaceful uses of Atomic Energy, Geneva, 1 - 13 Sept 58.

BRIUKHANOV, Andrey Nikolayevich; LAKHTIN, Yuriy Mikhaylovich; MALYSHEV, Anatoliy Ivanovich; NIKOLAYEV, Grigoriy Nikolayevich; SHUVALOV, Yuliy Avraamovich; KUBIN, V.V., inzh., retsenzent; GLIKIN, M.M., kand. tekhn. nauk, red.; KHAVINSKIY, V.V., red. izd-va; MEDEL', B.I., tekhn. red.

[Technology of metals] Tekhnologiia metallov. Izd.2.,perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1959. 599 p. (MIRA 14:7)
(Metallurgy)



NIKOLAYEV, G.K.

Basic improvements in the design of MAZ motor vehicles. Obm.tekh. opyt.na avt.transp. no.4:57-67 '60. (MIRA 13:12)
(Minsk--Automobile industry)

NIKOLAYEV, G.N., kand.tekhn.nauk, dot.

Martensitic transformation of austenite in gray cast irons. [illegible] mashinostr. no.9:124-131 '61. (MIRA 14:12)

1. Moskovskiy avtomekhanicheskiy institut.
(Cast iron--Metallography)

MALYSHEV, A.I.; NIKOLAYEV, O.N.; SHUVALOV, Yu.A.; SAMOKHOTSKIY, A.I., red.; VOLKOVA, V.A., red.; VORONINA, R.K., tekhn. red.

[Technology of metals and building materials] Tekhnologiia metallov i konstruktsionnye materialy. Moskva, Vysshaia shkola, 1963. 429 p. (MIRA 16:7)
(Metalwork) (Building materials)

NIKOLAYEV, G.N., kand. tekhn. nauk, dotsent

Martensite diagrams of gray cast iron. Izv.vys.ucheb.zav.;mashinostr. no.5:147-150 '64. (MIRA 18:1)

1. Moskovskiy avtomekhanicheskiy institut.

ACCESSION NR: AT4048016 S/0000/64/000/000/0127/0137

Ionov, V. P., Nikolayev ... Gusev, M. V., Luneva, O. I.

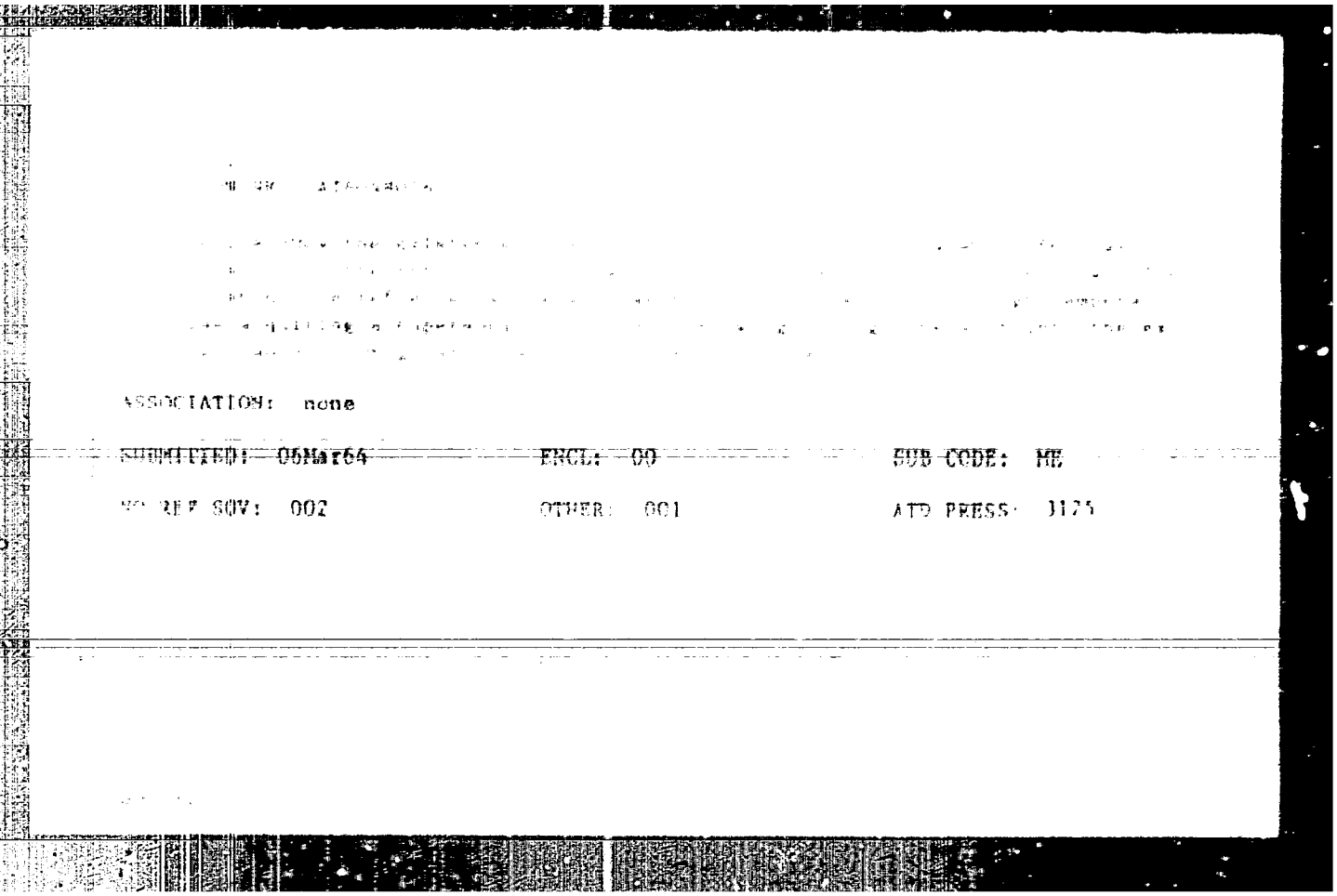
SOURCE: AN SSSR. Energeticheskiy institut. Fizicheskaya gazodinamika i svoystva gazov pri vy*sokikh temperaturakh (Physical gas dynamics and properties of gases at high temperatures). Moscow, Izd-vo Nauka, 1964, 127-137

