VASIL'YEV, V.N.

A district goes over to the year-round raising of chicks. Ptitsevodstvo
8 no.12:8-9 D '58.   (MIRA 11:12)

1. Sekretar' Dubossarskogo raykoma Kommunisticheskoy Partii Moldavii.
             (Dubossary District--Poultry breeding)

VASIL'YEV, V.N.

Eighty centners of poultry meat per hundred hectares of grain crops. Zhivotnovodstvo 21 no.4:3-8 Ap '59.   (MIRA 12:5)

1. Sekretar' Dubossarskogo rayonnogo komiteta Kommunisti-cheskoy partii Moldavii.
                    (Dubossary District--Poultry)

VASIL'YEV, V.N., Geroy Sotsialisticheskogo Truda

Reducing the cost of poultry produce on the "Krasnyi kut" Collective
Farm. Ptitsevodstvo 9 no.4:8-11 Ap '59.   (MIRA 12:6)

1.Direktor sovkhoza "Krasnyy Kut", Saratovskoy oblasti.
          (Poultry)

ARCHAKOV, B.G.; VASIL'YEV, V.N.; NEUSTROYEV, V.D.; POLOZOV, A.I.;
    PREOBRAZHENSKIY, A.A.

Comparative data on the determination of the concentration of the
smallpox vaccine virus by titration in chicken embryos and tissue
cultures. Vop.virus. 7 no.6:731-734 N-D '62.   (MIRA 16:4)
                    (VACCINES)   (SMALLPOX)

VACIL'YEV, V.I.

Betula pubescens Ehrh. and Betula verrucosa Ehrh, Bot. zhur. 44
no.12: 1784-1787 (1959)   (MIRA 13:1)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

KRAVCHENKO, A.T.;   VASIL'YEV, V.N.

Comparative study of the properties of two strains of the virus
tick encephalitis in tissue culture. Report No. 1: Conditions
for cultivating the virus of tick encephalitis in tissue culture
Vop. virus. 5 no. 6:649-653 N-D '60.   (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.
              (ENCEPHALITIS) (TISSUE CULTURE)

(Article submitted # dec 59)

KRAVCHENKO, A.T.; VASIL'YEV, V.N.

Comparative study of the properties of two strains of tick encephalitis
virus in tissue culture. Report No. 2: Properties of strains of
tick encephalitis virus after prolonged cultivation in tissue culture.
Vop. virus. 7 no. 1:10-13 Ja-F '61.   (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.
                    (ENCEPHALITIS)

GADZHIYEV, S.A., prof. (Leningrad, ul. Frunze, d.1, kv.5); VORONOV, A.A.:
    VASIL'YEV, V.N.

Some problems of perfusion in artificial blood circulation. Vest.
khir. 90 no.2:31-35 F'63.   (MIRA 16:7)

1. Iz kafedry grudnoy khirurgii i anesteziologii (zav. - prof.
S.A.Gadzhiyev) Leningradskogo ordena Lenina instituta usover-
shenstvovaniya vrachey imeni Kirova.
                (PERFUSION PUMP (HEART))

PSCHENICHNYY, I.P.; SHTEYGARDT, Yu.N.; MESHCHERYAKOV, A.V.; VASIL'YEV, V.N.;
    SOKOLOVA, E.F.; BROVKOVICH, E.D.; RUBANOVSKIY, B.R.; LUR'YE, R.G.;
    PARAKHONYUK, Z.M.; GOROKHOVSKIY, B.I.; ZHDANOV, V.S.; GORBUNOVA, Z.V.
GLIKIN, M.I.; TAVAR'YAN, E.A.; SUKHODOLYA, Ye.I.

Abstracts. Kardiologiia 4 no.4:87-90 Jl-Ag ' 64. (MIRA 19:1)

VASIL'YEV, V.N. (Leningrad, K-196, Zanevskiy prospekt, d.1/82,kv.161)

Significance of certain indices of the adequacy of perfusion in artificial circulation. Grud. khir. 6 no.1:50-57 Ja-F '64.
(MIRA 18:11)

1. Kafedra grudnoy khirurgii i anesteziologii (zav. - prof. S.A. Gadzhiyev) Instituta usovershenstvovaniya vrachey imeni Kirova, Leningrad. Submitted February 12, 1962.

VASIL'YEV, V.N.; NEUSTROYEV, V.D.; POLOZOV, A.I.; TERESHCHENKO, M.O.;
SHCHETININ, V.P.

Some problems in humoral smallpox immunity.   Zhur. mikrobiol.,
epid. i imm. 41 no. 2:5-10 F '64.   (MIRA 17:9)

GADZHIYEV, S.A.; VORONOV, A.A.; VAS'LIYEV, V.P.

Artificial blood circulation in surgery on the open heart.
Azerb. med. zhur. 41 no. 10:9-15 '64   (MIRA 19:1)

1. Iz kafedry grudnoy khirurgii (zav. - prof. S.A. Gadzhiyev)
Leningradskogo Gosudarstvennogo instituta dlya usovershenstvova-
niya vrachey imeni Kirova.

GADZHIYEV, S.A., prof.; VASIL'YEV, V.N.

Esophageal diverticula and their surgical treatment. Vest. khir. 93
no.8:41-46 Ag '64.   (MIRA 18:7)

1. Iz kafedry grudnoy khirurgii i anesteziologii (zav. - prof.
S.A.Gadzhiyev) Leningradskogo ordena Lenina instituta usover-
shenstvovaniya vrachey imeni Kirova.

CHISTOV, Aleksandr Aleksandrovich; VASIL'YEV, V.N., red.; SKONECHNAYA,
A.D., red.; KLYUCHEVA, T.D., tekhn.red.

[Work and live the communist way] Rabotat' i zhit' po kommu-
nisticheski. Moskva, Izd-vo "Sovetskaia Rossiia," 1960. 28 p.
(Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh shkol
i kruzhkov. Tema 7).   (MIRA 14:2)
          (Agricultural laborers)

KLADCHIKOV, Sergey Mikhaylovich; VASIL'YEV, V.N., red.; KOLOMIYTSEVA,
        O.I., red.; KLYUCHEVA, T.D., tekhn.red.

        [Reducing production costs is a source for increasing the national
        wealth] Snizhenie sebestoimosti produktsii - istochnik rosta
        obshchestvennogo bogatstva. Moskva, Izd-vo "Sovetskaia Rossiia,"
        1960. 30 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomicheskikh
        shkol i kruzhkov. Tema 6).
                        (Costs, Industrial)   (MIRA 14:2)

MITROKHIN, Mikhail Alekseyevich; IVIN, Ivan Andreyevich; VASIL'YEV,
V.N., red.; DMITRIYEVA, L.A., red.; KLYUCHEVA, T.D., tekhn.
red.

[Worknorms and wages on collective and state farms] Normiro-
vanie i oplata truda v kolkhozakh i sovkhozakh. Moskva, Izd-
vo "Sovetskaia Rossiia," 1960. 33 p. (Dlia slushatelei sel'-
skikh nachal'nykh ekonomicheskikh shkol i kruzhkov; tema 5)
(MIRA 15:1)

(Agricultural wages)

SELEZNEV, Fedor Yakovlevich; VASIL'YEV, V.N., red.; VISHNYAKOVA, Ye.A.,
    red.; KUZNETSOVA, G.I., tekhn. red.

[Agricultural planning] Planirovanie sel'skokhoziaistvennogo
proizvodstva. Moskva, Izd-vo "Sovetskaia Rossiia," 1960.
36 p. (Dlia slushatelei sel'skikh nachal'nykh shkol i kruzh-
kov. Tema 2)   (MIRA 14:5)

                    (Agriculture)

GLUKHOV, Anatoliy Aleksandrovich; VASIL'YEV, V.N., red.; DROKHANOVA, Ye.N.,
    red.; KLYUCHEVA, T.D., tekhn. red.

[Increasing labor productivity is the path to abundance] Povy-
shenie proizvoditel'nosti truda - put' k izobiliiu. Moskva, Izd-
vo "Sovetskaia Rossiia," 1960. 37 p. (Dlia slushatelei sel'skikh
nachal'nykh ekonomicheskikh shkol i kruzhkov. Tema no.4)
                                                    (MIRA 15:1)

    (Agriculture--Labor productivity)

POPOV, Ivan Mikhaylovich; VASIL'YEV, V.N., red.; DROKHANOVA, Ye.N., red.;
KUZNETSOVA, G.I., tekhn.red.

