Investigation of the self-absorption effect in the hyperfine structure components. (Cont.) 51-3-2/24

There are 7 figures and 17 references, 8 of which are Slavic.

SUBMITTED: July 23, 1956.

ASSOCIATION: Physical Research Institute, Leningrad State University. (Nauchno-Issledovatel'skiy Fizicheskiy Institut Leningradskogo Gosudarstvennogo Universiteta).

AVAILABLE:

Card 4/4

KUZMAK, Ye.M.; YEFREMOVA, K.P.; FIRKOVICH, T.V.; TURKIN, Yu.S.

Engineering fundamentals of the hard-alloy reinforcement of rollers. Izv. vys. ucheb. zav.; neft' i gaz 6 no.7:107-113 '63. (MIRA 17:8)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika I.M. Gubkina.

KUZMAK, Ye.M.; YEFREMOVA, K.P.; TURKIN, Yu.S.

Processes reducing the diffusion of a granular solid alloy (a tungsten carbide composition). Trudy MINKHiGP 46:197-206 '64. (MIRA 17:6)

TURKINA, A. P.

Turkina, A. P. "Observations of A. bifurcatus in the Gor'kiy vicinity," (printed in abridged form), Med. parazitologiya i parazitar. bolezni, 1948, No. 6, p. 524-27

SO: U-2888, Letopis Zhurnal'nykh Statey, No. 1, 1949

DIKENSHTEYN, G.Kh.; KUTUZOVA, V.V.; MASHKYKOV, K.K.; BABAYEV, A.G.; POL'STER, L.A.; YUFEREV, R.F.; SHISHOVA, A.I.; BAREYEV, R.A.; MAKAROVA, L.N.; MURADOV, K.; PYANOVSKAYA, I.A.; SEMOV, V.N.; SIROTINA, Ye.A.; TURKINA, I.S.; FEL'DMAN, S.L.; KHON, A.V.; KUNITSKAYA, T.N.; GOLENKOVA, N.P.; ROSHINA, V.M.; FARTUKOV, M.M.; SHCHUTSKAYA, Ye.K.; ALTAYEVA, N.V.; BYKADOROV, V.A.; KOTOVA, M.S.; SMIRNOV, L.M.; IBRAGIMOV, M.S.; KRAVCHENKO, M.F.; MARKOVA, L.P.; ROZYYEVA, T.R.; UZAKOV, O.; SLAVIN, P.S.; NIKITINA, Ye.A.; MILOGRADOVA, M.V.; BARTASHEVICH, O.V.; STAROBINETS, I.S.; KARIMOV, A.K.

[Splicing of the wires of overhead power transmission lines] Soedinenie provodov vozdushnykh linii elektroperedachi. Moskva, Energiia, 1964. 69 p. (Biblioteka elektromontera, no.132) (MIRA 17:9)

SHAPIRO, M.Ya., SHUB, M.G., TURKINA, L.P.

Professor Miron Isaakovich Vol'fkovich, on his 60th birthday.
Vest.oto-rin. 20 no.6:125-126 N-D '58 (MIRA 11:12)
(VOL'FKOVICH, MIRON ISAAKOVICH, 1898-)

L 44359-66 EWT(1)/EWT(m)/EWP(e) IJP(c) WH/GD

ACC NR: AT6022269 SOURCE CODE: UR/0000/66/000/000/0028/0031

AUTHOR: Mikaelyan, A. L. (Doctor of technical sciences, Professor); Koblova, M. M.; Melikova, I. M.; Ovchinnikova, Ye. V.; Turkina, K. Ya.

ORG: none

50
48
B+1

TITLE: Investigation and design of optical gates

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya kvantovoy elektroniki. Doklady. Moscow, 1966, 28-31

TOPIC TAGS: laser radar, Faraday effect, optic equipment component, terbium compound, diamagnetism

ABSTRACT: A scheme is proposed for a simple gating device which contains a 45° polarization rotator, a 45° quartz rotator, and a polarizer. A plane polarized light beam passes through the quartz rotator, the polarizer and the active substance where under the applied field the polarization of the beam is restored to its initial condition. The reflected light is polarized identically as the beam leaving the gate is rotated 45° more by the rotator, and is either carried away or is absorbed by the polarizer. Requirements for an optical gate are maximum decoupling, minimum loss, minimum distortion, minimum reflection, lightweight, and small size. The Faraday effect was studied with special terbium-aluminum garnet. Among diamagnetic glasses studied were samples

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L 44359-66

ACC NR: AT6022269

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rich in lead oxide. The highest Verdet constant is obtained with $PbO \cdot CeO_2$, BrO_3, P_2O_5, and aluminum silicate glass doped with terbium. The Faraday effect is directly dependent on the ceric oxide content of the glass. The Verdet constant was measured for the various samples of various thickness and was found to fall off in moving from green to red light. A polarization rotator was made of two 9.5 mm pieces of TbAl garnet glued together, which at $\lambda=0.63$ μ, required a field of 4800 oe to rotate the light 45°. The overall length of the gate is 13 cm. Losses are 2.2 db looking in and decoupling is equal to 28.5 db. Methods of improving the design are suggested, especially by using a single crystal. The design may be used in an optical circulator. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 11Apr66

Card 2/2 hs

KURSANOV, A.L.; TURKINA, M. V.

Plants - Respiration

Respiration of fibro-vascular bundles, Dokl. AN SSSR, 84, no. 5, 1952

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

CA

Respiration of conductive tissues and movement of su
crose. A. L. Kursanov and M. V. Turkina (A. N. Bakh Biochem. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* **85**, 649-52(1952); *ibid.* **84**, 1073(1952). Sucrose or closely related substances into which it is transformed in the conducting tissue cells can move directly in the sap-carrying fluid. This movement is accompanied by the increase of respiration within the conducting structures. Sucrose entering the bark or a conducting layer of plant stem at one end causes an increase of respiration throughout the length of the structure; added sucrose similarly stimulates respiration of the conducting tissues of sugar beet, acacia, and other plants. The transmission of the effect can be caused by rapid transfer of sucrose. G. M. Kosolapoff

TURKINA, M.V.

Movement of organic matter in plants (scientific conference in the K.A. Timiriazev Institute of Plant Physiology of the Academy of Sciences of the U.S.S.R.). Vest. AN SSSR 23 no.5:107-109 My '53. (MLRA 6:7)
(Botany--Physiology)

KURSANOV, A.L.; TURKINA, M.V.; SOKOLOVA, S.V.

Transformation of sugars penetrating plant cells. Fiziol. rast. 11 no.4:569-580 Jl-Ag '64. (MIRA 17:11)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

TURKINA, M. V.

Chemical Abst.
Vol. 48 No. 8
Apr. 25, 1954
Biological Chemistry

(42)

The use of the isotope method in the study of movement of sugars in plants. A. L. Kursanov, M. V. Turkina, and I. M. Dubinina (K. A. Timiryazev Inst. Plant Physiol., Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 93, 1115–18(1953).—C^{14}-tracer method was employed in following movements of sugars in the sugar beet under various conditions. It was shown that in the fall there is a removal of sugars from the leaves during the 1st part of a day, followed by accumulation during the evening and night period, which could be ascribed only to phys. movement from the roots and stems. The total carbohydrates in the fibrillar conducting regions remained substantially const. Labeled sucrose (produced by administration of $C^{14}O_2$ to other sugar-beet plants) was infiltrated into test plants for the studies which showed that within 5 min. the labeled sugar reaches the upper parts of the plant and the steams of leaves, within 15 min. it reaches the tips. The movement occurs entirely through the conducting vessels. The periodicity of movement noted above is most pronounced in the period of active growth of the root.

