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SOV/137-58-11-21878

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 11, p 5 (USSR)

AUTHORS: Pol'kin, S. I., Bykov, Yu. A., Shapavalov, G. M.

TITLE: On the Flotation of Pyrochlore and Zircon (K voprosu flotatsii pirokhlora i tsirkona)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy, Tsvetnaya metallurgiya, 1958, Nr 1, pp 48-59

ABSTRACT: A study is made of the flotation properties of pyrochlore, zircon, and other minerals entering into the make-up of the concentration-resistant pyrochlore-zirconium ores. Various collectors, different pH values of the medium, and prior caustic and acid treatment were employed. The pH limits at which the best floatability of various minerals is attained with various collectors are established. This substantiates the fact that it is theoretically possible to separate them selectively. Pre-treatment with caustic or acid facilitates selective flotation. Radioactive isotopes are used to reveal the influence of the presence of various soluble salts upon flotation. This is of particular significance in the flotation of gravitation tailings. Methods of regulating the composition of the medium are

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On the Flotation of Pyrochlore and Zircon

presented. Flowsheets and reactant regimens for selective flotation of concentration-resistant, finely disseminated, pyrochlore-zircon ores and gravitation slimes, capable of yielding quality products, are presented. Thus, in the flotation of an ore containing 0.08% $Nb_2O_5$ and 0.37% $ZrO_2$, concentrates were obtained with 7.2% $Nb_2O_5$ and 20% $ZrO_2$, recovery being 73 and 90%, respectively. This procedure makes it possible to separate the following concentrates as well: Pure feldspar (satisfactory for the ceramics industry), feldspar-aegirite-augite, sulfide, calcite, and apatite.

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POL'KIN, S.I.

Interaction of cassiterite, hematite and calcite flotation reagents. Izv. vys. ucheb. zav.; tsvet. met. no.2:11-23 '58. (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra obogashcheniya poleznykh iskopayemykh.
(Flotation)

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BELYAYEV, A.I.; POL'KIN, S.I.

Higher metallurgical education and research in the United States; from materials of a trip. Izv. vys. ucheb. zav.; tsvet. met. no.2: 176-180 '58. (MIRA 11:8)

(United States--Metallurgical research)
(Metallurgy--Study and teaching)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I., prof. doktor; ZOLIN, S.N.

Present state of flotation techniques for dressing wolframite, ferberite, and hubnerite ores. Biul. TSIIN tsvet. met. no.8:14-20 '58. (MIRA 11:6)

(Flotation) (Tungsten)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; KHAN, G.A.; KALMAKOV, A.A.; ZLOTINA, S.R.

Introducing automatic control of continuously operating laboratory ore dressing plants. Izv.vys.ucheb.zav.; tsvet. met. 2 no.6:35-46 '59. (MIRA 13:4)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra obogashcheniya poleznykh iskopayemykh.
(Ore dressing) (Automatic control)

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PHASE I BOOK EXPLOITATION SOV/3639

Pol'kin, Stepan Ivanovich, Professor, Doctor of Technical Sciences

Flotatsiya rud redkikh metallov i olova (Flotation of Ores of Rare Metals and Tin) Moscow, Gosgortekhizdat, 1960. 637 p. Errata slip inserted. 3,500 copies printed.

Reviewers: M. A. Eygeles, Professor, Doctor of Technical Sciences, and A. V. Troitskiy, Engineer; Resp. Ed.: A. F. Avseyenok; Ed.: V. A. Glembotskiy; Ed. of Publishing House: M. L. Yezdokova; Tech. Eds: G. A. Vilina and A. G. Libergal.

PURPOSE: This book is intended for mining and concentration engineers, geologists, miners, metallurgists, and economists working in the non-ferrous and rare-metals industry, as well as for personnel working in allied industries (chemicals, iron and steel, nonmetallic minerals, etc.), in scientific and planning organizations, higher educational institutions and tekhnikums. It may also be used as a reference book by students of ore concentration.

COVERAGE: The book gives practical information on the industrial flotation

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of cassiterite tin ores and the ores of lithium, beryllium, zirconium, titanium, tantalum, niobium, uranium, tungsten, and molybdenum. The data have been systematized and generalized, purportedly appearing in this form for the first time. Generalizations have been made from the most important results of the investigations of the flotation of cassiterite and other nonsulfide minerals. An attempt has been made to explain the mechanism of the reaction between the flotation reagents and the surface of the mineral particles, and in particular the effect of polymolecular layers of collecting agent, cations, and pulp conditioners on the flotation properties of these minerals. Methods are described, and results of radiographic investigation are given. No personalities are mentioned. There are 308 references: 210 Soviet, and 98 English.

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Preface 3

PART I. PROPERTIES OF THE PRODUCTS OF THE REACTION OF THE COLLECTOR WITH IONS IN THE PULP AND WITH THE SURFACE OF NONSULFIDE MINERALS



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SOV/149-60-1-4/27

AUTHORS: Pol'kin, S. I., Shapovalov, G. M.

TITLE: Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals With Sodium Alkylsulfate

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Tsvetnaya metallurgiya, 1960, Nr 1, pp 29-34 (USSR)

ABSTRACT: The influence of polyvalent metal cations on flotation of minerals with sodium alkylsulfate has not been adequately studied, although this flotation agent is considerably more selective than oleic acid and sodium oleate. Alkylsulfate salts are similar to fatty acid soaps: their anionic polar groups are attached to hydropholic radicals and make them surface-active. Alkyl sulfates are stronger acids than the corresponding fatty acids: their alkali salts are less easily hydrolyzed in water solutions than soaps, and their selective collecting properties are retained in both

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Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals With Sodium Alkylsulfate

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acid and alkaline solutions. In distilled water solutions (up to 1500 mg/liter) sodium alkylsulfate has no flotation effect on pyrochlore, zirkon, and ilmenite, but noticeably (at 600 mg/l) on sphene (6.9% extraction) aegirite-augite(7%), limonite (3%), microcline (20%) and nepheline (40.7%). However, at pH 3 (addition of hydrochloric acid) this picture changes radically. At pH = 1.4 and a concentration of sodium alkylsulfate of 200 mg/l, the extraction of pyrochlore, zircon, ilmenite, and sphene into the foam rises sharply to 84-94%, while that of limonite and microcline falls to nearly zero, and separation becomes possible (see Fig. 2). Addition of $FeCl_3$ (500 mg/l) at different pH values (an alkaline reaction is achieved by NaOH addition) influences the flotation of different minerals as shown in Fig. 5. The influence of $AlCl_3$ and $CuSO_4$ on the flotation of minerals with sodium alkylsulfate is shown in Figs. 7 and 9. Further tests showed that the addition of

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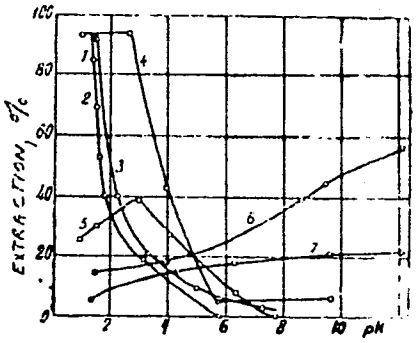


Fig. 2. Influence of pH on flotability of minerals with sodium alkylsulfate: (1) pyrochlore; (2) zircon; (3) ilmenite; (4) sphene (concentration of collector 200 mg/l); (5) aegirite-augite (600 mg/l); (6) limonite; (7) microcline (400 mg/l).