[Ways for a better use of production funds on collective and
state farms] Puti luchshego ispol'zovaniia proizvodstvennykh
fondov kolkhozov i sovkhozov. Moskva, Izd-vo "Sovetskaia Rossiia,"
1960. 38 p. (Dlia slushatelei sel'skikh nachal'nykh ekonomi-
cheskikh shkol i kruzhkov. Toma 3)

(MIRA 14:1)

(Agricultural administration)

VASIL'YEV, V.N.

First coordinating conference on the problem of labor productivity increase potentials and the use of labor resources in the national economy of Siberia and the Far East. Izv.Sib.otd.AN SSSR no.2: 120-121 '60. (MIRA 13:6)

(Siberia--Labor and laboring classes)

VASIL'YEV, V.N.; MOTOV, S.M.; RUMYANTSEV, A.F., otv. red.; VEYSBISH, S.M.,
         red.

[Economics of socialist agricultural enterprises; visual aids]
Ekonomika sotsialisticheskikh sel'skokhoziaistvennykh pred-
priiatii; nagliadnye posobiia. Moskva, Gos. izd-vo polit. lit-
ry, 1961. 1 v. plates.   (MIRA 14:8)
                (Agriculture—Audio-visual aids)

GUK, Mikhail Mikhaylovich; VASIL'YEV, V.N., red.; NAUMOV, K.M.,
        tekhn. red.

[Organization of animal husbandry on collective and
state farms] Organizatsiia zhivotnovodstva v kolkhozakh
i sovkhozakh. Moskva, Izd-vo VPSh i AON, 1962. 108 p.
                                      (MIRA 17:1)

ABRAMOV, V.A.; RUMYANTSEV, A.F.; CHAYKIN, P.I.; ABATURIN, L.V.;
GAVRILOV, V.I.; ALTAYSKIY, I.P.; KAMINSKIY, A.Ye.; SUKACH,
P.V.; VASIL'YEV, V.N.; OBOLENSKIY, K.P.; SAVEL'YEV, Ye.A.;
MOTOV, S.I.; RUSAKOV, G.K.; IVANOV, F.G.; PISKUNOV, V.,
red.; POLYAKOVA, I., red.; MUKHIN, Yu., tekhn. red.

[Economics of agricultural enterprises; textbook]Ekonomika
sel'skokhoziaistvennykh predpriiatii; uchebnoe posobie. Mo-
skva, Gospolitizdat, 1962. 510 p.   (MIRA 15:9)

1. Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya
partiynaya shkola.
                    (Farm management)

IVANOV, Fedor Gerasimovich; VASIL'YEV, V.N., red.; NAUMOV, K.M.,
   tekhn. red.

   [Working assets of collective farms] Oborotnye sredstva
   kolkhozov. Moskva, Izd-vo VPSh i AON, 1963. 54 p.
                                              (MIRA 16:12)

      (Collective farms—Finance)

ABRAMOV, V.O., nauchn. sotr.; CHAYKIN, O.F., nauchn. sotr.;
ABATURIN, L.V., nauchn. sotr.; GAVRILOV, V.I.[Havrylov,
V.I.], nauchn. sotr.; ALTAYSKIY, I.P.[Altais'kyi, I.P.],
nauchn. sotr.; KAMINSKIY, O.IE.[Kamins'kyi, O.IE.],
nauchn. sotr.; RUMYANTSEV, O.IE., nauchn. sotr.;
SUKACH, P.V., nauchn. sotr.; VASIL'YEV, V.M.[Vasyl'iev,
V.M.], nauchn. sotr.; KOTOV, G.G.[Kotov, H.H.], nauchn.
sotr.; OBOLENSKIY, K.P.[Obolens'kyi, K.P.], nauchn. sotr.;
SAVEL'YEV, Ye.O.[Savel'iev, IE.O.], nauchn. sotr.; MOTOV,
S.I., nauchn. sotr.; RUSAKOV, G.K.[Rusakov, H.K.], nauchn.
sotr.; YEVDOKIMENKO, V.P.[IEvdokymenko, V.P.], red.;
SKVIRSKAYA, M.P.[Skvyrs'ka, M.P.], tekhn. red.

[Economics of agricultural enterprises] Ekonomika sil'sko-
khospodars'kykh pidpriiemstv; navchal'nyi posibnyk. Kyiv,
Derzhpolitvydav URSR, 1963. 469 p.   (MIRA 16:10)

1. Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya
partiynaya shkola.
          (Agriculture—Economic aspects)

VASIL'YEV, V.N.; SLOBODENYUK, G.I.; TRIFONOV, V.I.; KHOTUNTSEV,
Yu.L.; MIGULIN, V.V., red.; MASHAROVA, V.G., red.

[Regenerative transistorized parametric amplifiers;
problems of theory and design] Regenerativnye poluprovod-
nikovye parametricheskie usiliteli; nekotorye voprosy
teorii i rascheta. Moskva, Sovetskoe radio, 1965. 447 p.
(MIRA 18:8)

VASIL'EV, V.N., inzh.

Problems in the automation of cutting-tool exchange during multitool machining. Izv.vys.ucheb.zav.; mashinostr. no.9: 76-84 '62.   (MIRA 16:2)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.
              (Automation)   (Metal cutting)

ROZHKOV, V.A.; VASIL'YEV, V.N.

Use of digital computers for the approximation of discrete fields.
Trudy GOIN no.86:112-123 '65.   (MIRA 18:9)

VASIL'EV, V.N.

Dust-removal

Local dust collectors and removal of emery dust from grinding tools. Gig. i san.
No.2, 1952.

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

VASHNIN, V.A. slesar'; VASIL'YEV, V.N. slesar'; GRINKEVICH, S.Z.,
          slesar'

Eccentrical clamp. Suggested by V.A.Vashnin, V.N.Vasil'ev, S.Z.Grinkevich.
Rats.i izobr.v stroi.   no.9:15-17   '59.   (MIRA 13:1)

1. Po materialam tresta No.5 Ministerstva stroitel'stva BSSR.
               (Reinforced concrete)

VASIL'YEV, V.N.

VASIL'YEV, V.N.

Some unsolved problems in the operation of rural pharmacies. Apt.delo
                                                    (MIRA 10:12)
6 no.6:45-46 N-D '57.

1. Upravlyayushchiy Yal'chikskoy aptekoy Chuvashskogo otdeleniya
Glavnogo aptechnogo upravleniya.
          (YAL'CHIKI--DRUGSTORES)

TREBIN, G.F.; KAPYRIN, Yu.V.; VASIL'YEV, V.N.

Thermograph with contact temperature-sensitive element for
investigating wells. Nefteprom. delo no.7:33-36 '64.
(MIRA 17:8)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

BELINSKIY, B.A.; VASIL'YEV, V.N.; KAREVSKIY, V.A.; SAVINIKHINA, A.V.

Ultrasonic device for determining certain standard parameters of reservoir oils. Prim. ul'traakust. k issl. veshch. no.14:171-184
'61.
(MIRA 14:12)
(Petroleum) (Petroleum products) (Ultrasonic testing)

AUTHOR: Vasil'yev, V.N.

TITLE: Calculation of the input waveguide section of a
               parametric amplifier with two discontinuities

PERIODICAL: Radiotekhnika i elektronika, v. 8, no. 2, 1963,
               347-348

TEXT: Assuming the incident wave in the form $E_{inc} = C^{-i\gamma x}$
and calculating the reflection coefficient at the point $x = -1$ it is
found that the parameters determining the behavior are

$$l' = 1 + \frac{\varphi_1}{2\gamma}; \qquad d' = d + \frac{\varphi_1 + \varphi_2}{2\gamma} \qquad (3)$$

Choosing these parameters in the form

$$l' = \frac{\lambda_0}{4}(2n + 1), \qquad d' = \frac{\lambda_0}{4}(2m + 1)$$

(where m, n – integers, λ_0 – wavelength) it is shown that for small

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S/109/63/008/002/025/028
D266/D308

Calculation of the input ...

reflections the two discontinuities are equivalent to the circuit shown in Fig. 2. If R_H, $\sqrt{L_H/C_H}$ and $\sqrt{C_s/L_s}$ are given the characteristic impedance of the transmission line and both reflection coefficients can be determined. The solution is obtained with the aid of an iterative procedure choosing first $l'/l = 1$ and $d'/d = 1$. The values of n and m can be independently chosen. There are 2 figures.

