"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

31598
S/169/61/000/010/049/053
D228/D304

11.1530

AUTHORS: Antonova, L. A., and Ivanov-Kholodnyy, G. S.

TITLE: Corpuscular hypothesis of nocturnal ionospheric ionization

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 10, 1961, 33, abstract 10G197 (Geomagnetizm i aeronomiya, 1, no. 2, 1961, 164-173)

TEXT: From data on the distribution of electron concentration in the night ionosphere in the F-layer region in middle latitudes, and taking into account that it is largely caused by soft-electron flows, the effective energy and intensity of the electron flow was estimated and the energy spectrum of electrons also calculated. The calculated spectrum in the energy region from 100 ev to 5×10^4 ev may be approximated by the graded function $E^{-\gamma}dE$ with $\gamma \sim 4$. The form of the resulting spectrum is in

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L. A.

CURRENT POSITION: Member, Institute Applied Geophysics, Academy Sciences USSR, Moscow 1960-61.

OCCUPATION : Atmospheric and ionospheric physics, radiation measurements.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 32030-65

ACCESSION NR: AP5005437

of the output integrating RC cells was 5 x 10^{-3} sec. (In later investigations the multiplier's time resolution was improved to 10 μsec and the amplification factor increased to 2000—5000.) The SF recorder was placed in a separable container of a high-altitude automatic geophysical station provided with stabilizing and orientation control systems. The apparatus was stabilized with respect to the vertical and rotated around it with a gradually lengthening period from 7 to 12 sec, which made it possible to analyze the angular distribution of electron variations with respect to the magnetic force line. The dispersion of recorded points caused an error in individual measurements of the order of 30% at counting speeds of about [illegible] pulses/sec. Periodic signal peaks at certain angles of rotation were found to

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 320[illegible]

A[illegible]SSION NR: AP[illegible]

A

[illegible] the magnet[illegible] force line [illegible] signals which were used to plot [illegible] has [illegible] figures. [FT]

ASSOCIATION: none

SUBMITTED: 09Dec63 ENCL: 00 SUB CODE: AA, ES

NO REF SOV: 011 OTHER: 002 ATD PRESS: 3199

Card 3/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 41837-65 EWT(1)/EWG(v)/FCC/HEC-4/EWG(t)/EWA(h) Pi-4/Pe-5/Po-4/Pq-4/
Pae-2 Pab EW-2

ACCESSION NR: AP5006438 S/0293/65/003/001/0089/0101 46 43 B

AUTHOR: Antonova, L. A.

TITLE: Measurement of the intensity and spectrum of the flux of soft electrons in the ionosphere at heights of 200-500 km

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 1, 1965, 89-101

TOPIC TAGS: ionosphere, electron flux, soft electron, secondary electron multiplier, upper atmosphere, aeronomy

ABSTRACT: This is a companion article to another in the same source (L. A. Antonova, G. S. Ivanov-Kholodnyy N. D. Masanova and V. S. Medvedev, Kosmich. issled. Vol. III, No. 1, 1965, p. 82), which reported on the measurement of electron fluxes at heights up to 500 km using a spectrophotometric instrument carried aboard a rocket. A secondary electron multiplier was used as the sensor. The latter has a high sensitivity to low energy electrons making it possible to measure the total flux of electrons without using any additional absorbers and to measure the intensity, spectrum and rapid variations of rather weak fluxes of electrons. The measurement method description of the

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 11837-65

ACCESSION NR: AP5005438

3

cited paper. This second paper is a detailed exposition of the method for analyzing the initial data and interpretation of the results. Part 1 describes the analytical method. Part 2 gives details on investigation of the background. Part 3 provides information on the intensity of the measured electron flux. Part 4 is an analysis of the energy spectrum of the electrons. Despite the fact that there is some unreliability in the results caused by the fact that the useful signal in this experiment only slightly exceeded the background [illegible] it is believed that at heights of [illegible] in the ionosphere during the daytime in the middle latitudes there are rather [illegible] fluxes of electrons. The mean total intensity of the flux is $\sim 5 \cdot 10^{7}$ cm^{-2} sec^{-1} steradian and its energy is ~ 0.1–0.6 erg cm^{-2} sec^{-1} steradian. For energies exceeding ~ 10 kev the energy spectrum can be represented by a power law function with the exponent $\gamma \approx 3.5$. The intensity of the flux of electrons changes strongly with time; for this reason, the paper can give only the principal mean characteristics of the flux. In conclusion, the author states his gross deep appreciation to G. S. Ivanov-Kholodnyy, under whose direction the work was done and to V. [illegible] Grigor'yev and Yu. [illegible] for their help in the discussion of the results. [illegible] and contains 4 formulas, 2 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 09Dec63 ENCL: 00 SUB CODE: ES

Card 2/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 1545-66 FSS-2/EWT(1) OS/OW

ACCESSION NR: AT5023586 UR/0000/65/000/000/0214/0216

AUTHOR: Antonova, L. A.; Kazachevskaya, T. V.

TITLE: Soft electron fluxes in the upper atmosphere

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 214-216

TOPIC TAGS: electron flux, electron spectrum, atmospheric ionization

ABSTRACT: Daytime measurements were made of the intensity and energy spectrum of soft electrons in the upper atmosphere. The measurements were made on 18 October 1962 in the middle latitudes. An open-type secondary-emission multiplier was used. Separate sections of the electron energy spectrum were isolated by using different filters in front of the multiplier. The multiplier operated in a pulse-counting mode. The device was installed in a sealed container which was separate from the rocket. The symmetry axis of the device's entrance opening was in the equatorial plane of the container. The visual angle of the instrument was $\pm 6^{\circ}$. The container was stabilized with respect to the vertical and rotated around it with a period which changed gradually from 12 to 7 sec. The instrument recorded

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 1545-66

ACCESSION NR: AT5023586

considerable background, which was apparently caused by the scattered light which penetrated into the instrument. The average value for the integral electron flux was $\approx 5.10^7$ electron.$cm^{-2}.sec^{-1}.ster^{-1}$, with an accuracy up to the factor 2. The average electron flux with energies exceeding 30—35 kev was $\sim 2.10^5$ electron.$cm^{-2}.sec^{-1}.ster^{-1}$. The total energy flux, under the assumption that the boundary of the spectrum on the side of small energies lies in the region of 1—8 kev, gave values of $\sim (0.1—0.5) erg.cm^{-2}.sec^{-1}.ster^{-1}$. The average flux magnitude does not depend on the height in the range of measured heights or the angle between the velocity vector and a plane perpendicular to the magnetic force line. In 1962 and 1963 electron fluxes in the atmosphere were also measured by methods based on recording the ionizing radiation by means of a thermoluminescent phosphor $CaSO_4(Mn)$. The measurements, made during a rocket climb to 500 km, showed that the electron flux energy changes little with height and is, on the average, 0.3 $erg.cm^{-2}.sec^{-1}$. Orig. art. has: 2 figures. [JA]

ASSOCIATION: none

SUBMITTED: 02Sep65 ENCL: 00 SUB CODE: ES, NP

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4094

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 38452-66 EWT(1)/FCC GW

ACC NR: AT6023723 SOURCE CODE: UR/2831/65/000/014/0009/0012

AUTHOR: Antonova, L. A.; Ivanov-Kholodnyy, G. S. +1 B+1

ORG: none

TITLE: Corpuscular ionization hypothesis in the nocturnal ionosphere

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. V razdel programmy MGG: Ionosfera. Sbornik statey, no. 14, 1965. Ionosfernyye issledovaniya, 9-12

TOPIC TAGS: ~~electron concentration~~, ionosphere, solar eclipse, satellite measurement, hard electron, electron flux, effective recombination coefficient, ~~corpuscular stream~~, radiation belt, solar corpuscular radiation, ionospheric electron density

ABSTRACT: The electron concentration in the lower ionosphere diminishes after sunset, but it does not disappear and maintains a constant level during the night. An analogous phenomenon is observed during solar eclipse. The source of continued ionization may be assumed to be charged particles in the upper atmosphere. Rocket and satellite measurements revealed electron fluxes at various altitudes above the Earth. Hard, high-energy electrons were measured which were peculiar in their sporadic appearance and the dependence of their intensity and spectrum upon the latitude. Maximum radiation at 100-km altitude was found to be in the auroral zone. The authors developed a hypothesis that nocturnal ionization in the F2 layer is caused by electron fluxes which penetrate the atmosphere deeply. The effective energy and the energy spectrum in the F2 layer were computed. The radiation intensity

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 38452-66
ACC NR: AT6023723

was found to be proportional to the effective coefficient of recombination. The intensity of the corpuscular stream was determined from a given value of the dissociative recombination coefficient. The solar corpuscular stream differs from those in the radiation belts and in the ionosphere. The penetration of the solar corpuscular stream into the ionosphere is hindered by the geomagnetic field. Corpuscular streams from radiation belts are also unable to reach the ionosphere. A comparison of x-radiation at 100-km altitude measured by balloons with the electron flux measured by rockets at the same altitude, leads to the conclusion that a great quantity of electrons exists in the upper atmosphere which may be revealed by bremsstrahlung when it penetrates dense atmospheric layers.

[EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 004/ ATD PRESS: 5042

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.F.

Thymoma in a parturient. Akush.i gin. 35 no.5:108-109 S-O '59.
(MIRA 13:2)

1. Iz kafedry akusherstva i ginekologii (zaveduyushchiy - prof. A.I. Petrenko) Leningradskogo pediatricheskogo meditsinskogo instituta (direktor - prof. N.G. Shutova).

(THYMOMA, in pregnancy)
(PREGNANCY, complications)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.F.

