

DROZDOV, <sup>A</sup>Aleksiy Mykhaylovich; PETRENKO, V.V.

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(MIRA 15:10)

(Odessa Province--Geography)

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DROZDOV, A. P.

IA 1/49747

Mar/Apr 48

USSR/Engineering  
Turbines, Steam  
Testing and Standardization

"The Problem of the Standardization of Steam Turbines,"  
A. P. Drozdov, Cand Tech Sci, Cen Sti Res Turboboiler  
Inst imeni I. I. Polzunov, 3 1/2 pp

"Kotloturbostroy" No 2

Discusses important factors taken into consideration  
by Ministry of Heavy Machine Construction USSR in  
attempts to establish standards for stationary steam  
turbines.

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D R O Z D O Z , A . P .

114-8-2/16

AUTHOR: Drozdov, A.P., Candidate of Technical Sciences.

TITLE: An experimental investigation of the temperature fields in the main assemblies of the first prototype of the turbine "CBK-150-1". (Eksperimental'noye issledovaniye temperaturnykh poley v osnovnykh uzlakh golovnogo obratzsa turbiny SVK-150-1.)

PERIODICAL: "Energomashinostroyeniye" (Power Machinery Construction) 1957, Vol.3, No.8, pp. 5-11 (U.S.S.R.)

ABSTRACT: The rational design and operation of large turbines for very high steam parameters is hindered by lack of knowledge of temperature fields in various parts during heating up, starting and loading the turbine and also during steady operating conditions. It is therefore necessary to investigate these questions experimentally and the results of one such investigation are given in the present article. The work was carried out by members of the staff of the steam turbine department of the Central Boiler Turbine Institute (TsKTI), A.P. Drozdov, E.I. Utsal', E.N. Sokolov, A.S. Volfson and others under the leadership of the author. The task consisted in determining the temperature fields in the main parts of the most important assemblies of the first prototype of the turbine type "CBK-150-1". On the basis of the experimental data which has been obtained,

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it is possible to determine the magnitudes of the thermal stresses in these parts, their deformations and also the displacement of one member relative to another. This helps to establish the best conditions for heating up, starting and loading a turbine of this type.

The article describes only the most interesting of the large number of investigations that were made and in particular those on the steam-strainer, the automatic shutter, the body of the right-hand lateral regulating valve and the outside frame of the high-pressure cylinder. The locations of the thermocouples in these parts is shown in Figs. 1, 2, 3 and 4. A special apparatus was devised by V.D.Gogin, E.I. Utsal' and B.I. Lomashev to weld the thermo-couples in place.

The test results are then given, Temperature distribution curves on the radius of the flanges of the bodies of the automatic shutter and regulating valve during heating, starting and loading of the turbine determined during its second period of operation are given in Figs. 5 and 6. As was to be expected these curves show that sharp changes in steam temperature

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correspond to large temperature drops in the flanges and, therefore, to large thermal stresses in them during periods of starting and loading the turbine. The results of calculations of the thermal stresses in the steam strainer, the automatic shutter and the regulating valve, that arise at the instants of greatest temperature drop are tabulated. The table also gives results of calculations of thermal stresses in the various parts during steady operation of the turbine on a load of 150 MW. It will be seen from the table that during the starting period the thermal compressive stresses on the inner surface of the flange of the body of the regulating valve greatly exceed the yield point. However, it is shown that during constant operation of the turbine at rated load the thermal stresses in this part or in the others that were examined are not dangerous.

The very high thermal stresses in the parts investigated, even under steady thermal conditions, occur because the austenitic steels used have a high coefficient of expansion and low thermal conductivity. Turbines with important parts made of austenitic steel therefore require much longer time to heat up,

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start and load than turbines in which no austenitic steel parts are used.

The test results for the outer frame of the high pressure cylinder are then considered separately. There are two important aspects in evaluating the operation of this component, namely, the thermal displacement of the rotor relative to the frame and thermal bending of the cylinder during heating and starting. These points are considered briefly.

The starting time of the turbine can be much reduced by heating it up at the same time as the main steam piping is heated whilst smoothly raising the steam conditions; that is it is necessary and advisable to heat and start the turbine whilst steam is being raised in the boiler. This procedure will limit thermal stresses.

Temperature deformation of the cylinder is then considered. When operating conditions are not steady and particularly when the turbine is being heated up, the temperatures of the upper and lower halves of the cylinder may be very different. It is necessary to know the greatest permissible temperature difference

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of this kind. It is very difficult to give an accurate analytical solution of the problem. Moreover, the deformations encountered are small and very difficult to measure. However, the article presents a simplified analytical solution of the problem which represents the cylinder as a beam that is bent under the influence of non-uniform heating. A sector of such a beam is represented in Fig. 7 which gives the notations used in the brief analytical treatment. From the approximate relationships that are obtained an important practical conclusion may be drawn that the limiting temperature drop between the upper and lower parts of the cylinder may be the greater the greater the diameter of the cylinder and the greater the radial gaps in the shaft glands but varies inversely as the square of the length of the cylinder. The expression which is derived is used to make an approximate determination of the permissible temperature drop between the upper and lower parts of the frame. Assuming that the temperature change from the upper part of the cylinder to the lower is linear, the total permissible drop is about 32 C. The manufacturer limited this difference to 25 C which seems reasonable. If, during starting, the temperature

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difference exceeds 25 C rotation of the rotor should not be commenced. Experimental curves of turbine heating recorded during two starts and relating to the second period of experimental operation are given in Fig. 8. It will be seen from the curves that the temperature difference between the upper and lower parts of the frame reached about 75 C during the heating up period whilst the rotor was still. This occurred at the start of heating when the condensate was not drained from the frame.

The author then considers the possibility of operating turbine parts during the heating period with thermal stresses above the yield point. Since the stresses are greatly relieved by small plastic deformations, occasional application of such stress is not dangerous but there is a risk of the occurrence of secondary plastic deformations during unloading. Very little work has been done on the experimental study of this problem but work by A.E. Danyushevskiy in the Central Boiler and Turbine Institute has shown that the ability of the material to resist alternating plastic deformation decreases sharply as the strain is increased, and it follows from his work that if

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"CBK-150-1". (Cont.)

during heating of a part the apparent elastic stress does not  
exceed twice the yield point in tension, secondary plastic def-  
ormations will not occur when the part is unloaded.

Tests carried out by P.S. Kuratov, and V.I. Rosenblum on a  
disc of austenitic steel under given conditions showed that the  
disc cracked after only 330 cycles. In the turbine which is the  
subject of this article the greatest thermal stresses were  
observed in the flange of the body of the regulating valve and  
the considerations given in the article show that they are not  
dangerous.

The preliminary results of the present work have been used  
by the turbine manufacturers to correct the instructions for  
starting up the first turbine. It is of course to be expected  
that this instruction will be further modified in the light of  
experience. The results of the investigations should be useful  
to turbine designers concerned with super high steam parameters  
and also to the staff of power stations.

There are 8 figures.  
AVAILABLE: Library of Congress

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SOURCE CODE: UR/0096/66/000/011/0030/0034

AUTHOR: Drozdov, A. P. (Candidate of technical sciences); Rabinovich, E. K. (Engineer)

ORG: Central Boiler and Turbine Institute (Tsentral'nyy kotloturbinnyy institut)

TITLE: Investigation of operating temperatures of parts of the steam supply members of the leading model of K-300-240 IMZ turbine under natural conditions

SOURCE: Teploenergetika, no. 11, 1966, 30-34

TOPIC TAGS: turbine, steam turbine, thermal stress, temperature measurement

ABSTRACT: The authors measured the temperature distribution as a function of time in various parts of the turbine during a typical starting operation, with the purpose of evaluating the resulting thermal stresses. Thermocouples were placed in various internal and external parts of the turbine and the temperature recorded. The meridional and equatorial thermal stresses in the spherical part of the body wall were calculated on the basis of the theory of S. P. Timoshenko (Theory of Elasticity, ONTI, 1937). Because of the complicated geometry, simplifying assumptions were made. The calculated stresses were as high as 4150 kg/cm<sup>2</sup>, whereas the yield point for steel is 4300 kg/cm<sup>2</sup>. For other parts, the stresses were also close to the critical point, so that frequent careful inspection of the parts is recommended in the search for possible cracks which would indicate residual deformations. Orig. art. has: 4 figures and 5 equations.

SUB CODE: 10/ SUBM DATE: none/ ORIG REF: 005

DROZDOV, A.P. (Moskva)

By the hands of a talented specialist. Priroda 54 no.7:82-84 J1 '65.  
(MIRA 18:7)

*DROZDOV A. V.*

PHASE I BOOK EXPLOITATION

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DrozdoV, A.V.