SUBMITTED: February 20, 1962 (initially)
              August 4, 1962 (after revision)

Fig. 2
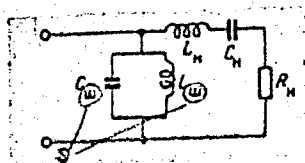
Card 2/2

S/194/62/000/005/089/157
D222/D309

AUTHORS: Belinskiy, B.A., Vasil'yev, V.N., Karevskiy, V.A., and
              Savinikhina, A.V.

TITLE: Ultrasound device for the measurement of some standard
              parameters of stratified liquids

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
              no. 5, 1962, abstract 5-5-49 shch (V sb. Primeneniye
              ul'traakust. k issled. veshchestva, no. 14, M., 1961,
              171 - 184)

TEXT: A small-sized ultrasound device is described, which is suita-
ble for investigations related to the measurement of absorbtion and
velocity of propagation of ultrasound oscillations under extremely
varied physico-chemical conditions, in particular those relating to
oil and oil products. The block diagram and the circuit diagram of
the device are given. In order to determine the saturation pressure
and crystallization temperature of paraffins it is sufficient to ob-
tain data on the attenuation of ultrasound. The device has a ther-
mostatically controlled vessel with two transducers, a pulse genera-
Card 1/2

Ultrasound device for the measurement ... S/194/62/000/005/089/157
D222/D309

tor working according to the pulsed self-modulation circuit, a su-
per-heterodyne receiver and a cathod-ray tube indicator. The satura-
tion pressure is determined from the appearance of gaseous phase,
accompanied by a marked drop in the amplitude of the received ultra-
sonic impulse. The results showed a great accuracy of measurement.
Experiments were carried out at 7.5 and 12.5 mc/s frequencies. [Ab-
stractor's note: Complete translation].

Card 2/2

L 6814-65   EWG(j)/EWT(1)/EWG(k)/EWT(m)/EPA(sp)-2/EPF(c)/EPF(n)-2/EPR/EPA(w)-2/
T/EWA/EWP(q)/FWP(b)   Pr-4/Ps-4/Pu-4/Pz-4/Pab-2L/Ped/Po-4   IJP(c)/AMD/AFWL/
RAEM(a)/RAEM(t)   AT/RWH/JD/HW/JG   S/0048/64/028/006/1354/1359

ACCESSION NR: AP4044653   //4

AUTHOR: Pomazkov, V.P.; Vasil'yev, V.P.

TITLE: Determination of the free alkaline earth metal in oxide-coated cathodes by
means of radioactive iodine /Report, Third All-Union Conference on Semiconductor
Compounds held in Kishinev 16-21 Sep 1963/

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.6, 1964, 1354-1359

TOPIC TAGS: oxide cathode, barium work function, oxygen poisoning

ABSTRACT: The authors have previously developed a sensitive method of analyzing
for free barium in oxide-coated cathodes, based on the fixation of the barium as
BaI_2 by means of radioactive I^{131} (V.P.Vasil'yev and V.P.Pomazkov, Radiotekhnika i
elektronika 2, 343,1961; V.P.Pomazkov, Tr.Tashkentsk.gos.un-ta Fizika, No.221,136,
Tashkent,1963). In the present paper they report results of two series of tests per-
formed in employing this procedure. In one series of experiments the quantity of
free barium in a series of cathodes and on the corresponding anodes was measured,
as well as the distribution of barium within the cathodes. Three different barium
carbonate coatings were employed on a passive nickel base and an active alloy base.

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L 6814-65
ACCESSION NR: AP4044653

The experimental details, including the preparation and activation of the cathodes, are described in the reference . . . . The results are discussed in terms of the theory . . . . The ratio of the barium on the anode to that in the cathode . . . . coating confirmed Rittner's assumption that the barium penetrates the coating by means of Knudsen flow. The concerntation of free barium in the coating, however, was nearly independent of distance from the base, hence the assumption that the inter-action of the barium with the oxide proceeds according to Henry's law is not con-firmed. The nature of the base had very little influence on the concentration of free barium in the coating. In the second series of experiments the effect of oxy-gen poisoning on the free barium content of triple oxide cathodes on nickel bases was investigated. The cathodes were activated by heating for 3 min each at 900, 950 and 1000°C and then operating at 850°C with an anode potential of 100 to 150 V un-til the work function at 600°C was between 1.7 and 1.9 eV. The vacuum was maintain-ed during activation by means of a titanium getter, and the pressure at the end was never greater than 10^{-6} mm Hg. The cathodes were then poisoned at 600°C for 1 hour in oxygen at pressures from 5×10^{-4} to 2×10^{-7} mm Hg, and the free barium content and distribution were measured. The effect of the oxygen was to reduce the free ba-rium content uniformly throughout the thickness of the coating. Even an oxygen pres-

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L 6614-65
ACCESSION NR: AP4044653

sure as low as 5×10^{-7} mm Hg reduced the free barium content by a factor 4. The poisoned cathodes could be returned to their original condition by heating for several hours at $850^{\circ}C$. Orig.art.has: 3 figures and 3 tables.

ASSOCIATION: none   ENCL: 00

SUBMITTED: 00   OTHER: 003

                              NR REF SOV: 007

SUB CODE: EC,EM

3/3

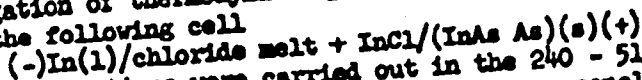s/0020/64/156/001/0118/0120

ACCESSION NR: AP4035815

AUTHOR: Abbasov, A. S.; Nikol'skaya, A. V.; Gerasimov, Ya. I. (Corresponding member); Vasil'yev, V. P.

TITLE: Determination of the thermodynamic properties of indium arsenide from the electromotive force measurements

SOURCE: AN SSSR. Doklady*, v. 156, no. 1, 1964, 118-120

TOPIC TAGS: electromotive force, indium arsenide, thermodynamic property, entropy, enthalpy, Gibbs free energy, thermodynamic function

ABSTRACT: Indium arsenide belongs to a group of compounds of the $A^{111}B^V$ type. This group of semiconductors is now the subject of extensive investigations. The purpose of this work was to study the basic thermodynamic properties of InAs. This investigation of thermodynamic properties of InAs was based on the measurement of emf of the following cell
   (-)In(l)/chloride melt + InCl/(InAs As)(s)(+)
These investigations were carried out in the 240 - 510 C temperature interval.
On the basis of a phase diagram of In-As it was concluded that electrodes of

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ACCESSION NR: AP4035815

arsenic-arsenide type, regardless of the excess amount of As, are in the two-phase region. Thus, the emf of such cells corresponds to the formation of arsenide from the components, and may be represented as follows:

$$In(l) + As(S) = InAs(s) \qquad (I)$$
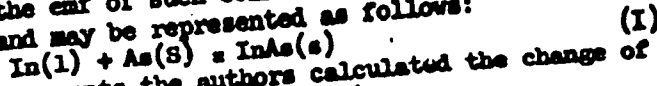
Directly from emf measurements the authors calculated the change of Gibbs free energy (ΔG^0) for reaction (I)

$$\Delta G = -nFE$$

where n is the charge on metal ion, (n=l for In), F is the Faraday's constant equal to 23062 cal/v·g-gequiv., and E is the emf in volts. The change of entropy and enthalpy of this process was calculated from the measurements of emf as a function of temperature

$$\Delta S = -d(\Delta G)/dt = nF \frac{dE}{dt}$$

$$\Delta H = \Delta G + T \Delta S$$

"The authors express their gratitude to L. Ya. Krol' and M. D. Khlystovskaya of the Institute of Rare Elements (Institute redkikh elementov) for the preparation of the indium arsenide." Orig. art. has: 1 table and 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova

Card 2/3

ACCESSION NR: AP4035815

(Moscow State University)

SUBMITTED: 17Jan64

SUB CODE: SS, IC

NO REF SOV: 008

ENCL: 00

OTHER: 006

Card 3/3

S/0020/64/156/005/1140/1142

ACCESSION NR: AP4040953

AUTHOR: Abbasov, A. S.; Nikol'skaya, A. V.; Vasil'yev, V. P.; Gerasimov, Ya. I.
(Corresponding member, AN SSSR)

TITLE: Analysis of the thermodynamic properties of gallium tellurides by electro-
motive force method

