Pavlyuchenka, M. M.

A reply to B. V. Erofeev's remarks on an article "The kinetics and the mechanism of heterogeneous chemical reactions which occur with the participation of solids." M. M. Pavlyuchenka (White Russian State Univ., Minsk). Zhur. Fiz. Khim. 36, 1100-72 (1962); cf. C. A. 50, 12015d; Erofeev, Zhur. Fiz. Khim. 29, 1336 (1955). - Polemical.

V. M. Sternberg

PAVLYUCHENKO, M.M.

Reply to S.V. Markevich. Zhur.fiz.khim. 30 no.6:1400-1401 Je '56. (MLRA 9:10)

1. Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina, Minsk.
(Chemical reaction, Rate of) (Markevich, S.V.)

Category: USSR / Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis. B-9

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 30038

Author : Pavlyuchenko M. M.
Inst : not given
Title : Reply to the "Critical Comments" of P. I. Bel'kevich

Orig Pub: Zh. fiz. khimii, 1956, 30, No 7, 1678

Abstract: A discussion article. See preceding abstract.

Card : 1/1 -12-

PAVLYUCHENKO, M. M.

Distr: 4E4j

Spectral determination of potassium, magnesium, and calcium in mineral salts. M. M. Pavlyuchenko and V. M. Klimovich. *Vestsi Akad. Navuk Belarus. S.S.R., Ser. Fiz.-Tekh. Navuk* 1957, No. 2, 109-14.—An app. and method are described for the detn. of K, Mg, and Ca in mineral salts by emission spectroscopy. The following pairs of the spectral lines gave the best results: K 3446.37 – Cd 3466.20 and K 4047.22 – Cd 3610.51; Ca 3179.33 – Bi 3076.67; and Mg 2707.64 – Bi 2933.31 and Mg 2779.85 – Cu 2765.88 A. for the detn. of K from 5 to 50 and from 0 to 5; Ca from 0.5 to 20; and Mg from 0.5 to 2.0 and from 0.2 to 20% concn. in mineral salts, resp. K was detd. in 18 and Ca and Mg in 7 different salts with the accuracy of the detns. of 7, 10, and 3-0 relative %, resp. E. Wierbicki

[illegible]

[redacted]

For qualified scientific review. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.2:175-177 '57. (MIRA 11:1)
(Chemistry, Physical and theoretical)
(Explosives)

AUTHOR: Pavlyuchenko, M.M. 76-12-26/27

TITLE: Once Again on the Remarks by S.V.Markevich (Yeshche raz po povodu zamechaniy S.V.Markevicha).

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 12, pp.2765-2765 (USSR)

ABSTRACT: Upon the remarks of S.V.Markevich, which were made without any analysis, the author delivered his elaborate study to the head of the professorial chair for differential equations: Professor A.D. Myshkis, Doctor of physico-mathematical sciences, to the head of the chair for theoretical physics BGU, F.I. Fedorov, Doctor of physico-mathematical scienoes, and to the teaching professor at the same chair: I.Z. Fisher, for examination. Independently from each other, they all came to the same conclusion, viz. that the problem was correctly solved from beginning to end, and that no questions in dispute appeared. Therefore the remarks by S.V.Markevich proved as unfounded. There are 2 Slavic referenoes

Card 1/2

Once Again on the Remarks by S.V. Markevich 76-12-26/27

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

SUBMITTED: June 16, 1956

AVAILABLE: Library of Congress

Card 2/2

PAVLYUCHENKO, M. M., V. M. AKULOVICH, K. V. DUBOVIK, and N. N. BULYGO

"Trace Elements (B, Mn, Sr, Zn) in Salts of Starobinskoye mestorozhdeniye (Deposit) and Their Quantitative Spectrum Analysis" p. 1[illegible]

Sbornik nauchnykh rabot, vyp. [illegible] (Collection of Scientific Works of the Institute of Chemistry, Belorussian SSR Academy of Sciences, No. [illegible]) Minsk, Izd-vo AN Belorusskoy SSR, 195[illegible], 271 pp.

PAVLYUCHENKO, M.M.

KARGIN, V.A.

S(3) PHASE I BOOK EXPLOITATION SOV/1589

Akademiya nauk SSSR.

Khimiya bol'shikh molekul; sbornik statey (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya serija) 30,000 copies printed.

Compiler: G.V. Zhirovskiy; Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: V.A. Boyarskiy; Tech. Ed.: I.N. Guseva.

PURPOSE: This book is intended for a wide circle of readers including those who have had no training in chemistry. It can also serve as a manual for propagandists, teachers, and journalists.

COVERAGE: This collection of articles reflects the trend for the future development of the Soviet chemical industry as indicated by the XXI plenary session of the Central Committee of the Communist Party within the framework of the new Seven Year Plan. These articles were published in newspapers and journals. The authors, scientists and industry workers, developed the theme of accelerated development of the chemical industries, and sciences, with stress on the manufacture of synthetic fibers, plastics, and other materials. Some of the articles were abridged, revised, or enlarged. The articles were selected so as to give an adequate survey of the chemistry and technology of high-molecular-weight compounds and their use in industry, agriculture, and in the manufacture of consumers goods. Mentioned are raw materials for the production of polymers. This book belongs to the popular-science series of the Academy of Sciences. Similar volumes are intended for future publication. No references are given.

TABLE OF CONTENTS:

Card 7/8

Polyakova, M.M.

28(7) PHASE I BOOK EXPLOITATION SOV/2700

Lvov. Universitet

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

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

Editorial Board: O.S. Landsberg, Academician, (Resp. Ed.); B.S. Neporent, Doctor of Physical and Mathematical Sciences; I.I. Shaleinikov, Doctor of Physical and Mathematical Sciences; V.A. Fabrikant, Doctor of Technical Sciences; S.M. Rayskiy, V.O. Soritskiy, Candidate of Technical Sciences; L.K. Klimovskaya, Candidate of Physical and Technical Sciences; V.S. Milyanchuk Candidate of Physical and Mathematical Sciences; A.Ye. Glemberman, Doctor of Physical and Mathematical Sciences (Deceased), Doctor of Physical and Mathematical Sciences; M.I. S.L. Gazer, Tech. Ed.: F.V. Saranyuk.

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

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

Card 2/31

YARMOLENKO, I.M. [Iarmolenka, I.M.]; PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]

Swelling of oxidized cellulose in water. Vestsi AN BSSR. Ser. fiz.-tekhn. nav. No.2:67-75 '58. (MIRA 11:10)
(Cellulose)

PAVLYUCHENKO, M.M.; AKULOVICH, V.M.; FILONOV, I.O.

Spectral determination of trace elements in mineral salts.
Fiz.sbor. no.4:516-519 '58. (MIRA 12:5)

1. Institut khimii AN BSSR.
(Trace elements--Spectra)

GRUZIN, P.L.; KOBONYUK, I.F.; PAVLYUCHENKO, M.M.; POLIKARPOV, Yu.A.

Using the method of radioisotopes in studying the diffusion of sulfur in iron. Inzh.-fiz. zhur. no. 6:64-67 Je '58. (MIRA 11:7)

1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii, Moskva i Belorusskiy gosudarstvennyy universitet im. V.I.Lenina, Minsk.
(Radioisotopes--Industrial applications)
(Sulfur--Isotopes)
(Iron--Metallography)

PAVLYUCHENKO, M. M. and FILONOV, B. O.

"Determination of Copper, Lithium and Rubidium in Mineral Salts by Spectral Analysis." p. 92

Sbornik nauchnykh rabot, vyp. [illegible] (Collection of Scientific Works of the Institute of Chemistry, Belorussian SSR Academy of Sciences, No. [illegible]) Minsk, Izd-vo AN Belorusskoy SSR, 1958, 271 pp.

PAVLYUCHENKO, M.M.; AKULOVICH, V.M.; DUBOVIK, K.V.; BULYGO, N.N.