TAGS: shock tube, shock wave, shock wave reflection, supersonic flow, ... tube flow

... An experimental ... Toepler method and ...

applied to the study of shock wave reflections ... to supersonic flow around obstacles of various shapes in oxygen and nitrogen.

Card 1/2



ASSOCIATION: none

SUBMITTED: 06Mar64 ENCL: 00 SUB CODE: ME

NO REF SOV: 002 OTHER: 001 ATD PRESS: 3175

NIKOLAYEV, G.N., inzh.

Introduce over-all mechanization into the construction of mooring structures. Transp. stroi. 11 no.7:21-24 Jl '61. (MIRA 14:7)

(Wharves)

NIKOLAYEV, G.N., inzhener.

Deep laying of bridge supports made of reinforced concrete elements. Transp.stroi. 5 no.9:23-24 S '55. (MLRA 9:12)
(Bridges--Foundations and piers)

KHDIAIEV, S.I., inzhener.

Construction of supports under a high-voltage power line tower using precast concrete elements. Gidr.stroi. 25 no.3:61 Mr '56. (United States--Electric lines) (MLRA 9:9)

ACCESSION NR: AP4034695 S/0143/64/000/004/0066/0071

AUTHOR: Shrigov, V. P. (Docent); Mikolayev, G. P. (Engineer)

TITLE: Heat exchange with boiling carbon dioxide at near-critical pressures

SOURCE: IVUZ. Energetika, no. 4, 1964, 66-71

TOPIC TAGS: carbon dioxide, carbon dioxide heat exchange, heat exchange, critical boiling, critical boiling pressure

ABSTRACT: An experimental investigation of the critical boiling of carbon dioxide at near-critical pressures of a liquid-vapor system under natural convection conditions is reported. The heat exchange was studied with a 3.9/3.0-mm brass tubing passing circulating water and cooled externally by boiling carbon dioxide. The tubing was mounted in a pressure chamber with thermocouples, viewing ports, etc. (drawing supplied). Three pressures were maintained in the chamber: 65.9, 68.1, 69.9, 72.3, 73.7, 74.3, 75.0 kg/cm^2; the carbon dioxide critical pressure was 73.3 kg/cm^2. It was found that: (1) At near-critical pressures, the pattern of liquid boiling on the tubing surface undergoes a sharp

Card 1/2

[redacted], N. P.; [redacted], V. I.

"Investigation into the burn-out of carbon dioxide boiling with natural convection at pressures close to critical."

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

Ural' Polytechnic Inst.

L 40350-66 EWT(1) mm/GD

ACC NR: AT6021842 (A) SOURCE CODE: UR/0000/65/000/000/0146/0154

AUTHOR: Nikolaev, G. P.; Skripov, V. P.

ORG: Ural Polytechnic Institute im. S. M. Kirov, Sverdlovsk (Ural'skiy politekhnicheskiy institut)

TITLE: Investigation of the boiling crisis for carbon dioxide at pressures close to the critical

SOURCE: Teplo- i massoperenos. t. III: Teplo- i massoperenos pri fazovykh prevrashcheniyakh (Heat and mass transfer. v. 3: Heat and mass transfer in phase transformations). Minsk, Nauka i tekhnika, 1965, 146-154

TOPIC TAGS: boiling, carbon dioxide, critical pressure

ABSTRACT: The experiments were made in a pressure chamber consisting of a thermostatted parallelepiped with dimensions 0.13 x 0.13 x 0.11 meters, with a cylindrical volume with a diameter of 0.05 meters and a length of 0.05 meters. Sections of brass tubing were used as heating surfaces. The experiments were carried out in the pressure interval $p/p_{cr} = 0.865-0.995$. The specific heat flux was calculated by the following formula:

$$q = \frac{c_p \gamma V \Delta t}{F}. \qquad (1)$$

Card 1/2

SKRIPOV, V.P.; NIKOLAYEV, G.P.

Attenuation of light in the transcritical range by using carbon dioxide. Opt. i spektr. 1 no.6:1020-1021 D '56. (MLRA 10:2)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova, Sverdlovsk.

(Spectrum, Molecular)

BEDILO, V.Ye.; BOROKHOV, I.A.; YERSHOV, V.S.; MOGILKO, A.P.; NIKOLAYEV, G.P.; SUGIN, Ye.V., otv.red.; DUKALOV, N.P., red.; RUDYR', V.A., red.; VARSHAVSKIY, I.N., red.; TYUTYUNIK, Ya.I., red.; MUSIN, M.I., red.; PANCHENKO, A.I., red.; SELYAYEV, P.R., red.; RADINKOVA, L.K., red.izd-va; SOLOTAREVA, Z.A., tekhn.red.