Tekhnologiya i metodika kapital'nogo remonta koordinatno-rastochnogo stanka "SIP" modeli MP-5B; iz opyta zavoda (Technology and Methods of General Overhauling of the "SIP" Jig Boring Machine, Model MP-5B; the Practice of a Plant) Leningrad, 1955. 23 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Informatsionno-tekhnicheskij listok, no. 12 /680/)

Sponsoring Agencies: Leningradskiy dom nauchno-tekhnicheskoy propagandy, and Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.

No contributors mentioned.

PURPOSE: This pamphlet is intended for personnel performing both maintenance and general overhaul of the SIP jig boring machine.

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COVERAGE: The pamphlet outlines step-by-step procedures to be followed in disassembling, washing, scouring, repair, and re-assembling the SIP jig boring machine. There are no references. No personalities are mentioned.

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| g. Method of scouring the cross rail block and spindle heads and control of their position in relation to the surface of the table | 10  |
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Control certification of the machine tool for precision  
after a three-month period of uninterrupted operation

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Appendix. A chart of precision standards for the overhaul  
of the machine tool

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VK/ad  
8-13-58

*Doc. 200, 10/11/57, V. 10/11/57*

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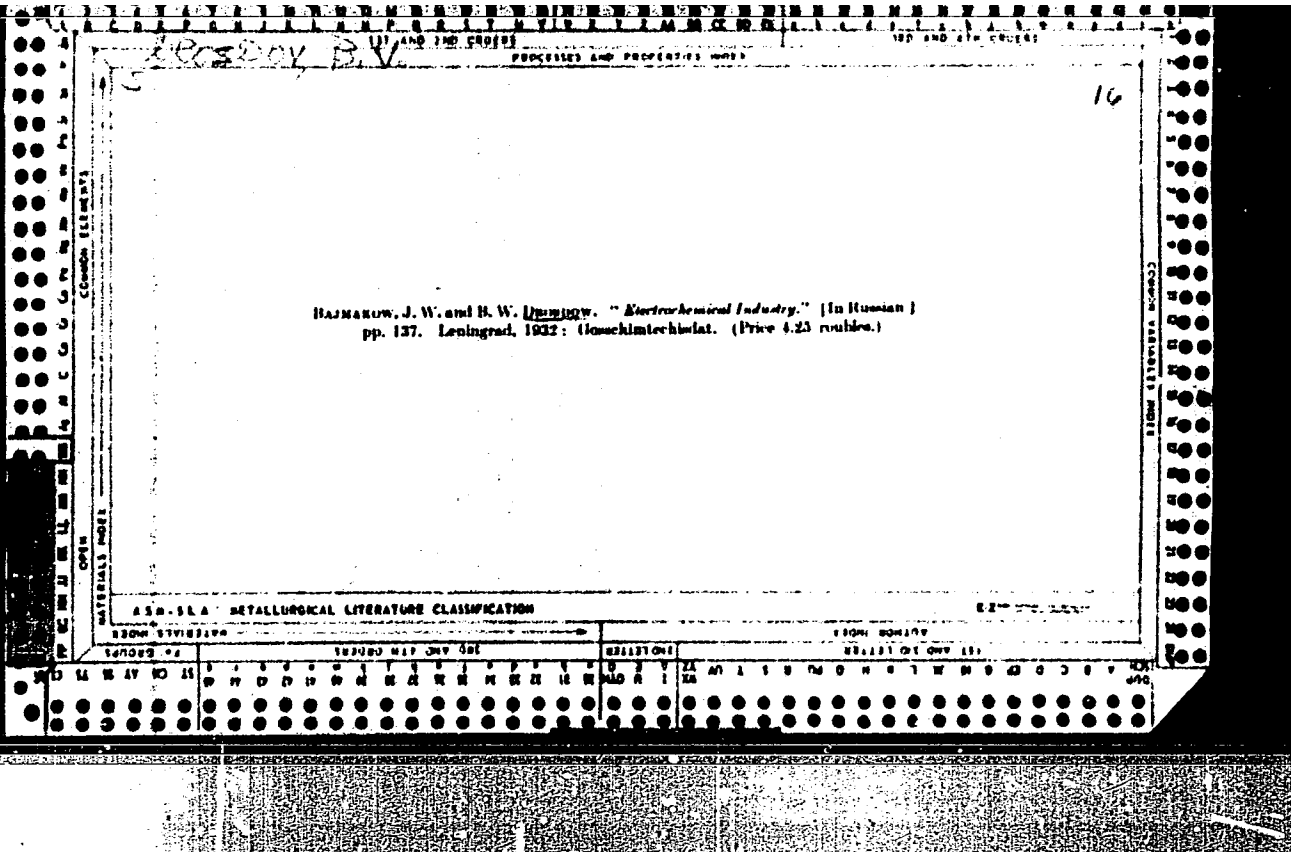
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ASAC SLA METALLURGICAL LITERATURE CLASSIFICATION

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CATEGOR: 04

SERIES: 443 030 003

CLASSIFICATION: 0 2 7 1

FILED: 04 04 151

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Kinetics of the processes of reacting, leaching, washing, and cementation. A. I. Kholmyan and B. V. Zhoslov. *Zhur. Obshchei Khim. (J. Gen. Chem.)* 19, 1833-38 (1947).  
 --A general kinetic treatment applicable to those diverse classes of phenomena is based on the common feature of the reaction taking place at the interface between a solid particle and the gaseous or liquid phase, with the reactants and products having to diffuse across a diffusion layer of growing thickness; depending on whether that layer is highly permeable or impermeable, the rate will be mainly detd. by that of the chem. reaction or of the diffusion,  $\alpha$ , in the case of medium porosity, by both. In that general case, the rate expression is  $dx/dt = kDSB_0(a-x)/(krs + DSB_0)$ , where  $k$  = rate const. of the 1st-order chem. reaction,  $D$  = mean diffusion coeff. across the reaction rind,  $S$  = interface area,  $v$  = vol. of reagent,  $x$  = concn. of reagent reacted up to time  $t$ ,  $\mu$  = coeff. of transition from surface to vol. concn., and  $B = xv/SA$  relates the thickness  $\lambda$  of the rind to the progress of the reaction,  $x$ . With the initial conditions  $x = 0$  at  $t = 0$ , integration gives  $(1/\beta) \ln[a/(a-x)] - (\alpha t/\beta) = M$ , where  $\beta = k\lambda/(krs + DSB_0)$ , and  $M = kDSB_0/(krs + DSB_0)$ . In the extreme case of negligible inhibition of the diffusion, i.e. when the rate is detd. by that of the chem. reaction,  $D \rightarrow \infty$ , hence  $\beta \rightarrow 0$ ,  $D SB_0 \gg krs$ ,  $M \rightarrow k$ , and the equation goes over into the ordinary 1st-order rate equation. In the other extreme case of very slow diffusion as compared with the rate of the reaction,  $D SB_0 \ll krs$ , hence  $\beta \rightarrow 1/\alpha$ , and  $M = DSB_0/ra$ . The inhibition coeff.  $\beta$  tends to  $1/\alpha$  as diffusion is slowed;  $\beta = 1/\alpha$  would mean  $D = 0$ , i.e. the reaction comes to a halt at the very surface of the solid particles. In terms of the amt. of solid reacted, with  $x'$  denoting the degree of extn. in fractions of the initial amt. ( $a = 1$ ), the general equation becomes  $(1/\beta) \ln[1/(1-x')] - (\alpha x'/\beta) = M$ , where  $\beta' = \beta a$ , the coeff.  $\alpha$  being the no. of moles of the solid reacting with 1 mole of the reagent. The validity of the theory is tested

by the criterion of linearity between  $\ln[1/(1-x')]$  and  $x'/\beta$ . Leaching of alunite is an example of a process with no resistance to diffusion and hence detd. solely by the chem. reaction, with the 1st-order  $k \sim 0.17$  hr.<sup>-1</sup>, holding up to 90% dehydration. Examples of processes in which chem. reaction and diffusion rate play commensurable roles, and for which the above linearity is shown to hold, are the reduction of Ni aluminosilicate by CO, data of Bogatski (C.I. 41, 734f), with  $\beta' = 1.2, 1.4$ , and 1.7, at 600, 700, and 800°, resp., the rise of  $\beta'$  with the temp. expressing the slower increase of the diffusion as compared with the chem. reaction, chlorination of W ores by liquid S<sub>2</sub>Cl<sub>2</sub>, data of Fridman and Bogoraz (C.I. 41, 442g), with  $\beta' = 1.1$  at 100°. Rate of Pb and Zn from the mixed sulfide ores by gaseous chlorination at 300° appears to be an instance of a purely chem. process, with the 1st-order  $k = 0.020$  and 0.013 min.<sup>-1</sup> for PbCl<sub>2</sub> and ZnCl<sub>2</sub>, resp. The above linearity was further confirmed in numerous instances of oxidizing, sulfating, and reducing reactions. That leaching processes are not necessarily simple 1st-order processes, but are detd. by both the chem. reaction rate and diffusion across the interface layer follows from the frequent inconsistency of the const. calcd. by the simple Nernst diffusion equation. This applies particularly to leaching of high-d. minerals. An example is the leaching of natural covellite (CuS) by an acid soln. of Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, for which the above linear relation is found to hold, except at the initial stage where the rind is not yet formed; the effect of increased temp., from 35 to 80°, is due solely to increased rate of the diffusion coeff. In the case of chalcocite (Cu<sub>2</sub>S), also leached with acid Fe<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, at 22, 35, and 50°,  $\beta' = 1.3, 1.1$ , and 2, resp.; here, the effect of the temp. on the diffusion coeff. is more pronounced only at lower temps., whereas at higher temps. the effect on the chem. reaction rate becomes predominant. With increasing fineness of the

