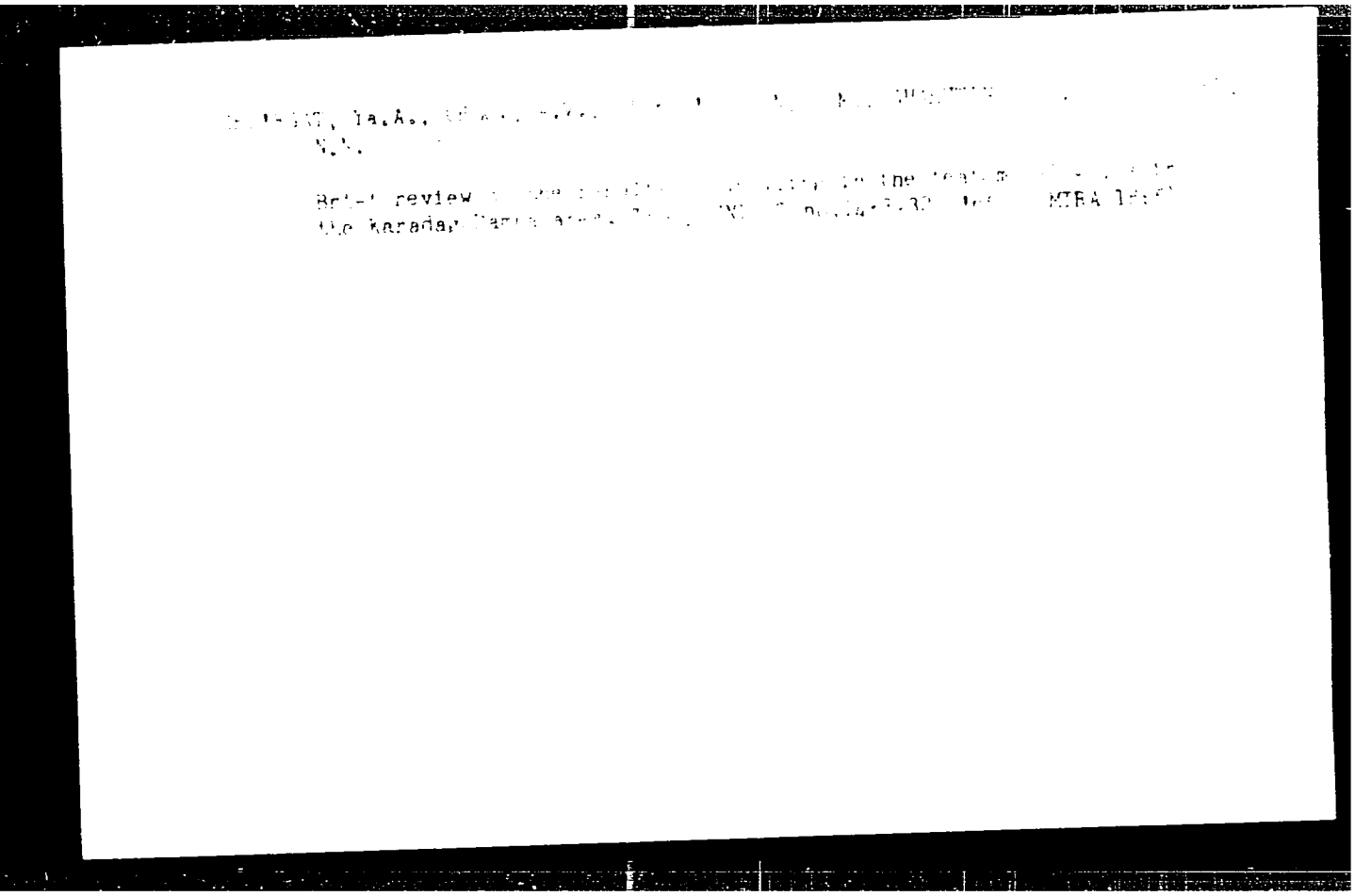
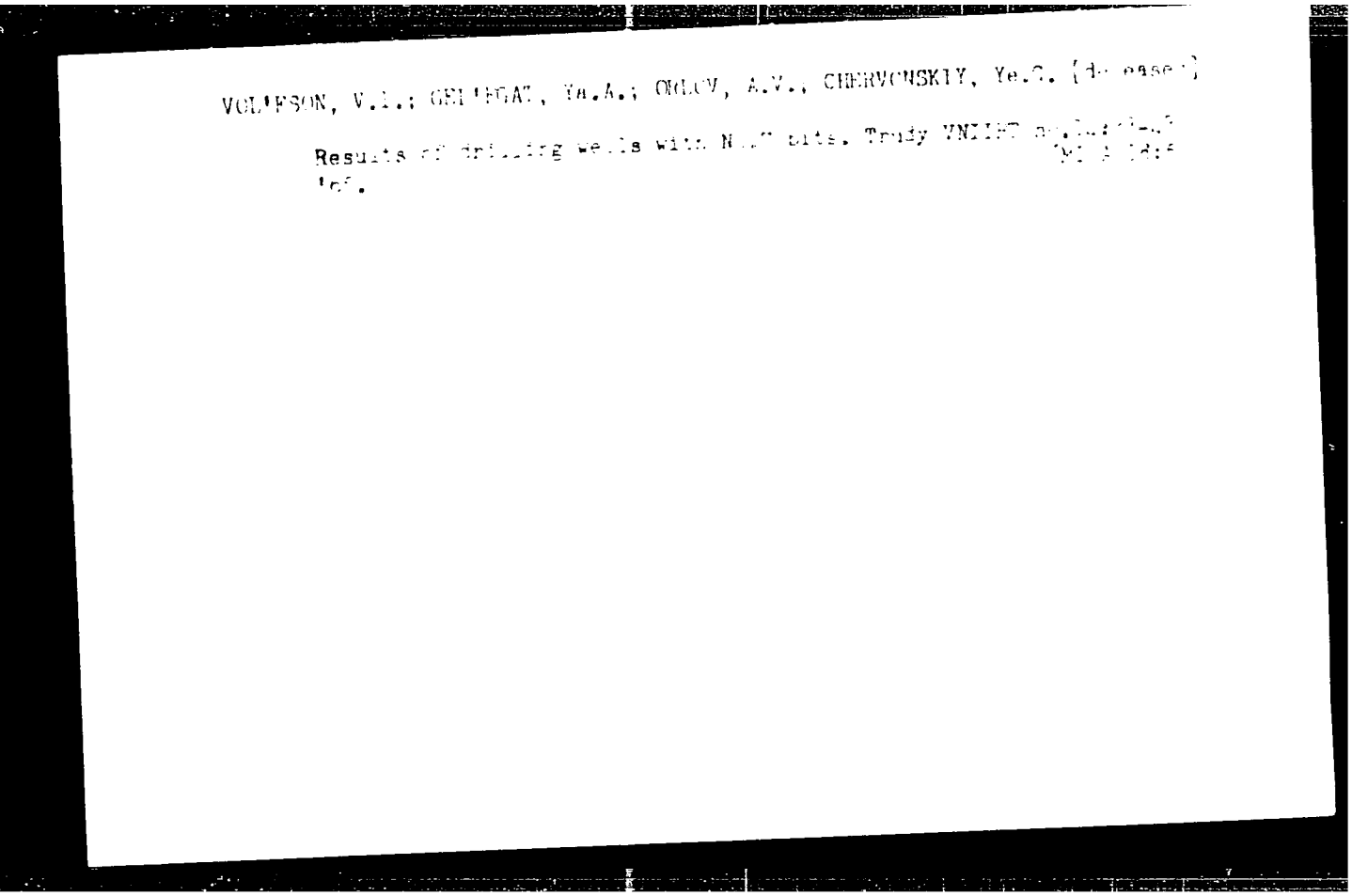




VOL'FSON, V.I.; GEL'FGAT, Yu.A.; OKLOV, A.V., CHERVONSKIY, Ye.C. {deceased}

Results of drilling wells with N... bits. Trudy VNIIBT no.[illegible] [illegible] 1961.

ORLOV, A.V., inzh.

Adjustment and operation of enclosures for heating frozen fuels. (MIRA 19:1)
Energetik 14 no.1:?-6 Ja '66.

L 42317-66 EWT(d)/EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/EM

ACC NR: AP6016305 SOURCE CODE: UR/0380/66/000/001/0076/0083

AUTHOR: Pinegin, S. V. (Moscow); Orlov, A. V. (Moscow); Gudchenko, V. M. (Moscow)

41
36
B

ORG: none

TITLE: Failure of material under the action of a pulsating contact load

SOURCE: Mashinovedeniye, no. 1, 1966, 76-83

TOPIC TAGS: material failure, metallographic examination, hardness

ABSTRACT: The aim of the work was a description of changes in a material in the contact zone which occur during long term working of the pieces under given conditions, and establishment of the form and location of the foci of the failure of the material. The test samples were short cylinders with a diameter of 50 mm, with flat convex spherical or grooved end surfaces. By combining the end surfaces of the samples and compressing them in an axial direction, we obtained contact surfaces of a circular or elliptical form depending on the form of the surfaces joined. The curvature of the surface was so chosen that the eccentricity of the ellipse e < 0.89. The samples were made of Type ShKh-15 carbon chromium steel. After heat treatment the samples had a

UDC: 620.192.7

Card 1/2

L 42317-66

ACC NR: AP6016305

surface hardness HRC = 60-62. The ends of the samples were polished to a purity R_a = 0.06-0.08 microns. Each pair of samples was placed in special chambers (diagram shown) equipped with hydraulic pulsators, or in a resonance type electric vibrator, and were subjected to an alternating compression load corresponding to Hertzian stresses at the center of the area of from 250 to 450 kg/mm^2. The frequency of the loads in the pulsator was 8 cycles, and in the electric vibrator 80 cycles. The temperature of the samples varied from 30 to 45°. The duration of the tests varied from 3 to 22 million load cycles, and was limited by the appearance of visible damage to the surface. After the tests, the samples were subjected to metallographic investigation. Determinations were made of the residual deformations and of the depth of the surface damage. Experimental results are given in graphic form, and several microphotos of the surfaces are given. Orig. art. has: 5 figures.

SUB CODE: 11, 20/ SUBM DATE: 27Jul65/ ORIG REF: 007/ OTH REF: 005

Card 2/2

TAGIYEV, F.I.; [illegible], A.V.

Increase in possible drilling depth. [illegible]

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni akademika Gubkina.

UVAROV, G.A., kand.tekhn.nauk; SHESTAKOV, B.I., kand.tekhn.nauk; FEDOROV, V.N., inzh.; GOPKO, M.K., inzh.; ANDREYEV, G.B., inzh. ORLOV, A.V., inzh.

