ACCESSION NR: AT4021264

effectiveness of a detector with an organic scintillator. This method proves to be highly effective and acquires high calculation precision with moderate machine time consumption. All interaction processes of neutrons with nuclei of the scintillation substance are taken into consideration, including the marginal effects on the walls of the scintillator. These are presented in a graph. The paper also includes a table of registration efficiency for a 30 X 30 mm crystal. Orig. art. has: 3 formulas, 3 figures, and 1 table.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physics and Engineering Institute)

SUBMITTED: 00 DATE ACQ: 06Apr64 ENCL: 00

SUB CODE: MF, PH NO REF SOV: 002 OTHER: 003

Card 2/2

ZOLOTUKHIN, V.G.; MOGIL'NER, A.I.

Distribution of the number of recordings by a neutron detector placed in a reactor. Atom. energ. 15 no.1:11-16 Jl '63. (MIRA 16:8)
(Nuclear counters) (Distribution (Probability theory))

ZOLOTUKHIN, V.G.; DOROSHENKO, G.G.; YEFIMENKO, B.A.

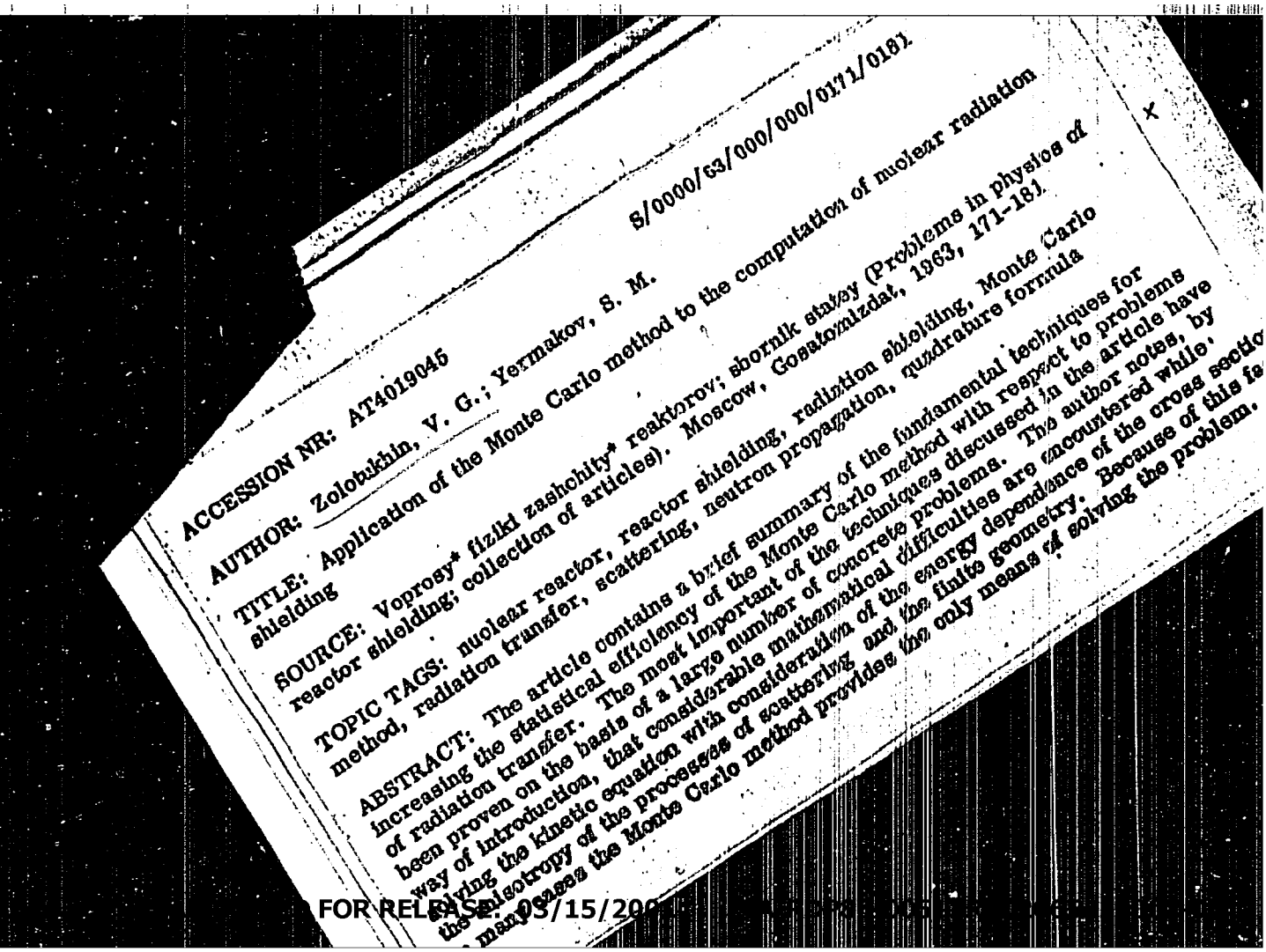
Calculation of pulse amplitude distributions and counting efficiencies for a fast neutron scintillation detector. Atom. energ. 15 no.3:194-200 S '63. (MIRA 16:10)

(Scintillation counters)

YERMAKOV, S.M.; ZOLOTUKHIN, V.G.; PETROV, E.Ye.

Calculating the passage of neutrons through a plane polyethylene layer. Atom. energ. 15 no.3:253-255 S '63. (MIRA 16:10)

(Neutrons—Capture) (Shielding (Radiation))



ACCESSION NR: AT4019046 S/0000/63/000/000/0171/0181

AUTHOR: Zolotukhin, V. G.; Yermakov, S. M.

TITLE: Application of the Monte Carlo method to the computation of nuclear radiation shielding

SOURCE: Voprosy* fiziki zashchity* reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 171-181.

TOPIC TAGS: nuclear reactor, reactor shielding, radiation shielding, Monte Carlo method, radiation transfer, scattering, neutron propagation, quadrature formula

ABSTRACT: The article contains a brief summary of the fundamental techniques for increasing the statistical efficiency of the Monte Carlo method with respect to problems of radiation transfer. The most important of the techniques discussed in the article have been proven on the basis of a large number of concrete problems. The author notes, by way of introduction, that considerable mathematical difficulties are encountered while solving the kinetic equation with consideration of the energy dependence of the cross sectio the anisotropy of the processes of scattering and the finite geometry. Because of this fa many cases the Monte Carlo method provides the only means of solving the problem.

ACCESSION NR: AT4019045

The application of this method to problems involving the passage of neutrons and gamma quanta through a substance is possible due to the absence of any interrelation between the particles in real beams. The difficulties that arise in connection with the use of the Monte Carlo method are concerned primarily with the determination of small probabilities. In problems connected with the passage of radiation through a substance, the smallness of the probability p may be occasioned by the absorption of the particles, their leakage from the medium, energy losses as the result of slowing, etc. It is pointed out that the Neuman series for the solution of the kinetic equation reduces the radiation transfer problem to the computation of multiple intervals, while the Monte Carlo method itself consists essentially in the calculation of the terms of a Neuman series which are the multiple intervals. The use of non-random points, in the opinion of the authors, implies a repudiati of the probabilities of the Monte Carlo scheme, eliminating the possibility of a practical evaluation of the accuracy of the results. In those cases in which interest attaches to a particular functional of the kinetic equation solution, the methods which are described in this article for increasing the statistical effectiveness of the method normally provide a accuracy quite satisfactory for practical purposes with a number of histories ranging fron

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ACCESSION NR: AT4019045

10^3 to 10^4. The authors describe the method of conditional probabilities (in American technical literature this method is known as the method of analytical averaging). It is noted that different modifications of this method are possible, all being based on the introduction of the transitional probability $K(x \to x)$, connected with $K(x \to x)$ by the formula

$$K(x \to x') = \frac{K(x \to x')}{\int_{(D)} K(x \to x')\,dx'}, \qquad (1)$$

where (D) is the region of space T in which the function $\phi(x)$ assumes the greatest values. The semi-analytical Monte Carlo method is briefly discussed. This method is based on the use of analytical solutions (provided such are possible) for certain ramifications of the basic straying process. The essential idea of the "control variable method" is explained. This technique is sometimes also called the "correlation sampling method". The point is made that the chief difficulty in the use of this method consists in finding random values $\xi_1, \ldots, \xi_n$, of high correlation with ξ_0, the mathematical expectancies of which are known. The method of local stream calculation is discussed and examples of its use are given. The use of quadrature formulas with random nodes is analyzed, and it is noted that the further development of the general methods for reducing the dispersion, based on the construction of interpolation-quadrature formulas, permits the formulation of

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ACCESSION NR: AT4019045

quadrature expressions with random nodes of high accuracy, which are very useful for practical applications. A final section of the article deals with problem-solving through the use of high-speed electronic computers. Orig. art. has: 10 formulas.

ASSOCIATION: none

SUBMITTED: 14Aug63 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: NP NO REF SOV: 010 OTHER: 006

Card 4/4

DOROSHENKO, G. G.; YEFIMENKO, B. A.; ZOLOTUKHINA, V. G.

"A Method of Calculating Efficiencies for the Investigation of Continuous Spectra of Fast Neutrons."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22 Feb 64.

MIFI (Moscow Engineering Physics Inst)

ZOLOTUKHIN, V.G.; KHAM'YANOV, L.P.; BLYSKAVKA, A.A.

Analyzing the characteristics of many-rotor mechanical neutron choppers. Prib. i tekh. eksp. 9 no.2:36-39 Mr-Ap'64. (MIRA 17:5)

MIKHAYLUS, F. F.; ZOLOTUKHIN, V. G.; YERMAKOV, S. M.

"Solution methods of transport equation in inhomogeneous and finite media."

report submitted for 3rd Intl Conf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

MOGIL'NER, A. I.; ZOLOTUKHIN, V. G.

"Space-time correlation relations in multiplying systems."

report submitted for 3rd Intl Cpnf, Peaceful Uses of Atomic Energy, Geneva, 31 Aug-9 Sep 64.

BUBLIK, Yu.I.; YERMAKOV, S.M.; YEFIMENKO, B.A.; ZOLOTUKHIN, V.G.; PETROV, E.Ye.

Gamma-ray dose from a unidirectional source near the soil-air interface.
Atom. energ. 18 no.6:628-629 Je '65. (MIRA 18:7)

L 4031-66 EWT(m) DIAAP DM

ACCESSION NR: AP5027960

UR/0089/65/019/001/0051/0056

AUTHOR: [illegible]roshenko, [illegible]; Zolotukhin, [illegible]; Yefimenko, B. A.

TITLE: [illegible] matrix treatment of data obtained by fast neutron single crystal scintillation spectrometer

SOURCE: Atomnaya energiya, v. 19, no. 1, 1965, 51-56

TOPIC TAGS: fast neutron, neutron spectrum, mathematic matrix, single crystal, crystal counter, spectrometer, Monte Carlo method

ABSTRACT: Matrices are calculated for the treatment of results of measurements of fast-neutron spectra. The counting efficiencies of a stilbene crystal (height 30 mm and diameter 30 mm) in the energy range [illegible] to 18 Mev taking into account energy [illegible] were calculated [illegible] the shapes [illegible] and [illegible] neutron energy. Calculations [illegible] standard deviation. The [illegible] formulas.

ASSOCIATION: none

SUBMITTED: 22Sep64

NO REF SOV: 007

ENCL: 00

OTHER: 007

SUB CODE: NP, MA

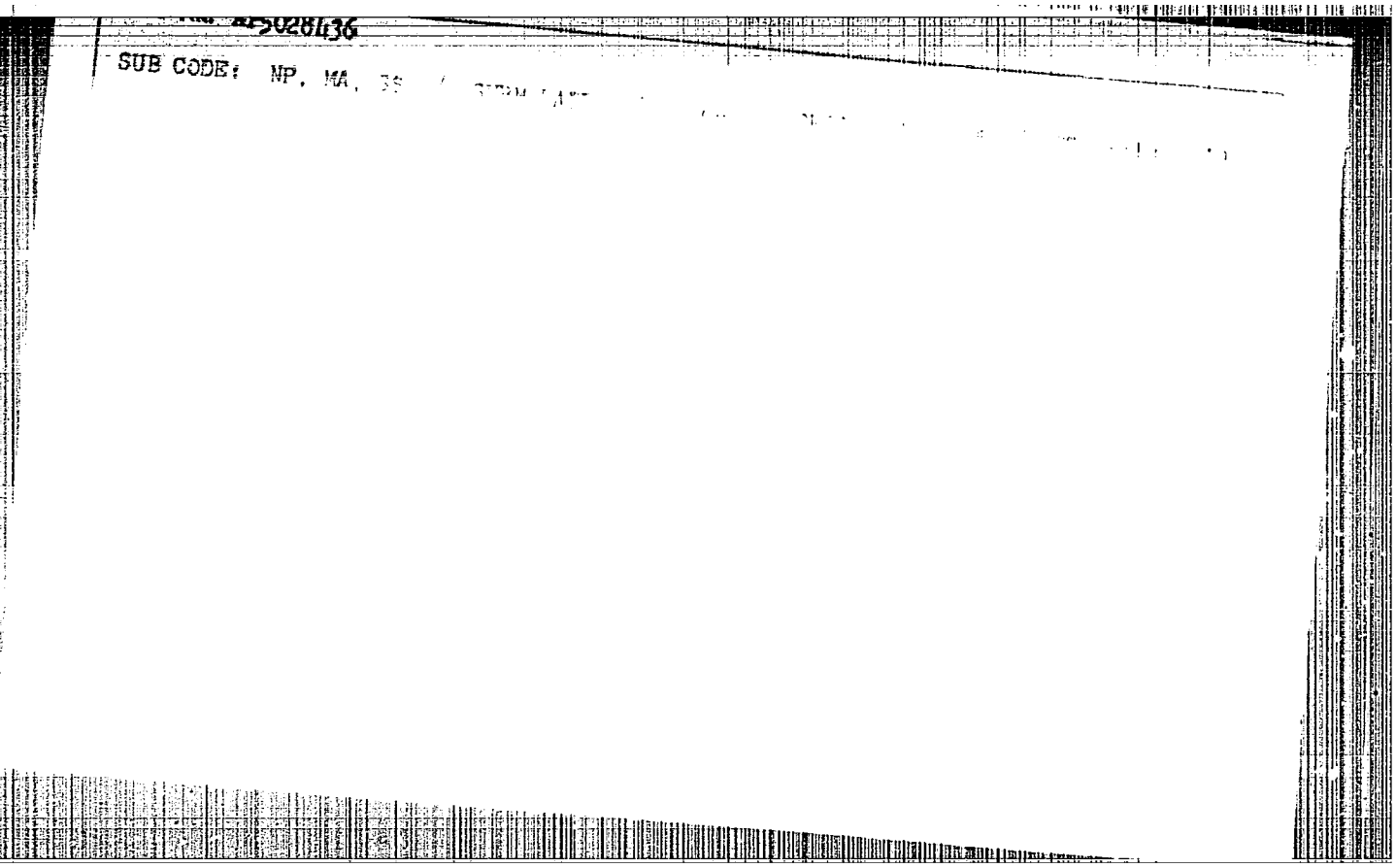
Card 1/1

ACC NR: AP5028436 SOURCE CODE: UR/0089/65/019/001/0056/0059

AUTHOR: Zolotukhin, V. G.; Doroshenko, [illegible]; Yefimenko, B. A.

