ALTUKHOV, Konstantin Alekseyevich; MIKHAYLOVSKAYA, Aleksandra Aleksandrovna; MUKHOMEDIYAROV, Fettakh Bakirovich; NADEZHIN, Vasiliy Mikhaylovich; NOVIKOV, Petr Ignat'yevich; PALENICHKO, Zinaida Georgiyevna; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[Fishes of the White Sea] Ryby Belogo moria. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1958. 161 p. (MIRA 12:2)
(White Sea--Fishes)

YAKOVLEV, F.S.; VORONOVA, V.S.; VILIKAYNEN, M.I., kand. biol. nauk, nacunyy red.; PANKRASHOV, A.P., red.; POD"EL'SKAYA, K.M., tekhn. red.

[Forest types in Karelia and their natural zoning] Tipy lesov Karelii i ikh prirodnoe raionirovanie. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1959. 189 p. (MIRA 15:4)
(Karelia--Forests and forestry)

PLESHKOV, Aleksandr Georgiyevich; PANKRASHOV, A.P., red.; POD"YEL'SKAYA, K.M., tekhn.red.

[Remuneration of labor in logging camps] Oplata truda rabochikh na lesozagotovkakh. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1958. 40 p. (MIRA 12:12)
(Lumbering) (Wages)

GRIGOR'YEV, Vasiliy Grigor'yevich; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[For high technical and economic efficiency in logging camps] Za vysokie tekhniko-ekonomicheskie pokazateli lespromkhozov. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1958. 102 p. (MIRA 12:12)

1. Glavnyy bukhgalter upravleniya lesnoy promyshlennosti Karel'skogo sovnarkhoza (for Grigor'yev).
(Lumbering)

RUSAKOV, Dmitriy Mikhaylovich; KATAYEV, Anatoliy Timofeyevich; DEMIN, Konstantin Konstantinovich; ROGACHEVSKAYA, Nina Kirillovna; PANKRASHOV, A.P., red.

[Multipurpose utilization of lumber] Kompleksnoe ispol'zovanie drevesiny. Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1963. 121 p. (MIRA 17:6)

KARACHUN, Aleksandr Afanas'yevich; STEPAKOV, Gennadiy Andreyevich; PANKRASHOV, A.P., red.; GREYVER, I.K., tekhn. red.

[Mechanization of work at lumber landings]Mekhanizatsiia rabot na nizhnikh lesnykh skladakh. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1961. 94 p. (MIRA 15:9)
(Karelia--Lumbering) (Karelia--Loading and unloading)

KRASHENINNIKOV, Yevgeniy Mikhaylovich; MARKOV, Dmitriy Nazarovich; FREYNDLING, Aleksandr Fedorovich; PANKRASHOV, A.P., red.; PETROVA, O.B., tekhn.red.

[Machinery for lumber transportation; a brief manual] Lesotransportnye mashiny; kratkii spravochnik. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1958. 210 p. (MIRA 12:10)
(Lumber--Transportation)

DOGVAL', Viktor Ivanovich; LIVSHITS, Erik Abramovich; LYSOCHENKO, Aleksandr Alekseyevich; NADEZHIN, Konstantin Nikolayevich; NOVOZHILOV, Yuriy Ivanovich; SOKOLOV, Nikolay Aleksandrovich; FEDOSEYEV, Oleg Vasil'yevich; YASKUNOV, Nikolay Pavlovich; MAGIROVSKIY, N.P., red.; PANKRASHOV, A.P., red.; POD"YEL'SKAYA, K.M., tekhn. red.

[TDT-40M diesel timber-skidding tractor] Trelevochnyi traktor TDT-40M. Pod red.N.P.Magirovskogo. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1961. 355 p. (MIRA 14:10)
(Tractors—Design and construction)

PANKRATEV, B. E. (Prof.)

Khrurgiia Voenno-Polevykh Povrexhdenii Grudi (Surgery Concerning Chest Wounds as Practiced on Battle Fields), 375 p., Kiev, 1949.

PANKRATEV, B. R.

Hirurgiya Voenno-Polevich Povrezhdenii Crudi (Surgery of Battle-Field Chest Wounds), Kiev, 1949.

USSR/Human and Animal Physiology. The Nervous System. V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27427.

Author : M.A. Pankrator.
Inst : The Leningrad State Pedagogical Institute.
Title : Results of a Study of the Localization of Function in the Cerebral Cortex.

Orig Pub: Uch. zap. Leningr. gos. ped. in-ta, 1956, 113, 5-21.

Abstract: According to the author the basic method of localizing cortical sites associated with specialized, individually acquired motor actions boils down to the formation of a conditioned motor reflex, its subsequent extinction, and observation of the motion of excitatory and inhibitory processes by utilizing

Card : 1/3

USSR/Human and Animal Physiology. The Nervous System. V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27427.

other conditioned motor reflexes as indicators. In the first case there arises at a circumscribed site of the kinesthetic zone a focus of excitation, in the second case inhibition, and in the third is manifested the successive irradiation of both processes to the sites of other conditioned motor reflexes. Three conditioned motor reflexes were established in dogs - vocal (barking), jaw (snapping at a ring), and lifting the right anterior paw. Upon extinction of the vocal reflex, at first gradual inhibition of the jaw reflex was seen, and only then was the paw-lift affected. Recovery occurred in the reverse order. Consequently the cortical site of "jaw movement" is located closer to the center for the vocal reaction than to the

Card : 2/3

PANKRATOV, A.

Loyal promoters of party policies. Sov.profsoiuzy 6 no.16:46-51 N '58. (MIRA 12:2)

1. Sekretar' Moskovskogo oblastnogo komiteta Kommunisticheskoy Partii Sovetskogo Soyuza.
(Moscow Province--Trade unions)

Country : USSR
Category : Diseases of Farm Animals. B
Diseases Caused by Bacteria and Fungi.
Abs. Jour : Ref Zhur-Biol., No 21, 1958, 96958

Author : Pankratov, A.
Institut. :
Title : Investigating Diarrhea in Horses.

Orig Pub. : S. kh. Kirgizii, 1957, No 12, 12-16

Abstract : No abstract.

Card: 1/1

Pankratov, A.

PANKRATOV, A., tekhnik.

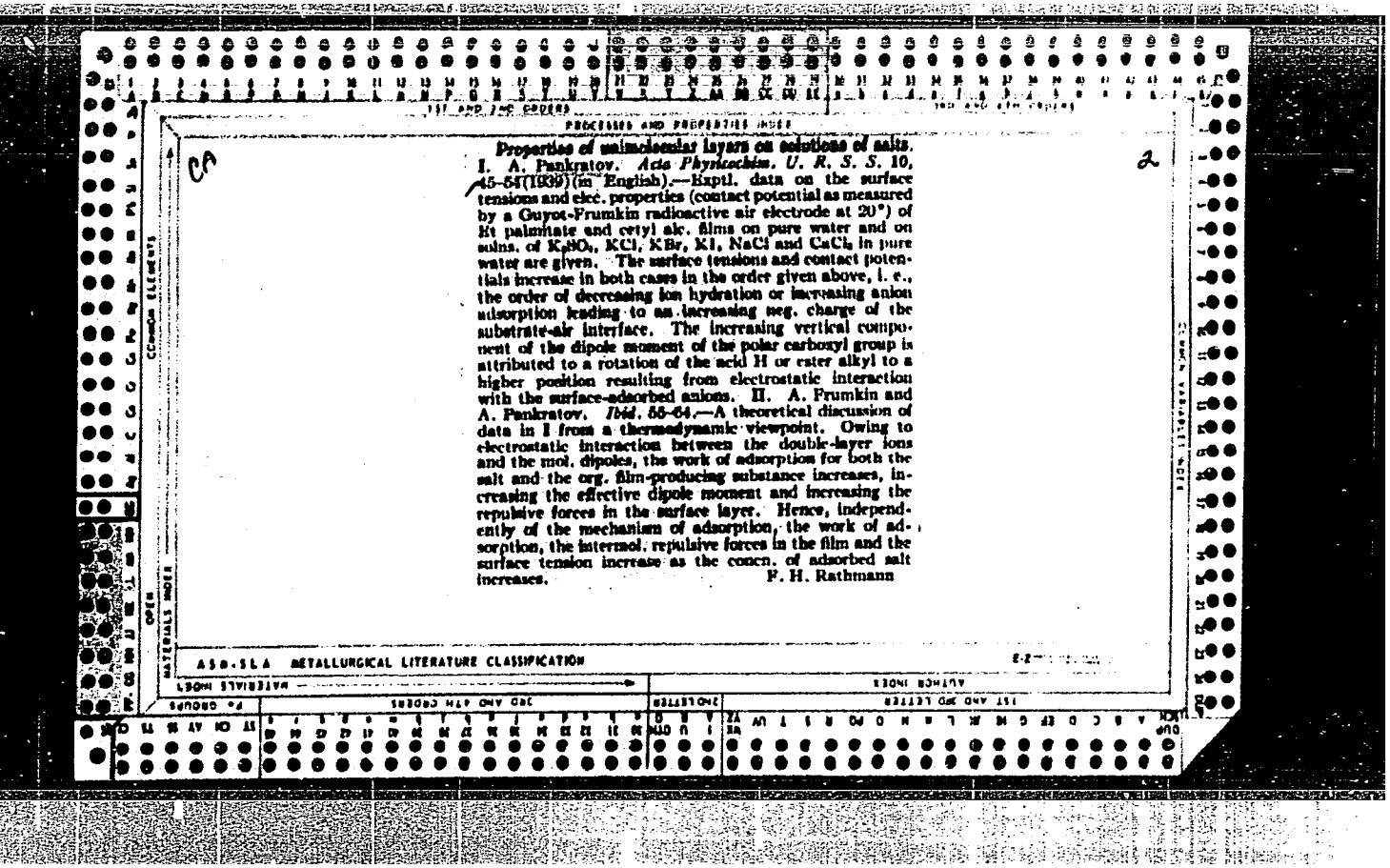
Make wider use of local building materials. Sel'.stroi.11 no.7:29 Jl '56. (MIRA 9:9)

1.Otdel po stroitel'stvu v kolkhozakh Beshenkovichskogo rayona Vitebskoy oblasti BSSR.
(Building, Adobe)

PANKRATOV, A.

Kilning raw bricks of increased moisture. Prom.koop. no.10:19 O '56.
(MLRA 9:11)

1. Rukovoditel' planovoy gruppy Ust'-Labinskoy arteli "Krasnyy kirpichnik," Krasnodarskiy kray.
(Brickmaking)



Properties of unimolecular layers on solutions of salts. I. A. Pankratov. *Acta Physicochim. U. R. S. S.* 10, 45–64 (1939) (in English).—Exptl. data on the surface tensions and elec. properties (contact potential as measured by a Guyot-Frumkin radioactive air electrode at 20°) of Et palmitate and cetyl alc. films on pure water and on solns. of K_2SO_4, KCl, KBr, KI, NaCl and $CaCl_2$ in pure water are given. The surface tensions and contact potentials increase in both cases in the order given above, i. e., the order of decreasing ion hydration or increasing anion adsorption leading to an increasing neg. charge of the substrate-air interface. The increasing vertical component of the dipole moment of the polar carboxyl group is attributed to a rotation of the acid H or ester alkyl to a higher position resulting from electrostatic interaction with the surface-adsorbed anions. II. A. Frumkin and A. Pankratov. *Ibid.* 55–64.—A theoretical discussion of data in I from a thermodynamic viewpoint. Owing to electrostatic interaction between the double-layer ions and the mol. dipoles, the work of adsorption for both the salt and the org. film-producing substance increases, increasing the effective dipole moment and increasing the repulsive forces in the surface layer. Hence, independently of the mechanism of adsorption, the work of adsorption, the intermol. repulsive forces in the film and the surface tension increase as the concn. of adsorbed salt increases.

F. H. Rathmann

KABLUKOVSKIY, A.F.; PANKRATOV, A.A.

Economy of nickel in the electrometallurgy of steel. Metallurg 6 no.3:17-22 Mr '61. (MIRA 14:5)

1. Zavod "Elektrostal'."
(Steel--Electrometallurgy)

PANKRATOV, A.A. (Kalinin)

Representation of spatial figures in a course of stereometry. Mat.v shkole no.3:44-47 My-Je '54. (MLRA 7:6)
(Mensuration)

PANKRATOV, A.A. (Kalinin)

Methods of studying the topic of parallel projections in grade 9.
Mat. v shkole no.3:7-15 My-Je '58. (MIRA 11:5)
(Geometry, Projective--Study and teaching)

ILUPIN, I.P.; KOZLOV, I.T.; PANKRATOV, A.A.