SOURCE: AN SSSR. Doklady*, v. 156, no. 5, 1964, 1140-1142

TOPIC TAGS: emf, gallium, gallium telluride, gallium telluride compound, Te,
gallium mono-telluride, gallium sesquitelluride, semiconductor, gallium tri-
chloride

ABSTRACT: The phase diagram of the system gallium-tellurium given in Khausen and
and Anderko's nomograph (Struktura dvoyny*kh splavov, Moscow, 1962, page 806)
points out the existence of compounds of Ga_2Te_3 and $Ga\,Te$ compositions without
homogeneity intervals. They also noted that the structure of a region rich in.
tellurium was not fully explained. They assumed that a telluride of the composi-
tion $Ga\,Te_3$ was formed in it. The purpose of the present paper was an anlaysis of
the thermodynamic properties of gallium tellurides. The authors used the emf
method in their analysis. The methodology of this method was described previously
by A. V. Nikol'skaya et al (DAN, 130, No. 5, (1960, 1074) and by Ya. I. Gerasimov

Card 1/3

ACCESSION NR: AP4040953

and A. V. Nikol'skaya (Voprosy metallurgii i fiziki poluprovodnikov, Izd. AN SSSR, 1961, page 30). Concentration electrochemical chains of the type

$$(-)\ Ga_{liquid}\ \left|\begin{matrix}liquid\\electrolyte + GaCl_3\end{matrix}\right|\ (Ga_x\ Te_{1-x})\ solid,\ \ (+)$$
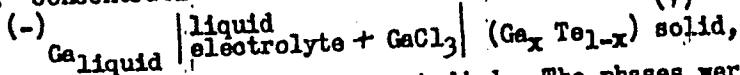
where x is the gallium mole fraction, were studied. The phases were identified by X-ray analysis for the stoichiometric compositions as well as for transition alloys. The parameters which were found are in satisfactory agreement with those found in literature: a=5.89 angstrom for $Ga_2\ Te_3$, a=23.79 angstrom for Ga Te, b=4.08 angstrom, c=10.49 angstrom, and β=45.70°. Alloys with compositions of 53.2 - 84.2 at .% of Te were analyzed. Findings showed that all alloys with compositions of 63.5 to 84.2 at .% of Te yielded a constant emf value within an experimental error of ± 11.0 millivolts. This indicates that the examined alloys lie in one and the same phase space. Alloys with 53.2 to 55.7 at .% of Te also yielded constant values, which corresponds to the formation of the Ga Te phase from $Ga_2\ Te_3$ and gallium. Equations of the form E=A+BT were found for the relationship between emf and absolute temperature as the result of processing the experimental data by the least square method. The errors in the emf magnitudes and smoothing coefficients A and B, which determine the precision for calculation of temperatures and entropies, were calculated with equations of the least squares technique. Findings

Card 2/3

ACCESSION NR: AP4040953

are generalized in a table. Orig. art. has: 1 figure, 2 tables and 3 equations.

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

SUBMITTED: 22Feb64

SUB CODE: SS, MM

NO REF SOV: 008

ENCL: 00

OTHER: 008

Card 3/3

VASIL'YEV, V.P.

Entropy characteristics of a nonideal state of electrolyte
solutions. Zhur. fiz. khim. 36 no.9:2005-2009 S '62.
(MIRA 17:6)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

ACCESSION NR: AP4041405

The thermodynamic functions for the formation of GaSb from monatomic gas molecules were also calculated; $\Delta H_{298} = 68.5$ kcal/gm.atom; $\Delta S_{298} = 32.1$ electron ergs/gm.atom; $\Delta G_{298} = 59.0$ kcal/gm. atom.

Orig. art. has: 2 tables and 1 figure

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M.V. Lomonosova (Moscow State University)
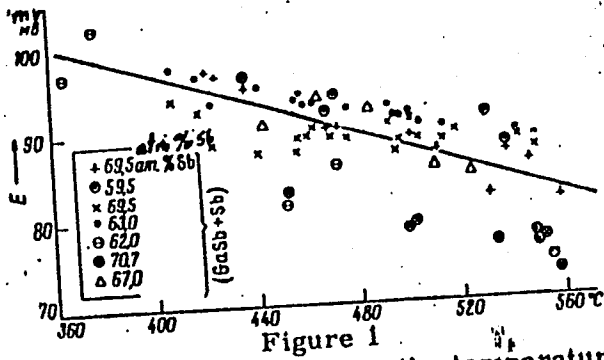
SUBMITTED: 22Feb64

ENCL: 01

SUB CODE: TD,IC

NR REF SOV: 007

OTHER: 006

Card 2/3

ENCLOSURE: 01

ACCESSION NR: 4041405

Figure 1

Dependence of electromotive force on the temperature in the cell

$Ga_{liq} | (KCl - LiCl)_{melt} + GaCl_3 | (GaSb + Sb)_{solid}$

Card 3/3

BARKOV, N.S., inzhener; VASIL'YEV, V.P., inzhener.

Automatic machine for welding fins on furnace wall tubes. Elek.sta. 24 no.
5:22-24 My '53.   (MLRA 6:7)
                                    (Electric welding) (Furnaces)

VASIL'YEV V. P.

K-5

Category : USSR/Optics - Physical Optics

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 2296

Author : Velichko, V.A., Vasil'yev, V.P., Golosov, V.V.
Title : Measurement of Light with an Illumination Rangefinder and Determination of the Velocity of Propagation of Light

Orig Pub : Geodeziya i kartografiya, 1956, No 1, 10-24

Abstract : The construction of the illumination rangefinder SVV-1 with two Kerr cells is described. The synchronously and symmetrically connected Kerr cell permits the use of the observer's eyes as the light-sensitive element, and it is the authors' opinion that this is the advantage of their instrument. The SVV-1 instrument was used to measure triangulation sides up to 10 km long. An average of 40-50 minutes was consumed in the measurement of the length of one side in 24-30 steps. The data tabulated in the article on the measured lengths of 17 sides measured with the rangefinder and by triangulation show the good agreement between the measurements. The mean-squared error of the result of measuring a side 8 km long amounts to 0.09 meters. On the basis of the measurement of the lengths of the 17 sides, obtained by triangulation, the velocity of propagation of light in vacuum was found to be $c = 299793.9 \pm 1$ km/sec.

Card : 1/1

3(4)

AUTHOR: Vasil'yev, V. P.

SOV/154-59-1-8/19

TITLE: The Problem of Comparative Judgment on Optical Distance Meters
and Radio Distance Meters (K voprosu o sravnitel'noy otsenke
svetodal'nomernoy i radiodal'nomernoy apparatury)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"-
yemka, 1959, Nr 1, pp 85-90 (USSR)

ABSTRACT: The first radio distance meter was designed in South Africa
and has been called "tellurometer" by the English. The
tellurometer is at first described in short here, and then
the question is started whether the radio distance meters
will fully suppress the optical range finders in a near
future. The potential possibilities for the apparatus of both
types are investigated to this end. It is shown that the
accuracy of the geodimeter practically surpasses the accuracy
of the tellurometer by about 3 times, while further technical
improvement of the devices will hardly reduce this difference.
As a summary it is stated that mainly the work connected
with higher accuracy will constitute the range of application
of optical range finders. The radio distance meters, however,
will be used in such work where less accuracy is demanded.

Card 1/2

The Problem of Comparative Judgment on Optical   SOV/154-59-1-8/19
Distance Meters and Radio Distance Meters

      For instance, where good visibility cannot be awaited or
      the surveying must be done at any time of day. There are
      3 references, 2 of which are Soviet.

Card 2/2

VYASHNYEV V.P.

VASIL'YEV, V.P.

USSR / Diffusion. Sintering.

E-6

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, No 9332

Author   : Vasil'ev, V.P., Chernomorchenko, S.G.
Title   : Concerning a Procedure for Investigating Self-Diffusion of
             Tungsten.

Orig Pub   : Zavod. laboratoriya, 1956, 22, No 6, 688-691

Anstract   : On the basis of the work by V.M. Golikov and V.T. Borisov
             (Referat Zhurnal - Fizika, 1956, 10446), a method is pro-
             posed for measuring the coefficient of diffusion of metals
             with accuracy to 25 -- 30%. The method consists of coating
             on the specimen a thick layer of radioactive isotope and e-
             establishing with the aid of a counter the time dependence
             of the relative numbers of the recorded decays in the spe-
             cimen before and after the diffusion annealing. Using the
             proposed method, the a;uthors measured the coefficient of
             self-diffusion D over the range from 1290 to 1450°. D .