Microelements (B,Mn,Sr,Zn) and their quantitative spectrum determination in salts of Starobin deposits. Sbor. nauch. rab. Inst. khim. AN BSSR no.6:102-114 '58. (MIRA 11:11)
(Trace elements--Spectra) (Starobin--Potassium salts)

PAVLYUCHENKO, M.M.; VERINA, A.D.

Kinetics of the decomposition of mercury oxalate. Uch.zap.BGU no.42: 95-105 '58. (MIRA 12:1)
(Mercury oxalates) (Chemical reaction, Rate of)

PAVLYUCHENKO, M.M.

Mechanism of the impregnation of the surface of steel with sulfur. Uch. zap.BGU no.42:107-119 '58. (MIRA 12:1)
(Steel--Hard facing) (Diffusion)

SOV/137-59-3-7039

Translation from: Referativnyy zhurnal. Metallurgiya 1959 Nr 3 p 39[illegible] (USSR)

AUTHORS: Pavlyuchenko, M. M., Barskaya, M. N.

TITLE: The Relationship Between the Sulfidization and Nitriding of Gray Cast Iron and the Increase in its Wear Resistance (Sul'fidirovaniye i azotirovaniye serogo chuguna i povysheniye yego iznosostoykosti)

PERIODICAL: Uch. zap. Belorussk. un-t, 1958 Nr 42, pp 121-126

ABSTRACT: Investigations performed dealt with processes of sulfidization, nitriding, and sulfidization with subsequent nitriding of specimens (Ss) of gray cast iron. The Ss were sulfidized with the aid of hydrogen sulfide at temperatures of 250, 300, 400, and 500°C. Best results with regard to wear resistance were observed in Ss which had been first sulfidized for a period of two hours at a temperature of 300° and were then nitrided for a period of three hours at a temperature of 600° (the wear resistance of Ss tested without lubricants and cooling increased by 100-300 times), as well as in Ss which had been sulfidized at 400° for a period of three hours. Bibliography: 9 references.

A B

Card 1/1

YERMOLENKO, I.N.; PAVLYUCHENKO, M.M.; KAPUTSKIY, F.N.

Diagram of the oxidation of cellulose by nitrogen oxides.
Dokl. AN BSSR 2 no.11:461-464 D '58. (MIRA 12:8)

1.Predstavleno akademikom AN BSSR N.F. Yermolenko.
(CELLULOSE) (NITROGEN OXIDE) (OXIDATION)

AUTHORS: Yermolenko I. N., Pavlyuchenko, M. M.

TITLE: The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products (Kinetika okisleniya tsellyulozy dvuokis'yu azota po dannym spektrov pogloshcheniya produktov)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 3, pp 727-728 (USSR)

ABSTRACT: Not regarding the many publications dealing with the oxidation of cellulose with NO_2 the kinetics of this reaction has, to a great extent, not been investigated sufficiently and the formed hypotheses of the mechanism of the processes have not been proved. The application of new methods, in particular of the spectral methods, enabled the authors to find a great number of new and very interesting facts connected with the mechanism of the reaction. By means of the spectral investigations of the organic nitrites their solutions, their nitrogen oxides in free and adsorbed state, of nitric acid and nitrous acid of the oxidized cellulose,

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The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products

79-38 3/37/61

previous to and after a vacuum treatment as well as by heating and the effect of the solvents the authors showed that in the macromolecular reaction products formed in the oxidation of cellulose with NO_2, besides the groups containing carboxy and carbonyl groups a cellulose nitrite is formed in considerable quantities. In order to determine its content in the oxidation products the value of the optical density at λ 365 mμ was made use of; the carboxyl groups were determined according to the modification of the optical density at λ 250 mμ, the carbonyl groups at λ 280 mμ (Refs. 5, 19). Thus the amount of cellulose nitrite found by the authors already earlier in oxidation products of cellulose with NO_2 was determined. It was shown that with the duration of oxidation the amount of the nitrite passes through a maximum. A maximum accumulation velocity of the carboxyles corresponds to the maximum amount of nitrite in the oxidation product. The character of the reaction process depends on the temperature. A rise of temperature reduces the amount of the carboxyl groups as well as of the nitrite. This way the cellulose nitrite discovered by

Card 2/3

The Oxidation Kinetics of Cellulose With Nitrogen Dioxide According to the Data of the Absorption Spectra of the Products

79-28 3-37/61

the authors was recognized as an intermediary product in the oxidation process of cellulose with NO_2.

There are 6 figures and 30 references. 16 of which are Soviet.

ASSOCIATION: Belorusskiy gosudarstvennyy universitet i Institut fiziki i matematiki Akademii nauk Belorusskoy SSR (Belorussian State University and Institute for Physics and Mathematics, AS Belorussian SSR)

SUBMITTED: January 14, 1956.

Card 3/3

AUTHORS: Povlyuchenko, M. M., Kalinenko, Ya. S. [illegible]

TITLE: The Dissociation Kinetics of Barium and Calcium Peroxides (Kinetika dissotsiatsii perekisey bariya i kal'tsiya)

PERIODICAL: Thermal Fi[illegible], Vol. [illegible], [illegible], pp. [illegible] - [illegible] 1958.

ABSTRACT: The problem of the thermal resistance of peroxides is dealt with in the works by Blumenthal (Reference 1), V. D. Avramov and G. I. Chufarov (Reference 2), while the present paper investigates the problem mentioned in the title in high-vacuum under the influence of various factors on the reaction velocity and the mechanism of thermal decomposition. From the experimental part can be seen that the investigated substances were used with and without crystal water, with CaO_2 having been investigated within the temperature interval of from 305 - 370°C and BaO_2 of from 410 - 460°C. The peroxides were obtained in an apparatus proposed by I. A. Kazarnovskiy. From the experiments carried out as well as from the classification.

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78-32-2-26/43

The Dissociation Kinetics of Barium and Calcium Peroxides

of the results obtained can be concluded that the decrease of the velocity of reaction taking place after some time can be traced back to the formation of solid solutions and to the a diffusion process ... to be regarded as limit, in which process S. Kaneyev (Reference ...) obtained similar values. The investigations of the decomposition of crystall-hydrates of peroxides showed that these decompose earlier than the dehydrated substances, and that they display high activity. A great reactivity of the substances at the moment of formation (after dehydration) or crystallization (his transformation respectively was observed by Hedvall (Reference 11) in many reactions in solid phase. The presence of steam does not from 0.05 - 0.1 mm Hg term not exert any influence on the velocity of reaction but ... pressure ... effect. Finally it ... that ... the ... formation of peroxides no splitting ... of ... takes place ... of oxygen molecules. As I. A. Kazarnovskiy (Reference ...) observed their ... the other

Card 2/3

The Dissociation Kinetics of Barium and Calcium Peroxides

hand this is an energetically probable process. There are 7 figures, 1 table and 13 references, 5 of which are Soviet.

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

SUBMITTED: December 27, 1956

AVAILABLE: Library of Congress

1. Barium peroxides--Decomposition 2. Calcium peroxides--Decomposition

YERMOLENKO, Igor' Nikolayevich; PAVLYUCHENKO, M.M., red.; MARIKS, L., red.izd-va; VOLOKHANOVICH, I., tekhn.red.

[Spectroscopy in the chemistry of oxidized celluloses] Spektroskopiia v khimii okislennykh tselliuloz. Minsk, Izd-vo Akad.nauk BSSR, 1959. 291 p. (MIRA 13:2)

1. Chlen-korrespondent AN BSSR (for Pavlyuchenko).
(Cellulose) (Spectrochemistry)

PAVLYUCHENKO, M.M.

