"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

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#324

RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

[illegible], D.A.; VARIUKOV, A.V.; MAKOVSKIY, A.Yu.; SHAPIRO, Yu.L.

Investigating shaft furnace smelting of oxidized nickel ores by freezing the furnace. Izv. vys. ucheb. zav.; tsvet. met. no.2: 55-70 '58. (MIRA 11:8)

1. Moskovskiy institut tsvetnykh metallov i zolota. Kafedra metallurgii tyazhelykh tsvetnykh metallov.

(Nickel--Metallurgy)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

S/137/62/000/005/040/150
A006/A101

AUTHORS: Vanyukov, A. V., Utkin, N. I., Malevskiy, A. Yu., Popkov, A. N.

TITLE: Behavior of chromium in processing oxidized nickel ores

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 5, 1962, 22, abstract 50139 ("Sb. nauchn. tr. In-t tsvetn. met. im. M. I. Kalinina", 1960, v. 33, 51 - 66)

TEXT: The authors studied behavior of Cr during melting of oxidized Ni ores and its effect upon the properties of slags. There are 24 references.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 1/1

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, A.Yu.

Effect behavior in the process of roasting sulfide gold-bearing concentrates. TSvet. met. 33 no.10:38-44 O '60. (MIRA 13:10)
(Nickel—Metallurgy) (Chromite)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

VIKTOROVICH, G.S.; LISOVSKIY, D.I.; MALEVSKIY, A.Yu.

Studying the interaction of nickel oxide with iron in the solid phase. Izv. vys. ucheb. zav.; tsvet. met. 5 no.4:86-94 '62. (MIRA 16:5)

1. Moskovskiy institut stali, kafedra metallurgii i fizicheskoy khimii tsvetnykh metallov.
(Nickel oxide) (Iron oxide) (Phase rule and equilibrium)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

LISOVSKIY, D.I.; MALEVSKIY, A.Y[illegible]; [illegible]OVICH, G.S.

Interaction of the components of the system Fe - Ni - O in solid phases. Izv. vys. ucheb. zav.; tsvet. met. 5 no.6: 50-56 '62. (MIRA 16:6)

1. Moskovskiy institut stali i splavov, kafedra metallurgii i kompleksnogo ispol'zovaniya polimetallicheskikh rud.
(System(Chemistry))
(Phase rule and equilibrium)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SMIRNOV, A.S.; MALEVSKIY, A.Yu.; VANYUKOV, A.V.

Converting nickel-bearing copper mattes. Tsvet. met. 35 no.1: 31-37 Ja '62. (MIRA 16:7)
(Copper--Metallurgy) (Nickel--Metallurgy)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

S/149/63/000/001/002/008
I006/A101

AUTHORS: Listovskiy, D. I., Viktorovich, G. S., Malevskiy, A. Yu.

TITLE: On the mechanism of interaction between the components of the Fe-Ni-O system in the solid phases

PERIODICAL: Izvestiya vyashikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, no. 1, 1963, 58 - 66

TEXT: In previous investigations the structure of the zone, formed between NiO and its reduction products and the part of oxygen diffusion was not revealed. The authors attempt to determine the basic features in the interaction of components in the Fe-Ni-O system. Cylindrical specimens, 1.8 mm in diameter, were produced from pure iron and iron-nickel alloys. They were pressed into chemically pure nickel oxide. The briquets obtained were quenched in a nitrogen filled closed space, at 1,000°C for 5 h. The chemical composition of the cylinders and the extension of the reaction zones is given in a table. The process of NiO reduction by iron was studied. The formation of nickel atoms takes place as a result of transition of Fe^{2+} ions into Fe^{3+}. As a result of

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

Fe^{3+} and Ni^{2+} diffusion in opposite directions, a nickel ferrite layer is formed on the interface with NiO. Fe^{2+} and electron diffusion to a spinel layer causes the reduction of Ni-ions. These processes take place simultaneously. As a result of reaction diffusion of metal ions and electrons in contact with wuestite, spinel must be formed which does not contain nickel (magnetite). In contact with NiO spinel may be present which does not contain Fe^{2+}, i.e. nickel ferrite. In such a manner Ni^{2+} reduction by Fe^{2+} ions proceeds during the contrary diffusion of cations of both metals in the spinel layer, indicating the presence in the latter of metal phase inclusions. The thickness of the spinel layer is determined by the rate of iron transfer to its internal surface. The driving force in oxygen diffusion is the gradient of its chemical potential, which is supported over the layer of interaction products in the direction from NiO to the metallic cylinder. The oxygen can diffuse in electroneutral state over the interstices of the oxide phase lattice or pores, and also consecutively from one sublattice to another one in the form of a negatively charged ion. The oxygen diffuses also through the metal phase. The penetration of oxygen into the depth of the alloy, accompanied by the formation of iron oxides along the grain boundaries, and inside the grains, excludes the possibility of Ni diffusion, but

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accelerates iron transfer. The general rate of oxidation is increased in comparison to the rate that could be expected when assuming that the process must be exclusively limited by mutual iron and nickel diffusion in the metallic phase. Investigating the effect of the composition of the alloy upon the composition of oxide phases and the structure of zones, it was established that the composition of the initial metal determines that of the oxides formed during their contact with the metal, and the structure of the internal reaction zone. If iron prevails in the initial alloy, wuestite formed in the internal reaction zone breaks the metal phase into finest metal particles. At a higher Ni content the wuestite particles in the alloy crystals remain dissociated, but each grain is enveloped by an oxide film. Processes in the internal reaction zone are of a more general nature than those in the external reaction zone, where the structure of individual layer depends little upon the composition of the initial alloy. The mechanism of the former processes does not depend upon the form of introducing the oxygen, and is also correct for oxidation of pure iron and selective iron oxidation [illegible] alloys by a gaseous medium. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and Alloys) Kafedra metallurgii radioaktivnykh metallov i kompleksnogo ispol'zovaniya polimetallicheskikh rud (Department of Metallurgy of Radioactive Metals and the Complex Utilization of Polymetallic Ores)

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On the mechanism of interaction...

S/149/63/000/001/002/008
A006/A101

SUBMITTED: October 1, 1962

Table.

Specimen	Composition of cylinders, %		Extension of reaction zones, μ			
	Fe	Ni	internal	external wuestite layer	external spinel layer	total
a	100.0	-	100	320	10	430
b	78.9	21.1	170	190	15	375
c	60.9	39.1	180	110	20	310
d	44.4	55.6	140	60	25	225
e	22.9	77.1	25	-	40	65

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

ACCESSION NR: AT4042139 S/2677/63/000/018/0030/0043

AUTHOR: Malevskiy, A. Yu., Rikhter, T. L., Veres, G. I.

TITLE: Lead-bismuth sulfo salts and isomorphic substitution in them of selenium for sulfur

SOURCE: AN SSSR. Institut mineralogii, geokhimii i kristallokhimii redkikh elementov. Trudy*, no. 18, 1963. Eksperimental' no-metodicheskiye issledovaniya v oblasti mineralogii i geokhimii redkikh elementov (Experimental-methodical studies in the field of mineralogy and geochemistry of rare elements), 30-43

TOPIC TAGS: mineralogy, geochemistry, solid solution, lead sulfide, bismuth sulfide, lead selenide, bismuth selenide, sulfur selenium isomorphism, lead bismuth salt, isomorphic substitution, crystallography, debyegram

ABSTRACT: In a study of the isomorphism of selenium and sulfur in lead-bismuth sulfo salts and the individual characteristics of the salts, a diagram for the polythermal cross sections of the PbS - Bi_2S_3 - Bi_2Se_3 - PbSe system was plotted for melting points up to 600C. The test samples were prepared from the individual elements in quartz vacuum ampules at 900-1200C. The molten material was then cooled rapidly to a temperature 5-10 C below the peritectic, held for 10-12 hrs. and annealed for 50-360 hrs. at 600-800C.

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ACCESSION NR: AT4042139

The debyegrams of the samples were prepared in a NaCl-calibrated 57.3 mm chamber. The crystallographic characteristics and x-ray examination results of the obtained $Pb_4Bi_2(S_xSe_{1-x})_7$, $Pb_{3-y}Bi_2(S_xSe_{1-x})_{6-y}$, and $PbBi_2(S_xSe_{1-x})_4$ salts are discussed in great detail. Etching with HNO_3 was found to facilitate the revealing of phases. Different degrees of isomorphism of sulfur and selenium were established in different individual compositions. Most of the compositions obtained were found to be combinations of individual compounds (see the Enclosure). Orig. art. has: 12 figures and 1 table.

ASSOCIATION: Institut mineralogii, geokhimii i kristallokhimii redkikh elementov AN SSSR (Institute of the Mineralogy, Geochemistry and Crystallochemistry of the Rare Elements, AN SSSR)

SUBMITTED: 00 ENCL: 01

SUB CODE: ES,IC NO REF SOV: 008 OTHER: 006

2/3
Card

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ACCESSION NR: AT4042139 ENCLOSURE: 01

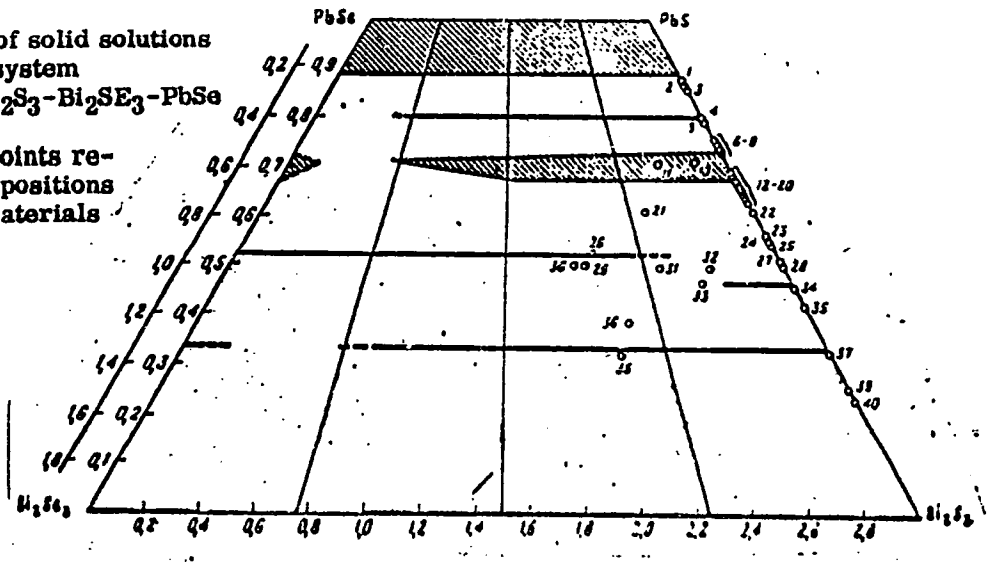

Fig. 1 - Areas of solid solutions in the system $PbS-Bi_2S_3-Bi_2SE_3-PbSe$

(the numbered points represent the compositions of the natural materials studied)

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POPOV, S.A., kand.tekhn.nauk; MALEVSKIY, N.P., inzh.

