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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; ROMANOVA, M.F.

Cadmium nonoisotopic light sources. Trudy VNIIM no.26:5-16 '55. (MIRA 11:6)

(Cadmium--Spectra) (Light--Wave length)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

Batarchukova, N.R.

USSR/ Physical Chemistry - Atom B-3

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 7139

Author : Batarchukova, N.R. and Dubrovskiy, G.B.
Inst : Not given
Title : The Effect of Argon Pressure on the Reproduction of the Wavelength of the $Cd^{114}$ Red Line in an Electrodeless Descharge

Orig Pub : Optika i spektroskopiya, 1956, Vol 1, No 3, 330-333

Abstract : The interferometric method was applied to the investigation of the effect of argon pressure on the displacement and broadening of the $Cd^{114}$ red line (6438A). It is shown that increasing the argon pressure in the discharge tube leads to a very small increase in the wavelength of the $Cd^{114}$ red line (0.001 $cm^{-1}$/mm Hf). The broadening of the red line is approximately $0.0002_4$ $cm^{-1}$/mm Hg.

Card 1/1 - 7 -

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.

New monochromatic light sources. Izm.tekh.no.6:26-28 N-D '56.
(MLRA 10:1)

(Monochromators )

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N. R

AUTHOR: Batarchukova, N. R. 51-4-1-21/26

TITLE: Comparative Investigations of the Metrological Properties of the Spectral Lines of $Pb^{206}$ and $Cd^{114}$. (Sravnitel'nyye issledovaniya metrologicheskikh kachestv spektral'nykh liniy $Pb^{206}$ i $Cd^{114}$.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol. IV, Nr. 1, pp. 112-113. (USSR)

ABSTRACT: In 1953 the International Consultative Committee on Determination of the Metre (Ref.1) decided that the metre should be defined in terms of the vacuum wavelength of a monochromatic spectral line which is radiated when both the source and the observer are at rest relative to one another. Such a line should be free from hyperfine structure, and should be determined by two spectral terms which are not affected

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51-4-1-21/26

Comparative Investigations of the Metrological Properties of the Spectral Lines of $Pb^{206}$ and $Cd^{114}$.

by external conditions. Spectral lines of even isotopes of cadmium, krypton and mercury were put forward as possible choices. Isotopes of xenon and lead also possess stable lines. From the published (Ref.2) data it is clear that xenon lines are no better than krypton lines. The present paper deals with the study of $Pb^{206}$ emission in the visible spectrum. An electrodeless tube of fused quartz, filled with 3-4 mg of $Pb^{206}$ and pure argon at 1-2 mm Hg, was used as a source of light. The lead spectrum was excited by 180-200 Mc/s fields. A large number of bright lines was observed in the visible spectrum if the source was heated to 480-500°C. A green line at 5005 Å was most promising. Its wave-

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51-4-1-21/26

Comparative Investigations of the Metrological Properties of the Spectral Lines of $Pb^{206}$ and $Cd^{114}$.

length was compared with that of the red line of $Cd^{114}$ (using a Fabry-Perot interferometer) and found to be 5005.4301 ± 0.0002 Å. When the source was heated to 450-500°C the spectral lines of $Pb^{206}$ were inferior in their width and reproducibility of wavelengths to the red line of $Cd^{114}$ and the lines of $Kr^{84}$ and $Hg^{198}$. The theoretical Doppler half-width of the green $Pb^{206}$ line at 540°C is 0.028 $cm^{-1}$, but the observed half-width was found to be 0.035 $cm^{-1}$. It is expected that lowering of the source temperature will lead to a considerable narrowing of this line. Furthermore lead used in the present experiments contained only 80% of $Pb^{206}$, and the author suggests further experiments using 100% pure $Pb^{206}$. Use of lead iodide instead of pure lead may

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51-4-1-21/26

Comparative Investigations of the Metrological Properties of the Spectral Lines of $Pb^{206}$ and $Cd^{114}$.

also help since for the iodide the source could be at a temperature 2.5 times lower to produce similar brightness. There are 4 references, of which 2 are German, 1 French and 1 English.

ASSOCIATION: All-Union Scientific Research Institute of Metrology (Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii).

SUBMITTED: April 17, 1957.

AVAILABLE: Library of Congress.

1. Cadmium-Spectral lines-Determination 2. Lead-Spectral lines-Determination

Card 4/4

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

AUTHOR: Batarchukova, N. R. SOV/48-22-6-17/28

TITLE: On the Possibility of Using Spectral Lines as Standards for Wave Lengths and as Standards of Length (O vozmozhnosti ispol'zovaniya spektral'nykh liniy v kachestve normaley dlin voln i etalona dliny)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 6, pp. 708-710 (USSR)

ABSTRACT: Some suggestions made previously for fixing the metric measure were discussed in the introduction. The authoress is of the opinion that exact and constant measurement of length would be of advantage if the excitation of gas could be carried out at low pressure and if such spectral lines are chosen as belong to transitions that have not too high values of the principal quantum number. In 1953 it was suggested that instead of the red line of natural cadmium, the green line of $Hg^{198}$, the yellow-green line of $Kr^{87}$ or the red line of $Cd^{114}$ be used. These suggestions were shelved for the time being by the consultative committee because of the lack of full documentation with respect to the said lines. In this paper the attempt is made to check the domain of the Pb

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spectrum for the purpose of determining its suitability for the reason mentioned. An electrode-less tube made from molten quartz was used as a light source, which was filled with $Pb^{206}$ and pure argon at a pressure of 1-2 torr. In the course of the experiments it was found useful to heat the source up to 480-500° and to use a pure iodine compound instead of pure Pb. Besides, enrichment by isotopes 206 up to 100% is recommended (which is supposed to be possible). Further investigation of the pure isotope $Pb^{206}$ is said to be particularly interesting. The suggestion made by the authoress of this paper was examined and approved by the consultative committee in September 1957, and it is expected to be confirmed definitely by Commission Nr 14 of the International Astronomical General Assembly in Moscow. At present the consultative committee recommended the use of a radiation for the determination of the metric rule which corresponds to a transition between the levels $2p_{10}$ and $5d_5$ of the atom $Kr^{86}$ and amounts to = 1 650 763,73 wave lengths of this radiation in the vacuum. In



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On the Possibility of Using Spectral Lines as Standards for Wave Lengths and as Standards of Length

SOV/48-22-6-17/28

conclusion it is mentioned that the examination of the present stroke meter with the aid of a platinum-iridium rule confirmed the urgent necessity of correcting this measure. There are 3 references, 1 of which is Soviet.

1. Measurement--Standards 2. Spectroscopy--Applications
3. Metals--Spectra

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

24(7);21(5)

AUTHOR: Batarchukova, N. R.

SOV/54-59-3-2/21

TITLE: On the Isotopic Shift in Cadmium Lines

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1959, Nr 3, pp 10-14 (USSR)

ABSTRACT: The wavelength of the spectral lines of even-even elements was taken into account for setting up the new international meter unit. According to measurements of enriched cadmium isotopes 114 (97%) 112 (87%) 116 (78%) (Ref 1) carried out at the VNIIM it had been suggested to use the wavelength of the red $Cd^{114}$-line for this purpose. In these measurements it was found that the wavelength of the red line differs in the various enriched samples by 0.0013 Å. For this reason there exists an isotopic shift of the red Cd-line which was hitherto not been observed (Romanova, Rudomin, Ref 2). In the present paper the following is determined: (1) the degree and the sign of the isotopic shift of the red Cd-line $\lambda$ = 6438 Å and of the triplet lines $\lambda$ = 5085, 4800, 4678 Å by using the samples with an enrichment of even-numbered cadmium isotopes; (2) the accuracy of the reproducibility of the effective wavelength of the red $Cd^{114}$-line depending upon the percentage of

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this isotope in the sample. Discharge tubes without electrodes and tubes with incandescent electrodes were used as light sources in the investigations. The interference figures were made of natural cadmium and the isotopic mixture. Pressure, temperature, and humidity were controlled during this process. The fractions of the interference order of the corresponding lines were computed from the diameters of the first interference rings and the isotopic shift in the lines was determined from the differences of the fractions of the isotopic light source. Table 1 gives the values of isotopic shift for all four lines investigated and their comparison with the data by Wise and Van der Sluis (Ref 3). Table 2 contains the isotopic shift of the red line with respect to natural cadmium. It may be seen from the data that in single results the deviation exceeds the measuring error. For this reason the reproducibility of the wavelength of the red cadmium line of $Cd^{114}$ was investigated depending upon the percentage of the sample. An apparatus was constructed for the graphical analysis of the intensity distribution in the lines depending upon the percentage of the corresponding isotope in the sample (Fig 1). It is based on the condition of the proportionality between the line intensity and



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the percentage of an isotope. Figure 2 shows the breakup of the spectral line at 6438 Å of natural cadmium into the amounts of intensity of its isotopes, and figure 3 shows the shift of the center of mass of the red line of $Cd^{114}$ in a change of the percentage content of $Cd^{114}$ from 100 to 70%. A shift of the red line of $Cd^{114}$ compared to natural cadmium by 0.0022 $cm^{-1}$ could be computed from the results. The error of this determination was 0.0002 $cm^{-1}$. A change of the $Cd^{114}$ content in the sample of from 85-100% practically does not cause a line shift. It is within the limits of the resolving power of the apparatus applied. There are 3 figures, 2 tables, and 7 references, 2 of which are Soviet.