[Standard cross sections of mine workings] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.2. [Cross section of workings lined with concrete and artificial stone, for 1-ton cars] Secheniia vyrabotok, zakreplennykh betonom i iskusstvennym kamnem, dlia 1-tonnykh vagonetok. 1960. 459 p. (MIRA 13:11)

1. Moscow. Gosudarstvennyy proyektnyy institut Yuzhgipreshakht.
(Mining engineering)

AKOP'YAN, L.Ye.; BEDILO, V.Ye.; BOROKHOV, I.A.; VINARSKIY, I.S.; GOLOVATYUK, S.A.; NIKOLAYEV, G.P. Prinimali uchastiye: DATSUK, N.V.; [illegible], V.P.; IVANITSKAYA, S.Yu.; KONISHAROV, M.A.; KALINCHUK, I.G.; LISHERGOV, V.D.; [illegible]IKOVA, E.O.; FILIN, V.D. BUGLIK, Ye.V., otv.red.; DUKALOV, M.F., red.; BURYK, V.A., red.; TYUTYUNIK, Ya.I., red.; VARSHAVSKIY, I.N., red.; MOSKIN, N.I., red.; PANCHENKO, A.I., red.; BELYAYEV, F.R., red.; RABINKOVA, L.K., red.izd-va; BOLDYREVA, Z.L., tekhn.red.

[Types of mine cross section] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.5. [Cross section of mines with reinforced-concrete supports and hinge-hung crossbars for 1-, 2- and 3-ton railroad cars] Secheniia vyrabotok, armirovannykh zhelezobetonnymi stoikami s sharnirno-podvesnym perekrytiem, dlia 1-, 2- i 3-tonnykh vagonetok. 1960. 411 p. (MIRA 13:12)

1. Khar'kov. Gosudarstvennyy proyektnyy institut Yuzhgiprouglemash. (Mine timbering)

BEDILO, V.Ye.; KALINCHUK, I.G.; LISHENKOV, V.D.; NIKOLAYEV, G.P.; TSOY, D.; SHCHERBINA, O.F. Priimali uchastiye: KOLESNIKOV, V.F.; OSTAPENKO, P.V.; SEDOVA, N.P.; TKACHEV, N.V. DUBIN, Ye.V., otv.red.; RABINKOVA, L.K., red.izd-va; KOROVNIKOVA, Z.A., tekhn.red.; SABITOV, A., tekhn.red.

[Types of mine cross section] Tipovye secheniia gornykh vyrabotok. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu. Vol.6. [Cross section of mines lined with steel arches and anchor bolting for 1-, 2- and 3-ton railroad cars] Secheniia vyrabotok, zakreplennykh stal'noi arochnoi i shtangovoi krep'iu, dlia 1-, 2- i 3-tonnykh vagonetok. 1960. 503 p. (MIRA 13:12)

1. Khar'kov. Gosudarstvennyy proyektnyy institut Yuzhgiprosheakht. (Mine timbering)

ACC NR: AP6005001 SOURCE CODE: UR/0106/66/000/001/0067/0071

AUTHOR: Frolov, P. A.; Nikolayev, G. P.

ORG: none

TITLE: Results of an investigation of the temperature coefficient of attenuation in coaxial pairs in an MKTP-4 cable

SOURCE: Elektrosvyaz', no. 1, 1966, 67-71

TOPIC TAGS: coaxial cable, RF cable

ABSTRACT: The results are reported of measuring the temperature coefficient of attenuation of 1.2/4.8-mm coaxial pairs in a Soviet-made r-f MKTP-4 cable at frequencies between 60 kc and 10 Mc. Two lengths of the cable 734.5 and 733 m were tested in a 100-m³ thermostat where the temperature was controlled within ±1C around these points: +37.5, +2, 0, −20, and −30C. The experimental results are tabulated; the temperature coefficient was found to be 2.80×10^{-3} and 2.00×10^{-3} for 60 kc and 10 Mc, respectively. Remarkably close results are obtainable from a formula suggested by A. Payant (Cables et transm., 1961, no. 2). Orig. art. has: 5 figures, 6 formulas, and 2 tables.

SUB CODE: 09, 17 / SUBM DATE: 05Mar65 / ORIG REF: 007

Card 1/1 UDC: 621.315.212

FEDOSEYEV, B.V., kand. tekhn. nauk; ZHURKIN, V.K., inzh.; [illegible], G.S., inzh.

Investigating the air-cleaning of legume seeds in a vertical channel. Trakt. i sel'khozmash. 33 no.11:35-37 N '63. (MIRA 17:9)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva tsentral'nykh rayonov nechernozemnoy zony.

SOV/137-59-2-3747

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 209 (USSR)

AUTHOR: Nikolayev, G. S.

TITLE: The Effect of Thermal Distortions and Straightening Operations on the Fatigue Strength of Leaf Springs (Vliyaniye termicheskikh korobleniy i rikhtovochnykh operatsiy na ustalostnuyu prochnost' ressor)

PERIODICAL: V sb.: Materialy Soveshchaniya glavn. metallurgov z-dov i in-tov avtomob. prom-sti. Nr 4. Moscow, 1958, pp 110-115

ABSTRACT: The effect of straightening operations on the fatigue strength (FS) of leaf springs was investigated. A number of specimens cut from a metal sheet were straightened in an impact device, the direction of the ram travel coinciding with the radius of the curvature; the other specimens were left in their original shape. It was established that straightening lowers the FS by more than 50%. In order to prevent distortion of spring leaves, modernization of the facilities is recommended and a number of novel technological operations are proposed. The effect of corrosion on the FS of the springs is also outlined, recommendations on storage of metal are given, and the need for preliminary anti-corrosion processing of the metal is emphasized. Z F

