

ACCESSION NR: AP4018393

S/0120/64/000/001/0199/0200

AUTHOR: Karasik, A. S.; Shafiyev, A. I.

TITLE: Counting-rate characteristics of CO sub 2 counters

SOURCE: Pribory* i tekhnika eksperimenta, no. 1, 1964, 199-200

TOPIC TAGS: carbon dioxide counter, counter, particle counter, counting rate, counting rate characteristic, isotope study

ABSTRACT: Results of an investigation of counting-rate-vs.-voltage characteristics are reported of these Soviet-make counters: SBS-5 with an external graphite cathode, MS-6 with a copper cathode, and SBM-7 with a stainless-steel cathode. The counters were filled with CO₂ at 50-660 torr with a quenching admixture of ethyl-alcohol vapor at 15 torr. With no external quenching, satisfactory counting-rate characteristics were obtained at the end of the proportional region and in the limited-proportional region up to the beginning of the Geiger region

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ACCESSION NR: AP4018393

(table supplied). The plateau was found to extend within 100-150 v with a 3 or 5% slope per 100 v. The SBS-5 counter exhibited a better plateau, longer for higher pressures. The plateau of the SBM-7 counter disappears at pressures over 360 torr. In the Geiger region, the plateau vanishes because of a sharp increase in the multiple tube counts. A few experiments with an external quenching circuit are also reported. Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Permskiy gosudarstvennyy universitet (Perm' State University)

SUBMITTED: 25Jan63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: NS

NO REF SOV: 003

OTHER: 004

Card 2/2

KARASIK, A.S.; SHAFIYEV, A.I.

Using cyclohexane vapors in internally filled counters.
Trudy po khim.i khim.tekh. no.1:174-176 '64.

(MIRA 18:12)

ACC NR: AP7012430

SOURCE CODE: UR/0075/66/021/009/1107/1112

AUTHOR: Gabov, N. I.; Shafiyev, A. I. -- Shafiev, A. I.

ORG: Perm' State University im. A. M. Gor'kiy (Permskiy gosudarstvennyy universitet)

TITLE: Chromatographic separation on paper of alkylphosphates and alkylphosphites

SOURCE: Zhurnal analiticheskoy khimii, v. 21, no. 9, 1966, 1107-1112

TOPIC TAGS: paper chromatography, phosphoric acid, phosphorous acid

SUB CODE: 07

ABSTRACT: The authors investigated solvents with the best separatory capacity for paper chromatography of a mixture of alkyl esters of phosphoric and phosphorous acids, of the composition $ROPO_2H_2$, $(RO)_2POH$, $(RO)_3P$, $ROPO_3H_2$, $(RO)_2PO_2H$, and $(RO)_3PO$. In each individual case, one of the following radicals served as alkyl groups: CH_3 , C_2H_5 , $n-C_3H_7$, and $n-C_4H_9$. Instead of monoalkyl- and dialkylphosphoric acids and monoalkylphosphorous acids, the acid chloride were used, which hydrolysed with the water present in the solvent, into the corresponding acids. Orig. art. has: 3 tables. [JPRS: 40,422]

Card 1/1

UDC: 543.544
0932 1376

FEDORCHENKO, I.M.; CHAYKA, B.I.; NEVEL'SHTEYN, Ya.G.; SHAPORENKO, M.A.;
BARBANEL, Ya.Ye.

Comparative testing of ceramic metal piston rings on tractor engines.
Porosh.met. 4 no.5:92-97 S.O '64. (MIRA 18:10)

1. Institut problem materialovedeniya AN UkrSSR i Spetsial'noye
konstruktorskoye takhnologicheskoye byuro Odesskogo zavoda
zapasnykh chastey.

Shafiyev, B. N.

AID P - 2094

Subject : USSR/Mining

Card 1/1 Pub. 78 - 7/24

Authors : Askerov, M. G., Shafiyev, B. N., Makushkin, A. G. and Popova, N. V.

Title : Ways of improving well cementing in major overhauls

Periodical: Neft. khoz., v.33, no.4, 35-39, Ap 1955

Abstract : Dependent upon the condition of the well whose walls have been damaged and require tightening and sealing of the damaged places, different amounts of cement are necessary. The coefficient of absorbing capacity, the coefficient of permeability, the kind and size of fissures and the amount and pressure of the water flow into the well will determine the amount of cement mixture to be pumped, the pressures to be applied, and also the cementing methods to be used. Charts, diagrams.

Institution: None

Submitted : No date

AKOPOV, R.Ya., kand. ekon. nauk, dots.; BASYUK, T.L., doktor ekon. nauk, prof.; BIRMAN, A.M., doktor ekon. nauk, prof.; GRIGOR'YEV, A.Ye., doktor ekon. nauk, prof.; DOKUKIN, V.I., prof.; IKONNIKOV, V.V., prof.; KONDRASHEV, D.D., doktor ekon. nauk; KURSKIY, A.D., doktor ekon. nauk; LOKSHIN, E.Yu., doktor ekon. nauk, prof.; MALYY, I.G., kand. ekon. nauk, dots.; PERVUSHIN, S.P., kand. ekon. nauk; PLOTNIKOV, K.N., TYAPKIN, N.K., kand. ekon. nauk; FILIMONOV, N.P., kand. ekon. nauk; ~~SHAFIYEV, K.N.~~, doktor ekon. nauk, prof.; BAKOVETSKIY, O., red.; KOKOSHKINA, I., mladshiy red.; MOSKVINA, R., tekhn. red.

[Economics; communist means of production] Politicheskaya ekonomiya; kommunisticheskiy sposob proizvodstva. Uchebnik 2., perer. i dop. izd. Moskva, Sotsekgiz, 1963. 599 p.

(MIRA 16:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Plotnikov).
(Economics) (Communism)

38015. SHAFIYEV, M. KH.

ISSLYEDOVANIYE V OBLASTI PIROLIZA ORGANICHYESKIKH SOYEDINYEVIY
FOSFORA. TRUDY SAMARKANDSK. GOS. OB" YEDIN. PYED I UCHITTEL.
IN-TA I N COR'KOCO. T. VI, 1948, S. 33-36-BIBLIOGR 5 NAZV.

SHAFIYEV, R.A.

Modification of the method of tangent hyperbolas. Dokl. AN Azerb. SSR 19
no.1:3-8 '63. (MIRA 16:4)

1. Institut matematiki i mekhaniki AN AzSSR. Predstavleno akademikom
AN AzSSR Z.I.Khalilovym.
(Hyperbola)

SHAFIYEV, R.A.

Method of tangent hyperbolas. Dokl. AN SSSR 149 no.4:788-791
Ap '63. (MIRA 16:3)

1. Institut matematiki i mekhaniki AN AzerSSR. Predstavleno akademikom
A.N.Kolmogorovym.
(Operators (Mathematics)) (Banach spaces)

SHAFIYEV, R.A. (Baku)

Modification of Chebyshev's method. Zhur. vych. mat. i mat. fiz.
3 no.5:950-953 S-0 '63. (MIRA 16:11)

SHAFIYEV, R.A.

An iterative process for a nonlinear operator equation. Dokl. AN
Azerb. SSR 19 no.4:3-9 '63. (MIRA 16:12)

1. Institut matematiki i mekhaniki Azerbaydzhanskoy SSSR.
Predstavleno akademikom AN Azerbaydzhanskoy SSSR Z.I.Khalilovym.

L 1630-66 EWT(d) IJP(c)

ACCESSION NR: AP5022081

UR/0249/65/021/00/0008/0012

AUTHORS: Shafiyev, R. A.; Kerimova, D. N.

