

ZHUKOV, D.D.; KARELIN, Ya.A.; MEDEM, V.M.; NAZAROV, I.I.; SHEVTSOV, D.A.

Additional experimental investigations of a two-stage biochemical purification of waste waters from the Electrical Desalting Unit of the Orsk Petroleum Refinery. Khim.i tekhn.topl.i masel 7 no.9:19-23 S '62. (MIRA 15:8)

1. Moskovskiy inzhenerno-stroitel'nyy institut im. V.V.Kuybysheva i Orskiy neftepererabatyvayushchiy zavod. (Orsk--Petroleum--Refining) (Sewage--Purification)

KARELIN, Ya.A.; IKRAMOV, M.; ZHUKOV, D.D.; KOMAROV, D.Ye.

Investigating the industrial waste waters of a petroleum-lubricant plant and purifying them by the biochemical method. Khim. i tekhn. topl. i masel 9 no.8:29-37 Ag '64.

(MIRA 17:10)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni inzhenerno-stroitel'nyy institut im. Kuybysheva.

SOV/143-59-2-17/19

8(6)

AUTHOR:

Zhukov, D.F., Engineer

TITLE:

Foreign Small-Size Hydroelectric Power Units (Malogabaritnyye gidroagregaty za rubezhom)

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy - Energetika, 1959, Nr 2, pp 126-133 (USSR)

ABSTRACT:

The author reviews the experiences made with small-size hydroelectric power units in West Germany, Austria, Switzerland, France and Poland (former German territory; power units were installed in 1936). These power units consist of horizontal propeller turbines which are directly coupled to generators enclosed by water-tight housings; they are located entirely within the water flow and do not require any generator halls. The author comes to the conclusion that these units have sufficiently high efficiency coefficients and that they are considerably cheaper than conventional types of hydroelectric power units.

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Foreign Small-Size Hydroelectric Power Units

SOV/143-59-2-17/19

There are 2 photos, 3 tables, 7 diagrams, 3 graphs,
and 11 references, 3 of which are Soviet, 1 English,
1 French and 6 German.

ASSOCIATION: Institut energetiki AN BSSR (Power Engineering In-
stitute of the AS BSSR)

Card 2/2

ZHUKOV, D.F., Cand Tech Sci--(diss) ^{technical} "Means of improving ~~the engineering~~
~~economic indicators of small GES under conditions of BSSR.~~ ^[Hydroelectric, Electric Stations] Linsk, 1958.
15 pp (Acad Sci BSSR. Department of Phys-Math and ^{Tech} ~~Engineering~~ Sci. Inst
of Power Engineering), 100 copies (XII, 26-58, 109)

- 64 -

ZHUKOV, D.F., inzh.

Small-size hydraulic units abroad. Izv. vys. ucheb. zav.; energ.
2 no.2:126-134 F '59. (MIRA 12:7)

1. Institut energetiki AN BSSR.
(Turbogenerators)

ZHUKOV, D.F.

Joint construction of small and medium-sized low pressure hydroelectric power stations in White Russia. Trudy Inst. energ. AN BSSR no.10:133-156 '59. (MIRA 13:6)
(White Russia--Hydroelectric power stations)

1. ZHUKOV, D. F.
2. USSR (600)
4. Naturalists
7. Philosophical principles in the world outlook of A. N. Svertsov.
Vest. Mosk. un. 7 no. 10, 1952.

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

ZHUKOV, D.F., inzh.

Magnitude of specific discharge on spillways of small hydro-
electric power plants. Izv.vys.ucheb.zav.; energ. 2 no.8:
113-120 Ag '59. (MIRA 13:2)

1. Institut energetiki AN BSSR.
(Spillways)

1. ZHUKOV, D. F.
2. USSR (600)
4. Svertsov, Aleksei Nikolasvich, 1866-1936
7. Philosophical principles in the world outlook of A. N. Severtsov. Vest. Mosk. un. 7 no. 10, 1952.

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

ZHUKOV, D.F.; KOROL', S.I.

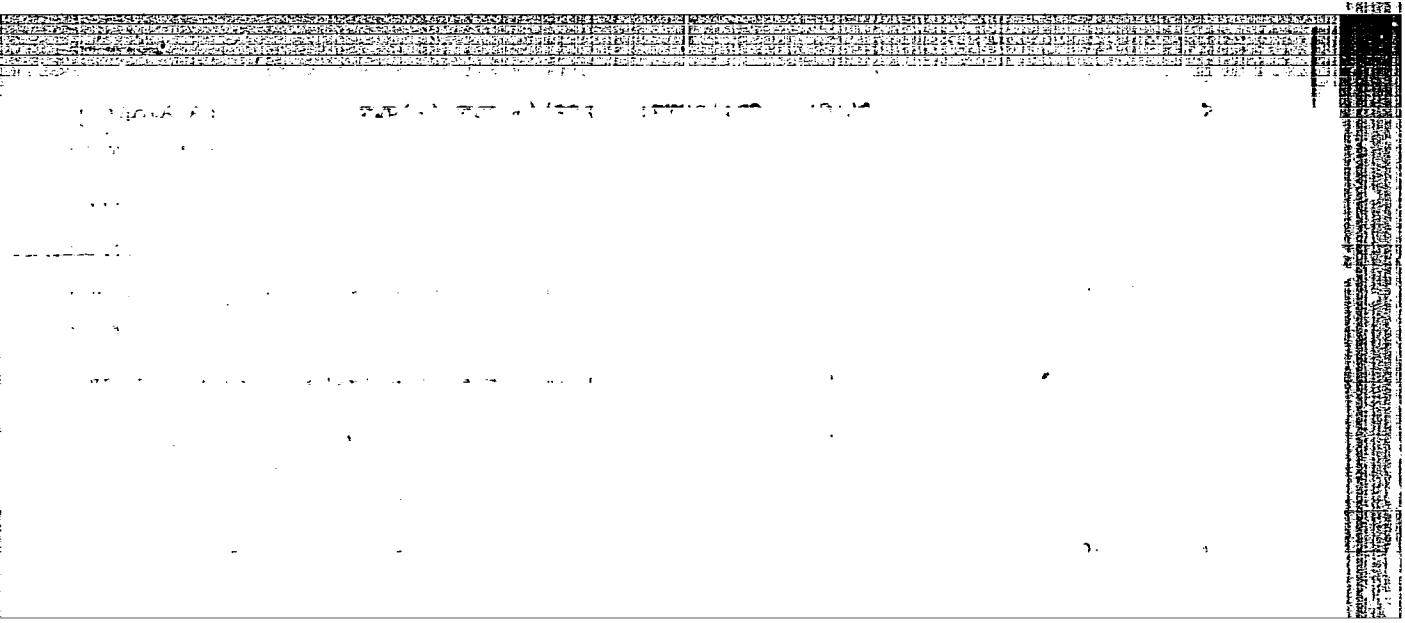
Study of secondary currents in the afterbays of hydraulic structures.
Trudy Inst.energ.AN BSSR no.12:241-249 '60. (MIRA 14:6)
(Hydraulics)

SAVITSKIY, Ye.M.; KEYS, N.V.; POPOV, V.F.; LYUBIMOV, V.N.; ZHUKOV, D.G.;
MALINOVSKAYA, T.I.

Effect of rare-earth metals on the properties of stainless steel.
Izv. AN SSSR. Otd. tekhn. nauk. Met. i gor. delo no.1:133-137 Ja-F '63.
(MIRA 16:3)

(Steel, Stainless—Metallurgy)

(Rare earth metals)



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castings. ORIG. SRC. INST. OF METALLURGY Chelyabinsk Metallurgical Plant

ASSOCIATION: Inst. of Metallurgy Chelyabinsk Metallurgical Plant

Card 2/2

ACCESSION NR: AP5014375

UR/0383/65/000/001/0061/0065
669.187.6-8

54
36
R

AUTHOR: Zhukov, D. G.; Keys, N. V.; Ken'shenin, Ye. B.; Pegov, V. G.;
Molchanova, A. A.