SUBMITTED: April 15, 1959



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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

24.3300

S/026/62/000/005/006/010
D036/D113

AUTHOR: Batarchukova, N.R., Candidate of Technical Sciences

TITLE: A standard meter based on light

PERIODICAL: Priroda, no. 5, 1962, 95-97

TEXT: The Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii (All-Union Scientific Research Institute of Metrology) has designed an interference comparator for checking and measuring lengths according to the lengths of light waves, in conformity with the new meter standard adopted at the Eleventh General Conference of Weights and Measures. A diagram of the new comparator is given. The Institute will also produce a standard interference unit for checking the comparators. There are 2 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology im. D.I. Mendeleyev)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

24.3300

S/051/62/012/003/011/016
E032/E314

AUTHORS: Batarchukova, N.R., Kartashev, A.I. and Kirichenko, A.P.

TITLE: An optical method of filtering the green line of $Hg^{198}$

PERIODICAL: Optika i spektroskopiya, v. 12, no. 3, 1962, 424 - 426

TEXT: It is pointed out that if monochromatic light is transmitted between two closely located absorption lines of equal intensity then the "slit" produced thereby will let through only that wavelength range which corresponds to the distance between the absorption lines. A version of this method has been used by Kessler and Schweitzer (Ref. 2 - J. Opt. Soc. Amer., 49, 199, 1959) in the case of the λ 2537 line of $Hg^{198}$. The present authors developed a further modification, whereby the method could be used in the visible. Fig. 3 shows the apparatus employed. The electrode-less mercury lamp 1, which is cooled by running water at 17 °C, is placed in a magnetic field of 1 400 Oe, produced by the magnet 2. The magnet has holes drilled through it so that observations can be carried out in the direction of the field. Light from the lamp is passed

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; KIRICHENKO, A.P.

Optical method for isolating the green line of $Hg^{198}$. Opt. i spektr. 12 no.3:424-426 Mr '62. (MIRA 15:3)

(Mercury--Spectra)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; KIRICHENKO, A.P.

Fabry and Perot-type interference monochromator with a spherical calibration. Izm.tekh. no.8:11-13 Ag '62. (MIRA 16:4)
(Monochromator)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; YEFREMOV, Yu.P.; POPOV, G.S.

Krypton tube for the reproduction of the length-unit standard. Izm.tekh.no.8:14-16 Ag '62. (MIRA 16:4)
(Metric system)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.

New standard for the reproduction of the length unit. Trudy inst.Kom. stand.,mer i izm.prib no.47:5-22 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.

(Length measurement)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; KIRICHENKO, A.P.

A method for obtaining coherent radiation in the event of resonance absorption. Trudy Inst.Kom.stand., mer i izm.prib. no.56:5-10 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.
(Standards of length) (Absorption spectra)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; YEFREMOV, Yu.P.

Use of photoelectric recording of interference rings of uniform inclination in measurements of length and wavelengths. Trudy Inst.Kom.stand., mer i izm.prib. no.56:15-26 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.
(Interference (Light)) (Length measurement)
(Waves--measurement)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, N.R.; KARTASHEV, A.I.; KIRICHENKO, A.P.

Method of obtaining interference patterns at a large phase difference. Opt. i spektr. 14 no.2:304-305 F '63. (MIRA 16:5)
(Interference (Light)) (Optical measurements)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARCHUKOVA, Natal'ya Romanovna; BARINOV, V.A., prof., doktor tekhn. nauk, red.; RYSKO, S.Ya., red.

[New definition of the meter] Novoe opredelenie metra. Pod red. V.A.Barinova. Moskva, Izd-vo standartov, 1964. 77 p. (MIRA 17:10)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

ACC NR: AR6017174 SOURCE CODE: UR/0058/65/000/012/A016/A016

40
B

AUTHOR: Batarchukova, N. R.

TITLE: Work of VNIIM on the duplication of the meter in terms of units of light waves

SOURCE: Ref. zh. Fizika, Abs. 12A182

REF SOURCE: Tr. in-tov Gos. kom-ta standartov, mer i izmerit. priborov SSSR, vyp. 76(136), 1965, 92-101

TOPIC TAGS: scientific standard, metrology, interference measurement, optic research facility

ABSTRACT: In chronological order, starting from the 20's to the present time, the author describes the course of work done on increasing the accuracy of duplication and storage of the unit of length in the Soviet National Metrological Institute of VNIIM. After the October revolution, interference methods have been developed in VNIIM in the field of length measurements. Preparatory work on the determination of the meter in terms of light wavelengths was initiated in VNIIM in 1925. At the present time, the VNIIM has an absolute interference method for the measurement of 1 m gage blocks, accurate to within $1 \times 10^{-7}$, and an inteferometer for comparative measurements of gauge blocks with error not larger than ±0.17 μ per meter. At the time when a new definition of the meter was established, a large amount of work was carried out at VNIIM on the creation and investigation of sources of light for duplication of the primary and secondary standard wavelengths, and also on the construction of interferometers for the measurement of gauge blocks and ruled measures. Bibliography, 45 titles. P. A. [Translation of abstract]

Card 1/1 SUB CODE: 20

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATAREV, S.

Remarkable results. Stroitel' 2 no.7:15 Jl '56. (MIRA 10:1)

1. Brigadir kompleksnoy brigady stroyupravleniya no.5.Krivbassrudstroya. (Building)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARINA, O.

[Struggle for fulfillment of the industrialization plan of the country, 1933-1937] V borot'bi za zdiisnennia planu industrializatsii krainy, 1933-1937 rr. Dnipropetrovs'k, Dnipropetrovskie knyzhkove vyd-vo, 1960. 39 p. (Z istorii Dnipropetrovs'koi oblastnoi partiinoi orhanizatsii, no.11)
(MIRA 14:12)

(Dnepropetrovsk Province--Industries)
(Dnepropetrovsk Province--Communist Party of the Soviet Union--Party work)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATAROVA, N.A.

Development of the pathogen of paroxysmal (tick-borne) rickettsiosis and Volhynia rickettsial fever in body lice. Med. paraz. i paraz. bol. 32 no.3:311-313 My-Je'63 (MIRA 17:3)

1. Iz virusno-rikettsioznogo otdela Permskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok (nauchnyy rukovoditel' - kand.med. nauk R.A. Pshenichnov).

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

VSHENICHNOV, R.A.; BATAKOVA, N.A.

A possibility of the co-existence of phages with [illegible] pes of Rickettsia. (Preliminary communication). Vo [illegible] virus 9 no.4: 494-497 Jl-Ag '64

1. Rikketsiozmaya laboratoriya Permskogo nauchno-issledovatel'skogo instituta vaktsin i syvorotok.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATAMSHIN, R.A.

Depreciation of capital assets in industry. Soob. DVFAN SSSR no.19:145-149 '63.

Modernization of capital assets in industry. Ibid.:151-155 (MIRA 17:9)

1. Dal'nevostochnyy filial imeni Komarova Sibirskogo otdeleniya AN SSSR.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARUNAS, J.V.

USSR/Atomic and Molecular Physics - Physics of the Atom, D-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34260

Author: Batarunas, J., Kaveckis, V., Jucys, A.

Institution: None

Title: Application of the Method of the Incomplete Separation of Variables to the Helium-Type Atoms

Original Periodical: Darbai Fizikos-techn. inst. Lietuvos TSR Mokslu Akad., 1955, 1, 25-33; Lithuanian; Russian resumé

Abstract: The work is devoted to the application of the method of incomplete separation of variables, the theory of which was given by V. A. Fok, M. P. Veselov, and M. I. Petroshen' (Zhur. eksper. i teoret. fiziki, 1940, 10, 723) to the basic configuration of helium-type atoms with the aid of the numerical wave functions of the self-consistent field. The numerical calculations were carried out with the aid of solutions of the equations for the self-consistent field. The results for 6 atoms (ions) of the helium type, starting with $H^-$ and ending with $C^{4+}$, are given in a table.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATAKUNAS, J. V.

USSR/Atomic and Molecular Physics - Physics of the Atom, D-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34264

Author: Jucys, A. P., Batarunas, J. V., Kaveckis, V. I.

Institution: None

Title: Many-Configuration Approximation in the Case of Atoms of the Lithium Type

Original Periodical: Lietuvos TSR mokslu akad. darbai, 1956, B2, 3-10; Lithuanian resumé

Abstract: Starting with a model of 2-electron state, the authors suggest a method for constructing the wave functions of the entire atom in the many-configuration approximation, in which they dispense with the absolute equality of the radial single-electron wave functions with identical sets of values of the fundamental and orbital quantum numbers. In this method, the 3-configuration approximation with the aid of the analytic hydrogen-like single-electron wave functions is applicable to the 2 lower configurations of 4 atoms of the lithium-type. In the case of the lithium atom, one employs also the wave functions of the Fok self-consistent field.

1 of 1



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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARUNAS, J.

USSR/Physical Chemistry - Atom, B-3

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 52

Author: Batarunas, J., Kaveckis, V., and Jucys, A.