Origin of the associated minerals of diamonds in Yakutian kimberlites. Zap.Vses.min.ob-va 90 no.4:488-492 '61. (MIRA 14:9)

1. Amakinskaya ekspeditsiya Yakutskogo geologicheskogo upravleniya Glavgeologii RSFSR.
(Yakutia--Diamonds) (Yakutia--Kimberlites)

BOBRIYEVICH, A.P.; ILUPIN, I.P.; KOZLOV, I.T.; LEBEDEVA, L.I.; PANKRATOV, A.A.; SMIRNOV, G.I.; KHAR'KIV, A.D.; SOBOLEV, V.S., red.; BASHMAKOVA, Z.I., ved. red.

[Petrography and mineralogy of kimberlite rocks in Yakutia] Petrografiia i mineralogiia kimberlitovykh porod IAkutii. [By] A.P.Bobrievich i dr. Moskva, Nedra, 1964. 189 p. (MIRA 18:1)

S/130/61/000/003/003/008
A006/A001

AUTHORS: Kablukovskiy, A.F., Deputy Chief Engineer, Pankratov, A.A.

TITLE: Savings of Nickel in Electric Steelmelting Production

PERIODICAL: Metallurg, 1961, No. 3, pp. 17 - 22

TEXT: A series of measures were taken at the "Elektrostal'" Plant to achieve savings of nickel during the melting of steels and alloys in electric arc and induction furnaces. These measures include: 1) Remelting of alloy waste in electric arc furnaces using oxygen. The melting of 1Х18Н9Т (1Kh18N9T) steel by this method shows the following characteristic features. It is allowed to use 100% alloy waste in the charge, C not less than 0.15% above the upper limit of the steel grade to be remelted and 0.8 - 1.0 silicon; slag forming components - none. To accelerate melting of the heat, oxygen blowing should be started 55 - 65 minutes after switching on the current. After oxidizing the pool by blowing through water-cooled tuyeres, the required amount of ferrochromium is added. Oxygen blast can not be used to speed up the melting of ferrochromium. Liquefaction and reduction of Cr from slag oxides during the reduction period is achieved by deoxidation with 15 - 25 kg/t silicochrome (33% Cr and 50% Si) or 45% FeSi in 10 - 20 mm lumps.

Card 1/8

S/130/61/000/003/003/008
A006/A001

Savings of Nickel in Electric Steelmelting Production

The metal temperature in the ladle should be 1,550 - 1,600°C. The metal is syphon-cast into round non-greased molds to ingots of 500 kg and more. The Cr content in the finished metal should be within 17.0 - 18.0%, and Ni 9.0 - 9.5% (for sheets) and 10.2 - 11.0% (for pipes). The average time of melting 1Kh18N9T steel with oxygen on a 20-ton furnace is 2.7 - 3.0 hours. Remelting of nickel-containing waste permits the standardization of the charge as to the Ni and Cr content and ensures the chemical composition required at a minimum consumption of Ni. 2) Improving the technology of melting Cr-Ni-Mi-Cu 3Ч 629 (EI629) steel containing not over 0.10% Cr; 1.0% Si; 1.0% Mn; 0.02% S; 0.03% P; 17.0-19.5% Cr; 27.0-30.0% Ni; 2.5-3.5% Mo; 2.5-4.5% Cu and not over 0.7% Ti. The characteristic peculiarities of this process of melting acid-resistant steel are: a) alloying of ferrochromium, nickel, ferromolybdenum and copper with Armco-iron and wastes; b) deep deoxidation of the pool during the reduction of the heat, with silico-calcium and calcium metal; c) low temperature ranges of the metal in the ladle after teeming; d) teeming of steel to ingots only by syphon-casting. The melting of acid-resistant steel by this new technology reduced the amount of metal reject by almost a factor of 5, increased the output and reduced nickel and copper consumption per 1 ton of high-quality ingots. 3) Production of stainless-steel substitutes, low-alloyed with nickel, and with high manganese and nitrogen content. Approximate

Card 2/8

Savings of Nickel in Electric Steelmelting Production

chemical composition of such steels is: up to 0.1% C; up to 0.8% Si; 4.0-6.0% Mn; not over 0.03% S; not over 0.035% P; 17.0-20.0% Cr; 1.5-2.5% Ni; 0.15-0.20% N. Chrome manganese steel with nitrogen is melted in induction and arc furnaces with basic linings. The charge contains wastes of steel to be melted; mild iron with up to 0.05% C, nitrated ferrochromium, and nickel. Manganese is added within 5.5-5.8%; silicocalcium 5 - 6 kg/t. The temperature of liquid steel is 1,520 - 1,550°C. In the arc furnace, reduction is conducted under white slag which is deoxidized with crushed coke (2 - 3 kg/t) and silico-calcium powder (3 - 5 kg/t). In an induction furnace the slag is deoxidized with a mixture of aluminum powder and lime. Calcium metal and nickel magnesium alloy are added into the pool 20 and 10 minutes prior to teeming, respectively. The metal temperature in the furnace should then be 1,500 - 1,520°C. The metal is syphon-cast into round molds to ingots of 500 kg and more. The replacing of stainless 1Kh18N9T steel by manganese steel with nitrogen, having similar properties, yields savings of nickel as high as 70 kg per ton of finished metal. 4) The Institute of Electric Welding imeni Ye.O. Paton developed a new method of producing ingots by electric slag remelting of consumable electrodes in a water-cooled copper crystallizer. The electrode is melted by the heat liberated in the molten slag layer which plays the part of resistance when the electric current is passed through. The unit (Figure 1) for electric slag remelting consists of a water-cooled copper crystal-

lizer, a copper bottom plate and an electrode column with a chuck-support. Round crystallizers of 180 - 420 mm section are used. The electrode diameter is 80 - 300 mm. Steel bars are welded to the electrodes which are clamped into the support. Fluxes of two types are employed: the АНФ-6 (ANF-6) operational flux containing about 60% CaF_2; 30-38% Al_2O_3; 3-6% CaO; up to 2% SiO_2 and not over 1% MgO and Fe_2O_3; the electroconducting solid flux for the initiation of the electroslag process, composed of a mixture of ПАМ-3 (PAM-3) alumomagnesium powder and the operational flux. The electric slag process warrants conditions assuring the production of ingots of compact cast structure, purifying the metal from harmful impurities and non-metallic inclusions; and reducing segregational phenomena. Saving of nickel is achieved by using rolled rod rejects as consumable electrodes. The remelting of these rods produces high-quality ingots and forgings without internal defects. 5) Protection of liquid metal against oxidation during teeming is brought about by using special vacuum-argon chambers (Figure 2) where large or small-size ingots can be top or syphon cast in a rarefied space or inert gas atmosphere. The chamber consists of a stationary floor and a removable cupola. In syphon casting a bottom plate, molds, extension pieces and a centering device are mounted on the floor. The cupola is placed upon the floor and the air is evacuated until a residual pressure of not over 1 mm Hg has been obtained. The ladle

with the metal is placed in the guides at the cupola top in such a manner that the axis of the ladle nozzle coincides with the center of the aperture for the metal jet. After evacuation the chamber is filled with argon. This method improves the surface of the ingots, reduces the depth of stripping, increases the output of metal and reduces nickel consumption. 6) Alloy scrap is reutilized by extracting and remelting in arc furnaces to standard ingots which are employed for the melting of nickel-containing steel. This process saved about 130 tons of nickel during 1960. 7) Collection and utilization of emery dust containing up to 8 - 12% nickel, is performed by equipping the emery mills with a suction ventilator. The dust is collected in special containers and transported to plants for processing. The enumerated measures yielded considerable savings in nickel.

Card 5/8

Savings of Nickel in Electric Steelmelting Production

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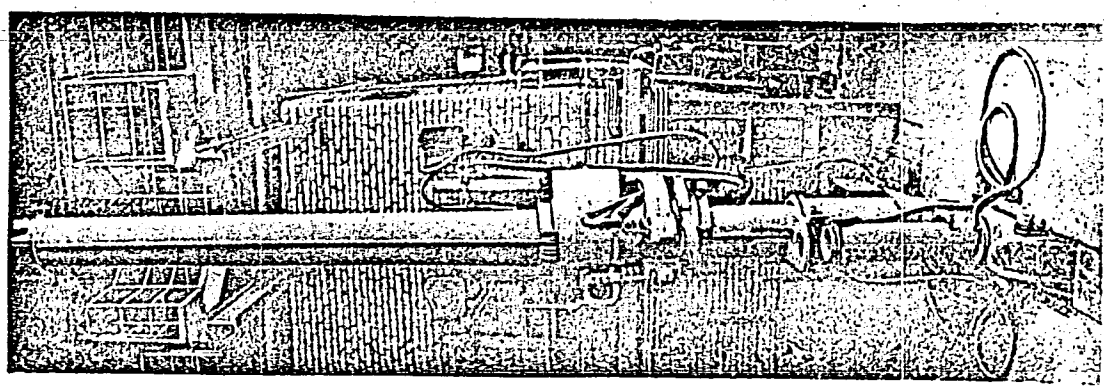
Figure 1: Installation for electroslag remelting



Card 6/8

Savings of Nickel in Electric Steelmelting Production

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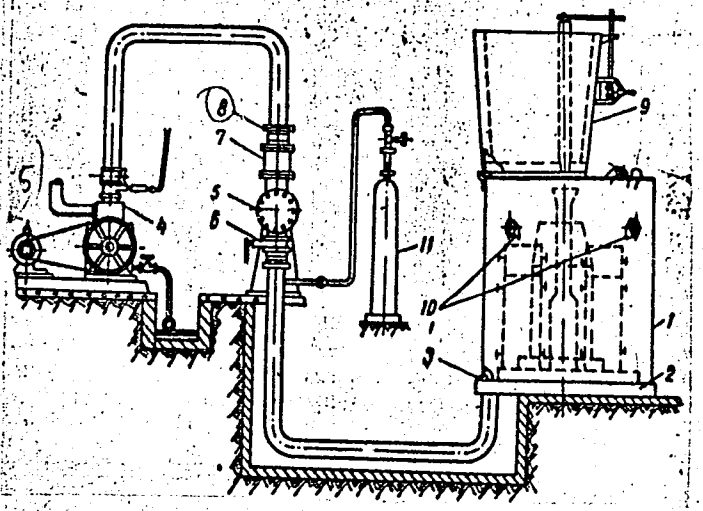


Figure 2

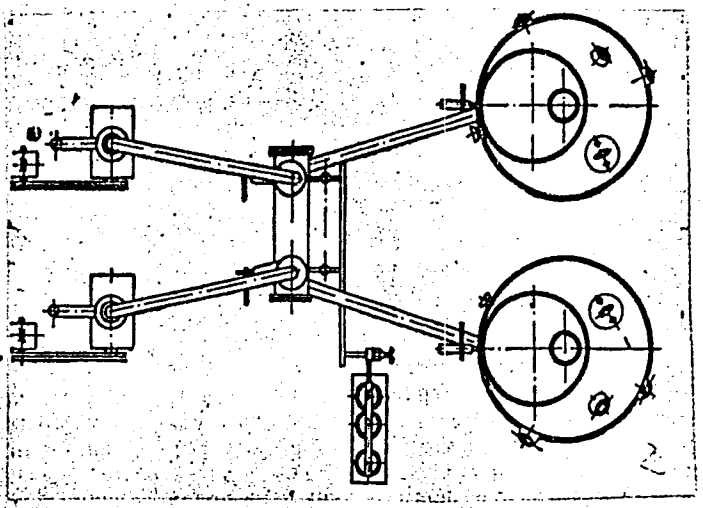
Schematic drawing of a unit for teeming steels and alloys in a vacuum and inert gas atmosphere: 1 - cupola; 2 - support bottom plate; 3 - rubber padding; 4 - vacuum pump; 5 - collecting filter; 6 - valve; 7 - filters; 8 - flexible bellows; 9 - steel teeming ladle; 10 - operational apertures; 11 - inert gas cylinder.

