

The Determination of Uranium by Using Potassium Iodate NOV/74-137120-24

tion of $KJ\text{O}_3$ in 10 per cent H_2SO_4 (the same volume as in the initial solution) used for precipitation in this method had to be reduced by one half in case of a uranium content in the test solution of more than 2 mg; in case of smaller amounts of uranium (1-2 mg) a ratio of 2:1 between the initial solution and the volume of the sample is favorable. After this, an 0.8 per cent solution of $KJ\text{O}_3$ is added whose volume amounts to twice that of the original test solution (2-40 ml). The precipitate is filtered through a glass sinter pot and washed with a diluted solution of potassium iodate in sulfuric acid (0.4 per of $KJ\text{O}_3$ in one per cent H_2SO_4) and then with alcohol and ether. The precipitate thus obtained can be dried at $100-120^\circ$ until its weight is constant and it still retains its constancy at a temperature of 170° . If the precipitate was washed with a solution of $KJ\text{O}_3$ and with alcohol only, decomposition starts at 60° . The content of uranium in the precipitate was determined by titration with permanganate and by glowing to U_3O_8 . The iodate ion was determined iodometrically

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The Determination of Uranium by Using Potassium Iodate SOV-75-11-5-10/24

after the precipitate was dissolved in H_2O_2 and after the uranium was oxidized to its hexavalent state with permanganate. The absence of potassium in the precipitate was determined with a microcrystalloscope with $H_2[PtCl_6]$ after destruction of the precipitate and separation of the uranium. The precipitate dried at $110-120^\circ$ does not contain any water of crystallization. The precipitate formed under the given conditions therefore corresponds to the formula $U(JO_3)_4$ and may be used for the gravimetric determination of uranium. A titrimetric determination is also possible. For this purpose the precipitate is dissolved in H_2SO_4 , mixed with a solution of KJ and titrated with thiosulphate. A portion of the iodine formed reacts with quadrivalent uranium: $U^{4+} + I_2 + 2 H_2O = UO_2^{2+} + 2 I^- + 4 H^+$. Therefore, there are 22 (4.5 + 2) g equivalents of iodine for every atom of uranium. Copper and molybdenum do not form iodates under the conditions mentioned and can moreover be removed by electrolysis at a mercury cathode. Vanadium is reduced in the electrolysis and does not interfere with the de-

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S/189/62/000/005/004/006
D204/D307

AUTHORS: Alimarin, I. P., Nikolayeva, Ye. R., and Masalovich, V. M.

TITLE: A study of the system uranium (IV) - uranium (III)

PERIODICAL: Moscow. Universitet. Vestnik. Seriya II, Khimiya, no. 5, 1962, 50-54

TEXT: The electrolytic reduction of uranyl salts was studied on an Hg cathode in ~0.1 - 1.1N HCl, H₂SO₄, and HClO₄, under H₂, with a Pt anode, at 40 - 50 and 12 - 15°C, for up to 4 hours, from solutions containing 0.01 or 0.1 mol of U per liter. The highest degrees of reduction were observed in 0.4N HCl, 0.2N H₂SO₄, and 0.2N HClO₄ (47 - 49, 40 - 44, and 34 - 36 % respectively) for durations of 1.5 - 2.5 hrs, at 12 - 15°C; further increases of acidity or time of reaction led to a decrease in the

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ALIMARIN, I.P.; NIKOLAYEVA, Ye.R.; TIKHONOVA, V.I.; BOBROVA, L.V.

Oxidation-reduction properties of bivalent vanadium compounds.
Zhur.energ.khim. 7 no.2:296-304, P '62. (MIRA 15:3)

1. Moshovskiy gosudarstvennyy universitet imeni Leninsseva,
kafedra analiticheskoy khimii.
(Vanadium compounds) (Oxidation-reduction reaction)

AGASYAN, P.K.; NIKOLAYEVA, Ye.R.

**Theoretical principles and interrelationship of the electrostatic
methods of chemical analysis (Survey). Izv.lab. 29 no.7:773-781
'63. (MIRA 16:8)**

(Electrochemical analysis)

AGASYAN, P.K.; NIKOLAYEVA, Ye.P.; RYSKULBEKOVA, R.M.

Potentiometric titration of titanium (IV) with a solution of vanadium (II) sulfate. Zhur.anal.khim. 19 no.10:1219-1222 '64.

(MIRA 17:12)

1. M.V. Lomonosov Moscow State University.

AGASYAN, P.K.; NIKOLAYEVA, Ye.R.; DEMINA, L.A.

Selection of an electrometric method of determining uranium by titration
with vanadate and complexon. Zav.lab. 30 no.12:1414-1438 '64.
(MIRA 18:1)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.

NIKOLAYEVA, Ye.S. (Lugansk)

Evening dedicated to the topic "Plants in spring." Mol. v shkol. no.2:
76-78 Nr-Ap '63. (MIRA 1614)

(Botany—Study and teaching)

NIKOLAYEVA, Ye.S.

Embryology of the poplar *Populus balsamifera* L. Bot. zhur. 49 no.11:
1644-1649 # '64. (MIRA 18:1)

1. Inganskiy pedagogicheskiy institut.

NIKOLAYVA, Ye.Ye., nauchnyy sotrudnik.

**Pathohistological changes in producers of immune sera.
Trudy Gos.nauch.-issl.inst.vet.priy. 4:269-276 '59.(MIRA 7:10)
(Serum) (laboratory animals)**

VOLIK, Ye.K., doktor veterinarnykh nauk; NIKOLAYOVA, Ye.Ye., mladshiy nauchnyy sotrudnik.

Bacteriocidal action of ultraviolet lamps. Veterinaria 34 no.8:81-82 Ag '97. (MIRA 10:9)

1. Sekundarnyy nauchno-kontrol'nyy institut veterinarnykh preparatov Ministerstva sel'skogo khozyaystva SSSR. (Ultraviolet rays--Physiological effect)

NIKOLAYEVA, Ye.Ye.

**Tectonics of Kasakh Bay based on water-borne seismic surveying
data. *Notegs.geol. i geofiz.* no.8:20-23 '65.**

(MIRA 16:8)

14B325

ACCESSION NR: AR5018563

UR/0299/65/000/014/B044/B044

SOURCE: Ref. zh. Biologiya. Svodnyy tom, Abs. 14B325

AUTHOR: Grezin, V. F.; Nikolayova, Ye. Ya.

11B

TITLE: Fermentation of oleandomycin in a deep growing culture of Actinomyces antibioticus

CITED SOURCE: Tr. Gos. nauchno-kontrol'n. in-ta. vet. preparatov, v. 12, 1964, 291-295

TOPIC TAGS: fermentation, oleandomycin, antibiotic, pharmacognosy, animal husbandry

TRANSLATION: Conditions for producing oleandomycin for uses of animal husbandry were investigated. The experiments were carried out at 26-28° in flasks with a vibrating device and in fermenters with a capacity of 45-100 liters. In working up the composition of the medium, the best results were obtained by combining different concentrations of soybean flour with sunflower oil cake and glucose with molasses. Using a VNIIA medium as a base with 3% sunflower oil

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L 1878-66

ACCESSION NR: AR5018563

cake and 1.5% molasses, the yield of oleandomycin was 322 units/ml. Cottonseed oil cake was found to be unsuitable for oleandomycin biosynthesis. Native oleandomycin does not lose its activity after more than 2 months of storage at 3-5°. A. Meshkov.

SUB CODE: LB

ENCL: 00

Card 2/2 LP

in *Medits. Na. Yel., Englewood*

"On the Morphology of Openings and Channels in the Partition of Auricles in Humans."
Thesis for degree of Cand. Medical Sci. Sub 24 Apr 50, Second Moscow State Medical
Sci. Sub 24 Apr 50, Second Moscow State Medical Inst. imeni I. V. Stalin

Summary 71, 4 Ser 52. Dissertations Presented for Degrees in Science and Engineering
in Moscow in 1950. From Vecherneya Moskva, Jan-Dec 1950.

НИКОЛАЙНА, Yо.Yо.; ЛОПУХИН, Yu.K.

Effect of prolonged stimulation of the vagus and sympathetic nerves on the quantity and acidity of gastric juice. *Biol. eksp. biol.* 1 vol. 37 no. 4:34-36 4p '54. (MEDA 7:7)

1. Is inquiry operativny khirurgii o topograficheskoy anatemiyev (sov. prof. V.A.Ivakhov) II Moskvozhskogo meditsinskogo instituta imeni I.V.Stalina (dir. dozent S.I.Milevidov)

(GASTRIC JUICE,

Quantity & secretion, eff. of stimulation of sympathetic & vagus nerves in dogs)

(NERVOUS VAGUS, physiology,

Eff. of stimulation on gastric juice acidity & secretion in dogs)

(SYMPATHETIC NERVOUS SYSTEM, physiology,

Eff. of stimulation on gastric juice acidity & secretion in dogs)

НИКОЛАЙНВА, Ye.Ye.

