

S/058/62/000/005/066/119
A061/A101

AUTHOR: Bessonov, M. V.

TITLE: Ultrasonic data used to calculate the thermal conductivity of vitreous substances at high temperatures

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 47, abstract 5G425
(V sb. "Primeneniye ul'traakust. k issled. veshchestva", no. 13, Moscow, 1961, 165 - 170)

TEXT: The sound velocity in colophony and silicate glass has been experimentally determined in dependence on temperature at ultrasonic frequencies of 1.35 and 23.9 Mc. In the transition from the liquid to the solid phase, ultrasonic velocity changes by 2.5 - 3 times. The attempt is made to utilize these data for an estimate of thermal conductivity using the well-known formulas of Debye, Bridgman, et al.

[Abstracter's note: Complete translation]

Card 1/1

BESSONOV, N., polkovnik

Love for combat specialty. Komm. Vooruzh. Sil 5 no.22:62-66 N '64.
(MIRA 17:12)

BESSONOV, N.A.

Mass and inertia. Sbor. nauch. rab. Bel. politekh. inst.
no.60:10-17 '57. (MIRA 13:2)
(Mechanics)

AKSENOVICH, D.A.; BESSONOV, N.A.

Effect of surface energy on the abrasive wear of crystals. Sbor. nauch.
rab. Bel. politekh. inst. no.60:125-130 '57. (MIRA 13:2)
(Abrasion) (Crystals)

BESSONOV, N.A.

Relation between work, heat and absorbed energy in the process of
abrasive wear of rock salt. Sbor. nauch. rab. Bel. politekh. inst.
no.60:116-124 '57. (MIRA 13:2)
(Rock salt) (Abrasion) (Friction)

BESSONOV, N.A., kand.tekhn.nauk

Two mistakes in the exposition of the theory of the dimensional analysis. Sbor. metod. rab. Bel. politekh. inst. no. 1:163-164 '59.

(MIRA 14:1)

(Dimensional analysis)

BESSONOV, N.D.

Theoretical determination of the parameters b in the Prony equation as applied to problems of fluid flow in coarse-grained rocks. Trudy VODGEO no.6:21-26 '64. (MIRA 18:3)

GAVRILKO, V.M.; BESSONOV, N.D.

Filters from porous silicate materials for water-collecting
wells. Vod. i san.tekh. no.4:33 Ap '59. (MIRA 12:5)
(Filters and filtration) (Water-supply engineering)

BESSONOV, N.D., inzh.

Hydraulic study of block type filters. Gidr. i mel. 13 no.4:39-47
Gidr. i mel. 13 no.4:39-47 Ap '61. (MIRA 14:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenerov gidrogeologii.
(Filters and filtration)

BESSONOV, N.D.

Calculation of the flow of water towards a well equipped with a
block-type filter. Razved. i okh. nedr 27 no.10:54-58 0 '61.
(MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut vodosnabzheniya,
kanalizatsii, gidrotekhnicheskikh sooruzheniy i inzhenernoy
gidrogeologii.

(Filters and filtration) (Hydrodynamics)

BESSONOV, N.D.

Evaluating the application of the linear law in filtration
calculations. Vop. fil'tr. rasch. gidr. soor. no.4:151-160 '64.
(MIRA 17:6)

BESSTOMY, N.I., Cand Tech Sci -- (diss) "Relay ² *computer* calculating machine."
Mos, 1958, 6 pp (Acad Sci USSR. Heat Engineering Laboratory) 160 copies
(KL, 27-58, 107)

- 83 -

BESSONOV, N.M.

Hydrochemical characteristics of the commercial areas off the coast of west Africa in the spring and summer of 1960. Trudy Azherniro no.20:11-16 '62. (MIRA 16:4)

(Atlantic Ocean—Sea water—Analysis)

BESSONOV, N.M.

Some characteristics of changes in hydrochemical properties in
the fishing area of Dakar and Takoradi. Okeanologia 4 no.36
813-824 '64 (MORA 1891)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut rybnogo khoz-
yaystva i okeanografii, Laboratoriya promyslovoy okeanografii.

BESSONOV, N.M.

The waters of the continental shelf of East Africa. Mor. sbor.
48 no.4368-75 Ap '65. (MIRA 18:6)

BESSONOV, N.M.; FEDCSOV, M.V.

Primary production in the shelf waters of the western coast of Africa. Okeanologia 5 no.5:877-883 '65.

(MIRA 18:11)

1. Laboratoriya promyslovoy okeanografii Vsesoyuznogo nauchno-issledovatel'skogo instituta morskogo rybnogo khozyaystva i okeanografii.

VOLOKH, V.G.; GUSHCHINA, M.V.; IGRUNOV, V.D.; NECHAYEV, I.N.; POKROVSKAYA, I.A.; TRIFONOVA, T.S.; TSYGANOVA, A.M.; RUSIN, N.P., otv.red.; KITAYTSEV, A.M., red.; KUZ'MIN, L.A., red.; OLIMPOV, V.G., red.; SKITEYKIN, I.S., red.; BERLIN, I.A., red.; NECHAYEV, I.N., red.; SHCHERBAKOVA, L.F., red.; MARTYNOV, S.I., red.; SIMONOV, Ya.P., red.; IVANOV, A.P., red.; BESSONOV, N.P., red.; YASNOGORODSKAYA, M.M., red.; VLADIMIROV, O.G., tekhn.red.

[Directions for hydrometeorological stations and posts] Nastavlenie gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidrometeor.izd-vo. No.3, pt.1. [Observations at meteorological stations] Meteorologicheskie nabludeniia na stantsiakh. 1958. 223 p.

(MIRA 12:12)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Sotrudniki Metodicheskogo otdela Glavnoy geofizicheskoy observatorii im. A.I.Voyeykova (for Volokh, Gushchina, Igrunov, Nechayev, Pokrovskaya, Trifonova, Tsyganova). 3. Glavnoye upravleniye Gidrometeorologicheskoy sluzhby SSSR (GUGMS)(for Kitaytsev, Kuz'min, Olimpov, Skiteykin). 4. Glavnaya geofizicheskaya observatoriya (GGO) (for Berlin, Nechayev, Rusin, Sherbakova). 5. Mestnyye upravleniya Gidrometeorologicheskoy sluzhby (for Martynov, Simonov, Ivanov, Besonov).

(Meteorology--Observations)

BESSONOV, N.V., inzhener.

Repairing a damaged boiler shell. Energetik 2 no.2:12-13 F '54.
(MLRA 7:4)
(Steam boilers)

AUTHOR: Bessonov, P., School Director SOV/27-58-11-8/29
TITLE: The Modernization of Machine Tools (Modernizatsiya stankov)
PERIODICAL: Professional'no - tekhnicheskoye obrazovaniye, 1958, Nr 11, pp 9 - 10 (USSR)
ABSTRACT: In the training workshops of the Kolomna Trade School Nr 30 there are 104 metal cutting machine tools of which a great number has become obsolete. During their training courses the students are turning out screw-cutting lathes 1615-M and bench drilling machines NS-12B. The obsolete equipment has caused difficulties in this production, and the school management decided to improve the performance of the equipment. Twelve lathes of the "Udmurt" type were fundamentally modernized. The author goes on to explain in detail what changes were effected on the lathes and machine tools. He mentions the receipt of 5 gear-shift boxes from the Tbilisskiy liteyno-mekhanicheskiy zavod imeni Kamo (Tbilisi Foundry

Card 1/2

The Modernization of Machine Tools

SOV/27-58-11-8/29

and Mechanical Plant imeni Kamo). The modernization of the machine tools and lathes gave good results and the improvement of the school's equipment is being continued.

ASSOCIATION: Kolomenskoye remeslennoye uchilishche Nr 30 (Kolomna Trade School Nr 30)

1. Machine tools---Development 2. Personnel---Performance

Card 2/2

BESSONOV, P. A.

Sur les fonctions presque periodiques d'une variable complexe, definies dans tout le plan. CR Acad. Sci., 182 (1926), 1011-1013.

