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POVOLOTSKAYA, K.L.

Obtaining riboflavin preparations from a biological medium. Trudy VNIVI 5:88-95 '54. (MLRA 9:3)

1. Biokhimicheskaya laboratoriya.
(RIBOFLAVIN) (EREMOTHECIUM ASCHBYII)

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POVOLOTSKAYA, K.L.; ZAYTSEVA, N.I.

Decomposition of riboflavin by visible light. Trudy VNIVI 5: 145-151 '54. (MLRA 9:3)

1. Biokhimicheskaya laboratoriya.
(RIBOFLAVIN) (PHOTOCHEMISTRY)

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BUKIN, V.N.; POVOLOTSKAYA, K.L.; KONDRASHOVA, A.A.; SKOROBOGATOVA, Ye.P.

Fluorometric method for the determination of thiamine. Vit. res. i ikh isp. no.3:91-99 '55. (MLRA 9:4)

(THIAMINE) (FLUORIMETRY)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.; ZAYTSEVA, N.I.; SKOROBOGATOVA, Ye.P.

Fluorometric method for the determination of riboflavin. Vit. res. i ikh isp. no.3:108-120 '55. (MIRA 9:4)

(RIBOFLAVIN) (FLUOROMETRY)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.; SKOROBOGATOVA, Ye.P.; ZAYTSEVA, N.I.

Microbiological method for the determination of riboflavin. Vit. res. i ikh isp. no.3:121-128 '55. (MLRA 9:4)

(RIBOFLAVIN) (LACTOBACILLUS CASEI)

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POVOLOTSKAYA, K.L.; ZAYTSEVA, N.I.

Chromatographic method for the separation of riboflavin, and its nucleotides. Vit. res. i ikh isp. no.3:129-132 '55. (MLRA 9:4)

(RIBOFLAVIN) (CHROMATOGRAPHIC ANALYSIS)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K. L.

A method for simultaneous determination of ascorbic acid oxidase, polyphenol oxidase, and peroxidase. K. L. Povolotskaya and D. M. Sedenko (Inst. Plant Physiol., Acad. Sci. U.S.S.R., Moscow). *Biokhimiya* 20, 88-91(1955).—Two aliquot samples of the tested material are ground in mortars in a pH 5.0 buffer soln. Similarly two other samples are ground in a pH 7.5 buffer soln. The ground material is transferred to 100-ml. volumetric flasks and the mortars are washed with the corresponding buffer solns. The washings are added to the corresponding flasks. The vol. is then made up to 100 ml. The solns. indicated below can be varied depending upon the activity of the enzymes. For the detn. of ascorbic acid oxidase three 100-ml. volumetric flasks were used. Into each of two flasks 4 ml. of the enzyme prepn. of pH 5.0, 2.5 ml. of the buffer soln., and 2.5 ml. of ascorbic acid soln. are added. To the third flask (control) are added 1 ml. CCl_3COOH, 4 ml. of the enzyme prepn., 2.5 ml. of pH 5.0 buffer, and 2.5 ml. of ascorbic acid soln. Flasks are shaken for 30 min. and 1 ml. of 10% CCl_3COOH added. Titration is performed in 50-ml. beakers to which previously were added 5 ml. H_2O and 1 ml. of the material to be tested. The controls are titrated without preliminary shaking. For the detn. of polyphenol oxidase six 100-ml. volumetric flasks are used. To 2 are added 2 ml. of the enzyme prepn. of pH 5.0, 2 ml. of corresponding buffer soln., 2.5 ml. of the ascorbic acid soln., and 2.5 ml. of pyrocatechin soln. To 2 other flasks are added 2 ml. of the pH 7.5 enzyme prepn., 2 ml. of corresponding buffer soln., 2 ml. of the ascorbic acid, and 2.5 ml. of the pyrocatechin solns. To each of the two control flasks are added 1 ml. CCl_3COOH, 2 ml. of the enzyme prepn., 2 ml. of the corresponding buffer soln. and 2 ml. of the ascorbic acid and 2.5 ml. of the pyrocatechin solns. Flasks are shaken for 30 min. excepting controls, 1 ml. CCl_3COOH is added to test aliquots, and titrated as above. In this procedure the combined titration value for ascorbic acid oxidase and poly-

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phenol oxidase is detd. From this, the polyphenol oxidase activity value is obtained by subtracting the first titration value from the second. If the titration value for polyphenol oxidase at pH 7.5 is greater than at pH 5.0, the titration value of ascorbic acid oxidase at pH 7.5 must be obtained first and correspondingly subtracted. For the detn. of peroxidase activity three 100-ml. volumetric flasks are used. Into each of 2 are added 1 ml. of the enzyme prepn., 2 ml. of the pH buffer soln., 2.5 ml. of the ascorbic acid soln., 2.5 ml. of pyrocatechin soln., and 1 ml. of H_2O_2. Into the control flask are added 1 ml. CCl_3COOH, 1 ml. of the enzyme prepn., 1 ml. of the corresponding buffer soln., and 1 ml. each of ascorbic acid, pyrocatechin, and H_2O_2 solns. Shake, acidify, and titrate as above. By this procedure the titration value indicates the combined activity of peroxidase and polyphenol oxidase. By subtracting from this the value obtained above for polyphenol oxidase, the activity of peroxidase is estd. In some instances turbidity may develop in the flasks owing to the complete oxidation of the ascorbic acid. In such cases it is pointless to complete the titration. In all cases the activity of the enzymes is judged by the difference in the no. of ml. of 2,6-dichloroindophenol used up in the control and test titrations. All tests are carried out at room temp. (18-22°). Temp. fluctuations above and below these limits are to be avoided, and the same end point color intensity should be developed. It was found that in different plant objects the activity of each of the oxidases and their interratios varied depending upon their physiol. state, thereby serving as indexes of direction of the plant tissue energy processes.

B. S. Levine

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POVOLOTSKAYA, K. L.

3

Some changes in metabolism of flowers and plants of tomato after action of 2,4-D and 2,4,5-T. Yu. V. Rakitin, K. L. Povolotskaya, and D. M. Sedenko (K. A. Timiryazev Inst. Plant Physiol., Acad. Sci. U.S.S.R., Moscow). *Fiziol. Rastenii* 3, 297-305(1956).—Application of stimulative doses of 2,4-D and 2,4,5-T to tomato flowers results in increased activity of oxidation-reduction enzymes, increased concn. of P components, particularly protein-lipide P with a higher ratio of org. P to inorg. P. Use of hindering doses of the substances disorganizes the oxidation-reduction systems, usually by enhancement of peroxidase and reduction of polyphenoloxidase systems. Respiration rises mainly in flavo-protein portion. Under these conditions the plant accumulates P, mainly inorg. forms and the ratio of org. to inorg. P declines. G. M. Kozolapov

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BC

A 4

Fermented cabbage (sauerkraut) as source of the antiscorbutic vitamin. K. L. Povolotskaya, V. N. Bukin, L. A. Harder, and M. M. Makarova (Bull. Appl. Bot. U.S.S.R., 1934, Suppl. 67, 103—112).—Cabbage fermented in brine loses 50%, that fermented in pure culture of lactic acid bacilli only 10—20% of its vitamin-C val.

Nutr. Abs. (m)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

Antiscorbutic [in-]activity of a preparation of methylnornarcotine. K. L. Povolotskaya (Bull. Appl. Bot. U.S.S.R., 1934, Suppl. 67, 165—169).—The preps. are devoid of vitamin C. Cn. Abs. (p)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

11E

Experimental scurvy in relation to the character of the basic diet. M. F. Glazunov and K. L. Puvolotzkaya. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.), Suppl. 67, 217-24(1934).—The Bezsonov diet, even with the addn. of vitamin C (3 cc. of orange juice), is not satisfactory to prevent scurvy in guinea pigs. Addns. of autoclaved hay overcome the deficiencies. Animals kept on the Bezsonov diet tend to develop fatty degeneration of the liver. This condition does not appear if autoclaved hay is added to the diet.

J. S. Joffe

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11E

Sauerkraut as a source of antiscurvy vitamin. K. I. Povolotskaya, V. N. Bukin, L. A. Garber and M. M. Makarova. Bull. Applied Botany, Genetics Plant Breed. Inst (U. S. S. R.), Suppl. 67, 101-12(1934). J. S. J.

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Co

11E

Testing the antiscurvy activity of the preparation of methyl-nor-narcotine. K. L. Povolotskaya. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.), Suppl. 67, 165-9(1934).—Biol. and chem. tests of 3 prepns. of methyl-nor-narcotine have shown that these prepns. are devoid of vitamin C. J. S. Joffe

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

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Ca

11E

The possibility of applying chemical methods in determining vitamin C. V. N. Bukin and K. L. Povolotzkaya. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.), Suppl. 67, 179-94(1931).—The Bezssonov reaction and I titration do not agree with the actual antiscurvy activity. The reaction with 2,6-dichlorophenol-indophenol, as worked out by Tillmans, is not specific because this reagent might react with a series of other substances. A comparison of this reaction with biol. tests has proved it to be in fair agreement and it could be used for a preliminary orientation of the vitamin content. At high temp. the presence of sugars may reduce the reagent. J. S. J.

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

11E

The antiscurvy vitamin in various fruits, berries and vegetables of the north. V. N. Bukin, K. L. Pereborskaya and N. P. Onokhova. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.) Suppl. 67, 25-61 (1934).—Of the 38 varieties of 8 kinds of vegetables, kohlrabi and red and savoy cabbages proved to have the highest vitamin content. 1 g. acted as a prophylactic for the guinea pig (1 to 1 g. of the ordinary cabbage was required to accomplish similar results). Cultivated strawberries were more antiscorbutic than the wild strawberries. Of the wild fruits the dogrose shows an exceptional potency; 0.1 g. is an effective dosage. The bird cherry, dewberry and Amur wild grape are practically devoid of vitamin C. *Physalis pubescens*, *P. peruviana* and *P. fuscomaculata* are as potent as the orange.