Card 1/1

VOLKOV, Yu.I., inzh.; GAFANOVICH, A.A., kand.tekhn.nauk; GLAZKOV, M.G., kand.sel'skokhoz.nauk; GORKUSHA, A.Ye., agr.; ZHITNEV, N.F., inzh.; ZANIN, A.V., kand.tekhn.nauk; ZAUSHITSYN, V.Ye., kand.tekhn.nauk; IVOLINSKIY, N.P.; KHL'YNSKAN, I.M., kand.tekhn.nauk; KAIPOV, A.M., kand.tekhn.nauk; KASPAROVA, S.A., kand.sel'skokhoz.nauk; KOLOTUSHKINA, A.P., kand.ekon.nauk; KRUGLYAKOV, A.M., inzh.; KURNIKOV, I.I., inzh.; LAVRUKH'YEV, L.N., inzh.; LEBEDEV, B.M., kand.tekhn.nauk; LNVITIN, Yu.I., inzh.; MAKELIN, Ye.A., inzh.; NIKOLAYEV, G.S., inzh.; POLUNOCHENKO, P.V., kand.tekhn.nauk; POLUNOCHEV, I.N., agr.; P'YANKOV, I.P., kand.sel'skokhoz.nauk; RABINOVICH, I.P., kand.tekhn.nauk; SOKOLOV, A.F., kand.sel'skokhoz.nauk; SPISHKOVSKIY, A.A., inzh.; TURBIN, B.G., kand.tekhn.nauk; CHARAN, I.V., inzh.; CHAPKEVICH, A.A., kand.tekhn.nauk; CHERNOV, G.G., kand.tekhn.nauk; SHMAGLEV, B.M., kand. tekhn.nauk; KRASNICHENKO, A.V., inzh., red.; KLETSKIN, M.I., inzh., red.; MOLYUKOV, G.A., inzh., red.; MLADOSELOVOVA, N.Yu., inzh., red.; UVAROVA, A.F., tekhn.red.

[Reference book for the designer of agricultural machinery in two volumes] Spravochnik konstruktora sel'skokhozisistvennykh mashin v dvukh tomakh. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry. Vol.1. 1960. 655 p. (MIRA 13:11)
(Agricultural machinery--Design and construction)

L 24020-66 EWT(d)/EWT(l)/EWT(m)/EWP(f)/EPF(n)-2/T/ETC(m)-6 WW/DJ/GG/GS/GM

ACC NR: AT6000848 SOURCE CODE: UR/0000/65/000/000/0105/0113

AUTHOR: Borovik, Ye. S.; Nikolayev, G. T.; Sharevskay, B. A.

ORG: none

TITLE: Heated condensation pumps

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova dumka, 1965, 105-113

TOPIC TAGS: high vacuum pump, ultrahigh vacuum, low temperature effect, liquid helium

ABSTRACT: Heated condensation pumps which operate at hydrogen or helium temperatures are designed for producing a superhigh vacuum ($\sim 10^{-10}$–10^{-11} mm Hg) in large metal vessels for a relatively short time. The authors discuss the development of the heated hydrogen condensation pump and data from preliminary experiments on the use of liquid helium in a heated condensation pump. It is pointed out that a nitrogen screen has an extremely low coefficient of absorption for thermal radiation under ultrahigh vacuum conditions unless it is specially darkened and therefore the hydrogen condensation pump is practically unprotected by this type of screen from thermal radiation. It is also noted that an oil diffusion pump which has not been subjected to the action of atmospheric air may operate without a nitrogen trap with no reduction in the ultrahigh vacuum characteristics of the installation. These facts were used to simplify the con-

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L 24050-66
ACC NR: AT6008848

struction of a heated hydrogen condensation pump by eliminating the nitrogen screen as well as to simplify and perfect the system for breaking in the installation by using oil diffusion pumps. The system of hot conditioning was also simplified by reducing the temperature and duration of heating. It was found that normal heating of the installation reduces the pressure to a minimum, after which it slowly increases at a rate equivalent to leakage of noncondensed gases into the system: $\sim 10^{-8}$ mt/sec when the valve connecting the installation to the diffusion pump is closed. If the hydrogen vapor is evacuated from the hydrogen pump, the increase in pressure begins 1.5-2 hours later. The mechanism responsible for this phenomenon has not yet been studied in detail. However it has been established that the sources of uncondensed gas are the glass lead-ins of the manometric tube, and also the flange connections which are cooled later than the walls of the installation. Additional cooling of the glass leads or flanges reduces the effect. Preliminary experiments on the use of liquid helium in heated condensation pumps showed that these pumps produce a higher and more stable vacuum, other conditions being equal. These experiments are still in progress. Orig. art. has: 4 figures.

SUB CODE: 13,20/ SUBM DATE: 20Oct65/ ORIG REF: 005/ OTH REF: 001

Card 2/2

L 2[illegible] EWT(m)/T/EWP(t)/ETA(b) JD/WW/GS

ACC NR: AT6003852 SOURCE CODE: UR/0000/65/000/000/0130/0136

AUTHOR: Borovik, Ye. S.; Katrich, N. P.; Nikolayev, G. I.