Sur les fonctions meromorphes presque periodiques definies dans tout le plan. C.R. Acad. Sci., 186 (1928), 63-65.

SO: Mathematics in the USSR, 1917-1947

edited by Kurosh, A. G.

Markushevich, A. I.

Rashevskiy, P. K.

Moscow-Leningrad, 1948

BESSONOV, S.A.; VASIL'KOV, N.P., kand. ekon. nauk; VLASOV, V.A., kand. ekon. nauk; GLUKHAREV, L.I., kand. ekon. nauk; DANILEVICH, M.V., doktor ekon. nauk; ZHAMIN, V.A., doktor ekon. nauk, prof.; ZAKHMATOV, M.I., kand. ekon. nauk; KURAKIN, N.A., kand. ekon. nauk; PANOV, V.P.; SMIRNOV, G.V., kand. ekon. nauk, dots.; TRIFONOV, V.I., kand. ekon. nauk; TYAGAY, Ye. Ya.; FAMINSKIY, I.P.; KHODOV, L.G.; SHMIDT, G.A., kand. ekon. nauk, dots.; SHMIGOL', N.N., kand. ekon. nauk, dots.; MATSUK, R.V., red.; GARINA, T.D., tekhn. red.

[The economy of foreign countries; the capitalistic system of the world economy after the Second World War] Ekonomika zarubezhnykh stran; kapitalisticheskaya sistema mirovogo khozaystva posle Vtoroi Mirovoi voyny. Pod red. V.A. Zhamina. Moskva, Vysshaya shkola, 1962. 632 p. (MIRA 16:1)
(Economic history)

BESSONOV, S.M.

DECEASED
C' 1961

1962/5

SEE ILC

NUTRITION

PA 77T86

BESSONOV, S. V.

USSR/Metals
Flotation
Gold

May 1948

"The Problem of the Effect of Adsorption and the Chemical Action of Oxygen on the Flotation Properties of Gold, Silver and Copper Surfaces," I. N. Flaksin, Corr Mem, Acad Sci USSR; S. V. Bessonov, Inst of Mining, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LX, No 4

Discusses results of experiments on above subject. Readings are tabulated and plotted, showing boundary angle of wetting against time of contact with water for each metal. Submitted 9 Mar 1948.

77T86

BESSONOV, S.V.

PA 24/4 T100

USSR/Metals

Aug 48

Mining Methods

"Changes in the Wetting of Metals and Sulfide Minerals Caused by the Action of Various Gases,"
I. N. Plaksin, Corr Mem, Acad Sci USSR, S. V.
Bessonov, Mining Inst, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 5

Subject investigation showed oxygen's selective action on the surface of the minerals.

~~24~~ 24/49T100

A

Influence of flotation reagents on the hydrometallurgical processing of ore concentrates. I. N. Plaksin and S. V. Bessonov. *Izvest. Akad. Nauk S.S.S.R., Otdel. ~~77th~~ 1948, 883 8.*—The recovery of Au by direct cyanidation of flotation concentrates without preliminary treatment, such as grinding, gave lower recoveries than when the concentrates were previously treated. The questions of stability and compn. of the reagent film on the Au particle were discussed. The loss of Au in the tailings was attributed chiefly to the presence of flocules formed during the flotation process. Two hypotheses for the detrimental effects of flotation reagents on hydrometallurgical processing were advanced: (1) The flotation reagent, viz., collector, reduces the wettability of the Au by the cyanide soln. and the recovery drops. (2) This collector film is removed but formed again on the Au surfaces during cyanidation. Graphs show the effect of different durations of preliminary agitation on the percentage recovery of Au; the effect of the amt. of flotation reagent on the recovery of Au by cyanidation of semiroasted concentrates; and the relation of the amt. of flotation reagents to the loss of Au in the coarse and fine concentrates after cyanidation. Eight photographs of differently treated Au surfaces are provided. A table gives the relation of Au recoveries to different methods of preliminary treatment of flotation concentrates before cyanidation. Gilulya S. Macy

75

CA

Role of oxygen and other gases in the flotation phenomena. I. N. Plaksin and S. V. Bessonov (Inst. Mining, Acad. Sci. U.S.S.R.). *Invent. Akad. Nauk P.S.S.R., Otdel Tekh. Nauk* 1948, 1773-88. The mechanism of the action of O on mineral surfaces was studied. The chief method of investigation was the measurement of contact angles; the method developed by Rebinder and his co-workers was used. It is believed by P. and B. that contact angle measurements offer the possibility of estg. the alteration of the solid surface occurring as a result of adsorption of surface-active substances on it. Also, it is stated that if the contact angle on a mineral surface increases (by increasing the concn. of collector, time of contact, or adsorption of gas), then the flotation activity of such a surface improves. In the method used by P. and B. the contact angle was measured by projecting onto a screen the image of a drop resting on a mineral surface, and measuring the angle of contact directly. In rare instances the reproducibility of the angle obtained is 4-5°, but in most cases it is 1-2°. For the expts. the metal surfaces used were electrolytic Au and Ag. These metals were formed into cylindrical tablets of 8 mm. diam. and 0.5 mm. thick. Then the minerals, pyrite, galena, and arsenopyrite were also studied. For exposure of the mineral surface, the method of polishing (under a layer of distd. water) was adopted. Time of polishing in all cases was 2 min. After polishing, the surface was washed with alc., then with distd. water. On the basis of results obtained from the measurements made it is concluded that O (from the air or dissolved in water) does adsorb on metal surfaces. This was assumed to occur in the following steps: (1) phys. adsorption of gas, (2) activation of adsorption, and (3) fixation of O on the surface with formation of O film (chemisorption), and then (4) considerable oxidation of the surface with formation of an oxide film. Besides O, other gases used in the expts. were N and CO₂. Several tables and graphs give the relation between size of contact angle and length of time of contact. Photographs of the app. used are given.

Gladys S. Macy

BESSONOV, S. V.

Plaksin, I. N., and Bessonov, S. V., "Action of a Film of Xanthate on the Solubility of Gold and its Alloys in a Cyanide Solvent." Isvetnyye Metally, No 4, 1949.

BESSONOV, S.V.

U S S R .

✓ The effect of oxygen on the floatability of galena and chalcopyrite. S.V. Bessonov and I.N. Plaksin. *Izvest. Akad. Nauk S.S.S.R. ~~Geol. Nauch. Ser.~~ Nauk* 1954, No. 1, 114-27. —
 A novel method proposed for the study of the effects of O₂ on flotation of sulfide minerals consists in grinding and classifying the pure minerals and flotation in a N₂ or A atm. in a deoxygenated soln., or in the presence of definite amts. of O₂ in the liquid phase. The minerals were ground to 0.1-0.074 mm. size, and were tested in a neutral water phase, in the absence of flotation agents, with terpineol alone (50 g./ton) and with Bu xanthate (100 g./ton) and terpineol (50 g./ton). Neutral deoxygenated water was found to cause no flotation of the sulfide minerals, while with the reagents, but with no O₂ bubbled through small amts. of minerals collected on the surface, presumably because of the surface oxidation of the minerals during grinding. Upon the introduction of O₂ the minerals are readily sepd. Galena is floated even with a min. O₂ content, while chalcopyrite requires a many times higher O₂ concn.

W. M. Sternberg

Bessonov, S. V.

USSR

Changes in the surface wettabilities of gold, silver, copper, and pyrite caused by successive action of gases. S. V. Bessonov. *Trudy Inst. Gornogo Dela, Akad. Nauk S.S.S.R.* 4, 242-8(1954).--Surface wettabilities in various atm. were studied by measuring contact angles between carefully prepd. specimens and water previously treated with the gas. Of the gases H₂, N₂, and O₂ only O₂ was adsorbed on the studied materials. The adsorption of O₂ on Au and pyrite was irreversible and not changed by action of H₂. A surface previously treated with H₂ was more actively affected by O₂ than an untreated surface. No difference was observed between the action of pure and tech. O₂. Rates in changes of contact angles are included. John A. Krymisky--

BR 52 0000, SM

USSR

A possible mechanism of the galena depression by alkalies in xanthate flotation. S. V. Bessonov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1954, No. 9, 108-9. — The effect of KOH on the flotation of Pb minerals with xanthate is discussed. In the presence of KOH, Pb salts incapable of combination with the xanthate are formed in the absence of O_2 even when the pH is low and if more xanthate is added. A set of equations is written to illustrate the probable reactions. NaOH is less active in this reaction than KOH owing to its lower alkyl. and to its buffer action, and the pH of the soln. does not rise above 9-9.6. W. M. S.

