POPOV, B.D., inzh.; KOPELEVICH, G.L., inzh.

The DSK-1 (housing-construction combine) is building. Biul. tekh.
inform. po stroi. 5 no.7:7-11 Jl '59.   (MIRA 12:10)
                (Leningrad--Precast concrete construction)

YEFREMOVA, L.A., zasluzhennyy master sporta; ZAK, M.G.; RAKITINA, R.I., starshiy metodist; ZABAROVSKIY, K.K.; GOL'BERG, A.Ya.; KAZAKOV, M.B.; ZHAVORONKOV, I.Ye. (Kerch'); KLYUCHAREVA, I.R. (Moskva); BELAYA, N.A., kand.med.nauk; POPOV,B.F., artist

We continue the discussion of the power of physical culture.
Zdorov'e 8 no.8:26-28 Ag '62.   (MIRA 15:8)

1. Zamestitel' glavnogo vracha 2-go Moskovskogo vrachebno-fizkul'-turnogo dispansera (for Yefremova). 2. Glavnyy vrach Oblastnogo vrachebno-fizkul'turnogo dispansera, Rostov-na-Donu (for Zak). 3. Respublikanskiy vrachebno-fizkul'turnyy dispanser, Kiyev (for Rakitina). 4. Glavnyy vrach Respublikanskogo vrachebno-fizkul'turnogo dispansera, Minsk (for Zabarovskiy). 5. Zaveduyushchiy kabinetom lechebnoy fizkul'tury Respublikanskogo vrachebno-fizkul'turnogo dispansera, Minsk (for Gol'berg). Glavnyy vrach Gorodskogo vrachebno-fizkul'turnogo dispansera, Sverdlovsk (for Kazakov). 6. Gosudarstven-nyy Akademicheskiy Malyy teat (for Popov).
(PHYSICAL EDUCATION AND TRAINING)

BELOV, N.S.; BIRYUKOV, I.V.; VERBLYUDOV, N.N.; GORBUNOVA, M.N.; YESIPOVA, M.M.;
IL'ICHEV, A.I.; IGNAT'YEVA, N.Ya.; KOVACHEVICH, P.M.; LYTKIN, A.M.;
LOSKUTOV, V.G.;MAZYUKOV, A.S.; MIROSHNICHENKO, N.Ya.; NEFEDOV, A.Ya.;
OSIPOV, K.V.; OSIPOV, P.M.; PETROV, N.G.; PETRACHKOV, M.I.;
PINEVICH, K.M.; POPOV, B.E.; POTAPOV, P.V.; PREDEIN, F.Ye.; PUKHOV, A.F.;
CHUSOVITINA, Ye.I.; ANGEL'SKIY, N., tekhn.red.

[The Kuznetsk Basin in the sixth five-year plan] Kuzbass v shestoi
piatiletke. [Kemerovo] Kemerovskoe knizhnoe izd-vo, 1956. 125 p.
(MIRA 10:12)

(Kuznetsk Basin)

POPOV, B.G.

Surface currents in the Solomon Sea. Okeanologiia 3 no.4:
599-605 '63.
(MIRA 16:11)

Identification of plastics

Plast. massy no.2:62-66 '6.

POPOV, B. G.: Master Tech Sci (diss) -- "Investigation of heat exchange in the boiling of aqueous solutions of mineral salts". Ivanovo, 1958. 15 pp (Min Higher Educ USSR, Moscow Inst of Chemical Machinebuilding), 150 copies (KL, No 6, 1959, 175)

153-58-1-26/29

AUTHORS: Popov, B. G., Rychkov, A. I.

TITLE: Investigation of the Heat Exchange During the Boiling of Acqueous Solvents of the Mineral Salts (Issledova= niye teploobmena pri kipenii vodnykh rastvorov mineral'= nykh soley)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp 173-182. (USSR)

ABSTRACT: The convective heat exchange - complicated by the boiling process - is a consequence of complicated phenomena of physics. Various papers on the theore= tical problems of heat exchange are available. Those by Klaassen belong to the earliest. The limited number of such works remains constant not only because of the rather complicated chemical process, but rather on account of the difficulties arising in the field of the experiment. The authors report in this paper on the re= sults obtained by the test for the determination of the coefficient of heat emission with boiling of a porous

Card 1/3

Investigation of the Heat Exchange During the Boiling of   153-58 : 26/29
Acqueous Solvents of the Mineral Salts

solvents of sodium sulfate or of lithium sulfate
respectively. It was found that the above-mentioned
coefficient depends on the type of the dissolved
substance, as well as on its concentration in the
solvent. The coefficient of heat emission decreases
according to the increased concentration (see figures
3 to 5). The exponent n in the equation $a = A q^n$
depends equally on the nature of the dissolved sub-
stance and its concentration in the solvent With
most of the solvents the exponent n decreases The
temperature depression exercises great influence
on the coefficient of heat emission. Generalizing
the results of the data of investigation on the cri-
tical equation (Reference 7) these data come to lie
in the same line - with a maximum deviation of 12%.
There are 7 figures and 16 references, 12 of which
are Soviet.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya
               (Moscow Institute for Chemical Machine Building)

Card 2/3   Kafedra khimicheskogo apparatostroyeniya (Chair of Chemistry
               Equipment Design)

S/153/60/003/02/31/034
B011/B006

5.1230

AUTHOR: Popov, B. G.

TITLE: Approximation Method for Determining the Coefficient of
             Heat Loss in Boiling Aqueous Salt Solutions

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i
             khimicheskaya tekhnologiya, 1960, Vol. 3, No. 2, pp. 375-378

TEXT: The present determination methods of the coefficient mentioned in
the title are either tedious or require physical constants not contained
in reference works. In this paper, the author tries to summarize publica-
tion data to find a criterial dependence. From this, the above coefficient
can be calculated fairly easily over a wide concentration range. In the
calculation, an equation derived by the author for the ebullioscopic
constant E_s is used. 1) For electrolyte solutions containing more than
20% of salt, this equation reads $E_s = 0.28 \cdot K_q^{-0.5} \cdot K_\tau^{0.75}$ (3). 2) For
electrolyte solutions having concentrations below 20% and for all non-

Card 1/2

POPOV, B.G., kand.tekhn.nauk; MEDVEDEVA, V.S.; VEREVKIN,V.N.

Problems of the formation of charges of static electricity in
technological processes. Zhur.VKHO 9 no. 3:253-258 '64.
(MIRA 17:9)

FUKS, I.T.; POPOV, B.I.

Electrolytic effect of the traction currents on the performance of
the communication networks of electrified railroad districts run-
ning through hilly terrain. Avtom., telem. i sviaz' 6 no.3:34
Mr '62.   (MIRA 15:3)

1. Zamestitel' nachal'nika Irkutskogo uchastka energosnabzheniya
(for Fuks).
            (Electric railroads--Communication systems)

BOGDANOV, K.T.; POPOV, B.G.

Currents of the surface layer in the western part of the Pacific
Ocean. Trudy Inst.okean. 40:135-141 '60.   (MIRA 14:8)
                    (Pacific Ocean—Ocean currents)

POPOV, B.I.; SHMELEV, A.S.

Technological parameters of a two-stage water-gas converter with
optimum dimensions of catalyst tablets. Khim.prom. no.1:45-47
Ja-F '60.   (MIRA 13:7)
            (Water gas)
            (Catalysis)

POPOV, B.I.

Use of SORS adapter systems with STA terminal apparatus; experiment at the Gorky telegraph center. Vest.sviazi 20 no.6:22-23 Je '60.   (MIRA 13:7)

1. Glavnyy inzhener Gor'kovskogo telegrafa.
      (Gorky--Telegraph)

POPOV, B.I.

Optimal dimensions of briquets of iron oxide catalysts in the conversion of water gas. Khim.prom. no.7:596-601 O-II '59.

(MIRA 13:5)

(Water gas)   (Catalysts)

POPOV, B.I.; LANDYSHEVA, O.P., inzh.

Operating the ATA-50 station of subscriber's automatic telegraph.
Vest.sviazi 18 no.10:19-20 O '58.   (MIRA 11:11)

1. Glavnyy inzhener Gor'kovskogo tsentral'nogo telegrafa (for Popov).
                    (Telegraph--Automatic systems)

PONOMARENKO, A.A.; POPOV, B.I.