**Formina and canals of the coctum auricularum in can. Arch.
anat.gist. i emb. 32 no.1:56-58 Ja-ly '55. (MIRA 8:9)**

**1. Is kafedry klinicheskoy anatomii i operativnoy khirurgii
Tsentral'nogo instituta usovershenstvovaniya vrachey (sov.
kafedry khim-korrespondent ANU SSSR professor B. V. Ognev)
(MIRA, anatomy and histology,
coctum auricularum formina & canals)**

NIKOLAYEVA, Yu.; KONFENDRAT, Ya.

Introducing work norms in the building materials industry.
Sots. trud 8 no.8:124-128 Ag '63. (NIRA 16:8)

1. Glavnoye upravleniye promyshlennosti stroitel'nykh materialov
i stroitel'nykh detaley (for Nikolayeva).
(Moscow—Building materials industry—Production standards)

NIKOLAYEVA, Yu. N. Cand Agr Sci -- (diss) "Study of Early Stages
of the Embryonic Development of Chickens in Connection with Various
Periods and Conditions of Egg Preservation." Moscow, 1955. 19 pp
20 cm. (Sci Res Inst of Poultry Raising of the Min of Agr RSFSR),
100 copies (KL, 27-57,108)

- 55 -

LOTSEVICH, P.A.; MONDALEV, G.F.; MIKHALEVICH, N.G.; ZINOVICH, E.F.;
SAFRONENKO, A.P.; KLIPENKOV, P.A.; GAYDUREVICH, N.M.; SILIN,
N.S.; BRAZOVSKIY, P.V.; KOVPAK, M.D.; MELESNKEVICH, O.A.;
KASHITSOVA, V.N.; KULIKOVSKIY, A.V.; TARAYKOVICH, P.I.;
ALEYNIKOV, G.A.; SIBULEVICH, Sh.S.; GRACHEVA, E.I.; NIKOLAYEVA,
Ye.E.; VOLKOV, M.A.; DOMASHEVICH, O., red.; KARKLINA, E.,
red.; SUTKOVA, V., tekhn. red.

[Manual for livestock raisers] Spravochnik shivotovoda.
2., dop. i perer. izd. Minsk, Gos.izd-vo sel'khoz.lit-ry
BSSR, 1963. 462 p. (MIRA 16:8)

1. Glavnyy nauchnyy Upravleniya nauki Ministerstva sel'skogo
khozaystva Belorusskoy SSR (for Safronenko).
(Stock and stockbreeding)

KISILENKO, A.A.; SALEPOVA, A.I.; SMIRNOVA, A.I.; SYRTSOVA, Ye.M.;
MIKHAYLOVA, A.D.; GUK, Yu.I.; NIKOLAYEV, Z.A.;
AYZENBERG, M.M.; MIKHAYLOVA, K.L.; UCHAKOVA, T.V., red.

[Agroclimatological manual for Stalino Province] Agrokli-
maticheski spravochnik po Stalinskoj oblasti. Leningrad,
Gidrometeoizdat, 1959. 101 p. (MIRA 17:8)

1. Ukraine. Upravleniye gidrometeorologicheskoy sluzhby.
2. Nachal'nik Otdela agrometeorologii Kiyevskoy gidro-
meteorologicheskoy observatorii (for Salepova).

SHARATOV, A.D., red.. V redaktirovani priimani uchastiye: SHARATOV, E.K.;
FEDOROVA, M.A.; OUCHENNIKOV, A.I.; SILOVA, A.I.; SIGEL', M.G.;
KARVINSKIY, A.V.; KULICHKIN, A.V.; NIKOLAYOVA, I.A.; SEMENOVA,
V.P.; SYNOVA, V.K.; SUKNIKOVA, V.M.. YEMININ, E.I., red.;
KRAMER, Ya.M., tekhn.red.

(Economy of Ul'yanevsk Province; a concise statistical manual)
Sostavnoe khozisistvo Ul'yanevskoi oblasti; kratkii statisticheski
sbornik. Ul'yanevskoe knizhnoe izd-vo, 1958. 199 p. (NIRA 12:3)

1. Ul'yanevsk (Province). Oblastnoye statisticheskoye upravleniye.
2. Nachal'nik Statisticheskogo upravleniya Ul'yanevskoy oblasti
(for Sharatov).

(Ul'yanevsk Province--Statistics)

SIMONOV, Ye.P.; SALEKOVA, A.I.; SMIRNOVA, A.I.; SYRISOVA, Ye.M.; MIKHAYLOVA, A.D.; YEFIMOVA, K.A.; MONOZ, V.P.; GUK, Yu.I.; NIKOLAYEVA, Z.A.; AYENBERG, M.M.; MIKHAYLOVA, K.L.; ROGOVSKAYA, Ye.G., red.;
VOLKOV, E.V., tekhn.red.

[Agroclimatic reference book on Nikolayev Province] Agroklimaticheskii spravochnik po Nikolayevskoi oblasti. Leningrad, Gidrometeor.izd-vo, 1959. 103 p. (MIRA 13:2)

1. Kiyev. Gidrometeorologicheskaya observatoriya. 2. Nachal'nik otbela agrometeorologii Kiyevskoy gidrometeorologicheskoy observatorii (for Salepova).
(Nikolayev Province--Crops and climate)

TREGUBOVA, A.S., st. inzh.; KARASENKO, A.P., inzh.; MARKOVA, A.V.,
st. tekhnik; NIKOLAYEVA, Z.A., st. tekhnik; KOVTUNENKO,
Zh.I., tekhnik; FENEASS, Z.F., tekhnik; STOYAN, T.T.,
tekhnik; CHERVYACHENKO, V.A., tekhnik; YEFREMOV, N.V., red.;
DEREVYANKO, G.S., tekhn. red.

[Manual on the supply of moisture available to basic farm
crops in the Ukraine] Spravochnik po zapasam produktivnoi
vlagi pod osnovnym sel'skokhozyaystvennyimi kul'turami na
Ukraine. Kiev, Gosel'khozizdat USSR, 1963. 547 p.

(MIRA 16:12)

1. Otdel agroreteorologii Kiyevskoy gidrometeorologicheskoy
observatorii (for all except Yefremov, Derevyanko).
(Ukraine—Soil moisture)

BABOSHIN, B.K.; SIDOROV, R.I.; RUDAKOV, G.A.; NIKOLAYEVA, Z.K.;
IVANOVA, L.S.

Investigating the composition of terpene carbohydrate mixtures
by the method of gas-liquid chromatography. *Gidrolis. i*
lezhka, prom. 16 no.4:14-15 '63. (MIRA 16:7)

1. Institut nefto- i uglekhimicheskogo sintesa Sibirskogo
otdeleniya AN SSSR.

(Gas chromatography) (Terpene—Analysis)

21(1)

AUTHORS: Sergeyev, G. Ya., Titova, V. V., SOV/89-5-6-2/25
Savitskiy, Ye. M., Zhul'kova, A. A.,
Nikolayeva, Z. P.

TITLE: The Mechanical Properties of Uranium (Mekhanicheskiye svoystva urana)

PERIODICAL: Atomnaya energiya, 1958, Vol 5, Nr 6, pp 618-623 (USSR)

ABSTRACT: The test apparatus (~~Fig. 1~~) with which the hardness of uranium at increased temperature and the expansion of uranium at increased temperature were investigated in a neutral gas (argon), are represented by two sectional drawings. Measuring results are given by a graph. The following details are mentioned:

The hardness of the uranium decreases with increasing temperature. If temperature rises up to 600°C, hardness decreases from 350 kg/mm² to 50 kg/mm². A regular variation of hardness in dependence on the carbon content of the uranium (0.07 to 0.24 %) was not observed.

The presence of carbon in uranium samples influences outflow pressure if these samples are pressed in the α -phase. The outflow pressure increases with an increasing carbon content

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The Mechanical Properties of Uranium

SOV/89-5-6-2/25

(0.09 to 0.24 %). At 650°C and a degree of deformation of 75 % the outflow pressure increases by about 60 %. For uranium in the γ -phase outflow pressure decreases from 4 kg/mm² at 830°C to 1.8 kg/mm² at 1050°C.