BESSONOV, S. V.

U.S.S.R.

Adhesion of sulfide minerals to air bubbles in absence of (flotation) reagents. I. N. Plaksin and S. V. Bessonov (*Dokl. Akad. Nauk SSSR*, 1954, 87, 495-498).—The hydrophobicity of freshly powdered chalcopyrite immersed in water rises steadily for 1 hr., thereafter remaining constant; this effect is ascribed to absorption of dissolved O_2 . A similar effect is observed with galenite in water of very low O_2 content, but is followed by surface oxidation, with diminishing hydrophobicity. The stable hydrophobicity of a series of minerals in presence of dissolved O_2 rises in the order pyrites < galenite < sphalerite < chalcopyrite < pyrrhotine < arsenopyrite.

R. TRUSCOE.

ESSO:CV, S.V.

4

Resorption of oxygen by sulfide suspensions. I. N. Plaksin and S. V. Bessonov. *Doklady Akad. Nauk S.S.S.R.* 98, 251-2 (1954). In the flotation of sulfide ores, the adsorption and the following resorption of O dissolved in the H₂O suspensions by the finely dispersed sulfides is often observed

and may affect the output of the flotation process. Galenite, pyrite, and chalcopyrite, in grain sizes down to 55 μ , were ground in an atm. of A and suspended in H₂O or in alk. solns., pH 9.0 and 11.0, by addn. of Ca(OH)₂ solns. The O concn. in the liquid, was detd. at the beginning of the

expts. and in periods up to 10 min. thereafter. Pyrite and galenite resorb O rapidly; chalcopyrite also resorbs, but with a lower rate. The pH and the chem. character of the collector agents distinctly influence the reaction; quartz has only a low reactivity. The O resorption is strongest in Ca(OH)₂ or soda solns., analogous to the rapid depression of pyrite in alk. solns. For galenite a similar effect is observed, but chalcopyrite shows the same phenomenon only in a much lower degree.

W. Eitel

BESSONOV, S. V.

KURENKOV, I.I., kandidat tekhnicheskikh nauk; BESSONOV, S.V., dotsent.

"Concentration of ores" by S.I.Pol'kin. Reviewed by I.I.Kurenkov,
S.V.Bessonov. TSvet.met. 27 no.5:76-78 S-O '54. (MIRA 10:10)
(Ore dressing) (Pol'kin, S.I.)

PLAKSIN, I.N.; BESSONOV, S.V.; SOLOV'YEV, L.R.

Study of modifications in flotation properties of the surface of
sulfides under the effect of gases and reagents. Trudy Inst.gor.
dela no.2:193-205 '55. (MLRA 9:3)

1. Chlen-korrespondent AN SSSR (for Plaksin)
(Flotation) (Sulfides)

RUSSIA, S. V.
USSR/Chemistry - Metallurgy

FD-3237

Card 1/1 Pub. 41-18/22

Author : Bessonov, S. V., Plaksin, I. I., and Tyurnikova, V. I., Moscow

Title : On the Influence of Oxygen on the Floatability of Chalcopyrite
 in the Presence of Oleic Acid

Periodical : Izv. AN SSSR, Otd. Tekh. Nauk 7, 137-138, Jul 55

Abstract : Describes flotation (with argon) of chalcopyrite pulverized
 under argon and mixed 2:3 with quartz with 4:1 ratio of liquid:
 solids. Water used contained 0.16 and 36.0 milligrams of
 oxygen per liter (20°C); medium was neutral (pH=7.0, water) and
 alkaline (pH=9.0, addition of NaOH); reagents used were oleic
 acid and pine oil (5 grams per ton). Results given on graph
 and in table show definite influence of oxygen as activator.
 Four references, all USSR.

Institution : Institute of Mining, Acad Sci USSR

Submitted : 14 April 1955

Bessonov, S. V.

~~CH~~
~~AC~~
 The effects of various gases on the flotability of chalcopyrite. S. V. Bessonov, I. N. Plaksin, and V. I. Tyurnikova. *Izv. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk* 1955, No. 10, 127-30; cf. *C.A.* 50, 739a.—The effects of A, H, and CO₂ on chalcopyrite flotation were studied with tagged xanthate. With A, the extn. depends entirely on the O₂ concn. in the soln. H is not itself active in the flotation, but it interacts with O, and the extn. may be affected adversely if insufficient O is present. CO₂ is effective chiefly by lowering the pH. The acidity of the soln. favors the activation of the mineral surface, and the yield is high even when practically no O is present. O nevertheless plays an important role in flotation even in the presence of CO₂. The effect. of the 3 gases are similar with other sulfide minerals, and the results confirm the predominating and substantial role of O₂ in the xanthate extn. of sulfide minerals. W. M. S.

usult spruce to the bank.

(2)

Bessonov, S. V.

USSR/Minerals - Chemical technology

Card 1/1 Pub. 22 - 37/59

Authors : Plaksin, I. N., Memb. Corres., Acad. of Sc., USSR; Bessonov, S. V.; and Tyurnikova, V. I.

Title : Reaction of xanthogenates with the surface of sulfide minerals

Periodical : Dok. AN SSSR 102/2, 331-333, May 11, 1955

Abstract : The results obtained during the flotation splitting of chalcopyrite and quartz in argon with the application of marked xanthogenates are described. The effect of oxygen and xanthogenates upon the surface of sulfide minerals is discussed. Two USSR references (1950-1954). Graphs.

Institution : Acad. of Sc., USSR, Inst. of Mining

Submitted : January 7, 1955

SOV/137-58-10-20409

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 8 (USSR)

AUTHOR: Bessonov, S. V.

TITLE: The Effect of Soda Upon the Floatability of Sulfide Minerals
(O vliyanii sody na flotiruyemost' sul'fidnykh mineralov)

PERIODICAL: Tr. Irkutskogo gornometallurg. in-ta, 1956, Nr 11, pp 91-101

ABSTRACT: A study of the influence of Na_2CO_3 upon the floatability of sulfide minerals is run by measuring the time required for particles to adhere to an air bubble on a contact instrument of the Glembotskiy system. It is established that in the presence of Na_2CO_3 the grains of the majority of sulfide minerals remain hydrophobic. However, at high Na_2CO_3 concentration in the solution ($\text{pH} > 10-12$), they become hydrophilic. Na_2CO_3 suppresses the floatability of arsenopyrite to a greater degree than any other; it has little effect upon the floatability of pyrrhotite. All this holds true when xanthate is introduced. The influence of Na_2CO_3 on the surface of sulfide mineral is dual. On the one hand, the OH^- ion strengthens the oxidation and hydrophilization of the surface, while on the other the HCO_3^- and CO_3^{2-} ions, reacting with the oxidized surface, form a hydrophobic film. The

Card 1/2

SOV/137-58-10-20409

The Effect of Soda Upon the Floatability of Sulfide Minerals

hydrophobization of the grain surfaces of most sulfides is explained by the fact that the parameters of the crystal lattices of films of carbonates and the crystal lattices of sulfides do not coincide. This conclusion is confirmed by the hydrophilization of arsenopyrite in soda solutions, the lattice of the Fe carbonate in this mineral having a parameter similar to two parameters in the sulfide lattice.

L. S.

1. Metal sulfides--Flotation 2. Sodium carbonates--Applications 3. Sodium carbonates
--Chemical effects 4. Crystals--Lattices

Card 2/2

BESSONOV, S.V. doktor tekhnicheskikh nauk.

