L 40345-66 EWT(m)/EWP(e)/EWP(j)/T/EWP(t)/ETI IJP(c) AT/RM/WH/DS/JD/JG
ACC NR: AP6018982 (A) SOURCE CODE: UR/0364/66/002/006/0683/0687

AUTHOR: Misyuk, E. G.; Davtyan, O. K.; Priyma, T. V. 41 B

ORG: Odessa State University im. I. I. Mechnikov (Odesskiy gosudarstvennyy universitet)

TITLE: Study of semiconductor electrode catalysts. Part 3: Electrochemical reversibility of the oxidation of solid solutions $Li_xCu_{(1-x)}O$

SOURCE: Elektrokhimiya, v. 2, no. 6, 1966, 683-687

TOPIC TAGS: solid solution, copper oxide, lithium oxide, electrode potential, anodic oxidation

ABSTRACT: The feasibility of electrochemically oxidizing and reducing solid solutions of copper and lithium oxides was investigated by studying the solid solution powders in the form of electrodes which were first charged anodically, then cathodically in a polarization cell. It was found that when lithium oxide penetrates copper oxide, the potential rises sharply; as the hole concentration increases, the electrode potential climbs linearly and apparently tends toward the potential of the reversible oxygen electrode. Lithiated copper oxide has the ability to accumulate oxygen electrochemically in reversible fashion; at the same time, its charge and discharge occur practically over a definite potential range, respectively 0.6-0.8 and 0.6-0.4 V. The reversibility coefficient is proportional to the hole concentration and mobility. A theoretical explanation is given for the direct relationship between the oxidation of the

Card 1/2 UDC: 541.135.4

L 40345-66

ACC NR: AP6018982

of the solid solution and the presence of a hole complex whose concentration increases in proportion to the electrode capacity. Orig. art. has: 7 figures.

SUB CODE: 07/ SUBM DATE: 01Feb65/ ORIG REF: 004/ OTH REF: 002

09/

Card 2/2 hs

L 08395-67 EWT(m)/EWP(j)/EWP(t)/ETI IJP(c) RM/DS/JD/JG/RM
ACC NR: AP6031791 (A) SOURCE CODE: UR/0364/66/002/007/0788/0790

AUTHOR: Misyuk, E. G.; Davtyan, O. K.; Stupichenko, R. N.; Kalyuzhnaya, Ye. A. 39 B

ORG: Odessa State University imeni I. I. Mechnikov (Odesskiy gosudarstvennyy universitet)

TITLE: Study of semiconductor electrode catalysts. Part 4: Dependence of the nature of oxygen electrodes prepared from metals of variable valence on the nature of alkali metal promotor ions

SOURCE: Elektrokhimiya, v. 2, no. 7, 1966, 788-790

TOPIC TAGS: electrode potential, electric polarization, alkali metal oxide, transition metal oxide

ABSTRACT: Continuing their study of solid solutions formed by oxides of variable-valence metals (NiO, CuO, CoO, MnO, etc.) with lithium oxide and used as oxygen electrodes, the authors investigated the system $L^+ - O^* - Ni^+$, where L^+ is an alkali metal ion, in electrodes consisting of two-layer plates prepared by a metal-ceramic method. The electrodes were activated at 450°C with Li, Na, K and Cs oxides in hydrogen. The activity of the electrodes was determined with polarization curves, which showed the electrochemical activity to increase in the series Li, Na, K, Cs. The electrode activity was compared with the ionization potentials of the alkali metal atoms with which they were activated. At a polarization of 0.25 V, the electrode activity was found to

Card 1/2 UDC: 541.136

L 08395-67

ACC NR: AP6031791

be proportional to the reciprocal ionization potentials. It is noted that the electrodes studied are not corrosion-resistant, but the results obtained are of theoretical interest, since they may aid in elucidating the mechanism of current-generating processes on the oxygen electrode and in finding suitable catalysts for it. Orig. art. has: 2 figures.

SUB CODE: 07/ SUBM DATE: 01Feb65/ ORIG REF: 001

Card 2/2 afs

L 08396-67 EWT(m)/EWP(j)/EWP(t)/ETI IJP(c) DS/JD/HW/JG/RM
ACC NR: AP6031792 (A) SOURCE CODE: UR/0364/66/002/007/0791/0795

AUTHOR: Misyuk, E. G.; Davtyan, O. K.; Uminskiy, M. V. 58 B

ORG: Odessa State University imeni I. I. Mechnikov (Odesskiy gosudarstvennyy universitet)

TITLE: Study of semiconductor electrode catalysts. Part 5: Semiconducting properties of nickel and copper oxides due to the incorporation of potassium ion

SOURCE: Elektrokhimiya, v. 2, no. 7, 1966, 791-795

TOPIC TAGS: metal oxide, semiconductor conductivity, copper compound, nickel compound, potassium compound

ABSTRACT: The object of the study was to determine the degree of incorporation of potassium oxide in NiO and CuO, associated with the formation of Ni^{3+} and Cu^{3+} holes, and to study the semiconducting properties of solid solutions thus obtained. The electric conductivity of the NiO-K_2O and CuO-K_2O systems was studied as a function of temperature. It was found that at certain initial concentrations of K_2O and certain temperatures, K_2O becomes incorporated in the crystal lattices of NiO and CuO. The increase in the electric conductivity of these systems is fairly considerable, despite small hole concentrations. It is shown that the electric conductivity is due to the mobility of holes (Ni^{3+} and Cu^{3+}), and to the mobility of K^+ and OH^- ions. In systems obtained at high initial concentrations of potassium, the electric conductivity appar-

Card 1/2 UDC: 541.135.4

L 08396-67
ACC NR: AP6031792

ently is exclusively ionic in nature. Orig. art. has: 4 figures and 4 tables.

SUB CODE: 07,20/ SUBM DATE: 01Feb65/ ORIG REF: 003

Card 2/2 afs

MINKIN, Matvey Lazarevich, kand. tekhn. nauk; YEGOROV, L.A., kand. tekhn. nauk, retsenzent; DAVTYAN, R.I., inzh., red.; SMIRNOVA, G.V., tekhn. red.

[Starting devices for motor-vehicle engines] Puskovye ustroistva avtomobil'nykh dvigatelei. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 138 p. (MIRA 14:6)
(Motor vehicles—Ignition)

DAVTYAN, R.I.

Investigating the hydropneumatic system of a rack-type starter. (MIRA 14:10)
Avt.prom. 27 no.8:11-17 Ag '61.
(Motor vehicles--Starting devices)

Davtyan, R. V.

Effect of colamine on the function of isolated frog heart on the background of action of cadmium chloride. G. V. Kanalyan and R. V. Davtyan. *Doklady Akad. Nauk Armyan. S.S.R.* 21, No. 3, 113-16(1955)(in Russian).—Colamine in the concn. range of 10–10,000 γ/ml. of Ringer soln. acts on frog heart contraction in a pos., inotropic sense. At higher concns. it shows a neg. inotropic action, while from 15,000 γ upward it stops heart action. $CdCl_2$ at 1:4000–1:5000 concn. stops the action of the isolated heart, while colamine at 1000–10,000 γ concn. restores the action, i. at 6000 γ concn. Thus the heart stoppage by binding of SH groups with Cd is restorable not only by addn. of cysteine, urea, and guanidine, but also by colamine.
G. M. Kosolapoff

Yerevanskiy zooveterinarnyy institut. Predstavleno G. Kh. Bunyatyanom.

AGBALYAN, G.A., dotsent; DAVTYAN, S.A., assistent

Clinical electroencephalographic characteristics of a schizophrenic manifestation in its early and defective stages. Trudy Erev.med. inst. no.11:383-389 '60. (MIRA 15:11)

1. Iz kafedry psikhiatrii (zav. kafedroy prof. Megrabyan, A.A.) Yerevanskogo meditsinskogo instituta.
(SCHIZOPHRENIA) (ELECTROENCEPHALOGRAPHY)

MEGRABYAN, A.A.; DAVTYAN, S.A.

Clinical aspect of psychoses due to intoxication and infection. Zhur. eksp. i klin. med. 3 no.2:51-58'63. (MIRA 16:10)

1. Respublikanskaya psikhonevrologicheskaya klinika, ArmSSR.

DAVTYAN, S. Kh.

AID P - 1143

Subject : USSR/Mining

Card 1/1 Pub. 78 - 21/25

Authors : Rubachev, G. N., Logashkin, V. A. and Davtyan, S. Kh.

Title : Improved working methods and their effectiveness in the Buzovnin Drilling Bureau

Periodical : Neft. khoz., v. 32, #11, 83-89, N 1954

Abstract : A method of coordinating drilling operations leading to an appreciable increase in speeds of assembly and dismantling of the drilling pipe line and convenience in carrying the pipe sections to the storage pile is outlined. A hydraulic method is described for cementing the well.

Institution : TsIMTneft (Central Scientific Research Institute for Mechanization and Organization of Labor in the Petroleum Industry).

Submitted : No date

MUKHIN, Grigoriy Ivanovich; DAVTYAN, Sokrat Khachaturovich; KIRSH, Boris Aleksandrovich; OSIPOVA, Agniya Lazarevna; MAZURA, R.S., redaktor; GONCHAROV, I.A., tekhnicheskiy redaktor.

[Problems of mechanizing and organizing work in the drilling of oil and gas wells] Voprosy mekhanizatsii i organizatsii truda pri burenii neftianykh i gazovykh skvazhin. Baku, Azerbaidzhanskoe gos.izd-vo neftianoi i nauchno-tekhnicheskoi lit-ry, 1955, 182 p. (MLRA 9:4)
(Oil well drilling) (Gas, Natural)

DAVTYAN, S. Kh.

