ZMIHORSKI, Edward

Studies on new high-speed cutting steels with increased carbon content.
Archiw hutn 9 no.2:203-235 '64.

ZMIHORSKI, Edward; ZYSK, Jan

Selection of optimum heat treatment parameters for thin flat springs based on fatigue tests. Inst mech precyz 12 no.2:5-11 '64.

25(1); 18(3) PHASE I BOOK EXPLOITATION POL/2373

Żmihorski, Edward, Doctor, Master Engineer

Stal szybkotnąca (High-speed Steel) Warszawa, Państwowe Wydawnictwa Techniczne, 1958. 233 p. 3,617 copies printed.

Reviewer: Stanisław Jabłoński, Master Engineer; Scientific Ed. of Publishing House : Stefan Błażewski, Master Engineer; Tech. Ed.: W. Bocheński.

PURPOSE: This book is intended for engineers and technicians concerned with the manufacture of tools, and for tool designers, engineers and technologists working in the field of metal cutting.

COVERAGE: The author describes the basic properties and chemical composition of high-speed steels and their use in the manufacture of metal-cutting tools. Methods of brazing, resistance welding, hot press-forming, and forging of high-speed steels, and their use for hard-surfacing other tool materials are described. A detailed description of various methods of heat treatment is given and modern equipment for hardening cutting tools from high-speed steel is discussed. Data on types of high-speed steels produced in Poland,

Card 1/5

High-speed Steel

USA, USSR, and Germany are given. No personalities are mentioned. There are 66 references: 5 Soviet, 33 Polish, 23 German, and 5 English.

TABLE OF CONTENTS:

High-Speed Steel

AVAILABLE: Library of Congress

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GO/lsb
10-26-59

ZMIHORSKI, E.

"Chroming Applied to Machine Tools", p. 104, (MECHANIK, Vol. 27, No. 3, Mar. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

ZMIHORSKI, E.

Coating cylinders and rings of combustion motors with chromium. p. 113. (TECHNIKA MOTORYZACYJNA, Vol. 4, No. 4, Apr. 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 3, No. 12, Dec. 1954, Uncl.

ZMIHORSKI, Edward

Factors influencing economy of steel and quality improvement in production. Przegl drobnej wytworczosci 12 no.6:14-15 Mr '62.

ZMIHORSKI, Edward

Influence of residual austenite upon the fatigue strength of steel under very high pressing stresses. Archiw hutn 7 no.2:177-195 '62.

ZMIHORSKI, Edward, doc.dr.inż.

Modernization of starting equipment of electrode salt-bath furnaces. Wiad elektrotechn 30 no.6:199-203 Je '62.

P/038/62/007/002/001/002
E193/E583

AUTHOR: Zmihorski, Edward

TITLE: The effect of residual austenite on the endurance of steel under very high compressive stresses

PERIODICAL: Archiwum hutnictwa, v. 7, no. 2, 1962, 177-195

TEXT: High pressures of the order of 300 kg/mm^2, required in cold extrusion of steel, give rise to problems of finding suitable materials of construction - hence the present investigation conducted on steels whose composition is given in Table 1. The test pieces were quenched from various temperatures and tempered for 1 hour at 175, 240, 280, 400, 530 and 570 °C, with or without preliminary sub-zero treatment in liquid air. The investigation comprised fatigue tests under compressive stresses ranging from 35 - 330 kg/mm^2, determination of the proportion of residual austenite, measurements of resistance-to-abrasion, static compression tests, study of dimensional changes during and after heat-treatment and study of plastic deformation in compression. The results can be summarized as follows.
1) High-speed-cutting tungsten steel such as steel SW9 is the

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P/038/62/007/002/001/002
E193/E383

The effect of ....

most suitable for heavy-duty extrusion rams and other similar parts operating under very high (up to 300 kg/mm^2) compressive stresses. Steel NWC could be used as an alternative.
2) Contrary to the generally accepted view, residual austenite has a beneficial effect on the endurance of heat-treated steel operating under high compressive stresses. There is, however, an optimum content of this constituent (10 ± 5%) whose effect, when present in quantities outside this range, becomes harmful.
3) With increasing tempering temperature (200 - 500 °) the abrasion-resistance of the steels studied increases and their endurance rapidly decreases.
4) The optimum tempering temperature is 175 °C for steels no.1 and no.2 and 570 °C for steel no. 4. Tempering above or below these temperatures as well as sub-zero treatment brings about a considerable decrease in the resistance of these steels to cyclic compressive loads.
5) A tool, or a machine part, designed to operate under heavy cyclic compressive loads, made from suitable steel and given correct heat-treatment, should have the following characteristics:

Card 2/3

The effect of ....

homogeneous, finely-crystalline structure, consisting of 10 ± 5% residual austenite, 90% cubic martensite and carbide; the lowest possible internal stresses; hardness HRC = 62 - 63.
There are 15 figures and 1 table.

SUBMITTED: September 30, 1961

Table 1:

Nr	Skład chemiczny w % Chemical composition, %						Typ Cecha hutnicza
	C	Si	Mn	Cr	W	V	
1	1,4	0,3	0,6	1,4	—	—	NC6
2	1,1	0,3	1,0	1,1	1,5	—	NWC
3	1,7	0,4	0,4	12,0	—	—	NC10
4	0,85	—	—	4	9	2	SW9

Card 3/3

ZMIHORSKI, Jan, dr inz.

Suggestions concerning reorganization of pump designing and construction in Poland. Przegl mech 22 no.14:426-427 25 Jl '63.

1. Kierownik Centralnego Osrodka Badawczo-Koordynacyjnego Pomp, Warszawa.

ZMIHORSKI, Jan, mgr., inż.

Role of pump power stations in energetics. Gosp wodna 22 no. 3:95-97. Mr '62

1. Instytut Energetyki, Warszawa.

ZMIHORSKI, Jan, mgr. inż.

Designing and construction costs of pumped storage electric power plants. Gosp wodna 22 no.4:142-146 Ap '62.

ZMIHORSKI, Jan, mgr inz.

Technical analysis of pumped-storage power plants both existing and under construction in foreign countries. Gosp wodna 22 no.9:414-418 S '62.

1. Instytut Energetyki, Warszawa.

ZMII, P. N.

The care of automobile tires. Izd. 2., perer. Moskva, Gos. nauch.-tekhn. izd-vo khim. lit-ry, 1946. 100 p. (50-40944)

TL270.Z55 1946

ZMIJA, Ryszard, inz.

Influence of the method of carbon tool steel melting on its hardening capacity. Wiad hut 19 no.10:275-276 O '63

ZMIJA, Ryszard, inz.

Water and sewage problems in the metallurgic industry.
Wiad hut 19 no.7/8:215-219 Jl/Ag '63.

ZMIJANIC, D.

Production of plane tree seedings. p. 17

SUMARSKI LIST, Zagreb, Vol 80, No. 1/2, Jan./Feb., 1956

SO: East European Accessions List, Vol 5, No. 10, Oct., 1956

YUGOSLAVIA / Forestry. Forest Crops. K-3

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24894.

Author : Zmijanac, Duro.
Inst : Not given.
Title : Cultivation of Plantation Stock.

Orig Pub: Sumarski list, 1956, 80, No 1-2, 17-23.

Abstract: A comparative analysis of various ways of cultivation of high-yield stock sowing of seeds and grafting is given. The best growth is shown by plants obtained from planting of grafts prepared from two-year specimens.