Organising scientific research requested by industry in
schools of higher learning. TSvet. met. 29 no.10:1-5
0 '56.

(MLRA 9:12)

1. Irkutskiy gorno-metallurgicheskiy institut.
(Metallurgical research)

PLAKSIN, I. N., and BESSONOV, S. V.

"Role of Gas in Flotation Processes."

paper delivered at the Intl. Cong. on Surface Activity, London, 8-12 Apr 1957.

Angewandte Chemie, No. 16, 1957.

BESSONOV, S. V.

BESSONOV, S.V.

"The flotation of arsenic pyrite ores" by I.N. Plaksin, G.A.
Miasnikova, A.M. Okolovich. Reviewed by S.V. Bessonov. Izv. vost.
fil. AN SSSR no.10:132-133 '57. (MLRA 10:11)
(Flotation) (Arsenopyrite) (Pyrites)
(Plaksin, I.N.) (Miasnikova, G.A.) (Okolovich, A.M.)

BESSONOV, S. V

137-1958-3-4524

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 7 (USSR)

AUTHORS: Bessonov, S. V., Plaksin, I. N.

TITLE: On the Effect of the Alkalinity of Pulp on the Oxidation of Sulfides and Their Flotation (O vliyanii shchelochnosti pul'py na okisleniye sul'fidov i na ikh flotiruyemost')

PERIODICAL: Sb. nauchn. tr. Mosk. in-t tsvetn met. i zolota i VNITO tsvetn. metallurgii, 1957, Nr 26, pp 33-34

ABSTRACT: Available experimental materials, also observations made under industrial conditions, justify the conclusion that a direct relation exists between the alkalinity of the pulp and the oxidation processes of sulfides during flotation. The greater the alkalinity of the pulp, at a given O₂ concentration, the more intense the oxidation in the liquid phase of the pulp. Consequently, by controlling the pH of the medium, the reaction of minerals with the flotation agents may be altered. Thus the problem of the amount and of the point at which alkali is supplied during the process acquires great practical importance.

Card 1/1

A. Sh.

Bessonov, S. V.

PLAKSIN, Igor' Nikolayevich; KAKOVSKIY, I.A., prof.doktor, retsenzent;
KHOKHLOV, V.R., kand.tekhn.nauk, retsenzent; **SKOBHEYEV, I.K.,**
prof. odktor, retsenzent; **VESSONOV, S.V.,** prof., doktor tekhn.
nauk, retsenzent; **MARENKOV, Ye.A.,** red.; **EL'KIND, L.M.,** red.
izd-va; **VAYNSHTEYN, Ye.B.,** tekhn.red.

[Metallurgy of precious metals] Metallurgiya blagorodnykh metallov.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metal-
lurgii, 1958. 366 p. (MIRA 11:7)

1. Chlen-korrespondent Akademii nauk SSSR (for Plaksin). 2.
Irkutskiy gorno-metallurgicheskiy institut, kafedra metallurgii
blagorodnykh metallov (for Khokhlov, Skobeyev). 3. Irkutskiy
gorno-metallurgicheskiy institut kafedra obogashcheniya poleznykh
iskopayemykh (for Bessonov)
(Precious metals--Metallurgy)

KATASHIN, L.V.; YEGOROV, A.K.; BESSONOV, S.V.

Using stage and jet flotation in treatment of lead-zinc ores.
Izv. vys. ucheb. zav.; tsvet. met. no.2:33-38 '58. (MIRA 11:8)

1. Irkutskiy gornometallurgicheskiy institut. Kafedra obogashcheniya
poleznykh iskopayemykh.
(Flotation) (Lead ores) (Zinc ores)

AUTHORS: Leonov, S.B., SOV/149-58-4-17/26
Khokhlov, V.R.,
Bessonov, S.V.

TITLE: Elimination of Harmful Effects of Flotation Reagents
on Concentrate Cyaniding (Ustraneniye vrednogo deystviya
flotoreagentov pri tsianirovani kotsentrata)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya
Metallurgiya, 1958, Nr 4, pp 122-123 (USSR)

ABSTRACT: It has been known for some time that slowing down of
the reaction observed sometimes in cyaniding flotation
concentrates is not caused by a film of collector
adhering to the surface of the gold grains but is due
to froth formation. The present Authors studied this
effect in the particular case of gold-rich
concentrates from Taseyev deposits containing 49.7% SiO₂,
4.18% Al₂O₃, 1.32% CaO, 17.63% S, 16.8% Fe, 1.1% As,
0.73% Sb, 0.13% Cu and 0.1% Zn. The first series of
experiments consisted of cyaniding concentrate taken
straight from the filter-press and the same

Card 1/4

SOV/149-58-4-17/26

Elimination of Harmful Effects of Flotation Reagents on
Concentrate Cyaniding

concentrate washed three times with water and dried at 150°C. The ratio of the 0.1% NaCN solution containing barium peroxide as the oxidising agent to the concentrate was 2 to 1 and the experiments, carried out in bottles attached to a mechanical mixer, lasted 24 hrs. The values of gold recovery from the washed and untreated concentrate were 88 and 72% respectively. In the next series of experiments the liquor:solid ratio was increased to 3.5:1. Consequently, less froth was formed and under these conditions 95% gold was recovered from both untreated and washed concentrates. Since air bubbles may be broken up and the flotation reagents washed away when water is removed from the concentrate in the filter press, concentrate removed straight from the flotation machine was used in the next series of experiments in which stationary cyaniding vessels were employed. Here again the same gold recovery of 88% was obtained from both washed and untreated samples. However, when

Card 2/4

SOV/149-58-4-17/26

Elimination of Harmful Effects of Flotation Reagents on
Concentrate Cyaniding

the same experiments were carried out in a laboratory mixer (5 litre capacity) a large quantity of froth was formed when unwashed concentrate was cyanided, with the result that only 72% of gold was recovered from this material as compared with 88% recovered from the washed concentrate. In the last series of experiments the froth formed during cyaniding was continuously broken up by mechanical means. Under these conditions high recovery values (up to 89%) were obtained from both washed and untreated samples. The experimental results confirmed the view that one of the causes of the harmful effect of the flotation reagents during cyaniding is frothing as a result of which some gold (particularly that contained in very fine

Card 3/4

SOV/149-58-4-17/26

Elimination of Harmful Effects of Flotation Reagents on
Concentrate Cyaniding

concentrate particles) does not come in contact with
the cyanide solution. There are 6 references of which
5 are Soviet and 1 English.

ASSOCIATION: Irkutskiy Gornometallurgicheskiy Institut. Kafedra
Metallurgii Blagorodnykh Metallov (Irkutsk Mining-
Metallurgical Institute, Chair for Metallurgy of
Noble Metals)

SUBMITTED: 3rd December 1957.

Card 4/4

BESSONOV, S.V.; LEONOV, S.B.; KHOZHLOV, V.R.

Studying the behavior of stibnite during cyanidation of concentrates in autoclaves. Izv.vys.ucheb.zav.; tsvet.met. no.6:84-91 '58.
(MIRA 12:2)

1. Irkutskiy gornometallurgicheskiy institut, kafedra metallurgii blagorodnykh metallov.
(Stibnite) (Cyanide process)

18(5)

PHASE I BOOK EXPLANATION

SOV/1997

Besronov, Sergey Vasil'yevich, Doctor of Technical Sciences, Professor

Obogashcheniye rud v SSSR (Ore Concentration in the USSR) Moscow,
Izd-vo "Znaniye," 1959. 31 p. (Series: Vsesoyuznoye obshchestvo
po rasprostraneniyu politicheskikh i nauchnykh znaniy. Seriya IV,
1959, vyp. 6) 42,500 copies printed.

Sponsoring Agency: Vsesoyuznoye obshchestvo po rasprostraneniyu
politicheskikh i nauchnykh znaniy.

Scientific Ed.: A. M. Okolovich; Ed.: T. F. Islankina; Tech. Ed.:
Ye. V. Savchenko.