AID P - 3278

Subject : USSR/Mining

Card 1/1 Pub. 78 - 8/24

Authors : Golovko, V. N. and S. Kh. Davtyan

Title : Experiment in using winch-reel KL-3 in well drilling

Periodical : Neft. khoz., v. 33, #9, 35-39, S 1955

Abstract : In hoisting machinery, the use of a newly designed winch-reel KL-3 instead of a winch-capstan is suggested. Photos, table. 5 references, 1951-1954.

Institution : None

Submitted : No date

TER-GRIGOR'YAN, A.I., inzh.; AVETISYAN, A.A., inzh.; GASAN-DZHALALOV, A.B., inzh.; GUKHMAN, M.I., inzh. [deceased]; DAVTYAN, S.Kh., inzh.; DADASHEV, B.B., kand.tekhn.nauk [deceased]; DANIYELYANTS, A.A., inzh.; DEDUSENKO, G.Ya., kand.tekhn.nauk; IOANESYAN, R.A., inzh.; KARASIK, T.Ye., inzh.; KULIYEV, I.P., kand.tekhn.nauk; KULI-ZADE, K.N., kand.tekhn.nauk; LANGLEBEN, M.L., kand.tekhn. nauk; MADERA, R.S., inzh.[deceased]; MIKHAYLOV, V.R., inzh.; MURADOV, I.M., inzh.; POLYAKOV, Z.D., inzh.; PROTASOV, G.N., kand. tekhn.nauk; SAROYAN, A.Ye., kand.tekhn.nauk; SEID-RZA, M.K., kand. tekhn.nauk; TARANKOV, V.V., inzh.; FRIDMAN, M.Ye., inzh.; SHNEYDEROV, M.R., kand.tekhn.nauk; YAISHNIKOVA, Ye.A., kand.tekhn.nauk; SHTEYN-GEL', A.S., red.izd-va

[Driller's handbook] Spravochnik burovogo mastera. Izd.2., ispr. i dop. Baku, Azerbaidzhanskoe gos.izd-vo neft.i nauchno-tekhn.lit-ry, 1960. 783 p. (MIRA 13:5)
(Oil well drilling)

L 11179-67 EWT(d)/EWP(1) IJP(c) GG/BB/JXT(CZ)/JXT(BF)

ACC NR: AT6026468 SOURCE CODE: UR/3012/65/000/003/0005/0040

AUTHOR: Piliposyan, A. G.; Davtyan, S. M.

ORG: none

TITLE: Description of a universal compiling routine with certain transformations of logical charts

SOURCE: Yerevan. Vychislitel'nyy tsentr. Trudy, no. 3, 1965. Matematicheskiye voprosy kibernetiki i vychislitel'noy tekhniki; modelirovaniye protsessov upravleniya (Mathematical problems in cybernetics and computer engineering; modelling control processes), 5-40

TOPIC TAGS: automatic programming, computer programming, computer program logic, computer language

ABSTRACT: This compiling routine (CR) is based on a combination of two methods for the automation of programming; the universal compiling routine method and the standard subroutine library method, for use in compiling object programs from source programs written in Lyapunov's operator language (A. A. Lyapunov. Sb. Problemy kibernetiki, vyp. 1, 1958; vyp. 8, 1962, M., Fizmatgiz). This necessitates constructing intermediate (linking) logical

Card 1/2

charts which take into account the specific features of present-day computers and assure optimal conversion to machine languages, i.e. to programs in true addresses, on exploiting certain possibilities for optimizing the program and on automatic incorporation of the necessary routines. This particular CR differs from its counterparts in that it provides for the automatic construction of linking charts for conversion from one set of parameters to another. In addition, this CR provides for formal conversion of logical charts in accordance with specific rules which simplify their structure and implementation. The article presents the first three chapters of an eight-chapter work. Chapter 1 describes the theoretical principles of the proposed CR and examines the logical chart for an algorithm. Chapter 2 describes the class of flow charts that can be programmed with the aid of this CR. Chapter 3 deals with aspects of the construction and realization of the assembler operator. The remaining chapters (not published in this issue) describe the general structure of the CR, the transformations of logical charts and the programming of certain CR operators. "The authors are sincerely grateful to I. D. Zaslavskiy and R. I. Podlovchenko for their valuable comments on the MS of this publication." Orig. art. has: 4 formulas.

SUB CODE: 09, 12/ SUBM DATE: none/ ORIG REF: 009

SYSOYEV, B.A., inzh.; DAVTYAN, S.M., inzh.

Repairing corroded axle journals of water wheel generators without dismantling the rotors. Energ. stroi. no.3:61-63 (13), 1960. (MIRA 14:9)

(Electric generators—Maintenance and repair)

DAVTYAN, S. S.

"Armyanskiye kruzheva i ikh rasprostraneniye."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.

ZOLOTNITSKAYA, S.Ya.; GASPARYAN, A.G.; DAVTYAN, TS.M.

Caucasian belladonna and results of cultivating it in the Botanical Garden of the Academy of Sciences of the Armenian S.S.R. Biul.Bot. sada [Eriv.] no.8:17-22 '49. (MLRA 9:8)

(Armenia--Belladonna)

KAZARYAN, V.O.; DAVTYAN, V.A.

Effect of the processes of generative development on nocturnal photosynthetic depression in plants. Dokl. AN Arm. SSR 37 no.4: 231-235 '63. (MIRA 17:8)

1. Botanicheskiy institut AN ArmSSR. Predstavleno akademikom AN ArmSSR G.Kh. Bunyatyanom.

KAZARYAN, V.O.; DAVTYAN, V.A.

Changes in the intensity of photosynthesis in short-day and long-day plants under similar environmental conditions. Dokl. AN Arm. SSR 39 no.5:311-314 '64. (MIRA 18:2)

1. Botanicheskiy institut AN ArmSSR. Submitted Februrary 19, 1964.

DAVTYAN, V.M., inzh.; DAVIDYAN, Zh.D., inzh.

Series of synchronous generators with increased frequency and self-excitation by selenium rectifiers. Vest. elektroprom. 34 no.8:19-23 Ag '63. (MIRA 16:9)
(Electric generators) (Electric current rectifiers)

DAVTYAN, Ye.G.

ALIYEV, Sh.B.; DAVTYAN, Ye.G.

Mechanism of the formation of hydrocarbon complexes with aluminum chloride. Izv. AN Azerb. SSR no.12:27-38 D '57. (MIRA 11:2)
(Complex compounds)
(Aluminum chloride)
(Olefins)

DAVTYAN, Yu.M.

Pay more attention to the training of engineers and to the instruction of workers. Neft.khoz. 33 no.2:23-26 F'55. (MLRA 8:4)
(Petroleum engineering--Study and teaching)

DAVTYAN, Yu.M.

Gas industry of the R.S.F.S.R. in 1959-1961. Gaz. prom. no.10:21-24 O '61. (MIRA 14:11)
(Gas industry)

ABILOV, K.M.; DAVUDOV, M.M.

Effect of carotonaphthalene and refined naphthalene on nitrogen from amino acids in the blood. Tr. Vsesoius. obsh. fiziol. no. 1:109-110 1952. (CLML 24:1)

1. Delivered 23 December 1945, Baku.

ACC NR: AT6023360 SOURCE CODE: UR/3019/65/000/004/0044/0062

AUTHOR: Aslanov, I. A.; Davudov, Yu. D.; Salmanov, I.

ORG: none

TITLE: Computation of the optical depths of TiI lines in the solar spectrum

SOURCE: Shemakha. Astrofizicheskaya observatoriya. Soobshcheniya, no. 4, 1965. Fizika Solntsa (Physics of the sun), 44-62

TOPIC TAGS: solar spectrum, spectral line, spectrographic analysis

ABSTRACT: The optical depth at which the emission of spectral lines of neutral Ti occurs in the atmosphere of the sun is given in tabular form. The table includes the multiplet number, the transition levels wavelength of the line and its relative width as well as the excitation potential and the two optical depths. These two depths differ by a small amount (their ratios are given - the smallest being about one-tenth) and represent differing defining criteria. The method of determining the optical depths is reviewed briefly. Essentially, it follows the method developed for the spectral lines of the neutral iron. Since neither line intensity nor its excitation potential give unique answers to the question as to where in the atmosphere of the sun a given line originates, this work should be useful in constructing a realistic model of the atmosphere of the sun. Orig. art. has: 1 table.

SUB CODE: 03/ SUBM DATE: 00/ ORIG REF: 004/ OTH REF: 005

Card 1/1

DAVUTATAM, F.F.

Hydrometeorological research during the International Geophysical Year. Meteor.i gidrol.no.12:3-8 D '56. (MIRA 10:1)
(Meteorology) (Hydrology)

Oct 48

DAVYATYKH G. G.

USSR/Chemistry - Fatty Acids, Adsorption
Chemistry - Diphenylamine

"Adsorptive Layers in Nonaqueous Systems: III, Aliphatic Acids on the Diphenylamine-Air Boundary," G. I. Starobinets, A. V. Pasfilov, G. G. Devyatykh G. A. Lazerko, Belorussian U, Inst Chem, Minsk, 5½ pp

"Zhur Fiz Khimii" No 10

Measures surface tension of solutions of propionic, butyric, isovaleric, isocaproic and oleic acids in diphenylamine in the neighborhood of its MP. Determines depression of MP of solutions studied, and calculates thermodynamic activity of its components. Calculates adsorption of aliphatic acids on diphenylamine-air boundary from curves $\sigma - \sigma_2$ using Gibbs' equation. Calculates constants of saturated adsorption layers. Submitted 20 Oct. 47.

PA 21/49T6

DAVYDCHENKOV, V.