Card 1/1

FUKARAK, P.; GAFNER, J.; MESTROVIC, S.; KLEPAC, D.; LNENICEK, Z.; ZMIJANAC, D.; SEVNIK, F.; ZAGAR, B.; MIKLAVZIC, J.; KNEZ, A.; PIPAN, R.; FUNKL, L.; SVETLICIC, A.; ZUMER, L.; KEVO, R.

Reveiw of periodicals; silviculture. Bul sc Youg 9 no.4/5:144-145 Ag-O '64.

ZMIJESKA, Joanna

Eighth International Book Fair, Warsaw, May 18-26, 1963.
Przegl mech 22 no. 13:408-409 10 Jl '63.

P/046/60/005/011/017/018
D249/D303

AUTHORS: Minczewski, J., and Żmijewska, W.

TITLE: On the reaction of chromates with diphenylcarbazide

PERIODICAL: Nukleonika, v. 5, no. 11, 1960, 790

TEXT: (Abstract - Report No. 153/VII (IBJ - Institute of Nuclear Research, PAS)): Reactions of Cr(VI) with diphenylcarbazide (DPCD) and Cr (II) with diphenylcarbazone (DPCN) have been investigated spectrophotometrically and by potentiometric titration. The investigation concerned the reaction mechanism in the presence of excess reagents, conditions of extraction of the colored product, and the behavior of DPCN in solutions of organic and mineral acids. A mechanism is proposed for the reactions. [Abstractor's note: Complete translation].

Card 1/1

ZMIJEWSKA, Joanna

House of the Technician in Poznan. Przegl mech 22 no.14:455 25 Jl '63.

P/014/62/041/010/001/001
D214/D308

AUTHORS: Akerman, Karol, Brafman, Marek, Kruszewska, Olga and Żmijewska, Wanda

TITLE: The purification of trichlorosilane and silicon tetrachloride and the preparation of synthetic quartz glass

PERIODICAL: Przemysł chemiczny, v. 41, no. 10, 1962, 574-577

TEXT: Methods of determining small quantities of impurities in $SiHCl_3$ and $SiCl_4$ were developed to estimate the efficiency of methods of purification of these compounds. The most efficient purification was achieved by complexing the impurities with CH-CN and $(C_6H_5)_3CCl$ and removing them by fractional distillation. To estimate the P and Fe contents present as the trichlorides, isotope tracer techniques were used. Other impurities were determined by neutron activation of the samples in the EWA reactor and by measurement of their β-absorption and the decay of their β-activity. The major impurity was found to be Fe (1.6×10^{-2}%). The purity of

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The purification ...

SiO_2 and that of quartz glass, obtained from $SiCl_4$ by a method developed by the authors, was studied by γ-spectroscopy. All γ-emitters of half-life shorter than that of ^{31}Si could not be determined by this method. Quartz glass, obtained from high purity $SiCl_4$, contained only traces of As and Na but up to 10^{-2}% Ta, which was introduced into the glass during the vacuum melting of SiO_2. This compares favorably with quartz glass produced outside Poland. Boron cannot be estimated by the above methods but other methods (5 are given) can be employed. The B content in the produced SiO_2 or the subsequent quartz glass was $> 3 \times 10^{-5}$%. There are 1 figure and 1 table.

ASSOCIATION: Instytut Badań Jądrowych PAN (Institute of Nuclear Research PAS)

SUBMITTED: June 26, 1962

AKERMAN, Karol; BRAFMAN, Marek; KRUSZEWSKA, Olga; ZMIJEWSKA, Wanda

Purification of trichlorosilane and silicium tetrachloride and the obtaining of synthetic quartz glass. Przem chem 41 no.10:574-577 O '62.

1. Instytut Badan Jadrowych, Polska Akademia Nauk, Warszawa.

ZMUJEWSKI, Wanda

Precision of the determination of copper, arsenic and antimony from a photopeak decay curve of a gamma spectrum. Nukleonika 7 no.2:101-108 '62.

1. Institute of Nuclear Research, Polish Academy of Sciences, Warsaw.

MINCZEWSKI, Jerzy; ZMIJEWSKA, Wanda

Remarks on the behavior of diphenylcarbazone as an analytic reagent. Chem anal 5 no.3:429-433 '60. (EEAI 10:8)

1. Zaklad Chemii Analitycznej Instytutu Badan Jadrowych PAN, Warszawa.
(Phenylazoformic acid phenylhydrazide)

ZMIJEWSKI, Bohdan

Mgr., inz. Bohdan Zmijewski; an obituary. Normalizacja 29 no. 4 p. 31 '61.

(Engineers—Polish)

ZMIJEWSKI, Pawel, doc. mgr inz. [deceased]; SKARZYNSKA, Krystyna, mgr inz.; KLASSA-BRUNICKI, Hugo, mgr inz.

Utilization of postproduction waste materials for the needs of earthwork construction. Gosp wodna 24 no. 4:125-128 Ap '64.

GOLANT, V.Ye.; ZMILINSKIY, A.P.; KRIVOSHEYEV, M.V.; NEKRUTKINA, G.P.

Propagation of centimeter waves through wave guides filled with the plasma of a positive discharge column. Part 1. Zhur. tekh. fiz. 31 no.1:55-62 Ja '61. (MIRA 13:12)

1. Leningradskiy Politekhnicheskiy institut imeni M.I.Kalinina.
(Plasma (Ionized gases)) (Microwaves) (Wave guides)

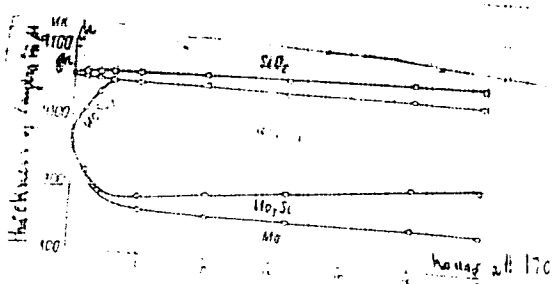
AUTHOR: Nechiporenko, Ye. P. (Dr. of Technical Sciences); Zmiliy, V. I.; Petukhov,

... molybdenum, tungsten, refractory

ABSTRACT: Heaters made of Mo or W and protected by the coatings, become

L 28460-66

ACC NR: AT5027945



L 28460-66

ACC NR: AT5027945

experimentally, were considered during the development of a production technique for the Mo heaters in the form of rods [illegible]