Chemiluminescent method for the determination of small amounts of certain isomeric benzene derivatives containing NO_2, NH_2, OH groups, and for the analysis of their mixtures. Zhur. anal. khim. 19 no.11: 1397-1401 '64.   (MIRA 18:2)

1. L'vovskiy torgovo-ekonomicheskiy institut.

5(1,2,4)   SOV/153-58-6-11/22
AUTHOR: Popov, B. I.

TITLE: Thermodynamic Analysis of the Interaction Reaction of Iron
               Oxides With Hydrogen Sulfide and Carbon Disulfide on the
               Conversion of Water Gas (Termodinamicheskiy analiz reaktsiy
               vzaimodeystviya okislov zheleza s serovodorodom i serouglero-
               dom v usloviyakh konversii vodyanogo gaza)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya
               tekhnologiya, 1958, Nr 6, pp 61-70 (USSR)

ABSTRACT: The reaction $CO + H_2O = CO_2 + H_2 + Q$ (1), extensively used
               in the water gas industry, is as a rule carried out on iron
               oxide catalysts. These catalysts are heavily poisoned by the
               sulphur compounds contained in the semiwater gas. Among these
               compounds carbon disulfide and carbon sulfoxide play the
               main role (often called "organic sulphur"). In the course
               of the conversion organic sulphur is transformed into in-
               organic sulphur, viz. into carbon disulfide (Refs 1-3, 5).
               Thus the substances mentioned in the title are the most
               important poisoning agents. This poisoning is usually thought
Card 1/4   of as being connected with the formation of iron sulfide

SOV/153-58-6-11/22

Thermodynamic Analysis of the Interaction Reaction of Iron Oxides With
Hydrogen Sulfide and Carbon Disulfide on the Conversion of Water Gas

$FeO + H_2S = FeS + H_2O$ (2). In the same way the regeneration
by steam of the catalyst (Refs 4, 5) is explained by the
equilibrium of reaction (2). However, the author does not
know of any theoretical observations or experimental facts
that prove the correctness of the above statements. The papers
available (Ref 5) cannot serve as a criterion for the fact
that the poisoning of the catalyst is connected with the
formation of phase sulfides. The author made use of the
thermodynamic values given in the reference work (Ref 6) and
of the temperature series of the heat capacities (Ref 8). Ta-
ble 1 presents the calculation results for the interaction
reactions of the iron oxides with the main components of
semiwater gas. These results show that, under the conditions
of said reaction, only Fe_3O_4 is able to form a thermodynamical-
ly stable phase. In tables 2 and 3 the calculation results
for the interaction reactions of iron oxide with H_2S and CS_2

are listed. A comparison of these data with those in tables 4
and 5 (equilibrium constants and the minimum concentrations
Card 2/4   of H_2S and CS_2, respectively, at which an interaction with

SOV/153-58-6-11/22
Thermodynamic Analysis of the Interaction Reaction of Iron Oxides With
Hydrogen Sulfide and Carbon Disulfide on the Conversion of Water Gas

magnetite, iron, and ferrous oxide takes place at 400 and
500°) shows that, thermodynamically speaking, CS_2 constitutes

a more potent poison than H_2S. Thus the poisoning of the

catalyst cannot be accounted for by reaction (2). It was
furthermore found that the iron oxide catalyst is present on
the conversion by magnetite; an oxygen content somewhat
lower than in Fe_3O_4 is possible. The poisoning, under in-
dustrial conditions, of the catalyst is effected, not by
the formation of phase sulfides, but by that of surface sul-
fides or iron. A pattern of catalyst-poisoning by sulphur
compounds was proposed((69) - (76)). There are 5 tables
and 19 references, 17 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy i kolloidnoy khimii; Ivanovskiy khimiko-
tekhnologicheskiy institut (Chair of Physical Chemistry and
Colloid Chemistry; Ivanovo Chemo-technological Institute)

Card 3/4

SOV/153-58-6-11/22

Thermodynamic Analysis of the Interaction Reaction of Iron Oxides With Hydrogen Sulfide and Carbon Disulfide on the Conversion of Water Gas

SUBMITTED: November 26, 1957

Card 4/4

KUPLYAYEV, I.M. (Leningrad, B. Pushkarskaya ul. d. 30., kv.27); IULIYEV, N.N. (Gor'kiy, ul. Radistov, d.6, kv.6); CHERNOV, Ya.G. (Gor'kiy, ul. Radistov, d. 6, kv.6); PISAREV, A.L. (Moskva, Lyubertsy, 4. pos. Vsesoyuznogo nauchno-issledovatel'skogo ugol'nogo instituta, d.5, kv.5; GASPAROV, R.G. (Moskva, I-51, 2-y Kolobovskiy pereulok d.2/2 kv.18); POPOV, B.I. (Irkutsk, 13, Depovskiy pereulok, d.83, kv.2); PIONTKOVSKIY, B.A. (Moskva, Ye-77, Sredne-Pervomayskaya ul. d.13, kv.4); VEDENEYEV, G.M. (Moskva, I-110, B. Spasskaya, d. 15/17, kv.29); KRECHER, V.G. (Uzhgorod, Zakarpatskaya obl., ul. Kosmodem'yanskoy, d.4, kv.69); SIDORENKO, A.P. (Leningrad, ul. Frunze, d.15, kv.38); SPIRIDONOV, A.V. (Leningrad, ul. Frunze, d.15, kv.38); SEREDA, P.A. (Moskva); IL'IN, V.F.; PEL'TSMAN, L.N.; DANILEVICH, A.I. (Khar'kov, Plekhanovskiy pereulok, d.9a, kv.2); KHIMENKO, L.T. (Khar'kov, Plekhanovskiy pereulok, d.92, kv.2); LYKOV, M.V. (Moskva, Leninskiy prospekt, d.55); RYBAL'CHENKO, G.F. (Moskva, Leninskiy prospekt, d.55); BOYKO, V.F. (Leningrad, M-142, ul. Tipanova, d.3, kv.130); KITAYEV, G.I. (Chelyabinsk, Smolenskaya ul. d.4); SKLYAROV, A.Ye. (Novocherkassk, Rostovskoy obl. pos. Oktyabr'skiy, Gvardeyskaya ul. d.30, kv.29)

Discoveries and inventions. Prom. energ. 19 no.11:57-58 N '64.
(MIRA 18:1)
1. Zavod "Amurkabel'", Khabarovsk (for Il'in, Pel'tsman).

KOLOVERTNOV, G.D.; BORESKOV, G.K.; DZIS'KO, V.A.; POPOV, B.I.; TARASOVA,
D.V.; BELUGINA, G.G.

Iron-molybdenum oxide catalyst of methanol oxidation to
formaldehyde. Part 1: Specific activity as a function of the
catalyst composition. Kin. i kat. 6 no. 6:1052-1056 N-D '65
(MIRA 19:1)

1. Institut kataliza Sibirskogo otdeleniya AN SSSR. Submitted
January 25, 1965.

GAVRILIN, V.N.; POPOV, B.I.

Oxidation of methanol to formaldehyde on a silver catalyst. Part 1: Operating conditions of the process. Kin.i kat. 6 no.5:884-888 S-O '65. (MIRA 18:11)

1. Institut kataliza Sibirskogo otdeleniya AN SSSR.

POPOV, B.G.

Approximate method of determining the heat-transfer coefficient during the boiling of aqueous salt solutions. Izv.vys.ucheb. zav.; khim. i khim.tekh. 3 no.2:375-378 '60.   (MIRA 14:6)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra khimicheskogo mashinostroyeniya.
                    (Salt)
                    (Ebullition)
                    (Heat—Transmission)

POPOV, B.I.

Thermodynamic analysis of the reaction of iron oxides with hydrogen sulfide and carbon disulfide in connection with water gas conversion. Izv.vys.uchob.zav.; khim.i khim.tekh.
no.6:61-70 '58.   (MIRA 12:6)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra fizicheskoy i kolloidnoy khimii.
          (Iron oxides) (Sulfur compounds) (Water gas)

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Country     : USSR
Category    : Farm Animals.                              Q-2
              Cattle.
Abs. Jour   : Ref Zhur-Biol., No 16, 1958, 74024

Author      : Popov, B. I.
Institut.   : Yerevan Zootechnical Veterinary Institute.
Title       : Some Data on the Growth and Development of
              Calves in the Process of Their Raising.