Ultimate strength and creep strength increase with an increasing carbon content in the uranium. In hot-rolled uranium with a C-content of 0.01 % ultimate strength is $\sigma_b = 36$ kg/mm², in uranium with 0.24 % C-content $\sigma_b = 52$ kg/mm². The creep strengths in these cases amount to 23 to 31 kg/mm².

At temperatures of from 100 - 150°C all mechanical properties characterizing the strengths decrease monotonously, whereas the properties that characterize plasticity increase. For uranium with 0.12 % C-content one finds that at 750°C $\sigma_b = 12$ kg/mm², $\delta = 18$ % (relative elongation), $\psi = 51$ % (relative narrowing of the pressed surface), at 600°C $\sigma_b = 7$ kg/mm², $\delta = 23$ %, $\psi = 76$ %, and at 850°C $\sigma_b = 0.8$ kg/mm², $\delta = 31$ %, $\psi = 97$ %.

γ -uranium, which has a volume-centered lattice, has the highest degree of plasticity. The tetragonal β -uranium is inclined to be brittle, and velocity of deformation is more

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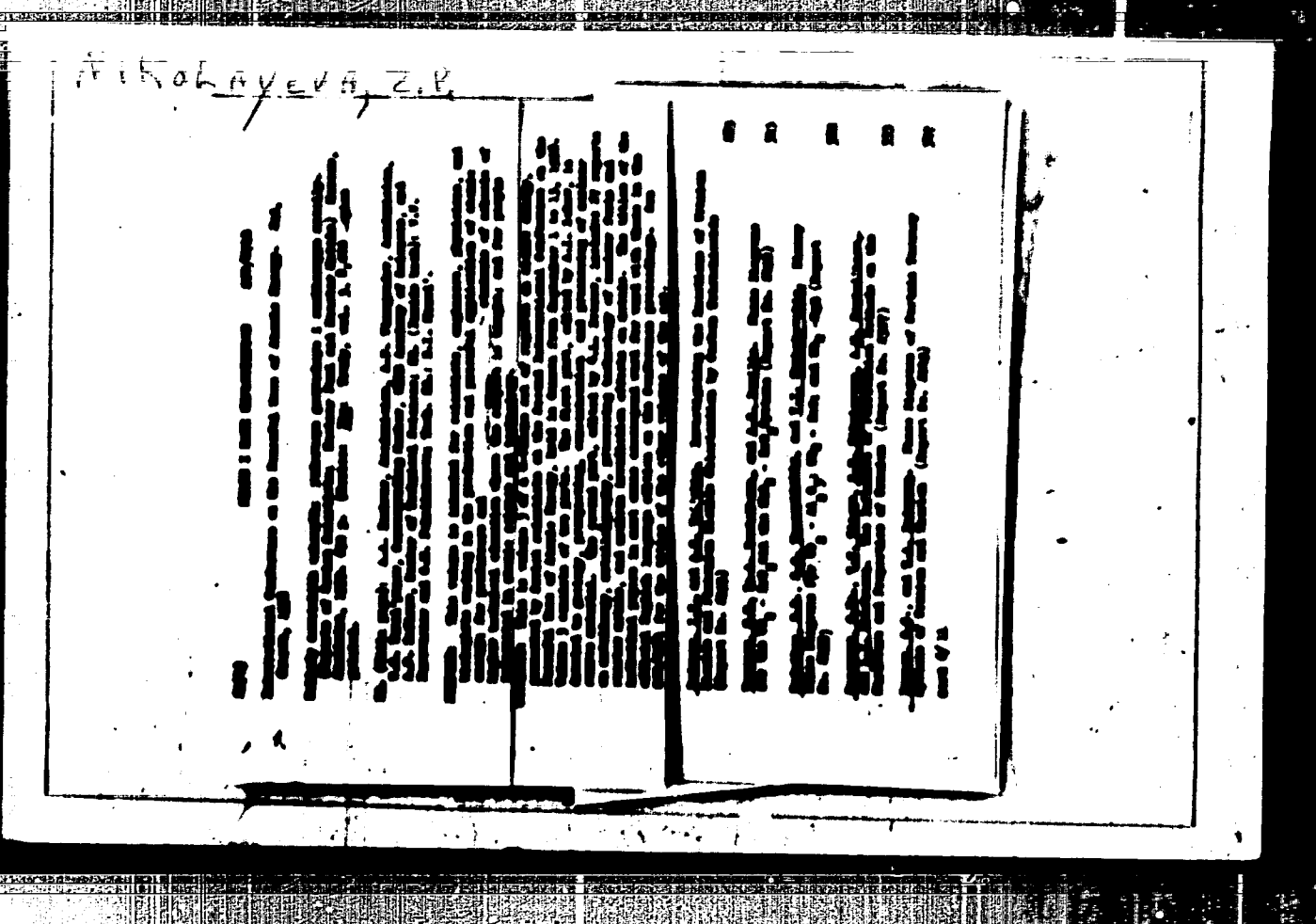
The Mechanical Properties of Uranium

SOV/09-5-6-2/25

sensitive to temperature. Because of the low symmetry of the rhombic lattice of α -uranium, the latter is characterized by sharply marked anisotropic properties. There are 13 figures, 2 tables, and 3 references.

SUBMITTED: July 16, 1958

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S/009/60/008/04/03/009
2113/2017AUTHORS: Sergeyev, G. Ya., Titova, V. V., Nikolayeva, Z. P.,
Kaptel'tsev, A. N.

TITLE: Thermal Treatment of Uranium ✓

PERIODICAL: Atomnaya energiya, 1960, Vol. 6, No. 4, pp. 340-347

TEXT: The authors investigated the influence exercised by hardening on the macro- and microstructure as well as the mechanical properties of cast and hot-rolled uranium at increased and room temperatures. Uranium was hardened from various cooling media, in water of different temperatures, from different phases, with varying sample diameters. Repeated hardenings were made. Results of measurement are shown in figures, tables, and curves. Hardening reduces the grain size of uranium. Strength increases after the hardening from the beta phase by about 30%, from the gamma phase by 60%. Repeated hardening of uranium increases its creeping strength at temperatures below 400°C. The degree of change in the macro- and microstructure and strength properties depends on the chemical composition of uranium. Strength increases with the increase in the cooling rate from

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NIKOLAIYA, Z.V.

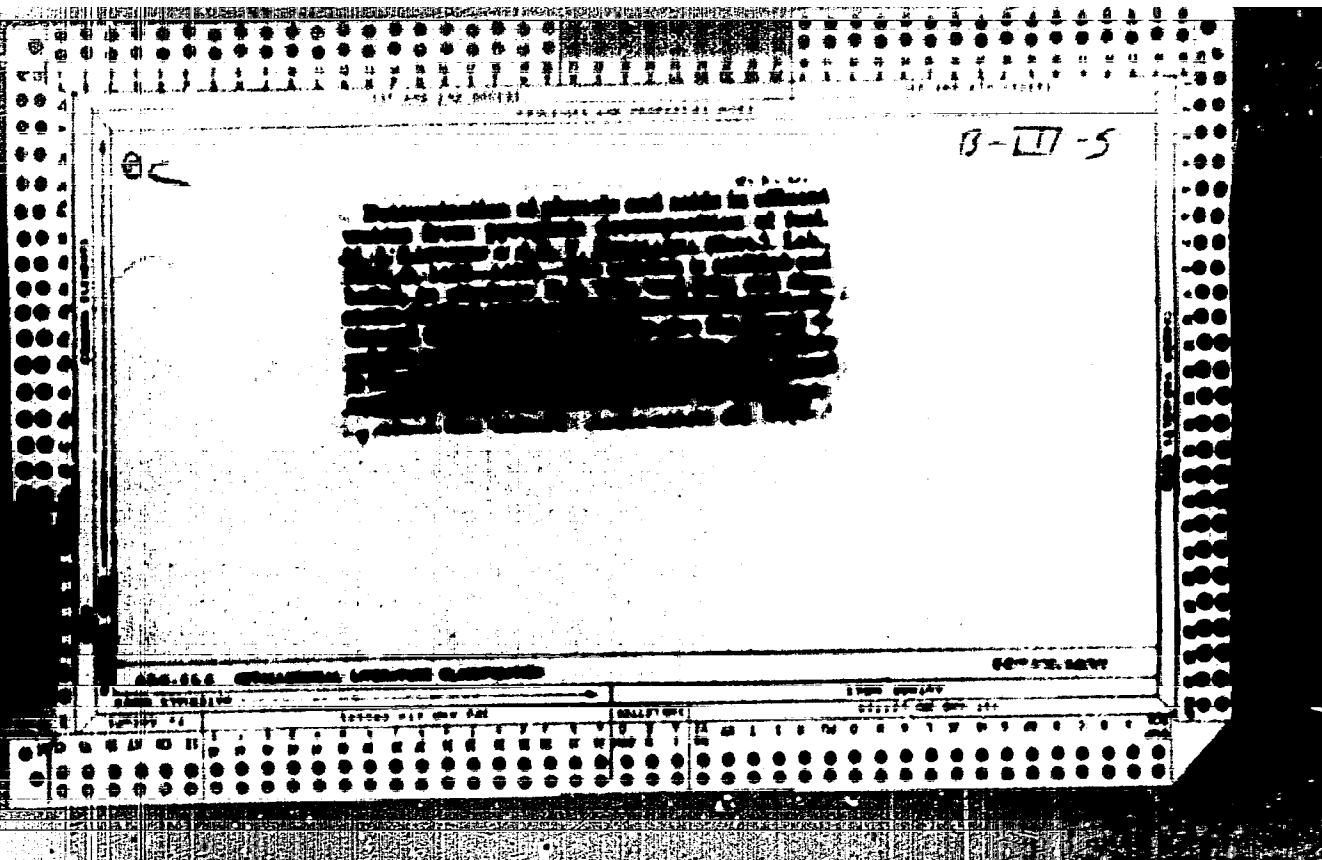
Microsporangiosis in ash; Bot. zhur. 47 no.9:1333-1338 8 '62.
(MIRA 16:5)