Card 3/3

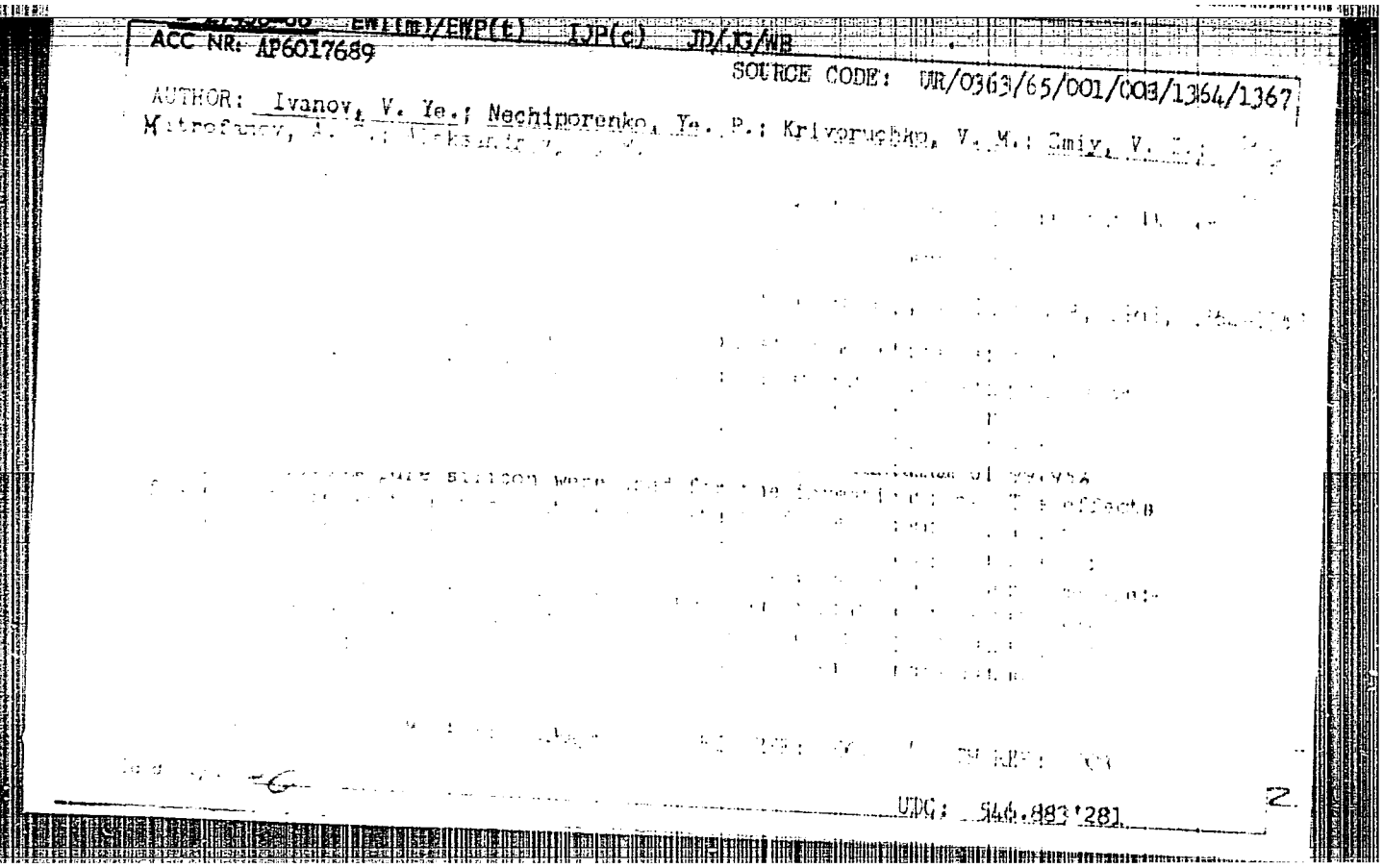
L 27302-66 EWT(m)/EWP(t) IJP(c) JD/JG/WB

ACC NR: AP6017688

SOURCE CODE: UR/0363/65/001/008/1360/1363

AUTHOR: Ivanov, V. Ye.; Nechiporenko, Ye. P.; Krivoruchko, V. M.; Zmiy, V. I.; Mitrofanov, A. S.; Aleksandrov, O. M.

Card



EWT(m)/EWP(t) IJP(c) JD/JG/WB

ACC NR: AP6017689 SOURCE CODE: UR/0363/65/001/003/1364/1367

AUTHOR: Ivanov, V. Ye.; Nechiporenko, Ye. P.; Krivoruchko, V. M.; Smiy, V. [illegible]

Mitrofanov, A. [illegible]

UDC: 546.883'281

2

ZMITRENKO, V., podpolkovnik.

Discipline is the soul of the army. Voen.znan. 31 no.6: 8-9 Je '56. (MLRA 9:10)

(Military discipline) (Russia--Armed forces)

ZMITROVICH, L.A.

Change in venous pressure during pregnancy. Akush.i gin. 36 no.1:49-52 Ja-F '60. (MIRA 13:10)
(BLOOD PRESSURE) (PREGNANCY)

BOGOSLOVSKIY, B.M.; ZHIY, P.N.; ZYKOV, D.D., dotsent; PIK, I.Sh.; STREPIKHEYEV, A.A.; [illegible], I.I.; AVRAMOVA, N.S., redaktor; LUR'YE, M.S., tekhnicheskiy redaktor.

[General chemical technology of organic substances] Obshchaia khimicheskaia tekhnologiia organicheskikh veshchestv. Pod red. D.D.Zykova. Moskva, Gos. nauchno-tekhn.izd-vo khim. lit-ry, 1955. 463 p.
(Chemistry, Technical) (MIRA 8:4)

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Ca

8

The production of lampblack from anthracene and naphthalene. P. Zmit. *J. Rubber Ind.* (U. S. S. R.) 12, 851-3(1936).—A discussion. A. Pestoff

