SKOROKHOD, S. D.

FA 64/49T34

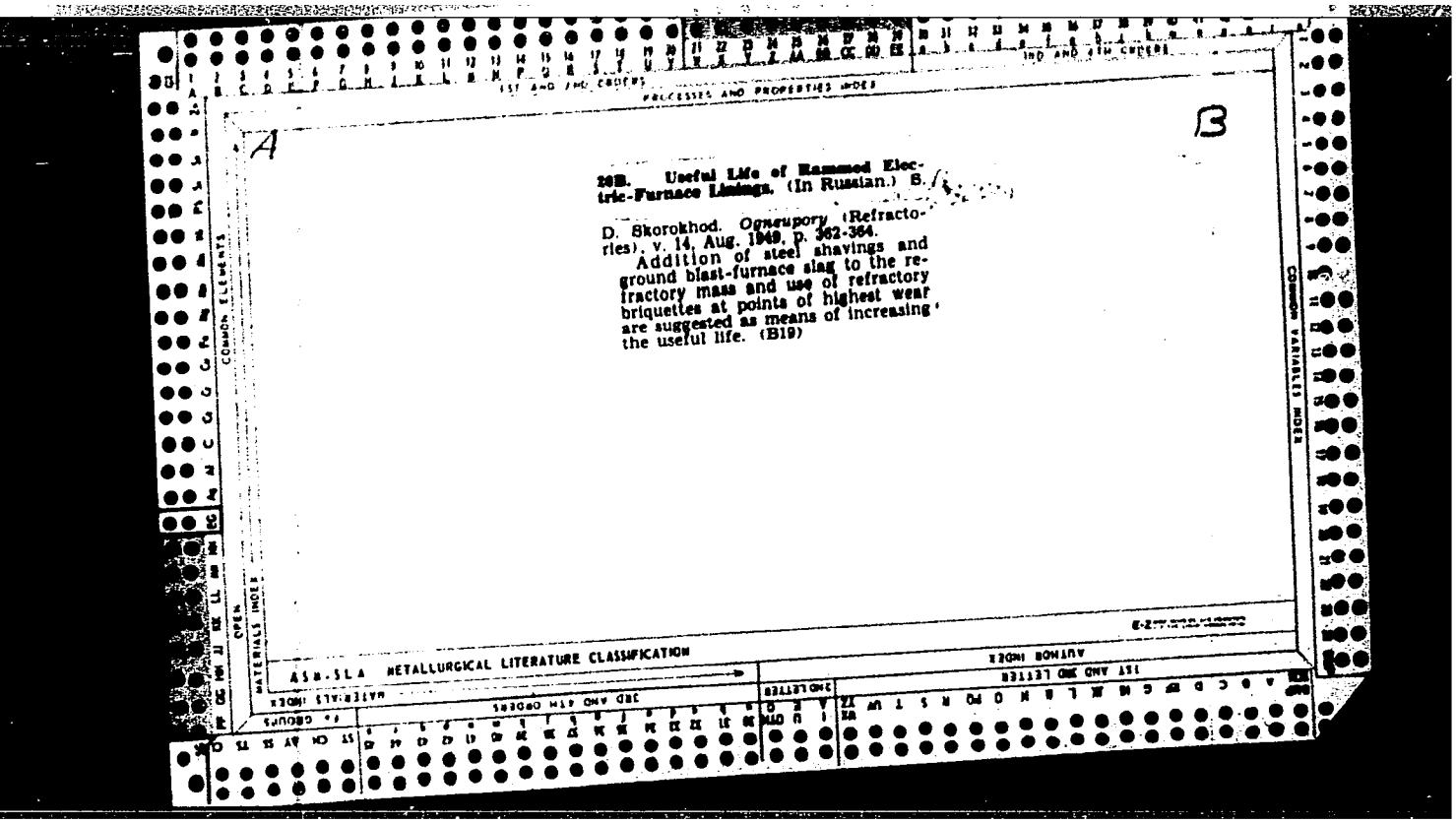
USSR/Engineering Aug 49
Refractories
Refractory Materials - Tests

"The Service of the Rammed Walls of Electric Furnaces," S. D. Skorokhod, 2½ pp

"Ogneupory" No 8

Original material used for lining a 15-ton electro-furnace proved unsatisfactory when a more powerful furnace transformer was installed. Describes trials carried out using four alternative materials, with three tables.

64/49T34



A

B

28B. Useful Life of Hammed Electric-Furnace Linings. (In Russian.) B. D. Skorokhod. *Ogneupory* (Refractories), v. 14, Aug. 1949, p. 362-364.

Addition of steel shavings and ground blast-furnace slag to the refractory mass and use of refractory briquettes at points of highest wear are suggested as means of increasing the useful life. (B19)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Refractories

B-S

574. Increasing the resistance of the roofs of 45-ton Martin furnaces.—S. D. SZOROCHOD *Ogneupory*, No. 6, 275, 1950: abstracted in *Steel*, 28, 286, 1950). The roofs of O.H. furnaces are worn irregularly and fail because of too great wear along the back wall and the corners. Since 1948 the parts worn most have been lined with 300 mm. refractory chrome-magnesite bricks and the rest with silica bricks. The chrome-magnesite bricks are laid with steel plates. The roof life with composite lining is increased by 22%. The wear is uniform (0·3–0·6 mm. instead of 1·3–2·9 mm. per heat). These furnaces have to be put out for repair on account of the checkers. The roofs retain 60–70% of their original thickness even at the end of the campaign.

TATARSKAYA, T.B.; KABLUKOVSKIY, L.F.; SKOROKHOD, S.D.

Magnesite mass with an addition of calcium aluminate slag for electric furnace linings. Ogneupory 18 no.9:401-406 '53.
(MIRA 11:10)

1.TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii.
(Refractory materials) (Electric furnaces)

SKOROKHOD, S.D.

High alumina bricks in arc furnace crowns. Ogneupory 18 no.10:470 '53. (MIRA 11:10)

1. Gisogneupor, "Elektrostal'."
(Refractory materials) (Electric furnaces)

PETROV, A.K.; SPERANSKIY, V.G.; KHIZHNICHENKO, A.M.; SHILYAYEV, B.A.; DANILOV, A.K.; BORODULIN, G.M.; ZAMOTAYEV, S.P.; MARKARYANTS, A.A.; SOLNTSEV, P.I.; SMIRNOV, Yu.D.; VAYNBERG, G.S.; OKOROKOV, N.V.; KOLOSOV, M.I.; SEL'KIN, G.S.; MEDOVAR, B.I.; LATASH, Yu.B.; YEFROYMOVICH, Yu.Ye.; VINOGRADOV, V.M.; SVEDE-SHVETS, N.N.; SKOROKHOD, S.D.; KATSEVICH, L.S.; SHTROMBERG, Ya.A.; MIKHAYLOV, O.A.; PATON, B.Ye.

Reports (brief annotations). Biul. TSNIICHM no.18/19:67-68 '57. (MIRA 11:4)

1. Zavod Dneprospetsstal' (for Speranskiy, Borodulin). 2. Chelyabinskiy metallurgicheskiy zavod (for Khizhnichenko). 3. Uralmashzavod (for Zamotayev). 4. Trest "Elektropech'" (for Vaynberg). 5. Moskovskiy institut stali (for Okorokov). 6. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Sel'kin, Svede-Shvets). 7. Institut elektrosvarki AN USSR (for Paton, Medovar, Latash). 8. TSentral'naya laboratoriya avtomatiki (for Yefroymovich, Vinogradov). 9. Gisogneupor (for Skorokhod). 10. Trest "Elektropech'" (for Katsevich). 11. Tbilisskiy nauchno-issledovatel'skiy institut okhrany truda Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for Shtromberg).

(Steel--Metallurgy)

137-58-6-11773

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 81 (USSR)

AUTHOR: Skorokhod, S.D.

TITLE: Refractory Service Life in Electric Furnaces (Sluzhba ogneuporov v elektropechakh)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 18, pp 639-651

ABSTRACT: Data are presented on manufacturing methods and the service lives of conventional silica-brick and chrome-magnesite roofs for electric arc furnaces at various plants. Note is taken of the longer lives of chrome-magnesite roofs, averaging 95 heats, and the following measures are recommended to increase it further: increasing the density of the brick, increasing the magnesite component of the brick, improving the structural strength of the roofs by raising the rise of vault of the masonry to 1/7-1/8 of the roof diameter, reducing the height of the economizers and turning on the furnace after blowing with O_2 with lowered electrodes for the purpose of preventing an electric arc from developing between the electrode and the economizer, employment of a system of repairing the central

Card 1/2

137-58-6-11773

Refractory Service Life in Electric Furnaces

portion of the roof only, and elimination of the need for hand-chipping the brick and the heel of the roof by using shaped brick. Methods of lining furnace walls are set forth, as are the factors affecting the service lives of walls, and it is recommended that preparation of wall-ramming mix be done in mixing machines, that magnesite powder with a 40-45° angle of repose when poured be employed, that the walls be touched up before every heat, and that the proper plastic material be used for this purpose. Data are presented on unit consumption of refractories in steel-foundry departments. The requirements to be met in lining induction furnaces, the methods of doing this, and the composition of the refractories employed for the purpose are described. The desirability of performing one or two boils with the addition of new ingredients to acid furnaces in the course of a campaign and the prospects for the use of rammed materials and cast furnaces of sintered Al_2O_3 with added TiO_2 and ZrO_2 are noted.