24(7),24(0)

AUTHOR: Stepanov, B. I., Academician AS Belorusskaya SSR SOV/30-59-1-9/57

TITLE: Investigations by Belorussian Scientists in the Field of Spectroscopy and Luminescence (Raboty belorusskikh uchenykh po spektroskopii i lyuminestsentsii)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 1, pp 68-76 (USSR)

ABSTRACT: These investigations are being carried out at the Institut fiziki i matematiki (Institute of Physics and Mathematics) and the fizicheskiy fakul'tet Belorusskogo universiteta (Physics Department, Belorussian University) under the direction of B. I. Stepanov, A. N. Sevchenko, M. A. Yel'yashevich, Academicians AS BSSR, and F. I. Fedorov, Corresponding Member, Academy of Sciences, BSSR. In the field of theoretical spectroscopy, the investigations by P. A. Apanasevich, B. I. Stepanov are mentioned. Further, the following investigations are indicated:

B. I. Stepanov, Ye. S. Khvashchevskaya used the general principles of spectroscopy of negative currents in their communications.

On the basis of experimental data A. M. Samson obtained important results in the determination of genuine values of optical characteristics of the substance examined.

L. A. Kravtsov, N. P. Ivanov examined calculation methods of reabsorption with large overlapping of absorption and luminescence spectra.

N. A. Borisevich succeeded in obtaining fundamental results in the examination of luminescence of phthalimide vapors. He also showed that the efficiency of quenching collisions may be much less than one.

L. G. Mikulik, under the direction of A. N. Sevchenko, examines the influence of the solvent on the yield of fluorescence as well as the absorption and emission spectra.

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A. N. Sevchenko, G. P. Gurinovich, A. M. Sarzhevskiy examined the luminescence polarization of many combined molecules. At the same time they designed an improved apparatus.

A. N. Sevchenko, V. V. Kuznetsova work in the field of luminescence of rare-earths complexes.

V. A. Pilipovich examined the phenomenon of phosphorescence. The examinations of optical properties of chlorophyll and related compounds are being carried out in close cooperation with the Institut biologii Akademii nauk BSSR (Institute of Biology, Academy of Sciences, Belorusskaya SSR).

T. N. Godnev, L. A. Kravtsov, R. V. Yefraznova examined the absorption and luminescence spectra of a live leaf.

A. N. Sevchenko, G. P. Gurinovich, K. N. Solov'yev, L. A. Kravtsov examined polarization spectra and the dependence of polarization on the wave length of fluorescence.

A. N. Sevchenko, L. V. Voled'ko obtained valuable data of the composition of complex compounds and the nature of intermolecular forces of interaction.

I. P. Shapiro examined the optical and electrical properties of some crystal phosphors.

Card 3/8

A. N. Sevchenko, B. I. Stepanov examined cellulose and its products of transformation.

R. G. Zhbankov, I. N. Yermolenko worked at high pressure in order to study the composition of celluloses by means of spectroscopical methods.

I. N. Yermolenko, R. G. Zhbankov examined the oxidizing kinetics of cellulose by means of nitrogen dioxide, acid and chloride.

R. G. Zhbankov, B. I. Stepanov, A. Ya. Rozenberg, A. I. Mitrygna, A. M. Shishko examined the mercerizing process of cellulose.

M. M. Pavlyuchenko, I. N. Yermolenko examined the oxidation of celluloses with the use of absorption spectroscopy in the ultraviolet range.

M. M. Pavlyuchenko and collaborators spectrophotometrically examined the adsorption of coloring substances on cellulose.

I. N. Yermolenko, N. Z. Gavrilov examined the luminescence of cellulose products.

B. I. Stepanov, Yu. I. Chekalinskaya determined the dependence of the spectra of dispersed objects on the reduction ratio, the character of the binding agent, and the layer thickness.

Card 4/8

25(5) SOV/25-59-9-17/49

AUTHOR: Pavlyuchenko, M.M., Corresponding Member of the AS BSSR (Minsk)

TITLE: The Starobin Combine

PERIODICAL: Nauka i zhizn', 1959, Nr 9, pp 42 - 44 (USSR)

ABSTRACT: The article deals with the Starobinskiy kaliynyy kombinat (Starobin Potassium Combine), the largest plant of this kind in the Soviet Union, now under construction in the North-western part of the Dnepr-Donets depression. The salt deposit covers the area from the Pripyat' river to the Northern margin of the Donets basin. The combine's concentration plant, which will apply an absolutely new technology developed by Soviet scientists, is intended for reprocessing several million tons of salt yearly. The combine will provide potassium for the soil of Belorussia and the adjacent districts of Poles'ye, which are poor in nutriment. The arable layers in Belorussia contain only 25.3 tons potassium oxide per hectare (Podmoskov'ye - 52.5% and

Card 1/4

Pribaltika 75.8 tons). According to data of the Institut zemledeliya Akademii sel'skokhozyaystvennykh nauk BSSR (Institute of Agriculture of the Academy of Agricultural Sciences of the BSSR), the use of 1 million tons of potassic fertilizers would yield more than 2 billion rubles additionally in the marshland alone. Up to now, potassium salts are provided from Solikamsk and Berezniki. The reserves of sodium chloride of the Starobin deposit are so large that a well bored at Davydovka to a depth of more than 1,300 m did not reach the end of the layer. The thickness of a single seam is greater than 200 meters and the total reserves are estimated at billions of tons. Wells bored in a 23 sq km area of Starobin reached a depth of 919 meters without leaving the salt layer. The salt strata are situated in a depth of 365-650 meters. The reserves already discovered surpass half a billion tons and are probably several times greater. As to the content of potassium chloride, Belorussian potassium salt is inferior only to the layers of Verkhnyaya Kama. The average content is 22% and in the middle part of the

layer 33.4%. A special method used by metro builders is being applied for the first time in building potassium enterprises. The shaft stems are sunk in previously frozen ground. For this purpose, a salt solution is pumped into the bore-hole. A 200 m long ice cylinder with a diameter of 25 meters safely protects the shaft stem during its sinking. In recent years, the flotation method for concentrating potassium salt is widely used. In the Soviet Union, an experimental industrial installation for concentrating potassium salt by the flotation method has been successfully applied in Berezniki, where it gives a daily output of about 650 tons of potassium salt. This method is already used in the SZG, USA and in Western Germany. In recent years, a highly-effective installation - the hydrocyclone (Figure 4) - is being used for the concentration of coal, polymetallic ores and other valuable minerals. With this installation it is possible in laboratories to separate potassium

chloride from sodium chloride in raw potassium salt. Scientists of Belorussia, Moscow and Leningrad, have developed a new technology: concentration by means of the combined flotation and hydrocyclone method. Around the combine a new town will be built larger than the adjacent town of Slutsk. There are 3 photographs and 1 diagram.

5(2)

AUTHORS: Pavlyuchenko, M. M., Rabinchik, Ya. S. SOV/78-4-[illegible]/48

TITLE: The Decomposition of Calcium Peroxide in Carbon Dioxide Atmosphere (Razlozheniye perekisi kal'tsiya v atmosfere uglekislogo gaza)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr [illegible], pp [illegible] (USSR)

ABSTRACT: The decomposition of calcium peroxide in carbon dioxide was quantitatively investigated. The influence of temperature, crystallization water, and catalysts on the decomposition rate were investigated. The decomposition of calcium peroxide was carried out by the static and dynamic method. The tests show that anhydrous calcium peroxide does not react with dry CO_2 at temperatures lower than the dissociation temperature. NaOH and MnO_2 did not show any positive effect as catalysts. Anhydrous calcium peroxide decomposes at 14[illegible]° in humid carbon dioxide atmosphere. Additions of solid NaOH, MnO_2, and CuO to calcium peroxide accelerate the decomposition rate within the temperature range 14.5-52.5°. The crystal hydrate of

Card 1/3

The Decomposition of Calcium Peroxide in Carbon Dioxide Atmosphere SOV/78-4-[illegible]/28

Calcium peroxide ($CaO_2 \cdot 8H_2O$) decomposes without catalysts within the temperature range 15-70° which was investigated. The addition of solid catalysts accelerates the decomposition rate. A mixture of solid alkali hydroxide and manganese dioxide effects quicker decomposition of calcium peroxide than one single component. The mechanism of the decomposition of calcium peroxide in the presence of humidity and CO_2 and the catalytic effect of NaOH, MnO_2, and CuO were discussed. In the presence of humidity the first phase of the reaction probably takes place while hydrogen peroxide is formed ($MeO_2 + H_2O \rightleftarrows MeO + H_2O_2$). The catalysts NaOH, MnO_2, and CuO catalyze the decomposition of hydrogen peroxide while water and oxygen are formed. The higher decomposition rate of the crystal hydrates of calcium peroxide can be explained by the formation of an unstable phase during the dehydration of the crystal hydrate. There are 5 figures, 4 tables, and 11 references, 3 of which are Soviet.