ORG: none

TITLE: Analysis of a systematic error due to differentiation of ... spectra measured by fast neutron single crystal ... [illegible]



L 1164-66 EWT(m)/EPF(n)-2/EWA(h)

ACCESSION NR: AT5023150 UR/2892/65/000/004/0068/0072

AUTHOR: Doroshenko, G. G.; Zolotukhin, V. G.

TITLE: Simple method for [illegible] continuous spectra of fast neutrons

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchi[illegible]

TOPIC TAGS: neutron spectrum, fast neutron, mathematic matrix, hydrogen, radiation dosimetry

ABSTRACT: The article gives an evaluation of the accuracy of an approximate solution to the problem of the simple interaction of neutrons with hydrogen nuclei, using a matrix analysis of the results of measurements made with a single crystal scintillation fast neutron spectrometer. In the matrix method for [illegible] the system of linear equations [illegible]

Card 1/2

L 1164-66

ACCESSION NR: AT5023150

$$N(B_i) = \int_{B_i}^{E_{\max}} f(E)\,\frac{\sigma_n(E)}{E}\,(E - B_i)\,dE =$$

$$= \sum_{n=i+1}^{k} f(E_n)\,\frac{\sigma_n(E_n)}{E_n}\,(k - i)\,(\Delta E)^2, \qquad (1)$$

where $N(B_i)$ is the integral velocity of the counter at the threshold energy B_i; $f(E)$ is the sought differential energy spectrum of the fast neutrons; E_n is the

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 005 OTHER: 001

L 2698-66 EWT(m)/EPF(c)/ETC/EPF(n)-2/EWG(m)/T WW

ACCESSION NR: AT[illegible]

[illegible] 156/65/000/007/0001/0009

AUTHORS: Bondarenko, [illegible] (deceased); [illegible] [illegible]

[illegible] to measure directly

[illegible]

[illegible] elementary particle, space environment

ABSTRACT: A physical experiment is proposed for continuously and directly measuring the n-n interaction cross section in the [illegible] of outer space, the experiment is proposed at an altitude of 400-500 km with a pulse reactor as the neutron source and an He^3-filled ionization chamber as a detector. Because of the very high vacuum [illegible] Starting with an expression for the number of [illegible] in the given chamber per single burst

$$J = \mathcal{R}(\bar{v})\, Q^2 \cdot \overline{T_{nn}}\, \xi\, \bar{E} \text{ pulses}$$

and the following definition for the pulse width

Card 1/2

L 2894-66

ACCESSION NR: AT5022''8

$$\tau = 35 \frac{\mathcal{L}}{\delta K_0},$$

a criterion is derived for selecting the most suitable reactor

$$\delta K_0 = \frac{|\alpha|}{2}(T_{max} - T_0),$$

where $|\alpha|$ is the thermal coefficient of reactance K_0. The best reactor is shown to be a zirconium-hydride one with a beryllium reflector. The number of neutrons emitted from the reactor [illegible] and the value for the number of [illegible] were investigated, and it [illegible]

[illegible]

ASSOCIATION: [illegible]

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NO REF SOV: 003 OTHER: 005

Card 2/2

L 27477-66 EWT(1)/T IJP(c)
ACC NR: AT6008420

SOURCE CODE: UR/3158/65/000/021/0001/0012

AUTHOR: Zolotukhin, V. G.; Kutuzov, A. A.; Eroder, D. L.; Kham'yanov, L. P.; Yefimenko, B. A.; Shilkin, A. F.

ORG: None

TITLE: Analysis and generalization of the correlation method of measuring the particle lifetime distribution in a physical system

SOURCE: Obninsk. Fiziko-energeticheskiy institut. Doklady, no. 21, 1965, Analiz i obobshcheniye korrelyatsionnogo metoda izmereniya raspredeleniya vremeni zhizni chastits v fizicheskoy sisteme, 1-12

ABSTRACT: The authors present a complete statistical analysis of the correlation method of measuring the distribution of the lifetime of particles in a linear physical system. The method is reduced to a determination of the mutual correlation function between a signal [illegible] modulate the intensity of the [illegible] and the counting rate of the detectors, [illegible] the method depends both on the effect [illegible] of the presence of a noise back-

Card 1/2

L 27477-66
ACC NR: AT6008420

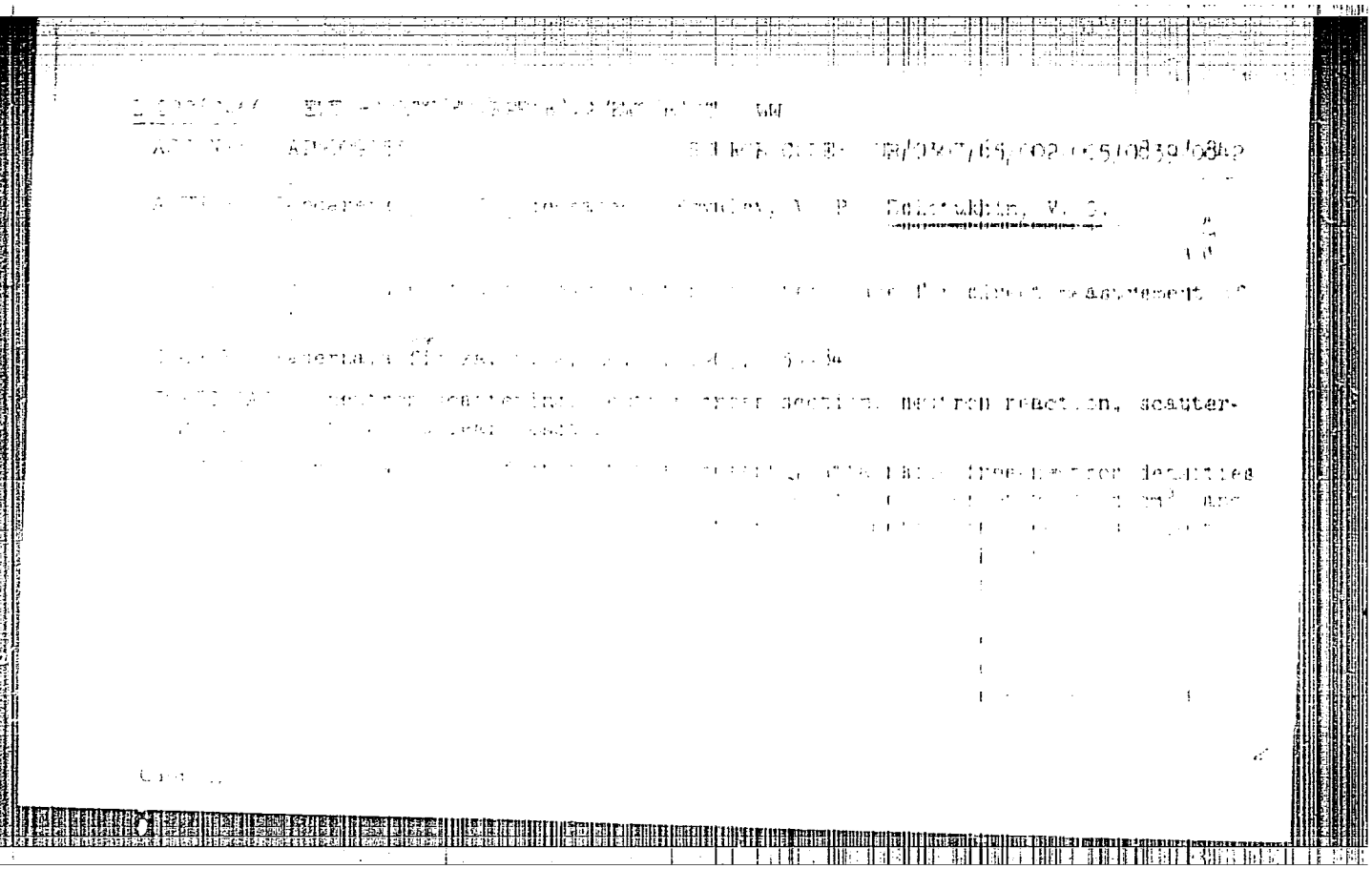
ground against which the measurements are made. In particular, it is shown that the conclusions made by T. E. Stern et al. (J. of Nucl. An., p.A/B, 16, 499, 1962) that the use of random (or pseudorandom) excitation can completely reduce the measurement time compared with the classical method (ordinary periodic excitation) is valid only when there is an appreciable background. When there is no background, on the average the statistical accuracy of the classical and correlation methods is approximately the same. A new method of pseudorandom modulation of the particle source is proposed, to take advantage of this fact. If the modulation is made coherent with the background noise, then it can be readily shown that the fast component of the background can be readily eliminated in the same manner as in the classical method, and the slow component can be eliminated by suitable choice of the off-duty factor of the modulating signal. This type of statistical modulation prevents loss of the peak value of the modulated intensity and thus permits the use of the peak power of the source and retain the favorable advantages of the correlation method. Orig. art. has: 6 figures and 13 formulas.

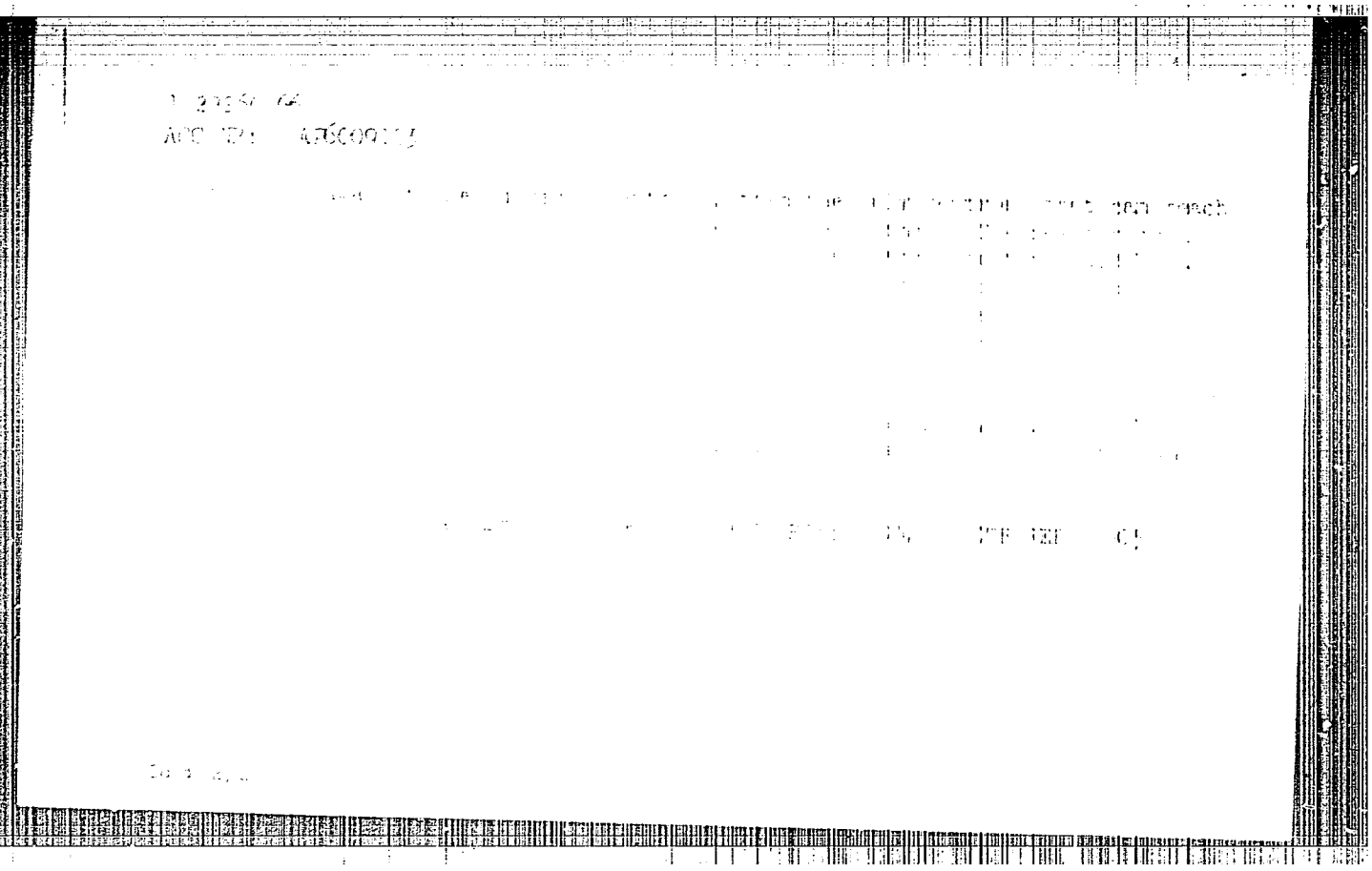
SUB CODE: 20/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 002