ASA-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

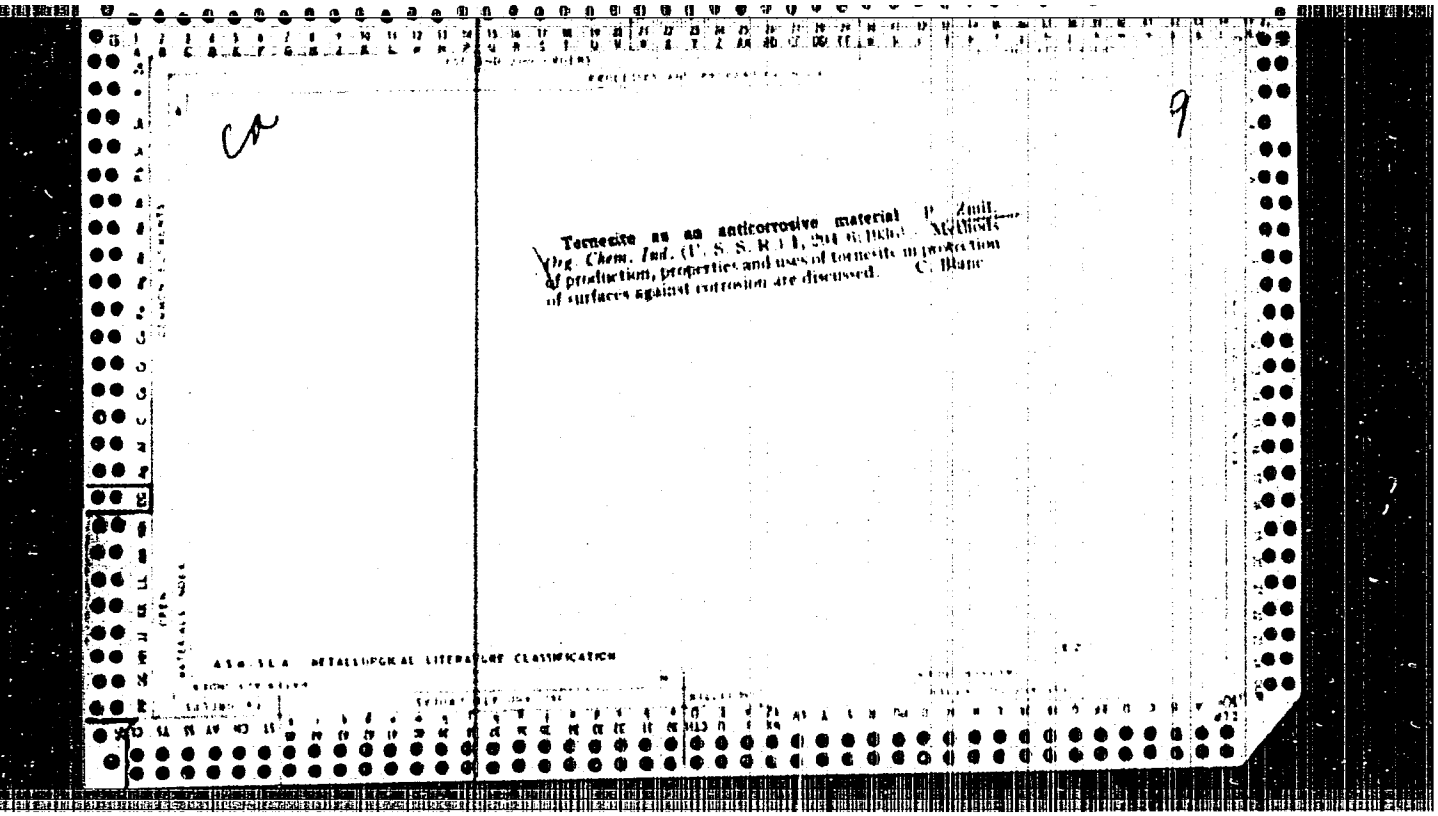
PROCESSES AND PROPERTIES INDEX

3rd AND 4TH ORDERS

30

Soviet tire manufacturing in the last twenty years (1917-1937). P. Zmll. *Caoutchouc and Rubber* (U. S. S. R.) 1937, No. 11, 37-42.—A review. A. Pestoff

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



Tarnesite as an anticorrosive material [illegible]
Prog. Chem. Ind. (U. S. S. R.) 1, [illegible]
Of production, properties and uses of tarnesite in protection
of surfaces against corrosion are discussed. C. Blanc

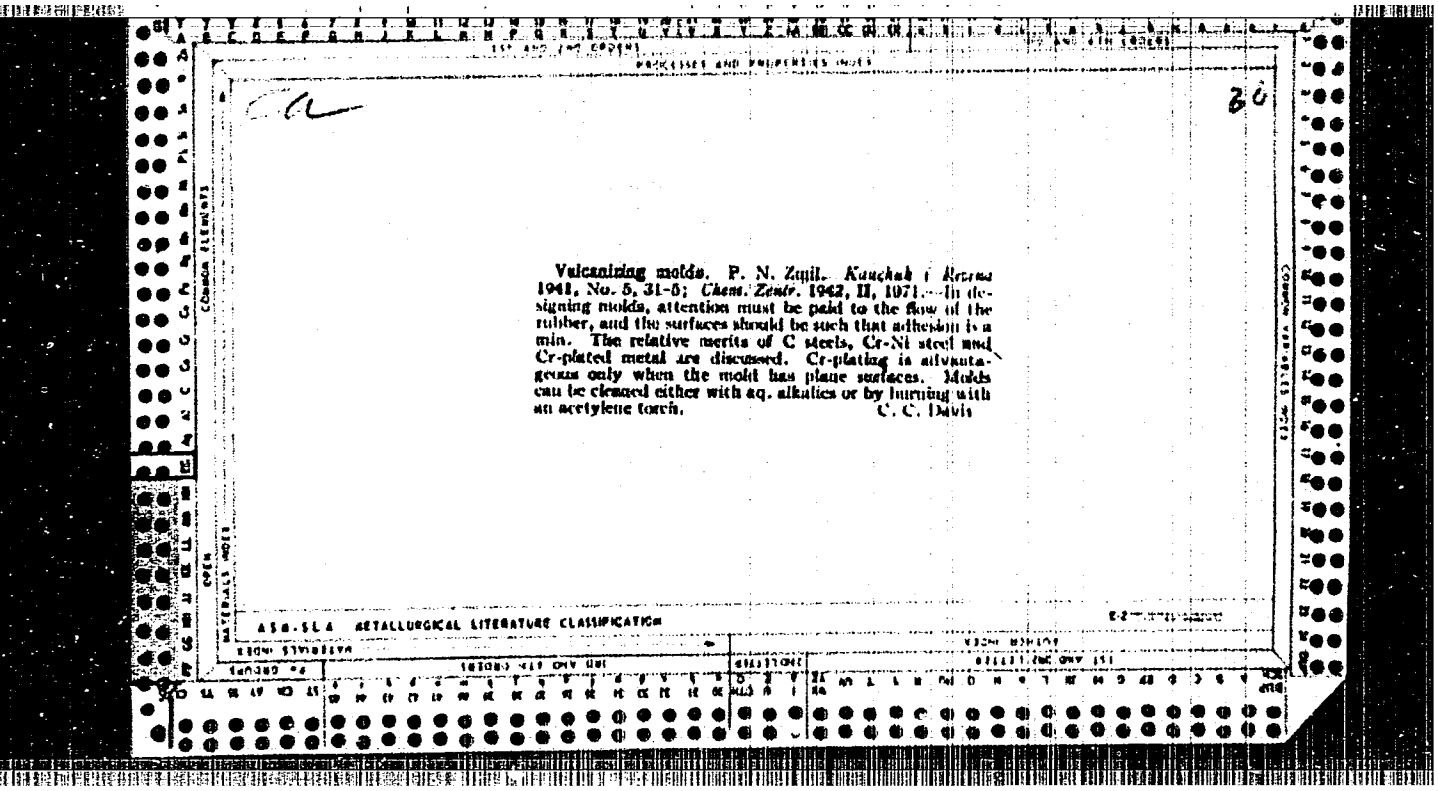
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS

PROCESSES AND PROPERTIES INDEX

Tornesite as an Anticorrosive Material. P. Zuili (*Promish. Organ. Khimii* (*Organic Chem. Ind.*), 1936, 1, 204-206; *C. Abs.*, 1936, 30, 5165).—[In Russian.] Methods of production, properties, and uses of tornesite in the protection of surfaces against corrosion are discussed.—N. B. V.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Vulcanizing molds. P. N. Zquil. *Kauchuk i Rezina* 1941, No. 5, 31-5; *Chem. Zentr.* 1942, II, 1071.—In designing molds, attention must be paid to the flow of the rubber, and the surfaces should be such that adhesion is a min. The relative merits of C steels, Cr-Ni steel and Cr-plated metal are discussed. Cr-plating is advantageous only when the mold has plane surfaces. Molds can be cleaned either with aq. alkalies or by burning with an acetylene torch. C. C. Davis

BULINSKI, Romuald; ZMINDA, Mieczyslawa

Investigations on the vatamin C content in radish. Ann. Univ., Lublin sect.D 16:433-439 '61.

1. Z Katedry i Zakladu Nauki o Srodkach Spozywczych i Higieny Zywienia Wydzialu Farmaceutycznego Akademii Medycznej w Lublinie Kierownik: prof. dr Alfred Trawinski.
(ASCORBIC ACID) (VEGETABLES)

1. ZMIRNOV, V., ZOTOV, G., Engs.

2. USSR (600)

4. Lumber

7. Expand the production of glued parts. Za ekon mat. No. 1 1953.

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

ZMITKO, J

Preparation and properties of kieselguhr used as support in gas chromatography. Jan Bradský and Jiří Zmitko (Výzkumný ústav synth. kaučuku, Gottwaldov, Czech.). *Chem. listy* 52, 2012-13(1958).—Mixing Borovany kieselguhr SK contg. SiO_2 61.5, R_2O_3 25.28, MgO 0.9, and moisture 3.91%, with distd. H_2O to a thick pulp, drying the pulp in the form of small lumps (diam. 3-6 cm.) at 100-10°, calcining 1 hr. at 500-50° and crushing the hard lumps to powder with particles 0.2-0.5 mm., removing dust by decantation with distd. H_2O, drying the material at 100-10° and calcining 1 hr. at 300° gives a fine light-brown, first powder with good wetting properties which tolerate up to 30% by wt. liquid phase in dioctyl adipate. L. J. Urban

4

ZMITKO, J.