The influence of a broken work week (Sunday off) on a mine.
Sots.trud no.2:109-112 F '56. (MLRA 9:7)
(Staline--Mine management) (Hours of labor)

DAVYDENKO, A.O., kand.med.nauk

Report on the activities of the Kiev Society of Obstetricians and Gynecologists for the period 1953-1956. Ped., akush. i gin. 19 no.2:71-72 '57. (MIRA 13:1)

1. Sekretar' pravleniya Kiyevskogo nauchnogo obshchestva akusherov-ginekologov.

(KIEV--GYNECOLOGICAL SOCIETIES)

DAVYDENKO, A.O., kand.med.nauk

Hypoferric anemia and pregnancy. Ped., akush. i gin. 19 no.4:46-49 '57. (MIRA 13:1)

1. Kafedra akusherstva i ginekologii (zav. - prof. V.M. Khmelevskiy) Kiyevskogo instituta usovershenstvovaniya vrachey (dir. - zasluzhennyy deyatel' nauki prof. I.I. Kal'chenko).
(ANEMIA) (PREGNANCY, COMPLICATIONS OF)

DAVYDENKO, A.O., kand.med.nauk

Analysis of causes of fetal death for the purpose of preventing stillbirth. Ped., akush. i gin. 20 no.6:58-61 '58. (MIRA 13:1)

1. Kafedra akusherstva i ginekologii (zav. - prof. V.M. Khmelevskiy) Kiyevskogo instituta usovershenstvovaniya vrachey (doktor - dots. V.D. Bratus').

(FETUS, DEATH OF)

DAVYDENKO, A.S., inzhener.

Unified system of planned periodic repairs. Vest. mash. 33 no.12: 91-93 D '53. (MLRA 6:12)

1. Starshiy inzhener planovo-periodicheskogo remontor zavoda imeni I.Ye.Yegorova.
(Machine-shop practice--Repairing)

36270

16.6500

S/021/62/000/004/003/012
D299/D302

AUTHOR: Davydenko, D.F.

TITLE: On finding approximate solutions to algebraic equations

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi, no. 4, 1962, 434-436

TEXT: The method of parameter variation (set forth in earlier works by the author), is used for calculating complex solutions of algebraic equations, whose coefficients are functions of the parameter λ, which assumes pre-assigned values on a finite interval. The equation

$$\sum_{k=0}^{n} a_{n-k}(\lambda)x^K = a_n(\lambda) + a_{n-1}(\lambda)x + \ldots + a_0(\lambda)x^n = 0 \qquad (1)$$

is considered, whose coefficients $a_\nu(\lambda)$ ($\nu = 0, 1, 2, \ldots, n$) are functions of the parameter λ, ($\lambda_0 \leqslant \lambda \leqslant \lambda^*$). The complex solutions of Eq. (1) are denoted by

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On finding approximate solutions ...

$$x_j(\lambda) = p_j(\lambda) + iq_j(\lambda) \quad (j = 1, 2, \ldots, n).$$

Certain assumptions are made with respect to p, q, and the coefficients $a_\nu(\lambda)$. It is required to find the approximate values of the solution $x_j(\lambda) = p_j(\lambda) + iq_j(\lambda)$ for given values of $\lambda > \lambda_0$. After differentiation and transformation, one obtains the equqtions

$$\frac{dp}{d\lambda} = \frac{T_0S_0 + q^2T_1S_1}{S_0^2 + q^2S_1^2}, \qquad \frac{dq}{d\lambda} = q\,\frac{T_0S_1 - T_1S_0}{S_0^2 + q^2S_1^2}, \tag{7}$$

where T and S are series in harmonic polynomials P(p, q). In order to find the approximate solutions $x(\lambda)$ of Eq. (1), it is necessary to integrate numerically Eq. (7) over the interval $\lambda_0 \leqslant \lambda \leqslant \lambda^*$, with initial conditions

$$\text{for } \lambda = \lambda_0,\ p_j(\lambda) = p_j^{(0)},\ q_j(\lambda) = q_j^{(0)}.$$

For the polynomials P(p, q), a system of recursion formulas is obtained. The method can be also used for determining approximate

complex solutions of algebraic equations with constant coefficients:

$$\sum_{k=0}^{n} c_{n-k} x^k = 0. \qquad (9)$$

For this purpose it is necessary to preliminarily transform Eq. (9) to the form of Eq. (1). A numerical example is considered. There are 1 table and 3 Soviet-bloc references.

PRESENTED: by Academician Yu.O. Mytropol's'kyy, AS UkrRSR

SUBMITTED: September 11, 1961

DAVYDENKO, G.

Are these good practices? Metallurg 8 no.3:20 Mr '63. (MIRA 16:3)

1. Starshiy konvertershchik brigady kommunisticheskogo truda metallurticheskogo zavoda imeni Petrovskogo.
(Iron and steel plants—Management)

DAVYDENKO, G.P.

Ingot molds are being repaired at the plant. Metallurg 9 no.12:25-26 D '64. (MIRA 18:2)

1. Starshiy konvertershchik metallurgicheskogo zavoda im. Petrovskogo.

DAVYDENKO, G.P.

Friendsh'p of the workers of three converter plants.
Metallurg 10 no.1:22-23 Ja '65. (MIRA 18:4)

1. Starshiy konvertershchik brigady kommunisticheskogo truda zavoda im. Petrovskogo.

PUTNIY, M.P.; FILIN, P.V.; DAVYDENKO, I.A.

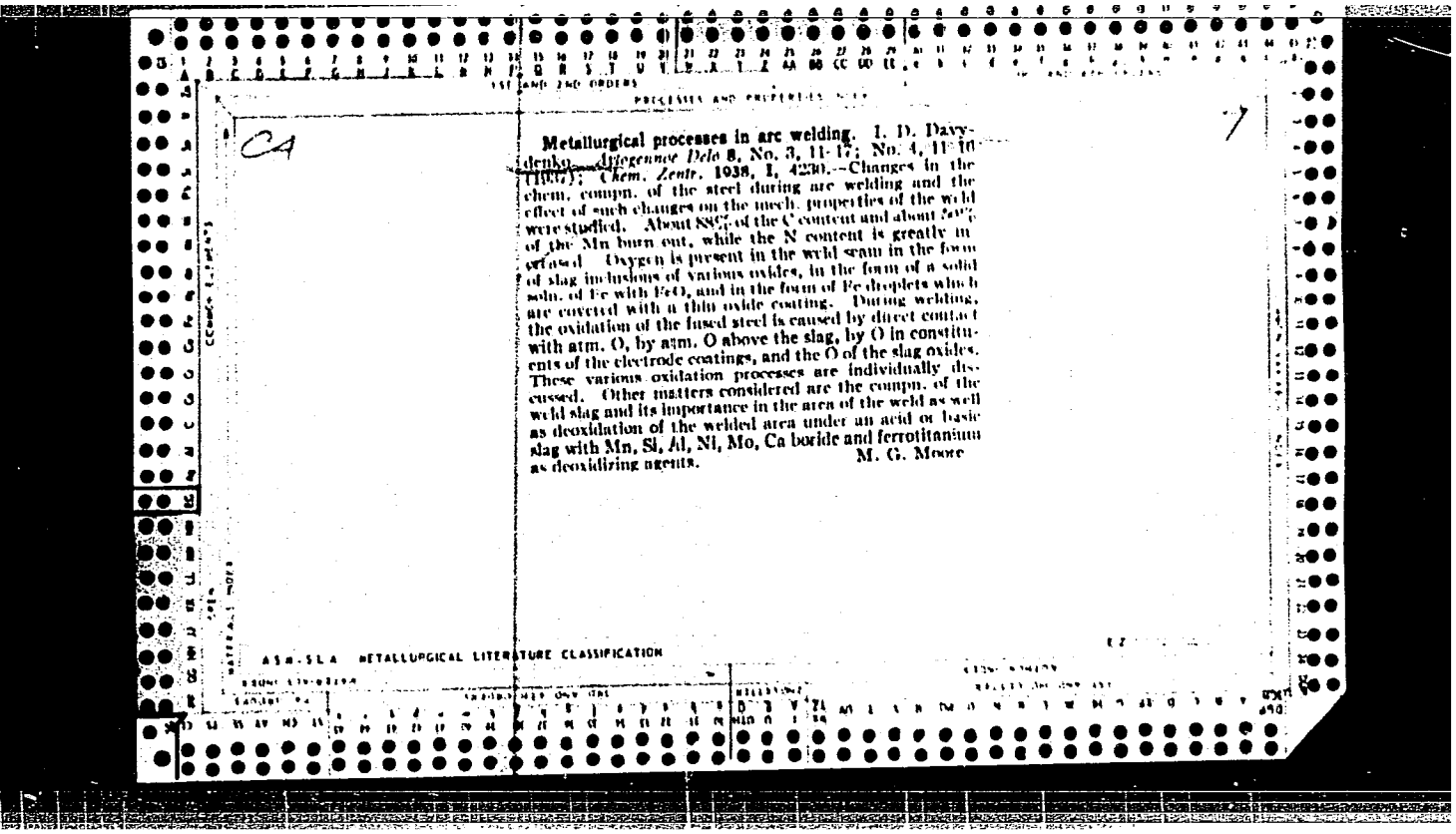
Placement of rubber-cement bridges in wells. Burenie no.2: 28-30 '65. (MIRA 18:5)

1. Trest "Groznefterazvedka" i Groznenskaya laboratoriya Vsesoyuznogo nauchnc-issledovatel'skogo instituta geofizicheskikh metodov razvedki.

DAVYDENKO, I.A. [Davydenko, I.O.]