material, the straight lines shift parallel to each other in the direction of higher rates, which again indicates the diffusion character of the kinetics. The theory was further confirmed for the processes of extraction of Au with KCN, and for metal cementation. That 1st-order chem. kinetics are applicable to so great a variety of heterogeneous reactions can be explained only by mechanisms involving several simple steps obeying a 1st-order law, one of which is the rate-determ. step. N. Thon



PROCESS AND PROPERTIES INDEX

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Potentials and solubility of copper in nickel-plating solutions. D. V. Zhurkov, *Zhur. Prikl. Khim.* (J. Applied Chem.) 22, 30-31 (1949). —  $\text{Na}_2\text{SO}_4$  and  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  have very little effect on the potential  $E$  of Cu. Variation of  $\text{Na}_2\text{SO}_4$  from 1  $N$  to 0.01  $N$  changed  $E$  from 225 to 235 mv. (at 18°), variation of the  $\text{NiSO}_4$  from 250 to 1.5 g./l. changed  $E$  from 223 to 240 mv.  $\text{NaCl}$  has a much more marked effect. In the absence of Cu salts, in  $\text{NaCl}$  4, 1, 0.1, and 0.01  $N$  at 18°,  $E = -85, -40, +110,$  and  $+160$  mv. In a Ni-plating soln. of  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  200,  $\text{Na}_2\text{SO}_4$  40, and  $\text{H}_2\text{BO}_3$  20 g./l. with Cu in soln. 10, 0.25, 0.075, and 0.0 g./l., at 70°,  $E = 304, 264, 251,$  and  $220$  mv. In the same bath but contg. also  $\text{NaCl}$  5 g./l., with Cu in soln. 1.05, 0.251, 0.10, 0.055, and 0.0 g./l., at 70°,  $E = 246, 221, 213, 202,$  and  $171$  mv. In this soln., at 70°, in the presence of Cu 250 mg./l.,  $E$  is practically const., 207 mv., in the pH range 1.57-4.33; in the presence of 10 mg.  $\text{I}$ , it varies from 135 to 210 mv. at pH 0.01 to 4.10. In the absence of  $\text{NaCl}$ , the temp. coeff. of  $E$  between 17 and 70° is practically const.,  $+0.68$ , with the Cu content varying from 200 to 0 mg./l.; in the presence of  $\text{NaCl}$  5 g./l., Cu in soln. 220, 105, and 0 mg., it is  $+0.68, 0.06,$  and  $0.39$ , resp.  $A_{\text{Cu}}$  very low in Ni-plating solns.,  $E$  in Ni-plating solns. becomes irreversible and tends to become const. With decreasing concns. of Cu in soln.,  $E$  in Ni-plating solns. becomes irreversible and tends to become const. With decreasing Cu content, and increasing  $\text{NaCl}$  in the soln., the Cu electrode becomes an electrode of the 2nd kind,  $\text{Cu}|\text{Cu}(\text{OH})_2$  or  $\text{Cu}|\text{CuCl}_2$ . The rate of soln. of powdery Cu in a Ni-plating bath is a function of its oxidation potential  $\tau$ . Thus, at 70°, pH 1.5-5.5, at  $\tau = 20, 30,$  and  $502$  mv., Cu dissolved at the rate of 37, 70, and 220 mg./hr. g., i.e. much faster than compact Cu. N. Thon

METALLURGICAL LITERATURE CLASSIFICATION

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**\*Kinetics of the Cementation Process. [Removal of Copper from Nickel Electrolytes].** R. V. Drunov (Zhur. Priklad. Khim., 1949, 22, (5), 463-490). - [In Russian]. D. studied the reaction  $Cu^{2+} + Ni \rightarrow Cu + Ni^{2+}$  in the removal of copper from nickel electrolytes by addition of nickel powder. Photomicrographs indicate that thick films (up to 50  $\mu$ ) of cement copper can be produced; they consist of pure copper, not an alloy. Formulas are deduced to cover the three possible types of kinetics: (i) when the process is determined by the rate of cementation itself, the first-order law,  $K = 1/t \cdot \ln(C_0/C_t)$ , (II), is obeyed; (ii) when the process is controlled by diffusion,  $M = C_0 \cdot t \cdot \ln(C_0/C_t) = C_t$ , (III); (iii) when the process is controlled by both diffusion and the chemical process,  $M = D/K_1 + C_0 \cdot t \cdot \ln(C_0/C_t) = \beta C_t$ , (III). In these equations,  $C_0$  = initial concentration of copper in solution;  $C_t$  = amount of copper deposited from unit vol. of solution at time  $t$  (in min.),  $K$  = rate constant of reaction between the copper and the nickel powder,  $M$  = cementation constant,  $D$  = coeff. of diffusion, and  $\beta$  = retardation constant ( $1 > \beta > 0$ ). When  $\beta = 0$ , equation III reduces to I; when  $\beta \sim 1$ , to II. Using electrolytic nickel powder, D. studied cementation in a solution containing:  $NiSO_4 \cdot 7H_2O$ , 200;  $Na_2SO_4$ , 40;  $H_2SO_4$ , 20;  $NaCl$ ,

Aug. 1951

5 g./l. with various copper contents. With very active powder, all but 2 mg. of the nickel powder was consumed, and equation I was obeyed, with  $A = 0.001$ , i.e. in favourable conditions the cement copper forms a porous film and exerts no retarding influence on the cementation process. More frequently, the process obeys I, III, and II in succession. Thus, for one powder, with  $C_0 = 10.7$  g./l. and at 25° C., up to  $t = 21$  min.  $\beta = 0$  and  $K = 0.010$ ; for  $21 < t < 55$ ,  $\beta = 1$  and  $M = 0.0103$ ; after 55 min. there was strong dissolution of the copper. With another powder, for 0. to 3.5 min. and  $K = 0.022$ ; for  $3.5 < t < 15$ ,  $\beta = 0.83$ ; for  $15 < t < 10$ ,  $\beta = 1$  and  $M = 0.023$ ; after 10 min. the copper began to dissolve. The influence of 0.0050 to 0.010 g./l. NaCl on the rate of cementation in baths containing ~1 g./l. copper was also investigated at 70° C. NaCl retarded the cementation (because difficultly soluble  $U_2Cl_2$  was deposited on the surface of the nickel powder), particularly when the copper concentration was increased. Thus, when  $C_0 = 1$  g./l. with NaCl = 0.0050, 5.0, 50.0, 500 g./l.,  $\beta = 0.017, 0.04, 0.07,$  and 0.30, respectively; but when  $C_0 = 2$  g./l. and NaCl = 50 g./l.,  $\beta = 0.40$ .

-G. V. K. T.

