"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON, A.N.; FEDORCHENKO-TIKHIY, G.D.

Discrete converters of continuous signals. Vop. pered. inform. 2:113-128 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

BLAZHKEVICH, B.I., kand. tekhn. nauk, otv. red.; MIKHAYLOVSKIY, V.N., red.; SVENSON, A.N., kand. tekhn. nauk, red.; MIZYUK, L.Ya., kand. tekhn. nauk, red.; KUZOVKIN, S.K., glav. inzh., red.; BELICHENKO, A.I., ved.inzh., red.; SABANEYEV, R.D., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Apparatus for electric prospecting by air; its design and operation] Apparatura aeroelektrorazvedki; proektirovanie i ekspluatatsiia. Kiev, Izd-vo AN Ukr.SSR, 1963. 155 p. (MIRA 17:2)

1. Akademiya nauk URSR. Kiev. Instytut mashynoznavstva ta avtomatyky, Lvov. 2. Chlen-korrespondent AN Ukr. SSR (for Mikhaylovskiy).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON, A.N.

Methods for signal volume conversion. Vop. pered. inform. 2:55-71 '63. (MIRA 16:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON, A.N.; SMERDOV, A.A.

Method for compressing the speech signal spectrum in multichannel communication systems. Vop. pered. inform. 2:92-97 '63.

Statistical characteristics of a speech signal transmission process in a channel with regulated bandpass. Ibid.:98-112 (MIRA 16:12)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON, A.N.; SMERDOV, A.A.

Study of the efficiency of a multichannel communication system with regulated passband channels. Elektrosviaz' 17 no.10:57-65 O '63. (MIRA 17:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

POKROVSKIY, B.G.; SVENSON, A.N.

Methods for quantitative determination of the natural sound quality of speech. Elektrosviaz' 17 no.12:68-69 D '63. (MIRA 17:2)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVERCHKOV, A.N. [Sverchkov, O.N.]

Effect of some volatile aromatic excretions of plants during florescence on the ionization of air. Ukr. bot. zhur. 21 no.1:25-29 '64. (MIRA 17:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut kommunal'noy gigiyeny.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 21813-65 EWT(d)/T/EWP(1) Pg-4/Ph-4/Pl-4/Pb-4 [illegible]/AMD/AFMD(p)/AFETR/RAEM(i)/RAEM(d)/ESD(c)/ESD(dp)/ESD(t)/ASD(a)-5/IJP(c)

ACCESSION NR: AT5001686 S/3120/64/000/003/0047/0059

AUTHOR: Svenson, A. N. (Candidate of technical sciences)

TITLE: Compression of spectra by signal volume transformations

BT

SOURCE: AN UkrSSR. Fiziko-mekhanicheskiy institut. Voprosy peredachi informatsii, no. 3, 1964, 47-59

TOPIC TAGS: information theory, 16 signal volume transformation, spectrum compression, Shannon equation

ABSTRACT: The feasibility of the compression of spectra by signal volume transformations depends on the well known Shannon equation describing the maximum transfer capacity of a communication channel in the presence of fluctuation noises. The author studied the possibility of shortening a spectrum by increasing the signal-to-noise ratio without changing the duration of the signal. The results of calculations show that under all circumstances this method of compression is convenient provided that the initial signal-to-noise ratio is not excessively large. On the other hand, one sees that it is hardly advisable to use the transient process compensator because of its limited capabilities even in the case of an ideal realization of the compensating circuitry. It is more ad-

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 21813-65

ACCESSION NR: AT5001686

vantageous to use compensator modifications which remove pulse coupling within real communication channels having smoothly-decreasing amplitude-frequency characteristics. Orig. art. has: 38 formulas and 2 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: DP

NO REF SOV: 002 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 30362-66 EWT(d)/T/EWP(1) IJP(c) BB/GG/GD

ACC NR: AT6008311 SOURCE CODE: UR/0000/65/000/000/0014/0019

AUTHOR: Svenson, A. N. (L'vov) (Candidate of technical sciences); Tynnaya, N. T. (L'vov)

ORG: none

TITLE: Code-pulse decoder with error correction

SOURCE: AN UkrSSR. Elementy sistem otbora i peredachi informatsii (Elements of systems for selecting and transferring information). Kiev, Naukova dumka, 1965, 14-19

TOPIC TAGS; digital decoder, error correcting code

ABSTRACT: In the case of error correcting codes, the decoder must work out not only the particular code word but also those words differing from the given one by one, two, or more letters. Since the pyramidal or matrix decoders require usually a large number of elements, the authors outline the feasibility of the construction of code-pulse error correcting decoders for codes transmitted by sequential or parallel pulses. They analyze the possible solution for such decoders for a varying number of correcting errors and discuss their operation as a function of the parameters of the circuitry. One of the solutions can decode both parallel and sequential signals. Another is constructed from standard cells. Orig. art. has: 5 formulas and 3 figures.

SUB CODE: 09/SUBM DATE: 6Nov65/ ORIG REF: 003/ OTH REF: 002

Card 1/1

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 39075-66 EWT(d)/FSS-2 GD

ACC NR: AT6021046 SOURCE CODE: UR/0000/65/000/000/0054/0061

AUTHOR: Bilyk, M. G. (L'vov); Svenson, A. N. (Candidate of technical sciences; L'vov)

ORG: none

39
B+1

TITLE: Conditions of optimal transmission of two combined signals 4

SOURCE: AN UkrSSR. Metody otbora i peredachi informatsii (Methods of selecting and transferring information). Kiev, Naukova dumka, 1965, 54-61

TOPIC TAGS: multiple beam transmission, amplifier design

ABSTRACT: The optimal transmission of a linear combination of two signals with different constraints is considered by the method of Lagrange multipliers. The input signals are S_1 and S_2, and the output signals are S_1 and $S_3=aS_1+S_2$. The question under investigation is to determine the optimal gains of the transmitting amplifiers k_1 and k_2 for signals S_1 and S_2 respectively. Six different problems are solved: 1. Performance index--maximal signal to noise power ratio for S_3; constraint--limited sum of amplitudes of S_1 and S_2, i. e. $k_1+k_2=c$. 2. Performance index--same as in 1; constraint--limited sum of powers of S_1 and S_2, i. e. $k_1^2+k_2^2=c$. 3. Performance index--maximal ratio of the total power of S_1 and S_2 to the total noise power; constraint--same as in 2. 4. Performance index--same as in 3; constraint--same as in 1. 5. Performance index--maximal informational contents of the ensemble of signal, using Shan-

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 39075-66

ACC NR: AT6021046

non's formula; constraint--same as in 2. 6. Performance index--same as in 5; constraint--same as in 1. Expressions for optimal k_1 and k_2 as a function of a and σ, are derived for each case. Orig. art. has: 1 figure, 15 formulas.

SUB CODE: 17,09/ SUBM DATE: 20Nov65

Card 2/2 MLP

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 33481-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1) BC/JXT(CZ)/GD

ACC NR: AT6011926 SOURCE CODE: UR/0000/66/000/000/0053/0057

78

B+1

AUTHOR: Svenson, A.N. (L'vov); Smerdov, A.A. (L'vov)

ORG: none

TITLE: The transmitting capacity of measuring systems in the transmission of a multidimensional signal with correlated components

SOURCE: Vsesoyuznaya konferentsiya po avtomaticheskomu kontrolyu i metodam elektricheskikh izmereniy, 5th. Avtomaticheskiy kontrol' i metody elektricheskikh izmereniy; trudy konferentsii, t. 2: Izmeritel'nyye informatsionnyye sistemy. Ustrystva avtomaticheskogo kontrolya. Elektricheskiy izmereniya neelektricheskikh velichin (Automatic control and electrical measuring techniques; transactions of the conference, v. 2: Information measurement systems. Automatic control devices. Electrical measurements of nonelectrical quantities). Novosibirsk, Izd-vo Nauka, 1966, 53-57

TOPIC TAGS: information processing, signal correlation, signal transmission, multichannel communication, measuring system

ABSTRACT: One of the possible ways for a further increase in the efficiency of multichannel communication systems is to utilize to a higher degree the statistics of the instantaneous values of the transmitted signals. Initially, it appears that additional difficulties may be encountered in the case of correlated signals. However, a more detailed analysis shows that in the multichannel transmission of interdependent signals the potential for reducing the

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

ACC NR: AT7001498 SOURCE CODE: UR/0000/66/000/000/0212/0217

AUTHOR: Svenson, A. N. (L'vov; Candidate of technical sciences); Tynnaya, N. T. (L'vov)

ORG: none

TITLE: Disrete-analog decoders with error correction

SOURCE: AN UkrSSR. Teoriya i praktika ustroystv dlya preobrazovaniya elektro-izmeritel'noy informatsii (Theory and practice of devices for the conversion of electrical measuring information) Kiev, Naukova dumka, 1966, 212-217

TOPIC TAGS: error correction, error correcting code, data transmission, analog decoder, computer circuit, computer component, Zener diode

ABSTRACT: Error detecting decoder circuits are analyzed which issue a signal whenever the difference between a received code word and a reference code exceeds a preassigned number of allowable errors. Two types of decoders are studied: series (Fig. 1a) and parallel (Fig. 1b). The switches in both types close whenever the code and reference words match. The number of switches in both types of error detection circuit is equal to the code work bit length. The series decoder uses Zener diodes to establish a level corresponding to the maximum number of allowable errors. If this level is exceeded the current starts to flow through the load. In the parallel decoder, output voltage depends on the number of closed switches (i.e. the number of correctly received code word bits). An amplitude discriminator is normally used in conjunction with the parallel decoder to determine the number

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON O.M.