1. Tashkentkiy gosudarstvennyy universitet imeni V.I.Lenina.
(Ash (Tree)) (Spores (Botany))

NIEDLAYKA, Z.Y.

Morphological and physiological characteristics of pollen
germination in the ash tree. Dokl. AN SSSR 146 no.1:221-224
8 '62. (MIRA 15:9)

1. Tashkentkiy gosudarstvennyy universitet im. V. I. Lenina.
Predstavleno akademikom V.M. Sotachevym.
(Ash tree) (Spermatogenesis in plants)



ИЗВЕСТИЯ, Н. В., ВОДОСНАБЖЕНИЕ, Н. Е., ДИСТРИБУЦИЯ, Н. В.

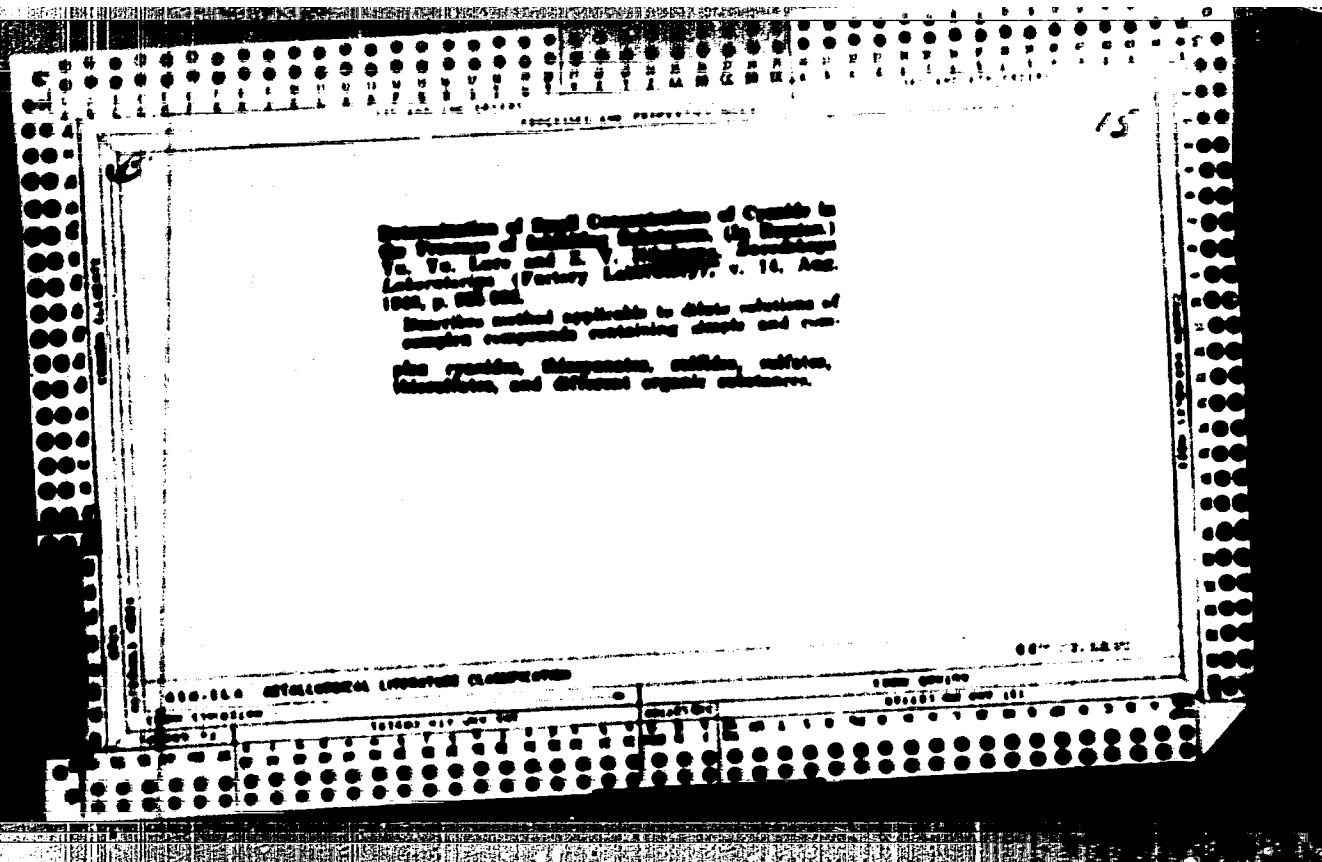
"Formation and Separation of Tar in Water from a Peat gas Generator,"
Vodosnabzhenie Sanit. Tekh. 1939, No. 6, 59-64.
Khim Referat. Zhur. 1939, No. 10, 99-100

Kinetics of the processes of the sepn. of coarsely dispersed tar and the production of "tar formers" from peat water are described. The effect of pH is discussed. Expts. verified the supposition that tars are formed by processes of condensation and oxidation of phenols and aldehydes.

F **1970. DETERMINATION OF SMALL CONCENTRATIONS OF CHLORIDE IONS IN PURE WATER FOR RADIUM SURVEY BATTERIES.** Lur'o, Y.Y. and Hinkelroy, S.V. (Brookhaven Lab., 1946, *JL*, 161-70; *Chem. Abstr.*, 1946, *41*, 1770). **T**

A colorimetric method for very small concentrations of Cl⁻ is based on the suppression of Cl⁻ in the reactions between Hg²⁺ and diethylarsenite. The colours obtained obey the Lambert-Beer law within the limits of concentrations studied. The determination can be completed either by the colour scale method or by the equilibrium method. The colour is stable for 5-30 min. and is not affected by small concentrations of Hg²⁺ that may be present in the water. The solution should be preliminarily neutralized if the content of Hg²⁺ exceeds 12 mg./l. The method is accurate and sensitive. The minimum detectable concentration of Cl⁻ is 0.025 mg./l. No colours were obtained in strongly acid solutions. Best results were obtained at pH 4. The content of up to 0.5 mg. of Fe per l. does not interfere with the determination. Another colorimetric method studied for the determination of Cl⁻ is based on the reaction $Hg^{2+} + 2 Cl^{-} \rightleftharpoons HgCl_2 + CrO_4^{2-}$. The CrO_4^{2-}

found in the solution can be determined calorimetrically. The $C_{p,2}$ —
determination method is as accurate as the method with $C_{p,1}$ —
but is more convenient.



C.A.

47

Comparison of various methods of determination of free chlorine and chloramines in water. Yu. Ya. Lev's and L. V. Kuznetsov. *Analiticheskiy Zhurnal*, 1963, 15(10):1019. The laboratory method compares, accuracy, reliability, and possible interferences. The method is based on the reaction of Cl₂ with methylene blue. The reaction of the indicator (pink) on the curve of Cl₂ absorption by the water-soluble substance. The method is recommended for this data. The results of the free Cl and chloramines by these methods are close but do show small deviations owing to instability of the system being analyzed. In the last 2 methods HNO₂ causes part of the result to be called as free Cl and part as chloramines. The methyl orange method gives a sharp differentiation between these 2 items. Use of it along with the laboratory method permits accurate determination of free Cl and total of chloramines. (L. M. Kuznetsov)

*A-U Sci Res Inst, Water Supply, Sewerage,
Hydro Tech Const. + Eng. Hydrogeol*

NIKOLAYEVA, Z. V.