Card 2/3

The Decomposition of Calcium Peroxide in Carbon Dioxide Atmosphere SOV/78-4-1-11/48

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

SUBMITTED: October 10, 1957

Card 3/3

PAVLYUCHENKO, M.M.

Starobin Potash Plant. Nauka i zhizn' 26 no.9:42-44 S '59.
(MIRA 13:1)

1.Chlen-korrespondent AN BSSR, Minsk.
(Starobin--Potash industry)

AUTHOR:

TITLE:

SOURCE:

ABST:

experiments had/[illegible] mixtures were prepared, each [illegible]

0 to 100 %, and 10^{-3} [illegible] 2×10^{-2} [illegible] 2×10^{-3} [illegible]
to each composition. [illegible] % Sn was present in all cases. [illegible]
of the spectral lines and of the background were measured [illegible]
MCP-51 (ISP-51), spectrograph (ISP-22 for Cu), using the [illegible]

Card 1/2

found that with incomplete volatilization, ... and showed sharp ... exhibit the same ... and As/Sb were also ... positions based on ... ing from 0 to 100 ... in the same way. ... (measured with ... the 2 basic components ... date the spectral ... dividing the mixture ... the case of ... completely volatilized. ... desired smoothing ... data are inaccurate. ... ing basic mixtures. ... are 7 figures and 10 Soviet-bloc references.

Card 2/2

AUTHORS: Pavlyuchenko, L..., and Arulovich, ...

TITLE: Determining K, Na and insoluble residue [illegible] by flame photometry and refractometry

SOURCE: Akademiya nauk BSSR, Minsk. Institut [illegible] ... gal'cheskoy khimii. Sbornik nauchnykh rabot. No. ..., Minsk, 1956, 53 - 62

TEXT: The object of this work was to apply [illegible] to analyzing natural K deposits. The method, which consists [illegible] ing the aqueous solutions into an air-acetylene flame and analyz... the latter with the [illegible] (SF-4, spectrophotometer, is described [illegible] illustrated in some detail. K-766 mu and Na-589 m... lines were ... ed. Standards containing 1g NaCl and KCl/220 ml H2O were prepar... varying from 0.5 to 100 % of the total salts, and were used ... calibration line intensity concentration curves. It was found that ... relative analytical error of this procedure ... % and was consider...

Card 1/2

AUTHOR:

TITLE:

SOURCE:

ABST:

were found in the apatites and in the phosphorite, whereas [illegible] and phosphorites required chemical concentration before the [illegible] optic analysis. All the lanthanons were detected. For the [illegible]

Card 1/ 3

S/115/60/000/001/003/005
B004/B063

Spectrochemical determination ...

analyses the lanthanons were first concentrated, using the oxalate method. This is described in some detail. The precipitation of lanthanates should be conducted in neutral rather than acid medium to avoid losses. $CaCl_2$ was added to act as a precipitate carrier. Analytical calibration curves were first constructed with 6 specimens of known compositions. The samples were mixed with powdered carbon (1:1 ratio), to which Zr had been added to act as an internal standard. The following pairs of lines were used for the analysis: La 3988.50 - Zr 3991.13, Y 3982.60 - Zr 3991.13, Yb 3987.99 - Zr 3991.13 and Ce 3952.84 - Zr 3958.22 . The results were reproducible to 5 - 8 % . Yttrium was also determined, with 10 - 12 % accuracy, by the method of additions, with Cd as an internal standard (the pair Y 4374.94 - Cd 4378.63). The method of calculation is given. Cerium was also determined chemically in the apatites. Results of the different methods are tabulated. The total lanthanon contents were 0.4 - 1.2 % in the apatites and 0.[illegible] - 0.[illegible] % in the phosphorites, depending on the deposits. There are 2 figures, 3 tables and 19 references: 12 Soviet-bloc and 7 non-Soviet-bloc.

Card 2/3

PAVLYUCHENKO, M. M.; ALEKSANDROVICH, Kh.M.

Improving the quality of concentrated ore from the Starobin deposit. Dokl.AN BSSR 4 no.1:15-19 Ja '60. (MIRA 13:6)

(Sylvite)

PAVLYUCHENKO, M.M.

Some questions on the structure and reactive capacity of solid bodies. Dokl.AN BSSR 4 no.3:113-115 Mr '60. (MIRA 13:6)
(Solids)

GILEVICH, M.P.; PAVLYUCHENKO, M.M.

Effect of lattice defects on the reaction capacity of silver sulfite. Dokl.AN BSSR 4 no.9:384-386 S '60. (MIRA 13:9)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina.
(Silver sulfite)

YERMOLENKO, I.N.; KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.

Effect of the moisture content and the composition of the oxidant on the oxidation of cellulose by nitrogen oxides. Dokl.AN BSSR 4 no.10: 417-420 '60. (MIRA 13:9)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Nitrogen oxides) (Oxidation)

POKROVSKIY, I.I.; PAVLYUCHENKO, M.M.

Kinetics of the sulfuration of copper by liquid sulfur. Dokl. AN BSSR 4 no. 11:462-465 N '60. (MIRA 13:12)

1. Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina.
(Sulfuration) (Copper)

PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.; KAPUTSKIY, F.N.

Mechanism of the oxidation of cellulose by nitrogen dioxide. Zhur. prikl. khim. 33 no.6:1385-1391 Je '60. (MIRA 13:8)
(Nitrogen oxide) (Cellulose)
(Oxidation)