A.Sh.

1. Refractory materials--Performance 2. Refractory materials--Effectiveness
3. Refractory materials--Applications 4. Furnace liners--Materials

Card 2/2

SKoROKHoD, S.D.

15 (2), 15 (6)
AUTHORS: Zhikharevich, S. A., Royzen, A. I., Gin'yar, Ye. A., Kozyreva, L. A., Kablukovskiy, A. F., Skorokhod, S. D.

SOV/131-59-7-6/14

TITLE: Refractory Concrete as Electric Insulating Material for Electrode Coolers of Electric-arc Furnaces (Ogneupornyy beton kak elektroizolyatsionnyy material dlya okhladiteley elektrodov dugovykh staleplavil'nykh pechey)

PERIODICAL: Ogneupory, 1959, Nr 7, pp 309-319 (USSR)

ABSTRACT: The magnesite-chromite tiles in the arch of a steel-melting furnace are saturated, during operation, by iron- and chromous oxide, and become more conductive in this way, which often leads to short circuits and a burning through of the coolers. Figure 1 shows the dependence of the logarithm of the specific electric resistance on the temperature for some industrial refractories. At the experimental plant of the Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (UNIIO) (Ukrainian Scientific Research Institute of Refractories (UNIIO)) and at the Semiluki Works, experiments with highly aluminous refractories, the original materials of which are indicated in a table, were carried out. The microscopic investigations were carried out by N. Ye. Drizheruk (Footnote 2).

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3

The mass composition and the properties of the samples are indicated in table 1. Figure 2 shows the thermal expansion, and figure 3 the dependence of the logarithm of the specific electric resistance of the samples. It was not possible, however, to ensure the electric insulation of the coolers in this way. Highly aluminous cement was also prepared at the experimental plant of the UNIIO. Highly aluminous fire clay with a grain size of from 3 to below 0.09 mm was used as a filler. The chemical composition and refractoriness of the cement and of the fire clay are indicated in table 2. The petrographic investigation was carried out by L. A. Kuz'mina (Footnote 3), the X-ray examination by B. Ya. Sukharevskiy (Footnote 4) and the thermal analysis by V. V. Pustovalov (Footnote 5 and Fig 4). Further experiments were carried out with leaned masses, the composition, density and strength values of which are indicated in table 3. The characteristic of the samples is shown in table 4. Figure 5 shows the cohesion of the concrete with a refractory product and an iron tube, and figure 6 shows the cohesion of the concrete with a magnesite-chromite tile. But also this experiment did not ensure an adequate electric insulation of the coolers. Experiments with highly aluminous cement and highly aluminous tiles of a

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mullite-corundum composition were also carried out at the experimental plant of the UNIIO. The properties of the cement and concrete with the filler of highly aluminous fire clay are indicated in table 5. Some data characterizing the quality of the highly aluminous arch tiles and of the fire clay are indicated in table 6. The insulation of the coolers by refractory concrete is carried out in 2 variants (Figs 7 and 8). The chemical composition of the concrete zone and of the slag crust is shown in table 7. The petrographic investigation was carried out by M. Ye. Drizheruk (Footnote 7). Figure 9 shows a concrete piece after 72 melts. The experiments carried out showed that the use of concrete eliminates the burning through of the coolers by short circuit, and extends the working period of the furnace arches by 12-15 %. Conclusions: The satisfactory application results of the concrete insulation for electrode coolers should be introduced, as soon as possible, in all electrometallurgic plants, particularly in the furnaces working with oxygen. The series production of the material needed for the insulation should be organized. There are 9 figures, 8 tables, and 20 references, 10 of which are Soviet.

Card 3/4

ASSOCIATION: Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukraine Scientific Research Institute of Refractories) (Zhikharevich, S. A., Royzen, A. I., Gin'yar, Ye. A., Kozyreva, L. A.); Zavod "Elektrostal'" ("Elektrostal'" Works) (Kablukhovskiy, A. F., Skorokhod, S. D.)

15 (2)

AUTHORS: Zegzhda, V. P., Kablukovskiy, A. F., Laktionov, V. S., Skorokhod, S. D. SOV/131-59-9-7/12

TITLE: The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

PERIODICAL: Ogneupory, 1959, Nr 9, pp 419-423 (USSR)

ABSTRACT: The Vsesoyuznyy institut ogneuporov (All-Union Institute for Refractories) has carried out experiments with graphite-chamotte bricks, containing 15% and 25% of graphite, in 80 t ladles of the Izhora Works. In the "Elektrostal'" works experiments were made with 20 t casting ladles with graphite-chamotte bricks of the Borovichi Kombinat for refractories. The properties of the bricks are shown in table 1. The wear of the test bricks, burnt at high temperatures, is indicated in table 2. In casting steels of the types 40-45, EShKh15, 20G, 37KhN3A, 15KhFA, 20Kh, EU8, and U10A at the "Elektrostal'" works the graphite chamotte lining of the ladle has not exercised any influence on the carbon content of the metal. The composition of the mortar used may be seen from the table 3. Figures 1 and 2 (photos) show the condition of the joints, made from mortar Nr 1 and Nr 2 after

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10 melts. Data concerning the stability of the test ladles are given by table 4, and table 5 contains data concerning the wear of the lining of the ladle. The installation of a thermocouple for measuring the metal temperature in the ladle is represented in figure 3, and the respective measuring results are compiled in table 6. Figure 4 shows the manner in which the side walls of the casting gutters are subject to wear. Conclusions: When casting dead, bubble-free, steel with a carbon content of more than 0.5% the graphite-chamotte lining of the ladle does virtually not exercise any influence upon the carbon content of the metal. It must still be found out whether this lining can be used when casting steel with a lower carbon content. In order to prevent the destruction of the joints, the use of a special mortar is recommended. Owing to their higher heat-conductivity it is not advantageous to employ graphite-chamotte bricks for lining the bottom of the ladles. A further paper in this field will deal with the changes in the shape and the dimensions of these products, as well as the reduction of their heat conductivity. The necessity is stressed of of an industrial production of the graphite-chamotte bricks.

The Use of Graphite Chamotte Bricks in Steel Casting Ladles and Gutters for Steel Melting Furnaces

SOV/131-59-9-7/12

There are 4 figures, 6 tables, and 7 references, 5 of which are Soviet.

(V. P. Zegzhda)

ASSOCIATION: Vsesoyuznyy institut ogneuporov/(All-Union Institute for Refractories). Zavod "Elektrostal'" ("Elektrostal'" Works)

Card 3/3

KHOROSHAVIN, L.B.; SYREYSHCHIKOV, Yu.D.; SKOROKHOD, S.D.

Effect of the composition of the metallurgical powder mix on the stability of sidewalls and hearth bottoms in electric arc furnaces. Ogneupory 29 no.6:276-280 '64. (MIRA 18:1)

1. Vostochnyy institut ogneuporov (for Khoroshavin, Syreyshchikov).
2. Zavod "Elektrostal'" (for Skorokhod).

VOL.OV, Ye.V., inzh.; [illegible], L.M., inzh.; RY[illegible]OV, N.F., dots.; SKOROKHOD, V.F., inzh.; [illegible], S.Ye., inzh.; [illegible], N.B., inzh.

Conversion of boiler furnaces from block peat to milled peat by installing cyclone furnaces. Izv. vys. ucheb. zav.; energ. 4 no. 1:116-122 Ja '61. (MIRA 14:2)

1. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova, Uralmashzavod i Uralenergochermet. Predstavlena kafedroy promteploenergetiki Ural'skogo politekhnicheskogo instituta. (Furnaces)

PA 9/49T67

SKOROKHOD, V. G. Prof

USSR/Medicine - Botany Sep 48
Medicine - Plants

"Dokuchayev Tree Forest Belts in the Donets Coal Field," Prof V. G. Skorokhod, 1½ pp

"Priroda" No 9

Describes remains of wide forest belts indicating that steppe regions were once covered with dense timber. Based on geologic and paleographic studies, author traces history of these forests. Under Soviet rule much done to restore these forest belts and some day USSR landscape will be greatly changed.

9/49T67

L

USSR/Meadow Cultivation.

Abs Jour : Ref Zhur Biol., No 14, 1958, 63269

Author : Kaynakan, M.A,, Konakov, M.K., Mashkevich, N.G., Skorokhod, V.G.

Inst : Voroshilovgrad Agricultural Institute.

Title : Meadows of Kolkhoz imeni Budenny of Novo-Aydarskiy Rayon and Ways to Improve Them.