Orig Pub.   : Tr. Yerevansk. zootekhn.-vet. in-ta, 1957,
              vyp. 21, 99-107

Abstract    : No abstract.




Card:          1/1
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39

SOV-111-58-10-14/29

AUTHORS: Popov, B.I., Chief Engineer, Landysheva, O.P., Engineer

TITLE: The Experience of Operating a Station of Automatic Subscriber Telegraph "ATA-50" (Opyt ekspluatatsii stantsii avtomaticheskogo abonentskogo telegrafa ATA-50)

PERIODICAL: Vestnik svyazi, 1958, Nr 10, pp 19-20 (USSR)

ABSTRACT: When the Gor'kiy Central Telegraph Station was equipped with automatic "ATA-50" subscriber telegraphs, there were many difficulties which had to be overcome. At the beginning the subscribers complained about the inaccurate work of the equipment. Further there were defective relays, spark formation on contacts, etc. All these drawbacks were eliminated. The average distance that telegraphs are sent from the station is between 20 to 25 km. A certain number of stations are located at distances of 200 - 250 km, whereby batteries with higher voltages are required for their operation. The station also serves 11 city departments which are connected with the Gor'kiy Central Telegraph Station. Operators instruct the subscribers in the use of the telegraph, control the reception of telegrams, check the apparatuses, etc. The station which is now semi-auto-

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The Experience of Operating a Station of Automatic Subscriber Telegraph "ATA-50"

SOV-111-58-10-14/29

mated will be switched over to complete automation as soo.. as the necessary devices are available. There are 2 photos.

ASSOCIATION: Gor'kovskiy tsentral'nyy telegraf (Gor'kiy Central Tele-graph Station)

1. Telegraph systems--Performance   2. Telegraph systems--Control systems   3. Telegraph systems--Automation

Card 2/2

Popov B.I.

The kinetic equation of the heterogeneous catalytic reaction of carbon monoxide conversion with steam. Popov / Krim.-Teched. Inst. Ivanovo/. Zhur Fiz. Khim. 31, 1038-41 /957/ C.I. 50, 757 /c.— The equation for the minimal reversible reaction of CO with H₂O previously derived described correctly the course of the reaction on a sintered Fe catalyst. The reaction was of a 1st order with respect to CO and zero order with respect to H₂O vapor. Above 400° the results agreed better with the Kul'kova and Temkin equation (C.A. 43, 7308h) of an apparently unimol. reaction with respect to CO, and 0.5 order with respect to H₂O.

W. M. Sternberg

POPOV, Boris Ivanovich, prepodavatel'; CHAYEVSKAYA, N.S. [Chaievs'ka, N.S.], red.; MIL'KIN, Yu.A., tekhn. red.

[The nature of technological progress] Shcho take tekhnichnyi progres. Kyiv, Derzh. vyd-vo polit. lit-ry URSR, 1961. 39 p.   (MIRA 14:10)

1. Kiyevskiy ordena Lenina politekhnicheskiy institut (for Popov).
                    (Technology)

POPOV, B.I.

On the kinetic equation of the heterogeneous catalytic reaction for
carbon monoxide conversion by water vapor.[with.summary in.English].
Zhur. fiz. khim. 31 no.5:1033-1041 My '57.   (MIRA 10:11)

1. Khimiko-tekhnologicheskiy institut, Ivanova.
        (Water gas)   (Chemical reaction, Rate of)

BELONOGOV, K.N.;   POPOV, B.I.

Determination of the reaction rate constants and of the effective
diffusion coefficient inside a porous catalyst from kinetic data.
Zhur.fiz.khim. 29 no.7:1187-1192 Jl '55.   (MLRA 9:3)

1. Khimiko-tekhnologicheskiy institut, Ivanovo.
                         (Catalysis)

BELONOGOV, K.N., POPOV, B.I.

Study of the role of the transference in the conversion of carbon monoxide. Zhur.fiz.khim. 29 no.8:1383-1395 Ag '55.   (MLRA 9:3)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
     (Carbon monoxide) (Diffusion)

POPOV B. I.

Maslovskiy P. M. and Popov B. I., "Automatic Regulation of Open-hearth
    Furnaces. (Program Auto-regulation of Heat Conditions in Open-hearth
    Furnaces.)" Moscow, Metallurgizdat, 1953, 176 pages, 88 figures;
    bibliography, 25 items.

PUGOVISHNIKOV, V.M.; POPOV, B.I., master.

Regulation of high-speed automatic devices by separate generators.
Elek. i tepl. tiaga 2 no.3:31-32 Mr '58.   (MIRA 11:4)

1. Nachal'nik ispytatel'noy stantsii Irkutsk II, Vostochno-Sibir-
skaya doroga (for Pugovishnikov).
                                    (Servomechanisms)

POPOV, B.I.

Investigation of the role of transfer of material in the re-action of carbon monoxide conversion. K. N. Belonogov and B. I. Popov (Chem. Technol. Inst., Ivanovo). Zhur. Fiz. Khim. 29, 1383-95(1955).—The role of diffusion proc-d esses in CO conversion with steam on en Fe oxide catalyst was studied. At 300-400°, the CO conversion is satisfac-torily described by a kinetic equation of the 1st order. If other reaction products are absent, but at higher temps. a deviation from the equation is observed. The inhibition of the reaction caused by insufficient supply of the reagent to the catalyst surface (outer diffusion) is inconsiderable at 400°, and does not exceed 10% with the particular catalyst used. The diffusion to the internal surface of the catalyst e was greatly inhibited above 350°. The temp. relation of the reaction velocity const. is described by the equation of Arrhenius-van't Hoff.   W. M. Sternberg

ПОРОВ, В.И.

5259. INVESTIGATION OF THE ROLE OF TRANSFER OF MATERIAL IN THE REACTION OF CARBON MONOXIDE CONVERSION. Belonogov, K.N. and Bupov, B.I. (Zh. fiz. Khim. (J. phys. Chem., Moscow), 1955, vol. 29, 1385-1395; abstr. in Chem. Abstr., 1957, vol. 51, 818). The role of diffusion processes in carbon monoxide conversion with steam on an iron oxide catalyst was studied. At 300-400°, the carbon monoxide conversion is satisfactorily described by a kinetic equation of the first order if other reaction products are absent, but at higher temperatures a deviation from the equation is observed. The inhibition of the reaction caused by insufficient supply of the reagent to the catalyst surface (outer diffusion) is inconsiderable at 400°, and does not exceed 10% with the particular catalyst used. The diffusion to the internal surface of the catalyst was greatly inhibited above 350°. The temperature relation of the reaction velocity constant is described by the equation of Arrhenius-van't Hoff.

C.A.

PONOMARENKO, A.A.; POPOV, B.I.; AMELINA, L.M.; CHISHCHTEC, L.V.;
       SHINDEL', R.Ye.

       Inhibition of luminol chemoluminescence by addition of certain
       organic compounds and utilization of this effect for analytical
       purposes. Zhur.ob. khim. 34 no.12:115   P 144   (MIRA 18:1)

       1. L'vovskiy torgovo-ekonomicheskiy institut.

L 52796-65   EWT(1)   Pi-4   IJP(c)

ACCESSION NR: AP5016194

UR/0079/64/034/012/4118/4118

AUTHOR: Ponomarenko, A. A.; Popov, B. I.; Amelina, L. M.; Grishchenko, L. V.;
Shindel', R. Ye.

TITLE: Inhibition of the chemiluminescence of luminol by additions of certain organic
compounds and the utilization of this effect for analytical purposes

SOURCE: Zhurnal obshchey khimii, v. 34, no. 12, 1964, 4118

TOPIC TAGS: luminescence, alcohol, phenol, quantitative analysis, organic nitrogen
compound

Abstract: The inhibiting action of various organic compounds on the
chemiluminescent radical reaction of luminol in the system luminol –
copper ammine – hydrogen peroxide was investigated, using the method of
chemiluminescent quantitative analysis. The nature of the alcohols
tested greatly influenced their inhibiting ability. Polyhydric and
unsaturated monohydric alcohols suppressed the luminescence most actively;
monosaccharides and disaccharides proved to be strong inhibitors of chemi-
luminescence. Aromatic compounds — nitrophenols and dinitrophenols,

Card 1/2

L 52796-65

ACCESSION NR: AP5016194

aminophenols, amines, nitroanilines, naphthols -- intensively suppressed the chemiluminescence; compounds with two substituents exhibited activities in the series: ortho-isomer > para-isomer > meta-isomer. The high sensitivity of the chemiluminescent reaction of luminol to additions of inhibitors made it possible to develop a chemiluminescent method for determining small quantities of these compounds ($1 \cdot 10^{-3}$-$5 \cdot 10^{-6}$ M). The differences in inhibiting activity were used to develop methods of determining percent composition of mixtures for aliphatic compounds and for ortho-, meta-, and para-isomers of aromatic compounds.