Instrument for measuring macro and microroughness of working surfaces of grinding wheels. Izv. vys. ucheb. zav.; mashinostr. no.1:122-127 '58. (MIRA 11:6)

1.Moskovskoye vysshoye tekhnicheskoye uchilishe im. Baumana.
(Grinding wheels--Testing)
(Electronic instruments)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

POPOV, S.A., kand.tekhn.nauk; MALEVSKIY, N.P., inzh.

Relationship between the macrogeometry of working surfaces and unbalance of grinding wheels. Nauch.dokl.vys.shkoly;mash.i prib.no.1:147-151 '58. (MIRA 12:1)

1. Predstavleno kafedroy "Teoriya mekhanizmov i mashin" Moskovskogo vysshego tekhnicheskogo uchilishcha imeni N.E. Baumana.
(Grinding and polishing)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

KATSEV, P.G.; YEPIFANOV, N.P.; DENISOV, P.S., inzh., retsenzent; MALEVSKIY, N.P., inzh., red.; GARANKINA, S.P., red.izd-va; TIKHANOV, A.Ya., tekhn. red.

[Manual for broaching-machine operators] Spravochnik protiazhnika. Moskva, Mashgiz, 1963. 254 p. (MIRA 16:7)
(Broaching machines)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 01086-67 EWP(e)/EWT(m)/EWP(v)/EWP(j)/T/EWP(t)/ETI IJP(c) JD/WW/RM/WH

ACC NR: AP6021248 SOURCE CODE: UR/0121/66/000/003/0007/0011

AUTHOR: Popov, S. A.; Storchak, G. A.; Malevskiy, N. P.

ORG: None

TITLE: Range of application for diamond wheels made with an organic binder

SOURCE: Stanki i instrument, no. 3, 1966, 7-11

TOPIC TAGS: diamond, grinding, abrasive material, synthetic material, CUTTING TOOL

ABSTRACT: Data are given on the use of diamond wheels made with bakelite binders with respect to selection of the most efficient conditions for grinding various types of hard-alloy cutting tools. The experimental work was done on 3194 and 3A64AM grinders using AChK125×10×3 wheels using M1 and B1 binders with grain sizes of A8 and A5 respectively. Analysis of experimental data on the effect which grain size has on cutting conditions and wheel wear shows that diamond wheels with moderate granularity (AS6-AS12) have the highest cutting capacity. Coarser wheels (AS16-AS25) have poorer cutting properties while fine-grained wheels show the worst cutting performance. It was found that an increase in diamond concentration reduces cutting force requirements. Diamond wheels with a bakelite binder show minimum wear with a 100-150% diamond concentration for grain sizes of AS12-AS8. Test data show that Soviet diamond wheels based on organic binders are as durable and productive as the best models made by some firms in the United States, Belgium, Holland and Japan. Orig. art. has: 7 figures, 2 tables.

SUB CODE: 13, 11/ SUBM DATE: none

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UDC: 621.9.025.7.004.14

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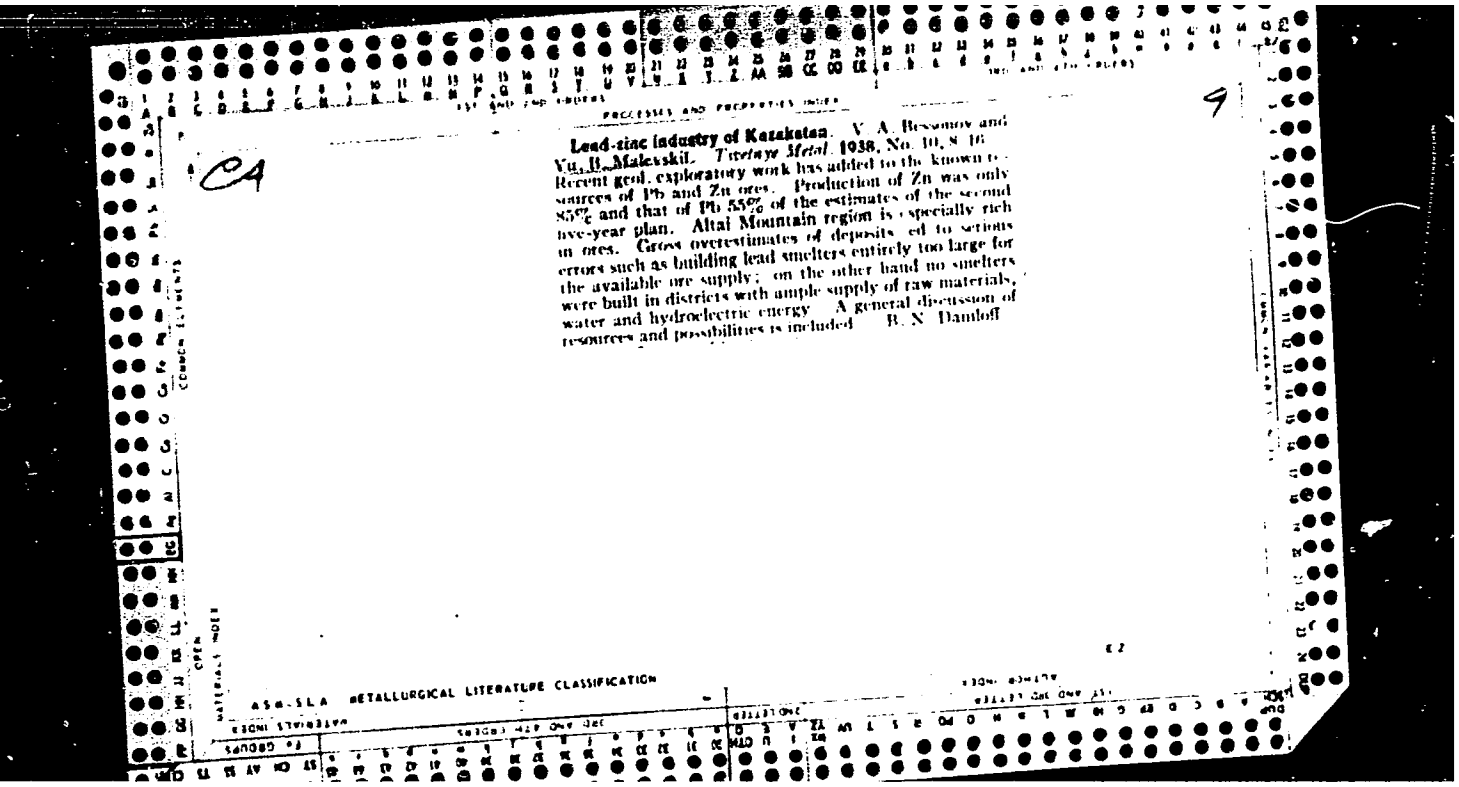

CA

9

Lead-zinc industry of Kazakstan. V. A. Bessonov and Yu. B. Malevskii. *Tsvetnye Metal.* 1938, No. 10, 8-16. Recent geol. exploratory work has added to the known re- sources of Pb and Zn ores. Production of Zn was only 85% and that of Pb 55% of the estimates of the second five-year plan. Altai Mountain region is especially rich in ores. Gross overestimates of deposits led to serious errors such as building lead smelters entirely too large for the available ore supply; on the other hand no smelters were built in districts with ample supply of raw materials, water and hydroelectric energy. A general discussion of resources and possibilities is included. B. N. Danilov

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, V. N.

"The Cooper and Lead-Zinc Industry In the Third Five-Year Plan", Tsvet. Met. 14, No 3, March 1939.

Report U-1506, 4 Oct. 1951

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu. B.

Properties of dissociation of supercooled austenite of steel type 30KhGS in the thermal cycle of the weld zone. A. M. Makara and Yu. B. Malevskii. Avtomat. Svarka 7, No. 6, 3-18(1954).—Results of magnetometric, x-ray, and metallographic studies of the dissocn. of supercooled austenite in steel type 30KhGS under conditions of the thermal cycle of welding are presented. Temps. of austenitization has a definite effect on the kinetics of the dissocn. of austenite during cooling. Increasing the duration of austenitization at significantly lower temps. ([illegible]°) causes a shift of the transition to lower temps. Products of martensitic transformation are formed during the thermal welding cycle as well as a significant amt. of residual austenite. The nature of its dissocn. during welding depends chiefly upon the heterogeneity of the austenite.

I. R. Behrman

Electrowelding in. Ye. O. Paton, AS USSR

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B.

Electron microscope weld structure investigation by the colloid replica method. Avtom.svar. 8 no.4:69-72 Jl-Ag'55. (MIRA 8:11)

1. Ordena Trudovogi Krasnogo Znameni Institut elektrosvarki imeni Ye.O.Patona Akademii nauk USSR
(Electron microscope) (Metallography)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

Malevskiy, Yu. B.