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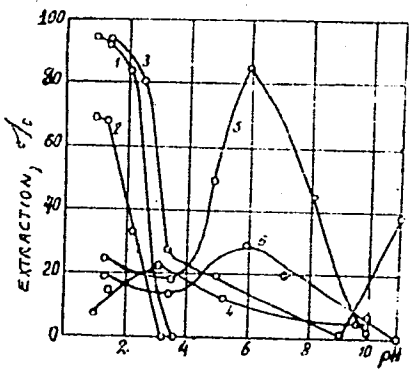


Fig. 5. Influence of pH on flotation of minerals with sodium alkylsulfate in presence of $FeCl_3$ (300 mg/l): pyrochlore; (2) zircon; (3) ilmenite; (4) sphene (concentration of collecting agent, 200 mg/l); (5) aegirite-augite; (6) limonite (600 mg/l).

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Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals with Sodium Alkylsulfate

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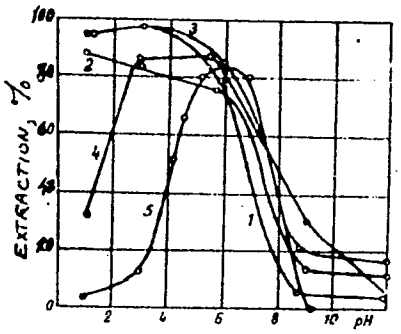


Fig. 7. Influence of pH on the flotation of minerals with sodium alkylsulfate (200 mg/l) in the presence of $AlCl_3$ (300 mg/l): (1) pyrochlore; (2) zirkon; (3) ilmenite; (4) sphene; (5) aegirite-augite.

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Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals With Sodium Alkylsulfate

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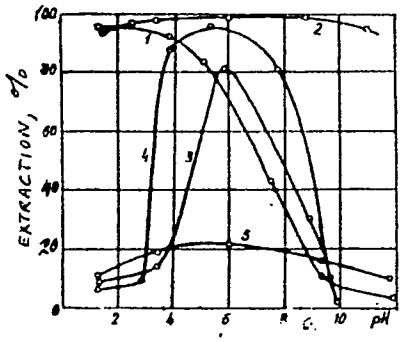


Fig. 9. Influence of pH on the flotation of minerals with sodium alkylsulfate in the presence of $CuSO_4$ (300 mg/l): (1) pyrochlore; (2) ilmenite; (3) aegirite-augite; (4) microcline; (5) limonite.

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Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals With Sodium Alkylsulfate

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$CaCl_2$ or $BaCl_2$ raises the rate of aegirite-augite and of microcline extraction at pH over 6 and does not noticeably affect the rate of extraction of other minerals. In the conclusions the authors recapitulate the experimental data stating that: (1) Moderate concentrations of iron, aluminum, copper, calcium and barium salts do not affect the flotation of pyrochlore, zircon, ilmenite, limonite, aegirite-augite, and microcline with sodium alkylsulfate at pH $<$ 2. (2) At higher pH, salts of polyvalent metals activate the flotation up to the pH value at which hydrolysis of these salts begins (except $FeCl_3$). (3) For best separation of pyrochlore, zircon, and ilmenite with sodium alkylsulfate, the flotation must be carried out at pH not more than 2. There are 12 figures; and 6 Soviet references.

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Concerning the Influence of Salts of Polyvalent Metals on Flotation of Nonsulfide Minerals With Sodium Alkylsulfate

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ASSOCIATION: Krasnoyarsk Institute of Non-Ferrous Metals. Chair of Mineral Concentration (Krasnoyarskiy institut tsvetnykh metallov. Kafedra obogashcheniya poleznykh iskopayemykh)

SUBMITTED: May 15, 1959

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GLEMBOTSKIY, Vladimir Aleksandrovich; prof. dokt.tekhn.nauk; KLASSEN, Villi Ivanovich, prof.dokt.tekhn.nauk; PLAKSIN, Igor' Nikolayevich, ; POL'KIN, S.I., otv.red.; RYKOV, N.A., red.izd-va; KACHALKINA, Z.I., red.izd-vo; SAL'TSOVSKIY, M.S., red.izd-va; PROZOROVSKAYA, V.L., tekhn.red. BOLDYREVA, Z.A., tekhn.red.

[Flotation] Flotatsiia. Pod obshchei red. I.N.Plaksina. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 547 p.

(MIRA 14:5)

1. Chlen-korrespondent AN SSSR (for Plaksin)
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S/149/61/000/002/001/017
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AUTHORS: Lu Shou-tzu, Pol'kin, S.I.

TITLE: On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1961, No. 2, pp. 27 - 32

TEXT: Studying the effect of pulp pH on flotation of titanium minerals a series of peculiarities of these minerals is being revealed, in particular the causes of their more selective flotation with fatty acids in a weakly acid medium. Considering the complicated phenomena occurring during flotation of ilmenite and perovskite with sodium oleate and sodium alkyl sulfate, it is important to investigate the effect of $H^+$ and $OH^-$ ions on changes in the surface conditions of titanium minerals; on changes in the active form of collectors and the ion composition of the pulp at different pH; and to reveal the effect of pulp pH on adsorbtion of collectors by the mineral surface, and on flotation of titanium minerals. Changes in the surface conditions of Ti minerals, depending on pH of the pulp were studied by measuring the electrokinetic and electrochemical potentials. Results

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obtained (Fig. 1) show that with higher pH of the medium, the electrokinetic potential of all the three titanium minerals becomes more electro-negative, due to an excess of anion groups. In acid media an excess of cation groups will entail redischarge of minerals to the positive side, as observed on rutile. A common feature of the minerals investigated is the fact that in an acid medium, changes take place in their chemical composition and in the solubility of Ti mineral surfaces, onto which non-compensated cation regions are exposed carrying a positive charge; this assures their better interaction with collector anions. The shift of the electrokinetic potential to the positive side in an acid medium cannot be explained for all the minerals merely by the adsorbtion of $H^+$ cations, and the shift to the negative side in alkaline media by the adsorbtion of OH ions, as it is usually considered. It is necessary to take into account the chemical nature of the given process, and changes in the chemical composition of mineral surfaces and the ion composition of the pulp, in connection with the partial solubility of minerals. For rutile, an increase of the electrokinetic potential in an acid medium may be connected with the splitting of $OH^-$ anions off the surface; a decrease of the potential in an alkaline medium may be connected with the

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On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

splitting off of $H^+$ cations. This is in agreement with A.N. Frumkin's confirmation (Ref. 8) who stated that during absorbtion of anions in the presence of a positive surface charge, the effects of the electrostatic and specific adsorbtion forces are summarized and a considerable adsorbtion effect can be observed. Consequently, the charge of mineral surfaces has a great importance in the interaction with collectors. A positive charge on Ti mineral surfaces in an acid medium will promote the interaction of collector anions with the surface. In an alkaline medium, an increasing negative charge of the Ti mineral surface will inhibit adsorbtion of collector anions on the surface. The ion-molecular composition of the collectors depends in the first place on the pulp pH, which determines directly the activity of collectors in flotation. The authors studied the fixation of sodium oleate and sodium alkyl sulfate on Ti minerals. The amount of fixed sodium oleate was determined by the permanganate method (Ref. 12). To determine sodium alkyl sulfate the authors synthesized sodium hexadecyl sulfate from hexadecyl alcohol and concentrated sulfuric acid, marked with $S^{35}$, by sulfatizing. Results obtained (Fig. 3, 4) show that in an alkaline medium the adsorbtion of sodium oleate and sodium alkyl sulfate decreases with increased pulp pH and the