ASSOCIATION: L'vovskiy torgovo-ekonomicheskiy institut (L'vov Trade-Economics Institute)

SUBMITTED: 28Jul64   ENCL: 00   SUB CODE: OC, GC

NO REF SOV: 003   OTHER: 001   JPRS

BAB
Card 2/2

S/064/60/000/01/09/024
B022/B008

AUTHORS: Popov, B. I., Shmelev, A. S.

TITLE: The Technical Parameters of a Two-stage Water-gas
                Converter With Optimum Dimensions of the Catalyst Briquets

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 1, pp. 45 - 47

TEXT: The data for calculating the optimum briquet dimensions published
in a previous paper (Ref. 1) are based on the kinetic equation of the
monomolecular reversible reaction. It was the aim of the paper under re-
view to clear some problems connected with the practical application of
these data, such as for example, the applicability under operating condi-
tions and the technical parameters of the water-gas converter when using
briquets of optimum dimensions. The values for K, εN_1, p, and D_1^* for an

iron-chromium catalyst with a porosity of approximately 50% are given
(Table 1) (K = rate constant on the surface εN_1 of the catalyst, D_1^* = co-
efficient of diffusion of CO). The conditions taken as a basis for the
calculations are given. The results are listed in Tables 2 and 3. The

Card 1/2

Popov, B. I.

The determination from the kinetic data of the reaction rate constant and of the effective diffusion coefficient inside a porous catalyst. K. N. Belonogov and B. I. Popov (Chem. Technol. Inst., Ivanovа). Zhur. Fiz. Khim. 29, 1187–92(1955).—A method is examd. for the detn. of the reaction rate const. and of the effective diffusion coeff. inside a porous catalyst in unimol. reversible reactions. The detn. is made from kinetic data obtained with the catalyst in the shape of a hollow cylindrical rod, with the reacting mixt. flowing through the inside channel. Kinetic data obtained with 3 catalyst tubes with different wall thickness are necessary for the calcn. of the reaction rate const. The detn. of the effective diffusion coeff. requires the knowledge of either the diffusion coeff. of one of the components or the ratio of the coeff. of the two components. W. M. S.

POPOV, B. K.

Influence of the quartz granules on the porcelain strength. Godishnik khim tekh 5 no.2:73-84 '58 (Publ. '60).

POPOV, B.L., inzh.

Electrocorrosion of underground metallic equipment. Tekhnika
Bulg 3 no.1:20-24 Ja '54.

Popov, B.L.;

VINOGRADOV, V.M.; RAZUMOVSKIY, V.V.; SEROVA, L.V.; TARZIMANOV, P.F.;
KOZHEVNIKOV, O.V.; PICHUGIN, B.M.; PROKOP'EV, I.V.; FEDOROV, B.A.;
KOSHELYAYEVSKIY, V.S.; IVANOVA, A.S.; SHIGIREV, V.G., YASHCHENKO,
G.I.; VORONKOVA, Ye.A.; ZAMYATINA, A.A.; SERGEYEV, N.A.; KUREPOV,
A.I.; POPOV, B.L.; FINOGENOV, V.P., NABOROV, V.B.; CHENCHIKOVSKIY,
S.F.; IVANOV, Ye.A.; AIKHIMOV, V.S., red.; VINOGRADOV, V.M., red.;
SMIRNOV, A.M., red.; KAKHOVSKAYA, O.G., red. izd-va; RUDCHENKO,
A.M., red. izd-va; LEKANOVA, I.S., tekhn. red.

[Foreign commerce of the U.S.S.R. with capitalist countries] Vnesh-
niaia torgovlia SSSR s kapitalisticheskimi stranami. Moskva, Vnesh-
torgizdat, 1957. 232 p.

(MIRA 11:7)

1. Moscow. Nauchno-issledovatel'skiy kon"yunkturnyy institut.
(Russia--Commerce)

POPOV, B.M.

Device for drilling holes. Mashinostroitel' no.5:27-28 My '59.
(MIRA 12:8)
(Drilling and boring machinery--Attachments)

POPOV, B.M.; VINOGRADOVA, L.I.; KONDRAT'YEV, A.S.

Injector for a cyclotron. Uskoriteli no.6:112-115 '64.

(MIRA 18:2)

L 36124-66   EWT(l)   IJP(c)   AT

ACC NR: AP6018803   SOURCE CODE: UR/0056/66/050/1252/1259

AUTHOR: Dmitriyev, I. S.; Nikolayev, V. S.; Teplova, Ya. A.;
Popov, B. M.; Vinogradova, L. I.

ORG: Institute of Nuclear Physics, Moscow State University (Institut
yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Experimental investigation of the effective cross sections
for destruction and formation of fast negative ions in atomic collisions

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1252-1259

TOPIC TAGS: capture cross section, negative ion, cyclotron, electron
loss, atomic structure

ABSTRACT: The effective cross sections of loss of one, two, or three
electrons in helium, nitrogen, or argon have been measured for negative
carbon, nitrogen, and oxygen ions produced as a result of a charge
exchange of positive ions accelerated in a 72-cm cyclotron to a velocity
of $v=2.6 \times 10^8$ cm/sec. The cross section of simultaneous loss of two

Card   1/2

L 36124-66

ACC NR: AP6018803

electrons by negative ions is ⌣50—70% of the cross section of loss
of a single electron.   Comparison of the results obtained with the
known cross sections of electron loss by other negative or positive
ions shows that the specificity of negative ions, expressed in the
weak coupling of the outer electron with the ion frame, does not
appreciably affect the interaction between the negative ions and the
given substance at a velocity $v=2.6 \times 10^8$ cm/sec.   Data on the forma-
tion cross sections of negative ions as a result of capture of two
electrons by positive ions or capture of an electron by neutral atoms
have been obtained for carbon and oxygen.   Equilibrium values have
been obtained for the fraction of negative carbon or oxygen ions in a
beam passing through a sufficiently thick layer of a substance (ϕ_{-1}).
Maximal values of ϕ_{-1} are obtained in media in which the formation
cross sections of negative ions at a given velocity, attain their
maxima.   The authors thank the cyclotron team headed by Yu. P. Divno-
gortsev and A. S. Kondrat'yev, as well as Yu. Druzhinin and V. Kalit
for technical support of the cyclotron and experimental equipment.
Orig. art. has: 7 figures and 1 table.   [Based on authors' abstract]
[NT]

SUB CODE: 20/   SUBM DATE: 29Dec65/   ORIG REF: 013/   OTH REF: 004

Card   2/2

L 23766-66   EWT(1)/EWT(m)   AT/JG/JD

ACC NR: AP6006799   SOURCE CODE: UR/0386/66/003/001/0035/0040

AUTHORS: Dmitriyev, I. S.; Vinogradova, L. I.; Nikolayev, V. S.;
Popov, B. M.