KASATKIN, B.S.; KAKHOVSKIY, N.I.; MALEVSKIY, Yu.B.

Investigating the structure of ferrite in Bessemer steel welds by means of an electron microscope. Avtom. svar. 8 no.6:96-98 N-D '55. (MLRA 9:2)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O.Patona AN USSR.
(Ferrite--Metallography) (Electron microscope)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

AID P - 4506

Subject : USSR/Engineering

Card 1/2 Pub. 11 - 4/12

Authors : Malevskiy, Yu. B. and G. F. Darovskiy

Title : Reproduction of Titanium Replica for Electron-microscopic Examination of Welded Seams.

Periodical : Avtom. svar., 2, 22-26, Mr/Ap 1956

Abstract : The authors present their method of obtaining titanium replica with the second phase particles based on the electrochemical division of phases. Obtaining of a clear, higher quality replica which does not require further treatment or washing was found possible. In contradiction to the opinion of Shigeto Uamaguchi and Tadavuki Nakavama, expressed in "Titanium Replica for Electron Microscopy" (Journal of Applied Physics, v. 24, 5, 1953, 658) the authors state that such a replica-film (of 99.6% clearness) can be used for electron-microscopy because a good titanium film can be detached from the surface of welded seams by means of gelatine. The UEM-100 electron-microscop of

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

AID P - 4506

Avtom. svar., 2, 22-26, Mr/Ap 1956

Card 2/2 Pub. 11 - 4/12

domestic make was used. Six electron-microphotographs and one sketch. 6 Russian references (1944-1955) and 1 American reference.

Institution : Institute of Electrowelding im. Paton

Submitted : D 16, 1955

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu. B

24-8-11/34

AUTHORS: Malevskiy, Yu. B. and Medovar, B. I. (Kiyev).

TITLE: On the germination and the growth of the σ-phase in pure austenitic weld seams of 25 (Cr)-20 (Ni) type steel. (O zarozhdenii i roste σ-fazy v chisto austenitnykh svarnykh shvakh stali tipa 25-20).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.84-88 (U.S.S.R.)

ABSTRACT: Some authors, including one of the authors of this paper (1-3), express the view that the σ-phase grows directly from the austenite. Other authors, for instance, Pivnik, Ye. M. (4) consider that the appearance of the σ-phase precedes γ to α transformation, whilst Lismer, R.E. et alii (5) express the view that the σ-phase evolves from carbides. None of these views has been confirmed by adequate data. Published work relating to the σ-phase do not contain information on observations of the transformations taking place in the same part of the metal and for that purpose the authors developed a method of metallographic and electron microscope investigation of a definite section of the metal. The specimens were first polished and etched for microscopic investigation and then heated in a furnace to

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the desired temperature in a sealed capsule inside an argon atmosphere. It was established by electron microscopic and X-ray investigation that the dark sections on micro-photographs of austenitic weld seams, which represent the dendritic structure of the cast metal, consist of agglomeration of secondary carbides of the type $Me_{23}C_6$; the concentration of secondary carbides in an austenitic weld is shown in Fig.4, at magnifications of 12 500 and 9 500 respectively. The process of growth of the σ-phase in purely austenitic 25-20 type weld seams have a periodic character, the period of growth of the σ-phase alternates with periods of its dissolution. With increasing heating duration the periodicity weakens and a continuous growth is observed of the σ-phase sections which stops only after very long duration of exposure to the effect of high temperatures. Fig.3 shows micro-photographs of the weld seam obtained after annealing the specimen at 800 C after 25, 50, 100 and 500 hours. Local plastic deformation of the austenite brings about intensive γ to σ transformation. There are 4 figures, 1 table and 10 references, 7 of which are Slavic.

SUBMITTED: March 18, 1957.

AVAILABLE: Library of Congress

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B.; DAROVSKIY, G.F.

Method of obtaining a collodion replica from a fixed microsection for electron microscope investigation. Avtom.svar. 10 no.4:48-51 Jl-Ag '57. (MIRA 10:10)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O.Patona Akademii nauk USSR.
(Metallography) (Electron microscopy)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B.; MEDOVAR, B.I.

Secondary carbides and formation of the δ-phase in welded joints in stable 25-20 austenite steel. Avtom. svar. 10 no.5:86-94 S-O '57. (MIRA 10:12)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Steel--Welding) (Metallography)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY Y

MEDOVAR, B.I.; MALEVSKIY, Yu.B.

Effect of grain size on the transformation in 25-20 austenitic steel and welded joints in the steel. Avtom.svar. 10 no.6:35-41 N-D '57. (MIRA 11:1)

1.Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O.Patona AN USSR.
(Steel--Metallography)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu. B

AUTHOR: MALEVSKIY, Yu.B., DAROVSKIY, G.F. 32-6-20/54

TITLE: Method of Investigating a Problem in the Electron Microscope. (Metod issledovaniya zadannogo uchastka v elektronnom mikroskope, Russian)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 702-704 (U.S.S.R.)

ABSTRACT: It is possible, with the help of an electron microscope, to solve the problems connected with the investigation of the structural properties of a metallographical ground surface. In connection with some problems, as e.g. the investigation of processes of the mechanism of deformation, crystallization, and decay, the applicability of the electron microscope is limited.
The method investigated here deals with granular changes in the course of the aging process and the effect of reagents on structural composition. The method is carried out in the laboratory by means of a colloidal cast. On the ground section a certain part is selected for the purpose of microscopic investigation. Next, several soldered places are examined and microhardness is determined. The round surface is rubbed with cottonwool saturated with methylated spirit and then dried with gaseous nitrogen. A drop of 0,5 - 1% colloid amyl acetate is then dropped on to the surface.

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

32-6-20/54

Method of Investigating a Problem in the Electron Microscope.

The part to be investigated is then microphotographed and the granulation at the soldered parts is investigated at a temperature of 800°.

ASSOCIATION: Institute for Electric Soldering at the Academy of Science of the U.S.S.R.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SOV/137-58-9-19197 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 154 (USSR)

AUTHOR: Malevskiy, Yu.B.

TITLE: Secondary Carbides and Sigma Phase in Austenitic Weld Seams (Vtorichnyye karbidy i sigma-faza v austenitnykh svarnykh shvakh)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the In-t stroit. mekhan. AN UkrSSR (Institute of Structural Mechanics, Academy of Sciences, Ukrainian SSR), Kiyev, 1958

ASSOCIATION: In-t stroit. mekhan. AN UkrSSR (Institute of Structural Mechanics, Academy of Sciences, Ukrainian SSR) Kiyev

1. Seam welds--Phase studies

Card 1/1

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY Yu B.

125-58-4-2/15

AUTHORS: Podgayetskiy, V.V., and Langer, N.A , Candidates of Technical Sciences, Malevskiy, Yu.B., and Manzheley, G.P., Engineers

TITLE: A Study of Non-Metallic Inclusions in Seams Welded Under Flux (Issledovaniye nemetallicheskikh vklyucheniy v shvakh vypolnennykh pod flyusom)

PERIODICAL: Avtomaticheskaya Svarka, 1958, Nr 4, pp 10-23 (USSR)

ABSTRACT: A brief review of different opinions on the subject is given [Ref. 1-12] to demonstrate that the influence of flux on non-metallic inclusions has been barely investigated, although the flux composition considerably affects the structure of weld metal and its mechanical properties. The experiment described in the article was carried out with the use of fluxes "AN-5", "AN-348-A", "AN-20", "AN-30" and an experimental low-silicon manganese flux, and standard electrode wire of grades "Sv-08", "Sv-08G", and "Sv-10GS". The compositions of the fluxes, wire, and the obtained weld metal are given (Tables 1-5). It was concluded that the content of non-metallic inclusions in weld metal, and the

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A Study of Non-Metallic Inclusions in Seams Welded Under Flux

general oxygen content therein, increase with increasing SiO_2 content in the flux. The composition of non-metallic inclusions is determined by the flux composition and is comparatively little - affected by the composition of the electrode wire. Non-metallic inclusions originate mainly from the flux and change their composition within the weld puddle. In the conditions of intensive mixing of metal and slag in the puddle, the intensiveness of the extraction of non-metallic inclusions apparently depends less on the difference between the density of the inclusions and the metal than on the inter-phase tension on the border between them. The flux composition seems to affect the initial weld-metal structure by affecting the composition and the thickness of intercrystalline layers, and not by affecting the distribution of the non-metallic inclusions.
There are 8 figures, and 21 references, 18 of which are Soviet, 2 German, and 1 English.

ASSOCIATION: Institut elektrosvarki imeni Ye.O. Patona AN UkrSSR (Electric Welding Institute imeni Ye.O. Paton of the AS UkrSSR)
SUBMITTED: January 17, 1957
AVAILABLE: Library of Congress
Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

AUTHOR: Malevskiy, Yu.B.

32-1-47/55

TITLE: A Reagent for the Electrolytic Etching of Chrome-Nickel-Austenite Alloys (Reaktiv dlya elektroliticheskogo travleniya khromonikelevykh austenitnykh splavov).

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 1, pp. 111-112 (USSR)

ABSTRACT: In this paper the application of a new reagent as well as a method of electrolytic etching is recommended, which is based on the principle of anodic phase dissolution. As a new electrolyte a solution of potassium chloride (300 g KCl per 1 l of water) is suggested. During the process of etching in this electrolyte, the austenite dissolves, whereas the carbide and the intermetallic phases remain undissolved. The radiostructural analysis of the precipitate shows alone the carbide lines $Me_{23}C_6$ and the σ-phases. A distinct and uniform etching is obtained at a current density of 0.013-0.020 A/cm^2 at a voltage of 1,8-2,1 V, and an etching period of 50 seconds. Upon the ground (polished) surface of a sample etched in the vacuum in the manner described metallic titanium powder is sprayed, after which the film which forms is

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A Reagent for the Electrolytic Etching of Chrome-Nickel-Austenite Alloys

32-1-47/55

removed. The reagent recommended for electrolytic etching may also be used for the purpose of investigating the structure of austenite-chrome-nickel steels (18-8 and 25-20) in the course of the usual metallographic analysis. By taking advantage of the various effects exercised by the reagent upon each of the phases the carbides or σ-phases can be determined. There are 3 figures, and 2 Slavic references.