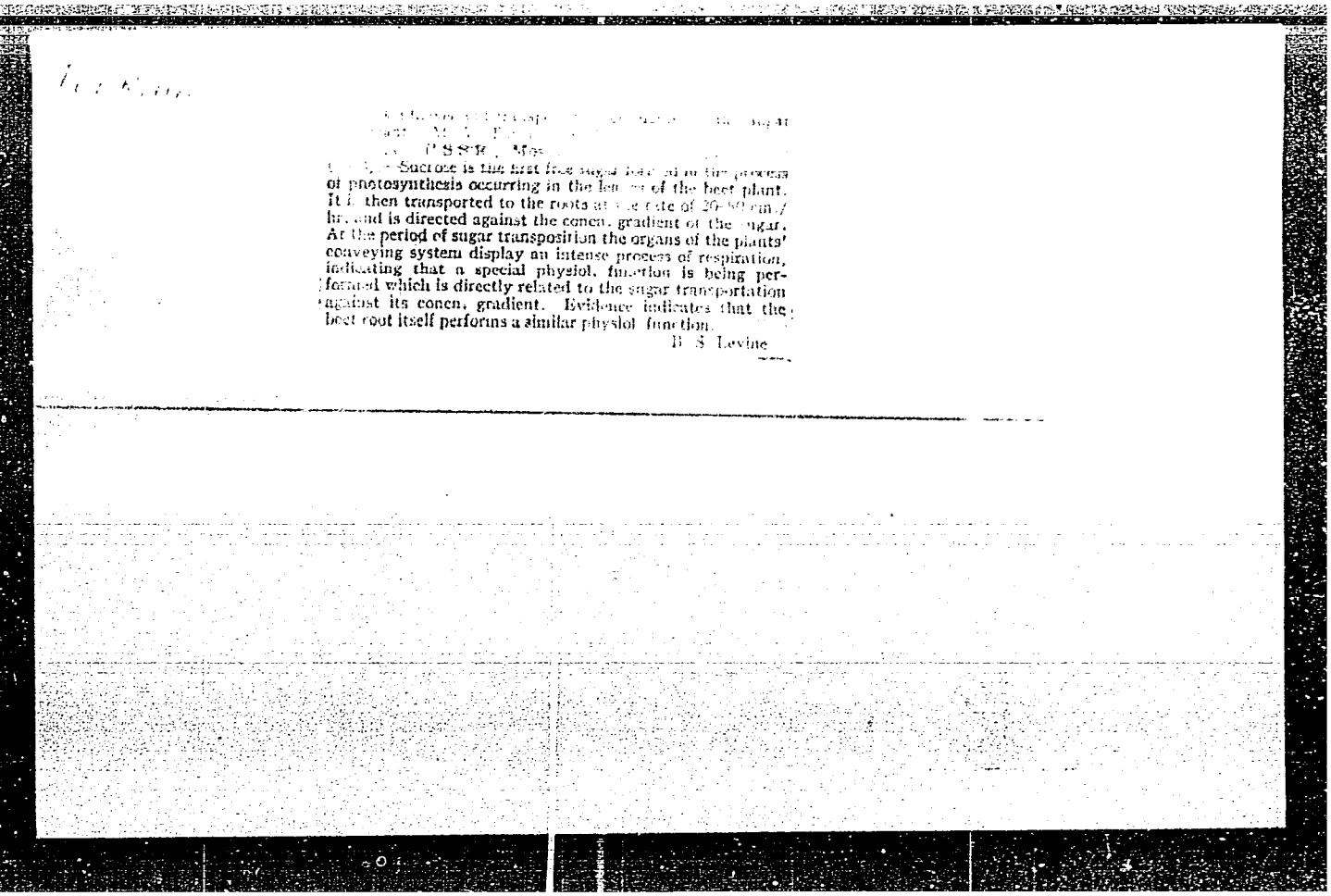
G. M. Kosolapoff

TURKINA, M. V.

"A Physiological-Biochemical Investigation of Vascular-Fibrous Bundles in Connection With the Movement of Sugars in a Plant." Cand Biol Sci, Inst of Biochemistry imeni A. N. Bakh, Acad Sci USSR, 2 Dec 54. (VM, 19 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

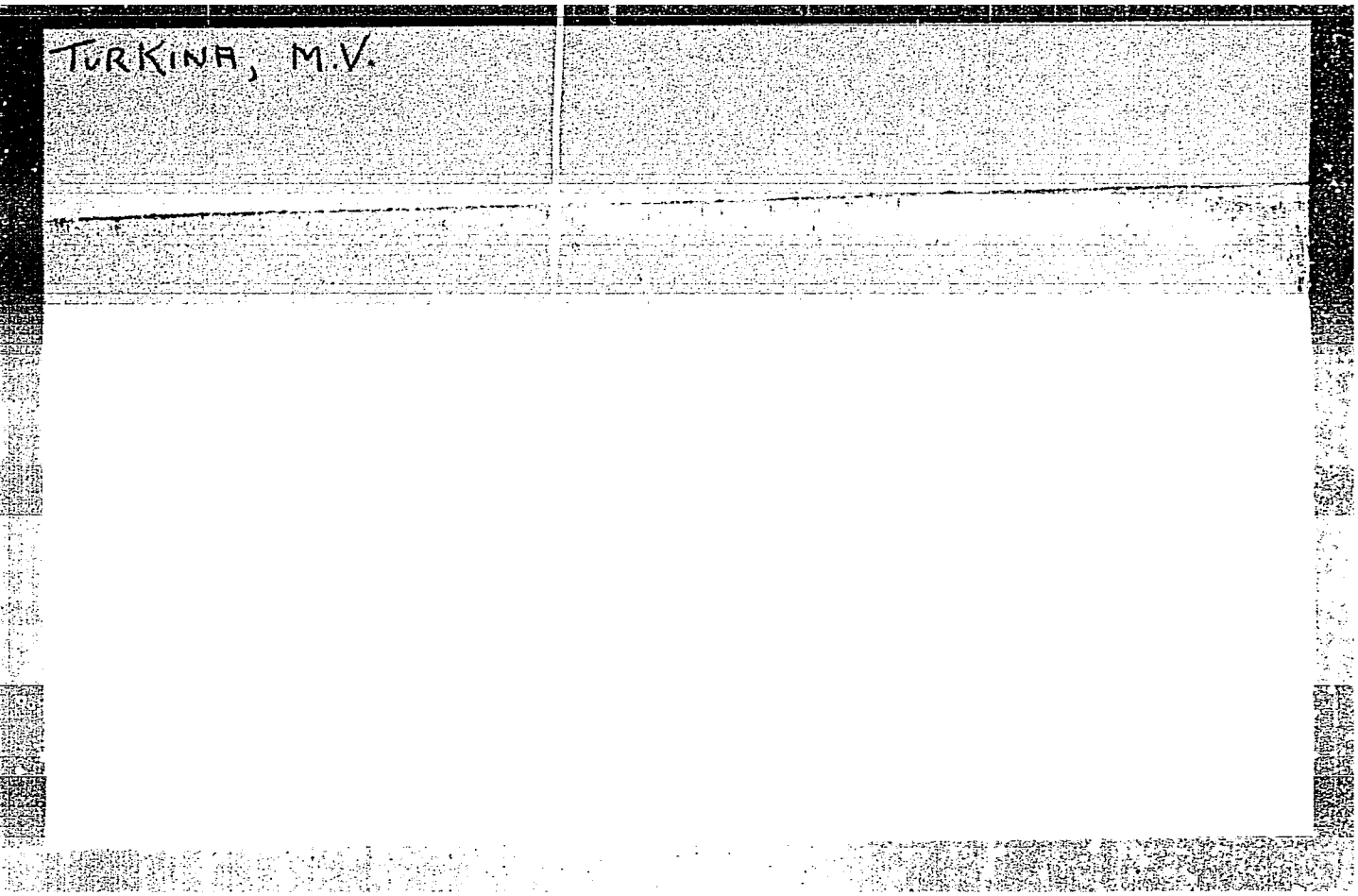
SO: Sum. No.521, 2 Jun 55

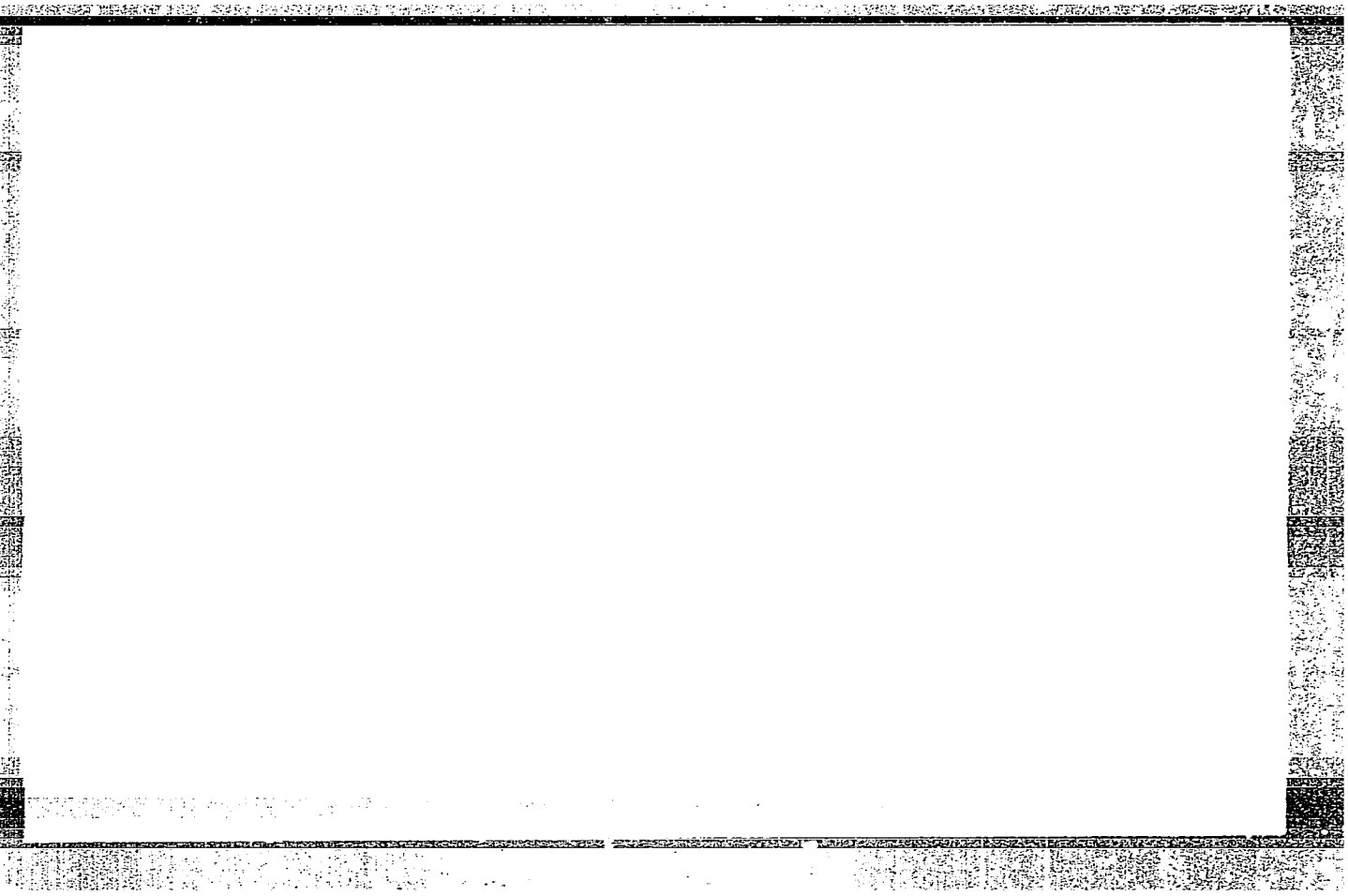


USSR, Mos

Sucrose is the first free sugar formed in the process of photosynthesis occurring in the leaves of the beet plant. It is then transported to the roots at the rate of 26-30 mg/hr, and is directed against the concn. gradient of the sugar. At the period of sugar transposition the organs of the plants' conveying system display an intense process of respiration, indicating that a special physiol. function is being performed which is directly related to the sugar transportation against its concn. gradient. Evidence indicates that the beet root itself performs a similar physiol function.