BELEN'KIY, Ya.Yu.; MIKHAYLOVS'KIY, V.M.; SVENSON, O.M.

Circuit solution of multiple-channel commutation.
Avtomatyka no.4:54-61 '56. (MLRA 10:2)

1. Institut mashinoznavstva ta avtomatiki AN URSR.
(Electronic circuits)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENSON, O., kand.tekhn.nauk (L'vov)

Electronic excursion leader. Nauka i zhyttia 11 no.3:38 Mr '62. (MIRA 15:8)

(Telecommunication)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

ACCESSION NR: AP4026839 S/0102/64/000/002/0003/0015

AUTHOR: Svenson, O. M. (L'viv)

TITLE: Methods of signal conversion

SOURCE: Avtomaty*ka, no. 2, 1964, 3-15

TOPIC TAGS: information transmission, signal transmission, signal conversion, information conversion, signal transmission review

ABSTRACT: Based on 1955-62 Soviet sources and a few 1948-60 Western sources (one 1963 Polish source), this review classifies methods of information conversion and transmission according to the well-known Shannon formula of maximum link capacity. Three classes of methods are discerned: (1) Methods that result in reduced signal power with the same signal-to-noise ratio at the link output or in a higher signal-to-noise ratio with the same signal power; (2) Methods of shortening the total time of transmission; (3) Methods of compressing the signal

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

ACCESSION NR: AP4026839

bandwidth. A table is worked out in which various types of signals (arbitrary, stationary, quasi-stationary, nonstationary) are listed and further subdivided into single- and multivariable forms. The table is explained by a number of examples taken from the above sources. Orig. art. has: 1 formula and one table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 17Apr64 ENCL: 00

SUB CODE: EC NO REF SOV: 027 OTHER: 013

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

CILNY, Milan, inz.; SVENTEK, Oldrich

Czechoslovak record in coal mining with a scraper. Uhli 7 no.4: 129-132 '65.

1. Petr Bezruc Mine, Ostrava.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTIKHOVSKAYA, A.N.

Natural resources of litter peat in White Russia. Trudy Inst. torfa AN BSSR 7:96-116 '59. (MIRA 14:1)
(White Russia--Peat)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKAYA, G.

Twice the first. Voen. znan. 42 no.1:41-42 Ja '66. (MIRA 19:1)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTSITSKAYA, N.F.; RAMANAVA-TSKHOVREBOVA, O.D.

Nucleic acids and nucleotides in erythrocytes in leukemia. Vop. med. khim. 10 no.1:61-64 Ja-F '64. (MIRA 17:12)

1. Biokhimicheskaya laboratoriya TSentral'nogo ordena Lenina instituta gematologii i perel'vaniya krovi, Moskva.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

PO/0056/66/017/003/0495/0506

AUTHOR: Swiecicki, W. --Sventitski, V.

ORG: Department of Aviation Physiopathology of the Military Institute of Air Medicine, Warsaw (Dzial Patofizjologii Lotniczej Wojskowego Instytutu Medcycyny Lotniczej)

TITLE: Influence of constantly increased respiratory pressure on the protein levels of rabbits

SOURCE: Acta physiologica polonica, v. 17, no. 3, 1966, 495-506

TOPIC TAGS: blood plasma, gamma globulin, protein, adrenalin electrophoresis, acetylcholine, physostigmine, ergotamine, pendiomide

ABSTRACT: The author studied the protein of blood plasma by the refractometer method and its fractions by the method of electrophoresis in 56 male rabbits under urethane anesthesia, subjected to increased respiratory pressure of 20-40 mm Hg, and also administered drugs. Increased respiratory pressure of 20-40 mm Hg lowered the general protein levels albumin, and gamma globulin in the blood plasma. Administration of adrenalin (0.03 mg/kg) during increased respiratory pressure did not change the level of the protein and its fractions. Cessation of increased respiratory pressure caused a drop in the beta globulin levels. Acetylcholine (0.04 mg/kg) injected during increased respiratory pressure and after its cessation caused a drop in the general

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, G.A. (Moscow).

Methods of solving certain problems in therapeutic nutrition.
Vop.pit.13 no.2:51-53 Mr-Ap '54. (MLRA 7:2)
(Diet in disease)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, G. A., dots., kand. med. nauk.

Significance of vegetables in the diet. Obshchestv. pit. no.3:20-21 '57. (MIRA 11:3)

(Vegetables) (Nutrition)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, G.A., dots.

Mineral waters. Zdorov'e 6 no.6:28-29 Je '60. (MIRA 13:7)
(MINERAL WATERS)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, I.I.

SVENTITSKIY, I.I., inzh.

Combination lighting installations. Svetotekhnika 3 no.12:9-11 D '57. (MIRA 11:1)

1. Vsesoyuznyy institut elektrifikatsii sel'skogo khozyaystva.
(Fluorescent lamps)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SMIRNOVA, I.S., kand.tekhn.nauk; BAKHIREV, N.F., inzh.; KACHUROVA, K.P., zootekhnik; KUTSENKO, V.V., inzh.; BEKHTIN, B.I., inzh.; SVEN-TETSKIY, I.I., inzh.; KISHECHNIKOV, S.A., inzh.; YEVREINOV, M.G., red.

[Ultraviolet irradiation of farm animals and poultry; a manual] Ul'trafioletovoe obluchenie sel'skokhoziaistvennykh zhivotnykh i ptits; rukovodstvo. Moskva, Otdel tekhn.informatsiiVIESKha, 1959. 34 p. (MIRA 13:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva. 2. Deystvitel'nyy chlen Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I. Lenina (VASKHNIL) (for Yevreinov).
(Ultraviolet rays--Therapeutic use) (Veterinary hygiene)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

BEKHTIN, B.I.; SVENTITSKIY, I.I.

Starterless circuit for turning on EUV low-pressure gas-discharge lamps with active ballast in the form of incandescent lamps. Sbor. nauch.-tekh. inform. po elek. sel'khoz. no.7:25-28 '59.
(MIRA 13:9)

(Electric discharge lighting)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

BEKHTIN, B., inzh.; SVENTITSKIY, I., inzh.

Ultraviolet rays in agriculture. Nauka i pered. op. v sel'khoz. 9 no.2:49-52 F '59. (MIRA 12:3)
(Ultraviolet rays)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SMIRNOVA, I.S., kand.tekhn.nauk; SVENTITSKIY, I.I.; KUTSENKO, V.V.

Using combined radiation equipment in poultry raising. Dokl. Akad.sel'khoz. 24 no.9:39-43 '59. (MIRA 13:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva. Predstavlena akademikom M.G.Yevreinovym.
(Radiation--Physiological effect)
(Poultry houses and equipment)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, I.I., inzh.

Magnitudes and units of optical radiation characterizing its photosynthesis effect. Nauch. trudy VIESKH 7:29-36 '60. (MIRA 15:8)

(Plants, Effect of light on)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, I. I., CAND TECH SCI, "DEVELOPMENT AND ~~INVESTIGATION~~ study OF CIRCUIT DIAGRAMS FOR FLUORESCENT LAMPS FOR AGRICULTURAL IRRADIATION INSTALLATIONS AND THE SUBSTANTIATION OF A METHOD FOR MEASURING OPTICAL RADIATION IN PLANT GROWING." LENINGRAD-PUSHKIN, 1961. (MIN OF AGR RSFSR, LENINGRAD AGR INST). (KL, 3-61, 220).

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

ANDREYTSEV, A.P., inzh.; SVENTITSKIY, I.I., insh.

Regulating optical radiation in plant growing. Mekh. i elek. sots. sel'khoz. 19 no.2:41-45 '61. (MIRA 14:3)

1. Institut biofiziki AN SSSR (for Andreytsev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Sventitskiy).
(Plants, Effect of radiation on)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

BAKHIREV, N.F., kand. tekhn. nauk; GAVANIN, V.A., inz.; DANTSIG, N.M.; KODINETS, G.A., prof.; MELYUKOV, A.N., kand. sel'khoz. nauk; PIGAREV, N.V., doktor sel'khoz. nauk; CSETROV, P.A., kand. tekhn. nauk; SVENTITSKIY, I.I., kand. tekhn. nauk; SOKOLOV, M.V., doktor tekhn. nauk; SOLUN, A.S., doktor sel'khoz. nauk; SHARABRIN, I.G., doktor bet. nauk; SKOBELEV, V.M., kand. tekhn. nauk; TIRKEL'TAUB, M.V., inzh.; KOLPAKOVA, Ye.A., red. izd-va; YEPIFANOVA, L.V., tekhn. red.; SIMKINA, G.S., tekhn. red.

[Recommendations for ultraviolet irradiation of farm animals and fowl] Rekomendatsii po ul'trafioletovomu obluchen'iiu sel'skokhoziaistvennykh zhivotnykh i ptits. Moskva, Izd-vo Akad. nauk SSSR, 1962. 46 p. (MIRA 16:2)

1. Akademiya nauk SSSR. Institut biologicheskoy fiziki. Sektsiya po ul'trafioletovomu izlucheniyu.
(Ultraviolet rays--Physiological effect)
(Stock and stockbreeding)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

AYZENBERG, Yu.B., inzh.; GUNCHEV, A.V., inzh.; DEMCHEV, V.I., inzh.; SVENTITSKIY, I.I., kand. tekhn. nauk

New irradiation apparatus and units for agriculture. Mekh. i elek. sots. sel'khoz. 21 no.1:36-38 '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy svetotekhnicheskiy institut (for Ayzenberg, Gunchev, Demchev). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Sventitskiy).