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magnitude of negative Ti mineral charges increases. The negative charge of the surface impairs the approaching of collector anions and makes difficult their interaction with the surface. In an acid medium, changes in the electrokinetic potential to the positive side should promote adsorbtion of collector anions. The formation of positive charges proves the appearance of non-compensated cation regions on the Ti mineral surface, which interacts with collector anions and promote their strong fixation. Oleate adsorbtion on Ti minerals is different. On ilmenite and perovskite increased adsorbtion in an acid medium was not observed; on rutile it occurred although a corresponding increase of rutile flotation activity did not take place; this was apparently connected with the transition of sodium oleate in the acid medium into a weakly active form. When studying the effect of pulp pH on the flotability of minerals, it was revealed that all Ti minerals were well flotable with sodium oleate in a neutral, weakly acid or weakly alkaline medium. Flotation of Ti minerals with sodium alkyl sulfate increases continuously with reduced pH of the pulp (Fig. 6). Comparing Figures 5 and 3, and Figure 6 and 4, it can be easily observed that when using sodium alkyl sulfate there is a single-valued dependence between adsorbtion and flotation. In the case of sodium oleate, a parallelism between adsorbtion and flotation is only



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On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

established in an alkaline medium when the sodium oleate basically dissociates in ions. Consequently, in an alkaline medium the depression of Ti minerals for both sodium alkyl sulfate and sodium oleate, depends on the weak adsorbtion of collectors on the minerals, or its complete absence. If in an acid medium the collector is in an active i.e. ionic form and poorly hydrolizing, flotation of titanium minerals should be more active as a result of the improved interaction of collector anions with their surface.

Figure 1:

The effect of pH on electrokinetic potentials of rutile (1), ilmenite (2) and perovskite (3)

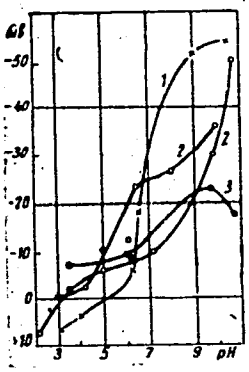
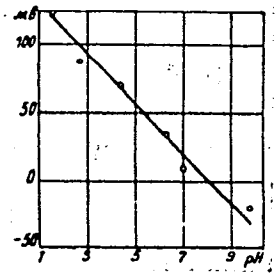



Figure 2: The effect of pH ($H_2SO_4$, NaOH) on the electrochemical potential of ilmenite

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On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

Figure 3:

The effect of pH on fixation of sodium oleate (consumption 200 g/t) on rutile (1), ilmenite (2) and perovskite (3).

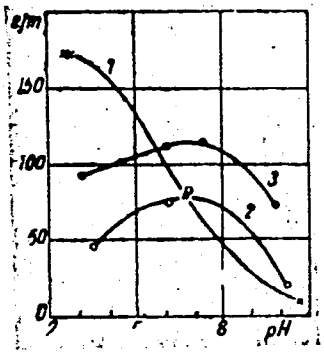
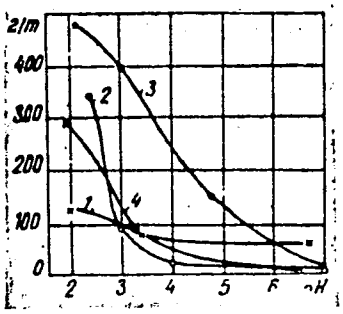



Figure 4:

The effect of pH on fixation of sodium hexadecyl sulfate (consumption 100 mg/l or 1,000 g/t) on rutile (1), ilmenite (2), perovskite (3) and stavrolite (4).

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On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

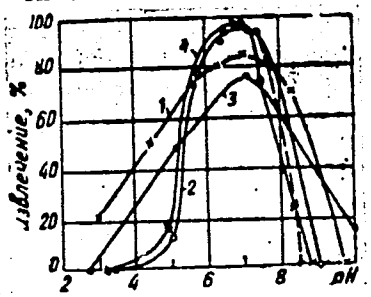


**Figure 5:**

The effect of pH on flotation of titanium minerals. 1 - rutile (olNa 20 g/t); pine oil 200 g/t); 2 - ilmenite (olNa 100 g/t, NaOH); 2' - ilmenite (olNa 100 g/t, $Na_2CO_3$); 3 - perovskite (olNa 300 g/t); 4 - ilmenorutile (olNa 100 g/t).

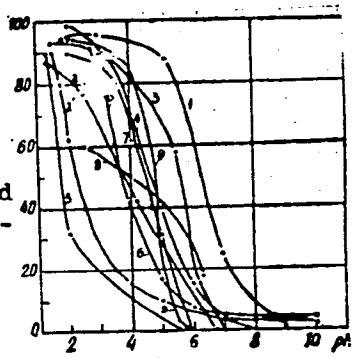


**Figure 6:**

The effect of pulp pH on flotation of minerals with sodium alkyl sulfate; 1 - rutile; 2- ilmenite; 3 - perovskite; 4 - cassiterite (according to Edwards); 5 - pyrochlore and 6 sphere (according to Shapovalov); 7 - zirconium (according to Bykov); 8 - hematite (according to Gorlovskiy) ; 9 - stavrolite.

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On the Mechanism of Pulp pH Influence on Flotability of Titanium Minerals

There are 6 figures, 1 table and 12 Soviet references.

ASSOCIATIONS: Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute of Non-Ferrous Metals); Kafedra obogashcheniya poleznykh iskopayemykh (Department of Concentrating Mineral Resources)

SUBMITTED: October 19, 1960

Card 8/8

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

GURAN, M.; POL'KIN, S.L.; KHAN, G.A.

Studying the composition of films formed by the interaction of xanthates with the electrode. Izv. vys. ucheb. zav.; tsvet. met. 4 no. 1:33-41 '61. (MIRA 14:2)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra obogashcheniya poleznykh iskopayemykh.
(Flotation--Equipment and supplies)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

LU SHOU-TSZY [Lu Shou-tz'u]; POL'KIN, S.I.

Mechanism of the effect of pulp pH on the floatability of titanium minerals. Izv. vys. ucheb. zav.; tsvet. met. 4 no.2:27-32 '61. (MIRA 14:6)

1. Krasnoyarskiy institut tsvetnykh metallov. Kafedra obogashcheniya poleznykh iskopayemykh.
(Titanium ores)
(Flotation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

PLATONOV, A.L.; POL'KIN, S.I.; BYKOV, Yu.A.

Froth collapse in flotation plants. Izv. vys. ucheb. zav.; tsvet. met. 4 no.4:30-32 '61. (MIRA 14:8)

1. Vishnevogorskoye rudoupravleniye, Krasnoyarskiy institut tsvetnykh metallov. Rekomendovana kafedroy obogashcheniya poleznykh iskopayemykh Krasnoyarskogo instituta tsvetnykh metallov.