\*Potential of Nickel in Nickel-Plating Solutions. S. Y. Dvornov (*Zhur. Priklad. Khim.*, 1948, 21, (7), 716-723).—(In Russian). Published values for the normal potential of Ni (ranging from -640 to -138 mV.) are reviewed. D. has determined the potential referred to the normal H electrode ( $E$ ) in baths contg.  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$  200,  $\text{Na}_2\text{SO}_4$  60,  $\text{H}_2\text{BO}_3$  20,  $\text{NaCl}$  5 g./l., using two types of Ni: (i) active electrolytic powder, and (ii) compact electrodeposited Ni exposed to air for a long period. Both types were very pure, contg. 0-00% Cu and 0-00% Fe. In a bath contg. also 3-36 g./l.  $\text{Fe}^{2+}$  and 0-11 g./l.  $\text{Fe}^{3+}$ , i.e. with high Redox potential  $E_0$ , at 18° C. the compact Ni became completely passive, with  $E = +710, 845, 866, 931, 966$ , and 670 mV. after 0, 15, 30, 60, 120, and 4700 min.; in a bath contg. 0-21 g./l.  $\text{H}_2\text{SO}_4$  (low  $E_0$ ) at 18° C., its activity increased, with  $E = +170, 183, 143, 132, -50, -98$ , and  $-99$  mV. after 0, 15, 60, 180, 4300, 7800, and 12,000 min. On subjection to intensive cathodic polarization,  $E$  was changed to  $-280$  mV. With the active powder, in a bath contg.  $\text{Fe}^{2+}$  1-16,  $\text{Fe}^{3+}$  0-4 g./l. (high  $E_0$ ) at 18° C.,  $E = -250, -190, -80, -43, -60$ , and  $-14$  mV. after 0, 0-5, 2, 24, 48, and 96 hr., some Ni dissolving with decrease in  $\text{Fe}^{2+}$ . At low  $E_0$  and pH  $\geq 3$ ,  $E$  for active

Ni was established rapidly. In acid soln. free from oxidants,  $E$  varied with the pH: at 18° C.,  $E = -140, -160, -200, -210, -230$ , and  $-230$  mV. for one powder at pH 1, 2, 3, 4, 5, and 6, resp.; at 70° C.,  $E = -190, -230, -225$ , and  $-245$  mV. at pH 1-3, 2-2, 3-3, and 4-3. This is thought to be due to sorption of H. The influence of the bath compn. on  $E$  was investigated: within the range 5-60 g./l. the  $\text{Na}_2\text{SO}_4$  and  $\text{H}_2\text{BO}_3$  contents had no effect but as the NaCl content increased from 0 to 30 g./l.,  $E$  became 20 mV. more positive. The inertness of compact Ni is attributed to sorption of O; active Ni can be made inactive by heating in air, when H is removed, and the Ni loses its ability to cement Cu. About 4% Mn in Ni powder increased its capacity for Cu cementation and changed  $E$  from  $-170$  to  $-270$  mV. Mn as impurity also makes  $E$  more negative, but Cu makes it more positive. Thus  $E = -260, 0, 110, 180$ , and  $230$  mV. for Ni-Cu alloys contg. 0, 5, 10, 20, and 100% Cu in a bath free from NaCl at 18° C. With increase in temp., however, the potential of Ni-Cu alloys contg. up to 65% Cu approached that of Ni. The presence of Cu in Ni powder has no influence on the cementation process, but Ni powder is activated by the presence of free Cu as a mech. mixture.—G. V. E. T.

Distr. 4/2/5



DR OZDOV B V

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5(4) PHASE I BOOK EXPLOITATION SOV/2216

Sveshchaniye po elektrokhimii. 4th, Moscow, 1956. Trudy... (Transactions of the Fourth Conference on Electrochemistry. Collection of Articles) Moscow, Izd-vo SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed. Sponsoring Agency: Akademiya nauk SSSR, Otdeleniye khimicheskikh nauk.

Editorial Board: A.M. Fridkin (Resp. Ed.) Academician, O.A. Yasin, Professor, S.I. Zhdanov (Asst. Secretary), B.M. Kabanov, Professor, Professor, S.I. Zhdanov (Asst. Secretary), B.M. Kabanov, Professor, Ya. M. Kolobov, Doctor of Chemical Sciences, V.V. Losev, P.D. Lukovtsev, Professor, Z.A. Solov'yeva, V.V. Stander, Professor, and G.M. Pletchenovich, Ed. of Publishing House: I.G. Yegorov; Tech. Ed. I. T.A. Frusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry. COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer, industrial electrolytic processes in metal electrodeposition, at the end of each division. The table of contents are included here have been published in periodical literature. No personalities are mentioned. References are given at the end of each of the articles.

Chalyz, Y.F. Characteristic Features of the Separation of Disperse Cathodic Deposits of Metals 517

Drozdov, B.V. (Khausho-issledovatel'skiy i proyektirnyy institut "Mikrokhimicheskiy Institut Leningrad", Scientific Research Institute "Dipromet", Technological Institute, Leningrad). Cathodic Deposition of Metal in Disperse Form 520

Prantsevich-Zabludovskaya, T.V., and A.I. Zayats. Comparative Characteristics of Processes for Electrodepositing Molybdenum and Tungsten Alloys With Metals of the Iron Group 524

Erasovskiy, A.I. (Institute of Physical Chemistry, Academy of Sciences, USSR). Problems of the Mechanism of the Electrodeposition of Nickel-Molybdenum Alloys 530

Tsygany, D.A., A.I. Chernousova, and A.I. Iosilevich. Institut khimii AN USSR-Institute of Chemistry, Academy

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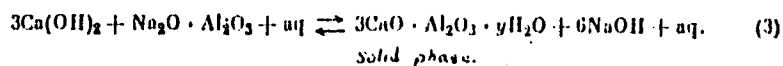
77495  
SOV/80-33-1-4/49

AUTHORS: Malyshev, M. F., Drozdov, B. V.

TITLE: Concerning the Reaction of Sodium Aluminosilicate With Calcium Aluminum Hydrate in Solutions

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 1, pp 20-26 (USSR)

ABSTRACT: In order to follow the changes that take place during the leaching process in the production of alumina by the method of sintering, the authors have studied reactions that decompose tricalcium aluminate hexahydrate (supposedly formed in the process by reaction (3)):

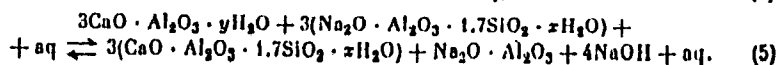
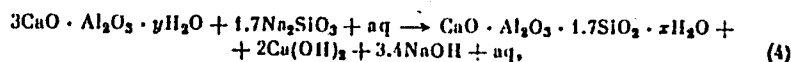


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Concerning the Reaction of Sodium  
Aluminosilicate With Calcium Aluminum  
Hydrate in Solutions

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Experimental data on the extent of these reactions (performed in tightly closed stainless-steel vessels inverted 18 times per minute for 2 hours in an air thermostat at 80°) have shown that percent of decomposed calcium aluminate hydrate (of molecular ratio  $\text{CaO}:\text{Al}_2\text{O}_3:\text{H}_2\text{O} = 3.08:1:6.20$ ;  $n = 1.604$ ; crystalloptical measurements were performed by A. A. Chistyakova under the supervision of O. I. Arakelyan) increases with increasing concentration of  $\text{Na}_2\text{SiO}_3$  (100% at  $\text{Na}_2\text{O}$  191 g/l and  $\text{SiO}_2$  224 g/l). The reaction of calcium aluminate hydrate with sodium aluminosilicate ( $\text{Na}_2\text{O}:\text{Al}_2\text{O}_3:\text{SiO}_2:\text{H}_2\text{O} = 0.91:1:1.66:1.62$ ) in

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water, NaOH solutions, and alkaline solutions of sodium aluminate was found to result in the formation of soluble  $\text{Na}_2\text{O}$  and  $\text{Al}_2\text{O}_3$  and that (1) the degree of decomposition of the aluminate hydrate increases with increasing concentration of NaOH in the solution and with increasing quantity of sodium aluminosilicate in the original pulp, and decreases with increase of calcium aluminate hydrate in the pulp; and (2) the degree of ionic exchange in sodium aluminosilicate decreases with increasing concentration of NaOH and with increasing weight ratio of sodium aluminosilicate to calcium aluminate hydrate in the original reaction mass. Presence of calcium aluminosilicate in the final residue after the leaching process has not yet been proved, yet by simultaneous mixing of solutions of  $\text{Al}_2\text{O}_3$  and  $\text{Na}_2\text{O}$  containing, respectively,  $\text{SiO}_2$ ,  $\text{CaO}$  and both, it was shown that calcium aluminate hydrate, sodium aluminosilicate, and calcium aluminosilicate were formed. The degree of decomposition of calcium aluminate

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Aluminosilicate With Calcium Aluminum  
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hydrate by sodium aluminosilicate in water and in alkaline solutions of sodium aluminate is so low (10.5-12%) that its absence in the residue after the leaching process cannot be explained by the reaction of sodium aluminosilicate and calcium aluminate hydrate. It is supposed that the latter can decompose by reaction with silicon dioxide as it does in reaction with sodium silicate. G. V. Kazabrodsкая participated in this work. There are 7 tables; and 10 references, 8 Soviet, 1 French, 1 U.S. The U.S. reference is: Allen U. Rogers, Am. Chem. J., 24, 34 (1900).

ASSOCIATION: All-Union Aluminum and Magnesium Institute and the Department of Inorganic and Analytical Chemistry of the Leningrad Technological Institute (Vsesoyuznyy alyuminiyevo-magniyevyy institut i Kafedra neorganicheskoy i analiticheskoy khimii Leningradskogo tekhnologicheskogo instituta)

SUBMITTED: June 20, 1958

Card 4/4

5.2200,5.4300

78001  
SOV/60-22-3-22/47

AUTHOR: Drozdov, B. V.