J. S. Joffe

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Ca

11E

The biological method in determining the antiscurvy vitamin. V. N. Bukin, K. L. Povalotskaya and M. F. Glazunov. *Bull. Applied Botany, Genetics Plant Breeding* (U. S. S. R.), Suppl. 67, 195-215(1934).—A number of diets have been investigated with the Bezmonov diet as the standard. The latter was found to be unsatisfactory inasmuch as prophylactic doses of substances contg. vitamin C, like orange juice, did not give any response. Addns. of irradiated cereals, carotene and salts did not improve the Bezmonov diet. A diet of oats, autoclaved hay and autoclaved carrots was found to be satisfactory. Carotene in place of carrots was also satisfactory. The latter serves as a source of vitamin D. It also improves the vitamin A content. J. S. Ioffe

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A-4

Chemical methods in determining vitamin-C. V. N. Bukin and K. L. Povolotskaya (Bull. Appl. Bot. U.S.S.R., 1934, Suppl. 67, 179—194).—The Benedict reaction and I titration do not measure vitamin-C activity. Tillmans' 2 : 6-dichlorophenol-indophenol reaction is not sp., but serves for preliminary observations. The reagent is reduced by sugars at high temp. Ch. Abs. (9)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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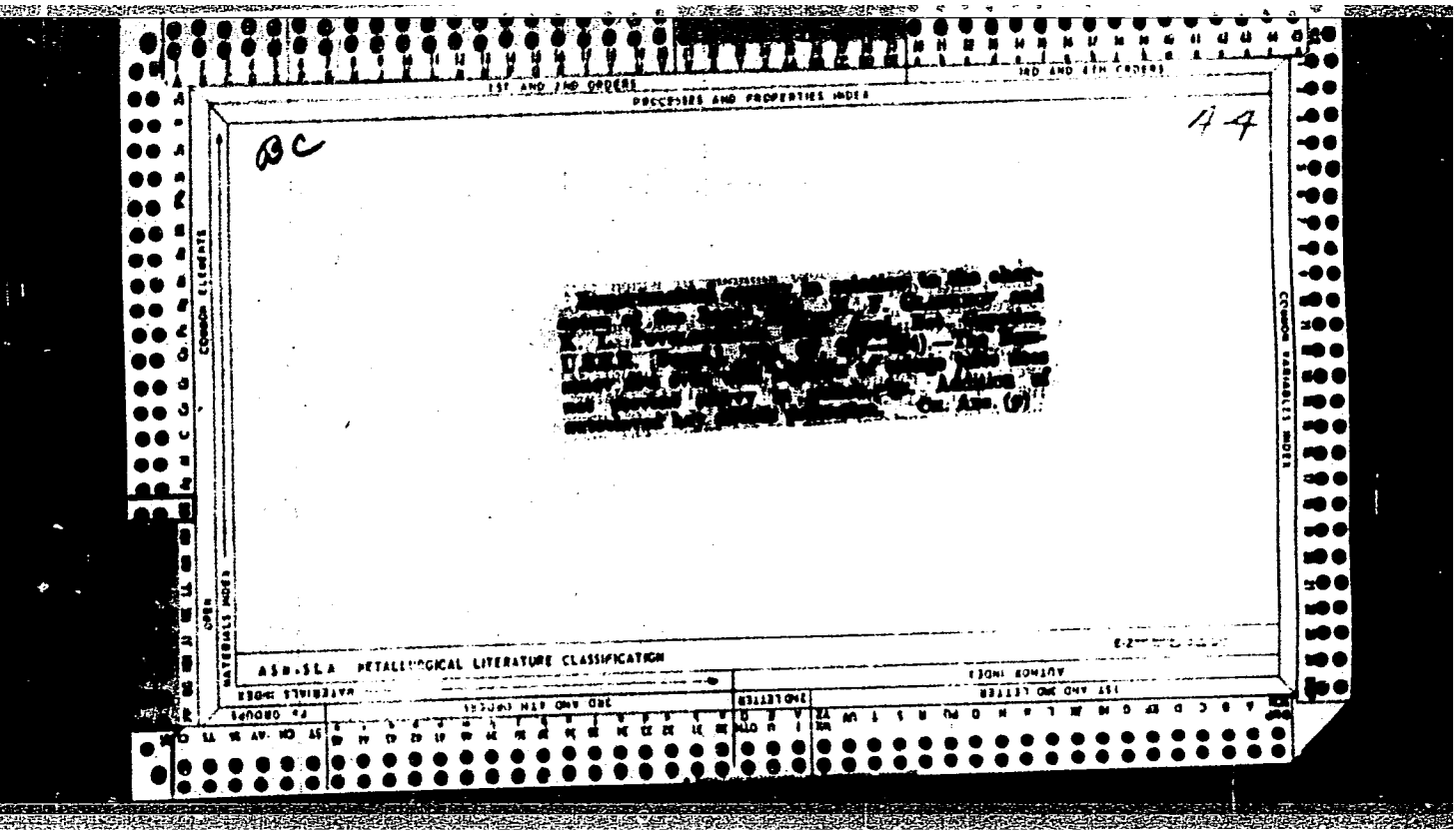

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Be

11-4

Presence of the antiscorbutic vitamin in northern varieties of fruits, berries, and vegetables. [illegible] Nutr. Abs. (b)

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

Biological method for determining vitamin-C. V. N. Bumin, K. L. Povolotskaya, and M. F. Glazunov (Bull. Appl. Bot. U.S.S.R., 1934, Suppl. 67, 195—215).—Prophylactic doses of vitamin-C (e.g., orange juice) do not improve the Semenov diet. Additions of irradiated cereals, carotene (I), and salts were also ineffective. A diet of autoclaved hay and autoclaved carrots (II) was satisfactory. (I) may replace (II), which serves as a source of -D and improves the -A content. Ch. Abs. (p)

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

Therapeutic method of determining vitamin-C. K. L. Povolotskaya (Bull. Appl. Bot. U.S.S.R., 1934, Suppl. 57, [illegible]).—Compared with the prophylactic, the therapeutic method with guinea-pigs suffering from scurvy gives sufficiently exact results, wt. increase and macroscopic pathological changes being the criteria. The min. healing and preventive doses are nearly the same. NUTR. ABS. (m)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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RAKITIN, Yu.V., otv. red.; ARKHANGEL'SKIY, N.I., red.; KRETOVICH, V.L., red.; METLITSKIY, L.V., red.; SHTEYNBERG, D.M., red. [deceased]; SHCHERBINOVSKIY, N.S., red.; YAKOVLEV, B.V., red.; POVOLOTSKAYA, K.L., red.; SUSHKOVA, L.A., tekhn. red.; VOLKOVA, V.V., tekhn. red.

[Scientific principles in crop protection] Nauchnye osnovy zashchity urozhaia. Moskva, Izd-vo AN SSSR, 1963. 246 p. (MIRA 17:1)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. V.I.Lenina. 2. Institut fiziologii rasteniy im. K.A. Timiryazeva AN SSSR, Moskva (for Rakitin). 3. Institut evolyutsionnoy fiziologii im. I.M.Sechenova AN SSSR, Leningrad (for Yakovlev). 4. Institut biokhimii im. A.N.Bakha AN SSSR, Moskva (for Metlitskiy).

(Crop yields)

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POVOLOTSKAYA, K.L.; RAKITIN, Yu.V.; KHOVANSKAYA, I.V.

Participation of heteroauxins in the translocation of sugars in plants. Fiziol. rast. 9 no.3:303-308 '62. (MIRA 15:11)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Indolacetic acid) (Sugars) (Plants—Respiration)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Mechanism of the action of maleic hydrazide in plants. Izv. AN SSSR. Ser. biol. no.2:250-255 Mr-Ap '61. (MIRA 14:3)

1. Timiryazev Institute of Plant Physiology, Academy of Sciences of the U.S.S.R., Moscow.
(GROWTH INHIBITING SUBSTANCES) (MALEIC ACID)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Using gibberellins for stimulating the growth and development of plants. Itogi nauki: Biol.nauki no.2:383-397 '58. (MIRA 14:4)

(Gibberellin)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Thinning flowers and inhibiting the flowering of fruit trees.
Itogi nauki: Biol.nauki no.2:398-415 '58. (MIRA 14:4)

(Fruit culture) (Plants, Effect of chemicals on)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Inhibiting the sprouting of potatoes and vegetables in storage.
Itohi nauki: Biol.nauki no.2:416-448 '58. (MIRA 14:4)

(Potatoes--Storage) (Vegetables--Storage)
(Plants, Effect of chemicals on)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

OVCHAROV, K.Ye.; POVOLOTSKAYA, K.L.; ZEMSKAYA, V.A.; SVARINSKAYA, R.A.; SEDENKO, D.M.

Weed control on fields where broad-leaved plants are grown. Itogi nauki: Biol.nauki no.2:549-581 '58. (MIRA 14:4)

(Herbicides)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

OVCHAROV, K.Ye.; POVOLOTSKAYA, K.L.; ZEMSKAYA, V.A.; SVARINSKAYA, R.A.; SEDENKO, D.M.

Destroying woody plants and controlling weeds in meadows, pastures, and nurseries. Itogi nauki: Biol.nauki no.2:582-608 '58. (MIRA 14:4)

(Herbicides)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POPOLOTSKAYA, K.L.

