ACCESSION NR: AP4042000

Langmuir, Larmor, and probe frequencies, respectively. The behavior of resonance probes was investigated experimentally in helium and air plasmas at pressures from 0.03 to 0.1 mm Hg and magnetic fields up to 4 kOe. The plasmas were excited in a cubical glass container by a 50 megacycle/sec electric field, the available power of which was 300 W. The probes were similar to those employed by Jeung and Sayers (loc.cit.) and were made from lengths of high frequency coaxial line. The exciting and detecting probes were located near the center of the container, and were separated by 0.5 to 1.5 cm. The probe frequency was varied from 200 to 1000 megacycles/ /sec. Resonance probe measurements in the absence of a magnetic field were compared with measurements performed by the method of G.Schulz and S.Brown (Phys.Rev.98,1642, 1955), and satisfactory agreement was found. In the presence of the magnetic field, the probe frequency was held constant and the amplitude of the probe oscillations was observed with an oscilloscope as a function of the electron concentration. (The electron concentration was obtained from the power absorbed by the plasma from the exciting field.) The predicted resonances were observed at the predicted places. As the magnetic field increased, the Langmuir resonance (V = 1) broadened, was replaced by a plateau having several small peaks, and finally disappeared entirely. Although there are noise problems, and the method cannot be used when the collision frequency is as great as the probe frequency, it is concluded that the resonance

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ACCESSION NR: AP4042000

probe method holds promise and should be further explored. "The authors are pleased to express their gratitude to R.Z.Sagdeyev and B.V.Chirikov for discussing the work, and to N.S.Buchel'nikova for her constant support and interest." Orig.art.has: 22 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 18Jan63 ENCL: 00

SUB CODE: ME NR REF SOV: 004 OTHER: 004

3/3

RUMANIA

CADARIU, Gh., Professor; GRADINA, C., MD; CONSTANTINIDIS, A., MD;
DECULESCU, F., MD; DAVIDSOHN, H., MD; RADU, I., Technician.

Institute of Hygiene and Labor Protection of the Rumanian People's Republic in Bucharest (Institutul de igiona si protectia muncii al R.P.R. din Bucuresti) - (for all)

Bucharest, Igiena, No 4, Jul-Aug 63, pp 309-314

"Functional Changes in the Organism of Workmen due to Local Vibrations." (With reference to the problem of an early diagnosis of the same.)

EXCERPTA MEDICA Sec 15 Vol. 11/3 Chest Aug 58

DAVIDSOHN, S.

1763. STUDY ON THE DYNAMICS OF BRONCHIAL TB - Etude sur la dynamique de la tuberculose bronchique - Davidsohn S., Eskenasy Y., Gheorghiu T., Glaubes M., Rodescu M. and Tatomir A. Inst. de Rech. sur la Tuberc. de Roumanie, Sect. de Laryngo-Bronchol., Bucarest - BRONCHES (Paris) 1957, 7/3 (333-340) Graphs 1

This work refers exclusively to bronchoscopy of the large bronchi in the course of 2 periods, the first of which preceded the large-scale spread of antibiotics. In 5,796 patients examined, bronchial lesions were found in 74.25% of the cases in 1949 and 1950 (first period), in 63.5% in 1951 and 1952, and in 52% of the cases in 1953 and 1954. The improvement is undoubtedly due to a wider use of antibiotics and an earlier detection. Congestive inflammatory lesions occurred in one-third of the pathological cases, and this proportion has not been affected by the arrival of the antibiotics. It is believed that these lesions, far from being common and lacking importance, are probably due to paucibacillary infections provoking very special foci (atypical, incomplete follicles). Hypersecretions were observed in a varying percentage of cases in the course of the 3 periods considered: from 2.6% it rose to 17.9% to fall again to 5.4%. Infiltrative lesions often accompanied by small erosions, granulations and haemorrhages were found in half of the cases in the course of the first period, the percentage being maintained at approximately 36.8 afterwards. Ulcerative lesions developed in 11.8% of the cases in the course of the first period; this figure fell successively to 6.84% and then to 3.3%. This fall is certainly the result of the specific treatment. Cicatricial stenosis was a phenomenon which was still rare in the first period: 1.9%; its incidence was seen to increase to 2.8% in the course of the second period and, in the last period, it reached a percentage of 4.2. The cure of stenosis is directly attributable to the action of antibiotics administered by the general route. Local treatment, on the other hand, produced cure of lesions without stenosis in the majority of the cases. As regards gangliobronchial fistulae, which are not always specific of tb, these were diagnosed more frequently in the course of the last period (4.8% of the cases) than in the beginning of the study. There is no special correlation between age, incidence and appearance of the bronchial lesions.

1105. CONSIDERATIONS ON HAEMOPTYSIS OF BRONCHIAL ORIGIN. HAEMOPTYSIS IN PATIENTS WITH NORMAL CHEST PICTURES - Considérations sur les hémoptysies d'origine bronchique. Les hémoptysies à image thoracique normale - Davidsohn S., Brill A., Eskenasy Y., Glaubes M. and Rodesco M. Inst. de Tuberc., Bucarest - BRONCHES 1958, 8/3 (266-274)

Among 498 patients, 70% of whom were between 20 and 40 yr. old, 190 had no bronchoscopical abnormalities, and 308 (over 60%) had. Non-specific inflammation was observed in 59 patients, bronchiectasies (at bronchography) without inflammation in 21, non-specific bronchitis in 13, occupational bronchitis in 7. Specific bronchitis was seen in 187 cases (60% of all bronchitis cases), and there were 15 bronchial tumours, 7 of which were benign. A few patients showed disturbances of blood coagulation.

Kromsigt - Emmen (XV, 6, 11)

AUTHOR: Davidson, A. B. 30-58-4-25/44

TITLE: Current Objectives of Soviet Specialists on Africa (Aktual'nyye zadachi sovetskikh afrikanistov).
Transactions of the Coordination Conference at the Institute for Orientalism (Koordinatsionnoye soveshchaniye v institute vostokovedeniya)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 4, pp. 109-110 (USSR)

ABSTRACT: This conference took place on February 13, and was the second coordination conference of Africa explorers of the AS USSR. In it took part: representatives of the Institutes for Orientalism, Ethnography, International Economy and International Relations, as well as those of the Moscow University and of pedagogic institutes. Ye. M. Zhukov, Academic Secretary of the Department for Historical Sciences, Corresponding Member of the AS USSR, reported on the decisions of the Conference of Solidarity of Asian and African Countries in Cairo which he called a fight against colonialism. He further pointed out the

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sympathy of these peoples for the Soviet Union and underlined the necessity of the further development of Soviet exploration of Africa. S. R. Smirnov (Institute for Ethnography) was of opinion that the Soviet scientists should draw direct consequences from the decisions of the Cairo conference and the text books should be checked with regard to the peoples of Africa and Asia. He spoke in favor of a society of all explorers of Africa. V. B. Lutskiy raised the problem of the participation of some Soviet scientists in the creation of an historical-geographical encyclopedia of Asia and Africa as suggested by the Cairo conference. D. A. Ol'derogge (Institute for Ethnography) spoke in favor of the teaching of 3 African languages at Soviet schools. A. Z. Zusmanovich (Institute for Orientalism) reported on the importance of the formation of a workers' class in African countries. L. D. Yablochkov (Institute for Ethnography), N. S. Lutskaya (Institute for Orientalism) and M. V. Rayt (Institute for Ethnography) made a number of suggestions for better coordination of the work of

Current Objectives of Soviet Specialists on Africa 30-58-4-25/44
Transactions of the Coordination Conference at the Institute for Orientalism

Soviet explorers of Africa. The chairman of the conference I. I. Potekhin, stated that the works of Soviet scientists will find their way to African readers. He underlined that it must be the aim of Soviet explorers to support the peoples of Africa in their fight against colonialism. The conference decided to found an All-Union Society for Explorers of Africa and to publish a special periodical. It was suggested to introduce into the teaching programs of historical, economic and philological faculties courses on the history, the economy and the literature of African peoples. At Moscow University a special chair for African exploration is to be founded. Also a combined expedition for the exploration od African countries with representatives of classical and natural sciences taking part in it was suggested.

1. Intellectual cooperation—Africa 2. Intellectual cooperation—USSR

Card 3/3

DAVIDSON, A. G.