ORG: none

TITLE: Vaporization of stainless steel by H_1^+ ions and penetration of these ions into the surface

SOURCE: AN UkrSSR. Magnitnyye lovushki (Magnetic traps). Kiev, Naukova, dumka, 1965, 130-136

TOPIC TAGS: hydrogen, stainless steel, vaporization, charged particle

ABSTRACT: The authors studied the vaporization coefficient for stainless steel bombarded by H_1^+ ions as well as the penetration factor for these ions. A diagram of the measurement chamber is shown in the figure. Before bombardment, the target was degassed by heating to approximately 400°C for three hours. Target 3 (made from 1X18N9T stainless steel) is fastened in holder 4. The target holder is insulated from the measurement chamber by a glass junction so that the ion current may be measured directly during bombardment of the target. The target was heated simultaneously with the measurement chamber by an external heater to approximately 300°C for three hours. Collector 6 (made from 0.05 mm aluminum foil) is a truncated cone with a diameter of 35 mm at the base and 24 mm at the apex. The collector is 70 mm long and is protected from the ion beam by screen 5 (made from stainless steel). A hydrogen condensation

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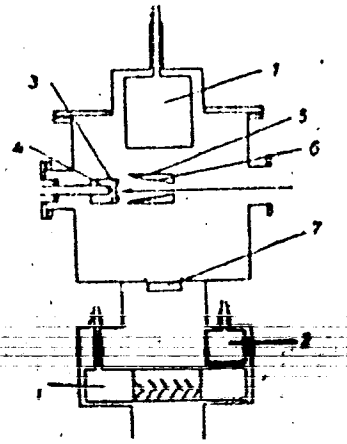
pump was used for evacuating the measurement chamber during degassing. After heating, liquid helium was poured into the helium condensation pumps and liquid hydrogen was poured into hydrogen condensation pump 1. The measurement chamber was then disconnected from hydrogen condensation pump 2 by heated metal valve 7. This method gave a final pressure of no more than $1 \cdot 10^{-9}$ mm Hg. A beam of 35 kev H_1^+ ions incident on target 3 was electrically recorded by applying a blocking potential across collector 6. The current of the ion beam was ordinarily 100-~~.80~~ μa. The hydrogen ions penetrate part way into the target as they strike and the vaporized metal of the target is accumulated by the collector. The following formulas are given for calculating the coefficient of vaporization α and the penetration factor η:



$$\alpha = \frac{\Delta P_{\alpha}}{9{,}3 \cdot 10^{-23} I/qt}, \qquad \eta = \frac{\Delta P_{\alpha} + \Delta P_{w}}{1{,}67 \cdot 10^{-24} I/qt},$$

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ACC NR: AT6009852

where ΔP_t is the reduction in the weight of the garget; ΔP_c is the increase in the weight of the collector; i is the current of the H_1^+ ion beam in amperes; q is the charge of an electron in coulombs; t is the time of target bombardment in seconds; $9.3 \cdot 10^{-23}$ is the weight of a single iron atom in grams and $1.67 \cdot 10^{-24}$ is the weight of a single hydrogen atom in grams. The results show a coefficient of $9 \cdot 10^{-3}$ for vaporization of stainless steel by H_1^+ ions with an energy of 35 kev, and a penetration factor of 0.5. Orig. art. has: 2 figures, 1 table, 2 formulas.

SUB CODE: 20/11 SUBM DATE: 20Oct65/ ORIG REF: 004/ OTH REF: 002

Card 3/3

NIKOLAYEV, G. T.

Experimental Aerodynamics

Dissertation: "Investigation of the Distribution of Velocities and Density in a Vapor Stream Discharged Into a Vacuum." Cand Phys-Math Sci, Khar'kov State U, Khar'kov, 1953. (Referativnyy Zhurnal -- Mekhanika, Moscow, Mar 54)

SO: SUM 213, 20 Sep 1954

S/185/61/006/005/013/019
D274/D303

AUTHORS: Nikolayev, G.T., and Shareve'kyy, B.A.

TITLE: Effect of operating conditions of MM-1000 diffusion oil pump on composition of waste products of the oil A-IA (D-IA)

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 6, no. 5, 1961, 697 - 701

TEXT: The waste products are analyzed by a method which involves low-temperature and low-pressure fractionation. The experimental set-up (Fig. 1) consisted of the diffusion pump MM-1000 (1), deflector 2, nozzle 3, chamber 4 with condensation element 5 which is cooled by liquid nitrogen, and glass tubes which are connected by valve 11. The waste products were analyzed by the following method: Pump 1 together with the rest of the set-up, were run-in for 30-50 hours, so as to ensure the stability of the vacuum (thereby nozzle 3 remained open). Then liquid nitrogen was poured into sphere 5. The waste products were condensed at the surface of the sphere. On

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completion of the condensation, nozzle 3 was closed, the nitrogen was let out from 5, which was, thereupon, slowly heated. The first fraction evaporated and re-condensed on tube 6; then the second fraction followed, etc. The amount of the waste products was determined by means of manometer 9 (as the volume of the respective fraction was known). The waste products were analyzed for three different types of operating conditions of the oil pump. Type 1 are normal operating conditions with power of 3 kwat; type 2 involves better conditions for oil-purification and has a power of 2 kwatt; type 3 is similar to type 2, except for the power=3 kwatt. In the case of conditions 1, the waste products contain 3 fractions, denoted by I, II, III (in proportion to increasing molecular weight of the fraction). By comparing the fractionation curves for conditions 2 and 3, the conclusion is reached that a change in operating conditions is accompanied by a change in the composition of the waste products. A table lists the quantitative results of waste-product analysis. These results show that a change in operating condtions brings about changes in the ratio between the fractions, in addition to the changes in the absolute amount of waste products. Thus

a transition from conditions 1 to 2 involves a sharp change in the ratio of the light (I and II) and the heavy fractions (III): The relative amount of the heavy fraction decreases to 35 % (from 70 %). On passing from normal operating conditions (complete cooling of pump body) to partial cooling, the relative amount of the heavy fraction is reduced by half; thereby the composition of the light fractions changes - the mean molecular weight of the light fractions increases. There are 4 figures, 1 table and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publications reads as follows: H.D. Nöller, I. Reich, W. Bächler, Nat. Symposium on vacuum Techn., 1957.