FDD PA 169721

USSR/Chemistry - Analysis, Water

Sep 50

"Calorimetric Method for Determination of Calcium and Potassium in Natural Water," Yu. Ya. Lar'ya, Z. V. Nikolayeva, *Vodoo*. (VODGEO)

"Zaved Lab" Vol XVI, No 9, pp 1058-1063.

Method is based on precipitating Ca and K as complex salt $Ca_2K_2(NO_2)_6$ and determining NO_2 in precipitate with Griess reagent.

PA 169721

▼ Determination of groups in water effluents and other
dilute solutions. (The following is a summary of the method.)

Two very sensitive methods for the detection of water effluents
containing in the presence of a small amount of formaldehyde were
tested and compared. The sensitivity of the formaldehyde
method is one to two orders of magnitude higher than that of
the infrared method. It is well applicable to the analysis
water samples as effluents from wood carbonization and
gasification plants. It can be used for the analysis of long
in several applications. (A. M. G. G. G. G.)

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10/10

11-7-57, 2 1/2

AUTHOR: LER'YE, YU.YU., NIKOLAYEVA, Z.V. 32-6-3/54
TITLE: Determination of Small Lead Concentrations. (Opredeleye malykh
kontsentratsiy svintsa, Russian)
PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 652-655 (U.S.S.R.)

ABSTRACT: Two of the best methods for the determination of small lead concentrations are recommended:
1.) The "diticon" method.
2.) The chromatic method.
The former is described as very sensitive, and the second, though also of great accuracy, requires a collector (e.g. iron hydroxide or calcium carbonate). It is pointed out that the application of both methods to solutions containing besides lead also copper, zinc, or iron presents difficulties. In the case of the "diticon" method potassium cyanide must be used as a reagent, which, because of its poisonous nature, is difficult to obtain. In the case of the second method the lead chromate precipitation is connected with a lead precipitation, which fact disturbs the course of the analysis process. Previous binding of the iron with citric acid or tartaric acid decelerates the precipitation of lead chromate. In order to avoid these drawbacks new variations are suggested for both methods, which make

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AUTHORS: Nikolayeva, Z. V., Krasil'shchikov, A. I. SOV/76-32-7-15/45

TITLE: The Anodic Oxidation of Hydrogen at a Pressure Below 500 Atm
(Anodnoye okisleniye vodoroda pod davleniyem do 500 atm)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 7, pp.1545-1555
(USSR)

ABSTRACT: Among the scientists who have published papers in this field P. D. Lukovtsev, S. D. Levina and A. N. Frunkin (Ref 12) found the logarithmic function between the potential and the current density of the hydrogen ionization while on the other hand S. N. Frunkin and E. A. Aykasyan (Ref 14) carried out investigations to explain the ionization kinetics of hydrogen. In the present paper the authors investigated the ionization process of the hydrogen at the anodes of platinum, gold, iron, cobalt and silver oxide within a wide potential range up to the potential of oxygen formation. The major part of the experiments was carried out in an apparatus already described, at a working pressure not exceeding 600 atmospheres absolute pressure, and the rest at a pressure not exceeding 100 atmospheres absolute pressure. The investigations at smooth platinum were carried out in sulfuric acid solution and solu-

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The Anodic Oxidation of Hydrogen at a Pressure Below 500 Atm

tion of caustic soda; it was found that the anodic polarization curves of activated platinum at different pressures have in both solutions the same shape; the straight function of the potential vs. the current density slowly changes over to a limit current. The anodic behavior of gold in acid solutions is similar to that of platinum, with also the influence of an earlier anodic treatment being found. In contrast to platinum a thin oxide film forms on gold, which is, however, not the case in the alkaline medium where the polarization curves display a different character. Silver oxide was investigated only in the alkaline medium a thick Ag_2O layer being formed in the anodic oxidation. The anodic curves are in many a respect similar to those of platinum; a dependence on the hydrogen pressure is found and the limit ionisation current density of hydrogen on Ag_2O is considerably smaller than in the case of gold and platinum. The anodic process of pure electrolytic iron in solutions of caustic soda takes place in three stages, while that of "Armco" iron takes place in two stages. In the experiments with cobalt it was observed that in 0,1 N solutions of caustic soda the limit current density is higher than in 1 N solutions, on which occasion the occurrence of an oxide

Card 2/4

SOV/76-32-7-15/45

The Anodic Oxidation of Hydrogen at a Pressure Below 500 Atm

film was observed. In the explanations of the experimental results obtained it is mentioned that the activation of platinum is connected with the formed oxide layer which may be of an adsorption nature; in this connection the authors point to the observations made by T. N. Belina and A. I. Krasil'shchikov (Ref 6); the linear function of the differential adsorption heat vs. the degree of the surface filling according to M. I. Tomkin (Ref 18) is based on the electron adsorption. The latter is, however, explained on another basis for OH^- and J^- , and it is proved by experimental results obtained by L. A. Medvedeva and Ya. M. Kolotyrkin. Under the assumption of the presence of a two-dimensional electron gas at the electrode surface some considerations are carried out employing the Fermi statistics (Ref 20). In the explanations of the observations made at the iron electrode the observations made by V. V. Losev and B. N. Kabanov (Ref 22) are mentioned, while in the case of cobalt the assumption made by A. M. Martasayev (Ref 23) is referred to, stating that the hydrogen oxidation takes place simultaneous-

Card 3/4

5 (3), 5 (4)
AUTHORS:Lur'ye, Yu. Yu., Nikolayeva, Z. V.

05722

SOV/32-25-10-11/63

TITLE:

Separate Determination of Dibasic Phenols in Waste Water and Diluted Solutions

PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1186 - 1192 (USSR)

ABSTRACT:

Methods of determining individual phenols have been developed which are of importance for their utilization from waste water, as well as in connection with their different toxicity and different odor intensity of their chlorine derivatives. The determination of resorcinol, pyrocatechin, and hydroquinone is described in special chapters. Several modifications were applied to the method of determining resorcinol as suggested by Willard and Wooten (Ref 1); thus, it was made more sensitive and precise. The violet-colored compound formed in the presence of resorcinol, pyrocatechin, and iodine is extracted with n-butanol (instead of acetone), the molar light absorption coefficient amounting to 9552 (instead of 6365 in acetone). The method was tested on mixtures of pure dibasic phenols and industrial waste water (Table 1). If the waste water is colored, and contains large amounts of substances dis-

Card 1/3

05722

Separate Determination of Dibasic Phenols in Waste
Water and Diluted Solutions

SOV/32-25-10-11/63

and pyrocatechin either being eliminated by an extraction, with n-butanol, of their oxidation products obtained with iodine (one variant), or by adding resorcinol and pyrocatechin to the "zero solution" in the photocolometric measurement (with the addition of sulphite to prevent oxidation by air). The sensitivity of the method is indicated with a molar light absorption coefficient of 910 (Table 4). There are 2 figures, 4 tables, and 3 references, 2 of which are Soviet.

ASSOCIATION: Institut VODGBO (VODGBO Institute)

Card 5/5

USHAKOVA, K.N., starshiy nauchnyy sotrudnik; POPOVA, A.V., mladshiy
nauchnyy sotrudnik; KUZ'MINA, G.P.; NIKOLAYEVA, Z.V., mladshiy
nauchnyy sotrudnik; KATSENELENOGEN, A.M.; RYZHOVA, V.N., inzh.

Industrial processing of 90 Tm acetate silk in the knit goods
industry. Tekst. prom. 24 no.9:35-38 S '64.

(MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna (for Ushakova, Popova).
2. Rukovoditel' syr'yevoy gruppy Vsesoyuznogo nauchno-issledovatel'skogo instituta trikotazhnoy promyshlennosti (for Kuz'mina).
3. Vsesoyuznyy nauchno-issledovatel'skiy institut trikotazhnoy promyshlennosti (for Nikolayeva).
4. Rukovoditel' syr'yevoy gruppy Nauchno-issledovatel'skoy laboratorii trikotazhnoy fabriki im. Dzerzhinskogo (for Katsenelenbogen).
5. Nauchno-issledovatel'skaya laboratoriya trikotazhnoy fabriki im. Dzerzhinskogo (for Ryzhova).

LUR'YE, Yu.Yu.; NIKOLAYEVA, Z.V.

Determination of monoatomic phenols in waste waters by paper chromatography. Zav. lab. 30 no.8:937-942 '64. (MIPA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodomatsheniya, kanalizatsii, gidrotekhnicheskikh soorusheniy i inzhenernoy gidrogeologii.

NIKOLAYEVA, N. V.