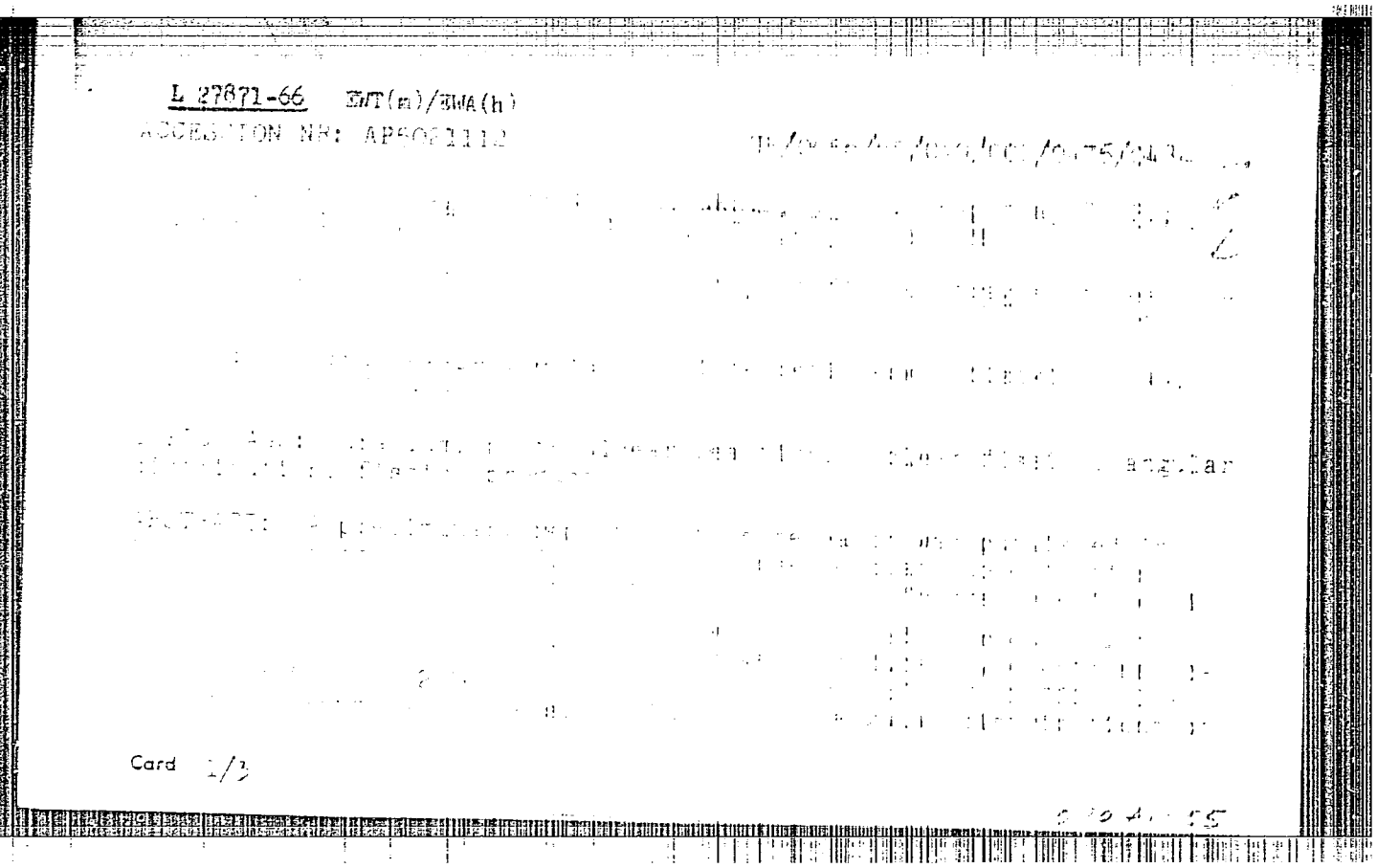
Card 2/2

[illegible], [illegible] [deceased]; KOVALEV, V.P.; [illegible]

Possibility of using a nuclear reactor in outer space for direct measurement of the [illegible] cross section. [illegible] no.5:839-842 My '65. (MIRA 18:[illegible])







L 27871-66 EWT(m)/EWA(h)

ACCESSION NR: AP6023112

Card 1/2

L 27671-66

ACCESSION NR: AP5021112

C

Card

L 27871-66

ACCESSION NR: AP

research,

pation in the work. Orig. art. has: ... and N. Ye. Fedorova for partici-

Card 3/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R002065420002-0"

L 04223-67 EWT(1)/EWT(m) GW

ACC NR: AR6031858 SOURCE CODE: UR/0058/66/000/006/V049/V049

AUTHOR: Gudkova, L. Ya.; Degtyarev, S. F.; Kukhtevich, V. I.; Zolotukhin, V. G.

TITLE: Scattered-neutrons field at the interface of earth and water with air

SOURCE: Ref. zh. Fizika, Abs. 6V405

REF SOURCE: Byul Inform. tsentra po yadern. dannym, vyp. 2, 1965, 346-382

TOPIC TAGS: scattered neutron field, earth air boundary, water air boundary, neutron flux, neutron dose rate, spatial variable, initial neutron energy

ABSTRACT: The basic characteristics of the scattered-neutrons field at the interface of earth and water with air have been investigated by both calculation and experimental methods. The dependence of flux and dose rate on spatial variables and on initial neutron energy was studied. A modification of the Monte-Carlo method, known as the method of the local calculation of the flux, was used for computation, and it was assumed that earth is a mixture of dry sand SiO_2 with a density of 1.7 g/cm^3 and contains 10 wt % water. The case of water was

Card 1/2

L 04223-67
ACC NR: AR6031858

investigated separately. In the method of calculation consideration was given to all the known interaction processes between neutrons and the nuclei of the substance in the energy range of 1 ev—10 Mev. The results are presented in numerous graphs and tables. [Translation of abstract]

SUB CODE: 18, 20/

Card 2/2

L 05041-67 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JG/JR/GD

ACC NR: AT6027925 SOURCE CODE: UR/0000/66/000/000/0104/0116

AUTHOR: Broder, D. L.; Zhilkin, A. S.; Zolotukhin, V. G.; Tarasko, M. Z.; Kutuzov, A. A.

ORG: None

TITLE: Fast neutron spectra in metal-water shielding

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 104-116

TOPIC TAGS: fast neutron, radiation shielding, neutron spectrum

ABSTRACT: The authors study the spectra of neutrons in the energy range above 1 mev from sources with energies of 3.35 and 14.9 mev in water and in water behind layers of iron and lead. A scintillation spectrometer with a stilbene crystal was used for the measurements. The sensitivity to γ-quanta was reduced by time division of irradiation. The reactions used for the neutron sources were $D(d,n)He^3$ and $T(d,n)He^4$ produced by using deutrons to bombard zirconium-tritium and zirconium-deuterium targets with a thickness of 18 mg/cm^2. For the measurements in water, the source was located in a paraffin block placed in direct contact to the water tank. The overall dimensions of the shielding were 710×710×600 mm. The scintillation spectrometer was combined with an FEU-13 photomultiplier and an AI-100-1 amplitude analyzer. The results show that

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L 05041-67

ACC NR: AT6027925

the neutron spectrum from a monochromatic source in lead and iron differs considerably from that in water. The iron and lead spectrum shows a stronger concentration of low-energy neutrons (<2 Mev). In the energy range from 2 Mev to the initial energy of the 3.35 Mev source and from 4-5 Mev to the initial energy of the 14.9 Mev source, the spectrum in water contains more neutrons than that in iron and lead. This form of spectrum explains the excellent shielding properties of iron and lead for fast neutrons as well as their poor characteristics for comparatively low-energy neutrons. These data also explain the excellent shielding properties of metal-water shielding throughout the entire energy spectrum. Spectra for neutrons in the energy region below the initial energy in water behind layers of lead and iron approach the shape of spectra in water at a thickness of greater than 20 cm. For thinner water layers, particularly below 2-3 Mev, the spectrum shows high concentrations of neutrons in comparison with the spectrum in water. In this transition region there is also a considerable difference from the spectrum in pure water for the energy range from 2 Mev to the initial energy. Orig. art. has: 10 figures, 1 table, 2 formulas.

SUB CODE:20,18/ SUBM DATE: 12Jan66/ ORIG REF: 004/ OTH REF: 004

Card 2/2 pla

L 22419-66 EWT(m)/EWA(h)

ACC NR: AP6[illegible] SOURCE CODE: [illegible]

[illegible]

[illegible] amplitude distributions from neutron energy spectra [illegible]

SOURCE: Atomnaya energiya, [illegible], 1966, 1-3

TOPIC TAGS: neutron spectrum, neutron detector, scintillation detector, pulse height analyzer, nuclear reaction [illegible], beryllium

ABSTRACT: This is an abstract of article No. [illegible]-01 submitted to the source editor but not [illegible] improve the [illegible] integral [illegible] obtained by dif- [illegible] a least-squares method [illegible] from a scintillator. This [illegible] of determining the derivative,

Card 1/2 UDC: 539:16.08:539.125.5

2

L 22419-66
ACC NR: AP6007950

decreasing the fluctuations that result from differentiation of ex-
perimental [illegible]

Card 2/2

ZOLOTUKHIN, V.I.

Role of zemstvo physicians in the control of syphilis in Russia. Vest. derm. i ven. 38 no.9:68-70 S '64.

(MIRA 18:4)

1. Respublikanskiy kozhno-venerologicheskiy dispanser (glavnyy vrach V.P.Konenkova) Udmurtskoy ASSR; nauchnyy rukovoditel' - chlen-korrespondent AMN SSSR prof. P.V.Kozhevnikov.

ZOLOTUKHIN, V.I. (Izhevsk)

Incidence of syphilis in the population of Udmurtia in the postwar period. Vest.derm.i ven. no.11:61-62 '61. (MIRA 14:11)
(UDMURT A.S.S.R.--SYPHILIS)

ZOLOTUKHIN, V.I.

Concept of dispensary services for syphilitic patients by "zemstvo" physicians in the Vyatka Government. Vest. derm. i ven. 37 no.4:65-69 Ap '63. (MIRA 17:5)

1. Respublikanskiy kozhno-venerologicheskiy dispanser Udmurtskoy ASSR (glavnyy vrach V.P. Konenkova).

ZOLOTUKHIN, V.I.

Overall mechanization of the assembling and painting shop. Biul. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.12:29-31 D '64. (MIRA 18:3)

CO 7

Rapid determination of copper in copper arsenoacetates. V. K. Zolotukhin. *Zavodskaya Lab.* 4, 111(1935).—Dissolve the sample in HCl, add an excess of NH_4OH and titrate with KCN. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BC ... A. A.

a. v.

Determination of potassium carbonate in sunflower ash. V. K. Kolotuchin (J. Appl. Chem. Russ., 1936, 9, 552—554).—1 g. of ash is extracted with 150—300 ml. of boiling H_2O for 10 min., the cooled solution is diluted to 250 ml., and 50 ml. of the filtered solution are titrated with 0·1N-HCl. A deduction of 0·3 ml. of acid per 100 ml. of solution is made, to correct for solubility of $CaCO_3$. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

The carrying down of barium, calcium and magnesium salts by ferric and aluminum hydroxides precipitated by ammonia. V. K. Zolotukhin. *Acta Univ. Voronegiensis* 9, No. 3, [illegible] (in German 82 [illegible]); cf. C. A. 32, [illegible]. When $Fe(OH)_3$ or $Al(OH)_3$ is pptd. with excess NH_4OH in the presence of Ba, Ca or Mg salts, these cations are carried down with the ppt. and cannot be washed out. Ba and Ca are partly pptd. as $BaCO_3$ and $CaCO_3$ owing to absorption of CO_2 from the air by NH_4OH, and are partly adsorbed by the hydroxides. With Mg, adsorption alone is responsible. The impurities can be almost entirely removed by washing the ppts. with NH_4Cl soln. However, if pptn. occurs at *p*H less than 7, the carbonates are not formed and the ppt. has a pos. charge and cannot adsorb cations. Hence, if Al and Fe are pptd. by neutral reagents, such as $NaNO_2$ or urotropine, or if only enough NH_4OH is used to keep methyl red on the acid side, ppts. entirely free from Ba, Ca and Mg are obtained.

H. M. Leicester

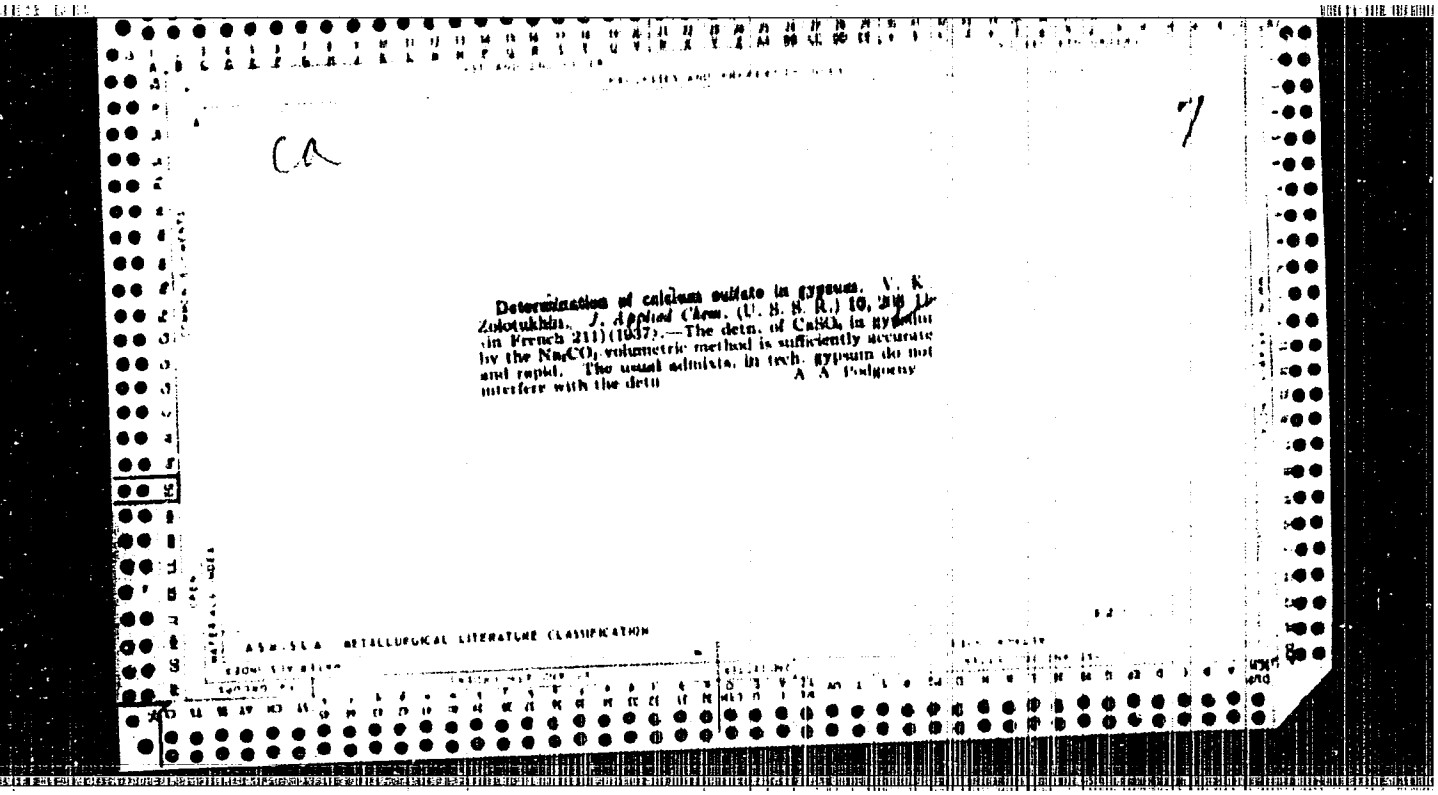
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

The carrying down of barium, calcium and magnesium salts by the sulfides of the third-group elements precipitated by ammonium sulfide. V. K. Zolotukhin. *Acta Univ. Voronegiensis* 9, No. 3, 84-7 (in German 87)(1937).—When sulfides of the 3rd group are pptd. in alk. soln., Ba, Ca and Mg are carried down by adsorption and as carbonates. This can be prevented by pptg. at pH 5, but in this case only Co, Zn and Ni are pptd. completely.