B S Levine





APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001757530004-9"

TURKINA, M.V.

"Movement of nutrients in plants." M.V. Afanas'eva. (Reviewed by M.V. Turkina). Fiziol.rast. 3 no.5:492-494 S-O '56.
(MLRA 9:12)

(Plants, Movement of fluids in) (Afanas'eva, M.V.)

TURKINA, M.V.

20-6-25/48

AUTHOR: Turkina, M.V.

TITLE: On the Problem of the First Carbohydrates Formed in the Course of Photosynthesis (K voprosu o pervykh uglevodakh, obrazuyushchikhsya v protsesse fotosinteza)

PERIODICAL: Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1142 - 1145 (USSR)

ABSTRACT: Calvin and Benson were the first to observe the formation of saccharose as one of the first carbohydrates in the early stages of photosynthesis in the 1-celled alga Scendesmus. Later on Kursanov and Turkina proved that during a 5 minutes duration of photosynthesis in $Cl^{14}O_2$ the main radioactivity in sugar beets concentrates in saccharose. This fact caused the last-mentioned authors to suppose that saccharose represents the first free non-phosphorylated sugar in the photosynthesis of sugar beets. In several papers both from here and abroad the predominant formation of saccharose during the first minutes of photosynthesis was since proved also in other plants. In this connection it was to be expected that, according to the nature of the conversion of carbohydrates, the types of free sugar directly developing in the photosynthesis would prove to be different . Therefore the author made it her task to follow

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On the Problem of the First Carbohydrates Formed in the Course of [illegible]

the formation of the first free i.e. non-phosphorylated carbohydrates in plants with different types of carbohydrate-conversion. As material she selected: 1) sugar beet as collector of sugar, 2) Jerusalem artichoke (Topinambur) as a collector of inulin, 3) tobacco plant as collector of starch, 4) leek (onion) as collector of monose and 5) stonecrop (Sedum) as a plant capable of collecting heptose. Individual types of sugar were, after their elution from the chromatogram, partly used for the determination of radioactivity, partly for the determination of their quantitative content by "anthron". In all plants the radioactivity and the total content of starch were also determined. The content of carbohydrates in the leaves is recorded in table 1. From it may be seen that the leaves of plants such as tobacco, Jerusalem artichoke and stonecrop on the whole accumulate starch. Onion, however, does not contain any starch at all and chiefly accumulates monoses and oliosaccharides. In Sedum heptose was discovered among the monoses, which had the same value as glucose, but in contrast to this latter gave a bluish-green coloring with "orcine". It became evident that in all plants, apart from their type of hydrocarbo-conversion and of the sugar content in the leaves, the chief mass of radioactive

On the Problem of the First Carbohydrates Formed in the Course of Photosynthesis

carbon falling to the soluble carbohydrates' share is concentrated in saccharose after a five minutes period of photosynthesis in the $C^{14}O_2$-atmosphere (table 2). The high radioactivity of saccharose is shown by figure 1. Other types of sugar did not show at all due to their weak radioactivity. Thereby the conclusion is verified that in a large number of plants which differ according to their carbohydrate-content, the carbohydrates in the green stages of photosynthesis develop mainly as saccharose. In plants inclined toward the formation of starch (table 2) it can be seen that considerable radioactivity manifests itself in the starch, as is already known from publications. Therefore the predominant formation of starch and saccharose respectively apparently depends on the relative speeds of those enzymatic reactions which bring about the conversion of hexosephosphates to saccharose or to starch. In this connection, according to the author's data, the speed of assimilating C^{14} into saccharose or starch is equal, even in plants such as tobacco which contains 5 times more starch than all types of sugar together. By tests with a partial hydrolysis of the 1 - 4

On the Problem of the First Carbohydrates Formed in the Course of Photosynthesis

oligosaccharides of onions, saccharose was also discovered among the intermediate products. From this the conclusion must be drawn that saccharose actually participates in the structure of oligosaccharides, which apparently is also indicated by the displacement of radioactivity from saccharose not only into the monoses, but also into the oligosaccharides. According to all this it may be stated that the chief way of the formation of monoses and oligosaccharides in the plant has a secondary character; the peculiarities of the amount of carbohydrates in various species of plants mainly begin to form after the development of saccharose in the photosynthesis and on its basis. There are 2 figures, 3 tables and 7 Slavic references.

ASSOCIATION: Institute for Plant-Physiology AN USSR imeni K.A. Timiryazev (Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR)

PRESENTED: by A.L. Kursanov, Academician, May 4, 1957
SUBMITTED: May 3, 1957
AVAILABLE: Library of Congress

TURKINA, M.V.

On the first carbohydrates formed in photosynthesis. Dokl. AN SSSR 115 no.6:1142-1145 Ag '57. (MIRA 11:1)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR. Predstavleno akademikom A.L. Kursanovym.
(Photosynthesis) (Carbohydrates)

TURKINA, M. V. and O. A. PAVLIKOVA

"On conversions of saccharose in plant tissues"

The Chemistry and Metabolism of Carbohydrates in Animal and Plant Organisms. Conference in Moscow. January 28 to January 30 1958.

(VAN SSSR, No 6, 1958)

TURKINA, M.V.

Absorption of sucrose by conductive tissues. Fiziol. rast. 8 no.6:649-657 '61. (MIRA 16:7)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Plant cells and tissues) (Sucrose)

SOV/32-24-9-18/53

AUTHORS: Semenov, G. A., Turkina, M. Ya.

TITLE: Direct Mass Spectrometric Determination of Deuterium Content of Deuterium Benzene (Pryamoye masspektrometricheskoye opredeleniye soderzhaniya deyteriya v deyterobenzole)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 9, pp 1084 - 1086 (USSR)

ABSTRACT: As the mass spectrum of a mixture of deuterium benzenes is rather complicated, a low ionizing voltage was employed in the present experiments and thus the mass spectrum was considerably simplified. The main disadvantage of low voltage mass spectrometry is the fact that ionic currents to be measured are minute. As follows from a table it is, in principle, possible to avoid ion fragments in benzene ionization. The present experiments were carried out with a mass spectrometer MS-4. It was observed that at an electron energy of 15 eV and more the mass spectrum of benzene shows two maxima (78 and 79). The mass spectrum of a mixture of deuterium benzenes shows three maxima as is shown by a figure. Tables of the ex-

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Direct Mass Spectrometric Determination of Deuterium Content of Deuterium Benzene SOV/32-24-9-18/53

perimental results as well as a formula for calculating the percentage of the whole deuterium content are given. There are 2 figures, 4 tables, and 6 references.

ASSOCIATION: Gosudarstvennyy institut prikladnoy khimii (State Institute of Applied Chemistry)

Card 2/2

TURKINA, M. YA. and GAGEROV, I. P.

"Utershungen uber die Beteiligung von Phenylradikalen an Losungsreaktionrm mit Hilfe von Deuterium."

Report presented at the 2nd Conf. on Stable Isotopes
East German Academy of Sciences, Inst. of Applied Physical Material
Leipzig, GDR 30 Oct - 4 Nov 1961.

SEMENOV, G.A.; TURKINA, M.Ya.; SHIRYEYEV, B.V.

Istopic exchange during the decarboxylation of deuterated benzoic acid. Zhur. ob. khim. 31 no. 2:641-644 F '61. (MIRA 14:2)

(Benzoic acid) (Deuterium)

GRAGEROV, I.P.; TURKINA, M.Ya.

Isotopic and mass-spectrometric method of investigating transformations of phenyl radicals in solution. Dokl. AN SSSR 140 no.6: 1317-1320 O '61. (MIRA 14:11)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN USSR. Predstavleno akademikom M.I.Kabachnikom.
(Radicals (Chemistry)--Spectra)

GRAGEROV, I.P.; TURKINA, M.Ya.

Isotopic and mass-spectrometric method of investigating the mechanism of homolytic reactions in solution. Part 4: Reaction of iodobenzene with magnesium and sodium. Zhur.ob.khim. 33 no.6:1901-1907 Je '63. (MIRA 16:7)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo AN UkrSSR i Gosudarstvennyy institut prikladnoy khimii.
(Benzene) (Radicals (Chemistry)) (Deuterium compounds)

GRAGEROV, I.P.; TURKINA, M.Ya.

Isotopic and mass-spectrometric method of investigating the mechanism of homolytic reactions in solution. Part 5: Thermal decomposition of diazonium salts and Gomberg-Bachmann reaction. Zhur.ob.khim. 33 no.6:1907-1910 Je '63. (MIRA 16:7)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo AN UkrSSR i Gosudarstvennyy institut prikladnoy khimii.
(Diazonium compounds) (Deuterium compounds) (Radicals (Chemistry))

GRAGEROV, I.P.; TURKINA, M.Ya.

Isotopic and mass-spectrometric method of investigating the mechanism of homolytic reactions in solution. Part 6: Photolysis of diphenylmercury, methyl iodide, and ethyl iodide. Zhur.ob.khim. 33 no.6:1910-1916 Je '63. (MIRA 16:7)

1. Institut fizicheskoy khimii imeni L.V.Pisarzhevskogo AN UkrSSR i Gosudarstvennyy institut prikladnoy khimii.
(Radicals (Chemistry)) (Deuterium compounds) (Photochemistry)

GRAGEROV, I.P.; LEVIT, A.F.; ZONOV, Yu.A.; TURKINA, M.Ya.