Orig Pub : Nauchn. sap. Voroshilovgradsk. s.-kh. in-ta, 1956, 4, No 1, 88-97

Abstract : No abstract.

Card 1/1

SKOROKHOD, V.I., DOVGAN, N. YA., ROZGONI, I.I., VRYTNYK, F.I., LAGODYUK, P.Z., GZHITSKY, S.Z. (USSR)

"The conditions of Maintaining the Chemical Medium in the Rumen in Ruminats."

Report presented to the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug. 1961.

GZHITSKIY, S.Z. [Hzhyts'kyi, S.Z.]; DOVGAN', N.Ya. [Dovhan', N.IA.]; ROZGONI, I.I. [Rozhoni, I.I.]; SKOROKHOD, V.I. [Skorokhid, V.I.]

Effect of urea and sodium sulfate on fermentation processes in the rumen of the cow. Ukr. biokhim. zhur. 33 no.1:101-106 '61. (MIRA 14:3)

1. Research Institute of Agriculture and Animal Husbandry of the Western Regions of the Ukrainian S.S.R.
(UREA) (SODIUM SULFATE)
(STOMACH--MICROBIOLOGY) (CATTLE--PHYSIOLOGY)

SKOROKHOD, V.I. [Skorokhid, V.I.]

Some indices of fat metabolism in cows following the feeding of urea and sodium sulfate. Ukr.biokhim. zhur. 33 no.3:379-384 '61. (MIRA 14:6)

1. Nauchno-issledovatel'skiy institut zemledeliya i zhivotnovodstva zapadnykh rayonov USSR, L'vov.
(FAT METABOLISM) (UREA AS FEED)
(SODIUM SULFATE) (DAIRY CATTLE—FEEDING AND FEEDS)

SKOROKHOD, V.V.

Root-mean square stresses and the rate of deformation in a ductile porous material. Porosh.met. 5 no.12:31-35 D '65. (MIRA 19:1)

1. Institut problem materialovedeniya AN UkrSSR. Submitted June 20, 1965.

SOV/21-59-7-14/25

9(3), 18(7)

AUTHOR: Skorokhod, V.V. and Fedorchenko, I.M., Corresponding Member of the AS UkrSSR

TITLE: On the Conductivity of Disperse Mixtures with Imperfect Contacts Between the Particles

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi, 1959, Nr 7, pp 756-759 (UkrSSR)

ABSTRACT: A method for calculating the conductivity of disperse statistical mixtures with imperfect contacts between the particles is proposed in this article. The method is based on the theory of electrical contacts (R.Holm /3/) and an analogy existing between contact resistance and poor conductive film resistance. The method is applicable to the mixtures of any concentration and any number of phases. The conductivity of pressed one-component bodies was calculated by this method, applying experimental data on porosity and pressure of pressing. The results of experimental measurements of conductivity show satisfactory agreement

Card 1/2

On the Conductivity of Disperse Mixtures with Imperfect Contacts Between the Particles

with the calculated ones. There are 11 mathematic formulas, 1 diagram and 5 references, 4 of which are Soviet and 1 German

ASSOCIATION: Instytut metalokeramiky i spetssplaviv AN URSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR)

SUBMITTED: January 30, 1959

05295
SOV/170-59-8-6/18

24(3)

AUTHOR: Skorokhod, V.V.

TITLE: On the Electric Conductivity of Dispersion Mixtures of Conductors With Non-Conductors

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 8, pp 51 - 58 (USSR)

ABSTRACT: There exist several attempts to construct a theory for calculating the macroscopic electric conductivity of many-phase bodies /Refs 1,2/. Their results disagree with experimental data /Refs 4,5/. Therefore the author undertook to calculate more precisely the conductivity of a statistical mixture of a conductor with a dielectric at an arbitrary concentration of the latter. He derived Formulae 18 and 19 on the basis of considerations following from the probability theory, while each phase was considered as a mixture of spherical, ellipsoidal and cylindrical elements. The author does not present final analytical expressions which should result after inserting into those formulae all the necessary quantities, but gives in Table 2 numerical values of $\varphi(\theta)$, being the ratio of electric conductivity of the mixture to that of one component, for various concentrations of this component. These figures are plotted in Figure 1 and compared with experimental data obtained from measurements of electric conductivity of

Card 1/2

On the Electric Conductivity of Dispersion Mixtures of Conductors With Non-Conductors

porous bodies sintered from copper and iron powders. The agreement between the experimental points and the theoretical curve is satisfactory. In conclusion the author thanks I.M. Fedorchenko, Corresponding Member of the AS Ukrainian SSR for discussing the present investigation.
There are: 2 tables, 1 graph and 7 references, 5 of which are Soviet and 2 English.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute of Metalloceramics and Special Alloys of the AS Ukrainian SSR), Kiyev.

85436

S/170/60/003/011/007/016
B019/B056

24.5300

AUTHOR: Skorokhod, V. V.

TITLE: The Viscosity of Some Two-phase Mixtures

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 11, pp. 69-71

TEXT: In the introduction the author briefly deals with the analogy between the equations of hydrodynamics in linear approximation and the formulas of the elasticity theory. This analogy makes possible to use the formulas previously obtained for the modulus of elasticity for the purpose of calculating the viscosity coefficient of multiphase mixtures. The equations for the calculation of the macroscopic moduli of quasi-isotropic mixtures of solid phases are:

$$\sum_{(1)} \frac{3K + 4\mu}{3K^{(1)} + 4\mu} \cdot \frac{K^{(1)}}{K} \vartheta^{(1)} = 1 \qquad \sum_{(1)} \frac{5(3K + 4\mu)\mu^{(1)} \vartheta^{(1)}}{(9K + 8\mu)\mu + 6\mu^{(1)}(K+2\mu)} = 1$$

Here K and μ are the compression- and shearing moduli, the index 1 refers

Card 1/3

to the 1-th phase, $\vartheta^{(1)}$ is the volume fraction of the 1-th phase. These formulas are used for the calculation of the viscosity coefficient in the suspensions of solid particles in a viscous incompressible medium and in the case of mixtures of viscous incompressible media and air. For the viscosity of a suspension the expression

$\eta = \eta^{(0)}(1 - 5\vartheta^{(1)}/2)^{-1}$ (2) is obtained, which for $\vartheta^{(1)} \ll 1$ goes over into the known Einstein formula. For a porous viscous medium, the relations

$$\eta = 3\eta^{(0)}\frac{1 - 2\vartheta^{(1)}}{3 - \vartheta^{(1)}}, \quad \zeta = 4\eta^{(0)}\frac{(1 - \vartheta^{(1)})(1 - 2\vartheta^{(1)})}{\vartheta^{(1)}(3 - \vartheta^{(1)})} \qquad (4)$$

are obtained. The empirical formula for the relative viscosity of suspension, which was suggested by Higginbotham et al. (Ref. 4), is practically identical with (2). The formulas (4) were checked according to the experimental data of another paper (Ref. 5). From the diagram in Fig. 1, good agreement of the formulas derived here with the experimental values may be seen. There are 1 figure and 5 references: 3 Soviet, 1 British, and 1 US.

Card 2/3

85436

The Viscosity of Some Two-phase Mixtures S/170/60/003/011/007/016
B019/B056

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov, g. Kiyev (Institute of Powder Metallurgy and Special Alloys, Kiyev)

SUBMITTED: April 19, 1960

Card 3/3

S/021/60/000/010/013/016
28190
D251/D303

15.2680

AUTHORS: Skorokhod, V.V., and Fedorchenko, I.[illegible], Corresponding Member AS UkrSSR

TITLE: On two-phase system sintering

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopo[illegible]di, no. 10, 1960, 14[illegible] - 1407

TEXT: After referring to the theoretical investigations in this field of B.Ya. Pines (Ref. 1: ZhTF, 24, 9, 1956) the author considers the sintering of two spherical particles, assuming that one of the particles is not deformed during the sintering process. If the particles are A and B as shown in the diagram (Fig. 1), then, writing h = NK,

$$h = R \sin \alpha \operatorname{tg} \frac{\alpha}{2} = 2R \sin^2 \frac{\alpha}{2} \qquad (1)$$

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eq and hence, to the second order of accuracy

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(5)

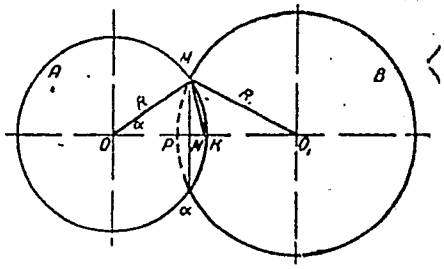
28190
S/021/60/000/010/013/016
D251/D303

On two-phase system sintering

ASSOCIATION: Instytut metalokeramiky i spetsial'nykh splaviv AN URSR (Institute of Metal Powders and Special Alloys AS UkrSSR)

SUBMITTED: June 9, 1960

Fig. 1.