Institution: Academy of Sciences Lithuanian SSR

Title: Application of the Method of Incomplete Separation of the Variables to Helium-Type Atoms

Original Periodical: Tr. Fiz.-tekhn. in-ta AN LitSSR, 1955, Vol 1, 25-33 (published in Lithuanian with a Russian summary)

Abstract: The paper is devoted to the application of the method of incomplete separation of the variables, the theory of which was published by V. A. Fok, M. P. Veselov, and M. I. Petrashen (Zh. eksperim. i teor. fiziki, 1940, No 10, 723), to the basic configuration of atoms of the helium type with the aid of numerical wave functions in an orthogonal field. The numerical calculations are carried out with the aid of the solutions of the equations of the orthogonal field. The results for 6 atoms (ions) of the helium type are given, beginning with $H^-$ and ending with $C^{4+}$, summarized in a table.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATARUNAS, I.V.

USSR/Physical Chemistry - Atom, B-3

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 60695

Author: Batarunas, I. V., Kavetskis, V. I., Yutsis, A. P.

Institution: None

Title: Three-Configurational Approximation in the Case of Atoms of the Beryllium Type

Original Periodical: Tr. AN LitSSR, 1955, B3, 9-16; Lithuanian resumé

Abstract: Three-configurational approximations $1s^2 2s^2 - 1s^2 2p^2 - 2s^2 2p^2$ [illegible] breviated 1-2-3) is applied to primary state of atoms Be, B and $C^2$. For configuration [illegible] are utilized self-coordinated wave functions (Referat Zhur - Khimiya, 1956, 9001). For configurations 2 and 3 included in wave function of primary state as small corrections are utilized analytical hydrogen-like wave functions: $P(1s/r) = 2\alpha^{3/2} r \exp(-\alpha r)$; $P(2s|r) = [12\beta^5/(\alpha^2 - \alpha\beta + \beta^2)]^{1/2} \times r\{1 - [(\alpha + \beta)/3]r\} \exp(-\beta r)$ $P_1(2p/r) = (4/3\gamma_1^5)^{1/2} r^2 \times \exp(-\gamma_1 r)$. Utilized are $\alpha$ and $\beta$ determined at one-configurational approximation

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USSR/Physical Chemistry - Atom, B-3

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, [redacted]0695

Abstract: for the primary state (Fok, V. A., Petrashen', M. I., Zh. eksperim. i teor. fiziki, 1936, 6, 1). For determination of parameters $\gamma_2$ and $\gamma_3$ the 3-configurational approximation is divided into 2 2-configurational approximations: 1-2 and 1-3. Values [redacted]2 were in part determined before (Referat Zhur - Khimiya, 1955, 8971). In the paper are tabulated the values of parameters contained in the abo[redacted]e-state one-electron functions and is also tabulated the function P(2p/r) for B . Taking into account the interaction of configu[redacted]a-tions 1-2-3 the complete 4-electron wave function is represented in the form $[(1 + a_{12})^2(1 + a_{13})^2]^{-1/2}[\psi(2s^2/x_1, x_2) + a_{12}\psi(2p[redacted]|x_1, x_2)][\psi(1s^2|x_3, x_4) + a_{13}\psi(2p^2|x_3, x_4)]$ [redacted] shows that interaction of configuration reduces itself [redacted] this case to a utilization of 2-electron wave functions (to an incomplete separation of variables). Values of energy of primary state in the isoelectronic series Be, $B^+$ and $C^{2+}$ (in atomic units): calculated by the usual method of self-coordinated field of Fok, are -14.577; -24.238; -36.406; calculated at 3-configurational approximation utilizing for configurations 2 and 3 the analytical functions -14.638; -24.314; -36.496; calculated by solving simplified

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USSR/Physical Chemistry - Atom, B-3

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 60695

Abstract: equations of Fok at individual 2-configurational approximations with correction for 3-configurational approximation -14.640; -24.316; (-36.498 this value was not calculated but estimated); the experimental values are: -14.668; -24.353; -36.545.

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BATARUNAS, I. V.

Name: BATARUNAS, I. V.

Dissertation: Using more accurate methods of the quantum theory of the atom

Degree: Cand Phys-Math Sci

Defended at: ~~Affiliation~~: Vil'nyus State U imeni V. Kapsukas

Publication ~~Defense Date~~, Place: 1956, Vil'nyus

Source: Knizhnaya Letopis', No 4, 1957

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

Batarunas, I.V.

USSR/Atomic and Molecular Physics - Atomic Physics D-1

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 8927

Author : Vizbarayte, Ya.I., Batarunas, I.V., Kibartas, V.V. Yutsis, A.P.

Title : The Fock Self-Consistent Field in the Two-Configuration Approximation for the Nitrogen Atom in Various Degrees of Ionization.

Orig Pub : Liet. TSR mokslu Akad. darbai Tr. AN Lit SSR, 1956, 5B, 3-10

Abstract : The Fock equation is solved in the two-configuration approximation for a radial wave function 2p taken into account by the configuration $1s^2\ 2p^{q+2}$ of the two-configuration approximation $1s^2 2s^2 sp^q - 1s^2 sp^{q-1}$ at q = 2, 3, and 4 for the case of the nitrogen atom. The values of the energies of the 2s and 2p electrons are determined and compared with experimental data.

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BATARUNAS, I.V

USSR/Atomic and Molecular Physics - Physics of the Atom. D-1

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11355

Author : Batarunas, I.V., Vizbarayte, Ya.I., Yutsis, A.P.
Inst :
Title : The Fock Self-Consistent Field in Two-Configuration Approximation for Atoms of the Boron Type.

Orig Pub : Liet. TSR Mokslu Akad. darbai, Tr. A Lit SSR, 1956, B4, 15-20.

Abstract : Solutions are given for the Fock equation in the two-configuration approximation for the 2p radial wave function, taken into account by the configuration of the two-configuration approximation

$1s^2 2s^2 2p$ -- $1s^2 2p^3$ and the values of the energies of the 2s and 2p electrons for B, C , $N^{2+}$, and $O^{3+}$.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

AUTHORS: Yutsis, A. P., Vizbarayte, Ya. I., Kavetskis, V. I., Batarunas, I. V.

SOV/48-22-6-6/28

TITLE: The Approximation of the Models of Two-Electron States and the So-Called Anomaly in the Spectra of Carbon, Nitrogen, and Oxygen (Priblizheniye modeli dvukhelektronnykh sostoyaniy i tak nazyvayemaya anomaliya v spektrakh ugleroda, azota i kisloroda)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1958, Vol. 22, Nr 6, pp. 665-667 (USSR)

ABSTRACT: For quantum-technical calculations of the atom the method of the incomplete separation of variables (Ref 1) and that of multiconfiguration approximation (Ref 2) are employed, which are both difficult from a mathematical point of view. Simplification may be attained by using these methods for two-electron systems. It is therefore assumed in this paper that also other calculations can be carried out on the basis of the two-electron systems by means of approximation methods. The second and more simple method is here given preference.

The chapter entitled: "The Case of Three-Electron Systems" deals with the ground state and the first excitation state for atoms

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of the lithium type. With respect to the two internal electrons a 5-configuration approximation: $1s^2-2p'^2-2s'^2-3d'^2-3p'^2$ is used (Ref 4) and external electrons are dealt with by the approximation method for electron states. The chapter: "The Problem of Anomaly in the Spectra of Carbon, Nitrogen, and Oxygen" deals with the values of q = 2, 3, 4, where, in the intervals between the energies of individual terms, the anomaly occurs; for carbon or oxygen the experimental value of $\frac{^1S - {}^1D}{^1D - {}^3P} = 1,13$ and the theoretical value is 1,5. In the case of nitrogen the experimental value obtained is 0,5, the theoretical value is 0,67. If the problem is solved according to the two-electron state, the values 1,1 and 0,5 respectively are obtained, which are near the experimental values. In the chapter: "Evaluation of Results" the conclusion is arrived at that in multi-configuration approximations carried out on the basis of two-electron states the conception of the shell structure of



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The Approximation of the Models of Two-Electron States and the So-Called Anomaly in the Spectra of Carbon, Nitrogen, and Oxygen SOV/48-22-6-6/28

electrons in atoms is maintained. There are 12 references, 7 of which are Soviet.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR, Vil'nyusskiy gos. pedagogicheskiy institut i Vil'nyusskiy gos. universitet im. V. Kapsukas (Institute of Physics and Mathematics, AS Lithuanian SSR, Institute of Pedagogics and State University imeni V. Kapsukas in Vil'nyus)

1. Atoms--Mathematical analysis 2. Carbon--Spectra 3. Nitrogen --Spectra 4. Oxygen--Spectra

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S/044/62/000/007/005/100
C111/C333

AUTHORS: Batarunas, I. V., Levinson, I. B.

TITLE: On the Clebsch-Gordan coefficients of the point groups

PERIODICAL: Referativnyy zhurnal, Matematika, no. 7, 1962, 33, abstract 7A184. ("Liet TSR Mokslu Acad. darbai", 1960, B2(22), 15-32)

TEXT: Certain general properties of the Clebsch-Gordan coefficients of the point groups are determined. It is shown that the Clebsch-Gordan coefficients of a double cubic group are connected with the Clebsch-Gordan coefficients of the rotation group. Tables of the Clebsch-Gordan coefficients of a double cubic group are given.

[Abstracter's note: Complete translation.]

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S/058/62/000/004/006/160
A058/A101

AUTHORS: Mauza, E. V., Batarunas, I. V.