30
217
B

TITLE: Approximate solution of a nonlinear problem in filtration theory

SOURCE: AN AzerbSSR. Doklady, v. 21, no. 5, 1965, 8-12

TOPIC TAGS: approximation calculation, differential equation

ABSTRACT: The authors consider

$$\begin{cases} \frac{d^2u}{dx^2} = f\left(x, u, \frac{du}{dx}, v\right) \\ \frac{dv}{dx} = g\left(x, u, \frac{du}{dx}, v\right) \end{cases} \quad (1)$$

subject to
and

$$u(a) = u(b) = 0 \quad (2)$$

$$v(a) = 0 \quad (3)$$

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L 1630-66

ACCESSION NR: AP5022081

They obtain an approximate solution of this problem using the Newton-Kantorovich method, establish differentiability properties of the operator involved in this method, and obtain error estimates. Orig. art. has: 14 formulas. 5

ASSOCIATION: Institut matematiki, Akademii nauk, Azerbaydzhanskoy SSR (Institute of Mathematics, Academy of Sciences, Azerbaidzhan SSR) 44.55


SUBMITTED: 24Jul64

ENCL: 00

SUB CODE: MA

NO REF SOV: 007

OTHER: 001

Card 2/2 

ACCESSION NR: AP4012007

S/0208/64/004/001/0139/0143

AUTHOR: Shafiyev, R. A. (Baku)

TITLE: Iterative processes

SOURCE: Zhurnal vyshisl. matem. i matem. fiz., v. 4, no. 1, 1964, 139-143

TOPIC TAGS: iterative process, nonlinear operator, Banach space, tangent hyperbola, convergence, approximation, recursion relation

ABSTRACT: The author studies

$$P(x) = 0 \quad (1)$$

where $P(x)$ is a nonlinear operator acting from the sphere $D(x_0, R)$ of the Banach space X into the Banach space Y . Other authors have obtained conditions for convergence of iterative schemes for the solution of (1) under the assumption, among others, that there is a constant bounding the norm of the second derivative in some neighborhood of the initial approximation x_0 . In the present work the author replaces this constant by a number which estimates the norm of $P''(x_0)$. He refines the bounds of applicability of the given processes. Orig. art. has: 19 formulas.
Card 1/2

ACCESSION NR: APL012007

ASSOCIATION: none

SUBMITTED: 10Nov62

SUB CODE: MM

DATE ACQ: 14Feb64

NO REF SOV: 006

ENCL: 00

OTHER: 001

Card 2/2

SHAFIYEVA, S.B.

Hydrochemical characteristics of waters in the Sub-Kirmaki series of the Buzovny-Mashtagi oil field in connection with the use of secondary recovery methods. Azerb. neft. khoz. 39 no.10:32-34 0 '60.
(MIRA 13:11)

(Azerbaijan--Oil field' brines)

SHAFIYEVA, S.B.

Hydrogeology of the sub-Kirmaki series in the Buzovny-Mashtagi
oil field. Azerb.neft.khoz. 41 no.2:4-6 F '62. (MIRA 15:8)
(Apsheron Peninsula--Oil field brines)

S/058/61/000/009/027/050
A001/A101

AUTHORS: Efendiyev, G.A., Shafi-zade, R.B.

TITLE: Application of kinematic electron-diffraction examination to investigations of phase formation in Bi-Se double layers

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1961, 191, abstract 9E63
("Dokl. AN AzerbSSR, 1960, v. 16, no. 9, 833-836, Azerb. summary)

TEXT: The authors developed a method of taking electron-diffraction photographs on a moving film in the electron-diffraction analyzer $\Theta\Gamma(EG)$ for studying phase transformations proceeding when the specimen is heated. A Bi-Se alloy was investigated. It is shown that in this alloy the phase Bi_2Se_3 is formed during settling and a further annealing does not change the phase composition.

[Abstracter's note: Complete translation]

Card 1/1

24,7200

28075
S/181/61/003/009/007/039
B102/B104

+

AUTHORS: Efendiyev, G. A., and Shafizade, R. B.

TITLE: Electron-diffraction study of phase formation in Bi-Se double layers

PERIODICAL: Fizika tverdogo tela, v. 3, no. 9, 1961, 2564 - 2566

TEXT: The method of kinematic electron diffraction (A. Boettcher, Thun. Optik, 11, 22, 1954) was applied to study Bi-Se double layers. An "electronograph" of the type ЭГ(EG) made it possible to take pictures also at higher temperatures, and, thus, to record phase formation and phase transitions on the photographic plate. Bi-Se layers were decided upon as test specimens because of their particular interest in semiconductor engineering. The purpose of the investigation was to determine the succession of phase formations between the two layers, in addition to determining the nature of the phases and the conditions for phase formation and phase transition. The specimens were prepared by sputtering the two components onto each other in vacuum (10^{-5} mm Hg). The total thickness ranged between 100 and 400 Å. Three specimens were prepared:
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Electron-diffraction study...

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S/181/61/003/009/007/039
B102/B104

(1) Bi on Se, (2) Se on Bi, and (3) Bi + Se simultaneously. The following results were obtained: (1) Bi on amorphous selenium. The electron diffraction picture displays four diffuse lines (4.48, 3.05, 2.08, and 1.72 Å), all of which, except for the first one, derive from Bi_2Se_3 . If the specimens are heated for 1 min at 200°C the lines become sharply defined, and the one mentioned first vanishes, which means that recrystallization takes place without phase change. If Bi condenses on crystalline Se, Bi_2Se_3 will likewise result, but not all of the Bi and Se undergoes reaction. (2) If Se condenses on Bi, no Bi_2Se_3 will form without heating. It will form, however, on a 15-min heating at 100°C. The fact that the phase formation depends on the succession in which the components are sputtered is explained by the circumstance that Bi atoms reach the layer with a higher kinetic energy than Se atoms, and thus have the energy required for the Bi_2Se_3 formation. (3) The simultaneous sputtering of Bi + Se by Vekshinskiy's method gave rise to Bi_2Se_3 only, and the BiSe phase would not arise even if the concentration of components

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S/181/61/003/009/007/039

B102/B104

Electron-diffraction study...

corresponded to this phase. This selectivity in phase formation was observed in all the experiments. To establish the phase transitions, kinematic electron-diffraction pictures were examined for 1.5 hr under heating from room temperature to 400°C. Only Bi₂Se₃ was found to form at first, and 20-min heating at 400°C was not accompanied by a phase change. BiSe lines are not allowed to appear until a further 40-min heating at about 400°C. 1.5-hr heating at 400°C is required for Bi to arise as the third phase, so that Bi₂Se₃, BiSe, and Bi are present

simultaneously. The following values were obtained for the shortest interatomic distances in the layer structure (D_{3d}⁵ - R_{3m} group):

Se-Se = 3.30 kX, Bi-SeI = 3.07 kX, Bi-SeII = 2.99 kX. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Institut fiziki AN AzSSR Baku (Institute of Physics of the AS Azerbaydzhanskaya SSR, Baku)

SUBMITTED: March 6, 1961

Card 3/3

S/120/63/000/001/037/072
E032/E314

AUTHORS: Efendiyev, G.A. and Shafi-Zade, R.B.
TITLE: Kinematic attachment for the $\Sigma\Gamma$ (EG) electron-
diffraction apparatus
PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963,
142 - 145

TEXT: An attachment for the horizontal electron-diffraction apparatus described by Vaynshteyn and Pinsker (Elektronograf dlya strukturnykh issledovaniy (Electron diffraction in structural studies) 1958, In-t informatsii.) is reported. It may be used to investigate the phase-formation and phase-transformation in the Cu-Se, Bi-Se and Ni-Se systems. The principle of the device is shown in Fig. 1, in which 1 is the electron beam, 2 object, 3 diffraction cone, 4 horizontal slit, 5 screen and 6 a photographic film moving in the direction indicated by the arrow. It is clear that if there are changes in the properties of the object the appearance of the lines recorded on the moving film will change with time and thus a continuous record of the changes occurring in the object may be deduced.. The results obtained with
Card 1/2

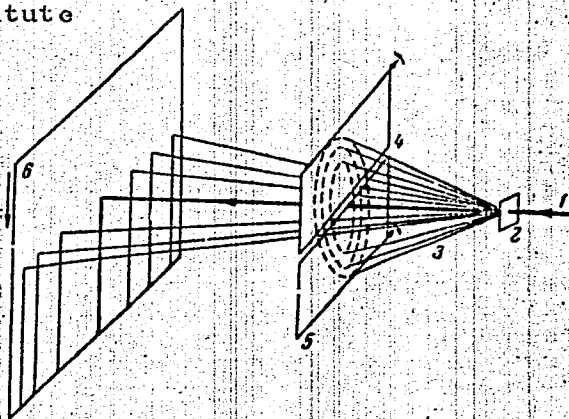
Kinematic attachment

S/120/63/000/001/037/072
E032/E314

this apparatus have been described by the authors elsewhere and it is stated that further studies are being made. In particular, the crystallization of Tl-Se is being investigated at temperatures below 100 °C. There are 5 figures.