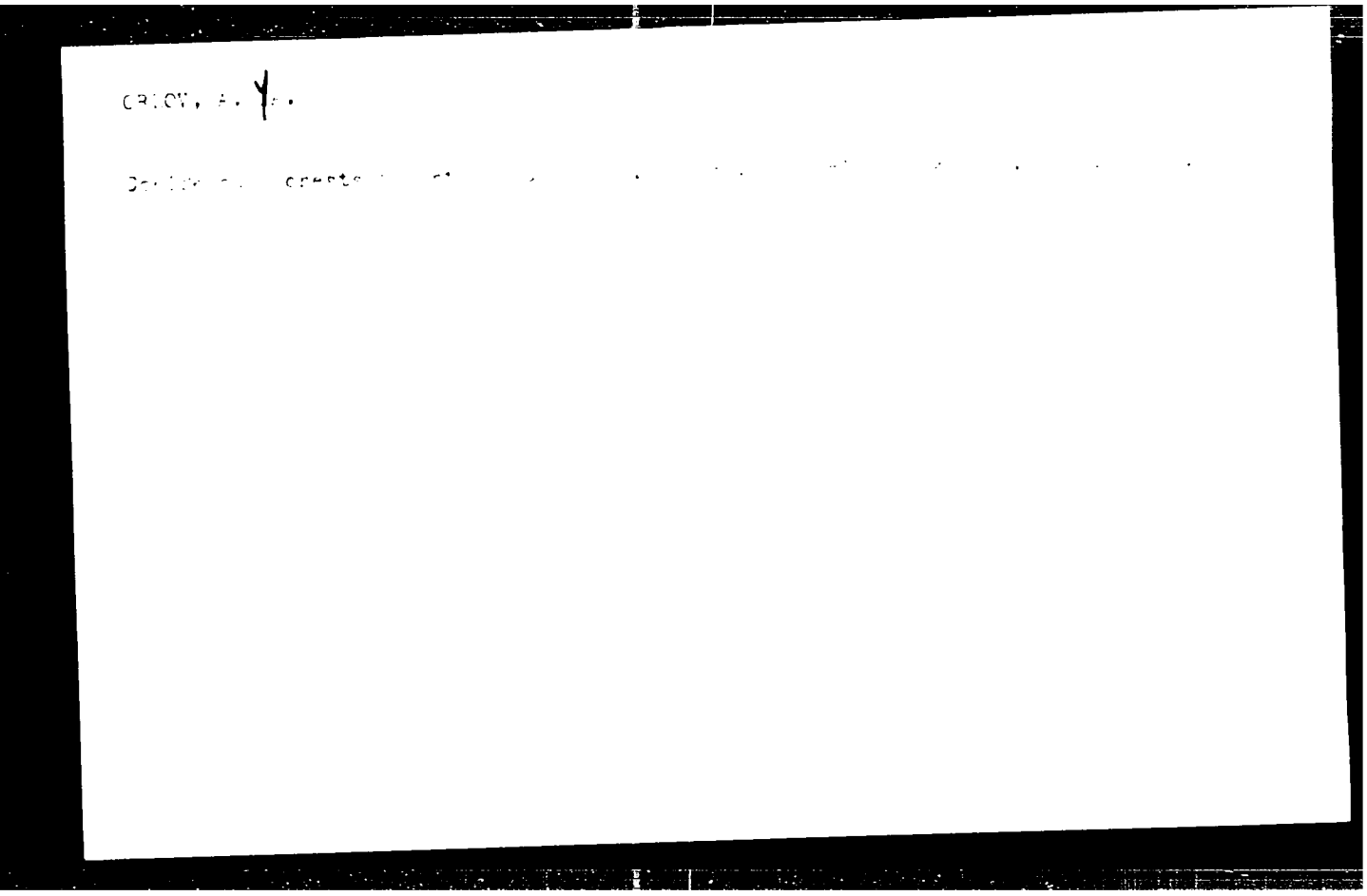
Simultaneous burning of anthracite culm and gas with different methods for supplying the gas to the furnace. Teploenergetika 8 no.4:52-57 Ap '61. (MIRA 14:8)

1. Kuybyshevskiy industrial'nyy institut i Kuybyshevenergo. (Furnaces)

GROMAKOV, Vasiliy Vasil'yevich; ORLOV, Aleksandr Vasil'yevich; VORONOV, A.I., red.; MAKHIN, I.T., tekhn. red.

[Role of the subjective factor in the building of communism] Rol' sub"ektivnogo faktora v stroitel'stve kommunizma. Moskva, Izd-vo "Znanie," 1961. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.2, Filosofiia, no.17)
(MIRA 14:11)

(Communism) (Efficiency, Industrial)



ORLOV, A-Ya.

SOIL TEMPERATURES

[illegible]

3.6-132
Orlov, A. IA. Temperatura pochv i proizvoditel'nost' lesov. [Soil temperature and
forest productivity.] Akademiia Nauk SSSR, Doklady, Moscow, 91(4):957-960, Aug. 1,
1953. 6 refs. DLC—Temperatures of forest soils of a series of western regions of the U.S.S.R.
are during the vegetative stage considerably lower than the soil temperatures of the [illegible]
forest zones of the European parts of the U.S.S.R. The principal woody species of the tundra
regions of the U.S.S.R. have developed adaptations for growing in soil with relatively low
temperatures even during the period of their maximum heating. Roots of woody species are
sometimes found in soil layers with temperatures of about 1°C but their number is small; most
of the roots are in layers with temperatures 4-5°C during maximum heating. Subject Headings:
1. Soil temperatures 2. Forest climatology 3. U.S.S.R.—I.L.D.

ORLOV, A.Ya.; KABANOV, N.Ye., professor, redaktor; POZHARITSKIY, K.L., professor, redaktor; KUL'TIASOV, I.M., redaktor; ALEKSEYEVA, T.V. tekhnicheskiy redaktor.

[Coniferous forests of the Amgun-Bureya interfluve] Khvoinye lesa Amgun'-Bureinskogo mezhdurech'ia. Moskva, Izd-vo Akademii nauk SSSR, 1955. 206 p. [Microfilm] (MLRA 8:11)
(Khabarovsk Territory--Forests and forestry)

ORLOV, A. Ya.

Methods of quantitative determination of absorption roots of trees in the ground. Biul. MOIP. Otd. biol. 60 no.3:93-102 My-Je '55. (MLRA 8:9)

(Roots (Botany)

ORLOV, A.Ya.

Observations on the sucking root ends of the spruce (Picea excelsa Link) under natural conditions. Bot.zhur. 42 no.8:1172-1181 Ag '57. (MLRA 10:9)

1. Institut lesa Akademii nauk SSSR, selo Uspenskoye Moskovskoy oblasti.
(Spruce) (Roots (Botany))

PHASE I BOOK EXPLOITATION SOV/3377

Orlov, Aleksandr Yakovlevich

Sluzhba shiroty. Service des Latitudes (Latitude Service) Moscow, AN SSR, 1958. 124 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Astronomicheskiy sovet.

Resp. Ed.: Ye. P. Fedorov.

PURPOSE: This booklet is intended for earth scientists concerned with latitude and pole determination.

COVERAGE: This booklet describes the activities of the International Latitude Service and presents data on latitude and pole determination. Data on pole displacement is presented from several widely distributed latitude stations over a period of about eighty years. This work was published in connection with the International Astronomy Congress held in Moscow on August 12-20, 1958. This work contains a French translation of all information. No personalities are mentioned. References are incorporated in the text.

Card 1/3

ORLOV, A.Ya.

Oxygen in the ground waters of certain forest soil types of Vologda Province. Pochvovedenie no.12:36-47 D '58. (MIRA 12:1)

1. Institut lesa AN SSSR, Laboratoriya lesnogo pochvovedeniya.
(Vologda Province--Forest soils)
(Water, Underground)

ORLOV, A.Ye.

Distribution of sucking roots in the overmoist soil layer of spruce forests as related to the conditions of aeration. Biul.MOIP.Otd. biol. 64 no.1:79-89 Ja-F '59. (MIRA 12:7)
(Roots (Botany)) (Soil moisture) (Spruce)

ORLOV, A.Ya.; IZHEKOV, A.A.

Change in the properties of peat-humus forest soils after they have been drained. Pochvovedenie no.2:40-49 F '60. (MIRA 15:7)

1. Laboratoriya lesovedeniya AN SSSR.
(Drainage) (Forest soils)

ORLOV, A.Ya.

Growth and age changes in root tips of the spruce Picea excelsa Link. Bot.zhur. 45 no.6:888-896 Je '60. (MIRA 13:7)

1. Laboratoriya lesovedeniya Akademii nauk SSSR, s.Uspenskoye, Moskovskoy obl.
(Spruce) (Roots(Botany)) (Growth(Plants))

ORLOV, A.Ya.

Effect of soil factors on principal characteristcs of some forest types in the southern taiga zone. Biul.MOIP. Otd.biol. 65 no.3:116-131 My-Je '60. (MIRA 13:7)
(YAROSLAVL PROVINCE--FOREST ECOLOGY)
(SOIL MOISTURE) (SOIL TEMPERATURE)

ORLOV, Aleksandr Yakovlevich, zasl. deyatel' nauk USSR; AKSENT'YEVA, Z.N., otv. red.; LAVRENT'YEVA, Ye.V., starshiy nauchnyy sotr., red.; POPOV, N.A., starshiy nauchnyy sotr., red.; FEDOROV, Ye.P., starshiy nauchnyy sotr., red.; ORLOV, B.A., starshiy nauchnyy sotr., red.; LABINOVA, N.M., red. izd-va; RAKHLINA, N.P., tekhn. red.

[Selected works in three volumes] Izbrannye trudy v trekh tomakh. Kiev, Izd-vo Akad. nauk USSR. Vol.3. 1961. 242 p. (MIRA 15:1)

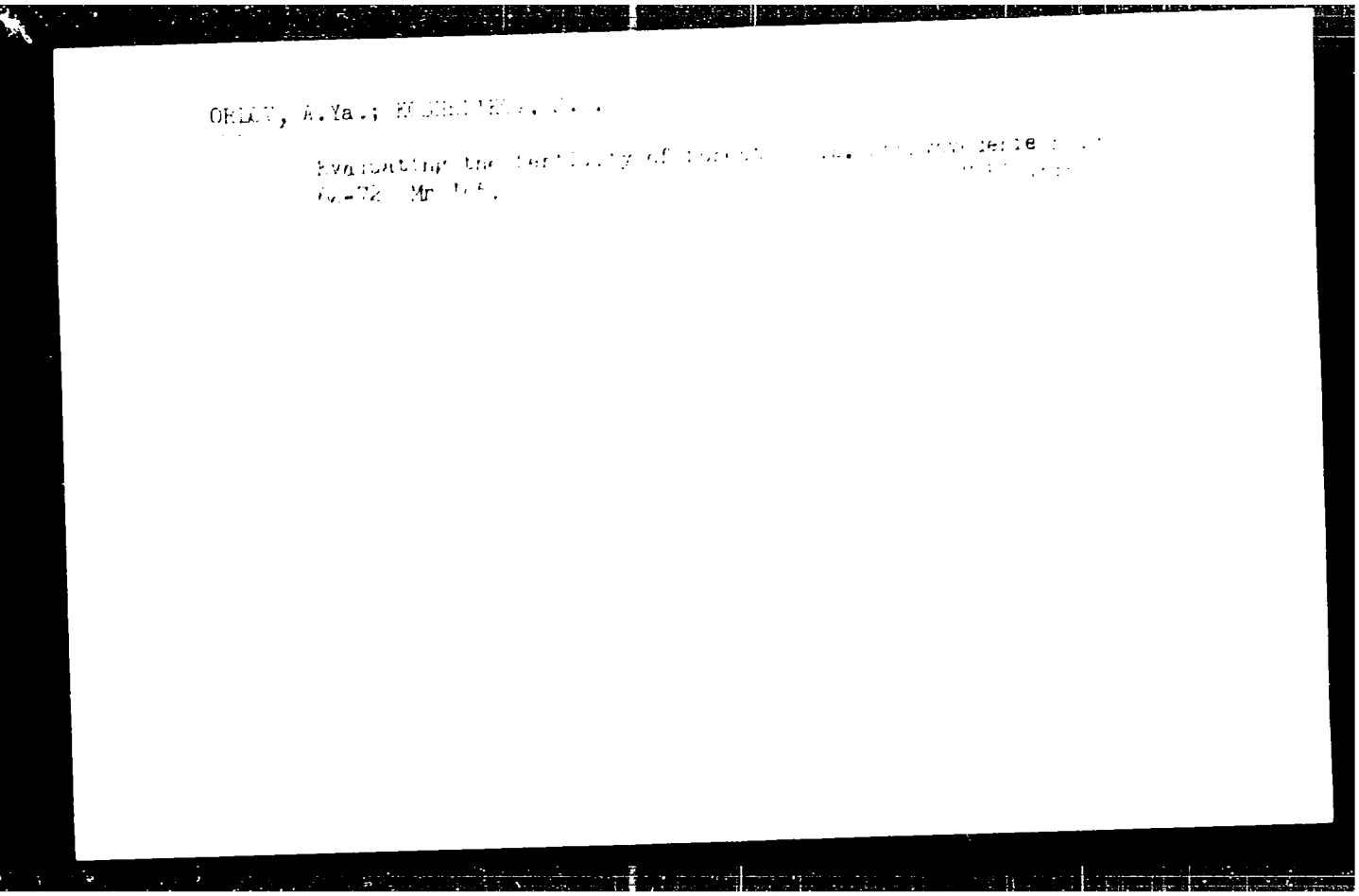
1. Deystvitel'nyy chlen AN USSR, Chlen-korrespondent AN SSSR (for Orlov). 2. Chlen-korrespondent AN USSR (for Aksent'yev). 3. Poltavskaya gravimetricheskaya observatoriya (for Lavrent'yeva, Popov, Fedorov). 4. Glavnaya astronomicheskaya observatoriya v Pulkove (for Orlov).