H. M. Leicester

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

7

Determination of calcium sulfate in gypsum. V. K. Zolotukhin. *J. Applied Chem.* (U. S. S. R.) 10, 211 [in French 211] (1937).—The detn. of $CaSO_4$ in gypsum by the Na_2CO_3 volumetric method is sufficiently accurate and rapid. The usual admixts. in tech. gypsum do not interfere with the detn. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

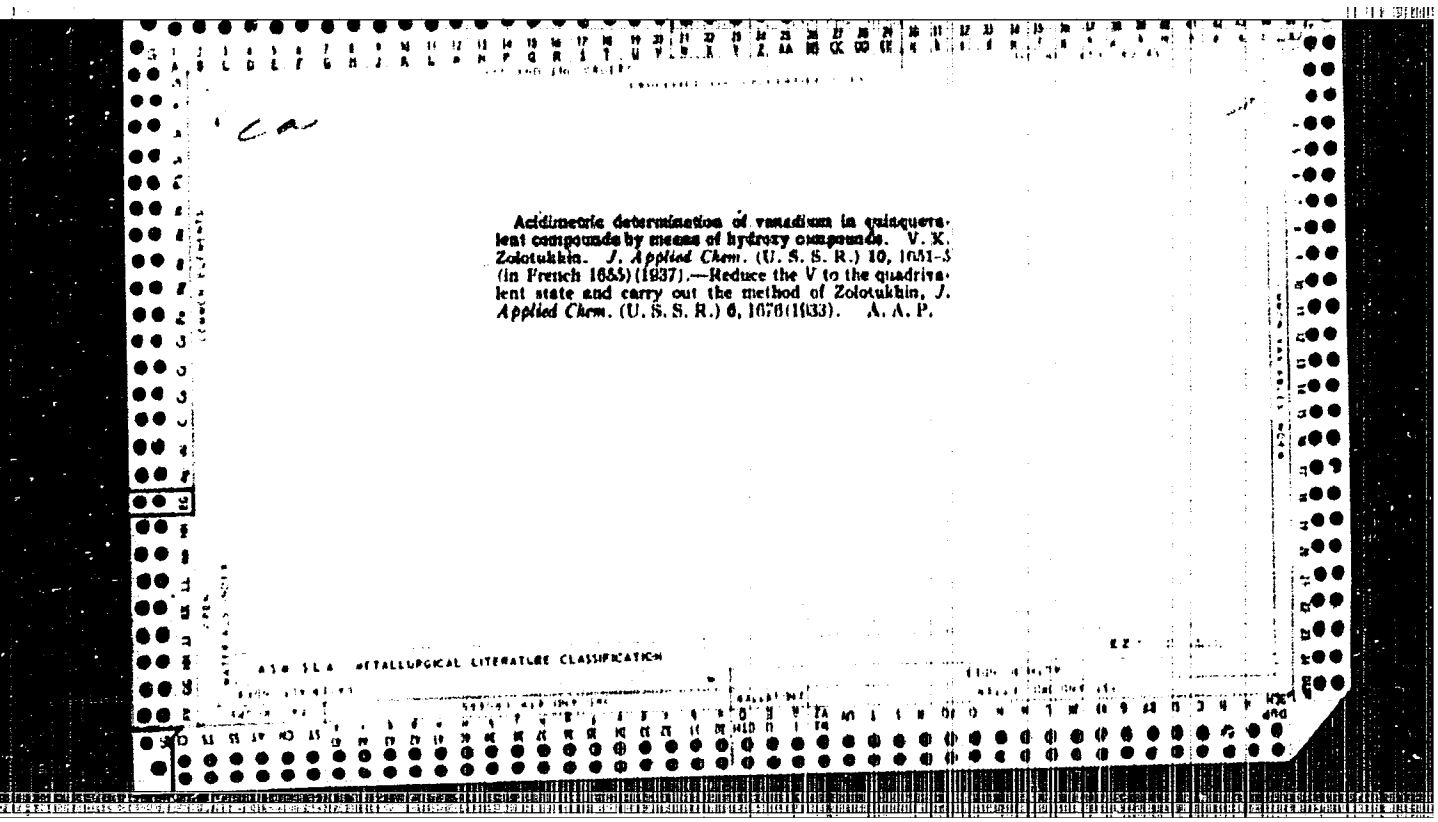
BC

a-1

Gravimetric determination of iron and aluminium by precipitation as hydroxide with ammonia, in presence of calcium, barium, and magnesium. V. K. Zolotnitskii (J. Appl. Chem. Russ., 1937, 10, 1891—1896).—Fe and Al hydroxides are pptd. by a slight excess of NH_3, and the ppt. is washed with 2% aq. NH_4NO_3; Ca, Ba, and Mg do not interfere.

R. T.

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION



Acidimetric determination of vanadium in quinquevalent compounds by means of hydroxy compounds. V. K. Zolotukhin. *J. Applied Chem.* (U. S. S. R.) 10, 1651–5 (in French 1655) (1937).—Reduce the V to the quadrivalent state and carry out the method of Zolotukhin, *J. Applied Chem.* (U. S. S. R.) 6, 1676 (1933). A. A. P.

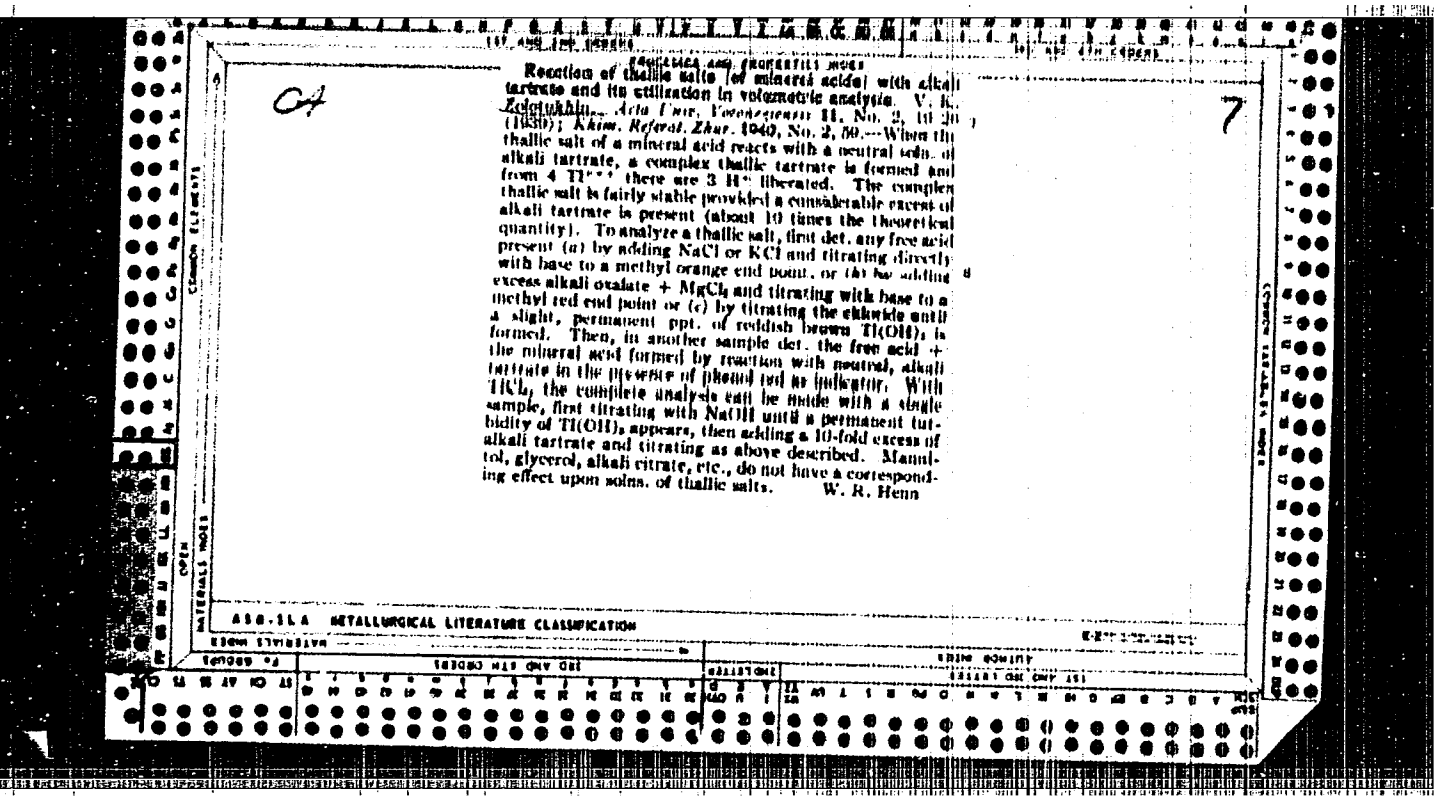
ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Volumetric determination of vanadium in its salts by means of certain hydroxy compounds. V. K. Zolotukhin. *J. Applied Chem.* (U. S. S. R.) 10, 1050-6(in French 1061)(1937).—The salts of quadrivalent V liberate equiv. amts. of acid with Rochelle salt, mannitol, glycerol and cane sugar. The free acid in the quadrivalent V salt solns. must be detd. separately. Eleven references.

A. A. Podgorny

METALLURGICAL LITERATURE CLASSIFICATION



Reaction of thallic salts of mineral acids with alkali tartrate and its utilization in volumetric analysis. V. K. Zelenukhin. *Acta Univ. Voronegiensis* 11, No. 2, [illegible] (1939); *Khim. Referat. Zhur.* 1940, No. 2, 59.—When the thallic salt of a mineral acid reacts with a neutral soln. of alkali tartrate, a complex thallic tartrate is formed and from 4 Tl^{+++} there are 3 H^{+} liberated. The complex thallic salt is fairly stable provided a considerable excess of alkali tartrate is present (about 10 times the theoretical quantity). To analyze a thallic salt, first det. any free acid present (*a*) by adding NaCl or KCl and titrating directly with base to a methyl orange end point, or (*b*) by adding excess alkali oxalate + $MgCl_2$ and titrating with base to a methyl red end point or (*c*) by titrating the chloride until a slight, permanent ppt. of reddish brown Tl(OH)$_3$ is formed. Then, in another sample det. the free acid + the mineral acid formed by reaction with neutral, alkali tartrate in the presence of phenol red as indicator. With $TlCl_3$ the complete analysis can be made with a single sample, first titrating with NaOH until a permanent turbidity of Tl(OH)$_3$ appears, then adding a 10-fold excess of alkali tartrate and titrating as above described. Mannitol, glycerol, alkali citrate, etc., do not have a corresponding effect upon solns. of thallic salts. W. R. Henn

PROCESSES AND PROPERTIES INDEX

Ca

7

Determination of zirconium by the acidimetric method with hydroxy compounds. V. K. Zolotukhin. *Acta Univ. Voronegiensis* (U. S. S. R.) 11, No. 2, 28-33(1939); *Khim. Referat. Zhur.* 1940, No. 2, 61.—The method is based on the detn. of acid sepd. in the reaction of the Zr salt with Na tartrate. To a known amt. of the Zr salt soln. add an excess of Na tartrate and titrate the soln. in the cold with NaOH (thymolphthalein indicator). In a sep. portion of the soln. det. the free acid according to the KF method, for which to a known amt. of the Zr salt add a soln. of KF (neutral to phenol red) satd. with KCl and KNO_3, add to the soln. KCl or KNO_3 to satn., let stand for 15-20 min. and titrate with NaOH in the presence of phenol red. The Zr content is calcd. from the amt. of NaOH used for the titration of the acid equiv. to Zr. This is obtained from the difference between the NaOH used for detg. the total acidity (after the addn. of Na tartarate) and the free acid. W. R. Henn

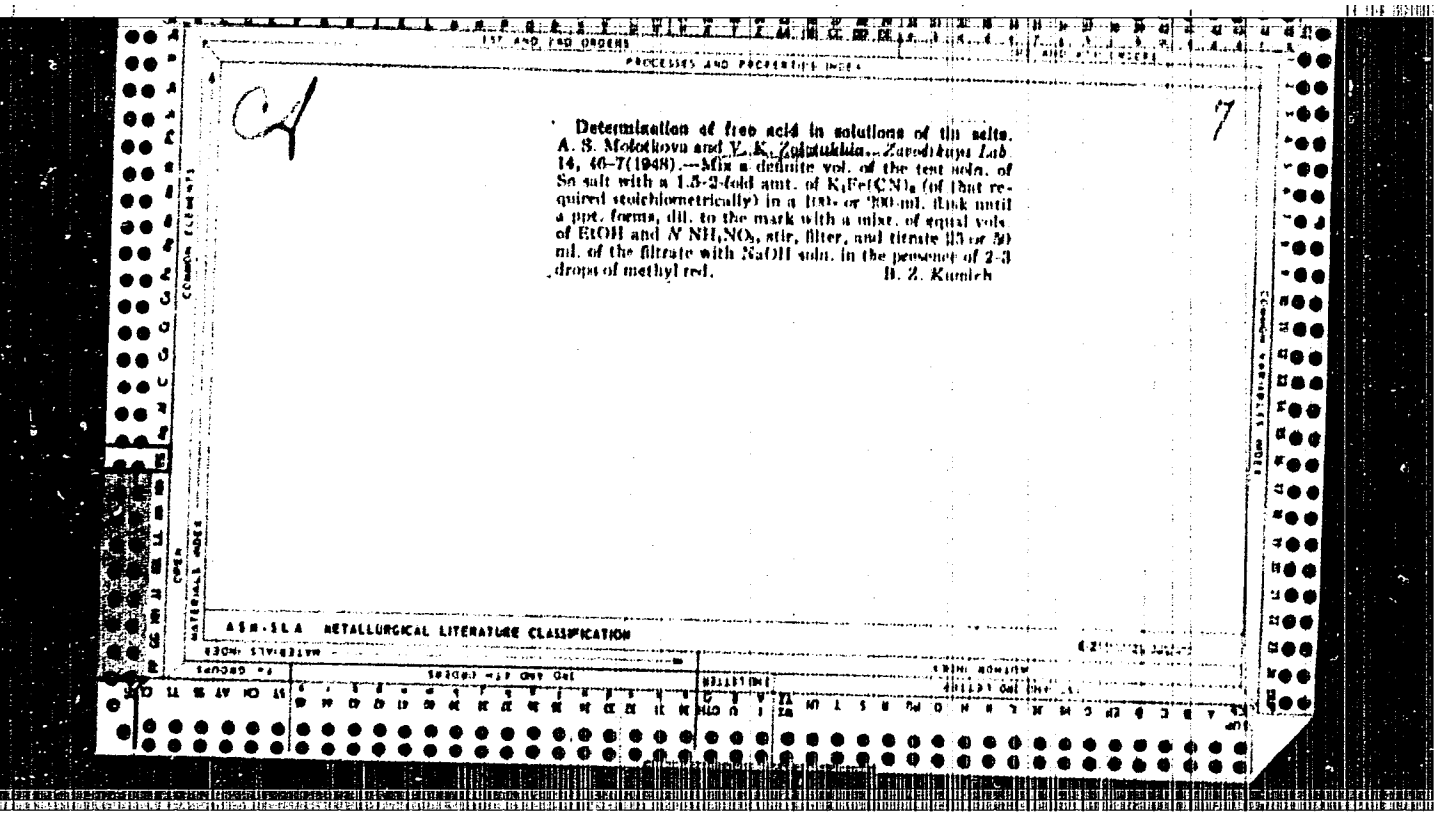
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

Salts of bervalent thallium as indicators in alkalimetry and acidimetry. V. K. Zolotuchin (*Zavod. Lab.*, 1960, **9**, 133—134).—Tl^{III} gives in alkaline solution a yellow sol of $Tl(OH)_3$. The colour change is so abrupt that it can be used in titration, especially in presence of oxidising substances which destroy org. indicators. The solution must contain much Cl', so that NaCl is added to H_2SO_4 or HNO_3 before titration. Examples are given for solutions containing Cl_2, Br, and NO_3. J. J. B.