TITLE: 6G coefficients for double point groups

PERIODICAL: Referativnyy zhurnal, Fizika, no. 4, 1962, 22, abstract 4A175 ("LietTSR Moksiu Akad. darbai, Tr. AN LitSSR", 1961, B3 (26), 27 - 39, Lith. summary)

TEXT: Generalized Klebsch-Gordon coefficients and Wigner coefficients for double point groups were determined. 6G coefficients usable incident to calculation of matrix operator elements are introduced. 6G coefficients for double point group O' are calculated.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

Characteristics of the dynamics of crystal lattices of the ZnS type for compounds with mixed ionic-valence bonding and varying atomic charges. K. B. Tolpygo, E. H. Korol' (15 minutes).

Relation of the electrical properties of $Sb_2Se_3$ with the crystallo-chemical composition and zone structure. A. S. Karpus, I. V. Batarunas (10 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

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L 07961-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6031893 SOURCE CODE: UR/0058/66/000/006/E100/E100

AUTHOR: Audzionis, A. I.; Batarunas, I. V.; Karpus, A. S.; Kudzhmauskas, Sh. P.

TITLE: Optical properties and band structure of antimony trisulfide single crystals 46 B

SOURCE: Ref. zh. Fizika, Abs. 6E788

REF SOURCE: Lit. fiz. sb., v. 5, no. 4, 1965, 481-490

TOPIC TAGS: optic property, absorption coefficient, single crystal, valence band, antimony, antimony trisulfide

ABSTRACT: The authors measured the absorption coefficient of plane-polarized light of thin single-crystal films and $Sb_2S_3$ single crystals in the photon energy range of 0.6—1.75 ev. It is shown that the maximum of the valence band and the minimum of the conduction band do not coincide. In an approximation of highly bound electrons, models constructed from the energy band structure agree with the experimental data. [Translation of abstract]

SUB CODE: 20/

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PETROV, R.P.; BATASHEV, B.G. [Batashov, B.H.]; ONOPRIYENKO, M.Ye. [Onopriienko, M.IE.]

Some remarks on the stratigraphic scale of the Greater Krivoy Rog Basin. Geol. zhur. 25 no.2:105-107 '65. (MIRA 18:6)

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*On the Electrolytic Production of Alloys of Aluminium with Silicon. K. P. Batashev and A. I. Zhurin (*Metallurg* (*Metallurgist*), 1938, (2), 66 77). [In Russian.] The binary system cryolite silicon and the ternary system cryolite silicon-aluminium have been investigated. By addition to the electrolyte aluminium bath, of a known amount of silicon, it is possible to obtain alloys of any desired composition with only small deviations in silicon content. The current yield based on the aluminium content varies between 70 and 85%. The alloys obtained, when remelted under ordinary conditions, display a modified structure.—N. K.

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BATASHOW, K. F.

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Abramo, G. A., K. F. Batashow, and A. I. Sharin. *Laboratory Manual on the Electrometallurgy of the Non-Ferrous Metals.* [In Russian.] Pp. iii + 136. 1935. Leningrad: Steklogr. LII.

COMMON ELEMENTS

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2

Electrical conductivity of the potassium fluoride-aluminum fluoride and potassium aluminum fluoride-alumina systems. K. Batashev and A. Zhurin. *Metallurg* 10, No. 12, 67-73(1935).—The elec. cond. of the KF-$AlF_3$ system between 930° and 1050° decreases considerably as the $AlF_3$ content increases. The cond. of the $K_3AlF_6$-$Al_2O_3$ system between 900° and 1050° decreases rapidly as the $Al_2O_3$ content increases. The soly. of $Al_2O_3$ is slightly greater in $K_3AlF_6$ than in $Na_3AlF_6$. $K_3AlF_6$-$Al_2O_3$ mixts. fuse at a lower temp. than the corresponding $Na_3AlF_6$-$Al_2O_3$ mixts. H. W. Rathmann

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CA

4

**Chromium-plating baths containing fluoride ions.** Yu. V. Balmakov, K. P. Batashev and D. M. Tekenkov *Trans. Leningrad Tech. Inst.* 1939, No. 1, Sect. Met. No. 1, 27-35.—The baths contained 250 g./l. of $CrO_3$, 0.5-10 g./l. of NaF and less than 1 g./l. of sulfate. Temps. were 15-45° and c. d. 1-5 amp./sq. dm. Best deposits were obtained in baths contg. 3-5 g./l. of NaF and at a c. d. of 1-5 amps./sq. dm., while in some cases bright deposits were obtained with c. d. of 0.5 amps./sq. dm. Deposits obtained at 18-30° were bright. Max. thickness of these deposits was 6-8 microns. The throwing power of the bath contg. $CrO_3$ 250 g. and NaF 5 g./l. was detd. at 21-22° and at a c. d. of 3 amp./sq. dm. With increasing temp. the throwing power dropped and at 35° it was 10%. Pb anodes deteriorated rapidly; Pt and magnetite (treated in a Cr bath for 48 hrs.) anodes were good for long periods.

B. Z. Kamich

SBOR LEN INDUST INST

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4

**Electrolytic production of lead-barium alloys.** K. P. Batashev and M. A. Vinogradova. *Trans. Leningrad Ind. Inst.* 1938, No. 1, Sect. Met. No. 1, 30-6.—Pb-Ba alloys of high purity were obtained by electrolyzing a melt of 30-70% $BaCl_2$ and 70-30% KCl by wt. in Fe cells lined with burnt clay or talc-schist. The cathode c. d. was 0.3-0.5 amp./sq. cm., spacing between electrodes, 15 to 100 mm., best temp. 700-750°. The molten Pb cathode can be satd. with Ba up to 15% without affecting the electrolysis provided stirring of the Pb is resorted to from time to time. The anode was graphite. B. Z. K.

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CA

4

**Stability of iron oxide and copper oxide anodes in the electrolysis of cryolite alumina melts.** Vu. V. Balmakov, K. P. Batashev, I. M. Evlannikov and A. I. Bukhbinder. *Trans. Leningrad Ind. Inst.* 1938, No. 1, Sect. Met. No. 1, 57-80.—Anodes were tested for stability in the electrolysis of cryolite alone or cryolite with 5% $Al_2O_3$ or with 10% NaF. The chem. soln. of the $Fe_3O_4$ anodes did not exceed 0.24%; Cu oxide anodes, 0.15-0.20%. The soly. of the anodes during electrolysis was then dctd. and they were found to be unstable. B. Z. Kamich

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Ca

4

Investigation of the phenomena in the regions of the electrodes during electrolysis of fused baths of cryolite and alumina. Yu. V. Baimakov, K. P. Bateshev and L. M. Kviannikov. *Trans. Leningrad Ind. Inst.* 1939, No. 1, *Sect. Met.* No. 1, 24-39; *cf. C. A.* 34, 943[1].—In an attempt to study the electrode processes the compn. of the electrolyte at the anode and cathode was varied. By use of a porous partition it was established that there is a cataphoretic movement of the cryolite-alumina melt from the anode to the cathode. The cathodyte gained Na and lost F and Al. The cathodyte showed an excess of $NaF$ of 51 and 8.5% when using cathodes with and without diaphragms, resp. The presence of alkali varied from 0.3 to 3.9% $Na_2O$ and its formation did not depend upon the duration of the expt. The anolyte lost Na and gained F and Al. The anolyte showed excess $AlF_3$ of 23 and 5% in expts. with and without diaphragms. B. Z. Kanich

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CA

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3RD AND 4TH ORDERS

6

**Behavior of fluorides of sodium and aluminum and cryolite during their fusion.** K. P. Batashev. *Trans. Leningrad Ind. Inst.* 1939, No. 1, *Sect. Met.* No. 1, 40-8. — NaF is considerably volatile and changes compn. during fusion in the open. In fusing cryolite in the open there is a fractional evapn. of the $AlF_3$ along with the substitution of F for O. The vapors of $AlF_3$ are converted to a alumina in the surrounding air. Anhyd. $AlF_3$ can be prepd. by distn. in an incompletely hermetically sealed app. in an atm. of $AlF_3$ and HF. B. Z. Kamich

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1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

M

5

**Gold-Plated Nickel Wire.** K. P. Batashev and L. M. Evlannikov (*Trans. Leningrad Indust. Inst.*, 1939, [Sect. Met.], (1), 85–98; *C. Abs.*, 1941, 35, 3534).—[In Russian.] Clean the wire with lime or soda powder, wash with water and degrease cathodically in a 15% caustic soda solution for 2–3 minutes with a c.d. of 20 amp./dm.$^2$. Wash with water and gild in a cyanide bath with gold 5–10 and free potassium cyanide 30 grm./litre. Plate with c.d. 5–10 amp./dm.$^2$ at 70°–90° C. for 1 hr., using gold anodes and without stirring. The gold deposit is 2 $\mu$ thick at 90% current efficiency. After this preliminary plate wash in water and plate to the required thickness in gold 25 and free hydrochloric acid 30 grm./litre, c.d. 300 amp./dm.$^2$, 70° C., 0·7 v., platinum anodes and without stirring. Wash the wire in water and treat for 3 minutes in a muffle furnace at 900° C.