(Geophysics)

ORLOV, A.Ya.

Effect of the flooding of root systems on the accumulation of phosphorous in seedlings of arborecus plants. Dokl. AN SSSR 147 no.1:233-236 N '62. (MIRA 15:11)

1. Laboratoriya lesovedeniya pri Gosplane SSSR. Predstavleno akademikom V.N. Sukachevym.
(Plants—Assimilation)
(Trees)
(Plants, Effect of water on)



OBLOV, A.Ya.; [illegible]

Evaluating the [illegible]
[illegible]

ORLOV, B. (Novosibirsk); PANDAKOV, V. (Novosibirsk)

Vital problems in the economics and organization of new enterprises and production. Vop. ekon. no.10:151-155 O '63. (MIRA 16:12)

ORLOV, B.A., inzh.

Indicator of dynamic deformations using transistors. Elek.sta. 29 no.6:54-57 Je '58. (MIRA 11:9)
(Transistors) (Electric measurements)

PETROV, K. A.; PARSHINA, V. A.; ORLOV, B. A.; TSYPINA, G. M.

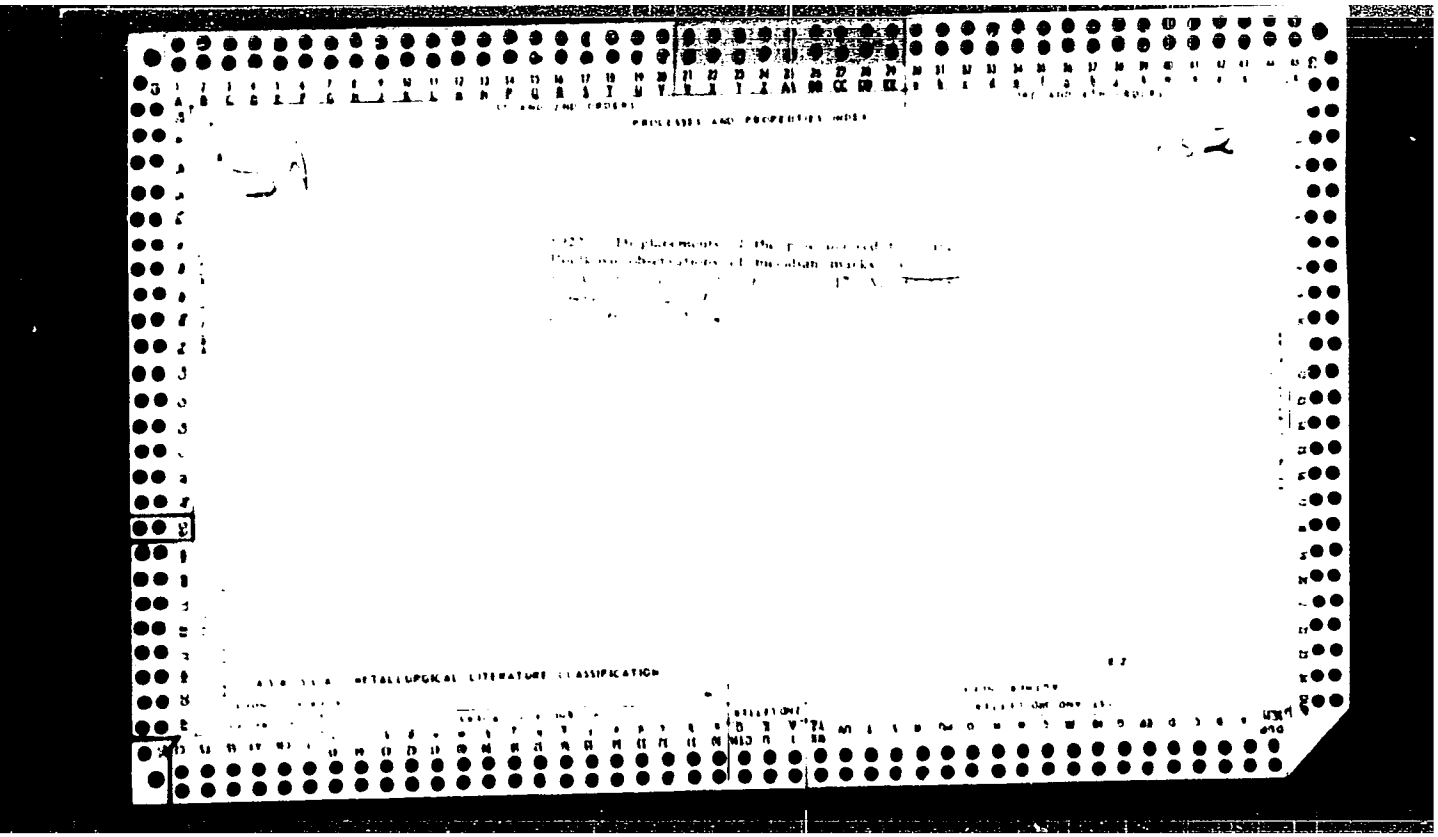
Properties of phosphines. Part 5: Reactions of phosphines with chloroamines, sulfenyl chlorides, and amines. Zhur. ob. khim. 32 no.12:4017-4022 D '62. (MIRA 16:1)

(Phosphine) (Sulfenyl chlorides) (Amines)

ORLOV, B.A.

Periodic variations of refraction. Izv.GAO 23 no.1:81-84 '62.
(MIRA 16:12)

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238



ORLOV, B. A.

Astronomical Clocks

Study of the clocks of the Nikolayev branch of the Main Astronomical Observatory.
Izv.Gla v. Astron.obs. 19 No. 1, 1952.

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

ORLOV, B. A.

Stars - Clusters

Effect of bending on the derivation of an absolute order of clusters. Astron. zhur. No. 128, 1952.

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

ORLOV, B.A.

Effect of bending on the derivation of an absolute system of declinations. Izv.Glav.astron.obser. 19 no.3:56-69 '53.
(MLRA 7:1)

(Astronomy, Spherical and practical)

ORLOV, B. A.
USSR/Astronomy - Observatories

Card : 1/1

Authors : Mikhaylov, A. A., Dir. of Pulkovo Observatory, and Orlov, B. A., Cand. of Phys-Math. Sciences

Title : Reactivated Pulkovo

Periodical : Nauka i Zhizn', 6, 24 - 25, June 1954

Abstract : The history of the largest Soviet Astronomical Observatory of the Academy of Sciences USSR, located in Pulkovo, 18 km from Leningrad, is described. The role of the Communist Party of the USSR in the reconstruction of the Observatory from the almost ruined state suffered during the last war is emphasized. Special mention is given to the work of the Observatory in compiling a catalogue of weak stars, which will give the exact position of about twenty thousand especially selected stars. The international scientific relations of the Observatory are cited. Soviet made instruments installed at the Observatory are briefly described. Illustrations.

Institution : Astronomical Observatory at Pulkovo

Submitted : ....

3.5150

AUTHOR: Orlov, ...

TITLE: On mean refraction in the Pul...vo tables

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. ..., 1963, ..., abstract 2A101 ("Izv. Gl. astron. observ. v Pulkove", 1961, v. ..., no. 1, 51-55, English summary)

TEXT: The initial values of temperature and pressure entering the Pulkovo refraction tables are expressed by fractional numbers, both in the decimal system of measures (t_o = 9.31 C, b_o = 751.51 mm) and in the English one (t_o = ...5 F, b_o = 29.5966 inch). The origin of these numbers, which are in no way connected with meteorological conditions at Pulkovo, is investigated. Bradley in Greenwich put into the basis of his refraction table ... = ...F, b_o = 29.6 inch. On the basis of Bradley's measurements Bessel car... to the co...ion that correction of his thermometer amounted to -1.25 F. Hence th... ...perature was 48.5 F = 9.31 C. As to the pressure, Bessel ...und, comparing ... studies on refraction at Koenigsberg, that readings of ... ...arometer are in need of a correction of + 0.50 of Paris line. Hence, after ...nversion from ...ry temperature 50 F =

Card 1/2

G/135/62/000/002/002/[illegible]
A001/A101

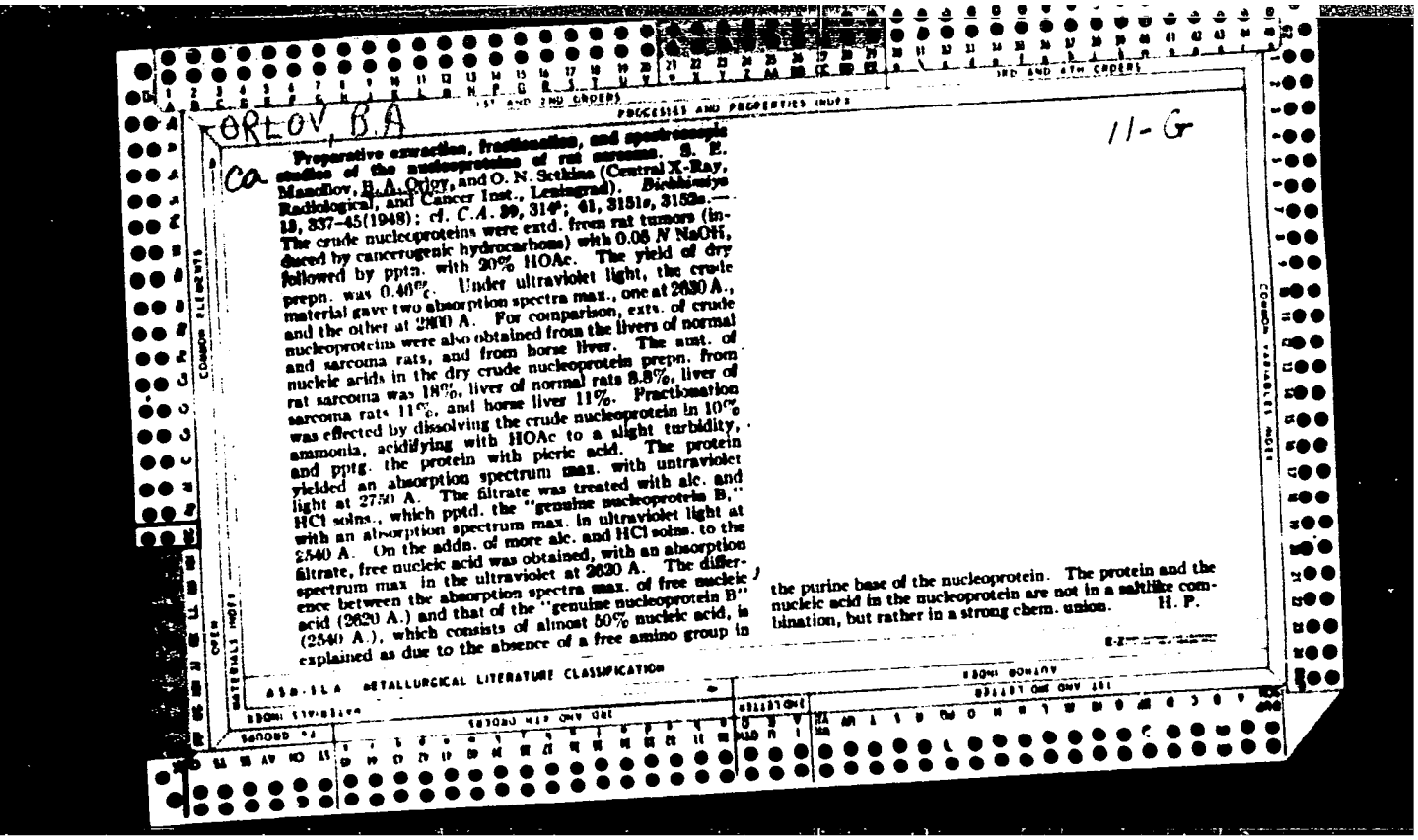
On mean refraction in the Pulkovo tables

+ 10°C to 0°C, the initial pressure 20.5966 inch = [illegible] mm was obtained. Bessel numbers were taken over by Gulden, and from the latter they came into the Pulkovo tables.