(Infrared rays--Physiological effect)
(Ultraviolet rays--Physiological effect)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, L.V., agronom

Work practices in the construction and operation of closed irrigation systems by the use of DM-80 sprinklers. Gidr.i mel. 12 no.3:11-14 Mr '60. (MIRA 13:6)
(Magnitogorsk region--Sprinkler irrigation)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 1776-66 EWA(k)/FBD/EWT(1)/EWP(e)/EWT(m)/EEC(k)-2/EWP(i)/T/EWP(k)/EWA(m)-2/ EWA(h) SCTB/IJP(c) WG/WH

ACCESSION NR: AP5025089 UR/0368/65/003/003/0230/0233
621.375.9:535.89

AUTHOR: Sventsitskaya, N. A.; Khazov, L. D.

TITLE: Improving the directionality of a ruby laser by means of an external reflector

SOURCE: Zhurnal prikladnoy spektroskopii, v. 3, no. 3, 1965, 230-233

TOPIC TAGS: ruby laser, laser beam, beam directionality

ABSTRACT: An increase in the distance L between the external mirrors of a ruby laser is shown to result in: 1) a generation which is limited to fewer modes, and 2) improved beam divergence. To show this experimentally, the authors used a 20-j pulsed laser consisting of a ruby rod 75 mm long and 16 mm in diameter with opaque sides and an $\sim 10^{19}$ cm^{-3} concentration of chromium ions. The ruby was pumped by two xenon flashlamps. The diameter of the dielectric-coated plane mirrors was 16 mm. The output mirror, with a 77% reflection, was placed at a fixed distance from the adjacent rod end, while the other (opaque) mirror could be moved over a 20-m distance. All measurements were made from the output mirror side. The angular beam divergence was measured photoelectrically. The experimental results showed that: 1) at L = 13 m sharper

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

L 1775-66

ACCESSION NR: AP5025089

0

beams were produced, and 2) in present-day ruby crystals (which contain undesirable microinhomogeneities) the ruby beam can be confined to an angle of 1—2' only at the expense of a 40-fold decrease in output power (at L = 13 m). Orig. art. has: 4 figures. [YK]

ASSOCIATION: none

SUBMITTED: 11Jan65 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 004 ATD PRESS: 4111

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

Interruption arc for spectral analysis. N. S. Sventitskii. *Zavodskaya Lab.* 6, 325-6(1937).—In studying spark spectra by Schleicher and Kaiser method (*C. A.* 30, 5497[8]) a more uniform interruption arc results and the formation of obstructing layers of oxides is eliminated by the use of a revolving friction electrode. The arrangement, illustrated and described in detail, makes possible the use of a. c.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

B-I-4

Spectrum analysis of brass for manganese, tin, and iron. N. S. [illegible] (Zavod. Lab., 1939, 7, 1371—1375).—The content of Mn, Sn, and Fe is determined by comparing the intensity of the lines Cu 2916, Mn 2933; Cu 2814, Sn 2840; Cu 2357, Fe 2382, in an arc spectrum, the arc being struck between the sample of brass and a Cu electrode, using a.c., with superposition of a high-frequency, high-tension current, and with platinised quartz filters.

The intensity of the lines varies with the temp. of the sample; hence the calibration curves apply only to a sample of a given shape and mass. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

Stabilisation of the alternating current arc used for quantitative spectrochemical analysis. N. S. Sventitski (*Zavod. Lab.*, 1939, 8, 470—471).—The arc is permanently illuminated by a small spark; the photo-electric effect thus produced prevents extinguishing of the arc. J. J. H.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N.

3

2156

SIMPLE METHOD OF MAKING A STEP WEDGE FOR SPECTRUM ANALYSIS IN ULTRAVIOLET. N. Sventitskii. Translated from Zavodskaya Lab. 8: 511-14(1939). Sp. Available from Henry Brutcher (Trans. No. 1434) Altadena, Calif. (AE) (r. 1902).

Step wedges suitable for quantitative analysis in the ultraviolet range can be prepared by applying a coat of soot to a quartz plate. The soot coating is applied by moving the clean, heated quartz plate through a steady gasoline or kerosene flame at an experimentally determined rate. The steps are traced with a small pointed stick and separated by means of glass filaments. Tinsel pieces are used to limit the length of the step wedge and a quartz protective plate is taken over the step wedge. (J.S.R.)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

1

Quantitative spectroscopic analysis of certain brasses with an activated alternating-current arc as the light source. N. S. Syentitskii. *Bull. acad. sci. U. R. S. S., Sér. phys.* 4, 10–19(1940).—Brasses were analyzed for Mn, Sn, Fe, Ni and Al by the method of photographic interpolation, with the step absorber developed by Vvedenskii (preceding abstr.). The activated alternating current arc was used as a source of light (cf. *C. A.* 33, 4905[1]). The following pairs of lines were used for the analysis: Mg 2933 A. and Cu 2961 A.; Sn 2840 A. and Cu 2824 A.; Fe 2382 A. and Cu 2357 A.; Ni 2345 A. and Fe 2357 A.; Al 2000 A. and Cu 2089 A. The quadratic error of detn. varied from 3 to 5.5% for Mn, Sn, Fe and Ni and from 5 to 8% for Al.

Roksalana Gamow

COMMON ELEMENTS

MATERIALS INDEX

OPEN

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON VARIABLES INDEX

AUTHOR INDEX

1ST AND 2ND LETTER

2ND LETTER

3RD AND 4TH ORDERS

Fe GROUPS

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

Spectrochemical Determination of Zinc in Brass. *E. Y. Magaziner* and *N. S. Sventitsky* (*Zavod. Lab.*, 1940, **9**, 992–994; *Brit. Chem. Abs.*, **1944**, [C], 6).—[In Russian.] An a.c. arc is struck between a Cu electrode and the brass sample, and the intensities of the lines Cu 2824 and Zn 2756 A. are compared. The difference (Δ) of the intensities is a linear function of log [Zn]. If the alloy contains Pb also, the line Cu 2883 A. is taken for comparison. Sn raises Δ at a const. [Zn].

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Ca

7

Detection of silicon by means of the steeloscope. I. S. Kirin and N. S. Syrentiskii. *Zavodskaya Lab.* 9, 1270-2 (1940).—Si can be detd. from the line λ = 3905 A. for concns. over 1%. A rod of C steel may serve as the standard electrode. The arc current was 10 amp. By decreasing the current the intensity of the Si line decreases faster than the Fe lines. With Al alloys it is better to use an a. c. because there is less danger of trouble from oxide films.

B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

M

***The Alternating-Current Arc as Light Source for Quantitative Spectrographic Analysis [of Alloys].** N. S. Sventitsky (*Izvest. Akad. Nauk S.S.S.R.*, 1941, [Fis.], 5, (2/3), 222–228).—[In Russian.] The a.c. arc with h.-f. ignition is described, and the optimum conditions of operation are given. Such a light source is well suited for the quantitative analysis of alloys, errors being in the range 1–4%. Its advantages over the spark are: (*a*) cheapness of the apparatus required, (*b*) safety during exposure, (*c*) greater accuracy of the determinations, (*d*) greater brightness of the spectra, (*e*) absence of the need for sparking before exposure; while its advantages over the d.c. arc are: (*a*) better reproducibility, (*b*) the ability to analyse low-melting materials and very small quantities of materials, (*c*) the convenience of striking the arc without contact of the electrodes. Some results obtained by the use of the a.c. arc are given very briefly.—N. B. V.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

SA

A545

545.822 1704

Quantitative analysis for impurities by intensity estimation of one spectral line. PROKOFIEV, V. K., SVENTITSKY, N. S., AND MAGAZINER, E. L. *C.R. (Doklady) Acad. Sci. URSS*, 34, 8, pp. 224-227, 1942.—By using an a.c. arc as the light source, spectral analysis by the method of abs. intensity yields quantitative estimations of impurities, of sufficient accuracy for industrial purposes. The accuracy was exemplified in a series of analyses for Pb in the alloy LS-59-1 (containing 0·95% Pb). The probable error was calculated from 100 determinations and found to be 5·2% for an individual measurement, giving 3% for an average of 3 measurements.

A. S. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

54

A5.3
1

535.331.03 : 621.325.1 174

A universal source of excitation of spectra. SVENTITSKY, N. S. — *C.R. Acad. Sci. URSS*, 37, 7-8, pp. 205-208, 1942.—Describes circuit arrangements for the excitation of either the arc or the spark spectral lines, particularly for use in the industrial spectrum analysis of metals and alloys. The device consists of a basic circuit for producing an arc discharge at industrial frequency, into which h.f. currents are fed under controllable conditions from an auxiliary circuit. To produce arc spectral lines, with avoidance of injurious burning of the electrodes, the burning time of the arc is interrupted by a simple rotating interrupter in the h.f. circuit. Conditions for the spark régime are secured when the duration of the arc flashes is reduced by appropriate variation of the circuit parameters of both basic and h.f. circuits, and at the same time the arc gap is shunted by a capacitor. A. S. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

GTRSFL, Vol. 4, No. 10

Sventitskii, N.S., Generation of spectral spark lines and of spectra of metalloids in A.C. arc discharges, 10-11.