Labor in women following heart surgery. Akush. i gin. 36 no.2: 117 Mr-Ap '60. (MIRA 13:12)
(MITRAL VALVE—SURGERY) (LABOR, COMPLICATED)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

USSR/Metals
Nickel
Anodizing

Jun 49

"Anode Behavior of Nickel in Alkaline Solutions," L. M. Volchkova, L. G. Antonova, A. I. Krasil'shchikov, State Inst of Nitrogen Ind, Moscow, 4½ pp

"Zhur Fiz Khim" Vol XXIII, No 6

Mechanism for forming nickel oxide is accurate up to a current density of 10^{-1} A/cm^2. Nickel oxide is deposited on the anode subsequent to formation of nickel hydroxide. High percent of chlorine ions in weak alkaline solutions in relation to number

52/49T85

USSR/Metals (Contd)

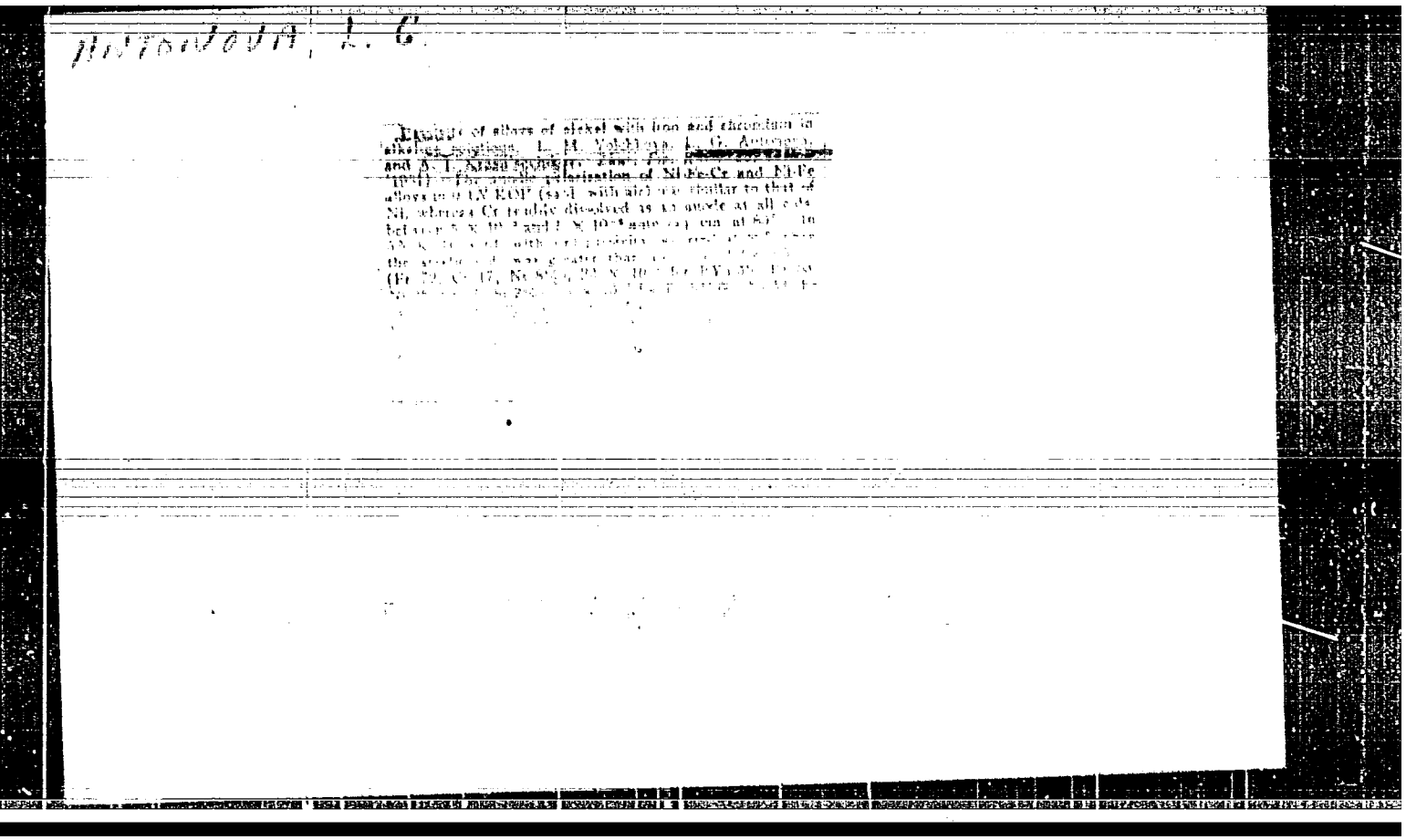
Jun 49

of hydroxyl ions impedes oxidation process and corrodes the nickel. Submitted 17 Aug 48.

52/49T85

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

[illegible]

"[illegible]," A. [illegible], L. [illegible], L. G. [illegible]

[illegible]

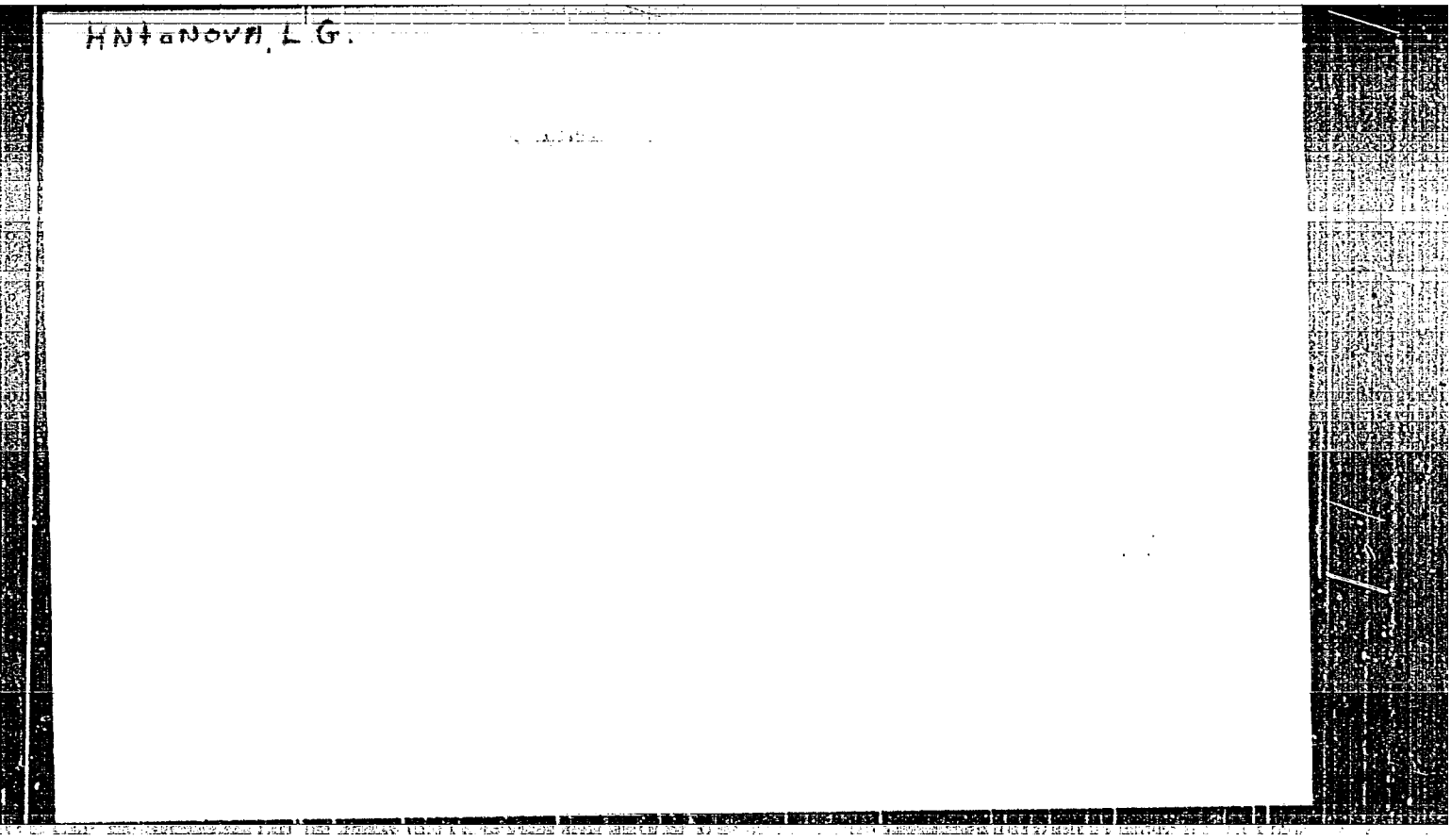
[illegible] at [illegible] higher [illegible].

(CA 47 no. 21: 11049 '53)

[illegible]

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.G.; KRASIL'SHCHIKOV, A.I., doktor khim.nauk

Electrochemical method of the investigation of gas adsorption and catalysis. Trudy GIAP no.7:292-304 '57. (MIRA 12:9)
(Hydrogen) (Catalysis) (Adsorption)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

KRASIL'SHCHIKOV, A.I., doktor khim. nauk; ANTONOVA, L.G.

Effect of mechanical deformations on the kinetics of corrosion and electrochemical processes. Part 2. Trudy GIAP no.8:219-225 '57. (MIRA 12:9)
(Deformations (Mechanics))
(Corrosion and anticorrosives)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

5(4) SOV/76-33-2-28/45

AUTHORS: Antonova, L. G., Ivanovskiy, F. P., Fil'chenkova, T. G., Krasil'shchikov, A. I.

TITLE: Adsorption Phenomena in the System Hydrogen - Carbon Dioxide - Carbon Monoxide - Water Vapor I (Adsorbtsionnyye yavleniya v sisteme vodorod - uglekislota - okis' ugleroda -vodyanoy par.I)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 2, pp 416 - 421 (USSR)

ABSTRACT: The catalytic reaction of carbon monoxide with water vapor yielding hydrogen and carbon dioxide has been often investigated (Refs 1-7). The present experiments concerning the adsorption of these components were carried out according to a somewhat modified method (Ref 8). No electrode polarization was produced, but the potential of the internal electrode was measured. The gas was absorbed onto a porous metal film which served as an electrode and which was applied to glass. A metal film of silver maintained in an air atmosphere served as the comparison electrode. The reactior cell (Fig 1) was produced from a special glasseous

Card 1/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

material conductive at higher temperatures and which was attached to the testing apparatus (Fig 2). Experiments on copper films showed (Fig 3) that at 300°C (potential ca - 1250 mv) an extension of the potential to positive values takes place with an increase in moisture. The hydrogen adsorption at 250°C (potential ca -1200 mv) (Fig 5) has a different character than at 300°C since the influence of the moisture exerts a stronger irreversible effect. The adsorption of CO_2 on copper occurs at 250°C with a potential of ca -500 mv (Fig 6). The adsorption of H_2 and CO_2 on cobalt films occurs similarly to that on the copper films (potential at 250°C ca - 1100 mv) (Figs 8-10). The experimental results show that the measurement of the potential of metallic films is an important method for investigating gas adsorption. There are 10 figures and 21 references, 12 of which are Soviet.

ASSOCIATION: Institut azotnoy promyshlennosti, Moskva (Institute of the Nitrogen Industry, Moscow)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Adsorption Phenomena in the System Hydrogen - Carbon Dioxide - Carbon Monoxide - Water Vapor I

SOV/76-3-2-28/45

SUBMITTED: July 9, 1957

Card 3/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

KRASIL'SHCHIKOV, A.I.; ANTONOVA, L.G.

Study of gaseous reactions in catalytic hydrogenation by electrochemical methods. Probl. kin. i kat. 10:172-177 '60.
(MIRA 14:5)

(Hydrogenation)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

87451

S/195/60/001/002/003/010
B004/B067

26.2153

AUTHORS: Krasil'shchikov, A. I., Antonova, L. G., Ivanovskiy, F. P.