TITLE: Treatment of electric steel with liquid synthetic slag

SOURCE: Metallurgicheskaya i gornorudnaya promyshlennost', no. 1, 1965, 61-65

TOPIC TAGS: electric steel, synthetic slag

ABSTRACT: The treatment of electric steel with liquid synthetic slag was adopted on a mass-production scale at the Chelyabinsk metallurgical plant for the first time in the history of Soviet metallurgy, in July, 1964. The chemical composition of the materials and the procedure employed in the preparation of the lime-alumina slag are described. ShKh15 steel was treated with the slag obtained. The slag treatment was found to reduce considerably the contamination of the steel with non-metallic impurities, to decrease the sulfur content, and to raise the output of the electric furnaces by 12 to 15%. The macrostructure of slag-treated ShKh15 steel shows virtually no differences from that of steel of standard batches. The

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ACCESSION NR: AP5014375

18

work was carried out in collaboration with TsNIICM under the supervision of
Doctor of Technical Sciences S. G. Voinova. In addition to the authors, engineers
M. V. Keys, Ye. S. Golikov, I. A. Lubenets, G. Pegov, N. V. Ridenik, A. A.
Molchanova, H. Ye. Anisimova and others participated in the study. Orig. art.
has: 2 figures and 5 tables.

ASSOCIATION: none

SUB CODE: KH

SUBMITTED: 00

ENCL: 00

NO REF SOV: 000

OTHER: 000

Card 2/2 BP

LIJENETS, I.A.; ZHUKOV, D.G.; PEGOV, V.G.; GOLIKOV, Ye.S.

Refining steel by synthetic slag. Metallurg 10 no.7:25 '65.
(MIRA 18:?)

LUBENETS, I.A.; ZHUKOV, D.G.; VOINOV, S.G.; SHALIMOV, A.G.; KOSOY, L.F.;
KALINNIKOV, Ye.S.; CHERNYAKOV, V.A.; YARTSEV, M.A.; GOLIKOV, Ye.S.;
MYSINA, G.Ye.; Primali uchastiye: KEYS, N.V.; PEGOV, V.G.;
MEN'SHENIN, Ye.B.; BARNOVALOV, M.A.; SHIRER, G.B.; SHATALOV, M.I.;
MOLCHANOVA, A.A.; ANISIMOVA, M.Ye.

Refining steel with synthetic slag from large-capacity arc
furnaces. Stal' 25 no.3:232-235 Mr '65. (MIRA 18:4)

GALYAN, V.S.; ZHUKOV, D.G.; KEYS, N.V.; USHAKOV, S.T.; KHAYRUTDINOV,
R.M.; SHATALOV, M.I.

Improving the procedure for making transformer steel. Metallurg
8 no.1:13-14 Ja '63. (MIRA 16:1)

(Steel—Metallurgy)
(Sheet steel—Magnetic properties)

"APPROVED FOR RELEASE: 09/19/2001

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CIA-RDP86-00513R002064920010-7"

S/130/63/000/001/001/008
A006/A101

AUTHORS: Galyan, V. S., Zhukov, D. G., Keys, N. V., Ushakov, S. T.,
Khayrutdinov, R. M., Shatalov, M. I.

TITLE: Improving the transformer steel melting techniques

PERIODICAL: Metallurg, no. 1, 1963, 13 - 14

TEXT: Previous transformer steel melting techniques were based on the combined oxidizing of carbon with iron ore and oxygen, and diffusion deoxidation of the metal with ferrosilicon admixture. The cold rolled steel produced by this technique showed unsatisfactory magnetic properties. During 1959 and 1960 some improvements were made at the KMK including the use of an increased amount of iron ore for oxidation of Cr, Mg and P; reduction of the carbon and manganese content; decreased oxidation of the metal during melting, more complete deoxidation of the steel during the reduction period. A more accurate correlation of iron-ore and admixtures in the metallic portion of the charge, increased slag amount, strict observation of temperature conditions during oxygen blast, and an increased amount of silico-calcium, were the improvements achieved. On the basis

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Improving the transformer steel melting techniques

S/130/63/000/001/001/008
A006/A101

of the new techniques transformer steel was melted in a high capacity electric furnace in 1961. To reduce metal oxidation at the beginning of the oxidation period, 10% cast iron was added to the charge; the optimum metal temperatures were established at the end of oxygen blast (1,590 - 1,620°C) and in the ladle (1,570 - 1,590°C). The content of ferric oxide in the slag decreased at the end of melting to 28 - 33% and at the end of the oxidation period to 38 - 41%. The carbon content after oxygen blast exceeded 0.03% in 80% of heats, and the manganese content was not below 0.05 - 0.06%. As a result the magnetic properties of 0.35 mm thick sheets were improved. There is 1 table.



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ZHUKOV, D.G.; KEYS, N.V.; MEN'SHENIN, Ye.B.; PEGOV, V.G.; MOLCHANOVA, A.A.;
VOINOV, S.G., doktor tekhn. nauk, rukovoditel' raboty.

Treatment of electric steel with a liquid synthetic slag.
Met. i gornorud. prom. no.1:61-65 Ja..F '65. (MIRA 18:3)

S/130/60/000/006/007/011

AUTHORS: Gnuchev, S. M., Zhukov, D. G., Keys, N. V., Klochkova, Z. V.,
Danilov, P. M., Konovalov, K. N.

TITLE: On the Problem of Transformer Steel Melting

PERIODICAL: Metallurg, 1960, No. 6, pp. 18-22

TEXT: Information is given on peculiarities in the technology of transformer steel melting at the "Dneprospetsstal" Plant, the Kuznetskiy Metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) and the Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant). A special feature adapted by the Dneprospetsstal plant is that a relatively high content of C and S is obtained in the molten charge (0.30-0.40 C and 0.030-0.035% S). The carbon is oxidized by the ore and then by gaseous oxygen. The reduction time depends on the sulfur obtained in the finished metal (not over 0.005%). After teeming the metal is subjected to vacuum treatment in the ladle. At the Kuznetsk plant the melting process is conducted in a highly organized manner. The necessary amount of ore and lime is added to the charge so that the oxidizing and the melting stage are combined. After repeated slag formation the pool is subjected to oxygen blast; during the blast the carbon content is reduced to

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On the Problem of Transformer Steel Melting

S/130/60/000/006/007/011

0.02-0.03%. Until 1960, oxidizing at the Chelyabinsk Metallurgical Plant was brought about with iron ore and subsequent elimination of carbon by blowing the pool with oxygen. Presently, the oxidation and the melting stage have been combined; simultaneously with the charge 2.5 t iron ore and 1.0 t lime are introduced. It was stated that the amount of rejects was relatively low at all the plants. The dependence of surface defects in slabs on the metal temperature in the ladle is given and shows that the minimum percentage of rejects is obtained at a temperature of 1570-1590°C. The content of impurities in metals produced by the enumerated plants is represented by graphs. The metal produced at the Chelyabinsk plant contained the highest amounts of carbon, sulfur, manganese and nickel. The metal from Dneprospetsstal' contained the lowest amounts of carbon, sulfur and chromium (to 0.005%). The metal from the Kuznetsk Combine contained more carbon and about 40% of the melts contained 0.006-0.008% S. Thousandths of a per cent of Ti were revealed in all the metals. Data on the output of high-grade rolled sheets made of metal which was produced by the aforementioned plants do not indicate the advantages of one or the other technology, since an effect of the used technology on the output was not established. There are 2 sets of graphs and 3 tables. ✓

ASSOCIATIONS: TsNIIChM, Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant) Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine)

Card 2/2

KEYS, N.V.; ZHUKOV, D.G.; MALINOVSKAYA, T.I.; VIKHAREV, A.M.