Zhurnal Tekhnicheskoi Fiziki, Vol. 14, XXX (1944)

Translations available at Brookhaven National Laboratory.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

PROCESSES AND PROPERTIES INDEX

3

Excitation of spark-spectrum lines and spectra of metalloids in an arc discharge of alternating current. N. S. Sventitskii. *J. Tech. Phys.* (U.S.S.R.) 14, 605-10 (1944).—By introducing a condenser (10 μf.) into the system supplying a.c. (120-220 v.) to an arc the discharges can be made short and intensive, and in the spectrum lines appear which usually are observed only in a spark spectrum, e.g., lines of Si II, Al II, and Al III. This makes possible a detn. of Si; its line 6310 A. is compared (in Si-Al alloys) with Al 6226 A., and in Si-brass with Cu 6325 A. Near the electrodes in the arc also lines of P (from 5170 to 5420 A.), Cl (from 4704 to 4904 A.), Br (from 4704 to 5322 A.), and I (from 5161 to 5625 A.) are visible. The concn. of KI solns. can be detd. by comparing the intensities of I 5161 A. and Cu 5153 A. J. J. Bikerman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

CA

7

Spectral determination of S in aqueous salt solutions. O. V. Blank and N. S. Sventitskii. *Doklady Akad. Nauk S. S. S. R.* 44, 63-4; *Compt. rend. acad. sci. U. R. S. S.* 44, 58-9(1944)(in English).—Introduction of a sulfate soln. into an a.-c. arc (5 amps.) between metal electrodes shunted by a large capacity (60 μf.) results in appearance of the S II spectrum. The upper electrode was a pointed Cu bar and the lower electrode was a Cu disk, 1 mm. thick and 20 mm. in diam. rotating (1 r. p. m.) in the vertical plane with the lower part of the disk dipping into the soln. being tested. On increasing the S concn. from 0.002% to 0.02% the line 5454 appeared first, followed by 5660, 5640, 5606, 5500 and then by 5473 and 5565, while at concns. of 0.08% or above the S line 5454 became equal or greater in intensity to the Cu line 5463. Comparison of these 2 lines, with a calibration graph, permits quant. estn. of S with an accuracy of about 10%. The sensitivity of this test for S is impaired by Cr. J. W. Perry

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

COMMON ELEMENTS

COMMON VARIABLES INDEX

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

PROCESSES AND PROPERTIES INDEX

S

21

SPECTROSCOPIC DETERMINATION OF CARBON IN IRON AND STEEL. O.V. Blank and N.S. Sventitsky. (Comptes Rendus (Doklady) de l'Academie des Sciences de l'U.R.S.S., 1945, vol 45, no 4, pp 252-255). In the visible spectrum a broad carbon line results from the overlapping of two spark lines at 4267Å. By using a large capacitance and spark gap only 0.8 mm. long with a powerful transformer, this line can be recorded in spectra of steels with carbon 0.3% to 4%. The density contour of the diffuse CII line is plotted, and its area is measured and compared with the blackening of the spectrum at wave-length 4270. When these relative densities are plotted against the percentage of carbon, the points for steel and cast iron fall on a single straight line.

In the ultra-violet region the line CIII 2296.92 is used, and compared with the line Fe 2294.6 in the range 0.1% to 4% of carbon. A background correction is necessary if nickel is present above 1%. Steel and cast iron were combined

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

to give a single calibration line.—E. Van S.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Modern Light Sources for Spectrographic Analysis. N. S. Syentitsky (*Izvest. Akad. Nauk S.S.S.R.*, 1945, [Phys.], **9**, (6), 677 680). [In Russian] A critical review of light sources for spectrographic analysis, comparing the D.C. arc, different types of spark, and A.C. arcs of the usual types described in German and American papers. The A.C. arc with H. F. ignition, favoured in the U.S.S.R., is supplied with an additional interrupter in the primary of the transformer, which enables an intermittent discharge to be used for samples of low melting point. The trend in the development of controlled sources is discussed and it is pointed out that there is only a limited value to theoretical calculations based on the assumption that thermal equilibrium is attained in the arc column. In seeking reproducibility of spectra, it may not be enough to aim at uniform electrical conditions which would restrict the scope of the light source; a more useful circuit would produce regular variations of potential gradient, so as to ionize the more difficult elements as well as those with lower excitation potentials.--E. VAN S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

***Band-Heads of AlO Spectrum as an Inner Line Standard in the Spectrum Analysis of Aluminium Alloys.** G. G. Polozova and N. S. Syrenitsky (*Compt. rend. (Doklady) Acad. Sci. U.R.S.S.*, 1945, **46**, (1), 10-12).—[In English.] In the visual spectrum analysis of Al alloys with arc spectra, suitable comparison lines for Cu, Mg, and Mn are absent. The band system for AlO is tabulated, and it is pointed out that band-heads are conveniently placed for comparison with the green Cu and Mg lines and for the blue Mn and Zn lines. An A.C. arc between pure Al and the sample is recommended for Cu and Mn lines; a table of relative intensities with selected Al band-heads is given. Further measurements with a "steelometer" (a spectrometer with polarizing eye-piece for measuring line-intensities) show that the relative intensities of a pair of AlO band-heads is uniform in alloys of various compositions; a calibration curve for Cu based on this method, and the probable error of the method are given.—E. VAN S.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

15

B

Spectroscopic Determination of Carbon in Cast Irons and Steels. O. V. Blank and N. S. Svyatitskii. Henry Brutcher, Translation No. 2468, 7 pages. From *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 48, Apr. 1945, p. 269-272.

Discusses difficulties encountered in the selection of suitable carbon lines for the above. Presents results of determination using two different lines.

COMMON ELEMENTS

OPEN

MATERIALS INDEX

COMMON VARIABLES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

2ND LETTER

1ST AND 2ND LETTER

AUTHOR INDEX

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

15

5108 Spectroanalytical Determination of Carbon in Iron and Steel in a Spectrum Excited by a Low Potential Discharge. N. S. Sventitskii. Henry Brutcher, Translation 2538, 5 pages. From *Doklady Akademii Nauk* SSSR (Reports of the Academy of Sciences of the USSR), v. 50, 1945, p. 189-190.

Discusses the above and gives particulars of an a.c. arc circuit modified to produce a low-potential spark as a universal spectrum source. Comparative intensities of carbon lines are tabulated.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

15

13

On the Spectroscopic Determination of Nickel in Steel. N. Sventitski, M. Fedorov, and L. Khudominskayn. 10 pages. Henry Brutcher, Altadena, Calif. (Translation No. 1945.) From *Zavodskaya Laboratoriya*, v. 12, no. 6, 1946, p. 569-573.

Gives results of a study of fifty of the most intense nickel lines for the purpose of finding lines best suited for spectroscopic analysis of nickel-alloyed steels, especially steels with low nickel contents.

COMMON ELEMENTS

OPEN

MATERIALS INDEX

COMMON VARIABLES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

3RD AND 4TH ORDERS

2ND LETTER

1ST AND 2ND LETTER

AUTHOR INDEX

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY N. S. PA 17T57

USSR/Spectrum Analysis Jul 1947
Testing Procedures

"An Electric Device for Transferring Samples During Spectral Analysis," N. S. Sventitskiy, K. I. Taganov, State Optical Institute, 4 pp

"Zavodskaya Laboratoriya" No 7

Describes with diagrams, a new generator of an activated arc with alternating current for elstrical spark transfer of samples and for exciting the spectra.

17T57

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N. S. PA 24T92

USSR/Physics May/Jun 1947
Spectrography
Spectrochemical Analysis

"Spectral Determination of Some Metalloids," N. S. Sventitskiy, 6¼ pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XI, No 3

Well-illustrated article discussing the determination of phosphorous in steel, carbon in iron alloys and the determination of sulphur. The author seeks to present some concrete results for the determination of phosphorous, carbon, and sulphur. Submitted at the State Optical Institute. Written in connection with the All-Union Spectral Conference.

24T92

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

13

15

Carbon Detection by Means of the "Steeloscope." (In Russian.) N. S. Syrnitskii and K. I. Iaganov. *Factory Laboratory* (U.S.S.R.), v. 13, Apr. 1947, p. 434-437.

Describes determination or identification by means of a spectroscope with high energy of excitation which permits investigation of the doublet at 4267A.

COMMON ELEMENTS

OPEN

MATERIALS INDEX

COMMON VARIABLES INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

AUTHOR INDEX

1ST AND 2ND LETTER

3RD LETTER

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

S

21

DETERMINATION OF SILICON WITH A STEELOSCOPE, N.S. Sventitskii and M.F. Fedorov. (Zavodskaya Laboratoriya, 1947, vol 13, pp626-628: Chemical Abstracts, 1948, vol 42; July 10, col 4403). Details are given of an alternating current arc generator for use with steeloscopes for the determination of silicon in steel.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

15

*247. **An Electrical Device for the Transfer of Samples During Spectroscopic Analysis.** (In Russian.) H. S. Sventilskii and K. I. Taganov. *Factory Laboratory* (U.S.S.R.), v. 13, July 1947, p. 850-853.