36653. Vintovoy Trubogib. Materialy Po Kommunal. Khoz-vu, 1949, Sb. 4, c. 3-7

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

DAVIDSON, A.G.; DATLIN, S.V.; KIRICHENKO, G.A.; KOROTKOVA, Ye.N.; KRAVCHENKO, D.V.; ORLOVA, A.S.; ADADUROVA, A.A.; ARKAD'YEV, V.G.; BARDINA, Yu.Ya.; BODYANSKIY, V.L.; BONDAREV, S.N.; GLAZACHEV, M.V.; DAVYDOVA, E.A.; IVANOV, V.N.; KARPUSHINA, V.Ya.; KREKOTEN', L.P.; LANDA, R.G.; LEVITSKAYA, G.O.; LIPETS, Yu.G.; LOGINOVA, V.P.; ONAN, E.S.; PEGUSHEV, A.M.; PYKHTUNOV, N.V.; TOKAREVA, Z.I.; KHUDOLEY, V.F.; MILOVANOV, I.V., red.; MIKAELYAN, E., red.; MUKHIN, R., red.; SVANIDZE, K., red.; KLIMOVA, T., tekhn. red.

[Africa today; concise reference book on politics and economic conditions] Afrika segodnia; kratkii politiko-ekonomicheskii spravochnik. Moskva, Gos. izd-vo polit. lit-ry, 1962. 326 p.
(Africa--Politics)
(Africa--Economic conditions)

DAVIDSON, A. F.

Mechanization of certain operations in metallurgical [illegible].
Stan. i instr. 35 no.[illegible] My '64.

DAVIDSON, A.M.

Advantage of using oxygen-enriched air for reverberatory smelting. Izv.vys.ucheb.zav.; tsvet.met. 3 no.2:132-134 '60. (MIRA 15:4)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.
(Smelting furnaces) (Oxygen--Industrial applications)

DAVIDSON, A. M.

USSR/Miscellaneous - Industrial processes

Card 1/1 Pub. 103 - 4/24

Authors : Davidson, A. M.

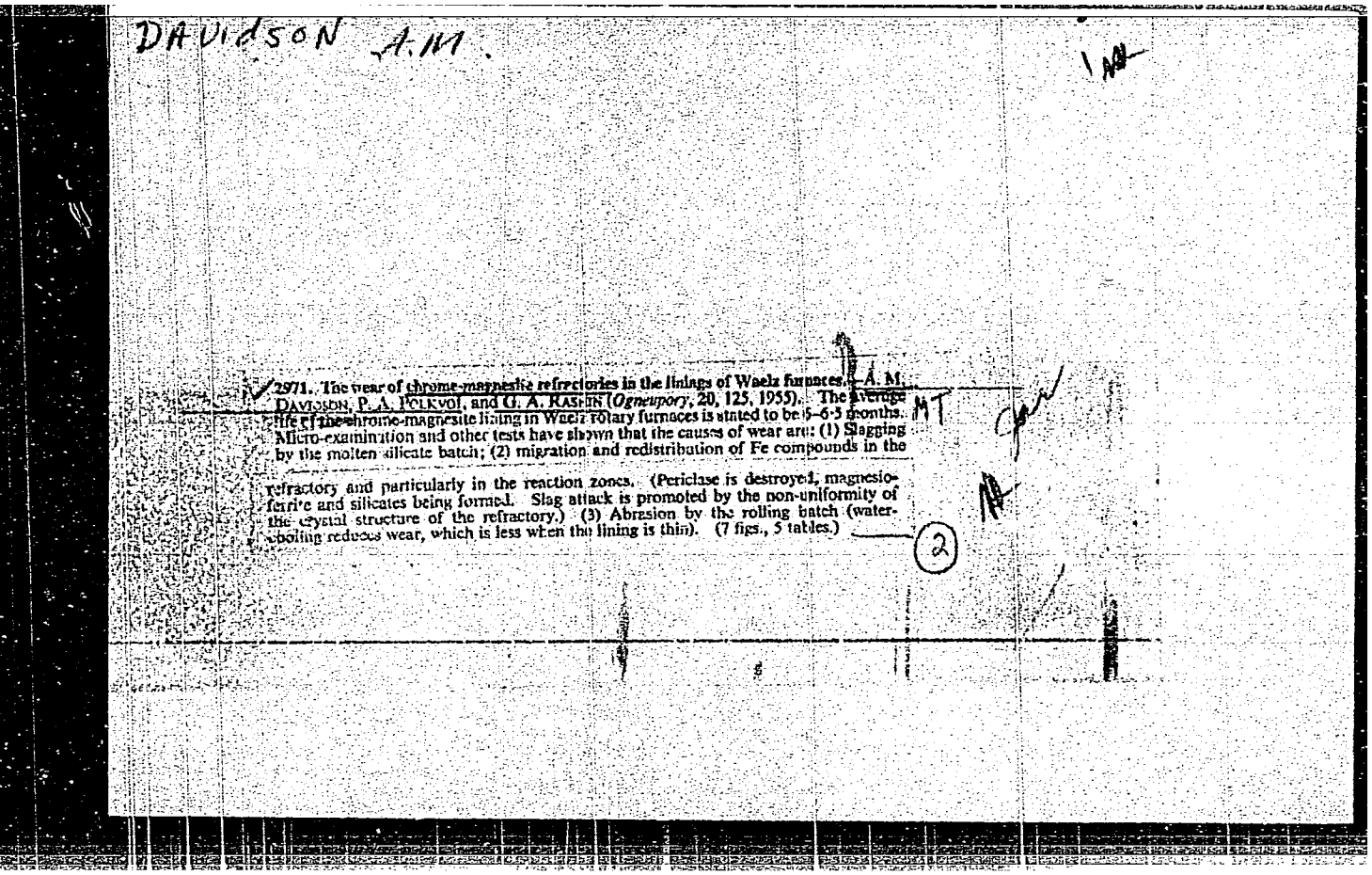
Title : Experiments of high-speed grinding

Periodical : Stan. i instr. 11, 10-11, Nov 1954

Abstract : Describing his own experiences gained during the operation of high-speed grinding machines the author lists the numerous unsolved problems which hinder the introduction of such machines. The lack of valuable guiding literature material is considered one of the main hindrances in the introduction of high-speed metal-machining lathes. Only after the elimination of these and many other deficiencies will a wide scale introduction of high-speed grinding machines into industry become possible. Tables; drawings.

Institution : . . .

Submitted : . . .



DAVIDSON A.M.

2971. The wear of chrome-magnesite refractories in the linings of Waelz furnaces. A. M. DAVIDSON, P. A. POLKVOI, and G. A. RASHIN (*Ogneupory*, 20, 125, 1955). The average life of the chrome-magnesite lining in Waelz rotary furnaces is stated to be 5–6·5 months. Micro-examination and other tests have shown that the causes of wear are: (1) Slagging by the molten silicate batch; (2) migration and redistribution of Fe compounds in the refractory and particularly in the reaction zones. (Periclase is destroyed, magnesio-ferrite and silicates being formed. Slag attack is promoted by the non-uniformity of the crystal structure of the refractory.) (3) Abrasion by the rolling batch (water-cooling reduces wear, which is less when the lining is thin). (7 figs., 5 tables.)

(2)

DAVIDSON, A.M.

Category : USSR/Atomic and Molecular Physics - Heat D-4

Abs Jour : Ref Zhur - Fizika, No 2, 1957 No 3502

Author : Davidson, A.M.
Title : Determination of the Mean Temperature of Bodies in Heating and Cooling

Orig Pub : Tr. Severo-Kavkazsk. gorno-metallurg. in-ta, 1956, vyp. 13, 94-103

Abstract : No abstract

Card : 1/1

DAVIDSON, A.M.

Optimum parameters for shaft furnaces being used in nonferrous metal industries. TSvet. met. 29 no.10:31-34 O '56. (MLRA 9:12)

(Nonferrous metal industries)
(Metallurgical furnaces)

137-58-6-11396

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 21 (USSR)

AUTHOR: Davidson, A.M.

TITLE: Determining the Temperature Diffusivity and Thermal Conductivity of Aluminum Hydroxide (Opredeleniye koeffitsiyentov temperaturoprovodnosti i teploprovodnosti gidrookisi alyuminiya)

PERIODICAL: Sb. nauchn. tr. Severo-Kavkazsk. gorno-metallurg. in-t, 1957, Nr 14, pp 209-215

ABSTRACT: The investigation was conducted by constant-rate heating of $Al(OH)_3$ made from highest-grade Al, desiccated to a moisture content of 0.94 and 11.7%. Graphs were obtained for the relationship between the temperature diffusivity and thermal conductivity of $Al(OH)_3$ and the temperature; equations for the calculation of these factors in the 200-950°C temperature interval are set up making it possible to calculate with satisfactory accuracy the distribution of temperatures within a layer of $Al(OH)_3$ in a furnace.

1. Aluminum hydroxide--Thermodynamic properties
2. Aluminum hydroxide--Temperature factors

L.P.