ASSOCIATION: Institut fiziki
AN AzerbSSR (Institute
of Physics of the
AS AzerbSSR)

SUBMITTED: March 21, 1962



Card 2/2

Fig. 1:

MALAKHOV, Georgiy Mikhaylovich; STARIKOV, Nikolay Ivanovich; SHOSTAK, Afanasiy Grigor'yevich; ~~SHAFORENKO, I.P.~~ redaktor; PERTSEVSKIY, V.N., redaktor izdatel'stva; KARASEV, A.I., tekhnicheskiy redaktor

[Principal source of iron ore in the U.S.S.R.; a sketch of the development of the Krivoy Rog Basin] Osnovnaia zhelezorudnaia baza SSSR; ocherk razvitiia Krivorozhskogo basseina. [n.p.] Metallurgizdat, 1957. 161 p. (MLRA 10:9)
(Krivoy Rog Basin--Iron mines and mining)

SHAFOROST, L., kapitan

Third trip along the Equator. Starsh.-serzh. no.3:14-15 Mr 162.
(Motortrucks, Military) (MIRA 15:4)

I 3593-66 EWT(i)/EWT(m)/EWP(i)/T/EWP(t)/EWP(b) IJP(c) JD/GG
ACCESSION NR: AP5024566 UR/0070/65/010/005/0758/0760 56
548.522 50
B

AUTHOR: Maslov, V. N.; Shaforostov, M. P.
44,55 44,55

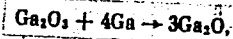
TITLE: Growth of doped acicular and filamentary gallium phosphide crystals from
the gaseous phase 21,44,55

SOURCE: Kristallografiya, v. 10, no. 5, 1965, 758-760

TOPIC TAGS: gallium compound, phosphide, acicular crystal, semiconductor crystal,
crystal growth

ABSTRACT: The simplest equipment for growing doped acicular and ribbon-filament crystals of gallium phosphide from the gaseous phase consists of a two-zone furnace (with a temperature of 1100-1200C in the reaction zone and 400-500C in the phosphorus heating zone) and a quartz tube 100 mm in diameter in the reaction zone and 25 mm in diameter in the phosphorus heating zone. A quartz crucible is placed in the reaction zone with a 20-30 gram charge consisting of a mixture of metallic gallium with gallium oxide in a 3:1 ratio. A quartz boat is charged with 4-6 grams of red phosphorus. The phosphorus vapor is carried by a stream of pure argon to react with gallium substrate. The vapor formed by the reaction

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L 3593-66

ACCESSION NR: AP5024566

Transparent yellow-orange acicular and ribbon-filament crystals 2-6 cm long are grown on the sides of the crucible in 2-3 hours. Since reaction products are removed from the surface of the charge by the argon stream, there is no chance of a tough surface crust of gallium phosphide preventing the evaporation of the gallium suboxide. Chemical and spectral analysis show that the impurity content in the non-doped crystals is no greater than the impurity concentration in the initial reagents. Sulfur, zinc and tellurium were used as dopants. Sulfur changes the shape of the crystals as well as the electrical and physical parameters. When 70 mg of sulfur is added to 5 g of phosphorus, 100% formation of ribbon filaments results. Zinc was introduced by adding zinc oxide to the gallium charge in the crucible, since addition of zinc to the phosphorus resulted in growth impairment and change in crystal color to grayish-orange. A third heating zone was added to the furnace for doping with tellurium. This doping method is more convenient than the other two since the impurity content can be controlled over a wide range. This method was used for producing n-type crystals of gallium phosphide with carrier concentrations from 10^{15} to 10^{17} cm^{-3} . However, the dopant content in the crystals is not a single-valued function of the tellurium vapor pressure corresponding to the temperature in the tellurium heating zone. An increase in the temperature in the phosphorus zone reduces the charge carrier concentration in the crystals. The temperature in the reaction zone also has a definite effect on the impurity concentration. High dopant concentra-

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L 3593-66

ACCESSION NR: AP5024566

tions cause imperfections in the crystals which make them useless for applications as finished crystals, although they make good starting material for producing epitaxial layers of gallium phosphide with the use of gas transport reactions. Orig. art. has: 3 figures, 2 formulas. [14]

ASSOCIATION: Gosudarstvenny nauchno-issledovatel'skiy i proyektnyy institut red-kometallicheskoj promyshlennosti (State Design and Planning Scientific Research Institute of the Rare Metals Industry)

SUBMITTED: 30Dec64

ENCL: 00

SUB CODE: SS

NO REF SOV: 002

OTHER: 001

ATD PRESS: 4/14

mlr
Card 3/3

RUKAVTSOVA, V.F.; STIFATOVA, N.N.; KOROBKIN, V.B.; MDROZOVA, T.I.;
SOFRONOVA, V.A.; SHAFOROST, P.D.; PLATONOVA, N.P.; YEREMENKO, O.S.;
IVANOVA, A.M.; SIDAYEVA, N.Ya.; SUYETINA, S.M.; RAL'YANOVA, T.Ye.;

Study of the dust factor in the founding departments of six
Krasnodar plants. Nauch. trudy Kub. gos. med. inst. 19:63-76
'62. (MIRA 17:8)

1. Iz sanitarno-epidemiologicheskoy stantsii g. Krasnodara
i polikliniki No.8 Krasnodara.

BY: [illegible], I.I.I., [illegible], [illegible], [illegible], [illegible], [illegible]

New principle of regulation of composition of the medium in the continuous cultivation of micro-organisms. Mikrobiologiya 34 no.1: 73-78 Ja-2 1966. (MIRA 1967)

I. Institut mikrobiologii AN SSSR.

L 23373-66 EWT(1)/T JK

ACC NR: AP6014018

SOURCE CODE: UR/0220/65/034/001/0073/0078

AUTHOR: Iyerusalimskiy, N. D.--Ierusalimsky, N. D.; Shaforostova, L. D.; Balashov, V. I.

22
21
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ORG: Institute of Microbiology, AN SSSR (Institut mikrobiologii AN SSSR)

TITLE: New principle for regulating the composition of media used in continuous culturing of microorganisms

SOURCE: Mikrobiologiya, v. 34, no. 1, 1965, 73-78

TOPIC TAGS: microbiology, cell physiology

ABSTRACT: In flow-type apparatuses based on the chemostat principle, sooner or later a dynamic equilibrium is established between the multiplication of cells and loss thereof in the liquid flowing out. The population and growth rate of the cells, their morphophysiological properties, and composition of the culture fluid become stabilized at some constant level. Any change in the flow rate entails a change in the composition of the medium. Yet for precise physiological investigations it is important to be able to vary only individual external factors, leaving the others unchanged. To achieve this purpose, the authors proposed a new device (here described in detail and illustrated) permitting independent regulation of the amount of several solutions making up the medium. It worked efficiently in continuous culturing of Bac. megatherium for 2½ months in a medium consisting of glucose, NaCl, MgSO₄, K₂HPO₄, sodium citrate, ammonium succinate, NH₄Cl, CoCl₂, MnSO₄, and

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UDC: 576.8.093.1

2

L 23373-66

ACC NR: AP6014018

tap water. The flow rate was maintained throughout at the prescribed level. Such indices of the process as optic density of the culture and content of residual nitrogen and sugar in the culture fluid remained stable at each flow rate. The pH was virtually unchanged. Orig. art. has: 1 figure and 2 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 01Feb64 / ORIG REF: 002

Card 2/2

So

L 16574-65 EWT(m)/EWP(t)/EWP(b) ESD(gs)/RAEM(c)/ESD(t)/SSD/AFWL/ASD(a)-5/
AS(mp)-2/IJP(c) JD S/0070/64/009/006/0938/0939
ACCESSION NR: AP5000300

AUTHORS: Maslov, V. N.; D'yakonov, L. I.; Davy*dov, A. A.; Shaforo-^B
stov, M. P.

TITLE: Epitaxial growing of germanium on the surface of germanium
dendrites ¹⁶ ²⁷

SOURCE: Kristallografiya, v. 9, no. 6, 1964, 938-939, and insert
facing p. 939

TOPIC TAGS: germanium, epitaxial growing, crystal growth, filament
crystal

ABSTRACT: The authors describe the growth of an epitaxial layer of
germanium on the surface of germanium dendrites. No earlier experi-
mental data were published on the subject, nor were quantitative
data given in earlier reports on epitaxial growth concerning the
dependence of the growth rate on the gap between the source and the

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L 16574-65

ACCESSION NR: AP5000300

substrate or on the profile of the epitaxial layer. The ribbons used were 2--3 mm wide and 0.20--0.30 mm thick. A diagram of the setup is shown in Fig. 1 of the enclosure. The film was deposited in a quartz ampoule 40 mm in diameter. The substrate and the source were at a specified distance between two graphite blocks intended for equalization of the temperature. The process is realized in an oven with the temperature drop between the blocks amounting to $\sim 25^\circ$ in the interval from 700 to 1000C. The growth rate was shown to increase linearly with decreasing gap, reaching a maximum of 9 μ /hr, which is much higher than obtained by others. The epitaxial layer on the dendrite duplicates clearly the characteristic shape of the dendrite teeth. The tests have also shown that the resolution of the epitaxial deposition increases rapidly with decreasing gap between the source and the substrate. The dependence of the rate of deposition and of the resolution on the gap width are shown in Fig. 2 of the enclosure. Orig. art. has: 3 figures.