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PROCESSES AND PROPERTIES INDEX

CA

2

Electric conductivity of diabase, diatomite, and chamotte. K. P. Batalov. *Trans. Leningrad Ind. Inst., Sect. Met.* 1940, No. 4, 75-85.—Measurements were made in a Wheatstone bridge with a.c. of 1500-3000 cycles/sec., on cubes 20 × 20 × 20 or 10 × 10 × 10 mm., using graphite-plate and Pt-foil electrodes pressed against three identical samples, in an arrangement resulting in parallel mounting of $R$ and $2R$ ($R$ = resistance of a single cube). The elec. resistance was detd. in each case also on samples impregnated with a fused electrolyte mixt. of KCl 75%, NaCl 15%, $MgCl_2$ 5%. (1) Diabase showed a sp. elec. cond. of, resp., $0.6 \times 10^{-6}$, $20.2 \times 10^{-6}$, $143.0 \times 10^{-6}$ $ohm^{-1}$ $cm.^{-1}$ at, resp., 300°, 600°, 800°. There is practically no difference with impregnated samples. (2) Diatomite brick, sp. gr. about 0.64 (impregnated 1.94), vol. porosity 55%, showed elec. cond. $0.6 \times 10^{-6}$, $19.0 \times 10^{-6}$, $320 \times 10^{-6}$ at, resp., 300°, 600°, 800°; impregnated $0.83 \times 10^{-6}$, 0.0385, 0.3030 (750°). (3) Chamotte brick of coarse structure (grains of 1 to 3 mm.), vol. porosity 32%, sp. gr. 2.0, showed elec. cond. of $0.16 \times 10^{-7}$, $80.0 \times 10^{-7}$, $380 \times 10^{-7}$ at, resp., 300°, 600°, 800°. Impregnated with fused carnallite $0.4 \times 10^{-6}$, 0.015, 0.096 (750°); impregnated with fused KCl, $4 \times 10^{-7}$, $900 \times 10^{-7}$, 0.080 (770°). Elec. cond. of various refractories impregnated with the same fused electrolyte increases with their porosity. N. Thon

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3RD AND 4TH ORDERS

4

**Electrolytic copper and chromium plating of silumin.** K. P. Batashev and T. P. Tatarnikova. *Trans. Leningrad Ind. Inst., Sect. Met.* 1940, No. 4, 105-14(German summary).—Etching reagents of various compns. were investigated to insure satisfactory adherence of electrolytic deposits on silumin (Al alloy with 5 to 14% Si and some Mg and Mn) which was sandcast, machined, and degreased cathodically in *M* NaOH at c.d. 5 amp./sq.dm., 20-26°, for 5 min. Uniform etching is obtained with HCl (sp. gr. 1.18) 25 cc. + $HNO_3$ (sp. gr. 1.40) 150 cc. + $H_2O$ 150 cc., at 30°-40° for 10-15 min.; loss of wt. 1 g./sq. dm. per 5 min. Further investigated were mixts. $HNO_3$ + HCl + HF (sp. gr. 1.12) and the corresponding losses in wt. detd. Example: HCl 30 cc. + $HNO_3$ 470 cc. + HF 500 cc. (per l.), loss 1 g./sq. dm. in 6 min. The latter soln. removes the dark film of finely divided Si which remains on the surface after etching. Diln. with water changes the character of the etch; with a soln. of $HNO_3$ 500 cc. + HCl 25 cc. + HF 100 cc., best results are obtained with addn. of 500 cc. $H_2O$. The finally adopted procedure is etching in $HNO_3$ 470 cc. + HCl 30 cc. + HF 500 cc. + $H_2O$ 750-1000 cc., at 30°-35°, for 10-15 min., followed by removal of the Si film by immersion in a soln. of the same compn. but without $H_2O$ added, for 1-2 sec. If it is desired to avoid HF, an etching soln. of $HNO_3$ 850 cc. + HCl 150 cc. + $H_2O$ 850 cc. can be used. Cu plating is best achieved with $CuSO_4 \cdot 5H_2O$ 200 g./l. + $H_2SO_4$ 50 g./l., stirred electrolyte, c.d. 0.01-0.03 amp./sq. cm. at which deposits of 100 μ thickness are obtained in, resp., 7 and 2.3 hrs. Baths contg. HF are not satisfactory. For Cr plating, a bath of 150 $CrO_3$ g./l. and 1.5 g./l. $H_2SO_4$ is recommended at 60°, c.d. 80 amp./sq. dm., that is 1.5 times the usually recommended c.d.; etching may be cut down to 2-4 min. Adherence proved to depend directly on the quality of the etch. Salt-spray tests showed that with nonporous Cu plate, only the Cu corrodes but that with even slightly porous Cu deposits the underlying silumin will corrode within the first 24 hrs. Consequently, Cu plating offers no protection against corrosion. Cr-plated samples withstand corrosion in salt spray for 5-15 days and show no corrosion on immersion in sea water for 30 days. Cu-plated samples (thickness of deposit from 50-150 μ), tinned and soldered to steel show high adherence of the plate; the rupture occurs at the soldered surface. Best solder compn. in this case is 50% Sn + 50% Pb. Preliminary electrolytic Zn-plating expts. also gave pos. results. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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9

**On the Anodic Process in the Electrolytic Polishing of Copper in a Solution of Orthophosphoric Acid.** K. P. Batashev and E. N. Nikitin (*Zhur. Prikkad. Khim.*, 1950, [illegible], (3), [illegible]-270).—[In Russian]. B. and N. studied the products of the anodic processes by an analytical method. The anode (3 × 3 cm.) was suspended between 2 cathodes in $H_3PO_4$ (sp. gr. = 1·55). The value of the initial c.d. was chosen so that towards the end of polishing, after 10 min., the anodic potential was within the range 1·25–1·50 V.; the anodic c.d. for polishing was 1·5 amp./dm.$^2$. In the experiment the bath contained 4·0–4·4 g./l. Cu. At the 200th sec. after switching on the current ($T_1$) and at the 200th sec. after the jump in anode potential ($T_2$), the anode with its adhering layer of electrolyte was withdrawn from the bath; tests indicated that these layers do not contain P per-acids. The anode was therefore immersed in anhydrous acetone, which precipitated the salts from the anodic layer but dissolved the acid and $H_2O$. The precipitate was filtered off, washed with acetone until free from acid, dissolved in HCl, and this soln. analysed for $Cu^{++}$, total Cu, and $PO_4^{3-}$. The compn. of the salts corresponds to $CuHPO_4$ at $T_1$, and to $Cu_3(HPO_4)_2$ at $T_2$; $Cu^+$ and $Cu^-$ contg. anions appear to be absent. When $H_3PO_4$ was electrolysed until saturated with Cu, using a cell divided by a porous diaphragm and an anodic potential of 1·25–1·5 V., both anolyte and catholyte became less acid, and a completely transparent filtrate from the saturated soln. became turbid in a few days; the precipitate was a mixture of secondary and tertiary phosphates. The form of the potential/anodic c.d. curves is discussed in the light of these results. The thermodynamically calculated statistical potentials of Cu in soln. of its phosphates agree with the experimental values.—G. V. E. T.

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Electrolytic Processes in the Electrolytic Polishing of Metals

[illegible] potential for [illegible]

[illegible] is practically independent of the [illegible] temp. of the soln. A characteristic dependence is observed between the anodic potential of electropolishing and the [illegible] in the form of sections on the polarization curves corresponding to limiting currents. Polarization curves were obtained for [illegible] $H_3PO_4$, N in $H_2SO_4$, and Al and steel [illegible] $H_3PO_4$, [illegible] and thus the optimum [illegible]

[illegible] of the inner anodic layer regulating the [illegible] on the [illegible] part of the anode. — G. V. E. T.

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Batashev, N.P.

AGEYEV, P.Ya.; ALABYSHEV, A.F.; BAYMAKOV, Yu.V.; BELYAYEV, A.I.; BATASHEV, N.P.; BUGAREV, L.A.; VASIL'YEV, Z.V.; GUPALO, I.P.; GUS'KOV, V.M.; ZHURIN, A.I.; VETYUKOV, M.M.; KOSTYUKOV, A.A.; LOZHKIN, L.N.; OL'KHOV, N.P.; OSIPOVA, T.V.; PERTSEV, I.I.; RUMYANTSEV, M.V.; STRELETS, Ye.L.; FIRSANOVA, L.A.; CHUPRAKOV, V.Ya.

Georgii Alekseevich Abramov. TSvet.met. 27 no.2:72-73 Mr-Ap '54. (MIRA 10:10)
(Abramov, Georgii Alekseevich, 1906-1953)

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BATASHEV, K.P.

137-58-5-10268

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 197 (USSR)

AUTHORS: Batashev, K.P., Yablonskaya, N.S., Patrova, G.I.