CZ/8/52(82)/10-34/39

AUTHORS: Brodski, J. and Zmitko, J.

TITLE: Preparation and Properties of Kieselguhr Used as a Support in Gas Chromatography (Uprava a vlastnosti kremeliny jako nosiče pro plynovou chromatografii)

PERIODICAL: Chemické Listy, 1958, Vol 52(82), Nr 10, pp 2012-2043 (Czechoslovakia)

ABSTRACT: Because of import difficulties connected with such carriers as "Celite 545" and "Sterchamoll", the authors report a method for treating indigenous Kieselguhr to produce a suitable carrier. This involves the wetting and redrying, baking and powdering of the Kieselguhr to produce particles of a suitable and uniform size. There are 3 references, all of which are Czech.

ASSOCIATION: Výzkumný ústav synthetického kaučuku, Gottwaldov (Rubber Research Institute, Gottwaldov)

SUBMITTED: January 14, 1958

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B-13

COUNTRY : Czechoslovakia
CATEGORY : Physical Chemistry. Surface Phenomena. Adsorption. Chromatography. Ion Exchange.
ABS. JOUR. : RZKhim., No. 23 1959, No. 81577

AUTHOR : Brodsky, Jan; Zmitko, Jiri
INST. : Not given.
TITLE : Treatment and Properties of Diatomaceous Earth, used as a Carrier in Gas or Liquid Chromatography.
ORIG. PUB. : Chem. Listy, 1958, 52, #10, 2012-2013.

ABSTRACT : The preparation of treated diatomaceous earth (I) (Kisselghur SK) used in gas chromatography was described. Technical grade diatomaceous earth was wetted with distilled water, dried, calcined for 1 hour at 500-550°, ground and classified. The wetability with liquids commonly used as a stationary phase was tested. It was found that up to 25% of liquid may be incorporated into I. The above method may be used to obtain I with any desired particle size.

-- Karel Setinek

CARD: 1/1

ZMITKO, J.; BRODSKY, J.; BIZA, V.

"Automatic recording of analyses carried out by gas chromatography.

p. 414 (Chemicky Prumysl) Vol. 7, no. 8, Aug. 1957
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

ZMITKO, J.

CZECHOSLOVAKIA/Fitting Out of Laboratories. Instruments. Their Theory, Construction, and Use. F.

Abs Jour : Ref Zhur - Khimiya, No 9, 1958, 28585

Author : Zmitko, J., Brodsky, J., and Biza, V.
Inst :
Title : The Automatic Recording of the Results of Gas Chromatographic Analysis.

Orig Pub : Chem Prumysl, 7, No 8, 414-416 (1957) (in Czech with summaries in German, French, English, and Russian)

Abstract : A catharometer [TN: see RZhKhim, No 9, 1958, 28596, for description of apparatus; latter is essentially a thermal conductivity detector] is installed at the outlet of the column; the indications of the catharometer are recorded on a moving strip of photosensitized paper by means of a light-beam galvanometer. The apparatus is suitable for the analysis of mixtures containing air,

Card 1/2

ZHITKOVICH, A. M.

Material'naia chast' aviatsionnykh bombardirovochnykh ustanovok. Moskva, Gos. voen. izd-vo, 1939. 146 p., illus.
Title tr.: Aircraft bombing material equipment.

UG630.Z6

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

ZMITROVICH, L.A.

Three cases of bilateral tubal pregnancy. Kaz. med. zhur. no.4:79-80 Jl-Ag '61. (MIRA 15:2)

1. Otdeleniye operativnoy ginekologii (zav. - prof. M.V.Dubnov) Instituta akusherstva i ginekologii AMN SSSR.
(PREGNANCY, EXTRAUTERINE)

ZMITROVICH, Sergey Viktorovich; BEDRAK, T.V., red.; DMITIYEVA, Ye.U., tekhn.red.

[Utilizing food industry waste in livestock raising] Ispol'zovanie otkhodov pishchevoi promyshlennosti v zhivotnovodstve. Ordzhonikidze, Severo-Osetinskoe knizhnoe izd-vo, 1960. 37 p. (MIRA 14:2)
(Food industry--By-products) (Feeding)

ZMITROVICH, S. V., Cand of Agric Sci -- (diss) " Utilization of malt grains for fattening pigs."" Ordzhonikidze, 1957, 15 pp (North Osetian Agricultural Institute), 100 copies (KL, 32-57, 95)

ACCESSION NR: AP4013097 S/0126/64/017/001/0094/0099

AUTHOR: Ivanov, V. Ya.; Nechiporenko, Ye. P.; Zmiy, V. I.

TITLE: Study of reaction diffusion in the Mo - Si system

SOURCE: Fizika metallov i metalloved., v. 17, no. 1, 1964, 94-99

TOPIC TAGS: metal diffusion, reaction diffusion, silicon diffusion, molybdenum silicide, molybdenum silicon system, silicide phase formation, vacuum silication

ABSTRACT: Previously published papers of the first two authors and others on various aspects of the reaction diffusion of silicon-saturated molybdenum, tungsten, and tantalum in vacuum have led to the conclusion that in the Mo - Si system the predominant role is played by diffusion of the silicon through the silicide layer; that is, the phase formation reaction takes place primarily on the internal boundary of the layer. The present article confirms this conclusion. The kinetic aspects of the vacuum silication of the molybdenum were also studied. The authors found that the growth of diffusion layers of Mo_5Si_3 and $MoSi_2$, as a function of time, obeys a parabolic law. From the parabolic growth of the silicide layers the authors computed the silicon diffusion factors in Mo_5Si_3 and $MoSi_2$ at 1250C. Used in the diffusion study were flat molybdenum samples 4CH2CH1 millimeter in size. The

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ACCESSION NR: AP4013097

silicon employed in the tests was in the form of powder with a grain size of 5-7 microns (purity factor: 99.99%). The samples were located in a molybdenum bath and thoroughly sprinkled with the powder. The bath with the samples was inserted, through a precombustion chamber, into a furnace with a molybdenum heater set at the proper temperature. Orig. art. has: 6 figures, 2 formulas, and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 03Mar63 DATE ACQ: 26Feb64 ENCL: 00

SUBCODE: ML, PH NO REF SOV: 009 OTHER: 000

Card 2/2

S/0126/64/017/001/0142/0144

ACCESSION NR: AP4013101

AUTHOR: Ivanov, V. Ye.; Nechiporenko, Ye. P.; Zmiy, V. I.; Glushko, P. I.; Aleksandrov, O. M.; Dorokhov, V. I.