Card   : 1/2   Cent. Asian State Univ in V. I. Lenin

E-6

USSR / Diffusion. Sintering.

Abs Jour   : Ref Zhur - Fizika, No 4, 1957, No 9332

Abstract   : $6.3 \times 10^7 \exp(-135,800/RT)$ cm^2/sec. The activation energy Q is within 7% of the theoretically calculated value: $Q_{th} = 146,000$ cal/mol.

Card   : 2/2

VASIL'YEV, V.P.

CARD 1 / 2   PA - 1478

Measuring of primary activity is difficult in the case of barium, strontium, and calcium, because the preparation must be exposed to the influence of air. Therefore the author worked out a method which makes it possible to measure the diffusion coefficients in the vacuum. The method is characterized as follows: If the sample is coated with an infinitely thin layer of a radioactive substance, the following distribution of concentration applies in the case of a semi-in-finite body: $C(x,t) = (C_0/\sqrt{\pi D t})\, e^{-x^2/4Dt}$. (The significance of the letters is not explained). For the integral intensity of the sample it is true that $I = I_0 e^{z^2}(1 - \mathrm{erf}\, z)$, where $z = \sqrt{\mu^2 D}\, t$. The total intensity of the sample for the duration of diffusion heating is $E(t) = \int_0^t kI\, dt$, the total activity during the same interval of time, but without diffusion heating, is $E_0(t) = \int_0^t kI_0\, dt$. Here k denotes a counting coefficient. The ratio of activities is:
$E(t)/E_0(t) = (1/z^2)\left[e^{z^2}(1-\mathrm{erf}\, z)+(2/\sqrt{\pi})z-1 \right]$ and $E(t)/E_0(t) = 1-(4/3\sqrt{\pi})\mu\sqrt{D}\sqrt{t}$ is a simplified formula for $z < 0.3$. In the case of this approximation the error remains below 1%.

Dokl.Akad.Nauk,110, fasc.1, 61-63 (1956)   CARD 2 / 2   PA - 1478

This method was checked by the examination of the self-diffusion of silver. For this purpose, a layer of radioactive silver of 1 μ thickness was steamed on in the vacuum to thin silver plates which were annealed for one hour at 850°. Each sample was then transferred to the vacuum device for diffusion annealing. The device, which was of nonex glass, is described on the basis of a drawing. Heating took place at 1010, 967, 950 and 930° K. Evaporation began beyond 1030° K. The fitting of the counter (on a water-cooled casing for reasons of heat protection) is described in short.

The weakest β-component of Ag^{110} was fully absorbed. The coefficient of the linear absorption of the β-component with 0,53 MeV was measured direct on the apparatus and amounted to 227 cm^{-1}. The kinetic curves for the self-diffusion of the silver are shown in a table. Apart from the beginning, they are nearly straight. From these data the following diffusion coefficients were determined:

Temperature in °K	1010	967	950	930
D in cm^2/sec	$1,01.10^{-10}$	$3,16.10^{-11}$	$2,49.10^{-11}$	$1,28.10^{-11}$

By the method of the smallest squares the following temperature dependence was determined for the diffusion coefficients of silver: $D=2,78 \exp(-48.100/RT) cm^2/sec$. This method is well suited for vacuum examinations, investigations of the influence exercised by magnetic voltages on diffusion, etc.

INSTITUTION: Central Asiatic State University "V.I.LENIN".

VASIL'YEV, V.P.; ZAKHAROV, V.K.; CHERNOMORCHENKO, S.G.

Radioactive tracer technique for the study of metal diffusion
processes in metals (applicable to the technology of oxide cathodes).
Trudy SAGU no.91:17-38 '57.   (MIRA 11:2)
                    (Diffusion)   (Electron tubes)
            (Radioactive tracers--Industrial applications)

68587

21.7100

21(1)

S/166/60/000/01/007/011

AUTHORS: Vasil'yev,V.P., and Moroz,V.D.

TITLE: The Investigation of the Vaporization Processes of the Oxide-
            Coated Cathode With the Aid of the Autoradiographic Method

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-
            matematicheskikh nauk, 1960, Nr 1, pp 58-63 (USSR)

ABSTRACT: It is proposed to use the radioactive barium isotope Ba^{133} as an
            indicator for investigations of the vaporization processes of an
            oxide-coated cathode with the aid of the autoradiographic method.
            This isotope has β- and φ-radiation and its half-life is greater
            than 20 years. It is shown that with the aid of the autoradio-
            graphy the distribution of the tragged matter on the surface of
            the investigated body can be found and that by photometric
            evaluation of the images it is possible to obtain not only
            qualitative but also quantitative data on the distribution of the
            activity on the electrodes.
            There are 5 figures, and 15 references, 10 of which are Soviet,
            1 French, and 4 American.

ASSOCIATION: Sredneaziatskiy gosuniversitet imeni V.I.Lenina (Central Asiatic
             State University imeni V.I.Lenin)

SUBMITTED: December 18, 1959

Card 1/1

VASIL'YEV, V.P.; KAMARDIN, I.F.; SHMAR'YAN, M.

Investigating the migration of electrode materials in electron
tubes with oxide-coated cathodes. Izv. AN Uz. SSR. Ser.fiz.-
mat. nauk no.6:53-62 '60.   (MIRA 14:3)

1. Tashkentskiy gosuniversitet im. V. I. Lenina.
              (Cathodes)   (Electron tubes)

9.3120

AUTHORS: Shuppe, G.N., and Vasil'yev, V.P.

TITLE: The Application of Radioactive Isotopes to the Study of Oxide-Cathode Processes and Certain Other Problems of Cathode Electronics

ABSTRACT: Work carried on at the Central-Asia University and the Tashkent vacuum-tube factory using radioactive isotopes is described. The following problems are investigated: evaporation of pure metal cathodes; diffusion of iron in Ni, W, Ta and Ag; alkali-earth metal diffusion (Ca) in Ni, Ag, Au and bronze; diffusion processes; evaporation of oxide layers and getters in vacuum tubes; nickel migration in an oxide cathode; barium diffusion in the cathode oxide coating. Using activity counters and autoradiogram photographs, it is found that the processes occurring are more complex than has been suspected and that cathode and getter elements migrate over practically all the other tube elements except the heater in indirectly heated tubes. In the majority of cases industrially produced types have been

Card 1/2

! 7

S/109/60/005/07/013/024
E140/E163

The Application of Radioactive Isotopes to the Study of Oxide-Cathode Processes and Certain Other Problems of Cathode Electronics

used, with radioactivity induced in selected tube parts by the use of radioisotope admixtures or neutron bombardment of the part before assembly.
There are 10 figures, 3 tables and 16 Soviet references.

SUBMITTED: January 3, 1960

Card 2/2

33102
S/638/61/001/000/027/056
B104/B138

9, 3120 (1003, 1138, 1160)

AUTHORS: Shuppe, G. N., Vasil'yev, V. P.

TITLE: Use of radioisotopes in certain fields of cathode
              electronics

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu
              atomnoy energii. Tashkent, 1959. Trudy, v. 1. Tashkent,
              1961, 182 - 191

TEXT: Processes in oxide cathodes have been studied in recent years by
means of tagged atoms at the Kafedra elektrofiziki TashGU (Department
of Electrophysics of the Tashkent State University) and the Tashkentskiy
elektrolampovor. zavod (Tashkent Electrontube Plant). The evaporation
rates of tantalum and tungsten were investigated. 48.7 and 43.3μ thick
wires were enriched with Ta^{182} and W^{185}, pressure was 10^{-8} mm Hg. In
the range 2070 - 2400°K, the evaporation rate of Ta was $5.9 \cdot 10^{-12}$
- $2.7 \cdot 10^{-9}$ g/cm^2·sec. The evaporation rate of tungsten in the tempera-
ture range 2400 - 2800°K was between $4.5 \cdot 10^{-10}$ and $1.1 \cdot 10^{-7}$ g/cm^2·sec.
Card 1/3

33102
S/638/61/001/000/027/056
B104/B138

Use of radioisotopes in...