TITLE: Electrodeposition of Palladium (Elektroliticheskoye osazhdeniye palladiya)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1957, Nr 188, pp 225-231

ABSTRACT: An investigation is made of the processes involved in palladium plating in phosphorus electrolyte (E) in a stationary bath and in a bell-type bath, and also in neutral E with soluble anodes. Palladium plating in quiet E was run under the following conditions: Solution of 2.5-10 g $PdCl_2$/liter, 2.5 g benzoic acid/liter, 20 g $(NH_4)_2HPO_4$ per liter, 100 g $Na_2HPO_4$/liter, pH 6.5-7.0, temperature 50°C, $D_K$= 0.1 amp/cm$^2$, potential 1 or 2 v. Pt, Pd, and carbon anodes were tried. Carbon electrodes are recommended for large-scale industrial palladium plating. The Pd was deposited directly on parts made of polished phosphorus bronze. It is shown that 1.5-2 micron bright Pd platings can be produced in phosphate E containing from 5 to 10 g $PdCl_2$ per liter, the temperature of the solution being 50°C. The dependence of current efficiency in Pd deposition upon the bath content of $PdCl_2$

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Electrodepositon of Palladium

(1-10 g/liter) and upon current density (0.05-0.2 amp/dm$^2$) is investigated. The highest current efficiency is that at 10 g $PdCl_2$/liter and $D_K$= 0.1 amp/dm$^2$. The polarization curve of the Pd deposition process can be divided into 3 segments. In the first segment the process occurring does not involve liberation of Pd. The second segment is that in which the $Pd^{2+} + 2e \rightarrow Pd$ reaction occurs. Liberation of $H_2$ in addition to Pd is observed during the period represented by the third segment. The maximum current for the $Pd^{2+} + 2e \rightarrow Pd$ reaction is that occurring at $D_K$ =0.15 amp/dm$^2$. It is shown that a reduction in the $PdCl_2$ content of the bath to less than 2.5 g/liter results in a dark deposit and diminishes the current efficiency. A 4-liter bell has been designed to mechanize the palladium plating of small parts. Under the same conditions as those used in a quiet bath, and with a 10-dm$^2$ area of part surface to be plated, bright Pd deposits of 1.5-2 micron thickness were obtained. The porosity of the Pd deposit is determined by immersion in a 15% $HNO_3$ solution for 10-30 min. The pores are marked by the points at which bubbles attach to the surface. It is found that the number of pores goes as high as 25 per cm$^2$ in a coating 0.1 micron thick, while no pores are found in a 3.5-micron coating. It was found that it is possible to coat with palladium in neutral E with soluble Pd anodes, provided that an area of insoluble carbon anodes equal to 1/3 the area of the Pd anodes is had in parallel.

Card 2/2 1. Palladium--Electrodeposition

L.A.

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137-58-6-13801

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 371 (USSR)

AUTHORS: Batashev, K.P., Makarenko, N.V.

TITLE: A Technique of Preparing Electrolytic Deposits of Standard Thickness (Metodika prigotovleniya etalonov tolshchiny gal'-vanicheskikh osadkov)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1957, Nr 188, pp 232-238

ABSTRACT: A description of jet-electrometric method (M) and an apparatus for the determination of the thickness of metallic coatings, also a method for obtaining specimens of standard thickness of electrolytic coatings (EC). A special feature of the jet-electrometric M consists of limiting the area of the specimen (S) in contact with the working solution and fixation of the moment of piercing of EC by the galvanometer. The limiting of the area of S is attained by a clamp which permits to create favorable conditions for sharp variations of the electromotive force of the electrolytic cell created by the S, the working solution, and a Pt electrode which can cause a discontinuous variation of the current detected by a microammeter. As a result of the determination of the thickness of an electrolytic deposit of Cu on

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137-58-6-13801

A Technique of Preparing Electrolytic Deposits of Standard Thickness

Cu-foil and steel plates copperplated in a cyanide bath (removal of the Cu layer was accomplished by a solution containing 150 g/ℓ $FeCl_3 \cdot 6H_2O$ and 150 cc HCl, sp. gr. 1.17) it is shown that divergence in reproducibility of the results obtained by the jet-electrometric M is $\leq 2.5\%$. It is indicated that the high precision of this M and the possibility of measuring the thickness of EC in 4-5 points on a 1-$cm^2$ area of S permits a detailed investigation of the thickness of the metal distributed on the surface of an article. To obtain standard specimens, an electrolyzer is constructed which ensures production with a high degree of uniformity of the distribution of EC on the cathode. This was done by means of a fixed-screen cathode placed around a rotating specimen-cathode. A rectangular vessel 600 x 100 x 120 mm is used as the electrolytic cell. Control of the thickness of Cu EC is performed by 3 M: gravimetric, jet-electrometric, and spectroscopic. It is shown that the proposed M of production of standard thicknesses of EC ensures a 97% homogeneity of distribution of deposits of Cu.

L.G.

1. Metals--Electrode position 2. Plating--Standardization

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, K.P.

137-58-5-10267

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 197 (USSR)

AUTHORS: Batashev, K.P., Kitaychik, B.G.

TITLE: Silver Plating in Baths Without Cyanide (Serebreniye v netsianistykh elektrolitakh)

PERIODICAL: Tr. Leningr. politekhn. in-ta, 1957, Nr 188, pp 239-248

ABSTRACT: This study is devoted to determining the conditions required to produce Ag coatings of satisfactory quality in iodide solutions. An investigation of the polarization curves of deposition is made, and the dependence of current efficiency upon $D_K$ is determined. The following two procedures are recommended for silver-plating practice: 1) 27 g AgCl per liter, 400 g KI per liter, 1-2 g gelatin per liter; temperature 25°C, $D_K$= 0.1-0.2 amps/dm$^2$; 2) 60 g AgCl per liter, 450 g KI per liter, 1-2 g gelatin per liter; temperature 60°, $D_K$= 2.5-3.0 amps/dm$^2$. Deposits obtained from iodide solutions are not inferior in microstructure to the structure of Ag deposited from cyanide solution. An electroanalytical method of determing the Ag in iodide solution was developed parallel with the pursuit of the fundamental purpose of the investigation. V. A.

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1. Silver plating--Effectiveness.
2. Electrolytes--Properties

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, K. P.

"Titan und Titanlegierungen mit galvanothermischen Uberzug."

paper submitted for the Congress on Corrosion, Budapest, 24-30 Sept 1958.

Politechnisches Institut, Moscow.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BAYMAKOV, Yu.V., prof.; BATASHEV, K.P., kand.tekhn.nauk

Progress of electrolytic polishing. Khim. nauka i prom. 3 no.4:464-470 '58. (MIRA 11:10)

(Electrolytic polishing)

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PHASE I BOOK EXPLOITATION SOV/3992

Batashev, Konstantin Pavlovich, Candidate of Technical Sciences

Osazhdeniye gal'vanicheskikh pokrytiy na titan i yego splavy (Electroplating of Titanium and Its Alloys) Leningrad, 1959. 25 p. (Series: Leningrad. Dom nauchno-tekhnicheskoy propagandy. Seriya: Zashchitnyye pokrytiya metallov, vyp. 6 and 7) 3,500 copies printed.

Sponsoring Agencies: Leningrad. Dom nauchno-tekhnicheskoy propagandy, and Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Ed.: V.I. Zhukova, Engineer; Tech. Ed.: V.L. Gvirts.

PURPOSE: This booklet is intended to acquaint the reader with information on the electroplating of titanium and titanium alloys.

COVERAGE: The booklet deals with the coating of titanium and titanium alloys with copper, zinc, and chromium plating. Among the topics discussed are the heat treatment and anticorrosion properties of chromium plating and the electrolytic polishing

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and oxidizing of titanium and titanium alloys. The following staff members of the Leningradskiy politekhnicheskiy institut imeni Kalinina (Leningrad Polytechnical Institute imeni Kalinin) are coauthors of the book: G.I. Patrova, Engineer; V.P. Ochkin, Technician; V. Ryabov, Engineer; B.B. Adadurov, Engineer; Yu.V. Mesetkina, Engineer; V.D. Ovcharenko, Engineer; A.I. Rytvinskiy, Engineer; K.N. Kusheleva, Engineer; and G. Oskotskaya, Engineer. There are 35 references: 14 Soviet, 19 English, 1 German, and 1 French.

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Processing of VT-5 Titanium Alloy in Aqueous Acid Solutions 5

Treatment of VT-5 Alloy in Fused Chlorides of Heavy Metals 8

Copper Plating 11



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BATASHEV, Konstantin Pavlovich, kand. tekhn. nauk; AKATOVA, N.V., inzh., red.; FREGER, D.P., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Use of insoluble platinized titanium anodes] Primenenie nerastvorimykh platinirovannykh titanovykh anodov. Leningrad, 1961. 12 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Seriia: Zashchitnye pokrytiia, no.4) (MIRA 14:9)
(Electrolysis--Equipment and supplies)

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AUTHORS: Baymakov, Yu.V. and Batashev, K.P.