Card 1/1

137-58-4-6498

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 23 (USSR)

AUTHORS: Davidson, A.M., Kuznetsov, N.N.

TITLE: Analysis of Rotary Tubular Furnaces (O raschete trubchatykh vrashchayushchikhsya pechey)

PERIODICAL: Sb. nauchn. tr. Severo-Kavkazsk. gorno-metallurg.in-t, 1957, Nr 14, pp 216-223

ABSTRACT: Methods of calculating heat exchange in rotary tubular furnaces are set forth. Equations for the determination of inside diameter, the dimensions of the protected and exposed surfaces of the lining, and of the substance being treated, and the heat exchange between the substance and the gas flow, are developed. Formulas are presented for calculating the length of a tubular furnace that will yield a given output; instructions on determining the optimum diameter are given.

Ya.K.

1. Furnaces--Characteristics 2. Furnaces--Operation

Card 1/1

SOV/137-59-1-81

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 11 (USSR)

AUTHOR: Davidson, A. M.

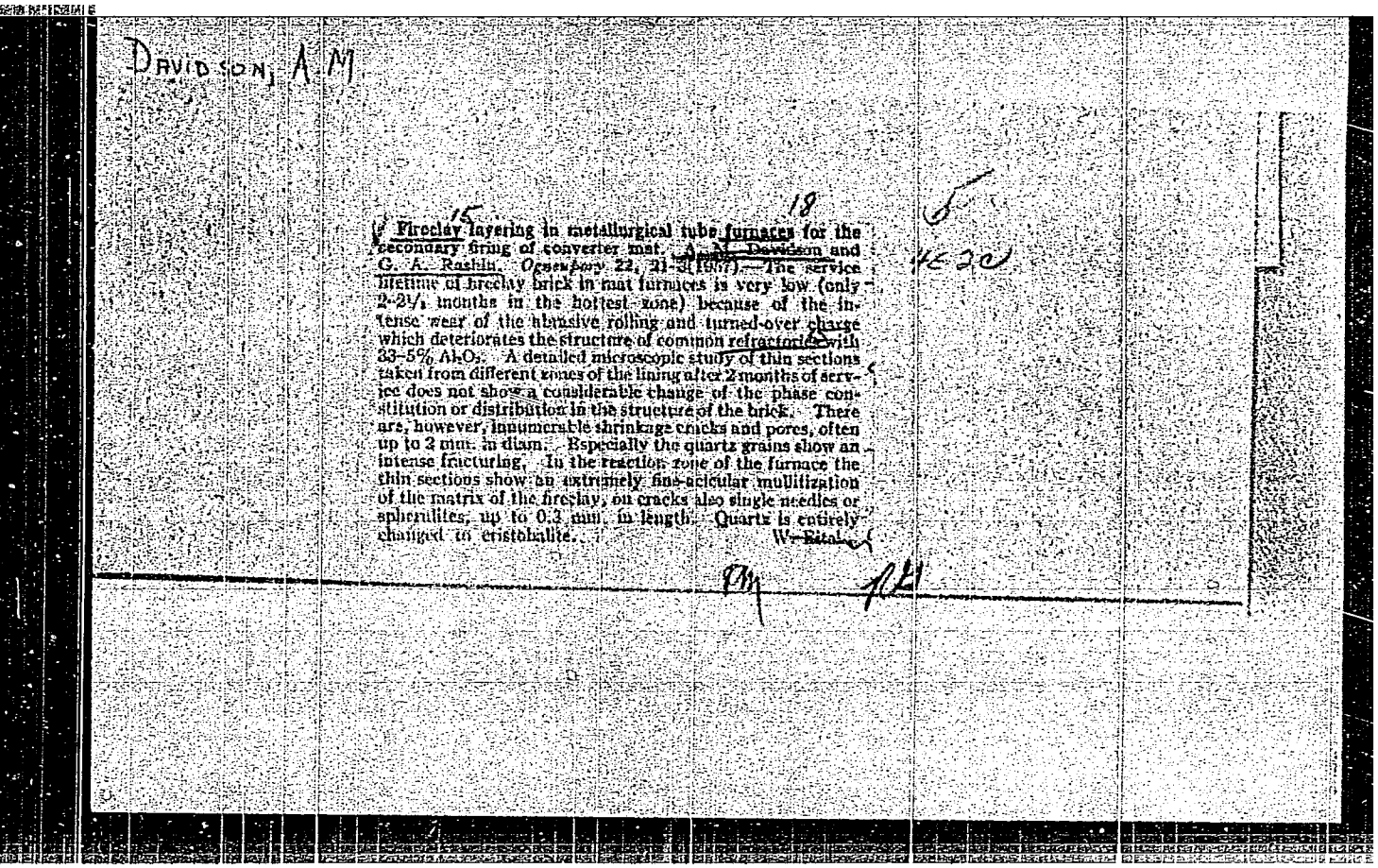
TITLE: Optimum Thickness of Lining and Water Cooling of Rotary Tubular Kilns (Optimal' naya tolshchina futerovki i vodyanoye okhlazhdeniye trubchatykh vrashchayushchikhsya pechey)

PERIODICAL: Tr. Sev.-Kavkazsk. gorno-metallurg. in-ta, 1957, Nr 15, pp 186-202

ABSTRACT: A detailed exposition is made of the new technically economical method developed by the author for determining of the optimum thickness of the lining of rotary tubular kilns (RTK); data are supplied on the expediency of water cooling. The parameters for RTK lining obtained are consistent with the dimensions calculated in terms of their diameter. Water cooling is advisable for increasing the service life of the lining after adapting special steel housing of RTK and maintaining precautionary measures; however, this causes a decrease in the capacity of the furnaces.

Ya. K.

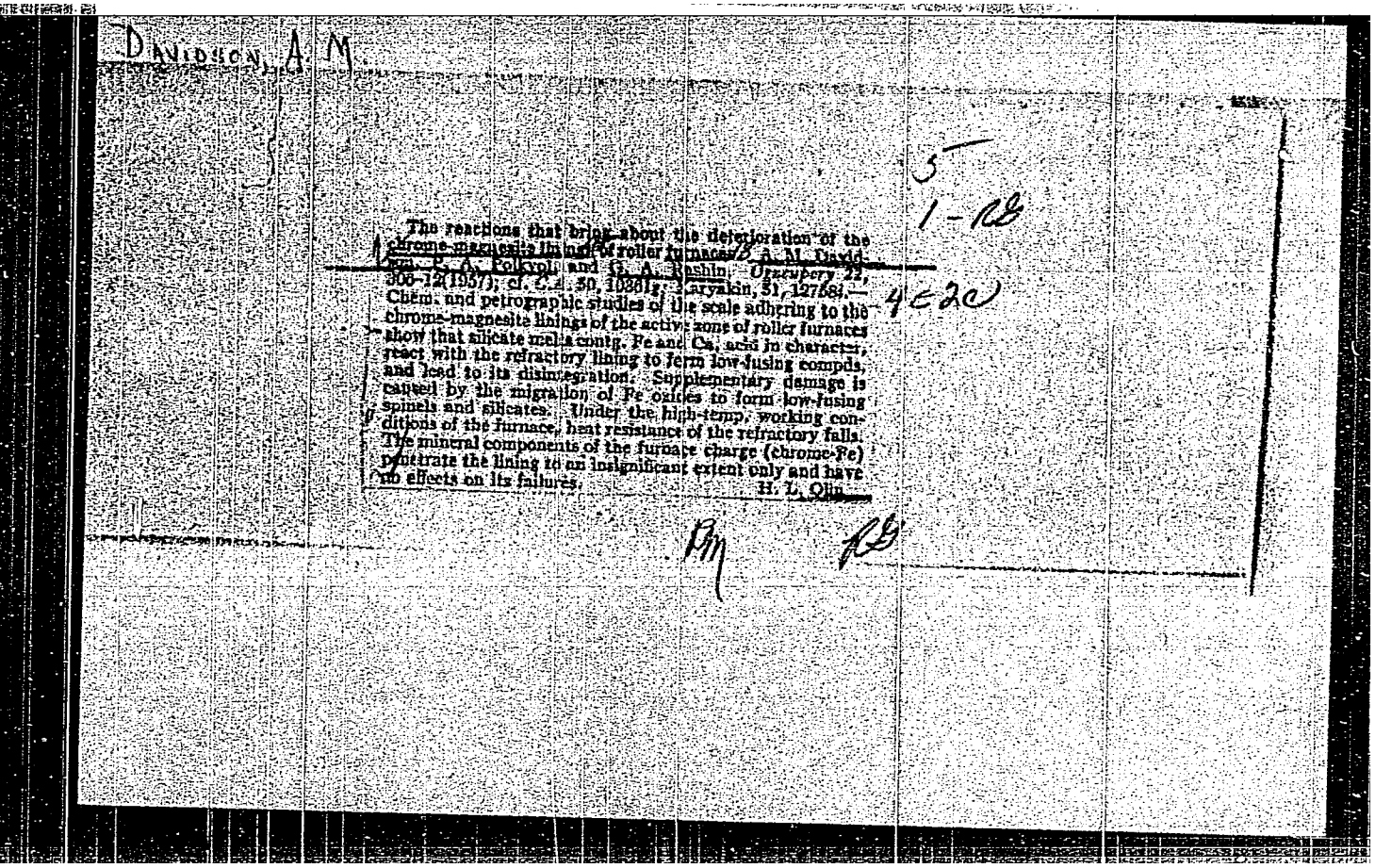
Card 1/1



DAVIDSON, A. M.