TITLE: Adsorption, Ionization, and Catalytic Activation of Gases on Metals

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 2, pp. 212 - 220

TEXT: In the field of gas adsorption and catalysis an increasing number of electron concepts has been developed. Therefore, new investigation methods must be developed. In Refs.10-12 the authors have developed a new electrochemical investigation method which they describe in this paper. The test equipment is schematically shown in Fig.1. The reaction tube 1 was made of special glass which becomes conductive on heating and acts as a solid electrolyte. A silver film applied to the outside of the glass served as reference electrode. The authors studied the adsorption of H_2, CO_2, C_2H_4; a mixture of H_2 and C_2H_4; CO and N_2; and a mixture of N_2 and H_2 on the following metals: Cu, Co, Ni, Ag, and Fe. The studies were made in the temperature range of 250 - 425°C. It was found that the

Card 1/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

electrochemical potential of gas adsorption depends on the metal used. For the metals considered here, the maximum potential difference was 220-225 mv for H_2, 300-350 mv for CO, and 750-800 mv for N_2. In the hydrogenation of ethylene on copper at 250°C, large amounts of ethylene and hydrogen are adsorbed on copper. It is assumed that the activation of C_2H_4 takes place by the addition of an electron to the metal, viz., probably to the double bond. In the adsorption of CO on Cu, the chemical potential was by 300 - 350 mv more negative than on all other metals. The specific catalytic action of Cu is due to the particularly strong reducing effect of CO adsorbed on Cu. N_2 adsorption on Fe takes place at a potential by 800 mv more positive than on Cu, Co, or Ag. Hence, negative nitrogen ions in appreciable quantities may be formed only on Fe. Only Fe may be used as a catalyst in the synthesis of ammonia. It is assumed that the activation of N_2 on Fe is caused by the formation of uninegative molecular ions. In all cases, a jump in the electrochemical potential occurred when a gas was adsorbed on a metal. This effect was attributed to the formation of gas ions on the metal surface. However,

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

this ionization must not be regarded as gas adsorption. Ionization may follow adsorption, and it is possible that only part of the adsorbed gas is ionized. The formation of molecular gas ions may increase the reactivity of the gas. There are 9 figures and 25 references: 16 Soviet, 3 US, 3 British, 1 French, and 4 German.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut azotnoy promyshlennosti (State Scientific and Research Institute of the Nitrogen Industry)

SUBMITTED: December 22, 1959

Legend to Fig.1: 1) reaction tube; 2) measuring electrode; 3) reference electrode; 4) platinum contacts; 5) gas inlet; 6) gas outlet; O-H-E-Э-X: reversing switch; Ex: measured voltage; НЭ: standard cell; R_1,R_2,R_3,R_4: resistors; B: selenium rectifier; C: stabilizer; Г: zero galvanometer; П: potentiometer.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

S/076/60/034/012/012/027
B020/B067

AUTHORS: Antonova, L. G., Fil'chenkova, T. G., Ivanovskiy, F. P., and Krasil'shchikov, A. I.

TITLE: Adsorption Phenomena in the System Hydrogen - Carbon Dioxide - Carbon Monoxide - Water Vapor. II. Adsorption of Carbon Monoxide

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 12, pp. 2766-2771

TEXT: The authors attempted to study the electrochemical adsorption potential of carbon monoxide on various metals by using the same methods as described in Ref. 1. The reproducibility of the measurements was approximately ± 25 mv, the accuracy of measurement was ± 1 mv. The adsorption experiments with carbon monoxide were made to study the conversion of carbon monoxide with water vapor. CO was purified by passing it through a furnace filled with reduced copper at 350°, furthermore through a furnace filled with copper, precipitated on silica gel at 250°, by a freezing trap at approximately -70°, askarite, charcoal, and

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

silicagel. At the beginning of the measurements the curves potential versus time took a somewhat irregular course which was, however, equalized after 1.5 to 2 hours. The adsorption of CO by a cobalt film at 250°C (Fig. 1) and of CO and hydrogen on iron at 425°C (Fig. 2), and on nickel at 425°C (Fig. 3) is graphically illustrated. The adsorption diagrams of hydrogen and CO on silver at 425°C (Fig. 4), copper at 425°C (Fig. 5), and after nitrogen adsorption at 425°C (Fig. 6) are also given. Fig. 7 shows the adsorption potentials of carbon monoxide on various metals which clearly express the characteristic behavior of copper. The adsorption potential of carbon monoxide on copper is approximately by 300 mv more negative than in all other metals studied. This fact can be explained by the complex electron structure of carbon monoxide and by the selective character of the adsorption affinity. Actually, copper is usually recommended as specific catalyst for the reaction of CO with oxygen, whereas nickel and iron are used for its reaction with hydrogen. There are 7 figures and 15 references: 12 Soviet, 1 US, and 2 British.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Adsorption Phenomena in the System Hydrogen - Carbon Dioxide - Carbon Monoxide - Water Vapor II. Adsorption of Carbon Monoxide

S/076/60/034/012/012/027
B020/B067

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti (State Institute for the Nitrogen Industry)

SUBMITTED: March 25, 1959

Card 3/3

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

KRASIL'SHCHIKOV, A.I. (Moskva); ANTONOVA, L.G. (Moskva)

Adsorption phenomena under conditions of ammonia synthesis.
Zhur.fiz.khim. 35 no.8:1710-1715 Ag '61. (MIRA 14:8)

1. Gosudarstvennyy institut azotnoy promyshlennosti.
(Ammonia) (Adsorption)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

KRASIL'SHCHIKOV, A.I.; ANTONOVA, L.G.; BIRYUKOVA, Z.M.; KARATAYEVA, I.M.; FIL'CHENKOVA, T.G.

Activated adsorption of nitrogen. Zhur.fiz.khim. 37 no.1:204-206 Ja '63. (MIRA 17:3)

1. Institut azotnoy promyshlennosti.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

KRASIL'NIKOV, A.I.; ANTONOVA, L.G.

Activated adsorption and ionization of gases on metals. Zhur.fiz.khim. 39 no.7:1690-1699 Jl '65. (MIRA 18:8)

1. Gosudarstvennyy institut azotnoy promyshlennosti.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.G.; KRASIL'SHCHIKOV, A.I.; SIVYAKOVA, R.F.; [illegible], L.M.

Ammonia yield on a K-55 catalyst as a function of the potential. Kin. i kat. 6 no. 6:1117-1118 N-D '65 (MIRA 19:1)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza. Submitted February 3, 1965.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 24500-66 EWT(m)/EWP(j)/T WW/JW/JWD/RM

ACC NR: AP6002167 SOURCE CODE: UR/0195/65/006/006/1117/1118

AUTHOR: Antonova, L. G.; Krasil'shchikov, A. I.; Sivyakova, R. F.; Dmitrenko, L. M.

ORG: State Scientific Research and Planning Institute of the Nitrogen Industry and Products of Organic Synthesis (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza)

TITLE: Potential dependence of ammonia yield on K-55 catalyst

SOURCE: Kinetika i kataliz, v. 6, no. 6, 1965, 117-118

TOPIC TAGS: nitrogen, hydrogen, ammonia, cathode polarization

ABSTRACT: In order to determine the effect of the electrochemical polarization of K-55 catalyst on the rate of ammonia synthesis, the potential of thin layers of the catalyst was measured during polarization. The experiments were carried out at 375--400°C with a nitrogen-hydrogen mixture of stoichiometric composition; the ammonia was absorbed in a 0.01 N H_2SO_4 solution and back-titrated with methyl red. The current density ranged from 0.04 to 1 $\mu A/cm^2$, and the potential was shifted from 0 to 6 V. A very slight increase in ammonia yield was noted as the cathode potential was raised. It is concluded that the substantial increase in ammonia yield (by a factor of 2-2.5) observed earlier by other authors when strong fields were applied to the electrode must be directly related to the influence of the fields on the catalytic reaction, and

Card 1/2

UDC: 541.128.13.037+542.91 : 546.171.1

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 24500-66

ACC NR: AP6002167

is not due to electrolysis phenomena in the glass. During polarization, only the portions of the porous catalyst electrode which are directly adjacent to the glass become partially activated. Orig. art. has: 1 figure.

SUB CODE: 07/ SUBM DATE: 03Feb65/ ORIG REF: 003/ OTH REF: 000

Card 2/2 LC

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACC NR: AP7002408 SOURCE CODE: UR/0363/66/002/012/2241/2245

AUTHOR: Yeliseyev, A. A.; Kuznetsov, V. G.; Yarembash, Ye. I.; Vigileva, Ye. S.; Antonova, L. I.; Zinchenko, K. A.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: New phase in the system of tellurides of the rare earth metals of ceria subgroup

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 12, 1966, 2241-2245

TOPIC TAGS: compound semiconductor, rare earth metal, telluride, single crystal growing, crystal structure, crystal electric conductivity

ABSTRACT: The existence of the M_4Te_{7+x} phase within the homogeneity limits between 61 and 64 at% Te was confirmed by chemical, x-ray spectrochemical, and x-ray phase analysis of poly- and single-crystalline M_4Te_7, where M = La, Pr, or Nd. Previously, the M_4Te_{7+x} phase was detected by different Soviet authors but was absent in the La-Te and La-Nd phase diagrams which were published in the 1965 Western studies. The M_4Te_7 single crystals, 1 x 1 x 1 mm maximum size, were grown from polycrystalline M_2Te_3 by the chemical transport reaction with iodine at a 950—800C temperature gradient. Simultaneously, the MTe_2 single crystals were formed. The shape of the

Card 1/2 UDC: 546.65'241-54-162.2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACC NR: AP7002408

La_4Te_7 and $LaTe_2$ single crystals was identical, while that of the Nd_4Te_7 and $NdTe_2$ was different. Lattice symmetry type and constants, space symmetry group, number of molecules in the unit cell, and x-ray density were determined and tabulated for La_4Te_7, Pr_4Te_7, and Nd_4Te_7. Lattice constants of Ce_4Te_7 were extrapolated from their plots versus ionic radii of the M^{3+} ions. La_4Te_7 was found to crystallize in a tetragonal not rhombic system, which was previously assigned to La_4Te_7 by the authors. The lattice constants of La_4Te_7 were found to be as follows: $a = b = 9.011 \pm 0.005$ Å, $c = 9.172 \pm 0.005$ Å. The most likely space symmetry group of La_4Te_7 was the centric P4/mbm group. Other $M_4Te_{7\pm x}$ tellurides of the ceria subgroup crystallize in the same system and have the same space symmetry group as La_4Te_7. Structural similarity and differences were noted between M_4Te_7 and MTe_2. Electrical conductivity and thermal emf of the M_4Te_7 phase was of the semiconductor type. The existence of the M_4Te_7 (or M_7Te_{12}) phase was presumed for Ce and Sm because of the crystallochemical analogy between tellurides of the ceria subgroup. Orig. art. has: 3 tables and 2 figures.

SUB CODE: 07/ SUBM DATE: 24Feb66/ ORIG REF: 003/ OTH REF: 004/

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 11266-63 EWQ(q)/EWT(m)/BDS—AFFTC/ASD—JD

ACCESSION NR: AP3001230 S/0078/63/008/006/1542/1543 56

AUTHOR: Yarembash, Ye. I.; Vigileva, Ye. S.; Yeliseyev, A. A.; Antonova, L. I.

TITLE: Lanthanum tellurides 27.