ASSOCIATION: Institute for Electric Welding imeni Ye.O.Paton AS Ukrainian SSR (Institut elektrosvarki im. Ye.O.Patona Akademii nauk USSR).

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Card 2/2 1. Potassium chloride 2. Metallographic analysis

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu. B

AUTHORS: Medovar, B. I., Malevskiy, Yu. B. 32-2-32/60

TITLE: On the Methods of the Production of Impact Specimens of Austenite Steel and of Welding Seams for the Investigation of the Transition $\gamma \rightarrow \sigma$ (O metodike izgotovleniya udarnykh obraztsov iz austenitnoy stali i svarnykh shvov dlya issledovaniya prevrashcheniya $\gamma \rightarrow \sigma$)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 2, pp. 208-210 (USSR)

ABSTRACT: It was determined experimentally, that an isothermal heating, together with a surface hardening in the course of investigations performed on austenitic steels and welding seams, respectively, accelerates the transition from $\gamma \rightarrow \sigma$. Even polishing of steel can cause an increased formation of σ. This was proved by observations of microstructure and by the fact, that after effecting a notch an increase of the σ phase was found in the vicinity of the notch (with a width of 0,2 mm). Several samples of a welding seam with the composition 0,12% C, 0,22% Si, 1,3% Mn, 25,5% Cr, 18,9 % Ni, were extended by 50 % after welding and were partly notched

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

On the Methods of the Production of Impact Specimens of Austenite Steel and of Welding Seams for the Investigation of the Transition $\gamma \rightarrow \sigma$ 32-2-32/60

previous to isothermal heating, and partly afterwards. The subsequent impact bending tests showed, that in the first case an increase of the σ - phase occurred, at the same time showing a lower flexure strength (by 20 %) than the samples, which were notched after ageing. From this it results, that in investigations of the influence of the $\gamma \rightarrow \sigma$ transition on the flexure strength the notching of the samples must be performed after the isothermal heating at temperatures of the σ-phase formation. There are 3 figures, 1 table, and 4 references, 2 of which are Slavic.

ASSOCIATION: Institute for Electric Welding imeni Ye. O. Paton, AN Ukrainian SSR (Institut elektrosvarki imeni Ye. O. Patona Akademii nauk USSR)

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1. Steel-Phase studies 2. Austinitic steel-Test methods

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

AZOS, S.; AREF'YEV, A.; ARTAMONOV, I.; BABINA, I.; BERGOVSKIY, V.; BLOZHKO, V.; BRAVERMAN, A.; BYKHOVSKIY, Yu.; VINOGRADOVA, M.; GALANKINA, Ye.; GIL'DENGERSH, F.; GLOBA, T.; GREYVER, N.; GORDON, G.; GUL'DIN, I.; GULYAYEVA, Ye.; GUSHCHINA, I.; DAVYDOVSKAYA, Ye.; DAMSKAYA, G.; DERKACHEV, D.; YEVDOKIMOVA, A.; YEGUNOV, V.; ZABELYSHINSKIY, I.; ZAYDENBERG, B.; AZMOSHNIKOV, I.; ITKINA, S.; KARCHEVSKIY, V.; KLUSHIN, D.; KUVINOV, Ye.; KUZNETSOVA, G.; KURSHAKOV, I.; LAKERNIK, M.; LEYZEROVICH, G.; LISOVSKIY, D.; LOSKUTOV, F.; MALEVSKIY, Yu.; MASLYANITSKIY, I.; MAYANTS, A.; MILLER, L.; MITROFANOV, S.; MIKHAYLOV, A.; MYAKINENKOV, I.; NIKITINA, I.; NOVIN, R.; OGNEV, D.; OL'KHOV, N.; OSIPOVA, T.; OSTRONOV, M.; PAKHOMOVA, G.; PETKER, S.; PLAKSIN, I.; PLETENEVA, N.; POPOV, V.; PRESS, Yu.; PROKOF'YEVA, Ye.; PUCHKOV, S.; REZKOVA, F.; RUMYANTSEV, M.; SAKHAROV, I.; SOBOL', S.; SPIVAKOV, Ya.; STRIGIN, I.; SPIRIDONOVA, V.; TIMKO, Ya.; TITOV, S.; TROITSKIY, A.; TOLOKONNIKOV, K.; TROFIMOVA, A.; FEDOROV, V.; CHIZHIKOV, D.; SHEYN, Ya.; YUKHTANOV, D.

Roman Lazarevich Veller; an obituary. TSvet. met. 31 no.5:78-79 My '58. (MIRA 11:6)

(Veller, Roman Lazarevich, 1897-1958)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

25 (1)
18 (7)

SOV/13[illegible]-59-4-4/18

AUTHORS: Medovar, B. I., Candidate of Technical Sciences;
Malevskiy, Yu. B., Candidate of Technical Sciences.

TITLE: The Effect of the Chemical Composition of "25-20" Type Austenite Weld Metal on the $\gamma \rightarrow \sigma$ Transformation (Vliyaniye khimicheskogo sostava metalla austenitnogo shva tipa 25-20 na prevrashcheniye $\gamma \rightarrow \sigma$

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 4, pp 12 - 16 (USSR)

ABSTRACT: As is known /Ref. 1-6/, the embrittlement of austenitic "25-20" (25% chrome, 20% nickel) heat resistant and stainless steel welds working in 650 - 900°C is caused by the transformation $\gamma \rightarrow \sigma$, the sigma formation. The purpose of the described investigation was to find the effect of manganese, carbon and chrome (which do not increase the known proneness of this type steel to hot cracks), of molybdenum and tungsten (on the effect of which the authors know no data in Soviet or foreign literature), nickel, copper, carbon and nitrogen on sigma formation.

Card 1/3

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

The Effect of the Chemical Composition of "25-20"-Type Austenite Weld Metal on the $\gamma \rightarrow \sigma$ Transformation

An investigation was made of machine-welded seams on 12 mm Kh23N18 steel sheet of EI417 steel (Table 1). The following was stated: manganese (up to 4%) does not increase sigma formation significantly; molybdenum, tungsten and copper increased sigma formation drastically, reduction of the content in the weld metal from 22-25% to 20-21% at 15-25% content of nickel drastically increased resistance to embrittlement at high temperatures; nitrogen prevented intense sigma formation, which is evidently due to the binding of a part of the chrome into nitride. The new welding wire "2Kh25N15G7" increased the resistance of welds to the formation of crystallization cracks and at the same time made the weld metal satisfactorily resistant to sigma formation. This wire is recommended for extensive practical application. Its chemical composition is as follows: 0.20-0.26% C; 6-8% Mn; 22-25% Cr; 16-19% Ni; not over 0.3% Si; not over 0.02% S and 0.035% P. There are 5 tables, 1 set of graphs, 6 sets of macrophotographs and 11 references, 8 of which are Soviet

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SOV/135-59-4-4/18

The Effect of the Chemical Composition of "25-20"-Type Austenite Weld Metal on the $\gamma \rightarrow \delta$ Transformation

and 3 English.

ASSOCIATION: Institut elektrosvarki im. Ye. O. Patona AN SSSR (Electric Welding Institute imeni Ye. O. Paton, AS USSR)

Card 3/3

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

18(5,7) SOV/125-59-7-6/19

AUTHOR: Malevskiy, Yu.P., Fedoyar, P.I.

TITLE: The Effect of Cold Work on the Transformation of the Gamma-Phase into the Sigma-Phase in Austenitic Steel Welds

PERIODICAL: Avtomaticheskaya svarka, 1959, Nr 7, pp 40-45 (USSR)

ABSTRACT: It is a well known fact that the cold work exercised on rolled or forged austenitic steels furthers formation of the sigma-phase. The present article gives some information about the nature of the cold work effect on the formation of the sigma-phase. During research butt-welded steel bars 18 mm thick were used as test-pieces. Before they received an isothermic heating, they were subjected to compaction and to subsequent extension of 5,10, 20 and 30%. The grade of brittleness of the welds has been determined on the basis of the viscosity changes observed after a more or less long process of ageing. The ageing process took place at the temperature of 600° C and lasted up to 1000 hours. The analysis of sediments secreted

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

The Effect of Cold Work on the Transformation of the Gamma-Phase into the Sigma-Phase in Austenitic Steel Welds

from the welds after their **age ing** in the course of 25 hours already disclosed the appearance of the sigma-phase. Particles of the sigma-phase were found with the aid of electronic microscope on the borders of austenitic grains. The cold work which proceeds the isothermic heating speeds up the formation of the sigmaphase in austenitic steel welds. Acceleration of the transformation of the gamma-phase into the sigma-phase of the cold-worked steel is intimately linked with the processes of recrystallization. If the deformation grade and the temperature of **ageing** are such that the recrystallization does not take place, the speeding-up action of cold work is not manifested. If the age-**ing** passes at a comparatively low temperature, the sigma-phase appears in the form of grains having the perlite structure. There are 1 graph, 1 table, 7 photographs and 10 references, 3 of which are American

Card 2/3

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SOV/125-59-7-6/12

The Effect of Cold Work on the Transformation of the Gamma-Phase into the Sigma-Phase in Austenitic Steel Welds

and 7 Soviet

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN USSR (Order of the Red Banner of Labor. Institute of Electric Welding, AS UkrSSR, imeni Ye.O. Patona).

SUBMITTED: February 27, 1959

Card 3/3

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SOV/125-59-3-8/13

18(7),24(4)

AUTHOR: Darovskiy, G.F., and Malevskiy, Yu.B.