TITLE: Platinum-plating of titanium and titanium alloys

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 8, 1961, 1879-1880

TEXT: Problems involved in the use of titanium for insoluble anodes instead of Pt, Rh, Au and Pb and graphite have recently been studied in the Soviet Union and abroad. To date, however, attempts at employing insoluble titanium anodes have not been successful owing to the formation of an oxide film with a large electrical resistance, so the authors decided to investigate further the question of the platinum-plating of titanium and its alloys. Experiments performed at the Leningradskiy politekhnicheskiy institut (Leningrad Polytechnic Institute) in 1959 indicated that the low electroconductivity is due to the porous or partial coating of platinum or lead on the working surface of the titanium anode. Past failures in preparing insoluble electrodes with a titanium base may

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have been caused by the absence of a method for removing the oxide film, inhibiting stable cohesion between the metal coatings and titanium. Recent work by K.P. Batashev (Ref. 3: Naneseniye gal'vanicheskikh pokrytiy na titan iyego splavy (Application of Galvanic Coatings to Titanium and its Alloys), Izd. Doma nauchno-tekhn. propagandy, Leningrad, 1959), however, disclosed a new technique for overcoming this difficulty. Before platinum-plating, the surface of the titanium specimens is first processed with emergy paper and washed in carbon tetrachloride. It is then pickled in hot sulphuric acid: the authors recommend a 50% solution of acid at a temperature of 60 - 65° for a 10 minute period of pickling, when metal is removed at a rate of not more than 3μ a minute. Two platinum-plating methods - electrosparking and electrochemical - may be used. In the former process the titanium sample is connected to a negative source of direct current and the platinum wire to the positive terminal. Platinum-plating is carried out in an atmosphere of oxygen or argon, and a very fine layer of platinum is formed on the titanium surface. Electrolytic platinization is effected in a solution with the following composition: 5 - 8 g/l of Pt as the chloride; 30 - 45 g/l of



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$(NH_4)_2HPO_4 \cdot 12H_2O$; 200 - 240 g/l of $Na_2HPO_4 \cdot 12H_2O$. Electrolysis takes place on heating to 60° at a current density of 0.1 - 1 A/dm$^2$. The anode is first platinum and then the platinized titanium; the thickness of the platinum deposit is 0.10 - 0.15 $\mu$, when the platinum expenditure amounts to 2 - 3 g/m$^2$ of the titanium surface. The platinum-plated specimens of titanium were subsequently tried out as insoluble anodes in the electrolysis of sodium chloride and in the electrolysis of water in a solution of sulphuric acid. The tests were continued for 5 - 6 days, and the results showed the absence of any loss in the anodic weight, which indicates good cohesion between the platinum and titanium and the high stability of titanium in such electrolytes. Thus, the authors conclude that their data confirm the expediency of the industrial use of titanium instead of graphite, platinum and lead in insoluble anodes, especially in view of the almost negligible consumption of platinum (2 - 3 g/m$^2$) in the process of preparing them. There are 3 references: 1 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: Electroplating and Metal Finishing, 6, 1959; Fishlock, D.I. Metal Ind., 95, 9, 1959.



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BATASHEV, Konstantin Pavlovich, kand. tekhn. nauk; ZHUKOVA, V.I., red.; FREGER, D.P., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Electrochemical treatment of the surface of titanium and its alloys] Elektrokhimicheskaia obrabotka poverkhnosti titana i ego splavov; stenogramma lektsii. Leningrad, 1963. 29 p. (MIRA 16:10)
(Titanium alloys--Electrometallurgy)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

ACCESSION NR: AT4026281 S/2563/63/000/223/0115/0124

AUTHOR: Batashev, K. P.; Patrova, G. I.; Ryabov, V. A.; Ry*tvinskiy, A. I.

TITLE: Electrolytic chromium plating of titanium-alloy parts

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 223, 1963. Metallurgiya tsvetny*kh metallov (Metallurgy of nonferrous metals), 115-124

TOPIC TAGS: chromium plating, electrolytic plating, electroplating, titanium, titanium alloy, titanium electroplating, corrosion, titanium corrosion, chromium

ABSTRACT: Chromium plating of titanium and titanium alloys makes possible the elimination of one of their main disadvantages, the tendency to seizing, thus widening their field of application. However, chromium plating of Ti encounters the difficulty of poor adhesion between the Cr and the underlying surface, owing to the presence of $TiO_2$ film. The preliminary treatment of the Ti surface to remove this film is therefore important and has been attempted with a variety of reagents (HF, NaOH, KOH, $HNO_3$ + HF, dichromate + HF + $CuSO_4$, and acetic acid + HF + alternating current). In the present paper the authors discuss the preliminary pickling of the surface of Ti and VT-5 Ti alloy in some detail, as well as working out the optimal conditions for chromium plating and the heat treatment of the plated surface. Pickling with HF, HCl, or $H_2SO_4$ was found to be

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effective, but the best procedure was pickling for 5-10 minutes with 50% sulfuric acid at 50-90C, preceded by treatment with Vienna lime. Studies of the strength of the Ti-Cr bond were carried out on both bright and dull ("milky") Cr coatings 5-50 microns thick. On the basis of the phase diagram of the Ti-Cr system, the authors attempted to improve the adhesion between Ti and Cr by thermal treatment (5 minutes at 400, 600, 800, or 1000C). Studies of the microhardness and microstructure indicated that 800C was optimal. Finally, the corrosion resistance of Cr-plated Ti was studied in 5% NaCl, KOH, $H_2SO_4$, and $HNO_3$, as well as 2% HF. Determinations of the potential difference between the Cr plate and the VT-5 Ti alloy in NaCl solution showed that the Cr exerts an electrochemical protective effect. Orig. art. has: 2 figures and 5 tables.

ASSOCIATION: Leningradskiy politekhnicheskiy institut (Leningrad Polytechnical Institute)

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SUB CODE: MM NO REF SOV: 008 ENCL: 00

OTHER: 007

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, K.P.; PATROVA, G.I.; RYABOV, V.A.; RYTVINSKIY, A.I.

Electrolytic chromizing of titanium alloy products. Trudy LPI no.223:115-124 '63. (MIRA 17:11)

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BATASHEV, K.P.

Silver plating in noncyanide electrolytes. Trudy LPI no.223:125-130 '63. (MIRA 17:11)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

ACCESSION NR: AT4045607 S/2563/64/000/239/0108/0120

AUTHOR: Batashev, K. P.; Andreyeva, L. A.; Afonina, L. G.

TITLE: Titanium-based insoluble anodes

SOURCE: Leningrad. Politekhnicheskiy institut. Trudy*, no. 239, 1964. Elektrometallurgiya tsvetny*kh metallov (Electrometallurgy of nonferrous metals), 108-120

TOPIC TAGS: electrometallurgy, electric refining, insoluble anode, titanium based anode, electrode stability, anode polarization, platinizing

ABSTRACT: Although attempts to substitute titanium, niobium and tantalum for platinum as the material of insoluble electrodes have failed because of anodic polarization with the formation of nonconductive oxide films, recent studies of the authors showed that titanium can be used effectively as the base of platinum-coated electrodes proved that the platinum coating is porous and that there is adequate titanium - platinum electrical contact. As a result of thorough studies of electrovacuum, electrospark and electrolytic platinizing, the authors developed a process for producing quality platinum coatings in which titanium, pretreated with hot 65% $H_2SO_4$ to obtain firm coating adhesion, is platinized at 60-85C and 0.5-1.0 a/dm in a solution of 8 g metallic Pt, 30-35 g $(NH_4)_2HPO_4 \cdot 12\ H_2O$ and 225-250 g $Na_2HPO_4 \cdot 12\ H_2O$ per

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ACCESSION NR: AT4045607

liter. Adequate electrode stability was indicated by a platinum loss of 1.70-4.38 g (retrievable) per ton of chlorine obtained in the protracted electrolysis of cobalt chloride, sodium chloride and hydrochloric acid. Rhodium-coated (a) and palladium-coated (b) titanium anodes were also prepared (a) by electrolysis of a solution containing 2 g/liter Rh and 25-30 g/liter $H_2SO_4$ at 55-60C with a yield of 50-70% of the theoretical, and (b) by electrolysis of a solution of $PdCl_2$ (30-40 g/liter Pd) in ammonia (3 g/liter $NH_3$) or a solution containing 2.5-10 g $PdCl_2$, 100 g $Na_2HPO_4 \cdot 12H_2O$, 20 g $(NH_4)_2 HPO_4 \cdot 12H_2O$, and 2.5 g of benzoic acid per liter. Testing of Batashev's titanium-graphite and titanium-carbon electrodes in the electrolysis of chloride solutions proved their superiority over pure graphite and carbon electrodes. Orig. art. has: 6 figures and 5 tables.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni M. I. Kalinina (Leningrad Polytechnical Institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 016 OTHER: 005

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APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, K.P.; ANDREYEVA, L.A.; YUMAYEVA, R.Z.

Electrolysis of cobalt chloride with platinized titanium inert anodes. Trudy LPI no.239:121-125 '64.

(MIRA 17:10)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, K.P.; ANDREYEVA, L.A.; AFONINA, L.G.

Inert anodes on a titanium base. Trudy LPI no.239:108-120 '64.
(MIRA 17:10)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, M.

ALEKSEEV, MIKHAIL VASIL'EVICH, M. BATASHEV and P. MALINOVSKII.

Spravochnik po voenno-vozdushnym silam. Moskva, Gosizdat, 1933. 391 p., illus., tables, diagrs.
Bibliography: p. 6.
Title tr.: Guide to the Air Force.

UG630.A47 1933

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

Batashev, M.

ALEKSEEV, MIKHAIL VASIL'EVICH, M. BATASHEV, and P. MALINOVSKII.

Spravochnye svedeniia po vozdushnym silam. 2. pererabotannoe izdanie. Moskva, Gos. voen. izd-vo, 1935. 415 p., illus., tables, diagrs.

Bibliography at end of each section.

Title tr.: Guide to the Air Force.

UG630.A47 1935

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, S.A.kandidat meditsinskikh nauk, (Nizhniy Tagil)

History of medicine in the Urals. Khirurgiia, 33 no.1:123-127 Ja '57 (MLRA 10:4)

(SURGERY, hist. in Russia) (Rus)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEV, V.

Moving-picture Projectors

Grounding of moving-picture projection equipment. Kinomekhanik no1, 1953

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Uncl.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

Batashev, V.I.

S/180/60/000/02/028/028
E071/E135

AUTHOR: Ogurtsov, S.V.