Card 7/8

S/130/61/000/003/003/008
A006/A001

Savings of Nickel in Electric Steelmelting Production

Figure 2 continued:



There are 2 figures and 3 tables.

ASSOCIATION: Zavod "Elektrostal'" (Electrostal' Plant)

Card 8/8

PANKRATOV, A.A. (Kalinin)

On the construction of figures in solid geometry. Mat. v shkole no.4: 23-31 Jl-Ag '56. (Geometrical drawing) (MLRA 9:9)

AGEYEVA, A.P.; AKSENOVA-CHERKASOVA, A.S., aspiranka; VELIKANOV, L.N., bibliotekar'; GAVVA, F.M.; GIRENKO, P.D., Geroy Sots. truda; GUBANOV, M.M., pensioner; GUS'KOVA, T.K., nauchnyy sotr.; DAVYDOV, A.G., prepodavatel'; DANILEVSKIY, V.V., prof., dvazhdy laureat Stalinskoy premii; DOVGOPOL, V.I., laureat Stalinskoy premii; YELOKHIN, M.F.; YERMAKOV, A.D.; IVANOV, V.G., prepodavatel'; KOVALEVICH, V.K.; KOVALEVSKAYA, Ye.S., zhurnalistka; PANKRATOV, A.G.; POPOVA, F.M.; URYASHOV, A.V.; FEDORIN, I.M., kand. ist. nauk; FILIPPOV, F.R.; CHUMAKOV, N.P.; SHEPTAYEV, K.T., zhurnalist; VAS'KOVSKIY, O.A., kand. ist. nauk, retsenzent; KULAGINA, G.A., kand. ist. nauk, retsenzent; GORCHAKOVSKIY, P.L., prof., doktor biol. nauk, retsenzent; BAKHMUTOVA, V., red.; SAKNYN', Yu., tekhn. red.

[Nizhniy Tagil]Nizhnii Tagil. Sverdlovsk, Sverdlovskoe knizhnoe izd-vo, 1961. 294 p. (MIRA 16:1)

1. Nizhne-Tagil'skiy krayevedcheskiy muzey (for Ageyeva, Gus'kova). 2. Zaveduyushchiy gorodskim otdelom narodnogo zdravookhraneniya, Nizhniy Tagil (for Velikanov). 3. Zaveduyushchiy gorodskim sel'skokhozyaystvennym otdelom goroda Nizhniy Tagil (for Gavva). 4. Nachal'nik upravleniya stroitel'stvom Sverdlovskogo sovnarkhoza (for Girenko). 5. Deystvitel'nyy chlen Akademii nauk Ukr. SSR, Leningradskiy politekhnicheskiy institut (for Danilevskiy).

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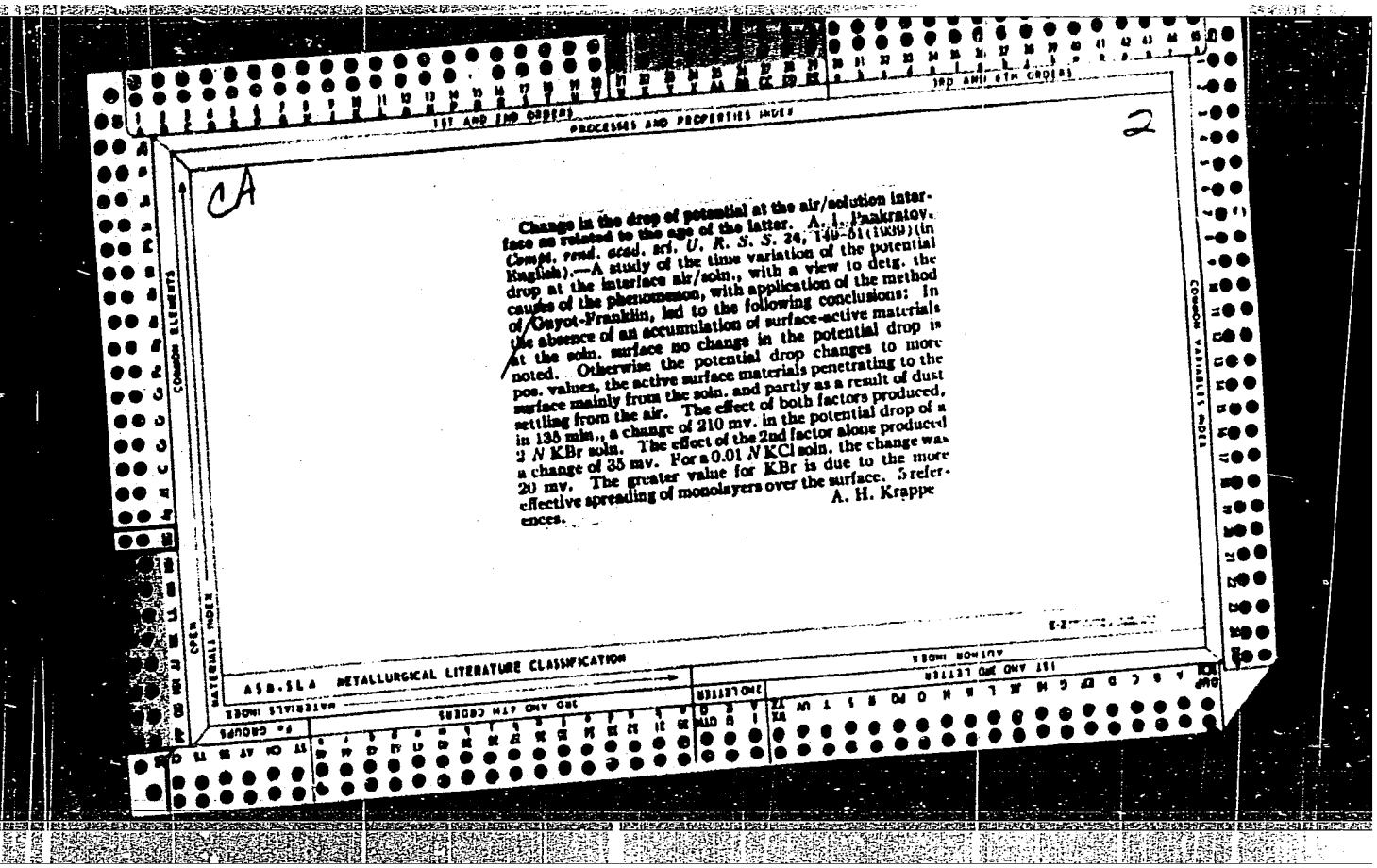
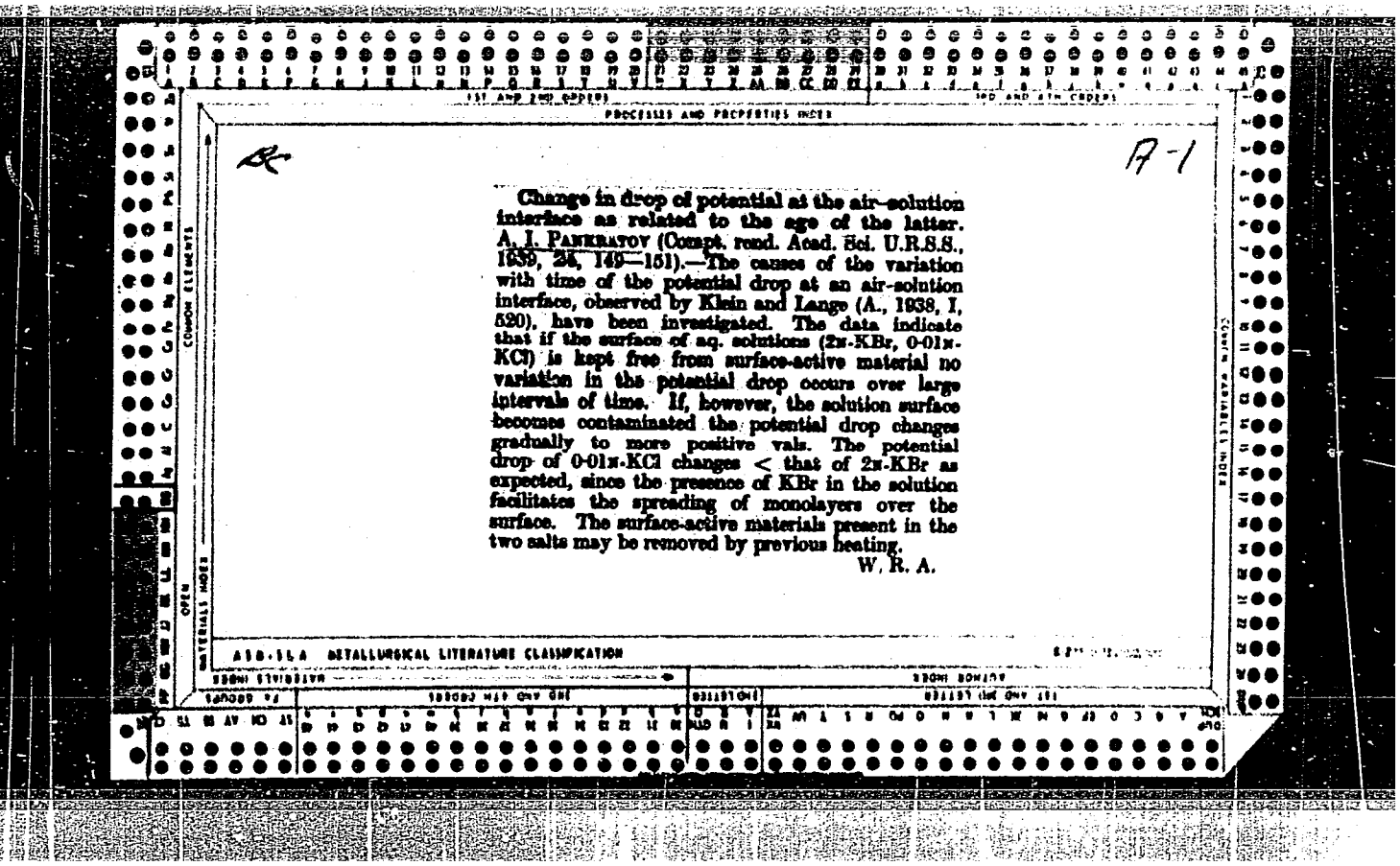


CA

2

Change in the drop of potential at the air/solution interface as related to the age of the latter. A. I. Isakratov. *Compt. rend. acad. sci. U. R. S. S.* 24, 140–51 (1939) (in English).—A study of the time variation of the potential drop at the interface air/soln., with a view to detg. the causes of the phenomenon, with application of the method of Guyot-Franklin, led to the following conclusions: In the absence of an accumulation of surface-active materials at the soln. surface no change in the potential drop is noted. Otherwise the potential drop changes to more pos. values, the active surface materials penetrating to the surface mainly from the soln. and partly as a result of dust settling from the air. The effect of both factors produced, in 135 min., a change of 210 mv. in the potential drop of a 2 *N* KBr soln. The effect of the 2nd factor alone produced a change of 35 mv. For a 0.01 *N* KCl soln. the change was 20 mv. The greater value for KBr is due to the more effective spreading of monolayers over the surface. 5 references.