POKROVSKIY, I.I.; PAVLYUCHENKO, M.M., akademik

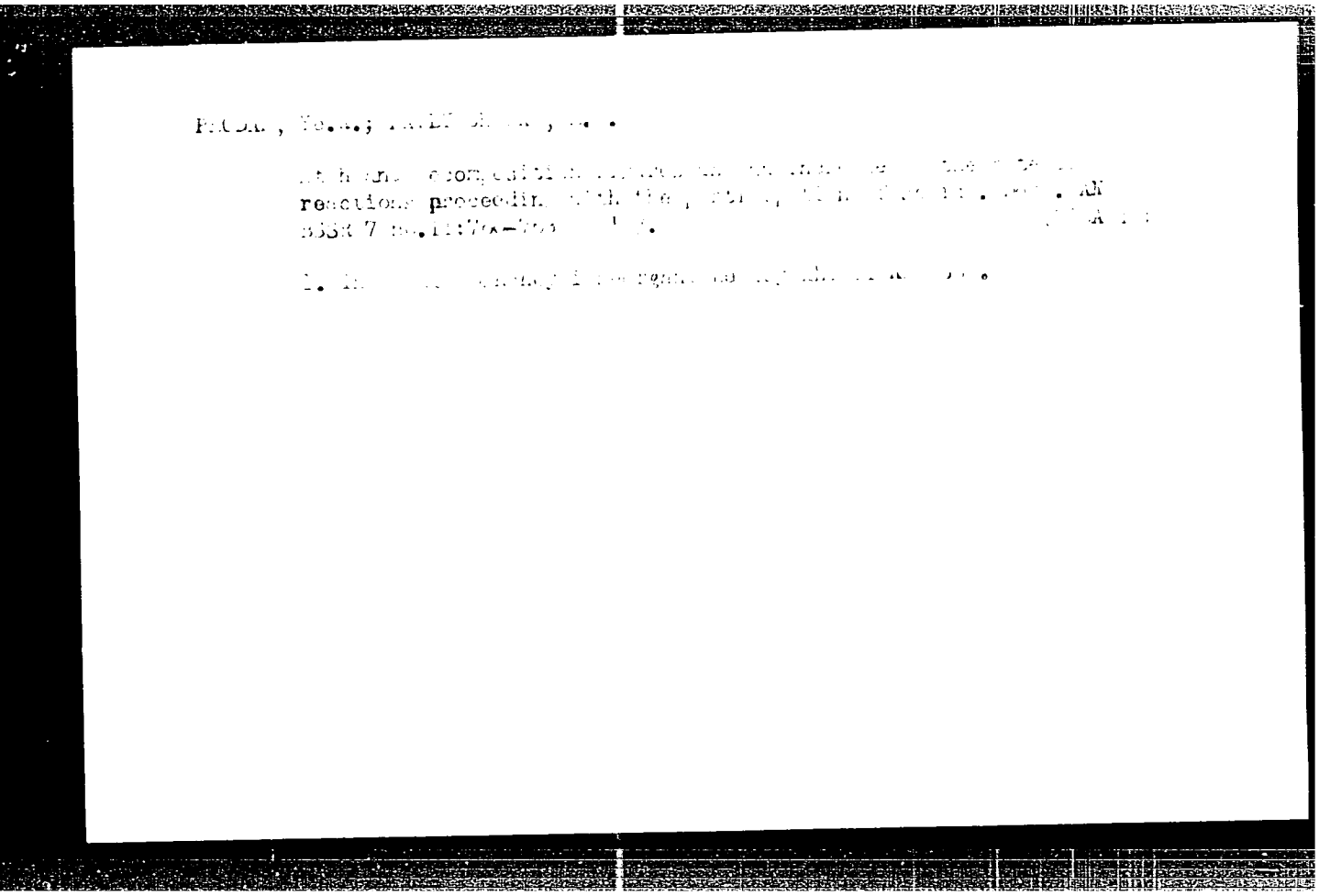
Mechanism of the oxidation of copper by liquid sulfur, as studied by means of the S^{35} isotope. Dokl.AN SSSR 134 no.2:391-393 S '60. (MIRA 13:9)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina.
(Sulfur--Isotopes) (Oxidation) (Copper)

PAVLYUCHENKO, M.M., akad., red.; TIMOFEYEV, L., red. izd-va; SEDERKO, N., tekhn. red.

[Transactions of the Conference on the Use and Processing of White Russian Potassium Salts] Trudy Soveshchaniia po ispol'zovaniiu i obogashcheniiu kaliinykh solei Belorussii, Minsk, 1960. Pod red. M.M. Pavliuchenko. Minsk, Izd-vo Akad. nauk BSSR, 1961. 262 p. (MIRA 14:11)

1. Soveshchaniye po ispol'zovaniyu i obogashcheniyu kaliynykh soley Belorussii, Minsk, 1960. 2. AN BSSR (for Pavlyuchenko).
(White Russia—Potassium salts)



PAVLYUCHENKO, M.M., akademik; ALEKSANDROVICH, Kh.M.; MARKIN, A.D.

Defectometric techniques for the separation of impurities from rock salt. Dokl. AN SSSR 157 no.5:1210-1212 Ag '64. (MIRA 17:9)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
2. AN BSSR (for Pavlyuchenko).

PAVLYUCHENKO, M.M., prof., red.; NAYDOVICH, A.N., red.; BELEN'KAYA, I.Ye., tekhn. red.; DUBOVIK, A.P., tekhn. red.

[Heterogeneous chemical reactions] Geterogennye khimicheskie reaktsii. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 261 p. (MIRA 15:2)

(Chemical reactions)

S/081/62/000/017/020/102
B166/B180

AUTHORS: Pavlyuchenko, M. M., Pokrovskiy, I. I.

TITLE: The mechanism of the high temperature oxidation of metals by oxygen, sulfur and halides

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1962, 58, abstract 17Zh390 (In collection: Geterogen. khim. reaktsii. Minsk, 1961, 240 - 244)

TEXT: An examination of the mechanism of scale-formation processes shows that considerable difficulties arise in trying to explain them on the basis of unidilateral diffusion of the metal towards the scale - metalloid interface alone. These are eliminated if it is assumed that transport of the metalloid towards the interface also occurs during the reaction. [Abstracter's note: Complete translation.]

Card 1/1

S/638/61/001/000/038/056
B108/B138

AUTHORS: Pavlyuchenko, M. M., Kanonyuk, I. F., Markin, A. D.

TITLE: Radioactive isotope study of the diffusion of sulfur in copper and its alloys

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent. 1961, 248-252

TEXT: The diffusion of S^{35} in electrolytic copper and copper alloys with tin, lead, aluminum, and silver was studied by removing thin layers. The grain size of the annealed copper was 1 mm. The sulfur isotope was applied to the copper specimens in a benzene solution. Between 800 and 1000°C, sulfur diffuses uniformly throughout the copper. The diffusion coefficient depends on temperature according to the law $D = 0.824 \cdot \exp(-47,000/RT)$ cm^2/sec. In solid solutions of aluminum, tin, lead, and silver in copper diffusion is also uniform throughout. A new copper sulfide phase arose on the copper surface when the benzene-sulfur solution was applied. This, however, had no effect on the diffusion coefficient. In heterogeneous copper alloys

Card 1/2

PAVLYUCHENKO, M.M.; KOSYUK, E.F.

Flotation of potassium salts and the effect of temperature on the process. Dokl.AN BSSR 5 no.1:9-11 Ja '61. (MIRA 14:3)

1. Institut obshchey i neorganicheskoy khimii.
(Flotation) (Potassium salts)

PAVLYUCHENKO, M.M.; GILEVICH, M.P.; KULIKOV, V.I.

Kinetics and mechanism of thermal decomposition of sodium dithionate. Dokl. AN BSSR 5 no.12:554-557 D '61. (MIRA 15:1)

1. Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina.
(Sodium dithionate) (Thermochemistry)

PAVLYUCHENKO, M.M., akademik; PRODAN, Ye.A.

Role of chemical and crystallization processes in reversible topochemical reactions. Dokl. AN SSSR 136 no. 3:651-653 Ja '61. (MIRA 14:2)

1. Belorusskiy gosudarstvennyy universitet imeni V.I. Lenina.
2. Akademiya nauk BSSR (for Pavlyuchenko).
(Crystallization) (Chemical reactions)

PAVLYUCHENKO, M.M., akademik; GILEVICH, M.P.

Chemical exchange reactions in solid phases and contact between the reacting particles of solids. Dokl. AN SSSR 139 no.3:648-650 Jl '61. (MIRA 14:7)

1. Belorusskiy gosudarstvennyy universitet im. V.I. Lenina. 2. AN BSSR (for Pavlyuchenko).
(Chemical reaction--Conditions and laws)
(Solids)

PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.], SHELKANOVTSEVA, N.A. [Shalkanoutsava, N.A.]

Kinetics and mechanism of lead oxide reduction by carbon.
Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.3:46-53 '62.
(MIRA 18:3)

PRODAN, Ye.A. [Proden, IA.A.]; PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]

Effect of the solid product of the reaction on the mechanism underlying the thermal decomposition of cadmium carbonate. Vestsi AN BSSR. Ser. fiz.-tekn. nav. no.4:42-49 '62. (MIR 15:4)

KAPUTSKIY, F.N.; PAVLYUCHENKO, M.M.; YERMOLENKO, I.N.

Effect of nitrogen trioxide, moisture, and phosphoric acid on the reaction of cellulose with nitrogen peroxide. Vysokom. soed. 4 no.4:503-509 Ap '62. (MIRA 15:5)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Cellulose) (Nitrogen oxides) (Phosphoric acid)

ALEKSANDROVICH, Kh.M.; PAVLYUCHENKO, M.M.; MOZHEYKO, P.P.