ORG: Scientific Research Institute of Nuclear Physics, Moscow State
University (Nauchno-issledovatel'skiy institut yadernoy fiziki
Moskovskogo gosudarstvennogo universiteta); Moscow Engineering
Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut)

TITLE: Autoionization of fast lithium-like nitrogen and oxygen ions
after passage through a solid

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma
v redaktsiyu. Prilozheniye, v. 3, no. 1, 1966, 35-40

TOPIC TAGS: nitrogen, oxygen, ionization cross section, electron
loss, charge exchange

ABSTRACT: The authors describe the results of experiments set up to
observe the increased probability of electron loss by fast ions pass-
ing through a medium. Beams of nitrogen and oxygen ions accelerated

Card   1/4

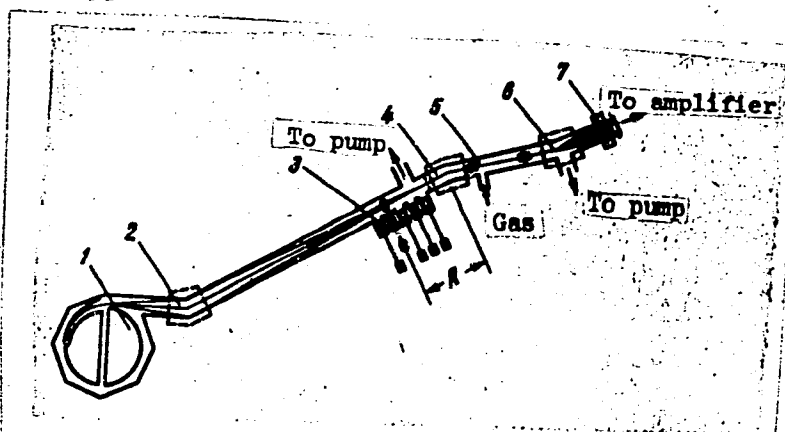L 23766-66
ACC NR: AP6006799

Fig. 1. Diagram of experimental setup: 1 - Cyclotron, 2 - focusing magnet, 3 - targets, 4 - mass monochromator, 5 - charge-exchange chamber, 6 - analyzer, 7 - detectors.

Card   2/4

L 23766-66
ACC NR: AP6006799 O

in a 72-cm cyclotron were focused at a distance of 8 meters from the
cyclotron (Fig. 1). The targets were celluloid films placed at dif-
ferent locations on the path of the beam near the focus. Ions with
different charges were produced after passage of. the beam through the
target. Ions of given charge were guided by means of a magnetic mass
monochromator into a charge exchange chamber where they were converted
into ions of different charge by collision with the gas atoms. A
magnetic analyzer described by the authors elsewhere (ZhETF v. 40,
989, 1961), was used to determine the charge composition of the ions
leaving the charge exchange chamber. The experiment consisted of
determining the relative number of nitrogen ions (with charges 2 --
5) and oxygen ions (charges 3 -- 5) whose charge increased by unity
in the charge exchange chamber, for different distances between the
target and the center of the mass-monochromator. For most ions the
relative change in the charge was independent of the distance, except
in the case of N^{+4} and O^{+5}, where the relative number of the N^{+5} and
O^{+6} ions increased appreciably with decreasing distance. It is shown
that this increase cannot be attributed to an increase in the electron
-loss cross sections but must be ascribed to autoionization of

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L 23766-66

ACC NR: AP6006799

N^{+4} and O^{+5}. Various experimental reasons for this interpretation are given. The authors thank S. Ye. Kupriyanov and G. A. Askar'yan for a discussion of the results. Orig. art. has: 2 figures and 1 formula.

SUB CODE: 20/   SUBM DATE: 16Nov65/   ORIG REF: 002/   OTH REF: 004

Card   4/4

NASTYUKHA, A.I.; POPOV, B.M.; VINOGRADOVA, L.I.

Ion injector for a cylotron and phasotron. Fiz. elek. no.1:
90-94 '62.   (MIRA 17:1)

POPOV, B.M.

Device for bending coils of tension springs. Mashinostroitel'
no.9:32 S '59.   (MIRA 13:2)
            (Springs (Mechanism))

POPOV, B.M.

Multitool milling attachment. Mashinostroitel' no.6:
19-20 Je '60.   (MIRA 13:8)
       (Milling machines—Attachments)

ROTOV, B.

"The Passage of the Torm_ _ _hrough the City o. _osto/, _aroslavl Oblast"
Meteorol. i _idrolo_iya, _o _, 27-3U, 1954

A tornado passed through Rostov _etween 17U2 _n_ 1712 _oscow t_me. The
width of the zone with various _am_ _e_ _mounted to 45U-85U meters in the
city. The speed of the _in_ re_che_ 6U-_U meters/sec. The tornado
formed in a warm sector i_ m_ist _nsta_le _ir _ver an _re_ of 2 -3U km,
in front of a diffuse _ld front. Charts _n_w th_ p_t_ of the torn_do
in Rostov and t__ _istribution of _e leveled an_ sma_n_ trees _lon_
its _ath. (RZ_Geol, No 1, 1955)

SO: Sum. 4_2, 12 May 55

POPOV, B.M.

Stationary pneumatic devices used for marking workpieces.
Mashinostroitel' no.12:36 D '57.   (MIRA 10:12)
(Marking devices)

POPOV, B.M.

Work of the Yaroslavl hydrometeorological bureau. Meteor. i gidrol.
no.1:50-52 '56.   (MIRA 9:6)
          (Yaroslavl--Meteorology)

POPOV, B.M.

Pneumatic presses for riveting ferodo bands. Mashinostroitel'
no.11:45-46 N '57.   (MIRA 10:10)
            (Power presses)   (Rivets)

AUTHOR: ,·Popov, B.M.   SOV-117-58-8-7/28

TITLE: The Milling of Slits in Castings of Complex Configuration
               (Frezerovaniye prorezey v otlivkakh slozhnoy konfiguratsii)

PERIODICAL: Mashinostroitel', 1958, Nr 8, pp 25-26 (USSR)

ABSTRACT: The collector of the truck ZIL-150 (Figure 1) is produced in
               the Motorcar Plant imeni Likhachev. This collector is fastened
               to the cylinder block by a flange. For the compensation of
               expansion during heating, 3-mm slits are cut in the collector
               flange. Figure 2 shows the device by means of which 6 slits
               are cut simultaneously. The device is driven by compressed
               air. It may be used in motorcar, tractor, aviation, and
               engine-building plants for processing castings of complex con-
               figuration. There are 4 diagrams.
ASSOCIATION: Avtozavod imeni Likhacheva (Motorcar Plant imeni Likhachev)

               1. Metals - Machining   2. Machine shop practice - USSR

Card 1/1

POPOV, B.M.

Milling slots in castings with complicated shapes. Mashinostroitel'
no. 8:25-26 Ag.'58.   (MIRA 11:8)
                    (Milling machines--Attachments)

SOV/117-58-12-17/36

AUTHOR: Popov, B.M.

TITLE: A Mechanized Attachment for Boring Holes in Piston Casings
             (Mekhanizirovannoye prisposobleniye dlya rastochki otverstiya
             v korpuse porshnya)

PERIODICAL: Mashinostroitel', 1958, Nr 12, pp 23 - 24   (USSR)

ABSTRACT: At the Plant imeni Likhachev, a new method was introduced
             for boring holes in piston casings with a mechanized attach-
             ment on a horizontal two-spindle diamond boring machine.
             Holes in two different parts are drilled simultaneously.
             Information on the design and operation of the attachment
             and of the hydraulic drive system are given. There are 3
             sets of diagrams.

Card 1/1

ANDRYUSHIN, O.S.; POPOV, B.M.

Feature of using an extracting injector electrode for stabilizing
and modulat.ng the ion current of a cyclotron on the internal
target. Fiz. elek. no.1:95-106 '62.   (MIRA 17:1)

AUTHOR: Popov, B.M.   117-2-15/29

TITLE: A Multi-Position Fixture, Which Automatically Clamps Parts
              (Mnogomestnoye prisposobleniye s avtomaticheskim zazhimom
              detaley)

PERIODICAL: Mashinostroitel', 1958, # 2, pp 31-32 (USSR)

ABSTRACT: This automatically-clamping multi-position fixture is used
              at the Automobile Plant imeni Liknachev for machining two
              opposite faces on " ЗИЛ-150"-automobile compressor head
              castings on revolving-table milling machines. The fixture's
              cast body has eight positions and eight pneumatic cylinders for
              separate clamps on each position. When the milling of one
              face of the part is finished the part will be turned and
              clamped in the next position for milling the opposite face
              without stopping the machine. In this way, work is con-
              tinuous. The fixture can be reset (with the use of corres-
              ponding auxiliary holding devices) for milling parts of various
              configurations. .
                  There are 2 drawings.

AVAILABLE: Library of Congress
Card 1/1

_PoPoV, B. M.