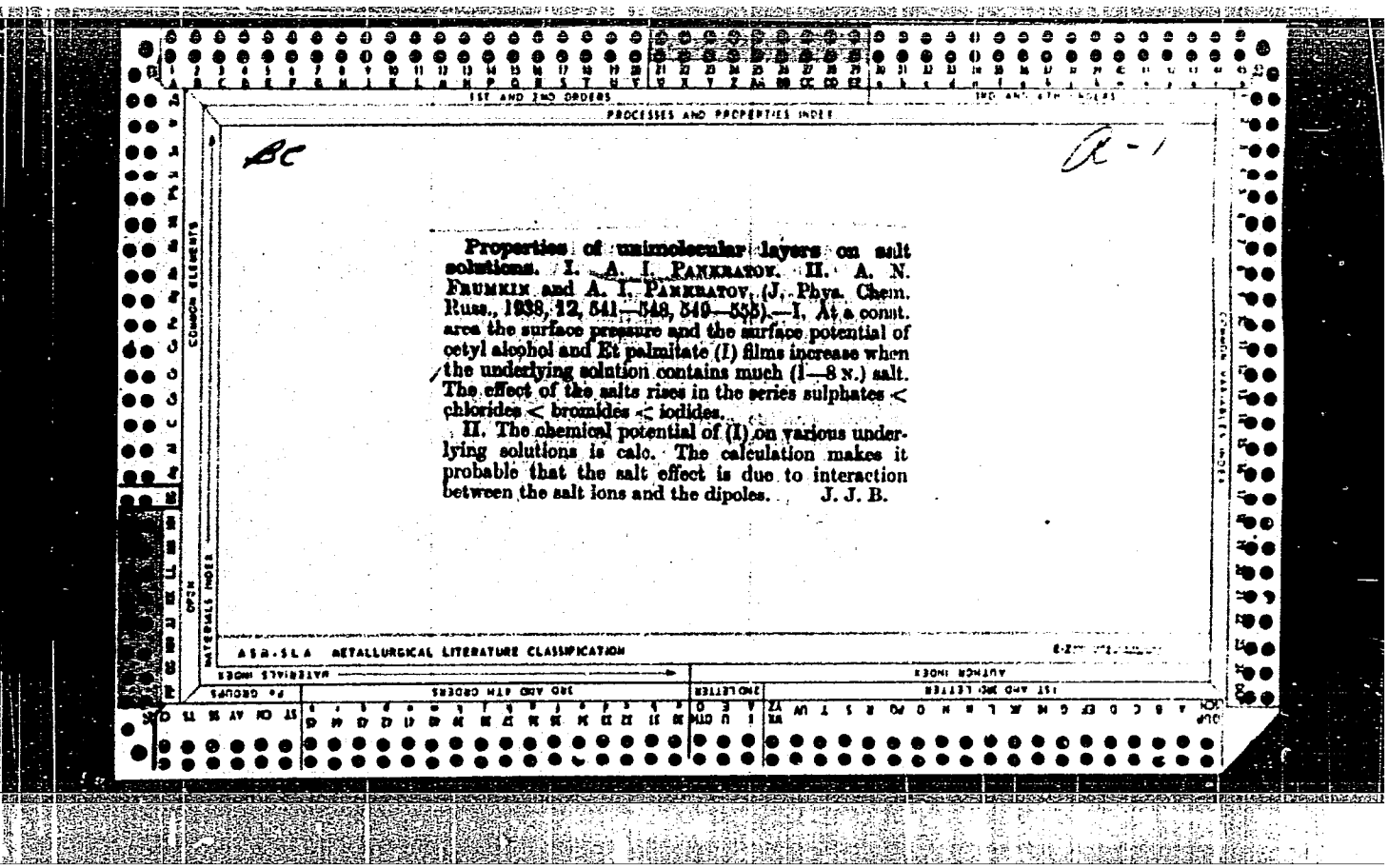
A. H. Krappe



A-1

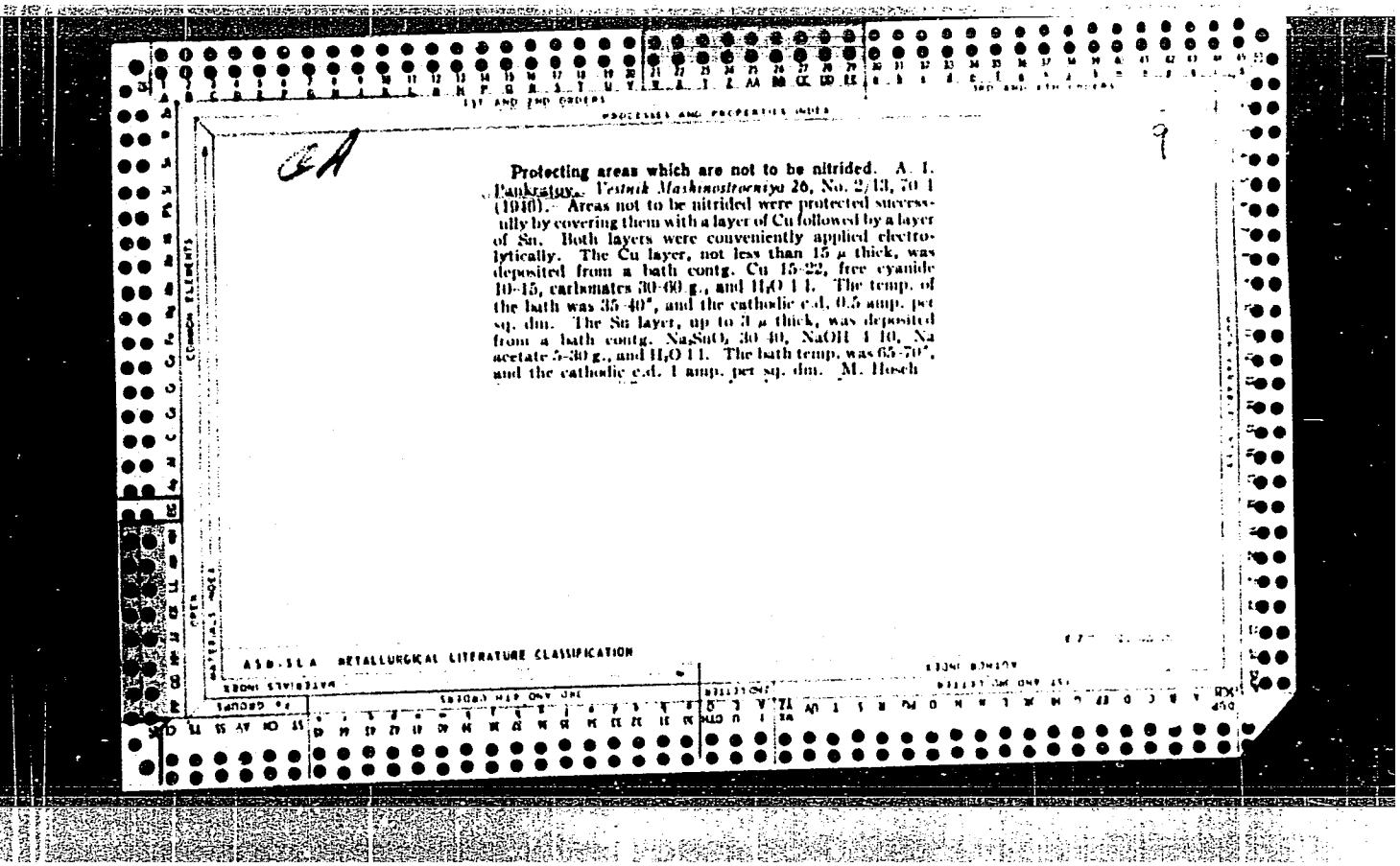
Change in drop of potential at the air-solution interface as related to the age of the latter. A. I. PANKRATOV (Compt. rend. Acad. Sci. U.R.S.S., 1939, 24, 149—151).—The causes of the variation with time of the potential drop at an air-solution interface, observed by Klein and Lange (A., 1938, I, 520), have been investigated. The data indicate that if the surface of aq. solutions (2N-KBr, 0·01N-KCl) is kept free from surface-active material no variation in the potential drop occurs over large intervals of time. If, however, the solution surface becomes contaminated the potential drop changes gradually to more positive vals. The potential drop of 0·01N-KCl changes < that of 2N-KBr as expected, since the presence of KBr in the solution facilitates the spreading of monolayers over the surface. The surface-active materials present in the two salts may be removed by previous heating.

W. R. A.



Properties of unimolecular layers on salt solutions. I. A. I. Pankratov. II. A. N. Frumkin and A. I. Pankratov. (J. Phys. Chem. Russ., 1938, 12, 541—548, 549—558).—I. At a const. area the surface pressure and the surface potential of cetyl alcohol and Et palmitate (*I*) films increase when the underlying solution contains much (1—8 N.) salt. The effect of the salts rises in the series sulphates < chlorides < bromides < iodides.

II. The chemical potential of (I) on various underlying solutions is calc. The calculation makes it probable that the salt effect is due to interaction between the salt ions and the dipoles. J. J. B.



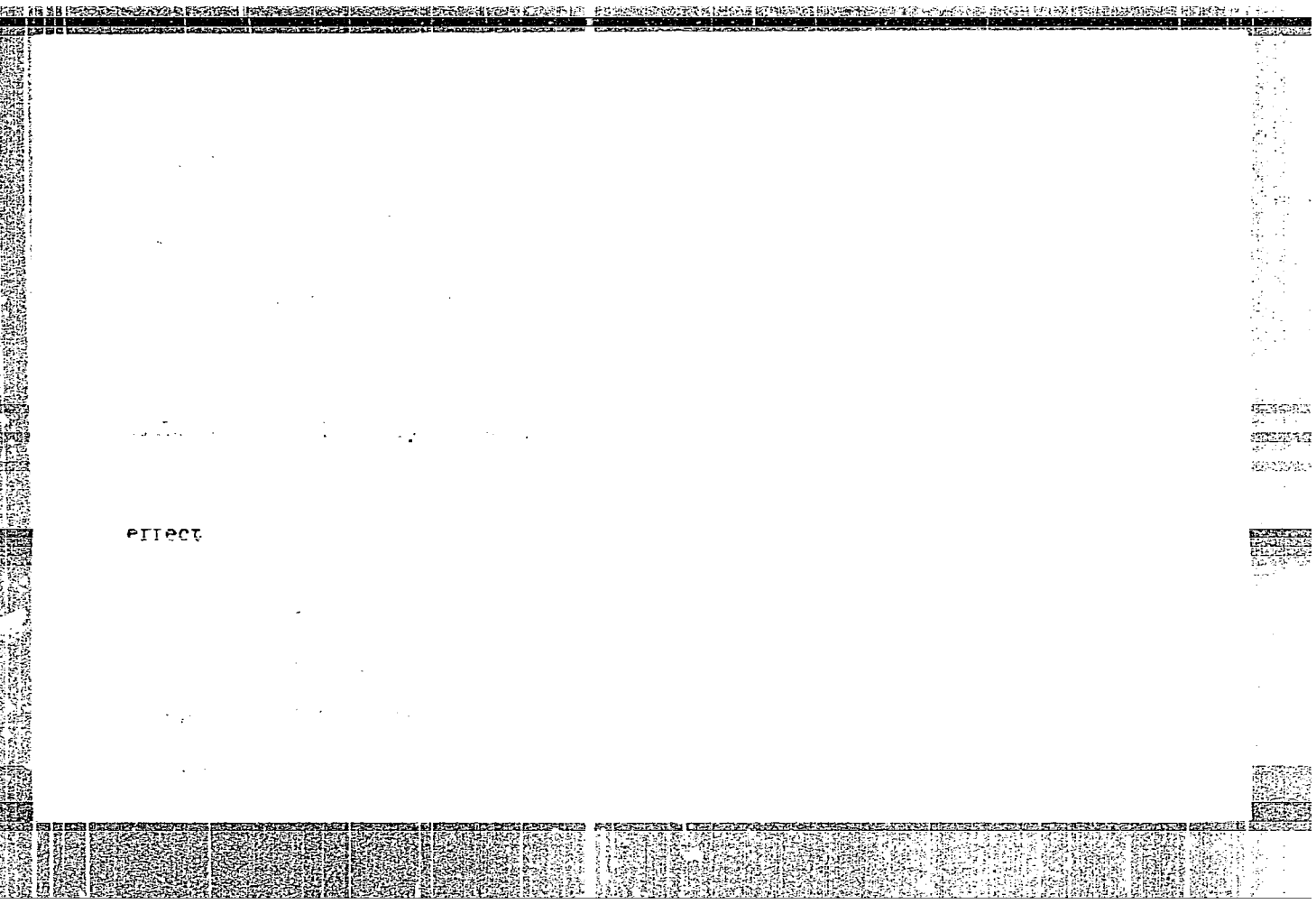
Protecting areas which are not to be nitrided. A. I. Pankratov. *Vestnik Mashinostroeniya* 26, No. 2/13, 70-1 (1946). Areas not to be nitrided were protected successfully by covering them with a layer of Cu followed by a layer of Sn. Both layers were conveniently applied electrolytically. The Cu layer, not less than 15 μ thick, was deposited from a bath contg. Cu 15–22, free cyanide 10–15, carbonates 30–60 g., and H_2O 1 l. The temp. of the bath was 35–40°, and the cathodic c.d. 0.5 amp. per sq. dm. The Sn layer, up to 3 μ thick, was deposited from a bath contg. Na_2SnO_3 30–40, NaOH 1–10, Na acetate 5–30 g., and H_2O 1 l. The bath temp. was 65–70°, and the cathodic c.d. 1 amp. per sq. dm. M. Hosch