Studying rheological properties of heavy suspensions. Dokl. AN BSSR 6 no.3:168-171 Mr '62. (MIRA 15:3)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Flotation)

S/250/62/006/006/006/006
I032/I232

AUTHORS: Kononyuk, I.F. and Pavlyuchenko, M.M.

TITLE: A study of the electric transfer of sulfur in titanium

PERIODICAL: Akademiya nauk Belorusskoy SSR. Doklady, v.6, no.6, 1962, 373-375

TEXT: The diffusion of sulfur in titanium was studied to elucidate the nature of the diffusing sulfur particles. Radioactive S^{35} was made to migrate in titanium plates 40 to 70 mm. in length, at temperatures ranging from 800° to 1200°C, under the action of an electric field with a potential grade between 0.2 and 0.7 V/cm. The sulfur distribution along the sample was recorded by radioactivity counters. The sign and the charge on the sulfur particles was calculated from the direction and extent of displacement of the radioactive zone. In the temperature range between 900° and 1200°C, at which temperatures titanium exists in the β-modification, sulfur always migrated towards the cathode. The average effective charge on sulfur atoms, calculated from the Einstein relation $ZeD = BkT$, was 1.3 ± 0.2 el. units.

Card 1/2

S/250/62/006/006/006/006
I032/I232

A study of the electrotransfer...

To calculate the true charge on sulfur particles, their interaction with the conductivity electrons and holes has to be taken into account. There are 2 figures.

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

SUBMITTED: March 13, 1962

PAVLYUCHENKO, M.M., KORSHUK, E.F.

Effect of the nature of the collector on the temperature dependence and flotation rate of potassium salts. Dokl. AN BSSR 6 no.7:438-441 Jl '62. (MIRA 16:8)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Flotation) (Potassium salts)

PAVLYUCHENKO, M.M., akademik; POKROVSKIY, I.I.

Evaporation of sulfur from sulfide scales separated from copper. Dokl. AN SSSR 153 no.3:646-649 N '63.
(MIRA 17:1)

1. Belorusskiy gosudarstvennyy universitet im. V.I. Lenina.
2. AN BSSR (for Pavlyuchenko).

RUBINCHIK, Ya.S.; PAVLYUCHENKO, M.M.; TSYBUL'KO, I.A.

Use of reflection spectrophotometry to the study of MgO - Fe_2O_3 interaction. Dokl. AN BSSR 7 no.1:30-32 Ja '63. (MIRA 17:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

S/048/62/026/007/011/030
B104/B138

AUTHORS: Pavlyuchenko, M. M., and Filonov, B. O.

TITLE: The use of radioisotopes for studies of the evaporation of salts in an a-c arc

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 7, 1962, 878-881

TEXT: The dependence of Li, Rb, Ba, and Cd line intensities on NaCl and KCl content was investigated on synthetic potassium salts containing 0.001-0.01% Li and Rb chlorides and 0.1-1% Ba and Cd chlorides. Current in the a-c arc was 8 a. If only NaCl or only KCl was present, maximum line intensity occurred during the first period of arc burning. If the two salts were present as a mixture, it was nearer the end. For all the elements examined the variation in line intensity during evaporation is similarly dependent on the ratio of the two salts. Using the radioisotope Cd^{115} in the $CdCl_2$ compound the radioactive intensity of the samples was determined before evaporation, and that of their residue after

Card 1/2

PAVLYUCHENKO, M.M., akademik

Crystal lattice energy and the reactivity of solids. Dokl. AN SSSR 143 no.1:153-155 Mr '62. (MIRA 15:2)

1. Belorusskiy gosudarstvennyy universitet im. V.I.Lenina i AN BSSR.

(Crystal lattices)
(Solids)

PAVLYUCHENKO, M.M., akademik, red.; BEL'ZATSKAYA, L., red.izd-va; ATLAS, A., tekhn. red

[Potassium salts and methods for their processing] Kaliinye soli soli i metody ikh pererabotki. Minsk, Izd-vo AN Bel. SSR, 1963. 151 p. (MIRA 16:10)

1. Akademiya navuk BSSR. Minsk. Institut obshchey i neorganicheskoy khimii. 2. AN Bel.SSR (for Pavlyuchenko).
(Potassium salts)

S/250/63/007/001/005/005
A006/A101

AUTHORS: Rubinchik, Ya. S., Pavlyuchenko, M. M., Tsybul'ko, I. A.

TITLE: The use of reflection spectrophotometry in studying the reaction of MgO - Fe_2O_3 interaction

PERIODICAL: Doklady Akademii nauk BSSR, v. 7, no. 1963, 30 - 32

TEXT: New possibilities will be opened in studying solid-phase reactions if the Kubelka-Munk formula $F(R) = \frac{(1 - R)^2}{2R} = \frac{K}{S}$ (where R is the reflection coefficient; K is the absorption constant, S is the scattering constant) could be applied to determine quantitatively the components of powderlike mixtures in chemical interaction. Results are presented of using this method to determine the amount of a reacted iron oxide in a reaction causing the formation of magnesium ferrite. Spectrophotometrical determinations were carried out with Fe_2O + MgO mixtures, roasted at 1,000°C for 30, 45, 60 min and at 1,100°C for 30, 45, 60, 240, 480 min. One part of the magnesium ferrite samples was subjected to chemical

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PAVLYUCHENKO, M.M.; POPOVA, T.I.

Energy of formation of the peroxide ion. Dokl. AN BSSR 7 no.3: 174-177 Mr '63. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.
(Peroxides) (Thermochemistry)

PAVLYUCHENKO, M.M., akademik; DUBOVIK, K.V.

Intensity of spectral lines of trace elements in a silicate system as dependent on its equilibrium diagram. Dokl. AN SSSR 149 no.5:1088-1090 Ap '63. (MIRA 16:5)

1. Institut obshchey i neorganicheskoy khimii AN Belorusskoy SSR.
2. AN Belorusskoy SSR (for Pavlyuchenko).
(Silicates) (Spectrum analysis) (Phase rule and equilibrium)

PAVLYUCHENKO, M.M., akademik; ALEKSANDROVICH, Kh.M.; MARKIN, A.D.

Selective grinding of potassium ores by a thermal method.
Dokl. AN SSSR 150 no.3:616-618 My '63. (MIRA 16:6)