New form of riboflavin bound with proteins. Biokhimiia 18 no.5:638-643 S-O '53. (MLRA 6:10)

1. Institut biokhimii im. A.N.Bakha Akademii nauk SSSR, Moscow.
(Riboflavin) (Proteins)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

RAKITIN, Yu.V.; POVOLOTSKAYA, K.L.

Microchemical determination of ethylene. Fiziol.rast. 7 no.3:366-373 '60. (MIRA 13:6)

1. K.A. Timiryazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.
(Ethylene) (Fruit--Chemical composition)
(Microchemistry)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

MURAV'YEVA, Ye.M., inzh.; POVOLOTSKAYA, M.D., inzh.

Compositions: silver-zinc oxide, and silver-lead oxide obtained by an oxide annealing method. Elektrotekhnika 36 no.3:37-39 Mr '65. (MIRA 18:6)

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L 51306-65 EPF(c)/EWT(m)/EWP(z)/EWP(i)/EWP(b)/EWA(d)/EWP(t) IJP(c) JD/WB

ACCESSION NR: AP5007535 S/0292/65/000/003/0037/0039

AUTHOR: Murav'yeva, Ye. M. (Engineer); Povolotskaya, M. D. (Engineer)

TITLE: Silver-zinc oxide and silver-tin oxide compositions obtained by the method of oxidizing annealing

SOURCE: Elektrotekhnika, no. 3, 1965, 37-39

TOPIC TAGS: alloy oxidation, silver alloy, zinc containing alloy, tin containing alloy, zinc oxide containing alloy, tin oxide containing alloy, electrical contact alloy

ABSTRACT: Experiments were performed on samples of silver-zinc and silver-tin alloys in order to obtain compositions of silver with zinc or tin oxide by oxidizing annealing at 800C and to determine the applicability of these compositions to high-power electrical contacts. A composition with oxide in granular form was obtained only from alloys with 3% by weight of either tin or zinc, while on the alloys with 9.7% of tin or zinc a continuous film was formed. Experiments were carried out on samples of cold-rolled alloys, 1.0—2.2 mm thick. Oxidizing annealing was done at 750—800C in oxygen or air. The oxidation of 3% alloys was found to follow the parabolic rate as shown in Fig. 1 of the Enclosure. Alloy density increased very

Card 1/4

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L 51306-65

ACCESSION NR: AP5007535

slightly after oxidation but the hardness increased by 100% or more. The variation in resistivity is shown in Fig. 2 of the Enclosure. The contacts were not damaged when subjected to a 2-mm-long arc of about 8 seconds duration. In a corrosion test, samples were exposed to air for 24 hours at room temperature, to distilled water vapor for 20 hours at room temperature and at 100C for 7 hours and then to air at 500C for 5 minutes and at 700C for another 5 minutes. The contact resistance before the test was 0.20 and 0.13 milliohms for silver-zinc and silver-tin alloys, respectively. After the test, the corresponding values were 0.10 and 0.08 milliohms. Contacts made of the alloys were opened and closed 50 times at 60—65 volts and currents of 75, 150, 200, and 300 amperes with no visible damage to the material. The alloys are recommended for further testing in high-power electrical devices. Orig. art. has: 3 figures, 1 formula and 4 tables. [08]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 02 SUB CODE: MM, EE

NO REF SOV: 003 OTHER: 000 ATD PRESS: 4016

Card 2/4

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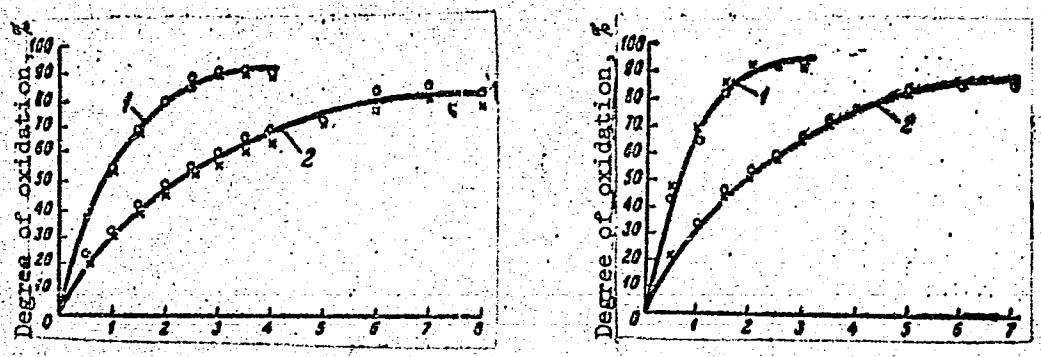
L 51306-65

ACCESSION NR: AP5007535 ENCLOSURE: 01



(a) Oxidation time, hr (b) Annealing time, hr

Fig. 1. Oxidation curves of the alloys at 800C

a - Silver-zinc (3%); b - silver-tin (3%);
1 - oxygen; 2 - air.

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L 51306-65

ACCESSION NR: AP5007535

ENCLOSURE: 02

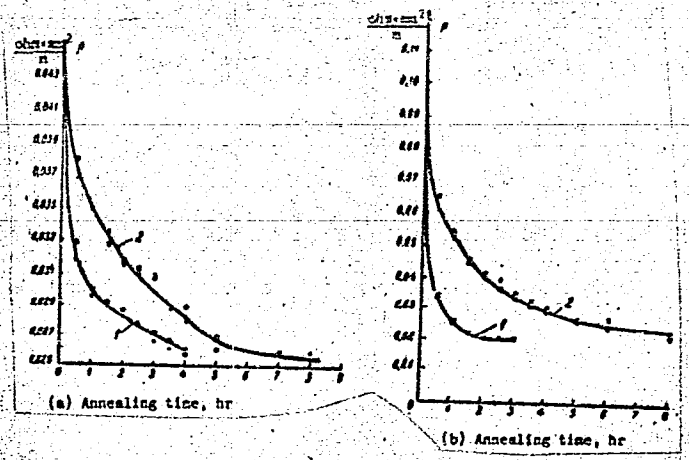

Fig. 2. Variation in alloy resistivity after annealing at 800C

a - Silver-zinc (3%); b - silver-tin (3%); 1 - oxygen; 2 - air.

BJB

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

USOV, Vladimir Vasil'yevich[deceased]; DEKABRUN, I.Ye., red.; KIRILLOVA, Z.S., red.; POVOLOTSKAYA, M.D., red.; LARIONOV, G.Ye., tekhn. red.

[Metals for electrical contacts] Metallovedenie elektricheskikh kontaktov. Moskva, Gosenergoizdat, 1963. 207 p. (MIRA 16:6)

(Electric contactors)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

PEREDEL'SKIY, M. [Perediel's'kyi, M.]; POVOLOTSKIY, A. [Povolots'kyi, A.]; TELEDIDO, A.; BARANOVSKIY, A. [Baranovs'kyi, A.], glavnyy red.; DROGICHINSKIY, N. [Drohichyns'kyi, N.], red.; KOCHUBEY, A., red.; OLEKSYUK, I., red. [deceased]; ZHURBA, S., otv. za vypusk; LYAMKIN, V., tekhn.red.

[The Soviet Ukraine in the seven-year plan, 1959-1965] Radians'ka Ukraina v semirichtsi, 1959-1965. Kyiv, Derzhpolitvydav URSR, 1959. 42 leaves. (MIRA 13:5)

(Ukraine--Economic policy)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, B.

Factory committee permitted. Okhr.truda i sots.strakh. 5 no.11: 29 N '62. (MIRA 15:12)
(Donskoy (Tula Province)--Employees, Dismissal of)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, D. S., kand. tekhn. nauk

Vibration compaction of fine coking coal transported in gondola cars. Ugol' 38 no.4:43-44 Ap '63. (MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.

(Coal handling)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, D.Ya.

Conditions of flake formations in steel. Izv. vys. ucheb. zav.; chern. met 6 no.2:120-128 '63. (MIRA 16:3)

1. Chelyabinskiy politekhnicheskiy institut.
(Steel—Hydrogen content)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

PEREVERZEV, D.A., inzh.; POVOLOTSKIY, L.V., inzh.

Study of the efficiency of a steam turbine rotor cooling system with supercritical parameters. Ebergomashinostroenie 9 no.4: 9-13 Ap '63. (MIRA 16:5)

(Steam turbines—Cooling)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, Igor' Aleksandrovich; PERLOV, Anatoliy Kuz'mich; CHUGUNIKHIN, S.I., otv.red.; SHOROKHOVA, A.V., red.izd-va; SABITOV, A., tekhn. red.

[KN-1 cutter loader] Nareznoi kombain KN-1. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1960. 153 p. (MIRA 13:7)
(Coal mining machinery)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, Ye.G.; DOVGALEVSKIY, Ya.M.; BAYTINA, V.K.

Rate of cooling of "magnico" alloys. Izv.vys.ucheb.zav.; chern. met. 6 no.1:120-124 '63. (MIRA 16:2)

1. Saratovskiy politekhnicheskiy institut.
(Iron-nickel-cobalt alloys--Magnetic properties)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.I.

Transformations and functions of a form of riboflavin firmly bound to a protein. Vitaminy no.4:148-153 '59. (MIRA 12:9)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva Akademii nauk SSSR, Moskva.
(RIBOFLAVIN) (PROTEINS)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

ZAYTSEVA, Z.I.; POVOLOTSKAYA, K.L.