Card 4/4

S/137/62/000/001/047/237
A060/A101

AUTHOR: Skorokhod, V. V.

TITLE: Calculation of isotropic moduli of elasticity of solid dispersion mixtures

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 37, abstract 1G277 ("Poroshk. metallurgiya", 1961, no. 1, 50 - 55 [English summary])

TEXT: The author considers the problem of the theoretical calculation of isotropic moduli of solid dispersion mixtures with arbitrary number of phases at an arbitrary disparity between the moduli of the phases. A special case of such a model is a porous body. A comparison of the theoretical and experimental results on the effect of porosity upon the modulus of elasticity of sintered Fe has shown satisfactory agreement.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1

32787

S/137/61/000/012/061/149
A006/A101

15 2520 1521

AUTHOR: Skorokhod, V.V.

TITLE: On the phenomenological theory of condensation in sintering porous bodies

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 46, abstract 120322 ("Poroshk. metallurgiya", 1961, no. 2, 14-20, English summary)

TEXT: Equations for the calculation of macroscopic elastic moduli are employed to compute the viscosity factor of porous bodies and suspensions. The experimental data are in a satisfactory agreement with the theoretical relationships. The author uses Ya.I. Frenkel's concept on the equalization of the energy dissipated as a result of viscous flow to the loss of free energy during sintering, and takes into account the effect of porosity on the viscosity factor. As a result, a differential equation is obtained for kinetics of changes in density during sintering. Due to lacking information on non-stationary changes in vis-

Card 1/2

On the phenomenological theory ...

cosity, the direct experimental checking of the theoretical relations obtained, is difficult. However, some indirect data show the reasonableness of the calculations performed. There are 10 references.

R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 2/2

S/137/62/000/001/055/237
A006/A101

AUTHOR: Skorokhod, V. V.

TITLE: Investigation of the kinetics of contraction during sintering

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 1, 1962, 38, abstract 1G289 ("Poroshk. metallurgiya, 1961, no. 3, 3 - 10, English summary)

TEXT: This is a critical discussion on mechanisms of the effect of defects in the crystalline structure on shrinkage during sintering, proposed in literature. The author rejects the concepts of B. Ya. Pines on the causes of accelerated rates of shrinkage kinetics. It is suggested to connect sintering kinetics with the growth of mosaic domains; this is in agreement with the theory of diffusion creep developed by Nabarro and entails increased viscosity. Experimental results on the shrinkage of Cu powder briquets and Cu-Ni alloys, and results of studying the growth of domains during sintering, were correlated. On the basis of theoretical concepts on shear and volumetric viscosity of dispersed porous mixtures (RZhMet, 1961, 12,G322), a phenomenological theory is proposed for the sintering of Cu-W type compounds. The experimental results are in a qualitative agreement with theoretical data. R. Andriyevskiy

[Abstracter's note: Complete translation]

Card 1/1

S/021/61/000/004/011/013
D213/D303

15 2530

AUTHORS: Skorokhod, V.V., and Fedorchenko, I.M.

TITLE: On the sintering of two-phase powder systems

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 4, 1961, 486 - 489

TEXT: The authors carried out an experimental investigation on the kinetics of the growth of interphase contacts in systems containing tungsten, and on the existence of correlations between the angle of wetting and the magnitude of interphase contacts. Experiments were carried out using various systems: Cu - W, (Cu + 5 % Ni) - W, Cu-ZrC, (Cu + 5 % Ni) - ZrC, in order to determine the existence of correlation between the sintering of the system and the angle of wetting. Equilibrium is not attained in practice, hence the equilibrium "angle of solid wetting" is evaluated from the formula

$$\frac{y}{R} \cong \sqrt{\frac{\varkappa}{2}\cdot\frac{1-T(t)}{a-cT(t)}}, \qquad (4)$$

Card 1/5

On the sintering of ...

where R is the radius of the particles, $\varkappa = 1 + \cos\theta$, θ is the angle of solid wetting,

$$T(t) = \exp\left(-\frac{6\sigma_B}{R}\gamma\overline{-\Delta}\int_0^t\frac{dt}{\eta}\right)$$

σ_B is the surface tension of the more fusible phase, η is the viscosity, $a = \sqrt{-\Delta} + 0.5$, $c = 0.5 - \sqrt{-\Delta}$, $-\Delta = 0.25 - \varkappa/8$ [Abstractor's note: y is not defined]. For constant sintering time $T(t) = \text{const}$, $\varkappa \sim (y/R)^2$. The conductivity is measured on an MD-6 bridge. The experimental results are shown in the table, and show satisfactory agreement with the theoretical values. The kinetic growth of contact in the system Cu - W was investigated at temperatures ranging from 850° - 1050°. The curves obtained show a good general resemblance to the curves for the kinetic growth of conductivity at these temperatures. From formula (4) a theoretical treatment is developed. In the case $\varkappa = 2\sqrt{-\Delta}$, (4) becomes

Card 2/5

S/021/61/000/004/011/013
D213/D303

On the sintering of ...

$$\frac{V}{R} = \sqrt{\frac{2\tau}{4 + \tau}}, \tag{5}$$

where

$$\tau = \frac{6\sigma_B}{R} \int_0^t \frac{dt}{\eta}$$

is the sintering time. In the first approximation

$$\eta(t) = \eta_0 \cdot \xi t. \tag{6}$$

From Nabarro's theory of strength and the theory of the diffuse growth of block crystals the relationship for $\eta(t)$ is evaluated.

$$\eta_0 = \frac{\sqrt{2}}{16} \frac{A_0^2 kT}{\delta^3 D}, \qquad \xi = \frac{\sqrt{2}}{16} \frac{\xi}{\delta}. \tag{7}$$

where A_0 is the linear dimension of the block crystal initially. D

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S/021/61/000/004/011/013
D213/D303

is the coefficient of self-diffusion, δ is the atomic diameter, and σ the surface tension at the boundary of the crystal. X-ray investigation by Darwin's method yielded $A_0 = 5 \cdot 10^{-5}$ cm, σ depends on the angle of disorientation at the boundary of the crystal. For small angles the Shokli-Rid formula holds

$$\sigma = E_0 \varepsilon (A - \ln \varepsilon)$$

where ε is the angle of disorientation and E_0 and A are constants. For the most probable value of ε, $\varepsilon \cong 5 \cdot 10^{-1}$, $\sigma = 3$ ergs/cm^2. There are 2 figures, 1 table and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc. The reference to the English-language publication reads as follows: F.R.N. Nabarro, Rep. Conf. Strength Solids, London, 1948.

ASSOCIATION: Instytut metalokeramiki i spetsial'nykh splaviv AN URSR (Institute of Metallo-Ceramics and Special Alloys of the AS UkrSSR

SUBMITTED: December 28, 1960

RAYCHENKO, A.I.; SKOROKHOD, V.V.

Theory of shrinkage in the initial period of sintering. Porosh. met. no.4:3-8 Jl-Ag '61. (MIRA 16:5)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
(Sintering) (Porosity)

S/021/61/000/006/007/009
D217/D301

11600

AUTHORS: Skorokhod, V.V., and Fedorchenko, I.M., Member of AS UkrSSR

TITLE: The effect of space relations of phase particles on the sintering of two-phase mixtures

PERIODICAL: Akademiya nauk Ukrayinsk yi SSR, Dopovidi, no. 6, 1961, 745 - 747

TEXT: This article is a report of the continuation of previous investigations in which the kinetics of particle coalescence in the system Cu-W were studied. In these investigations calculations were presented on the assumption of spherical shape of the particles. In the present article the authors study the effect of relative particle dimensions on the electrical conductivity of a series of sintered mixtures, as well as on the amount of their shrinkage during heating. In the first series of experiments the dependence of the conductivity on the size of particles of Cu and W was investigated. The results show that d_{Cu}/d_W affects the conductivity of samples,

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S/021/61/000/006/007/009
D247/D301

The effect of space ...

those with the fine Cu powder and coarser W particles having the highest conductivity. In the second series of experiments the dependence of sample contraction on the relative concentration of components was studied on samples with d_{Cu}/d_W ratios equalling 1 and 2. Samples with 10, 20, 30, 40 and 50 % of W were heated at 1000°C for 1 hour. The amount of shrinkage $\frac{\Delta L}{\Sigma Cu_L}$ is plotted against tungsten content Θ_2, the contraction of pure copper powder in these conditions being taken as unity. The graph shows that with the increase of tungsten content in the mixture, the amount of contraction is markedly decreased. The obtained results may be explained by means of following theoretical assumptions: If in a binary mixture in which two kinds of particles, differing in dimensions, are present (particles in each phase being of the same size) then the part of the surface of every particle of one phase, contacting a particle at the other phase would not be proportional to

Card 2/5

The effect of space ...

to calculate the average contact values for particles of each phase, namely y_{11}, y_{12} and y_{22} and from those by means of a method published previously, to calculate the electrical conductivity of the given mixture (index 1 corresponds to copper, index 2 to tungsten). The experimentally found conductivity is in fairly satisfactory agreement with the theoretical. It is simpler to evaluate the effect of the diameter ratio of particles on the shrinkage during heating on the assumption that the latter is connected with the viscosity of the mixture. During heating, the tungsten particles behave as absolutely solid ones, so it might be assumed that the effect of tungsten content is connected with the dependence of the viscosity of the viscous medium on the volume content of the solid phase. It is assumed that in heterogeneous mixtures the total effective solid phase content θ_2 is equal to w_2. The dependence of the relative viscosity η_0/η on the solid phase content θ_2 is shown graphically. Comparison of the two figures proves the validity of the above assumptions concerning the effect of the particle

Card 4/5

S/021/61/000/006/007/009
D247/D301

The effect of space ...

diameter ratio on the dependence of contraction during heating on the relative contents of components in two-phase mixtures. There are 2 figures, 2 tables and 6 Soviet-bloc references.