TITLE: Preparing Carbon-Film for Electron-Microscopy (Poluch-eniye ugol'noy plenki dlya elektronnoy mikroskopii)

PERIODICAL: Avtomaticheskaya svarka, 1959, Vol 12, Nr 3, pp 64-68 (USSR)

ABSTRACT: The described design is used for vaporizing electrode-graphite in a vacuum for preparing a carbon-film of metal microsection surfaces for electronic microscopic studies. The described apparatus VUP-2 (Photograph 1) consists of two holders for the electrodes and a mechanism for holding the sample. It should be fixed in an angle of α = 18 - 30° (Fig. 2) and a distance of 5-6 cm from the graphite-electrode tip. After two current impulses films of 250-300 Å. are obtained. Figs. 3a, 3b and 4 show examples of the structure of the welding seams obtained with electronic-microscopic tests. It was established that the loosening of the film from the metal by electrolyzing is the best method existing. The

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

Preparing Carbon-Film for Electron-Microscopy

electrolyte is a nitric acid 10% solution in alcohol (3). There are 4 photographs, 1 diagram and 5 references, 3 of which are Soviet and 2 English.

ASSOCIATION: Ordena trudovogo krasnogo znameni institut elektrosvarki im. Ye. O. Patona AN USSR (Order of the Red Banner of Labor Institute for Electro-Welding im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: November 24, 1958

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B., MEDOVAR, B.I., MANZHELEY, G.P.

Chemical composition of the σ-phase in 25-20-type austenite welds. Avtom. svar. 13 no.8:33-36 Ag '60. (MIRA 13:8)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR.
(Steel--Welding)
(Steel--Analysis)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

S/125/60/000/009/005/017
A161/A130

1.2300 2708 1073

AUTHORS: Podgayetskiy, V.V., and Malevskiy, Ye.B.

TITLE: Intergranular Layers in Welds

PERIODICAL: Avtomaticheskaya svarka, 1960, No. 9, pp. 33-37

TEXT: No method has been found yet to separate intergranular layers from iron alloys for investigation of their chemical composition, but these layers apparently affect the weld metal properties, and data obtained in investigations (Ref. 1-13) could not be positively confirmed. The Electric Welding Institute imeni Ye.O. Paton investigated submerged-arc welds produced by low-carbon Sv-08A (Sv-08A) welding wire and flux with different SiO_2 and MnO content using an electron microscope. The preparation of carbon films shown in the article had been described previously (Ref. 14). Three photographs (Fig. 1-3) show films from welds made under AN-348A (AN-348A) flux (42% SiO_2; 37% MnO; 5.5% CaF_2; 5.5% MgO; 5.0% CaO; 4.0% Al_2O_3; 1.0% FeO). Welds produced with AN-20 (AN-20) flux had less developed layers, but thick layers were also observed (the AN-20 flux composition:

Card 1/5

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Intergranular Layers in Welds

21.7% SiO_2, 32.0% Al_2O_3, 19.8% CaF_2, 9.1% MgO, 16.4% CaO, 1.0% FeO). In welds made under fluoride flux AN-[illegible] (ANF-1P) thicker intergranular layers were practically absent. It was concluded that: 1. The length of grain boundaries filled with intergranular layers depends on the flux composition and is the longer the more SiO_2 and MnO is present in the flux; 2. The layers are joined with globular non-metallic inclusions and obviously originate from them; in places the layers have been deformed by growing dendrites of weld metal; 3. The chemical composition of the intergranular layers is close to that of the non-metallic inclusions, and it can be concluded that in welds made under AN-348A and AN-20 flux the layers consist mainly of manganese silicates, and their fusion temperature is 1,100-1,160°C in AN-348A, and about 1,300° in AN-20 flux; 4. Drop of impact resistance of weld metal produced under high-silicon manganese flux is apparently due mainly to the presence of the layers. The authors express their gratitude to Candidate of Technical Sciences B.A. Movshan for valuable advice in the work. There are 8 figures and 15 references of which 11 are Soviet and 4 German.

Card 2/5

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

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A161/A130

Intergranular Layers in Welds

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" of the Academy of Sciences of the UkrSSR)

SUBMITTED: February 9, 1960

Card 3/5

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

S/125/60/000/009/005/017
A161/A130

Intergranular Layers in Welds

Fig. 1

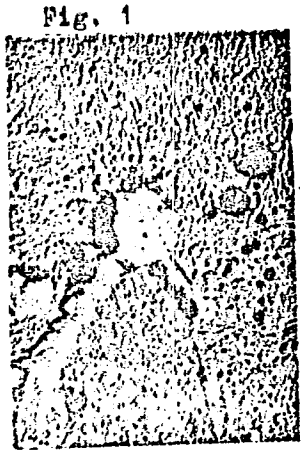
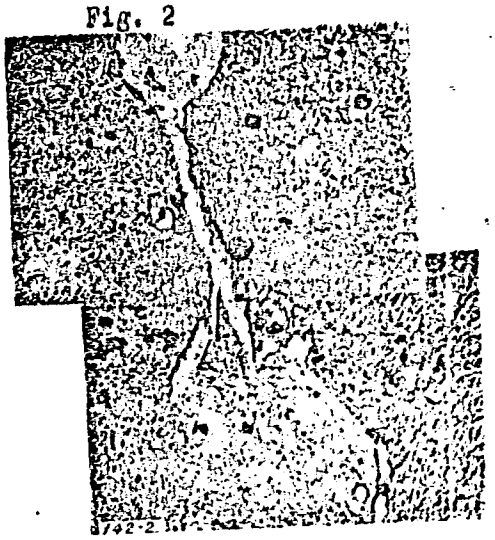


Fig. 2



Card 4/5

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

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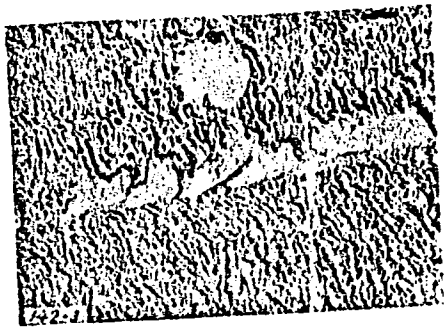
A161/A130

Intergranular Layers in Welds

Fig. 3



Card 5/5

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

21907

S/125/60/000/011/002/016
A161/A133

18.8200

AUTHOR: Malevskiy, Yu.B.

TITLE: On the electronic fracture micrography

PERIODICAL: Avtomaticheskaya svarka, no. 11, 1960, 10-12

TEXT: Data on electronic fractography are abundant in Soviet and foreign literature. The Electric Welding Institute investigated the one-stage method of imprint preparation, with the conventional carbon film, and a two-stage method suggested by A.N. Pilyankevich (Ref.5) to evaluate their advantages for studying fractures with deep and complex relief under an electronic microscope. The carbon film produced in single-stage procedure could not be used for deep reliefs, it was ruined when being removed. The two-stage preparation by A.N. Pilyankevich was employed with some modifications - the load was increased to 2-3 kg for very deep reliefs; the primary imprint was rotated during the dusting with carbon, and, besides, it was shifted relative to the vertical axis passing through the contact point between the carbons (as in Ref.6). This eliminated the necessity of using two carbon dust sour-

Card 1/3

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On the electronic fracture micrography

ces and shading. Squares were marked after dusting on the primary imprint, and certain spots marked on it when desirable; the direction of deformations was fixed. The primary imprint was dissolved by a method suggested by A.N. Pilyankevich. The separated carbon films were solid and fully suitable to be studied under an electronic microscope. A study of the fracture of a brittle-failure specimen revealed a tough crack at the notch. The rupture takes place along parallel crystallographic planes. The electronic microscope revealed also plastic deformations in the thin surface layer in the brittle failure zone that had been discovered previously by S.O. Tsobkallo (Ref.7) by X-raying. The "tongues" formed in low-temperature impact bending tests have not yet been explained although this had been mentioned formerly in other works. It is mentioned that tough fracture in armco iron was also studied. It was concluded that not only inclusions but also accumulations of dislocations may be the rupture centers in fractures. In aged austenitic "25-20" steel the rupture was characteristical for separation on planes along the slip lines. In general, the two-stage method reveals the same fracture elements as the one-stage method, but the two-stage method permits investigation of separate spots. The two methods are complementing one another, and both are recommended for use in deep and detailed studies. There are 4 fi-

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21907
S/125/60/000/011/002/016
A161/A133

On the electronic fracture micrography

gures and 7 references: 6 Soviet and 1 non-Soviet.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im.Ye. O.Patona AN USSR ("Order of the Red Banner of Labor" Electric Welding Institute im.Ye.O.Paton of the Academy of Sciences of the Ukrainskaya SSR)

SUBMITTED: April 19, 1960

Card 3/3

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yuzef Boleslavovich; GRABIN, Vladimir Fedorovich; DAROVSKIY, Georgiy Fedos'yevich; PARFESSA, Galina Ivanovna; ROSSOSHINSKIY, A.A., kand.tekhn.nauk, retsenzent; MAKAR, A.M., kand.tekhn.nauk, red.; RIKBERG, D.B., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn.red.

[Atlas of the micro- and macrostructure of welded joints] Atlas makro- i mikrostruktur svarnykh soedinenii. Pod red. A.M.Makara. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. (MIRA 15:2)
118 p.
(Welding--Testing) (Metallography)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

PILYANKEVICH, Aleksandr Nikolayevich; MALEVSKIY, Yu.B., kand. tekhn. nauk, retsenzent; FURER, P.Ya., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Techniques of electron microscopy; teaching methods] Praktika elektronnoi mikroskopii; metody preparirovaniia. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 175 p. (MIRA 14:6)
(Electron microscope)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B.; TSECHAL', V.A.

Work of the Subcommittee on the Equipment and Quality Control of Welding. Avtom.svar. 14 no.9:94-95 S '61. (MIRA 14:8)
(Welding research)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

SLUTSKAYA, T.M.; MALEVSKIY, Yu.B.