"Influence of Surface-Active Organic Substances on the Kinetics of Hydrogen-Ion Discharge on a Mercury Electrode." Thesis for degree of Cand. Chemical Sci. Sub. 22 Jun 49, Moscow Order of Lenin State U Imeni M. V. Lomonosov.

Summary 82, 18 Dec 52, Dissertations Presented for Degrees in Science and Engineering IN Moscow in 1949. From Vechernaya Moskva, Jan-Dec 1949.

**Ussr/Amesbury - Electrochemistry,
Electrodes**

21 Aug 52

"The Relationship Between the Electroreduction of Anions and the Position of the Points of Neutral Charge of the Electrode," E. V. Mikhailova, N. S. Shapovalov, and Anat A. E. Frushin, Moscow State U in N. V. Zhukovskiy

RAF 688, Vol 66, No 3, pp 561-563

Data obtained on the reduction of anions in Cd and Pb electrodes confirm the usefulness of the theory of delayed discharge in explaining the process of

247215

anion reduction on these metals. These data also show that by changing the relationship between the intensity of current during the reduction of anions and the potential of the dil soln, the neutral point of the metal may be varied.

RA 027014

247215

1. NIKOLAYVA, E. Y. and FREDEYAKOVA, V. N.

2. USSR (600)

4. Polarograph and Polarography

7. Polarographic study of the kinetics of exchange reactions of complex compounds in solutions of electrolytes. Dokl.AN SSSR 67 No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.

Release of your...
The...
Department of Health...
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1944...
17 of 17

... PAGE 2A, IV

USSR.

✓ Electroreduction of peroxydisulfate ion on a platinum electrode. M. V. Nikulina and A. A. Gromov (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk SSSR* 264 (1982) 141-143. Cathodic reduction of $S_2O_8^{2-}$ (I) from 0.01 N $K_2S_2O_8$ on a platinum Pt electrode in 0.1 M NaOH at 0.4 v relative to a silver-silver chloride electrode and reached a diffusion current which is proportional to the concentration of $S_2O_8^{2-}$. At 0.3 v, the current begins to decrease and goes through a minimum at -0.09 v. The observed electroreduction is catalytic high current supports the view. The effect is explained by reduction of $S_2O_8^{2-}$ from the negatively charged surface, thus the onset of the current begins at a potential 0.3-0.4 v more to the point of zero charge of Pt surface, as had been observed in measurements. The efficiency of electroreduction of the ions increases with various catalysts, e.g. 0.1 M NaOH, 0.01 M H_2O_2 completely extinguish the reaction. Anions which adsorb on the positively charged surface shift the onset point of the diffusion wave to more negative potentials as follows: NO_3^- 0.1, $KClO_4$ 0.21, $K_2Cr_2O_7$ 0.47 v. With change in pH from 1 to 11, the potential corresponding to the beginning of the diffusion wave shifts by 0.05-0.1 v. This finding supports the view of electroreduction of $S_2O_8^{2-}$ on Pt particles without intervention of adsorbed Pt atoms and that the decrease of $S_2O_8^{2-}$ on Pt surface is the determining step in the process. Some Pt surface treatments, not specified, enhance the performance of the electrode. A. D.

USSR/Electrochemistry

B-12

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26307

Author : N.V. Nikolayeva, B.B. Basmakin

Title : Mechanism of Influence of Alkali Metal Ions of Process of Electrodeposition of Copper.

Orig Pub : Zh. fiz. khimii, 1956, 30, No 7, 1676-1677

Abstract : At the addition of 0.01 n. solutions of alkali metal chlorides to 0.001 n. $K_2S_2O_8$ solution and at the transition from Ca^{+} to Li^{+} , a shift of the potential to the positive side is taking place on polarograms of electrical reduction of the $S_2O_8^{2-}$ ion at a current of constant strength up to 1 v. The authors explain such an influence of the cation radius by the influence of the cations of the potential distribution on the double layer. In presence of less hydrated and more adsorbent Ca^{+} ions, the structure of the double layer is less diffused than in presence of Li^{+} in the same concentration, which, according to the theory of retarded discharge, should result in an acceleration of the influence of metal cations on the process of electrodeposition of Cu, proposed in the work of R.M. Vasenin and S.V. Goryachev (RZhKhim, 1955, 28568), is discussed.

Card : 1/1

"APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001137120011-4

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001137120011-4"

FRUMKIN, A.N.; NINDLAYEVA-FEDOROVICH, N.V.

**Electric reduction of anions and adsorption of cations. Vest. Mosk.
un. Ser. nat. math. astron. fis. khim. 12 no. 4:169-184 '57.
(NIRA 11:5)**

**1. Kafedra elektrokimii Moskovoogo gosudarstvennogo universiteta.
(Electrochemistry) (Anions) (Cations)**

AUTHORS

Frunkin, A.N., Academician
Danashin, B.B., Nikolayeva-Fedorovich, N.V.

20-4-33/60

TITLE

The Super-equivalent Adsorption of Cations on a
Negatively Charged Mercury Surface.
(Sverkhvivalentnaya adsorbtsiya kationov na otritsatel'no
naryazhennoy poverkhnosti rtuti.)

PERIODICAL

Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 4,
pp. 751-754 (USSR)

ABSTRACT

In a demonstration of electrocapillarity it is usually assumed that among the anorganic ions only the anions possess a specific adsorbability; that the concentration of the anorganic cations in an electric double layer is only determined by the quantity of their charges. But there exist published data which point to the inaccuracy of such a conclusion. A direct conclusion on the different adsorbability of the cations of alkaline metals in solutions of 0,1 N - chlorides becomes clear from Grahame's paper who determined the precise values of the differential capacity of the latter. His conclusions are in bad agreement with experimental data. In order to avoid contradictions in the interpretation of test results, it is simpler to assume a certain, although not large, cation adsorption

CARD 1/5

20-4-33/60

The Super-Equivalent Adsorption of Cations on a Negatively Charged Mercury Surface.

This conclusion may, however, not be considered as unequivocal, since the data are in such solutions complicated by the Cl^- adsorption. The most convincing data concerning the super-equivalent cation adsorption may be obtained by measurements of the differential capacity on negatively-charged electrode surfaces in the presence of such an anion, as e.g. J^- , whose adsorption in the surface layer markedly influences the value of the differential capacity. Such measurements are performed by the authors in 0,1 N solutions of

H^+Cl , H^+J , CaCl_2 , CaJ_2 , as well as in 1,1 N solutions of
 KCl , 1 N $\text{KJ} + 0,1 \text{ N KCl}$, 1 N $\text{KCl}_2 + 0,1 \text{ N LaCl}_3$,
 and
 1 N $\text{KJ} + 0,1 \text{ N LaCl}_3$.

The data are given in fig. 1 B and 2 A. From them follows that in the case of sufficiently negative polarisations

GARD 5/5

20-4-33/60

The Super-Equivalent Adsorption of Cations on a Negatively Charged Mercury Surface.

The form of the desorption peak considerably changes on transition from Cl^- to J^- . The tapering of the peak indicates a sudden destruction of the adsorption layer within a narrow domain of potential instead of desorption which is observed at a certain potential ($\varphi = -1,57$ v).

There are 2 figures and 8 Slavic references.

ASSOCIATION: None given.
SUBMITTED: July 27, 1957.
AVAILABLE: Library of Congress.

CARD 5/5

20-116-5-39/59

AUTHORS:

Nikolayeva-Fedorovich, N. V. , Pokina, L. A.

TITLE:

The Influence of Tribenzylamine on the Persulphate Anion Reduction (Vliyaniye tribenzilamina na reaktsiyu vosstanovleniya aniona persulfata)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1958, Vol.118, Nr 5, PP.987-990 (USSR)

ABSTRACT:

At first reference is made as to the referring previous works. The authors studied the action of tribenzylamine namely in the title on a tear-shaped mercury electrode. In the diluted solutions of the background which are more strongly negative than the electrocapillary maximum of mercury, reduction of $S_2O_8^{2-}$ at the mercury electrode is a slow process so that the approximation of the anion $S_2O_8^{2-}$ to the surface of the electrode is rendered difficult by electrostatic repulsion. A decrease of current can be observed in the polarization curve which disappears with stronger negative potentials. The introduction of tribenzylamine in various concentrations into solution of 10^{-3} N $K_2S_2O_8$ reduction of $S_2O_8^{2-}$ is moderated due to

Card 1/3

The Influence of Tribenzylamine on the Persulphate Anion Reduction 20-116-5-39/59

PRESENTED: July 27, 1957, by A. N. Frumkin, Member, Academy of Sciences
USSR

SUBMITTED: June 22, 1957

Card 3/3

On the Adsorption of the Ion Cs^+ on the Surface of a Mercury Electrode 307/20-121-1-36/55

is adsorbed) than a sodium cation. A conclusion on the superequivalent adsorption of Cs^+ can also be made by comparing the corresponding curves of the capacitance of the fluorides and iodides of sodium and cesium. These data on the super-equivalent adsorption of cesium were also proved by electrocapillary measurements in 0,1 N solutions of NaF, NaJ, CsF, and CsJ. An important fact is also the displacement of the maximum on the electrocapillary curve from -0,471 in the case of NaF to the value of -0,468 for CsF and from -0,815 for NaJ to -0,833 for CsJ. There are 3 figures, 1 table, and 9 references, 3 of which are Soviet.