Pouring electrical steel with use of wooden frames. Stal' 21
no. 1:38-39 Ja '61. (MIRA 14:1)

1. Chelyabinskiy metallurgicheskiy zavod.
(Steel ingots) (Metallurgical plants--Quality control)

S/133/61/000/002/003/014
A054/A033

AUTHORS: Shved, F. I.; Zhukov, D. G. and Khizhnichenko, A. M.

TITLE: Increase of Silicon-Chromium Consumption Rate When Melting
Stainless Steel

PERIODICAL: Stal', 1961, No. 2, pp. 128 - 129

TEXT: The consumption of chromium-silicon during the melting of 1X8H9T (1Kh8N9T) grade stainless steel in the Soviet metallurgical plants amounted to not more than 15 kg/t, although in some USA-plants stainless steel (with 0.08 % C and 1 % Si) is produced with up to 50 kg/t silicon-chromium in the charge. The authors of the article and D.B. Royak, Ye. S. Lyanin R.V. Bobov-Suetin, Kh. Sh. Samokhuzhin, A. I. Yakunin et al. studied ways and means of increasing the chromium-silicon-amount in melting 1Kh8N9T grade steel which would mean considerable savings in carbon-free ferrochromium. Up to April 1959 this steel was smelted in the Chelyabinsk metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant) in the following way: immediately after blowing, 12 - 15 kg/t manganese-silicon and 10 - 15 kg/t crushed

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S/133/61/000/002/003/014
A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

chromium-silicon or 45 % ferrosilicon were added to the charge and after mixing the slag for a short while, ferrochromium was added. In the new technology no ferrochromium was added after blowing manganese-silicon was replaced by medium-carbon ferromanganese which was added towards the end of the melting process. Next the bath was cooled down after blowing in stainless steel scrap. When blowing was ended, 40 - 45 kg/t waste of chromium-silicon and 25 - 30 kg/t crushed chromium-silicon were added, and the bath was stirred for 20 - 25 minutes. After this the slag was tapped, but a thin remaining layer, samples were taken and finally ferrochromium was added. The correcting additions of ferrochromium and nickel were calculated according to the samples taken before adding ferrochromium. The final smelting phases remained unchanged. The following data characterize the savings effected by this new method, (numerators: conventional technology, average 1958-indices, denominators: new technology, average indices for May-December 1959):

Melting-time, hour-minutes $\frac{6 - 24}{6 - 10}$

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A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Electricity-consumption, kwh-h/ton of serviceable ingots	<u>559.1</u> 542.5
Consumption of carbon-free ferrochromium, (type 0000-00) kg/ton of faultless steel	<u>167.9</u> 139.5

In spite of the use of a greater amount of chromium-silicon, the Si-content in the finished metal decreased somewhat. However, when adding chromium-silicon after ferrochromium, the Si-content of the metal increased and the total recovery of chromium decreased. This is explained by the higher oxygen content of the chromium-containing metal towards the end of the blowing process. When adding ferrochromium immediately after blowing, a part of chromium oxidized and penetrated into the slag, while the oxygen concentration of the metal decreased. Silicium, added after this phase as chromium-silicon or ferrosilicium is largely assimilated by the metal, which had been already deoxidized beforehand by chromium. The subsequent decrease of

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A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel ✓

the Si-content in the metal due to the reduction of chromium from the slag took place rather slowly, because it was connected with the diffusion of silicon and chromium in the metal and of their oxides in the slag. Even when the consumption of deoxidizers is low and the recovery of chromium decreases, the Si-content of the metal remains high. When, however, chromium-silicon was charged immediately after blowing, all the oxygen-content of the metal was bonded by silicon; even when applying an increased amount of deoxidizers, the Si-content of the metal was insignificant and by adding ferrochromium to the deoxidizing bath, the total amount of chromium reclaimed increased. The amount of chromium-silicon used in the process and recovery of chromium from the slag can be increased still further by replacing ferro-titanium by metallic titanium metal waste, by increasing the basicity of the slag and by determining the amount of deoxidizers used for each heat according to the amount of oxygen spent. There are 3 figures and 3 references: 2 Soviet, 1 non-Soviet.

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S/133/61/000/002/003/014
A054/A033

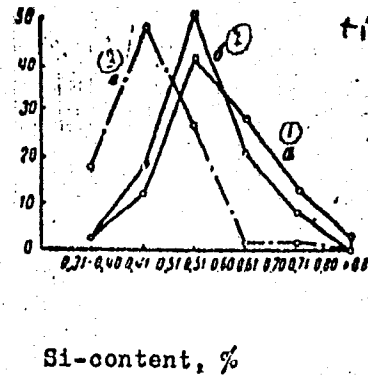
Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Figure 1:

Frequency diagram of the Si-content in the finished (1Kh18N9T) steel depending on the deoxidizing conditions:

- 1 - deoxidizing with ferro-silicium or chromium-silicon (10-12 kg/t)
- 2 - idem, with chromium-silicon (25-30 kg/t)
- 3 - idem, when replacing ferro-titanium by metallic titanium scrap

frequency, %



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✓

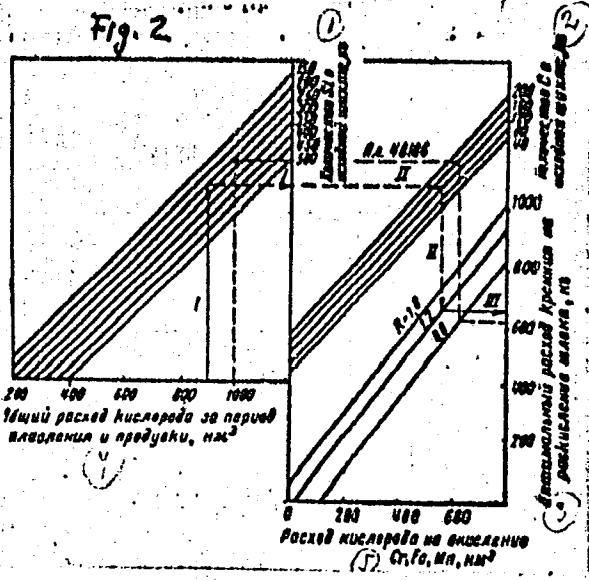
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A054/A033

Increase of Silicon-Chromium Consumption Rate When Melting Stainless Steel

Figure 2:

Nomogram for the rating of the optimum consumption of chromium-silicon (Si) for deoxidizing the slag (R = basicity of slag)

- 1 - Si-content in the initial charge
- 2 - C-content in the initial charge
- 3 - Optimum Si-content for the de-oxidation of the slag
- 4 - total amount of oxygen consumed during smelting and blowing, HM³
- 5 - Oxygen consumed for oxydation of Cr, Fe, Mn, HM³



Card 6/6

S/137/61/000/006/016/092
A006/A101

AUTHORS: Shved, F.I., Zhukov, D.G., Khizhnichenko, A.M., Kolosov, M.I.

TITLE: Increased silicochrome consumption for stainless steel melting

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 42, abstract 6V299
("Sb. nauchno-tekh. tr. N.-i. in-t metallurgii Chelyab. sovarkhoza",
1960, no. 2, 57 - 64)

TEXT: A technology was developed for melting stainless 1X18W9Ti (1Kh18N9Ti) steel providing for the addition of a higher Si-Cr amount immediately after O₂ blast. It is shown that the addition of 25-35 kg/t Si-Cr 50 or 35-40 kg/t Si-Cr 40 causes an increase in the degree of Cr extraction from the slag and a reduced consumption of carbonless Fe-Cr. [Si] in the finished metal does not increase, since Si-Cr is added to the non-deoxidized bath. It is noted that a further reduction of [Si] in the finished metal is obtained by replacing Fe-Ti, introducing usually about 0.15% Si, by Ti metal waste. A nomogram was developed which may be used to determine the optimum consumption of deoxidizers per heat from the total consumption of O₂, the amount of Si and C in the charge and also from the basicity of the slag.