15 18

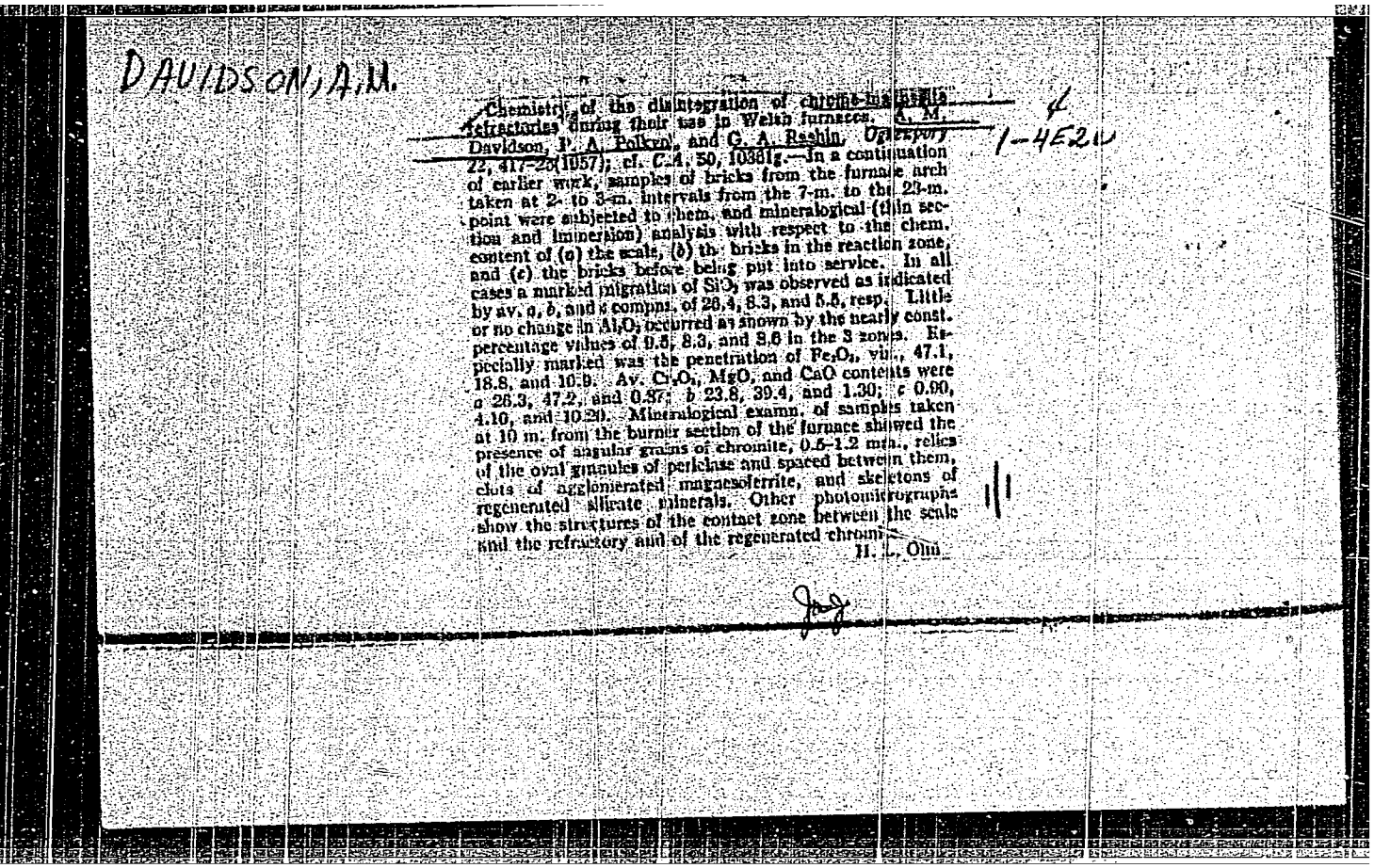
Fireclay layering in metallurgical tube furnaces for the secondary firing of converter mat. A. M. Davidson and G. A. Rashin. *Ogneupory* 22, 21-31(1957).—The service lifetime of fireclay brick in mat furnaces is very low (only 2-2½ months in the hottest zone) because of the intense wear of the abrasive rolling and turned-over charge which deteriorates the structure of common refractories with 33-5% Al_2O_3. A detailed microscopic study of thin sections taken from different zones of the lining after 2 months of service does not show a considerable change of the phase constitution or distribution in the structure of the brick. There are, however, innumerable shrinkage cracks and pores, often up to 2 mm. in diam. Especially the quartz grains show an intense fracturing. In the reaction zone of the furnace the thin sections show an extremely fine-acicular mullitization of the matrix of the fireclay, on cracks also single needles or spherulites, up to 0.3 mm. in length. Quartz is entirely changed to cristobalite. W. Eitel



DAVIDSON, A. M.

The reactions that bring about the deterioration of the chrome-magnesite lining of roller furnaces. A. M. Davidson, P. A. Kolkovi, and G. A. Roshin. *Ogneupory* 22, 306-12(1957); cf. *C.A.* 50, 10301g. *Zaryalkin*, 51, 12768i.— Chem. and petrographic studies of the scale adhering to the chrome-magnesite linings of the active zone of roller furnaces show that silicate melts contg. Fe and Ca, acid in character, react with the refractory lining to form low-fusing compds. and lead to its disintegration. Supplementary damage is caused by the migration of Fe oxides to form low-fusing spinels and silicates. Under the high-temp. working conditions of the furnace, heat resistance of the refractory falls. The mineral components of the furnace charge (chrome-Fe) penetrate the lining to an insignificant extent only and have no effects on its failures.

H. L. Olin



DAVIDSON, A.M.

Chemistry of the disintegration of chrome-magnesite refractories during their use in Welsh furnaces. A. M. Davidson, P. A. Polkovi, and G. A. Reshin. Ogneupory 22, 417–26(1957); cf. C.A. 50, 10381g.—In a continuation of earlier work, samples of bricks from the furnace arch taken at 2- to 3-m. intervals from the 7-m. to the 23-m. point were subjected to them. and mineralogical (thin section and immersion) analysis with respect to the chem. content of (a) the scale, (b) the bricks in the reaction zone, and (c) the bricks before being put into service. In all cases a marked migration of SiO_2 was observed as indicated by av. a, b, and c compns. of 26.4, 8.3, and 5.5, resp. Little or no change in Al_2O_3 occurred as shown by the nearly const. percentage values of 9.5, 8.3, and 8.6 in the 3 zones. Especially marked was the penetration of Fe_2O_3, viz., 47.1, 18.8, and 10.9. Av. Cr_2O_3, MgO, and CaO contents were a 26.3, 47.2, and 0.87; b 23.8, 39.4, and 1.30; c 0.90, 4.10, and 10.20. Mineralogical examn. of samples taken at 10 m. from the burner section of the furnace showed the presence of angular grains of chromite, 0.5–1.2 mm., relics of the oval granules of periclase and spaced between them, clots of agglomerated magnesioferrite, and skeletons of regenerated silicate minerals. Other photomicrographs show the structures of the contact zone between the scale and the refractory and of the regenerated chromite. H. L. Olin

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SOV/137-58-10-20444

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 14 (USSR)

AUTHOR: Davidson, A. M.

TITLE: Formation of Chilled Residue in Rotary Tubular Furnaces (Nastyleobrazovaniye v trubchatykh vrashchayushchikhsya pechakh)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Tsvetn. metallurgiya, 1958, Nr 1, pp 120-127

ABSTRACT: The results of a study of the effect upon formation of chilled residue in rotary furnaces of the nature of particle motion, the duration of particle retention upon exposed surfaces, temperature and length of contact between surfaces and lining, all of which depend upon the diameter and length of the furnace, the rpm, and the slope of the furnace axis, are examined. The investigations are conducted both on laboratory models and in industrial furnaces. The relationships discovered make possible a tentative estimate of possible chilled residue formation in sintering furnaces, and determination of the optimum dimensions and conditions of operation of these furnaces. The method developed makes it possible to determine the conditions

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SOV/137-58-10-20444

Formation of Chilled Residue in Rotary Tubular Furnaces

of chilled residue formation in tubular furnaces for any desired production process.