Natural reproduction of the common pear (Pyrus communis L.) in forest stands of the right and left-bank forest-steppe of the Ukraine. Ukr. bot. zhur. 22 no.3:52-59 '65. (MIRA 18:7)

1. Institut botaniki AN UkrSSR, otdel geobotaniki.



Metallurgical processes in arc welding. I. D. Davydenko. *Diegennoe Delo* **8**, No. 3, 11-17; No. 4, 11-16 (1937); *Chem. Zentr.* **1938**, I, 4230.—Changes in the chem. compn. of the steel during arc welding and the effect of such changes on the mech. properties of the weld were studied. About 80% of the C content and about 50% of the Mn burn out, while the N content is greatly increased. Oxygen is present in the weld seam in the form of slag inclusions of various oxides, in the form of a solid soln. of Fe with FeO, and in the form of Fe droplets which are covered with a thin oxide coating. During welding, the oxidation of the fused steel is caused by direct contact with atm. O, by atm. O above the slag, by O in constituents of the electrode coatings, and the O of the slag oxides. These various oxidation processes are individually discussed. Other matters considered are the compn. of the weld slag and its importance in the area of the weld as well as deoxidation of the welded area under an acid or basic slag with Mn, Si, Al, Ni, Mo, Ca boride and ferrotitanium as deoxidizing agents.

M. G. Moore

PROCESSES AND PROPERTIES INDEX

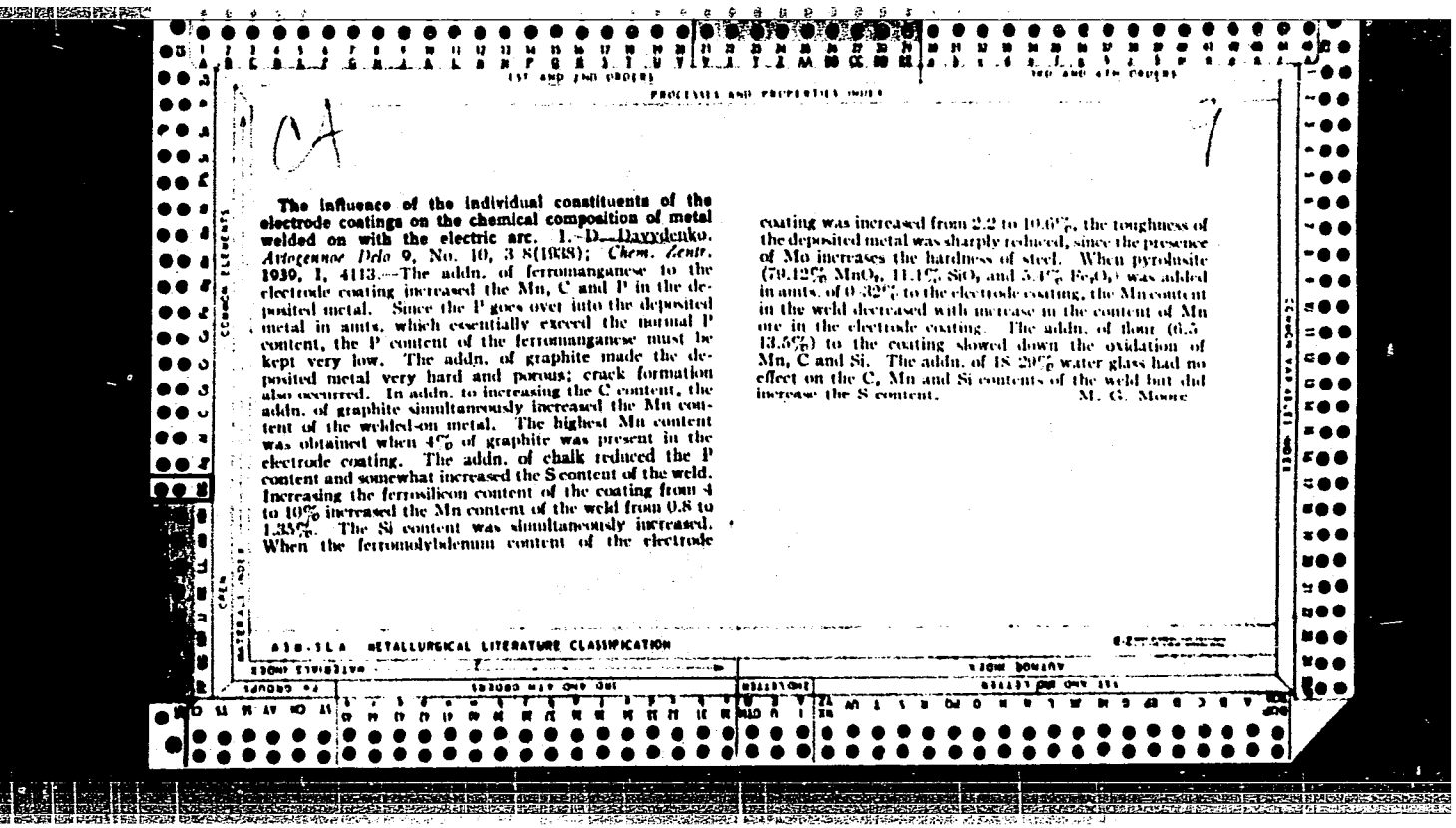
CH

9

The rate of fusion of the electrodes and the voltage drop across the arc in relation to the composition of the flux. I. D. Davydenko. *Avtogennoe Delo* 9, No. 1, 6-9(1938); *Chem. Zentr.* 1938, II, 3601.—In hand welding with a short arc and electrodes 5 mm. in diam. basic fluxes reduce the voltage drop across the poles to 20 v. Under like conditions acid fluxes increase it to 40 v. Org. electrode coverings also increase the potential drop to 10 v. With increase in the arc potential the rate of fusion of the electrodes increases, as does also the power factor (cos φ) of the welding transformer. Oxidizing agents increase the rate of fusion of the electrodes and produce a large torch-like flame across the arc. Org. materials used in the electrode coverings increase the rate of melting of the electrodes, greatly increase the depth to which the metal being welded is fused, and form a protective layer of gas about the arc. An org. covering over a thick inner electrode coating likewise increases the rate of fusion of the electrodes and essentially reinforces the reducing properties of the covering.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA 7

The influence of the individual constituents of the electrode coatings on the chemical composition of metal welded on with the electric arc. I.—D. Davydenko. *Avtogennoe Delo* 9, No. 10, 3–8(1938); *Chem. Zentr.* 1939, I, 4113.—The addn. of ferromanganese to the electrode coating increased the Mn, C and P in the deposited metal. Since the P goes over into the deposited metal in amts. which essentially exceed the normal P content, the P content of the ferromanganese must be kept very low. The addn. of graphite made the deposited metal very hard and porous; crack formation also occurred. In addn. to increasing the C content, the addn. of graphite simultaneously increased the Mn content of the welded-on metal. The highest Mn content was obtained when 4% of graphite was present in the electrode coating. The addn. of chalk reduced the P content and somewhat increased the S content of the weld. Increasing the ferrosilicon content of the coating from 4 to 10% increased the Mn content of the weld from 0.8 to 1.35%. The Si content was simultaneously increased. When the ferromolybdenum content of the electrode coating was increased from 2.2 to 10.6%, the toughness of the deposited metal was sharply reduced, since the presence of Mo increases the hardness of steel. When pyrolusite (79.12% MnO_2, 11.1% SiO, and 5.4% Fe_2O_3) was added in amts. of 0.32% to the electrode coating, the Mn content in the weld decreased with increase in the content of Mn ore in the electrode coating. The addn. of flour (0.5–13.5%) to the coating slowed down the oxidation of Mn, C and Si. The addn. of 18.20% water glass had no effect on the C, Mn and Si contents of the weld but did increase the S content. M. G. Moore

A10-1LA METALLURGICAL LITERATURE CLASSIFICATION

DAVIDENKO, I. D.