V. Shumskiy

[Abstracter's note: Complete translation]
Card 1/1

SHVED, P.I.; ZHUKOV, D.G.; KHIZHNICHENKO, A.M.

Increasing the use of silicon-chromium alloys in making stainless
steel. Stal' 21 no.2:128-129 # '61. (MIRA 14:3)

(Steel, Stainless--Electrometallurgy)
(Silicon-chromium alloys)

KEYS, N.V.; GOLIKOV, Ye.S.; TULIN, N.A.; KOKAREV, N.I.; ZHUKOV, D.G.

"Manufacture of steel in electric furnaces" by A.D. Kramarov.
Stal' 22 no.1:42 Ja '62. (MIRA 14:12)

1. Chelyabinskiy metallurgicheskiy zavod i Ural'skiy institut
chernykh metallov.
(Steel--Electrometallurgy)

GNUCHEV, S.M.; ZHUKOV, D.G.; KRYS, N.V.; KLOCHKOVA, Z.V.; DANILOV, P.M.;
KONOVALOV, K.H.

Manufacture of electrical steel. Metallurg 5 no.6:18-22
Je '60. (MIRA 13:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii, Chelyabinskiy metallurgicheskiy zavod i Kuznetskiy
metallurgicheskiy kombinat.
(Steel--Metallurgy)

SOV/133-59-2-6/26

AUTHORS: Dubrov, N.F., Gorlach, I.A., Keys, N.V. and Zhukov, D.G.

TITLE: An Investigation of the Heterogeneity of a Transformer Steel Ingot (Issledovaniye neodnorodnosti slitka transformatornoy stali)

PERIODICAL: Stal', 1959, Nr 2, pp 117-122 (USSR)

ABSTRACT: The chemical and structural non-uniformity of a 6.2 ton ingot of transformer steel was studied. The method of smelting steel in a 40 ton arc furnace is described in some detail. The chemical composition of the metal in the ladle was %: C 0.04; Si 3.20; Mn 0.10; Ni 0.12; Cu 0.12; S 0.007; P 0.009 and Cr 0.04. The metal was bottom poured into 6.2 ton ingots. The shape and dimensions of the ingot are shown in Fig.1. A longitudinal plate, 20 mm thick was cut out from the middle part of the ingot, from which 60 samples were collected by drilling for chemical analysis as shown in Fig.1. The segregation of longitudinal and transverse cross-sections of carbon, sulphur, phosphorus, aluminium and nitrogen is shown in table 1 and Fig.2. The degree of segregation was as follows:

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SOV/133-59-2-6/26

An Investigation of the Heterogeneity of a Transformer Steel Ingot

Deviation from mean %	C	S	P	Al	N ₂
positive	30	30	20	25	10
negative	5	15	10	5	10

Mean silicon content was 3.10%, maximum 3.23% and minimum 2.95%. No regularity in the distribution of silicon was observed. Mean manganese content was 0.095%, a number of samples taken from the upper part of the ingot contained 0.110% and from the bottom part 0.092%. On the basis of mean values it is concluded that the non-uniformity in the distribution of manganese was insignificant. Mean chromium content was 0.030%; in the upper part of the ingot -- 0.035% was the predominant concentration and in the bottom part -- 0.025%; maximum 0.041% and minimum 0.041%. Thus the distribution of chromium was found to be very non-uniform. The contents of copper and nickel in all samples was stable, for copper it varied from between 0.10 to 0.11% and for nickel from 0.11 to 0.12%. The quantities and composition of non-metallic inclusions which varied from 0.0172 - 0.0066% are shown in table 2,

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An Investigation of the Heterogeneity of a Transformer Steel Ingot
their appearance in Fig.3. The predominant component
of non-metallic inclusions was alumina but considerable
quantities of TiO_2 , SiO_2 and FeO were also found. The
size of the individual inclusions was comparatively small,
mainly 5μ only a small proportion was of about 50μ . The
macro and microstructure of sections taken from various
parts of the ingot is shown in Fig 4, 5 and 6 respectively.
It is concluded that a considerable improvement in the
heterogeneity of transformer steel can be obtained if the
contents of carbon, sulphur and aluminium are decreased
to 0.02%, 0.003% and traces respectively. The
introduction of electromagnetic stirring will also improve

Card 3/4

SOV/133-59-2-6/26

An Investigation of the Heterogeneity of a Transformer Steel Ingot
the uniformity of steel. There are 2 tables, 6 figures
and 5 references of which 4 are Soviet and 1 English.

ASSOCIATION: Ural'skiy Institut Chernykh Metallov i Chelyabinskiy
Metallurgicheskiy Zavod (Ural Ferrous Metals Institute
and Chelyabinsk Metallurgical Works)

Card 4/4

S/133/61/000/001/005/016
A054/A033

AUTHORS: Keys, N.V.; Zhukov, D.G.; Malinovskaya, T.I.; Vikharev, A.M.

TITLE: Using Wooden Frames in Electric Steel Pouring

PERIODICAL: Stal', 1961, No. 1, pp. 38 - 39

TEXT: At the end of 1957, the Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant), in cooperation with the TsNIICM introduced a new technology for producing ШX15 (ShKh15) grade ball bearing steel, applying lower temperatures for the liquid metal (before pouring 1,530 - 1,550°C instead of 1,560 - 1,590°C). This improved the quality of the metal as regards non-metallic inclusions. Pouring was carried out with skin-formation at the metal surface when the lower third of the ingot mold was filled. However, the new method increased the surface defects of the new metal producing distortions on the ingot, flaking and cracking in the rolled product. The rate of rejects due to surface defects in the metal poured at 1,530 - 1,550°C was 1.47% as compared to 0.21% of the conventional metal. When the causes of these surface defects were investigated it was found that the distortions occurred mainly in that part of the ingot which corresponded to the reduction of the metal flow speed during pouring for the pur-

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Using Wooden Frames in Electric Steel Pouring

S/133/61/000/001/005/016
A054/A033

pose of skin formation. To eliminate these surface defects it was decided to put wooden frames in the ingot molds and to fill the lower part of the ingot mold rapidly, then slowing down the pouring speed and increasing it again when filling the upper third of the ingot mold. The use of wooden frames reduced the percentage of rejects due to surface defects to 0.08% as compared to 1.47% in metal poured without wooden frames. The new method has been applied also for transformer steel and it was possible to reduce the percentage of surface defects in this steel from 2.5 to 0.5% using wooden frames in the ingot molds.

ASSOCIATION: Chelyabinskiy metallurgicheskiy zavod (Chelyabinsk Metallurgical Plant)

Card 2/2

KEYS, N.V.; ZHUKOV, D.G.; KHIZHNICHENKO, A.M.

Improving the technology of smelting transformer metal. Stal'
12 no.2:130-131 F '59. (MIRA 12:2)

1. Chelyabinskiy metallurgicheskiy zavod.
(Smelting) (Vacuum metallurgy) (Metallurgical plants--Quality control)

DOBROV, N.F.; GORLACH, I.A.; KEYS, N.V.; ZHUKOV, D.G.