(Flotation)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

S/149/62/000/005/002/008
A006/A101

AUTHORS: Pol'kin, S. I., Ch'eng Te-ming

TITLE: Floatability of columbite and some accompanying minerals with the use of various collectors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 5, 1962, 28 - 33

TEXT: Columbite is the most important source for obtaining niobium. Its fine dissemination and high brittleness entail considerable losses in the concentration of columbite-containing ores and in refining crude concentrates by gravitational methods. Flotation seems to be the most promising method for extracting fine-disseminated columbite from complex ores. The floatability of columbite has as yet been little studied and there are no data available on its flotation. The authors studied floatability of columbite and accompanying minerals such as zircon, albite and garnet with the use of sodium oleate, sodium isooctylphosphate АНП-14 (ANP-14), and oxidized petrolatum at different consumption and various pH of the pulp. Flotation was performed in a 75-ml mechanical-type machine at the solid: liquid ratio = 1:15 and -016 + 0.044 mm

Card 1/2

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mineral size in distilled water. The pulp was mixed with the collectors during 3 minutes. Pine oil consumption was 100 g/ton. The pulp pH was regulated by addition of hydrochloric acid or caustic soda. pH was measured after completed flotation. Columbite was found to possess high floatability when sodium oleate, sodium isooxylphosphate, oxidized petrolatum and the ANP-14 cation collector were used; floatability of columbite approaches very closely that of garnet; therefore, their separation without selective-acting agents is difficult. Floatability of zircon and columbite is rather close, but they can be separated in a weakly acid medium with oxidized petrolatum at up to 4,000 g/ton consumption; under the same conditions columbite and garnet can be separated from albite. In flotation with sodium isooxylphosphate or sodium cetylsulfate in an acid medium it is possible to separate columbite, garnet and zircon from albite. The flotation activity of albite increases sharply in the case of using ANP-14; if pH<5, it can be separated out into a frothy product and separated from columbite, zircon and garnet. There are 1 table and 8 figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steels and Alloys) Kafedra obogashcheniya rud redkikh metallov (Department of Rare Metal Ore Concentration)

SUBMITTED: April 11, 1962



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.

Flotation of pyrochlore from carbonatite ores. TSvet.met. 35 no.2:12-15 F '62. (MIRA 15:2)
(Pyrochlore) (Flotation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

KALMAKOV, A.A.(eng); POLKIN, S.I. (Prof, Dr.Eng.), KHAN, G.A. (eng student), SMIRNOV, V.V.

"The use of radioisotopes for the determination of the contents of certain metals in the products of ore dressing."

report submitted for 6th Intl Mineral Processing Cong, Cannes, 26 May-2 Jun 63.

Kalinin Inst Non-Ferrous Metals & Gold, Moscow.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, Stepan Ivanovich; GLADKIKH, Yuriy Fedorovich; BYKOV, Yuriy Aleksandrovich; BARSKIY, L.A., otv. red.; MAKRUSHINA, Ye.A., red.izd-va; MAKSIMOVA, V.V., tekhn. red.

[Dressing of tantalum and niobium ores] Obogashchenie rud tantala i niobiia. Moskva, Gosgortekhizdat, 1963. 186 p. (MIRA 16:5)

(Ore dressing) (Tantalum) (Niobium)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; KOMLEV, A.M.; PETUKHOV, Ye.P.

Using electron microscopy for the study of reagent interaction with the inevitable pulp ions and mineral surfaces. Izv. vys. ucheb. zav.; tsvet. met. 6 no.3:29-34 '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya rud redkikh metallov.
(Flotation—Testing)
(Electron microscopy)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

NAYFONOV, T.B.; POL'KIN, S.I.; SHAFEYEV, R.Sh.

State of a double electric layer of tantalite and certain accompanying minerals during flotation. Izv. vys. ucheb. zav.; tsvet. met. 6 no.3:40-46 '63. (MIRA 16:9)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya rud redkikh metallov.
(Tantalite—Electric properties)
(Flotation)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

NAYFONOV, T.B.; POL'KIN, S.I.

Electrochemical nature of oleic acid adsorption on tantalite. Izv. vys. ucheb. zav.; tsvet. met. 8 no.4:45-47 '65. (MIRA 18:9)

1. Kafedra obogashcheniya rud redkikh metallov Moskovskogo instituta stali i splavov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

ZARAKHANI, A.I.; SPEKTOR, A.N.; SHCHEPILOV, V.I.; YUSPIN, [illegible]; [illegible], N.P.; POL'KIN, S.I.; POKHVISHEV, A.N.

Technical and economic estimate of the concentratability of lean iron ores. Report No.2. Izv. vys. ucheb. zav.; chern. met. 8 no.9:17-21 '65. (MIRA 18:9)

1. Moskovskiy institut stali i splavov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

RAFTYENKO, A.I.; POL'KIN, S.I.

Certain characteristics of the effect of a magnetic field on ore pulp. Izv. vys. uchebn. zav.; tsvet. met. 8 no.3:17-22 '65. (MIRA 18:9)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya rud redkikh i radioaktivnykh metallov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

NAYFONOV, T.B.; POL'KIN, S.I.

Mechanism of the interaction of oleic acid with tantalite and certain accompanying minerals. Izv. vys. uchebn. zav.; tsvet. met. 8 no.3:23-30 '65. (MIRA 18:9)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya rud redkikh metallov.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; NEBERA, V.P.

Scientific research institutes and universities in India.
Izv. vys. ucheb. zav.; tsvet. met. 8 no.5:149-155 '65.
(MIRA 18:10)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; ZHAVORONOK, V.I.

Effect of sodium fluosilicate in the flotation of tantalite, cassiterite and garnet. TSvet. met. 38 no.11:51-52 N '65. (MIRA 18:11)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

KOMLEV, A.M.; POL'KIN, S.I.

Using the method of nonaqueous titration to determine the fatty acids attached to mineral surfaces. Izv. vys. ucheb. zav.; tsvet. met. 7 no. 4:32-37 '64 (MIRA 19:1)

1. Moskovskiy institut stali i splavov, kafedra obogashcheniya rud redkikh i radioaktivnykh metallov.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; ZHAVORONOK, V.I.; LUNIN, V.D.

Using tanning substances obtained from Kazakhstan and Central Asia plants for the flotation of certain minerals. Izv.vys.ucheb.zav.; tsvet.met. 8 no.2:18-20 '65. (MIRA 19:1)

1. Kafedra obogashcheniya rud redkikh i radioaktivnykh metallov Moskovskogo instituta stali i splavov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; RAFIYENKO, A.I.

Effect of magnetic fields on the clogging of filter fabrics. TSvet. met 37 no.9:10-12 S '64. (MIRA 18:7)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

ZARAKHANI, A.I.; SPEKTOR, A.N.; SHCHEPILOV, F.I.; YUSFIN, Yu.S.; BANNYY, N.P.; POL'KIN, S.I.; POKHVISNEV, A.N.

Technical and economic evaluation of the concentrability of lean iron ore. Izv. vys. ucheb. zav.; chern. met. 8 no.7:23-27 '65. (MIRA 18:7)

1. Moskovskiy institut stali i splavov.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

GLADKIKH, Yu.F.; POL'KIN, S.I.