TITLE: Energy of Activation of Contact Reduction of Copper From Solutions by Means of Nickel Powders

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 633-635 (USSR)

ABSTRACT: The energy of activation of copper reduction with high activity (Fig. 1, plots 3 and 4) and low activity (Fig. 1, plots 1 and 2) nickel powders in solutions containing  $\text{NiSO}_4 \cdot 7\text{H}_2\text{O}$ ;  $\text{Na}_2\text{SO}_4$ ;  $\text{H}_3\text{BO}_3$ ;  $\text{NaCl}$ ; and  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  was determined by the authors by the analytic method, and by M. Ye. Semenov by the potentiometric method. In both instances, the plots of  $\ln K$  against  $1/T$  were not linear. This was particularly noticeable in reduction with low active catalysts (Fig. 1, plots 1 and 2) where a sharp change in the value of  $E$  and a break in the straight line occurred at higher temperatures, making the line practically horizontal. This indicated a transition of the reaction kinetics from the kinetic to the diffusion region.

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Energy of Activation of Contact Reduction of 78221  
Copper From Solutions by Means of Nickel Powders SOV/80-33-3-22/47

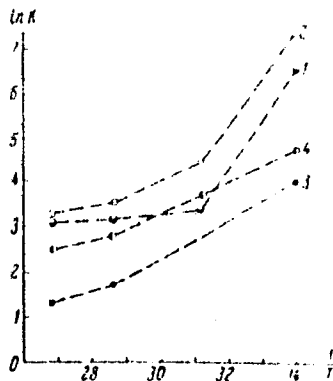


Fig. 1. Dependence of  $\ln K$  on  $1/T$  characterizing the transition from kinetic to diffusion region (rate constant calculated by determining copper concentration in the solution); (1, 2, 3, 4) powder numbers.

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Energy of Activation of Contact Reduction of 78221  
Copper From Solutions by Means of Nickel Powders SOV/80-33-3-22/47

There are 2 figures; and 3 references, 1 U.S., 2  
Soviet. The U.S. reference is: R. Glicksman, H.  
Mouquin, C. King, J. Electroch. Soc., 100, 580 (1953).

SUBMITTED: June 27, 1959

Card 3/3

18.3100, 5.2200

78226  
SOV/80-33-3-27/47

AUTHOR: Drozdov, B. V.

TITLE: ~~The Behavior of~~ Arsenic and Antimony in Electrolytic Copper Refining

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 3, pp 662-667 (USSR)

ABSTRACT: The study deals with the mechanism of the oxidation of  $\text{As}^{\text{III}}$  and  $\text{Sb}^{\text{III}}$  to  $\text{As}^{\text{V}}$  and  $\text{Sb}^{\text{V}}$ ; with the way in which these impurities are deposited on the cathode; and with the effect of Cl ions on the migration of Sb to the cathode. It was established that the oxidation potentials of  $\text{As}^{\text{III}}-\text{As}^{\text{V}}$  and  $\text{Sb}^{\text{III}}-\text{Sb}^{\text{V}}$  do not correspond to the equilibrium, and the Nernst equation cannot be applied to them. The possibility of an anodic oxidation taking place in the electrolytic copper refining cannot be excluded, contrary to the studies of other Soviet authors who considered it to be chiefly a chemical reaction. It was further established that the absence of an oxidation potential equilibrium

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The Behavior of Arsenic and Antimony in  
Electrolytic Copper Refining

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plays a preponderant role in the oxidation of As, and the formation of little-soluble quinquevalent compounds, in the oxidation of Sb. As and Sb subjected together to anodic oxidation formed little-soluble compounds of the type  $nAs_2O_3 \cdot mSb_2O_5$  or  $kAs_2O_5 \cdot lSb_2O_3$ ; the oxidation proceeded readily, and up to 83% of the impurities were precipitated. As and Sb cations can also be discharged at the cathode, chiefly in trivalent form which predominates in the solution. Quinquevalent As and Sb are deposited on the cathode in a much smaller amount, as they are present in the solution chiefly in the form of anions. . The addition of Cl ions to the solution hinders the migration of Sb ions to the cathode; the reason for this fact is not clear as yet. B. N. Antonov participated in the experimental part of the study. There are 4 figures; and 21 references, 1 U.S., 2 U.K., 7 German, and 10 Soviet. The U.S.

Card 2/3



The Behavior of Arsenic and Antimony in  
Electrolytic Copper Refining

78226  
SOV/80-33-3-27/47

and U.K. references are: H. J. S. Sand, J. Chem.  
Soc., 93, 1576 (1908); L. Addicks, Copper Refining,  
McGraw Hill Book Co., New York (1921); A. K. Gbard,  
E. K. Rideal, Trans. Farad. Soc., 19, 740 (1924).

SUBMITTED: June 29, 1959

Card 3/3

DROZDOV, B.V.; MALYSHEV, M.F.; Primala uchastiye KAZABRODSKAYA, G.V.

Decomposition of  $\beta$ - $2\text{CaO}\cdot\text{SiO}_2$  with sodium alkali solutions of sodium  
aluminate. Zhur.prikl.khim. 33 no.10:2357-2359 0 '60.  
(MIRA 14:5)

1. Leningradskiy tekhnologicheskoy institut tsellyulozno-bumazhnoy  
promyshlennosti i Vsesoyuznyy alyuminiyevy-magniyevyy institut.  
(Calcium silicate) (Sodium aluminate)

S/126/62/013/005/025/031  
E111/E435

AUTHORS: Droz dov, B.Ya., Kogan, L.I., Entin, R.I.

TITLE: Influence of stress and deformation on the kinetics of the intermediate transformation of austenite

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.5, 1962, 776-779

TEXT: Information on the effect of deformation of metastable austenite followed by quenching on the austenite transformation is incomplete. The authors have studied the kinetics of the transformation under applied-load conditions on type 40XH5C (4OKhN5S) and 80X4 (8OKh4) steels. For the first, loading was carried out at 0.6 mm/min to the required stress which was then kept constant within  $\pm 1 \text{ kg/mm}^2$ . The kinetics were studied at 300 and 350°C. Acceleration occurred at all the temperatures, being especially marked at temperatures of the lower part of the intermediate region. The influence of rate of deformation was studied at 300, 400 and 525°C. This and other work shows that when conditions for thermomechanical treatment of steels are  
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Influence of stress ...

S/126/62/013/005/025/031  
E111/E435

being worked out, the effect of stresses and plastic deformation on the austenite-transformation kinetics must be allowed for in such a way that non-martensitic transformation products should not be found. Deformation temperature should be sufficiently high to give very stable austenite, and the deformation should be as fast as possible. There are 4 figures and 2 tables.

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIICHM  
(Institute of Science of Metals and Physics of  
Metals TsNIICHM)

SUBMITTED: July 25, 1961

Card 2/2

YANOVSKIY, G.V., kand.med.nauk; DROZDOV, D.D.

Reiter's syndrome. Vrach.delo no.2:132-133 P '63.

(MIRA 16:5)

1. Otdel klinicheskoy farmakologii (zav. - zasluzhennyy deyatel'  
nauki, prof. A.L. Mikhnev) Ukrainskogo nauchno-issledovatel'skogo  
instituta klinicheskoy meditsiny imeni akademik N.D. Strazhesko.  
(ARTHRITIS) (CONJUNCTIVITIS) (URETHRA—DISEASES)

DROZDOV, D.D.

Gas metabolism under the effect of ACTH, cortisone and prednisone.  
Fiziol.zhur. [Ukr.] 10 no.4:546-549 J1-Ag '64.

(MIRA 18:11)

1. Otdel funktsional'noy diagnostiki Ukrainского nauchno-issledovatel'skogo instituta klinicheskoy meditsiny im. akademika Strazhesko, Kiyev.

DROZDOV, D.D.

Aggravation of thyrotoxicosis phenomena in the treatment with hormonal preparations. Vrach.delo no.3:26-29 Mr '63.

(MIRA 16:4)

1. Otdel klinicheskoy farmakologii i funktsional'noy terapii (zav. - zasluzhennyy deyatel' nauki, prof. A.L.Mikhnev) Ukrainskogo nauchno-issledovatel'skogo instituta klinicheskoy meditsiny imeni akademika N.D.Strazhesko.