The evaporation heat of Ta was -8.02 ev/atom, that of W, -8.10 ev/atom.
The diffusion of Fe in Ni, W, Ta, and Ag was studied by means of the
isotope Fe^{59}. Diffusion heating was carried out in a furnace at $1 \cdot 10^{5}$
mm Hg. Results: The diffusion coefficient D_o in Ni was $7.3 \cdot 10^{-4}$ cm^2/sec,
in W, $1.4 \cdot 10^{-2}$ cm^2/sec, in Ta, 0.5 cm^2/sec, and in Ag, $2 \cdot 10^{-5}$ cm^2/sec.
The diffusion coefficient of Ca in various metals was determined with
Ca^{45}. D_o in Ni was $2 \cdot 10^{-2}$, in Ag, $1.5 \cdot 10^{-1}$, in Au, $5.8 \cdot 10^{-6}$, in bronze
(with 5% Al), $2.4 \cdot 10^{-4}$ cm^2/sec. A device is described for continuous
measurements during diffusion processes. A sample with a radioactive
preparation on its surface is heated in vacuo. The change in intensity
of radioactive radiation is measured by an end-window counter through a
glass window. On a 6П3С (6PZS) tetrode having a radioactive barium-oxide
coated cathode (Ba^{140}), it was found that evaporation products
precipitated on all tube parts, thus considerably changing the properties
of the tube. Ni precipitates on parts of a Γ-807 (G-807) tube do not
come from the oxide layer of the cathode in which Ni is also contained,
they migrate through the oxide film. Conversely, substances of grids,

Card 2/3

33102
S/638/61/001/000/027/056
B104/B138

Use of radioisotopes in...

heat conductors, etc. also precipitate on the cathode. The application
of autoradiography to investigations of oxide cathodes provides the
possibility of obtaining quantitative and qualitative results regarding
the distribution of the substances investigated. There are 10 figures,
3 tables, and 16 Soviet references.

Card 3/3

20591

S/109/61/006/002/023/023
E073/E335

9.3120 (1003,1137,1140)

AUTHORS: Vasil'yev, V.P. and Pomazkov, V.P.

TITLE: Determination of Free Barium in an Oxide Cathode
by the Use of Radioactive Indicators

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol. 6, No. 2,
pp. 343 - 344

TEXT: From the point of view of the physical phenomena in an
oxide cathode the determination of free barium in the oxide
layer is of major interest. The methods used for this purpose
hitherto were based on the reaction of water vapours with free
barium and measurement of the pressure of the evolving hydrogen
(Berdennikov method)or the reaction with nitrogen, etc.   In
recent work which was based on the Berdennikov method (Ref. 2),
a sensitivity of 1×10^{-8} g was achieved. The method proposed
by the authors is based on the reaction of free barium with
iodine as a result of which the relatively stable compound
BaI_2 is obtained.
The isotope I^{131} was used in the form of an aqueous solution
without a carrier. This enabled increasing the sensitivity
Card 1/5

20591

S/109/61/006/002/023/023
E073/E335

Determination of ....

of the method. For purifying the iodine a few drops of the aqueous iodine solution were mixed with benzol and the latter was separated from the water. Then a certain quantity of the stable iodine carrier was added so as to create the necessary vapour pressure in the experimental lamp. The solution of iodine in the benzol was placed into a glass tube with 4-5 intakes and this was followed by vacuum distillation of the iodine. The last part of the tube, where the iodine finally condensed, contained a s e a l e d capillary with a striker. Before distillation of the iodine, the entire tube was carefully de-gassed and following that the tube with the radioactive iodine was welded onto the experimental tube. The experimental tube consisted of a diode with a disc cathode of 5 mm diameter and a flat anode. The base material was 99.99% Ni, annealed in vacuum. The cathode coating consisted of 55% $BaCO_3$, 45% $SrCO_3$ with an organic binder. The thickness of the coating was about 100-120 μ; activation of the cathode was in/vacuum of at least 5×10^{-5} mmHg in two stages; in the first stage the temperature reached 1 050 $^{\circ}$C with a short-

Card 2/5

20591

S/109/61/006/002/023/023
E073/E335

Determination of ....

duration drawing-off of the emission current. Under static conditions the current intensity reached 300 - 500 mA/cm^2. Following that, the cathode was cooled and the tube was sealed in a vacuum of 10^{-7} mm Hg. Immediately after sealing, the capillary tube was broken off and iodine vapour penetrated into the tube which was placed into a furnace at 100-120 ^{o}C for a few hours, following which the furnace temperature was increased to 200 ^{o}C, whilst the end of the ampule was cooled. As a result, the total free iodine was collected in one spot of the instrument. Then the tube was opened and the radioactivities of the anode and cathode were determined. For studying the distribution of the radioactivity along the depth of the oxide layer, the cathode was coated with paraffin wax and, by means of a special device, 10-μ thick layers were cut. From the quantity of iodine in the oxide coating, the quantity of free barium can be easily determined. On the average, the quantity of free barium in the cathodes amounted to 5×10^{-7} g, corresponding to a concentration of about 0.05%

Card 3/5

20591

S/109/61/006/002/023/023
E073/E335

Determination of ....

in weight of the entire layer. In addition, the presence of
3×10^{-8} g of free barium was detected on the surface of the
anode, which is turned towards the cathode. For determining
the iodine sorption in the oxide layer check tests were
carried out, using tubes with two oxide cathodes and two
anodes. One of the cathodes was activated until a stable
emission was obtained, after which oxygen at a pressure of
a few atm. was fed in. A few hours later, the tube was again
evacuated and the second cathode was asctivated and, following
that, normal measurements were carried out with radioactive
iodine. The quantity of free barium in the unpoisoned cathode
was near to the value given above, whilst on the poisoned
cathode it did not exceed 10^{-9} g and on the poisoned anode
it did not exceed 5×10^{-10} g. The obtained results indicate
that the sorption of iodine in the oxide layer is lower
by two orders of magnitude than the quantity of iodine that
is combined with free barium in the layer. Data on the
distribution of free barium in the oxide layer indicate an

Card 4/5

20591
S/109/61/006/002/023/023
E073/E335

Determination of ....

increase in its concentration from the surface into the core.
The quantity of free barium on the anode is apparently lower
and this seems to be due to the fact that under vacuum
conditions a certain part of the free barium that evaporates
from the cathode combines with the residual gases. As a
result of using labelled atoms for determining the free barium
concentration in oxide cathodes it can be stated that this
method is more sensitive by two orders of magnitude than any
other known method.
(Abstractor's note: this is a complete translation.)
There are 2 Soviet references.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet
               Kafedra elektrofiziki (Tashkent State
               University, Department of Electrophysics)

SUBMITTED: July 6, 1960

Card 5/5

S/109/62/007/009/010/018
D409/D301

9, 3120
36.2531

AUTHOR: Vasil'yev, V.P.

TITLE: Study of oxide cathodes by the method of radioactive tracers

PERIODICAL: Radiotekhnika i elektronika, v. 7, no. 9, 1962,
             1574 - 1578

TEXT: The radioactive isotopes Ba^{131} and C^{14} were used for study-
ing the decomposition of the carbonates of oxide cathodes ($BaCO_3$ +
$SrCO_3$). In the experiments with C^{14}, the radioactive barium-carbo-
nate $BaC^{14}O_3$ was added. The experimental lamp contained, in addi-
tion to the cathode and anode, a heater, a thermocouple, and an
absorber (of type BaTI). The decomposition took place in 8 stages,
each lasting 15 minutes. Thereby the cathode was heated from room
temperature to 1000°C. The emission current was of the order of 20
50 mA. The radioactivity was recorded by means of a counter of type
БФЛ-Т- 25 (BFL-T-25). In order to study the evaporation of barium

Card 1/2

Study of oxide cathodes by the ...

S/109/62/007/009/010/018
D409/D301

from the oxide cathode, the radioactive isotope Ba^{131} was used, (in the form of $Ba^{131}CO_3$). The experimental apparatus was similar to that used for C^{14}. The experiments with C^{14} showed that the release of CO and CO_2 from the oxide cathode begins at very low temperatures, of the order of $200^\circ C$. As the temperature increases to $600^\circ C$, the activity at the anode and collectors "fluctuates", i.e. it increases and decreases alternately. This is apparently due to two factors: the release of adsorbed gases, and changes in the "instantaneous" temperature of the cathode. Above $600^\circ C$, intense decomposition of the carbonates takes place (with the release of CO_2); but strong evaporation at the collector starts only at $800^\circ C$.