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 6, 1963, 1542-1543

TOPIC TAGS: lanthanum tellurido, lanthanum reaction product, lanthanum—tellurium phase system, specific resistivity, thermal emf

ABSTRACT: Conditions for the formation of lanthanum tellurides have been studied, together with the phase composition of the products formed from the reaction of La and Te. The tellurides were synthesized by heating a mixture of finely powdered La and Te in the presence of a very small amount of iodine and also by the reaction of LaH_2 with Te vapor. Several phases, among them LaTe, La_2Te_3, and $LaTe_2$, were identified. X-ray analysis indicated the possible formation of two additional phases whose properties and compositions are not known. Compound LaTe crystallizes as an NaCl-type lattice with $a = 6.407 \pm 0.005$ kX, a value commensurate with data

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 11266-63
ACCESSION NR: AP3001230

in the literature. The specific resistivity and thermal emf of compacted samples at room temperature were found to be $\rho = 1.5 \cdot 10^{3}$ ohm·cm and $\alpha = -40$ to -50 μv/deg for LaTe, $\rho = 4 \cdot 10^{2}$ ohm·cm and $\alpha = -20$ to -30 μv/deg for La_2Te_3, and for $\rho = 2.4 \cdot 10^{-1}$ ohm·cm and $\alpha = +15$ to $+20$ μv/deg for $LaTe_2$. The presence of a negative temperature coefficient of resistivity was established in all cases studied, and all compounds--with the exception of $LaTe_2$--were of n-type conductivity. Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 21Jan63 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: CH NO REF SOV: 000 OTHER: 005

nh/ktb
Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANIKEEVA, L.I.

L 10527-65 EWT(m)/EWP(b) ASD(m)-3/RAEM(t) RDW/JD/JG
ACCESSION NR: AP4029187 S/0078/64/009/004/0876/0882

AUTHOR: Yeliseyev, A. A.; Yarembash, Ye. I.; Kuznetsov, V. G.; Vigileva, Ye. S.; Reshchikova, A. A.; Antonova, L. I.

TITLE: Lanthanum tellurides

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 4, 1964, 876-882

TOPIC TAGS: lanthanum telluride, crystal structure, lanthanum sesquitelluride, lanthanum ditelluride, lanthanum tritelluride, conductivity, electric resistance temperature coefficient, specific electric resistance, thermal electromotive force

ABSTRACT: A series of alloys of the La-Te system, containing 50-80 at.% Te was investigated at temperatures below the liquidus line. The following telluride phases were found: LaTe, La_2Te_3(La_3Te_4), $LaTe_7$ ($LaTe_{12}$), $LaTe_2$, and $LaTe_3$. These compounds can be synthesized by a single-stage thermal reaction of La with Te in 1:1, 2:2 and 1:2 molar ratios. The sesquitelluride La_2Te_3(La_3Te_4) crystallizes in the Th_3P_4 lattice, parameter a = 9.6003 ± 0.0005 Å; d_{20} = 6.53 gm/cm³. The structures of $LaTe_7$($LaTe_{12}$) and $LaTe_2$ are similar. The ditelluride $LaTe_2$

Card 1/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 10527-65
ACCESSION NR: AP4029187

crystallizes in a tetragonal lattice, a = 4.547 ± 0.003 kX, c = 9.158 ± 0.006 kX; d_4^{20} = 6.80 gm/cm³. Its single crystals are fairly stable in air but disintegrate on prolonged storage. The gold-cinnamon colored tritelluride $LaTe_3$ dissociates on heating in vacuum to form the ditelluride and free tellurium: $LaTe_3 \xrightarrow{>460°} LaTe_{2+x}(1-x)Te$. All the tellurides except $LaTe_2$ show p-type conductivity; the temperature coefficient of their electric resistance is negative. The values of the specific electric resistance and the thermal electromotive force of the lanthanum tellurides and their dependance on composition were determined. "Susceptibility measurements were conducted by V. I. Bylov." Orig. art. has: 5 tables and 3 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences SSSR)

SUBMITTED: 24Aug63 ENCL: 02 SUB CODE: IC

NO REF SOV: 004 OTHER: 008

Card 2/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 10527-65
ACCESSION NR: AP4029187 ENCLOSURE: 01

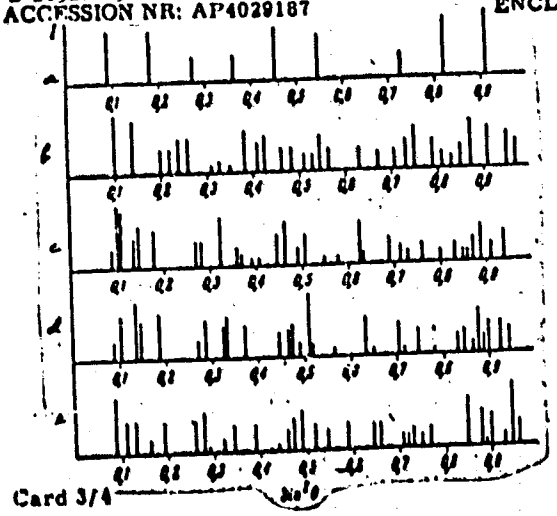


fig. 1

X-ray diagrams of phases in the La-Te system:
a--LaTe; b--La_2Te_3; c--La_4Te_7
d--$LaTe_2$; e--$LaTe_3$

Card 3/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 10527-65
ACCESSION NR: AP4029187 ENCLOSURE: 02

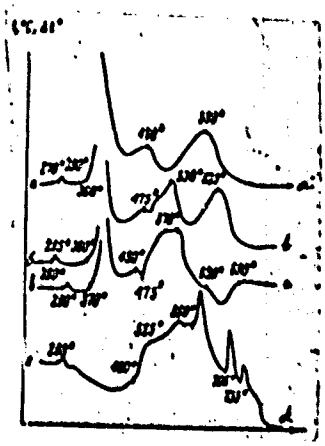


fig. 2

Differential thermal analysis curves

a--La:Te - 1:1; b--La:Te - 2:3; c--La:Te - 1:2; d--La:Te - 2:3

Card 4/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

YELISEYEV, A.A.; YAREMENKO, Ye.I.; KUZNETSOV, V.G.; ANTONOVA, I.I.; STOYANTSEVA, Z.P.

X-ray diffraction examination of lanthanum tellurides. Izv. AN SSSR. Neorg.mat. 1 no.7:1027-1038 Jl '65. (MIRA 18:9)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.Kurnakova AN SSSR.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

YELISEYEV, A.A.; YEREMBASH, Ye.I.; VIGILEVA, Ye.S.; ANTONOVA, [illegible]; ZACHATSKAYA, A.V.

Polymorphism of lanthanum. Zhur. neorg. khim. 9 no.5: 1032-1037 My '64. (MIRA 17:9)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova AN SSSR.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACC NR: AP5022248 SOURCE CODE: UR/0363/65/001/007/1027/1038

AUTHOR: Yeliseyev, A. A.; Yarembash, Ye. I.; Kuznetsov, V. G.; Antonova, L. I.; Stoyantsova, Z. P.

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: X ray phase analysis of lathanum tellurides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1027-1038

TOPIC TAGS: rare earth element, lathanum compound, telluride, phase diagram, crystal chemistry, crystal lattice parameter

ABSTRACT: Crystallochemical properties of lanthanum tellurides have been studied by x-ray phase analysis and differential thermal analysis of the polycrystalline samples which were synthesized by a technique previously described by the authors [Zh. neorgan khimii, 9, 876, (1964)]. The complete phase diagram of the La-Te System was established for the first time on the basis of the new data. Homogeneity limits of the six identified phases were determined. One of the six phases, La_2Te_5, was detected for the first time. The phase previously identified as La_4Te_7 was found to be $LaTe_{1.7\pm X}$. Crystallographic characteristics of all phases were given. The existence of the $MTe_{1.7\pm X}$ and M_2Te_5 phases, where M is a rare earth element from Ce to Sm, was presumed on the grounds of crystallochemical analogy

Card 1/2 UDC: 546.654'241:548.19

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACC NR: AP5022218

between the rare-earth tellurides of other types. Orig. art. has: 8 tables and 5 figures.

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 011

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACCESSION NR: AP4036962 S/0078/64/009/005/1032/1037

AUTHOR: Yeliseyev, A. A.; Yarembash, Ye. I.; Vigilova, Ye. S.; Antonova, L. I.; Zachatskaya, A. V.

TITLE: The polymorphism of lanthanum

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 5, 1964, 1032-1037

TOPIC TAGS: lanthanum, polymorphism structure, x ray analysis, microstructure, differential thermal analysis, alpha lanthanum, beta lanthanum, lattice contraction, thermogram, enantiotropic transformation, melting temperature, gamma lanthanum, coefficient of expansion

ABSTRACT: The structure of lanthanum was investigated in samples (containing 0.7 and 0.2% impurities) by x-ray, microstructural and differential-thermal analyses. Under ordinary conditions lanthanum consists of the alpha- and beta-modifications with the alpha-form predominating. Lattice parameters of these modifications are:

α - La a = 3.755 ± 0.005Å c = 12.024Å

β - La a = 5.291 ± 0.005Å

Differential thermal analysis curves of La (and of La with quartz to determine the

Card 1/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACCESSION NR: AP4036962

effects of impurities) were constructed (fig. 1.). The transition from alpha to beta lanthanum occurs at about 260C (with the top limit at 400C; above that only traces of alpha are retained); the transition from beta to gamma is at 850C, and melting is at 900C. The endo- and exothermic effects at 400, 560 and 745C were not explained. The anomalous contraction at 325C is associated with a sharp decrease in the beta-lattice spacing. An insignificant decrease in the parameter of the alph-lanthanum lattice along the c axis was observed at 200-330C. The coefficient of linear expansion of beta-lanthanum at 300-330C is approximately 400×10^{-6} degrees^{-1}. At temperatures above 550C lines appear on the La x-ray which do not correspond to either of the known modifications or their oxides. The number of these lines increases with increase in temperature. This is in accord with the presence of the "sliding" effect at 550-710C on the La thermogram. After cooling, the molten metal recovers its original structure. At 850C beta-lanthanum is enantiotropically transformed to gamma-lanthanum. Orig. art. has: 4 figures and 4 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova, Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of

Card 2/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACCESSION NR: AP4036962

Sciences, SSSR)

SUBMITTED: 07Jun63 DATE ACQ: 05Jun64 ENCL: 01

SUB CODE: IC,OP.. NO REF SOV: 002 OTHER: 017

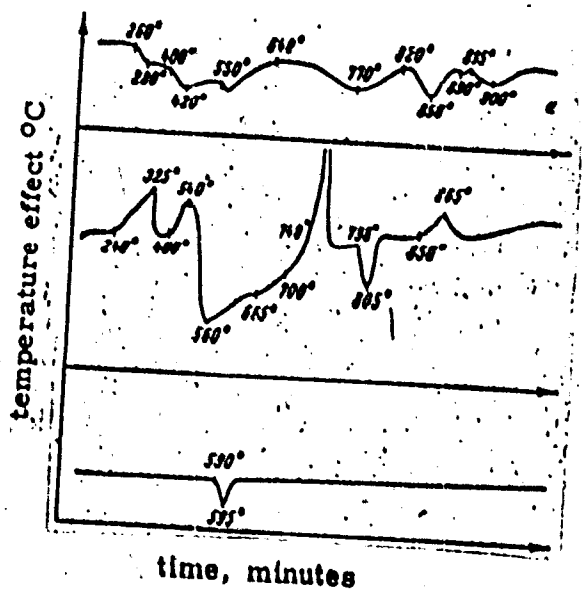
Cord 3/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ENCLOSURE: 01