ASSOCIATION: Institut metalokeramiki i tspetsial'nikh splaviv AN URSR (Institute of Metalloceramics and Special Alloys, AS UkrSSR)

SUBMITTED: February 7, 1961

Card 5/5

S/137/62/000/003/062/191
A006/A101

AT 2400

AUTHORS: Skorokhod, V. V., Fedorchenko, I. M., Panfilov, Yu. A.

TITLE: On the calculation of the concentration dependence of electric conductivity and magnetic permeability of bi-phase cermet alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 41, abstract 3G281 ("Poroshk. metallurgiya", 1961, no. 4, 42 - 46, English summary)

TEXT: The applicability of the Odelevskiy and Landau and Lifshits formulae to calculate the properties of the type of conductivity was checked on Fe-Cu and Ni-Ag compositions. Both formulae are in a satisfactory agreement with experimental data on electric conductivity and magnetic permeability. The authors analyze the causes of deviations from the theory which are connected with the formation of partially matrix systems or the imperfection of interparticle contacts. The authors present also results of investigating electric conductivity in the Cu-W system.

[Abstracter's note: Complete translation]

R. Andriyevskiy

Card 1/1

L 10750-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD
ACCESSION NR: AP3001952 S/0226/63/000/003/0025/0029

54
53

AUTHOR: Skorokhod, V. V.; Panneva, G. O.

TITLE: Investigation of sintering of Ni powders prepared by different methods

SOURCE: Poroshkovaya metallurgiya, no. 3, 1963, 25-29

TOPIC TAGS: carbonyl Ni powder, electrolytic Ni powder, sintering behavior, viscosity, linear shrinkage, interparticle contact, porosity, lattice distortion

ABSTRACT: An investigation of the kinetics of sintering 99.5%-pure electrolytic and 99.9%-pure carbonyl Ni powder at temperatures equal to or less than $0.5T_m$, °K (T_m = melting temperature) has been made in an effort to determine the effect of physicochemical properties of powders produced by different methods. The average particle size was 24.5μ for the electrolytic powder and 9.7μ for the carbonyl powder. Specimens 5 x 5 x 70 mm were compacted with a porosity of 36–39% and sintered in hydrogen at 300, 400, 500, 600, and 700C for 8 hr. Significant differences in sintering behavior were observed in the powders tested. The carbonyl powder was considerably more active than the electrolytic powder. The linear shrinkage of both powders increased with increasing

Card 1/#3

temperature and prolonged holding, but in electrolytic powder after 440 min at 400, 500, 600, and 700C, it amounted to approximately 0.34, 0.38, 0.50, and 0.90%, respectively; the corresponding figures for carbonyl powder were approximately 1.40, 3.80, 6.00, and 3.70%. The growth of the interparticle contact areas, measured as λ_{pr}/λ_k (where λ_{pr} is the electrical conductivity of compacts reduced to zero porosity and λ_k is the electrical conductivity of solid material), followed the same pattern as that of linear shrinkage and after sintering for 440 min at 300, 400, 500, 600, and 700C amounted to approximately 0.30, 0.40, 0.58, 0.80, and 0.92%, respectively, for electrolytic powder and approximately 0.78, 0.85, 0.90, 0.94, and 0.95%, respectively, for carbonyl powder. Porosity of the carbonyl nickel compacts decreased much more rapidly than that of the electrolytic nickel compacts (see Fig. 1 of Enclosure). The experimentally determined values of the coefficient of viscosity for electrolytic Ni at 700C did not differ significantly from the value calculated from the Nabarro formula; for carbonyl Ni, however, the calculated value was almost four orders higher, which indicates that carbonyl Ni has much higher diffusion activity than electrolytic Ni. The crystal lattice of electrolytic Ni was found to be more distorted than that of carbonyl Ni, which shows that lattice distortions have no effect on the sintering activity of powders. The only explanation for

L 10750-63
ACCESSION NR: AP3001952

the higher activity of carbonyl powder appears to be a highly developed network of macrodefects. Orig. art. has: 5 figures, 2 formulas, and 2 tables.

ASSOCIATION: Institut metallokeramiki i spetsialny*kh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys, AN USSR)

SUBMITTED: 22Dec62	DATE ACQ: 11Jul63	ENCL: 01
SUB CODE: ML	NO REF SOV: 005	OTHER: 000

Card 3/4

ACCESSION NR: AT4013961 S/2659/63/010/000/0252/0257

AUTHOR: Fedorchenko, I. M.; Lyapunov, A. P.; Skorokhod, V. V.

TITLE: The nature of the high temperature oxidation of porous nickel

SOURCE: AN SSSR. Institut metallurgii. Issledovaniya po zharoprochnym splavam, v. 10, 1963, 252-257

TOPIC TAGS: nickel, porous nickel, nickel oxidation, oxidation, high temperature oxidation

ABSTRACT: Porous products manufactured by powder metallurgical methods are finding even wider use in various fields of engineering. In many cases these products viz. metal-ceramic bearings, filters, and packings, work at high temperatures. The authors have investigated the oxidation of porous products to determine the specific features of this process at high temperatures and to observe the qualitative variations connected with internal oxidation of the sample. The process of oxidation of porous bodies differs greatly from that of compact bodies. This is expressed by disruption of the normal course of the temperature-oxidation curve and by a variation in the observed oxidation law. These features of the oxidation of porous bodies can be explained by the decrease in the surface area taking part

Card 1/2

SKOROKHOD, V. V.

"The influence of imperfections of crystal lattice on the sintering of metal powders."

paper to be presented at the Intl Powder Metallurgy Conf, 14-17 Jun 65, New York City.

Ukr Acad Sci.

L 61028-65 EWP(e)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) Pf-4/Pad IJP(c) JD/HW
ACCESSION NR: AR5017422 UR/0137/65/000/006/G029/G029

32
B

SOURCE: Ref. zh. Metallurgiya, Abs. 6G201

AUTHOR: Skorokhod, V. V. 44,55

TITLE: Special characteristics of pressing and sintering of active nickel powders 27

CITED SOURCE: Tr. 7 Vses. nauchno-tekhn. konferentsii po poroshk. metallurgii. Yerevan, 1964, 95-100

44,55

TOPIC TAGS: powder metal compaction, powder metal sintering, nickel, carbonyl nickel 44,55 Ni 27

TRANSLATION: A study was made of processes for pressing and sintering of reduced and carbonyl nickel powders. An estimate of the critical pressing stress σ_k was made with the formula $\sigma_k = p\lambda_k(1-1.5\theta)/\lambda(1-\theta)^2$, where p is the pressing pressure, λ_k is the electrical conductivity of the dense metal, λ is the electrical conductivity of the briquet, and θ is the porosity in unit portions. For carbonyl and reduced nickel at p = 30 kg/mm^2, σ_k is equal respectively to 107

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L 61028-65
ACCESSION NR: AR5017422

0

and 196 kg/mm^2. The advantages of carbonyl nickel powder are pointed out. Assumptions are made as to the different nature of the defects of the crystal structure in carbonyl and reduced nickel powders. M. Bal'shin

SUB CODE: MM ENCL: 00

awm
Card 2/2

L 4211-65 EWT(l)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5008273 S/0226/65/000/003/0058/0061

AUTHORS: Skorokhod, V. V.; Panichkina, V. V.