ZOLOTUKHIN, V.K.

Acidimetric determination of beryllium by certain organic hydroxy compounds. Nauk.zap.L'viv.un. 9:55-63 '48. (MLRA 10:5)

1.Kafedra analiticheskoy khimii.
(Beryllium) (Titration)



C4

7

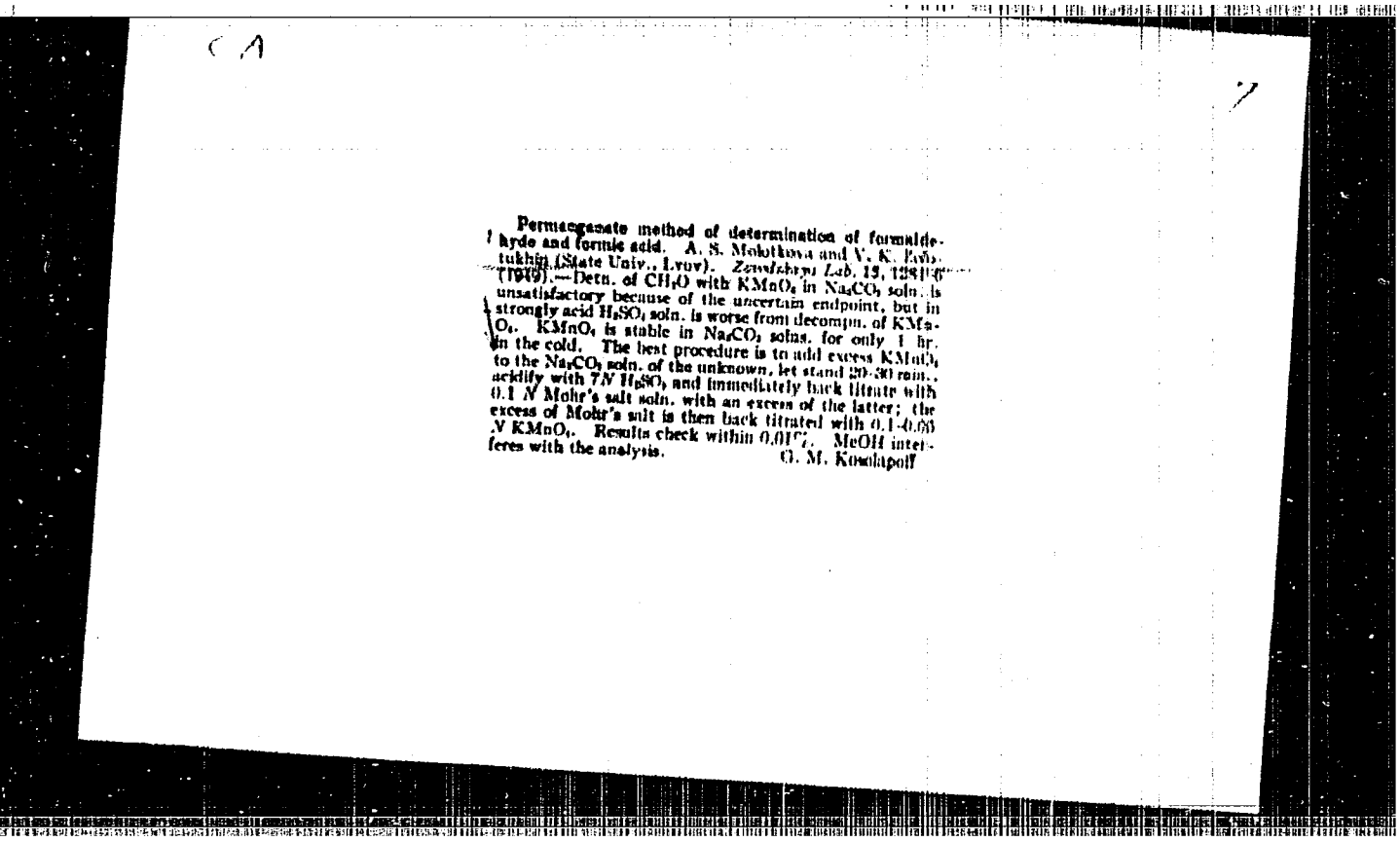
Determination of free acid in solutions of tin salts. A. S. Molochnova and V. K. Zolotukhin. *Zavodskaya Lab.* 14, 46–7(1948).—Mix a definite vol. of the test soln. of Sn salt with a 1.5–2-fold amt. of $K_4Fe(CN)_6$ (of that required stoichiometrically) in a 100- or 200-ml. flask until a ppt. forms, dil. to the mark with a mixt. of equal vols. of EtOH and *N* NH_4NO_3, stir, filter, and titrate 25 or 50 ml. of the filtrate with NaOH soln. in the presence of 2–3 drops of methyl red. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ZOLOTUKHIN, V. K.

35840. O permanganatometricheskom opredelenii formal'degida i murav'inoy kisloty. Zavodskaya laboratoriya, 1949, No. 11, s. 1284-86.-Bibliogr: 5 nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

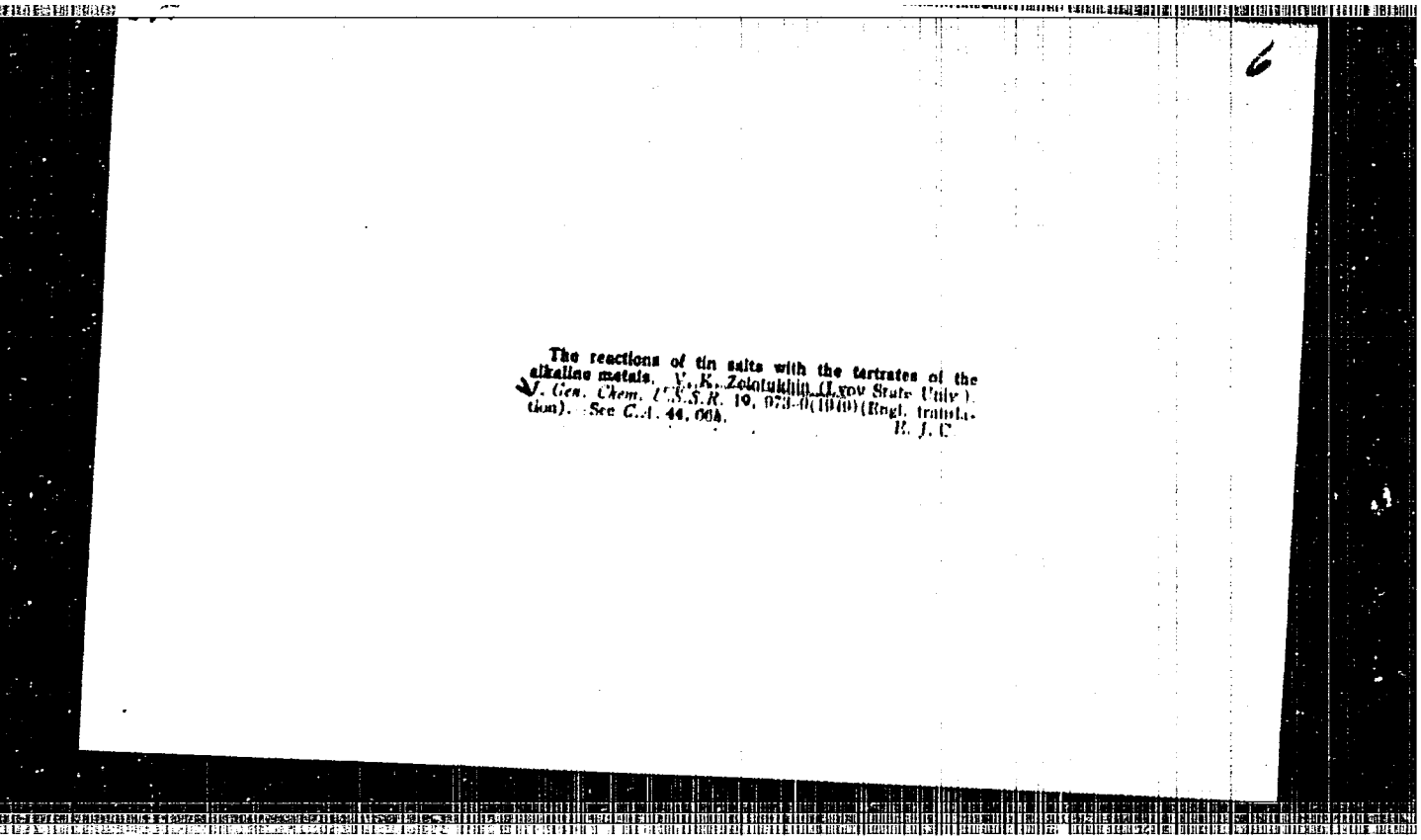


CA

7

Permanganate method of determination of formaldehyde and formic acid. A. S. Mokhtkova and V. K. Pavlukhin (State Univ., Lvov). *Zavodskaya Lab.* 15, 1281[illegible] (1949).—Detn. of CH_2O with $KMnO_4$ in Na_2CO_3 soln. is unsatisfactory because of the uncertain endpoint, but in strongly acid H_2SO_4 soln. is worse from decompn. of $KMnO_4$. $KMnO_4$ is stable in Na_2CO_3 solns. for only 1 hr. in the cold. The best procedure is to add excess $KMnO_4$ to the Na_2CO_3 soln. of the unknown, let stand 20–30 min., acidify with 7 *N* H_2SO_4, and immediately back titrate with 0.1 *N* Mohr's salt soln. with an excess of the latter; the excess of Mohr's salt is then back titrated with 0.1–0.05 *N* $KMnO_4$. Results check within 0.01%. MeOH interferes with the analysis.

O. M. Kondapoff



6

The reactions of tin salts with the tartrates of the alkaline metals. V. K. Zolotukhin (Lvov State Univ.). J. Gen. Chem. U.S.S.R. 10, 973-4(1940)(Engl. translation). See C.A. 44, 668.
R. J. C.

CA

Reactions of tin salts with alkali metal tartrates. V. K. Zolotukhin. *Zhur. Obshchei Khim. (J. Gen. Chem.)* 19, 987-90(1949). By titration with alkali, to phenolphthalein or thymolphthalein, it was proved that mixing of solns. of $SnCl_4$ with $Na_2C_4H_4O_6$ liberates 4 equivs. acid per Sn. This ratio remains unchanged when the proportions are varied from 3:1 to 1:20. At all these proportions, the solns. remained clear at the neutralization point, but became turbid with time at 3:1 and 2:1. In alk. soln., Sn tartrates are ppted., unless there is at least a 4:1 excess of $Na_2C_4H_4O_6$. Clear solns. obtained at the molar proportions 3:1, 2:1, 1:1, and 1:2, become turbid on addn. of HCl or KCl, probably owing to coagulation of colloidally dissolved Sn tartrates. H_2S ppts. SnS_2 even in the presence of a 70-fold excess of $Na_2C_4H_4O_6$. Heating causes pptn. through hydrolysis. That the total acid is liberated in the very act of mixing, not gradually during the titration, was demonstrated by detn. of the acidity of the filtrate from the Sn tartrate ppt. formed in a weakly acid soln. (0.05 *N*). These facts prove that salts of Sn^{IV} react with $Na_2C_4H_4O_6$ with substitution of SnO for H of the OH groups of 1 or of 2 mols of the tartrate. Liberation of free acid was found also on mixing solns. of $SnCl_4$ with $Na_2C_4H_4O_6$ in the molar proportions 2:1 to 1:24. The amt. of acid liberated varies with the mol. proportion, from 66% of the theoretical amt. at 1:1, 54% at 1:2, 58% at 1:4, to 75% at 1:6 to 1:12; in the latter case, no ppt. was formed during the titration up to the end point. With $Na_2C_4H_4O_6$ added to a strongly acid soln. of $SnCl_4$, no ppt. is formed at any proportion. In a weakly acid soln., a ppt. is formed unless $Na_2C_4H_4O_6$ is used in at least 3-fold excess. The stability of the Sn tartrates towards NaOH, Na_2HPO_4, and $K_4Fe(CN)_6$ increases with increasing excess of the $Na_2C_4H_4O_6$. At $SnCl_4:Na_2C_4H_4O_6$ = 1:6, the solns. remain undisturbed by any of these reagents even on heating. H_2S ppts. SnS_2 even in the presence of 30-fold excess of $Na_2C_4H_4O_6$ in a neutral medium, and a 75-fold excess in an acid medium. The $SnC_4H_4O_6$ described in the literature can be formed only in strongly acid solns.