Method and apparatus described are based on the principle of electrical erosion recently applied to machining in the U.S.S.R. A definite amount of the material of the specimen to be analyzed is transferred to a fixed electrode by electro-erosion, then the specimen electrode is replaced by another one like the fixed one. An arc is struck, and the time during which the characteristic lines of the element being determined are visible is considered to be proportional to the percentage composition. Gives circuit diagram of the apparatus and charts typical results.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

The Sorting of Aluminium Alloys with the Steeloscope. N. S. Svetlitsky (*Zavod. Lab.*, 1947, **13**, 1454-1459; *C. Abs.*, 1950, **44**, 4371). - [In Russian]. Comparison lines and operating conditions are given for determining Mg, Cu, Mn, Fe, and Si in Al alloys with an Fe or Cu counter-electrode and a triggered low-voltage A.C. arc.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

CA

Investigation of the activated alternating-current arc. I. S. Abramson and N. S. Sventitskii (Lebedev Inst. Phys., Moscow). *J. Tech. Phys.* (U.S.S.R.) 17, 43-52(1947) (in Russian).—Oscillograms were taken of the potential across and current through the gap of the Sventitskii-activated a.-c. arc. In arc-type operation (series inductance $L = 370\ \mu H$, blocking capacitance $C = 0.25\ \mu F$), the potential drop was approx. const. and equal to 40 v. The max. current was 10 amp. For spark-type operation the corresponding values were observed on a single spark which was used to trigger the sweep of an oscilloscope with a long-persistence screen. With $L = 70\ \mu H$ and $C = 8\ \mu F$, the potential drop was 20 v. and the max. current 75 amp. The spark discharge lasted about 80 microsec. The latter discharge was nonoscillatory, but oscillatory trains lasting 6 microsec. and having peak currents of 200 amp. were obtained by using $L = 10\ \mu H$ and $C = 8\ \mu F$. Current d. in the spark path was measured by observing the width of a single spark of known amperage at a given time. Values of $0.2\text{-}2.0 \times 10^8$ amp./sq. cm. were obtained for spark operation, and $5.6\text{-}7.5 \times 10^8$ amp./sq. cm. for arc operation. Changes in L affect the intensity ratios of Cu spark lines to Cu arc lines much more strongly than do changes in C, but increases in C noticeably diminish the intensities of NII lines. Cyrus Feldman

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

7

Spectral analysis by transference in the electric spark. N. S. Sventitskii and K. I. Taganov. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 12, 396-401(1948); cf. C.A. 42, 8095a.—The method consists in first allowing material from the alloy electrode to be transferred, through an elec. spark, to an auxiliary electrode, and then using the latter as the sample electrode in an elec. arc. The final detn. is made either by photometry of a line pair, as Cr 4254.3-Fe 4271.71 A. for Cr in steel, or by visual observation of the length of persistence of a line of the element. By the spark-transference method, the slopes of the calibration curves, log of the ratio of intensities against log concn., or time of persistence against concn., are steeper than by the direct method, i.e. the spark transference method, in both its variants, is more sensitive. The amt. of material transferred by the spark is a function of the spark gap, passing through a max. at about 0.5 mm. It increases with the length of sparking only up to a point. N. T.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N. S.

USSR/Metals - Aluminum Alloys, Analysis Dec 50

"Spectrum Analysis of Aluminum Alloys With Excitation of Spectra by an AC Arc," V. P. Borzov, N. S. Sventitskiy

"Zavod Lab" No 12, pp 1509-1511

Conducted expts to develop method for decreasing effect of arc on Al electrodes in cases when spectra are excited with activated arc, since otherwise dense layers of oxides are formed on electrodes, hampering discharge stability. Arc current was decreased to 2 a. Used ISP-22 spectrograph for expts. Describes all necessary modifications of arc generator.

182T97

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKY, N. S.

PA 172T58

USSR/Metals - Spectrography

Sep/Oct 50

"Spectral Determination of Carbon in Steels and Cast Iron," V. P. Borzov, O. S. Gramm, S. S. Rimlyand, N. S. Sventitsky, K. I. Taganov

"Iz Ak Nauk SSSR, Ser Fiz" Vol IXV, No 5, pp 611-617

Finds spectrograph of medium dispersion is sufficient. Best exciting method is hf spark.

PA 172T58

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

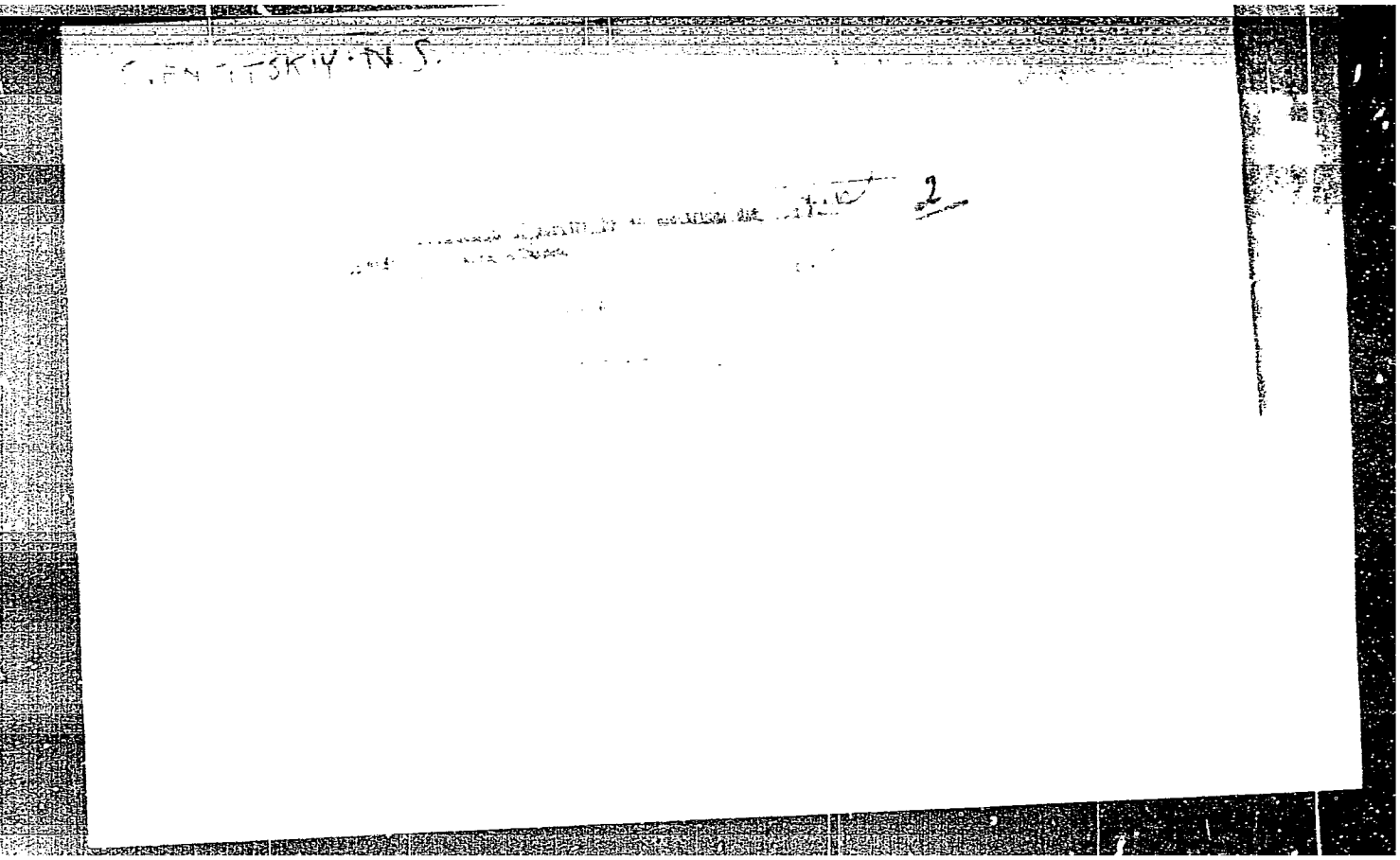
CA

7

Spectroscopic analysis of aluminum alloys with spectrum excitation by an alternating current arc. V. P. Borzov and N. S. Sventitskii. *Zavodskaya Lab.* 16, 1509-11(1950). The arc generator was modified by inclusion of an induction coil to aid the maintenance of a steady arc at low-current levels (1-2 amp.) and the standard reference electrode was a Cu cone-shaped rod. For detns. the following lines are suggested: Si, Si 2987.05-Al 3050.08 (1.4% error), or Si 2514.3-Al 2652.49 (1.6% error); Fe, Fe 2973.2-Al 3050.08 (2.5% error) or Fe 2973.2-Al 3050.08 (1.4% error); Zn, Zn 3345.0-Al 3050.08 (3.3% error); Mg, Mg 3332.2-Al 3050.08 (0.8%); and Mn, Mn 2933.1-Al 3050.08 (0.9% error). G. M. Kosolapoff

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N. S.

IZVESTIYA AKADEMII NAUK SERIYA FIZCHESKAYA.
Bulletin of the Academy of Sciences, Physics Series
March-April
Vol. 19, No. 2, 1955.
The Nineteenth All-Union Congress on Spectroscopy,
July 5-11, 1954,
Continued from No. 6, 1954 and No. 1, 1955.

Spectral determination of hydrogen in metals.
N. C. Gerasimova, T. F. Ivanova, N. S. Sventitskii,
G. P. Startsev, K. I. Taganavov, M. E. Trantovius,... 147

DJ/SMW/LFH/bt

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

GERASIMOVA, N.G.; IVANOVA, T.F.; SVENTITSKIY, N.S.; STARTSEV, G.P.; TAGANOV, K.I.; TRENTOVIUS, M.E.

Spectral determination of hydrogen in metals. Izv.AN SSSR.Ser fiz. 19 no.2:147-148 Mr-Ap '55. (MLRA 9:1)
(Tartu--Spectrum analysis--Congresses)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1264

Abstract: while the last method was found most effective for O and H. N and O were determined in an atmosphere of helium (700 and 500 mm Hg, respectively), while H was determined in air. For standards cast samples of Ti were used the N content of which had been determined chemically, and the O and H content -- by hot extraction. The following slit widths were used: 0.015 mm for N, 0.02 mm for O, and 0.07 mm for H. An exposure of one second was used for N with the following pairs: NII 3994, 995 A and TiI 3889, 954 A and TiI 3998, 640 A. In analysis for O the relative intensity of the lines OII 4705, 32 and OII 4596, 13 A and of the background was determined. In the case of H the darkening of the line H 6563 A was measured. The error in the determination of N is ±25%; of O, ±20-40% (as the energy of the discharge is increased, the intensity of the O-lines at first increases and then begins to drop off); and for H, ±8.8% for heat treated samples and ±15.5% for samples which have not been heat treated. For the determination of H in powdered Ti briquetted electrodes are used. Standard briquettes are prepared from titanium hydride and Cu powder. The error is ±10-13%.