TITLE: Scientific Conference on the Metallurgy, Chemistry and Electrochemistry of Titanium

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, Nr 2, pp 167-168 (USSR)

ABSTRACT: The conference took place on January 14-20 1960 in Moscow in the Institute of Metallurgy, Academy of Sciences, USSR. It was organised by the Committee for Coordination of Scientific Research on Titanium. About 400 representatives of academic and research institutions and works participated in the conference. The conference was divided into four sections: 1) raw materials and smelting of ores; 2) chemical technology and chlorination; 3) metallothermic methods of smelting titanium; and 4) electrolysis. The following papers were read:

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Metallurgical evaluation of some new deposits (B.B. Dmitrovskiy); State and prospects of improving the technology of smelting of ilminite concentrates (V.A. Rezhnichenko and V.I. Solov'yev);

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Thermodynamic investigations of titanium compounds (F.B. Khalimov and V.A. Reznichenko); An investigation of the process of reduction of iron-titanium concentrates with carbon (M.B. Rapoport); Some hydrodynamic and kinetic features of the process of chlorination of titanium dioxide in molten chlorides (Kim Men-rin); Oxidation of titanium tetrachloride with oxygen (G.S. Moynov, B.N. Melent'yev, V.A. Rezhnichenko); Utilisation of ilminite concentrates for the production of titanium dioxide pigment by the sulphuric acid method (M.L. Borodina, S.B. Shaykevich, N.A. Gubarova); An investigation of some properties of the system $TiCl_4$ - $AlCl_3$ - $FeCl_3$ (N.K. Druzhinina); An investigation of phase equilibria liquid-vapour in systems formed by titanium tetrachloride with chloroanhydrides of mono- and trichloroacidic acids (G.V. Seryakov, S.A. Vaks, L.S. Sidorina); Determination of the summary content of carbon in titanium tetrachloride (G.V. Seryakov, S.A. Vaks, I.M. Golovanov); Basic conditions for standardised

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results of the process of production of titanium by the magnesium thermite method (S.V. Ogurtsov, V.A. Reznichenko, V.K. Ustinov, V.I. Kozhevnikov, A.I. Dedkov); On the two stage method of production of titanium by the sodium thermite method (V.A. Reznichenko, S.V. Ogurtsov); Production of a high purity titanium (V.I. Batashev); The influence of the content of chlorine in a high purity titanium sponge on the process of smelting and on the quality of the metal produced (G.M. Vaynshteyn); The production of titanium and its alloys by refining of black anodes (Academician I.P. Bardin, A.D. Khromov, V.I. Lukashin); On the theory of refining of titanium (V.A. Bukhodskiy); Production of titanium by electrolysis of titanium dioxide in fluoride-chloride melts (I.P. Bardin, A.A. Kazayn); Electrolytic production of titanium from chloride-fluoride melts (V.M. Ioffe, N.N. Rozanov, N.A. Lyubimova); Electrolytic refining of titanium waste products (V.M. Lozovatskiy); and a number of other reports.

There are no figures, tables or references.

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S/598/62/000/008/003/009
D217/D307

AUTHORS: Batashev, V.I. and Reznichenko, V.A.

TITLE: The refining of titanium

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 8. Moscow, 1962, Metallurgiya titana, 167 - 174

TEXT: The nature of certain processes taking place during the iodide refining of Ti may be exploited in an attempt to raise the purity of Ti with respect to metallic impurities and silicon. The characteristics of the iodide refinement under conditions in which the reactions leading to a higher purity of Ti iodide can be controlled, may also be identified. It is shown that a decrease in the rate of sublimation of Ti tetraiodide in vacuo is accompanied by a decrease in the Mg, Al, Si and Fe contents of the Ti iodide. Kinetic factors are likely to influence the transfer of impurities by the stream of Ti tetraiodide produced during evaporation of the latter. It is found that the purity of TiI can be increased

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

ACCESSION NR: AP5009275 S/0370/65/000/001/0195/0196

AUTHOR: Batashev, V. I.

TITLE: Conference on the problems of enriching tungsten and molybdenum ore and on the metallurgy of tungsten, molybdenum, and rhenium

SOURCE: AN SSSR. Izvestiya. Metally, no. 1, 1965, 195-196

TOPIC TAGS: tungsten, molybdenum, rhenium, ore beneficiation, processing method, metallurgy, conference

ABSTRACT: A conference on the metallurgy of tungsten, molybdenum, and rhenium was held 10—12 November 1964 at the Institute of Metallurgy in Moscow, and was attended by 200 representatives of scientific research organizations and industrial plants. In opening the conference, M. V. Pridantsev pointed out the continuously increasing demand for tungsten, molybdenum, rhenium, ferrotungsten, and ferromolybdenum for the production of special steels and alloys and stressed the necessity for improving metallurgy of extracting pure metals at all stages. He urged better utilization of poor concentrates and tails, production wastes at the plants (including the use of dust produced by sintered carbide tools), and economy of ferrotungsten

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and ferromolybdenum in the production of high-speed steels. I. N. Shorsher and S. G. Maslova spoke on improving the technology of enriching tungsten and molybdenum ores. They noted a comparatively high percentage of extracting molybdenite into the concentrate at the beneficiation plants of the USSR, and described in detail research on the beneficiation of complex molybdenum ores by hydrocarbons emulsified by ultrasound. V. A. Reznichenko described scientific research conducted at the Institute of Metallurgy on new metallurgical processes: chloride methods of obtaining high-purity tungsten and molybdenum, an electrolytic method of reducing tungsten and molybdenum compounds, an autoclav-acid method of processing sheelite concentrates, and an extraction method of separating tungsten and molybdenum. A. N. Zelikman of the Moscow Institute for Steel and Alloys reported the improvement and development of new processing methods for tungsten and molybdenum concentrates and the production of high-purity tungsten and molybdenum compounds. He also described research on the technology for obtaining molybdenum trioxide from pyrite cinders by a sublimation method, and on the development of acid methods for decomposition of tungsten concentrates. N. A. Belozerskiy, speaking on the separation of tungsten and molybdenum by extraction of their carbonyls, stated that since solid tungsten and molybdenum carbonyls form ideal solid

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solutions with each other, the solubility of simultaneously present carbonyls must follow Khlopin's distribution rule. V. A. Amosov described high requirements demanded of tungsten and molybdenum, particularly their creep resistance, strength, and ductility under thermomechanical loads and their emmisive property. He described the ways for obtaining the required properties in the metals and pointed out the role of alloying additions. I. L. Glukhov, a representative of the Institute of Chemistry of the Tadzhik SSR, reported on a method of low-temperature chloriding of low-grade tungsten and molybdenum concentrates. The conference noted a considerable growth of the production of tungsten and molydenum, as shown by the number of new operating plants for production of refractory metals, tungsten anhydride, and molybdenum semifinished products. The conference approved a number of measures designed to eliminate deficiencies in the work of scientific research institutions and metallurgical plants, to increase production of tungsten and molybdenum, and to improve the quality of produced metals. [MS]

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ASSOCIATION: none

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

ISHMAMETOV, A.S.; BATASHEVA, N.V.; GERSHMAN, Ya.G.

Intrafactory haulage of parts in container pallets. Der.prom. 10 no.3:23-24 Mr '61. (MIRA 14:5)
(Unitized cargo systems)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEVA, N.V.; YEVDOKIMOV, L.G.

All-purpose master form for the manufacture of staves. Der. prom. 10 no. 4:21-22 Ap '61. (MIRA 14:4)
(Staves)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHEVA, N.V.

Machine for cutting grooves and edge joints of box boards. Der. prom. 10 no.11:22-23 N '61. (MIRA 14:10)

1. Moskovskiy lesotarnyy zavod No.2.
(Woodworking machinery)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHOV, G.

Regulations for operating electric units should be reissued. Bezop. truda v prom. 6 no.3:34 Mr '62. (MIRA 15:3)

1. Glavnyy inshener Zhirnovskogo kar'yeroupravleniya, pos. Tatsinskiy, Rostovskoy oblasti.
(Electric engineering--Safety regulations)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHOV, Nikolay Nikolayevich; KURNEV, Yevgeniy Mikhaylovich; OSIPOV, Petr Fedotovich; IGREVSKIY, V.I., red.; ISAYEVA, V.V., ved. red.; YAKOVLEVA, Z.I., tekhn.red.

[Preparation, treatment, and cleaning of clay solutions; practices of petroleum workers in Kuybyshev Province] Prigotovlenie, obrabotka i ochistka glinistykh rastvorov; opyt neftianikov Kuibyshevskoi oblasti. Moskva, Gostoptekhizdat, 1963. 80 p. (MIRA 16:11)
(Oil well drilling fluids)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHOV, N.S.; GAGARIN, Ye.I.; BRITKIN, A.S., professor, retsenzent; CHERNYAK, A.Ya., redaktor.

[E.G.Kuznetsov, outstanding master of the 18th century] E.G.Kuznetsov - vydaiushchiisia master XVIII veka. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry [Red.lit-ry po istorii mashinostroit tekhniki] 1953. 94 p. (MLRA 7:5)
(Kuznetsov, Egor Grigor'evich, 1725- ? )

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000203920012-2

BATASHOV, V.A.

"Case of A General Traumatic Aneruism of the Left Cartoid and Internal Jugular Vein, Which Appeared Similar to a Bilateral Tramatic Arterio-Venal Ameurism of these Vessels," Khirurgiya, No. 6, 1948

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