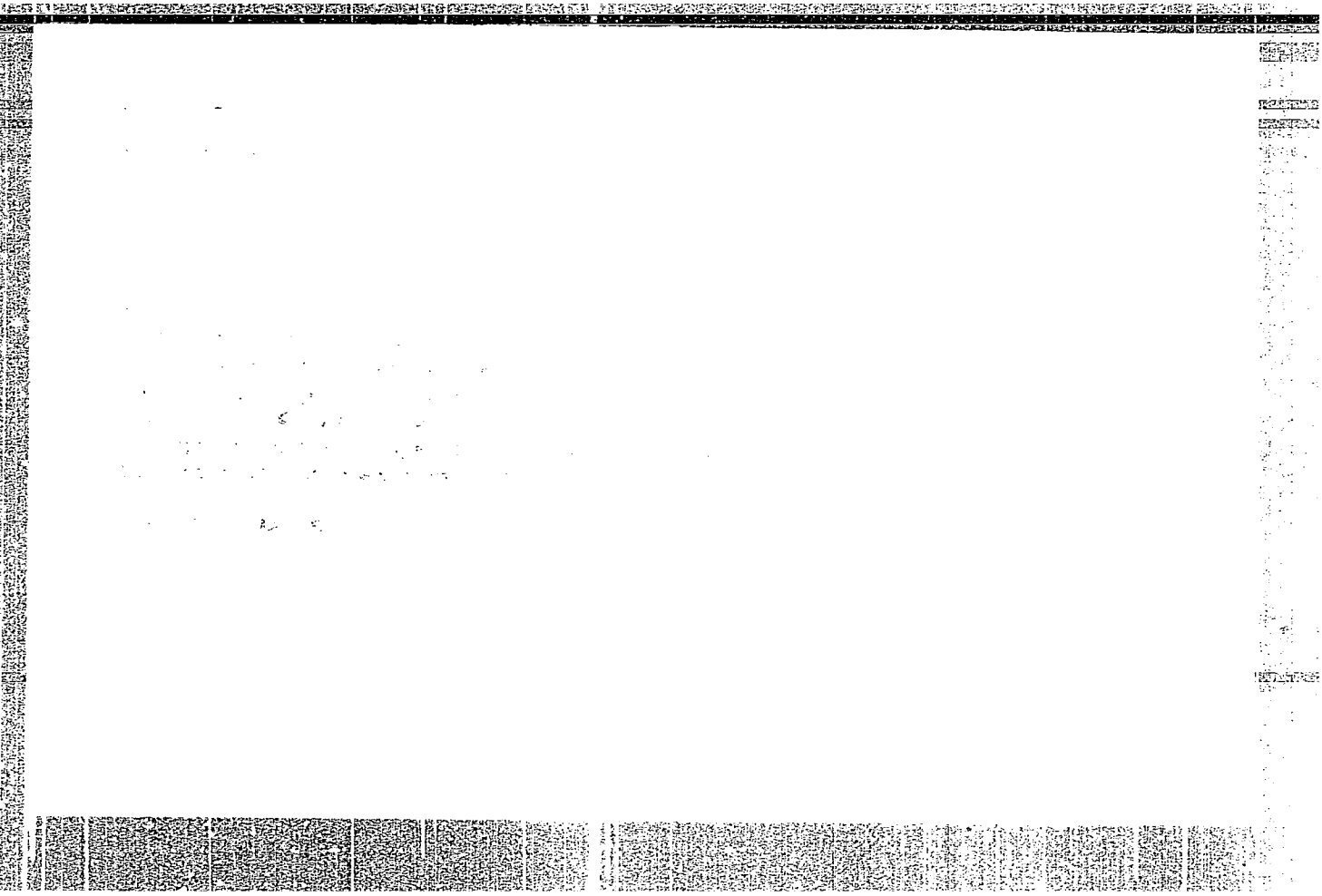
PANKRATOV, A. I.

"Change in the Drop of Potential at the Air Solution Interface as Related to the Age of the Latter", Dok. AN, 24, NO. 2, 1939. Moscow State Univ.; Electrochemistry Lab., -1939-.

PANKRATOV, A.K.

Radio frequency and x-radiation from solar flares. Izv. Krym. astrofiz. obser. 29:160-174 '63. (MIRA 16:10)





AUTHOR: Vladimirskiy, B.M.; Pankratov, A.K.

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Card 1/3

L 30408-65

ACCESSION NR: AR5011848

the vicinity of wavelengths $\lambda \leqslant 8$ A, use was made of experimental data on (a) the minimum frequencies of reflections from the ionosphere with vertical sounding, (b) the absorption of short radio waves, (c) the absorption of cosmic radio waves, and (d) the sudden increases in atmospherics. The data on the increase in the intensity of cosmic rays during chromospheric flares were obtained from published works (on the greater effects) and also from data obtained through observations made by means of neutron monitors at high-latitude stations. For studying the relationship with X-radiation, use was made only of the relativistic portion of the energy spectrum of solar cosmic rays, since it is least subject to variations in the conditions of the distribution of particles in interplanetary space. A statistical analysis of three groups of flares (of intensity $\leqslant$ c, c, and $\geqslant$ c on the H_α line) showed that chromospheric flares with an X-ray flux in the vicinity of wavelengths $\lambda \leqslant 8$ A, greater than $2 \cdot 10^{-3}$ erg/cm^{2}sec, causes an average increase of ~0.4% in the intensity of the neutron component of the cosmic rays at sea level and that the amplitude of the increase is virtually independent of the intensity of the chromospheric flare. On the other hand, flares with an X-ray flux of less than $2 \cdot 10^{-3}$ erg/cm^{2}sec within the limits of statistical errors do not cause an increase in the intensity of neutrons at sea level. By analyzing the data on the large cosmic ray flares the authors show that there is, on the average, a direct

Card 2/3

L 60408-65

ACCESSION NR: AR5011848

relationship between the magnitude of absorption of radiowaves in the D-layer during a solar flare and the amplitude of increase in cosmic intensity at sea level. The authors also show that an increase in the cosmic ray [illegible] spheric flare at sea level is always accompanied by corresponding ionospheric effects in the D-layer, caused by X-radiation, in the vicinity of [illegible]. On the other hand, the authors show that the presence of an X-radiation [illegible] ionizing absorption in the D-layer [illegible] increase in the intensity of cosmic rays at sea level. Refer[illegible]

SUB CODE: AA, ES ENCL: 00

Card 3/3

VLADIMIRSKIY, B.M.; PAVKRATOV, A.K.

X radiation of flares, and solar cosmic rays. Izv. AN SSSR Ser. fiz. 28 no.12:2019-2021 D '64 (MIRA 18:2)

1. Krymskaya astrofizicheskaya observatoriya.

[illegible]

[illegible]

[illegible]

TITLE: On the connection between the [illegible]

[illegible]

[illegible]

TRANSLATION: From a comparison of [illegible]

[illegible]

SUB CODE: AA

Card 1/1

DVORYASHIN, A.S.; LEVITSKIY, L.S.; PANKRATOV, A.K.

Active solar regions and their corpuscular emission. Astron. zhur. 38 no.3:419-438 My-Je '61. (MIRA 14:6)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Solar radiation)

3,2430

S/033/62/039/003/003/010
E032/E114

AUTHORS: Dvoryashin, A.S., Levitskiy, L.S., and Pankratov, A.K.

TITLE: X-ray emission of flares

PERIODICAL: Astronomicheskiy zhurnal, v.39, no.3, 1962, 428-438

TEXT: The authors describe a method of studying the X-ray emission of flares, which involves the use of the minimum reflection frequencies f_{min} obtained from the world-wide network of ionospheric stations. The idea is that since the path traversed by the radiation in the atmosphere is different for different stations, the atmosphere may be looked upon as a type of filter, so that the energy of the photons reaching a particular station depends on its position in the atmosphere. The experimental data on chromospheric flares of importance 3 and 3+ were taken from the observatory working list of flares reported by H.W. Dodson and E.R. Hederman. Among flares of importance 2+ only proton flares were included in the analysis. Finally, radio bursts at 9400 Mc/sec and the minimum frequencies f_{min} were taken from published data of the Crimean Astrophysical Observatory and from

X-ray emission of flares

S/033/62/039/003/003/010
E032/E114

IGY data. Analysis of the relation between the time characteristics (onset, maximum, and termination) of X-ray and radio emission of flares on the one hand, and optical characteristics in the visible part of the spectrum on the other, has shown that the time dependence of the X-ray and radio emission is very nearly the same, but the H_α emission of flares begins earlier than the other two. Comparison of the minimum frequencies f_{min} recorded during ordinary and proton flares showed that there is considerable increase in the intensity of X-ray emission during proton flares. The energy of the ionising radiation has been estimated for the proton flares of March 23, 1958, and June 14, 1959. Assuming that the additional ionization in the ionosphere at tangential incidence of the radiation on the D layer occurs at about 60 km, it is shown that hard photons with energies of up to about 1 Mev should be generated in proton flares. There are 5 figures and 2 tables.

ASSOCIATION: Krymskaya astrofizicheskaya observatoriya Akademii nauk SSSR (Crimean Astrophysical Observatory, AS USSR)

SUBMITTED: December 26, 1961.

Card 2/2

41287
S/035/62/000/010/040/128
A001/A101

AUTHORS: Dvoryashin, A. S., Levitskiy, L. S., Pankratov, A. K.

TITLE: Chromospheric flares and corpuscular radiation of the Sun in regions of low and high energies

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 10, 1962, 54 - 55, abstract 10A376 ("Izv. Krymsk. astrofiz. observ.", 1961, v. 26, 90 - 135, English summary)

TEXT: The authors investigate a relation between absorption in high geomagnetic latitudes and disturbance of the magnetic field during 1957 - 1959 in connection with processes in active regions on the Sun. Analyzing experimental data, conclusions have been drawn on generation on the Sun of high-energy ...tons (10 - 100 Mev) during development of chromospheric flares and their ... the chromospheric flare regions simultaneously with plasma clouds ...orms on the Earth. Existence of interplanetary magnetic ... the long delay time in arriving protons (10 - 100 Mev) ...tling of protons onto the polar cap. Their

PANKRATOV, A.K.

Diagnosis of acute appendicitis. Vest.khir. 89 no.9:126-127 S '62. (MIRA 15:12)

(APPENDICITIS)

DVORYASHIN, A.S.; LEVITSKIY, L.S.; PANKRATOV, A.K.

Study of flares in the X-ray spectral region. Astron.zhur. 39 no.3:428-438 My-Je '62. (MIRA 15:5)

1. Krymskaya astrofizicheskaya observatoriya AN SSSR.
(Solar radiation)

38248
S/169/62/000/005/090/093
D228/D307

3.1540
3,2430

AUTHORS: Dvoryashin, A. S., Levitskiy, L. S. and Pankratov, A. K.

TITLE: Chromospheric flares and solar corpuscular radiation in high- and low-energy regions

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 5, 1962, 30-31, abstract 5G223 (Izv. Krymsk. astrofiz. observ., 26, 1961, 90-135)

TEXT: The authors investigate the interrelation between absorption in high geomagnetic latitudes and the magnetic field's disturbances in the period 1957-1959 in connection with the processes in active regions on the sun. It is concluded from the analysis of the experimental data that during the development of chromospheric flares high-energy protons (10 - 100 Mev) are generated on the sun and ejected from the regions of chromospheric flares simultaneously with the plasma clouds, causing magnetic storms on the earth. It is concluded from the great time lag in the arrival of

Card 1/3

S/169/62/000/005/090/093
D228/D307

protons (10 - 100 Mev) and from the duration and the isotropism of proton settling upon the polar cap that there are interplanetary magnetic fields. Their sources are local magnetic fields of the active regions, which are carried away by the movement of plasma. This deduction is confirmed by the fact that rapid arrivals of protons from flares are observed, if the flare previously arising in the given region induced a magnetic storm. This means that protons are injected into the approximately radial magnetic field, formed on the growth of the local magnetic field of the active regions by the movement of previously ejected plasma. A series of prolonged absorptions in the polar cap in the period 1957-1959 can be explained by the injection into such a field of high-enery protons, generated in flares arising in a given active region on its passage along the disc. While restraining the diffusion of generated protons throughout the solar system, the entrainable magnetic field at the same time causes a deeper and sharper Forbush abatement with a prolonged recovery. Since the magnetic field remains linked with the sun, it is already somewhat twisted by the latter's rotation at a distance of one astronomic unit. This de-

PANKRATOV, A. K. (Belaya TSerkov')

Method for setting posterior dislocation of the forearm. Ortop., travm. i protez. no.11:66-68 '61. (MIRA 14:12)

(ARM--DISLOCATION)

L 06352-67 EWT(1) GW

ACC NR: AR6013403 SOURCE CODE: UR/0269/65/000/011/0052/0052

AUTHOR: Pankratov, A. K.