ASSOCIATION: Fizyko-tekhnichenyy instytut AN URSR m. Kharkiv
(Physicotechnical Institute AS UkrSSR, Kharkiv)

SUBMITTED: January 30, 1961

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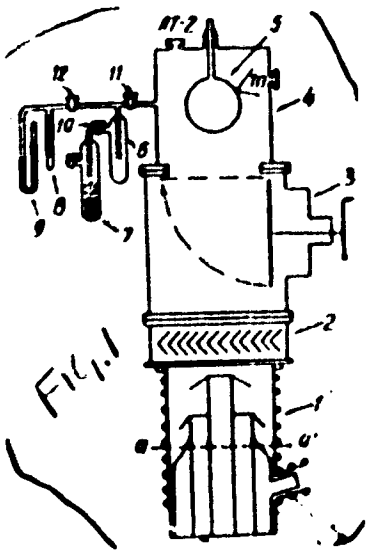
Effect of operating conditions of ...

Fig. 1.



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ACCESSION NR: AP4012032 S/0185/64/009/001/0066/0074

AUTHOR: Sharevs'ky*y, B. A.; Nikolayev, G. T.

TITLE: Investigation of the characteristics of an ionization vacuum gauge with a cold cathode

SOURCE: Ukrayins'ky* fizy*chny*y zhurnal, v. 9, no. 1, 1964, 66-74

TOPIC TAGS: vacuum, cathode, thermionics, tube, cold cathode, ionization vacuum gauge

ABSTRACT: The characteristics of an ionization vacuum gauge with a cold cathode were investigated. It was established that at the selected geometry of the electrodes there were several ranges of potential and magnetic field strength at which a linear dependence of the ionic current on the pressure in the 10^{-9} - 10^{-4} mm range was realized. According to preliminary results, the linearity of the ionic current -- pressure characteristic was retained down to the lowest pressures studied, i. e., $\sim 10^{-10}$ mm. The sensitivity of the cold-cathode gauge exceeded that of ordinary, hot-cathode ionization gauges by a factor amounting to a multiple of ten. The following shortcomings of a hot-cathode

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ACCESSION NR: AP4012032

gauge were eliminated: existence of a limiting pressure below which measurements cannot be carried out because of the vapor tension due to evaporation of W from the hot cathode; errors arising because of dissociation of H_2 and O_2, decomposition of oil vapors, and formation of CO at hot cathodes; interference of the photo-current with measurements at low pressures. The design of the cold-cathode gauge is shown in the figure. The anode 1 was formed by a cylinder perforated to increase the flow of gas through the discharge space. The cathode 3 consisted of a short cylinder to the ends of which two disc-shaped end planes were welded. The ring electrodes 2, which were inserted between the cylindrical anode and the two disc-shaped end planes, were maintained at the cathode potential to screen the discs from strong electric fields. On being emitted from the cathode, an electron was subjected simultaneously to the action of the electric field and a magnetic field perpendicular to it. It could not move in the axial direction, because the discs were at the cathode potential, or in a radial direction because of the action of the magnetic field: its path was hypocycloidal. If no collision with a gas atom took place within the flight through the first hypocycloidal trajectory, the electron was returned to the cathode; otherwise a second hypocycloid nearer to the anode was described until a second collision, and so on, until the electron reached the anode. At a magnetic field up to

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ACCESSION NR: AP4012032

2 X 10^3 gauss, at which measurements were carried out, and with the dimensions of the gauge used, the path of positive ions was not curved significantly by the magnetic field. Up to a pressure of 10^{-3} mm, the time required for positive ions to reach the cathode was insignificantly small vs. that required for electrons to reach the anode -- i. e., an electron space charge formed in this pressure range. Orig. art. has 5 figures, 1 table, and 4 formulas.

ASSOCIATION: Fizy*ko-Tekhnicheny*y Insty*tut AN URSR, Kharkov (Physico-Technical Institute AN URSR)

SUBMITTED: 30May63 DATE ACQ: 14Feb64 ENCL: 01

SUB CODE: PH, SD NO REF SOV: 000 OTHER: 002

Card 3/3

S/0057/64/034/007/1237/1241

ACCESSION NR: AP4041990

AUTHOR: Borovik, Ye.S.; Nikolayev, G.T.; Sharovskiy, B.A.

TITLE: Production of ultrahigh vacuum with a pre-heated hydrogen condensation pump

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no7.,1964, 1237-1241

TOPIC TAGS: ultrahigh vacuum, vacuum pump

ABSTRACT: An experimental vacuum system of stainless steel is described with which it was possible to bring a volume of 60 liters from atmospheric pressure to 4 x x 10^{-10} mm Hg in 14 hours. Some of the construction details are given by which a leak rate of less than 10^{-8} cm^3/hour was achieved. Pre-evacuation was accomplished with a specially rebuilt oil diffusion pump which could be isolated from the rest of the system with a special vacuum valve and was provided with a liquid nitrogen trap. The condensation pump consisted of a spherical container with a surface area of 220 cm^2 located in the tube joining the main volume to the diffusion pump. The tube containing the condensation pump was provided with a liquid nitrogen jacket, and its ends were partially closed by louvered screens cooled by liquid nitrogen. Provision was made for heating the system with external electric heating elements.