[illegible]or's summary

[Abstracter's note. [illegible] translation]

Card 2/2



ORLOV, B.A

11-G

Ca

Preparative extraction, fractionation, and spectroscopic studies of the nucleoproteins of rat sarcoma. S. P. Mandilov, B. A. Orlov, and O. N. Sytkina (Central X-Ray, Radiological, and Cancer Inst., Leningrad). *Biokhimiya* 13, 837–45(1948); cf. *C.A.* 39, 314⁶; 41, 3151*e*, 3152*a*.—The crude nucleoproteins were extd. from rat tumors (induced by cancerrogenic hydrocarbons) with 0.08 *N* NaOH, followed by ppta. with 20% HOAc. The yield of dry prepn. was 0.40%. Under ultraviolet light, the crude material gave two absorption spectra max., one at 2630 A., and the other at 2800 A. For comparison, exts. of crude nucleoproteins were also obtained from the livers of normal and sarcoma rats, and from horse liver. The anal. of nucleic acids in the dry crude nucleoprotein prepn. from rat sarcoma was 18%, liver of normal rats 8.8%, liver of sarcoma rats 11%, and horse liver 11%. Fractionation was effected by dissolving the crude nucleoprotein in 10% ammonia, acidifying with HOAc to a slight turbidity, and pptg. the protein with picric acid. The protein yielded an absorption spectrum max. with untraviolet light at 2750 A. The filtrate was treated with alc. and HCl solns., which pptd. the "genuine nucleoprotein B," with an absorption spectrum max. in ultraviolet light at 2540 A. On the addn. of more alc. and HCl solns. to the filtrate, free nucleic acid was obtained, with an absorption spectrum max in the ultraviolet at 2620 A. The difference between the absorption spectra max. of free nucleic acid (2620 A.) and that of the "genuine nucleoprotein B" (2540 A.), which consists of almost 50% nucleic acid, is explained as due to the absence of a free amino group in the purine base of the nucleoprotein. The protein and the nucleic acid in the nucleoprotein are not in a saltlike combination, but rather in a strong chem. union. H. P.

ORLOV, B.A.

USSR

The application of [illegible] spectroscopy to the investigation of nucleoproteins in normal and cancerous tissues. S. E. Manoilov and B. A. Orlov (Central [illegible] Radiol., and Cancer Inst., Leningrad). Vestnik Leningrad. Univ. 5, No. 3, [illegible] (1950).—Ultraviolet absorption spectroscopy was applied to the question of the bond between nucleic acids and albumin. The nucleoproteins from normal and cancerous tissues were fractionated and studied both chemically and spectrographically. The max. on the absorption curve corresponding to nucleic acid lies at 2030 A. but for the nucleoprotein it is shifted toward 2540 A. Upon hydrolysis with 10% KOH the max. is shifted towards 2620 A. and after continued hydrolysis the free nucleic acid is formed and the max. appears at 2620 A. In the nucleoprotein the amino group is blocked, thereby accounting for the max. at 2540 A. It is assumed that the reaction of albumin with nucleic acid takes place through the amino group of adenine. This is supported by expts. on [illegible] synthesis i.e., the reaction of nucleic acids with amino acids, and the reaction of adenine with amino acids. In these reactions only those amino acids which have an aromatic ring e.g., tyrosine, tryptophan, phenylalanine, enter into the reaction.

I. Roviar Leach

MB

(1)

ALEKSANDROV, S.N;MANOILOV, S. Ye;ORLOV, B. A.

Discharge of nucleic acids in injuries of normal and tumor cells.
Doklady Akad. nauk SSSR 83 no.5:725-728 11 Apr 1952.(CLML 22:2)

1. Presented by Academician A. I. Oparin 15 February 1952. 2.
Geophysics Institute, Academy of Sciences USSR.

GRAYEVSKAYA, B.M.; ORLOV, B.A.

Early modifications in the blood serum under the action of X rays as determined by ultraviolet spectrography. Dokl.AN SSSR 108 no.4: 623-625 Je '56. (MLRA 9:9)

1.TSentral'nyy rentgenologicheskiy radiologicheskiy i rakovyy institut Ministerstva zdravookhraneniya SSSR. Predstavleno akademikom L.A.Orbeli.
(SERUM) (X RAYS--PHYSIOLOGICAL EFFECT)

T-4

USSR / Human and Animal Physiology. Blood Circulation.

Abs Jour : Ref Zhur - Biologiya, No 1, 1951, No. 3407

Author : Manoylov, S. E.; Lasovskaya, A. V.; Orlov, B. A.
Inst : AS USSR
Title : Effect of Roentgen Rays Emitted from Various Anodes on the Function of the Isolated Frog Heart

Orig Pub : Dokl. AN SSSR, 1956, 110, No 2, 305-307

Abstract : The effect of X-rays (10800 r) of various wavelengths was revealed after the exposed heart placed in an altitude chamber at a pressure of 80 mm Hg, had ceased working. Control hearts, as a rule, did not stop working under such conditions. Heart irradiation by means of tubes with iron (1985A) and cobalt (1.795A) anodes (in which no stimulation of Fe atoms of the irradiated substrate takes place) induced arrest of the heart in 16.6 and 28% of the cases respectively. In

Card 1/2

32

CRLOV, B A

69

PHASE I BOOK EXPLOITATION SOV/5435

Kiselev, P. N., Professor, G. A. Gusterin, and A. I. Strashinin, Eds.

Voprosy radiobiologii. t. III: Sbornik trudov, posvyashchennyy 60-letiyu so dnya rozhdeniya Professora M. N. Pobedinskogo (Problems in Radiation Biology. v. 3: A Collection of Works Dedicated to the Sixtieth Birthday of Professor M[ikhail] N[ikolayevich] Pobedinskiy [Doctor of Medicine]) Leningrad. Tsentr. n-issl. in-t med. radiologii M-va zdravookhraneniya SSSR, 1960. 422 p. 1,500 copies printed.

Tech. Ed.: P. S. Peleshuk.

PURPOSE: This collection of articles is intended for radiobiologists.

COVERAGE: The book contains 49 articles dealing with pathogenesis, prophylaxis, and therapy of radiation diseases. Individual articles describe investigations of the biological effects of radiation carried out by workers of the Central Scientific Research Institute for Medical Radiology of the Ministry of Public Health, USSR. [Tsentral'nyy nauchno-issledovatel'skiy institut meditsinskoy radiologii Ministerstva zdravookhraneniya SSSR] during 1958-59. The following

Card 1/10

topics are covered: various aspects of primary effects of radiation; the course of some metabolic processes in animals subjected to ionizing radiation; reactions in irradiated organisms; morphologic changes in radiation disease; and reparation and regeneration of tissues injured by irradiation. Some articles give attention to the effectiveness of experimental medical treatments. No personalities are mentioned. References accompany almost all of the articles.

TABLE OF CONTENTS:

ORLOV, B. D. PA 12/49T27

USSR/Engineering Jul 48
Welding, Aluminum
Welding - Methods

"Roller Welding of Aluminum Alloys in Motor Structures," F. Ye. Tret'yakov, Engr, B. D. Orlov, Engr, 2 pp

"Avtogennoye Delo" No 7

Describes roller welding of aluminum, explaining advantages of method, preparation of work, welding routine, and points requiring special attention. Illustrated by photographs of machine and welds and dimensioned sketch of roller profile.

[redacted] 12/49T27

Cand. Technical Sci

ORLOV, B. D.

"Investigation of the Technology of Spot Welding of Parts Made of Duralumin of Great Thickness." Sub 30 Jun 51, Moscow Aviation Technological Inst

Dissertations presented for science and engineering degrees in Moscow during 1951.

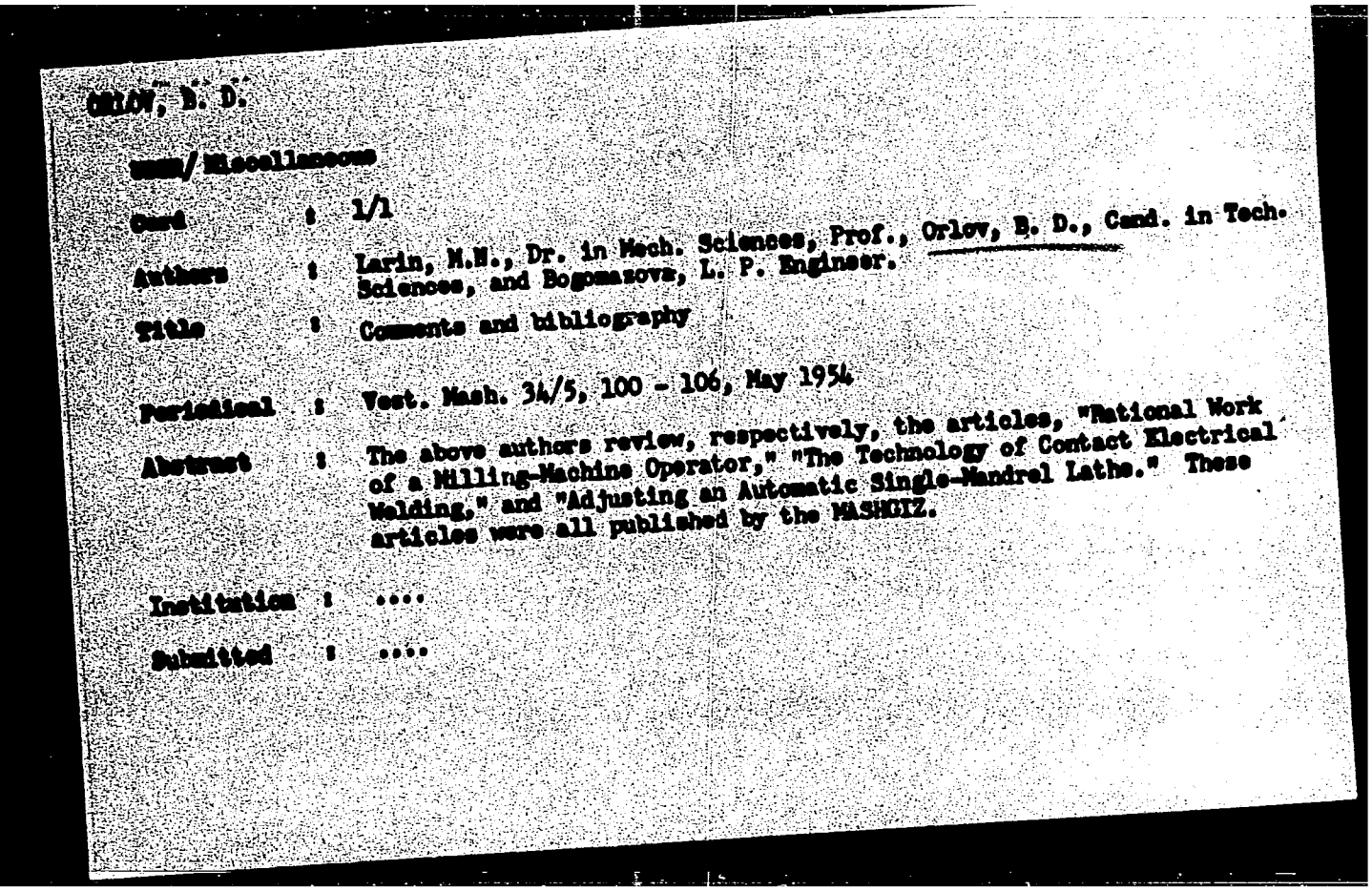
SO: Sum. No. 480, 9 May 55

ORLOV, B.D.

BALKOVETS, D.S., kandidat tekhnicheskikh nauk; ORLOV, B.D., inzhener; CHULOSHNIKOV, P.L., inzhener.