Effect of iron and calcium salts on the floatability of columbite-tantalite, tourmaline and garnet by various collectors. Trudy IPI no.20:36-43 '63.

Flotation of columbite-tantalite. Ibid.:44-60

Flotation isolation of free iron formed by the wearing away of the metal equipment during ore dressing. Ibid.:99-104

(MIRA 18:2)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; ANDREYEV, P.I.; ROZENFEL'D, S.Sh.; MORGEN, L.M.

Use of lignin derivatives for flotation control. TSvet. met. 38 no.2:13 F '65. (MIRA 18:3)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

YAMPOL'SKAYA, M. Ya.; POL'KIN, S.I.

The floatability of phenacite by cation collectors. Izv. vys. ucheb. zav. Tsvet. met. 7 no.5:19-22 '64 (MIRA 18:1)

1. Kafedra obogashcheniya rud redkikh metallov Moskovskogo instituta stali i splavov.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

L 40812-65 EWT(m)/EWP(e)/EPF(n)-2/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Pu-4
IJP(c) JD/JG

ACCESSION NR: AP5008233 S/0286/65/000/005/0125/0125

39
B

AUTHORS: Pol'kin, S. I.; Bykov, Yu. A.; Boriskina, Ye. A.

TITLE: Method for removing carbon from electrolytic powders of tantalum niobium and their alloys. Class 1, No. 153049

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 125

TOPIC TAGS: tantalum, tantalum alloy, niobium, niobium alloy

ABSTRACT: This Author Certificate presents a method for removing carbon from electrolytic powders of tantalum, niobium, and their alloys. To maximize purification of the powders from carbon, the original powders are subjected to flotation with kerosene and OPSB (product of the interaction of propylene oxide and butyl alcohol) as reagents. For increased content of bound carbon in the form of tantalum and niobium carbides, reagents are added to the pulp, creating an alkaline medium (e.g., potassium hydroxide, sodium carbonate, water glass, etc). In an alternate method for flotation of powders with increased content of carbon, oleic acid is added to the pulp.

ASSOCIATION: none
SUBMITTED: 23Dec61 ENCL: 00 SUB CODE: MM
NO REF SOV: 000 OTHER: 000
Card 1/1

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKIN, S. I.; NAYFONOV, T. V.

"About the mechanism of action of collectors and modifiers in flotation of silicate and oxide minerals."

report submitted for 7th Intl Mineral Processing Cong, New York, 20-25 Sep 64.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I., prof.; ANDREYEV, P.I.; CHANTURIYA, V.A.

Flotation for the separation of pyrochlore, zircon and ilmenorutile. Obog. rud. 8 no.3:20-24 '63. (MIRA 17:1)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I. (Moskva); PLAKSINA, L.D. (Moskva); CHANTURIYA, V.A. (Moskva)

Effect of emulsifying and of oxygen on the properties of oleic acid as collector in the selective flotation of phyrochlore-zircon concentrates. Izv. AN SSSR. Met. i gor. delo no.5: 154-158 S-O '63. (MIRA 16:11)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POTEMKIN, K.V.; SPITSYN, A.; SHUGAYEV, I.A.; FOL'KIN, S.I.; SAKSAGANSKAYA, I.P.; ANDREYEV, F.I.; POLYAKOV, R.M., red.; VERICO, K.M., red.

[Production of zirconium and hafnium in capitalist countries] Proizvodstvo tsirkoniia i gafniia v kapitalisticheskikh stranakh. Moskva, Pts.1-3. 1962. 157 p. (MIRA 17:4)

1. Moscow. TSentral'nyy institut informatsii tsvetnoy metallurgii.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, S.I.; ANDREYEV, P.I.

Flotation and separation of pyrochlore, ilmenite-rutile, and zircon and the mechanism of the action of reagents. TSvet. met. 36 no.5:9-17 My '63. (MIRA 16:10)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN. S.I. (Moskva); NAYFONOV, T.B. (Moskva); SHAFEYEV, R.Sh. (Moskva)

Studying the electrochemical properties of tantalite surface during its interaction with certain flotation reagents. Izv. AN SSSR. Otd. tekh. nauk. Met. i gor. delo no.2:169-172 Mr-Ap '63. (MIRA 16:10)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, V.A.

Fundamentals of a unified stratigraphic scale of volcanic formations in the northwestern part of the Siberian Platform. Uch. zap. NIIGA Reg.geol. no.3:5-26 '64. (MIRA 18:10)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

MURACH, Nikolay Nikiforovich[deceased]; SEVRYUKOV, Nikolay Nikolayevich; POL'KIN, Stepan Ivanovich; BYKOV, Yuriy Aleksandrovich; SLONIMSKIY, B.I., red.; LUTSKAYA, G.A., red.izd-va; KARASEV, A.I., tekhn. red.

[Metallurgy of lead] Metallurgiia olova. Moskva, Metallurgizdat, 1964. 351 p. (MIRA 17:3)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

**The Fusion Diagrams of the Ternary System $TlNO_3$-$AgNO_3$-$KNO_3$.** (In Russian.) V. A. Polkin. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 66, May 1, 1949, p. 71-72.

Presents diagram for the above system, based on investigation of 8 cross sections.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

STRELKOV, S.A.; DIBNER, V.D.; ZAGORSKAYA, N.G.; SOKOLOV, V.N.; YEGOROVA, I.S.; POL'KIN, Ya.I.; KIRYUSHINA, M.T.; PUMINOV, A.P.; YASHINA, Z.I.; SAKS, V.N., red.: NIKITINA, V.N., red.izd-va; GUROVA, O.A., tekhn.red.

[Quaternary sediments in the Soviet Arctic] Chetvertichnye otlozheniia Sovetskoi Arktiki. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol.i okhr.nedr, 1959. 231 p. (Leningrad. Nauchno-issledovatel'skii institut geologii Arktiki. Trudy, vol.91). (MIRA 13:5)

(Russia, Northern--Geology).

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, Ya.I.

Stratigraphic position of volcanogenic formations of the Yergalakh-skaya series in the Noril'sk region. Inform.biul.NIIGA no.18:27-30 '60. (MIRA 14:6)

(Noril'sk region--Geology, Stratigraphic)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KIN, Ya.I.

History of the geological development of the northwestern Siberian Platform. Trudy NIIGA 65:57-72 '59. (MIRA 13:12)
(Siberian Platform—Geology)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

VORONOV, P.S.; KIRYUSHINA, M.T.; POL'KIN, Ya.I., STRELKOV, S.A.

Latest tectonic movements in the Arctic portion of the Lena-Yenisey region. Trudy NIIGA 105:92-115 '59. (MIRA 13:5)
(Russia, Northern--Geology, Structural)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R. I.

"Effect of the Virus of Rabbit Papilloma on the Epithelia of Rabbit Skin in Tissue Cultures." Cand Biol Sci, Acad Med Sci USSR, Leningrad, 1954. (RZhBiol, No 8, Dec 54)

Survey of Scienfific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I.

Nerves of the human breast in benign and malignant tumors. Vop.onk. 1 no.4:22-29 '55. (MIRA 10:1)

1. Iz tsitologicheskoy laboratorii (zav. - prof. V.Ye.TSimbal) Instituta onkologii (dir. chlen-korr. AMN prof. A.I.Serebrov) AMN SSSR.