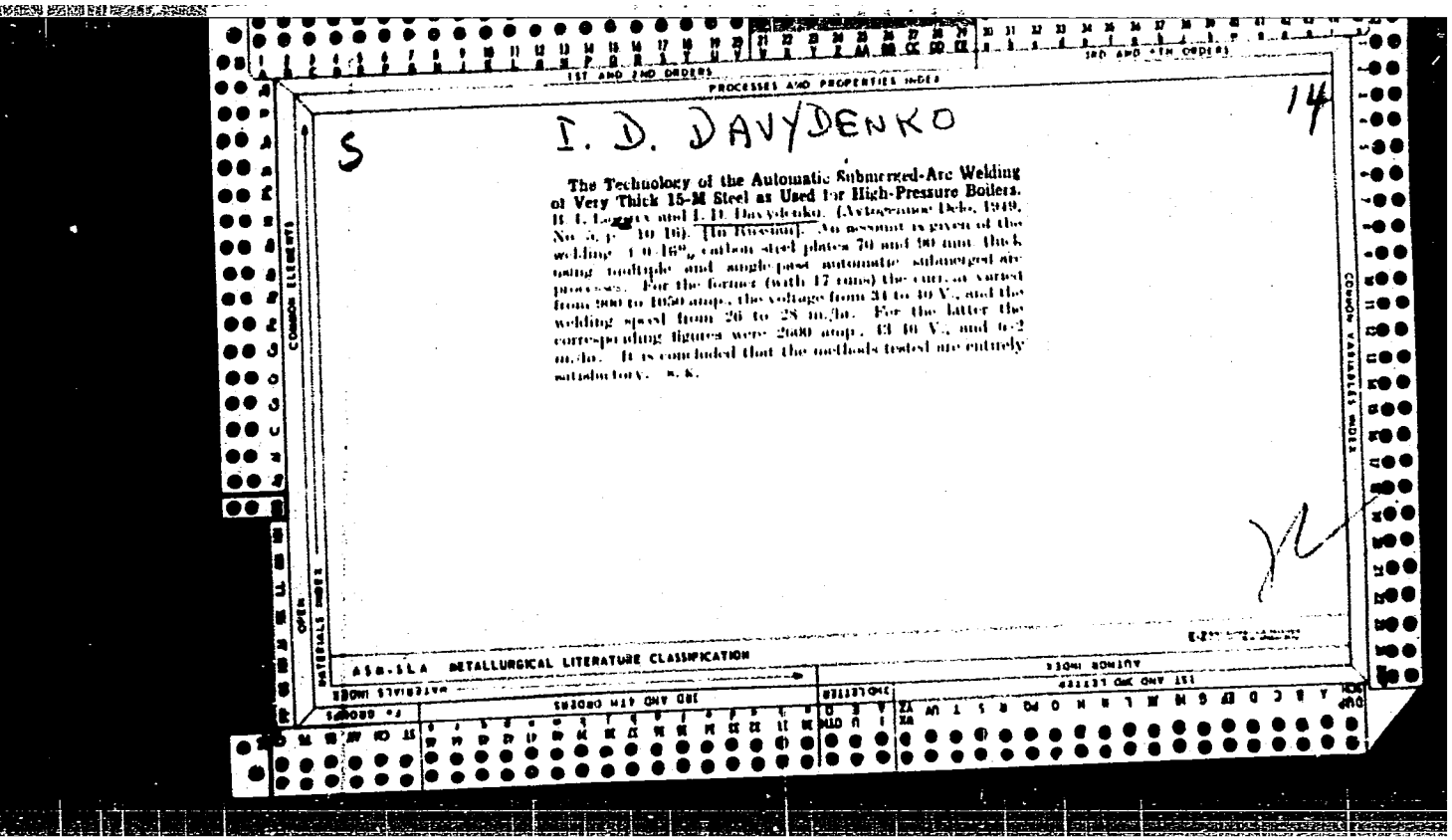
Davidenko, I. D. "Automatic welding in boiler construction", (Experience of the Krasnyy Kotel'shchik plant), Trudy Vsesoyuz. konf-tsii po avtomat. svarke pod flyusom, 3-6 October 1947, Kiev, 1948, p. 38-40.

SO: U-3261, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 11, 1949).

DAVYDENKO, I. B.

Davydenko. I. B. "TKZ fluxes for automatic welding", Trudy po avtomat. svarke pod flyusom (In-t elektrosvarki im. Patona), Collection 2, 1948, p. 54-80.

So: U-2261, 16 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).



S

I. D. DAVYDENKO

14

The Technology of the Automatic Submerged-Arc Welding of Very Thick 15-M Steel as Used for High-Pressure Boilers. B. E. Lazarev and I. D. Davydenko. (Avtogennoe Delo, 1949, No. 3, p. 10 to 16). [In Russian]. An account is given of the welding of 0.16% carbon steel plates 70 and 90 mm thick using multiple and single-pass automatic submerged-arc processes. For the former (with 17 runs) the current varied from 900 to 1050 amps, the voltage from 34 to 40 V, and the welding speed from 26 to 28 m./hr. For the latter the corresponding figures were 2000 amps, 43 to 45 V., and 6.2 m./hr. It is concluded that the methods tested are entirely satisfactory. — A. K.

DAVYDENKO, I., D., LAUREATE OF STALIN PRIZE Pa. 173T39

USSR/Engineering - Boilers, Welding Nov 50

"Highly Efficient Welding Methods in Technology of Boiler Construction," Engr I. D. Davydenko, Laureate of Stalin Prize

"Avtogen Delo" No 11, pp 14-17

Describes various equipment for automatic welding of large cyl vessels. Discusses universal 3-phase, 3-electrode automatic welding head TKZ-D1 for welding boilers with walls over 20 mm thick at 20-30 m/hr, and thin-walled vessels at 100-300 m/hr.

173T39

1. DAVIDENKO, I. D.

2. USSR (600)

4. Technology

7. Automatic welding in boiler construction. Moskva, Mashgiz, 1951

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

Mosyuchko, I. D.

18

Welding under Flux of Thick Walled Boiler Chambers with Semiautomatic Equipment. PSh-5. I. D. Davydenko and G. O. Gorodetskii. (*Avtom. Svarka*, 1951, 4, (3)(20), 66-72). (In Russian). Welding technique of walls of boilers 25-50 mm thick using the above equipment is described.—V. G.

3

1-4E2C

DAVIYDENKO, I. D., GORODETSKIY, G. G.

Flux welding of thick-walled boiler bodies with the semi-automatic welded PSH-5.
Avtom. svar./No 5, 1951.
4 (20)

USSR/Engineering - Welding, Dec 51
Methods

"Butt Resistance Welding of Pipe Using Double Upsetting," I. D. Davydenko, Engr

"Avtogen Delo" No 12, p 20

Describes procedure, accepted since beginning of 1950, for fusion welding of coil pipes 39/29 mm in diam employing repeated heating of welded joint and its 2d upsetting, due to which diam of pipe in zone of weld increases by 1 mm, facilitating removal of inner burrs. Consolidation

200T74

USSR/Engineering - Welding. Dec 51
Methods (Contd)

of metal, elimination of porosity and grain refinement occur in welded zone.

200T74

DAVYDENKO, I.D.

ASM

474-K. **Contact Butt Welding of Tubes With Repeated Upsetting.** (In Russian.) I. D. Davydenko. *Avtogennoe Delo*, v. 22, Dec. 1951, p. 20.

The butt welding of carbon steel boiler tubes, and techniques for improving the quality of the welds. (K1, CN)

DAVYDENKO, I. D.

Dissertation: "Arc welding of Steel Containing a Medium Amount of Manganese." Cand Tech Sci, Kiev Polytechnic Institute, Kiev, 1953. (Referativnyy Zhurnal-Khimiya, No 12, Moscow, Jun 54)

SO: SUM 318, 23 Dec 1954

DAVYDENKO, I. D.

1 OF 2

Electric Slag Welding of Boiler Drums

By I. D. DAVYDENKO. (From *Vestnik Mashinostroyenia* No. 12, December 1954, pp. 70-73, 3 illustrations.)

The electric slag process of welding is here performed in a special metallic mould, the walls of which are formed by the two vertical edges of the butt joint to be welded and two moving copper slides, which bridge the clearance between the welded edges, both above and below, as shown in Fig. 1. At the beginning of the process, the bottom of this mould is formed by an auxiliary metal plate, tack-welded underneath the butt joint, but, as the process continues, the solidifying metal at the bottom of the welding bath takes over this function.

For the formation of a welding bath, an arc is struck between the electrode wire and the bottom of the mould inside a layer of flux previously heaped in the mould. After some time, the welding bath is filled with molten metal and slag, which, rising in the course of the filling up of the bath with molten metal, shorts the arc when the electrode wire becomes submerged in the slag. At this instant the arc process is transformed into an arcless or electric slag process, in which the electrode wire submerged in the slag is fused by the passing current. From the end of the wire a jet of liquid metal emerges with a speed equal to that with which the wire is fed into the bath, and the current flows through this jet of metal. One part of the welding current branches off in all directions from the wire, and the jet of liquid metal then heats the fused slag to a temperature exceeding the melting point of the metal. The walls of the joint are gradually fused by the rising liquid slag, and the molten parent metal slowly flows down from the walls of the joint and mixes with the metal of the wire. As a result of the mixing of the parent and wire metal, the metal of the welding seam is formed, and this has a barrel-shaped cross-section, which, in an etched condition, shows a uniform appearance without any separate layers.

Crystallisation of the seam metal begins at the walls of the joint and at the bottom of the welding bath at the points of greatest heat removal. In the centre of the seam the metal cools most slowly and for this reason the metal bath has its greatest width at this point. In the preparation of the components for welding, the edges of the butt joint are cut square to the surface of the plate and the two plates to be welded together are joined by clamps which permit displacement of the copper slides.

The gap between the joint edges, subsequently filled with metal, is between about ½ and 1¼ in., depending on the thickness of the plate. An automatic welding head, with slides and a flux hopper, is arranged to move along one of the edges of the joint. The seam is welded throughout its thickness in a single pass, and the slides help to form the surface of the seam.

It is claimed that this new method of automatic welding is particularly economical for thick-walled pressure vessels, especially insofar as reduction of power consumption and flux is concerned.

I. D. DAVYDENKO

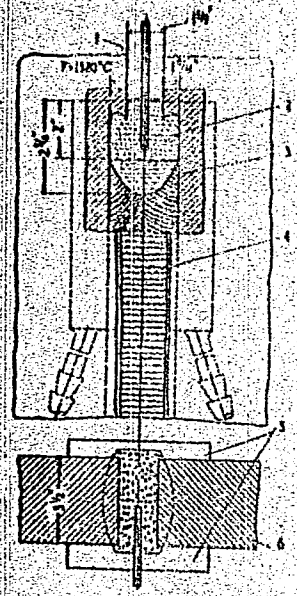


Fig. 1. Diagrammatic view of single-layer electric slag welding process.
(1) Electrode; (2) slag bath; (3) metal bath; (4) welded seam; (5) copper slides; (6) component.

DAVYDENKO I.D.

USSR.

11006* Shielded Metal-Arc One-Pass Welding of Longitudinal and Circular Seams of Boiler Drums. **Elektroshlakovaia odnoprokhodnaia svarka prodol'nykh i kol'tsevykh shvov kotel'nykh barabanov.** (Russian.) I. D. Davydenko. *Sparochnoe Proizvodstvo*, 1955, no. 5, May, p. 11-13.

Techniques. Type of current, thickness of electrode wire and amount of melted, strength of welding current. Flux fosters formation of protective slag covering. Diagrams, table.

DAVYDENKO, I. D.