N. Thon

Acidimetric determination of beryllium. V. K. Zolotukhin (Lvov State Univ.). *Zhur. Anal. Khim.* 6, [illegible]-40 (1951).—The reaction $Be(OH)_2 + 4KF \rightarrow K_2[BeF_4] + 2KOH$ proceeds to completion. However, the $Be(OH)_2$ obtained by pptn. of Be in a neutral soln. with NaOH or KOH occluded basic salts or ions of Be and the subsequent titration of KOH or NaOH with HCl gave lowered results. Direct titration of neutral Be solns. with NaOH or KOH with phenolphthalein as indicator also gave low results. $Be(OH)_2$ obtained from the reaction $BeSO_4 + KIO_3 + KI \rightarrow Be(OH)_2 + K_2SO_4 + 2I$ was also contaminated. Better results were obtained by titrating neutral $BeSO_4$ soln. with $Be(OH)_2$. However, this method was applicable only to $BeSO_4$ and other Be salts had to be converted first into $BeSO_4$. The $Be(OH)_2$ thus obtained was free of occlusions.

M. Hoteh

BH

1039. ACIDIMETRIC DETERMINATION OF TIN BY MEANS OF SODIUM TARTRATE.

V.I. Zolotukhin (J. anal. Chem. USSR, 1951, 6, 300–302). — The reaction between Sn^{4+} and tartrate ($Sn^{4+} + C_4H_4O_6 + H_2O = C_4H_2SnO_6 + 4H^+$)(Kolotukhin, A., 1950,I, 640), can be used for acidimetric determination of Sn^{4+} by titration to the phenolphthalein end-point. Presence of free acid (ϕ 0.5N) is essential, but this can be allowed for by adding $K_4Fe(CN)_6$ (Kolotkova and Zolotukhin, Zavod. Lab., 1948, 14, 46) to precipitate Sn, and then alkali titration of the filtrate. With mixtures of Sn^{IV} and Sn^{II}, the Sn^{IV} can be determined by titration with I, leaving the acidity unchanged, and portions of the oxidised solution can be used for determination of free acid and total Sn, respectively.

G. S. Smith.

ZOLOTUKHIN, V.K., dotsent.

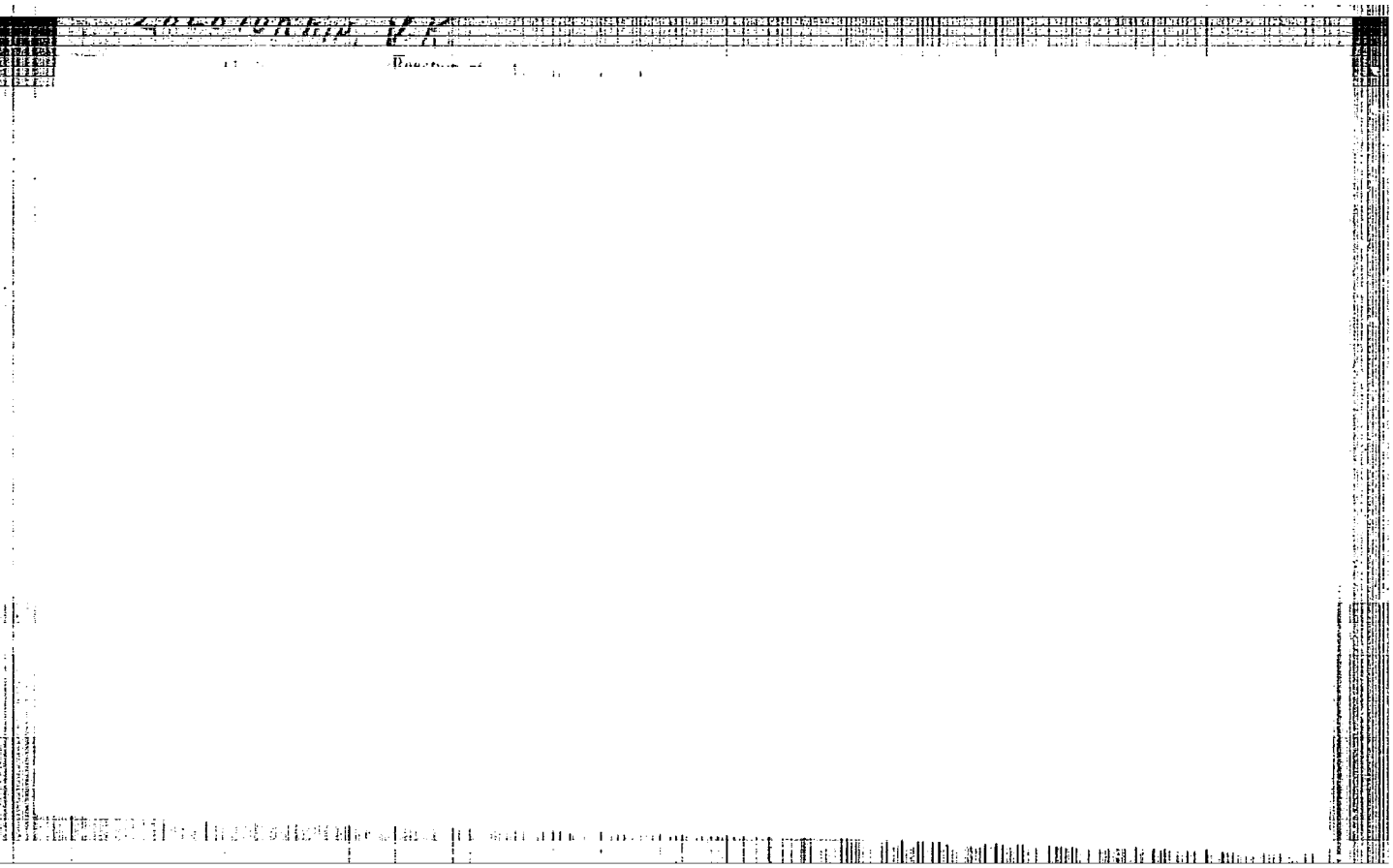
Volumetric determination of aluminum. Dop.ta pov.L'viv.un. no. 3 pt.2:31-32 '52. (MLRA 9:11)

(Volumetric analysis) (Aluminum)

ZOLOTUKHIN, V. F.

Acidimetrid determination of aluminum. Nauk.zap.L'viv.un. 21:145-151 '52. (MLRA 10:7)

1. Kafedra analiticheskoy khimii.
(Volumetric analysis) (Aluminum)



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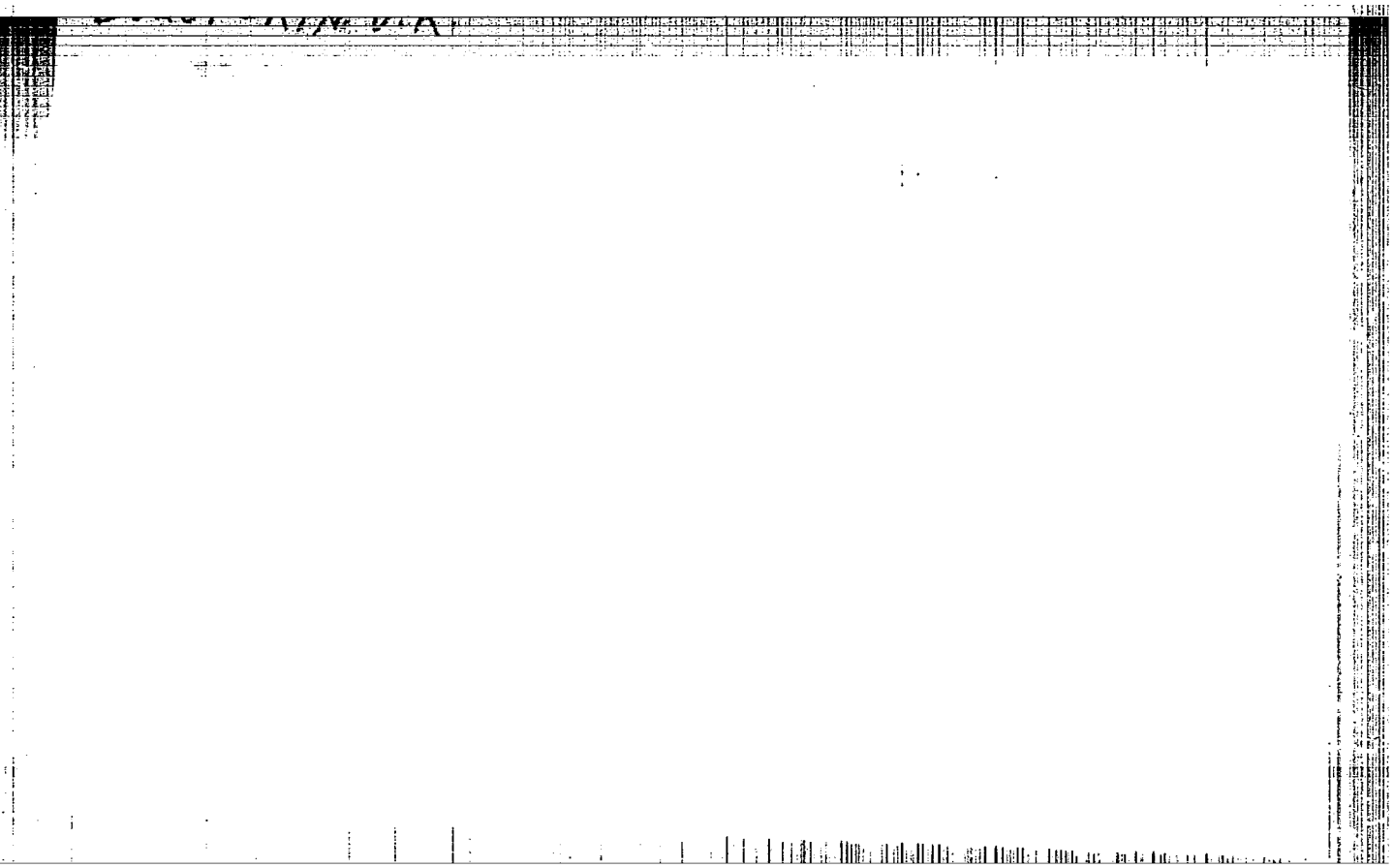

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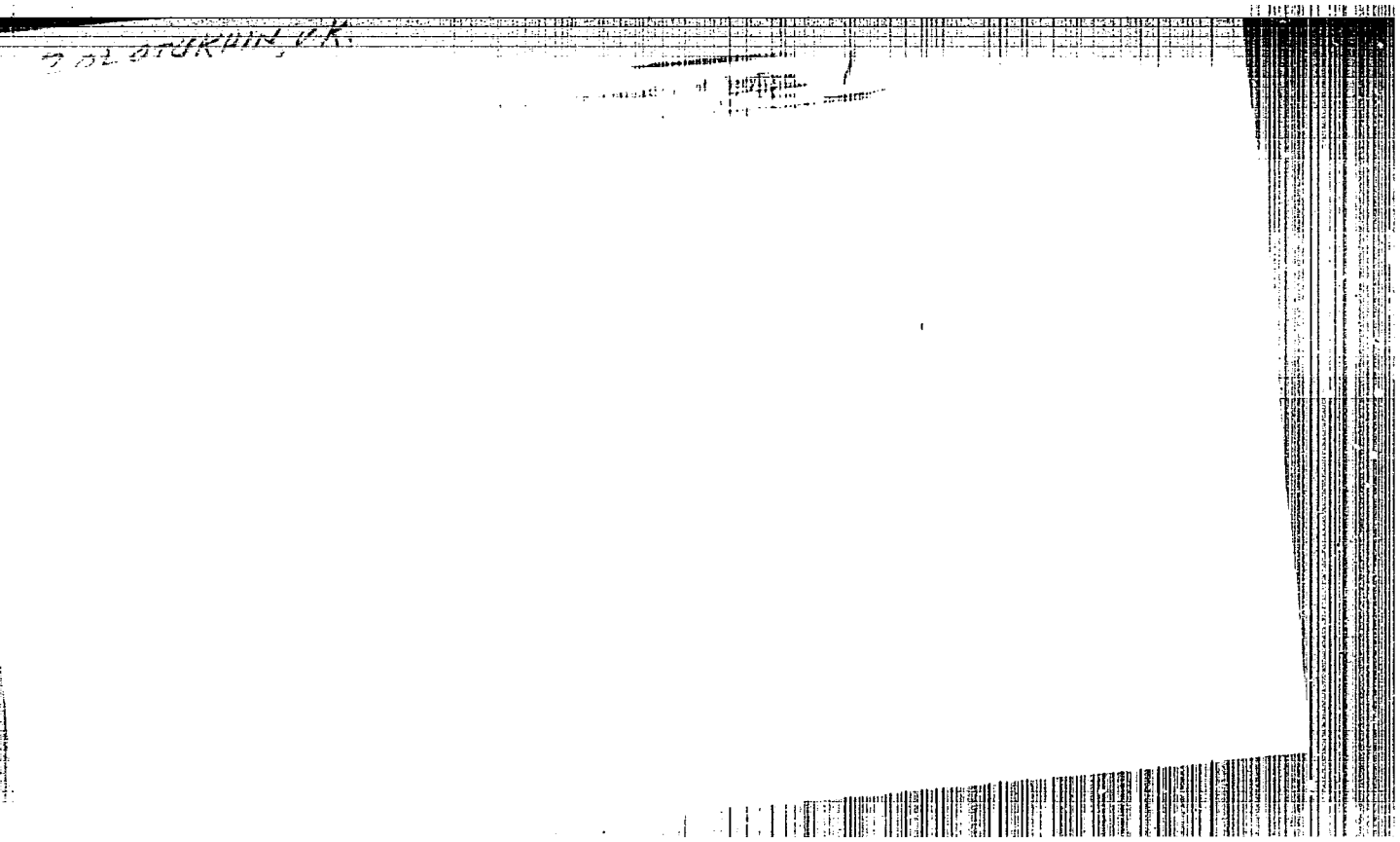

USSR/Analytical Chemistry - Analysis of Inorganic Substances G-2

Abs Jour : Referat Zhur - Khimiya, No 3, 1957, 8434

Author : Zolotukhin, V. K.
Inst : Lvov University
Title : On the Determination of Beryllium and Aluminum by the Phosphate Method.