Benzene oxidation mechanism studied by means of isotopes and mass spectroscopy. Dokl. AN SSSR 150 no.1:109-112 My '63. (MIRA 16:6)

1. Institut fizicheskoy khimii im. L.V.Pisarzhevskogo AN UkrSSR i Gosudarstvennyy institut prikladnoy khimii, Kiyev. Predstavleno akademikom M.I.Kabachnikom.
(Benzene) (Oxidation) (Isotopes) (Mass spectrometry)

TURKINA, N.

Creative initiative of youth. Prof.-tekh. obr. 14 no.1: 23-24 Ja '57. (MLRA 10:2)

1. Starshiy inspektor otdela kul'turno-massovoy raboty Glavnogo upravleniya trudovykh rezervov.
(Moscow--Youth--Congresses)

KUZNETSOV S.N., inzh.; TURKINA, N.A., inzh.

Experience in the operation of automatic long-distance telephone communications. Vest. sviazi 21 no.3:27-28 Mr '61. (MIRA 14:6)

1. TSentral'naya mezhdugorodnaya telefonnaya stantsiya.
(Telephone, Automatic)

TURKINA, N.A.

Experience in the use of semiautomatic telecommunication systems. Vest. sviazi 22 no.12:16-17 D '62. (MIRA 16:1)

1. Starshiy inzh. laboratorii TSentral'noy mezhdugorodnoy telefonnoy stantsii.

(Telephone)

SVIDERSKAYA, Z.A. (Moskva); TURKINA, N.I. (Moskva)

Phase recovery in the system aluminum - copper - lithium.
Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.1:151-155
Ja-F '62. (MIRA 15:2)
(Aluminum-copper-lithium alloys--Metallography)
(Metals, Effect of temperature on)

DRITS, M.Ye. (Moskva); SVIDERSKAYA, Z.A. (Moskva); TURKINA, N.I. (Moskva)

The softening of chemical compounds in magnesium alloys at high temperatures. Izv.AN SSSR.Otd.tekh.nauk.Met.i topl. no.4: 111-119 Jl-Ag '60. (MIRA 13:9)
(Magnesium alloys--Thermal properties)
(Metals, Effect of temperatures on)

82623

S/180/60/000/004/018/027
E193/E483

18.1245

AUTHORS: Drits, M.Ye., Sviderskaya, Z.A. and Turkina, N.I. (Moscow)

TITLE: On Softening of Chemical Compounds in Magnesium Alloys at Elevated Temperatures

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No.4, pp.111-119

TEXT: The behaviour of alloys at elevated temperatures is determined by the properties of both the solid solution matrix and the second phases (intermetallic compounds, solid solutions or grains of pure metals) as well as by the interaction between the matrix and the dispersed strengthening phases. The object of the investigation, described in the present paper, was to study the effect of time and temperature on the properties of intermetallic compounds, formed in Mg-base alloys, by measuring their micro-hardness at temperatures between 20 and 300°C. In addition to manganese, microhardness of the following compounds was determined: Al_2Ca, MgZn, Mg_5Th, Mg_xNd_y, $Mg_{17}Al_{12}$, Mg_9Cl, Mg_2Ca. At each temperature, two hardness measurements were taken with the load of

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On Softening of Chemical Compounds in Magnesium Alloys at Elevated Temperatures

20 g applied for 0.5 and 60 min. The results are reproduced in Table 1. It will be seen that the effect of temperature on hardness is not the same for all the phases studied. The intermetallic compounds $Mg_{17}Al_{12}$, Mg_2Ca and MgZn lose their hardness quite rapidly, the softening effect of heating being most pronounced in the compound formed by magnesium and zinc, whose microhardness is reduced considerably already at 150°C. The difference between the microhardness of the MgZn compound, determined at 150°C, with the load applied for 0.5 and 60 min, amounts to more than 100 kg/mm^2. The temperature dependence of microhardness of the compounds of magnesium with Th, Cl and Nl is represented by the curves with a lower angle of slope. On heating to 200°C the difference between short-term and long-term microhardness of these compounds amounts only to 30 to 40 kg/mm^2, as against the difference of 50 to 70 kg/mm^2 in the case of the $Mg_{17}Al_{12}$ and Mg_2Ca compounds. Microhardness of the Mn grains falls with rising temperature at a rate similar to that observed in the Mg_5Th, Mg_9Cl and Mg_xNl_y compounds, although the

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On Softening of Chemical Compounds in Magnesium Alloys at Elevated Temperatures

absolute values of microhardness of Mn are considerably higher. The least affected by the increase in temperature is the Al_2Ca compound. The effect of heating on microhardness of the investigated compounds is shown even more clearly in Table 2, which shows the % reduction in long-term microhardness at room temperature on heating to 150, 200, 250 and 300°C. On the basis of data reproduced in Table 2, it can be concluded that the investigated compounds can be divided into two groups: (1) heat-resistant phases such as the Al_2Ca, Mg_5Th, and Mg_9Cl compounds and the Mn grains which, on heating to temperatures up to 300°C, lose less than 50% of their original hardness and (2) heat-sensitive phases such as the $Mg_{17}Al_{12}$, Mg_2Ca and MgZn compounds whose hardness, on heating to 300°C, is reduced by 70 to 90%. Correlation of the data, obtained in the course of the present investigation, with the known effect of temperature on strength of various Mg-base alloys, leads to the conclusion that the properties of these alloys are, to a great extent, determined by the properties of the second phases present in these alloys.

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On Softening of Chemical Compounds in Magnesium Alloys at Elevated Temperatures

The object of the next series of experiments was to compare the properties of the Mg_5Th, Mg_9Ce and $Mg_{17}Al_{12}$ compounds with those of the corresponding solid solutions, i.e. the 10% Al-Mg, 4% Th-Mg, and 1% Ce-Mg alloys, tested after quenching from 420, 590 and 575°C, respectively. The results are reproduced in Fig.2, where microhardness, measured with the load applied for 60 min, is plotted against temperature. It is inferred from these results that the phases, precipitated during decomposition of super-saturated solid solutions or during recrystallization, play an important part in determining the properties of these alloys. In systems in which heat-resistant phases are present, their hardness at high temperatures is considerably higher than that of the solid solution matrix and, consequently, they may display a strengthening effect, even at relatively high temperatures. In systems containing heat-sensitive phases, whose hardness at high temperatures is the same, or nearly the same, as that of the matrix, the presence of these phases brings about no improvement in the creep properties of the alloys. In the final chapter of the paper, an attempt is made to

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correlate the results of the present investigation with other properties of the substances studied, such as their crystal structure, type of the chemical bond and melting point (see Table 3). There are 2 figures, 3 tables and 28 references: 21 Soviet and 7 English.

SUBMITTED: April 11, 1960

Card 5/5

S/149/61/000/004/006/008
A006/A101

18.1210 2408, 2808, 2208, 1413

25549

AUTHORS: Zakharov, M. V.; Sviderskaya, Z. A.; Kadaner, E. S.; Turkina, N. I.

TITLE: The effect of lithium on the properties of aluminum-manganese alloys at room and elevated temperatures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 4, 1961, 134-138

TEXT: The authors studied the possibility of improving the properties of an aluminum-manganese alloy, by alloying it with lithium. Lithium forms with aluminum a rather extended zone of solid solutions and the solubility of lithium in solid aluminum decreases from 6.4 to 1.5% at temperatures dropping from 601 to 15°C. This indicates the possibility of heat treatment for these alloys. Investigations were made with Al alloys containing 1.5% manganese; 0.1% titanium; 0.3% iron and silicon each, and from 0.5 to 3.0% lithium. Optimum heat treating conditions were selected by measuring the hardness of the alloys in hot-pressed state; in water-quenched state after heating in a saltpeter bath at 600°C for 1 hour; after 5-day natural aging and after 10-day artificial aging at 150-250°C.

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25549

S/149/61/000/004/006/008
A006/A101

The effect of lithium on the properties ...

The properties of the alloys were studied by short-time tension at room and elevated temperatures (200, 250 and 300°C), and by the method of hot and long-lasting hardness. Specimens intended for high-temperature tests were subjected, in addition to heat treatment under optimum conditions (quench hardening at 600°C for 1 hour and artificial aging at 195°C for 6 hours), to 100-hour stabilization. The results obtained show that only alloys containing 2 - 3% Li are hardened by heat treatment. Heating to 250 and 300°C reduced the hardening effect of lithium. This is probably caused by coagulation processes of the hardening phase, developing at these temperatures. Strength properties of alloys with 3% Li approach those of Al-Cu-Mg alloys. Comparison tests showed the expediency of heat treatment for artificially aged alloys with 3% Li whose hardness exceeded that of not heat-treated hot-pressed alloys by 10 kg/mm^2. It is concluded that one of the basic factors of hardening the Al-Mn-Li alloy at elevated temperatures, is the development of a submicroscopical heterogeneity of the structure on account of dispersional precipitation of the hardening phase during the decomposition of the ternary solid solution, rich in aluminum. Apparently the hardening lithium phase has sufficiently stable properties at elevated temperatures and low proneness to coagulation when heated not over 200°C. This article was recommended for publication by the kafedra metallovedeniya Krasnoyarskogo instituta tsvetnykh metallov

Card 2/3

25549

The effect of lithium on the properties ... S/149/61/000/004/006/008/ A006/A101

(Department of Metal Science at the Krasnoyarsk Institute of Non-Ferrous Metals). There are 3 tables, 5 figures, and 9 references: 4 Soviet-bloc and 5 non-Soviet-bloc. The reference to the most recent English-language publication reads as follows: P. Frost, Techn. Rev. 8, no. 1, 1959)

ASSOCIATIONS: Institut metallurgii AN SSSR (Institute of Metallurgy of AS USSR); Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals)

SUBMITTED: June 27, 1960

Card 3/3

18.1210

77733
SOV/149-60-1-22/27

AUTHORS: Zakharov, M. V., Sviderskaya, Z. A., Kadaner, E. S., Turkina, N. I.