SUBMITTED: May 8, 1958

Card 2/3

On the Adsorption of the Ion Cs^+ on the Surface of a Mercury Electrode SOV/20-121-1-36/55

1. Cesium ions—Adsorption
2. Mercury electrodes—Adsorptive properties

Card 5/5

5(4)

SOV/20-122-4-20/57

AUTHORS: Nikolayeva-Fedorovich, N. V., Fokina, L. A., Petriy, O. A.

TITLE: The Influence of Inorganic and Organic Cations Upon the Reduction of the Anion $PtCl_4^-$ on a Mercury Drop Electrode
(Vliyanie neorganicheskikh i organicheskikh kationov na vosstanovleniye aniona $PtCl_4^-$ na rtutnom kapel'nom elektrode)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 639-642 (USSR)

ABSTRACT: It was interesting to investigate the effect of the most active inorganic and organic cations on the electric reduction of the anion $PtCl_4^-$. A diagram gives the polarization curves of the reduction of the anion $PtCl_4^-$ in the presence of 1 n chlorides of alkali metals. An admixture of an indifferent electrolyte increases the velocity of the reaction in the whole region of the adsorption potentials of the background cations. The velocity of the reaction depends on the nature of the background cation, but even in the presence of 1 n CsCl the slowing down of the reaction is not totally stopped. The organic

Card 1/2

WALTER H. FEDOROVICH N.Y.

PHAS I BOOK REFLECTIONS 507/7216

Electrochemistry of Electrolysis, etc. Moscow, 1956.
Trends... (Translations of the Fourth Conference on Electrochemistry) Collection of Articles Moscow, 1956-58, 216 pp.
Soviet Academy of Sciences, Institute of Physical Chemistry, Moscow, 1956. 216 pp. 250 copies printed.

Electrochemical Society, A.S. Preprints (New York, 1956). G.A. Reiss, Editor.
Electrochemical Society, A.S. Preprints, G.A. Reiss, Editor.
Electrochemical Society, A.S. Preprints, G.A. Reiss, Editor.
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Electrochemical Society, A.S. Preprints, G.A. Reiss, Editor.

Electrochemistry and Physics, Swedish School for Advanced Technology, The Influence of Organic Solvents on Wave Height and Lifetime Potential of Organic Depositions 170
Sabetta, J.I., J.P. Sumner, and G.F. Kirshenbaum, (Imperial College of Science, London, U.K.) Influence of the Position of Zero-Charge Points on the Reduction of Indium at a Mercury-Drop Electrode 179

Electrochemistry and Physics, Swedish School for Advanced Technology, The Influence of Organic Solvents on Wave Height and Lifetime Potential of Organic Depositions 170
Sabetta, J.I., J.P. Sumner, and G.F. Kirshenbaum, (Imperial College of Science, London, U.K.) Influence of the Position of Zero-Charge Points on the Reduction of Indium at a Mercury-Drop Electrode 179

Electrochemistry and Physics, Swedish School for Advanced Technology, The Influence of Organic Solvents on Wave Height and Lifetime Potential of Organic Depositions 170
Sabetta, J.I., J.P. Sumner, and G.F. Kirshenbaum, (Imperial College of Science, London, U.K.) Influence of the Position of Zero-Charge Points on the Reduction of Indium at a Mercury-Drop Electrode 179

Electrochemistry and Physics, Swedish School for Advanced Technology, The Influence of Organic Solvents on Wave Height and Lifetime Potential of Organic Depositions 170
Sabetta, J.I., J.P. Sumner, and G.F. Kirshenbaum, (Imperial College of Science, London, U.K.) Influence of the Position of Zero-Charge Points on the Reduction of Indium at a Mercury-Drop Electrode 179

Electrochemistry and Physics, Swedish School for Advanced Technology, The Influence of Organic Solvents on Wave Height and Lifetime Potential of Organic Depositions 170
Sabetta, J.I., J.P. Sumner, and G.F. Kirshenbaum, (Imperial College of Science, London, U.K.) Influence of the Position of Zero-Charge Points on the Reduction of Indium at a Mercury-Drop Electrode 179

NIKOLAYEVA, Fedorovich, N. V.

5(2)

30V/156-59-1-11/54

AUTHORS:

Damaekin, B. B., Nikolayeva-Fedorovich, N. V.

TITLE:

The Adsorption of Lanthanum Ions From Weakly Alkaline Solutions
(Adsorbtsiya ionov lantana iz slaboshchelochnykh rastvorov)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya
tekhnologiya, 1959, Nr 1, pp 43 - 47 (USSR)

ABSTRACT:

The adsorption of lanthanum ions is investigated in alkaline pH ranges where no lanthanum-hydroxide precipitation takes place. The differential capacity was measured on an electrode formed by a pendent mercury drop. The change of the hydrogen ion concentration by a KOH addition clearly influences the curves of potential dependence of the differential capacity (Diagram, Fig 1). In the minimum of the curve capacity - potential, which depends on the diffusibility of the double layer near the zero charge point, the KOH addition causes a capacity increase. The minimum is continuously shifted toward positive potentials. Moreover, the capacity decreases with an increasing pH on strong negative polarization. Therefore it is concluded that complex basic ions are not simple La^{3+} ions are adsorbed in weakly alkaline solutions. The KOH

Card 1/3

The Adsorption of Lanthanum Ions From Weakly Alkaline Solutions

007/156-59-1-11/54

in Moscow in October 1956. Gratitude is expressed to Academician A. M. Frumkin for his advice concerning the work. There are 3 figures and 8 references, 5 of which are Soviet.

ASSOCIATION: Kafedra elektrokhemii Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Chair of Electrochemistry of Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 8, 1958

Card 3/3

FEVER-1000
NIKOLAYVA, E.V.; SAMNIKOV, A.P.

The SW-4m electrolysis unit for producing hydrogen. Biol.tech.-
chem.inform. no.11:10-12 '59. (USSR 13:6)
(Water-Electrolysis) (Hydrogen)

66187

The Mechanism of Electroreduction of the $\text{Fe}(\text{CN})_6^{3-}$ -Anion on a Mercury Drop Electrode SOV/20-128-5-41/67

presence of a $5 \cdot 10^{-2}$ M solution of KCl (Fig 1). The limiting current may be measured according to Il'kevich's equation. Amperometric drops within the range of the zero-charge potential when the electrolyte concentration is reduced. The amperage attains a minimum at $-1,2$ V and does not change any longer even at more negative potentials.

The same behavior was shown by $2 \cdot 10^{-3}$ M and $3 \cdot 10^{-3}$ M solutions of $\text{K}_3\text{Fe}(\text{CN})_6$ as well as by the corresponding Cs- and Li-ions in a concentration of 10^{-3} M. To determine the dependence

reduction rate of $\text{Fe}(\text{CN})_6^{3-}$ on the potential, corrections were made for the polarisation curves according to the equation of the theory of concentration polarisation for first-order reactions on the drop electrode by N. N. Meyman and V. S. Bagotskiy (Ref 8). Calculations indicate that with increasing polarisation the reduction rate should have risen by 30-40% as soon as it had attained its minimum (Fig 2). The lack of this rise on experimental curves is explained by the fact that with increasing cathode potential, the reduction rate of the anion rises but slowly, and that with increasing negative surface charge, dropping time and

Card 2/4

66187

The Mechanism of Electroreduction of the $Fe(CH_3)_6^{3-}$ -Anion on a Mercury Drop Electrode SOV/20-128-5-41/67

intensified with increasing concentration and length of the carbon chain. Experimental data indicate that the course of $Fe(CH_3)_6^{3-}$ reduction in principle does not differ from that of $S_2O_8^{2-}$ reduction.

Reduction curves were calculated in accordance with the Heyman-Bagotskiy theory (Fig 2); they represent the form of experimental curves, but deviate by up to 20% with a range of the potentials -1.2 to -2.2. This is explained by the potential distribution in the double layer. There are 4 figures and 12 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 28, 1959

Card 4/4

NIKOLAYVA-FEDOROVICH, N. B.; DAMASKIN, B. B.; PETRIY, G. A.