The carbon compounds are deposited on the cold electrodes in the form of separate particles; this process, too, starts at $200^\circ C$. The evaporation of barium in considerable amounts starts at temperatures of $400-600^\circ C$; it is also in the form of separate particles. There are 4 figures.

SUBMITTED: March 19, 1962

Card 2/2

ABBASOV, A.S.; NIKOL'SKAYA, A.V.; GERASIMOV, Ya.I.; VASIL'YEV, V.P.

Thermodynamic properties of gallium tellurides studied by the electromotive force method. Dokl. AN SSSR 156 no. 5:1140-1142 Je '64.

(MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
2. Chlen-korrespondent AN SSSR (for Gerasimov).

VASIL'YEV, V.P.; VASIL'YEVA, V.N.

Entropy and isobaric potential of the lattice of compounds
with multiatomic anions. Zhur. fiz. khim. 36 no.11:2517-
2520 N'62.   (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

ALESKOVSKIY, V.B., prof.; BARDIN, V.V.; BOYCHINOVA, Ye.S.;
    BULATOV, M.I.; VASIL'YEV, V.P.; DOBYCHIN, S.L.; DUSHINA,
    A.P.; KALINKIN, I.P.; KEDRINSKIY, I.A.; LIBINA, R.I.;
    PRIK, K.Ye.; SETKINA, O.N.; KHEYFETS, Z.I.; YATSIMIRSKIY
    K.B., prof.; VASKEVICH, D.N., red.

[Physicochemical methods of analysis ; a laboratory manual]
Fiziko-khimicheskie metody analiza; prakticheskoe rukovod-
stvo. Moskva, Khimiia, 1964. 451 p.   (MIRA 17:12)

VASIL'YEV, V.P.; MUKHINA, P.S.

Equilibria in aqueous solutions of thiocyanate complexes of uranyl. Izv. vys. ucheb. zav.;khim. i khim. tekh. 7 no.5:
711-714 '64   (MIRA 18:1)

1. Kafedra analiticheskoy khimii Ivanovskogo khimiko-tekhno-
logicheskogo instituta.

ACC NR: AP_7001723   SOURCE CODE: UR/0048/66/030/012/1930/1934

AUTHOR: Vasil'yev, V.P.; Lutsenko, I.M.

ORG: none

TITLE: Radioactive tracer investigation of the evaporation of barium oxide from different substrates /Report Twelfth All-Union Conference on the Physical Fundamentals of Cathode Electronics held at Loningrad, 22 - 26 Oct. 1965/

TOPIC TAGS: evaporation, barium, barium oxide, cathode, tracer study

ABSTRACT: The authors have employed radioactive Ba^{140} as a tracer to investigate evaporation of Ba and BaO from barium-strontium-calcium oxide cathodes on nickel bases and from barium oxide cathodes on platinum, nickel, and molybdenum bases. The 5 mm diameter disk cathode containing Ba^{140} was mounted below a rotatable molybdenum anode and the radioactivities of different parts of the anode were measured after exposure for different times to the hot cathode. Attemps to make use of the supplementary adsorption of radioactive I^{131} by adsorbed Ba to distinguish between evaporation of Ba and BaO from nickel base cathodes failed because of competition for the I^{131} by adsorbed nickel originating in the cathode base. The other base materials did not significantly adsorb iodine, however, and for these bases the Ba and BaO

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ACC NR: AP 7001723

evaporation rates were separately determined. The evaporation rate decreased rapidly with time and approached an equilibrium rate which in the case of the Ba-Sr-Ca cathode was reached after about 16 hours at 800° C, 5 hours at 900°, and 3 hours at 1000°. The evaporation rate was proportional to exp (- E/kT), where T is the temperature and E/k = 19 000°. This value of E/k is not far from that found by B.P.Nikonov and N.G.Otmakhova (Zh. fiz. khimii, 35, No.7, 1494 (1961)). The actual BaO evaporation rates were in all cases lower than those found by other investigators it is suggested that this may be due to the high density of the present coatings. The BaO evaporation rate was lowest from the Pt base (or, at least 1000°, from the Ni base) and highest from the Mo base. The evaporation rate of excess (uncombined) Ba from the Mo base also increased with increasing temperature. Anomalous changes in the excess Ba evaporation rate at fixed temperature were noted and are ascribed to side effects. The fact that excess barium appears on the active molybdenum base is not subject to doubt, but the mechanism of the ineraction between the base and the oxide is not understood. The authors thank B.P.Nikonov for suggesting the topic and for assistance with the work. Orig.art. has: 1 formula, 4 figures and 2 tables.

SUB CODE: 20   SUBM DATE: None   ORIG. REF: 010   OTH REF: 001

Card 2/2

VASIL'YEV, V.P.; VASIL'YEVA, V.N.

Effect of temperature on the change of entropy in the course
of complex-forming reactions in the gas phase. Zhur.fiz.khim.
39 no.11:2678-2683 N '65.   (MIRA 18:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

VASIL'YEV, V.P.; GRECHINA, N.K.

Equilibria in aqueous solutions of iodide complexes of cadmium. Zhur. neorg. khim. 9 no.3:647-653 Mr '64.
(MIRA 17:3)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

VASIL'YEV, V.P.; VASIL' YEVA, V.N.

Entropy of halide complexes in the gas phase.   Zhur. fiz. khim.
37 no.5:1089-1094 My '63.   (MIRA 17:1)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.

Thermodynamic properties of indium arsenide. A. A. Abbasov, A. V.
Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic properties of gallium arsenide. A. A. Abbasov, A. V.
Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic investigation of the system gallium-tellurium.
A. A. Abbasov, A. V. Nikol'skaya, V. P. Vasil'yev, Ya. I. Gerasimov.

Thermodynamic properties of aluminum antimonide. V. A. Geyderikh,
A. A. Vecher, Ya. I. Gerasimov.
(Presented by A. V. Nikol'skaya--20 minutes).

Report presented at the 3rd National Conference on Semiconductor Compounds,
Kishinev, 16-21 Sept 1963

VASIL'YEV, V. P.

"Study of Pyrophosphate Groups in Solutions." Min. Higher Education USSR, Ivanovo
    Chemical Engineering Inst., Ivanovo, 1954. (Dissertation for the Degree of Candidate
    of Chemical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

VASIL'YEV,V.P.; YATSIMIRSKIY,K.B.

On E.A.Ukshe and A.I.Levin's article "Composition and properties of a complex electrolyte in a copper-pyrophosphate bath." Zhur. ob.khim.25 no.6:1233-1235 Je '55.   (MIRA 8:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
        (Electrolytes) (Ukshe, E.A.) (Levin, A.I.)

VASIL'YEV, V. P.

USSR/Chemical – Physical chemistry

Card 1/1   Pub. 147 – 4/35

Authors   : Yatsimirskiy, K. B., and Vasil'yev, V. P.

Title   : Determination of instability constants of complexes by colorimetric measurement of the pH of the solution

Periodical : Zhur. fiz. khim. 30/1, 28-33, Jan 1956

Abstract   : A new method was developed for colorimetric determination of pH in highly dilute sodium pyrophosphate solutions. The method was tested on several series solutions containing calcium nitrate and sodium pyrophosphate and was found to be perfectly suitable for such type of measurements. The instability constant of a calcium pyrophosphate complex was computed on the basis of results obtained by this new method. Five references: 3 USSR and 2 USA (1928-1954). Tables; graph.

Institution : Chemicotechnological Institute, Ivanovo

Submitted   : March 14, 1955

VASIL'YEV, V. P.

Category: USSR / Physical Chemistry
Thermodynamics. Thermochemistry. Equilibrium. Physico-   B-8
chemical analysis. Phase transitions.

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29880.

Author : Yatsimirskiy K. B., Vasil'yev V. P.
Inst : not given
Title : Thermochemistry of Pyrophosphate Complexes in Solution

Orig Pub: Zh. fiz. khimii, 1956, 30, No 4, 901-911

Abstract: Determination of the heat of mixing values of solutions of nitrates
of Ni, Cu, Zn and Pb with solutions of sodium pyrophosphate of differ-
ent concentration, and also of the heat of dilution of the above-
stated salts. The determinations were carried out in the previously
described calorimeter (RZhKhim, 1955, 32011) which has been improved
by the authors. From changes in heat of mixing value, with change in
concentration of sodium pyrophosphate solution, the stepwise constant
of instability of $Ni(P_4O)$, was calculated. Enthalpy change ($\angle H$)
in the reaction $Ni\ aq + P\ O\ aq = NiP_2O\ aq$ (1) is 4.21 ± 0.04 kcal.