TITLE: Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Tsvetnaya metallurgiya, 1960, Nr 1, pp 145-149 (USSR)

ABSTRACT: A highly alloyed heat-resistant metal containing many excess phases is usually low-melting and cannot be recommended for the highest working temperatures. Conversely, if an alloy has a high mp, and a moderate number of excess phases, it will also be heat-resistant at adequately high working temperatures. From this point of view it was interesting to study the influence of a variable addition of s-phase (Al_2MgCu) on heat resistance of high-melting Al-Mn

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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SOV/149-60-1-22/27

(1.5% Mn) alloy. Cu and Mg content varied from 1.3 to 4.5 and from 0.5 to 2%, respectively. Alloy "A", free of these metals, and alloy VD17 (2.9% Cu, 2.2% Mg, 0.57 Mn, the rest Al) were also tested for comparison. Up to 0.1 Ti was added for finer grain structure. Ingots were cast in a water-cooled dipped mold, the specimens (10.5 mm rods) were extruded (in a 100 ton press) after 48 hr homogenizing at 480° C. Temperature of container was 400-420° C. Subsequent heat treatment comprised quenching in water from 500° C and artificial aging for 6 hr at 190° C. Samples to be tested for heat resistance were conditioned for 100 hr at the temperature of the test. The results of tests are shown in Table 1 and in Figs. 1 and 2.

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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Table 1. Mechanical properties of alloys.

A	B	ALLOY A (1,5% Mn, 0,3% Fe, 0,3% Si, 0,1% Ti, REST Al)	A+1,3% Cu+ +0,5% Mg (2,8% S-PHASE)	A+2,5% Cu+ +1,0% Mg (5,5 % S-PHASE)	A+3,5% Cu+ +1,5% Mg (7,5% S-PHASE)	A+4,5% Cu+ +2,0% Mg (10% S-PHASE)	ALLOY VD17 (2,9% Cu, 2,2% Mg, 0,5% Mn REST Al)
C	20[1]	33,0	57,5	100,0	120,5	128,0	112,0
	200[1]	20,5	38,0	60,0	67,0	79,0	74,5
	200[2]	15,5	31,0	50,0	55,5	62,5	58,0
	250[1]	17,0	24,0	33,0	40,0	44,5	43,5
	250[2]	10,0	16,0	23,0	27,5	32,0	31,0
	300[1]	12,0	16,5	18,5	22,5	23,5	23,0
	300[2]	7,0	8,5	10,5	12,5	14,0	12,5
D	20	11,5	24,0	37,5	44,5	49,5	42,5
	200	4,5	10,5	23,0	23,5	26,0	23,0
	250	4,0	9,0	14,5	14,5	16,0	16,5
	300	4,0	5,5	8,5	8,0	8,0	8,0

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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SOV/149-60-1-22/27

A	B	Alloy A (1.5% Mn, 0.3% Fe, 0.3% Si, 0.1% Ti, rest Al)	A+1.3% Cu+0.5% Mg (2.5% S-phase)	A+2.5% Cu+1.0% Mg (5.[illegible]% S-phase)	A+3.5% Cu+1.5% Mg ([illegible]% S-phase)	A+4.5% Cu+2.0% Mg (10% S-phase)	Alloy VD 17 ([illegible]% Cu, [illegible]% Mg, [illegible]% Mn, rest Al)
E	20	6,5	12,5	29,0	36,5	41,5	37,0
	200	3,0	7,5	20,0	18,5	21,0	20,5
	250	3,5	8,0	13,0	12,0	3,0	13,5
	300	3,5	4,5	8,0	6,5	7,0	7,0
F	20	34,5	20,0	11,0	7,0	7,0	10,0
	200	32,0	31,0	29,0	21,5	21,5	19,0
	250	33,5	35,0	29,0	19,5	20,5	23,5
	300	36,0	35,0	30,0	26,5	26,0	30,0

Key to Table 1: (A) Properties; (B) Test temperature, °C; (C) Hardness (H_b), kg/mm²; (D) Tensile strength (σ_b) kg/mm²; (E) Yield point ($\sigma_{0,2}$) kg/mm²; (F) Elongation (δ) %; (G) Remark: action time of indenter: (1) 30 sec, (2) 60 min.

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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SOV/149-60-1-22/27

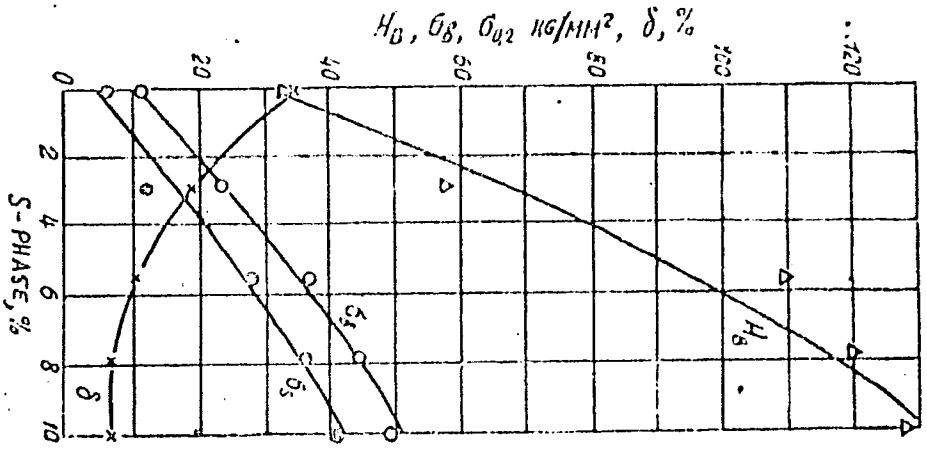

Fig. 1. Effect of s-phase content on mechanical properties of Al-Mn alloy at room temperature.

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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SOV/149-60-1-22/27

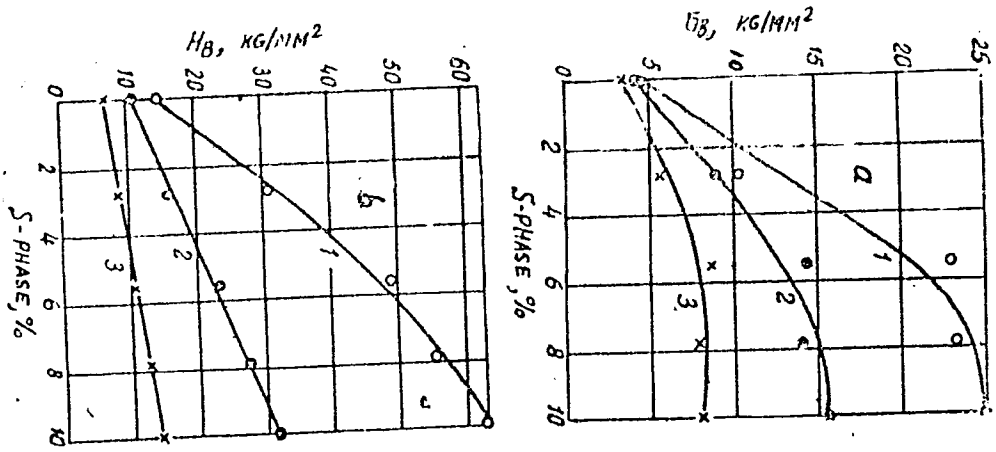

Fig. 2. Effect of s-phase content on tensile strength (a) and ultimate hardness (b) of Al-Mn alloy at elevated temperatures: (1) 200° C; (2) 250° C; (3) 300° C.

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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SOV/149-60-1-22/27

Further tests for long-lasting strength at 250° C were carried out by determining strength after 20 and 100 hr. The results (on logarithmic scale) are shown in Fig. 4.

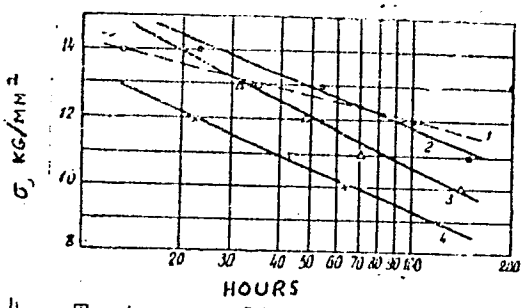

Fig. 4. Test results for long-lasting strength (at 250° C) of VD17 (1) and "A" alloy containing 7.8% sigma phase (2); 10% (3); 5.5% (4).

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Effect of Copper and Magnesium on Properties of Aluminum-Manganese Alloys at Room and Elevated Temperatures

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The authors conclude that the optimum results (for 100 hr at 250° C) were shown by an aluminum alloy with 1.5% Mn and 7.8% s-phase (3.5% Cu and 1.5% Mg), meaning that moderate alloying by this binary phase results in higher characteristics than a 10% addition. There are 2 tables; 4 figures; and 7 Soviet references.

ASSOCIATION: Institute of Metallurgy, AS USSR and Krasnoyarsk Institute of Nonferrous Metals (Institut metallurgii AN SSSR i Krasnoyarskiy institut tsvetnykh metallov)

SUBMITTED: April 15, 1959

Card 8/8

SVIDERSKAYA, Z.A.; KADANER, E.S.; TURKINA, N.I.; KUZ'MINA, V.I.