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L 16574-65

ACCESSION NR: AP5000300

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy proyektnyy institut redkometallicheskoy promy'shlyenosti (State Scientific Research and Design Institute of the Rare Metal Industry)

SUBMITTED: 18Apr64

ENCL: 02

SUB CODE: SS

NR REF SOV: 000

OTHER: 003

Card 3/5

L 16574-65
ACCESSION NR: AP5000300

ENCLOSURE: 01

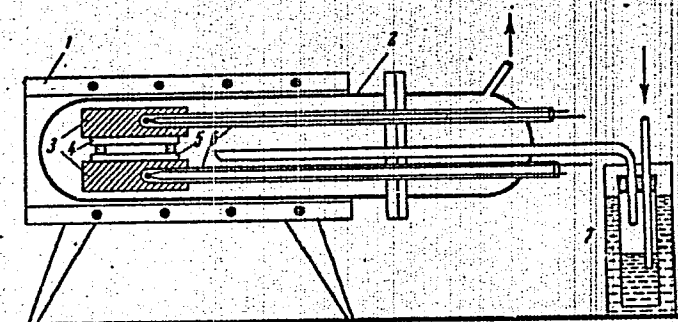


Fig. 1. Diagram of installation for epitaxial growing.

- 1 - Two-section oven, 2 - quartz ampoule, 3 - graphite blocks,
- 4 - source, 5 - substrate, 6 - quartz tubes with thermocouples,
- 7 - bubbler with water, immersed in cooling mixture.

Card 4/5

L 16574-65

ACCESSION NR: AP5000300

ENCLOSURE: 02

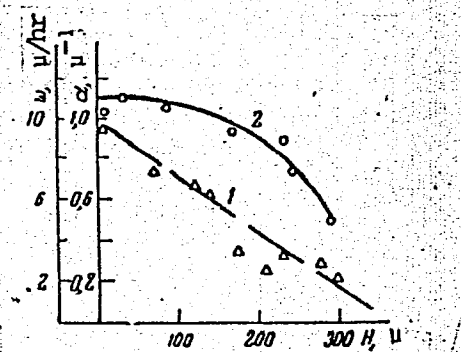


Fig. 2. Dependence of the settling rate w and of the resolution α on the width H of the gap between the source and the substrate.

1 - Settling rate, w ; 2 - resolution, α .

Card 5/5

IYERUSALIMSKIY, N.D.; SHAFOROSTOVA, L.D.

Changes in the biosynthesis of vitamin B₁₂ and p-aminobenzoic acid in *Bacillus megaterium* due to the effect of adaptation to norsulfazole. Dokl. AN SSSR 142 no.5:1176-1179 F '62.

(MIRA 15:2)

1. Chlen-korrespondent AN SSSR (for Iyerusalimskiy).

(SULFATHIAZOLE)
(BENZOIC ACID)
(CYANOCOBALAMINE)
(BACILLUS MEGATERIUM)

Microassociation of new mycoplasma in continuous flow cultivation.
Mikrobiologiya 81 no.4:636-642 71-Ag '62.

(MIRA 18:3)

1. Institut mikrobiologii AN SSSR.

IVANOVA, I.I.; SHAFOROSTOVA, L.D.

Assay of some cobamides by the bioautographic method. Mikro-
biologiya 32 no.6:1087-1090 N-D '63 (MIRA 18:1)

1. Institut mikrobiologii An SSSR.

05299

SOV/170-59-8-10/18

24(7)

AUTHORS: Ovechkin, G.V., Ustinovich, A.B., Shafrostova, V.D.

TITLE: The Effect of Sodium on the Relative Intensity of an Analytical Pair of Lines of Magnesium and Copper

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 8, pp 78 - 83 (USSR)

ABSTRACT: One of the authors, Ovechkin, expounded Ref 17 a method of theoretical determination of graph shifts following a change in the concentration of a third component in an alloy. The present paper contains the results of an experimental investigation undertaken to check theoretical conclusions deduced. As a sample was taken a solution of magnesium and copper, and sodium served as a third component. An alternating current arc fed from a PS-39 generator at a current intensity of 5 A served as a source of emission and the substance to be investigated was introduced into the interelectrode gap by two methods. Electrodes employed were nickel and carbon ones. The spectral lines of the samples were studied by two different methods with two spectrographs of the ISP-22 type. It was confirmed that the rate of magnesium evaporation relative to that of copper increased with an increase in sodium concentration, i.e. with a decrease

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SOV/170-59-8-10/18

The Effect of Sodium on the Relative Intensity of an Analytical Pair of Lines of Magnesium and Copper

of plasma temperature. Using the experimental data obtained the authors constructed a graph showing the dependence of relative rate of magnesium and copper evaporation on plasma temperature or the sodium concentration in the sample, Figure 3. There are: 3 graphs and 8 Soviet references.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet im. V.I. Lenina (Belorussian State University imeni V.I. Lenin), Minsk.

Card 2/2

SHAFOROSTOVA, Ye.V.

Capillary toxicoses in childhood. Sbor. trud. Kursk. gos. med. inst.
no.16:339-343 '62. (MIRA 17:9)

1. Iz kliniki detskikh bolezney (ispolnyayushchiy obyazannosti
zaveduyushchego - dotsent S.I. Kopeliovich) Kurskogo meditsinskogo
instituta i Kurskoy detskoy bol'nitsy No.1 (glavnyy vrach M.N.
Kulezina).

SHAFRAN, A., inzhener.

With the Serov tourists. V pom.profaktivu 14 no.15:21-23 Ag '53.
(MIRA 6:7)

1. Tsentral'nyy sovet Dobrovol'nogo sportivnogo obshchestva "Metallurg".
(Serov--Tourism) (Tourism--Serov)

SHAFRAN, A.

SHAFRAN, A.

Physical education and sports among workers of "Zaporozhstal".
Sov. profsoiuzy 2 no.6:54-56 Je '54. (MLRA 7:7)

1. Instruktor Tsentral'nogo soveta Dobrovol'nogo sportivnogo obshchestva "Metallurg".
(Physical education and training)

SHAFRAN, A.

In the middle of the mountains. Zdorov'ie 4 no.9:16 S '58 (MIRA 11:10)

1. Starshiy instruktor Vsesoyuznogo Soveta sportivnykh obshchestv
profsoyuzov.

(ALA--TAU--CAMPING)

SIGOV, S.G.; KIRZHNER, D.M., professor, otvetstvennyy redaktor; SHAFRAN,
A.A., otvetstvennyy redaktor; FEYTEL'MAN, N.G., redaktor;
NADEINSKAYA, A.A., tekhnicheskii redaktor

[Circulating capital in the coal industry] Obrotnye sredstva ugol'-
noy promyshlennosti. Moskva, Ugletekhizdat, 1954. 177 p. [Microfilm]
(Coal mines and mining--Accounting) (MIRA 8:4)

SHAFRAN, A.A.; SHCHERBAKOV, V.I.

[Collection of legislative materials and of directives on financial work in the coal industry] Sbornik zakonodatel'nykh materialov i instrukativnykh ukazanii po finansovoi rabote v ugol'noi promyshlennosti. Moskva, Ugletekhizdat, 1958. 767 p. (MIRA 13:8)

1. Russia (1923- U.S.S.R.) Laws, statutes, etc.
(Coal mines and mining--Finance)

PANCHENKO, Aleksandr Mironovich; SHAFRAN, A.A., otv.red.; MIROSHNICHENKO,
V.D., red.izd-va; IL'INSKAYA, G.M., tekhn.red.

[Accounting in capital construction] Uchet v kapital'nom
stroitel'stve. Moskva, Ugletekhizdat, 1959. 85 p. (MIRA 12:4)
(Construction industry--Accounting)

SHAYKIN, A. L.

"Duodenal Exploration on Post Gastric Resection Case," Sov. Med., No. 1, 1949. 1br.,
Essentuk Sanitorium No. 5, Min. Health, -1949-.

SHAFRAN, A.L.

Chronic invagination following gastroenterostomy. Khirurgiia no.5:
75-76 My '56. (MLRA 9:9)

1. Iz sanatoriya No.5. Yessentukskogo kurorta.
(STOMACH--SURGERY) (INTESTINES--SURGERY)

SHAFRAN, A.L.