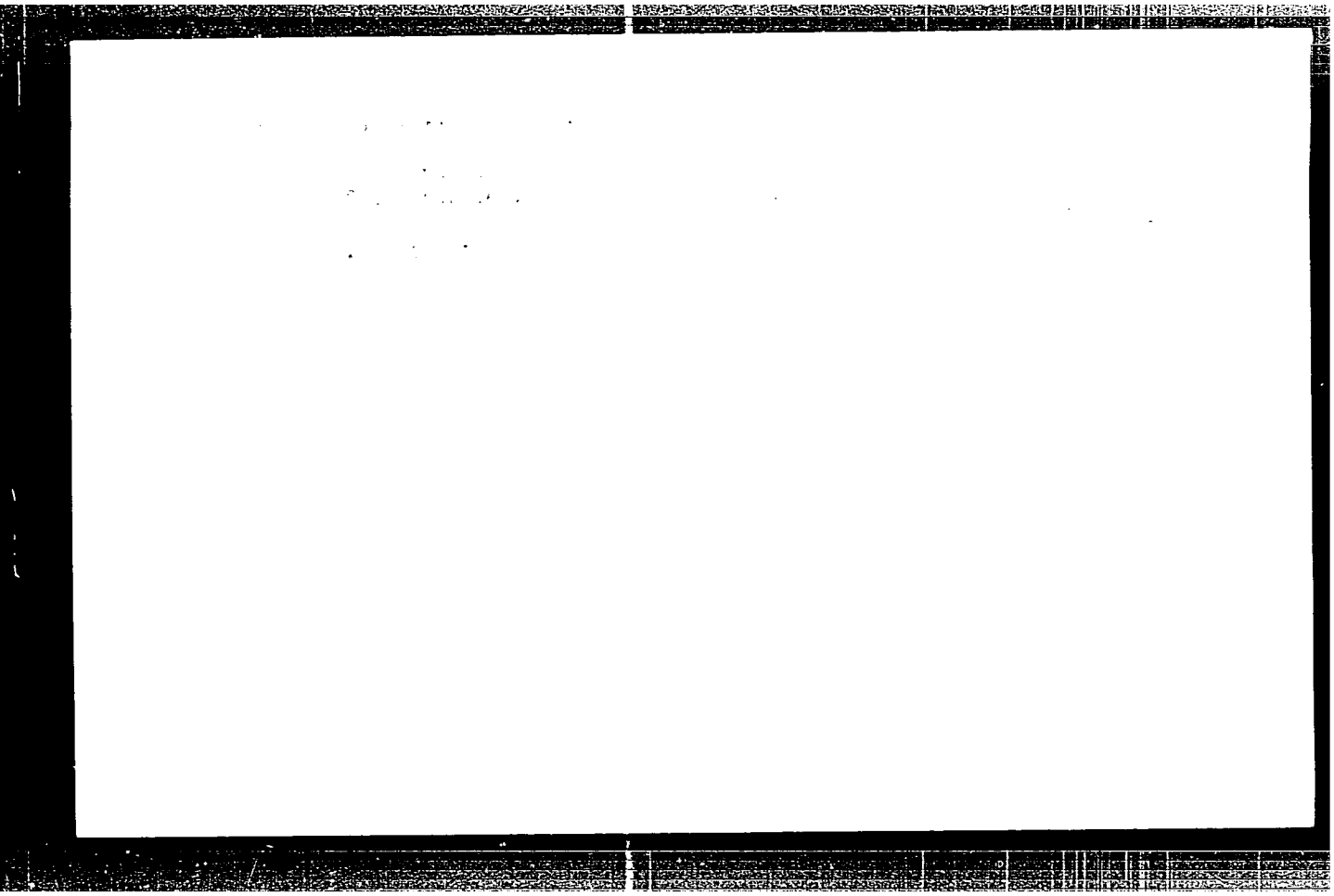
1. Institut obshchey i neorganicheskoy khimii AN BSSR.
2. AN BSSR (for Pavlyuchenko).
(Potassium ores)

ALEKSANDROVICH, Ph.M.; MOZHEYKO, F.F. [Mazheika, F.F.]; PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]

Effect of certain reagents on the properties of heavy suspensions. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.2:58-65 '64. (MIRA 18:1)

ALEKSANDROVICH, L. ...

Effect of certain reagents on the physicochemical properties of clay rocks of Starobin potassium deposits. Vestsi AN BSSR Ser. fiz.-tekh. nauk, ... 3-77 '54.



APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239720005-2"

RUBINCHIK, Ya.S.; PAVLYUCHENKO, M.M.; SYBUL'KO, I.A.; LEYTSINA, V.G.

Kinetics of formation of magnesium ferrite from magnesium and iron oxides. Dokl. AN BSSR 8 no.10:654-656 O '64. (MIRA 18:3)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

ALEKSANDROVICH, Kh.M., PAVLYUCHENKO, M.M.

Role of the interaction of particles in the concentration of potassium ores by gravitation. Dokl. AN BSSR 8 no. 11:723-724 N '64. (MIRA 18:3)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

PAVLYUCHENKO, M.M.; [illegible], S.A.; [illegible], Ye.A.

Thermal stability of natural and synthetic manganese carbonates. Dokl. AN B.S.S.R. no.6:379-382 Je '65. (MIRA 18:9

1. Institut obshchey i neorganicheskoy khimii AN B.S.S.R.

PAVLYUCHENKO, M.M.; LOKSHOVSKIY, I.I.

Kinetics of vaporization of sulfur from sulfide scales. Dokl. AN BSSR 7 no.7:446-449 Jl '63. (MIRA 16:9)

1. Belorusskiy gosudarstvennyy universitet imeni V.I.Lenina.

PAVLYUCHENKO, M.M.; LITVINENKO, E.Ye.; BASOVA, N.P.

Effect of the pH of the medium on the adsorption of octodecylamine acetate on potassium and sodium chlorides and sulfates. Dokl. AN BSSR 9 no.8:520-522 Ag '65. (MIRA 18:10)

1. Institut obshchey i neorganicheskoy khimii AN BSSR.

L 61816-65 EWG(j)/EWT(m)/EPF(c)/EWP(t)/EWP(b) Pr-4/Ps-4 IJP(c) JD/JW 30

ACCESSION NR: AP5018249 UR/0078/65/010/007/1663/1667 28

546.654-31-546.641-31-546.723-31 B

AUTHOR: Rubinchik, Ya. S.; Pavlyuchenko, M. M.; Tsybul'ko, I. A.; Leytsina, V.G.

TITLE: Reactions of lanthanum oxide and yttrium oxide with ferric oxide

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 7, 1965, 1663-1667

TOPIC TAGS: lanthanum oxide, yttrium oxide, iron oxide, garnet, perovskite

ABSTRACT: The course of the reaction was followed by means of chemical, x-ray, magnetic, and spectrophotometric analyses, and certain factors affecting the reaction rate were determined. The oxide mixture Y_2O_3:Fe_2O_3 (1:1 and 3:5) was reacted at 900-1400C. $YFeO_3$ and $Y_3Fe_5O_{12}$ were identified as the products by x-ray diffraction. At 1200C, the oxides convert completely into the final product, a garnet, which is responsible for the ferromagnetic properties observed. Formation of garnet proceeds via the formation of a perovskite, which begins to react with excess Fe_2O_3 at 1100C to give garnet. The reaction is very fast during the first 10 min. The apparent activation energy was calculated to be 20 kcal/mole for the initial period; this relatively low value indicates that

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L 61816-65

ACCESSION NR: AP5018249

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surface diffusion, not volume diffusion, of the ions through the layer of the product plays a major part. The reaction between La_2O_3 and Fe_2O_3 was studied at 700-1400C. For a 1:1 ratio of the oxides, the compound $LaFeO_3$ is formed already at 700C. The presence of this perovskite phase was shown by an unusually strong reflection with $\theta = 67^{\circ}24'$, corresponding to an interplanar distance of 1.049 A. The reaction is complete at 1300C. As in the preceding case, the reaction is fast at first, then slows down. The activation energy for the initial period is 32.8 kcal/mole. Orig. art. has: 4 figures and 5 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk BSSR (Institute of General and Inorganic Chemistry, Academy of Sciences, BSSR)

SUBMITTED: 02Jan64 ENCL: 00 SUB CODE: IC

NO REF SOV: 001 OTHER: 009

Card 2/2

PAVLYUCHENKO, M.M.; [illegible], I.I.

Answer to the remarks made by A.Brukman, S.Mrovets, and T.Verber. Fiz. met. i metalloved. 20 no.4:639-640 O '65.
(MIRA 18:11)

1. Belorusskiy universitet imeni V.I.Lenina.

PAVLYUCHENKO, M.M., red.; PRODAN, Ye.A., red.

[Heterogeneous chemical reactions] Geterogennye khimicheskie reaktsii. Minsk, Nauka i tekhnike, 1965. 200 p.
(MIRA 18:11)

L 38706-66 EWT(m)/T/EWP(t)/ETI LJP(c) JD/WW/JG/JWD/GD
ACC NR: AT6016860 (A) SOURCE CODE: UR/0000/65/000/000/0080/0085

AUTHOR: Pavlyuchenko, M. M.; Popova, T. I.