Card 2/2

32-8-61/61

SVENTITSKIY, N. S.

RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

AUTHOR None Given

TITLE New Books. (Novyye knigi.- Russian)

PERIODICAL Zavodskaya Laboratoriya 1957, Vol 23, No 8, pp 1016-1016 (USSR)

ABSTRACT Methods of the chemical analysis of the mineral raw materials. 3 edition. Gosgeolteohizdat (State Geological-Technical Publishing House) 1957.

Analysis of mineral raw materials. Editor: Knipovich Yu.N. 2nd edition 1956, Goskhimizdat (State Chemical Publishing House).

Stadnikov G.L. Physical methods in the coal research.

Myshlyayeva V.V., Nagerova E.I. Accelerated methods of chemical analysis in the cementindustry.

Voskresenskiy P.I. Bases of the working technique in laboratories.

Luminescence analysis. Materials of the IVth conference on luminescence at Minsk June 20-25th, 1955.

Mosberg P.K. Radiographic Investigation of the fatigue process of the slightly carbonaceous steels.

Sventitskiy N.S., Shlepkova Z.I. Spectral analysis. Scientific-technical conference on spectral analysis. Minsk 1956.

32-8-61/61

CARD 1/3

...s and plants (text book).

...perties of fireproof metals.

...957. (State Publishing House for Engine-...ing).

...inovich A.N. Automatical control of steel hardness.

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

New Books.

32-8-61/61

Reports delivered by candidates competing for the title of candidate of technical sciences:

Gurvich, A.M. Chromography in preparatory luminophore-chemistry.
Zamanov P.Kh. Methods of the mercurimetric micro-detections of galogenides in the spirits.
Osherovich P.Kh. Application of ionites in phosphorus manure analyses.
Tananayeva A.N. New accelerated method of carbide analysis.
Bezuglyy V.D. Application of the polarographic method for the examination of medicines and half-finished products of the chemical-pharmaceutical industry.
Fedoseyev,P.N. New methods of quantitative determination of the content of C, H, N, S, Cl, Br, and J in organic substances.

AVAILABLE: Library of Congress.

CARD 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

PROKOF'YEV, Vladimir Konstantinovich; SVENTITSKIY, N.S., red.; FREGER, D.P., tekhn.red.

[Emission spectrum analysis in the U.S.S.R.; a survey] Emissionnyi spektral'nyi analiz v SSSR; obzor. Leningrad, Leningr. dom nauchn.-tekhn.propagandy, 1958. 34 p. (MIRA 12:6)
(Spectrum analysis)

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

24(7) PHASE I BOOK EXPLOITATION SOV/1700

Lvov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956. t. II: Atomnaya spektroskopiya (Materials of the 10th All-Union Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy) /Lvov/ Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Its: Fizicheskiy sbornik, vyp.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.); B.S. Neporent, Doctor of Physical and Mathematical Sciences; I.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; V.A. Fabrikant, Doctor of Physical and Mathematical Sciences; V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayskiy, Candidate of Physical and Technical Sciences; L.K. Klimovskaya, Candidate of Physical and Mathematical Sciences; V.S. Miliyanchuk (Deceased), Doctor of Physical and Mathematical Sciences; A.Ye. Glauberman, Doctor of Physical and Mathematical Sciences; Ed.: S.L. Gazer; Tech. Ed.: T.V. Saranyuk.

PURPOSE: This book is intended for scientists and researchers in the field of spectroscopy, as well as for technical personnel using spectrum analysis in various industries.

COVERAGE: This volume contains 177 scientific and technical studies of atomic spectrography presented at the 10th All-Union Conference on Spectroscopy in 1956. The studies were carried out by members of scientific and technical institutes and include extensive bibliographies of Soviet and other sources. The studies cover many phases of spectroscopy: spectra of rare earths, electromagnetic radiation, physicochemical methods for controlling uranium production, physics and technology of gas discharge, optics and spectroscopy, abnormal dispersion in metal vapors, spectroscopy and the combustion theory, spectrum analysis of ores and minerals, photographic methods for quantitative spectrum analysis of metals and alloys, spectral determination of the hydrogen content of metals by means of isotopes, tables, and atlases of spectral lines, spark spectrographic analysis, statistical study of variation in the parameters of calibration curves, determination of traces of metals, spectrum analysis in metallurgy, thermochemistry in metallurgy, and principles and practice of spectrochemical analysis.

Card 2/31

Sventitskiy, N.S., and K.I. Taganov. Studies on the Spectral Determination of Hydrogen in Metals 209

Sventitskiy, N.S., K.A. Sukhenko, O.B. Fal'kova, P.P. Galonov, K.I. Taganov, and N.S. Alpatov. Spectrum Analysis of Titanium, Molybdenum, and Their Alloys for Nitrogen, Hydrogen, and Oxygen 225

Aleksandrova, A.S., Ye.I. Vorontsov, and S.S. Rimlyand. Work With Pulse Generators 231

Rudelya, Ye.S. Some Aspects of the Entry of Sample Components Into the Discharge With Spark Excitation of Spectra 233

Rudelya, Ye.S. Nature of the Structure Effect in Spectrum Analysis of Metal Alloys 242

Grikit, I.A. Mechanism of the Entry of the Sample Component Into the Analytic Gap and Methods for Eliminating Alloy Structure Effect on the Results of Spectrum Analysis 244

Card 15/31

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N.S.

66356

SOV/81-59-19-67722

5.5310

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, pp 124 - 125 (USSR)

AUTHORS: Sventitskiy, N.S., Sukhenko, K.A., Fal'kova, O.B., Galonov, P.P., Taganov, K.I., Alpatov, M.S.

TITLE: The Spectral Analysis of Titanium, Molybdenum and Their Alloys for Nitrogen, Hydrogen and Oxygen

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1958, Nr 1(9), pp 225 - 231

ABSTRACT: The determination of 0.01 - 3% N in titanium is carried out at excitation of the spectrum by a low-voltage spark at a capacitance of 280 μ farad with an inductance equal to zero and with the application of a W-electrode of 6 mm in diameter sharpened to a rounded cone; spark gap 0.3 mm. The vacuum chamber of the light source is evacuated to 10^{-2} mm Hg and filled up with helium to a pressure of 700 mm Hg. The spectra are photographed on an ISP-51 spectrograph with a camera of F = 270 mm, a slit of 0.015 mm and an exposure of 1 sec on spectral plates of type II and III. The determination is carried out by the line N 3994.99 A being compared to Ti 3889.95 or Ti 3998.64 A. The mean arithmetic error of an individual determination is 25%. The possibility

Card 1/3

4

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

66356
SOV/81-59-19-67722

The Spectral Analysis of Titanium, Molybdenum and Their Alloys for Nitrogen, Hydrogen and Oxygen

with F = 1,300 mm at a slit of 0.07 mm on a panchromatic film with a sensitivity of 250 State Standard (GOST) units. A spectrograph with a camera of F = 270 mm can also be used. The blackening of the line H 6563.8 A shows a satisfactory dependence on the concentration without application of an inner standard. Every sample and standard is photographed on an ISP-51 spectrograph with a UF-85 camera with a cleaned surface. The preparation of samples and standards is carried out under the conditions of maximum cleanliness to avoid H-containing pollutions. The mean arithmetic error of an individual determination is ± 8.8%. In a similar way H is determined in Ti powder from which a briquet of 8 mm in diameter is prepared under a pressure of 160 atm. Samples of cast Ti serve as standards, to which equivalent H concentrations are ascribed based on powders of known composition. The error of analysis is ± 12%. The determination of N, H and O concentrations in molybdenum and its alloys is carried out under the same conditions as in Ti but the spectra are photographed from 2-4 pulses, in which case the sample serves as anode. In a low-voltage spark N is determined with a W-electrode; the line N 3995 is compared with the line W 3972 A; in the spectra of pulse discharge the same line is compared with the line Mo 3963.52 A. The mean arithmetic error for O and N is ± 25%.

Card 3/3

N. Sventitskiy

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

51-4-3-22/30

AUTHORS: Pedos, F.Z. and Sventitskiy, N.S.

TITLE: Excitation of Spectra by a Low-Voltage Pulse Discharge in Vacuum (Vozbuzhdeniye spektrov nizkovol'tnym impul'snym razryadom v vakuume.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.3, pp.407-409 (USSR)

ABSTRACT: The authors deal with excitation of spectra of metallic electrodes by discharges in vacuum. A principle of separate supply (Ref.3) is used in the circuit. A battery of capacitors of high capacitance charged to a comparatively low voltage of 200-300 V was used to produce discharges. The circuit used is shown in Fig.1a. The total capacitance was varied from 1 to 30000 μF and inductance - from 10 to 850 μH. In a vacuum of 10^{-4}-10^{-5} mm Hg pulse discharges occurred between copper electrodes separated by 0.5 mm. For discharges across bigger gaps (2-3 mm) an additional electrode (3, in Fig.1b) was used. The electrode 3 is connected to the anode and is separated by 0.2-0.5 mm from the cathode. The discharge starts in the gap 1 (Fig.1b) and then it occurs in the gap L (Fig.1b).

Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

51-4-3-22/30

Excitation of Spectra by a Low-Voltage Pulse Discharge in Vacuum

Graphite rods were used to make the additional electrode 3. Fig.2 shows copper spectra obtained by the vacuum discharge described above. Spectrum I was obtained by exposure to 5 pulse discharges in 10^{-4} mm Hg vacuum. Spectrum II was obtained by a single discharge in air, using the same circuit as was used to produce spectrum I; Spectrum III was produced by a 3.5 A a.c. arc in air. Fig.3 shows a small portion of Fig.2 for wavelengths from 2400 to 2500 Å. A large number of ionic lines is observed in the 2400-2600 Å region of the vacuum-discharge spectrum. In the vacuum discharge Cu I lines are weakened or disappear altogether, while Cu III lines are greatly strengthened. The 2486.5 (Fig.3) line described as an "air" line by Harrison (Ref.5) was observed in the vacuum-discharge spectrum. The 2370.5 line, which was also described as an "air" line by Harrison, was found both in the vacuum-discharge and in the air-discharge spectra. Variations of the discharge-circuit parameters make it possible to vary the conditions of spectrum excitation: e.g. results similar to those produced by condensed

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

51-4-3-22/30

Excitation of Spectra by a Low-Voltage Pulse Discharge in Vacuum.

sparks may be obtained. There are 3 figures and 5 references, of which 4 are American and 1 Soviet.

ASSOCIATION: State Optics Institute imeni S.I. Vavilov. (Gosudarstvennyy opticheskiy institut im. S.I. Vavilova.)

SUBMITTED: June 28, 1957.

1. Metallic electrodes--Excitation spectra

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

56354

SOV/81-59-19-67720

The Spectral Analysis of Uranium and Its Compounds for Admixtures by Means of Diffusion-Convection Transfer

transfer. Graphite rods of square 7 x 7 mm cross section serve as electrodes; in the lower-electrode a hollow is made for the sample and the graphite cover (depth of the channel 9 mm, diameter 4 mm). The upper electrode (also 7 x 7 mm) has on the butt a hole which in the center is 1 mm deep. The U_3O_8 sample (200 mg for small admixture contents and 50 mg for higher ones) is mixed with 2% of a carrier (AgCl or NH_4Cl) and placed into the channel of the graphite electrode, which is closed by a cover with an opening of 0.8 mm in diameter. The auxiliary arc for the incandescence of the graphite electrode burns on its ribs at 10 a for 1 min. Later on the electrode with the sample is replaced by a sharpened graphite rod and the spectra are photographed during burning of the transfer products in the a-c arc on a KSA-1 autocollimation spectrograph at a slit width of 0.02 mm; for isoortho-plates with a sensitivity of 600 according to X and D the duration of exposure is 1 minute at 8 a. The determination of the admixture is carried out according to the last lines; the lines of Mn, which is introduced in the form of nitrate to a concentration of 1%, serve as inner standard. Synthetic standards are prepared on the base of U_3O_8 of known chemical composition. The method has a high sensitivity: the Cd lines are detected at a concentration of $< 5 \cdot 10^{-6}$%, B lines at a concentration of 10^{-5}%.

Card 2/2

N. Sventitskiy

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

66352
SOV/81-59-19-67683

18.8400, 5.5310

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 117 (USSR)

AUTHORS: Sventitskiy, N.S., Taganov, K.I.

TITLE: Some Investigations on the Spectral Determination of Hydrogen in Metals

PERIODICAL: Fiz. sb. L'vovsk. un-t, 1958, Nr 4(9), pp 209 - 212

ABSTRACT: The conditions have been studied for changes in the concentration sensitivity (CS) of the spectral determination of H in metals at the excitation of the spectrum by a low-voltage pulse discharge. It has been established that the value of CS has a maximum at 100 μ henry. An increase in the ohmic resistance sharply reduces CS which at 6 ohms vanishes completely. An increase in the charge voltage of the capacitor from 100 to 200 v increases CS; an increase in the capacitance of the discharge circuit from 300 to 1,000 μ farad increases it two times. At high contents of H, in the measuring of the complete intensity of Hα based on the area of the contour, CS is by 50% higher than in the comparison of the intensities based on the maxima. The possibility is considered of reproducing various intensities of H-lines according to artificial samples, which an equivalent H content can be given in

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SVENTITSKIY, N.S.; SUKHENKO, K.A.; FAL'KOVA, O.B.; GALONOV, P.P.; TAGANOV, K.I.; ALPATOV, M.S.

Spectrum analysis of titanium, molybdenum, and their alloys for nitrogen, hydrogen, and oxygen. Fiz.sbor. no.4:225-231 '58. (MIRA 12:5)

1. Vsesoyuznyy ordena Lenina nauchno-issledovatel'skiy institut aviatsionnykh materialov.
(Gases in metals) (Spectrum analysis)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

KISELEVA, N.I.; SVENTITSKIY, N.S.

Spectrum determination of copper in binary Ag-Cu alloys. Inzh.-fiz. zhur.no.5:87-91 My '58. (MIRA 12:1)
(Silver-copper alloys--Spectra)
(Copper--Analysis)

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/51-5-6-14/19

AUTHORS: Pedos, F.Z. and Sventitskiy, N.S.

TITLE: Excitation of Spectra in the Vacuum Region by Means of a Low-Pressure Pulse Discharge (Vozbuzhdeniye spektrov v vakuumnoy oblasti impul'snym razryadom nizkogo napryazheniya)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 6, pp 706-707 (USSR)

ABSTRACT: A low-pressure pulse discharge described in Ref 1 may be used to excite spectra in the extreme ultraviolet. The source of light which is used to excite such spectra consists of a brass chamber which contains electrodes (1, 2 in a figure on p 707) in the form of rods of 6-10 mm diameter. These electrodes are placed one above the other. The lower electrode holder (3) is fixed rigidly. The upper electrode may be rotated about a vertical axis. In contrast to the arrangement described in Ref 1 the auxiliary carbon electrode (5) was placed at the side of the upper electrode 1. The axis of the upper electrode was slightly displaced with respect to the axis of its support. By rotation of this support the gap between the auxiliary electrode and the upper electrode could be varied. The electrode ends were hemispherical and the separation between them was 1.5 mm. Pulses were produced by means of a generator described in Ref 1 which had additional equipment for automatic repetition of a large number of pulses. Pulses were

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/51-5-6-14/19

Excitation of Spectra in the Vacuum Region by Means of a Low-Pressure Pulse Discharge

produced from 8000 μF capacitors charged to 280 volts. Spectra were photographed using a DFS-6 spectrometer with a concave diffraction grating. 250 pulses were necessary to photograph one spectrum. Up to 1000 pulses could be produced without replacement of the electrodes. The authors photographed spectra of iron, copper, carbon, magnesium, aluminium, titanium, tungsten and all other elements. They found multiply ionized lines (such as C III, C IV, O II, O V, Ti II, Ti III, Ti IV, etc.) in these spectra. Sufficiently intense lines were produced down to 180 Å. O.N. Druzhkov took part in experiments. There are 1 figure and 2 Soviet references.

SUBMITTED: June 11, 1958

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

PHASE I BOOK EXPLOITATION SOV/4959

Ural'skoye soveshchaniye po spektrosk

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

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

Eds.: Aron Borisovich Shayevich and Gennadiy Pavlovich Sherrychev; Tech. Ed.: N. M. Matlyuk.

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

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

Zolotukhin, G. Ye. Investigation of the Interaction of the Components of an Alloy on the Degree of Ionization of Atoms 25

Alaskovskiy, Yu. M. Some Distribution Characteristics of Particles in an A-C Arc 29

Zolotukhin, G. Ye. Investigation of Evaporation Kinetics of Oxidizing Metallic Electrodes of an Arc 36

Sokolov, A. V., G. I. Kharus, and V. P. Shirokovskiy. Double Refraction of Uniaxial Semiconductor Crystals 39

Buravlev, Yu. M. Problem of the Entry of the Probe Material Into the Radiating Cloud During the Spectral Analysis of Steel 42

Mal'tsev, M. G., and K. I. Tagunov. Application of Contact Electric Spark Transfer for Eliminating the Effect of Composition, Structure, and Mass of Samples During the Spectral Analysis of Certain Alloys 50

Buravlev, Yu. M., G. P. Neyumina, and V. I. Ustinova. Investigation of the Effect of Structure on the Spectral Analysis Results of Structural Steel 56

Buravlev, Yu. M., V. I. Ustinova, and D. Ye. Shaykina. Effect of Tungsten on the Results of the Spectral Analysis of High-Speed Cutting Steel 61

Buyanov, N. V., S. L. Zubkovskiy, G. V. Kovalenko, V. F. Korotkov, and V. H. Lindstrem. Spectral Analysis of Steel With a Modernized PES-1 Instrument 69

Sventitskiy, N. S. Spectral Analysis of Gases Contained in Metals 70

Shayevich, A. B. Spectral Analysis of Multicomponent Systems With a High and Varying Content of Components 79

Shayevich, A. B., M. A. Feropalkina, and N. A. Kobrina. Spectral Analysis of 45% and 75% Ferrosilicon 87

Kalinskiy, Ya. M., A. B. Shayevich, V. V. Bugrina, N. I. Chabanenko, and N. A. Feropalkina. Spectral Analysis of Ferroniobium, Ferrotitanium, and Titanium Concentrate 91

Kozlova, A. V. Role of Internal Standard in the Spectral Analysis of Various Ferroalloys 98

Kalinskiy, Ya. M., V. V. Bugrina, and A. K. Tumanov. Spectral Analysis of Chrome-Base Alloys 105

Lobova, L. D. Spectral Methods of Analyzing Products of the Magnesium and Titanium Industry 110

Fomina, O. A. Application of Spectral Analysis at the Severskiy Metallurgical Plant 112

Gavrilov, G. I., and L. G. Soshneva. Spectral Analysis at the "Uralsel'mash" Plant 114

SVENTITSKIY, N.S.

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/51-6-6-23/34

24(7)

AUTHORS: Pedos, F.Z., Sventitskiy, N.S. and Shlepkova, Z.I.