TITLE: Electric conductivity of porous materials sintered from copper wire

SOURCE: Poroshkovaya metallurgiya, no. 3, 1965, 58-61

TOPIC TAGS: copper, sintered metal, electric conductivity, resistivity / R316 bridge

ABSTRACT: The authors present a theoretical analysis of the electric conductivity of a porous material in relation to porosity and imperfections of contacts in general. The results of experiments performed on briquettes sintered from copper wire, showing the dependence of electric conductivity on the porosity and the time of the agglomeration are also presented. It was shown by V. V. Skorokhod (IFZh, 2, 52, 1959) that the conductivity of a porous body equals the conductivity of the same nonporous body, multiplied by one minus porosity, multiplied by the ratio of the mean field in the conducting phase and the mean field in the porous body. For a body made of short-length wires, it is assumed that the wires are arranged in all directions. The conclusion is reached that the value of the electric conductivity does not approach zero when the number

Card 1/2

L 48117-65

ACCESSION NR: AP5008273

of contacts between individual wires is reduced. In the experimental work, copper wire of 0.12-mm diameter was cut into pieces of 10 to 15 mm and pressed into test specimens 70 x 4.5 x 5 mm. All samples were sintered at a temperature of 1000C in a hydrogen atmosphere, with agglomeration times ranging from 0.25 to 8.0 hours. Two series of experiments were conducted with specimens of different porosity. The electric conductivity measurements and contact factor variations were plotted on charts. Some values are not yet accounted for, but most of the results are in accordance with the theoretical conclusions. Orig. art. has: 8 formulas and 3 charts.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of Materials Science Problems, AN UkrSSR)

SUBMITTED: 03Dec63 ENCL: 00 SUB CODE: MM, IE

NO REF SOV: 004 OTHER: 003

Card 2/2

L 63539-65 EWP(e)/EWT(m)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4/Pad IJP(c)
JD/HW

ACCESSION NR: AP5013244 UR/0226/65/000/005/0001/0003

36
33
B

AUTHOR: Skorokhod, V. V.; Khriyenko, A. F.

TITLE: X-ray investigation of nickel powders

SOURCE: Poroshkovaya metallurgiya, no. 5, 1965, 1-3

TOPIC TAGS: nickel powder, x ray crystallography, dislocation, powder metallurgy

ABSTRACT: X-ray techniques were used for studying packing defects in nickel powders. Carbonyl and reduced nickel powders were studied. For comparison, shavings of cast nickel were also investigated. The effect of packing defects on the broadening of x-ray reflections was taken into account. The method which was used permits determining the probability of deformation faults and twinning faults jointly but not separately. The powder briquets were irradiated in a URS-50I unit using copper Kα radiation. The (111), (222) and (200) lines were recorded. The (400) line was very faint for the powders. Each point of the reflection pattern was established by a five minute pulse count. Reproducibility of experiments was found to be satisfactory. Results show that carbonyl nickel has the lowest dislocation density and the greatest packing defect probability. These defects are attributed to processes oc-

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L 63539-65

ACCESSION NR: AP5013244

curring during the growth of crystallites rather than to Heidenreich-Shockley partial dislocations. In the deformed nickel, the packing defects are believed to be due solely to the splitting of complete dislocations. Reduced nickel is an intermediate case. Orig. art. has: 1 table, 4 formulas.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of Materials Research of the AN UkrSSR)

SUBMITTED: 10Jan64 ENCL: 00 SUB CODE: MM, AS

NO REF SOV: 008 OTHER: 005

Card 2/2

SKOROKHOD, V.Z., inzh.

Coal base of the Amur Economic Region and ways of expanding it.
Obog.i brik.ugl. no.27:3-8 '62. (MIRA 17:4)

SKOROKHOD, Ye.K. (L'vov, ul. Lenina, d.47, kv. 3)

Peculiarities in the diagnosis of acute hematogenous osteomyelitis in children. Nov.khir.arkh. no.6:124 N-D '58. (MIRA 12:3)

1. Kafedra travmatologii, ortopedii i detskoy khirurgii (zav. - prof. I.L. Zaychenko) L'vovskogo meditsinskogo instituta.
(OSTEOMYELITIS)

SKOROKHOD, Ye.K., kand.med.nauk

Patellar fractures and their treatment. E.K. Skorokhod. Ortop travm. i protez 19 no.2:76 Mr-Ap '58 (MIRA 11:5)

1. Iz kafedry travmatologii, ortopedii i detskoy khirurgii (zav. - prof. I.L. Zaychenko) L'vovskogo meditsinskogo instituta (dir. - prof. L.N. Kuz'menko)
(PATELLA--FRACTURE)

SKOROKHOD, Ye.K.

Diagnosis of acute hematogenic osteomyelitis in children.
Pediatriia 36 no.10:77 O '58 (MIRA 11:11)

1. Iz gospital'noy khirurgicheskoy kliniki L'vovskogo meditsinskogo instituta (zav. kafedroy i direktor instituta - prof. A.N. Kuzmenko).
(OSTEOMYELITIS)

SKOROKHOD, Ye.K., dotsent (L'vov); OKESHKO, N.N., vrach (L'vov)

Appendicitis in children. Zdorov'e 7 no. 5:22-23 My '61. (MIRA 14:4)

(APPENDICITIS)

SKOROKHOD, Ye.K., dotsent; OLESHKO, N.N., vrach (L'vov)

Acute appendicitis and its diagnosis in children. Fel'd. i akush. 26 no.7:13-19 Jl '61. (MIRA 14:7)
(APPENDICITIS)

SKOROKHOD, Yu.V., inzhener.

Development of foreign navies in the postwar period. Sudostroenie 23 no.6:39-43 Je '57. (MLRA 10:7)
(Warships)

SKOROKHOD, Yu.V., inzhener.

Development of foreign navies in the postwar period. Sudostroenie 23 no.7:52-56 Jl '57. (MLRA 10:8)
(War ships)

SKOROKHOD, Yu.V., inzhener.

Development of foreign navies in the postwar period (conclusion). Sudostroenie 23 no.8:63-66 Ag '57. (MIRA 10:11)
(Warships)

ZHUKOV, R.F., kand.tekhn.nauk; SKOROKHOD, Yu.V., inzh.

Shipbuilding as treated in the Great Soviet Encyclopedia. Sudostroenie 25 no.1:86-87 Ja '59. (MIRA 12:3)
(Shipbuilding)

SKOROKHOD, Yu.V., kand. tekhn. nauk

Operations research and its use in shipbuilding. Sudostroenie 28 no.1:77-79 Ja '62. (MIRA 16:7)

(Shipbuilding) (Operations research)

SKOP[illegible], [illegible]., kand. tekhn. nauk

[illegible] country's navy and cybernetics. Mor. sbor. 48 no.7: 62-68 Jl '65. (MIRA 18:8)

BRAYCHEVSKIY, M.Yu.; PSHENICHNAYA, L.E.; SKOROKHOD'KO, E.F.

Information retrieval in the field of archaeological literature.
NTI no.8:13-16 '63. (MIRA 16:10)

L 11040-63 EWT(d)/FCC(w)/BDS/EEC-2 ASD/AFMDC/ESD-3/APGC Pg-4/Pk-4/ Po-4/Pq-4 GG/IJP(C)
ACCESSION NR: AT3002149 S/2923/62/000/000/0105/0110

76
75

AUTHOR: Skorokhod'ko, E. F.

TITLE: Coding the meaning of words according to the indicants of the objects denoted by them.

SOURCE: Vy*chislitel'naya matematika i tekhnika; trudy* aspirantov Instituta kibernetiki AN USSR. Izd-vo AN USSR, 105-110

TOPIC TAGS: word meaning code, machine translation

ABSTRACT: An attempt is made to code the meaning of a word according to a more or less detailed description of the concept for which the word stands. The word "airplane" used as an example is described as a "heavier-than-air flying apparatus that has a power plant causing its flight and the wings." By assigning a code notation to every element in the above description, a certain code formula is obtained. Modifications of the elements result in a set of kindred concepts and words, such as autogyro, glider, propeller glider, airship, balloon. Possible applications of the above coding system to machine translation are considered, the task being to find out the meaning of a term used in the source language (and absent in the computer memory) by analyzing the context around the term. Orig. art. has: 2 formulas.

Card 1/1 Inst. of Cybernetics, Academy of Sciences, Ukr SSR

PCHELNICHNAYA, L.E. (Kiyev); SKOROKHOD'KO, E.F. (Kiyev)

Synthesis of intelligent sentences in an electronic digital computer. Probl. kib. no.10:261-273 '63. (MIRA 18:4)

L 17109-65 EWT(d)/BXT/EED-2/EWP(1) Pg-4/Pk-4/Po-4/Pq-4 IJP(c)/ASD(a)-5/
SSD/AFMD(p)/AFWL/AFETR/RAEM(c)/RAEM(i)/ESD(c)/ESD(dp)/ESD(t) GG/BB

ACCESSION NR: AP4048652 S/0315/64/000/006/0025/0026

AUTHOR: Pshenichnaya, L. E.; Skorokhod'ko, E. F.