Relapses of peptic ulcer following gastric resection and their treatment in Yessentuki. Klin.med. 34 no.7:90 J1 '56. (MIRA 9:10)

1. Iz sanatorii no.5. Yessentukskogo kurorta (dir. I.F.Protsenko; konsul'tanty - zaslushennyy deyatel' nauki prof. Ye.L.Berezov i doktor meditsinskikh nauk A.D.Rybinskiy)
(PEPTIC ULCER) (STOMACH--SURGERY)

SHAFRAN, A.L., zasluzhenny vrach RSFSR, kand.med.nauk, rentgenolog;
MIKHAYEVA, O.S., rentgenolog

Tenth anniversary of the death of M.D. A.D. Rybinskii. Vest. rent. i
rad. 36 no.6:84 N-D '61. (MIRA 15:2)

1. Sanatoriya "Kavkaz", predsedatel' Yessentukskoy seksii rentgenogov
(for Shafran). 2. Sanatoriya "Stavropol'ye", chlen Yessentukskoy
seksii rentgenologov (for Mikhayeva).
(RYBINSKII, ALEKSEI DMITRIEVICH, died 1951)

SHAFRAN, A. M.: IVANOVA, G. M.

Vetch

Winter vetch on collective farms of the Moscow province; Korm. baza 3 no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 195². Unclassified.

SHAFRAN, A. M.

Forage

Winter-rye for green forage. Sots. zhiv. 14 No. 5, 1952.

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

1. SHAFRAN, A. M.
 2. USSR (600)
 4. Swine--Feeding and Feeding Stuffs
 7. Feeding silage to swine, Sots. zhiv., 14, No. 12, 1952.
-
9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

1. SHAFRAN, A. M.,
2. USSR (600)
4. Lenin District (Moscow Province) - Dairying
7. Milk production in a suburban district, Sots. zhiv. 15 No. 4, 1953.

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

SHAFRAN, A.M.

[Work experience of the zootechnicians of the Mototov Machine-
Tractor Station] Opyt raboty zootekhnikov MTS imeni Molotova.
Moskva, Sel'khozgiz, 1954. 71 p. (MIRA 8:1D)

SHAFRAN, A.M.

[Increase in stockbreeding in suburban collective farms; practices in Lenin District, Moscow Province] Pod'em zhivotnovodstva v pri-gorodnykh kolkhozakh; iz opyta Leninskogo raiona Moskovskoi oblasti. Moskva, Gos. izd-vo selkhoz. lit-ry, 1957. 96 p.
(Lenino District (Moscow Province)) (MIRA 11:4)
(Stock and stockbreeding)

SHAFRAN, A.M., Geroy Sotsialisticheskogo truda

Interior equipment of laying houses using permanent litter.
Ptitsevodstvo 9 no.1:23-26 Ja '59. (MIRA 12:1)

1. Glavnyy zootekhnik inspektsii po sel'skomu khozyaystvu ispolkoma
Leninskogo raysoвета Moskovskoy oblasti.
(Poultry houses)

FILIPPOV, A.M.; PARFENOV, Yu.A.; MOROZOVA, A.D.; TOMCHIN, B.Z.; ~~SHARRAN, R.I.~~
otv. red.; CHSNOKOVA, T.V., red.; SLUTSKIN, A.A., tekhn.
red.

[Handbook on electric measurements in municipal telephone
lines] Rukovodstvo po elektricheskim izmereniam linii go-
rodskikh telefonnykh setei. Moskva, Sviaz'izdat, 1962. 120 p.
(MIRA 16:6)

1. Russia (1923- U.S.S.R.) Upravleniye mestnoy telefonnoy
svyazi i radiofikatsii. 2. Sotrudniki lineyno-kabel'noy labo-
ratorii Nauchno-issledovatel'skogo instituta gorodskoy i sel'skoy
telefonnoy svyazi Ministerstva svyazi SSSR (for Parfenov, Morozova,
Filippov).

(Telephone lines)

(Electric measurements--Handbooks, manuals, etc.)

RATNER, G.L.; FOKIN, A.A.; SHAFRAN, G.L.

Successful surgical therapy of a patient with aortic coarctation
and patent ductus arteriosus. Grud. khir. 3 no.2:98-99 '61.

(MIRA 14:4)

(DUCTUS ARTERIOSUS)

(AORTA--DISEASES)

SHAFRAN, I., ekonomist

Using an economic basis for the planning of construction on
collective farms guarantees the efficiency of capital investments.
Sil'.bud. 12 no.9:21 S '62. (MIRA 15:11)
(Construction industry) (Farm buildings)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45
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76 77 78 79 80 81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

2

CO

Effect of the sorption of gases on the catalytic activity of catalysts for the decomposition of hydrogen peroxides.
V. A. Roiter and I. G. Shafran. *Mer. ukrain. inst. Forsch.-Inst. physik. Chem.* 4, 20-23(1934). See C. I. 28, 1256c. E. H.

ASB-11A METALLURGICAL LITERATURE CLASSIFICATION

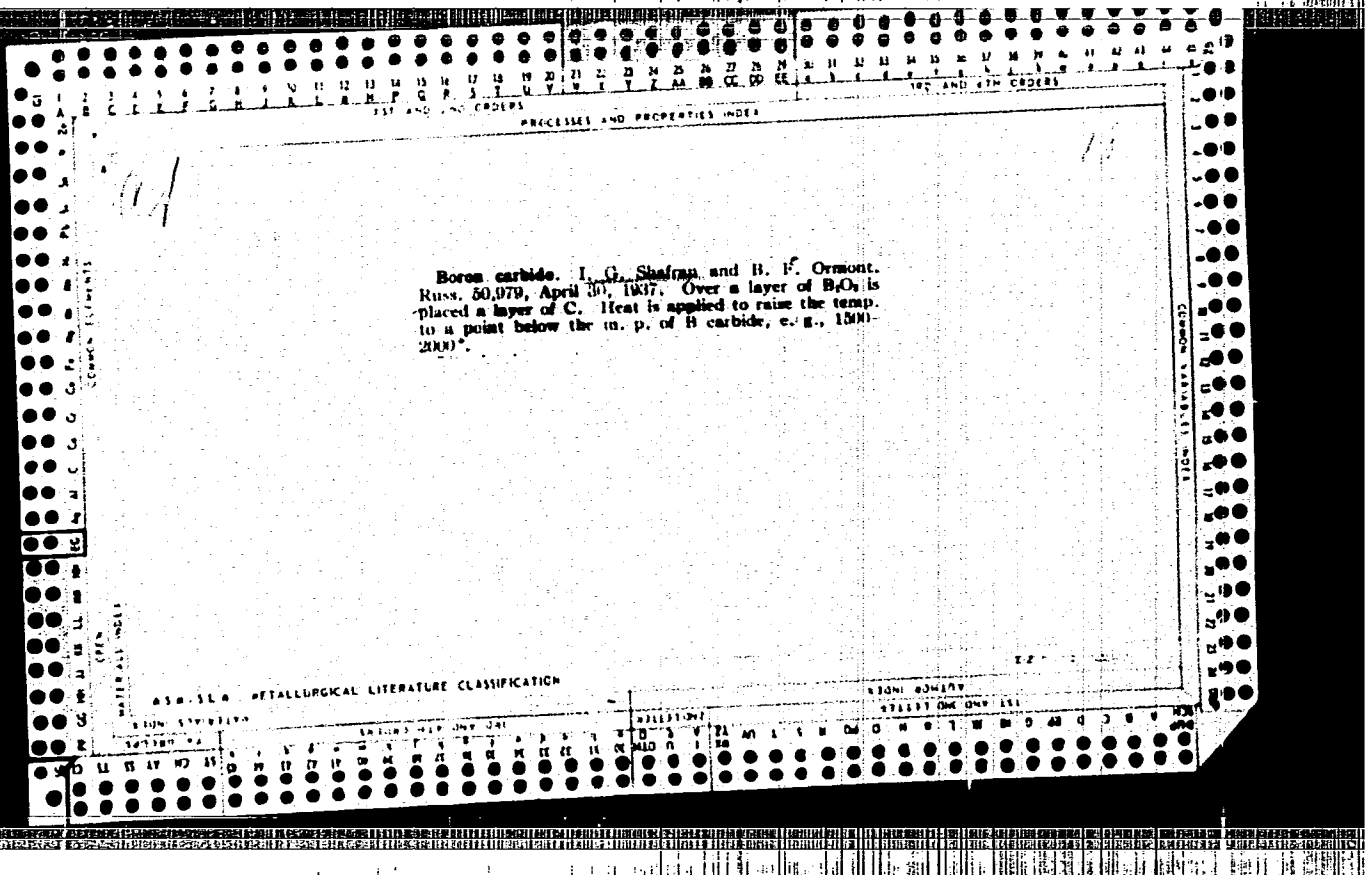
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18