Effect of surface-active organic substances on the electrolytic
reduction of anions. Coll Cs Chem 25 no.12:2982-2992 D '60.
(IBAI 10:9)

1. Institut fizicheskoy khimii, Akademiya nauk SSSR, Moskva, SSSR.

(Reduction) (Surface-active substances) (Anions)

DAMASKIN, B.B.; NIKOLAYEVA-FEDOROVICH, N.V.; IVANOVA, R.V. (Moscow)

Absorption of anions of aliphatic sulfonic acids on the mercury electrode, and effect of these anions on the kinetics of electrode processes. Zhur. fis. khim. 34 no.4:894-906 Ap '60.

(MIRA 14:5)

(Sulfonic acids)

(Electrodes, Mercury)

NIKOLAIYA-FEDOROVICH, E.V.; FRUMKIN, A.N., abkicuz

Reduction of complex cobaltamines having negative substituents in their inner coordination sphere on a dropping mercury electrode.
Dokl. AN SSSR 134 no.5:1135-1137 0 '60. (MIRA 13:10)

1. Meekovskiy gosudarstvennyy universitet im. N.V.Lomonosova.
(Cobalt compounds) (Electrodes, Dropping mercury)

NIKOLAYINA-FEDOROVNA, N.V.; FETIKH, O.A.

Mechanism of the electroreduction of halide complexes of platinum at the dropping mercury electrode. *Zhur.fiz.khim.* 35 no.6:1270-1278
In '61. (NDA 14:7)

1. Moskviy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Platinum compounds) (Reduction, Electrolytic)
(Electrodes, Dropping mercury)

RAMSUKIN, S.S.; NIKOLAYEVA-FEDOROVICH, N.Y.

**Absorption of tetraalkylammonium cations on mercury. Zhur.fis.khim.
35 no.6:1279-1288 Jo '61. (NIDA 14:7)**

**1. Mskovskiy gosudarstvennyy universitet imeni N.V.Lomossova.
(Ammonium compounds) (Adsorption)**

PETRIY, O.A.; NIKOLAYEVA-FEDOROVICH, N.V.

Mechanism of the reduction of the $\text{Fe}(\text{CN})_6^{3-}$ anion on a dropping mercury electrode. *Zhur.fis.khim.* 33 no.9:1999-2009 '61.
(KIRA 14:10)

1. Mekevskiy gosudarstvennyy universitet imeni N.V. Luninova.
(Ferriyanides)
(Reduction, Electrolytic)

DAMASKIN, B.B.; PUTRIY, O.A.; NIKOLAYEVA-FEDOROVICH, N.V.

Effect of dissolved oxygen on oscillographic polarograms.
Zhur.fis.khim. 35 no.11:2643-2645 N '61. (MIRA 14:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Oxygen)
(Polarography)

S/020/61/136/005/030/032
B004/B058

AUTHORS: Frankin, A. E., Academician, Petriy, O. A., and
Nikolayeva-Fedorovich, N. V.

TITLE: The current - time curve for the reduction of anions on the
dropping electrode

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 5, 1961, 1158-1161

TEXT: While the curve for the current I as a function of time has been studied for reduction processes, the rate of which decreases during adsorption of neutral organic substances and organic cations (Refs. 1-3), such studies are lacking for those cases where the reaction rate increases rapidly with increasing adsorption of cations. Such cations are tetrabutyl ammonium (TBA), tetraethyl ammonium (TAA), tetrahexyl ammonium (THA), and La^{3+} . The curve $I = f(t)$ was studied here for the reduction of $\text{S}_2\text{O}_8^{2-}$ and $\text{Fe}(\text{CN})_6^{3-}$ on the dropping mercury electrode in the presence of TBA, THA, TAA, and La^{3+} , and also for the reduction of PtCl_4^{2-} in the presence of

Card 1/0

S/O20/61/136/005/030/032
B004/B058

The current - time curve for ...

electrode equals that in the volume of the solution. If a sufficient amount of cations has accumulated on the surface to accelerate the reaction, the anion concentration near the electrode still remains sufficiently high. The resulting reduction current exceeds I_d but drops quickly after consumption of the anions. In the case of PtCl_4^{2-} this effect was not observed in the presence of TAA, because TAA accelerates the reduction of PtCl_4^{2-} much less than that of $\text{S}_2\text{O}_8^{2-}$. In this case, the increasing occupation of the electrode by cations has an inhibitory effect. The appearance of natural oscillations of the current was observed under certain conditions.

Fig. 2a shows $I = f(t)$ in $10^{-3} \text{ M K}_2\text{S}_2\text{O}_8 + 3 \cdot 10^{-5} \text{ M } [(\text{C}_4\text{H}_9)_4\text{N}]\text{I}$ at a cell voltage of $U = -1.29 \text{ v}$. Similar oscillations were observed in $10^{-3} \text{ M K}_3\text{Fe}(\text{CN})_6$, if a resistance $R = 47 \text{ kohm}$ ($U = -0.8 \text{ v}$) was connected in series to the cell. Fig. 2b shows natural oscillations in $10^{-3} \text{ M K}_2\text{PtCl}_4 + 3 \cdot 10^{-5} \text{ M } [(\text{C}_4\text{H}_9)_4\text{N}]\text{I}$ at $U = -1.09 \text{ v}$. At $U = -1.2 \text{ v}$,

Card 3/6

FRUMKIN, A.N., akademik; PETRIY, O.A.; NIKOLAYEVA-FEDOROVICH, N.V.

**Adsorption of hydrogen ions on a negatively charged mercury -
electrolyte interface. Dokl. AN SSSR 137 no.4:896-899 Ap '61.
(MIRA 14:3)**

**1. Mekhvatki gosudarstvennyy universitet im. N.V. Lomozova.
(Hydrogen) (Alkali metals)(Electrodes, Dropping mercury)
(Electric double layer)**

FRENKIN, A.N.; SAT'YANARAYANA, S.; NIKOLAYINA-FEDOROVICH, N.V.

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(Electrodes, Thallium)**

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APR 1954 NR AP5013176

9394

W. Rozenberg, Stratospheric

Stratospheric aerobics

IN THE AN SSSR - Invent. a. 4-1954

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Stratospheric aerobics

SESSION NR: AP5013176

the horizontal layers. The future use of appropriate filters
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DATE: 06Aug84

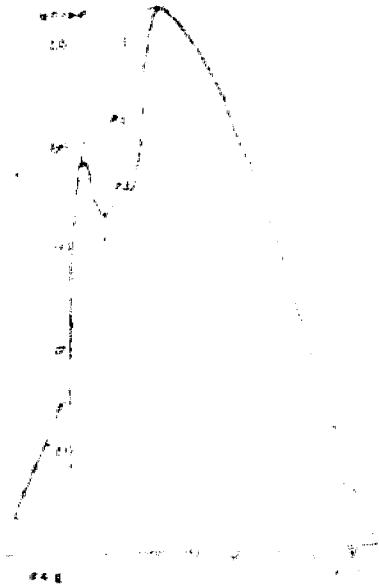
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ENCLOSURE 1



1/3/77

REF ID: A6610004 SOURCE: 08/1999/11/000/003/0043/0046

AUTHOR: Nizolayeva-Taraszkova, V. (Major; Hero of the Soviet Union; Pilot cosmonaut of the USSR)

ORG: none

TITLE: I dream of forthcoming flights [Aerosol-layer and twilight phenomena]

SOURCE: Aviatziya i kosmonavtika, no. 3, 1966, 43-46

TOPIC TAGS: aerosol, twilight, atmospheric optic phenomenon, atmospheric phenomenon, spaceborne photography, ~~atmospheric phenomenon, spaceborne photography~~

ABSTRACT: Photographs of the twilight band from altitudes of 10 to 120 km, taken during the Voskhod-1 space flight, were used by scientists to study the optical properties of the atmosphere. Studying these photographs, Professor G. Rozenberg, originator of the theory on twilight phenomena, found strong confirmation of H. Junge's suggestion that solid aerosols are produced in the upper atmosphere as a result of a chemical reaction. In addition, Professor Rozenberg concluded that this chemical reaction is sustained by gases escaping from erupting volcanoes. Color photographs taken during the Voskhod-1 space flight reaffirmed the

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presence of aerosol accumulations. On the basis of these latter photographs, Professor Rozenberg proved that the aerosol layer causes an anomalous twilight phenomena and that the appearance of this layer is definitely related to volcanic activity. Orig. art. has: 1 figure.

[5A]

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SUB CODE: G4/ SUBM DATE: none/ ATD PRESS: 4224

Card 2/2 *le*

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