PURPOSE: This booklet is intended for the general reader interested
in learning some basic facts about ore concentration in the USSR.

COVERAGE: The booklet gives general information on ore concentration,
particularly by the flotation method. Various minerals and ores
are discussed briefly. Present problems and future goals in the

Card 1/2

Ore Concentration in the USSR

SOV/1997

field of ore concentration are indicated. There are no references, and no personalities are mentioned.

TABLE OF CONTENTS:

Minerals and the Role of Concentration in Their Utilization	3
Development of the Science and Technology of Concentration	8
The Flotation Method of Concentration	10
Principal Achievements in the Perfecting of Other Methods of Concentration and Auxiliary Processes	23
Current Problems and Future Prospects in the Field of Mineral Concentration	30

AVAILABLE: Library of Congress

GO/dfh
7-27-59

Card 2/2

AUTHORS:

Kakovskiy, I.A., Bessonov, S.V., Professor,
Klassen, V.I., Doctor of Technical Sciences and
Livshits, A.K. SOV/136-59-3-17/21

TITLE:

On the Use of Radiography in Work on the Theory of
Flotation (O primeneni radiografii v rabote po teorii
flotatsii)

PERIODICAL:
ABSTRACT:

Tsvetnyye Metally, 1959, Nr 3, pp 72 - 78 (USSR)
This collection of letters to the editor were written
in connection with the publication by Tsvetnyye Metally,
1958, April, of an article by Professor S.I. Mitrofanov.
This criticised the use of radiographic methods of
reagent distribution on the surface of the mineral
particles.
I.A. Kakovskiy suggests that since radiography and
radiometry are the same in principle, Mitrofanov's
critical remarks should apply to both. He considers
however, that the experiments of that author were entirely
unrealistic and unnecessarily complicated. He mentions
his experiments which showed that it is impossible to
denthate off a polished silver plate. He also

SOV/136-59-3-17/21
On the Use of Radiography in Work on the Theory of Flotation
discounts Mitrofanov's assumption of the existence of the collector in the electrical double layer and gives some other factors which he has found to be contrary to Mitrofanov's views.
S.V. Bessonov of the Irkutskiy gorno-metallurgicheskii institut (Irkutsk Mining-metallurgical Institute) welcomes contributions on methods applicable to flotation-kinetics research but maintains that Mitrofanov's criticisms of radiographic methods are experimentally unsupported. He mentions work at the Institut gornogo dela AN SSSR (Mining Institute of the Ac.Sc.USSR) which clearly contradicts that author's contention that the results of drying-films experiments represent the distribution of reagent over glass as much as over mineral particles. Bessonov particularly deplores unfounded criticism by Mitrofanov of a technique which has contributed to the progress and international reputation of Soviet science but emphasises that he favours constructive criticism.
V.I. Klassen classifies Mitrofanov's experiments as artificially contrived to support incorrect ideas. The basis of these ideas is that when a mineral particle is

Card2/5

SOV/136-59-3-17/21
On the Use of Radiography in Work on the Theory of Flotation

removed from the pulp it takes with it an envelope of reagent-containing water; when the water evaporates the envelope splits into islands which lead to localised fixing of the tracer-containing reagent. In correctly conducted radiographic experiments the possibility of this happening is carefully avoided, e.g. by repeated washing of the particle. He also points out that if Mitrofanov's views were correct, the amount of collector on particles remaining in the tailings would be much more than on those in the concentrate: the opposite is found experimentally. Mitrofanov's attitude is inconsistent since he accepts radio-metry of powders, to which his own objections should apply. The author urges further studies in this field. A.K. Livshits does not deal specifically with Mitrofanov's article but himself criticises some work in which radiographic methods were used. The author admits that any of the microradiograms published give a direct picture of the reagent-distribution in particle surfaces. A general criticism is that the purity of the reagent is never stated: but the presence of impurities could alter the radiographic

Card3/5

SOV/136-59-3-17/21

On the Use of Radiography in Work on the Theory of Flotation

pattern and the presence of radioactive sulphur is likely to lead to their production. It may well be impossible to wash the impurities off the mineral surface. The author complains of the lack of quantitative data and the frequent discrepancies of results, e.g. between those of V.I. Klassen and of I.N. Plaksin and R.Sh.Shafeyev, published in Tsvetnyye Metally, Nr 7 for 1957 and 1958, respectively. He notes that the first attempts at quantitative radiography confirmed the validity of doubts on the usefulness of results based on visual examination of radiographic patterns. The author regards much of the pattern obtained by Plaksin and Shafeyev as being due to liquid droplets. He deals with some other published data and concludes, making specific recommendation, that much remains to be done to establish the radiographic method for flotation-kinetic studies. In the editorial introduction the following are invited to contribute to the discussion: M.A. Eygeles, V.A. Mokrousov, O.S. Bogdanov, G.S. Strel'styn, V.Ya. Khaynman and S.I. Krokhin (workers in flotation-theory research) and N.V. Matveyenko, M.I. Gorodetskiy,

Card4/5

SOV/136-59-3-17/21

. On the Use of Radiography in Work on the Theory of Flotation
M.M. Polyakov and S.N. Kulinin (works' personnel).

ASSOCIATION : Irkutskiy gorno-metallurgicheskiy institut
(Irkutsk Mining-metallurgical Institute)
(Bessonov, S. V.)

Card5/5

LEONOV, S.B.; KHOZHLOV, V.R.; BESSONOV, S.V.

Cyaniding gold out of flotation concentrates at high pressures.
Izv.vys. ucheb. zav.; tsvet. met. no.3:94-96 ' 58. (MIRA 11:11)

1. Irkutskiy gornometallurgicheskiy institut. Kafedra metallurgii
blagorodnykh metallov.
(Gold--Metallurgy) (Cyanide process)

AUTHORS: Bessonov, S.V., Leonov, S.B. and Khokhlov, V.H. SOV/149-58-6-10/19

TITLE: Investigation of the Behaviour of Stibnite During Autoclave Cyaniding of [Gold-bearing] Flotation Concentrates (Izucheniye povedeniya stibnita pri avtoklavnom tsianirovanii kontsentrata)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 6, pp 84 - 91 (USSR)

ABSTRACT: The harmful effect of antimony compounds in extraction of gold by the cyanide process has been known since 1900 (Ref 1). The mechanism by which the solubility of gold in cyanide solutions is affected by the presence of various antimony compounds, particularly stibnite (Sb_2S_3), has been extensively studied (Refs 2-8) and various methods of counteracting the effect of these compounds have been developed. In some cases, however, no difficulties have been encountered in treating certain types of gold ores (e.g. Transbaykal deposits) containing large proportions of antimony compounds, particularly when autoclave cyaniding was employed (Ref 9) and it was for this reason that the investigation described in the present paper was undertaken. The chemical and mineralogical composition

Card1/7

SOV/149-58-6-10/19
Investigation of the Behaviour of Stibnite During Autoclave
Cyaniding of [Gold-bearing] Flotation Concentrates

of stibnite from the Transbaykal deposits used in the experiments is given in Table 1. In the first stage of the investigation the solubility of Sb_2S_3 (ground to contain 87% particles less than 47μ in size) in cyanide solutions was studied. The experiments consisted of placing 100 c.c. of a cyanide solution (0.15% NaCN) in a steel bomb with quantities of Sb_2S_3 calculated to give the Sb content in the concentrate equal to 1, 2 or 3%, the liquid/solid ratio being 3:1. The bomb was then revolved at 112 r.p.m. and the concentration of Sb in the filtrate was determined after 1, 2 and 4 hrs. The results of these experiments are reproduced in Figures 1, 2 and 3. Figure 1 shows the solubility of Sb_2S_3 (in mg/l.) in alkaline cyanide solutions as a function of time (hours) and the concentration of CaO in the solution for the case when the concentrate contained 1% Sb, the concentration of CaO being (1) 0.015%, (2) 0.025% and (3) 0.04% (Curves 1', 2', 3' - atmospheric