Boron nitride. I. G. Shafran and B. F. Ormont. Russ. 50,556, Feb. 28, 1937. BN is prepd. from H_2BO_3 by blowing with NH_3 and NH_4Cl at about 1200° , and sublimation of NH_4Cl during continued blowing with NH_3 at $1200-1700^\circ$.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

1ST AND 4TH ORDERS

CA

18

boron chloride. I. G. Shafran. Russ. 51,438, July 31, 1937. Boron carbide is chlorinated.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

INTERNAL INDEX

EXTERNAL INDEX

1ST AND 2ND LETTERS

1ST AND 4TH LETTERS

COMMON VARIABLES INDEX

18

PROCESSES AND PROPERTIES INDEX

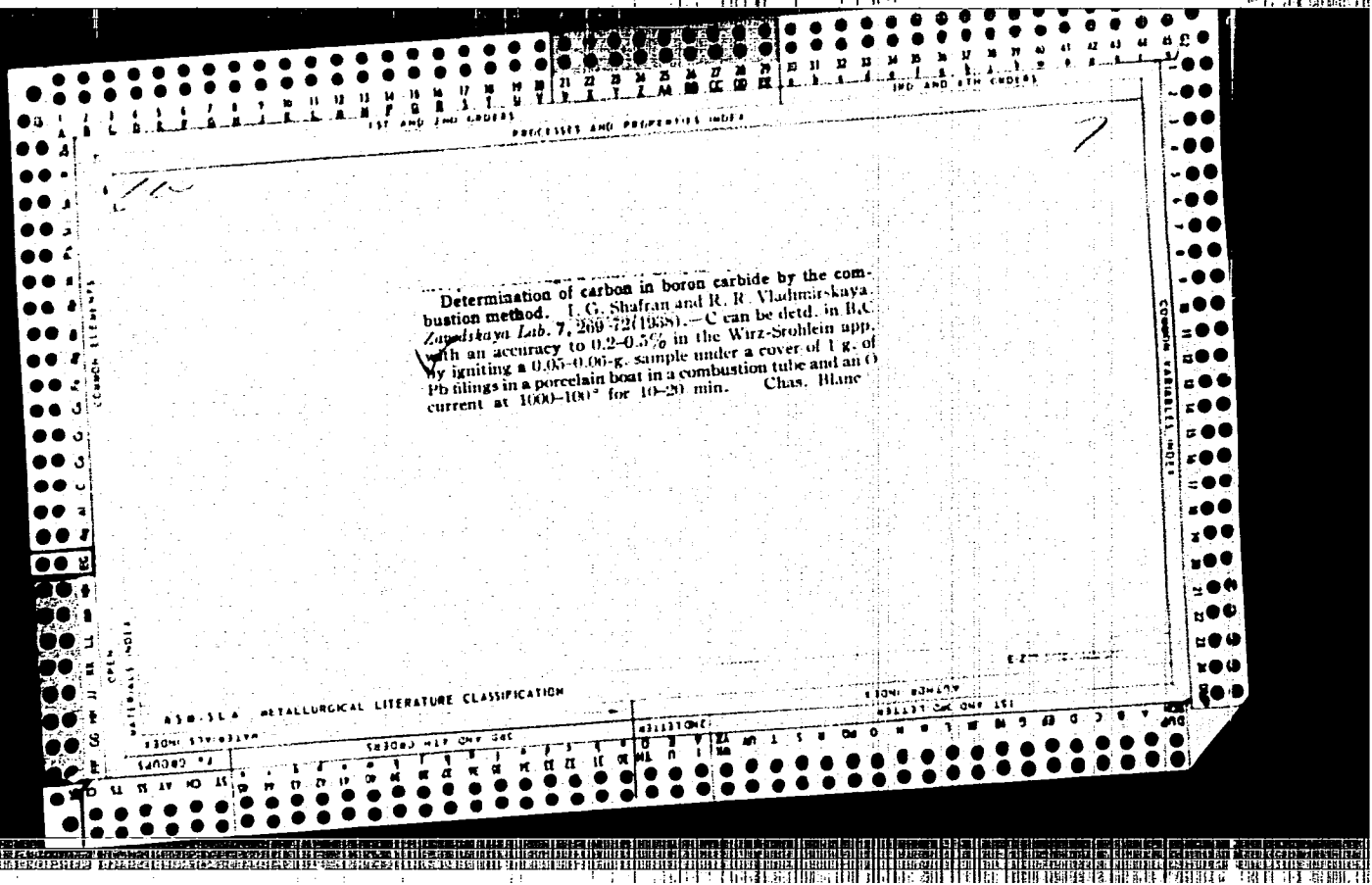
Purifying boron carbide. I. G. Shafran. Russ. 62, (1944, Oct. 31, 1937. Abstr. to Russ 50,070 (C. A. 33, 3079'). The boron carbide is heated at a temp. below redness with molten caustic until NH_3 is no longer evolved. The melt is then washed to remove the caustic, boiled with HCl, and dried.

ASB-SLA DETALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS

COMMON ELEMENTS

COMMON VARIETIES INDEX



PROCEDURES AND PROPERTIES INDEX

ca

Determination of boron in boron carbides. I. G. Shafran and M. V. Pavlova. *Zhurnal Khim. Fiz.* 7, 1245-7 (1938). Oxidize B_4C with HNO_3 in the presence of H_2SO_4 by the method described (C. A. 32, 5688D), neutralize the soln. with dil. $NaOH$, boil 10 min., add a slight excess of HCl , boil for 1 hr. with introduction of an air current during the last 5 min. to expel CO_2 , neutralize to methyl red and titrate the H_2BO_3 with $NaOH$ as usual. C. Blanc

7

BY SIA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND SERIES PROCESSES AND PROPERTIES INDEX 1ST AND 2ND SERIES

CA

2

Oxidation of difficultly oxidizable substances in an over-heated system. I. O. Shaban. *J. Applied Chem.* (U. S. S. R.) 11, 561-3(1958).—B, C and W₂C were oxidized with HNO₃ in the presence of H₂SO₄ (to increase overheating of HNO₃) in a specially designed app. (diagram is appended). Nine references. A. A. Puzgorny.

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION

OPEN METALLURGY INDEX OPEN

U W AV RD AS

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

cd

7

Analysis of boron nitride. I. G. Shafran and R. A. Levinson. *J. Applied Chem.* (U. S. S. R.) 13, 1883 (1940) (in French, 1940) (1940).—Grind an av. sample of BN in an agate mortar to powder, place the weighed and ground sample (about 0.2 g.) in a glass tube of which the bottom and walls are covered with a thick layer of fused and solidified NaOH. Add an addnl. 0.5 g. of powd. NaOH, mix well with the BN and cover with a layer of 1.5 mm. NaOH. Pour 50 ml. of 0.1 N H₂SO₄ into an Erlenmeyer flask and add 2-3 drops of a 1% soln. of phenolphthalein. Heat the BN + NaOH mixt. in a test tube to 300° and absorb the evolved NH₃ in the above H₂SO₄ soln. The preferred app. is shown and its operation is described in detail. A. A. Boetlingk

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ASME-SLA METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UU UV UW UX UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VU VV VW VX VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WU WV WW WX WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YY YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

1ST AND 2ND ORDERS

PACKAGES AND PROPERTIES INDEX

18

CA

Boron carbide. I. G. Shafran and B. F. Ormont. Russ. 50,444, March 31, 1941. A charge of alternate layers of B₂O₃ and C is heated to about 1500-2000°.

COMMON MATERIALS INDEX

MATERIALS INDEX

COMMON ELEMENTS

6-2

ASME-SIA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND LETTERS

1ST AND 2ND LETTERS

1ST AND 2ND LETTERS

1ST AND 2ND LETTERS

19

CA

Articles of boron carbide. I. G. Shafran. U.S.S.R. 64,547, April 30, 1945. B₄C is melted under pressure, in an atm. of N, in a BN crucible of the desired shape. Between the BN mold and the C tube of the furnace is placed an insulator of Ta, TaC, or TaN. M. Howch

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

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9TH AND 10TH ORDERS

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13TH AND 14TH ORDERS

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19TH AND 20TH ORDERS

21ST AND 22ND ORDERS

23RD AND 24TH ORDERS

25TH AND 26TH ORDERS

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ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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97TH AND 98TH LETTERS

99TH AND 100TH LETTERS

SHAFRAN, I.G.