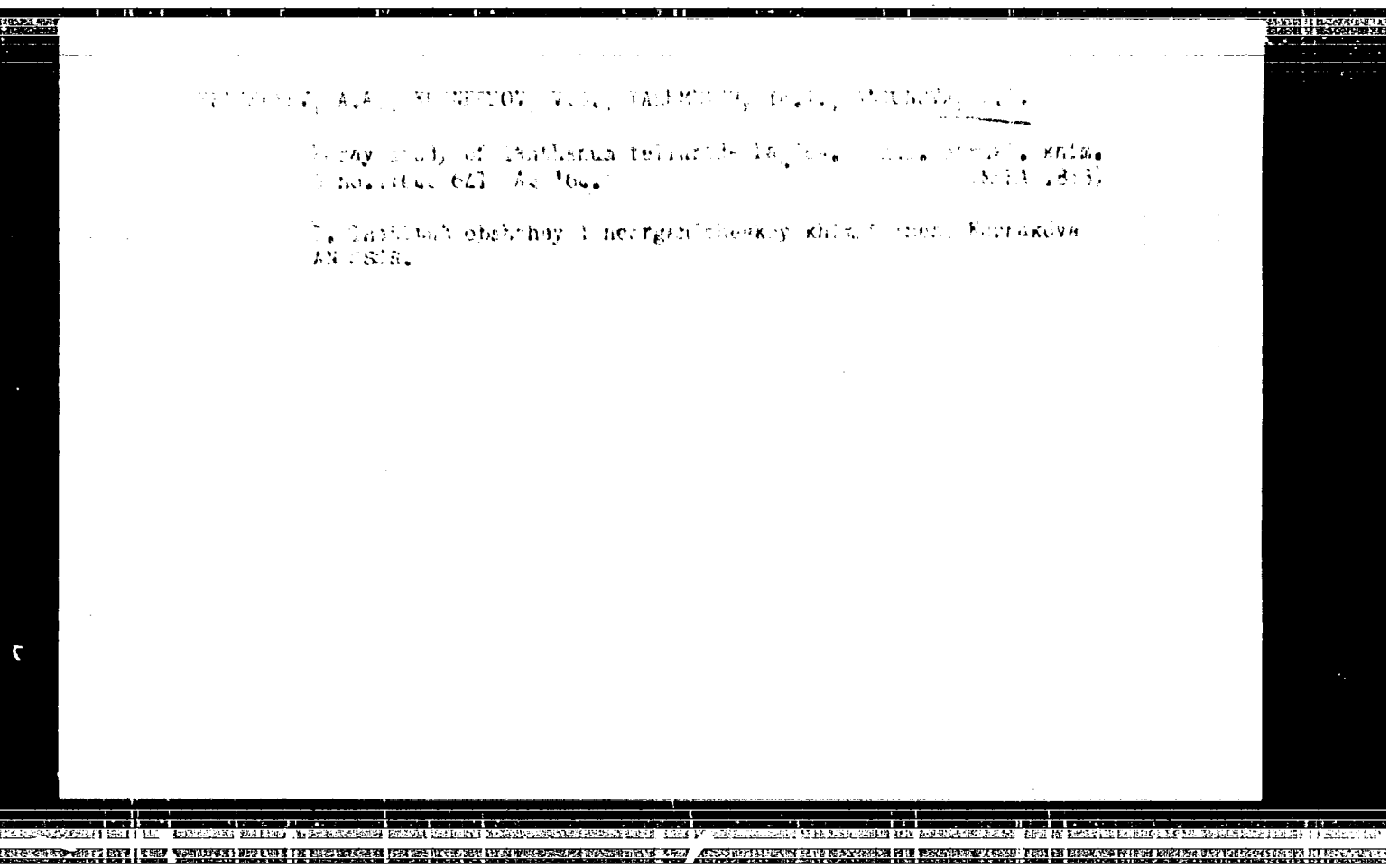
Fig. 1. DTA (heating) curves: a--lanthanum; b--mixture of lanthanum with (3.5 wt.%) quartz; c--quartz.



Card 4/4

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 06483-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG
ACC NR: AP6028295 SOURCE CODE: UR/0363/66/002/006/0984/0990

AUTHOR: Yarembash, Ye. I.; Yeliseyev, A. A.; Kalitin, V. I.; Antonova, L. I. 26 24 13

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakov, Academy of Sciences, SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: X-ray diffraction analysis of praseodymium selenides 14 17 7

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 6, 1966, 984-990

TOPIC TAGS: praseodymium compound, selenide, x ray diffraction study

ABSTRACT: The object of the work was to study the phase composition, crystal structure, and regions of homogeneity of the products obtained from a direct reaction between praseodymium and selenium. X-ray diffraction analysis of the praseodymium selerides obtained showed the existence of the following individual phases: PrSe, Pr_5Se_6, $Pr_{3-x}Se_4$, $Pr_4Se_{7\pm x}$, $PrSe_{1.9-x}$ and $Pr_3Se_{7\pm x}$. The phases Pr_5Se_6, $Pr_4Se_{7\pm x}$ and $Pr_3Se_{7\pm x}$ in the Pr-Se system were identified for the first time. PrSe (50 at. % Se) has a face-centered cubic NaCl-type lattice, a = 5.941 Å. Pr_5Se_6 (54.5 at. % Se) crystallizes in a low-symmetrical, probably monoclinic system. $Pr_{3-x}Se_4$ (where $0 = x = 0.33$) has a body-centered cubic lattice with a Th_3P_4-type structure; its region of homogeneity extends from 57.2 to 60.0 at. % Se; a = 8.881 Å for Pr_3Se_4 and a = 8.895 Å for Pr_2Se_3. X-ray structural analyses of Pr_4Se_7 and $PrSe_{1.9}$ single crystals were carried out for the first time, and their unit cell parameters and space groups were deter-

Card 1/2 UDC: 546.656'231:539.261

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ACC NR: AP6028295

mined. The (Cu_2Sb)-type structure is possible for $PrSe_{1.9}$. Pr_4Se_{7+x} ($0 = x = 0.2$) has a tetragonal lattice and $a = 8.44 \pm 0.05$ Å, $c = 8.49 \pm 0.05$ Å, $c/a = 1.006$; $Z = 2$; space group $P4/mbm$; the structure is apparently close to that of $PrSe_{1.9-x}$. The region of homogeneity extends from 63.0 to 64.2 at. % Se. $PrSe_{1.9-x}$ crystallizes in the tetragonal system with $a = 4.17 \pm 0.005$ Å, $c = 8.40 \pm 0.005$ Å; $c/a = 2.014$; $Z = 2$; space group $P4/nmm$; region of homogeneity from 65.5 to 64.3 at. % Se. Pr_3Se_{7+x} ($0 = x = 0.5$) has a tetragonal lattice with an unknown structure; region of homogeneity from 69.2 to 71.5 at. % Se. Praseodymium triselenide $PrSe_3$ was not observed. Authors thank Dr. of Chemical Sciences Prof. N. P. Luzhnaya and Dr. of Chemical Sciences V. G. Kuznetsov for their steady interest and assistance. Orig. art. has: 1 figure and 2 tables.

SUB CODE: 07/ SUBM DATE: 22Nov65/ ORIG REF: 013/ OTH REF: 009

Card 2/2 nkf

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

SOV/132-59-3-13/15

AUTHORS: Opalev, A.F., and Antonova, L.N.

TITLE: Uranium Resources of the Capitalist Countries

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 3, pp 55-59, (USSR)

ABSTRACT: The article gives data on the uranium resources in the U.S.A., Canada, the South African Union, North Rhodesia, Madagascar, Morocco, Australia, India, France, Great Britain, Sweden, Portugal, Spain, West Germany and Brazil. There is 1 table.

ASSOCIATION: VGF

Card 1/1

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

TKACHEVA, R.E.; OKORODNEVA, V.I.; DUBOVSKAYA, M.V.; MARKOVA, Ye.I.; GRIGOR'YEV, N.P.; POPOVA, A.I.; ROZIN, M.S.; OPALEV, A.F. Prinimali uchastiye: ANTONOVA, L.N.; MALAYEV, A.A.; KIRILLOVA, L.D.; SOKOLOVSKAYA, Ye.Ya., red.izd-va; BYKHOVER, N.A., red.; GUROVA, O.A., tekhn. red.

[Concise handbook on the mineral resources of capitalist countries; Asia] Kratkii spravochnik po mineral'nym resursam kapitalisticheskikh stran; Aziia. Pod red. N.A.Bykhovera, M.V.Dubovskoi i A.F.Opalova. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po geol. i okhrane nedr, 1961. 124 p. (MIRA 15:2)
(Asia—Mines and mineral resources)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

TKACHEVA, R.E.; OGORODNEVA, V.I.; DUBOVSKAYA,M.V.;MARKOVA,Ye.I.;GRIGOR'YEV,N.F.; POPOVA, A.I.; ROZIN, M.S.; OPALEV, A.F.; Prinimali uchastiye: ANTONOVA, L.N.; MALAYEV, A.A.; BYKHOVER, N.A., red.; MAKEYEV, V.I., red. izd-va; GUROVA, O.A., tekhn. red.

[Concise handbook on mineral resources in capitalist countries; America] Kratkii spravochnik po mineral'nym resursam kapitalisticheskikh stran; Amerika. Pod red. N.A.Bykhovera, M.V.Dubovskoi i A.F.Opaleva. Moskva, Gosgeoltekhizdat, 1961. 154 p. (MIRA 15:6)

1. Russia (1923- U.S.S.R.) Vsesoyuznyy geologicheskiy fond. (America--Mines and mineral resources)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

TKACHEVA, R.E.; OGORODNEVA, V.I.; DUBOVSKAYA, M.V.; MARKOVA, Ye.I.; GRIGOR'YEV, N.P.; POPOVA, A.I.; ROZIN, M.S.; OPALEV, A.F.; Prinimali uchastiye: ANTONOVA, I.N.; MALAYEV, A.A.; BYKHOVER, N.A., red.; NEKHODTSEV, N.A., red.; PANOVA, A.I., red.izd-va; IVANOVA, A.G., tekhn. red.

[Brief manual on the mineral resources of capitalist countries; Africa, Australia and Oceania] Kratkii spravochnik po mineral'nym resursam kapitalisticheskikh stran; Afrika, Avstraliia i Okraniia. Moskva, Gosgeoltekhizdat, 1962. 197 p.
(MIRA 16:3)

1. Russia (1923- U.S.S.R.) Vsesoyuznyy geologicheskiy fond.
(Africa--Mines and mineral resources)
(Australia--Mines and mineral resources)
(Oceania--Mines and mineral resources)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

SHISHLYAKOV, A.V., kand.tekhn.nauk; KOGAN, D.A.; ANTONOVA, L.N.