TITLE: High-temperature oxidation of molybdenum disilicide

SOURCE: Fizika metallov i metalloved., v. 17, no. 1, 1964, 142-144

TOPIC TAGS: molybdenum, silicon, molybdenum disilicide, molybdenum disilicide oxidation, molybdenum disilicide microhardness

ABSTRACT: Molybdenum disilicide is a metal with great promise for use in structures designed to withstand high temperatures. In the technical literature there are data on the oxidation of $MoSi_2$ achieved by various methods: hot pressing, sintering, etc. The authors of this short article conducted a study of the kinetics of $MoSi_2$ oxidation in a temperature interval of 1400-1700C using a high-temperature resistance furnace. The heater was a spiral 5mm in diameter made from a molybdenum rod. For oxidation, samples of molybdenum disilicide 25X10X0.15 mm in size were used; these samples were obtained by the vacuum method. The temperature was controlled by a thermocouple (Pt - Rh 7% center: Pt-Rh 20%) and an optical pyrometer, the latter placed directly on the heater. The temperature gradient between the heater

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ACCESSION NR: AP4013101

and the sample was not more than 30C. A metallographic analysis of the sample was carried out with an MIM-7 microscope, with microhardness tested on a PMT-3 instrument. Oxidation time was 10 hours. It was found that with increasing time and temperature the oxidizability of $MoSi_2$ increases, the rate of oxidation obeying a parabolic law. No transition from a parabolic law of oxidation to a logarithmic one was detected in the tests. X-ray analysis in the temperature range indicated (1400-1700C) revealed an amorphous oxide film on the surface of the oxidized samples. Preliminary analysis showed that this film, in addition to SiO_2, contains unknown components. These are, apparently, lower molybdic oxides, the vapor tension of which is lower than that of MoO_3. The microhardness of the molybdenum disilicide, which did not change during the oxidation process, was 1200 kg/mm^2. Orig. art. has: 3 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physicotechnical Institute, AN UkrSSR)

SUBMITTED: 03Mar63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: ML NO REF SOV: 005 OTHER: 003

Card 2/2

L 3434-66 EWT(m)/ETC/EPF(n)-2/EWG(m)/EWP(t)/EWP(b) [illegible] JD/JG/JG

ACCESSION NR: AT5024871 UR/0000/65/000/000/0045/0055

AUTHOR: Ivanov, V. Ye.; Nechiporenko, Ye. P.; Zmiy, V. I.; Krivoruchko, V. M.

TITLE: On the vacuum siliconizing of refractory metals

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Diffuzionnyye pokrytiya [illegible] Kiev, Naukova dumka, 1965, 45-55

TOPIC TAGS: metal diffusion plating, silicon, refractory metal, silicide, activation energy

ABSTRACT: The kinetics and mechanism of case-formation were investigated for Mo [illegible] 10 [illegible] being covered [illegible]. Metallographic and radiographic examination established that the formation of molybdenum silicides occurs in the following sequence

[illegible] $Mo_5Si_3 \rightarrow Si \rightarrow MoSi_2$

at the corresponding phase interfaces, i.e. the formation of $MoSi_2$ is due to the

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L 3474-66

ACCESSION NR AT5024871

lower silicides. Plotting of the curves of isothermal growth of the layers of [illegible] and [illegible] revealed that the increase in their thickness with time [illegible] identical specimens of Mo, [illegible] in saturated Si vapor. The resulting curves also proved to follow a parabolic [illegible] as a function of time, thus confirming that the diffusion [illegible] is the determining factor in the rate of siliconizing [illegible]

[illegible] decreases with increase in temperature of the specimen and increases with decrease in this temperature as compared with the temperature of the box, while the growth in case thickness follows a parabolic curve. Orig. art. has

ASSOCIATION: none

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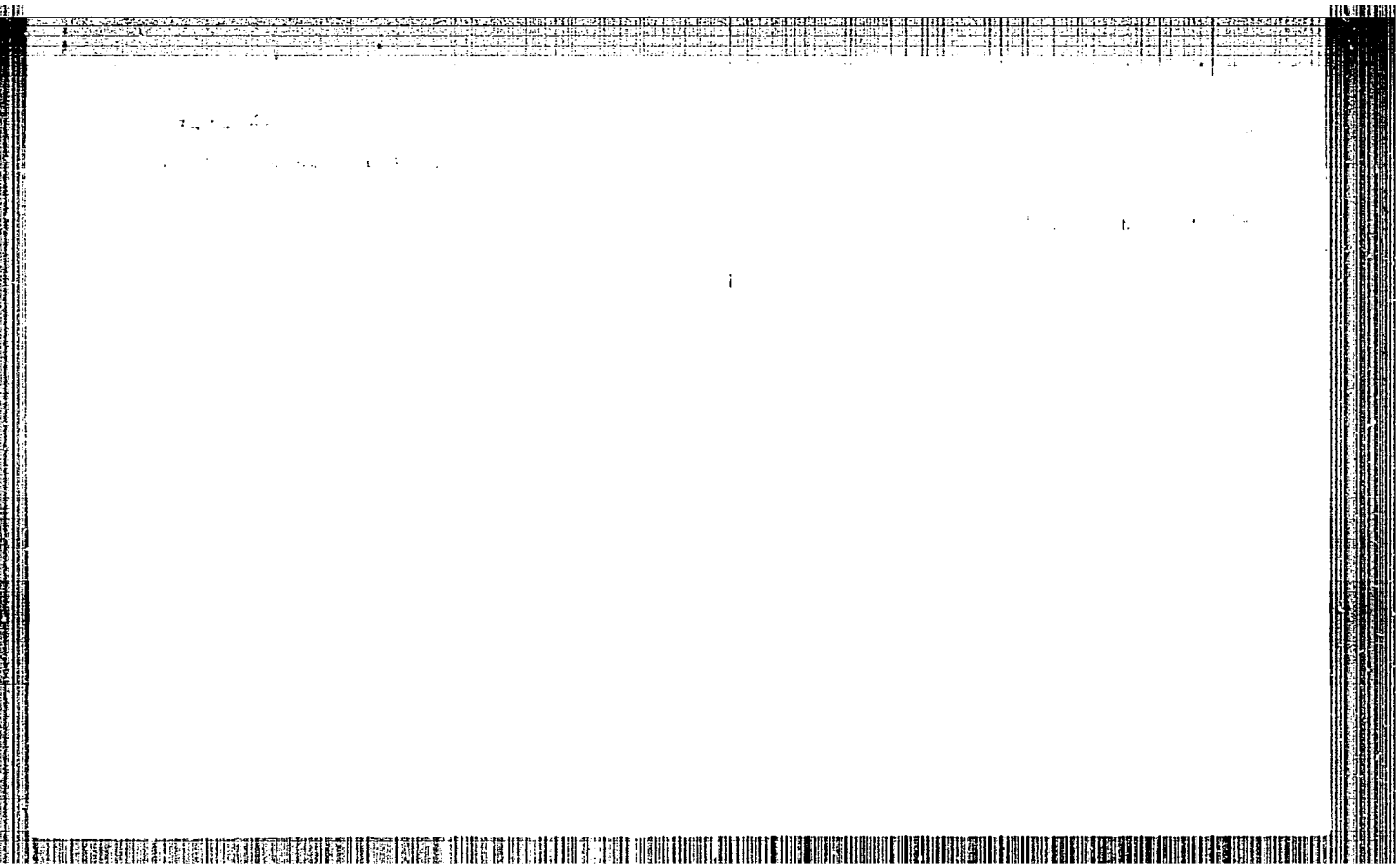