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ACCESSION NR: AP4041999

The pressure was measured with two types of ionization gage. The procedure for achieving ultrahigh vacuum in the system was as follows. After pumping down with a mechanical forepump, the diffusion pump was started, it was isolated from the system, and its liquid nitrogen trap was filled. When the diffusion pump reached a pressure of approximately 10^{-7} mm Hg it was opened to the system and the whole system was brought to this pressure. The system was then slowly heated to 400°C during the course of 1.5 to 2 hours. The heated system was pumped for a time that varied from experiment to experiment, at the end of which the pressure was again approximately 10^{-7} mm Hg. The system was then cooled and the liquid nitrogen jacket of the tube containing the condensation pump was filled. This resulted in a decrease of pressure by about a factor 10 during the course of 2 to 4 hours. The diffusion pump was finally isolated from the system, and the condensation pump was filled with liquid hydrogen. The pressure dropped very rapidly and reached its equilibrium value in an hour or two. The pumping speed of the hydrogen condensation pump was measured by the controlled leak method at pressures from 2×10^{-9} to 10^{-7} mm Hg. The pumping speed was found to be 600 liters/sec. Orig.art.has: 5 figures.

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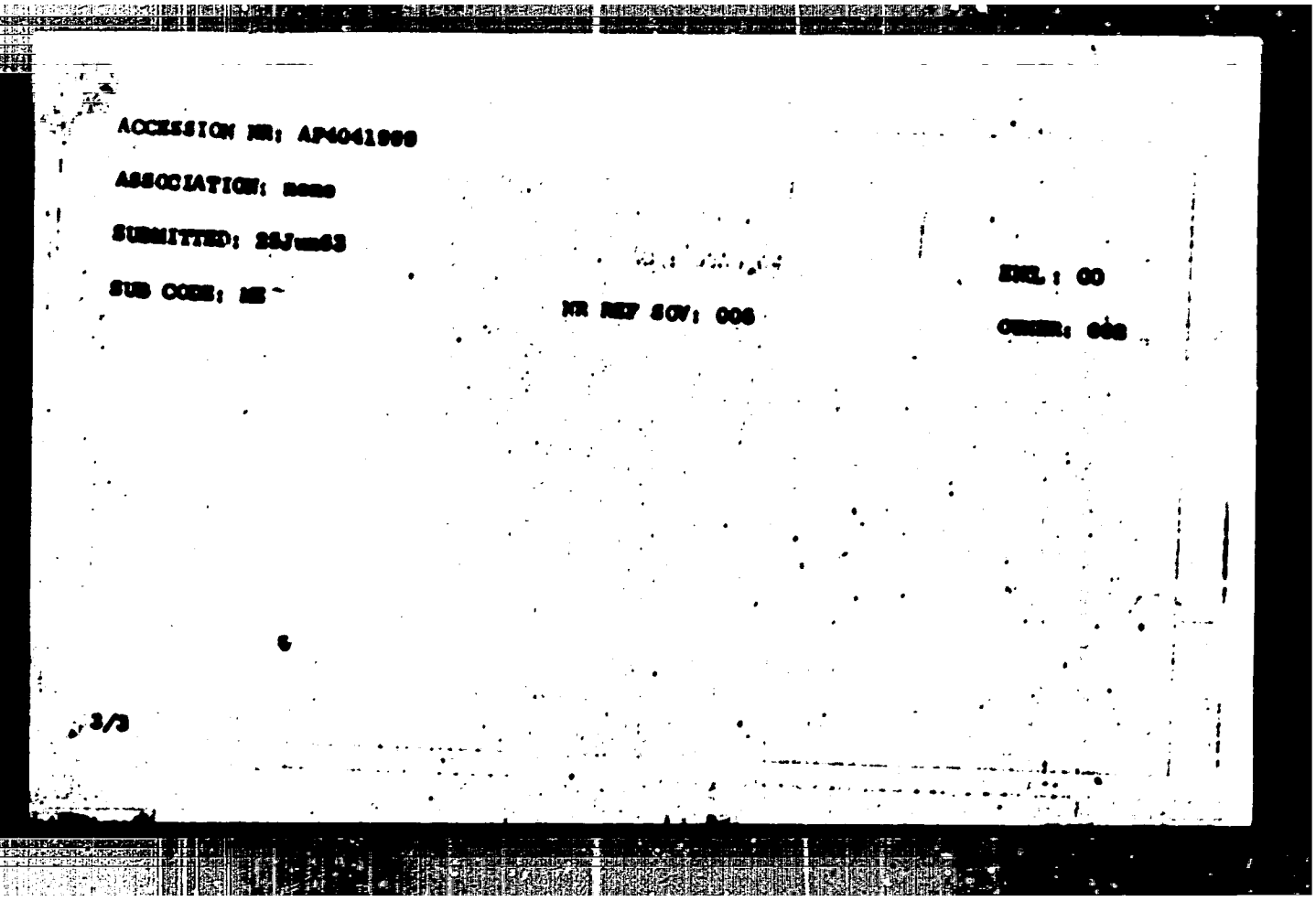