Single-track automatic block system without main track signal lights and with unlimited pulse track circuits. Avtom., telem. i sviaz' 9 no.5:20-24 My '65. (MIRA 18:5)

1. Vedushchiy konstruktorskogo byuro Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya (for Kogan). 2. Starshiy inzh. konstruktorskogo byuro Glavnogo upravleniya signalizatsii i svyazi Ministerstva putey soobshcheniya (for Antonova).

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

BILIBIN, A.F.; [illegible]INA, I.N.; KORNILOVA, [illegible]; ANICHOVA, L.S.; [illegible]KALINSKINA, E.M.; LACHASHVILI, I.S., [illegible], G.[illegible]; [illegible], [illegible]; POPOVA, V.N.; POPSHIEVA, I.[illegible].

Results of the treatment of acute dysentery at home; preliminary report. Zhur. mikrobiol., epid. i immun. [illegible] no.6:[illegible] '65. (MIRA 18:[illegible])

1. II Moskovskiy meditsinskiy institut imeni [illegible], [illegible] Klinicheskaya infektsionnaya bol'nitsa i poliklinika Pervomayskogo i Frunzenskogo rayona Moskvy.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

CHERNOVA, E.N.; ANTONOVA, L.N.; LOVTSEVICH, L.N.; SIDORENKO, V.Ya.; PANOV, A.A., otv. red.; POMERA, E.A., red.

[Systematic catalog of Russian periodical and serial publications on medicine, 1792-1960] Sistematicheskii katalog otechestvennykh periodicheskikh i prodolzhayushchikhsia izdanii po meditsine, 1792-1960. Leningrad, 1965. 495 p. (MIRA 18:12)

1. Akademiya nauk SSSR. Biblioteka. 2. Zaveduyushchiy otdelom sistematizatsii literatury Biblioteki AN SSSR (for Panov).

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

RUBTSOVA, L.K.; ANTONOVA, L.N.; D'YACHENKO, G.M.; GRACHEVA, N.M.; SYSOYEVA, L.A.; PROKHOROVA, I.I.; PLOTKINA, N.S.

Experience in the clinical use of novobiocin. Antibiotiki 10 no.10:930-934 O '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov; Klinika infektsionnykh zabolevaniy II Moskovskogo meditsinskogo instituta i Institut klinicheskoy i eksperimental'noy khirurgii. Submitted Jan. 14, 1965.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

VA[illegible]OV, I.I.; [illegible]ITSKIY, L.V.; [illegible]OVA, L.I.

[illegible] determining the transportability of tomatoes. Trudy VNIIKOP no.11:102-11[illegible] '6[illegible]. (MIRA 17:9)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T.; KURLYANDSKIY, B.A.; MEL'NIKOVA, M.M.; SMIRNOVA, M.I.
(Moskva)

State of the health of workers engaged in the production of caprolactam from benzene. Gig. truda i prof. zab. 6 no.5:14-17 My '62.
(MIRA 16:8)

1. TSentral'nyy institut usovershenstvovaniya vrachey.
(INDUSTRIAL HYGIENE) (CYCLOHEXANE—TOXICOLOGY)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kandidat meditsinskikh nauk

Functional diagnosis and determination of working capacity in chronic subfebrile temperatures. Klin. med. 32 no.8:59-63 Ag '54. (MLRA 7:10)

1. Iz TSentral'nogo instituta usovershenstvovaniya vrachey.

(FEVER,
subfebrile chronic states, diag. & determ. of working capacity)
(WORK,
working capacity, determ. in chronic subfebrile cond.)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk; VOLODINA, V.A., kand.med.nauk

Capillaroscopic data in various stages of hypertension in adolescents [with summary in English]. Pediatriia 36 no.3:21-25 Mr '58. (MIRA 11:3)

1. Iz podrostkovogo otdeleniya (zav. A.V.Khodzhash) Instituta gigiyeny truda i profzabolevaniy AMN SSSR (dir.-deystvitel'nyy chlen AMN SSSR prof. A.A.Letavet)

(HYPERTENSION) (CAPILLARIES)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk

A case of hypertension in a juvenile with congenital unilateral hydronephrosis with calculosis and infections [with summary in English]. Pediatriia 36 no.9:52-53 D'58 (MIRA 11:11)

1. Otdel rabochego podrostka Instituta gigiyeny truda i professional'nykh zabolevaniy AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A. Letavet, zav. klinikoy - prof. A.L. Morozov, zav. otdeleniyem A.V. Khodzhash).

(HYPERTENSION, case reports
congen., with unilateral hydronephrosis, calculosis
(HYDRONEPHROSIS, case reports
unilateral, with calculosis & infect. in congen. hypertension (Rus))
(KIDNEYS, calculi
with infect. & unilateral hydronephrosis in congen. hypertension (Rus))

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T.; MARTYNOVA, A.P.; MEL'NIKOVA, M.M. (Moskva)

State of health of workers in capron fiber plants. Gig. truda i prof. zab. 4 no.12:39-41 D '60. (MIRA 15:3)

1. TSentral'nyy institut usovershenstvovaniya vrachey, Institut gigiyeny truda i professional'nykh zabolevaniy AMN SSSR.
(NYLON--HYGIENIC ASPECTS)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T.

Pathogenesis of fucntional murmurs. Phenomenon of the systolic murmur in the abdominal aorta in hypertension. Terap.arkh. 32 no.1:70-76 Ja '60. (MIRA 13:10)
(HYPERTENSION diag.)
(HEART SOUNDS)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk; BELOVA, S.F., kand.med.nauk

State of the fundus oculi in hypertension in adolescents and youths. Pediatriia 38 no.8:67-71 Ag '60. (MIRA 13:12)

1. Is Instituta gigiyeny truda i profzabolevaniy AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A. Letavet).
(HYPERTENSION) (EYE)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk

Hypertension in youth. Zdorov'e 7 no.11:23-24 N '61. (MIRA 14:11)
(HYPERTENSION)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk

Hypertension in adolescents and youth, its prevention and treatment. Med. sestra 20 no.3:3-7 Mr '61. (MIRA 14:5)

1. Iz kafedry professional'nykh bolezney TSentral'nogo instituta usovershenstvovaniya vrachey, Moskva.
(HYPERTENSION)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T. (Moskva, D-252, 7-ya Peschanaya ul., d.3, kv.72); MELEKHOV, V.V.

Rare complication following surgery for atresia of the aortic isthmus; fatal hemorrhage as a result of the perforation of a suppurating para-aortic hematoma into the esophagus cuased by septicopyemia. Grudn. khir. 4 no.5:107-109 S-O'62 (MIRA 17:3)

1. Iz kafedry professional'nykh bolezney (zav. - prof. A.M. Rashevskaya) TSentral'nogo instituta usovershenstvovaniya vrachey na baze Instituta gigiyeny truda i professional'nykh zabolevaniy AMN SSSR i iz khirurgicheskogo otdeleniya Instituta eksperimental'noy biologii i meditsiny (dir. - prof. Ye.N. Meshalkin) Sibirskogo otdeleniya AN SSSR.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand. med. nauk; MELEKHOV, V.V.

Differential diagnosis of symptomatic hypertension in some organic diseases of the cardiovascular system in adolescents and young patients. Sov. med. 27 no.1:25-32 Ja '64. (MIRA 17:12)

1. Klinicheskoye otdeleniye Instituta gigiyeny detey i podrostkov AMN SSSR i klinicheskiy otdel Instituta eksperimental'noy biologii i meditsiny Sibirskogo otdeleniya AN SSSR.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, L.T., kand.med.nauk

Etiology and pathogenesis of juvenile hypertension.
Sov.med. 28 no.11:36-40 N '65.

(MIRA 18:12)

1. Institut gigiyeny detey i podrostkov AMN SSSR, Moskva.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

TREGER, Yu.A.; FLID, R.M.; ANTONOVA, L.V.; SPEKTOR, S.S.

Complex formation of allyl chloride and allyl alcohol with monovalent copper salts. Zhur.fiz.khim. 39 no.11:2831-2835 N '65. (MIRA 18:12)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, M. A.

"Phagocytic Properties of the Blood in Dysentery." Rostov-on-Don State Med Inst, Rostov-on-Don, 1955
(Dissertation for the Degree of Candidate of Medical Sciences)

SO: Knizhnaya Letopis', No. 32, 6 Aug 55

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, M. E., PAVLOVICH, L. A., SAKHAROVA, R. M., SERGEYEVA, T. Ya., TSAREGRADSKAYA, N. A. and POPOV, V. I.

"About infectious nature of atrophical hog rhinitis."

Veterinariya, Vol. 37, No. 4, 1960, p. 38

Sci. Res Lab for Struggle against Diseases Young Agric. Animals, MSKh, RSFSR

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

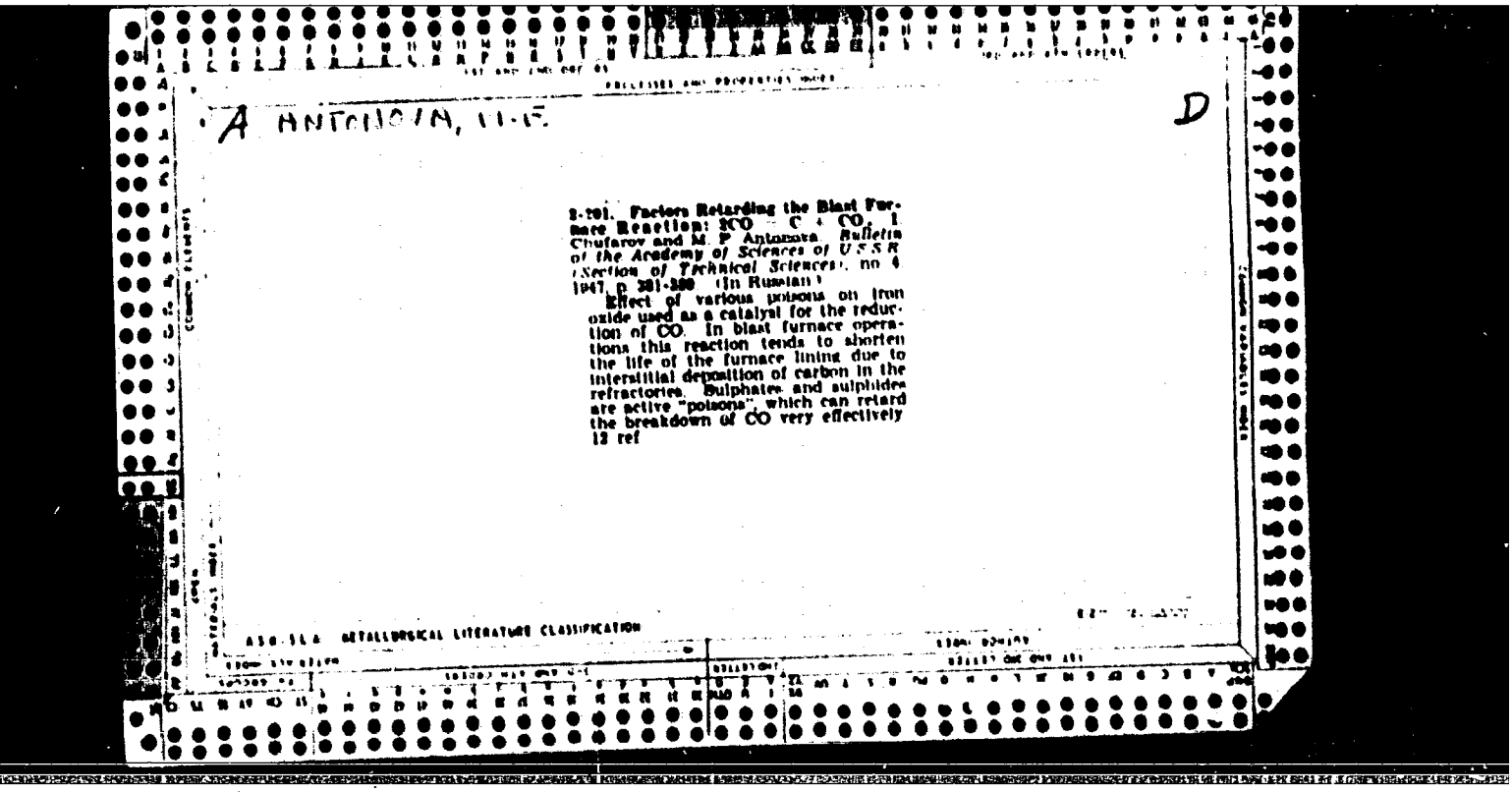
MIKHAL'SKIY, G. A. and ANTONOVA, M. E. (Candidates of Veterinary Sciences, Scientific-Industrial Laboratory for the Control of Diseases of the Offspring of Agricultural Animals, Ministry of Production and Procurement of Agricultural Products RSFSR).