Boundary of the solid solution region in the aluminum corner of the system aluminum - manganese - lithium. Metalloved. i term. obr. mat. no.12:2-6 D'63. (MIRA 17:2)

35776
S/180/62/000/001/012/014
E040/E135

18.1710

AUTHORS: Sviderskaya, Z.A., and Turkina, N.I. (Moscow)

TITLE: Phase softening in aluminium-copper-lithium alloys

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.1, 1962, 151-155 + 1 plate

TEXT: Aluminium-copper-lithium alloys have recently become of a considerable industrial importance because of the good strength properties at room and elevated temperatures (200-250°C). In order to elucidate the high strength properties of Al-Cu-Li alloys at elevated temperatures, it is of interest to examine the heat resistance properties of the phases existing in these alloys side by side with the strengthening phases in the more common aluminium alloys of the type of Duraluminium. The purpose of the present investigation was to examine the binary Al_2Cu and AlLi compounds, ternary compounds of Al_2CuMg (S-phase), Al_2CuLi (T_1), $Al_{7.5}Cu_4Li$ (T_B), Al_6CuLi_3 (T_2) ternary aluminium-base solid solutions in the alloys with 94% Al, 4% Cu, remainder

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Li, and 92% Al, 6% Cu and 2% Li. The ternary metallic compounds in the Al-Cu-Li system are denoted according to the system of H.K. Hardy and I.M. Silcock (Ref.5: The Phase-Sections at 500 and 350 °C of Aluminium-rich Aluminium-Copper-Lithium Alloys, J.Inst.Metals, v.84, 1955-56, p.423). Microhardness determinations were made on slowly cooled specimens of intermetallic compounds and on hot-pressed and heat treated (quenching from 520 °C and ageing for 5 days) specimens of solid solutions. The temperature of the tests varied from 20 to 300 °C. The specimens for metallographic examination were etched with HF and electrolytically. The test results are reported in detail in the form of graphs of microhardness data against temperature, together with micrographs of selected specimens. On the basis of the obtained results it is concluded that the high stability up to 200 °C of artificially aged Al-Cu-Li alloys is due mainly to the presence of particles of the heat resistant phases T_B and T_1.
There are 2 figures and 2 tables.
SUBMITTED: August 15, 1961

Card 2/2

ZAKHAROV, M.V.; SVIDERSKAYA, Z.A.; KADANER, E.S.; TURKINA, N.I.

Effect of lithium on the properties of aluminum-manganese alloys at room temperatures and higher. Izv. vys. ucheb. zav.; tsvet. met. 4 no.4:134-138 '61. (MIRA 14:8)

1. Institut metallurgii AN SSSR i Krasnoyarskiy institut tsvetnykh metallov. Rekomendovana kafedroy metallovedeniya Krasnoyarskogo instituta tsvetnykh metallov.
(Alluminum-manganese-lithium-alloys--Metallography)
(Metals at high temperature)

MOVCHAN, R.A.; MOISEYEV, I.A.; AYBABINA, A., uchitel'nitsa;
KUDRYASHOV, V.; TURKINA, O.I. (Rubtsovsk)

Editor's mail. Geog. v shkole 25 no.6:59-61 N-D '62. (MIRA 15:12)

1. Starosel'skaya shkola Mogilevskoy oblasti (for Moiseyev).
2. Chulkovskaya srednyaya shkola Moskovskoy oblasti (for Aybabina).
3. 16-ya shkola g. Morozovska, Rostovskoy oblasti (for Kudryshov).
(Geography—Study and teaching)

TURKINA, R.I., inzh.

Greater boldness in the adoption of progressive methods. Tekst. prom. 21 no.6:77-78 Je '61. (MIRA 15:2)
(Knit goods industry—Technological innovations)

TURKINA, R.I.

Permanent seminars on technical information. Tekst.prom. 22 no.12:83-84 D '62. (MIRA 16:1)

1. Nachal'nik Byuro tekhnicheskoy informatsii Vitebskoy chulochno-trikotazhnoy fabriki KIM.
(Technology--Information services)
(Textile industry--Technological innovations)

TURKINA, R.I.

At the "Kim" factory. Tekst.prom. 20 no.8:83-84 Ag '60.
(MIRA 13:9)

(White Russia--Knit goods industry)

GAMBURG, D.Yu.; LELYAKINA, T.M.; TURKINA, T.I.

Conditions for the thermal conversion of solid fuel and the specific surface of coke residue. Khim.i tekh.topl. i masel 10 no.1:34-35 Ja '65. (MIRA 18:4)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sinteza.

TURKIYA, G. Ye.: Master Med Sci (diss) -- "The problems of vegetative shifts in certain surgical diseases of the organs of the abdominal cavity". Moscow, 1959. 21 pp (Min Health USSR, Central Inst for the Advanced Training of Physicians), 200 copies (KL, No 13, 1959, 113)

TURKIYA, G.Ye.

Autonomic disorders in some surgical diseases of the abdominal organs [with summary in English] Khirurgiia 33 no.12:84-92 D '57. (MIRA 11:2)

1. Iz kafedry fakyl'tetskoy khirurgii (zav. - prof. V.A.Zhmur) i normal'noy fiziologii (zav. prof. V.F.Shirokiy) Ryazanskogo meditsinskogo instituta iemni I.P.Pavlova (dir. - prof. L.S. Sutulov)

(ABDOMEN, physiol.
autonomic NS funct. in surg. dis. of abdom. organs, review)
(AUTONOMIC NERVOUS SYSTEM, in various dis.
surg. dis. of abdom. organs, review)

FRENKEL', G.L., prof., red.; AZHIBAYEV, K.A., red.; TURKMENOV, M.T., red.; ANOKHINA, M.G., tekhn.red.

[Proceedings of a conference on injuries from electricity] Trudy konferentsii po elektrotravme. Pod obshchei red. G.L.Frenkelia. Frunze, Izd-vo Akad.nauk Kirgizskoi SSR, 1957. 244 p. (MIRA 11:5)

1. Konferentsiya po elektrotravme, 1956.
(ELECTRICITY, INJURIES FROM)

TURKIYA, G. Ye., Engrs., TSAGAREYSHVILI, G. I.
YEL'KIN, S. R.

Dynamos - Atlernating Current

Automatic self-synchronization of hydrogenerators. Elek, sta. 23, no. 7, 1952.

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

TURKIYA, G. Ye., Engrs., TSAGAREYSHVILI, G. I.
YEL'KIN, S. R.

Dynamos - Alternating Current

Automatic self-synchronization of hydrogenerators Elek. sta. 23 no. 7, 1952.

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

TURKIYA, G. Ye., Engrs., TSAGAREYSHVILI, G. I. YEL'KIN, S. R.

Dynamos - Alternating Current

Automatic self-synchronization of hydrogenerators Elek. sta. 23 no. 7, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED

TURKIYA, G. Ye., Engre., TSAMEREYSHVILI, G. I. YELKIN, S. R.

Dynamos - Alternating Current

Automatic self-synchronization of hydrogenerators. Elek. sta. 23, no. 7, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED

TURKIYA, G. Ye., Engrs., TSAGAREYSH'ILI, G. I. YEL'KIN, S. R.

Dynamos - Alternating Current

Automatic self-sychronization of hydrogenerators.
Elek, sta. 23 no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress November, 1952. UNCLASSIFIED.

SOV/112-59-1-60

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 1, p 5 (USSR)

AUTHOR: Turkmenov, M. T.

TITLE: Further Studies of First-Aid Measures in Cases of Electrical Trauma

PERIODICAL: Tr. Konferentsii po elektrotravme, 1956, Frunze, AS Kirgizskaya SSR, 1957, pp 231-236

ABSTRACT: Bibliographic entry.

Card 1/1

FRENKEL', G.L.; STEGAYLO, Ye.A.; TURKMENOV, M.T.

Protective component of the torpid phase of a burn shock. Izv. AN Kir. SSR no.5:107-120 '58. (MIRA 11:7)
(Burns and scalds)

ALIYEV, M.A., kand. med. nauk, otv. red.; FRENKEL', G.L., prof. red.; TURKMENOV, M.T., prof., red.; SKRIPKINA, Z.I., red.izd-va; ANOKHINA, M.G., tekh. red.

[Problems concerning the influence of alpine conditions on the organism; transactions of the First Scientific Out-Session of Dec.20-21, 1959 in Naryn] Problemy vliianiia vysokogor'ia na organizm; trudy Pervoi Vyezdnoi nauchnoi sessii 20, 21 dekabria 1959 g., g.Naryn. Pod red. M.A.Alieva. Frunze, Izd-vo AN Kirgizskoi SSR, 1961. 168 p. (MIRA 14:11)

1. Akademiya nauk Kirgizskoy SSR. Institut krayevoy meditsiny. 2. Direktor Laboratorii patofiziologii Instituta krayevoy meditsiny AN Kirgizskoy SSR (for Aliyev). 3. Rukovoditel' Laboratoriyey patofiziologii Instituta krayevoy meditsiny AN Kirgizskoy SSR i Chlen-korrespondent AN Kirgizskoy SSR (for Frenkel'). 4. Laboratoriya patofiziologii Instituta krayevoy meditsiny AN Kirgizskoy SSR (for Turkmenov).
(Altitude, Influence of)

TURKO, A.A.; RESHETNIKOV, N.P.; KOLDRA, V.G.

Geological and technological prerequisites for increasing drilling speeds on prospect areas of the cis-Carpathian region. Trudy UkrNIGRI no.7:90-101 '63.