Investigating the inhomogeneity of electrical steel ingots. Stal'
12 no.2:117-122 F '59. (MIRA 12:2)

1. Ural'skiy institut chernykh metallov i Chelyabinskiy metallurgi-
cheskiy zavod.
(Steel ingots) (Steel--Analysis) (Metallography)

SOV/133-59-2-10/26

AUTHORS: Keys, N.V., Zhukov, D.G and Khizhnichenko, A.M.
TITLE: Mastering of the Production of Transformer Steel
(Oshoyeniye vyplavki transformatornogo metalla)

PERIODICAL: Stal', 1959, Nr 2, pp 130-131 (USSR)

ABSTRACT: The development of the smelting practice of transformer steel in 40 ton arc furnaces with subsequent teeming in 6.2 ton ingots is briefly outlined. The main points of established practice: Oxidation of carbon to 0.10 - 0.15% with iron ore and further 0.03% carbon with dried oxygen, (250 - 450 m³/heat). At the beginning of the reducing period the metal is preliminarily deoxidised with silicocalcium in lumps (1.5 kg/t) and then during 15 - 20 min with powdered ferrosilicon (10 kg/t) and aluminium powder (1 kg/t). 20 - 25 minutes before tapping the metal is alloyed with 75% ferrosilicon. The metal temperature before tapping should be 1620-1635°C and in the ladle 1570-1590°C. Depending on the temperature the metal is retained in ladle for 10-20 minutes and then treated with a desulphurising mixture containing lime fluorospar and calcined soda. The metal in the ladle is vacuo treated for 8-10 minutes at a residual pressure of

Card 1/2

SOV/133-59-2-10/26

Mastering of the Production of Transformer Steel

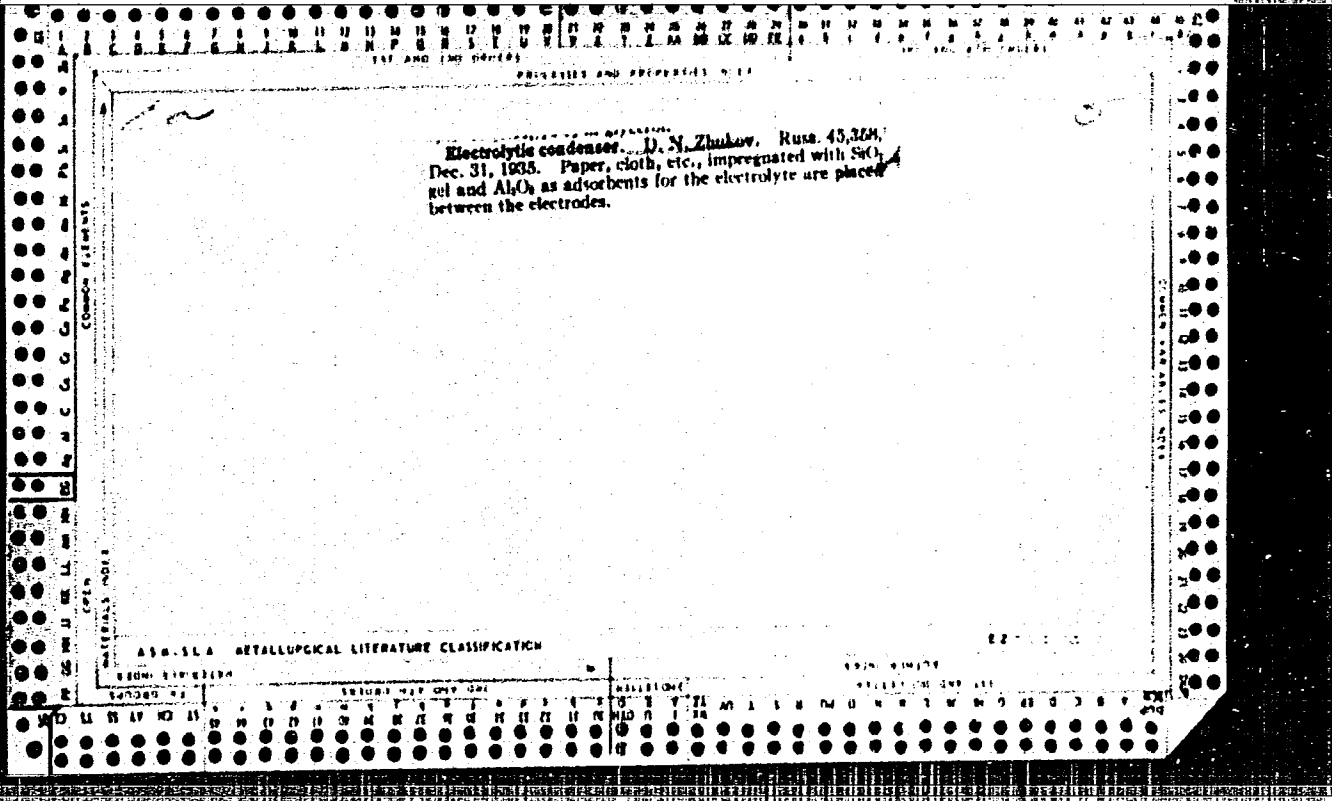
30 - 60 mm. Vacuo-treatment decreases the hydrogen content from 4.0 - 9.0 to 3.8 - 7.0 cm³/100 g of metal and the surface defects of slabs by a factor of 1.5 - 2.

ASSOCIATION: Chelyabinskiy Metallurgicheskiy Zavod (Chelyabinsk Metallurgical Works)

Card 2/2

GUBANOV, A.I.; KOLGANOV, V.I.; SAZONOV, B.F.; ZHUKOV, D.M.

Effect of forced production on the water encroachment and
oil recovery as illustrated by the development of the
Iablonovyy Ovrage field. Neft. khoz. 40 no.6:37-42 Je '62.
(MIRA 15:6)
(Samara Bend—Oil fields—Production methods)



PROCESSES AND PROPERTIES INDEX

4

CF

Anodic oxidation of electrolytic condensers. D. N. Zhukovskiy, Russ. 43,400, June 30, 1935. To increase the breakdown resistance of electrolytic condensers the oxide layer is obtained in an electrolyte contg. solns. of NH₄ or alkali metal molybdates or tungstates or their mixts., as well as admixts. of org. acids such as citric, tartaric, oxalic, lactic acids or their NH₄ or alkali salts.

ASA-5LA METALLURGICAL LITERATURE CLASSIFICATION

VRUBLEVSKIY, Aleksandr Vikent'yevich; GRIGOR'YANTS, Georgiy
Nikolayevich; ZHUKOV, Dmitriy Petrovich [deceased];
KNYAZHITSKIY, Grigoriy Mikhaylovich; KARUS', A.P.,
red.; MEDNIKOVA, A.N., tekhn. red.

[Electrical engineering; a manual for soldiers and sergeants]
Elektrotehnika; uchebnik dlia soldat i serzhantov. Izd.4. ,
ispr. i dop. Moskva, Voenizdat, 1964. 351 p. (MIRA 17:3)

ZHUKOV, D.V., kandidat tekhnicheskikh nauk, redaktor; AZRILYANT, Ya.M., redaktor; MEDVEDEV, L.Ya., tekhnicheskii redaktor.

[Provisional instructions for performing inside plastering work and drying plaster under winter conditions] Vremennaya instruktsiia po proizvodstvu vnutrennikh shtukaturnykh rabot i sushke shtukaturki v zimnikh usloviakh. Uvershdena Tekhnicheskim upravleniem Ministerstva stroitel'stva SSSR i Tekhnicheskim upravleniem Ministerstva stroitel'stva predpriatii metallurgicheskoi i khimicheskoi promyshlennosti 9 sentiabria 1954 g. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture. 1954. 30 p. (MLRA 8:5)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'stva. Tekhnicheskoye upravleniye.
(Plastering--Cold weather conditions)

BRAYNINA, Ye.Yu., kandidat tekhnicheskikh nauk; ZHUKOV, D.V., kandidat tekhnicheskikh nauk.