(BREAST, neoplasms, nerves in benign & malignant tumors)
(NERVES, in malignant & benign breast tumors)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

BUKHMAN, M.P.; POL'KINA, R.I.; SERGEYEV, L.V.

Methods for making permanent preparations in fluorescence microscopy. Zhur.ob.biol. 17 no.3:239-240 My-Je '56. (MLRA 9:8)

1. Laboratoriya eksperimental'noy onkologii Instituta onkologii AMN SSSR.

(FLOURESCENCE MICROSCOPY)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I. (Leningrad, 136, ul. Lenina, d. 32/66, kv. 26)

Fluorescence microscopic investigations in early stages of experimental presarcomatous changes in rats. Vop. onk. 4 no.5:520-526 '58. (MIRA 12:1)

1. Iz laboratorii eksperimental'noy onkologii (zav. chl.-korr. AMN SSSR prof. L.M. Shabad) Instituta onkologii AMN SSSR (dir. - (dir. - deystv. chl. AMN SSSR prof. A.I. Serebrov).

(NEOPLASMS, experimental,
carcinogenic changes on sites of implantation of carcinogenic & non-carcinogenic substance, luminescence microscopy (Rus))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I. (Leningrad, 136, ul. Lenina, d. 32/66, kv. 26)

Experimental and morphological study on diethylstilbestrol-induced renal tumors in golden hamsters. Vop. onk. 5 no.1:32-37 '59. (MIRA 12:3)

1. Iz laboratorii eksperimental'noy onkologii (zav. - chlen-korrespondent AMN SSSR prof. L.M. Shabad) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).

(DIETHYLSTILBESTROL, effects,
kidney carcinogenesis in golden hamsters (Rus))
(KIDNEYS, neoplasms,
diethylstilbestrol-induced tumors in golden hamsters (Rus))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I.

Radiosensitizing effect of some natural pyrimidines. Vop. onk. 11 no.3:57-58 '65. (MIRA 18:6)

1. Iz laboratorii eksperimental'noy onkologii (zav. - zasluzhennyy deyatel' nauki prof N.V. Lazarev) Instituta onkologii AMN SSSR (dir. deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov).

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I.; BYCHENKOVA, M.N.; ZALESSKAYA, L.I.

Attempts at the radiosensitization of transplanted tumors using some pyrimidine derivatives. Trudy Inst.onk.AMN SSSR no.4:102-107 '62. (MIRA 15:9)

1. Iz laboratorii eksperimental'noy onkologii (zav. - prof. N.V. Lazarev) i rentgenovskogo otdeleniya (zav. - prof. L.M.Gol'dshteyn).
(PYRIMIDINES) (ONCOLOGY) (RADIOTHERAPY)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R. I.

Renal tumors produced with synestrol and diethylstilbestrol in golden hamsters. Vop. onk. 7 no.7:35-41 '61. (MIRA 15:2)

1. Iz laboratorii eksperimental'noy onkologii (konsul'tant - chl.-korr. AMN SSSR prof. L. M. Shabad) Instituta onkologii AMN SSSR (dir. - deystv. chl. AMN SSSR prof. A. I. Serebrov)

(STILBESTROL--PHYSIOLOGICAL EFFECT)
(PHENOL--PHYSIOLOGICAL EFFECT)
(KIDNEYS--TUMORS)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KINA, R.I.; BYCHENKOVA, M.N.; ZALESSKAYA, L.I.

Radiosensitization of inoculated tumors with some pyrimidine derivatives. Vop. onk. 9 no.9:34-38 '63. (MIRA 17:9)

1. Iz laboratorii eksperimental'noy onkologii (zav.- prof. N.V. Lazarev) i rentgenovskogo otdeleniya (zav.- prof. L.M. Gol'dshteyn [deceased]) Instituta onkologii AMN SSSR (dir.- deystvitel'nyy chlen AMN SSSR prof. A.I. Serebrov). Adres avtorov: Leningrad, P-129, 2-ya Berezovaya alleya 3, Institut onkologii AMN SSSR.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KO, N.

Procurement system of the Kuban enters a new phase. Miag. ind. SSSR 29 no.5:35-37 '58. (MIRA 11:10)

1. Upravlyayushchiy Krasnodarskoy krayevoy skotozagotovitel'noy kontoroy.

(Kuban--Meat industry)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POL'KO, N.

Local production of feeds. Mias.ind.SSSR 27 no.3:38-40 '56.
(MIRA 9:9)

1.Upravlyayushchiy Krasnodarskoy krayevoy konteroy Rosglavzagotskotootkorm.
(Krasnodar territory--Feeding and feeding stuffs)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

EYDUS, Ya. [Eiduss, J.]; POLKO, T.; YUR'YEV, Yu.

Vibrational and electron spectra of some selenophene homologs.
Izv.AN Latv.SSR no.2:63-67 '63. (MIRA 16:4)
(Selenophene) (Molecular spectra)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

S/197/63/000/002/004/005
B117/B186

AUTHORS: Eydus, Ya., Polko, T., Yur'yev, Yu.

TITLE: Vibrational and electronic spectra of certain selenophene homologues

PERIODICAL: Akademiya nauk Latviyskoy SSR. Izvestiya, no. 2 (187), 1963, 63-67

TEXT: Vibrational and electron spectra of trimethyl, tetramethyl, 2-ethyl, 2-propyl and 2-butylselenophene were examined and compared with previously investigated spectra of mono and dialkyl selenophenes. The following particularities were established: The band 3060 $cm^{-1}$, which corresponds to the C-H vibrations and is intensive in the infrared spectrum of the selenophene, is slightly shifted toward lower frequencies. It is intensive in Raman spectra but, unlike selenophene, it is very weak in infrared spectra. Since the intensive band observed between 2950 and 2960 $cm^{-1}$ is absent from the spectrum of the very symmetric tetramethylselenophene it seems to be characteristic for such selenophenes as are substituted by mono-, di-, and trialkyl. Unlike tri- and

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tetramethylselenophenes, in whose spectrum the band 2750 $cm^{-1}$ is very weak, it became intensified in the spectra of mono- and dimethylselenophene as the number of methyl groups increased. The bands corresponding to the C=C vibrations were ascertained in the same region as in the spectra of alkyl derivatives of selenophene previously investigated. The band in the region 700 $cm^{-1}$ is characteristic for the vibrations of the C-Se bonding and likewise agrees with previous results. The band in the region 1380 $cm^{-1}$, established in all the compounds investigated, may be attributed to deformation vibrations of the C-H bonding. On comparing the vibrational spectra examined with data hitherto available on spectra of alkanes, cyclic and aromatic hydrocarbons it was found that cyclic compounds that are substituted by propyl can be identified from their vibrational spectra with sufficient reliability. In investigating the electron spectra of alkyl selenophenes it was found that they have an absorption maximum in the region 250 mμ but fail to exhibit any other particularity. There are 5 figures and 1 table.

SUBMITTED: September 1, 1962



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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOPIN, F.
V. MYASNIKOV, Trav. inst. Lomonossoff geochim., crist. mineral. No. 7
341-50, 1936

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

BEUS, A.A., doktor geol.-miner. nauk; NECHAYEVA, I.A.; POLKOPIN, F.D.; PREMYSLER, K.M.; CHUDINOV, Yu.V.; SITNIN, A.A.