(THYROID GLAND--DISEASES) (ACTH) (PREGNA)

MIGAY, Konstantin Vasil'yevich, kand. med. nauk; TIMOFEYEVA,  
Ol'ga Nikolayevna, kand. tekhn. nauk; YUSHTIN, Yevgeniy  
Ivanovich, inzh.; DROZDOV, D.F., inzh., retsenzent;  
ABRAMOVICH, V.R., inzh., retsenzent; OSINKIN, Ya.M.,  
nauchn. red.; SOSIPATROV, O.A., red.

[Safety measures during electric welding operations in  
shipbuilding] Tekhnika bezopasnosti pri elektrosvarochnykh  
rabotakh v sudostroenii. Leningrad, Izd-vo "Sudostroenie," 1964. 59 p.  
(MIRA 17:5)



DROZDOV, D. I.

DrozdoV, D. I. "On the problem of local anesthesia with an alkaline solution of novocaine," Sbornik nauch. rabot evakogospitaley i Kafedry oshchey chirurgii (Irkutsk oble.otd. zdravookhraneniya. Irkut. gos. med. in-t), (Irkutsk), 1948, p. 30-42

SO: U-2888, Letopis zhurnal'nykh Statey, No. 1, 1948

DROZDOV, D. I. and KOSUKHA, M. N.

"Operative Removal of a Foreign body (Bullet) From Epipericardium Joints",  
Military-Medical Journal, No. 8, p 86, 1955.

DROZDOY, D.I., polkovnik meditsinskoy sluzhby, kandidat meditsinskikh nauk;  
MORDOVSKIY, K.P., mayor meditsinskoy sluzhby, kandidat meditsinskikh  
nauk

Penicillin therapy for open infected fractures of the long bones.  
Voen.-med. zhurn. no.3:83 Mr '56. (MIRA 9:9)  
(PENICILLIN) (FRACTURES)

~~DROZDOV, D. I.~~, polkovnik meditsinskoy sluzhby, kandidat meditsinskikh nauk;  
MORDOVSKIY, K.P., mayor meditsinskoy sluzhby, kandidat meditsinskikh nauk

Air embolism in wounds of the liver. Voen.-med. zhur. no.3:83-84  
Mr '56. (MLRA 9:9)  
(EMBOLISM) (LIVER—WOUNDS AND INJURIES)

L 22425-66 EWT(a)/EWP(k)/EWP(l)  
CC NR: AP6013623

SOURCE CODE: UR/0105/65/000/009/0089/0090

AUTHOR: Avilov-Karnaukhov, B. N.; Batur, V. I.; Bakhvalov, Yu. A.; Bogush, A. G.;  
Bolyayev, I. P.; Gikis, A. F.; Drozdov, A. D.; Kayalov, G. M.; Kleymenov, V. V.;  
Kolesnikov, E. V.; Malov, D. I.

ORG: none

TITLE: Honoring the 60th birthday of Professor Yefim Markovich Sinel'nikov

SOURCE: Elektrichestvo, no. 9, 1965, 89-90

TOPIC TAGS: academic personnel, electric engineering personnel, computer research

ABSTRACT: Professor Sinel'nikov was born 11 May 1905 in Yekaterinoslav (now Dnepropetrovsk) in the family of a clerk. Following his graduation from the Khar'kov Electrical Engineering Institute in 1930 he was appointed chief of the Technical Division on Electric Drive at the Khar'kov Electrical Machinery Plant. Subsequently he was appointed research engineer at the Vol'ta Plant and later on transferred to Moscow, to the Institute of Experimental Medicine, while at the same time he continued his studies. In 1946 he started working as a senior scientific researcher at the All-Union Electrical Engineering Institute. Since September 1953 Professor Sinel'nikov has been working at the Novochoerkassk Polytechnic Institute. At present he is head of the Chair of

Card 1/2

UDC: 621.313

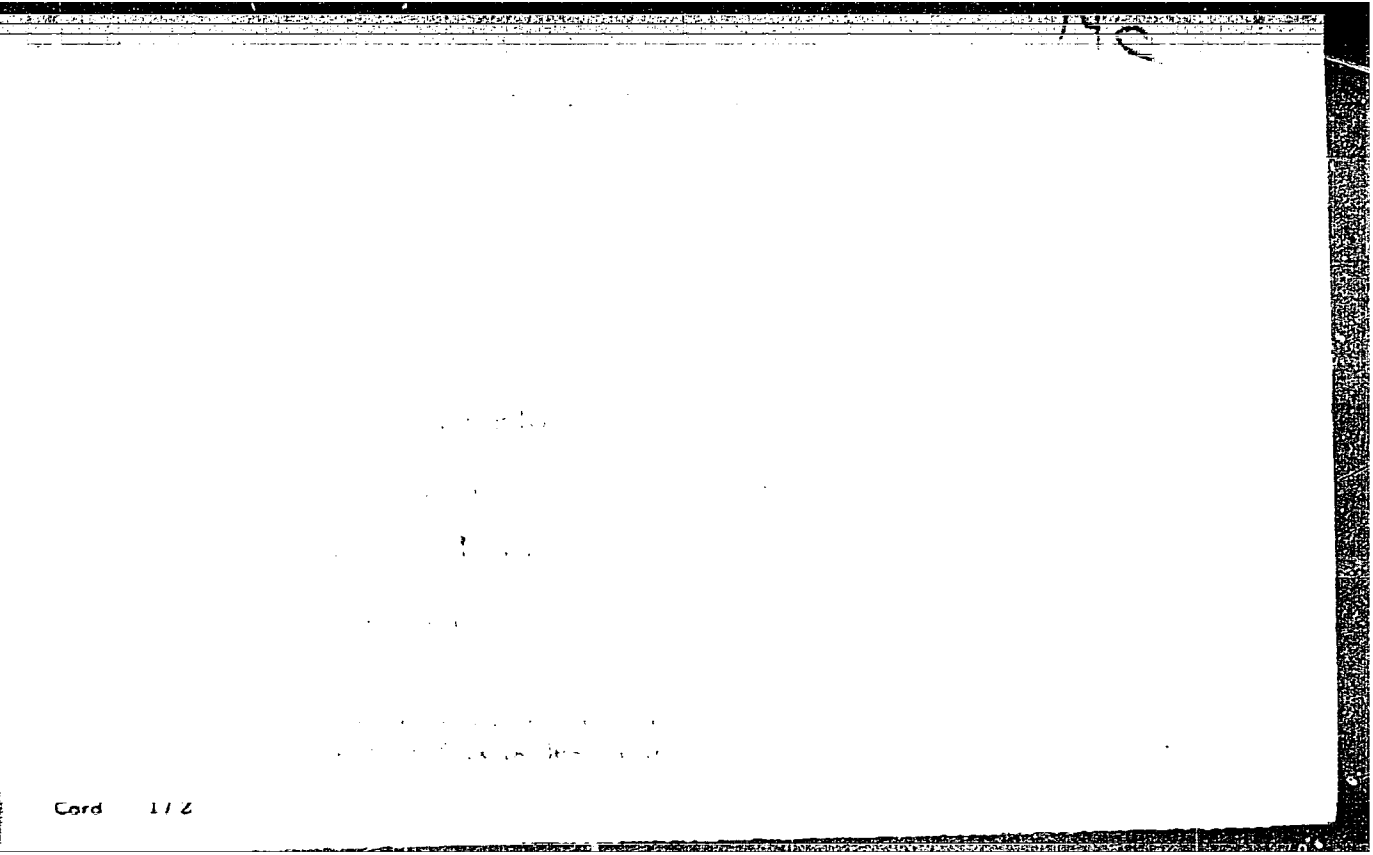
L 22425-66

ACC NR: AP6013623

Electrical Machinery, Apparatus, and Computers and Mathematical Devices. He has been instrumental in establishing the computer laboratory at this institute, where research is being performed on the problems of utilizing computer engineering in the design and calculation of electromagnetic, mechanical, and thermal processes in electrical machinery and equipment. Since 1958 Professor Sinel'nikov has been Coordinating Editor of the journal Elektromekhanika (Electromechanics) - one of the series published under the aegis of Izvestiya Vysshikh Uchebnykh Zavedeniy (News of Higher Schools). Yefim Markovich is moreover a prominent educator and the holder of many social honors and consultant to a series of industrial enterprises. For his great merits as an educator and for his scientific contributions he has been awarded the Order of Labor Red Banner. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 09 / SUBM DATE: none

Cord 2/2/11



Cord 112

**"APPROVED FOR RELEASE: Thursday, July 27, 2000**

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**APPROVED FOR RELEASE: Thursday, July 27, 2000**

**CIA-RDP86-00513R00041122**



REF

L 22520-06 EWT(m)/EPF(n)-2/EWA(h) GD/DM

ACC NR: AP6005539 (N) SOURCE CODE: UR/0089/66/020/001/0074/0075

19  
B

AUTHOR: Drozдов, F. S.; Rychev, A. S.