ACCESSION NR: AP4041999

ASSOCIATION: none

SUBMITTED: 25Jun63

SUB CODE: ME

NR REF SOV: 006

ENCL: 00

OTHER: 000

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Pt-4/Pz-6/Pab-10 IJP(c) AT/JW/WW/JLM/JD
S/0089/65/018/002/0091/0096
ACCESSION NR: AP5005796

AUTHOR: Borovik, Ye. S.; Katrich, N. P.; Nikolayev, [illegible]

TITLE: Penetration of atomic hydrogen ions into the surface of stainless steel

SOURCE: Atomnaya energiya, v. 18, no. 2, 1965, 91-96

TOPIC TAGS: hydrogen ion, ion penetration, stainless steel, magnetic trap, high vacuum

ABSTRACT: Since earlier tests were not made under vacuum conditions, and since the penetration of gas ions in various materials is of interest in connection with the design of magnetic plasma traps and the accompanying high-vacuum requirements, the authors describe an installation and report the results of first measurements of the coefficient of penetration of [illegible]-keV hydrogen ions into a target made of stainless steel (1Kh18N9T). A diagram of the apparatus is shown in Fig. 1 of the Enclosure. The apparatus, its preparation for measurements, and the measurements are described in detail. The use of hydrogen and helium condensation pumps ensured ultra-high vacuum in the installation. The coefficient of penetra-

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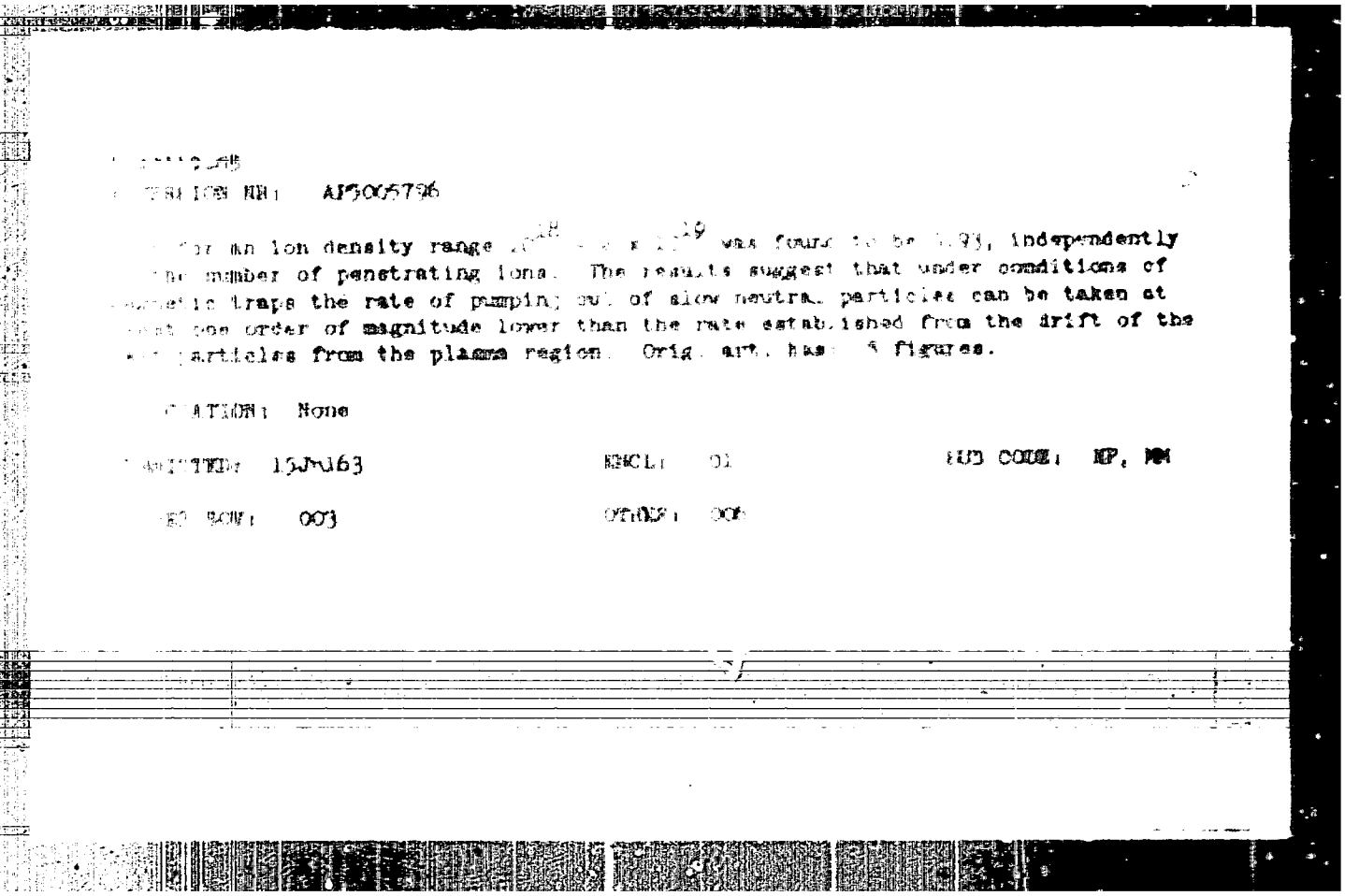

ACCESSION NR: AP5005796

For an ion density range [illegible] was found to be [illegible], independently of the number of penetrating ions. The results suggest that under conditions of [illegible] the rate of pumping out of slow neutral particles can be taken at least one order of magnitude lower than the rate established from the drift of the charged particles from the plasma region. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 15Jan63 ENCL: 01 SUB CODE: NP, NM

NO REF SOV: 003 OTHER: 002