27
1-4E2C

✓ 2207. Determination of small amounts of cobalt.
I. G. Shafran and R. I. Gordovskiy. *Trudy Vuzovsk. Khim. Inst. Khim. Reaktivov*, 1960, (31), 28-32;
Ref. Zhur., Khim., 1956, Abstr. No. 54,777. To determine Co ($4 \cdot 10^{-4}$ %) in chemical reagents, CoO_2 obtained by oxidation with KMnO_4 is co-precipitated with MnO_2 , the ppt. is dissolved in 1 ml of conc. HCl containing 0.1 ml of 30% H_2O_2 , and the soln. is evaporated to dryness. The residue is dissolved in water, 0.5 ml of 0.1% nitroso-R salt soln. and 1 ml of saturated Na acetate soln., which has been neutralised to pH ≈ 8.5 , are added, the soln. is boiled for 2 min., 1 ml of dil. HNO_3 (1 + 1) is added, and the soln. is then evaporated to a vol. of 3 to 4 ml. The colour is compared with that of standards prepared similarly. The error is $\pm 0.05 \mu\text{g}$ of Co.
G. S. SMITH

Chem

fra
int

SHAFRAN I.G.

48-5-8/56

SUBJECT: USSR/Luminescence

AUTHOR: Shafran I.G.

TITLE: New Chemical Methods for Determination of Small Quantities of Admixtures (Novyye khimicheskiye metody opredeleniya malykh kolichestv primesey)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, 1957, Vol 21, #5, p 661 (USSR)

ABSTRACT: Methods for determination of small quantities of admixtures were developed in the All-Union Institute of Chemical Reagents for use in the manufacture of luminophores. These methods detect following quantities of impurities:

10^{-6} to $10^{-5}\%$ of Cu; $10^{-5}\%$ of Fe; $10^{-5}\%$ of Co; $10^{-5}\%$ of Ni and some other elements.

There are 3 proposed methods:

1. Separation of iron admixture in the form of settled hydroxides or other difficultly soluble compounds by means of passing solutions through a column with glass wool used as an adsorbent;

Card 1/2

1976

TITLE: New Chemical Methods for Determination of Small Quantities of
Admixtures (Novyye khimicheskiye metody opredeleniya malykh
kolichestv primesei)

- 2. A cyclic concentration method;
- 3. Passing through a column with resin ("anionite") containing amino-groups.

One Russian reference is cited.

INSTITUTION: All-Union Scientific Research Institute of Chemical Reagents

PRESENTED BY:

SUBMITTED: No date indicated

AVAILABLE: At the Library of Congress.

Card 2/2

60782

S/137/60/000/01/01/009

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 1, p 91, # 621

15,2226
AUTHORS:

Ormont, B.F., Epel'baum, V.A., Shafran, I.G.

TITLE:

Investigation of the Boron-Carbon-Silicon System and Preparation of Borundum

PERIODICAL:

V sb.: Bor. Tr. Konferentsii po khimii bora i yego sovedineniy, Moscow, Goskhimizdat, 1958, pp 177 - 181

TEXT:

To find ways of economizing the valuable B-raw material in the production of abrasive materials on B_4C base, the authors investigated the possibility of obtaining preparations containing B - C - Si, which are generally named "borundum". Preparations were studied which corresponded to the silicon vertex of the ternary structural diagram as well as preparations with a low (2 - 3%) Si content in B carbide. The preparations were produced in Tamman furnaces. B_2O_3 was obtained from boric acid, SiO_2 from ground white quartz and C from carbon black. The preparation corresponding to the Si_2BC_2 formula

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S/137/60/000/01/01/009

Investigation of the Boron-Carbon-Silicon System and Preparation of Borundum

requires for its production an amount of B_2O_3 which is 6 times less than that necessary for B_4C ; its efficiency is 80% of that of B_4C . The polishing efficiency of the "borundum"-type preparations exceeds that of carborundum by a factor of 5. 4

A.P.

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82223

S/081/60/000/003/004/005

15.2220

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 3, pp. 378-379, # 10048

AUTHORS: Ormont, B. F., Epel'baum, V. A., Shafran, I. G.

TITLE: The Experience in Industrial Production of Borundum and Testing of Its Properties

PERIODICAL: V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy. Moscow, Goskhimizdat, 1958, pp. 182-183

TEXT: Experiments on the improvement of the carborundum quality by introducing small quantities of boron into the charge (1-10% of the Si + C content) confirmed the assumption of the possibility of melting borundum in Acheson-type furnaces at a temperature somewhat higher than the usual one, the consumption of electric energy in this case does not increase. With the introduction of small boron additions, the carborundum vapor pressure changes noticeably. The sublimation temperature (and the degree of borundum recrystallization) proved to be higher than in carborundum, therefore the borundum crystals had in all melts smaller dimensions on the average than the carborundum crystals from analogous temperature zones. It was established that boron enters the composition of the carborundum lattice, affecting the decomposition pressure and the pressure of silicon carbide

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The Experience in Industrial Production of Borundum and Testing of Its Properties

vapor. The losses of boric acid with the waste gases during melting of borundum were considerably lower than in the production of boron carbide by the arc method. (the flame on the walls of the furnace and in the torches was not green-colored). It was established by analysis of the samples that in case of an increase in the boron content in the borundum crystals their specific gravity decreases. This agrees with the assumption that substitution structures are formed in the crystal lattice of borundum. Roentgenographic investigations showed that the sizes (with an accuracy of up to 0.001 Å) of the crystalline nuclei of the borundum and carborundum samples investigated remained unchanged. Phase analysis detected in borundum a content of ~15% of the 2nd modification and ~85% of the 3rd modification of carborundum (compared to 50-100 and <40% in usual carborundum). Pastes prepared from concentrated borundum were little inferior to pastes from boron carbide and were noticeable better than analogous pastes from carborundum. Qualitative observations on the evaluation of the grinding capacity of borundum showed that it is apparently higher than the average grinding capacity of boron carbide and carborundum taken in corresponding amounts. Preliminary results of testing the grinding disks manufactured from borundum and carborundum of the same

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melting showed a great scattering of the figures of the relative mean. This fact was due to the non-homogeneous quality of the binding material and the difference in the technology of disk manufacture. However, these data do not contradict the conclusion on the sharp increase in the grinding capacity of borundum preparations compared to that of carborundum.

L. Strutinskiy

4

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80777

S/137/60/000/03/05/013

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No 3, p 105,
5312

AUTHORS: Ormont, B.F., Epel'baum, V.A., Shafran, I.G.

15.22.20
TITLE:

Experience in the Industrial Borundum Production and Testing
of Its Properties

PERIODICAL:

V sb.: Bor. Tr. Konferentsii po khimii bora i yego soyedineniy,
Moscow, Goskhimizdat, 1958, pp 182 - 188

TEXT:

For the purpose of raising the abrasive properties of carborundum, the authors carried out experimental smelts with admixture of B in the form of B_2O_3 (up to 8% and more) at temperatures slightly exceeding conventional temperatures. The smelts were prepared under industrial conditions in Acheson furnaces. It is shown that the product obtained - namely borundum - is very well fit for polishing and is 10 times cheaper than B_4C . If small amounts of B are added the pressure of carborundum vapor changes noticeably, whereas the

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Experience in the Industrial Borundum Production and Testing of Its Properties

dimensions of the crystal lattice remain unchanged. The physical ground for the raised fitness to polishing of borundum in comparison to carborundum was as yet not found; however, data obtained do not confirm the hypothesis on the penetration of B atoms into the interstices of carborundum lattice. X

A.P.

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SHAFRAN, I.G.

Chemical methods for determining small amounts of impurities
in a number of substances of high purity. Trudy IREA no.23:
88-95 '59. (MIRA 13:7)

(Metals--Analysis)

PHASE I BOOK EXPLANATION SOV/USA

Abadmiya nauk SSSR. *Kametsiya po analiticheskoy khimii*
 Metody opredeleniya prirody i chistoty metallakh (Methods of Determining Aba-
 tures in Pure Metals) Moscow, 1960. 411 p. (Series: Ita: Truly, 12) 5,500
 copies printed.

Resp. Eds: A.P. Vinogradov, Academician, and D.I. Ryabonikov, Doctor of Chemical
 Sciences; Ed. of Publishing House: M.F. Volynskiy; Tech. Ed.: T.V. Polyakova.

PURPOSE: This collection of articles is intended for chemists, metallurgists, and
 engineers.

COVERAGE: The articles describe methods for detecting and determining various ad-
 mixtures and their traces in pure metals. Also noted are many chemical,
 physicochemical, electrochemical, spectrochemical, and fluorescence methods of
 analyzing materials of high purity. The authors state that these methods have
 been developed within the last five or six years by various Soviet scientific
 institutes, and are now being used in research and factory laboratories of the
 Soviet Union. Some of the most important references are mentioned. References, where
 necessary, accompany each article.