9.4-27

551.579:551.509:63

Popov, B. M. Rabota Iaroslavskogo Gidrometeorologicheskogo Biuro. [The work of the Iaroslav Hydrometeorological Bureau.] *Meteorologiia i Gidrologiia*, Leningrad, No. 1:50-52, Jan. 1956. DWB, DLC—Examples are cited of the services rendered by the Iaroslav Hydro-meteorological stations to agriculture, forestry, etc. These included forecasting the date of harvesting of maize in 1954 after late planting, the forecasting of snow melting, nocturnal cooling, forest fire conditions, etc. *Subject Headings:* 1. Hydrometeorological stations 2. Agrometeorological forecasting 3. U.S.S R.—I.L.D.

POPOV, B.M.

Multiseat attachment with automatic gripping of workpieces.
Mashinostroitel' no.2:31-32 F '58.   (MIRA 11:3)
                    (Milling machines--Attachments)

AUTHOR:-   Popov, B.M.

TITLE: Automatic Device for Branding Cylindrical Parts (Avtomaticheskoye prisposobleniye dlya kleymeniya tsilindricheskikh detaley)

PERIODICAL: Mashinostroitel', 1958, Nr 7, pp 13-15 (USSR)

ABSTRACT: The article gives a detailed design and operational description of a new device for branding cylindrical machine parts, like short shafts, bushings, rollers or rings, designed and introduced into practical use at the Avtomobil'nyy zaved imeni Likhacheva (Automobile Plant imeni Likhachev). The device was suggested by the designer Ye.A. Golikov. It is fully automatic. The parts to be branded roll on to the stamp by an inclined magazine, and a pneumatic supporting arrangement under the stamp automatically compensates for the difference in the diameter of parts so that parts of various diameters can be branded. Branded parts are also automatically ejected. There are 2 diagrams.

1. Materials—Marking   2. Machines—Characteristics

Card 1/1

ABELYANTSEV, V.I.; PIDOPLICHKO, I.G., doktor biologichnykh nauk, professor;
POPOV, B.M. [deceased]; BILANOVS'KIY, I.D., doktor biologichnykh
nauk, redaktor; KAS'YANENKO, V.G., akademik, redaktor; MARKEVICH,
O.P., redaktor; SENCHENKO, O.S., redaktor vidavnitstva; ROZENTSVEYG,
Ye.N., tekhnichniy redaktor

[Fauna of the Ukraine; in forty volumes] Fauna Ukrainy; v soroka
tomakh. Kyiv, Vyd-vo Akademii nauk URSR. Vol. [Mammals] Ssavtsi.
No.1. [General characteristics of mammals; insectivores, bats]
Zahal'na kharakterystyka ssavtsiv, komakhoidni, kazhany. 1956.
445 p.   (MIRA 10:3)
        (Mammals)   (Ukraine--Bats)   (Ukraine--Insectivora)

POPOV, B.M.

Mechanized attachment for boring holes in piston bodies.
Mashinostroitel' no.12:23-25 D '58.   (MIRA 11:12)
        (Drilling and boring machinery--Attachments)

25(2)   SOV/117-59-5-16/30

AUTHOR: Popov, B.M.

TITLE: A Hole-Drilling Attachment

PERIODICAL: Mashinostroitel', 1959, Nr 5, pp 27-28 (USSR)

ABSTRACT: To speed up the drilling of cotter holes in pins, the Moskov-
               skiy avtomobil'nyy zavod im. Likhacheva (Moscow Automobile
               Plant imeni Likhachev) uses a six-spindle drilling attach-
               ment (which can work also with more drills). The article
               gives detailed design and operational information, including
               a detailed drawing. The attachment may be automated by add-
               ing an automatic feeder. Only one operator will be needed
               to service several drilling machines. The device was de-
               signed by the author and A.Ya. Antipov-Yasin. There is 1
               diagram.

Card 1/1

POPOV, B.M.

Pneumatic jigs with self-centering grips. Mashinostroitel' no.8:
16-17 Ag '57.   (MLRA 10:8)
(Jigs and fixtures)

(MLRA 10:8)

POPOV, B.M.

Automatic device for marking cylindrical parts. Mashinostroitel'
no.7:13-15 Jl '58.   (MIRA 12:10)
        (Marking devices)

POPOV, B. N.

Horse Breeding

Preliminary totals of horse breeding stations for 1951 and the quotas for 1952.
Konevodstovo., No. 1, 1952.

<u>Monthly List of Russian Accessions</u>, Library of Congress, March 1952. UNCLASSIFIED.

POPOV, B. N. Cand Agr Sci -- (diss) "Methods of breeding the Orel trotting stock in stud farms." Mos, 1957. 16 pp 20 cm. (Mos Vet Acad, Min of Agr USSR), 140 copies. (KL, 22-57, 106).

-28-

POPOV, B.N., kand. sel'skokhozyaystvennykh nauk.

Artificial insemination of cows in Finland. Zhivotnovodstvo 20 no.6:
80-82 Je '58.   (MIRA 11:6)

1. Uchenyy sektetar' sektsii konevodstva Vsesoyuznoy akademii sel'-
skokhozyaystvennykh nauk im. V.I. Lenina.
                    (Finland—Artificial insemination)
                           (Cattle breeding)

POPOV, B.N.

Plenum of the Coordination Council of the Lenin All-Union
Academy of Agricultural Sciences. Zhivotnovodstvo 23 no.6:59
Je '61.   (MIRA 16:2)

(Cattle breeding)

POPO, D. N.

2633* (Russian.) Teeming of Steel With Arc-Heating of Deadhead. Razlivka stali s elektrodugovym obogrevom pribyli. B. N. Popov. Metallurg, 1956, no. 9, Sept. 1956, p. 19-22. Method and installation for arc heating. Economics and advantages for rolling.

SOV/137-58-8-16550

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 45 (USSR)

AUTHOR: Popov, B.N.

TITLE: The Heating of Hot Tops of Ingots. Electric-arc Heating (Opyt raboty po obogrevu pribyl'noy chasti slitka. Elektrodugovoy obogrev)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 106-109

ABSTRACT: Ref. RZhMet, 1956, Nr 11, abstract 11856

            1. Steel--Production   2. Steel--Heating   3. Electric arcs--Applications

Card 1/1

POPOV, B. N.; KALUGIN, V. F., DMITRIYEV, A. A.

"Development and Mastering of Methods for Rolling Sheets and Strips of Titanium and Its Alloys," Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and Its Alloys; Metallurgy and Physical Metallurgy), Moscow, Izd-vo AN SSSR, 1958. p 152.

Ministry of the Aircraft Industry of the USSR

POPOV, B. N.

AB-1

18(2)
PHASE II - ABSTRACTS

Akademiya nauk SSSR. Institut metallurgii

Titan i yego splavy; metallurgiya i metallovedeniye (Titanium and Its
    Alloys; Metallurgy and Physical Metallurgy) Moscow, Izd-vo AN
    SSSR, 1958. 209 p. 4,000 copies printed.

Resp. Ed.: N.V. Ageyev, Corresponding Member, USSR Academy of Sciences;
    Ed. of Publishing House: V.S. Rzhesnikov; Tech. Ed.: A.A. Kiseleva.

INTRODUCTION: This book, of which a Phase I Exploitation (SOV/1200)
    has been prepared, is a collection of scientific papers devoted to
    the study of titanium and its alloys from three main points of view:
    physical metallurgy, forming, and welding. Special problems in-
    vestigated include structural changes occurring during welding, de-
    termination of the content of harmful gases, development of indus-
    trial methods of rolling, and oxidation at various temperatures.

PART I.   PHYSICAL METALLURGY

Card 1/83

Titanium and Its Alloys (Cont.)   AB-1

(80 percent NaOH, 20 percent NaNo$_3$), washing, pickling in acid solution, and final washing. To produce strip, hot-rolled sheet 2.2 mm, in thickness is cut into strips 200 mm wide and annealed at 700° for ten minutes. After annealing, the strips are butt-welded together using an argon-shielded arc to form a coil. The strip is then cold-rolled in 10 passes on a four-high mill, with tension in one direction, to a final thickness of 0.6 mm with intermediate annealing at thicknesses of 1.55 mm, and 0.8 mm. There are 6 figures and 5 tables, no references.