1. Furnaces--Deposits

B. L.

Card 2/2

DAVIDSON, A.M.

Methods of selecting best parameters of pyrometallurgical equipment for nonferrous metallurgy. Izv. vys. ucheb. zav.; tsvet. met. no.2: 124-129 '58. (MIRA 11:8)

1. Severokavkazskiy gornometallurgicheskiy institut. Kafedra obshchey metallurgii.
(Nonferrous metals--Metallurgy) (Metallurgical furnaces)

AUTHOR: Davidson, A.M. SOV/149-58-4-18/26

TITLE: Calculation of Heat Transfer in Reverberatory Furnaces for Copper Smelting (Raschet teploobmena v otrazhatel'nykh pechakh mednoy plavki)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 4, pp 124-135 (USSR)

ABSTRACT: Two methods of calculation of heat transfer in reverberatory furnaces - one developed in 1948 by Rafalovich (Ref.5), the other proposed by Diomidovskiy (Ref.6) in 1956 - are compared and their merits and demerits discussed. With the aid of the Vlasov method (Ref.7) based on compilation of energetic balances and calculation of the "effective flow", Rafalovich derived a set of equations (Eq.1-4) in which the total quantity of heat ($Q_{пл}$) absorbed by the melt and the charge in the furnace shown on Fig.1, heat (Q_c) radiated from the roof, from the melt (Q_B), and from the charge ($Q_ш$) were expressed in terms of the radiation coefficient (σ), degree of blackness (ε), degree of

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Calculation of Heat Transfer in Reverberatory Furnaces for Copper Smelting

author, the method developed by Rafalovich is more accurate than that proposed by Diomidovskiy, in spite of the fact that Rafalovich's formula for T_r is less correct than that used by Diomidovskiy. On the other hand, the final formulae obtained by Rafalovich are somewhat cumbersome, an arbitrary value of the coefficient of non-uniformity of the temperature (Ψ) has been used and the heat exchange between the banks of the charge has not been allowed for in compilation of equation (1). The last factor, which is particularly important, has been taken into account in the set of four equations (Eq.10-13) derived by the present author. Owing to a number of simplifying assumptions made in deriving these equations there is no need to obtain a general solution. In any particular case, the total heat (Q_Σ) absorbed by the melt and the charge, and the values of Q_c, Q_B, and Q_m can be determined separately from equations 10, 11, 12 and 13 giving a set of

Calculation of Heat Transfer in Reverberatory Furnaces for Copper Smelting

assumptions made by the latter worker in derivation of his formulae lead to an error, the magnitude of which increases with increasing blackness of the furnace gases. (In one instance the value of (q) obtained by this method was approx 9% higher than that calculated from Rafalovich's formulae modified by the present Author.) There are 2 tables, 1 figure and 12 Soviet references.

ASSOCIATION: Severokavkazskiy Gornometallurgicheskiy Institut. Kafedra Obshchey Metallurgii (North Caucasian Mining-Metallurgical Institute, Chair for General Metallurgy)

SUBMITTED: 2nd June 1958.

Card 5/5

AUTHOR: Davidson, A.M. SOV/149-58-6-11/19

TITLE: The Optimum Parameters of Reverberatory Furnaces for Copper Smelting (Optimal'nyye parametry otrazhatel'nykh pechey mednoy plavki)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, 1958, Nr 6, pp 92 - 107 (USSR)

ABSTRACT: The optimum parameters of reverberatory smelting are defined by the author as those values of the variables of the furnace design and of the smelting process itself which will secure the lowest costs per unit of the produced material. The problem of selection of the optimum composition of the charge, the matte and the slag has been already solved and in the present article a method is described of determining the optimum values of other parameters such as the length and the width of the smelting zone, the temperature of the gases, their velocity, etc. The author analyses the production costs of copper smelting in a reverberatory furnace and, having taken into consideration all the relevant characteristics of the process, arrives at the conclusion that the only factors that need to be taken into account in determining the

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optimum values of the parameters under consideration are the cost of the fuel and the value of copper and other metals lost in the form of dust carried away by the waste gases. Passing onto the calculation of the constructional parameters of a reverberatory furnace, the author questions the validity of the formulae proposed by Diomidovskiy (Ref 1) and shows that in order to determine the optimum width of the furnace it is necessary to consider a set of three equations. 1) An equation relating the quantity of heat Q_H^P produced by the burnt fuel with the recommended value of heat intensity in the smelting zone and its volume:

$$\frac{1000 \varkappa \ Q_H^P}{q_{pek}} = FL_{пл} \qquad (1)$$

where F - the free cross-section area of the furnace (in m^2), $L_{пл}$ - the length of the smelting zone (in m),

$\varkappa$ - fuel consumption (in t/h), q_{pek} - heat intensity in the smelting zone (in kcal $m^{-3}hr^{-1}$).

2) An equation describing the relationship between the capacity of the furnace, the heat transfer process and the properties of the charge:

$$G^1 = 0.9 \frac{Q_{\Sigma l} L_{пл}}{j} \qquad (2)$$

where G^1 - the capacity of the furnace (in tons of charge per hour), $Q_{\Sigma l}$ - the quantity of heat imparted to the charge and the molten bath per unit length of the furnace (in kcal $m^{-1}hr^{-1}$), 0.9 - a coefficient accounting for the fact that 10% of heat is not utilised (Ref 1), j - heat required to melt the charge (in kcal/t).

3) An equation relating the quantity of heat supplied to the charge and the molten bath with the width B of the furnace:

$$Q_{\Sigma l} = f(B)$$

which can be obtained only by calculating the heat transfer under given operating conditions for various values of B . Taking into account different values of F for the raw and roasted charge (owing to different angle of rest in each case) and using a formula proposed by Diomidovskiy (Ref 1):

$$\varkappa' = \frac{\varkappa}{G'} 100 = \frac{j}{8 Q_H^p + 3.1 v_{воздух} t_{воздух} - 3.3 v_{газ} t_{г. отх}} \quad (12)$$

where $v_{воздух}$ and $v_{газ}$ - volume of air and gas, respectively,

$t_{воздух}$ and $t_{газ}$ - temperature of air and gas, respectively,

the author arrives at the final equations (13) for the raw charge and (14) for the roasted charge:

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

and the value of Q_1, i.e. functions $f_1(B)$ or Eq (13) and $f_I(B)$ or Eq (3), function $f_I(B)$ determined for q_{peK} = 13 000 kcal $m^{-3}hr^{-1}$ is shown in Figure 1, where the optimum value of $B = B_1$ is given by the point of intersection of the two graphs. It can be seen that in furnaces with B less than 11.2 m the full potentialities of the heat transfer are not realised, while furnaces with B greater than 11.2 m would also operate uneconomically since in this case the furnace gases would carry more heat than could be imparted to the charge and the molten bath, with the result that the temperature of the waste gases would exceed its pre-determined value. Having thus shown that for given operating conditions as determined by the type of charge, the fuel and the optimum temperature of the waste gases, there is an optimum value of the width of the furnace, the author proceeds to calculate the length of the smelting zone. Since the velocity of gases is determined by the maximum permissible losses of the furnace fines,

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

$$L_{min} = \frac{(B^2-C^2)W_t(800\,Q_H^p + 310\,V_{BO3A}\,t_{BO3A} - 330\,V_{газ}\,t_{г.отх})}{Q_{сл}V_o(1+\alpha t_г)} \qquad (18)$$

$$L_{пр} = \frac{0.5774(B^2-C^2)W_t(800Q_H^p + 310V_{BO3A}\,t_{BO3A} - 330V_{газ}\,t_{г.отх})}{Q_{сл}V_o(1+\alpha t_г)} \qquad (19)$$

respectively.