(MIRA 19:1)

TURKO, BORIS PAVLOVICH

BELEN'KIY, Moisey Samoylovich; TURKO, Boris Pavlovich; SHPIL'BERG, Grigoriy Ioannovich; KIRICHINSKIY, A.P., redaktor; LOKHMATYY, Ye.G., tekhnicheskiy redaktor

[Health resorts of the Odessa sanatorium district] Zdravnitsy odesskogo kurortnogo raiona. Kiev, Gos.med.izd-vo USSR, 1957. 94 p. (MIRA 10:9)
(ODESSA PROVINCE--HEALTH RESORTS, WATERING PLACES, ETC.)

TURKO, B.P.

TURKO, B.P.; KOLESNICHENKO, N.S.

Diagnosis of diabetes mellitus at Odessa resorts. Vrach.delo supplement '57:10-11 (MIRA 11:3)

1. Odesskoye territorial'noye upravleniye kurortov i otdeleniy organizatsii kurortov Ukrainskogo instituta kurortologii.
(DIABETES)

Turko B.P.

TURKO, B.P.; SHPIL'BERG, G.I., kand.med.nauk

Odessa health resorts. Vop.kur., fizioter. i lech.fiz.kul't. 22 no.2:66-68 Mr-Ap '57. (MIRA 11:1)

1. Zamestitel' nachal'nika Odesskogo territorial'nogo upravleniya kurortov, sanatoriyev i domov otdykha (for Turko). 2. Zaveduyushchiy otdelom Ukrainskogo instituta kurortologii (for Shpil'berg)
(ODESSA--HEALTH RESORTS, WATERING PLACES, ETC.)

Turko, Bojan, dipl. inz.

Numerical indicator tubes in transistorized circuits.
Automatika 5 no.5:405-408 '64.

1. Ruder Boskovic Institute, Zagreb

L 10258-66 EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(c)
ACC NR: AP5026766 JD/HW SOURCE CODE: UR/0286/65/000/017/0048/0048

INVENTOR: Roshchin, V. V.; Grinenko, V. I.; Gusakov, G. I.; Frolov, Yu. M.; Novikov, V. I.; Turkov, I. I.

ORG: none

TITLE: Method of automatic TIG welding of fixed tube joints. Class 21, No. 174299

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 48

TOPIC TAGS: welding, metal welding, TIG welding, automatic welding, pipe

ABSTRACT: This Author Certificate introduces a method of automatic TIG welding of fixed joints of pipes of any thickness. The welding is done with the electrode vibrating across the groove according to a program determined by the torch motion. Filler wire is fed at the moment when the electrode crosses it. A modified method, in which the direction of welding is reversed after each pass in accordance with the program and the filler wire is fed correspondingly from two sides, is mentioned. [MS]

SUB CODE: 13/ SUBM DATE: 13May64/ ATD PRESS: 4160

Card 1/1 UDC: 621.791.753.9-462

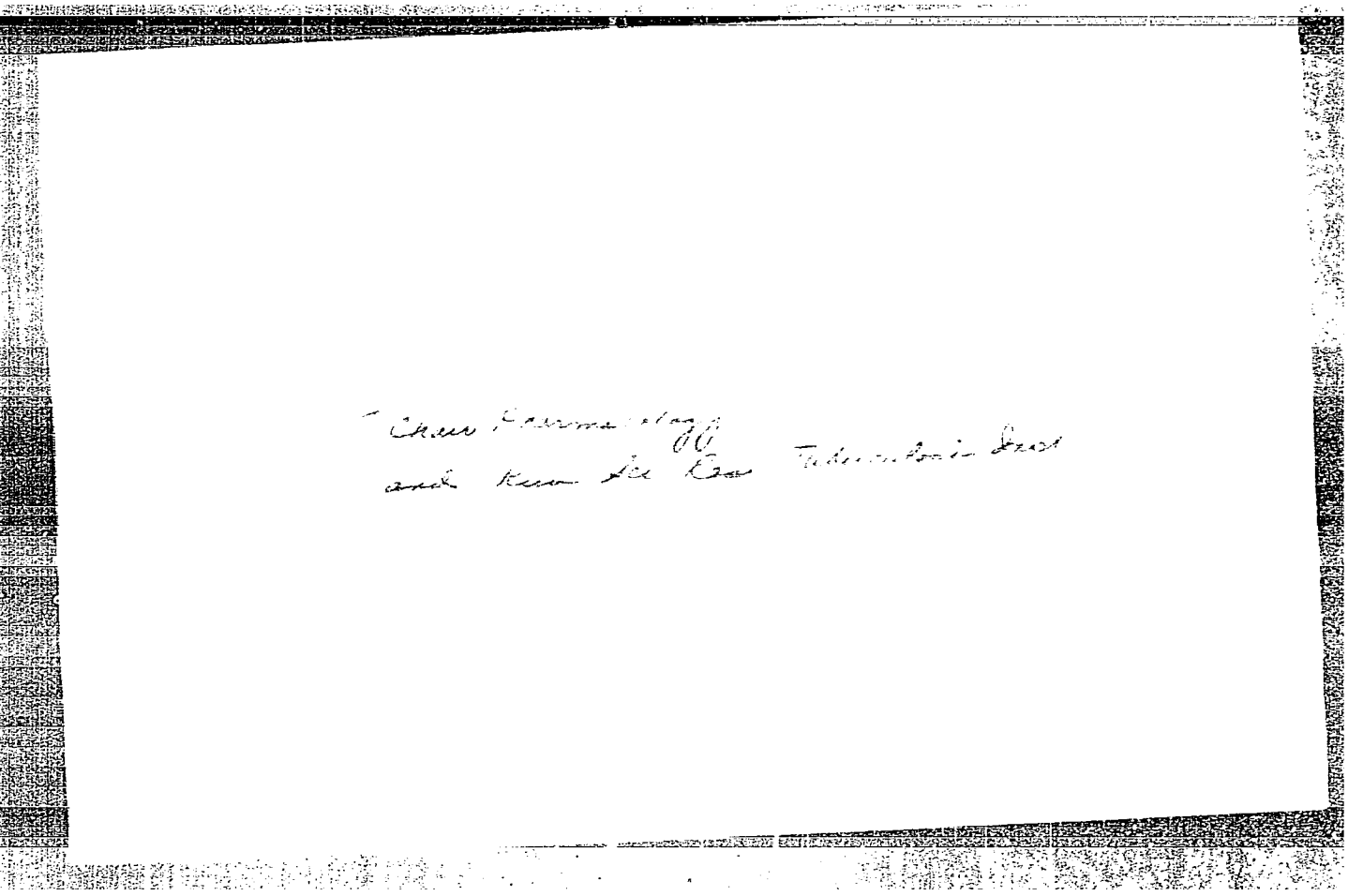
TURKO, I. P.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Biological Chemistry

(4)

Flamin as a cholagog. Yu. A. Petrovskii, N. P. Skakun, and I. P. Turko (Med. Inst., Lvov). *Farmatsiya i Tekhnol.* 16, No. 5, 29-31(1953).—Flamin, a prep. of active principles (flavones and gum resins) from *Helichrysum arenarium*, is specific for liver and gall-bladder diseases. It is more active than *Rosa canina* prepns.; no toxicity was observed after prolonged use, and no change in prothrombin content of the blood. Julian F. Smith

Chair Pharmacology



SKAKUN, N.P.; TURKO, I.P.

Effect of acute hemorrhage on liver function. Vop. fiziol. no.7: 133-135 '54. (MLRA 8:1)

1. L'vovskiy meditsinskiy institut.
(ANEMIA, experimental,
liver funct. tests in severe blood loss)
(LIVER FUNCTION TESTS, in various diseases,
exper. anemia in dogs)

TURKO, I.P.; SKAKUN, N.P.

Effect of phthivazid on hepatic function. Trudy Vses. ob-va fiziol., biokhim. i farm. 3:151-154 '56 (MIRA 10:4)

1. Kafedra farmakologii L'vovskogo meditsinskogo instituta; zaveduyushchiy kafedroy professor Yu.A. Petrovskiy. L'vov.
(ISONICOTINIC ACID) (LIVER)

PETROVSKIY, Yu.A.; SERDYUK, Ye.N.; SKAKUN, N.P.; TURKO, I.P.

Liver function in experimental vitamin B_1 deficiency. Vopr. fiziol. no.8:123-127 '54. (MIRA 14:1)

1. L'vovskiy meditsinskiy institut.
(VITAMIN B_1 DEFICIENCY, experimental, liver funct. tests)
(LIVER FUNCTION TESTS, in various diseases, exper. vitamin B_1 defic.)

SKAKUN, N.P.; TURKO, I.P.

Certain modifications in the blood and bile following convulsions produced with pyramidon. Vopr.fiziol. no.9:163-168 '54. (MIRA 14:1)

1. L'vovskiy meditsinskiy institut, kafedra farmakologii.

(AMINOPYRINE, effects,
convulsions, bile & blood in animals)
(CONVULSIONS, experimental,
bile & blood in aminopyrine
convulsions
(BILE,
in exper. convulsions caused by aminopyrine)
(BLOOD,
in exper. convulsions caused by
aminopyrine)

Turko, M. M

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Ural'skoye soveshchaniye po spektrosk

Materialy 2 Ural'skogo soveshchaniya po spektroskopii, Sverdlovsk, 1958 g.
(Materials of the Second Urals Conference on Spectroscopy, Held in Sverd-
lovsk, 1958) Sverdlovsk, Metallurgizdat, 1959. 206 p. Errata slip in-
serted. 1,000 copies printed.

Sponsoring Agency: Ural'skiy filial Akademii nauk SSSR. Komissiya po spek-
troskopii and Ural'skiy dom tekhniki VSNTO.