Sokolikov, K.I., V.N. Moiseyev (Ministry of the Aircraft Industry of the USSR) Hot Rolling of Commercial Titanium and Several of Its Alloys
                                                              162
Results are presented of an investigation to determine a satisfactory procedure for the hot rolling of VT-1D commercial titanium and two of its alloys (VT-2D and VT-5D). Directions are given for the production and forging of ingots and the heat treatment of forged blanks for rolling. The authors summarize the results of the investigation as follows: (1) A determination was made of the basic mechanical and manufacturing properties of VT-1D commercial titanium and VT-2D and VT-5D titanium
Card 36/43

KALUGIN, V.F.; POPOV, B.N.; DMITRIYEV, A.A.

Developing and mastering the sheet and strip rolling procedure for titanium and its alloys. Titan i ege splavy no. 1:152-161 '58.
(MIRA 14:5)

1. Ministerstvo aviatsionnoy promyshlennosti SSSR.
(Titanium)   (Rolling (Metalwork))

POPOV, B.N.

Kalugin, V.F., V.K. Barziy, S.G. Glazunov, T.S. Kuzina, and B.N. Popov (State Committee on Aircraft Engineering, Council of Ministers of the USSR). Production of Large-Sized Cold-Rolled Sheet From Vt-1D Alloy, p. 133. Titan i yego splavy. vyp. II: Metallurgiya titana (Titanium and Its Alloys. No. 2: Metallurgy of Titanium) Moscow, Izd-vo AN SSSR, 1959. 179 p.

This collection of papers deals with sources of titanium; production of titanium dioxide, metallic titanium, and titanium sheet; slag composition; determination of titanium content in slags; and other related matters. The sources of titanium discussed are the complex sillimanite ores of the Kyakhtinskoye Deposit (Buryatskaya ASSR) and certain aluminum ores of Eastern Siberia. One paper explains the advantages of using ilmenite titanium slags for the production of titanium dioxide by the sulfuric acid method. Production of metallic titanium by thermal reduction processes (hydrogen, magnesium, and carbon reduction) is the subject of several papers, while other papers are concerned with the electrolytic production of titanium. Other subjects dealt with are interaction of titanium with water vapor and with hydrogen and the determination of titanium in slags.

KALUGIN, V.F.; BARZIY, V.K.; GLAZUNOV, S.G.; KUZINA, T.S.; POPOV, B.N.

Production of large-sized cold-rolled sheet from VT-1D alloys.
Titan i ego splavy no.2:133-144 '59.   (MIRA 13:6)

1. Gosudarstvennyy komitet Soveta Ministrov SSSR po aviatsionnoy
tekhnike.
         (Titanium alloys) (Rolling (Metalwork))

Popov, B.N.

18.5100, 18.7100

77462
SOV/133-60-1-21/30

AUTHORS: Petrenko, A. O., Kurtova, L. A., Chub, O. P., Ioffe, M. M., Popov, B.N., Sterlin, R. L. (Engineers)

TITLE: Physical Metallurgy and Heat Treatment. The Effect of Intermediate Annealing in Hydrogen on Specific Losses of Cold-Rolled Transformer Steel

PERIODICAL: Stal', 1960, Nr 1, pp 71-73 (USSR)

ABSTRACT: This is a brief report concerning the experimental production that proposed to establish the possibility of decreasing carbon content in the transformer steel. The intermediate annealing in bell furnaces (with protective atmosphere of DKh-gas—a mixture of coke and blast furnace gas) was replaced by annealing in protective atmosphere with the protective tunnel-type furnace and bell furnace. M. I. Veklich, V. Ye. atmosphere of dry hydrogen. G. N. Novikov partici- Spiridonov, G. G. Kuznetsov, and steel had follow- pated in the work. The investigated steel had follow- ing chemical composition: C, 0.02-0.04; Mn, 0.08-0.14; Si, 2.90-3.26; P, 0.004-0.007; S, 0.005; Cu, traces-

Card 1/6

0.08; Al, 0.03-0.15. The results of tests of steel under various conditions are given in Tables 1, 2, and 3. The authors arrived at the following conclusions. (1) The application of double decarburization annealing of the strip 0.85-0.70 and 0.50-0.35 mm thick in a tunnel-type furnace in hydrogen atmosphere facilitates the pro- duction of steel with lower carbon content and smaller specific losses than in the case of intermediate anneal- ing of steel in bell furnaces in DKh-gas atmosphere. (2) The cold-rolled transformer steel of investigated melts, which passed the double intermediate annealing in the tunnel-type furnaces in the atmosphere of dry hydrogen (and after high-temperature annealing of sheets in the vacuum and additional annealing for elimination of work-hardening), has magnetic induction B_{25} from 18,700 to 19,300 gauss, and specific losses for sheets 0.50 mm thick P_{10} from 0.80 to 0.94 and P_{15} from 1.72 to 1.86 watt/kg, and for sheets 0.35 mm thick P_{10} from

Card 2/6

Table 1. Electric and magnetic properties of cold-rolled transformer steel, which passed through the intermediate annealing in bell furnace in DKh-gas atmosphere (A) and in tunnel furnace in hydrogen atmosphere (B).

Card 3/6

1B.5100.1B 7100

77462
SOV/133-60-1-23/30

Physical Metallurgy and Heat Treatment.
The Effect of Intermediate Annealing in Hydrogen on Specific Losses of Cold-Rolled Transformer Steel

0.57 to 0.66 and P_{15} from 1.22 to 1.41 watt/kg.   (3)

For manufacturing of higher grades of transformer steel according to the All-Union State Standard 802-58 (GOST 802-58) it is advisable to build at the metallurgical plants the tunnel-type furnaces, which assure the most intensive decarburization (heating in dry hydrogen, holding in humid, reaching the strip (counter to its movement) on both sides by hydrogen). The intermediate annealing in the tunnel-type furnace, with tension of the strip, results also in the heated (to 750-800° C) strip, diminishing of its waviness and warping. There is 1 figure; 3 tables; and 2 Soviet references.

ASSOCIATION: Central Scientific Research Institute of Ferrous Metallurgy and the "Zaporozhstal'" and "Electrostal'" Plants (TsNIIChM, i zavody "Zaporozhstal'" i "Elektrostal'")

Table 3. Electric and magnetic properties of cold-rolled transformer steel, which passed through the intermediate and final high-temperature annealing in coils in bell furnace in the atmosphere of dry hydrogen.

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Table 2. Electric and magnetic properties of annealed (in tunnel furnace in hydrogen atmosphere) cold-rolled transformer steel after addition annealing.

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$Popov, B-N$.

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AUTHORS: Mel'nikov, A.I., Morozov, A.V., Popov, B.N. and
Maklakov, A.A.

TITLE: Pressed Cathode Based on Barium-calcium Tungstate
(Pressovannyy katod na osnove bariy-kal'tsiyevogo
vol'framata)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol.III, No.3,
pp. 322 - 328 (USSR)

ABSTRACT: The active material which is employed in the preparation
of pressed film-type cathode should have the following charac-
teristics: capacity to produce the necessary quantity of the
activator during its interaction with the reducing agent; good
stability under normal atmospheric conditions; a low gas-
absorption capacity and a low evaporation rate. The above
requirements are, to a large extent, fulfilled by barium
tungstate, Ba_3WO_6. This substance can be prepared from pure
barium carbonate and tungsten oxide, the chemical reaction
being in the form:

$$3BaCO_3 + WO_3 = Ba_3WO_6 + 3CO_2 \qquad (1).$$
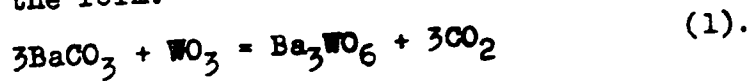
Card1/3   Properties of the cathode can be further improved by using

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barium-calcium tungstate instead of Ba_3WO_6. This can be obtained by adding into the mixture of barium carbonate and tungsten oxide an appropriate quantity of calcium carbonate. The reactions are then in the form represented by Eqs. (2), (3) and (4). The resulting material was used in two types of pressed, experimental cathodes (see Figs 2a and 6). The cathodes were in the form of molybdenum cylinders; the active mixture consisted of 90% tungsten, 9.5% tungstate and 0.5% aluminium (by weight). The cathodes were mounted in special diodes (see Fig.3) which were fitted with special cooling copper anodes. The distance between the cathodes and the anodes was 0.4 to 0.6 mm. The experimental results are shown in Figs. 4, 5, 6 and 7. Fig. 4 shows voltage current characteristics of the diodes taken at various cathode temperatures; the two curves of Fig. 4a were taken under pulse conditions, while the curves of Fig. 46 were measured under static conditions. Fig. 5 shows the static emission current of a tube as a function of time; Curve 1 refers to the cathode made of barium tungstate, while Curve 2 illustrates the emission of a barium-calcium tungstate cathode. Fig. 6 illustrates the influence of hydrogen-poisoning on barium-calcium tungstate cathodes (full

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SOV/109-3-8-5/18

AUTHORS: Kapitsa, N.L., Mel'nikov, A.I., Morozov, A.V., Popov, B.I., Sobolevskaya, R.B., Tsarev, B.M. and Shul'man, A.R.