The capacity of the furnace, G, (for the given type of the charge) can now be calculated from:

$$G = \frac{24 \times 0.9\,Q_{сл}\,L_{пол}}{j} \text{ tons/24 hours} \qquad (20).$$

Since in practice the length of the settling zone of the furnace constitutes 20-35% of the total length $L_{общ}$ of the furnace, it can be taken that:

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

$$L_{общ} = \frac{L_{пл}}{0.8} .$$

Then the specific capacity of the furnace a can be calculated from the formula:

$$a = \frac{G}{BL_{общ}} = 17.3 \frac{Q_{\Sigma 1}}{Bj} \text{ tons/m}^2 \text{ per 24 hours} \qquad (21) .$$

In the next chapter the author discusses the problem of calculating the optimum temperature of the gases leaving the furnace (waste gases). He asserts that the optimum temperature of the waste gases is that which would ensure that the slag in the settling zone of the furnace is maintained at a temperature at which the viscosity of the slag would be such as to result in minimum losses of the metal in the slag. In the absence of any detailed data on the optimum temperature of the slag in the settling zone the author assumes that it should be equal to the temperature of the molten bath in the smelting zone. Since there is

no charge present in the smelting zone, the author considers the present problem to constitute a case of heat transfer in a reverberatory furnace with the material resting on the hearth only and uses the method of calculations proposed for such a case by other workers (Refs 3,4). The set of the starting equations consists of: i) an equation for the total resulting heat flow, $Q_{\Sigma 1}$, to the molten bath (Eq 22); ii) an equation for the effective radiation of the lining Q_{KJ1} (Eq 23); iii) an equation for the effective radiation of the molten bath Q_B (Eq 24). In these equations σ_r and σ_B - radiation coefficients of the gas stream and the molten bath, respectively (in kcal m^{-2} hr^{-1} $(^oK)^{-4}$) F_{KJ1} and F_B - surface area of the "lining" and the molten bath (in m^2) respectively, the area of the "lining" meaning here the area of the roof of the silica banks and of the unprotected portion of the furnace walls, ε_r and ε_B -

 degrees of blackness of the gases and the molten bath,

$\varphi_{КЛ}^{КЛ}$ and $\varphi_{КЛ}^{В}$ - angular coefficients of the lining "against itself" and of the lining against the molten bath, $Q_{ПОТ}$ - heat lost by the lining into the surroundings (in kcal/hr), $T_{Г}$ and $T_{В}$ - temperatures of the gases and the molten bath (in °K). The expression from which the minimum temperature of the waste gases, $T_{Г.ОТХ}$, necessary for securing the normal course of the process can be calculated is given as Eq (27), where $a = F_{ПОД}/F_{В}$ = = hearth area/area of the molten bath, $\varepsilon_{Г}$ - degree of blackness of the gas stream at the end of the settling zone of the furnace, ($q_{ПОД}$ - heat lost by the molten bath through a unit hearth area (in kcal $m^{-2}hr^{-1}$), $q_{ПОТ}$ - heat lost by the lining (in kcal $m^{-2}hr^{-1}$).

The author shows then that the fuel consumption depends solely on the temperature of the waste gases and that, since

 the specific fuel consumption increases hyperbolically

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with increasing $t_{r.OTX}$, the minimum value of $t_{r.OTX}$ calculated from Eq (27) is also its optimum value. Some calculated values of $t_{r.OTX}$ are given in Table 1 under the following headings : i) the melting point of the charge, °C; ii) the temperature of the molten bath, °C; iii) the temperature of the waste gases, °C; for various values of the width of the furnace (in m). In the next chapter of the paper, the author considers the problem of selecting the optimum value of the heat intensity in the smelting zone, q_{peK}, by which, among other things, the optimum width of the furnace and its capacity are determined. To this end he calculates the dimensions of the furnace and its capacity for different values of q_{peK}, as used in industrial practice. From the results given in Table 2, he concludes that the optimum value of q_{peK} is that which corresponds to the length of the smelting zone equal to the length of the flame. For the furnaces equipped with burners of the commonly employed type this value is equal

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

to 120 000 - 130 000 kcal $m^{-3}hr^{-1}$. In the following chapter the problem of selecting the optimum gas velocity, W_t, in reverberatory furnaces is discussed. It is stated that the selection of W_t should be based on considerations of the cost of treating a unit of charge or of producing a unit of matte. The cost, S, of smelting a ton of charge can be calculated from the formula:

$$S = \frac{\chi P}{G^1} + \frac{kG^1 Re}{G^1} \qquad (29)$$

where : P - price of a ton of fuel (in roubles), k - coefficient of the dust losses, determining the proportion of the charge carried away by the furnace gases, R - coefficient determining the proportion of unrecoverable dust losses, e - value of a ton of dust (in roubles). The relationship between W_t (in m/sec) and the furnace capacity, fuel consumption, the dimensions of the furnace and the value of S is given in Table 3.

The figures reproduced there were obtained with the aid of Eq (29) for a furnace with B = 11.86 m, the other parameters being: $\varkappa/G^1$ = 0.181, R = 0.5, cost of the fuel (pulverised coal) 114 roubles/ton, value of the dust - 336 roubles/ton. The figures reproduced in Table 3 show that in the absence of dust-collecting equipment, it is advisable to operate reverberatory furnaces (even those with a large B) at low W_t. In the case under consideration, by decreasing W_t from 7 to 5 m/sec, the cost of smelting 1 ton of the charge is decreased by 0.67 roubles which results in a saving of more than 400 000 roubles per annum. However, at the same time, the capacity of the furnace is decreased by 39.5%. The effect of the physical properties of the charge on the constructional parameters of reverberatory furnaces is discussed in the last chapter of the paper. The relationship between the quantity of radiant heat absorbed by the charge and the molten bath per 1 m of the furnace length and the width of the furnace, the melting point of the charge being (1) 1250, (2) 1200 and (3) 1100 °C, is shown in Figure 2. This

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

relationship was determined for a furnace operating under the following conditions: fuel - pulverised coal with the calorific value of Q_H^P = 6899 kcal/kg; the initial temperature of the gases $t_{\text{г.нач}}$ = 1 570 °C; composition of the gaseous phase (%) : 14.0 CO_2, 8 H_2O, 2.0 SO_2; degree of blackness of the charge and the molten bath $e_ш = e_B = 0.7$. The temperatures of the banks of the charge $t_ш$, molten bath t_B, waste gases $t_{\text{г.отх}}$ and the gas stream at the end of the smelting zone $t_{\text{г.кон}}$ corresponding to various melting points $t_{пл}$ of the charge, are given in Table 4. The results of calculations of the optimum parameters of the furnace for various values of $t_{пл}$ are given in Table 5 (in these calculations $q_{рек}$ = 130 000 kcal $m^{-3}hr^{-1}$ and W_t = 7 m/sec.

When similar calculations were carried out for pre-roasted charge and the gaseous phase containing (%) 14.5 CO_2,

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

6 H_2O, 0.8 SO_2, the optimum width of the furnace remained practically constant and equal to 13.4 m when the melting point of the charge varied from 1 100 to 1 250 °C (in these calculations the degree of blackness of the gas stream was determined from the composition of the gaseous phase, taking into account the effect of the dimensions of the furnace and of the solid particles present in the gases). When, however, the optimum width of the furnace is calculated for raw charge assuming, as has been postulated by Rafalovich, that $\varepsilon_r = 0.3$ does not depend on the dimensions of the furnace, then for $t_{пл} = 1\ 200$ °C, B = 9.93 m and for $t_{пл} = 1\ 250$ °C, B = 10.8 m . Thus, before the final selection of the optimum constructional parameters of reverberatory furnaces is possible, the effect of the furnace dimensions on the degree of blackness of the gas stream has to be determined.

In conclusion, it is stated that: 1) the operational efficiency of narrow reverberatory furnaces can be considerably increased by increasing their width to an

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

optimum value; 2) since the lower the melting point of the charge the smaller is the optimum width of the furnace, it is expedient to aim at lowering the melting point of the charge in the existing narrow furnaces; 3) it is essential in copper reverberatory smelting to make provision for the collection of dust. The initial cost of the equipment will be recovered in short time owing to increased technological and economical efficiency of the process; 4) with the existing burners the optimum heat intensity in the smelting zone is between 120 000 and 130 000 kcal $m^{-3}hr^{-1}$; 5) the temperature of the waste gases should be 100 - 110 °C higher than the melting point of the charge; 6) the efficiency of the existing furnaces can be increased by increasing the initial temperature of the gases in the fore part of the furnace. This can be done either by using an oxygen/air mixture or by employing pre-heated air.

Card 7/18

SOV/149-58-6-11/19

The Optimum Parameters of Reverberatory Furnaces for Copper Smelting

There are 2 figures, 5 tables and 6 Soviet references.