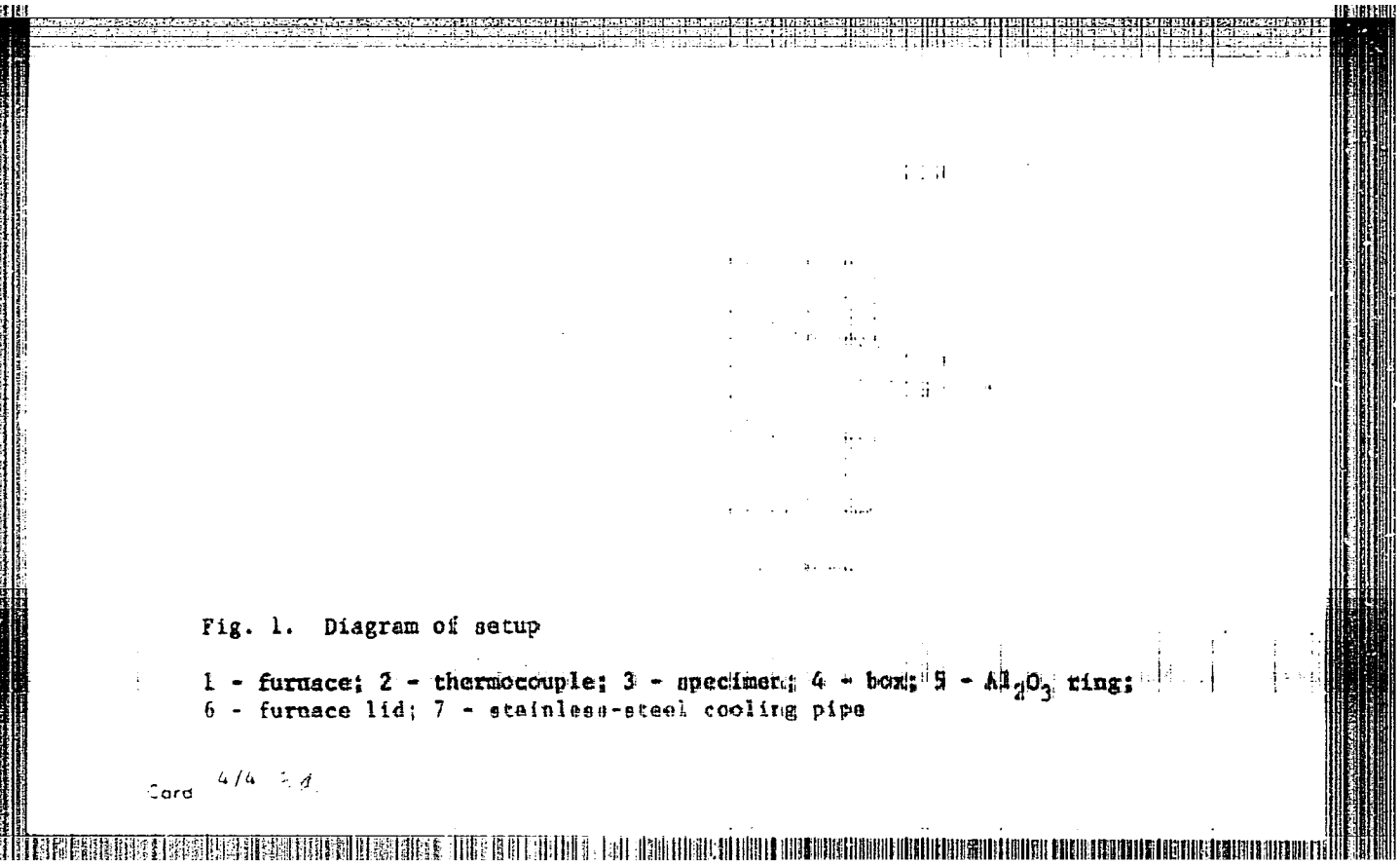

Fig. 1. Diagram of setup

1 - furnace; 2 - thermocouple; 3 - specimen; 4 - box; 5 - Al_2O_3 ring; 6 - furnace lid; 7 - stainless-steel cooling pipe

Card 4/4

IVANOV, V.Ye.; NECHIPORENKO, Ye.P.; ZMIY, V.I.

Studying the reactive diffusion in the system Mo - Si. Fiz. met. i metalloved. 17 no.1:94-99 Ja '64. (MIRA 17:2)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

IVANOV, V.Ye.; NECHIPORENKO, Ye.P.; ZMIY, V.I.; GLUSHKO, P.I.; ALEKSANDROV, O.M.; DOROKHOV, V.I.

High-temperature oxidation of molybdenum disilicide. Fiz. met. i metalloved. 17 no.1:142-144 Ja '64. (MIRA 17:2)

1. Fiziko-tekhnicheskiy institut AN UkrSSR.

NECHIPORENKO, Ye.P.; ZMIY, V.I.

New high-temperature heaters for electric furnaces not requiring protective atmospheres. Porosh. met. 1 no.5:92-94 S-O '61. (MIRA 15:6)

1. Fiziko-tekhnicheskiy institut AN SSSR.
(Electric furnaces)

IVANOV, V. Ye.; NECHIPORENKO, Ye. P.; OSIPOV, A. D.; ZMIY, V. I.

Effect of stresses on defects in silicide layers on molybdenum.
Fiz. met. i metalloved. 14 no.4:574-577 O '62.
(MIRA 15:10)

(Metallic films—Defects)
(Thermal stresses)

S/137/62/000/004/049/201
A006/A101

AUTHORS: Nechiporenko, Ye.P.; Zmiy, V.I.

TITLE: New high-temperature heaters for electric furnaces which do not require shielding atmosphere

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 45, abstract 4G300 ("Poroshk. metallurgiya", 1961, no. 5, 92 - 94, English summary)

TEXT: For high-temperature furnaces (1900°C), the use of Mo-rods is proposed. The rods are 6 mm in diameter, 230 mm long, with a protective $MoSi_2$ and refractory enamel coating. The rise of temperature in the furnace operating in air atmosphere can be brought about rapidly. The heaters were tested for 100 h at 1,750°C. A deficiency of the described heaters is the necessity of using high-power trnasformers due to the low electric resistivity of Mo.

R. Andriyevskiy

[Abstracter's note: Complete translation]

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L 12058-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG/WB
ACC NR: AP6001302 SOURCE CODE: UR/0363/65/001/008/1354/1359

[illegible] Izvestiya. Neorganicheskiye materialy, v. 1, no. 8, 1965, 1354-1359

TOPIC TAGS: molybdenum compound, silicide, oxidation kinetics, silicon dioxide

[illegible] Molybdenum [illegible]

UDC: 666.77'281

ACC NR: AP6001302

ZMIYENKO, Petr Yakovlevich; SPASIBIN, Ivan Ignat'yevich; ZAPIVAKHIN, A.I., red.; TRUKHINA, O.N., tekhn. red.

[Agriculture of the German Democratic Republic] Sel'skoe khoziaistvo Germanskoi Demokraticheskoi Respubliki. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1961. 165 p. (MIRA 14:7)
(Germany, East—Agriculture)

LEBEDEV, Mikhail Nikolayevich, kandidat tekhnicheskikh nauk; ASHEKO, Sof'ya Mikhailovna, kandidat tekhnicheskikh nauk; ZMIYENKO, Sergey Kirg-[illegible], kandidat tekhnicheskikh nauk; KRYUKOV, Georgiy Nikolayevich, kandidat tekhnicheskikh nauk; SIDOROV, Nikolay Nikolayevich, kandidat tekhnicheskikh nauk; PAUL', V.P., inzhener, redaktor; YUDZON, D.M., tekhnicheskiy redaktor

[Building] Stroitel'noe proizvodstvo. Pod red. M.N.Lebedeva. 2-e perer. izd. Moskva, Gos. transportnoe zheleznodor. izd-vo, 1954. 489 p. (MLRA 8:4)
(Building)

BALAKHONOV, V.P.; LOCHIN, N.A.; GUTERMAN, I.G.; ZAKHAROV, V.N.; ZMIYEV, A.B.; KARMANOV, V.D.; KEKUKH, A.M.; MARGOLIN, L.M.; TOPAL, I.D.

Brief news. Meteor.i gidrol no.2:61-64 F '63. (MIRA 16:2)
(Meteorology)

ZHIYEV, D.M., inzhener.