Investigating grain boundaries in medium-alloy steels with a tendency toward temper brittleness. Avtom. svar. 14 no.10: 6-13 O '61. (MIRA 14:9)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki imeni Ye.O. Patona AN USSR.
(Steel alloys--Metallography)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

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S/125/61/000/012/002/008
D040/D112

AUTHORS: Malevskiy, Yu.B.; Podgayetskiy, V.V.

TITLE: The connection between the welding speed and the distribution of nonmetallic inclusions in the weld metal

PERIODICAL: Avtomaticheskaya svarka, no. 12, 1961, 12-15

TEXT: The effect of the welding speed on the distribution of nonmetallic inclusions was studied in steel welds made at different welding speeds. The examination was carried out with the aid of an electron microscope on film-copies prepared by dusting carbon on to the microsections. Welds were produced by the submerged-arc method in low-carbon steel using Св -08 (Sv-08) wire and АН-60 (AN-60) flux. The composition of this flux which produces a very high quantity of nonmetallic inclusions, is the following: (%) 44.2 SiO_2, 39.4 MnO, 5.4 CaF_2, 7.5 CaO, 2.4 Al_2O_3, 0.4 Fe_2O_3, 6.6 MgO, 0.06 S and 0.04 P. Multilayer welds were welded at 220 m/hr by two arcs, and at 3 m/hr by one arc. Photomicrographs of the welds are shown. It was found that in welds made at 220 m/hr, the inclusions were located mainly within the crystallites; moreover, there were only a few of these inclusions and hardly any intercrystalline layers on the boundaries. After welding at 3 m/hr, a con-

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The connection between ...

sizable quantity of round nonmetallic inclusions was present on the grain boundaries, and thickened intercrystalline layers were observed. Conclusions (1) The welding speed has a noticeable effect on the distribution of nonmetallic inclusions within single crystallites in the weld metal. At high welding speed, the inclusions are located predominantly within the crystallites, and at a low welding speed they are present in considerable quantities on the boundaries. (2) This effect of the welding speed is due to the fact that they are forced outwards during the crystallization. At high welding speeds, crystallization is rapid and so the inclusions have no time to float to the surface of the metal pool or move to the grain boundary. When the welding speed is low, the inclusions do have time to pass from the metal into the slag, or to move to the grain boundary. (3) The quantity of nonmetallic inclusions is higher at high welding speed than at low welding speed, but the distribution of the inclusions at high welding speed is more advantageous. There are 6 figures and 3 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye.O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye.O. Paton, AS UkrSSR)

SUBMITTED: February 1, 1961

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

S/125/62/000/001/002/011
D036/D113

AUTHORS: Malevskiy, Yu. B.; Vasil'yev, V. G.

TITLE: A method of plotting transformation diagrams in a thermal welding cycle

PERIODICAL: Avtomaticheskaya svarka, no. 1, 1962, 7-13

TEXT: A new heating method and a new design of metal specimen are suggested for plotting metal structure diagrams in a heat cycle corresponding to the cycles of different welding processes. The system automatically reproduces the welding heat cycle, suggested by Yu. D. Gupalo, includes a programmer consisting of two interblocked electric circuits the first of which heats the specimen quickly to the required temperature at a required rate, and the second switches on after the heating stops, and imitates the cooling cycle corresponding to the chosen welding process. The programmer imitates fairly accurately the heat cycle of arc and electro-slag welding. Transformation temperatures were fixed with a lever dilatometer of the Gridnev-Kocherzhinskiy system (Ref. 8: V. N. Gridnev, V. T. Cherepin, "Zavodskaya Laboratoriya", no. 3, 1957) produced at the Institut elektrosvarki im. Ye. O. Patona (Electric Welding Institute im. Ye. O. Paton) and used as an

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A method of plotting transformation ...

attachment on a slightly modified 9S0-302 dilatometer. The thermic and the dilatometric curves are recorded on photographic paper. The specimen is heated by induction from a power generator (490 cps, 6 kw), and its temperature measured by two chromal-alumel thermocouples. The heating rate is set by a rheostat in the generator excitation circuit, and heating time by a thyratron time relay. A special device was built for hardening specimens and preventing oxidation. The specimen consists of a 50 mm long middle portion, and two threaded 35 mm long arbors of austenitic 25-20 steel having a minimum heat conductivity and heat expansion. Even heat distribution was obtained in specimens of 3 mm in diameter and arbors with 4.5 mm outer diameter and 2.5 mm inner diameter. The temperature gradient along the specimen did not exceed 15-20°C, which is considered permissible for dilatometric measurements. The critical temperature points determined by the described method correlated fairly well with results obtained using a Chevenard dilatometer and standard specimens. The data show that the method can be used for determining the start and end points of transformation during continual cooling. Conclusions: (1) The proposed sample-arbor arrangement and induction heating method ensure even temperature

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

A method of plotting transformation ...

distribution throughout the length of the specimens and permit thermal regulation over a wide range of rates to be carried out; (2) a programming device was constructed and applied for automatically regulating the heating and cooling of specimens in dilatometric studies in accordance with the thermal cycle in any selected spot in welded joints; (3) the transformation diagram plotted at continuous cooling of 45 steel correlated well with previously constructed diagrams, thus showing that the described method can be used for studying the peculiarities of structural transformations in a welding heat cycle. The circuit diagram of the programming system is included. There are 5 figures, 1 table and 8 references: 7 Soviet and 1 non-Soviet-bloc.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki im. Ye. O. Patona AN USSR (Electric Welding Institute "Order of the Red Banner of Labor" im. Ye. O. Paton, AS UkrSSR)

SUBMITTED: June 5, 1961

Card 3/3

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.B.; GRECHIN, Yu.I.

First Regional Conference on Welding held in Irkutsk. Avtom. svar. 15 no.4:95-96 Ap '62. (MIRA 15:3)
(Welding--Congresses)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yuzef Boleslavovich; VASIL'YEV, Valentin Grigor'yevich; GRABIN, Vladimir Fedorovich; NERODENKO, M.M., inzh., otv. red.; POGORETSKAYA, L.N., red.

[Equipment for the dilatometric investigation of transformations in welded joints] Ustanovki dlia dilatometricheskogo issledovaniia prevrashchenii v svarnykh soedineniiakh. Kiev, Naukovadumka, 1964. 35 p. (MIRA 18:2)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

GRABIN, V.F.; MALEVSKIY, Yu.B.

Structure and properties of copper base alloys with cobalt and silicon addition alloys. Metalloved. i term. obr. met. no.3:58-32 Mr '65. (MIRA 18:10)

1. Institut elektrosvarki AN UkrSSR im. Ye.O. Patona.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 9537-66 EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) JD/HM

ACC NR: AP5026289 SOURCE CODE: UR/0125/65/000/010/0023/0025

AUTHOR: Malevskiy, Yu. B. (Candidate of technical sciences); Gaydarenko, A. L. (Engineer) 44,55

ORG: Institute of Electric Welding, AN UkrSSR (Institut elektrosvarki im. Ye. O. Patona AN UkrSSR) 44,55

TITLE: Direct observation of dislocations in the near-weld zone of a welded joint 44,55

SOURCE: Avtomaticheskaya svarka, no. 10, 1965, 23-25

TOPIC TAGS: crystal dislocation, weld defect, weld evaluation, electron microscopy, plastic deformation / UEMV-100 electron microscope

ABSTRACT: Plastic deformation and the temperature gradient within the confines of the individual crystal and from crystal to crystal are major agents in the genesis and proliferation of dislocations in metals. These conditions are most clearly expressed in a welded joint. Hence, the authors performed the first ever experimental observation of defects in welded joints by means of electron microscopy with the object of determining the presence and configuration of dislocations in the weld metal and the near-weld zone. Specimens taken from the seam and near-weld zone of a welded joint of armco iron (pre-annealed at 950°C) were subjected to electrolytic polishing and the resulting foil was examined in an UEMV-100 electron microscope. The exami-

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ACC NR: AP5026289

nation revealed a large number of dislocations in the weld metal adjoining the fusion line. Both dislocation loops and rectilinear intersecting dislocations running in random directions could be seen. In the near-weld zone on the other hand, series of parallel dislocations were observed. Dislocation loops within subgrains were visible. The character of the configuration and distribution of dislocations in this zone points to a slip process based on intragranular crystallographic displacements, and confirms the presence of considerable plastic deformation in the near-weld zone. By the same token, the possibility of direct observation of defects in welded joints is also demonstrated. Orig. art. has: 3 figures.

SUB CODE: 11,13,17/ SUBM DATE: 16Mar65/ ORIG REF: 002/ OTH REF: 001

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

ACC NR: AP7002440 (A) SOURCE CODE: UR/0219/66/000/012/0050/0053

AUTHOR: Malevskiy, Yu.B.; Novikova, D.P.

ORG: Electric Welding Institute im. Ye.O. Paton, AN UkrSSR (Institut electrosvarki AN UkrSSR)

TITLE: Effect of the annealing temperature on the structure and properties of cast molybdenum

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 12, 1966, 50-53

TOPIC TAGS: molybdenum, cast molybdenum, ~~molybdenum~~ metal microstructure, ~~molybdenum~~ ductility, ~~molybdenum~~ annealing, annealing effect, cast metal, metal grain structure, high temperature effect

ABSTRACT: Specimens (2 x 2 x 45 mm) of 99.97%-pure electron-beam melted molybdenum, as-cast or vacuum annealed at 700—1500C for 45 min, were subjected to bend tests to determine the effect of the annealing temperature on the metal structure and ductility. The as-cast specimens failed in a brittle manner at a bend angle of 30 deg, but specimens annealed at 900 and 1200C sustained a bend angle of 180 deg without failure. Specimens annealed at 1400 and 1500C first cracked at a bend angle of 150 and 60 deg

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ACC NR: AP7002440

and failed along the grain boundary at a bend angle of 175 and 60 deg, respectively. Electron microscope examination revealed the presence of molybdenum oxides and carbides at the grain boundaries in the as-cast specimens, and within the grains at a distance of 1—2 mm from the grain boundaries in the specimens annealed at 1300—1400C. Thus, high ductility in molybdenum annealed at 900—1200C was brought about by eliminating impurities from the polygonal grain boundaries. Lower ductility in molybdenum annealed at 1500C is believed to be caused by microporosity, which was observed in the specimens and probably resulted from coagulation of vacancies, or from vaporization of molybdenum trioxide from the grain boundaries. [MS]

SUB CODE: 13,11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 002/
ATD PRESS: 5114

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yuzef Boleslavovich; VASIL'YEV, Valentin Grigor'yevich; GRABIN, Vladimir Fedorovich; NERODENKO, M.M., inzh., red.; POGORETSKAYA, L.N., red.