ASSOCIATION: Severokavkazskiy gornometallurgicheskiy institut. Kafedra obshchey metallurgii (North Caucasian Institute of Mining and Metallurgy. Chair of General Metallurgy)

SUBMITTED: June 9th, 1958

Card 18/18

1. Severokavkazskiy gornometallurgicheskiy institut, Kafedra obshchey metallurgii.
(Metallurgical furnaces - Design & Construction)
(Copper - Metallurgy)

AUTHOR: Davidson, A.M. SOV/121-58-9-11/21

TITLE: The Use of a Hydraulic Copying Attachment in the Machining of Fashioned Components (Primeneniye gidrokopirovalʹnogo supporta pri obrabotke fasonnykh detaley)

PERIODICAL: Stanki i Instrument, 1958, Nr 9, pp 35 - 36 (USSR)

ABSTRACT: The hydraulic copying attachment, Model UP-240, is shown in a photograph, mounted in place of the cross-support on a universal lathe. A stepped shaft is illustrated and its machining with the help of the copying attachment discussed. The re-setting of the machine for a different component takes less than 12 minutes. The loading and unloading for each component take less than 8 sec. The master for copying is a similar component and not a template. There are 4 figures.

Card 1/1

AUTHOR: Davidson, A.M., Engineer SOV/122-58-12-6/32

TITLE: The Dynamic Balancing by Means of the V.K. Vibroscope (Dinamicheskoye balansirovaniye s pomoshch'yu vibroskopa V.K.)

PERIODICAL: Vestnik Mashinostroyeniya, 1958, Nr 12, pp 19-21 (USSR)

ABSTRACT: The V.K. Vibroscope consists of a vibrometer, and a stroboscopic lamp supplied with rectified current. The vibrometer consists of an indicator which is a leaf spring with a small mass at the free end. The spring is pressed against a disc, near its clamp end, which can be axially displaced by a screw, thus varying the free length of the spring. The unit detects the resonant frequency, when the amplitude is read on a scale against which the free end of the spring moves. The position of the disc determines the resonant frequency and is read on a calibrated scale. The phase of the oscillations is detected by an adjustable contact. Vibroscope 2-VK is suitable for frequencies of 700-3000 cpm and detects amplitudes between 0.01 and 0.20 mm. Vibroscope 3-VK can be tuned to 1100-3000 cpm and detects the same

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The Dynamic Balancing by Means of the V.K. Vibroscope

amplitudes. The use of the device for the balancing of grinding machine spindles in situ is discussed. The electrical circuit makes the stroboscopic lamp flash every time the vibroscope leaf spring touches the adjustable contact. First, the spindle is calibrated "dynamically" with a known unbalance position. This consists in finding the angle between the unbalance and the maximum deflection phase. This angle is a constant for a given rotating system. Next, a chalk mark is made on the wheel face which stops under the stroboscopic illumination of the rotating wheel. The actual unbalance is displaced by the angle previously found by calibration. The balancing weights are then placed in the appropriate

The Dynamic Balancing by Means of the V.K. Vibroscope

positions. "Dynamic" balancing by this method reduced the amplitude in a new grinding machine from 0.08-0.16 mm to 0.03 mm and took 10 minutes.

There are 4 figures and 1 Table.

Card 3/3

DAVIDSON, A.M.

Efficiency of using preheated air for reverberatory copper. Izv. vys. ucheb. zav.; tsvet. met. 4 no.5:152-155 '61. (MIRA 14:10)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.
(Copper—Metallurgy)

DAVIDSON, A.M.; PLENKINA, V.K.

Soldering cutting tools with high-frequency currents. Mashinostroitel' no.5:41 My '62. (MIRA 15:5)
(Electric welding)

DAVIDSON, A. M.; MAGAY, S. A.

Punching instead of cutting out. Mashinostroitel' no.12:29 D '62. (MIRA 16:1)

(Forging)

DAVIDSON, A.M.

Changing furnace linings when using an oxygen-enriched blast.
Izv. vys. ucheb. zav.; tsvet. met. 5 no.6:122-125 '62.
(MIRA 16:6)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.
(Metallurgical furnaces)
(Oxygen—Industrial applications)

DAVIDSON, A.M.; GINZBURG, Ye.G.

Calculation of capital investments and depreciation deductions in selecting optimum parameters of metallurgical furnaces. Izv. vys. ucheb. zav., tsvet. met. 7 no.5:150-155 '64 (MIRA 18:1)

1. Severokavkazskiy gornometallurgicheskiy institut i Permskiy politekhnicheskiy institut.

DAVIDSON, A.M.

Optimum heat intensity of reverberatory furnaces for copper smelting. Izv. vys. ucheb. zav.; tsvet. met. 7 no.6:84-89 '64. (MIRA 18:3)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.

DAVIDSON, A.M.

Au[illegible]matic control of machining sockets for cutter blades.
Mashinostroitel' no.11:5 N '64 (MIRA 18:2)

DAVIDSON, A.M.

Using drum-type milling machines for milling supporting surfaces of cutting-tool holders. Stan. i instr. 35 no.11:38 N '64.
(MIRA 18:3)

DAVIDSON, A.M.; KUDRYAVTSEVA, A.G.

Investigating temperature distribution along the length of the flame of a copper smelting reverberatory furnace with the help of a modeling machine. Izv. vys. uchob. zav.; tsvet. met. 8 no.3:115-120 '65. (MIRA 18:9)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.

DAVIDSON, A.M.; KUDRYAVTSEVA, L.G.

Investigating changes of the flame temperature in tubular kilns with the help of a modeling machine. Izv. vys. ucheb. zav.; tsvet. met. 8 no.5:89-94 '65. (MIRA 18:10)

1. Severokavkazskiy gornometallurgicheskiy institut, kafedra obshchey metallurgii.

DAVIDSON, A.M.

Calculating heat transfer in copper smelting reverberatory furnaces on the zone method basis. Izv. vys. ucheb. zav.; tsvet. met. 8 no.4:103-110 '65. (MIRA 18:9)

1. Kafedra obshchey metallurgii Severokavkazskogo gornometallurgicheskogo instituta.

DAVIDSON, A.M.

Diamonds, quality and reliability. Standartizatsiia 29 no.7:
56-58 Jl '65. (MIRA 18:11)

DAVIDSON, A.M.

Basic principles of a standartization system.
Standartizatsiia 29 no.9:40 S '65.
(MIRA 18:12)

DAVIDSON, B. kand. arkhitektury

Rational utilization of city building plots. Zhil. stroi. no.8:6-7 '65. (MIRA 18:8)

KUZMAK, G.Ye.; ISAYEV, V.K.; DAVIDSON, B.Kh.

Optimum conditions for the motion of a point of variable mass in a uniform central field. Dokl.AN SSSR 149 no.1:58-61 Mr '63. (MIRA 16:2)

1. Predstavleno akademikom A.A.Dorodnitsynym.
(Automatic control) (Gravitation)

DAVIDSON, B.Kh.; ISAYEV, V.K.; SONIN, V.V. (Moscow):

"Optimum regimes of motion of a variable mass particle with limited power along nearly circular orbits."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

L 8784-65 FSS-2/EWT(1)/EPA(b)/FS(v)-3/EWG(v)/EWA(d)/EWA(1) Po-4/Pe-5/Pq-4/Pg-4
IJP(c)/ESD(dp) GW
ACCESSION NR: AP4043493 S/0293/64/002/004/0553/0566

AUTHOR: Isayev, V. K.; Sonin, V. V.; Davidson, B. Kh.

TITLE: Optimum conditions for the motion of a point of a variable mass with limited power in a homogeneous central field

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 4, 1964, 553-566

TOPIC TAGS: optimum motion condition, homogeneous central field, variable mass body, Pontryagin maximum principle, p trajectory, optimum exhaust velocity, optimum thrust

ABSTRACT: This article is a continuation of the authors' studies (Avtomatika i telemekhanika, v. 22, no. 8, 986, 1961 and v. 23, no. 9, 1117, 1962) concerning the properties of an optimum motion of a body of a variable mass in a central, homogeneous gravitational field. The qualitative study of the structure of the optimum control of the thrust N and the exhaust velocity c is carried out on the basis of Pontryagin's maximum principle and under the assumption that these control parameters satisfy the inequalities

$$0 \leqslant N \leqslant N_{max},$$

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ACCESSION NR: AP4043493

$$0 < c_{min} \leqslant c \leqslant c_{max}. \qquad (1)$$

Depending on the type of integral curve (derived from the optimum-motion equations) called a p-trajectory, which can be represented by either an ellipse, circle, or two coinciding straight lines, the character of the programming of the thrust

$$u_1 = N / N_{max},$$

and the exhaust velocity c is investigated. In the case of elliptic p-trajectories, the trajectory of motion is divided into two parts: a) the acceleration trajectory with continuous control of the thrust force b) and the trajectory with discontinuous (pulse) control of the thrust force, in which the problem of optimum programming of the exhaust velocity c(τ) is analyzed. A similar analysis of the optimum programming is made for other types of p-trajectories. The optimum motion of a body of a variable mass is analyzed when the first of the inequalities of (1) holds, but there are no constraints upon the exhaust velocity. The system of equations describing the optimum motion is written, which decomposes into the system of pure motion and the system of the expenditure of mass. Using relations derived from

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ACCESSION NR: AP4043493

the solution of the first system for the solution of the flight problem with the minimum expenditure of mass, the boundary-value problem is formulated. The analytic solution obtained for this problem makes it possible to synthesize the optimum control for this case. Orig. art. has: 68 formulas.