Riboflavin released from vegetable proteins isolated by 0,2o/o NaOh. Dokl. AN SSSR 118 no.2:338-339 Ja '58. (MIRA 11:4)

1.Institut biokhimii im. A.N. Bakha Akademii nauk SSSR i Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR.
(RIBOFLAVIN) (PROTEINS)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K. L.

I

/Czechoslovakia/Plant Physiology. Growth and Development

Abs Jour : Ref Zhur-Biol., No 13, 1958, 58237

Author : Rakitin Yu. V., Povolotskaya K. L.

Inst : Institute of Physiology, Academy of Sciences USSR

Title : Fluorometric Method of Determination of Heteroauxin in Plants

Orig Pub : Fiziol. rasteniy, 1957, 4, No 3, 285-292

Abstract : On the basis of the Ebert fluorometric method of determination of indolyl acetic acid (IAA) in pure solutions, a method for the determination of IAA in plant tissues has been developed. The fluorescence of the products of the reaction between IAA and sulfuric acid in the presence of copper sulfate was determined on a fluorometer with two light filters. The inten-

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

Czechoslovakia/Plant Physiology. Growth and Development I

Abs Jour : Ref Zhur-Biol., No 13, 1958, 58237

Abstract : sity of the fluorescence was proportional to the concentration of IAA within the limits of 0.5 to 2 /ml. Triptophan, -indolyl butyric acid, -indolyl propianic acid, N-ethyl indolyl-3-acetic acid, -naphthyl acetic acid, DL-catechin, epigallo catechin, chlorophyll, riboflavin, and antocyanins were not fluorescent as a result of the reaction with sulfuric acid and copper sulfate. To determine the concentration of indolyl acetic acid, a standard scale was constructed. The free indolyl acetic acid was extracted with the help of acidified alcohol with ether linked after hydrolysis with an alcohol alkali. The maximum spetrums of absorption in the reaction of indolyl acetic acid and H_2SO_4 with the extract from tissues coincided, a fact which pointed to their identity. The

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

RAKITIN, Yu.V.; POVOLOTSKAYA, K.L.; GEYDEN, T.M.; GARAYEVA, K.G.

Maleic acid hydrazide as a means of inhibiting the sprouting of sugar beet roots during prolonged storage. Fiziol. rast. 5 no.3: 291-295 My-Je '58. (MIRA 11:6)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR, Moskva.

(Sugar beets--Storage)
(Maleic acid)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K. L.

[illegible] Physiology - [illegible] [illegible]

Abs Jour : Ref [illegible] - Biol., [illegible]

Author : [illegible]

Inst : Institute of [illegible] Physiology [illegible] of Sciences [illegible]

Title : Experiment [illegible] in plants [illegible] by White Streptocide.

Orig Pub : Fizio[illegible] [illegible] 1957, [illegible], [illegible]

Abstract : The treatment of corn and wheat seeds with [illegible] and [illegible] solutions of white streptocide led to growth inhibition, especially of coleoptiles and side roots (intensified with an increase in the [illegible]), bending [illegible] shortening of the above ground part, [illegible] of the roots and [illegible] of the [illegible] into [illegible]. Depression of [illegible], [illegible] [illegible] activities (especially in [illegible]), inhibition

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Fourth All-Union Conference on Vitamins. Fiziol. rast. 4 no.6:575-576 N-D '57. (MIRA 10:12)

(Moscow--Vitamins--Congresses)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Some coenzymatic functions of riboflavin. Vitaminy no.2:134-143 '56. (MLRA 10:8)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva Akademii nauk SSSR, Moskva

(RIBOFLAVIN) (COENZYMES)

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X

POVOLOTSKAYA, K.L.

OVCHAROV, K.Ye.; POVOLOTSKAYA, K.L.

Experimental avitaminosis in plants induced by sulfanilamide [with summary in English]. Fiziol.rast. 4 no.2:117-123 Mr-Ap '57. (MLRA 10:5)

1.Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR, Moskva.
(Sulfanilamide) (Deficiency diseases in plants)
(Vitamins)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K. L.

13

Chemical and spectroscopic methods for determination of vitamin A. I. N. Garkina. *Vitaminnye Resursy i Ikh Ispol'zovanie, Akad. Nauk S.S.S.R., Inst. Biokhim. im. A. N. Bakha, Sbornik 3*, 5-21(1955).—Phys. and chem. properties, structure, and methods of detn. of the A vitamins are reviewed, and details of the chem. and spectroscopic detn. are presented for application to milk, eggs, and blood. Chemical method for determination of a vitamin D. I. N. Garkina and V. N. Bukin. *Ibid.* 22-52.—Properties of ergosterol, vitamin D_2 and D_3, and 7-dehydrocholesterol, and methods for detn. are reviewed. The chem. detn. methods are presented in detail for analyses of oil and fatty tissue of fish and marine animals, oil solns. of irradiated ergosterol and alc. solns. of irradiated ergosterol. Chromatographic method for separation of provitamin and vitamin D. I. N. Garkina. *Ibid.* 53-73. Biological method for the determination of the D vitamin activity (line test). N. N. Erofeeva. *Ibid.* 74-81. Biological method for determining P-vitamin activity. N. N. Erofeeva. *Ibid.* 82-90. Fluorometric method for determination of thiamine. V. N. Bukin, K. L. Povolotskaya, A. A. Kondrashova, and E. P. Skorobogatova. *Ibid.* 91-9. Cationite CDV-3 in the fluorometric method for determination of vitamin B_1. A. A. Dmitrovskii. *Ibid.* 100-7. Fluorometric method for determination of riboflavine. K. L. Povolotskaya, N. I. Zaĭtseva, and E. P. Skorobogatova. *Ibid.* 108-20. Microbiological method for determination of riboflavine. K. L. Povolotskaya, E. P. Skorobogatova, and N. I. Zaĭtseva. *Ibid.* 121-8.—The method is based on growth of a culture of *Lactobacillus casei*. Chromatographic method for separation of riboflavine and its nucleotides. K. L. Povolotskaya and N. I. Zaĭtseva. *Ibid.* 129-32. Microbiological method for determination of nicotinic acid (vitamin PP). O. I. Pushkinskaya and L. S. Kutseva.

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Gavkina, I. N.

Ibid. 133-44.—The method is based on growth of a culture of *Lactobacillus arabinosus*. Microbiological method for determination of pyridoxine (vitamin B_6). N. A. Pomoshchnikova. *Ibid.* 145-51.—The method is based on using a culture of *Saccharomycodes ludwigii*. Microbiological method for determination of pantothenic acid. N. A. Pomoshchnikova. *Ibid.* 152-7. Fluorometric method for determination of folic acid. N. A. Andreeva. *Ibid.* 158-65; cf. *C.A.* 48, 5257*d*. Microbiological method for determination of folic acid. O. I. Pushkinskaya and L. S. Kutseva. *Ibid.* 166-74. Microbiological method for determination of vitamin B_{12}. L. S. Kutseva. *Ibid.* 175-81. Chemical method for determination of vitamin B_{12}. V. N. Bukin, L. Ya. Areshkina, and E. P. Skorobogatova. *Ibid.* 182-7; cf. *C.A.* 49, 6368*e*.—The method is based on extn. of the vitamin with a dil. (0.25%) soln. of $NaNO_2$, refining the ext., and spectroscopic or colorimetric detn. of the vitamin in the refined ext. Supplement: Ascorbic acid (vitamin C). Anon. *Ibid.* 188-90. Determination of carotene (provitamin A) according to Murri. Anon. *Ibid.* 191-3; cf. *C.A.* 32, 2554[4]. M. M. Piskur

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, K.L.

Destruction of riboflavine under influence of visible light. K. L. Povolotskaya and N. I. Zaltseva. *Trudy Vsesoyuz. Nauch. Issledovatel. Vitamin. Inst.* 5, 145-51(1954).—Direct sunlight rapidly destroys riboflavine at all pH values, with 440 mμ range being most destructive. Nevertheless, low pH tends to preserve riboflavine better than high pH level. Riboflavine is moderately stable in diffuse light (natural or artificial). It is more stable to light in a living cell than in soln. Ascorbic acid and tea tannin tend to protect riboflavine from destruction to some degree. G. M. K.

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PHASE I BOOK EXPLOITATION SOV/4164

Vsesoyuznoye soveshchaniye po splavam redkikh metallov. 1st, Moscow, 1957

Redkiye metally i splavy; trudy... (Rare Metals and Alloys; Transactions of the First All-Union Conference on Rare-Metal Alloys) Moscow, Metallurgizdat, 1960. 438 p. 3,150 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut metallurgii; USSR Komissiya po redkim metallam pri nauchno-tekhnicheskom komitete.

Ed.: I.K. Shapovalov; Ed. of Publishing House: O.M. Kamayeva; Tech. Ed.: P.G. Islent'yeva.

PURPOSE: This collection of articles is intended for metallurgical engineers, physicists, and workers in the machine-building and radio-engineering industries. It may also be used by students of schools of higher education.

COVERAGE: The collection contains technical papers which were presented and discussed at the First All-Union Conference on Rare-Metal Alloys, held in the Institute of Metallurgy, Academy of Sciences USSR in November 1957. Results of investigations of rare-metal alloys, titanium, and copper-base alloys with additions of rare metals are presented and discussed along with investigations of rhenium, vanadium, niobium, and their alloys. The effect of rare-earth metals on properties of magnesium alloys and steels is analyzed. The uses of rhenium as a dehydrating catalyst, electroplating material, and material suitable for making plugs for automobile electrical systems are discussed. Also, the effect of the addition of certain elements on the properties of heat-resistant steel is examined and alloys with special physical properties (particularly semiconductive alloys) are discussed. No personalities are mentioned. Soviet and non-Soviet references accompany some of the articles.