[Albitized and greisenized granites, a new prospective type of rare element deposits] Al'bitizirovannye i greizenizirovannye granity - novyi perspektivnyi tip mestorozhdenii redkikh elementov. Moskva, 1961. 33 p. (MIRA 17:8)

1. Akademiya nauk SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. 2. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR (for Beus, Sitnin). 3. Geologorazvedochnyy trest No.1 Ministerstva geologii i okhrany nedr SSSR (for Nechayeva, Polkopin, Premysler).

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

Polkoshnikov I. G.

USSR / Farm Animals. Small Horned Stock. G-2

Abs Jour: Ref Zhur-Biol., No 23, 1958, 105656.

Author : Vermenicheva, M. D., Polkoshnikov, I. G.
Inst : Siberian Scientific Research Institute of Agriculture.
Title : Experiment in Developing Semi-Fine-Wool Sheep for the Northern Forest-Steppe Zone of Siberia.

Orig Pub: Sb. nauchn. rabot sibirsk. n.-i. in-t s.-kh. 1958, No 4, 17-36.

Abstract: In the north of Omskaya Oblast the Fine-wool-coarse-wool hybrids (coarse-wool x Merino) with homogeneous wool were crossed with Lincoln rams. The resulting three-breed hybrids were inbred. Compared with Merino hybrids and pure Merinos, the offspring of the three-breed hybrids had higher live weight, developed better, and had

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

KRZYSZKOWSKA, Anna; BIALOKOZ, Michal; CYGANCZUK, Janusz; DUWINSKA-SLIWINSKA, Bozena; FIRKO-STEPNIEWSKA, Otylia; GURTAT, Bronislaw; KANDZIORA, Stanislaw; KUBIT, Stanislaw; MOKRZYCKI, Mikolaj; POLKOSZEK, Mieczyslaw; ROMANOWSKA, Izabella; WASOWSKA, Janina; WESTRYCH, Feliks; WISNIEWSKI, Henryk.

Tuberculin reaction in recruits. Gruzlica 32 no.2:131-139 F'64

1. Z Zakladu Epidemiologii Instytutu Gruzlicy; Kierownik: doc. dr. med. O. Buraczewski.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVA, A.Z.

24(0); 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

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

Referaty nauchno-issledovatel'skikh rabot; sbornik No. 2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards, Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev) in Leningrad; Sverdlovsk branch of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Commission on Standards, Measures, and Measuring Instruments), created from MGIMIP - Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIFTRI - Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific Research Institute of Physicotechnical and Radio-engineering Measurements) in Moscow; KhGIMIP - Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Khar'kov State Institute of Measures and Measuring Instruments); and NGIMIP - Novosibirskiy gosudarstvenyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Polkova, A.Z., and I.P. Vaganova (Sverdlovsk Branch of VNIIM) Studying Line Comparator 10

Polkova, A.Z. (Sverdlovsk Branch of VNIIM). Completion of Research on Wear Resistance of Plane-Parallel End Standards (of Soviet Plants) of All Classes 11

Kayak, L.K., A.N. Koroleva, and A.D. Zagatina (VNIIM). Improving Accuracy in Testing Small-dimension Scales 11

Osmolovskaya, Ye.P., and K.A. Frolikova (MGIMIP). Studying the Circular Measuring Machine and Development of a Means of Inspecting Graduations of Precision Limbs 12

Polkova, A.Z., and L.L. Medyantseva (Sverdlovsk Branch of (VNIIM). Studying an Instrument for Checking Angle-measuring Devices 13

Card 4/27

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVA, A.Z.; TATEVOS'YAN, M.A.; IVANOVA, E.K.

Gauge blocks with nitrated surfaces. Izm. tekh. no.1:27 Ja '65.
(MIRA 18:4)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVA, A.Z.

Effect of the instability of high-grade gauge blocks on errors in measurements of their length. Trudy inst.Kom.stand., mer i izm.prib no.80-85 '61. (MIRA 15:12)

1. Sverdlovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta metrologii im. D.I.Mendeleyeva.
(Gauges—Testing)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVA, A.Z.

Durability of plane-parallel end measures of lengths. Izm. tekh. no.3:18-20 '57. (MLRA 10:8)
(Weights and measures) (Mechanical wear)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNICHENKO, A. YA. Cand Biol Sci -- (diss) "Biological Peculiarities of Ephemerides in Southern Turkmenia". Len, 1958. 18 pages (Botanical Inst im V.L. Komarov Acad Sci USSR). 120 copies (KL, 10-58, 120).



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

SHISHOV, L.M., POLKOVNIK, Geroy Sovetskogo Soyuza, kand.voyennykh nauk
GAPEYENOK, N.I., polkovnik, Geroy Sovetskogo Soyuza, kand. voyennykh nauk

Session of a department in an aviation unit. Vest. Vozd. Fl. no.10:56 O '61. (MIRA 15:2)

(Aeronautics, Military)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

MOSIN, M.I.; KATS, G.I.; SHEVYAKOV, L.D., akademik, red.; SHUKHARDIN, S.V., red.; AGOSHKOV, M.I., red.; BORISOV, S.F., red.; BYSTROV, N.M., red.; KISLOV, V.M., red.; KRAKHMALEV, M.K., red.; KUZNETSOV, N.A., red.; MAN'KOVSKIY, G.I., red.; MEL'NIKOV, N.V., red.; POLKOVNIKOV, A.A., red.; POPOV, K.S., red.; CHAYKIN, S.I., laureat Leninskoy premii, red.; GONCHAROVA, Ye.A., tekhn. red.

[Kursk Magnetic Anomaly; history of the discovery study, and commercial development of iron-ore deposits. Collection of documents and materials in two volumes, 1742-1960] Kurskaia magnitnaia anomaliia; istoriia otkrytiia, issledovanii i promyshlennogo osvoeniia zhelezorudnykh mestorozhdenii. Sbornik dokumentov i materialov v dvukh tomakh, 1742-1960. Belgorod, Belgorodskoe knizhnoe izd-vo. Vol.1. 1742-1926. 1961. 417 p. (MIRA 15:3)

(Kursk Magnetic Anomaly--Iron ores)
(Magnetic prospecting)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

YAKUSHCINA, S.Ye., KUGUCHEVA, Ye.Ye., POLKOVNIKOV, B.D.

Alkylation of n-butane by propylene at high pressures and temperatures. Dokl. AN SSSR 105 no.1:103-105 N '55. (MLRA 9:3)

1. Predstavleno akademikom A.A. Balandinym.
(Alkylation) (Butane)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B.D.

FREYDLIN, L.Kh.; POLKOVNIKOV, B.D.

Order of hydrogenation of double bonds of cyclopentadiene on a nickel-skeleton catalyst. Izv.AN SSSR. Otd.khim.nauk no.10: 1171-1179 O '56. (MLRA 9:12)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.
(Hydrogenation) (Cyclopentadiene)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B.D.

FREYDLIN, L.Kh.; POLKOVNIKOV, B.D.

Hydrogenation of cyclopentadiene in vinary mixtures with other unsaturated hydrocarbons over porous nickel catalysts. Izv.AN SSSR. Otd.khim.nauk no.11:1312-1319 N '56. (MIRA 10:3)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR. (Cyclopentadiene) (Hydrogenation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

Polkovnikov, B. D.