ASSOCIATION: none

SUBMITTED: 30May63 ATD PRESS: 3100 ENCL: 00

SUB CODE: MA, SV NO REF SOV: 006 OTHER: 012

Card 3/3

DAVIDSON, B.M.

DAVIDSON, B.M., kand.arkhitektury, dots.

Organizing grounds of residential blocks in constructing small standard apartment houses. Gor.khoz.Mosk. 31 no.12:11-14 D '57. (MIRA 10:12)

(Sverdlovsk Province--Apartment houses)

DAVIDSON, B.M., dotsent, kand.arkhitektury

Types of apartments in model apartment houses with few stories used in cities in Sverdlovsk Province (in the period of the fourth and fifth five-year plans). Trudy Ural.politekh.inst. no.109:65-79 '61. (MIRA 14:7)

(Sverdlovsk Province—Apartment houses)

KEYSAR, A.P.; DAVIDSON, B.S.

Protracted pregnancy. Kaz. med. zhur. no. 2:51-53 Mr-Ap '61.
(MIRA 14:4)

1. Akushersko-ginekologicheskoye otdeleniye Yaroslavskoy dorozhnoy bol'nitsy Severnoy zheleznoy dorogi (nachal'nik otdeleniya - A.P. Keysar).
(PREGNANCY, PROTRACTED)

DAVIDSON, D.G. (Leningrad)

New forms of work of the departmental sanitary service.
Vop. pit. 20 no.6:78-79 N-D '61. (MIRA 15:6)
(PUBLIC HEALTH)
(RESTAURANTS, LUNCHROOMS, ETC.--HYGIENIC ASPECTS)

DAVIDSON, D.L., inzh.; PURINYSH, R.A. [Purins, R.A.], inzh.

DP-1 and DP-2 automatic shovels. Mekh. trud. rab. 11 no.12:30-31 D '57. (MIRA 11:3)
(Loading and unloading--Equipment and supplies)

USSR/Human and Animal Morphology. Pathological Anatomy. S

Abs Jour: Ref Zhur-Biol., No 15, 1958, 69693.

Author : Davidson, G.D.
Inst :
Title : The Pathologicoanatomic Diagnosis of Shock.

Orig Pub: Sb. nauchn. rabot vrachey Kirovogradsk. obl., 1957, No 1, 62-64.

Abstract: In 140 autopsies with the diagnosis of shock, the tissues under the endocardium of the left ventricle, in the muscle trabeculae and papillary muscles, and in the aortic sinus, revealed well developed foci of hemorrhage of irregular form and differing sizes, which were of a bright red color. The author believes that these spots, in the absence of major blood loss, are a characteristic sign

Card : 1/2

DAVIDYUK, G.D. [Davydiuk, H.D.] (Kiyev); MITULINSKIY, Yu.T. [Mytulyns'kyi, IU.T.] (Kiyev)

Cognition of handwritten and typed numbers using a comparison method involving standards. Avtomatyka 9 no.4:30-36 '64. (MIRA 17:8)

DAVIDSON, G.O.; PROKHOROVA, L.B.[translator]; MOROZOV, V.N.[translator]; TURCHIN, V.F. [translator]; POPOVA, M.F., red.

[Biological effects of whole-body gamma radiation on human beings] Biologicheskie posledstviia obshchego gamma-oblucheniia cheloveka. Pod red. M.F.Popovoi. Moskva, Atomizdat, 1960. 107 p. (MIRA 14:8)

1. Johns Hopkins University. Operations Research Office. (RADIOACTIVE FALLOUT) (GAMMA RAYS—PHYSIOLOGICAL EFFECT)

DAVIDSON, I.D.

AID P - 4523

Subject : USSR/Engineering-Welding

Card 1/1 Pub. 107-a - 9/13

Author : Davidson, I. D.

Title : Rolling Method of Making Welded Tanks

Periodical : Svar. proizv., 2, 24-25, F 1956

Abstract : A new and more efficient method of making welded tanks of up to 26 cub.meters capacity by automatic and semi-automatic process was developed at the Steel Construction Assembly ("Stal'montazh-1") Trust workshops. The author describes the technique of welding on both sides. The method greatly improves the quality of the tanks and increases production by 30 to 35% with a significant reduction of working force at the same time. One drawing and 5 photos.

Institution : Steel Construction Assembly Trust-1

Submitted : No date

DAVIDSON, L., inzh.; SHISHKO, I., brigadir slesarey

MKP-2 and MKP-3 cranes. Stroitel' no.10:14 O '58. (MIRA 11:11)
(Cranes, derricks, etc.)

DAVIDSON, L., inzh.

Mobile scaffolds to be used in plastering. Stroitel' no.8:23 Ag '59. (MIRA 12:12)
(Scaffolding)

SERGEYEV, I., inzh.; DAVIDSON, L.; LONCHINSKIY, V., slesar'

Practices of innovators and inventions of efficiency promoters.
Stroitel' no.6:25 Je '60. (MIRA 13:7)

1. Glavnyy mekhanik UNR-439 tresta No.88 (Khar'kov).
(Building--Tools and impliments)

DAVIDSON, L.A., inzh.

Modernization of the T-108 crane. Mekh. stroi. 17 no.10:25 O '60.
(MIRA 13:10)

(Cranes, derricks, etc.)

DAVIDSON, M., doktor tekhn. nauk; PUZYREV, Yu., nauchnyy sotrudnik

Working in the winter using potash. Na stroi. Ros. 3 no.10: 20-22 O '62. (MIRA 16:6)

(Potash) (Building—Cold weather conditions)

DAVIDSON, M.G.

USSR/Chemical Technology - Chemical Products and Their Application. Silicates. Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62382

Author: Davidson, M. G.

Institution: None

Title: Some Procedures for Increasing Impermeability of Concrete

Original Periodical: Byul. tekhn. inform., Glavleningradstroy, 1955, No 2, 5-10

Abstract: One procedure for increasing the water impermeability of concrete consists in the inclusion of various additions in the concrete mix during mixing. Surface-active additions included in cement concrete and solutions in very small amounts permit to improve the properties of concrete by changing its structure within wide limits. Combined use of hydrophilic and hydrophobic additives greatly improves such properties of concrete and cement solutions as imperviousness to water and strength. Optimal dosages: 0.15% sulfate-alcohol liquor and 0.02% Na-abietate. There have been also used additives consisting

Card 1/2

DAVIDSON, M.G.

KHOMUTETSKIY, N.F.; DAVIDSON, M.G., doktor tekhnicheskikh nauk, nauchnyy redaktor; VLADIMIRSKIY, D.M., redaktor izdatel'stva; GURDZHIYEVA, A.M., tekhnicheskiy redaktor

[Russian architects and builders in the development of construction engineering] Russkie zodchie i stroiteli v razvitii stroitel'noi tekhniki. Leningrad, Ob-vo po rasprostraneniiu polit. i nauchnykh znanii RSFSR, Leningr. otd-nie, 1956. 54 p. (MLRA 10:4)
(Building--History)

DAVIDSON, Mikhail Genrikhovich, doktor tekhnicheskikh nauk; KUZ'MIN, Yevgeniy Dmitriyevich, kandidat tekhnicheskikh nauk; SAVINOV, O.A., kandidat tekhnicheskikh nauk, nauchnyy redaktor; KAPLAN, M.Ya., redaktor izdatel'stva; PUL'KINA, Ye.A., tekhnicheskiy redaktor

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Sbornik zadach po gazovoy dinamike (Collection of Problems in Gas Dynamics) Kiyev, Izd-vo Kiyevskogo univ., 1959. 186 p. 4,000 copies printed.

Ed.: L. N. Dzyuba; Tech. Ed.: T. I. Khokhanovskaya.

PURPOSE: This collection of problems is intended for students of universities and technical schools of higher learning taking courses in gas dynamics.

COVERAGE: This collection contains 147 gas-dynamic problems and their solutions. Problems are subdivided into six sections. Each section is provided with a brief introduction, containing basic formulas and suggesting solution methods. The collection also contains tables and graphs of gas-dynamic functions and values, and may be used as a handbook. No personalities are mentioned. There are 23 references: 21 Soviet and 2 Czech.

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