Heating concrete aggregates under cold weather conditions. Nov.
tekh.1 pered.op.v stroi. 18 no.10:5-8 0 '56. (MLRA 9:11)
(Concrete--Cold weather conditions)

ЖУКОВ, Д.В., кандидат технических наук

Apparatus for drying plaster and walls of buildings using air
mixed with fuel combustion products. Rats. i izobr. predl. v
stroitel. no. 86:24-31 '54. (MLRA 8:8)
(Plastering) (Drying apparatus)

ZHUKOV, Dmitriy Vasil'yevich; GLEZAROVA, I.L., red.; GILENSON, P.G.,
USkin. Red.

[Rapid drying of green bricks] Skorostnaia nushka kirpicha-
syrtsa. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.
materialam, 1959. 143 p. (MIRA 12:12)
(Bricks--Drying)

Zhukov, D.V.

USSR/Chemical Technology. Chemical Products and their Application. J-12
Glass. Ceramics. Construction Materials.

Abs Jour: Referat Zh.-Kh., No 8, 1957, 27790.

Author : Ye. Yu. Braynina, D.V. Zhukov.
Inst :
Title : Heating of Concrete Fill in Winter Time.

Orig Pub: Novaya tekhn. i peredov. opyt v str-ve, 1956, No 10, 5-8.

Abstract: Basing on the experience of the Kuibyshev "Gidroenergostroy" (trust for construction of hydraulic power stations) and of many Moscow constructions, it is recommended to heat the fill while it is in piles and to take the heated material from the bottom zone, as well as to heat the fill in drying barrels. It is shown that the method of heating the fill with steam in special bins, persisting at concrete factories, is little efficient and uneconomical. Tables characterizing the bin type heating installations, as well as engineering schemes of fill heating installations are attached.

Card : 1/1

-137-

ZHUKOV, Dmitriy Vasil'yevich, kand. tekhn. nauk; ZASEDATELEV, Igor' Borisovich, kand. tekhn. nauk; PALEVSKIY, S.A., nauchnyy red.; SHIROKOVA, G.M., red. izd-va; NAUMOVA, G.D., tekhn. red.

[Heating and drying of buildings and industrial structures erected in the winter] Obogrev i sushka zdaniy i promyshlennykh sooruzheniy, vozvodimykh v zimnikh usloviyakh. Moskva, Gosstroifizdat, 1962. 154 p. (MIRA 15:8)
(Heating) (Drying apparatus)

ZHUKOV, D.V., kand. tekhn. nauk; GAVRILKINA, N.A., inzh.; NIKITIN, I.A., INZH.

Developing formulas and schedules for the heat treatment
of heat insulating slabs made of perlite. Sbor. trud.
ROSNIIIMS no.25:141-149 '62 (MIRA 17:8)

ZHUKOV, D.V., kand.tekhn.nauk; ZASEDATELEV, I.B.

Electric heating of reinforced concrete flues in building under winter
conditions. Prom.stroi. 37 no.8:47-49 Ag '59. (MIRA 12:11)
(Electric heating) (Flues)

Zhukov, D.V.

ZHUKOV, D.V., kand. tekhn. nauk; BUKHGALTER, V.D.

Methods of drying plaster and interior walls of buildings. Nov. tekhn.
i pered. op. v stroi. 19 no.9:10-14 S '57. (MIRA 10:11)
(Plastering) (Drying apparatus)

ZHUKOV, D.V., kand.tekhn.nauk; ZASEDACHEV, I.B., inzhener.

Shortcomings in the operation of steam chambers and methods of
eliminating them. Stroi.prom. 35 no.7:7-9 J1 '57. (MIRA 10:10)
(Autoclaves)

ZHUKOV, D. V.

36728. Teplovaya Blokirovka Kol'tsavykh Kirpicheobzhigatel'nykh Pechey i Tunnel'nykh Sushil. Steklo i Keramika, 1949, No. 11, C. 19-22.

SO: Letopis' Zhurnal'nykh Statey Vol. 50, Moskva, 1949

ZHUKOV, D.V., kand.tekhn.nauk, nauchnyy red.; NIKOLAYEVA, N.M., red.
izd-va; EL'KINA, E.M., tekhn.red.

[Thermal investigations in the field of building materials
and construction elements; collection of works] Teplotekhnichesk
skie issledovaniya v oblasti stroitel'nykh materialov i konstrukt
sii; sbornik trudov. Moskva, Gos.izd-vo lit-ry po stroit., arkh
it. i stroit.materialam, 1960. 186 p.

(MIRA 13:7)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut
po stroitel'stvu.

(Building materials)

(Heat)

ZHUKOV, D. V.

(Drying plaster and stone walls of buildings) Moskva, Gos. izd-vo lit-ry
po stroitel'stvu i arkhitekture, 1953. 61 p. (54-20505)

TH8135. Z48

ZHUKOV, D.V., kandidat tekhnicheskikh nauk; ROGOVOY, M.I., inzhener, nauchnyy redaktor; BEGAK, B.A., redaktor izdatel'stva; TOKER, A.M., tekhnicheskiy redaktor

[Quick firing of bricks] Skorostnye reshimi sushki kirpichasyrtsa.
Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 27 p.
(Brickmaking) (MIRA 9:12)

ZHUKOV, D. V.

Brickmaking

Basic steps in the organization of the quick-drying process in brickmaking. *Biul. stroi. tekhn.* 9, No. 18, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

1. ZHUKOV, D.V., Kand. Tekhn. Nauk
2. USSR (600)
4. Plastering
7. New method of drying plaster and walls of buildings. Stroi. prom. 30 no. 6, 1952
NII Minmashstroya
9. Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ
 1st and 2nd indices
 SUBJECTS AND ENTRIES INDEX

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C

Process of drying ceramic shanks. D. V. Zhurav, Steklo i Keram., 7 (11) 11-17 (1950) - At one plant, structural brick was satisfactorily dried in tunnel driers in 48 hr., with the drying agent moving at 0.7 to 1.0 m./sec. and with relative humidities of 94 to 96% and 40 to 50%. The quality of the brick was improved and the drying process considerably shortened by adopting the following conditions: (1) First period of drying - duration 12 hr., moisture decrease from 18.3 to 14.1%, gradual rise in temperature from 35° to 45°C., speed of drying agent not over 0.5 m./sec., and rate of moisture loss close to constant value of 0.37%/hr. (2) Second period of drying - duration 1 hr., moisture decrease from 14.1 to 5%, rapid rise in temperature up to 142°C., speed of drying agent increased to 3 m./sec., and rate of moisture loss increased to 2 to 2.5%/hr. B.Z.K.

11-17

ZHUKOV, D.V., kandidat tekhnicheskikh nauk; LADINSKIY, A.S., inzhener, laureat
Stalinskoy premii.

[Drying plaster and stone walls of buildings] Sushka shtukaturki i kamennykh
sten zdaniy. Moskva, Gos.izd-vo lit-ry po stroitel'stvu i arkhitekture, 1953.
61 p.