Effect of pyridine on the rate and the selectivity of hydrogenation of tolan and cyclopentadiene over Raney nickel catalyst and platinum black. L. Kh. Freidlin and B. D. Polkovnikov (N. D. Zelinskii Inst. Org. Chem., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1956, 1502-4.—The reaction rate curves are shown for Raney Ni hydrogenation of cyclopentadiene and tolan in EtOH, EtOH with 10% pyridine, pyridine, cyclohexane, and cyclohexane with 10% pyridine; similar data are given for Pt black catalyst. In the presence of pyridine, Raney Ni causes hydrogenation of tolan to be selective, yielding stilbene, while cyclopentadiene is converted to cyclopentene. Over Pt black in the presence of pyridine, the reaction goes non-selectively, hydrogenating both double bonds of cyclopentadiene. G. M. Kosolapoff

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B.D. Cand Chem Sci -- (diss) "Catalytic hydrogenation of ~~the~~ cyclic hydrocarbons in a system of conjugated double ~~links~~ bonds." Mos,(Publishing House Acad Sci USSR), 1957. 16 pp 22 cm. (Acad Sci USSR. Inst of Organic Chemistry im N.D. Zelinskiy). 110 copies. (KL, 23-57, 109)

-~~19~~- 20

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B. D.

Hydrogenation of cyclopentadiene in binary mixtures with unsaturated hydrocarbons on palladium and platinum blacks. L. Kh. Freidlin and B. D. Polkovnikov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1957, 641-5.—Cyclopentadiene (I) mixed with the following unsatd. hydrocarbons in a 1:2 molar ratio was hydrogenated: cyclohexene (II), tolan (III), styrene (IV), cyclopentene (V), and 1-octene (VI). The solvents were cyclohexane for Pd black and 98% EtOH for Pt black. The data show that on Pd black, as on the Ni skeletal catalyst (*C.A.* 51, 8704e) I is hydrogenated selectively in binary mixts. with II but not in mixts. with IV. The hydrogenation is not selective in mixts. with III in contrast to the data on an Ni catalyst. In the presence of Pt black, I is not hydrogenated selectively in mixts. with V and VI.

J. Roytar Leach

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Inst. Org. Chem. im. N. D. Zelinskiy, AS USSR

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV B.D.

AZATYAN, V.D.; GYULI-KEVKHYAN, R.S.; FREYDLIN, L.Kh.; POLKOVNIKOV, B.D.

Hydrogenation of cycloöctatetraene and its derivatives with a skeleton nickel catalyst. Izv. AN Arm. SSR. Ser. khim. nauk 10 no.1:55-63 '57. (MLRA 10:9)

1. Khimicheskiy institut Akademii nauk Armyanskoy SSR i Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.
(Cycloöctatetraene)
(Hydrogenation) (Catalysts)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B.D.

FREYDLIN, L.Kh.; POLKOVNIKOV, B.D.

Sequence in the hydrogenation of cyclopentadiene double bonds on Pd- and Pt-black. Dokl.AN SSSR 112 no.1:83-85 Ja '57. (MLRA 10:2)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR. Predstavleno akademikom A.A.Balandinym.
(Cyclopentadiene) (Catalysts) (Hydrogenation)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

POLKOVNIKOV, B. D.

Dissertations. Branch of Chemical Sciences, Jul-Dec 1957.
Vest. Ak Nauk SSSR, No. 4, 1958, pp. 116-117

At the Inst. for Organic Chemistry im N. D. Zelinskiy the following dissertations were defended: for the degree Candidate of Chemical Sciences:

BEL'SKIY, I. F. - Catalytic Hydrohenolysis of Furane Homologa.

KURDYUMOVA, K. N. - Structure and Chemical Transformations of Organo-Alkaline Anyl Compounds

NIKIFOROVA - Investigations of the Kinetics of and of the Sequence of the Hydrogenation of Couplings in the Functional Series of Some Hyperoxidic Compounds.

POLKOVNIKOV, B. D. - Catalytic Hydrogenation of Cyclic Hydrocarbons with the System of Linked Double Compounds.

At the Institute for Physical-Chemistry the following dissertations were defended: for the degree of Cand. of Chemical Sciences:

O. Abrarov - Determination of the Discharge Velocity of Nickel Ions and of Cobalt Ions.

LIPIN, A. I. - Investigation of the Precipitation Process of Electrolytic Coatings on Aluminum Alloys.

for the degree of Candidate of Physico-Mathematical Sciences:

DUKHIN, S. S. - Theory of Diffusion Powers of Remote Effect in Aerosols.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820003-9

5(3) SOV/62-59-4-25/42

AUTHORS: Freydlin, L. Kh., Polkovnikov, B. D.

TITLE: Irreversible Catalysis and Consecutive Hydrogenation of Unsaturated Bonds of 1,3-Cyclohexadiene on the Skeleton Nickel Catalyst (Neobratimyy kataliz i posledovatel'nost' gidrirovaniya nepredel'nykh svyazey tsiklogeksadiyena-1,3 na skeletnom nikelevom katalizatore)

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ABSTRACT: It has been shown recently (Ref 7) that the unsaturated bonds of 1,3-cyclohexadiene hydrogenate consecutively in the presence of Pd and Pt black. At the same time the reaction of the irreversible catalysis up to cyclohexene and benzene takes place at a high reaction rate. The results determined in the present paper show that in the presence of skeleton nickel, cyclohexadiene is changed in the same direction. The experimental method, the preparation of cyclohexadiene as well as its qualitative determination have already been described in reference 7. 1,3-cyclohexadiene was hydrogenated in the presence of skeleton nickel at 25°. 96° ethyl alcohol and n-heptane were used as solvents. The results obtained with

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hydrogenation in 96° ethyl alcohol are shown in table 1 and figures 1 and 2. It was found that in the presence of skeleton nickel on Pd and Pt an irreversible catalysis of cyclohexadiene takes place in addition to the hydrogenation. With the irreversible catalysis benzene and cyclohexene are formed. Since cyclohexene hydrogenates under the experimental conditions and in connection with it absorbs the quantity of hydrogen theoretically required, no irreversible catalysis takes place in this case. Benzene is not hydrogenated on skeleton nickel at 25°. Thus the benzene and cyclohexadiene quantities can be determined from the difference between the hydrogen volume necessary in theory and the one actually used; and the transition degree of the weighed portion of cyclohexadiene can be determined from the benzene and cyclohexadiene quantities. The results obtained with hydrogenation in n-heptane are shown in figure 3. It was found that cyclohexadiene, too, hydrogenates at a high rate in n-heptane. The hydrogenation is accompanied by an irreversible catalysis. It was found that the hydrogenation takes place in two stages: first cyclohexene is formed and then cyclohexane. If



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cyclohexadiene is mixed with cyclohexene it is hydrogenated selectively up to cyclohexene. The hydrogenation is accompanied by the irresversible diene catalysis in benzene and cyclohexene. The ratio of the reaction rates on nickel is ~1 : 1.5, i.e. it is half way between Pd and Pt black. Moreover, it was found that alcohol and n-heptane do not influence the direction of the reaction process. In the presence of pyridine cyclohexadiene is hydrogenated only up to cyclohexene because the catalyst is poisoned by pyridine. There are 4 figures, 1 table, and 16 references, 5 of which are Soviet.

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