Orig Pub : Dopovidi ta povidomlennya. L'vivsk. un-t, 1955, Vol 2, No 6, 134-137

Abstract : The accuracy of methods based on the determination of Be and Al as $BeNH_4PO_4$ and $AlPO_4$ and the basicity of the precipitates have been investigated. It is shown that when Be is precipitated as $BeNH_4PO_4$, the results are lower than those obtained with the ammonia method by ~3.8%. The basicity of the beryllium phosphate precipitate, precipitated from a 0.1 M solution of $BeSO_4$ by heating, corresponds to 37.8-38.8%; the acidity of the filtrate is 38.8-39.6% of the starting Be salt (in equiv.). The basicity of the beryllium phosphate precipitated by heating a 0.05 M solution and the acidity of the filtrate are 9-10% higher than the corresponding values obtained with the ammonia method; when the precipitation is

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ZOLOTUKHIN, V.K.

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

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61822

Author: Zolotukhin, V. K.

Institution: None

Title: Acidimetric Determination of Beryllium by Means of Sodium Salicylate

Original Periodical: Nauk. zap. L'vivs'k. un-tu., 1955, 34, 115-117

Abstract: To determine Be in neutral and acid media and in basic salts a definite volume of Be salt is treated with excess 0.4N-solution of Na-salicylate and neutralized with 0.1N NaOH to thymolphthalein. Then is added 1.25-3-fold amount (on the basis of theoretical) of 0.1N HCl and 2-3-fold excess of KF solution neutralized to the orange transition point of phenol red (I). After 3-5 minutes excess acid is titrated with 0.1N NaOH in the presence of I, to the control (KF solution neutralized to I). Optimal results obtained with molar ratio $BeSO_4$:$C_6H_4OHCOONa$ = 1:3.2 and 0.25 excess

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

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61822

Abstract: HCl. On increasing the excess of salicylate the amount of HCl is increased.

Card 2/2

ZOLOTUKHIN, V.K.

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

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61830

Author: Molotkova, A. S., Zolotukhin, V. K.

Institution: None

Title: On Acidi-Alkalimetric Determination of Zirconium and Titanium

Original Periodical: Nauk. zap. L'vivs'k. un-tu, 1955, 34, 125-133

Abstract: Zr is determined in its salts by titration with NaOH in the presence of salts of tartaric, citric and salicylic acid (concentration of solutions of Zr $\geq$ 0.1 N) or without them (concentration of solutions $\leq$ 0.025 N). With an excess of anions of hydroxy acids even large amount of KNO_3 and K_2SO_4 are without effect; cathions reacting with caustic alkalies interfere. In basic salts Zr is determined from the sum of basicity of solutions of salt and amount of caustic alkali used up for its neutralization, the basicity being determined on the basis of the reaction $ZrO^{2+} + 6F^- + H_2O \rightarrow (ZrF_6)^{2-} + 2OH^-$. In neutral tartrate solutions Zr cannot be determined by the

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

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61830

Abstract: potassium fluoride method, in salicylate solutions the error of determination ~0.8%. Ti cannot be determined by the above described method since the fluoride complex of Zr are more stable toward alkalies than the fluoride complex of Ti.

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ZOLOTUKHIN, V. K.

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

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 61880

Author: Zolotukhin, V. K.

Institution: None

Title: Determination of Free Acid in Thorium Salts

Original Periodical: Nauk. zap. L'vivs'k. un-tu, 1955, 34, 138-140

Abstract: Free acid in solutions of the salts cannot be determined directly by titration with alkali due to the low pH of precipitation of basic salts of Th and $Th(OH)_4$. Th^{4+} is combined with KF or NaF (4-fold excess) or 1 N solution of oxalate of K or Na (10-fold excess) and free acid is titrated with 0.1 N NaOH to phenol red or phenolphthalein. Basic salts of Th are detected by means of their reaction with fluorides or oxalates of alkali metals, as a result of which alkali is liberated which is revealed by suitable indicators.

Card 1/1

ZOLOTUKHIN, V.K.; MOLOTKOVA, A.S.

Photometric and colorimetric determination of thallium in the form of thallic hydroxide. Zhur.anal.khim. 11 no.2:248-249 Mr-Ap '56. (MLRA 9:8)

1. L'vovskiy gosudarstvennyy universitet.
(Thallium)

ZOLOTUKHIN, V.K.

Salicilate compounds of beryllium. Dop. ta pov. L'viv. un. no.7 pt.3:209-213 '57. (MIRA 11:2)
(Beryllium compounds)
(Salicylic acid)

ZOLOTUKHIN, V.K.

Scientific technical conferences at the Kharkov Aeronautics Institute. Izv.vys.ucheb.zav.;av.tekh. no.4:123-127 '58.
(MIRA 11:12)

1. Khar'kovskiy aviatsionnyy institut.
(Kharkov--Aeronautics)

ZOLOTUKHIN, V.K.

Effect of the anion and cation composition of beryllium containing mixtures on the reaction of beryllium ions with hydroxyl ions. Nauk.zap.L'viv.un. 46:124-132 '58. (MIRA 12:7)
(Beryllium) (Hydroxyl group)

ZOLOTUKHIN, V.K.; KOMLEV, O.I.; GALANETS, Z.G. [Halanets', Z.H.]

Investigation of the tartaric acid compounds of copper and cadmium. Nauk.zap.L'viv.un. 46:133-140 '58. (MIRA 12:7)
(Tartaric acid) (Copper compounds) (Cadmium compounds)

MOLOTKOVA, G.S. [Molotkova, H.S.]; ZOLOTUKHIN, V.K.

Reaction of thallium trichloride with sodium tartrate. Nauk. zap.L'viv.un. 46:155-160 '58. (MIRA 12:7)
(Thallium chlorides) (Sodium tartrate)

S/147/59/000/04/020/020
E031/E413

AUTHOR: Zolotukhin, V.K.

TITLE: The Scientific-Technical Conference at Khar'kov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 161-165 (USSR)

ABSTRACT: In May 1959, the 16th Conference of Professorial and Teaching Staff took place. At a plenary session the following reports were read: "The XXI Congress of the Communist Party of the Soviet Union on the Further Development of the Two Forms of Socialist Ownership" by N.N.Aleksandrov, Director of the Chair Marxism-Leninism; "The Contemporary State of Rocket Technology" by Docent, Candidate of Technical Sciences I.F.Goldayev; "Efforts to Produce the First Aircraft Wholly Manufactured in China" by Docent, Candidate of Technical Sciences S.I.Kuz'min. The work of the Conference continued in twelve sections.
Social Sciences Section. The following papers were read: "Contemporary Bourgeois Philosophy" by Senior Instructor S.I.Epshteyn; "Discussion on Trade Unions in the

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E031/E413

The Scientific-Technical Conference at Khar'kov Aviation Institute

Khar'kov Party Organization" by Assistant A.G.Levchuk; "The Solution of the Housing Problem Under Socialism" by Senior Instructor in the Department of Economical Sciences, V.A.Yakovenko; "The Final and Complete Victory of Socialism in the USSR" by Senior Instructor V.A.Kravets; "The Problems of Socialist Competition at the XII Congress of the Trade Unions of the USSR" by Assistant Yu.N.Doroshenko.

Foreign Languages Section. The following papers were read: "Foreign Languages in the Life and Work of V.I.Lenin" by Docent, Candidate of Philological Sciences G.G.Pochentsov; "The Organization and Work of the Departmental Section of Foreign Language Teachers at Colleges which are not Specifically Language Colleges" by Senior Instructor N.S.Shneye; "Work on Translations at Higher Technical Colleges" by Assistant V.I.Kryzhenko; "On the Principles of Constructing a Handbook of Technical Texts - Educational Assistance for III-rd Course at Aviation Colleges" by Assistants A.M.Gurevich and L.A.Litovskaya.

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E031/E413

The Scientific-Technical Conference at Kharkhov Aviation Institute

Mathematics and Mechanics Section. The following papers were read: "A Spectral Representation of the Theory of Axisymmetric Turbulence" by Candidate of Physical and Mathematical Sciences G.M.Taranova; "Some Evaluations for Functions with Positive Real Parts" by Assistant G.S.Shpak; "Existence, Uniqueness and Correctness Theorems for Mixed Systems of Functional Equations" by Docent, Candidate of Physical and Mathematical Sciences M.N.Tikhov; "On the Application of Boll and Chebyshev Points to the Solution of Some Problems in the Synthesis of Four Bar Linkages" by Docent, Candidate of Physical and Mathematical Sciences Ya.L.Geronimus; "The Influence of the Structural Properties of Functions on the Convergence Almost Everywhere of their Conjugate Fourier Series" by Docent, Candidate of Physical and Mathematical Sciences B.L.Golinskiy.

General Technological Section. The following papers were read: "The Relation Between the Compton Length of Waves, the Length of de Broglie Waves and the Acceleration

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E031/E413

The Scientific-Technical Conference at Khar'kov Aviation Institute

Potential for High Energy Particles" by Docent, Candidate of Physical and Mathematical Sciences I.Ya.Mints; "The Problem of Determining the Heat Transfer Coefficient of Conductors" by Senior Instructor P.P.Bezuglov; "An Electron-Graphical Method of Investigating the Structure of Matter" by Assistant I.Ya.Surovtsev; "On the Results of the VIII th Mendeleyev Congress of Chemists of the USSR" by Docent, Candidate of Chemical Sciences E.I.Krech. Electrical and Radio Technology Section. The following papers were read; "On the Problem of the Optimum Passage of Transients in an Electric Drive with a Controlling Exciter" by Docent, Candidate of Technical Sciences M.M.Perel'muter; "The Experimental Determination of the Reactances in Synchronous Machines" by Senior Instructor S.V.Khmel'nitskiy; "An Experimental Method of Investigating Electric Fields" by Assistant A.I.Lopatin; "A Discrete Transformer of Current into Code Signals with Magneto-Electric Comparison Units" by Docent, Candidate of Technical Sciences G.M.Butayev;

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S/147/59/000/04/020/020
E031/E413

The Scientific-Technical Conference at Khar'kov Aviation Institute

"The Application of Infrared Instruments[15] in Aviation" by Docent, Candidate of Technical Sciences I.D.Artamonov.

General Engineering Section.

"The Adaptation of a Thermobaric Chamber to the Simulation of the Sinking of a Mine Shaft in Quicksand and Certain Results of Investigations to Determine the Mechanical Characteristics of Sand at Different Temperatures and Humidities" by Docent, Candidate of Technical Sciences S.V.Blyashenko; "Friction and Abrasion in Cermets" by Docent, Candidate of Technical Sciences O.I.Goldayeva; "The Construction of Multi-Satellite Planetary Gears"[16] by Assistant V.A.Tkachenko; "The Influence of Work Hardening[18] on the Fatigue[20] of Threaded Connections" by Assistant V.M.Rydchenko; "Investigation of Cermets Slide Bearings[17]" by Assistant A.S.Efoyan.

Strength of Aircraft Section.

"On the Theory of Bending of Thin-Walled Columns" by Docent, Candidate of Technical Sciences L.P.Vinokurov; "The Simulation of Static Experiments on Thin-Walled

Card 5/11

The Scientific-Technical Conference at Khar'kov Aviation Institute

Structures" by Candidate of Technical Sciences L.A.Kolesnikov and Senior Instructor V.K.Zolotukhin; "The Bending of Beams Framing an Opening" by Candidate of Technical Sciences L.A.Kolesnikov; "The Influence of the Rigidity of Ribs and Beams on their Bending" by Assistant N.A.Shelomov; "The Calculation of the Bending of Rectangular Plates by the Discrete Method" by Assistant Yu.P.Petrov; "The Calculation of Cylindrical Shells by the Method of Discrete Variables" by Aspirant N.I.Gur'yev.

Engine Construction Technology Section.

"The Choice of a Scheme for a Hydraulic Servo-System for the Automation of Welding Processes" by Assistant V.V.Balatskiy; "An Investigation of the Process of Polishing by an Abrasive Belt" by Senior Instructor, Candidate of Technical Sciences V.N.Verezub; "The Investigation of the Operation of a Pneumatic-Hydraulic Plant" by Assistant V.I.Basteyev;

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E031/E413

The Scientific-Technical Conference at Khar'kov Aviation Institute

"A Static Analysis and Calculation of the Accuracy of the Technological Processes of Machining" by O.M.Parkhomenko; "The Automatic Welding of Long Panels" by Candidate of Technical Sciences L.F.Kamakov; "Prospects in the Use of Specialised Computers for the Determination of the Optimum Geometry of Cutting Tools" by Docent, Candidate of Technical Sciences V.P.Kosharnovskiy; "The Spreading of the Experience of Innovators and the Classification of Organizational-Technical Measures in Machine Construction" by Senior Instructor M.M.Apanovich; "Features of Measurable Abrasion of a Cutting Tool in Fine Sharpening" by Assistant V.N.Malikov; "An Investigation of the Process of Compression at High Velocities of Deformation" by Docent, Candidate of Technical Sciences A.K.Bayev; "The Standardization of Vibration Effects on the Human Organism in Aircraft Production" by Senior Instructor V.D.Ivanov.