"Problem of effectiveness of anti-pasteurellosis vaccines from strains AV and K"

Veterinariya, vol. 39, no. 9, September 1962, p. 47

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



A ANTONOVA, M.P.

D

2-701. Factors Retarding the Blast Furnace Reaction: $2CO = C + CO_2$ I Chufarov and M. P Antonova. *Bulletin of the Academy of Sciences of U.S.S.R. (Section of Technical Sciences)*, no 4 1947, p 381-389 (in Russian)

Effect of various poisons on iron oxide used as a catalyst for the reduction of CO. In blast furnace operations this reaction tends to shorten the life of the furnace lining due to interstitial deposition of carbon in the refractories. Sulphates and sulphides are active "poisons", which can retard the breakdown of CO very effectively 13 ref

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

USSR/Catalysis
Retardation apparatus

Apr 1947

"On the Retardation of the Bell Reaction $2CO \rightleftarrows C+CO_2$," G. I. Chufarov, M. F. Antonova, 10 pp

"Izv Ak Nauk Takh Nauk" No 4

Large table listing the various catalysts with their coefficients of retardation ('k' in the equation: $p + kp = o$). Twelve graphs showing the dependence between temperature, time, percentage composition, catalyst used, etc.

PA 9T97

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

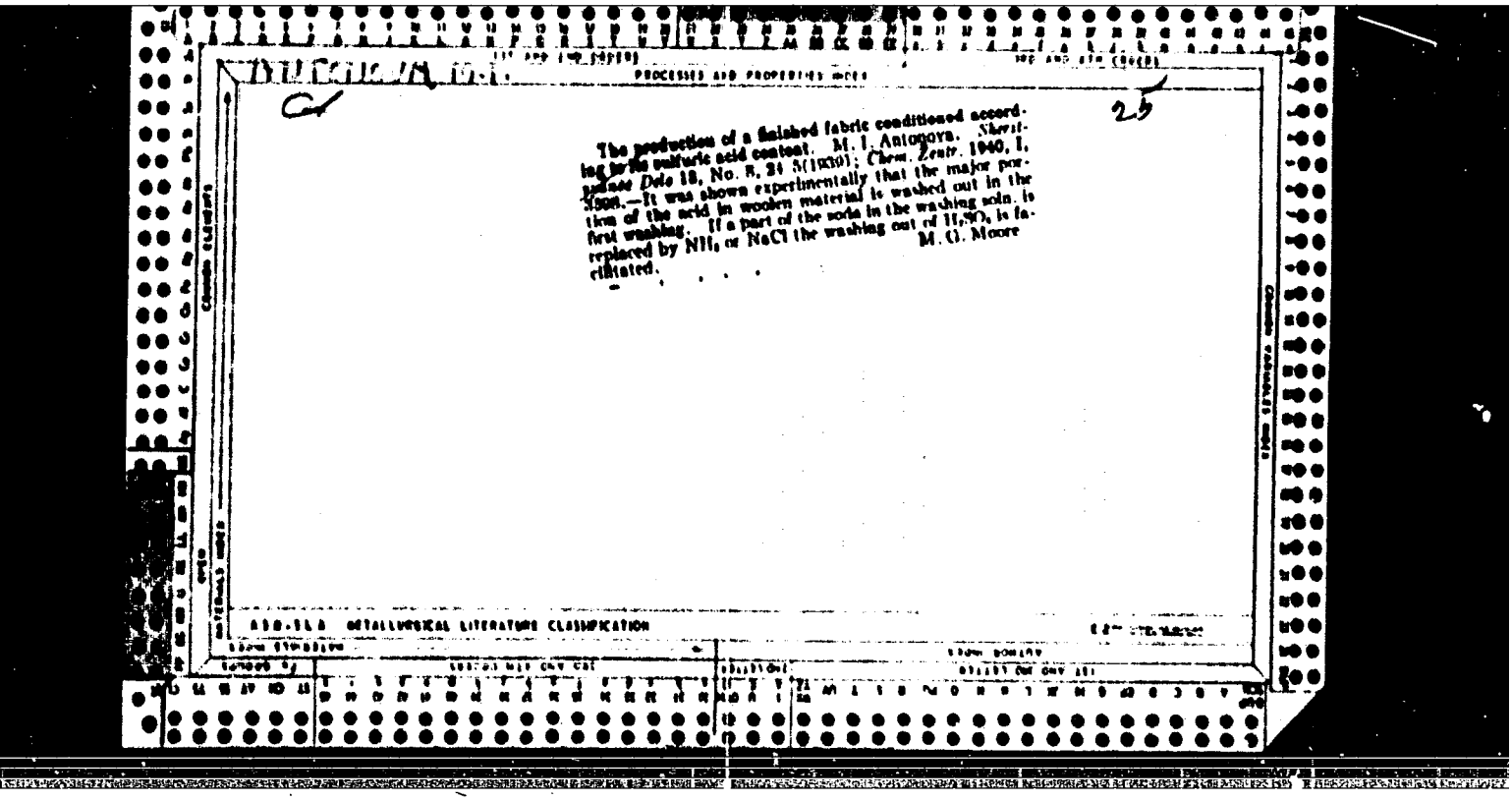
SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1981
AUTHOR TAKIBAEV, Ž.S., USIK, P.A., ANTONOVA, M.G.
TITLE On the Problem of the Production of Pions by High Energy Particles of Cosmic Radiation.
PERIODICAL Dokl. Akad. Nauk 111, fasc. 2, 341-344 (1956)
Issued: 1 / 1957

The slight dependence of the number of thin traces in showers with s m a l l aperture angle on the nuclear charge number of the nuclear target does not suffice for the solution of the problem as to the correctness of any theory.

The authors investigated showers with close and also with wide aperture angles of shower particles. These showers were produced on the occasion of the interaction between high-energy cosmic particles and the atomic nuclei of the photoemulsions (exposed in the stratosphere). The authors are of the opinion that most of the observed showers cannot possibly be explained by the mechanism of the multiple production of pions by a single collision between the impinging nucleon and one of the nucleons of the target nucleus. Also the hypothesis of the production of mesons by a collision between a particle and a whole "tube" of nucleons cannot serve as an explanation for the observed parameters of the showers.
The showers investigated were selected from among about 40.000 stars in photoplates. The energy of the primary particle is determined in accordance with the formula $E_0 = 2Mc^2/tg^2\vartheta_{1/2}$. The value found in this manner is, of course,

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



The production of a finished fabric conditioned according to the sulfuric acid content. M. I. Antonova. *Shersti-nalnoe Delo* 18, No. 8, 24 5(1939); *Chem. Zentr.* 1940, I, 3908.—It was shown experimentally that the major portion of the acid in woolen material is washed out in the first washing. If a part of the soda in the washing soln. is replaced by NH$_4$ or NaCl the washing out of H$_2$SO$_4$ is facilitated.

M. G. Moore

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

RAYKHLIN, F.I., kand.tekhn.nauk; ANTONOVA, M.I., inzh.

Continuous method of boiling-off and scouring suiting material.
Tekst.prom. 17 no.10:43-45 O '57. (MIRA 10:12)

1.Kuntsevskaya fabrika.

(Woolen and worsted manufacture)
(Textile finishing)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

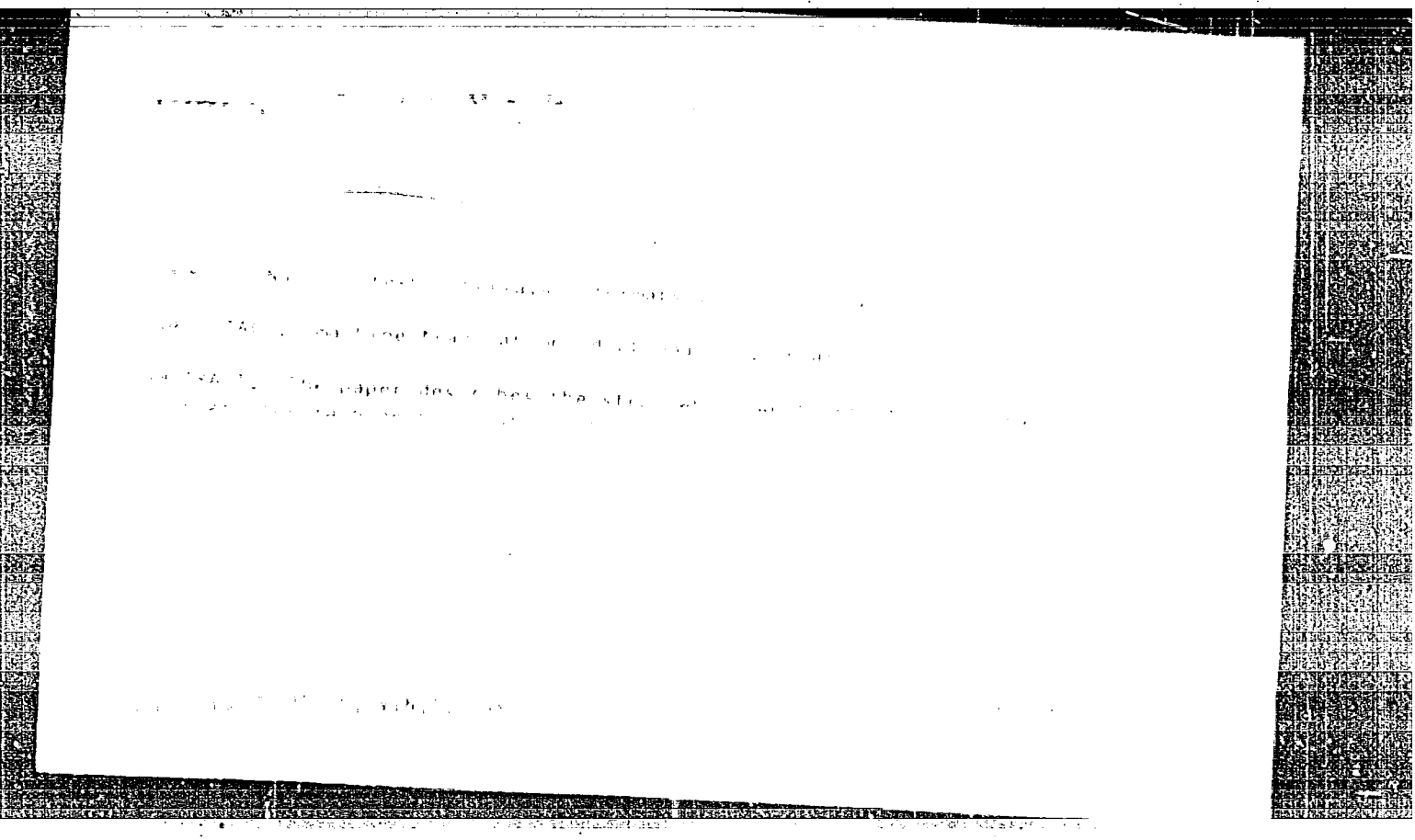
"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

LANTRATOV, M.F.; MORACHEVSKIY, A.G.; ANTONOVA, M.I.