PART II. TITANIUM AND COPPER-BASE ALLOYS WITH RARE-METAL ADDITIONS

Danilova, G.P., I.P. Drushinina, and M.I. Mal'tsev. Investigations of Alloys of the Titanium-Niobium-Aluminum and Titanium-Molybdenum-Aluminum Systems 34

Mal'tsev, M.V., G.P. Danilova, and Ye. A. Kazenskaya. Effect of Rare Metals on the Oxidability of Titanium and of Some Titanium Alloys 42

Mal'tsev, M.V., and V.Z. Karlinskiy. Investigation of Titanium-Aluminum-Vanadium Ternary Alloy Systems 52

Danilova, G.P., G.S. Tikhonova, I.S. Moiseyeva, L.I. Seleznev, and L.V. Mel'nikova. High-Strength and Heat-Conducting Alloys of the Copper-Cobalt-Beryllium System 63

Rare Metals (Cont.) SOV/4164

PART III. RHENIUM, VANADIUM, NIOBIUM, ZIRCONIUM AND ALLOYS BASED ON THEM

Balandin, A.A., Ye.I. Karpeyskaya, and A.A. Tolstopyatova. Rhenium as a Dehydrating Catalyst 72

Tylkina, M.A., and Ye.M. Savitskiy. Rhenium Alloys 80

Sklyarenko, S.I., Z.M. Sominskaya, A.A. Nikitina, and I.I. Lavrov. Electroplating With Rhenium 111

Usov, V.V., and M.D. Povolotskaya. Electrical Contacts Made of Rhenium 123

Shumskaya, Ye.A. The Possibility of Using Alloys on Tungsten With Rhenium for Making Contacts for Automobile Electrical Equipment 133

Baron, V.V., and Ye.M. Savitskiy. Properties of Vanadium, Niobium, and of Alloys Based on Them 136

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

SOV/110-58-8-1/26

AUTHORS: Professor Usov, V.V. (Doctor of Technical Science) and Pavlotskaya, M.P. (Engineer)

TITLE: Rhenium as a Substitute for Tungsten for Contacts (Renii kak zamenitel' vol'frama dlya kontaktov)

PERIODICAL: Vestnik Elektropromyshlennosti, 1958, Nr.8, pp 1-4 (USSR)

ABSTRACT: Previous work, mainly foreign, on the use of rhenium for contacts is briefly reviewed. The article then describes corrosion and erosion tests made on contacts of rhenium and some of its alloys. The specimens of compact and porous rhenium and also of alloys of rhenium with tungsten were prepared in the rare-alloy laboratory of the Institute of Metallurgy of the Academy of Sciences of the USSR by Prof. E.M. Savitskiy (Dr.Tech.Sci.) and Cand. Tech.Sci. M.A. Tylkina. Contacts of rhenium, tungsten, and alloys of rhenium with tungsten, were tested for resistance to moist air, high temperatures and contact arcs to elucidate the conditions under which non-conducting films are formed. The test procedure is described and the main test results are tabulated. Humidity-oven tests continued for 35 days. Temperature tests were run at up to 1,000°C. The appearance of the

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Rhenium as a Substitute for Tungsten for Contacts

contacts after exposure to moist air is shown in Fig 1, the appearance of the rhenium contacts being much superior to those of tungsten. Tests on the influence of contact areas were made with the equipment illustrated diagrammatically in Fig 2. Measurements were taken of the arc length when breaking 1.5 A, 110 V d.c. and of the voltage drop across the contacts. It will be seen from the table that the arc was shorter with tungsten than with rhenium but that the rhenium contacts were not damaged. Erosion tests were made on a vibrator with d.c. and 500 c/s a.c.; the current was 1 amp, the voltage 48 V. The tests involved 120,000 operations at a rate of 50 per second. On d.c., rhenium contacts were more than tungsten. Compositions of rhenium and silver were tested for welding under heavy currents; welding did not occur and the contacts continued to operate although they were turned and damaged particularly when the silver content was low. It is concluded that rhenium as a contact material has very similar properties to tungsten but has

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Rhenium as a Substitute for Tungsten for Contacts SOV/110-58-8-1/14

more stable contact-conductivity. Rhenium has good technological properties; it is easily impregnated with silver and copper and can form a basis for contact compositions. Contacts of rhenium and its alloys are easily soldered to copper, brass and steel parts by the procedure used for tungsten contacts. Rhenium contacts can be cut and polished by the methods used for tungsten. The main advantage of rhenium over tungsten is its resistance to atmospheric and tropical corrosion; also that it maintains its contact conductivity after exposure to high temperatures and contact-arcs. It has no other special advantages over tungsten. The properties of tungsten-rhenium alloys as contact materials are intermediate between those of the constituents.
There are 3 figures, 1 table, and 5 references, 1 of which is Soviet, 3 English and 1 German.

SUBMITTED: April 18, 1958

1. Conductors--Materials 2. Rhenium--Applications 3. Rhenium --Properties

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USOV, V.V., doktor tekhn. nauk, prof.; POVOLOTSKAYA, M.D., inzh.

Rhenium as a substitute for tungsten in contacts. Vest. elektroprom. 29 no. 8:1-4 Ag '58. (MIRA 11:8)

(Rhenium)
(Tungsten)
(Electric contactors)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

USOV, V.V., doktor tekhn. nauk; BEN'KO, P.A., inzh.; MURAV'YEVA, Ye.M., inzh.; POVOLOTSKAYA, M.D., inzh.

Silver-nickel contacts for electrical apparatus. Vest. elektroprom. 27 no.8:5-11 Ag '56. (MLRA 10:9)

1. Nauchno-issledovatel'skiy institut Ministerstva elektrotekhnicheskoy promyshlennosti.

(Electric contactors)

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S/196/62/000/013/003/018
E194/E155

AUTHORS: Usov, V.V., and Povolotskaya, M.D.

TITLE: Rhenium as an electrical contact material

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.13, 1962, 4, abstract 13 B 25. (In the collection of papers "Reniy" (Rhenium). Moscow, AS USSR, 1961, 192-197).

TEXT: A disadvantage of tungsten and molybdenum as contact materials is that they are subject to corrosion and the formation of oxide films. Rhenium approximates to tungsten in its physical and mechanical properties, but has more volatile oxides, which facilitates the self-cleaning of rhenium contacts through heating. Moreover, the electrochemical potential of rhenium is more electro-positive and so it should be more resistant to electrochemical corrosion in contact with other metals. Rhenium has been little studied as a contact material. Contacts made of rhenium, tungsten, rhenium-tungsten and rhenium-molybdenum alloys were studied. Measurements were made of contact resistance after holding at a temperature of 100-110 °C for seven hours and after maintaining

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for five minutes at 500, 700 and 1000 °C. The contact resistance was measured by the volt-ammeter method with a pressure of 700 g [Abstractor's note: In the original erroneously given as 700 T], a current of 1 A, with a voltage source of 6 V. The contact resistance of rhenium contacts is considerably less than that of tungsten. Because of the volatility of the oxides the contact resistance of rhenium contacts drops sharply after holding at 700 °C. In the case of contacts of tungsten and of alloys of tungsten with 15-20% of rhenium the contact resistance increases at high temperatures and after maintaining at 700 and 1000 °C, conductivity is interrupted. Similar results were obtained on contacts of alloys of molybdenum with 10-40% of rhenium. Tests under tropical conditions (with a relative humidity of 95-98%, maintained for eight hours at a temperature of 45 °C, with the rest of the day at room temperature) demonstrated the good corrosion resistance of rhenium contacts; they remained bright and conductivity did not fail after 35 days' testing. The conductivity of contacts of tungsten, alloys of tungsten-rhenium

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and of molybdenum-rhenium, broke down after 35 days' testing. The length of arc between rhenium contacts (before breaking) is considerably greater than that between tungsten contacts under the same conditions; however, this did not destroy the rhenium contacts. Rhenium contacts were more subject to electrical erosion than tungsten. In many cases it may be justified to replace contacts of pure tungsten by rhenium and its alloys because they resist corrosion and maintain contact conductivity despite high temperatures and contact arcs.
7 references.

[Abstractor's note: Complete translation.]

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8(2) PHASE I BOOK EXPLOITATION SOV/1855

Soveshchaniye po elektricheskim kontaktam. Moscow. 1956.

Elektricheskiye kontakty; trudy soveshchaniya (Electrical Contacts: Transactions of the Conference) Moscow, Gosenergoizdat, 1958. 303 p. 4,150 copies printed.

Editorial board: B.S. Sotskov (Resp. Ed.), V.V. Usov, R.S. Kuznetsov, I.Ye. Dekabrun, and Z.S. Kirillova; Ed.: I.Ye. Dekabrun; Tech. Ed.: K.P. Voronin.

PURPOSE: This collection of articles is intended for engineers and technicians designing, developing and operating electrical apparatus and is concerned with electric contact materials. It may also be useful in scientific research institutes and laboratories.

COVERAGE: This book comprises reports delivered at the Electric Contacts Conference held in Moscow in November, 1956. These papers cover physical processes occurring during connecting or disconnecting, methods of designing and testing electric contacts, production and characteristics of contact materials. During this conference of the Institut avtomatiki telemekhaniki AN SSSR (Institute of Automation and Telemechanics, Academy of Sciences, USSR) participants approved periodic conferences of physicists, metallurgists, chemists and apparatus design specialists to discuss problems of electric contacts, which are the components of electric apparatus primarily influencing the reliability of electric systems, especially d-c control systems. Their physical, thermal, mechanical and chemical processes have still not been well analyzed. References are given at the end of most of the reports.