Spot welding 30KhGSA steel by a two-impulse process. Vest.mash.34 no.4:68-71 Ap '54. (MLRA 7:5)
(Steel--Welding)

Evaluation B- 81524



ORLOV, B. D.

USSR/ Miscellaneous

Card : 1/1

Authors : Larin, M.N., Dr. in Mech. Sciences, Prof., Orlov, B. D., Cand. in Tech. Sciences, and Bogomazova, L. P. Engineer.

Title : Comments and bibliography

Periodical : Vest. Mash. 34/5, 100 - 106, May 1954

Abstract : The above authors review, respectively, the articles, "Rational Work of a Milling-Machine Operator," "The Technology of Contact Electrical Welding," and "Adjusting an Automatic Single-Mandrel Lathe." These articles were all published by the MASHGIZ.

Institution : ....

Submitted : ....

ORLOV, B.D., kandidat tekhnicheskikh nauk; CHULOSHNIKOV, P.L., inzhener

Current regulation in voltage oscillation of spot and roll welding machine circuits. Svar. proizv. no.4:13-17 Ap '55. (MLRA 8:9)
(Electric welding)

AID P - 5066

Subject : USSR/Engineering-Welding

Card 1/1 Pub. 107-a - 6/11

Authors : Orlov, B. D., and P. L. Chuloshnikov

Title : Twisting test of welded points

Periodical : Svar. proizv., 6, 20-21, Je 1956

Abstract : The authors describe the test they devised for welded points of different metals, such as the L62 brass, the D16T duraluminum, and the 1Kh18N9 steel, the 30KhGSA steel and the steel 20. In order to determine the shearing strength they used the MK-50 machine equipped with graphic recorder. Two photos, 1 graph, 1 drawing, 1 table and GOST standard.

Institution : None

Submitted : No date

AID P - 5603

Subject : USSR/Engineering

Card 1/1 Pub. 107-a - 3/12

Authors : Balkovets, D. S., Kand. of Tech. Sci., B. D. Orlov, Kand. of Tech. Sci. and P. L. Chuloshnikov, Eng.

Title : Electronic modulator for spot welding of aluminum alloys

Periodical : Svar. proizv., 12, 10-13, D 1956

Abstract : The process of the formation of spot weld in bonded specimens of D16T duralumin up to 1.5mm thick is briefly outlined. The authors describe their device to control spot welding impulses. They call it the electronic modulator and claim it eliminates spattering and cracks in the weld, which are commom defects in spot welding of duralumin. Five micro-pictures, 5 drawings, 1 photo and 1 table; 2 Russian references (1951-55).

Institution : Scientific Research Institute of Aviation Technology (NIAT).

Submitted : No date

ORLOV B D

Call Nr: TS 227.B29

AUTHORS: Balkovets, D. S., Orlov, B. D., Chuloshnikov, P. L.

TITLE: Spot and Seam Welding of Special Steels and Alloys (Tochechnaya i rolikovaya svarka spetsial'nykh staley i splavov)

PUB. DATA: Gosudarstvennoye izdatel'stvo oboronnoy promyshlennosti, Moscow, 1957, 430 pp.,5500 copies.

ORIG. AGENCY: None given

EDITORS: Editor: Veys, A. L., Candidate of Technical Sciences; Editor-in-Chief: Sokolov, A. I., Eng.; Ed. of Publishing House: Bogomolova, M. F.; Tech. Ed.: Rozhin, V. P.; Reviewers: Prof. Gel'man, A. S., Dr. of Technical Sciences, and Poplavko, M. V., Candidate of Technical Sciences

PURPOSE: The book is intended for scientific research institutes of technology, as well as for a wide circle of practicing engineers, designers, technologists and personnel engaged in the field of quality control and for persons interested in spot and seam welding techniques.

Card 1/7

Call Nr: TS 227 .B29

Spot and Seam Welding of Special Steels and Alloys (Cont.)

COVERAGE: The book presents extensive information on the technology of spot and seam resistance welding. Welding machinery, equipment and measuring instruments are described and illustrated. Suggestions for adequate design of spot or seam welded frames and tight, thin sheet-metal structures from structural steels, heat resistant and non-ferrous alloys are given, and basic methods employed in quality control of welds are presented. Failures in weld joints, causes of defective welds and methods of their detection are discussed and illustrated. Special measuring and testing instruments employed for the set-up and adjustment of welding machines are described and methods of eliminating operating trouble are suggested. There are 83 bibliographic references, 76 of which are Slavic, 6 English, 1 French. Personalities mentioned include: Akhun, A.I., Kochanowskiy, N.Ya., Gel'man, A.S., Grigor'yev, V.A., Maslov, G.A., Skakun, G.F., Poplavko, M.V.

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Spot and Seam Welding of Special Steels and Alloys (Cont.)

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Spot and Seam Welding of Special Steels and Alloys (Cont.)

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Call Nr: TS 227.B29

Spot and Seam Welding of Special Steels and Alloys (Cont.)

Card 6/7

Call Nr: TS 227.B29

Spot and Seam Welding of Special Steels and Alloys (Cont.)

Bibliography. 425

AVAILABLE: Library of Congress

Card 7/7

Orlov, B.D.

135-1-7/14

SUBJECT: USSR/Welding

AUTHORS: Orlov, B.D., Candidate of Technical Sciences; Shavyrin, V.N., Engineer; and Novosel'tsev, N.A., Engineer.

TITLE: X-ray inspection of spot-weld joints in high-strength aluminum alloys. (Rentgenovskiy kontrol'uzlov iz vysokoprochnykh aluminiyevykh splavov, svarivayemykh tochkami).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 1, pp 20-24. (USSR).

ABSTRACT: The article contains general information of X-ray inspecting, and X-ray photograph reading in aircraft building. As an advanced welding machine design of Soviet make there is mentioned the МТИП-type (MTIP-type), with stabilized welding impulses and considerably stabilized electrode pressure, which improves the quality of welds.
The article contains 9 photographs, 1 drawing, 2 tables, and 8 references - two of which are Russian.

INSTITUTION: Not stated.
PRESENTED BY:
SUBMITTED:
AVAILABLE: At the Library of Congress.

Card 1/1

[illegible] 7/14

SUBJECT: USSR/Welding

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, Chuloshnikov, P.L., Engineer, and El'yasheva, M.A., Candidate of Technical Sciences.

TITLE: Strength of Spot-Welded and Roller-Welded Joints in Titanium "BT1А". vypolnennykh tochechnoy i rolikovoy svarkoy). (Prochnost soyedineniy titana "BT1А".

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 5, pp 19-22 (USSR)

ABSTRACT: The investigation described had the purpose of comparing the properties of titanium "BT1А" with the properties of steel "1X18H9-H" for which titanium may be a replacement giving an economy in weight. Both metals were tested under static load, under cyclic fatigue load, and under pressure load. The technology of specimen preparation and of testing is given in detail.

The following conclusions have been made:

1. The static strength of spot-welded and roller welded joints of titanium "BT1А" is not below the static strength of those made of steel "1X18H9-H", despite the strength of the basic metal "BT1А" being 25% below the strength of the basic metal

Card 1/2

TITLE: Strength of Spot-Welded and Roller-Welded Joints in Titanium "BT1А". (Prochnost' soyedineniy titana "BT1А", vypolnennykh tochechnoy i rolikovoy svarkoy)

steel "1X18H9-H".

2. In tear-off tests, titanium "BT1А" shows weaker spot welds than steel "1X18H9-H".

3. Fatigue resistance of lap-spot joints and in lap-roller welded joints is practically equal in both compared metals In type III spot welds (shown in illustration) the resistance of titanium is only half the resistance of steel "1X18H9-H", which can be explained by low formability of titanium and hence its poor ability to readjust stresses in multi-spot joints.

4. Spot welds in combination with a sheet and a profile section made of titanium "BT1А" show good performance under pressure loads, but have brittleness breakdowns.

The article contains 4 tables, 1 sketch, 1 diagram, 6 photographs.

ASSOCIATION: "НИАТ" (NIAT)
PRESENTED BY:
SUBMITTED:
AVAILABLE: At the Library of Congress.
Card 2/2

SOV-135-58-2-4/18

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, Snavyrin, V.S., and Novosel'tsev, N.A., Engineers

TITLE: On the Strength of Spot Welded Joints of D16AT Alloys (O prochnosti soyedineniy iz splava D16AT, vypolnennykh tochechnoy svarkoy)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 2, pp 14 - 18 (USSR)

ABSTRACT: Tests under different loads were carried out on weld and riveted joints of duraluminum and the following conclusions were made: a) shearing strength under static load of weld joints is higher than of analogous riveted joints, whereas tearing strength of weld joints is lower; b) shearing strength of profile sections joined to sheets is about 25 % higher than strength of sheets joined to sheets; c) fatigue resistance of weld joints is almost similar to that of riveted joints and is lower under repeated static load; d) equal strength can be obtained by increased number of spots in the joint. Cold hardening was confirmed by Candidate of

Card 1/2

SOV-135-58-2-4/18

On the Strength of Spot Welded Joints of D16AT Alloys

Technical Sciences N. Kh. Andreyev to increase strength of weld joints. There are 4 tables, 3 photos, 9 diagrams, 6 graphs and 4 references, 1 of which is Soviet, 1 German, and 2 English.

Card 2/2 1. Welded joints--Physical properties

Orlov, B.D.

135-58-4-1/19

AUTHORS: Boytsov, V.V., Professor; Kostyuk, V.A., Candidate of Technical Sciences; and Orlov, B.D., Candidate of Technical Sciences

TITLE: Mechanization and Automation of Welding Processes (Mekhanizatsiya i avtomatizatsiya svarochnykh protsessov) The Automation of Welding Operations in the Aviation Industry (Avtomatizatsiya svarochnykh rabot v aviatsionnoy promyshlennosti)

PERIODICAL: Svarochnoye Proizvodstvo, 1958, Nr 4, pp 1-5 (USSR)

ABSTRACT: The article contains general information on the automation of welding processes in the Soviet and foreign aviation industry. A total of 14 photos show various types of welding devices. The authors mention special Soviet equipment such as: a series of machines for welding aluminum alloys designed by VNIIESO and the "Elektrik" plant; an electronic current stabilizer (type "RAST - 4A"); a modulator for spot welding providing the smooth increase and drop of the welding current pulses (type "ME - 1"); and some unique machines for spot and roller welding with a

Card 1/2

Mechanization and Automation of Welding Processes. The Automation of Welding Operations in the Aviation Industry

cantilever range of up to 3 m, designed by "Elektrik". There are 14 photographs and 5 non-Soviet references.

AVAILABLE: Library of Congress

Card 2/2

AUTHORS: Orlov, R.D., Candidate of Technical Sciences, and [illegible], P.L., Engineer

TITLE: The Selection of Parameters for the Spot Welding of High-Strength Aluminum Alloys (O vybore rezhima tochechnoy svarki vysokoprochnykh alyuminiyevykh splavov)

PERIODICAL: Svarochnoye proizvodstvo, 1958, Nr 11, pp [illegible]

ABSTRACT: The author discusses the use of soft and rigid parameter machines for the spot welding of high-strength aluminum alloys over 1 mm thickness. The advantages of machines with soft parameters are: the relative facility of controlling the shape and continuity of the welding pulse, a reduced probability of non-fusion and the possibility to reveal non-fusion areas by X-ray flaw detectors. The effect of the parameters on the strength of weld joints under different load was examined by metallographic investigations. Mechanical tests were carried out on specimens of plated high-strength alloys welded on the following types of machines: 1) with power accumulation in "A-400" type capacitors; 2) single-phase a.c. machines (MTP-200) with a welding current modulator (EM-1-NIAT); [illegible] pulse machines (MTIP-600-2 and MTIP-450-2). The following

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The Selection of Parameters for the Spot Welding of High-Strength Aluminum Alloys

conclusions are made: Spot welding with both soft and rigid parameter machines entails a sharp reduction of metal mechanical properties in the cast spot weld, which is less noticeable in zones adjacent to the weld spot. Comparative tests on hardness, static shear and tear, fatigue limits and repeated static load showed similar mechanical properties of joints welded with soft or rigid parameters. The use of machines with soft parameters (type MTIP) for spot welding of high-strength and other aluminum alloys over 1 mm thickness is found more expedient because of technological advantages. Engineer V.A. Petrov participated in the work There are 5 tables, 3 diagrams, 5 photos and 6 references, 4 of which are Soviet, 1 French, and 1 English

ASSOCIATIONS: MATI and NIAT

1. Aluminum alloys—Spot welding 2. Spot welds—Test results 3. Welded joints—Properties 4. Spot welding—Equipment

Card 2/2

18(4), 25(1,5)

AUTHOR: Orlov, B.D., Candidate of Technical Sciences (MATI)
Chuloshnikov, I.F., Engineer (MIAT)

TITLE: Present State and Future Development of Spot and Seam Welding of Light Alloy Designs

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 7, pp [illegible]

ABSTRACT: In connection with a constantly increasing application of aluminum and magnesium alloys in the Soviet machine-building industry, resistance welding will be utilized for producing parts of the aforementioned alloys. The authors review various resistance welding methods applicable for light metals and their alloys. They discuss welding equipment, anticorrosion protection of ends, problems of strength, detection of defects and the mechanization of auxiliary operations.