[Equipment for the dilatometric study of transformations in welded joints] Ustanovki dlia dilatometricheskogo issledovaniia prevrashchenii v svarnykh soedineniiakh. Kiev, Naukova dumka, 1964. 35 p. (MIRA 17:11)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.N.

PHASE I BOOK EXPLOITATION SOV/4642

Akademiya nauk SSSR. Energeticheskiy institut

Teploenergetika, vyp. 2: Ispol'zovaniye solnechnoy energii (Heat Power Engineering, No. 2: Use of Solar Energy) Moscow, 1960. 195 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Energeticheskiy institut imeni G.M. Krzhizhanovskogo.

Resp. Ed.: V.A. Baum, Doctor of Technical Sciences, Professor; Ed. of Publishing House: G.B. Gorshkov; Tech. Ed.: I.N. Dorokhina.

PURPOSE: The publication is intended for power engineers and economists interested in the industrial utilization of solar energy.

COVERAGE: This collection of 19 articles is a continuation of an earlier work published under the same title in 1957. The articles present results of investigations conducted in the USSR during the last three years at the Laboratory on the Use of Solar Energy and Wind in the Energeticheskiy institut AN SSSR (Power Engineering Institute of the AS USSR). Problems in determining the operational indices of solar engines, depending upon the amount of solar energy received, are analyzed. No personalities are mentioned. References follow each article.

[illegible], and Ya.T. Shermazanyan. Research and Development of the Elements of Tracking Automation of Solar Thermal Power Stations 52

[illegible], B.A. Approximate Method for Determining the Efficiency of the [illegible] of a Solar Power Station 65

Vernigorov, I.Kh. Some Problems in the Economics of Solar Power Engineering 69

[illegible], and Yu.N. Malevskiy. Investigation of Semiconductor Thermoelements 78

Aparisi, R.R., and D.I. Teplyakov. Optimum Geometry of Solar Semiconductor Thermal Batteries 88

Okhotin, A.S. Investigation of the Thermal Conductivity of Tellurides 99

Shchegolev, D.M. Determination of the Size of Thermal Storage Battery in House Heating With the Energy Generated by Solar Power Stations 111

Card 3/4

Baum, V.A. Technical Characteristics of Hot-Box Type Solar Stills 122

Ko Hsin-shik. Effect of the Selective Characteristic of Absorbing Surface on the Efficiency of a Solar Engine 133

Baum, V.A., R.R. Aparisi, and D.I. Teplyakov. On the Objective Evaluation of the Accuracy of Optical Systems in Solar Power Plants 142

Reksant, N.B., V.V. Fedurkin, and M.S. Borodina. Production of Aluminum Mirrors by Electrolytic Polishing 149

Markov, G.I. Determining the Optimum Angle of Inclination in Solar Water-Heaters With Tube-Type or Flat Boilers 158

Poyarkov, S.G. Methods for Determining the Efficiency of Economic Utilization of Installations Using Solar Energy 170

Kozlov, B.K. Energy Bases of Solar Thermal Power Stations 179

AVAILABLE: Library of Congress

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33942

S/665/61/000/003/006/018
E035/E420

26.1630

AUTHORS: Alatyrtsev, G.A., Malevskiy, Yu.N.

TITLE: The coupling of Pb-Te and Bi_2Te_3-Sb_2Te_3 thermoelements

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut. Teploenergetika, no.3, 1961. Poluprovodnikovyye preobrazovateli solnechnoy energii, 61-67

TEXT: According to A.F.Ioffe, efficiency of semiconductor thermoelements is defined as $z = \alpha^2/\lambda\rho$ assuming zero contact resistance between the thermoelement arms and the coupling. In practice such a resistance exists and z becomes

$$z^* = \frac{\alpha^2}{\lambda(\rho + \frac{r_o}{l})}$$

where r_o is the contact resistance across an area 1 cm^2 and l = length of thermoelement. To ensure z^* should be approximately z, $r_o < 10^{-5}\ \Omega\,cm^2$. PbTe and Bi_2Te_3-Sb_2Te_3 were used in this study of contact resistance. Materials used for the couplings were constantan, platinum, nickel wire and NiBi alloy

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The coupling of Pb-Te and ...

prepared in a corundum crucible at t ~ 1400°C in a high frequency oven. After crushing the alloy, powdered nickel in the proportion 1:1 was added. Electrical conductivity of the sintered sample was 62000 $\Omega^{-1}cm^{-1}$. The semiconductor specimens were made by sintering the powder of the appropriate alloy in a demountable press and at the same time embedding two twisted wires (d ~ 0.2 mm), one as a current lead and the other a potential probe. The specimens for measuring contact resistance between semiconductor and coupling alloy were made in the same press. The thickness of the coupling did not exceed 2 mm. Pressure, temperature and time of sintering of the specimens were selected to obtain the best thermoelectric properties of the semiconductors used. The contact possessed high mechanical stability. Contact resistances were measured by an a.c. potentiometric method thus avoiding errors due to thermal emf's when using d.c. Table 1 shows the results of measurements of the contact resistance between metals and the semiconducting alloys PbTe and Bi_2Te_3-Sb_2Te_3. The best results were obtained for the sintered alloy NiBi + Ni, the contact resistance being reduced down to $10^{-7}\ \Omega cm^2$. At the same time the influence of various

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The coupling of Pb-Te and ...

tinning agents was observed; the lowest resistances being obtained for constantan and nickel wires tinned with 10% Sb - 90% Sn alloy. To reduce thermal stresses an element consisting of two concentric cylinders was constructed. The cylindrical form should be more resistant to deformation compared with other electrode assemblies. An annulus of Bi_2Te_3-Sb_2Te_3 of cross-sectional area S_1 surrounded a PbTe rod of cross-sectional area S_2 giving a thermoelement of total diameter 12 mm. A life test of the thermoelements with $S_1/S_2 = 1$ and 2 at $\Delta t = 300$ °C for 100 hours showed an increase in the internal resistance in both cases, the increase for the case when $S_1/S_2 = 2$ being twice that for $S_1/S_2 = 1$. On a cross-section of the thermoelement cut after 100 hours operation ($\Delta t = 300$°C), a 30-fold increase in a network of fine transverse cracks was discovered in the PbTe electrode, which led to an increase of the internal resistance with $S_1/S_2 = 1$ of 20%. However, the boundary resistance of the coupling did not vary. For comparing mechanical stability a rectangular thermoelement was prepared using Bi_2Te_3 instead of PbTe. The Bi_2Te_3 alloy, as regards thermoelectric properties, is better

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

The coupling of Pb-Te and ...

then PbTe. Sintered BiNi + Ni was used as the coupling. Over a 100 hour test at $\Delta t = 300^{\circ}C$, the internal resistance of the thermoelement remained constant. No cracks were discovered although the type of deformation on heating remained as before. There are 4 figures, 2 tables and 3 Soviet bloc references.

Card 4/5

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

39533

S/196/62/000/015/004/008
E194/E155

26.1630

AUTHORS: Alatyrtsev, G.A., Baum, V.A., Malevskiy, Yu.N., and Okhotin, A.S.

TITLE: A solar thermal generator of 10 W output

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.15, 1962, 22, abstract 15 G 131. (Teploenergetika, no.3, M., AN SSSR, 1961, 73-81)

TEXT: Information is given about a thermo-electric generator using direct solar radiation, with a concentrator area of 1.15 m^2, and mirror reflection factor K = 0.75. The positive and negative thermo-elements are made of Sb_2Te_3 and Bi_2Te_3, respectively. The absorption factor at their hot junctions is taken as 0.9. The equipment consists of a duralumin circle carrying concentric rows of fittings to hold the facets of the concentrator which reflect the direct solar rays onto the hot junctions. During the year the position of the mirror is corrected by an annual deviation screw. During the day the mirror and generator are rotated at constant velocity by a load driven clock mechanism.
15 illustrations, 8 references.
Card 1/1 [Abstractor's note: Complete translation.]

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

ACC NR: AP6027438 SOURCE CODE: UR/0377/66/000/003/0006/0010

AUTHOR: Akramov, Kh. T.; Malevskiy, Yu. N.