Theory and Construction of Aircraft Engines and Propellor-Driven Machines Section. "The Investigation

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The Scientific-Technical Conference at Khar'kov Aviation Institute

of the Flow Between the Inlet and Outlet Valves of a Turbine" by Instructor, Candidate of Technical Sciences V.N.Yershov; "The Variation in the Stage Parameters of an Axial Compressor in Accordance with the Size of the Radial Clearance" by Assistant A.N.Anyutin; "On the Problem of Non-Stationary Heat Transfer" by Assistant S.D.Frolov; "The Influence of an Electric Field on the Flame of a Burner" by Senior Engineer P.P.Kostenko; "Calculation of the Temperature Compensation of Capacitance Pressure Pick-Ups" by Assistant L.Ya.Astaf'yev.
Aerohydrodynamics Section.
"Ideal Hypersonic Flow Round a Body" by Assistant V.I.Kholyavko; "The Control of the Boundary Layer of a Wing by Perforation of the Leading Edge" by Assistant Ye.P.Vachasov; "The Gas-Hydraulic Analogy and its Application" by Senior Instructor D.A.Munshtukov; "The Aerodynamic Investigation of Wing Profiles for Small Reynolds Numbers" by Engineer Yu.F.Usik.
The Technology of Aircraft Construction and Metal Working Section. "A New Model of the Plasticity of Metals" by

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E031/E413

The Scientific-Technical Conference at Khar'kov Aviation Institute

Instructor, Candidate of Technical Sciences Yu.N.Alekseyev; "The Forging Extrusion of Large Components from Sheet Metal" by Aspirant A.P.Barsukov; "On the Problem of Constructing Second Order Curves in Aircraft Construction" by Senior Instructor M.A.Zaydenvarg; "The Electric Contact Welding of Thin Pieces of Metal" by Assistant N.M.Tarasov; "The Influence of Plastic Deformation on the Properties of Austenitic Stainless Steel at Various Temperatures" by Assistant N.V.Pisareva; "The Deformation of Non-Ferrous Metals and Alloys at Low Temperatures" by Assistant N.N.Lyulicheva; "The Investigation of Phase Changes in Austenitic Steels Previously Deformed at Below Freezing Point Temperatures" by Candidate of Technical Sciences A.N.Chukhleb and Aspirant V.P.Martynov; "The Influence of the Temperature and Velocity of Deformation on the Phase Changes of Austenitic Steels" by Candidate of Technical Sciences A.N.Chukhleb and Fellow V.P.Martynov; "The Determination of Optimum Technical Grouping in the Design and Production of Aircraft" by Assistant

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E031/E413

The Scientic-Technical Conference at Khar'kov Aviation Institute

Yu.A.Boborykin; "On the Use of Explosives in the Technology of Drop Forging" by Assistant K.I.Zaytsev; "Welding by Friction" by Assistant N.P.Ostrovskiy. Structure of Aircraft Section.
"On the Problem of Protecting the Structure of Aircraft from Aerodynamic Heating" by Docent P.V.Dybskiy; "Passive Methods of Protection from Aerodynamic Heating" by Candidate of Technical Sciences F.G.Yasinskiy; "The Influence of the Parameters of a Thermally Isolated Packet on Heat Transfer Characteristics" by Assistant A.A.Kobylyanskiy; "Aircraft Structures Made from Fibreglass Sheets" by Docent, Candidate of Technical Sciences S.I.Kuz'min; "An Apparatus for Investigating Repeated Static Loading and High Temperatures" by Assistant L.A.Malashenko; "The Approximate Calculation of the Weight Taking into Account the Technical Features of the Aircraft Structure" by Candidate of Technical Sciences L.D.Arson; "The Determination of Stresses in a Shell as a Result of Riveting" by Assistant Yu.G.Fursa; "The Ultrasonic Altimeter (Sounding Device)"

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The Scientific-Technical Conference at Khar'kov Aviation Institute and "The Radio-Control and Autopilot of an Experimental Model" by Engineer L.F.Teplov.

SUBMITTED: June 27, 1959

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S/147/60/000/004/016/016
E073/E335

AUTHOR: Zolotukhin, V.K.

TITLE: Scientific-technical Conference at the Kharkhov Aviation Institute

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1960, No. 4, pp. 155--157

TEXT: The Seventeenth Conference of the Professional-lecturing Personnel of Khar'kovskiy aviatsionnyy institut (Khar'kov Aviation Institute) was held in April, 1960. 81 papers were read and discussed. At the plenary meetings the following papers were read:
Docent, Candidate of Historical Sciences N.A. Bystrov - "International Importance of Leninism";
Docent, Candidate of Technical Sciences V.G. Kononenko - "Explosive Forming of Metals";
Candidate of Military Sciences A.I. Chernovolenko - "V.I. Lenin - In Defence of the Socialist System".
The work of the conference proceeded in eleven sections.

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Scientific-technical Conference at the Khar'kov Aviation Institute

Section on Mathematics and Mechanics:
Professor, Doctor of Physicomathematical Sciences Ya.L. Geronimus - "Some Properties of the Focal Curve", "Evaluation for Coefficients of Limited Functions";
Candidate of Physicomathematical Sciences B.L. Golinskiy - "On approximating Two Conjugate Functions by Whole Functions of the Exponential Type";
Candidate of Physicomathematical Sciences G.M. Taranova - "Hydrodynamic Equations in Stresses";
Professor, Doctor of Physicomathematical Sciences A.D. Myshkis - "On the Stability of Motion in the Presence of Jerks";
Candidate of Physicomathematical Sciences Ya.I. Zhitomirskiy - "The Cauchy Problem for Equations with Variable Coefficients Which Are Concrete in Accordance With the Definition of I.G. Petrovskiy";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Candidate of Physicomathematical Sciences L.I. Ronkin - "On Quasi-analytical Classes of Functions";
Docent, Candidate of Physicomathematical Sciences M.N. Tikhov - "On Solving Certain Nonlinear Integral Equations";
Docent, Candidate of Physicomathematical Sciences M.S. Shun - "Approximation of Functions and Their Derivatives";
Docent, Candidate of Physicomathematical Sciences I.Ya. Mints - "Relativistic Correction to the 3/2 Law".
General Technical Section:
Docent, Candidate of Chemical Sciences E.I. Krech - "On the Modern Definition of "Atom"";
Postgraduate G.G. Lomakina - "Spectrophotometric Investigation of Complex Compounds of Elements of the Second Group of the Periodic System of D.I. Mendeleyev";
Candidate of Physicomathematical Sciences N.A. Khizhnyak - "Electrodynamic Methods of Acceleration of Plasmoids";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Postgraduate Shapovalova, L.Ya - "On Obtaining Metallic Powders of Fe and Cu From Mixed Oxylates Fe and Cu";
Postgraduate L.Ya. Kurilenko - "Study of the Interaction of Aluminium with Carbontetrachloride";
Senior Lecturer P.P. Bezuglov - "Determination of the Blackness Coefficient of Thin Steel Sheets";
Postgraduate L.Ya. Kheyfets - "Radioactive Precipitates and Radiochemistry".
Electro-Radio Engineering Section:
Docent, Candidate of Technical Sciences M.M. Perel'muter - "Methods of Determining the Volumetric Quantities of Material";
Docent, Candidate of Technical Sciences I.D. Artamonov - "Development of Illumination System/Runways";
Senior Lecturer S.V. Khmel'nitskiy - "Investigation of the Temperature Rise of Synchronous Machines";
Docent, Candidate of Technical Sciences G.M. Butayev - "On a Circuit for Transforming Coded Signals";

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E073/E335

Scientific-technical Conference at the Khar'kov Aviation Institute

Docent, Candidate of Physicomathematical Sciences P.V. Bliokh - "Parametric Resonance in a System of Coupled Circuits";
Candidate of Physicomathematical Sciences F.G. Bass - "Determination of the r.m.s. Permeability of a Medium with Random Nonuniformities";
Postgraduate M.A. Savchenko - "Thermal Radiation of Magnetised Ferrites";
Postgraduate Yu.G. Yagola - "Application of Galvanomagnetic Effects for Measuring the Potential of Magnetic Fields".
Section on Strength of Aircraft:
Postgraduate N.A. Shelomov - "Experimental Investigation of the Stress States of Thin-walled Rods";
Docent, Candidate of Technical Sciences S.V. Blyashenko - "Investigation of the Strength and the physicomechanical Properties of a glacier-ice cylinder from rocks under Creep Conditions Subject to the Effect of External Hydrostatic Pressure";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Candidate of Technical Sciences L.A. Kolesnikov - "Bending of Longitudinal Elements Bounding a Free Edge of Open Thin-walled Lattice Rods.
Section on Engine Manufacturing Technology:
Candidate of Technical Sciences V.A. Zemlyanskiy and Engineer Yu.F. Granin - "Kinematics of the Process of Cutting with Circular Self-rotating Cutting Tools";
Engineer Yu.F. Granin - "Machineability of the Steel ШХ-15 (ShKh-15) Using Circular Self-rotating Cutters";
Docent, Candidate of Technical Sciences A.I. Nikishov - "Some Problems of Milling Gears";
Docent, Candidate of Technical Sciences V.P. Kosharnovskiy - "On Formulating the Problem of Science of Metal-cutting" and "Basic Assumptions of the Theory of Working Out an Optimum Geometry of Cutting Tools";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Senior Lecturer M.M. Apanovich - "Certain Problems of Planning of Organisation-technical Measures";
Candidate of Technical Sciences O.M. Parkhomenko - "Statistical Analysis and Norms for Calculating the Accuracy of Machining in Engine Manufacture".
Section on the Theory and Design of Aviation Engines and Bladed Machinery:
Senior Lecturer A.P. Pershin - "On Experimental Investigation of the Thermal Effectiveness of Gas Flows with Very High Thermal Parameters";
Postgraduate G.V. Pavlenko - "Rotating Discontinuity in the Elementary Stage of an Axial Compressor";
Postgraduate A.N. Anyutin - "Influence of the Radial Gap on the Flow Past Blades of the Individual Stages of an Axial Compressor";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Senior Lecturer D.A. Munshtukov - "Application of Gas-hydraulic Analogy for Solving Nonsteady-state Problems in Gas Dynamics";
Senior Lecturer I.V. Aslanov - "New Type of Gas Expanders";
Postgraduate D.F. Simbirskiy - "On Measuring Pulsating Parameters";
Docent, Candidate of Technical Sciences N.T. Ozhgikhin - "Comparative Evaluation of Air-breathing Jet Engines";
Postgraduate S.K. Zaika - "Two-circuit Pulse Jet Engines. Experimental Results".
Section on Aerohydrodynamics:
Senior Lecturer O.V. Florinskiy - "Jet Wing";
Postgraduate V.I. Kholyavko - "On Calculating Aerodynamic Characteristics of a Thin Profile" and "Approximate method, position and the shape of an outgoing shock wave in the Case of Symmetric Flow Past Bodies of Simple Configuration";

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E073/E335

Scientific-technical Conference at the Khar'kov Aviation Institute

Engineer L.P. Koval'skiy - "Influence of Elastic wing deformations on its Aerodynamic Characteristics";
Postgraduate Ye.P. Vachasov - "Influence of the Suction of the Boundary Layer on the Aerodynamic Characteristic of a Thin Wing";
Docent, Candidate of Technical Sciences Ya.Ye. Tkachenko - "Boundary-layer Control" (Review paper).
Section on Aircraft Technology of Metals:
Docent, Candidate of Technical Sciences V.G. Kononenko - "Explosive loss-free Cutting of Hot Metal in Metallurgy";
Docent, Candidate of Technical Sciences D.A. Lyukevich - "Contact Welding in Aircraft Construction";
Postgraduate Yu.A. Boborykin - "Selection of Optimum Assembly of the "Glider" of an Aircraft";
Postgraduate K.I. Zaytsev - "Investigation of the Process of Explosive Punching of Holes";
Postgraduate V.L. Karpin - "On Applying Plastics for Assembly Work and Store Equipment";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Docent, Candidate of Technical Sciences Yu.N. Alekseyev - "Plastic Flow of Metals";
Candidate of Technical Sciences V.Ye. Semenov - "On the Possibility of Separate Manufacture of Dies and Punches for Slotting and Hole-punching";
Senior Lecturer A.N. Zaytsev - "Explosive Stamping of Components from Sheet"
Postgraduate N.M. Tarasov - "Electrocontact-welding of metals of small thicknesses";
Postgraduate L.Ya. Astaf'yev - "Thermal Machine for Slab-cutting";
Postgraduate V.N. Malikov - "Fine Turning with Large Rates of Feed".
Section on Aircraft Construction:
Candidate of Technical Sciences F.G. Yasinskiy - "On Planning Conditions";
Postgraduate V.N. Romanenko - "On the Selection of the Parameters of the Control Process";

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Scientific-technical Conference at the Khar'kov Aviation Institute

Senior Engineer L.F. Teplov - "Apparatus for Proportional Control";
Postgraduate V.N. Revinov - "On Calculating the Take-off of a Pilotless Glider with a Damper";
Docent N.V. Dybskiy, - "Protective Sheathing";
Candidate of Technical Sciences F.G. Yasinskiy - "Solution of One Problem of Heat Conductivity";
Candidate of Technical Sciences L.D. Arson - "Tensile Strength Taking Into Consideration Technological Factors";
Docent, Candidate of Technical Sciences S.I. Kuz'min - "Application of SVAM in Aircraft Design";
Senior Lecturer B.A. Cherepennikov - "Behaviour of Metals in the Case of Impact Loads".

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AUTHORS: Zolotukhin, V. K., Molotkova, A. S. S/078/60/005/04/016/040 B004/B007

TITLE: The Relative Stability of the Tartrate-, Citrate-, Malate-, and Salicylate Complexes of Iron and Aluminum

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 4, pp 879 - 881 (USSR)

ABSTRACT: The authors mention the fact that published data on the constitution of complex salts of organic oxy acids are insufficient and contradictory. They chose the compounds mentioned in the title, because they play a part in analytical chemistry. Relative stability was determined according to I. V. Pyatnitskiy's method (Ref 2). A mixture of potassium-aluminum-alum and iron-ammonium-alum was treated with the sodium salt of the organic acid, after which Al and Fe were precipitated - partly after addition of NaOH - with oxyquinoline. In the solution of the organic acid the non-precipitated Fe and Al, the degree of binding $\alpha = c_{complex}/c_{Me^{n+}}$ as well as the ratio α_{Fe}/α_{Al} was determined.

The results obtained are given in a table. The tartrate-, citrate-, malate-, and salicylate-complexes of iron are more stable than the corresponding complexes of aluminum. The ratio

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The Relative Stability of the Tartrate-, Citrate-, Malate-, and Salicylate Complexes of Iron and Aluminum

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α_{Fe}/α_{Al} of the degrees of binding of the complexes of these oxy acids increases with the pH of the solution. The stability of the investigated complex compounds of Fe and Al is in a reciprocal ratio to each pH, at which the precipitation of Fe and Al as hydroxide begins. There are 1 table and 7 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet (L'vov State University)

SUBMITTED: January 30, 1959

Card 2/2

ZOLOTUKHIN, V.K.

Solubility of cadmium, lead, and zin hydroxides in sodium tartrate solutions, and that of aluminum hydroxide in sodium citrate solutions. Zhur. neorg. khim. 5 no.8:1886-1888 Ag '60.
(MIRA 13:9)

1. L'vovskiy gosudarstvennyy universitet.
(Cadmium hydroxide) (Lead hydroxide) (Zinc hydroxide)
(Aluminum hydroxide)

S/073/60/026/004/014/018/XX
B023/B064

AUTHORS: Zolotukhin, V. K. and Oshchapovskiy, V. V.

TITLE: The Interaction of Trivalent Cerium With the Salts of Tartaric Acid

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 4, pp. 510-513

TEXT: The interaction of trivalent cerium with the salts of tartaric acid has, in the authors' opinion, hitherto been insufficiently investigated (Refs. 1, 2). This paper describes the investigation of cerium tartrate compounds formed in weakly acid or weakly alkaline medium, as well as their acidic and basic properties and their resistance to several reagents and to heat. It was found that an addition of alcohol to the cerium tartrate solutions causes precipitation. The salt has the following composition: $Ce_2(C_4H_4O_6)_3 \cdot 2H_2O$ with impurities of tartrate compounds containing sodium. Mixtures of cerium nitrate and sodium tartrate were titrated either potentiometrically or with phenol phthalein as indicator. In these investigations, the amount of $Na_2C_4H_4O_6$ was up to 25 and more moles per 1 mole

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