ORG: none

TITLE: Kinetics of the thermal decomposition of lithium peroxide

SOURCE: Geterogennyye khimicheskiye reaktsii (Heterogenous chemical reactions). Minsk, Nauka i Tekhnika, 1965, 80-85

TOPIC TAGS: lithium compound, reaction rate, heat of decomposition, thermochemistry, activation energy

ABSTRACT: The kinetics of decomposition of Li_2O_2 in the 280°-320°C range and at $1 \cdot 10^{-5}$-0.9 mm Hg of oxygen pressure was studied. The Li_2O_2 samples were prepared by pouring a solution of LiOH in 65%-H_2O_2 into ethyl alcohol at 0°C. The vacuum-dried product (for 5 hours at 80°-100°C) was found to contain 34.87% peroxide oxygen. The accuracy of decomposition temperature measurement was ±1°C. The decomposition curves for Li_2O_2 in the 280°-320°C range are graphed. The activation energy of Li_2O_2 decomposition was found to be 55.9 kcal/mole and the temperature coefficient

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L 38706-66

ACC NR: AT6016860

of this decomposition was found to be 2.35. The Li_2O_3 decomposition occurs in the kinetic range and its rate is constant in 280°-300°C and is increasing in 300°-320°C range. It is postulated that during Li_2O_2 decomposition two processes, decomposition of O_2^{2-} ions and formation of metal oxide, take place simultaneously. The loss of energy due to decomposition of the peroxide ion O_2^{2-} is compensated by reduction in distance between O^{2-} ion and Li^+ ions in the product Li_2O. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 04Oct65/ ORIG REF: 006/ OTH REF: 014

Card 2/2

L 38707-66 EWT(m)/T/EWP(t)/ETI LJP(c) JD/WW/JG/JWD/GD
ACC NR: AT6016861 (A) SOURCE CODE: UR/0000/65/000/000/0086/0092

AUTHOR: Pavlyuchenko, M. M.; Glazkova, N. I.

ORG: none

TITLE: Zinc carbonate decomposition in vacuo and in melts of alkali metal nitrates

SOURCE: Geterogennyye khimicheskiye reaktsii (Heterogenous chemical reactions). Minsk, Nauka i Tekhnika, 1965, 86-92

TOPIC TAGS: nonferrous metal, zinc compound, reaction rate, thermochemistry, heat of decomposition, carbonate, activation energy, alkali metal, nitrate

ABSTRACT: The kinetics of thermal decomposition of $ZnCO_3$ was studied in vacuo and in a 58% KNO_3+42% $LiNO_3$ melt in the 250°-280°C range. The object of the work was to verify the pertinent information in the literature. It was found that $ZnCO_3$ decomposition is a self-accelerating reaction and that its rate increases with increasing temperature. It was also found that at 280°C and at 250°C, the $ZnCO_3$ decomposition in the $KNO+LiNO_3$ melt and in vacuo was 129 and 178 times greater respectively than in vacuo in the absence of the melt. The dependence of the

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L 38707-66

ACC NR: AT6016861

specific surface area of $ZnCO_3$+ZnO mixtures upon the degree of $ZnCO_3$ decomposition (α) in vacuo is graphed. During thermal decomposition, the specific surface area of ZnO formed is independent of CO_2 pressure accompanying $ZnCO_3$ decomposition. The degree and rate of $ZnCO_3$ decomposition as functions of time are graphed for 250°-280°C and 0-120 min decomposition duration and in the presence and absence of the nitrate melt. Graphs are also given for the temperature dependence of the rate of $ZnCO_3$ decomposition in the presence and absence of the melt. The activation energy of $ZnCO_3$ decomposition in the nitrate melt and in the absence of the nitrate melt was found to be 34.31 kcal/mole and 37.99 kcal/mole, respectively. Orig. art. has: 5 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 04Oct65/ ORIG REF: 005/ OTH REF: 006

Card 2/2 SW

PRODAN, Ye.A.; PAVLYUCHENKO, M.M.; DERBINSKIY, I.A.

Figures of thermal decomposition on mercury oxide crystals.
Dokl. AN BSSR 9 no.9:585-587 S '65. (MIRA 18:11)

1. Belorusskiy gosudarstvennyy universitet imeni Lenina.
Submitted April 8, 1965.

DUBOVIK, K.V.; PAVLYUCHENKO, M.M.

Study of the supply of elements from a mixture of oxides by means of reabsorption. Zhur. anal. khim. 20 no. 11:1174-1179 '65 (MIRA 19:1)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk. Submitted April 27, 1964.

PAVLYUCHENKO, M.M.; POKROVSKIY, I.I.; TIKHONOV, A.S.

Self-diffusion of copper in Cu_2S. Dokl. AN BSSR 9 no. 4: 235-237 Ap '65 (MIRA 19:1)

1. Belorusskiy gosudarstvennyy universitet imeni Lenina. Submitted January 30, 1965.

PAVLYUCHENKO, Mikhail Mikhaylovich; POTAPOVICH, A. K.; GILEVICH, M. P.

"Kinetics and mechanism of the thermal dithionate decomposition and formation of free radicals."

Report to be submitted for the 5th Intl. Symposium on the Reactivity of solids (IUPAC), Munich, West Germany, 2-8 Aug 1964.

Inst of Gen & Inorganic Chemistry, AS BSSR, Minsk.

PRODAN, Ye. A.; PAVLYUCHENKO, M. M.

"Crystallization reactions in the thermal decomposition of solid materials."

Report to be submitted for the 5th Intl. Symposium on the Reactivity of Solids (IUPAC), Munich, West Germany, 2-8 Aug 1964.

Inst for General & Inorganic Chemistry, AS BSSR, Minsk.

ALEKSANDROVICH, Kh.M.; PAVLYUCHENKO, M.M.

Certain problems involved in the treatment of potassium salts of Starobin deposits. Khim. prom. no.10:765-770 O '63. (MIRA 17:6)

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AUTHORS: Pavlyuchenko, M. M.; Kononyuk, I. F.

TITLE: A study of sulfur diffusion into certain high melting metals

SOURCE: AN BSSR. Doklady*, v. 8, no. 3, 1964, 157-160

TOPIC TAGS: sulfur, grain boundary diffusion, volume diffusion, diffusion coefficient, sulfur solubility, autoradiograph, sulfur 35, radiometric analysis

ABSTRACT: The diffusion of sulfur into high-melting metals was studied. Sulfur S^{35} was coated on the test metal, either in a thin layer that established an unsteady diffusion source, or in a relatively thick layer (~5 microns) for a constant source. After heating at 700-1250C a layer-by-layer radiometric analysis of the sample was conducted. In cobalt (99.99% pure) the diffusion at 700-900C was almost exclusively along grain boundaries, but above 1000C volume diffusion also occurred. At 1150-1250C sulfur distribution from a thin layer was uniform through the sample, while from the thick layer it was concentrated along boundaries at certain places. The sulfur concentration (I) was studied as a function of the diffusion depth (x). For both steady and unsteady diffusion sources on cobalt a plot of $\log I = f(x^2)$ is linear, and its slope determined the volume

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apparent above 1000C and in tungsten at 1100-1200C, where volume diffusion accompanies boundary diffusion. The solubility of sulfur in several metals is in the range 0.01-0.001%. Orig. art. has: 2 figures and 1 table.

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PAVLYUCHENKO, M.M.; DUBOVIK, K.V.

Intensity of the spectral lines of trace elements and the state diagram of the system. Zhur anal.khim. 18 no.12:1426-1431 D '63. (MIRA 17:4)

1. Institut obshchey i neorganicheskoy khimii AN BSSR, Minsk.

PAVLYUCHENKO, M.M. [Pauliuchenka, M.M.]; SHELKANOVTSEVA, N.A. [Shalkanoutsava, N.A.]

Kinetics and mechanism of the carbon reduction of cadmium oxide. Vestsi AN BSSR. Ser. Fiz.-tekh. nav. no.2:42-47 '63. (MIRA 17:1)

PAVLYUCHENKO, M.M.; POPOVA, T.I.

Energy of elementary events of formation of the peroxide ion. (MIRA 16:10)
Dokl. AN BSSR 7 no.7:456-458 Jl '63.

1. Institut obshchey i neorganicheskoy khimii AN BSSR.