Card 1/1 There are 3 photographs, 3 diagrams, 3 tables and 10 references, 9 of which are Soviet and 1 French.

ASSOCIATION: MVTU, MIAT

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A115/A029

1.2300 only 2208, 2708, 2308

AUTHORS: Orlov, B.D., Candidate of Technical Sciences, Chuloshnikov, P.L., Engineer

TITLE: Investigation of Contact-Roller Weldings of Steels of Unequal Thickness

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 4, pp. 3 - 7

TEXT: Contact-roller welding of steel parts with a thickness ratio of 1:3 yields joints with or without mutual fusion. In the latter case, the joint is being formed at the expense of fusion and mutual crystallization of separate microcontacts by so-called "sticking". Such joints are not firm. A solid weld can be obtained by fusion of both parts only. The quality of the weld depends on the thickness of the thinner plate. The thickness of the thicker plate, if the ratio is less than 1:3, does not influence the conditions of building a joint. The object of this study is welding of 0.15+2 and 0.5+2 mm thick stainless steel 1Kh18N9T(N), (1Kh18N9T(N)). The following cross sections of fused joints have been taken into consideration: for 0.15 plates 0.8 - 1.2 mm; for 0.5 plates 2 - 3 mm. MShP -100 (MShP-100) welding machine (Fig. 1) with ПИШ-1 (PISh-1) contact breaker and a battery of capacitors was used. The oscillograph proved that

Card 1/2

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S/136/61/000/008/004/005
E193/E135

AUTHORS: Orlov, B.D., Kolpashnikov, A.I., and Dmitriyev, Yu.V.

TITLE: Spot welding of duralumin clad with alloys of the aluminium-magnesium system

PERIODICAL: Tsvetnyye metally, 1961, No.8, pp. 66-72

TEXT: The most dangerous defect of joints made by spot welding consists in incomplete fusion of the metal, resulting in the reduction of the effective area of the joint. In the case of welding of clad metals this defect is due to the fact that the mating cladding layers remain solid although the adjacent base material melts during the welding cycle. A microsection through a faulty spot weld of this type, reproduced in the paper, shows that no bond is formed between the two cladding layers. A certain degree of mechanical keying takes place but the joint has practically no load-carrying capacity. A more frequent type of failure of this kind is that in which only a portion of the cladding layer near the periphery of the welded spot remains unmolten. A photograph of a section through such a welded joint is reproduced, showing the actual and the nominal diameters of the

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Spot welding of duralumin clad with ...

weld nugget. The unfused and unbonded cladded layers, extending in to the weld nugget, constitute an "undercut", the degree of undercutting being given by

$$\triangle = \frac{d_{nominal} - d_{actual}}{d_{nominal}} \cdot 100\%$$

The defect, described above, occurs most frequently in spot welding of relatively thick (thicker than 2 + 2mm) clad duralumin sheet. If, however, the current density during the welding cycle falls appreciatively, faulty joints may be also produced in thin materials. Faulty joints of this type are particularly dangerous because, in contrast to similar faults found in spot-welded unclad metals, they cannot be detected by non-destructive tests. The object of the present investigation was to find means of preventing the formation of the defects of this type, or at least reducing the degree of undercutting in faulty joints. Regarding the relevant properties of aluminium-clad duralumin, it will be seen that the melting range of the duralumin Д16АТ (D16AT) core is 502-638 °C, its electrical resistivity 0.073 ohm mm^2/m, and its thermal conductivity 0.29 cal/cm sec °C; the corresponding figures

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Spot welding of duralumin clad with ...

for aluminium (the cladding material) being 658 °C, 0.0269 ohm mm²/m, and 0.052 cal/cm sec °C. The manner in which these two materials differ regarding these properties is bound to render aluminium-clad duralumin susceptible to the welding failures under consideration. It was, therefore, decided to replace the aluminium cladding by other corrosion resistant material with better electrical and thermal properties, and the AMG (AMG) alloy consisting (in wt.%) of 2.0-2.8 Mg, 0.15-0.4 Mn, remainder aluminium (with no more than 0.4 Si, 0.1 Cr, 0.1 other impurities) was used for this purpose. The melting range of this alloy is 627-652 °C, its electrical resistivity 0.0476 ohm mm²/m, and its thermal conductivity 0.37 cal/cm sec °C. (A schematic description of the method of fabrication of AMG-clad duralumin sheet is given in the paper). The improvement brought about by adopting this measure was demonstrated by a series of experiments, the results of which are reproduced graphically. The welding conditions during the preparation of the first series of test pieces are given in Table 3. The results of the first series of experiments are shown in Fig.4, where the degree of undercut Δ(%) of spot-welded joints is plotted against the duration of the current pulse, the

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Spot welding of duralumin clad with ...

four curves relating to results obtained on: 1) 4 + 4 mm thick sheet of AMG-clad duralumin; 2) 4 + 4 mm thick sheet of Al-clad duralumin; 3) 2 + 2 mm thick sheet of AMG-clad duralumin; and 4) 2 + 2 mm thick sheet of Al-clad duralumin. The results of some other experiments are reproduced in Fig.6, where Δ (%) is plotted against the welding pressure (kg) applied in welding of clad sheet 4 + 4 mm thick, curves 1-3 relating to AMG-clad duralumin and curves 4-6 to Al-clad duralumin. Curves 1 and 4, 2 and 5, and 3 and 6, were constructed from data on welds produced, respectively, by 'soft', 'medium' and 'hard' welding schedules. [Abstractor's note: No explicit explanation of these terms is given in the paper, but they seem to indicate the duration of the current pulse, 'soft' schedule corresponding to short pulses]. Finally, the effect of various factors on strength of spot-welded joints is illustrated in Fig.7, where the average force (P_{cp}, kg) required to shear the joint is plotted against the duration of the current pulse (secs). The four curves relate to: 1) 4 + 4 mm thick AMG-clad duralumin; 2) 4 + 4 mm thick Al-clad duralumin; 3) 2 + 2 mm thick AMG-clad duralumin; and 4) 2 + 2 mm thick Al-clad duralumin. The results obtained prove conclusively

Spot welding of duralumin clad with ...

that whereas it is not possible to avoid the formation of undercut in spot-welded Al-clad duralumin, this difficulty can be overcome by replacing the aluminium cladding by the AMG alloy. Consistently good joints in AMG-clad duralumin can be obtained by spot-welding, the mechanical strength of welds in this material being 20-30% higher than that of equally large spot-welds in Al-clad duralumin.
There are 7 figures, 3 tables and 2 Soviet references.

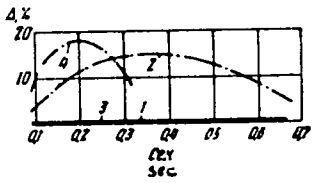

Fig.4

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AM4021133 BOOK EXPLOITATION S/

Zaychik, L. V.; Orlov, B. D.; Chuloshnikov, P. L.

Electric resistance welding of light alloys (Kontaktnaya elektrosvarka legkikh splavov), Moscow, Mashgiz, 1963, 217 p., illus., biblio., errata slip inserted. 7,500 copies printed.

TOPIC TAGS: Aluminum alloy, magnesium alloy, beryllium sheet, EI712, OT4, V95AT, AMg6, D16AT, 1Kh18N9T, MA8, spot welding , roller welding, butt welding, glue welding, welding equipment

PURPOSE AND COVERAGE: This book gives basic information on the technology of electric resistance welding, spot welding, and roller welding of articles from aluminum and magnesium alloys. The welding equipment and the control equipment are described. The basic methods and techniques of quality control of weldments are presented. The material in the book can be used to design welded structures and to develop new welding equipment. The book is intended for engineers and technicians who work in welding technology.

TABLE OF CONTENTS [abridged]:

Card 1/2

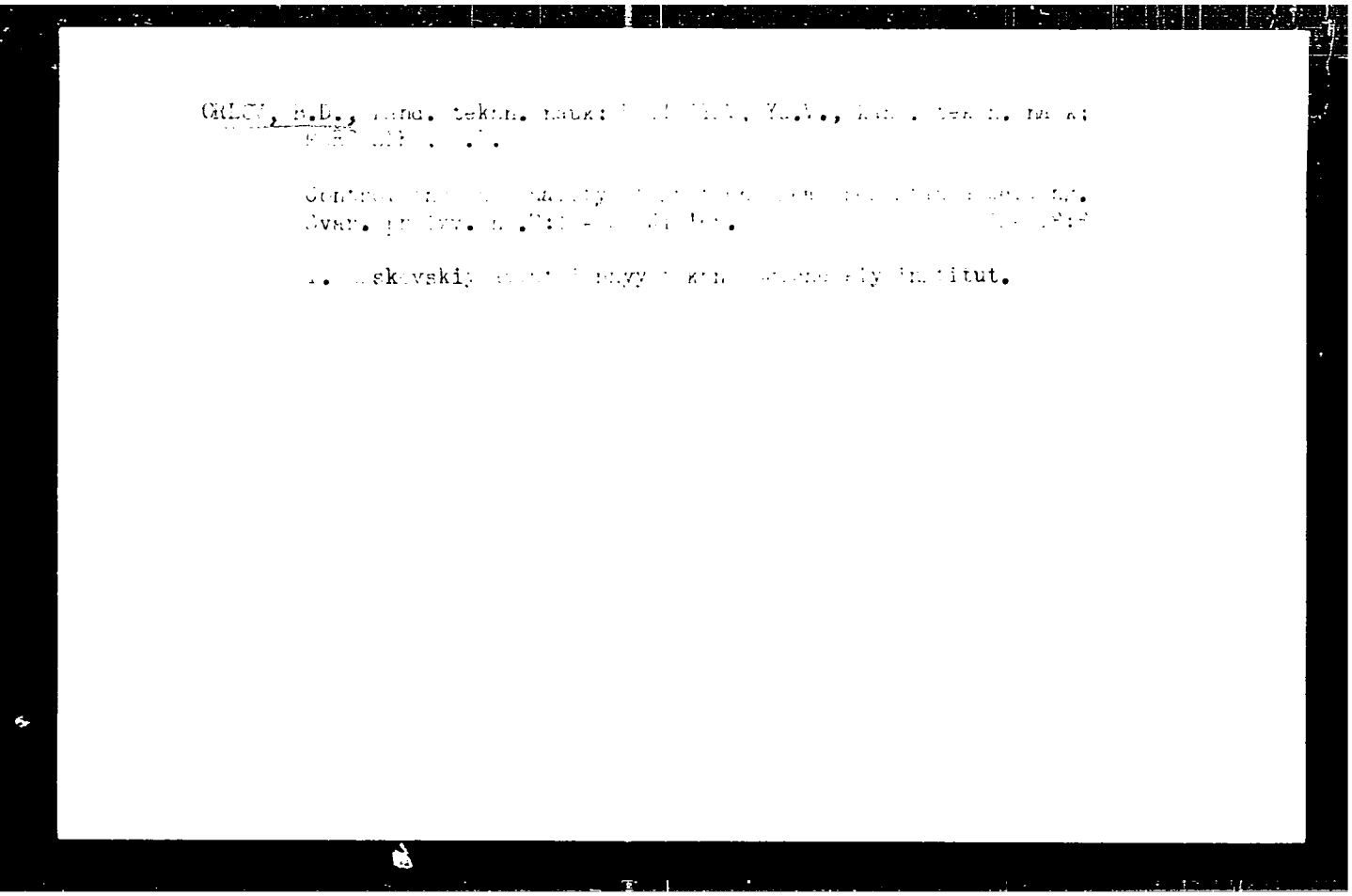
DMITRIYEV, Yu.V., inzh.; ORLOV, B.D., kand. tekhn. nauk

Comparative evaluation of the weldability by resistance welding of clad and nonclad SAP [sintered aluminum powder]. Trudy MATI no.57:114-119 '63.