TITLE: A Low-Voltage Pulse Discharge in Vacuo for Production of Spectra (Nizkovol'tnyy impul'snyy razryad v vakuume dlya polucheniya spektrov)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 6, Nr 6, pp 815-817 (USSR)

ABSTRACT: The authors describe several variants of a low-voltage pulse source working in vacuo. One variant is shown in Fig 1A where 1 and 2 are the electrodes and 3 is a porcelain spacer. This source produces, apart from the electrode spectra, also the spectrum of the porcelain spacer. Using an auxiliary electrode (Figs 1B and 1C) it was possible to produce a pulse discharge at inter-electrode separations greater than 5 mm without the porcelain spacer. The variant B is convenient when one of the electrodes has a large flat surface; if both electrodes are of the same diameter then the variant shown in Fig 1C is recommended. The auxiliary electrode 4 may be a carbon or a metal one. Experiments were carried out in vacuo of 10^{-4}-10^{-5} torr and pulses were produced by a bank of capacitors with 5000-50 000 μF capacitance. The discharge always started near the auxiliary electrode 4 and then jumped over to the gap between the electrodes 1 and 2. The energy was lost chiefly between the main electrodes. Best results were obtained by using multiple pulses (100-200 times) of comparatively low intensity (using only 5000-8000 μF).

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/51-6-6-23/34

A Low-Voltage Pulse Discharge in Vacuo for Production of Spectra

The pulse generator circuit is shown in Fig 2; it could be set to produce automatically the required number of pulse and then to switch itself off. Comparison of the spectra obtained in one of the ways described above in the visible, ultraviolet and far ultraviolet regions with the spectra obtained by pulse discharges in air shows that under vacuum-pulse conditions the background between copper electrodes is smaller, the resonance lines Cu I 3247 and Cu I 3274 Å are not self-reversed and the lines Cu III and Cu II are more intense. Spectra excited by pulse discharges in vacuo and recorded by means of a DFS-6 spectrograph showed that multiply-ionized atoms were produced. There are 2 figures and 5 references, 3 of which are Soviet and 2 English.

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

06574

SOV/170-59-9-15/18

24(3,7)

AUTHORS: Kiselevskiy, L.I., Sventitskiy, N.S.

TITLE: On the Role of Polarity in the Entry of Material of Electrodes Into a Light Source During Spectral Analysis

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 9, pp 106-110 (USSR)

ABSTRACT: The effect of polarity of electrodes manifests itself in spectral analysis [Refs 4-11]. The amount of erosion of the cathode may exceed that of the anode by over 20 times. The difference in erosion is seen in photos of traces of damage suffered by three samples which served as anodes (the upper part) and as cathodes (the lower part); they are different both in dimensions and appearance. The authors assume that the reason for this consists in the fact that the mechanism of the entry of electrode material into the light source during electric arc functioning is different for the cathode and anode. The material of the cathode enters the inter-electrode gap as a result of processes of explosive character, which follow the bombardment of the electrode surface by positively charged ions and the rapid increase in the density of the current in the initial phase of the flash. The anode, however, is subjected to the action of electrons whose

Car

Card 1/2

00513R001654110017-5

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

24(7) SOV/48-23-9-19/57

AUTHORS: Sventitskiy, N. S., Taganov, K. I.

TITLE: On Spectroscopic Investigations of the Electro-erosional Properties of Oxygen-containing Titanium

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1096-1097 (USSR)

ABSTRACT: The investigation of the electroerosive distortion of metals and alloys may be carried out either directly from the discharge spectrum as also from the spectrum of the transfer products which settle on the carrier electrode. The authors investigated titanium containing 0.12 to 2.32% O. In both cases it was, however, possible to estimate the erosion of the samples according to the line intensity of titanium. In the case of a lack of contacts between the electrodes in the spark and in the alternating current arc, a reduction of transfer products with an increase of the oxygen content in titanium was observed. However, in the case of contact spark discharges an intensification of transfer is observed in titanium with an increase in the oxygen content, which reduces the resistivity to erosion. From the relation between the intensity of the titanium lines and the oxygen concentration only oxygen concentration can normally be evaluated, but here the possibility

Card 1/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/48-23-9-19/57

On Spectroscopic Investigations of the Electro-erosional Properties of Oxygen-containing Titanium

offers itself spectroscopically evaluating the physico-chemical properties of titanium from its electroerosive behavior. Experiments were carried out for the purpose of evaluating the influence exercised by polarity in contact spark discharges upon the titanium transfer to the carrying copper electrode in air and in carbon tetrachloride. The ratio between the line intensities of titanium of the transfer products from the cathode and those from the anode I_-/I_+ amounted to 0.8 in air for 0.12% O, and to 0.5 for 2.32% O. In carbon tetrachloride the corresponding values were 2.0 and 1.6 respectively. Thus, the destruction in air is greater on the anode, and in carbon tetrachloride in the cathode. If the sample contains calcium, this effect is exactly reversed. Moreover, the possibility arises of investigating oxygen-containing titanium as to its thermoelectrical properties spectroscopically, as a linear dependence between the oxygen content of titanium and its thermo-current exists.

Card 2/2

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/48-23-9-29/57

24(7)

AUTHORS: Sukhenko, K. A., Grigorova, V. S., Lindstrem, I. S., Sventitskiy, N. S., Galonov, P. P.

TITLE: The Determination of Oxygen in Technical Titanium by Means of the Spectral Method

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1116 - 1118 (USSR)

ABSTRACT: In the introduction mention is made of the papers published in recent years on the determination of gases in metals in general, and especially on the determination of oxygen in titanium. (Refs 1-7). A pair of lines of oxygen and argon is given, by means of which the concentration of oxygen in titanium was determined within a range of 0.035 - 0.56%. Already in another paper (Ref 7) it was shown that the influence of "third" elements is lacking, and it is possible by this method to determine the oxygen content with an accuracy equaling that of vacuum melts or of bromine reductions. In the case of the experiments carried out here, titanium standards with an oxygen content of 0.01 - 2.0% were produced, in which case titanium-sponge was mixed with TiO_2 in appropriate ratios. The electrodes

Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

The Determination of Oxygen in Technical Titanium by Means of the Spectral Method

SOV/48-23-9-29/57

were re-melted from these mixtures in a helium atmosphere and in a vacuum. The following investigations were carried out by means of these standards: The wear of the sample surface by the discharge, the influence of vacuum annealing on the concentration-sensitivity of the oxygen lines, and the selection of the most favorable conditions for the excitation of the oxygen lines. During the experiments the electrodes were in a special container, in which a pressure of 10^{-2} torr was maintained, and the samples were connected as cathodes. The anode was of carbon. In the case of pulsed discharges, practically no concentration sensitivity was found, only in connection with a previous preparation of the samples was it possible to prove the concentration-dependence of two lines of OI and OII suggested by N. G. Isayev for the spectral analysis. In the course of further experiments with spark discharges in helium at a pressure near that of the atmosphere, a dependence of line intensities on oxygen concentration was found to exist after the samples had previously been prepared by pulsed discharges; however, this dependence is so insignificant that it is not suited for a quantitative analysis. Ex-

Card 2/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

The Determination of Oxygen in Technical Titanium by Means of the Spectral Method SOV/48-23-9-29/57

periments concerning the influence of annealing upon line intensities showed that the latter are independent of annealing. Experiments concerning the most favorable selection of the light source showed that low-voltage spark discharges are suited best. Figure 3 shows a diagram for the determination of oxygen in technical titanium according to the intensity of an oxygen line. This diagram was obtained by means of a low-voltage spark light source. Further investigations showed the usefulness of the DG-1-type generator for low-voltage spark discharges. There are 3 figures and 7 references, 2 of which are Soviet.

Card 3/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

SOV/48-23-9-30/57

24(7)

AUTHORS: Sventitskiy, N. S., Taganov, K. I., Shlepkova, Z. I.

TITLE: Some Characteristic Features of the Spectroscopical Determination of Oxygen in Titanium

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 9, pp 1118 - 1120 (USSR)

ABSTRACT: In the introduction the low degree of dependence of line intensities on oxygen concentration in titanium is pointed out. The extraction of oxygen and following spectral analysis of the gas mixture would be a more exact method, but this requires the application of platinum troughs and the development of analysis methods in which it is possible to carry out extraction of the gases and excitation of their spectra simultaneously. The low concentration-sensitivity in titanium is assumed to be due to the stability of the titanium oxides which are already present in the alloys or are formed during the discharge. For the purpose of checking the correctness of this assumption, experiments were made with copper powder containing TiO_2 in a concentration of 0.5-5%, and by using various light sources. The experiments showed that the highest intensity

Card 1/3

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"

"APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5

ratio I_{TiII}/I_{CuII} is obtained by pulsed discharges. Similar experiments were carried out with ZrO_2, and it could be seen from both results that in the case of pulsed discharges and of sparks, the bound oxygen must enter into the discharge cloud of the light source. Experiments on metallic titanium having an oxygen content of 0.33 - 0.80% are then discussed, which were carried out with pulsed discharges and high-frequency sparks. Again, the line intensities were found to depend only little on the oxygen content. Experiments carried out on technical titanium containing 0.12- 2% oxygen showed a considerable decrease of the concentration sensitivity of the lines. Comparative investigations were carried out on samples with calcium, the Ca-concentration of which varied within the range of 0.30 - 0.48% parallel to that of oxygen. It was found that after high-frequency sparks had been acting for four minutes in hydrogen at normal pressure, the line intensity and the concentration sensitivity increase considerably. Finally, it is found that the oxygen spectrum is sufficiently well excited by pulsed discharges and other light sources, and that the

APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001654110017-5"