Card2/7

SOV/149-58-6-10/19
Investigation of the Behaviour of Stibnite During Autoclave
Cyaniding of [Gold-bearing] Flotation Concentrates

conditions, Curves 1, 2, 3 - autoclave reaction at 5 kg/cm² pressure of air). The same relationship for concentrates containing 2 and 3% Sb is shown in Figures 2 and 3, respectively. It is evident that the solubility of Sb₂S₃ was higher in the autoclave reaction than under atmospheric conditions and that it increased with increasing concentration of Sb in the concentrate and CaO in the solution. Under the same experimental conditions the effect of Sb₂S₃ on the solubility of gold in cyanide solutions was studied by measuring the loss of weight of a gold foil (3.52 cm² surface area) and the concentration of gold in the solution after 1, 2 and 4 hours. It was found that in the presence of stibnite the amount of gold dissolved in the NaCN solution hardly increased with time, and after 4 hours, amounted to 0.425 mg/cm², as compared with 9 mg/cm² dissolved after 1 hour in the absence of Sb₂S₃. It was also observed that when Sb₂S₃ was present,

Card3/7

SOV/149-58-6-10/19
Investigation of the Behaviour of Stibnite During Autoclave
Cyaniding of [Gold-bearing] Flotation Concentrates

a dark film was formed on the surface of the gold specimen and it was established by spectrographic analysis that this surface film contained both antimony and silicon. Since it had been reported that certain constituents of the gangue have a beneficial effect on the solubility of gold in the presence of Sb_2S_3 , in the next series of experiments the effect of Al_2O_3 and $MgCO_3$ additions was examined.

The results are reproduced in Figure 4 showing the quantity of gold (mg/cm^2) dissolved in the solution as a function of time, the various solutions containing: 1) a quantity of Sb_2S_3 equivalent to 2% Sb in the concentrate, Al_2O_3 7.8%, $MgCO_3$ 0.97% (percent of the concentrate); 2) as in 1) but no $MgCO_3$; 3) as in 1) but no Al_2O_3 ; 4) stibnite only. It was found that in the presence of Al_2O_3 and $MgCO_3$ (jointly or separately) the rate of solution of gold was greatly increased and to find an explanation of this effect the ionic composition of the

Card4/7

Investigation of the Behaviour of Stibnite During Autoclave Cyaniding
of [Gold-bearing] Flotation Concentrates

SOV/149-58-6-10/19

cyanide solutions containing Sb_2S_3 , Al_2O_3 and $MgCO_3$ in various combinations was studied by the method developed by Illyuviyeva (Ref 10). The results are given in Table 2 showing the concentration (g-equiv/ton) of the S^{2-} ions in cyanide solutions containing 1.3 g Sb_2S_3 alone or in combination with 2.4 g Al_2O_3 and/or 0.32 g $MgCO_3$, after 1, 2 and 4 hours' operation. It can be seen that S^{2-} concentration in solutions containing Sb_2S_3 alone was approx. 15 times higher than in those containing additions of Al_2O_3 and $MgCO_3$. It was found also that while the Sb content of the solution containing all these three minerals was 36 mg/l. (after 4 hours), the concentration of Sb in the solution containing Sb_2S_3 only was 146 g/l. In conclusion it is stated that: A) when alkaline cyanide solutions are used for treatment of gold-bearing concentrates containing stibnite, the latter is present in the solutions in the form of colloidal, negatively charged particles.

Card5/7

SOV/149-58-6-10/19
Investigation of the Behaviour of Stibnite During Autoclave
Cyaniding of [Gold-bearing] Flotation Concentrates

These are gradually adsorbed on the surface of the gold particles and slow down, or even completely prevent, the dissolution of the metal; B) the harmful effect of SbS_3 is considerably reduced when Al_2O_3 and $MgCO_3$ are present in the flotation concentrate. These compounds adsorb the colloidal Sb_2S_3 particles as a result of which the possibility of the formation of the surface layer on gold particles is greatly reduced. At the same time conditions are created which are favourable for oxidation of the ions of the "sulphide" sulphur to the sulphate form more suitable for cyaniding. It is possible that the beneficial effect of $MgCO_3$ on the rate of solution of gold in the presence of SbS_3 consists of promoting coalescence of the colloidal particles of the latter compound; C) the results of the present investigation indicate that gold-bearing ores can be treated by direct application of the cyaniding process if Al_2O_3

Card6/7

SOV/149-58-6-10/19
Investigation of the Behaviour of Stibnite During Autoclave
Cyaniding of [Gold-bearing] Flotation Concentrates

and $MgCO_3$ are present in the gangue and that in the presence of these compounds even the gravitation or flotation concentrates containing considerable (up to 2%) proportions of Sb can be successfully treated by hydro-metallurgical methods. There are 4 figures, 2 tables and 14 references, 13 of which are Soviet and 1 English.

ASSOCIATION: Irkutskiy gornometallurgicheskiy institut. Kafedra Metallurgii blagorodnykh metallov (Irkutsk Mining-metallurgical Institute. Chair of Metallurgy of Noble Metals)

SUBMITTED: June 19, 1958

Card 7/7

BESSONOV, Sergey Vasil'yevich, prof., doktor tekhn.nauk; OKOLOVICH,
A.M., nauchnyy red.; ISLANKINA, T.G., red.; SAVCHENKO, Ye.V.,
tekhn.red.

[Ore dressing in the U.S.S.R.] Obogashchenie rud v SSSR.
Moskva, Izd-vo "Znanie," 1959. 31 p. (Vsesoiuznoe obshchestvo
po rasprostraneniю politicheskikh i nauchnykh znani. Ser.4,
Nauka i tekhnika, no.6) (MIRA 12:7)
(Ore dressing)

BESSONOV, S.V.; KULIKOV, I.M.

Feasibility of Nerchinsk deposit ore dressing in heavy sus-
pensions. Izv.vys.ucheb.sav.; tsvet.met. 2 no.6:47-51 '59.
(MIRA 13:4)

1. Irkutskiy gornometallurgicheskiy institut. Kafedra oboga-
shcheniya poleznykh iskopayemykh.
(Nerchinsk--Ore deposits) (Ore dressing)

BESSONOV, S.V.

Concerning D.Z. Entin's article "Improvement of the designs of
industrial electric power supply systems". Prom. energ. 19 no.8:
55 Ag '64. (MIRA 17:11)

1. Kazgiprotorglegprom.

BESSONOV, V.

Work practices of a progressive brigade operating the SE-3
excavator. Ugol' 34 no.12:23-24 D '59. (MIRA 13:4)
(Cheremkhovo Basin--Strip mining--Labor productivity)
(Excavating machinery)

BESSONOV, V.

Conference in the Irkutsk Economic Region. Sots.trud 5 no.3:
141-142 Nr '60. (MIRA 13:6)
(Irkutsk Province--Labor and laboring classes)

BESSONOV, V.A.

BESSONOV, V.A. and K. I. CHAFRANOVSKII. Osnovnaia literatura po Dzhzhkazgano-Ulutavskomu i sopredel'nym raionam Tsentral'nogo Kazakstana. (In Bol'shoi Dzhzhazgan ... Leningrad, 1935. p. 673-679.)

NN See no. 953

DLC: Q 60.A6 v. 7

SO: LC, Soviet Geography, Part I, 1951, Uncl.

BESSONOV, V-A.
CA

9

Lead-zinc industry of Kazakhstan. V. A. Bessonov and Yu. B. Malevskii. *Tsvetnye Metally* 1938, No. 10, 8-10. Recent geol. exploratory work has added to the known resources of Pb and Zn ores. Production of Zn was only 85% and that of Pb 55% of the estimates of the second five-year plan. Altai Mountain region is especially rich in ores. Gross overestimates of deposits led to serious errors such as building lead smelters entirely too large for the available ore supply; on the other hand no smelters were built in districts with ample supply of raw materials, water and hydroelectric energy. A general discussion of resources and possibilities is included. W. N. Dandoff

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

3304 137-8318

3304 83-178

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
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

BESSONOV, V.A.