Alimov, M.S., P.P. Galinov, E.A. Subhanov, and O.B. Yulizov. Determination
 of the Oxygen and Nitrogen Content in Solid Samples of Molybdenum
 and Chromium by the Spectral Method 288

Mukhina, Z.S., A.A. Fimchenko, and I.A. Zhelezovskaya. Determination of
 Traces of Lead, Tin, Bismuth and Cadmium in Metallic Chromium and in its
 Alloys 298

Sikitsina, Ye.N. Determination of Amounts of Antimony in Pure Chromium
 and in its Alloys 311

Peresov, G.A. Spectral Determination of Amounts of Bismuth, Cadmium,
 Tin, Lead and Antimony in Chromic Oxide and in Chromic Anhydride 314

Shadrin, I.M., O.A. Perisov, and I.K. Vinogradov. Spectrochemical Method
 of Determining Amounts of Bismuth, Cadmium, Tin, Lead, and Antimony in
 Chromium Anhydride 317

Barovskiy-Borovskiy, Z.F., and M.M. Zakharenko. Application of Activated Arc
 Arc With Substrator to Determine Small Quantities of Sodium, Calcium, and
 Lithium Amounts in Metallic Rubidium and Cesium 322

Karabach, A.O., Ch.I. Poyrelavaya, R.L. Sinyavskaya, and V.M. Litvakova.
 Determination of Amounts in Beryllium and Beryllium Oxide 331

Mirzakhana, E.F., and E.M. Tursoverova. Determination of Oxygen in Metallic
 Beryllium 341

Arzopov, E.I., Ye.G. Baryshov, Ye.A. Lavrinskii, P.V. Kirpichnikov, A.K.
 Gorbunov, and P.P. Galinov. Luminescence Method for the Quantitative
 Determination of Cadmium in Metallic Beryllium 344

Mladentsev, O.I., K.P. Gopshchikov, K.A. Subhanov, and A.Y. Akseynov.
 Spectral Analysis of Nickel Alloys to Determine Their Basic Components and
 Amounts 355

Shvarts, D.M., and I.S. Milova. Spectral Analysis of High-Purity Nickel 366

Alimov, M.S., and A.A. Rudkina. Separation of Small Quantities of
 Cobalt from Large Quantities of Nickel 377

Klyachko, Yu.A., and M.M. Shapiro. Phase Analysis of Nickel-Base Alloys 383

Lerzhin, V.I., E.Ye. Artykov, and Ye.G. Baryshov. Determination of Small
 Quantities of Gallium, Samarium, and Europium in Metallic Thorium 393

AVAILABLE: Library of Congress

SHAFRAN I.B.

SHAFRAN, I.G.

Possible new applications of one-color pH indicators, based on the example of phenolphthalein. Trudy kom. anal. khim. 11:58-68 '60.
(MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov.

(Indicators and test papers) (Phenolphthalein)

SHAFRAN, I.G.; PEVTSOV, G.A.; VZOROVA, I.F.

Spectrochemical method of determining bismuth, cadmium, tin, lead
and antimony impurities in chromium anhydride. Trudy Kom. anal. khim.
12:317-321 '60. (MIRA 13:8)
(Chromium oxides) (Spectrum analysis)

S/674/61/000/024/003/003
D227/D301

AUTHOR: Shafran, I.G.

TITLE: Determining boron admixtures

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut
khimicheskikh reaktivov. [Trudy] no. 24. 1961.
Khimicheskiye reaktivy i preparaty, 169-182

TEXT: In the present work the author applied a method he developed earlier for determining boron in fluoric acid and other volatile liquids, to determine this element in silicon. The method is based on separating boron in the form of a non-volatile complex with mannitol followed by the usual estimation. The analytical procedure was developed using crystalline silicon and comprised the following stages: (1) Dissolution of Si in HF, H₂O₂ and a silver salt catalyst. A small quantity of mannitol prevented any losses of boron. (2) Concentration of boron by treating the solution with HCl to remove the silver, filtering and evaporating the filtrate to dryness on a steam bath. To ensure complete

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Determining boron ...

removal of fluorine the residue was treated with HCl and again evaporated. For colorimetric determination of the micro-quantity of boron in the dry residue, the latter was dissolved in a small quantity of water, the solution transferred quantitatively into a silica crucible and evaporated to dryness. The residue was then dissolved in 0.2-0.3 ml of H-resorcinol in an acetate buffer (pH = 5.5) containing Trilon B for masking iron, platinum and other metals. After keeping the solution in a humid atmosphere for 18 hours at room temperature (or 3 hours in a drying cupboard at 50°C, followed by evaporation and dissolving in water) it was transferred into a flat-bottom test tube (3 mm diameter, 30 mm high) and the color was compared with standard solutions. If the dry residue or its HCl solution (before addition of the reagent) was yellow or grey in color, the solid was dissolved in water, the solution divided into two parts and the latter evaporated to dryness. The reagent was then added to one portion only. All subsequent operations were the same for the two portions. Colorimetric measurements were then conducted by comparing total colors of test solution containing reagent and standard solution

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D227/D301

Determining boron ...

reagent-free on one hand and test solution without reagent and standard solution containing reagent, on the other. Sensitivity of the reagent corresponded to 0.005 - 0.01 μ g B. Determination of boron in elemental silicon ($\sim 4 \times 10^{-5}\%$ B) was conducted as follows: 0.2 g of silicon was weighed into a platinum crucible and 0.2 ml mannitol, 0.2g AgNO_3 , 2 ml H_2O_2 and 5 ml HF were added. After stirring, the solution was kept at 90°C until all silicon dissolved. The solution was then acidified with HCl and filtered collecting the filtrate into 8 ml of water containing 0.15 ml HCl. After evaporation to dryness, the residue was dissolved in 3 ml water and transferred into a silica crucible. The standard solution was prepared by mixing 0.2 ml of mannitol with 0.8 ml of boron solution (0.001 mg B/ml) and 3 ml of water. Both test and standard solutions were then subjected to similar treatments including evaporation to dryness, dissolution in 0.15 ml water, addition of 0.16 ml of 0.003% reagent solution, humid atmosphere treatment for about 17 hours at room temperature and finally colorimetric measurements. If the intensity of coloration of the test solution is similar to that of standard solution, the boron content does not exceed $4 \times 10^{-5}\%$. Determination of

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Determining boron...

boron in silica (5×10^{-6} to 1×10^{-5} % B) is conducted in a similar manner except that no silver catalyst is used in the dissolving stage. Ye.I. Minayeva, A.V. Petlakh and A.V. Kurayeva participated in the experimental part of the work. There are 1 figure, 2 tables and 8 references; 3 Soviet-bloc and 5 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: C.L. Lüke, Anal. Chem., 27, 1150, (1955); L. Ducret and P. Seguin, Anal. Chem. Acta, 17, 207, (1957); G.H. Morrison and R.L. Rupp, Anal. Chem., 29, 892 (1957); C.L. Lüke and S.S. Flaschen, Anal. Chem., 30, 1406, (1958).

Card 4/4

BRUDZ', V.G.; SHAFRAN, I.G.; SMIRNOVA, K.A.; DRAPKINA, D.A.; ZELICHENOK, S.L.;
PODOL'SKAYA, B.L.; Primala uchastiye MASLINIKOVA, V.I.

Sulfonazo, a new reagent for vanadium. Trudy IREA no.25:17-23
'63. (MIRA 18:6)

SHAFRAN, I.G.; PARTASHNIKOVA, M.Z.; MAKAROVA, N.I.; SOLOV'YEV, Ye.A.;
ZELICHENOK, S.L.

Analytical application of calcion (prepared by the Institute
of Chemical Reagents) for complexometric and photolorimetric
determination of calcium. Trudy IREA no.25:203-214 '63.
(MIRA 18:6)

SHAFRAN, I.G.; STEPANOVA, A.G.; PANKRATOVA, L.I.

Iodometric determination of thiourea dioxide. Trudy IREA no.25:
215-220 '63. (MIRA 18:6)

SHAFRAN, I.G.; SIROTINA, I.A.

Determination of microquantities of cobalt using radiometric
titration and electrophoresis. Trudy IREA no.25:244-248 '63.
(MIRA 18:6)

PARTASHNIKOVA, M.Z.; SHAFRAN, I.G.

Complexometric indicators. Trudy IREA no.25:258-273 '63.

Complexometric method of determining the main substance in reagent chemicals. Ibid.:274-282

(MIRA 18:6)

MAZO, L.Ya.; SHAFRAN, I.G.

Determination of arsenic microquantities in water. Trudy IREA
no.25:283-285 '63.

Determination of silicon impurities in hydrofluoric acid.
Ibid.:286-288 (MIRA 18:6)