N/5
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.R9

RUSSIA. MINISTERSTVO TYAZHELOGO MASHINOSTROYENIYA.

PRDIZVODSTVENNYY OPYT V OBLASTI SVARKI (INDUSTRIAL PRACTICES IN THE FIELD OF WELDING) POD. RED. I. D. DAVYDENKO. MOSKVA, MASHGIZ, 1956.

121 P. ILLUS., DIAGRS., TABLES (ITS SBORNIK, NO. 1)

INCLUDES BIBLIOGRAPHIES.

DAVYDENKO, I.D.

Metallurgic ycharactenshes of automatic submerged arc welding.
Proizv. opyt v obl. svar. no.1:28-48 '56. (MLRA 9:10)

(Electric welding) (Chemistry, Metallurgic)

DAVYDENKO, I. D.

123-1-542

Translation from: Referativnyy Zhurnal, Mashinostroyeniye, 1957, Nr 1, p. 86 (USSR)

AUTHOR: Davydenko, I. D.

TITLE: Determination of Chemical Composition of Molten Weld Metal Overlayed by Electric Arc Process with Thickly-coated Electrodes (Raschet khimicheskogo sostava metalla naplavlennogo elektricheskoy dugoy tolstopokrytymi elektrodami)

PERIODICAL: Proizvodstvennyy opyt v oblasti svarki. Sbornik No 1, Moscow, Mashgiz, 1956, pp. 112-122

ABSTRACT: To estimate the chemical composition of weld metals molten by electric arc process and for the determination of the composition of electrodes for a given composition of the weld metal, equations are offered which permit to determine the coefficient of transition of the alloying elements (Mn, C, Si) into the weld metal, and the content of these elements in same, in relation to the content of these elements in the electrode. For the examined electrode with

Card 1/2

Davydenko, I. D.

137-1957-12-24195

Transiation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 185 (USSR)

AUTHOR: Davydenko, I. D.

TITLE: Possibilities of Electrical Slag Welding of Thick Metal (From the Operational Practices of the "Krasnyy kotel'shchik" Plant) [Vozmozhnosti elektroshlakovoy svarki metalla bol'shikh tolshchin (iz opyta z-da "Krasnyy kotel'shchik")]

PERIODICAL: V sb.: Novoye v konstruirovanii tyazh. mashin. Moscow, Mashgiz, 1956, pp 245-256

ABSTRACT: A description of vertical electrical slag welding (ESW) of boiler drums and thick-walled vessels. For the purposes of ESW of longitudinal joints on shells, the plant constructed a system which permits the welding of shells up to 6.5 m long. The system is equipped with three TSD-1000 welding transformers and an automatic welding unit A-340 or A-350. The ESW of the girth joints is performed on jigs of the portal type, equipped with a roller-tilter device, by means of the automatic welding units A-356 or A-385. Technological processes of assembling and welding boilers from 20-52 mm sheets of 20K and 22K steel are described, together with the welding operating conditions and the technical and economic data.

Card 1/2

137-1957-12-24195

Possibilities of Electrical Slag Welding of Thick Metal

Multi-electrode ESW of metal up to 1000-5000 mm thick is possible. Type0.8 GA welding wire is employed in conjunction with MnSi fluxes of the type OSTs-45, FTs-6, AN-348, TKZ-5, etc. Compared with multi-layer arc welding the ESW method is more economical owing to the reduced consumption of electrical energy, flux, and electrodes, and simplified technological operations and increased output with existing production space.

I. Z.

1. Steel-Submerged melt welding Applications
2. Submerged melt welding-

Card 2/2

SOV/137-59-1-802

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 108 (USSR)

AUTHORS: Davydenko, I. D., Kulichenko, G. F.

TITLE: Use of Stavropol' Natural Gas in Flame Treatment of Metals (Primeneniye stavropol'skogo prirodnogo gaza pri gazoplamennoy obrabotke metallov)

PERIODICAL: Byul. tekhn.-ekon. inform. Sov. nar. kh-va Rostovsk. ekon. adm. r-na, 1958, Nr 3, pp 8-9

ABSTRACT: Bibliographic entry

Card 1/1

Davydenko, I.D.

135-58-4-3/19

AUTHOR: Davydenko, I.D., Candidate of Technical Sciences, Laureate of the Lenin Prize

TITLE: Automation of Welding Processes in the Taganrog Boiler Plant (Avtomatizatsiya protsessov svarki na Taganrogskom kotel'-nom zavode)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 4, pp 10-13 (USSR)

ABSTRACT: The article contains information and illustrations on various welding methods and devices used at the Taganrog "Krasnyy Kotel'shchik" Plant such as automatic arc and electroslag methods applied to large thick-walled containers. A variant of electroslag welding of annular seams is shown in Figure 1. The burning-through of thin-walled connecting pipes during their welding to boiler drum chambers is prevented by plugs which fasten the welding heads (Figure 3). A machine for the automatic welding of flanges by austenitic electrodes and their welding on short tubes is shown in Figure 5. The plant is also equipped with several types of contact butt welders and accessory devices for continuous welding. Electric-driven machines are giving

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135-58-4-3/19

Automation of Welding Processes in the Taganrog Boiler Plant

good results. A new method of eliminating inner burrs in perlite steel tubes is now being applied. The burr is burned out in oxygen with a 10 to 15% admixture.
There are 5 figures and 3 Soviet references.

AVAILABLE: Library of Congress

Card 2/2

DAVYDENKO, I.D., kand. tekhn.nauk, laureat Leninskoy i Stalinskoy premiy,;
KULICHENKO, G.F., inzh.

Using Stavropol natural gas for gas cutting of metals at the Taganrog "Krasnyi kotel'shchik" Plant. Energomashinostroenie 4 no. 6:27-30 Je '58. (MIRA 11:8)

(Gas, Natural)
(Gas welding and cutting)

DAVYDENKO, I. D.

SOV/135-59-4-16/18

25 (1)

AUTHORS: Aleksandrov, P. K., Scientific Secretary; Fel'dman, B. Z., Chief Engineer of the Technical Department

TITLE: The Rostov Zornarkhos Welders Discuss Welding Industry Development. (Svarshchiki Rostovskogo zornarkhoza obsuzhdayut voprosy razvitiya svarochnogo proizvodstva)

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 4, pp 44 - 45

ABSTRACT: Information is presented on welding conferences in the Rostov oblast' since the beginning of the Soviet organization of industry after the XXI Communist party congress. There was a conference at the plant "Rostsel'mash" in September 1958 on general prospective development, with reports by Engineer Kochka "On Further Introduction of Welding into Production Practice"; Engineer Mironov on "Mechanization of Assembly Welding Work and Modernization of the Plant's Equipment"; Engineer Salimov on "High-Efficiency Electrodes and their Prospective Use at the Plant". A conference was organized at the plant "Prodmash" on the problem of using natural gas for cutting metals,

Card 1/6

with a demonstration of the process, which is extensively used at other plants of the Rostov Zornarkhos system. A conference at the Taganrog plant "Krasnyy kotel'shchik" discussed the problem of electric slag welding and contact welding. It is mentioned that nearly all existing welding processes are extensively used at all plants and construction projects in the Rostov oblast'. Welded work makes up 60% of the production of the machine building plants. It is emphasized that maximum automation and mechanization of welding and the auxiliary processes is the task of the scientific and practical welders and the welders innovators. More detailed information is given on the conference of December 1958, concerning technical development of welding and the introduction of new welding technique at the oblast' plants during 1959-1965, with 90 practical welding specialists and scientific workers participating. At this conference, Engineer B. Z. Fel'dman (Technical Department of the Zornarkhos) spoke of the success achieved at the "Rostsel'mash" and the Taganrogskiy kombaynovyy zavod (Taganrog Combine Harvester Plant). There, the production

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of the self-propelled "SK-3" combine has been mastered, the necessary welding equipment has been completed, and the auxiliary operations mechanized. The plant "Krasnyy kotel'shchik" is using natural gas instead of acetylene for cutting, has mechanized 50% of the gas cutting work and is using oxygen jets in the butt welding of pipes by the contact-flash method (to intensify the welding process and remove the metal ridge inside pipes). The plant "Krasnyy gidropress" has had good results in using welding in CO_2 in the production of hydraulic systems for combine harvester plants. The entire welding production is to be doubled during the seven-year plan as compared with 1958, cutting by welding is to be increased by 2.5 times, the production of electrodes by 6 times (the lack of good electrodes and wire is presently causing great difficulty) flux by 1.5 times, and the means of mechanization by 2.5 times. The use of contact welding will have to be increased [illegible] and welding in CO_2 will have to be used extensively.

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SOV/135-59-4-16/18

The Rostov Sovnarkhoz Discuss Welding Industry Development

Engineer A. D. Davydenko, Candidate of Technical Sciences and Stalin Prize Laureate (plant "Krasnyy kotel'shchik") read a report "On the Application of New Steel Grades in the Production of Boilers, and on the Technology of Welding These Steels". His plant is starting the use of the electric slag welding process for steel 15Kh1M1F and is studying the welding of austenitic and other steels and alloys. Engineer V. M. Khramov (plant "Krasnyy kotel'shchik") and Engineer V. S. Tochka ("Rostsel'mash") told of their plants experience in the reports "The Ways of Mechanizing and Automating Welding", Engineer Barilov ("Rostsel'mash") and Engineer Zadorozhnyy (SKTM) presented reports on "General Experience with Welding in Carbon Dioxide at the Sovnarkhoz' Plants". Candidate of Technical Sciences A. I. Zelikov of the Rostovskiy Institut Inzhenerov zheleznodorozhnogo transporta (Rostov Institute of Railroad Engineers), and Engineer P. M. Zaper, Chief of the "Rostsel'mash" Central Plant Laboratory, made reports on "Extending the Volume of Coating Work, and Introducing Modern Methods of Restoring Parts and Tools".