Theory of ore deposit appraisal. Trudy Akad. Nauk Kazakh. SSR
no.7:207-223 '58. (MIRA 12:7)
(Ores--Sampling and estimation)

Бессонов, Я.А.
ZAPLAYNYY, A.Ya.; BESSONOV, Y.A.

Transfer of water from the Irtysh River to Central Kazakhstan is a
decisive condition for complete utilization of its riches. Vest. AN
Kazakh. SSR 14 no.1:13-24 Ja '58. (MIRA 11:2)

(Kazakhstan--~~Mineral~~ industries)

(Kazakhstan--Water resources development)

HESSONOV, V.A., inzh.

Using the theory of probabilities for calculating the voltage
unbalance factor in the busbars of single-phase electric
substations. Trudy MIIT no. 132:21-33 '60. (MIRA 14:1)
(Electric railroads—Substations)
(Probabilities)

BÉSSONOV, V.A., inzh.

Law of current distribution in the substations of electric
railroads. Trudy MIIT no. 132:34-40 '60. (MIRA 14:1)
(Electric railroads—Substations)

BESSONOV, V.A., inzh.

Distribution of voltage nonsymmetry factors in single-phase
busbars of traction substations. Trudy MIIT no.144:10-19 '62.
(MIRA 15:10)

(Electric railroads—Current supply)

MININ, G.A., kand.tekhn.nauk; SERGEYEV, N.G., kand.tekhn.nauk; BESSONOV,
V.A., inzh.; KISLYAKOV, V.A., inzh.

Use of mathematical statistics and the probability theory for
studying and designing the power supply systems of electric
railroads. Trudy MIIT no.144:38-49 '62. (MIRA 15:10)
(Electric railroads—Current supply)

BRISSENEV, V.I.: Iskaniye dlya rad.

[Calculation of voltage reserve in a system supplying power to a reactive load; lecture for 5th and 6th year students of electrical and mechanical engineering] Raschet rezervov napora v yedinozhitskoy energosisteme, pitaniyemoy neregulyruemykh potrobitel'nykh stanzionov V i VI kursov spetsial'nosti EE. Moskva, Vses. zoolnyy inzh. inzhenerov vuzov. Izd-vo. 1961. 32 p. (1961)

BOGAYEVSKIY, O.A., inzhener.; BESSONOV, V.B., inzhener.

Using electric limbing saws in lumbering enterprises of the Urals.
Mekh. trud. rab. 11 no.2:27-29 P '57. (MIRA 10:5)

1. ^ATSentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i energetiki.
(Ural Mountain region--Saws)

BESSONOV, V. D.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 362 - I

BOOK

Call No.: TN672.V8

Author: BESSONOV, V. D.

Full Title: HEAT TREATMENT OF NEW STEELS FOR COLD STAMPING WORKS

Transliterated Title: Termicheskaya obrabotka novykh shtampovykh
staley dlya kholodnoy shtampovki

Publishing Data

Originating Agency: All-Union Scientific Engineering and Technical
Society of Machine Builders. Urals Branch

Publishing House: State Scientific and Technical Publishing House
of Machine Building Literature ("Mashgiz")

Date: 1950

No. pp.: 9

No. of copies: 3,000

Text Data

This is an article from the book: VSESOYUZNOYE NAUCHNOYE INZHENERNO-
TEKHNICHESKOYE OBSHCHESTVO MASHINOSTROITELEY. URAL'SKOYE OTDELENIYE,
THERMAL TREATMENT OF METALS - Symposium of Conference (Termicheskaya
obrabotka metallov, materialy konferentsii) (p.342-350) see AID 223 -II

Coverage: The substitution of the expensive alloying material molybde-
num by vanadium and nitrogen is analysed. The physical
and metallographic characteristics of basic molybdenum
steel (Kh12M) and various alloyed vanadium-nitrogen steels

Termicheskaya obrabotka novykh shtampovykh
staley dlya kholodnoy shtampovki

AID 362 - I

of the types (Kh12F, Kh12F-1 and Kh12FN) are presented and
compared for the evaluation of the substitution and thermal
treatments. 5 charts.

Purpose: For scientific workers

Facilities: None

No. of Russian and Slavic References: None

Available: Library of Congress.

2/2

69330

S/129/60/000/05/003/023
E193/E283

18.7100

AUTHORS: Bessonov, V. D., Kozochkina, Ye. S., and
Soboleva, K. G.

TITLE: Reducing the Distortion of Semi-Fabricated Sections
and Components of Alloy V95 During Quenching

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1960, Nr 5, pp 11-15 (USSR)

ABSTRACT: Components, made of the high-strength aluminium alloy V95,
tend to distort during quenching, the degree of the
distortion depending on the quenching conditions and
the shape and size of the component. The object of the
present investigation was to establish conditions under
which the distortion would be reduced to minimum, either
by changing the rate of quenching (by varying the
temperature of the quenching medium), or by the appli-
cation of anodizing process. The experiments were carried
out on ring specimens of the shape, shown in Fig 1a,
and on lengths of extruded T-section, illustrated in
Fig 1b; both specimens were made of the alloy V95M;
the variation of the dimension A (slot width) was taken
as the measure of distortion of the ring specimen and
the depth of the curvature in the case of T-shaped

Card 1/7

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components of Alloy V95 During Quenching

specimens. A nitrate bath was used for heating the specimens, which were quenched from 465 to 480°C in water whose temperature varied between 20 and 90°C. The results are reproduced in Fig 2, where the distortion (mm) is plotted against the temperature of the quenching medium (°C), graphs a and b relating to the ring and T-shaped specimens, respectively. It will be seen that significant reduction in the degree of distortion was attained only when the temperature of the quenching medium was raised to 80°C, and the object of the next series of experiments was to check to what extent the mechanical properties of the alloy would be affected by the variation of the temperature of the quenching medium. The alloy (V95), used in these experiments, contained 5.7% Zn, 0.41% Mn, 2.75% Mg, 2% Cu, 0.55% Si, 0.17% Cr, 0.23% Fe, the remainder Al. The specimens, measuring 135 x 80 x 60 mm, and prepared from extruded material, were quenched from 465 to 480°C and then aged at 135 to 145°C for 16 h, after which mechanical tests

Card 2/7

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components of Alloy V95 During Quenching

were carried out on test pieces, cut out from the central portion of the heat-treated specimens. The results are reproduced in Fig 3, where UTS (kg/mm^2 , left-hand scale, continuous curve) and elongation (% , right-hand scale, broken curve) are plotted against the temperature ($^{\circ}\text{C}$) of the quenching water; the upper and lower horizontal lines on these graphs show the T-Ch specification limits for UTS and elongation, respectively. It will be seen that the mechanical properties of the alloy were unaffected by raising the temperature of the quenching water up to 70°C ; further increase in the temperature of the quenching medium resulted in a rapid decrease of UTS, attributed to partial decomposition of the solid solution during quenching. This was confirmed by metallographic examination, the results of which are reproduced in Fig 4, showing the micro-structure of alloy V95 quenched in water at (a) 70°C and (b) 95°C . The rapid decrease of UTS of the alloy, brought about by raising the temperature of the quenching water to 80°C , rendered this method of reducing distortion impracticable; however, it is known

Card 3/7

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components of Alloy V95 During Quenching

that hardenability and age-hardening characteristics of aluminium alloys can be improved by anodizing treatment and it was just possible that by using this expedient, the alloy could be quenched in water at 80°C without losing its strength. This problem was studied in the next series of experiments, in which specimens (40 x 90 x 180 mm) of alloy V95 were used. After quenching and ageing for 16 h at 135 to 140°C, hardness measurements were taken on the cross-sections of the specimens at points situated (1.5 mm apart) on the line joining the surface and the centre of the specimens. The results are reproduced in Fig 5, where hardness (Rockwell B) of the heat-treated specimens is plotted against the temperature (°C) of the quenching water, curves 1, 2, 3 and 4 relating to specimens with the thickness of the anodized film equal 50, 10, 5, and 0 microns, respectively; the horizontal line on this graph indicates the T-Ch specification limit for hardness of the investigated alloy. It will be seen that hardness of both anodized