ORG: none

TITLE: Determining negative reactivity by "shooting" the source

SOURCE: Atomnaya energiya, v. 20, no. 1, 1966, 74-75

TOPIC TAGS: nuclear reactor, nuclear reactor power, radiation source, neutron flux

ABSTRACT: The authors discuss the method of "shooting" a neutron source for checking subcriticality in a nuclear reactor. The source of neutrons is shot by a pneumatic device and the neutron fluxes  $\phi_1$  with the source in the system and  $\phi_2$  after the shooting are recorded. An approximate formula is derived relating  $\phi_1$  and  $\phi(t)$  to reactivity. The experimental equipment used for verifying this formula is briefly described. It was found that the proposed method is extremely convenient for monitoring subcriticality. Reactivity may be evaluated directly after shooting by visual observation. The method may also be used for continuously monitoring the

19. 5

UDC: 621.039.564:621.039.566

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2

L 39530-66

\*ACC NR: AP6005539

2

state of a near-critical system. The authors thank V. M. Talyzin and Ya. V. Shevelev who directed the work and took part in most of the measurements on the IGR reactor. Orig. art. has: 8 formulas.

SUB CODE: 18/      SUBM DATE: 12Apr65/      ORIG REF: 002/      OTH REF: 005

Card 2/2      vmb

DROZDOV, FEDOR VLADIMIROVICH

Detali priborov. (2. izd., perer. i dopoln.) Moskva, Oborongiz, 1948.  
593 p. port., diags. First ed. pub. in 1936 under titl.: Detali tochnogo  
aparato- i priborostroeniia. (Elements of precision instruments and  
apparatus.)

Instrument elements.

DLC: TA165.D 7 1948

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of  
Congress, 1953.

DROZDOV, G., kand.ekon.nauk

Encourage efficiency improvements. Nauka i pered.op.v sel'khoz.  
9 no.12:60 D '59. (MIRA 13:4)  
(Agriculture)

FRONIN, V.I.; DROZDOV, G.D.

Boring an experimental inclined horizontal borehole in the  
Novo-Karfagensk salt mine. Trudy VNIIPodzemgaza no.12:135-  
138 '64. (MIRA 18:9)

1. UFRPODZEMGAZ.

YARMOOLINSKIY, I.B.: DROZDOV, G.M.

Over-all mechanization of the production of shoe parts and  
cardboard for shoes. Kosh.-obuv.prom. no.7:14-17 J1 '59.  
(MIRA 12:11)

(Shoe manufacture)

LITVINENKO, A.U.; DROZDOV, G.M.

Hypergene magnetite from the weathering crust of ultrabasic rocks  
of the middle Dnieper Valley. Dokl.AN SSSR 145 no.2:414-417 J1  
'62. (MIRA 15:7)

1. Dnepropetrovskaya geologicheskaya ekspeditsiya Ukrainskogo  
nauchno-issledovatel'skogo geologorazvedochnogo instituta.  
Predstavleno akademikom N.M.Strakhovym.  
(Dnieper Valley--Magnetite)

DROZDOV, G. N.

NEW methods in the struggle for raising the fertility of the soil. Sov.  
agron. 10, No 6, 1952.



1. DROZDOV, G. N.
2. USSR (600)
4. Irrigation Farming
7. Irrigation methods and control of water rot. Sad i og N. 12 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. DROZDOV, G. N.
2. USSR (600)
4. Irrigation Farming
7. Furrow method of irrigating onions. Sad i og. no. 2, 1953

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

DROZDOV, G. N.

Alfalfa

Critical comments on a good book ("Alfalfa." M. P. Elsukov. Reviewed by G. N. Drozdov). Sel. i sem. 20, No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

ДРОЗДОВ, Г. В.

Experience of the past is the basis for the future ("A year's work  
on the reclamation of virgin and waste lands in Kazakhstan."

Zemledelie & no.10:119-125 0 '56.

(MIRA 9:11)

(Kazakhstan--Agriculture)

DROZDOV, G.V.; KLEBANSKIY, A.L.; BARTASHOV, V.A.

Preparation of perfluoroacyloxy derivatives of biscyclopentadienyl-  
titanium. Zhur.ob.khim. 32 no.7:2390-2391 JI '62. (MIRA 15:7)  
(Titanium organic compounds)

L 17734-63

EPR/EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC/ASD

Ps-4/Pc-4/Pr-4

RM/WW/JD/MAY/JG

ACCESSION NR: AP3004289

S/0079/63/033/007/2422/2422

AUTHORS: Drozdcv, G. V.; Klebanskiy, A. L.; Bartashev, V. A. 76TITLE: Synthesis of bis-cyclopentadienyl titanium<sup>27</sup> bis-trifluoroethoxide

SOURCE: Zhurnal obshchey khimii, v. 33, no. 7, 1963, 2422

TOPIC TAGS: cyclopentadienyl titanium, alkoxide, trifluoroethoxide, toluene, trifluoroethanol

ABSTRACT: Earlier attempts to prepare bis-alkoxy derivatives of bis-cyclopentadienyl titanium were unsuccessful. The reaction of two moles of sodium trifluoroethoxide with one mole of bis-cyclopentadienyl titanium dichloride in anhydrous toluene gave the title compound in 70-80% yield as a reddish brown, crystalline solid with melting point of 47-8°. The compound, in analogy with the orthotitanates, is associated in benzene solution. For proof of structure, the new compound was converted back to the starting dichloride by treatment with hydrogen chloride acetyl chloride. UV spectra show that the organo-titanium group in the two compounds have similar structures. Orig. art. has: no graphics.

ASSOCIATION: none

Card 1/2/

ACC NR: AP5026263

SOURCE CODE: UR/0240/65/000/008/0109/0111

AUTHOR: Veldre, I. A. (Candidate of biological sciences); Maazik, I. Kh.; Drozdov, G. V.

ORG: Estonian Institute of Experimental and Clinical Medicine, AMN SSSR, Tallin  
(Estoniskiy institut eksperimental'noy i klinicheskoy meditsiny AMN SSSR); Sanepidstatiya,  
Pyarnu

TITLE: Results of a sanitary-hygienic study of the coastal region of Pyarnu Bay

SOURCE: Gigiyena i sanitariya, no. 8, 1965, 109-111

TOPIC TAGS: sea water, water pollution, waste disposal

ABSTRACT: A study of the sanitary conditions of the coastal region of the resort at Pyarnu Bay (Estonia) was made between July 1962 and June 1964 by analyzing the water at various distances from shore. It was found that the discharge of waste waters into the bay pollutes the water in the beach area, the pollution being higher in summer than in winter. A study of the effect of swimmers themselves on the state of the sea water showed that among the chemical indices, only the biological oxygen requirement is raised slightly at a day's end. Among the bacteriological indices, a decrease in the titer of *Escherichia coli* and an increase in the quantity of microbes are noted, indicating a marked decline in the sanitary quality of the water. Helminthological analyses indicated a fecal pollution of the water in the vicinity of the beach. This polluted state can be improved by discontinuing the discharge of untreated waste waters into the area, and periodically cleaning and leveling the beach bottom. Orig. art. has: 2 tables.

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UDC: 615.839/474

L 5368-66

ACC NR: AP5026263

SUB CODE: LS, CB / SUBM DATE: 13Nov64 / ORIG REF: 002

0

BC

Card 2/2



DROSDOV, I.

Dubrov, N., and Drosdov, I. Increase in Durability in Laying Open Hearth  
Furnaces. Stal, 1939 (1) 15-18

DROZDOV, I.

Hot days at a great construction site. Grazhd. av. 12 no.12:4  
D '55. (MIRA 11:6)

1. Kuybyshevskaya gidroelektricheskaya stantsiya.  
(Kuybyshev Hydroelectric Power Station)

DROZDOV, I.

New developments in the operations of the Orel Bus Station.  
Avt. transp. 42 no. 5:15-16 My '64. (MIRA 17:4)

1. Zamestitel' nachal'nika Orlovskogo avtoupavlaniya.

*Droz dov, I.A.*

AID Nr. 983-3 5 June

SINTERING OF COMPACTED OXIDIZED COPPER POWDERS (USSR)

Aksenov, G. I., and I. A. Drozdov. Poroshkovaya metallurgiya, no. 2,  
Mar-Apr 1963, 14-21. S/226/63/000/002/002/014

The Kuybyshev Aviation Institute has compared the sintering behavior of copper powders reduced from scale at 250°C (powder A) and at 600°C (powder B), compacted under a pressure of 1-3, 5, 7, 9, 11, or 13 ton/cm<sup>2</sup> from 75-90-μ fractions of powders, and sintered in a current of H<sub>2</sub> for 30 min at a temperature of 980°C reached at a rate of 20 deg/min. It was found that the final density of sintered compacts generally increased with increased sintering temperature. However, A compacts grew in the 400-550°C range and B compacts in the 800-1000°C range. When compacted at a pressure below 7 ton/cm<sup>2</sup>, sintered compacts of powder A were denser than compacts of powder B. The maximum density in both compacts was achieved with a compacting pressure of 5 ton/cm<sup>2</sup>.