Technology of electric spot and roll welding of clad SAP [sintered aluminum powder]. IBid.:120-126 (MIRA 16:12)

KANTER, Grigoriy Grigor'yevich, inzh.; SHAVYRIN, Vladislav Nikolayevich, kand. tekhn. nauk; ANDREYEV, Nikolay Khristoforovich, kand. tekhn. nauk; FEL'DMAN, Lev Semenovich, inzh.; ORLOV, B.D., kand. tekhn. nauk, retsenzent

[Glued and welded joints in the manufacture of machinery] Kleesvarnye soedineniia v mashinostroenii. Kiev, "Tekhnika," 196.. 199 p. (MIRA 17:7)



L 32688-66 EWT(d)/EWT(l)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(l)
ACC NR: AP6012283 (N) SOURCE CODE: UR/0125/65/000/011/0048/0051
IJP(c) JD/WW/HM/JG

AUTHOR: Orlov, B. D.; Dmitriyeva, G. M.; Vaks, I. A.

ORG: Moscow Aviation Technological Institute (Moskovskiy aviatsionnyy tekhnologicheskiy institut)

TITLE: Nondestructive testing of the fused zone of welded titanium alloy joints

SOURCE: Avtomaticheskaya svarka, no 11, 1965, pp 48-51

TOPIC TAGS: titanium alloy, nondestructive testing, weld evaluation, trace analysis, radiography/OT4 titanium alloy, VT1 titanium alloy

ABSTRACT: For an overwhelming majority of resistance-welded structural materials the physical properties of the fused zone (e.g. x-ray attenuation factor, propagation rate of ultrasonic vibrations, ferromagnetic characteristics, etc.) of the weld nugget and the base metal are virtually identical. Hence, the known defectoscopic methods cannot effectively be used to determine the boundary of the fused zone, i.e. the spot diameter (in spot welding)or the seam width (in seam welding); they merely make it possible to detect cracks, pores and other, generally secondary, characteristics of the welded joints, without detecting the presence or absence of the principal and most dangerous defect -- poor penetration. In this connection the authors de-

UDC: 621.791.763.004.5.658.562

Card 1/2

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ACC NR: AP6012283

scribe a newly developed nondestructive testing method, based on the artificial magnification of the difference between the physical properties of the fused zone and those of the surrounding metal by means of the prior addition of a metallic tracer (MT) which interacts with the molten metal of the weld pool and thus alters, e.g. the overall light-and-shadow contrast picture of the welded joint on the radiogram. This idea was tested out with positive results on welded joints of OT4 and VT1 titanium alloys for which the MT used were metals with a high x-ray attenuation factor and a much higher m.p. than that of Ti -- W, Mo, Ta, Nb, and particularly Zr. These metals can be applied in various ways: by deposition in the form of a powder or foil, etc., and, despite their higher melting points (compared with Ti) they satisfactorily melt and uniformly dissolve in the weld pool, thus assuring a reliable and simple nondestructive inspection of the dimensions of the fused zone of spot- and seam-welded joints. Orig. art. has: 7 figures, 1 table.

SUB CODE: 11, 13 SUBM DATE: 03May65/

Card 2/2 BLG

L 43925-66 EWT(d)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(1) IJP(c) JH

ACC NR: AP6027440 SOURCE CODE: UR/135/66/000/008/0004/0007

AUTHOR: Orlov, B. D. (Candidate of technical sciences); Marchenko, A. L. (Engineer); Lipovskiy, P. I. (Engineer); Zaytsev, M. P. (Candidate of technical sciences)

ORG: MATI

TITLE: Selection of parameter for automatic control of spot welding of aluminum alloys

SOURCE: Svarochnoye proizvodstvo, no. 8, 1966, 4-7

TOPIC TAGS: aluminum base alloy, copper containing alloy, amgnesium containing alloy, metal welding, weld evaluation, automatic control/ D16AT aluminum alloy, AMg6 aluminum alloy, AMtsAM aluminum alloy

ABSTRACT: Results are presented of a theoretical and experimental investigation of spot welding D16AT, AMg6 and AMtsAM aluminum alloys to determine a reliable parameter on which an automatic quality control of spot welds can be based. Effects of welding time, welding current, spot spacing, electrode radius, and electrode pressure on nugget diameter and thickness, magnitude of electrode "push back" (under effect of thermal expansion of welded metal), voltage drop on electrodes, and power were studied. Alloy specimens 30x200x1—2.5 mm in size were

Card 1/2 UDC: 621.791.763.1.08:669.715

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ACC NR: AP6027440

welded in an MTPT-400 spot welder. It was found that the electrode push-back is the most sensitive indicator of the nugget diameter and thickness; it reflects quantitatively the process of nugget formation. A decrease in nugget diameter by 0.3—0.5 mm reduced the push-back by about 0.01 mm. With welds of satisfactory quality, the average magnitude of push-back is 4—5% of the total thickness of welded sheets, with deviations of ±3.5—5%. With a lack of fusion, the magnitude of push-back is only one half the above value. On the basis of these results, the MTPT-400 welders are being equipped with the automatic quality control system. In AMg and AMtsAM alloy (3x3 mm), a minimum nugget diameter is ensured with a push-back of 0.30 mm. Orig. art. has: 8 figures and 2 tables. [AZ]

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 5260

Card 2/2 egk

L 46114-66 EWT(l)/EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) LJP(c) JD/HM/HW/JH
ACC NR: AP6031408 SOURCE CODE: UR/0135/66/000/009/0001/0004

AUTHOR: Orlov, B. D. (Candidate of technical sciences); Marchenko, A. L. (Engineer)

ORG: Moscow Institute of Aviation Technology (Moskovskiy aviatsionnyy tekhnologicheskiy institut) 39 B

TITLE: Statistical evaluation of the endurance characteristics of spot welds

SOURCE: Svarochnoye proizvodstvo, no. 9, 1966, 1-4

TOPIC TAGS: spot weld endurance, spot weld endurance evaluation

ABSTRACT: Six series of spot-welded (single-spot) specimens of AMg6 alloy sheets 2 mm thick were subjected to fatigue tests under loads of 70, 80, 90, 140, 155 and 195 kg,

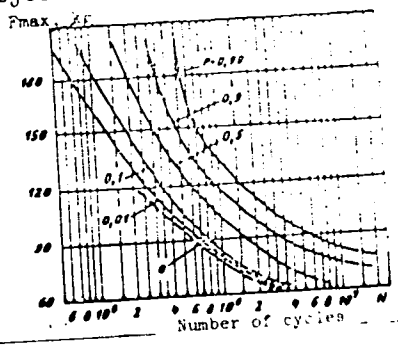

Fig. 1. Fatigue curves for spot welds in AMG6 aluminum alloy specimens 2 + 2 mm with various failure probabilities.

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L 46114-66
ACC NR: AP6031408

all exceeding the fatigue limit, which was found to be 60 kg for 10,000,000 cycles. On the basis of obtained results, a complete fatigue diagram for failure probabilities from 0 to 99% was plotted (see Fig. 1). Comparison of obtained characteristics with those for riveted joints showed that they were almost identical. Orig. art. has: 7 figures and 3 tables. [TD]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 005/ ATD PRESS: 5087

Card 2/2 LC

L 02970-67 EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HM/HW/JH

ACC NR: AT6032628 (N) SOURCE CODE: UR/0000/66/000/000/0162/0167

AUTHOR: Orlov, B. D. (Candidate of technical sciences); Dmitriyev, Yu. V. (Candidate of technical sciences); Voshedshenko, B. M. (Candidate of technical sciences)

ORG: none

TITLE: Spot welding of molybdenum

SOURCE: Moscow. Vyssheye tekhnicheskoye uchilishche. Avtomatizatsiya, mekhanizatsiya i tekhnologiya protsessov svarki (Automation, mechanization and technology of welding processes) Moscow, Izd-vo Mashinostroyeniye, 1966, 162-167

TOPIC TAGS: molybdenum alloy, ~~molybdenum alloy~~ metal welding, ~~molybdenum alloy~~ spot welding

ABSTRACT: Spot welding of molybdenum presents serious difficulties because the melting temperature of molybdenum is much higher than that of electrode alloys. In view of this fact, several variants of spot welding VM-1 and TsM-1 molybdenum alloy sheets 0.3—1.5 mm thick were tested. The most promising results were obtained with projection welding and the use of insulating inserts made of mica, aluminum oxide, zirconium dioxide, or a mixture of zirconium oxide with glass. Projections must be made on a soft backing (aluminum, copper) to prevent cracking of molybdenum sheets. To protect the electrode, sintered molybdenum foils 0.1 mm thick are inserted

Card 1/2

between the electrodes and sheets. With these precautions, satisfactory quality welds were obtained. Welds with 4.3—4.4 mm nugget diameter failed at room temperature in a brittle manner under a load of 210—265 kg. The strength increased with increased temperature, and at 500C the fracture became ductile and occurred under a load of 220—270 kg. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 13, 11/ SUBM DATE: 14May66/ ORIG REF: 002/ ATD PRESS: 5099

ACC NR: AP6025650 (A) SOURCE CODE: UR/0413/66/000/013/0100/0100

INVENTOR: Orlov, B. D.; Dmitriyeva, G. M.; Vaks, I. A.

ORG: None

TITLE: A metallic indicator for inspection of resistance welding. Class 42, No. 183463

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 100

TOPIC TAGS: weld evaluation, x ray analysis, metal powder, zirconium, niobium

ABSTRACT: This Author's Certificate introduces a metallic indicator for inspcetion of resistance welding. This indicator is used in combination with x-ray analysis to check for incomplete melting and to determine the dimensions of the weld zone in spot and roll joints of parts made from titanium alloys without destroying them. The material is designed for improving quality control while simultaneously maintaining the strength of the welded joint by using industrial zirconium powder or a powdered alloy of 75% niobium with 25% zirconium. This powder is added to the weld zone in quantities of 0.5-1.5% of the molten core at each point.

SUB CODE: 13, 11/ SUBM DATE: 18Jan65

Card 1/1 UDC: 620.179.152

S/196/63/000/003/003/012
A052/A126

AUTHORA Orlov, B.G.

TITLE: On the effect of hysteresis on transient processes in circuits with steel

PERIODICAL: Referatinyy zhurnal, Elektrotekhnika i energetika, no. 3, 1963, 23 - 24, abstract 3A154. (Tr. tashkentsk. politekhn. in-ta, no. 20, 1961, 53 - 84)

TEXT: A method of mathematical approximation of the magnetic reversal process of both the initial magnetization curve and particular cycles is suggested. Thereby the process of the initial magnetization (and of magnetic reversal respectively) with an allowance for hysteresis appears formally as taking its course along a hysteresis-free curve, but the values of induction B in the ferromagnetic core are determined by preceding values of the intensity H'. For approximating the hysteresis-free curve the known equation $B = a \operatorname{arcsh} bH'$ is used. The dependence of H' on H is proposed to be described by the function $H' = H [1 - \delta \exp (-\gamma H^n)]$ in which parameters δ, γ, and n

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are different for different ferromagnetic materials and are determined by empirical curves individually for magetization and demagnetization sections. For particular magnetic reversal curves the approximating expression is derived in the form $B = a \operatorname{arcsh} b \left\{(H-H_0)\left[1 - \delta \exp\left(-\gamma H^n\right)\right] + h'\right\}$, where H_0 and B_0 are intensity and induction corresponding to the beginning of a transition from an increase to a decrease or vice versa (the so called point of turn) and $h' = \frac{1}{b} \operatorname{sh} \frac{B_0}{a}$. The expressions provide the basis for the numerical calculation of a transient process by the method of successive integrals in a circuit with R, C and an iron-core coil. When calculating in each point of turn of the curve and at each passing of magnetizing current through zero, parameters of the approximating function were varied discretely. The results of the calculation coincided fairly well with the experiment. There are 7 figures and 6 references.