ORG: Physicotechnical Institute AN UzSSR (Fiziko-tekhnicheskiy institut AN UzSSR); State Scientific Research Power Institute im. G. M. Krzhizhanovskiy (Gosudarstvennyy n.-i energeticheskiy institut)

TITLE: Optimization of weight and power characteristics of a self-cooled solar thermoelectric converter

SOURCE: Geliotekhnika, no. 3, 1965, 6-10

TOPIC TAGS: solar energy conversion, solar radiation, thermoelectric generator, thermoelectric converter

ABSTRACT: Calculations were made of the mode of operation, optimal weight, and power characteristics of a metallic concentrator serving simultaneously as a heat-removing radiator. To determine the geometrical and thermal parameters of the instrument, the temperature field of its surface and the dependence of the parabola parameters on the thickness of the shell were investigated. It was established that, if the temperature of the hot junction increases, the minimum in the weight-to-output power relation (W/P) shifts toward higher radiator temperatures, and that a decrease of W/P leads to optimal temperatures of the hot junctions. If this temperature

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ACC NR: AP6027438

becomes higher than optimal, large thermal losses occur, and, consequently, the efficiency of the system falls and the W/P ratio increases. The optimum ratio of the values of the radiator and hot junction temperatures is 3/4 on the Kelvin scale. Since, in practice, the generator does not work in an optimal mode, the admissible ratio of radiator temperatures and those of the hot junction are to be found in the range of 0.6—0.8. The general weight of the system depends also on the radius of the concentrator, which, when increased, increases by R 3/2 the weight of the solar generator for a unit of power. Orig. art. has: 4 figures, 2 formulas, and 1 table. [ZL]

SUB CODE: 20/ SUBM DATE: 30Oct65/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS:

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 43043-66 EWT(1)/EEC(k)-2/T IJP(c) JKT/TT/WW/AT

ACC NR: AP6027438 SOURCE CODE: UR/0377/66/000/003/0006/0010

AUTHOR: Akramov, Kh. T.; Malevskiy, Yu. N. 67 B

ORG: Physicotechnical Institute AN UzSSR (Fiziko-tekhnicheskiy institut AN UzSSR); State Scientific Research Power Institute im. G. M. Krzhizhanovskiy (Gosudarstvennyy n.-i energeticheskiy institut)

TITLE: Optimization of weight and power characteristics of a self-cooled solar thermoelectric converter

SOURCE: Geliotekhnika, no. 3, 1966, 6-10

TOPIC TAGS: solar energy conversion, solar radiation, thermoelectric generator, thermoelectric converter

ABSTRACT: Calculations were made of the mode of operation, optimal weight, and power characteristics of a metallic concentrator serving simultaneously as a heat-removing radiator. To determine the geometrical and thermal parameters of the instrument, the temperature field of its surface and the dependence of the parabola parameters on the thickness of the shell were investigated. It was established that, if the temperature of the hot junction increases, the minimum in the weight-to-output power relation (W/P) shifts toward higher radiator temperatures, and that a decrease of W/P leads to optimal temperatures of the hot junctions. If this temperature

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L 43043-66

ACC NR: AP6027438

becomes higher than optimal, large thermal losses occur, and, consequently, the efficiency of the system falls and the W/P ratio increases. The optimum ratio of the values of the radiator and hot junction temperatures is 3/4 on the Kelvin scale. Since, in practice, the generator does not work in an optimal mode, the admissible ratio of radiator temperatures and those of the hot junction are to be found in the range of 0.6—0.8. The general weight of the system depends also on the radius of the concentrator, which, when increased, increases by R 3/2 the weight of the solar generator for a unit of power. Orig. art. has: 4 figures, 2 formulas, and 1 table. [ZL]

SUB CODE: 09,13/ SUBM DATE: 30Oct65/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS: 5065

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY, Yu.V.

"Mine returns and principles of evaluation of deposits" by N.V. Volodomonov. Reviewed by IU.V. Malevskii. Gor.zhur. no.6:77-78 Je '60. (MIRA 14:2)

1. Giprotsvetmet, Moskva.
(Mining industry and finance) (Volodomonov, N.V.)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY-MALEVICH, P. S. (DECEASED) 1963/2

c. 1962

MACHINES

see ILC

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

DVORKINA, M.D.; MALEVSKIY-MALEVICH, S.P.

Practice of using the floating structure of the Volgograd Hydrometeorological Observatory. Trudy GGO no.95:25-29 '63. (MIRA 16:7)

(Volgograd Reservoir--Hydrometeorological research--Equipment and supplies)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY-MALEVICH, S.P.

Measurement of the temperature of the water surface. Trudy GGO no.95:60-65 '63. (MIRA 16:7)

(Water—Temperature)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY-MALEVICH, S.P.

Methods for the temperature determination of the active surface. Trudy GGO no.144:124-132 '63. (MIRA 17:6)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

KIRILLOVA, T. V.; MALEVSKIY-MALEVICH, S. P.

"The influence of inhomogenities of an underlying surface on heat transfer in the lower layer of the atmosphere."

report presented at the Atmospheric Radiation Symp, Leningrad, 5-12 Aug 64.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

KIRILLOVA, T.V.; MALEVSKIY-MALEVICH, S.P.

Measuring the albedo of the sea from a helicopter. Trudy GGO no.150:120-124 '64. (MIRA 17:7)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

MALEVSKIY-MALEVICH, S.P.

A systematic error in calculating the components of heat balance of bodies of water. Trudy GGO no.167:140-143 '65.

Methodology of actinometric observations from a helicopter. Ibid.:155-160 (MIRA 19:1)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 14769-66 EWT(1) GW

ACC NR: AT6004156 SOURCE CODE: UR/2531/65/000/167/0144/0148

AUTHOR: Kirillova, T. V.; Malevskiy-Malevich, S. P.

ORG: Main Geophysical Observatory, Leningrad (Glavnaya geofizicheskaya observatoriya)

TITLE: On the profile of upwelling fluxes of longwave radiation above a reservoir

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 1, 1965. Fizika pogranichnogo sloya atmosfery (Physics of the boundary layer of the atmosphere), 144-148

TOPIC TAGS: upwelling longwave radiation, helicopter flight, radiometer, germanium filter, meteorological condition, downwelling radiation, radiation balance

ABSTRACT: In spring, 1963, measurements of upwelling longwave radiation were made above Tsimlyansk Reservoir by a helicopter in horizontal flights at heights of 10, 20, 30, 50, 100, and 200 m using a radiometer with a germanium filter. On the basis of these measurements, data profiles of upwelling longwave radiation were drawn characterizing the energy distribution with height. Profiles obtained from direct measurements were compared with those computed theoreti-

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ACC NR: AT6004156

cally. Both results agree inasmuch as meteorological conditions during the observation period did not change. The downwelling radiation was measured above both the water surface and dry land. The downwelling radiation measured at various heights was reduced by the formula

$$\frac{E_{\downarrow H=0}}{E_{\downarrow H=s}}$$

for comparison to the intensity above the ground. A table in the original article contains the reduced downwelling radiation for both the water and dry land. The difference between the downwelling and upwelling radiation is the radiation balance, the gradient of which was computed by height and given in a table. This gradient does not change above the height of 200 m either above the ground or the water. Orig. art. has: 3 figures, 3 tables, and 2 formulas. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004/ ATD PRESS: 4159

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 14568-66 EWT(1) GW

ACC NR: AT6004157 SOURCE CODE: UR/2531/65/000/167/0149/0154 27 28 E3+1

AUTHOR: Malevskiy-Malevich, S. P.; Serova, N. V.

ORG: Main Geophysical Observatory, Leningrad (Glavnaya geofizicheskaya observatoriya)

TITLE: Some results of measurements of radiation balance conducted in the spring above a reservoir

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 1, 1965. Fizika pogranichnogo sloya atmosfery (Physics of the boundary layer of the atmosphere), 149-154

TOPIC TAGS: total radiation, radiation balance, counterradiation, upwelling longwave radiation, radiometer, meteorological station, albedo, effective radiation

ABSTRACT: Actinometric measurements carried out above the Tsimlyansk Reservoir in early spring, 1963, showed that the radiation balance of the water surface is equal to or even exceeds the total radiation. The measurements were made simultaneously above the reservoir and above dry land. A pontoon was used for measurements on water which was located 2 km from the eastern shore of the reservoir. The radiation balance, total and reflected radiation, the counterradiation of the atmosphere, and the upwelling longwave radiation were measured. The effective radiation of the water surface was computed from measurement data. The radiometer was placed on the pontoon in such a manner that it could be directed toward the water surface for measuring the

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 14568-66

ACC NR: AT6004157

upwelling radiation from the water surface and turned toward the pontoon and shaded from the sun for messuring the counterradiation from the atmosphere. At the same time, counterradiation was measured at the Tsimlyansk Meteorological Station under the same conditions as on the pontoon—daily near noon in May 1963. In general, the effective radiation is very small, and on May 3 it was negative. The albedo of the water surface is also small because the absorption there is very high. The ratio of the radiation balance to the total radiation is near to one and even exceeds it on cloudy days. A diagram in the original article characterizes the dependence of the effective radiation upon the counterradiation from the atmosphere. Orig. art. has: 1 table, 3 figures, and 1 formula. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 4189

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 12776-66 EWT(1) GW

ACC NR: AT6004158 SOURCE CODE: UR/2531/65/000/167/0155/0160

44,55 54

AUTHOR: Malevskiy-Malevich, S. P. 57

44,55 B+1

ORG: Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya)

TITLE: Methodology of actinometric observations by helicopter 12,44,55

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 167, 1965. Fizika pogranichnogo sloya atmosfery (Physics of the boundary layer of the atmosphere), 155-160

TOPIC TAGS: helicopter course, upwelling radiation, radiation absorption, albedometer, radiometer, oscillograph, solar radiation

9m

ABSTRACT: Radiation measurements made by helicopter can be done above water surfaces and flat ground areas at various heights and different horizontal speeds. It is also possible to perform observations of the upwelling long-wave and short-wave radiations in areas of difficult access. Measuring the upwelling radiation at various heights, it is possible to determine the radiation absorption in the atmosphere. Upwelling radiation was measured by means of an albedometer and radiometer, both fastened to a frame in the front of the helicopter, and a vibrator and an oscillograph were used for recording the measured radiation. The accuracy of measurements depends upon the flight course. A strict horizontal position of the receiver is necessary in measuring the reflected solar radiation because a little slope can distort the results. The albedo of the surface of the Black Sea was

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

L 12776-66

ACC NR: AT6004158

measured at the heights of 25, 100, 300, 500, and 1000 m at various hours of the day in directions toward the sun and away from the sun. The maximum value of the albedo was obtained in the direction away from the sun. The albedo is higher above sea currents than above quiet sea surfaces. Orig. art. has: 2 figures and 2 tables. [EG]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4184

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APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001031810001-6

KIRILLOVA, T.V., kand. fiz.-matem. nauk; MALEVSKIY-MALEVICH, S.P.

One error in the calculation of long-wave radiation balance.
Meteor. i gidrol. no.1:36-38 Ja '65. (MIRA 18:2)

1. Glavnaya geofizicheskaya observatoriya im. Voyeykova.

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