Card 1/2

AID Nr. 983-3 5 June

SINTERING OF COMPACTED OXIDIZED [Cont'd]

S/226/63/000/002/002/014

An important factor affecting final density of sintered oxidized-powder compacts is the heating rate in sintering, since increasing pressure of gases with rapidly increasing temperature strongly counteracts sintering. Thus, slower or step-wise heating with a holding at the temperature of gas liberation from the surface of powder particles, i. e., at 400-500°C, would be more effective. [MS]

Card 2/2

L 14300-63

EWP(q)/EWT(m)/BDS AFFTC/ASD JD

ACCESSION NR: AP3000103

3/0126/63/015/004/0597/0604

AUTHORS: Aksenov, G. I.; Drozdo, I. A.

TITLE: Microstructural analysis of copper from sinter

56

SOURCE: Fizika metallov i metallovedeniye, vol. 15, no. 4, 1963, 597-604

TOPIC TAGS: microstructure, copper, copper sinter

ABSTRACT: The microstructure of copper obtained from copper sinter was studied. Photographs of the results are presented and discussed. The copper samples were oxidized in an electric oven at 900-1000C for 30 hours. The thickness of the oxidized layer obtained was 1.5-2 mm. The sinter was separated from the nonoxidized part of the metal and weighed. Subsequently it was treated by a reducing gas at temperatures of 250, 300, 350 and 500C for a period varying from 10 to 1200 minutes. The authors state that copper oxidation at high temperatures results in a dense sinter composed mainly of cuprous oxide. Large voids at the metal-sinter interface are caused by the unilateral copper diffusion. A hypothesis concerning the mechanism of the reduced copper advancement into the sinter-layer is offered. The crystalline-chemical conversion of the dense sinter during reduction results in a metal with cracks and submicrocracks. Copper reduced at low temperatures is fine-

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L 14300-63

ACCESSION NR: AP3000103

grained, has fewer cracks and displays coagulated micropores near the surface. The increase in the reduction temperature results in a honeycomb structure, a coarser grain, and a micropore displacement toward the center of the honeycomb fragments. The kinetics of the microstructure change in a reduced copper are determined by the acceleration of the diffusion processes with the temperature increase. Orig. art. has: 1 table and 5 figures.

ASSOCIATION: none

SUBMITTED: 15Oct62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: ML

NO REF SOV: 010

OTHER: 001

Card 2/2

ACCESSION NR: AR4018313

8/0137/64/000/001/0038/0038

SOURCE: RZh. Metallurgiya, Abs. 10249

AUTHOR: Aksenov, G. I.; Drosdov, I. A.

TITLE: Study of the sintering of copper compacts by means of high-temperature metallography

CITED SOURCE: Tr. Kuybyshchensk. aviats. in-t, vy\*p. 16, 1963, 149-155

TOPIC TAGS: copper powder sintering, pressed copper powder sintering

TRANSLATION: A study was made of the processes of sintering two Cu powders, a reduced and an atomized powder. The atomized powder was first annealed in H<sub>2</sub> at 300°. Specimens 20 mm in diameter and 0.7 - 1.2 mm high were pressed with polished-surface punches under a pressure of 5 t/cm<sup>2</sup>. To make it possible to study specific sections of the specimens, a grid was drawn on them with a diamond indenter. The specimens were placed in the chamber of a type MVY high-temperature microscope. The study was carried out either under vacuum (10<sup>-4</sup> mm Hg) or in H<sub>2</sub> (1-10 mm Hg). Heating rate was 5-10 deg/min. The surface was photographed every 50-100°. When sintering briquettes from reduced powder at 970-980°, the surface under observation

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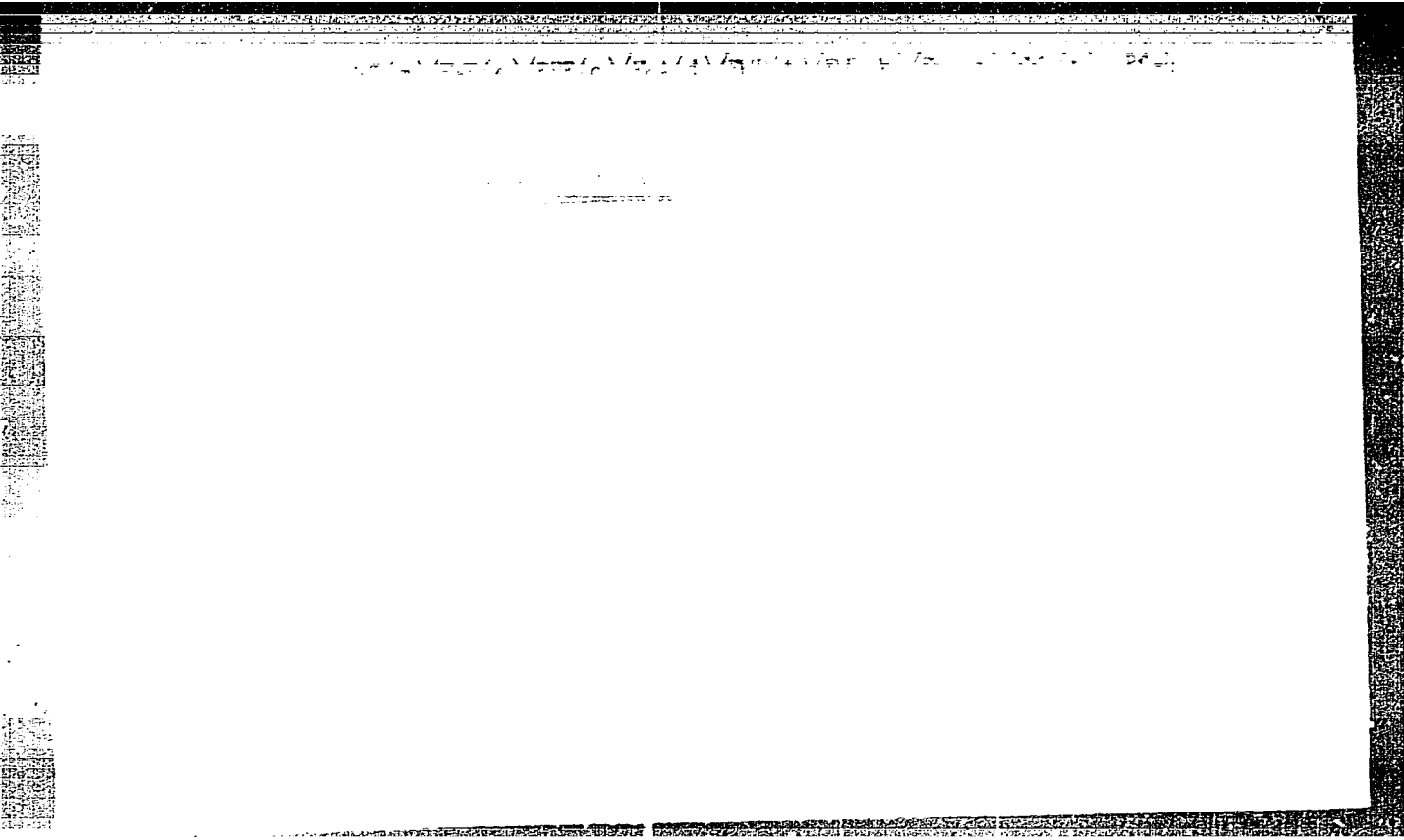
ACCESSION NR: AR4018313

became rough, pores became rounded, and the grid lines almost disappeared. When sintering briquettes from the atomized powder, the same changes occurred at 930-980° and were particularly pronounced at 1035-1070°. V. Miroshnikov

SUB CODE: MM

ENCL: 00

Card 2/2



L 63542-65

APR 11 1964  
APR 11 1964

40-503 The melting point of ...

Секретариат

Кубышевский авиационный институт (Krybyshev Aviation Institute)

SUBMITTED: 10Mar64

EPC: 00

SUB CODE: MM

NO REF SOV: 007

OTHER: 001

dm  
Card 2/2

DROZDOV, I. D., Cand. Tech. Sci. (diss) "Some Problems of Theory  
of Equalization of Measurements," Moscow, 1961, 23 pp. (Moscow  
Inst. of Engineers for Geodesy, Aerial Photography and Carto-  
graphy) 200 copies (KL Supp 12-61, 266).