Card 4/7

X

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components of Alloy V95 During Quenching

and untreated specimens was hardly affected by the variation of the temperature of the quenching water up to 80°C. However, above that temperature the hardness of untreated specimens fell sharply, whereas that of the anodized material decreased only by a negligible amount. The effect of anodizing on the distortion of T-shaped specimens was studied next. The results are reproduced in Fig 6, where the degree of distortion (mm) due to quenching is plotted against the temperature (°C) of the quenching water, graphs a and b relating to untreated and anodized specimens respectively. It was found that the anodizing treatment had practically no effect on the degree of distortion during quenching; the degree of distortion of both anodized and untreated material decreased by a factor of 4 after raising the temperature of the quenching water from 20 to 80°C. To check the results obtained on small specimens, the experiments were repeated on large panels (both anodized and untreated) of the same alloy, measuring 1700 x 662 x 8 mm. The results are reproduced in Fig 7,) X

Card 5/7

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components of Alloy V95 During Quenching

showing the degree of warping (mm, + or -) of anodized (a) and untreated (b) panels, heated and quenched under various conditions. Reading from left to right, the results relate to panels quenched in water at 20°C (first three graphs), 70°C (the next three graphs) and 75°C (the last graph); Nos 1, 2 and 3 relate to panels: 1 - heated in the horizontal position and dropped into the quenching tank from a height of 1.5 to 2 m; 2 - heated in the vertical position and dropped into the quenching tank; 3 - heated in the horizontal position and immersed in the quenching tank with the aid of a hoist. On the basis of the results obtained, the following procedure was recommended for heat-treating components made of alloy V95: (a) preliminary anodizing of the components to produce a surface oxide layer 5 to 50 microns thick; (b) heating the components to 465 to 480°C; (c) quenching in water at 80 to 85°C; Card 6/7 (d) ageing at 135 to 145°C for 16 h; (e) removing

69330

S/129/60/000/05/003/023
E193/E283

Reducing the Distortion of Semi-Fabricated Sections and Components
of Alloy V95 During Quenching

the anodized coating. It was also concluded that,
irrespective of the temperature of the quenching medium,
the degree of distortion of this alloy during quenching
can be reduced by increasing the speed of immersion of
the components in the quenching medium. There are
7 figures. ✓

Card 7/7

BESSONOV, V.D.; KOZUCHKINA, Ye.S.; SOBOLEVA, K.G.

Reducing the deformation of B95 alloy blanks and parts
during hardening. Metalloved. i term. obr. met. no. 5:11-15
My '60. (MIRA 13:12)
(Aluminum alloys--Hardening) (Deformations (Mechanics))

Bessonov, V.G.
SAVIN, G.N.; BESSONOV, V.G.

Rate of propagation of an elastic wave in steel wire-rope. Ukr.
mat.zhur. 2 no.1:118-126 '50. (MLBA 7:10)
(Vibration) (Wire rope)

БЕССОНОВ, В. Г.

USSR/Engineering - Stresses, Bars Torsion

Feb 50

"Plastic Torsion of Cylindrical Bars," L. G. Afendik, V. G. Bessonov, Inst of Math, Acad Sci Ukrainian SSR, 7½ pp

"Zavod Lab" Vol XVI, No 2

Emphasizes increasing importance of torsion tests in studying mechanical properties of metals, describes experiments on subject, and concludes, that, in cases of large angular twist, formulas from theory of finite deformations must be used for determining deformations, and effect of anisotropy on mechanical properties of plastic materials is quite noticeable. Important factor in torsion is origination of longitudinal compression of material for particles located nearer bar surface, and development of longitudinal tension in bar core. Latter conclusion is reverse of that made by S. I. Timoshenko in his consideration of stresses in highly twisted cylindrical bars.

FA 159T23

1975/11/11

BESSONOV, V.G.

Experimental determination of bending stresses in wire ropes. Nauch.
zap. IMA L'viv fil. AN URSR. Ser. mash. 3 no.2:40-46 '54.

(MLRA 8:11)

(Wire rope) (Strains and stresses)

BESSONOV, V.G.

Elasticity coefficient for steel wire ropes. Nauch.zap. IMA AN URSR
Ser. mashinoved. 4 no. 3:51-59 '55. (MLRA 9:8)
(Wire rope)

24(6)

SOV/21-59-7-5/25

AUTHOR: (Savin, G. N.)
Savin, H.M., /Member AS UkrSSR, Horoshko, O.O. (Goroshko, O.A.),
Bezsonov, V.H. (Bessonov, V. G.)

TITLE: Determination of Stresses in a Reeling Elastic Rope

PERIODICAL: Dopovidi Akademii Nauk Ukrain's'koi RSR, 1959, Nr 7,
pp 712-717 (UkrSSR)

ABSTRACT: The authors investigated stress distribution in the reeling part of ropes. The equilibrium conditions for the thread on the felloe are determined from equation

$$\frac{\partial^2 u(x,t)}{\partial t^2} - \frac{\beta}{R} \cdot \ddot{u} - \frac{\partial u(x,t)}{\partial x} = 0.$$

It is shown that, at winding-up speeds of $v_c = \text{constant}$, limited by condition

$$0 \leq v \leq - \frac{\beta \omega}{R \pi} l_m (1 - p^2).$$

the dynamic stresses in the reeling part are almost completely damped by friction forces. At winding-up speeds defined by inequality

Card 1/2

SOV/21-59-7-5/25

Determination of Stresses in a Reeling Elastic Rope

$$\nu \geq \frac{\rho \omega R}{\beta}$$

the slipping of the thread on the felloe vanishes.
There are 23 mathematic formulas and 4 diagrams

ASSOCIATION: Instytut budivel'noyi mekhaniky AN UkrSSR (Institute of
Civil Engineering AS UkrSSR)

SUBMITTED: March 16, 1959

Card 2/2

BIASSONOV, V. G. [Biaassonau, V. H.]

Effect of the initial curvature of longitudinal bars in
reinforced concrete on its physical and mechanical properties.
Vestsi AN BSSR, Ser. fis.-tekh. nav. no.1:111-118 '63.
(MIRA 16:4)

(Reinforced concrete)

L 25769-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 MLK/RM

ACCESSION NR: AT5002670

S/0000/64/000/000/0162/0167

AUTHOR: Bessonov, V. G.; Gumenyuk, V. S.; Tyshkevich, O. A.

TITLE: The effect of fillers on the modulus of elasticity of glass plastics

SOURCE: AN UkrSSR. Institut khimii vysokomolekulyarnykh soyedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 162-167

TOPIC TAGS: glass plastic, glass plastic elasticity, polymer elasticity, filler, polymer density

ABSTRACT: The modulus of elasticity, E, of unoriented samples of glass plastic was determined experimentally in order to study its dependence on density and the amount of filler. Experimental values of E were derived from the deformation of flat and annular samples under loads measured with tensometers and the SID statistical deformation meter, and from free vibration measurements. E was shown to depend linearly upon the ratio of the cross sectional area of the filler to the total cross sectional area. An empirical formula derived defines E, in units of bars, as

$$E = 1 \cdot 10^7 \frac{\eta \text{ st}}{\rho}$$

Card 1/2

L 25769-65

ACCESSION NR: AT5002670

ρ being density and γ_{st} being $Q_n \cdot 100\% / Q_{st}$, where Q_n and Q_{st} are the weight of filler and glass plastic, respectively. The deviation of calculated E from average experimental values was shown not to exceed 8%, and the formula can be used for the design of machines and apparatus containing glass plastic components. Orig. art. has: 5 figures, 2 tables and 10 formulas.

ASSOCIATION: Institut mekhaniki AN UkrSSR (Mechanics Institute, AN UkrSSR)

SUBMITTED: 22Jun64

ENCL: 00

SUB CODE: MT

NO REF SOV: 004

OTHER: 000

Card 2/2