TITLE: Thermionic Properties of Barium Tungstate (Termoelektronnyye svoystva vol'framata bariya)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 8, pp 1010 - 1015 (USSR)

ABSTRACT: The work described was concerned with the investigation of the thermionic emission of barium tungstate and of Ba_2CaWO_6. The investigation was undertaken since it was thought that the resulting data might be useful in explaining the operation of the pressed cathodes and other cathodes which contain barium tungstate. The investigations were carried out on directly heated cathodes which were based on tungsten and molybdenum cores. The measurements were made on special experimental diodes, fitted with protective anodes. The cathode temperature was determined by measuring the change in the resistance of the core. All the measurements were done under static conditions. The coating of Ba_3WO_6 and Ba_2CaWO_6 were effected by two methods:: a) a filament of the

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core metal was passed through a drop of the coating substance mixed with a binder; b) cataphoretic coating was used. In the first case, coarse-grain coatings were obtained, while the second method permitted obtaining the particles having a diameter of about $1 - 5 \mu$. The cathodes were de-gassed by heating up to $1\ 250\ °K$ for the duration of $1 - 2$ hours without taking any current.

This processing resulted also in a partial activation of the cathodes. Further activation of the cathodes (by heating and taking the current) was then carried out. During the preliminary activation, it was found that the work function (as measured from the Richardson curves) was of the order of $2.2\ eV$, while after the final activation, the work function dropped to $1.2 - 0.5\ eV$. The characteristics of a barium-tungstate cathode after final activation are shown in Figure 2. The emission current and the work function of the same cathode for various activating temperatures are given in Table 1. On the other hand, it was found that the cathodes of Ba_2CaWO_6 had very low emission densities. These were of the order

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$\mu A/cm^2$, as can be seen from Table 2. By comparing the results of Table 2 with those for Ba_3WO_6 (given in Table 3), it is seen that the emission of the latter is about 100 times higher than that of the former. It was found that the curve:

$$lg\frac{I}{T^2} = f\left(\frac{1}{T}\right)$$

for the cathode of barium tungstate consists of three regions (Figure 4). At low temperatures (below 900 °K), the curve has the highest slope; the work function in this region is equal to 1.3 eV. In the regions of temperatures from 900 - 1 250 °K, the work function has a value of about 0.6 - 0.7 eV. Finally, at temperatures above 1 250 °K, the current decreases as a function of temperature and the slope of the curve cannot be regarded as representing the work function.

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Thermionic Properties of Barium Tungstate   SOV/109-3-8-5/18

There are 5 figures, 5 tables and 4 references, 3 of which are Soviet and 1 English.

SUBMITTED: January 29, 1958

Card 4/4   1. Barium tungstates--Properties   2. Thermionic emission--Analysis
             3. Cathodes--Performance

AUTHORS: Popov, B.N. and Gugnin, A.A.   SOV/109-3-8-7/18

TITLE: Investigation of the Influence of Oxygen and Carbon Oxides on the Emission of Impregnated, Metal-porous Cathodes (Issledovaniye vliyaniya kisloroda i okislov ugleroda na emissiyu impregnirovannogo i metalloporistogo katodov)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 8, pp 1024 - 1030 (USSR)

ABSTRACT: The investigations described were carried out by means of the equipment similar to that ddescribed by Herman and Wagener (Refs 1 and 3). The equipment is illustrated diagrammatically in Figure 1. The basic element of this arrangement was a metal valve which permitted the letting-in of the investigated gas into the experimental diode. By changing the inlet velocity of the gas, equilibrium pressures ranging from 2.10^{-7} down to

1×10^{-3} mmHg could be obtained. The experimental tube was in the form of a diode fitted with a water-cooled, copper anode and with two aperatures for letting in and out the investigated gas. The pressure of the gas was

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Emission of Impregnated, Metal-porous Cathodes

was measured by a special gauge. The carbon dioxide
employed was of 99.9% purity, carbon monoxide had a purity
of 96.5%, while the oxygen was produced by thermal
decomposition of $KMnO_4$. The saturation current of the
cathode was measured by means of rectangular pulses having
a duration of 2μsec and a repetition rate of 50-200 pps.
The degree of poisoning of a cathode was represented by
the ratio of the saturation current taken in the presence
of a gas (at a particular pressure) to the saturation
current in the absence of gas. The filler for the metal-
porous cathode was the double carbonate, while the filler
for the impregnated cathode was made of the following
components: 90% tungsten powder, 9.5% $CaO.WO_3$ and 0.5% Al.
The emission as a function of time for the impregnated
cathode at a temperature of 1 225 $^{\circ}$C is shown in
Figure 2; the three curves correspond to various
pressures (as shown in the figure); the falling portions
of the curves represent the decay in the emission after
letting in the gas, while the rising portions correspond
to the evacuation of the tube. Similar curves for various

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Emission of Impregnated, Metal-porous Cathodes

temperatures (for the same cathode) are given in Figure 5.
Figure 4 represents the decay in the emission as a function
of oxygen pressure for various values of the cathode
temperature; 'dashed' curves refer to metal-porous
cathodes, while the full curves relate to the impregnated
cathodes. If the curves of Figure 4 are plotted in
logarithmic co-ordinates, they are represented by the
straight lines of Figure 5. The time dependence of the
curves of
emission current of an impregnated cathode is shown in the
Figure 6; these were taken at the equilibrium pressure
of the oxygen and at various cathode temperatures. The
poisoning of the impregnated cathodes by carbon monoxide
is illustrated by the curves of Figures 7 and 8. The
results of the measurements on the poisoning effect of
the carbon dioxide are represented by the middle curve of
Figure 9; this was taken for an impregnated cathode at
a temperature of 1 080 °C. The remaining two curves of
Figure 9 represent the poisoning effect of O_2 and CO for
the same cathode and at the same temperature. It is shown

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that the poisoning effect of oxygen can be represented by

$$I_{\theta_2} = I_{\theta_1} \exp\left[C(p_1 - p_2)\right]$$

where I_{θ_2} represents the emission of a cathode having a coverage ratio of θ_2, I_{θ_1} is the emission of a cathode having a coverage ratio of θ_1, p_1 represents the initial equilibrium pressure of oxygen and p_2 is the equilibrium pressure of oxygen after its admission into the experimental tube; C is a constant. From the investigations, it is concluded that oxygen has the highest poisoning effect on both the metal-porous and impregnated cathodes (Figure 9).

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Emission of Impregnated, Metal-porous Cathodes

There are 9 figures and 14 references, 7 of which are
English, 6 Soviet and 1 German.

SUBMITTED: January 29, 1958

1. Cathodes (Electron tube)--Performance   2. Thermionic emission
3. Oxygen--Electrical effects   4. Carbon dioxide--Electrical

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SOV/109-3-8-16/18

AUTHORS: Popov, B.N. and Druzhinin, A.V.

TITLE: High-vacuum, Emission Electron Microscope (Vysokovakuumnyy emissionnyy elektronnyy mikroskop)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 8, pp 1084 - 1091 (USSR)

ABSTRACT: One of the important problems in cathode electronics is the investigation of the distribution of the emission over the surface of a cathode. This may be done by means of an electron microscope provided the instrument is designed in such a way that its vacuum is better than 5×10^{-7} mmHg. A special instrument fulfilling this requirement was designed. The device is shown in the photograph of Figure 1. It consists of the following units: 1) the main cylinder of the microscope; 2) a bellows-type joint; 3) vacuum system; 4) a window for visual observation; 5) a window for the photo-camera; 6) a pressure gauge (type LM-2); 7) an electromagnet; 8) a glass bulb; 9) a cathode-shifting mechanism and 10) the input stage of an electrometric amplifier. The main part of the microscope is shown in Figure 2; this comprises the following units: a) the

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