Hard-alloy cutting heads used in cutting bevel gear teeth. Mashinostroitel' no.7:29-31 Jl '57. (MLRA 10:8)
(Gearing, Bevel) (Gear-cutting machines)

ZHIYKV, D.M.; YKVSTRONKYKV, Yu.A.

[redacted] Investigating cutting forces in cutting globoid worms. Stan. i instr. 28 no.5:1-2 My '57. (MLRA 10:6)
(Gearing, Worm) (Metal cutting)

LABEDEV, N.N., ZMIYEV, D.M.

Dividing devices used in thread grinding and relieving machines having no differential attachments. Mashinostroitel' no.1:36-37 Ja '57. (MLRA 10:4)

1. Moskovskiy zavod "Stankokonstruktsiya".
(Screw-cutting machines--Attachments)

ZMIYEV, D.M., inzh.

Quality and strength of gears. Vest.mash. 41 no.7:8-11 Jl '61.
(MIRA 14:6)
(Gearing)

ZMIYEV, K.

An extraordinary accident at a training exercise. Voen. znan. 41 no.1:28 Ja '65. (MIRA 18:2)

GAVRILIV, V.I.; ZMIYEVA, R.G.

Simplified method for deriving clones from single cells of continuous cell strains. Vop. virus. 8 no.3:361-364 My-Je'63. (MIRA 16:10)

1. Kontrol'nyy institut meditsinskikh biologicheskikh preparatov imeni L.A. Tarasevicha.
(VIRUS RESEARCH)

GAVRILOV, V.I.; YERSHOV, F.I.; BLYUMKIN, V.N.; KVOKOV, I.I.; LEVINA, D.S.; ZMIYEVA, R.G.

Characteristics of the morphogenesis of the cultures of the line of transplantable CA-SV40-6A.1 cells. Vop. virus. 10 no.3:121-129 My-Je '65. (MIRA 18:9)

1. Institut virusologii imeni Ivanovskogo AMN SSSR, Moskva.

BLYUMKIN, V.N.; GAVRILOV, V.I.; VASIL'IEVA, N.N.; ZMIYEVA, R.G.

Cellular strains obtained from tumors caused by the SV40 virus. Biul.eksp.biol. i med. 59 no.5:85-88 '65. (MIRA 18:11)

1. Institut virusologii imeni D.I.Ivanovskogo (direktor - deystvitel'nyy chlen AMN SSSR prof. V.M.Zhdanov) AMN SSSR i Kontrol'nyy institut meditsinskikh biologicheskikh preparatov imeni L.A.Tarasevicha (direktor I.F.Mikhaylov), Moskva. Submitted February 6, 1964.

ZMIYEV, YE. I.

BRILEVSKIY, Ye.A., inzhener; ZMIYEV, Ye.I., inzhener.

Large block building at the Ignat'ev mine. Shakht.stroi. no.2:23-24 F '57. (MLRA 10:7)
(Stalino--Apartment houses) (Mine buildings)

GAVRILOV, V.I.; VASIL'YEVA, N.N.; DODONOVA, N.N.; ZHIYEVA, R.G.

Line of transplantable cells from a Syrian hamster tumor caused by the SV_{40} virus. Vop. virus 8 no.5:583-590 S-O'63
(MIRA 17:1)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR i Kontrol'nyy institut meditsinskikh biologicheskikh preparatov imeni L.A. Tarasevicha.

GAVRILOV, V.I.; DEMIDOVA, S.A.; ZMIYEVA, R.G.

Clonal virological analysis of the cell population of the KEM-1 strain. Vop. virus. 9 no.3:309-315 My-Je '64.
(MIRA 18:1)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR i Kontrol'-nyy institut meditsinskikh biologicheskikh preparatov imeni L.A. Tarasevicha, Moskva.

BLYUMKIN, V.N.; GAVRILOV, V.I.; SHCHEKOCHIKHINA, Ye.A. ZAITSEVA, R.G.

Cytological, cytochemical and karyological characteristics of the RES strain and its sensitivity to the Coxsackie virus V6. Vop. virus 9 no.4:474-482 Jl-Ag '64.

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR i Kontrol'nyy institut meditsinskikh biologicheskikh preparatov imeni L.A. Tarasevicha, Moskva.

ZMIYEVA, Ye. S.

AID P - 1429

Subject : USSR/Meteorology and Hydrology

Card 1/2 Pub. 71-a - 3/23

Authors : Kalinin, G. P., Dr. of Geogr. Sciences, Prof. and Zmiyeva, E. S., Kandidat of Tech. Sci.

Title : On the regulation of the flow of melted water from farm lands

Periodical : Met. i gidro., 1, 16-22, Ja - F 1955

Abstract : A formula is suggested which would correlate the total amount of the surface discharge of melted water with the depth of the thawed layer of the soil, the deficiency in the absorption by the soil, the area of the thawed surface over which the water flows, its unthawed and snow-covered area, and the total area. For practical computation of the depth of thawed soil, a formula is given in connection with air mean daily positive temperature (centigrade). These formulae show how to control the

USSR/Physics of the Hydrosphere - General Problems, N-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36246

Author: Kalinin, G. P., Zmiyeva, Ye. S.

Institution: None

Title: On the Use of Aerial Photography for the Study of the Process of the Descent of the Snow Cover

Original Periodical: Tr. Ts[illegible]ntr. in-ta prognozov, 1956, No 44, 107-119

Abstract: Description of the aerial photographs, taken by the Central Institute of Forecasting in the spring of 1954. Possible errors in the determination of the mean arithmetic value of the different number of observations of the amount of snow in a given locality are discussed.

Card 1/1

ZMIYEVA, Ye.S.

Prognoses of high rain floods of the river Volga in line with the Uglich Hydroelectric Power Station. Trudy TSIP no.50:122-136 '57.
(Volga River--Floods) (MLRA 10:8)

ZMIYEVA, Ye.S.; PODVISHENSKAYA, N.Ya.

Distribution and dynamics of the snow blanket descent in river basins. Trudy TSIP no.54:43-61 '57. (MLRA 10:8)
(Snow) (Rivers)

ZMIYEVA, Ye.S.

Use of the synoptic-climatological method of the Main Geophysical Observatory for the forecasts of water conditions in the rivers. Meteor.i gidrol. no.8:46-52 Ag '63. (MIRA 16:10)

1. TSentral'nyy institut prognozov.

ZMIYEVA, Ye.S.; MAKAROVA, T.T.

Results of soil moisture measurement with the ohmic soil moisture meter. Trudy TSIP no.99:33-40 '61. (MIRA 14:5)
(Soil moisture--Measurement)

ZMIYEVA, Ye.S.

Determining soil moisture characteristics of drainage basins from hydrometeorological data. Trudy TSIP no.99:41-52 '61. (MIRA 14:5)
(Soil moisture)

ZHIVEVA, Ye.S.

Precalculating the water discharge during the flood descent under conditions of considerable inflow of melted-snow and rain water. Trudy TSIP no.65:71-83 '58. (MIRA 11:6)
(Hydrology)

ZHIYEVA, Ye.S.

Utilizing water supply draining curves of river systems for forecasting flood recessions. Trudy TSIP no.59:44-72 '57. (MIRA 11:4)
(Floods)

ZMIYEVA, Yelena Stepanovna; SHASTIN, A.P., otv. red.; MINENKO, V.M., red.

[Forecasts of the inflow of water into the Kuybyshev and Volgograd Reservoirs] Prognozy pritoka vody k Kuibyshevskomu i Volgogradskomu vodokhranilishcham. Moskva, Gidrometeoizdat, 1964. 255 p. (MIRA 17:12)