TITLE: Information retrieval with the aid of common meaning codes

SOURCE: Nauchno-tekhnicheskaya informatsiya, no. 6, 1964, 25-26

TOPIC TAGS: information retrieval, coding, common meaning code

ABSTRACT: An experimental system for information retrieval, based on a consideration of the common meaning of two concepts, was developed at the Institut kibernetiki (Institute of Cybernetics) of the AN UkrSSR. A connection is said to exist if the contents of two concepts contain at least one common element. The code for any expression can be represented in the form of a branching system in which the apex node is the convolution of the code, the center row of nodes is the code itself and the bottom row is the involute of the code, as shown in Figure 1 of the Enclosure. Solid line connections between the nodes represent relationships between the kind and the form of an idea, while all other relationships are represented by dotted lines. If the information search is performed according to a request B, the document A is said to have an unconditional common meaning with B if the graph of A contains an apex B connected with the apex A by a solid line. Similarly, document A has a hypothetical common meaning with B if the graph of B contains an apex A

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ACCESSION NR: AP4048652

connected with the apex B by a solid line. The document A has an unconditional common proximity to the request B if the graph of A contains an apex B connected to apex A by a dotted line, and when the situation is reversed, the document A is said to have a hypothetical common proximity to the request B. The experimental search system was programmed on the electronic computer "Kiev", using a total of 510 documents on radio engineering and computer technology. It was based on comparison of the second order code involutes and the results were classified into four columns, according to the degree of association with the request codes. The answers contained "search noise" which varied from 5 to 30% of the total number of elements contained in the request and about 70% of this noise occurred in the fourth column, i.e. the column whose connection to the request topic was weakest. Orig. art. has: 2 equations and 3 figures.

ASSOCIATION: none

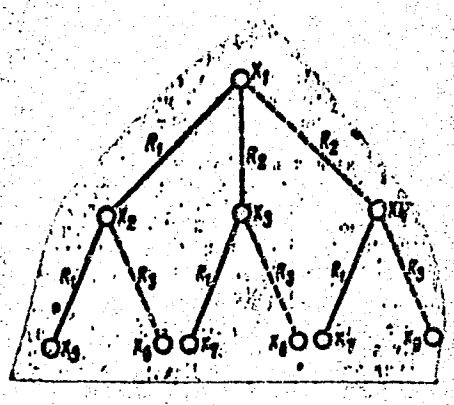
SUBMITTED: 26Jan64 ENCL: 01 SUB CODE: DP

NO REF SOV: 001 OTHER: 000

Card 2/3

L 17109-65
ACCESSION NR: AP4048652

ENCLOSURE: 01



Convolution

Meaning Code

Involute

Figure 1
Branching graph of an information system

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L 40833-65 EWT(d)/EPA(s)-2/TDB(jj)/EEC(f)/BXT/EED-2/EWP(1) Pq-4/Pg-4/Pk-4
IJP(c) WVH/BB/GG/JXT(BF)
ACCESSION NR: AP5008600 S/0315/65/000/002/0016/0018

51
B

AUTHOR: Skorokhod'ko, E. F. 16

TITLE: Information-retrieval system with improving parameters

SOURCE: Nauchno-tekhnicheskaya informatsiya, no. 2, 1965, 16-18

TOPIC TAGS: data processing system, documentation, information retrieval, information center, library, computer data processing, information processing, information storage, information analysis

ABSTRACT: A scheme for a two-stage information-retrieval system is discussed, in which the data retrieval is performed by initial inversion selection of the search images and subsequent checking of the search images selected by the block of logical relation, during which irrelevant documents are separated. Such programs can be improved continuously by the introduction of corrective orders concerning the quality of the selection work. The inversion search block selects all papers whose titles have even the remotest relation to the inquiry. The logical block includes a number of discriminators (operators) each selecting documents with a definite type and degree of logical relation to the inquiry. The type of the operators selecting the documents determines the amount of irrelevant

Card 1/3

items in the selection, the degree of information loss, and the length of working time of such a program. This programming scheme is represented as follows. The inversion search block selects a quantity of articles designated A; subsequently, the same block divides A into two groups: A_1 with a strong logical relation to the main topic, and A_2 with different degrees of relation. The A_2 group is filtered by the logical block which eliminates irrelevant documents, producing the group A_3. The algorithm describing the A_3 group (controlling the number of irrelevant items) is:

$$N_s = \bigcup_{i=1}^{q} N_i. \qquad (1)$$

where N_s is number of irrelevant items in the whole system; N_1 is the same in the discriminator d_i; q is total number of discriminators. The information loss is described by:

$$M_s = \bigcap_{i=1}^{q} M_i. \qquad (2)$$

where: M_s are losses in the system; M_i are losses in the discriminator d_i; q is the total number of discriminators. The length of the search time (depending on the number of discriminators is:

$$t_f = p_s \cdot t_0 \frac{1+q}{2}. \qquad (3)$$

L 40833-65
ACCESSION NR: AP5008600

where: t_f is working time of the logical relation block; p_2 is the quantity of search images checked by this block (the A_2 group); t_o is the average working time of one discriminator; q is the total number of discriminators. The system parameters may be varied by selecting the pertinent discriminators from the initial set, and the parameters may be continuously improved by the introduction of error information (corrective orders) into the program during the process of its application. Orig. art. has: 3 formulas.

ASSOCIATION: none

SUBMITTED: 16Nov64 ENCL: 00 SUB CODE: DP

NO REF SOV: 002 OTHER: 000

Card 3/3

SKOROKHOD'KO, E.F.

Information storage and retrieval system with improved parameters. NTI no.2:16-18 '65. (MIRA 18:6)

SKOROKHOD'KO, F.I., inzh.

Use of electrically welded pipes with a spiral seam according to the specifications of the All-Union State Standard No.8696-58. (MIRA 14:9)
Energetik 9 no.7:19-20 Jl '61.
(Electric power plants--Equipment and supplies)
(Steam pipes)

SHCHEKIN, Rostislav Vladimirovich, kand. tekhn. nauk, dots.; KORENEVSKIY, Sergey Mikhaylovich, kand. tekhn. nauk, dots.; BEM, Georgiy Yevgen'yevich, dots.; ARTYUSHENKO, Mikhail Alipiyevich, inzh.; SKOROKHOD'KO, Fedor Isidorovich, dots.; LOBAYEV, B.N., doktor tekhn. nauk, prof., red.; POLTORATSKAYA, E.A., red.; SURYGINA, E.N., red.; VOLOSHCHENKO, Z.N., red.; LEUSHCHENKO, N.L., tekhn.red.

[Handbook on heating and ventilation in residential and public buildings]Spravochnik po teplosnabzheniiu i ventiliatsii v grazhdanskom stroitel'stve. [By] R.V.Shchekin i dr. 2. izd., perer. i dop. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1962. 1019 p. (MIRA 16:2)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury Ukr. SSR (for Lobayev).

(Heating) (Ventilation)

L 55993-65

ACCESSION NR: AR5014013 UR/0372/65/000/004/V070/V070
801:51

SOURCE: Ref. zh. Kibernetika. Svodnyy tom, Abs. 4V444

AUTHOR: Skorokhod'ko, Ye. F.

TITLE: One approach to compiling a data language for technical sciences

CITED SOURCE: Sb. Obchysl. matem. i tekhn. Kyyiv, AN URSR, 1963, 45-52

TOPIC TAGS: computer language, logical system approach, ordinary language approach, combined approach, data language component, mathematical operation

TRANSLATION: Two possible approaches to the compilation of a data language (i.e. as a logical system offering the possibility of logical processing of information written in the data language or as a system more proximate to natural language with the inherent simplicity of translation to and from the data language) can be combined by representing the data language as a logical model of the ordinary language. A data language constructed in such fashion could serve as an intermediate language in computer translation. Listings of objects and relationships (i.e. orbit, mass, charge, motion and to be an object, to be a sub-

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ject, etc., respectively) assume the role of basic elements of the language to be compiled. Such objects and relationships are designated X_1, X_2,...X_n and R_1, R_2,...R_m, respectively. A set of topics for which relationships are defined is referred to as a situation. The latter can be represented by a graph whose vertices correspond to objects and whose edges correspond to relationships. A situation consisting of two objects and combining their relationships is called elemental. An elemental situation is described by means of a simple phrase in the form $X_i R_a X_j$. The author defined several operations for use in constructing more complex concepts, corresponding to situations with a number of objects in excess of two, from simple phrases. Some identity transformations which correspond approximately to an actively-passive transformation in an ordinary language are presented. Appropriate signs can be introduced to indicate the order in which the relationships are realized and to facilitate the description of a situation changing in time. H. Arapova

ENCL: 00

SUB CODE: DP

Card 2/2

PISKAREV, A.I.; KHOLOPOVA, A.A.; SHELAPUTIN, V.I.; NOSKOVA, G.L.; ALEKSEYEV, P.A.; DRACHEVA, T.A.; OLENEV, Yu.A.; PAVLOVA, I.A.; SELIVANOV, V.A.; VINOGRADOV, S.V.; MIROLYUBOV, P.A.; ROVENSKIY, A.I.; SKOROKHODOV, A.A.; RYUTOV, D.G., kand. tekhn. nauk, red.; CHICHKOV, N.V., red.; MEDRISH, D.M., tekhn. red.