(MLBA 6:8)
(Building)

ZHUKOV, D. V

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE AF AG AH AI AJ AK AL AM AN AO AP AQ AR AS AT AU AV AW AX AY AZ BA BB BC BD BE BF BG BH BI BJ BK BL BM BN BO BP BQ BR BS BT BU BV BW BX BY BZ CA CB CC CD CE CF CG CH CI CJ CK CL CM CN CO CP CQ CR CS CT CU CV CW CX CY CZ DA DB DC DD DE DF DG DH DI DJ DK DL DM DN DO DP DQ DR DS DT DU DV DW DX DY DZ EA EB EC ED EE EF EG EH EI EJ EK EL EM EN EO EP EQ ER ES ET EU EV EW EX EY EZ FA FB FC FD FE FF FG FH FI FJ FK FL FM FN FO FP FQ FR FS FT FU FV FW FX FY FZ GA GB GC GD GE GF GG GH GI GJ GK GL GM GN GO GP GQ GR GS GT GU GV GW GX GY GZ HA HB HC HD HE HF HG HH HI HJ HK HL HM HN HO HP HQ HR HS HT HU HV HW HX HY HZ IA IB IC ID IE IF IG IH II IJ IK IL IM IN IO IP IQ IR IS IT IU IV IW IX IY IZ JA JB JC JD JE JF JG JH JI JJ JK JL JM JN JO JP JQ JR JS JT JU JV JW JX JY JZ KA KB KC KD KE KF KG KH KI KJ KL KM KN KO KP KQ KR KS KT KU KV KW KX KY KZ LA LB LC LD LE LF LG LH LI LJ LK LL LM LN LO LP LQ LR LS LT LU LV LW LX LY LZ MA MB MC MD ME MF MG MH MI MJ MK ML MN MO MP MQ MR MS MT MU MV MW MX MY MZ NA NB NC ND NE NF NG NH NI NJ NK NL NO NP NQ NR NS NT NU NV NW NX NY NZ OA OB OC OD OE OF OG OH OI OJ OK OL OM ON OO OP OQ OR OS OT OU OV OW OX OY OZ PA PB PC PD PE PF PG PH PI PJ PK PL PM PN PO PP PQ PR PS PT PU PV PW PX PY PZ QA QB QC QD QE QF QG QH QI QJ QK QL QM QN QO QP QQ QR QS QT QU QV QW QX QY QZ RA RB RC RD RE RF RG RH RI RJ RK RL RM RN RO RP RQ RR RS RT RU RV RW RX RY RZ SA SB SC SD SE SF SG SH SI SJ SK SL SM SN SO SP SQ SR SS ST SU SV SW SX SY SZ TA TB TC TD TE TF TG TH TI TJ TK TL TM TN TO TP TQ TR TS TT TU TV TW TX TY TZ UA UB UC UD UE UF UG UH UI UJ UK UL UM UN UO UP UQ UR US UT UY UZ VA VB VC VD VE VF VG VH VI VJ VK VL VM VN VO VP VQ VR VS VT VY VZ WA WB WC WD WE WF WG WH WI WJ WK WL WM WN WO WP WQ WR WS WT WY WZ XA XB XC XD XE XF XG XH XI XJ XK XL XM XN XO XP XQ XR XS XT XU XV XW XX XY XZ YA YB YC YD YE YF YG YH YI YJ YK YL YM YN YO YP YQ YR YS YT YU YV YW YX YZ ZA ZB ZC ZD ZE ZF ZG ZH ZI ZJ ZK ZL ZM ZN ZO ZP ZQ ZR ZS ZT ZU ZV ZW ZX ZY ZZ

C

Process of drying ceramic shapes. D. V. Zhukov. *Steklo i Klinker*, 7 (1) 11-12 (1950). At our plant, structural brick was satisfactorily dried in tunnel driers in 48 hr., with the drying agent moving at 0.7 to 1.0 m./sec. and with relative humidities of 94 to 96% and 40 to 50%. The quality of the brick was improved and the drying process considerably shortened by adopting the following conditions: (1) First period of drying - duration 12 hr., moisture decrease from 18.3 to 13-14%, gradual rise in temperature from 35° to 45°C., speed of drying agent not over 0.5 m./sec., and rate of moisture loss close to constant value of 0.37%/hr. (2) Second period of drying - duration 4 hr., moisture decrease from 13-14 to 5%, rapid rise in temperature up to 142° C., speed of drying agent increased to 3 m./sec., and rate of moisture loss increased to 2 to 2.5%/hr. H.Z.K.

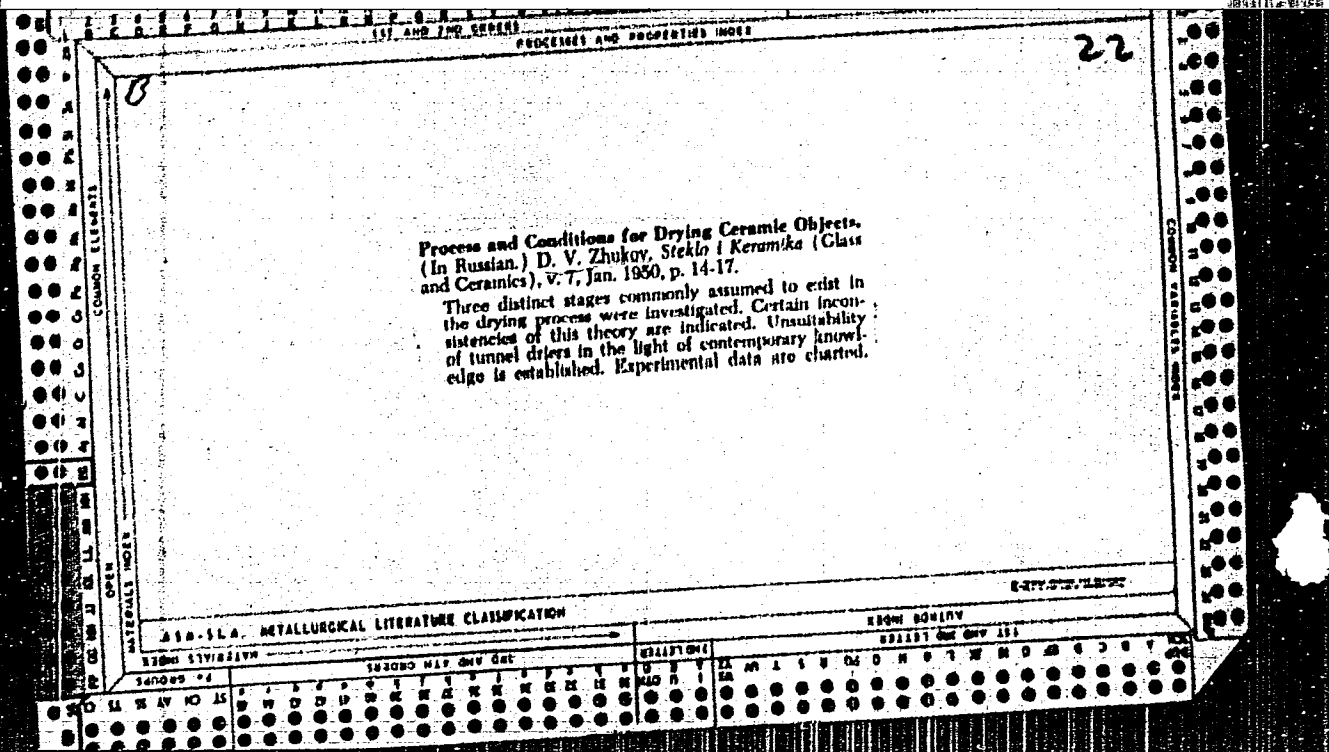
BLOKH, G.S., kand. tekhn. nauk; CHERNYAK, Ya.N., kand. tekhn. nauk;
BALKEVICH, V.L., kand. tekhn. nauk; GAK, B.N., kand. tekhn.
nauk; KORDONSKAYA, R.K., kand. tekhn. nauk; REMPPEL', A.M.,
kand. tekhn. nauk; ZHUKOV, D.V., nauchnyy red.; YUSHKEVICH,
M.O., red. toma; SKRAMTAYEV, B.G., glav. red.; BALAT'YEV,
P.K., red.; KITAYEV, Ye.N., red.; KITAYGORODSKIY, I.I., red.;
KRZHEMINSKIY, S.A., red.; ROKHVARGER, Ye.L., red.; KHOLIN, I.I.,
red.; GURVICH, E.A., red. izd-va; SHERSTNEVA, N.V., tekhn. red.