TITLE: Relation of increases of solar cosmic ray intensity with the corresponding corpuscular flux parameters

12

SOURCE: Ref. zh. Astronomiya, Abs. 11.51.439

38
13

REF SOURCE: Izv. Krymsk. astrofiz. observ., v. 33, 1965, 156-159

TOPIC TAGS: solar flare, solar chromosphere, solar corpuscular radiation, cosmic ray, magnetic storm

ABSTRACT: The relation between the characteristics of corpuscular fluxes causing magnetic disturbances with sudden commencement and the effect in solar cosmic rays from the same chromosphere flares is analyzed according to data taken during IGY-IGC. Flux velocity, strength of the magnetic storm (measured according to the index K_p), and the amplitude of the Forbush type decay are used as characteristics of the corpuscular fluxes. A comparison is carried out with data on cosmic radio noise absorption in the polar cap (RSA) converted on the basis of artificial earth satellites of the time-integrated proton flux with $E \geq 100$ Mev and also with the results of direct measurements carried out on American satellites. It is shown that the various data on solar cosmic rays are internally consistent. It is found

Card 1/2

UDC: 523.75:523.165

L 06352-67

ACC NR: AR6013403

that the most similar relation exists between the effect in solar cosmic rays and the amplitude of the Forbush decay (linear correlation coefficient up to 0.87). Bibliography of 11 citations. B. Vladimirskiy [Translation of abstract]

SUB CODE: 03

Card 2/2 mk E

PANKRATOV, Aleksandr L'vovich, uchitel' matematiki; LEPESHKINA, N.I., red.; VOLCHEK, V.L., tekhn.red.; KREYS, I.G., tekhn.red.

[Mathematical tables for the formulation solution of problems] Matematicheskie tablitsy dlia sostavleniia i resheniia zadach; posobie dlia uchitelei srednei shkoly. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv.RSFSR, 1959. 137 p. (MIRA 12:12)

1. Blinovskaya semiletnyaya shkola Sorokinskogo rayona Altayskogo kraya (for Pankratov).
(Mathematics--Tables, etc.)

S/006/60/000/02/010/024
B007/B011

3(4)
AUTHOR: Pankratov, A. M.

TITLE: Working Experience in the Identification of Localities

PERIODICAL: Geodeziya i kartografiya, 1960, Nr 2, p 38 (USSR)

ABSTRACT: When preparing topographic maps on a scale of 1 : 25,000 after the combined method, the simultaneous relief survey and identification of localities on the aerial picture plans gives rise to particular difficulties. In the practice, the localities are identified on the aerial pictures enlarged to map scale. Topographers first take the relief and after identifying the localities, transfer them from the aerial pictures to the aerophotographic plan. In this method, buildings must be drawn on the aerophotographic plans without leaving the locality (in order to avoid errors). In spite of careful working, cases may occur where one has to come back to carry out an additional identification. Frequently, one must also come back because differences arise in counting the buildings. To eliminate errors and the necessity of coming back a second time, aerial pictures enlarged up to 1 : 10,000 are utilized by team Nr 42 of the Severo-Zapadnoye predpriyatiye (Northwestern Enterprise). Fire-

Card 1/2

proof buildings are marked on the aerial pictures with red pencil, and non-fireproof ones with blue pencil. In the case of villages, living houses are marked with red color. On aerial pictures with 1 : 10,000, the dimensions of buildings are represented according to scale, which fact considerably facilitates the drawing operation. From these aerial pictures, the localities can be transferred without distortions onto an aerophotographic plan on a scale of 1 : 25,000. The additional expenses arising in the printing of enlarged aerial pictures pay well.

MAYOROV, V.V.; PANKRATOV, A.P.; DEMENT'YEV, V.A.

Determination of the optimal parameters of multiple hole blasting in investigating the Caspian Lowland by the correlation method. Neftegaz. geol. i geofiz. no.3:44-46 '63. (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki.

PANKRATOV, A.K.

YABLOCHKOV, Vladimir Alekseyevich; PANKRATOV, A.P., redaktor; POD'YEL'SKAYA, K.M., tekhnicheskiy redaktor.

[Segezha] Segezha. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1957. 30 p. (MIRA 10:10)
(Segezha--Description)

PANKRATOV, A.S., inzh.

Method of sealing tunnel driers. Stroi. mat. 8 no.5:21 My '62.
(MIRA 15:7)
(Drying apparatus)

PANKRATOV, Aleksandr Semenovich; SPITSYNA, A., red.; SHLYK, M., tekhn. red.

[Fighting auxiliaries] Boevye pomoshchniki. Moskva, Mosk. rabochii, 1961. 46 p. (MIRA 15:7)

1. Sekretar' Moskovskogo komiteta Kommunisticheskoy partii Sovetskogo Soyuza (for Pankratov).
(Agriculture) (Press and propaganda)
(Radio in agriculture)

VAVILOV, S.I.; LEVSHIN, V.L., redaktor; PANKRATOV, A.V., redaktor; AUZAN, N.P., tekhnicheskiy redaktor

[Collected works] Sobranie sochinenii. Moskva, Izd-vo Akad. nauk SSSR. Vol. 1 [Works on physics, 1914-1936] Raboty po fizike, 1914-1936. 1954. 450 p. (MIRA 8:5)
(Physics)

AUTHORS: Pankratov, A. V., Pshezhetskiy, S. Ya. SOV/76-32-7-23/45

TITLE: Some Rules Governing the Photochemical Decomposition of Ozone in the Liquid Phase (Nekotoryye zakonomernosti fotokhimicheskogo razlozheniya ozona v zhidkoy faze)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 7, pp. 1605 - 1611 (USSR)

ABSTRACT: Since the quantum yield in the photochemical decomposition of ozone in the gaseous phase only little exceeds a value of 2, the problem concerning the role played by the chain mechanism in this reaction may not be regarded as completely clear. As in the liquid phase there exist conditions more favorable for the transfer of the excitation energy between the molecules, as may also be seen from the data supplied by S.Ya. Pshezhetskiy, I. A.Myasnikov and N.A.Buneyev (Ref 2), the authors of the present paper carried out only some comparative experiments in the gaseous phase. The measurements were carried out by dilatometric methods with two types of apparatus being used, diagrams of which are given. The experiments were carried out at 183°C, a quartz lamp PRK-2 served as light source with cobalt and

Card 1/3

nickel sulfate as light filter solutions. From the experimental results obtained it may be seen that the reaction velocity is directly proportional to the light intensity, and that the quantum yield of the reaction does not depend on the latter. The determinations in the gaseous phase supplied a quantum yield of 3,5 (average) as compared to the value of 2,0 according to Schumacher (Refs 4,5) and 3,0 according to Heidt (Ref 9) at the same concentrations. The value of 25 obtained for the liquid phase points out that there the ozone decomposition represents a chain reaction. The oxygen has an impeding effect, in the gaseous phase less than in the liquid phase, which fact is explained by a greater effect of the reaction $O + O_2 + O_3 = O_3 + O_3$. A scheme of the mechanism of the photochemical ozone decomposition obtained according to the method of the steady concentrations as suggested by Schumacher, is given. There are 6 figures, 5 tables, and 12 references, 1 of which is Soviet.

Some Rules Governing the Photochemical Decomposition of Ozone in the Liquid Phase

SOV/76-32-7-23/45

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva (Moscow, Physicochemical Institute imeni L.Ya.Karpov)

SUBMITTED: March 14, 1957

1. Ozone (Liquid)--Decomposition 2. Ozone (Liquid)--Photochemical reactions 3. Photochemical reactions--Velocity 4. Oxygen--Chemical effects

Card 3/3

Pankratov, A. V.

PHASE I BOOK EXPLOITATION SOV/4386

Moscow. Fiziko-khimicheskiy institut

Problemy fizicheskoy khimii; trudy, vyp. 2 (Problems in Physical Chemistry; Transactions of the Institute, no. 2). Moscow, Goskhimizdat, 1959. 202 p. 1,000 copies printed.

Editorial Board: Ya. M. Varshavskiy, Doctor of Chemical Sciences; G. S. Zhdanov, Doctor of Chemical Sciences; V. A. Kargin, Academician; Ya. M. Kolotyrkin, Doctor of Chemical Sciences (Resp. Ed.); S. S. Medvedev, Academician; S. Ya. Pshezhetskiy, Doctor of Chemical Sciences; V. M. Cherednichenko, Candidate of Chemical Sciences; V. S. Chesalova (Editorial Secretary), Candidate of Chemical Sciences; Ed.: I. A. Myasnikov; Tech. Ed.: Ye. G. Shpak.

PURPOSE: This collection of articles is intended for physical chemists.

COVERAGE: The collection is the second issue of the Transactions of the Scientific Research Institute of Physical Chemistry imeni L. Ya. Karpov. It contains 17 articles which review

Card 1/5

AVAILABLE: Library of Congress

PSHEZHETSKIY, S.Ya.; KAMENETSKAYA, S.A.; GRIBOVA, Ye.I.; PANKRATOV, A.V.; MOROZOV, N.M.; POSPELOVA, I.N.; APIN, A.Ya.; SIRYATSKAYA, V.N.; SLAVINSKAYA, N.A.; CHEREDNICHENKO, V.M.

Kinetics of the decomposition and explosion of ozone.
Probl.fiz.khim. no.2:27-38 '59. (MIRA 13:7)

1. Laboratoriya kinetiki gazovykh reaktsiy Nauchno-issledovatel'skogo fiziko-khimicheskogo instituta im. L.Ya.Karpova.
(Ozone) (Explosions)

PANKRATOV, A.V.

pa 11.5000

81970
S/076/60/034/07/01/009
B015/B070

AUTHORS: Gribova, Ye. I., Kamenetskaya, S. A., Pankratov, A. V., Apin, A. Ya., Pshezhetskiy, S. Ya.

TITLE: The Critical Diameter and the Explosion Rate of Liquid Ozone Solutions

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 7, pp. 1395-1401

TEXT: According to the theory of Yu. B. Khariton (Ref. 1) the critical diameter of an explosive is the minimum diameter of a cylindrical charge in which a stable detonation at a constant rate may occur. The critical diameter of the explosive is proportional to the duration of the reaction in the front of the explosive wave and this duration is inversely proportional to the reaction rate. In the present work the dependence of the critical diameter on the composition of the liquid ozone sample diluted with oxygen or carbon tetrafluoride is investigated. The experimental apparatus is shown schematically in Fig. 1. The explosion was started by lead azide in a suitable apparatus (Fig. 2), and for experiments with

Card 1/2

81970

The Critical Diameter and the Explosion Rate of Liquid Ozone Solutions

S/076/60/034/07/01/009
B015/B070

oxygen - ozone mixtures the gaseous mixture was condensed in a receiver (Fig. 3). The measured values (Table 1, oxygen - ozone mixtures with 37-40% O_3; Table 2, 47% O_3; Table 3, 32-96% O_3; Table 4, experiments in small brass tubes with heterogeneous mixtures; Table 5, CF_4-O_3 mixtures) show that the explosion properties of ozone are determined principally by the character of the kinetics of decomposition, i.e., by the small activation energy and the large factor of the exponential function. The relation obtained between the critical diameter and the composition of the solutions agrees with the above-mentioned theory of the critical diameter of stable detonations. Measurements on the rate of explosion of an ozone - oxygen mixture with 96% ozone (Table 6) showed that the rate of detonation is not proportional to the ozone concentration. A. F. Belyayev is mentioned in the text. There are 5 figures, 6 tables, and 6 Soviet references.