III. PRODUCTION AND CHARACTERISTICS OF CONTACT MATERIALS

Dekabrun, I.Ye. (Institute of Automation and Telemechanics, Academy of Sciences, USSR) Characteristics of Some Sintered Metal Contact Materials 224
The author describes arrangements and equipment he has used in this investigation. He gives the results of the study as well as the characteristics of the most used composition.

Shumskaya, Ye.A. (NII - Avtopriborov) Wear Resistance of Tungsten Contacts 239
The author describes her investigation of cut tungsten contacts relative to the effect of internal structure and method of production on resistance to wear.

Usov, V.V. and Povolotskaya, M.D. (Nauchno-issledovatel'skiy institut elektrotekhnicheskoy promyshlennosti - Scientific-research Institute for the Electrical Industry) Atmospheric Corrosion in Tungsten Contacts 249
A description of experiments on the above problem is presented.

Rudnitskiy, A.A. (Institut metallurgii AN SSSR - Metallurgical Institute, Academy of Sciences, USSR) Alloys of Precious Metals as Electric Contact Materials for Very Low Voltages and Currents 255
The author analyzes the characteristics and resistance to corrosion and mechanical wear of various alloys composed of metals.

Kirillova, Z.S. Alloys for Electric Contacts With Small Contact Resistance 267
The author specifies the standard Soviet alloys for sliding contacts operating with small currents and contact pressure. She compares these alloys from the point of view of reliability, corrosion susceptibility, contact resistance, mechanical and electrical characteristics, and cost.

Yuferova, Ye.K. Application of New Materials for Sliding Contacts in SSP Systems [Self-synchronizing Systems] 279
The author specifies the new Soviet standard sliding contacts, discussing their characteristics and application.

Mityushev, V.A. Survey of Experimental Research on Contact Materials From Precious Metals 292
This is a brief report on Soviet standard palladium alloys PDS-40, PDS-80, PDI-10, and PDI-18.

Koslov, V.Z. State of the Production and Standardization of Contacts and Contact Materials From Precious Metals 293
The author describes briefly the developments obtained in the production of contacts made from alloys of precious metals. Considering the great number of contact and contactor types, the author expresses the opinion that a standardization of types is necessary. He suggests the creation of a special organization for the coordination of scientific research activities on contacts of all kinds and the standardization of metals and alloys used in these.

Discussion 297

In the general discussion participated besides the authors of the above articles, L.S. Palatnik (KhGU), R.S. Kuznetsov (NII EP), Ye.V. Podol'skaya (Khar'kovskiy elektromekhanicheskiy zavod - Kharkov Electromechanical Plant), N.Ye. Lysov (MEI), I.G. Kislyak (Moskovskiy institut tsvetnykh metallov i zolota - Moscow Institute for Nonferrous Metals and Gold), M.N. Tylkina (IMET AN SSR), L.A. Rotshteyn (Zavod "Elektrosila" - "Elektrosila" Plant), L.M. Voronel' (Cheboksarskiy elektroapparatnyy zavod - Cheboksary Electric Apparatus Plant), P.V. Smirnova.

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133-58-5-9/31

AUTHORS: Kolosov, M. I., Ayzenshtok, I. Ya., Komissarov, A. I., Mysina, G. Ye. and Povolotskaya, M. S.

TITLE: The Influence of the Weight of Ingots on the Quality of Structural Steels (Vliyaniye vesa slitka na kachestvo konstruktsionnykh staley)

PERIODICAL: Stal', 1958, Nr 5, pp 411-414 (USSR)

ABSTRACT: An investigation of the possibility of increasing the weight of ingots of steels 18KhVA, 40KhNMA, 12Kh2N4A and 30KhGSA from 1.2 and 2.65 t to 4.5 t was carried out. This increase in weight of ingots was necessary in order to increase the throughput of the casting pit and blooming mill as well as to increase the degree of deformation on rolling profiles of a large cross-section (250 to 300 mm). The investigation was carried out on eight heats made in a 30-ton electric furnace. The experimental metal was teemed into 1.18, 2.65 and 4.5 t ingots. In order to study the character of crystallisation three ingots of various sizes from each melt of each of the steels investigated were selected. After slow cooling and a softening heat treatment from the twelve selected ingots axial longitudinal plates were cut. The experimental ingots of 2.65 and 4.56 (charged hot into soaking pits)

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The Influence of the Weight of Ingots on the Quality of Structural Steels

were rolled on a blooming mill to a cross-section 250 x 250 mm and then on a mill 800 into semis 140 x 140 mm. Ingots weighing 1.18 t were rolled on a mill 800 into semis 140 x 140 mm. For the studies of the macrostructure and mechanical properties specimens were taken from semis 250 x 250 on the following distances from the top of ingots %:

Ingot 2.65 t	19, 58, 98
Ingot 4.5 t	19, 39, 58, 78, 98

The macrostructure of etched specimens was evaluated according to MAP-MChM scale. Thermal treatment of specimens for testing mechanical properties was done according to MPTU2333-49. The macrostructure of ingots is shown in Figs. 1-4. The results obtained indicated that: 1. Macrostructural defects in rolled steels were caused by defects in the cast structure of ingots. 2. Axial intercrystallite cracks in rolled steel 18KhNVA of a cross-section 250 x 250 from 4.5 t ingots remain unwelded during rolling in spite of a considerable degree of reduction (in steel 12Kh2N4A they are welded

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The Influence of the Weight of Ingots on the Quality of Structural Steels

on both profiles 140 x 140 mm and 250 x 250 mm (from ingots of all weights). 3. The axial porosity and v-shaped cracks in ingots of steels 40KhNMA and 30KhGSA are welded during rolling. 4. The degree of development of segregation outside the central zone of ingots depends on the chemical composition of steel and increases with increasing weight of ingots, but does not exceed the degree permitted by MAP-MChM 1951. From the steels investigated the highest development of the segregation was observed in ingots of steel 30KhGSA. 5. The weight of ingot has no influence on the mechanical properties of steels. 6. The indices of mechanical properties of steels investigated were high with the exception of the top part of 4.5 ton ingot of steel 30KhGSA, where strength and plasticity indices were lower than is required by standards. It is concluded that: 1. Increasing the weight of ingots of 18KhNVA steel from 1.18 to 2.65 ton to 4.5 t is not advantageous, as this deteriorates the macrostructure of metal due to developing axial intercrystallite cracks which are not welded during rolling. 2. Steels 12Kh2N4A

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The Influence of the Weight of Ingots on the Quality of Structural Steels

and 40KhNMA can be cast into 4.5 ton ingots as their structure and mechanical properties remain satisfactory.
3. The problem of casting steel 30KhGSA into 4.5 t ingots requires further investigation.
There are 4 figures.

ASSOCIATION: Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Works)

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ACCESSION NR: AP4042188 S/0190/64/006/007/1267/1271

AUTHOR: Terent'yev, A. P.; Mochalina, I. G.; Rukhadze, Ye. G.; Povolotskaya, Ye. M.

TITLE: Study in the series of polymeric chelates. X. Some physicochemical studies of polymeric chelates based on thio amide and poly(thio amide) derivatives of pyridine

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1267-1271

TOPIC TAGS: polymeric chelate, thiamide pyridine derivative, polythiamide pyridine derivative, Cu, Ni, Co, Zn, polymeric chelate property, chelate group structure

ABSTRACT: The properties of the following Cu-, Ni-, Co-, or Zn-containing polymeric chelates have been studied.

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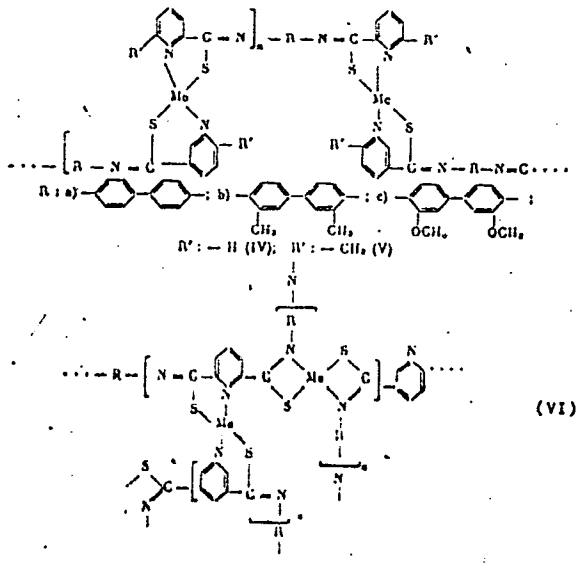

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The polymers are fine, colored amorphous powders which are soluble only with difficulty. They dissolve most readily in dimethylformamide, chloroform, and benzene; the best solubility is exhibited by polymers with metoxy groups in the backbone. The polymers are attacked by acids but are resistant to alkalis. They lose 5—15% of their weight on heating to 200C and 20—80% on heating to 400C. Comparative studies showed that polymers with a higher solubility have a lower chemical and thermal stability. The density of polymeric chelates varies from 1.27 to 1.60. They are dielectrics at room temperature; at 383K the highest electrical conductivity (10^{-10} to 10^{-11} ohm^{-1} cm^{-1}) is exhibited by Cu-containing polymers. Catalytic properties are inherent only in Cu-, Ni-, and Co-containing polymers. Their catalytic activity surpasses by two orders of magnitude that of inorganic Cu semiconductors. The nature of the band in the chelate group, as determined from x-ray absorption spectra, is =C-S-Me. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im M. V. Lomonosova (Moscow State University)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, Ye.M.