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SOV/135-59-4-16/18

The Rostov Sovnarkhoz Discuss Welding Industry Development

Engineers V. I. Strots and I. I. Fomin delivered reports on "Development and Use of Stamped-Welded Designs to Replace the Cast and Forged, as a Way to Reduce the Weight of Machines". Chief Engineer of "Rostovenergoremont", I. I. Israilevich, told the conference of the experience of the "Rostovenergoremont" in the repair and modernization of electric power plants, and of its work in improving existing and the creation of new equipment for inspecting welded joints in critical metal structures. Engineer V. I. Rozhkov of Novocherkasskiy elektrovozostroitel'nyy zavod (Novocherkassk Electric Locomotive Plant) reported on the automation of welding processes in the production of electric locomotives. The conference followed the example of the Moscow welders and appealed to all specialists of the Rostov oblast' to fulfill their practical obligations in the mechanization of welding and the automation of welding processes in mass production.

Card 5/6

SOV/135-59-4-16/18

The Rostov Sovnarkhoz Discuss Welding Industry Development

ASSOCIATION: Rostovskaya Rostov Sovnarkhoz.

Card 6/6

DAVYDENKO, Il'ya Danilovich, laureat Leninskoy i Stalinskoy premiy; SEL'VANYUK, I.M., red.; ZHEREBKOV, I.V., red.izd-va; CHEKANOV, A.A., tekhn.red.

[Electric slag welding in boiler construction] Elektroshlakovaia svarka v kotlostroenii. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1959. 85 p. (MIRA 13:5)
(Electric welding) (Pressure vessels--Welding)

18(7) SOV/135-59-10-14/23

AUTHORS: Davydenko, I.D., Candidate of Technical Sciences, Kulichenko, G.F., and Yeremenko, M.M., Engineers

TITLE: Oxygen Flux Cutting of Stainless Steels Using Natural Gas

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 10, pp 31-33 (USSR)

ABSTRACT: The authors state that oxygen flux cutting of stainless steels with thicknesses of 10-100 mm and more is used increasingly in different branches of industry. The Taganrog Boiler Factory now uses for oxygen flux cutting the cheap natural gas of the Stavropol' deposits. This gas has a pressure of 0.7 at. at the working site. It contains 97.7% methane, 1.6% nitrogen and 0.7% carbon-gas. The technical characteristics are given in a table. Iron powders of the following types are used: VS, PZhV, VK and PZhE. Table 2 shows the parameters of the welding regime for different thicknesses of steel (10 ÷ 90 mm). For safety at the working site, local ventilation is necessary. In the construction of assembly and ventilation V.I. Kharin and Ye.I. Abramov participated. There are 1 photograph, 4 diagrams and 2 tables.

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SOV/135-59-10-14/23

Oxygen Flux Cutting of Stainless Steels Using Natural Gas

ASSOCIATION: Taganrogskiy zavod "Krasnyy kotel'shchik" (Taganrog Factory "Red Boiler-Maker")

Card 2/2

85186

S/135/60/000/003/003/005
A115/AC29

1.2300

AUTHORS: Davydenko, I.D., Candidate of Technical Sciences, Koshevoy, V.F., Nosenko, A.I., Graduate Engineers

TITLE: Electric Slag Arc Welding of 1X18H9T (1Kh18N9T) Plate Steel

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 3, pp. 23-27

TEXT: The authors discuss technological features of electric slag butt welding of 5-m long joints on stainless steel plates. Tests were performed with an A-340 (A-340) single-electrode device fed by a ПСМ-1000 (PSM-1000) welder. АНФ-5 (ANF-5), АН-26 (AN-26), 48-ОФ-6 (48-OF-6) fluxes and 3 mm Св-Х25 Н13 (Sv-Kh25N13), Св-1Х18Н9Т (Sv-1Kh18N9T) and Св-1Х18Н9Б (Sv-1Kh18N9B) filler wires were tested on 36, 60, 75 mm thick and 700-1,400 mm long 1Х18Н9Т (1Kh18N9T) steel plates and on boiler shells of 3,100 mm in diameter composed of 60 75 and 90 mm thick 700 x 5,200 mm sheets. The length of shells was 700, 1,400 and 2,100 mm. The 36 mm plates were welded at a filled-rod rate of 216 m/h, 500 amp, 40-44 v, welding rate 1,5 m/h, throat depth 4-50 mm, butt distance 28 mm. The variations in the chemical composition of basic metal, filler wire and seam metal are shown in Table 1. Corrosion-resistance of joints was examined accord-

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A115/A029

Electric Slag Arc Welding of 1X18 H9T (1Kh18N9T) Plate Steel

ing to methods A-1 and A-2 of ГОСТ 6032-51 (GOST 6032-51) on 90 x 25 x 3 mm samples shown in Figure 1. After 48 hours of boiling in a copper sulfate and hydrosulfuric acid solution the samples were inspected to the loss of metallic sound and bent at an angle of 90°. Austenization included exposures to 1,050-1,070° C for 15 minutes. Results of these tests are shown in Table 2. The amount of ferrite phase determined with a TsNIITMash magnetic ferrito-meter on samples (Fig. 2) is shown in Table 3. Metallographic examination revealed no cracks or impurities (Figs. 3 and 4). Figure 5 shows hardness zones of the welded joint. Mechanical tests gave satisfactory results, and highest corrosion resistance was established in joints welded by Sv-1Kh18N9B wires with 48-OF-6 flux and Sv-Kh25N13 wires with 48-OF-6 and AN-26 flux. Flux 48-OF-6 is less oxidizing than AN-26, but the latter has superior technological properties. For welding of 60-75 mm thick and 700-1,400 mm long plates the ductility of 48-OF-6 flux was increased by addition of Al_2O_3 and reduction of CaF_2. This modified flux received the designation ТКЗ-НЖ (TKZ-NZh). Its chemical composition and welding conditions are given. Sv-1Kh18N9B filler wires with TKZ-NZh and 48-OF-6 fluxes, Sv-1Kh18N9T wires with TKZ-NZh fluxes and Sv-Kh25N13 wires with AN-26 fluxes were used. For welding with Sv-1Kh18N9B wires 1 % of aluminum powder was added to the

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85186

S/135/60/000/003/003/005
A115/A029

Electric Slag Arc Welding of 1 X 18 H 9 T (1Kh18N9T) Plate Steel

flux to reduce niobium waste. This produced good results. For Sv-1Kh18N9T wires the flux was enriched by 15 % titanium aluminate ceramic concentrate bound with water glass. This diminishes titanium wastes but complicates the flux production. The chemical composition of basic metal, filler wire, filler metal and the amount of α-phase are given in Table 4. All tests were made according to methods A-1, A-2 of GOST-6032-51 and AM ГОСТ 6032-58 (AM GOST 6032-58) and revealed high corrosion-resistance of seam metal and fusion zone. Mechanical tests were satisfactory and are given in Table 5. No defects were revealed. A typical macrostructure is shown in Figure 7. The microstructure of all types of surfaced metal were α-phase carbides. A new type jet described by the Plant for this welding method is given. 700-mm shells consisting of two half-shells were welded by longitudinal seams. Others were welded of 2-3 prefabricated sheets which simplified the process. Reinforced joints of welded shells were abraded and then subjected to austenization at 570°C for two hours and at 1,050-1,070°C for 1.5 minutes per 1 mm of weld. At 800-900°C some welds with girth joints fracture and crack during calibration due to heat deformation of the metal. This can possibly be prevented by austenization and subsequent cold cali-

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85186

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A115/A029

Electric Slag Arc Welding of 1 X 18 H 9 T (1Kh18N9T) Plate Steel

bration of shells. The application of electric slag welding to non-corroding plate steel resulted in considerable economy and increased production. There are 7 figures, 5 tables and 4 Soviet references.

ASSOCIATION: Taganrogskiy zavod "Krasnyy Kotel'shchik" (Taganrog "Red Boiler Maker" Plant)

Card 4/4

DAVYDENKO, Il'ya Danilovich, kand. tekhn. nauk, laureat Leninskoy i Stalinskoy premiy; ZHUREBKOV, I.V., red.; ALYAKRITSKAYA, L.S., tekhn. red.

[Manual on welding electrodes] Spravochnik po svarochnym elektrodam. Rostov, Rostovkoe knizhnoe izd-vo, 1961. 227 p. (MIRA 14:8)

(Welding—Equipment and supplies) (Electrodes)

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S/769/61/000/000/001/004

AUTHORS: Davydenko, I.D., Koshevoy, V.F., Nosenko, A.I.

TITLE: The metallurgy and technology of submerged electric slag welding of 1X18H9T (1Kh18N9T) steel.

SOURCE: Avtomatizatsiya i mekhanizatsiya svarki; novoye v svarochnom proizvodstve na Taganrogskom zavode "Krasnyy kotel'shchik." Comp. by M.V. Korsunov. (Rostov) Rostovskoye knizh. izd-vo, 1961, 3-26.

TEXT: The paper describes the welding of great thicknesses (50-100 mm and more) of stainless steel for petrochemical and chemical installations. Steel 1Kh18N9T of up to 20-mm thickness is welded in two-sided automatic electric arc welding under flux. Ordinary one-pass electric-slag (ES) welding (W), such as is practiced on structural steels of great thickness (Th), is not practicable with 1Kh18N9T steel, because it has an austenitic structure and its linear expansion coefficient is so great that joint-gap problems arise during W, and the maintenance of a steady arc (A) is uncertain. The single-pass automatic ES W was perfected to obviate the danger of A failures. 5-m test W were performed with the self-propelled single-electrode A-340 reverse-polarity a.c. equipment, supplied from a ПСМ (PSM) arc welder. Metallurgy: 4 fluxes and 3 W rods were tested (full-page tabulation). The basic W-process parameters were held constant in all tests. In no instance did the steel develop either hot or cold cracks. The newly developed ТКЗ - НЖ (TKZ-NZh) flux was found to be more suitable for ES W than the АНФ-6 (ANF-6) and 48-ОФ-6

Card 1/3

DAVYDENKO, Il'ia Danilovich; SHEVELEV, Aleksey Sergeyevich; SIDORENKO, M.D., red.