Eds.: [illegible] Borisovich [illegible] and Gennadiy Pavlovich [illegible]; Tech.
Ed.: D. M. Matlyuk.

PURPOSE: This collection of articles is intended for spectral analysis labo-
ratory workers at ferrous and nonferrous metallurgical plants, and for lab-
oratory personnel of the metal-working industry, geological and prospecting
organizations, and similar scientific research laboratories.

COVERAGE: The collection contains papers read at the Second Urals Conference
on the spectral analysis of ferrous and nonferrous metals and alloys,
slags, ores, agglomerates, refractories and other materials used in in-
dustry. The material of the conference includes articles on the analysis
of steels (including the determination of gases), ferroalloys, nonfer-
rous and light metals and alloys, pure noble metals, etc. The present
volume is intended to disseminate the latest experience in working with
spectral laboratories, and to report on the results of scientific re-
search. The author thanks R. I. Outkina and Yu. M. Buravlev. Almost all
of the articles are accompanied by references.

23629
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D206/D303

26.2212

AUTHOR: Turko, M.N.

TITLE: Distribution of ions in an arc discharge plasma

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya, no. 6, 1961, 14-22

TEXT: The author gives the results of his investigations into the axial distribution of the ionization degree of iron of an arc discharge of a half wave alternating current (generator ГЭУ -1 (GEU-1)) as a function of polarity and of the electrode material. The arc was sustained between metal water-cooled electrodes of standard shape. One of the electrodes was of a metal (copper, nickel etc) with a 0.2% addition of iron. The opposite electrode was of pure silver. In this manner, the iron atoms entered the discharge plasma either from the anode or from the cathode. The current was 3 amp. r.m.s., the distance between the electrodes was 2.5 mm. The picture of the arc was projected through a condensing arrangement onto the slot of the spectrograph ИСП-28 (ISP-28). The spectrum was photo-

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graphed using a fluorographic film PÜ-3 (RF-3) the exposure time was from 2 to 20 sec. The temperature was measured from the pair of spark lines Fe II 2562-Fe II 2585 Å as suggested by N.N. Sobolev (Ref. 6: Izmereniye otnositel'nykh veroyatnostey perekhodov nekotorykh liniy Bi 1, Fe 1 i Fe II, ZhETF, Vol. 13, No. 5, 1943). The temperature was evaluated from

$$T = \frac{5200}{0.42 - \lg I_1/I_2} \qquad (2)$$

where I_1, I_2 - intensities of given spectral lines. The degree of ionization of iron was determined from the relative intensities of the spark lines and of arc spectral lines of iron Fe II 2739 and Fe 2750 Å using

$$\lg \frac{I_{FeII}}{I_{FeI}} = 2.41 + \lg \frac{x}{1 - x} - \frac{5090}{T} \qquad (3)$$

The value of term C = 2.41 was evaluated from the spectra obtained by evaporating from the arc crater powders containing small quantities of iron and magnesium. After determining the degree of ionization of magnesium from the relative intensities of spectral lines M II 2795 and M 12776 Å using expression

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$$\lg \frac{x_1}{1 - x_1} = \lg \frac{x_2}{1 - x_2} - \frac{5040}{T} \cdot (U_{i1} - U_{i2}) \qquad (4)$$

where x_1 and x_2 are different degrees of ionization and U_i - the ionization potential of the given element, the degree of ionization of iron can be determined and hence the value of the constant terms in Eq. (3). The experiment showed that the temperature distribution between the electrodes depends to some extent on the polarity of the electrode containing iron. It seems that this effect could be explained by re-absorption of emission taking place at the electrode containing iron, owing to a large concentration of atoms. The real temperature distribution between electrodes is shown. Its value in the central region, 5100 - 5200°C is in good agreement with other data. Further, the distribution of the degree of ionization of Fe atoms is shown as evaporated from different cathodes; the degree of ionization is nearly independent of the cathode material and is about 0.03 - 0.05. These distribution curves differ markedly from each other in the cathode region; this effect could not be explained by the fact that the intensification of spark lines of the cathode

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is determined by the field strength in the arc and the ionization potential of the given element. The distribution of the degree of ionization of iron atoms depends on the polarity of the electrode, from which these atoms are being evaporated. The expression relating the changes in the degree of ionization to the field intensity and the concentration gradient of ions is derived, eventually as

$$\frac{x_a}{1 - x_a} - \frac{x_k}{1 - x_k} = - \frac{\mu E}{\beta n_e} \left[\left(\frac{1}{n_o} \cdot \frac{\partial n_i}{\partial z} \right)_a + \left(\frac{1}{n_o} \cdot \frac{\partial n_i}{\partial z} \right)_k \right] + \quad (10)$$

$$+ \frac{D}{\beta n_e} \left[\left(\frac{1}{n_o} \nabla^2 n_i \right)_a - \left(\frac{1}{n_o} \quad {}^2 n_i \right)_k \right].$$

In it subscripts a and k denote that the values which they define correspond to the evaporation of iron from anode and cathode respectively; n_e, n_i and n_o - the concentrations of electrons, ions and neutral atoms respectively. D - the ion diffusion coefficient, μ - the ions mobility, β - the ion recombination coefficient. The value of $\frac{x_a}{1 - x_a} - \frac{x_k}{1 - x_k} \approx + 0.03 \div 0.04$ as obtained from the experi-

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ment only slightly exceeds the experimental error (0.01 - 0.015) and should be in principle determined by the first term in the RHS of Eq. (10). The magnitude of the second term, which takes into account diffusion seems to be much smaller. In the case of discharge between aluminum and silver electrodes, the compositions of plasma changes with the changing polarity; when the Al electrode becomes the anode, the intensity of spectral lines of Al I 2660.4 and Al I 2575.1 Å markedly increases, the effective plasma ionization coefficient decreases. This should result in a decrease of the ionization of iron atoms. It is stated in conclusion that the experiment shows the following: 1) The degree of ionization of a given element in the described arc depends on whether it is being evaporated from anode or cathode; 2) The proposed explanation of this effect is based on the assumption that because the ions are being released from the near electrode regions, the van Saha formula is not quite valid. There are 4 figures and 9 references: 6 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk (Institute of Physics of Siberia Branch, AS USSR,

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Krasnoyarsk)

SUBMITTED: February 25, 1959

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KORSHAKEVICH, I.I.; TURKO, M.N.

Dynamics and structure of the luminous cloud of arc discharge. Tav. Sib. otd. AN SSSR no.12:3-[illegible] '62. (MIRA 17:8)

1. Krasnoyarskiy institut fiziki Sibirskogo otdeleniya AN SSSR.

35340
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D201/D305

26.2311

AUTHOR: Turko, M. N.

TITLE: Ion distribution in the arc discharge plasma

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 1, 1962, abstract 1Zh454 (Izv. Sibirsk. otd. AN SSSR, 1961, no. 6, 14-22)

TEXT: Axial distribution of the degree of ionization of Fe and the temperature of a low current (I = 3A) of a half-wave a.c. arc were investigated as functions of polarity and the electrode material (alloys of 0.2% Fe with Cu, Al, Ni or Ag as base). The anti-electrode was prepared of pure Ag. The inter-electrode spacing was 2.5 mm. It was found that the temperature distribution depended on the polarity of the electrode with the addition of Fe. When the cathode with Fe was used, temperature in the cathode region was higher which is explained by greater reabsorption of radiation in the vicinity of this electrode. The degree of ionization of Fe in the column is independent of the cathode material, while in the

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cathode region a sharp increase of the degree of ionization of Fe was observed for various cathode materials (Ag 10%, Ni 18%, Al 25%, Cu 35%). With changed polarity the degree of ionization of Fe in the column was sharply increased up to ~10%; this is explained by the introduction into the positive column of ions from the near-by cathode region of increased ionization and by the disruption of the equivalent value of ion concentration as determined by the Sach formula. Formulas, taking into consideration the dependence of the degree of ionization on the electrode polarity, are obtained. The corresponding graphs are given together with curves comparing the experimental and theoretical values of the distribution of the degree of ionization of copper and photographsm showing the effect of the electrode polarity on the arc spectrum. [Abstracter's note: Complete translation.]

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A062/A101

24.6710

AUTHOR: Turko, M. N.

TITLE: On the mutual relation between evaporation and ionization processes in arc discharges

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 58, abstract 6Zh373 (V sb. "Nekotoryye vopr. emission. i molekulyarn. spektroskopii", Krasnoyarsk, 1960, 42-52)

TEXT: A study was made of certain distribution regularities of ions and neutral atoms in the interelectrode space of a low intensity arc of alternating current. Measurements have shown that the atom ionization in an arc discharge plasma is determined by the temperature and the composition of the plasma that depends on the physico-chemical properties of the electrodes and the character of evaporation processes on the surface of the cathode and the anode. Therefore, the ionization degree of the atoms in the positive column depends on whether they are evaporated from the cathode or the anode. The observed change of the ionization degree was conditioned by the difference of evaporation from a pure metallic

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anode and from an anode made of an alloy of a metal and iron. The atom ionization in a plasma depends on the conditions of the transition of the electrode material from the solid phase to the gaseous phase. In the region adjacent to the electrodes, where the thermodynamic equilibrium is found to be violated, the increasing intensity of the electric field begins to exercise a great influence upon the atom ionization degree. The processes on the arc electrodes and in the plasma column of an arc discharge, and the evaporation and ionization processes, all present a common complex of phenomena.

I. Afanas'yev

[Abstracter's note: Complete translation]

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KORSHAKEVICH, I.I.; TURKO, M.N.

Dynamics and structure of the luminescent cloud of an arc discharge. Izv. AN SSSR. Ser. fiz. 26 no.7:942-945 Jl '62. (MIRA 15:8)

(Electric arc)