Case of anaphylactic shock during the use of streptomycin. Klin. med. 40 no.12:113-114 D '62. (MIRA 17:2)

1. Iz sanatoriya "Pushkino" Moskovskoy oblasti (glavnyy vrach Z.A. Smirnov).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKAYA, Yu., vrach (g.Khar'kov)

Long life through rational diet. Obshchestv. pit. no. 3:16-17 Mr '61. (MIRA 14:4)

(DIET)

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

ALEKSANDRENKO, Gleb Vasil'yevich [Aleksandrenko, H.V.]; POVOLOTS'KIY, A., red.; MEYEROVICH, S., tekhn.red.

[Economic councils of the economic administrative regions of the Ukrainian S.S.R.; legal problems connected with their work and organization] Radnarhospy ekonomichnykh administratyvnykh raioniv Ukrains'koi RSR; pravovi pytannia organizatsii ta diial'nosti. Kyiv, Derzh.vyd-vo polit.lit-ry URSR, 1959. 158 p. (MIRA 12:10)

(Ukraine--Economic policy)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

DARAGAN, M. [Darahan, M.]; SHEVCHENKO, N.; GORIELIK, L. [Horielik, L.], doktor ekon. nauk, red.; KOROIDA, O., kand. ekon. nauk, red.; POVOLOTSKIY, A. [Povolots'kiy, A.], red.; KADASHEVICH, O., tekhn. red.

[Economics of socialist industrial enterprises; an album of diagrams and plans] Ekonomika sotsialistychnykh promyslovykh pidpryiemstv; al'bom diagram i skhem. Pid zahal'noiu redaktsiieiu L. Horielika i O. Koroida. Al'bom uporiadkuvaly M. Darahan i N. Shevchenko. Kyiv, Derzh. vyd-vo polit. lit-ry URSR, 1958. 46 l. (in portfolio). (MIRA 11:10)

1. Akademiya nauk URSR, Kiev. Instytut ekonomiky.
(Russia--Economic conditions)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, A.I. (Leningrad)

Using the variational method for the study of spectra of nonlinear operators. Mat.sbor. 42 no.3:287-300 Jl '57. (MIRA 10:10)
(Operators (Mathematics)) (Calculus of variations) (Eigenvalues)

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~~POVOLOTSKIY~~, A. I.
POVOLOTSKIY, A. I.

USSR. I-P/W

Povolockii, A. I. On the existence of disconnected spectra for nonlinear completely continuous operators. Dokl. Akad. Nauk SSSR (N.S.) 99, 345–348 (1954). (Russian)

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Notations: E a Banach space; A a completely continuous operator in E; Λ = spectrum of

$$A = \{\lambda \mid Ax = \lambda x,\ x \neq \theta\};\quad \Pi_{r,R} = \{x \mid r < |x| < R,\ x \in E\},$$
$$\Lambda_{r,R} = \{\lambda \mid Ax = \lambda x,\ x \in \Pi_{r,R}\};$$

condition

$$(*)\qquad |Ax - Bx| \leq K|x|,\quad x \in \Pi_{r,R},$$

B a linear completely continuous operator;

$$\mathfrak{R}_{(\alpha,\beta)} = \{x \mid x \in \Pi_{r,R},\ Ax = \lambda x,\ \alpha < \lambda < \beta\};$$

$\mathfrak{R}_{(\alpha,\beta)}$ is a continuous branch in $\Pi_{r,R}$ if $\mathfrak{R}_{(\alpha,\beta)} \cap L \neq 0$ for all

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Povolochii, A. I.

bounded regions L such that $\{x \mid |x| \leq r\} \subset L \subset \{x \mid |x| < R\}$;

$$E_\lambda = \{x \mid Bx = \lambda x\};$$

$$\mathcal{E}_{\lambda,m} = \{x \mid \inf\{|x-e|/e \in E_\lambda\} < m|x|\};$$

B_θ = Fréchet derivative of A at θ; $\lim_{|x|\to 0} |Ax - B_\infty x|/|x| = 0$, if B_θ and B_∞ exist. Results (no proofs offered): 1. Let A satisfy condition (*) in $\Pi_{\theta,\infty}$; and

(**) $K < \min\{|((\lambda_0-\epsilon)I-B)^{-1}|^{-1}; |((\lambda_0+\epsilon)-B)^{-1}|^{-1}\}$.

If in $(\lambda_0-\epsilon, \lambda_0+\epsilon)$, λ_0 is the only proper value of B and if λ_0 is simple and if B_0 and B_∞ have only one proper value μ, resp. ν, in the same interval, then $\mathfrak{N}_{(\lambda_0-\epsilon,\lambda_0+\epsilon)}$ is a continuous branch in $\Pi_{\theta,\infty}$ and $\Lambda \cap (\lambda_0-\epsilon, \lambda_0+\epsilon) \subset (\mu, \nu)$. 2. When applied to the operator $A\varphi(s) = \int_G K(s,t) f(\varphi(t))dt$, where $\int_G\int_G K^2(s,t)\,ds\,dt = 1$, $K(s,t) = K(t,s)$, positive definite, G a

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Povolockii, A. D.

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compact set of measure 1 in n-space, f continuous on $(-\infty, \infty)$, we get: Let $B\varphi(s) = \int_G K(s, t)\varphi(t)\,dt$ have proper values $\lambda_1 > \lambda_2 > \cdots > \lambda_n$ which are simple and such that $[\lambda_1, \lambda_n]$ contains no other proper values of B. Furthermore, let (a) $|u - f(a)| < 2\alpha$, (b) $f'(0) = 1$, $\lim_{x\to\infty} f(x)/x = 1 - \alpha$, where $\alpha < \min_{i,j} \frac{1}{2}|\lambda_i - \mu_{i-j}|$; $1 - (\mu_i/\lambda_i)$, where

$$\mu_0 > \lambda_1 > \mu_1 > \lambda_2 > \cdots > \lambda_n > \mu_n.$$

Then $(\lambda_i, (1-\alpha)\lambda_i)$ contain different connected components of Λ. 3. Let A satisfy (2) in $\Pi_{0,R}$, λ_0 the only proper value of B in $(\lambda_0 - \epsilon, \lambda_0 + \epsilon)$, multiplicity α. Let (**) be fulfilled. Then $\lambda_0 \pm \epsilon$ are not in the point spectrum of B_θ and the sum of the multiplicities of the points in the point spectrum of B_θ which are in $(\lambda_0 - \epsilon, \lambda_0 + \epsilon)$ is α. Other results in the paper have a similar character. *B. Gelbaum.*

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POVOLOTSKIY, A.I.

39-3-2/6

AUTHOR: POVOLOTSKIY A.I. (Leningrad)

TITLE: Application of a Variation Method for the Investigation of the Spectrum of Nonlinear Operators (Primenenye variatsionnogo metoda k issledovaniyu spektrov nelineynykh operatorov)

PERIODICAL: Mat.Sbornik, 1957, Vol.42, Nr.3, pp.287-300 (USSR)

ABSTRACT: Let Γ be a completely continuous potential operator, $\Gamma = \text{grad } F$, and $F(x)$ a weakly continuous functional. Let $F(\theta) = 0$, $\Gamma\theta = \theta$. Let B be a linear selfadjoint completely continuous operator. If on a set there holds the inequation

$$\|\Gamma x - Bx\| \leq K \|x\| ,$$

then the operator Γ is called neighboring to the operator B with the constant K. Let ν be the greatest positive eigenvalue of B, let λ_1 be the second but one eigenvalue. If ν is the only positive eigenvalue, then $\lambda_1 = 0$.

Theorem: Let

(1) $\|\Gamma x - Bx\| \leq K \|x\| \qquad (\|x\| = \rho)$

and let

(2) $|F(x) - \frac{1}{2}(Bx,x)| \leq K_1 \|x\|^2 \qquad (\|x\| = \rho)$,

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where $K_1 < \frac{\nu - \lambda_1}{4}$ and $K < \nu \sqrt{1 - \frac{4K_1}{\nu - \lambda_1}}$. Then on the sphere S ($\|x\| = \rho$), Γ has at least one eigenvector which corresponds to an eigenvalue λ such that

$$|\lambda - \nu| < K + \frac{2(\|B\| + \nu)}{\sqrt{\nu - \lambda_1}} \sqrt{K_1} .$$

Let $\lambda_0 \neq \nu$ be an eigenvalue of B. Let λ_1 be the next smaller eigenvalue (where λ_0 is assumed to be positive).

Theorem: Let (1) and (2) be valid, where

$$K_1 < \frac{\lambda_0 - \lambda_1}{4}$$

and

$$K < \lambda_0 \sqrt{\frac{\lambda_0 - \lambda_1}{\nu - \lambda_1} - \frac{4K_1}{\nu - \lambda_1}} .$$

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Then on S, Γ has at least one eigenvector to which there corresponds an eigenvalue λ such that

$$|\lambda - \lambda_0| < 4K_1 + K.$$

The theorems are proved with the aid of a variation method proposed by Krasnosel'skiy [Ref.2]. In the limit case the author obtains once the theorem of Krasnosel'skiy on the points of bifurcation of a potential operator and another time he obtains the following assertion:

Theorem: Let Γ be the gradient of a weakly continuous functional, which is uniformly differentiable in every sphere of the Hilbert space $\mathfrak{H}$. Let the selfadjoint completely continuous operator B_2 be the asymptotic derivative of Γ. Then every eigenvalue of B_2 is an asymptotic eigenvalue of Γ.

Eight Soviet references are quoted.