[Automatic welding of small parts] Avtomaticheskaia svarka malogabaritnykh detalei. Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1965. 124 p. (MIRA 18:10)

DAVYDENKO, K.; KOROLEV, S.; CHERNOUSOV, M.; ZHUKOV, M., red.; AYZUPIYETE, M. [Aizupiete, M.], tekhn.red.

[Flax, the northern silk; from the experience of the "Krasnyi Oktiabr'" Collective Farm, Preyli District] Len - severnyi shelk; iz opyta kolkhoza "Krasnyi Oktiabr'", Preil'skogo raiona. Riga, Latviiskoe gos.izd-vo, 1960. 72 p. (MIRA 14:12)

(Preyli District—Flax)

DAVYDENKO, K.F.

Mobile exhibition. Zashch. rast. ot vred. i bol. 9 no.5: 5-7 '64. (MIRA 17:6)

1. Direktor Pribaltiyskoy stantsii zashchity rasteniy, Riga.

DAVYDENKO, M. A.

DAVYDENKO, M. A. "Pests of Kok-sagyz and Measures to Combat them under the Conditions of the Latvian SSR." All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin. All-Union Sci Res Inst of Plant Conservation. Leningrad, 1956 (For the Degree of Candidate in Agricultural Science)

So: Knizhnaya Letopis' No. 18, 1956

DAVYDENKO, M.O.

Increase the labor productivity and decrease the costs of repair. Mekh. sil'. hosp. 12 no.12:5-6 D '61.
(MIRA 17:1)

1. Zamestitel' predsedatelya Ukrainskogo respublikanskogo ob"yedineniya "Ukrsil'gosptekhnika".

DAVYDENKO, M. O.

Provide all collective and state farms with machinery operators. Mekh. sil'. hosp. 14 no.2:3-4 F '63. (MIRA 16:4)

1. Zamestitel' predsedatelya Ukrainskogo respublikanskogo ob"yedineniya "Ukrsil'gosptekhnika".

(Ukraine—Agricultural machinery—Study and teaching)

KOZIN, L.F.; DAVYDENKO, O.G.

Polarographic determination of impurities in metallic thallium, thallium alloys, and thallium amalgams. Trudy Inst. khim. nauk AN Kazakh. SSR 9:157-161 '62. (MIRA 16:6)

(Thallium compounds) (Polarography)

L 14512-66 EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b) JD/HM
ACC NR: AP6003287 (N) SOURCE CODE: UR/0135/66/000/001/0045/0045

78
B

AUTHOR: Davydenko, R. S. (Engineer); Bugrov, K. N. (Engineer)

ORG: none

TITLE: All-Union Conference on the Use of Servo, Copying and Programmed Systems for the Welding, Build-Up and Cutting of Metals held in Volgograd from 19 to 22 May 1965

44,55,16

SOURCE: Svarochnoye proizvodstvo, no. 1, 1966, 45

TOPIC TAGS: gas cutting, metal cutting, servomechanism, photoelectric copying, computer programming, automatic welding, welding technology, automatic control system, metallurgic conference

ABSTRACT: This Conference, the first of its kind, was attended by more than 200 representatives of various plants and organizations. More than 30 papers and communications were presented. As regards the flame cutting of metals, the following principal subjects were discussed: the current and future status of the automation of oxygen cutting; the development of an universal programming device for machines with digital programmed control in the shipbuilding industry; the computerization of mold-loft operations in the shipyard; a digital programmed control system for the automatic marking and gas cutting of components; photoelectric copying systems for gas-cutting machines; the replacement of the gas cutting of carbon steels with gas-electric cut-

UDC: 621.791(063)

Card 1/2

ting. It was also stated that the spreading use of flame-arc cutting requires a considerable increase in copying rate (eventually to as much as 10 m/min). The topics discussed in the papers on the automation of welding and build-up included: the causes of the displacement of the axis of joint under the electrode during the welding of spiral-shaped tubes and the methods of correcting the electrode's position relative to the joint's axis; programmed control of the motions of welding equipment; kinematic errors and dynamic properties of the control system of a welding machine; electric and pneumatic servomechanisms for stabilizing arc length in argon arc welding; an automatic control system for quality seam welding; programmed and servo control devices for arc welding machines; automatic build-up of intricately shaped trimming dies at a rate 3 times as fast as that of manual build-up. The Conference's participants adopted a resolution summarizing the results of its work and outlining measures to expedite research and development work in the fields indicated. In particular, the Conference recommended that State tests of the principal types of new machines and control systems be carried out during 1965-1966 with the object of selecting the best models for serial production.

SUB CODE: 05,11,13,09/ SUBM DATE: none/ ORIG REF: 000/ OTH REF: 000

NEMCHENKO, V.I.; BONK, G.M.; DAVYDENKO, V.A.

Role of X-ray examination in the detection of mitral insufficiency. Khirurgiia no.10:8-15 '64. (MIRA 18:8)

1. Klinika khirurgii usovershenstvovaniya vrachey No.1 (nachal'nik - prof. A.P.Kolesov) Voyenno-meditsinskoy Ordena Lenina akademii imeni Kirova, Leningrad.

KOLESOV, A.F., prof.; DAVYDENKO, V.A.; BONK, G.M.

Diagnosis and surgical treatment of benign tumors of the esophagus and cardia. Klin. khir. no.1:3-6 '65.

(MIRA 18:8)

1. Khirurgicheskaya klinika dlya usovershenstvovaniya vrachey No.1 Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova, Leningrad.

TOLUZAKOV, V.L. (Leningrad, K-9, ul. Smirnova, d.8, kv.53); KROL, Ya.M.; DAVYDENKO, V.A.; BONK, G.M.

So-called cavitary form of pulmonary cancer. Vop. onk. 10 no.5: 3-10 '64. (MIRA 18:8)

1. Iz khirurgicheskoy kliniki dlya usovershenstvovaniya vrachey No.1 Voyenno-meditsinskoy akademii imeni Kirova (nachal'nik - prof. A.P.Kolesov).

DAVYDENKO, V.A., inzh.; POLETAYKIN, V.F.

KMZ-TsNIIMF-12 log loader. Stroi. i dor. mash. 10 no.2:20-21 F '65.
(MIRA 18:3)

NOVIKOV, F.G.; BONK, G.M.; DAVYDENKO, V.A.

Clinical X-ray diagnosis of postoperative herniation of the heart. Vest. rent. i rad. 40 no.3:39-41 My-Je '65.
(MIRA 18:7)

1. Khirurgicheskaya klinika usovershenstvovaniya vrachey No.1 (nachal'nik - prof. A.P. Kolesov) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova, Leningrad.

YEGOROV, N.K., kand. tekhn. nauk; DAVYDENKO, V.T., gornyy inzh.; SUSLOVICH, Z.B., gornyy inzh.

Mine cap sets made of new materials. Ugol' 38 no.11:35-36 N '63. (MIRA 17:9)

1. Institut gornogo dela im. A.A. Skochinskogo (for Yegorov).
2. Shakhta im. Menzhinskogo kombinata Luganskugol' (for Davydenko).
3. Donetskiy sovet narodnogo khozyaystva (for Suslovich).

DAVYDENKO, Yevgeniy Alekseyevich; TUTOV, Petr Yemel'yanovich; [illegible] red.; GOROKHOV, Yu.N., tekhn.red.

[Painting practices; summary of lectures delivered at training courses for instructors of industrial painters] Malliarnye raboty; konspekt lektsii, prochitannykh na seminare-praktikume masterov proizvodstvennogo obucheniia maliarov. Moskva, Vses. uchebno-pedagog.izd-vo Trudrezervizdat, 1959. 54 p. (MIRA 12:12)

(Painting, Industrial)

DAVYDENKO, Yu., inzhener-podpolkovnik, kand. tekhn. nauk

Propagation of radio waves. Tekh. i vooruzh. no.1:21-29 Ja '64.
(MIRA 17:6)

DAVYDENKO, Yu., inzhener-podpolkovnik, kand. tekhn. nauk; TUMILOVICH, I., inzhener-podpolkovnik

Increasing the distance of radio communication. Tekh. i vooruzh. no.4:44-46 Ap '64. (MIRA 17:9)

GRINSHTEYN, N.V.; DAVYDENKO, Yu.A.; SERGEYEV, O.P.; TIMESKOV, V.A.

Position of Bakal siderites in the enclosing rocks. Izv. AN SSSR. Ser. geol. 25 no.7:95-98 Jl '60. (MIRA 13:10)
(Bakal region--Siderite)

DAVYDENKO, Yu.A.

Mode of occurrence of basic rocks in the southern Urals. Izv. vys.ucheb.zav.,geol.i razv. 4 no.10:43-47 O '61. (MIRA 14:12)

1. Irkutskiy politekhnicheskiy institut.
(Ural Mountains--Rocks, Igneous)

DAVYDENKO, Yu.A.

Zoning of hydrothermal ore deposits in the Bakal ore deposit.
Izv.vys.ucheb.zav.; geol.i razv. no.2:49-60 F '62. (MIRA 15:3)

1. Irkutskiy politekhnicheskiy institut.
(Bakal region (Chelyabinsk Province)—Ore deposits)