[Manual on the operation of cold storage warehouses] Spravochnik po ekspluatatsii kholodil'nykh skladov. Moskva, Gostorgizdat, 1963. 175 p. (MIRA 16:7)

1. Sotrudniki Vsesoyuznogo nauchno-issledovatel'skogo instituta kholodil'noy promyshlennosti (for Piskarev, Kholopova, Shelaputin, Noskova, Alekseyev, Dracheva, Olenev, Pavlova). 2. Rosmyasorybtorg Ministerstva torglovli RSFSR (for Selivanov, Vinogradov, Mirolyubov, Rovenskiy). 3. Gosudarstvennyy planovoy komitet Soveta Ministrov SSSR (for Skorokhodov). (Cold storage warehouses)

OSINTSEV, Arkadiy Stepanovich; VERSHININ, A.M., redaktor; SKOROKHODOV, A.A., redaktor; LUCHKO, Yu.V., redaktor izdatel'stva; KOVALENKO, N.I., tekhnicheskiy redaktor

[An analysis of potentials for reducing the cost of steel] Analiz rezervov snizheniia sebestoimosti stali. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, Sverdlovskoe otd-nie, 1956. 125 p. (MLRA 9:8)
(Steel)

VALUYEV, Aleksandr Iosifovich; SKOROKHODOV, Arkadiy Aleksandrovich; GRANOVSKIY, G.M., retsenzent; LUCHINSKIY, Sh.P., red.; LUCHKO, Yu.V., red.izd-va; TURKINA, Ye.D., tekhn.red.

[Accounting and analysis of the administrative operations of a metallurgical plant] Bukhgalterskii uchet i analiz khoziaistvennoi deiatel'nosti metallurgicheskogo zavoda. Sverdlovsk, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Sverdlovskoe otd-nie, 1960. 447 p. (MIRA 14:3)
(Steel industry--Accounting)

VESELOV, Nikolay Grigor'yevich; SKOROKHODOV, A.A., retsenzent; POPOV, Leonid Pavlovich, red.; SYRCHINA, M.M., red.izd-va; MAL'KOVA, N.T., tekhn. red.

[Cost of cast iron] Sebestoimost' chuguna. Sverdlovsk, Metallurgizdat, 1962. 51 p. (MIRA 15:6)
(Cast iron—Cost)

DUKHNEVICH, Vadim Ignat'yevich; KONOVALOV, Leopol'd Anatol'yevich: SKOROKHODOV, A.A., retsenzent; RADUKIN, V.P., red.; SYRCHINA, M.M., red. izd-va; MAL'KOVA, N.T., tekhn. red.

[Steel costs]Sebestoimost' stali. Sverdlovsk, Metallurgizdat, 1962. 57 p. (MIRA 15:7)
(Steel--Costs)

SKOROKHODOV, A.A.; KAZAKEVICH, E.I., red.; KOROVINA, N.A., tekhn. red.

[State plan is the law of production development] Gosudarstvennyi plan-zakon razvitiia proizvodstva. Moskva, Metallurgizdat, 1963. 21 p. (MIRA 17:3)

SKOROKHODOV, Aleksey Gavrilovich; BEREZOVSKIY, Semen Mikhaylovich; LOBOK, Abram Yakovlevich; TSYRUL'NIKOV, A.I., redaktor; AVRUTSKAYA, R.F., redaktor; BEKKER, O.G., tekhnicheskiy redaktor.

[Secondary ferrous metals] Vtorichnye chernye metally; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 336 p. [Microfilm] (MLRA 8:1)
(Scrap metal)

SOV/148-59-2-3/24

25(1)

AUTHOR: Skorokhodov, A.N., Engineer

TITLE: On the Theory of Planetary Rolling (K teorii planetarnoy prokatki)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1959, Nr 2, pp 61-71 (USSR)

ABSTRACT: The operation of planetary mills, which are now being used abroad, [Ref 1-3] is described. The rate of planetary rolling is computed in order to determine the force and power consumption of the process.
There are 4 diagrams, 1 graph and 3 American references.

ASSOCIATION: Chelyabinskiy traktornyy zavod (Chelyabinsk Tractor Plant)

SUBMITTED: August 14, 1958

Card 1/1

ILYUKOVICH, B.M., starshiy kalibrovshchik SKOROKHODOV, A.N.

Expanded groove design of side ring shapes for ZIL-164 automobile wheels. Metallurg 6 no.12:27-29 D '61. (MIRA 14:11)

1. Chusovskiy metallurgicheskiy zavod (for Ilyukovich).
2. Ural'skiy politekhnicheskiy institut (for Skorokhodov).

(Rolls(Iron mills))

S/137/62/000/006/080/163
A052/A101

AUTHORS: Tarnovskiy, I. Ya., Skorokhodov, A. N.

TITLE: Mechanics of metal deformation at rolling complex shapes

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 3, abstract 6D10 ("Tr. Ural'skogo politekhn. in-ta", no. 127, 1961, 19 - 32)

TEXT: The modern conception of the stressed and strained state of metal at rolling complex shapes is described. In view of a great variety of complex shapes, a classification of shapes in groups is suggested. 1. By the form: a) with two planes of symmetry (H-beams and other), b) with one plane of symmetry (rails, T-beams and others), c)without planes of symmetry. 2. By conditions of lateral deformation: a) with a free expansion, b) with a restricted expansion, c) without expansion. The analysis of the mechanics of metal deformation shows that neither Brovo's nor Tafel's method can be accepted as a correct one. It should be recommended to use electronic machines for performing calculations, since the functions derived are very cumbersome.

N. Yudina

[Abstracter's note: Complete translation]

Card 1/1

TARNOVSKIY, I.Ya.; SKOROKHODOV, A.N.

Analysis of deformations in the rolling of cross-like shapes by means of variational methods. Izv.vys.ucheb.zav.; chern.met. 5 no.6:61-70 '62. (MIRA 15:7)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Deformations (Mechanics))

ILYUKOVICH, B.M.; SKOROKHODOV, A.N.

Expanded finishing groove in the rolling of channel No. 10.
Metallurg 7 no.8:23-24 Ag '62. (MIRA 15:9)

1. Starshiy kalibrovshchik Chusovskogo metallurgicheskogo zavoda (for Ilyukovich). 2. Ural'skiy politekhnicheskiy institut (for Skorokhodov).
(Rolling (Metalwork))

ILYUKOVICH, B.M., starshiy kalibrovshchik; SKOROKHODOV, A.N.

Rolling of tire ring shapes. Metallurg 7 no.9:19-20 S '62. (MIRA 15:9)

1. Chusovskiy metallurgicheskiy zavod (for Ilyukovich).
2. Ural'skiy politekhnicheskiy institut (for Skorokhodov).
(Rolling (Metalwork))

TARNOVSKIY, I.Ya.; SKOROKHODOV, A.N.

Rolling of H-beams with free widening. Izv. vys. ucheb. zav.; chern. met. 5 no.8:62-68 '62. (MIRA 15:9)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Beams and girders)

TARNOVSKIY, I.Ya.; ILYUKOVICH, B.M.; SKOROKHODOV, A.N.

Calculating deformations in the forming and edging grooves during the rolling of T-sections. Stal' 22 no.10:925-928 O'62. (MIRA 15:10)

1. Ural'skiy politekhnicheskiy institut i Chusovoskoy metallurgicheskiy zavod.

(Rolling (Metalwork)) (Deformations (Mechanics))

TARNOVSKIY, I.Ya.; POZDEYEV, A.A.; KOLMOGOROV, V.L.; VAYSBURD, R.A.; GUN, G.Ya.; KOTEL'NIKOV, V.P.; TARNOVSKIY, V.I.; SKOROKHODOV, A.N.

[Variational principles of mechanics in the theory of metal-working by pressure] Variatsionnye printsipy mekhaniki v teorii obrabotki metallov davleniem. Moskva, Metallurgizdat, 1963. 52 p. (MIRA 17:5)

TARNOVSKIY, I.Ya.; SKOROKHODOV, A.N.

Deformation, forces, and the consumption of energy in rolling T-sections in edging passes. Izv.vys.ucheb.zav.; chern.met. 6 no.1:67-77 '63. (MIRA 16:2)

1. Ural'skiy politekhnicheskiy institut.
(Rolling mills)

TARNOVSKIY, I.Ya.; ILYUKOVICH, B.M.; SKOROKHODOV, A.N.

Deformations and stresses during strip rolling with cruciform grooves. Izv. vys. ucheb. zav.; chern. met. 6 no.4:68-75 '63. (MIRA 16:5)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Deformations (Mechanics))

TARNOVSKIY, I.Ya.; SKOROKHODOV, A.N.; ILYUKOVICH, B.M.

Deformation in sheet passes during the rolling of T-sections. Izv. vys. ucheb. zav.; chern. met. 6 no.5:118-122 '63. (MIRA 16:7)

1. Ural'skiy politekhnicheskiy institut.
(Rolling (Metalwork)) (Deformations (Mechanics))

TARNOVSKIY, I.Ya.; SKOROKHODOV, A.N.; ILYUKOVICH, B.M.

Shape changes during metal rolling in open beam passes.
Izv. vys. ucheb. zav.; chern. met. 6 no.12:82-89 '63.
(MIRA 17:1)

1. Ural'skiy politekhnicheskiy institut.