ASSOCIATION: Fiziko-khimicheskiy in-t im. L. Ya. Karpova
(Physicochemical Institute imeni L. Ya. Karpov)

SUBMITTED: February 22, 1958

Card 2/2

24018
S/076/61/035/005/001/008
B101/B218

11.1120

AUTHORS: Pankratov, A. V. and Bobrysheva, L. A. (Moscow)

TITLE: The problem of the mechanism of decomposition of liquid ozone

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 5, 1961, 969-973

TEXT: The study of the decomposition of ozone is of great importance for the problem of energy transfer in chemical kinetics. The authors studied the photochemical decomposition of liquid ozone. In their experiments, they prevented the decomposing ozone molecules from coming in contact with the wall of the vessel. The apparatus is schematically shown in Fig. 1. The gaseous mixture of O_2 and O_3 was conducted from the ozonizers into the photochemical cell 1 which was cooled by liquid oxygen. The mixture condensed in 1 was evacuated by a fore pump until a pressure of 0.06 mm Hg was attained, according to the vapor pressure of 100 % ozone at -183°C. Pressure was measured by an ЛТ-2 (LT-2) tube. After vacuum had been attained, the light source, a ПРК-2 (PRK-2) mercury lamp, was switched on and the ozone layer (5-10 mm) in cell 1 was exposed through a light filter ($\lambda = 3130$ Å, determined by an СФ-4 (SF-4) spectrophotometer). The intensity

Card 1/5

The problem of the mechanism of...

of the inciding light was measured by a photoconductive cell of the type ФС-К2 (FS-K2) which was inserted into 1. The oxygen liberated from O_3 due to the action of light passed over to the gaseous phase. Its pressure was measured by means of a "post-hole" glass pressure gauge. The following results were obtained: 1) The pressure of O_2 increased in proportion to the time of exposure. 2) After switching off the light, the pressure of O_2 remained constant for 3 hr. 3) The reaction rate did not depend on the quantity of ozone. Table 2 lists the experimental results: quantum yield 8 and reaction rate v at -183°C. If, however, cell 1 was filled with quartz rods, the results given in Table 3 were obtained:

I, quanta/mole·sec	v, mole O_3/sec	γ
6.55	13.0	2.0
4.86	9.7	2.0
4.30	7.9	1.8
1.35	1.5	1.1
1.20	1.5	1.3
1.02	1.5	1.5
0.74	1.5	2.0

The problem of the mechanism of...

number of packing	reaction rate mole O_3/sec	quantum yield	
		minimum	maximum
1	6.52	4.8	17.5
2	2.24	3.5	12.6
3	2.40	4.6	16.7
4	1.86	4.9	17.9

While the experiments listed in Table 2 resulted in a quantum yield of < 2, the latter was > 2 in the presence of a packing. Since the light inciding upon ozone could not be measured in the latter case, the authors give a minimum and a maximum value. For constant exposure, the temperature dependence of the quantum yield (without packing) was found to be

t, °C	γ
-183	1.8
-155	2.8
-145	7.9
-140	19.6

Two reaction mechanisms result therefrom: a temperature-independent mechanism below -160°C, and a temperature-dependent mechanism above -160°C. The activation energy was calculated to be 4200 cal/mole. The following reactions are written down: $O_3 + h\nu = O_2^* + O$ (1); $O + O_3 = 2O_2^*$ (2); $O + O + O_3 = O_2 + O_3$ (2'); $O + O_3 + \text{solid} = 2O_2^* + \text{solid}$ (2"); ✓

Card 3/5

The problem of the mechanism of...

$O + O_2 + O_3 = O_3 + O_3$ (3); $O_2^* + O_3 = O + O_2 + O_2$ (4); $O_2^* + O_3 = O_2 + O_3$ (5); $O_2^* + O_2 = O_2 + O_2$ (6). Summing up: 1) For temperatures below -160°C, the rate of reaction 2' outweighs that of reaction 2. The homogeneous decomposition of O_3 is determined by the reactions 1, 2', 3, 4, 5, and 6. Above -160°C, reaction 2 predominates, and the quantum yield depends on temperature. In the presence of a packing, reaction 2" predominates (catalytic reaction between O, O_3, and the wall). The following kinetic equations are derived: $-d[O_3]/dt = I[1 + k_4/(k_4 + k_5)]$ $\pm (\sqrt{2}/2)(k_3[O_2][O_3]^{1/2}/k^{1/2})[1+k_4/(k_4 + k_5)]^{1/2}\sqrt{I}$ (7), and for the case $[O_2] = 0$ one has $-d[O_3]/dt = I[1 + 1/(k_5/k_4 + 1)] = k_1 I$ (8). It is noted that these equations have only a qualitative character. There are 4 figures, 4 tables, and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc. The reference to the English-language publication reads as follows: A. Jenkins, F. Di-Paolo, J. Chem. Phys., 25, 296, 1956.

SUBMITTED: December 10, 1958

Card 4/5

BASYROV, Z.B.; PANKRATOV, A.V.

Sensitivity of ozone-oxygen solutions to pressure pulse. Khim. prom. no.3:174-175 Mr '62. (MIRA 15:4)
(Liquid oxygen) (Shock waves) (Ozone)

37635

S/076/62/036/005/010/013
B101/B110

11.V13

AUTHORS: Talakin, O. G., Akhanshchikova, L. A., Sosnovskiy, Ye. N., Pankratov, A. V., and Zercheninov, A. N.

TITLE: Heat of formation of fluonitrate

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 5, 1962, 1065-1067

TEXT: The heat of formation of NO_3F was calorimetrically determined on the basis of the reaction $NO_3F + 2KOH = KNO_3 + KF + 0.5\ O_2 + H_2O$, the NO_3F being synthesized by bubbling F_2 through HNO_3 thus: $HNO_3 + F_2 = HF + NO_3F$. The HF was absorbed by KF, and NO_3F was condensed at -183°C. The heats (kcal/mole) of reaction between NO_3F and KOH ($Q_1 = 93.5 \mp 0.8$), between KF and KOH ($Q_3 = 3.35 \mp 0.011$), and between KNO_3 and KOH ($Q_4 = -5.93 \mp 0.023$) were measured with a calorimeter calibrated with KCl. From the system of equations which allows for this and the other side reactions of the process the heats of formation of gaseous and liquid NO_3F were calculated

Card 1/2

S/076/62/036/005/010/013
B101/B110

Heat of formation of fluonitrate

and found to be -4.2 ∓ 0.9 kcal/mole at 21°C and -4.2 ∓ 1.2 kcal/mole at -45.9°C, respectively. There are 2 figures and 4 tables.

SUBMITTED: May 17, 1961

Card 2/2

PANKRATOV, A.V.; SOKOLOV, O.M.; SAVENKOVA, N.I.

Synthesis of difluorodiazines. Zhur. neorg. khim. 9 no.8:2030-2031 Ag '64. (MIRA 17:11)

L 08402-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JW/JG
ACC NR: AP6031749 SOURCE CODE: UR/0078/66/011/007/1497/1505

AUTHOR: Pankratov, A. V.; Sokolov, O. M.

ORG: none

TITLE: Reaction of fluorine with sodium azide

SOURCE: Zhurnal neorganicheskoy khimii, v.11, no. 7, 1966, 1497-1505

TOPIC TAGS: fluorine, azide, sodium compound, halogen nitrogen compound

ABSTRACT: The reaction of fluorine with sodium azide produced cis and trans isomers of difluorodiazine, nitrogen trifluoride, nitrogen, and sodium fluoride. The yield of both difluorodiazine isomers and nitrogen trifluoride was studied as a function of the temperature in the reaction vessel, fluorine consumption, dilution of sodium azide with calcium fluoride, and dilution of fluorine with nitrogen. The optimum conditions for obtaining the best yields of difluorodiazines were determined. It was found that the following three consecutive-parallel reactions take place during the fluorination process:

$$NaN_3 + F_2 = NaF + {}^1/_2N_2F_2 + N_2 \quad (1)$$

$$NaN_3 + 2F_2 = NaF + NF_3 + N_2 \quad (2)$$

$$2NaN_3 + F_2 = 2NaF + 3N_2 \quad (3)$$

Card 1/2 UDC: 546.16+546.33'171.8

L 08402-67
ACC NR: AP6031749 O

A mechanism is proposed for these reactions which satisfactorily accounts for the experimental data. Orig. art. has: 7 figures, 3 tables and 12 formulas.

SUB CODE: 07/ SUBM DATE: 25Jul64/ ORIG REF: 003/ OTH REF: 004

Card 2/2

ACC NR: AP6032268 SOURCE CODE: UR/0076/66/040/009/2101/2104

AUTHOR: Zercheninov, A. N.; Chesnokov, V. N.; Pankratov, A. V.

ORG: none

TITLE: Standard heat of formation of chlorodifluoramine

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 9, 1966, 2101-2104

TOPIC TAGS: chlorodifluoramine, heat of formation, potassium iodide solution, gaseous chlorodifluoramine, liquid chlorodifluoramine, FLUORINE COMPOUND, CHLORINE COMPOUND

ABSTRACT: The standard heat of formation of chlorodifluoramine has been determined from its reaction with an aqueous solution of potassium iodide

$$NF_2Cl + I^- + H^+ \rightarrow I_2 + N_2F_4 + Cl^- + F^- + NH_4^+ + N_2. \quad (1)$$

This reaction proceeds in several steps. Selection of proper [unspecified] pH of the solution and contact time of NF_2Cl with the solution reduced reaction 1 to the reaction

$$NF_2Cl + {}^3/_2KI = KCl + {}^1/_2KI_3 + {}^1/_2N_2F_4. \quad (2)$$

NF_2Cl used in the experiments contained, in addition to N_2 and N_2O, 1 to 7% N_2F_2 whose presence caused in the calorimeter the additional reaction

$$N_2F_2 + 3KI = 2KF + KI_3 + N_2. \quad (3)$$

Card 1/4 UDC: 541.11

ACC NR: AP6032268

Table 1.

NF_2Cl content in the sample, %	Analysis of the solution						Rise of temperature in the calorimeter (Δt), deg	Calculated overall heat of reactions 2 and 3 (Q_r), cal	Calculated heat of reaction 3 (Q_3), cal	Calculated heat of reaction 2 (Q_2), cal	Heat of the reaction of NF_2Cl with KI solution ($-\Delta H_r$), kcal/mol
	Cl^-, g	F^-, g	I_2, g	Calculated amount of NF_2Cl, g	Calculated amount of N_2F_2, g	Calculated amount of separated I_2, g					
90,1	0,165	0,0054	0,630	0,4070	0,0094	0,627	0,6419	158,9	21,7	137,2	29,48
83,6	0,401	0,0267	1,682	0,9892	0,0464	1,614	1,5363	473,4	107,3	366,1	32,37
83,6	0,426	0,0286	1,680	1,0509	0,0497	1,716	1,5119	465,9	115,0	350,9	29,20
83,6	0,401	0,0324	1,607	0,9892	0,0563	1,652	1,4496	446,7	139,2	316,5	27,98
83,6	0,372	0,0272	1,453	0,9176	0,0473	1,513	1,2973	399,8	109,4	290,4	27,68
80,4	0,261	0,178	1,096	0,6446	0,0309	1,054	1,2773	316,2	71,5	244,7	33,20
78,5	0,283	0,0131	—	0,6981	0,0228	—	1,3024	266,9	52,7	244,2	30,60
76,6	0,179	0,0136	—	0,4416	0,0236	—	0,9327	212,7	54,6	158,1	31,31
76,6	0,322	0,0093	1,272	0,7943	0,0162	1,215	1,4212	324,0	37,5	286,5	31,55
62,1	0,370	0,0188	—	0,9275	0,0327	—	1,2577	379,8	75,6	304,2	28,69
36,1	0,556	0,0228	2,160	1,3715	0,0396	2,142	2,7240	621,1	91,6	529,5	33,77
36,1	0,315	0,0166	1,300	0,7770	0,0288	1,238	1,4973	341,4	66,6	274,8	30,93
36,1	0,333	0,0173	1,290	0,8214	0,0300	1,307	1,4967	341,2	69,4	271,8	28,94
36,1	0,279	0,0142	1,131	0,6882	0,0247	1,093	1,3242	301,9	57,1	244,8	31,11

Average ΔH_r = -30.5±1.6 kcal/mol

Card 2/4

The experiments were conducted in a calorimeter described in earlier studies by the authors. The experimental procedure is described in the source. The reacted solutions were analyzed for F^-, Cl^- and NH_4^+ ions and for separated iodine. The experimental results and the calculated heats of the reactions of NF_2Cl with KI solutions are given in Table 1. The heat of formation of gaseous NF_2Cl was calculated from a thermochemical equation which took into account the heats of formation and solution of the substances involved. The respective heat values were taken from reference books or earlier studies. The missing value of the heat of solution of KCl in KI solution was determined experimentally for a neutral 15% KI solution (Table 2). The standard heat of formation of gaseous NF_2Cl was found to be

Table 2.