[Handbook on the manufacture of structural ceramics] Spra-
vochnik po proizvodstvu stroitel'noi keramiki. Moskva, Gos.
izd-vo lit-ry po stroit., arkhitekt. i stroit. materialam.
Vol.1. [General information and production control] Obshchie
svedeniya i kontrol' proizvodstva. Pod red. M.O.IUshkevicha.
1961. 464 p. (MIRA 15:2)
(Ceramics) (Building materials)

CA

19

Drying ceramic shapes. D. V. Zhukov, *Selsk i Keram.* 7, No. 1, 14-17(1959). Structural brick was dried satisfactorily in tunnel drier in 48 hrs. with speed of drying atm. 0.7-1.0 m./sec. and relative humidities of 94-98% and 41-50%. The quality of the brick was improved and the drying process shortened by using a 1st drying period of 12 hrs., moisture decrease from 18.3 to 13-14%, gradual rise in temp. from 35° to 45°, speed of drying atm. not over 0.5 m./sec., rate of moisture loss close to const. value of 0.37%/hr., and then a 2nd drying period of 4 hrs., moisture decrease from 13-14 to 5%, rapid rise in temp. to 142°, speed of drying atm. up to 3 m./sec., rate of moisture loss increased to 2-2.5%/hr.
B. Z. Kamich



PROCESSES AND PROPERTIES INDEX

1974 57

C

Process of drying ceramic shapes. D. V. ZHUKOV. *Sibko i Keram.* 7 (1) 14-17 (1980).—At one plant, structural brick was satisfactorily dried in tunnel driers in 48 hr., with the drying agent moving at 0.7 to 1.0 m./sec. and with relative humidities of 94 to 96% and 40 to 80%. The quality of the brick was improved and the drying process considerably shortened by adopting the following conditions: (1) First period of drying—duration 12 hr., moisture decrease from 18.3 to 13-14%, gradual rise in temperature from 35° to 45°C., speed of drying agent not over 0.5 m./sec., and rate of moisture loss close to constant value of 0.37%/hr. (2) Second period of drying—duration 4 hr., moisture decrease from 13-14 to 5%, rapid rise in temperature up to 142°C., speed of drying agent increased to 3 m./sec., and rate of moisture loss increased to 2 to 2.5%/hr. B.Z.K.

A 58-51A METALLURGICAL LITERATURE CLASSIFICATION

S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
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GRINBERG, Ya.Kh.; ZHUKOV, E.G.; MEDVEDEVA, Z.S.; LUZHAYA, N.P.

Kinetics of interaction of amorphous boron with phosphorus.
Izv. AN SSSR. Neorg. mat. 1 no.9:1484-1492 S '65.

(MIRA 18:11)

1. Institut obshchey i neorganicheskoy khimii imeni Kurnakova
AN SSSR.

GRINBERG, Ya.Kh.; ZHUKOV, E.G.

Measurement of the specific surface area of amorphous boron.
Izv. AN SSSR Neorg. mat. 1 no.10:1845-1848 0 '65.

(MIRA 18:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S. Kurnakova
AN SSSR. Submitted April 12, 1965.

GRINGERG, Ya.Kh.; MEDVEDEVA, Z.S.; YELISEYEV, A.A.; ZHUKOV, E.G.

Preparation of single boron phosphide (BP) crystals from the gaseous phase. Dokl. AN SSSR 160 no.2:337-338 Ja '65.

(MIRA 18:2)

1. Institut obshchey i neorganicheskoy khimii im. N.S. Kurnakova AN SSSR. Submitted July '7, 1964.

546.27181.1

AUTHOR: Grinberg, Ya. Kh.⁴⁴; Zhukov, E. G.⁴⁴; Medvedeva, Z. E.⁴⁴; Luzhnaya, N. P.⁴⁴ 7/20
33

TITLE: Kinetics of the reaction of amorphous boron with phosphorus

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1484-1492

TOPIC TAGS: rectifier²⁵, maser⁵⁴⁴, semiconductor, boron phosphide, boron compound, kinetics, reaction mechanism

ABSTRACT: Boron phosphide (BP) is of considerable interest since rectifiers made from it can function in an oxidizing atmosphere at up to 1000C. Boron phosphide monocrystals may prove useful for the design of masers and similar devices. In this work, the reaction of boron with phosphorus vapor was studied at 1000, 1100, and 1150C. It was found that the reaction is initially rate controlled and follows second-order kinetics. Following a transition period, the reaction becomes diffusion controlled and obeys first-order kinetics. The latter stage of the reaction is presumably caused by the formation of a coating on the boron. The rate constants and activation energies of both reaction stages were determined. A mechanism is proposed for the reaction. The optimum quality of BP ($< 10^{-3}\%$ Si) was obtained when the reaction was conducted at 1150—1200C for 1 hr or less, using amorphous boron. Orig. art. has: 7 figures, 3 tables, and 10 formulas. [VS]

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences, SSSR) 4/
Card 1/2

L 3976-66

ACC NR ~~AP~~5025781

SUBMITTED: 29Apr65

NO REF SOV: 007

REF: 012

REF: 53, 60

ATTN: 4118

ZHUKOV, E. M.

ZHUKOV, E. M. -- "On the Speed, Sensitivity, and Range of Electrical Transmission of Small Images with the Aid of Pipes." Min Higher Education USSR, Leningrad Electrical Engineering Inst imeni V. I. Ul'yanov (Lenin), Chair of Television, Leningrad, 1956. (Dissertation for the Degree of Candidate in TECHNICAL SCIENCES).

SO: KNIZHNAYA LETOPIS' (Book Register), No. 42, October 1956, Moscow.

ZHUKOV, E.V.

USSR/Zooparasitology - Parasitic Worms.

Q-1

Abs Jour : Ref Zhur - Biol., No 5, 1953, 19532

Author : Zhukov, E.V.

Inst :

Title : New Varieties and Species of Dipnetic Trematodes in Far Eastern Fish.

Orig Pub : Zool. zh., 1957, 36, No 6, 240-246

Abstract : A description and pictures of *Atractotrema kutlatini* gen. n. sp. n. from *Pleurogrammus aeneus* and *Hexagrammidae gilberti*; *Lepidobryllus armatus* sp. n. from *Eryonotus* sp.; *L. brechycladium* sp. n. from *Hexagrammidae gilberti* and *Gymnocypris herzensteini*; *L. pleuronectini* sp. n. from *Cleisthenes herzensteini*, *Microplesionax pleuronectes dubius*, *Pseudopleuronectes yabochanus* and *P. herzensteini*; *Urinatrema birudinae* sp. n. from *Hemigranon orthogranium* and *H. jagoccephalus*; *Pseudomonogonoides* gen.n.

Card 1/1

DEMENT'YEV, A.; ZHUKOV, F., sootekhnik:

Winter farrowing helped to increase the output of pork. Nauka i pered.
op. v sel'khoz 8 no.12:47-48 D '58. (MIRA 12:1)

1. Zamestitel' predsedatelya kolkhoza "Krasnoye znamy" Pskovskogo
rayona Pskovskoy oblasti (for Dement'yev).
(Swine)

ZHUKOV, F.

~~Local finance of capitalist countries.~~ Reviewed by F. Zhukov.
Fin.SSSR 20 no.3:92-94 Mr '59. (MIRA 12:7)
(Local finance)

ZHUKOV, F.A. (Pskov)

Conditioned reflexes and swine raising. Priroda 54 no.5:62-68
My '65. (MIRA 18:5)

ZHUKOV, F.

Year round field shelters for hogs. Sel'. stroi. 12 no.8:22-23
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