SUBMITTED: February 1, 1956

AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, A. I.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress * (Cont.) Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Povolotskiy, A. I. (Leningrad). On the Structure of Spectrum of Nonlinear Equation. 118-119

Polyatskiy, V. T. (Odessa). Reduction of Quasiunitary Operators to Triangular Forms. 119-120

Mention is made of Livshits, M. S.

Sakhnovich, L. A. (Odessa). On the Reduction of Non-self-conjugate Operators to Diagonal Form. 120-122

Mention is made of Keldysh, M. V., Tamarkin, Ya. D. and Naymark, M. A.

There are 6 references, 5 of which are USSR, and 1 is English.

Kharazov, D. F. (Tbilisi). Linear Equations With Completely Continuous Operators, Which are Polynomially Dependent on Parameters. 122

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"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, A. I.

" On Spectra of Operators Which Are Nearly Linear." Cand Phys-Math Sci, Chair of Mathematical Analysis, Leningrad State Pedagogical Inst imeni A. I. Gertsen, Leningrad, 1955. (KL, No 18, Apr 55).

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

SICH, A.[Sych, A.]; TELEDIDO, A.; TESLYA, P.; CHEGORYAN, O.[Chehorian, O.]; POVOLOTSKIY, A.I.[Povolots'kyi, A.I.], red.; LYAMKIN, V., tekhn. red.

[New developments on the map of the Ukraine; album of diagrammatic maps of economic administrative regions] Nove na karti Ukrainy; al'bom kartoskhem ekonomichnykh administratyvnykh raioniv. n.p. Derzhpolitvydav URSR, 1961. 14 maps. (MIRA 15:7)
(Ukraine--Maps)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

KRASNOSEL'SKIY, Mark Aleksandrovich; PEROV, Anatoliy Ivanovich; POVOLOTSKIY, Abram Isaakovich; ZABREYKO, Petr Petrovich; GORYACHEV, M.M., red.; AKSEL'ROD, I.Sh., tekhn. red.

[Vector fields on a plane] Vektornye polia na ploskosti. Moskva, Fizmatgiz, 1963. 245 p. (MIRA 16:11)
(Vector analysis)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, A.I.[Povolots'kyi, A.I.], red.; LEVCHENKO, O.K., tekhn. red.

[Soviet Ukraine; figures and diagrams]Radians'ka Ukraina; tsyfry i diagramy. Kyiv, Derzh. vyd-vo polit. lit-ry, USSR, 1962. 125 p. (MIRA 16:1)

(Ukraine--Statistics--Charts, tables, etc.)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

DAYEN, Leonid Abramovich; POZNYAK, Pavel Ivanovich; CHERP, Mark Maksovich; POVOLOTSKIY, A.I.[Povolots'kyi, A.I.], red.; LEVCHENKO, O.K., tekhn. red.

[Kiev; a guidebook and manual] Kyiv; putivnyk-dovidnyk. Kyiv, Derzh.vyd-vo polit.lit-ry URSR, 1963. 187 p. (MIRA 17:3)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

DAYEN, Leonid Abramovich; POZNYAK, Pavel Ivanovich; CHERP, Mark Maksovich; POVOLOTSKIY, A.I.[Povolots'kyi, A.I.], red.

[Kiev; reference guidebook] Kyiv; putivnyk-dovidnyk. Kyiv, Politvydav Ukrainy, 1965. 187 p.
(MIRA 19:1)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

MAR'YANOV, B.M.; SICH, A.S.[Sych, A.S.]; YAMPOL'SKIY, B.B.[IAmpol's'kyi, B.B.]; VELICHKA, I.O.[Velychka, I.O.], red.; POVOLOTSKIY, A.I. [Povolots'kyi, A.I.], red.; GAVRILETS', D.V.[Havrylets', D.V.], tekhn. red.

[Great 20 years; visual aid]Pro velyke dvadtsiatyrichchia; naochnyi posibnyk. Kyiv, Derzhpolitvydav URSR, 1962. 62 p. (MIRA 16:2)

(Russia—Economic policy)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

"APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0

POVOLOTSKIY, A.I.

Determination of the angular order of a locally simple curve. Dokl. AN SSSR 124 no.3:524-526 Ja '59. (MIRA 12:3)

1. Predstavleno akademikom P.S. Aleksandrovym.
(Curves)

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

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16(1)

AUTHOR: Povolotskiy, A.I. SOV/140-59-4-17/26

TITLE: On Eigenvectors on the Hyperboloids in the Hilbert Space

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Matematika, 1959, Nr 4, pp 126 - 140 (USSR)

ABSTRACT: Let B be a linear selfadjoint positive definite completely continuous operator in the real Hilbert space $\mathfrak{H}$. Let $\mathfrak{H}_1$ be a finite-dimensional invariant subspace of the operator B, $\mathfrak{H}_2$ the orthogonal complement of $\mathfrak{H}_1$. Let a unitary operator J be introduced which is identical with the unit operator I on $\mathfrak{H}_1$ and equal to -I on $\mathfrak{H}_2$. The operator J is the gradient of $\frac{1}{2}(Jx,x)$. The equipotential surfaces of this functional are denoted as hyperboloids in $\mathfrak{H}$. Let Γ be a completely continuous potential operator, i.e. Γ = grad F(x), where F(x) is a weakly continuous functional uniformly differentiable in $T(\|x\| < R)$. Let $F(\theta) = 0$, $\Gamma\theta = \theta$. Theorem : Let in $\Gamma_{r,R}$ $(r \leq \|x\| \leq R)$ be

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On Eigenvectors on the Hyperboloids in the Hilbert Space SOV/140-59-4-17/26

(2) $\| \Gamma x - Bx \| \leq K \| x \|$ and

(3) $|F(x) - \frac{1}{2}(Bx,x)| \leq K_1 \| x \|^2$

where it is $K < \nu m$, $K_1 < \frac{\nu}{4} m^2$, where ν is the smallest positive eigenvalue of JB and $m = \frac{r}{R}$ $(m < 1)$. Then on every hyperboloid $\gamma\left[(Jx,x) = \varrho^2\right]$, where $r^2 \leq \varrho^2 \leq \frac{\nu - 4K_1}{\nu + 4K_1} R^2$, $J\Gamma$ possesses an eigenvector to which there corresponds an eigenvalue λ such that

$$|\lambda - \nu| < 2K_1 + \frac{1}{m^2}(K + 6K_1) .$$

Let λ_1 be the smallest of the positive eigenvalues of JB, which are larger than λ_0 $(\lambda_1 > \lambda_0 > \nu)$.

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On Eigenvectors on the Hyperboloids in the Hilbert Space SOV/140-59-4-17/26

Theorem : Let (2) and (3) be satisfied in $\Gamma_{r,R}$, where $K < \nu m$ and $K_1 < \min\left\{ \frac{\nu}{4} m^2 ; \frac{\lambda_1 - \lambda_0}{4} m^2 \right.$. Then on every hyperboloid $\gamma\left[(Jx,x) = \varrho^2\right]$, where it is $r^2 \leq \varrho^2 \leq \frac{\nu - 8K_1}{2\lambda_0 - \nu} R^2$, $J\Gamma$ possesses an eigenvector to which there exists an eigenvalue λ such that $|\lambda - \lambda_0| < \frac{1}{m^2}(K + 4K_1)$.

Theorem : Let $\Gamma(\Gamma\theta = \theta)$ be a non-linear completely continuous operator which is the gradient of a weakly continuous functional being uniformly differentiable in a neighborhood of θ. In the zero point θ let Γ possess a Frechet derivative B_1 which is a self-adjoint positive definite completely continuous operator. Let J_1 be a unitary operator commutating with B_1,

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On Eigenvectors on the Hyperboloids in the Hilbert Space SOV/140-59-4-17/26

where JB_1 possesses finitely many positive eigenvalues. Then every positive eigenvalue of JB_1 is a bifurcation point of $J\Gamma$ (see Krasnosel'skiy [Ref 3,9]).

Theorem : Let B_2 be self-adjoint, completely continuous, positive definite and be asymptotic derivative of Γ, where Γ is the gradient of a weakly continuous functional being uniformly differentiable in every sphere of $\mathfrak{H}$. Let the unitary operator J commutate with B_2, JB_2 is assumed to have finitely many positive eigenvalues. Then every positive eigenvalue of JB_2 is an asymptotic eigenvalue of $J\Gamma$ (see Krasnosel'skiy [Ref 3,9]).

The author mentions Yu.G.Borisovich, E.S. Tsitlanadze and L.A. Lyusternik. - There are 9 Soviet references.

ASSOCIATION: Leningradskaya lesotekhnicheskaya akademiya (Leningrad Academy of Forestry Engineering)

SUBMITTED: April 21, 1958

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APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001342810002-0"

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SOV/20-124-3-7/67

16(1)

AUTHOR: Povolotskiy, A.I.

TITLE: Determination of the Angular Order of a Locally Simple Curve (Opredeleniye uglovogo poryadka lokal'no prostoy krivoy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 3 pp 524-526 (USSR)

ABSTRACT: At the suggestion of M.A. Krasnosel'skiy the author investigates the connection between the order $q(a)$ of a curve with respect to the point a which does not lie on the curve and the angular order p of the curve. Since $q(a)$ does not change under variation of a, if a does not intersect the curve itself, the author speaks of the order of the curve with respect to a domain. The curve Γ is assumed to divide the z-plane into the m simply connected domains D_j $(j = 1,2,\ldots,m)$. The corresponding orders then are $q(D_j)$. Let the angular order of Γ be p. Let several branches of Γ pass through the point A; the branches with the same tangent are denoted as a bundle; let the number of the bundles be k. Two branches each determine a sector of a sufficiently small neighborhood of A. Every sector S_r belongs

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