Thermodynamic properties of liquid alloys of the Na - Zn system.
Zhur.prikl.khim. 36 no.6:1278-1283 Je '63. (MIRA 16:8)
(Zinc-sodium alloys--Thermodynamic properties)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

L 20096-65
ACCESSION NR: AP4049563

NO REF SOV: 000 SUB CODE: DP

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

ANTONOVA, M.M.; PANTYUKHIN, V.P.

Appliance for warming the air inspired by laryngectomized patients. Vop. onk. 6 no. 11:102-103 N '60. (MIRA 14:1)
(LARYNX—SURGERY)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

27516
S/080/60/033/006/032/041/XX
D213/D302

5.2200

AUTHORS: Antonova, M.M., and Samsonov, G.V.

TITLE: Synthesis of vanadium hydride

PERIODICAL: Zhurnal prikladnoy khimii, v. 33, no. 6, 1960, 1407 - 1408

TEXT: The authors studied the method of preparing vanadium hydride by heating powdered vanadium metal in a hydrogen atmosphere. The method of preparation is then described. The results show that the most favorable conditions are at 800°C at a 2 hour reaction time. The maximum adsorption at each temperature occurs at this interval, but over 900°C the hydride begins to decompose to H_2. The extent of absorption under optimum conditions is 1.76 % which corresponds to the composition VH, i.e. a monohydride. X-ray analysis shows tetragonal lattices with periods a ≈ 2.990 and c = 3.395 kX which is in good agreement with data by U. Rostoker, who for the hydride gave $VH_{0.94}$, a = 3.013, c = 3.352 kX (Ref. 9: Metallurgiya vanadi-

Card 1/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Synthesis of vanadium hydride

S/080/60/033/006/032/04./XX
D213/D302

ya, ILM. 1959). The phase VH starts to form in a solid solution containing 0.47 %, but X-ray analysis of the crystal lattice does not show the presence of VH until the stoichiometric amount of H_2 has been absorbed. Otherwise, a solid solution is formed containing hydrogen in vanadium and vanadium hydride. Calculation from available information put the activation energy of the hydrogenation of vanadium at 1430 cal/mole which is significantly lower then the corresponding value for NbH. This difference is attributed to the different electron acceptor properties of the vacant d orbitals in the vanadium and niobium atoms respectively which are more accentuated in the vanadium. This accounts for the greater ease of formation of VH than NbH. The method described can be used on an industrial scale as well as in laboratories. There are 1 figure and 10 references: 4 Soviet-bloc and 6 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. Smith, Hydrogen in Metals, Univ. of Chicago Press. Chicago, Il, 1948.

SUBMITTED: November 23, 1959

Card 2/2

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

21.3100

S/076/61/035/004/012/018
B106/B201

AUTHORS: Samsonov, G. V. and Antonova, M. M.

TITLE: Metastable hydride phase in the niobium - hydrogen system

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 4, 1961, 900 - 904

TEXT: A study has been made of the kinetic rules governing the hydrogenation of niobium powder. The phases arising in this connection were subjected to both chemical and X-ray analysis. The niobium powder contained 99.8% Nb (the rest, tantalum). The apparatus employed for hydrogenation is schematically shown in Fig. 1. The chemical analysis of the reaction products was made in analogy to the analysis of titanium- and zirconium hydrides, as described in Ref. 5 (Sb. "Metody analiza osnovnykh materialov, primenyayemykh v elektrovakuumnoy promyshlennosti", ch. 1, 1959, str. 85). The investigation revealed that the maximum absorption of hydrogen by the niobium powder is attained in a time which is the shorter, the higher the temperature. The strongest absorption of hydrogen (~ 60 atom%) is attained at a hydrogenation temperature of 600°C after 2-4 hours. The course of absorption isothermal lines at 600 and 700°C is indicative of

Card 1/6

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Metastable hydride phase in ...

saturation of the powder with hydrogen. X-ray analyses have shown that -hydride of niobium is formed in this connection. At 800°C, the hydrogen content begins to decrease after two hours; at 900°C it takes only 90 minutes for this decrease to begin. These results contradict data by O. Brauer (Ref. 3: Z. anorgan. Chem., 247, 11, 1953; Ref. 4: Angew. Chemie, 70, 53, 1958), who has indicated $NbH_{1.0}$ as the upper limit of the homogeneity of the β-phase, while the authors have established the composition $NbH_{1.34}$ as the upper limit. With an increase of the hydrogen content of the β-phase, the lattice parameter a changes from 3.434 kX units in the composition $NbH_{0.9}$ (in agreement with data by Brauer: a=3.44 kX units) to 3.405 kX units in the composition $NbH_{1.34}$. This phase is manifestly metastable, as it passes over to a phase resembling the $NbH_{1.0}$ phase, in case of an anomalously high hydrogen content with hydrogenation taking more time, or with a temperature rise and increasing lattice parameters. It represents the lattice of niobium, in which not all the elementary cells contain the same number of hydrogen atoms. The remaining

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Metastable hydride phase in ...

hydrogen atoms occupy irregular positions, so that hydride $NbH_{1.34}$ represents no well-ordered phase. It has been established by X-ray analysis that the anomalously high hydrogen content of the $NbH_{1.34}$ phase is not due to the formation of NbH_2 dihydride. Temperature rise and longer time of hydrogenation cause the lattice to be rearranged, the positions of hydrogen atoms to be ordered, and, at the same time, the lattice parameter to rise to 3.42 kX units. The pseudocubic, rhombically distorted lattice of $NbH_{1.0}$ is formed, in which all elementary cells contain the same number of hydrogen atoms. Excess hydrogen is given off. To bring about this stable β-phase of NbH, the hydrogenation of the niobium powder is therefore suitably performed for 4-6 hours at 700-800°C or for 1-2 hours at 900°C. The authors finally determined the activation energy of monohydride formation by diffusion. It was found to amount to 3400 cal/mol. The table compares this value with the activation energies of the formation of silicides, borides, carbides, and nitrides of niobium by diffusion. The low value in the case of hydride proves the readiness by which the 4d orbital of niobium can be occupied by the hydrogen electrons under

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Metastable hydride phase in ...

formation of hybrid states. The anomalously high value of the total work function of the first electron of diffusing hydrogen is due to the absence of an interaction between hydrogen atoms in the hydrides; this interaction causes the binding of electrons with the metal to be weakened. Moreover, the very small atomic radius of hydrogen facilitates its diffusion into the metal lattice. There are 5 figures, 1 table, and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English language publication reads as follows: W. Albrecht, M. Mallet, W. Goode, J. Electrochem. Soc., 109, no. 4, 1958.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov. AN USSR (Institute of Powder Metallurgy and Special Alloys of the AS UkrSSR)

SUBMITTED: July 27, 1959

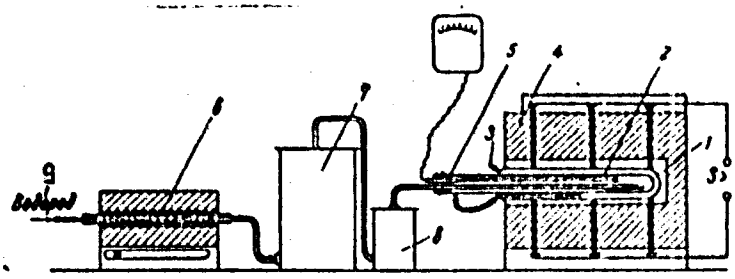
Card 4/6

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Metastable hydride phase in ...

Fig 1



Legend to Fig. 1: (1) quartz boat; (2) two connected quartz tubes, through which hydrogen can be conveyed simultaneously. The hydrogen first pervades the inside tube, then the outside one, and is ultimately burned at outlet port(?); (4) electric furnace; (5) thermocouple; temperature regulated by an electronic potentiometer of the type ЭПД-52 (EPD-52); (6) copper chips for purifying hydrogen from oxygen; (7)(8) columns with silica gel or phosphorus pentoxide for drying the hydrogen stream; (9) Водород -hydrogen.

Card 5/6

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

S/076/61/035/004/012/018
B106/B201

Metastable hydride phase in ...

Table

(1) Диффундирующий элемент	(2) Работа отрыва 1-го электрона, eV	(3) Энергия активации, ккал/моль
H	13,54	3400
Si	8,44	11720
H	8,28	14130
C	11,24	18000
N	14,51	25400

Legend to the table: (1) diffusing element; (2) total work function of the first electron, ev; (3) activation energy, kal/mole.

Card 6/6

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

MOYARINKO, Aleksey Grigor'yevich, prof.[deceased]; ANTONOVA, M.M., red.

[The life of the field] Zhizn' polia. Moskva, Kolos, 1965. 69 p. (MIRA 18:10)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

Antonova, N. M.

USSR / Farm Animals. Reindeer. Q-3

Abs Jour: Ref Zhur-Biol., No 23, 1958, 105733.

Author : Antonova, N. M.
Inst : Scientific Research Institute of Agriculture of the Extreme North.
Title : Experience in Introducing Pasture Rotation on Reindeer Breeding in the Kolkhozes of Dzhamalo-Nenetskiy National Okrug.

Orig Pub: Byul. nauchno-tekhn. inform. N.-i. in-t s. kh. Krayn. Severa, 1957, No 3, 3-4.

Abstract: No abstract.

Card 1/1

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"

"APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2

SMIRNOV, Nikolay Dmitriyevich; ANTONOVA, M.M., red.; PROKOF'YEVA, L.N., tekhn.red.; GRESHNOVA, V.P., tekhn.red.

[Mineral fertilizers and their application] Mineral'nye udobreniia i ikh primenenie. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 142 p. (MIRA 13:7)
(Fertilizers and manures)

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000101810008-2"