Card : 1/2   -10-

Category: USSR / Physical Chemistry.
Thermodynamics. Thermochemistry. Equilibrium. Physico-
chemical analysis. Phase transitions.   B-8

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29880

Author : Yatsimirskiy K. B., Vasil'yev V. P.
Inst   : not given

In reactions of the type $M^{--}aq + 2P_2O_7^{--} aq = M(P_2O_7)_2^{--} aq$ (2)
the $\triangle H$ for Ni, Cu, Zn and Pb is, respectively, 2.00 ± 0.02;
-0.67 ± 0.07; 2.64 ± 0.05 and -1.01 ± 0.11. Values of standard
heat of formation have been calculated for the complex ions NiP_2O_7
and $M(P_2O_7)_2$ (M -- Ni, Cu, Zn and Pb). For reactions of type (2)
change of isobaric thermodynamic potential and entropy have been
calculated. Entropy change in these reactions satisfies the equa-
tion: $\triangle S = 0.1 L_h + const$ (3), where L_h is heat of hydration of
M^{++} ion. Equation (3) is utilized to calculate the instability
constant of Pb $(P_2O_7)^{--}$ ion, together with the thermochemical
data.

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SOV/153-58-2-29/30

AUTHOR: Vasil'yev, V.P.

TITLE: On the Problem of the Dissociation of the Aquo-Complexes
            (K voprosu o dissotsiatsii akvokompleksov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
            tekhnologiya, 1958, Nr 2, pp 186 - 188 (USSR)

ABSTRACT: The solvation phenomena of ions produce wide effects on the course
            of most diverse reactions in the solution especially of complex
            formation and precipitation. It is maintained that a complete or
            partial desolvation of the reacting particles in this connection
            forms an unavoidable stage. By investigating several factors deter-
            mining the interaction energy of the ion with water molecules and
            of the ion with charged addenda Yatsimirskiy (Ref 1) succeeded in
            explaining the modification of the stability of complexes in the
            series magnesium, calcium, strontium, barium in aqueous solution.
            From these and other facts (Refs 2,3) it may be concluded that the
            stability of the complexes in the solution is not only determined
            by the affinity of the central ion to the addenda but also by the
            affinity of these particles to the molecules of the solvent. In this
            connection the determination of the composition and the dissociation
            stability of the aquo-complexes is at least an approximate estimation

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of this quantity. According to the opinion of the authors the in-
vestigation of the polarographic characteristics of the ions in non-
aqueous and mixed solutions gives a clue since solvation must be
regarded as a special case of the complex formation in the solution.
The author controverts Markman and Tur'yan (Ref 4) who used the
Brodskiy equation for the explanation of the displacement of the
semi-wave potential in the direction of the positive values with
increasing alcohol content in solutions of cadmium, lead and thal-
lium nitrates. The author is of the opinion that this shifting can
be explained also by another way. The curves on figure 1 reveal
that in the concentration range investigated a step-like complex
formation takes place (the points are not on a straight line) i.e.
that several aquo-complexes occur in the solution. For the deter-
mination of their composition and their stability the author used
the Yatsimirskiy method (Ref 6). It can be seen on figure 1 that
in the cases of cadmium 3, lead 4, and thallium only 2 tangents
with values of $(p + 1/2)$ can be plotted. In all 3 cases mentioned
he gives the empiric formulae of the corresponding aquo-complexes
(4 for cadmium, 5 for lead, and 3 for thallium) their instability
constants included. Thus the applicability of the polarographic
method of determining the composition and the instability constants

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of the aquo-complexes in the solution was proved. Coordination
numbers were determined and the step-like instability constants
of the mentioned metals in water-alcohol solutions were estimated.
There are 1 figure and 6 Soviet references.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut
(Ivanovo Chemical and Technological Institute)
Kafedra analiticheskoy khimii (Chair of Analytical Chemistry)

SUBMITTED: November 26, 1957

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5(4)
AUTHORS: Vasil'yev, V. P., Korableva, V. D.,   SOV/153-58-3-30/30
                  Yatsimirskiy, K. B.

TITLE: Conference Discussion on the Methods of Investigating the
                  Complex Formation in Solutions (Soveshchaniye-diskussiya
                  po metodam izucheniya kompleksoobrazovaniya v rastvorakh)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
                  khimicheskaya tekhnologiya, 1958, Nr 3, pp 173 - 174 (USSR)

ABSTRACT: From February 18 to 21, 1958 a conference discussion took
                  place at the town of Ivanovo; it dealt with the subjects
                  mentioned in the title. It was called on a decision of the
                  VIIth All-Union Conference on the Chemistry of Complex
                  Formations. More than 200 persons attended the conference,
                  among them 103 delegates from various towns of the USSR.
                  At the conference methods of determining the composition of
                  the complexes in solutions were discussed, as well as the
                  methods of calculating the instability constants according
                  to experimental data and problems concerning the influence
                  of the solvent upon the processes of complex formation.
                  I. I. Chernyayev, Member, Academy of Sciences, USSR, stressed
                  in his inaugural lecture the great importance and actuality

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Investigating the Complex Formation in Solutions

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of the problems to be dealt with, and wished the conference
all the best in its work. I. V. Tananayev, on behalf of the
Orgkomitet (Organization Committee) held a lecture on: "The
Method of Determining the Composition of Compounds Formed in
Solutions". In his lecture, V. N. Tolmachev dealt with the
problem of the graphical interpretation of the method by
Ostromyslenskiy-Zhob. It was proved that this method can
also be used in such cases where the equilibrium of complex
formation was turned complex by the hydrolysis or dimerization
of the central ion. In the lecture by A. K. Babko and
M. M. Tananayko, "Physical and Chemical Analysis of the
Systems With 3 Colored Complexes in the Solution", the results
of a systematic investigation in copper-quinoline-salicylate,
as well as in copper-pyridine-salicylate systems by means of
the optical method were dealt with. In the lecture by Ya. A.
Fialkov the idea of a further investigation of the complex
formation processes in solutions was developed. Besides the
determination of the composition and stability of the complexes
also the physical and chemical properties, the chemical nature
and the structure of the complex compounds must be investi-

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gated. The lecture by K. B. Yatsimirskiy dealt with the
conditions of checking the usefulness of the method of isomolar
series in the determination of the complex composition. To
be able to obtain objective results the position of the
maximum at various concentrations of the components must be
checked. A. K. Babko made several critical remarks concerning
the lecture by I. V. Tananayev. He pointed out that such a
method of investigation must be chosen that is connected with
the characteristic properties of the system investigated.
A. P. Komar' mentioned in his lecture that for the time being
the method by Ostromyslenskiy-Zhob is the best for determining
the complex composition, and should be employed as often as
possible. This demands, however, that all instructions con-
cerning this method are strictly obeyed. I. S. Mustafin,
L. P. Adamovich and V. I. Kuznetsov took part in the discus-
sion. K. B. Yatsimirskiy proved in his lecture "Hydrolytic
Equilibria and the Polymerization in Solutions" that, if the
hydrolysis products are polymerized, the "inclusion into the
complex" and the "formation function" at a constant pH value
are varied with the modification of the total concentration of

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the metal. Therefore all those methods may be employed for
investigating the polymerization of this type which make the
determination of at least one of the two functions mentioned
possible. It was proved that the hypotheses on the existence
of complexes of the type "nucleus + chain members" can also
be founded from the viewpoint of structural concepts: particles
the charge of which does not exceed unity can occur as "chain
members". The usefulness of the characterization of areas of
existence of polymers by means of surface diagrams: "total
concentration of the metal - pH" was proved as well. I. I.
Alekseyeva and K. B. Yatsimirskiy in their lecture "Investiga-
tion of the Polymerization of Iso-Poly Acids in Solutions"
mentioned experimental results of the investigation of the
polymerization in solutions of molybdic acid. The authors
proved that especially the molybdic acid within a certain
range of the pH values and the concentrations exists as a
number of compounds that can be expressed by an overall formula
$MoO_4(HMoO_4)^{n-2}$. In the lecture by N. V. Aksel'rud and V. B.
Spivakovskiy investigation results on basic salts taking into

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