G_{KCl}, g	Δt, deg	Heat of solution of KCl in a neutral 15% solution of KI (ΔH_s), kcal/mol
0.8354	-0.1755	3.67
0.8403	-0.1778	3.70
0.8540	-0.1827	3.74
0.9323	-0.1973	3.70

Average $\Delta H_s = 3.70 \pm 0.02$ kcal/mol

ACC NR: AP6032268

3.2 ± 2.9 kcal/mol. The heat of formation of liquid NF_2Cl was calculated by taking the value of 4.35 kcal/mol for the heat of vaporization of NF_2Cl at -67C (boiling point), and in the assumption that the average heat capacity of NF_2Cl in the range 298—206 K is equal to that of NF_3 (11.5 cal/mol·deg). The heat of formation of liquid NF_2Cl at -67C was found to be -2.2 kcal/mol. The N-Cl bond energy was calculated in the assumption that the N-F bond energy in NF_2Cl is equal to that in the free $NF_2^{\cdot}$ radical

$$E(N-Cl) = \Delta H^0_{f206}(Cl) + \Delta H^0_{f206}(NF_2^{\cdot}) - \Delta H^0_{f206}(NF_2Cl) = 35{,}3 \text{ kcal/mol}.$$

Orig. art. has: 3 tables.

SUB CODE: 21, 07/ SUBM DATE: 19Mar65/ ORIG REF: 005/ OTH REF: 003/

Card 4/4

KUZNETSOVA, T.V.; YEGOROVA, L.F.; PANKRATOV, A.V.

Some physicochemical constants of tetrafluorohydrazine. Zhur. fiz. khim. 38 no.7:1860-1862 Jl '64. (MIRA 18:3)

PANKRATOV, A.V.; AKHANSHCHIKOVA, L.A.; SHALAYEVA, O.N.; KUZNETSOVA, T.V.

Reaction of tetrafluorohydrazine with potassium iodide aqueous solution. Zhur. neorg. khim. 9 no.6:1517-1519 Je '63 (MIRA 17:8)

L 5665-65 EPA(a)-2/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(q)/EWP(b) Pr-4/Ps-4/Pt-10/
Pu-4 RPL JD/WW/JW/JG
ACCESSION NR: AP4042603 S/0076/64/038/007/1860/1862

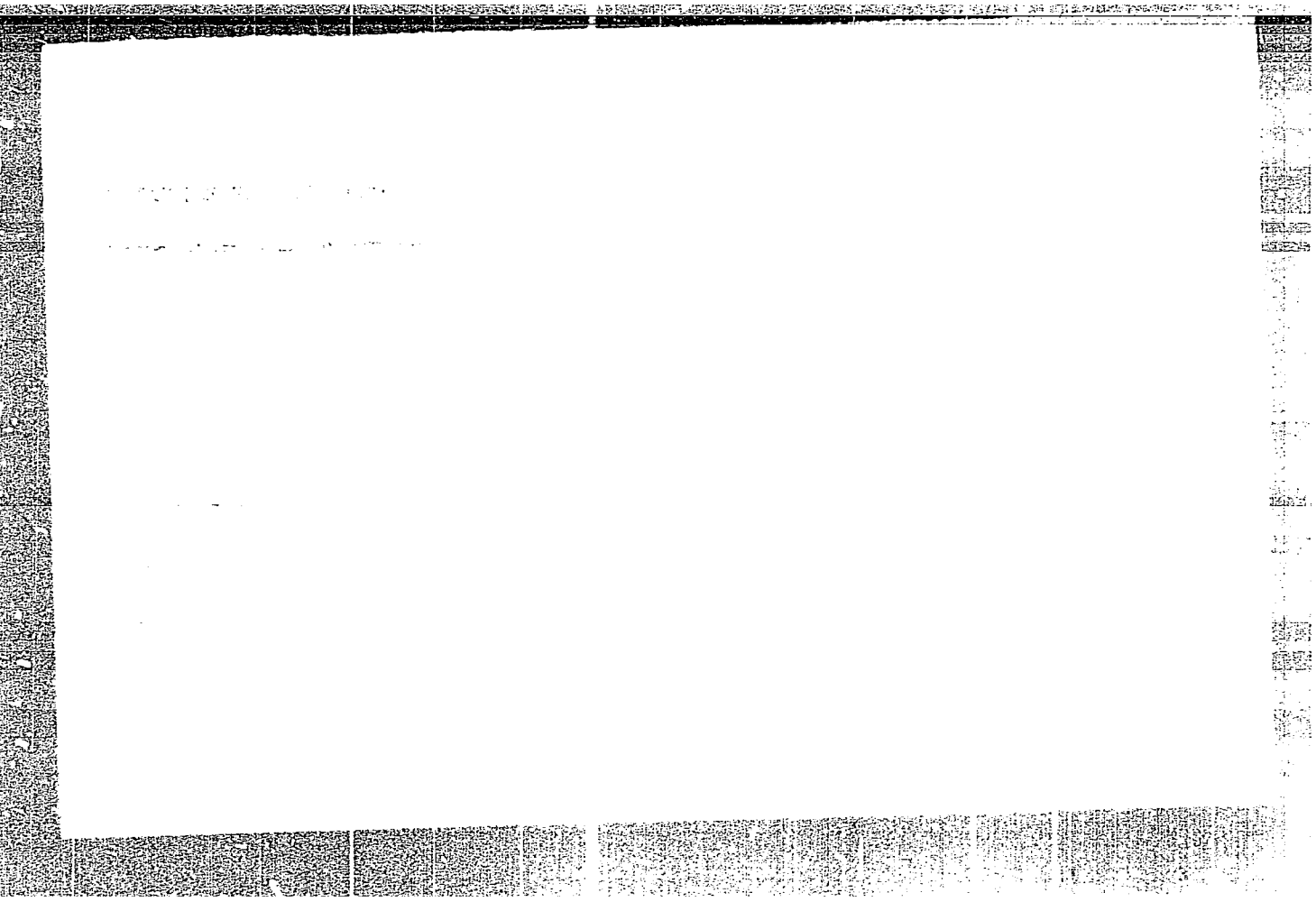
AUTHOR: Kuznetsova, T. V., Yegorova, L. F., Pankratov, A. V. 78

TITLE: Physico-chemical constants of tetrafluorohydrazine 27

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 7, 1964, 1860-1862

TOPIC TAGS: tetrafluorohydrazine, saturated vapor pressure, melting point, critical temperature, critical pressure, physical constant

ABSTRACT: The purpose of this work was to determine the saturated vapor pressure, melting point, critical temperature and critical pressure of tetrafluorohydrazine



PANKRATOV, A.V.; BOBRYSHEVA, L.A.

Mechanism of liquid ozone decomposition. Zhur. fiz. khim. 35 no.5:969-973 My '61. (MIRA 16:7)

(Ozone) (Chemical reaction, Rate of)

PANKRATOV, A.V.; ZERCHENINOV, A.N.; TALAKIN, O.G.; SOKOLOV, O.M.; KNYAZEVA, N.A.

Standard enthalpy of the formation of an active isomer of difluorodiazine. Zhur. fiz. khim. 37 no.6:1399-1401 Je '63. (MIRA 16:7)

(Diazine) (Heat of formation)

PANKRATOV, A.V.

Chemistry of some inorganic nitrogen fluorides. Usp. khim. 32 no.3:336-353 Mr '63. (MIRA 16:4)

(Nitrogen fluorides)

S/074/63/032/003/002/002
A057/A126

AUTHOR: Pankratov, A.V.

TITLE: Chemistry of some inorganic nitrogen fluorides

PERIODICAL: Uspekhi khimii, v. 32, no. 3, 1963, 336 - 353

TEXT: The author gives in this paper a review of literature data on the nitrogen fluoride chemistry. 75 references are given of which 72 are of western authors and 3 of papers published by the present author and coworkers. The first chapter of the review discusses the structure of the nitrogen trifluoride molecule to explain the characteristic properties of nitrogen fluorides. In the next chapter a thorough discussion of hydrazin tetrafluoride is given with appropriate literature data on the method of synthesis, the physico-chemical properties, and chemical properties. To the latter belongs the ability of this substance to react in two ways: (I) $N_2F_4 + M \rightarrow M(NF_2)_n$ and (II) $N_2F_4\ M \rightarrow \rightarrow MF_n + N_2$. The occurrence of these two reactions was proved by the author in a reaction of hydrazine tetrafluoride with an aqueous solution of potassium iodide (Zh. neorg. khim., in print). The following chapter deals with difluoro-

Card 1/2

S/074/63/032/003/002/002
A057/A126

Chemistry of some inorganic nitrogen fluorides

amines and chlorodifluoroamines. Among all possible syntheses of difluoroamine only the reduction of hydrazine tetrafluoride gives difluoroamine with a good yield. Difluoroamine is characterized by a strong oxidation effect, a reactivity for introduction of the NF_2 group, and instability, i.e., explosiveness. Chlorodifluoroamines could also be of interest for the introduction of NF_2 group. In the last chapter the author discusses the fluoro azide and isomers of difluorodiazine, citing literature data on preparation and properties of these extremely high-explosive substances. There are 3 tables.

Card 2/2

PANKRATOV, A.V.; KHANANOVA, E.Ya.

Synthesis of nitrogen trifluoride. Zhur.neorg.khim. 7 no.7:1743.Jl '62.
(MIRA 16:3)

(Nitrogen fluoride)

L 12872-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS Ps-4/Pc-4/Pr-4 RM/WW/JW

ACCESSION NR: AP3002942 S/0076/63/037/006/1399/1401

AUTHOR: Pankratov, A. V.; Zercheninov, A. N.; Talakin, O. G.; Sokolov, O. M.; Knyazeva, N. A.

TITLE: Standard enthalpy of formation of the active isomer of difluorodiazine

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1399-1401

TOPIC TAGS: standard enthalpy, active isomer, difluorodiazine, IR measurement

ABSTRACT: The standard enthalpy for the gaseous active isomer of difluorodiazine was calculated. It was 25.3 + or - 2.0 kcal/mol. It was 20.5 + or - 2.0 kcal/mol for the liquid at -105.7°. Data was obtained by IR measurement of the heat of reaction of the active isomer with an acid solution of KI. Orig. art. has: 2 tables, 1 figure, and 3 equations.

ASSOCIATION: none

SUBMITTED: 22Aug62 DATE ACQ: 16Jul63 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 005

Card 1/1

TALAKIN, O.G.; AKHANSHCHIKOVA, L.A.; SOSNOVSKIY, Ye.N.; PANKRATOV, A.V.; ZERCHENINOV, A.N.

Heat of formation of fluonitrate. Zhur.fiz.khim. 36 no.5:1065-1067 My '62. (MIRA 15:8)

(Fluonitrate) (Heat of formation)

PANKRATOV, A. Ya.

21951 PANKRATOV, A. Ya. Brutsellez kur. Trudy Kirgiz. s.-kh. in-ta im. Chernbina vyp. 6, 1949, s. 78-95

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949.

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Brutsellez sel'skokhozyaystvennykh zhivotnykh i mery bor'by nim (Brucellosis in Farm Animals and Measures for Combatting It). Frunze. 1950. 24 pages.

U-5235

FAINSHTCV, A. YA.

"The Drop Method in the Blood Agglutination Test for the Diagnosis of Brucellosis," Veterinariya, No. 1, 1950. Cand. Vet. Sci., -c1950-.

PANKRATOV, A. Ya. and TRET'YAKOVA, A.

"The causes stimulating the appearance of strangles of horses and the method of liquidation of strangles infection."

SO: Vet. 27 (11) 1950, p. 29

PANKRATOV, A. Ya.

"Strangles of horses"
Frunze, 1951. 8 pages, IN KIRGIZ LANGUAGE
SO: Vet., May 1952, Unclassified.