M. Zarudi

[Abstracter's note: Complete translation.]

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24(5) SOV/54-58-4-18, 18

AUTHORS: Adamov, M. N , Orlov, B I

TITLE: Computation of the Polarizability of π-Electrons on the Basis of a Metallic Model With δ-Shaped Potential Sources (Raschet polyarizuyemosti π-elektronov na osnove metallicheskoy modeli s δ-obraznymi istochnikami potentsiala)

PERIODICAL: Vestnik Leningradskogo universiteta. Seriya fiziki i khimii, 1958, Nr 4, pp 182-187 (USSR)

ABSTRACT: The most simple metallic model holds only in the case of a constant potential in the system of the conjugate bonds. In the real molecule for the model a step-like potential is assumed and in a boundary case as a model with δ-shaped potential sources in the points where an atom is located. The computation of the polarizability (according to references 1-3), which holds for any type of model, permits also for the model under investigation with δ-shaped potential sources the solution of the Schrödinger equation corresponding to it. This is carried out on the basis that the i-source contributes $u_i = -g\delta(s-s_i)$ to the potential energy of the electron, with $\delta(s-s_i)$ denoting Dirac

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USCOMM-DC-60,884

SOV/54-58-4-18/18

Computation of the Polarizability of π-Electrons on the Basis of a Metallic Model With δ-Shaped Potential Sources

δ-function, s - the coordinate along the outline of the model, s_i - the value of s at the location point of the source, g - a parameter expressing the intensity of the source. The expression for the polarizability α is formed from $\psi^{(0)}$, the wave function unperturbed by the external electric field and $\psi^{(1)} = \left(\frac{\partial \psi}{\partial F}\right)_{F=0}$ with ψ, the wave function perturbed by the field. $\alpha = -2\int \psi^{(0)} \psi^{(1)} ds$. The expression for the π-electron-polarizability is obtained by the further mentioned connections and as a function of the source intensity g, the energy-parameters ω_k and λ_n and the dimensions of the model. A computation, carried out according to the given formulae for benzene which can be regarded as a hexagonal model with six potential sources (each potential source has the value g = 0.733) represents the value of the π-electron-polarizability α = 59.2 which is in the same hexagonal model without potential sources only α = 47.0. There are 5 references, 4 of which are Soviet.

Card 2/2

ADAMOV, M.N.; KAGAN, V.K.; ORLOV, B.I.

Dispersion formula for an electron in a potential well of finite depth and the optical polarizability of molecules. Opt. i spektr. 10 no.2:276-279 F '61. (MIRA 14:2)
(Electrons) (Molecules—Optical properties)

L 11117-63 EWT(1)/EDS AFFTC/ASD

ACCESSION NR: AP3002781 S/0051/63/014/006/0737/0744

AUTHOR: Adamov, M. M.; Kagan, V. K.; Orlov, B. I. 21 52

TITLE: New method for calculating the optical polarizability of the hydrogen atom

SOURCE: Optika i spektroskopiya, v. 14, No. 6, 1963, 737-744

TOPIC TAGS: optical polarizability, atomic hydrogen

ABSTRACT: Starting with the quantum-dispersion theory expression for the polarizability as a function of the radiation frequency, the authors deduce an integral representation of this formula applicable to the hydrogen atom and one-electron ions. The integral expression was used to calculate the polarizabilities of the hydrogen atom in the ground state and in low-lying excited states with n = 2. For the ground state, with increase of the frequency of the radiation from 0 to 3/8 atomic units the polarizability increases monotonically. At this first natural frequency (3/8 atomic units) the function has a discontinuity and changes sign; further the polarizability again increases and goes to zero when the frequency equals about 0.404 atomic units. Thus, radiation of this frequency should pass through atomic hydrogen without refraction. The behavior of the polarizability as a function of the radiation frequency for hydrogen in low-lying excited states

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ACCESSION NR: AP3002781

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is similar, but the natural frequencies corresponding to discontinuities are different. Orig. art. has: about 66 formulas and two tables.

ASSOCIATION: none

SUBMITTED: 06Oct62 DATE ACQD: 15Jul63 ENCL: 02

SUB CODE: oo NO REF SOV: 002 OTHER: 001

Card 2/2

ADAMOV, M.N.; KAGAN, V.K.; ORLOV, B.I.

Calculating the optical polarizability of the hydrogen atom by means of a power series. Opt. i spektr. 19 no.2:300-302 Ag '65. (MIRA 18:8)

L 00934-66 EWT(l)/EPA(s)-2/EPA(w)-2/EWA(m)-2

ACCESSION NR: AP5020728 UR/0057/65/035/008/1411/1418

AUTHOR: Andreyev, S. I.; Orlov, B. I. 537.524.4

TITLE: On the theory of the development of a spark discharge. I.

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 8, 1965, 1411-1418

TOPIC TAGS: spark discharge, plasma conductivity, spark plasma

ABSTRACT: This paper is concerned with the time variation of the current during the first half-cycle of the discharge in a circuit containing capacity, inductance, and a spark gap. The principal uncertainty in a theoretical treatment is the time dependence of the resistance of the gap. This was derived in the present treatment from the energy balance equation with the assumption that all the power released in the gap is expended in widening the spark channel, and not in heating the spark plasma, the resistivity of which was thus assumed to remain constant. This assumption is in a sense opposite to that employed by W.Weizal and R.Rompe (Zs. Phys., 122, 636, 1944; Ann. Phys., 1, 285, 1947), who neglected the power expended in widening the spark channel but took into account the increase in the temperature of the plasma. It was also assumed that the rate of expansion of the spark channel is

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express their gratitude to S.I.Braginskiy for a number of valuable remarks concerning this work." Orig. art. has: 32 formulas and 2 figures. [15]

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 08Jun65 ENCL: 00

NO REF SOV: 010 OTHER: 008 ATD PRESS: 4077

Card 2/2

OGIYEVICH, V.A., kandidat tekhnicheskikh nauk; AGEYKIN, D.I., kandidat technicheskikh nauk; MAYORCHUK, A.Z., inzhener; ORLOV, B.M., inzhener.

Basic equipment for standard continuous-operation concrete plants
Stroi.i dor.mashinostr. no.9:8-13 S '56. (MLRA 9:11)
(Concrete plants)

SOV/51-7-4-15/32

AUTHORS: Levshin, V.L. and Orlov, B.M.

TITLE: Investigation of the Energy of Thermal Activation of the Optical Flash in ZnS-Cu,Pb Phosphors

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 530-536 (USSR)

ABSTRACT: The authors investigated the energy of thermal activation of flashes from localization levels of various depths in the ZnS-Cu,Pb phosphor stimulated with light of various wavelengths. It is known that the ZnS-Cu,Pb phosphor has three luminescence bands: one blue and two green. The more important properties of this phosphor were dealt with in several earlier papers (Refs 2-5). The authors used ZnS-Cu,Pb with 5% Pb, 10^{-5} g/g Cu and 4% NaCl. The phosphor was excited at -190°C and heated to +140°C at the rate of 0.2 deg C/sec. The thermal de-excitation curve in Fig 1a shows that the phosphor has two systems of capture levels: one of them corresponds to a sharp peak at -125°C (shallow levels) and the other produces a wide band between +30° and +140°C, with a maximum between +50 and +80°C (deep levels). Irradiation with λ = 1.3 μ at -190°C (after excitation) empties the shallow levels, but the deep levels are practically unaffected. Irradiation with λ = 0.8 μ light at -190°C empties both systems of levels. Thermal

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Investigation of the Energy of Thermal Activation of the Optical Flash in ZnS-Cu,Pb Phosphors

de-excitation of the phosphor excited at +20°C and irradiated with λ = 1.3 μ light shows that both systems of localization levels are emptied, but de-excitation is not complete. If the phosphor subjected to 1.3 μ irradiation is illuminated with λ = 0.8 μ wavelength, a bright flash is produced suggesting that the phosphor has at least one more system of deep levels in addition to those mentioned above. To study the activation energy of shallow levels several series of experiments were carried out. Fig 3 shows that log I, where I is the flash intensity, is a linear function of 1/T, where T is the absolute temperature; curves 1 and 2 represent de-excitation with λ = 0.8 μ and 1.3 μ respectively. From the slope of the straight lines in Fig 3 and those obtained using other de-exciting wavelengths between 0.7 and 1.4 μ, the value of the activation energy of shallow levels was found to be 0.039 ± 0.002 eV. Experiments carried out between +20° and +70°C showed that the energy of thermal activation is a function of the wavelength of the de-exciting light. This indicates that there are several types of deep levels with different activation energies. For the deepest level, which is not emptied by the infrared light of 1.3 μ wavelength, the activation energy was found to be 0.188 ± 0.004 eV. Further experiments dealing with shallow levels showed that at a fixed temperature the flash does not

Investigation of the Energy of Thermal Activation of the Optical Flash in ZnS-Cu,Pb Phosphors

occur instantaneously but after ~40 sec from beginning of optical de-excitation (Fig 4). It means that, instead of a flash, secondary phosphorescence is observed. This phosphorescence arises as follows: infrared rays produce transitions of localized electrons to another system of shallow levels and then the latter levels are thermally de-excited by thermal motion producing the flash. The authors recorded also the following spectra of the ZnS-Cu,Pb phosphor at various temperatures: luminescence during excitation (Fig 5a), phosphorescence (Fig 5б) and flash (Fig 5в). Fig 5a shows that at -196°C and -150°C blue luminescence with a maximum at 465 mμ is strong; it falls with temperature and at +70°C the 465 mμ maximum disappears. A second maximum in Fig 5a lies at 520 mμ at -196°C and it is due to copper. On increase of temperature this maximum rises and is displaced towards longer wavelengths. Increase of temperature produces also a rise of intensity at the long-wavelength end of emission, which may be due to

Investigation of the Energy of Thermal Activation of the Optical Fiber in ZnS-Cu,Pb Phosphors

a new band with a maximum at 550 mμ which represents emission by lead. Fig 5f shows that phosphorescence in the long-wavelength region is similar in form to fluorescence of Fig 5a. In the short-wavelength region phosphorescence is much weaker than fluorescence. Fig 5f represents the flash spectra at +20°C (curve 1, and -190°C (curve 2). Both these spectra are similar and they represent green emission of copper and lead with a maximum at 520 mμ; there is hardly any blue emission. There are 6 figures, 2 tables and 6 references, 4 of which are Soviet and 2 English.

SUBMITTED: January 15, 1959

Card 4/4

LYUBIMOV, K.N.; ORLOV, B.M.; AVSHAROV, G.A.

Drafting boards from panels with chip filling. Der. prom. 13 no.6:22 Je '64. (MIRA 17:6)

1. Proyektno-konstruktorskoye byuro Glavnogo upravleniya bytovogo obsluzhivaniya naseleniya pri Sovete Ministrov RSFSR.

ORLOV, B. M.

Effect of Lubricant on the Cutting of Steel at Reduced Speed" p. 4-11, in book Research in the Physics of Solids, Moscow, Izd-vo AN SSSR, 1957. 277 p. Ed. Bol'shanina, M. A., Tomsk Universitet, Siberskiy fiziko-tekhnicheskiy, institut.

Personalities: Savvin, N. N.; Rozenberg, A. M.; Vinogradov, Yu. M.; Rginder, P. A.; Arshinov, V. A.; and Yepifanov, G. I. Material used: steel 20 Kh. Cuttermade of steel R 18. Cutting speed [redacted] v 25 mm/min. There are 6 figures and 5 Soviet references.

This collection of articles is meant for metallurgical physicists and for engineers of the metal-working industry. This book contains results of research in the field of failure and plastic deformation of materials, mainly of metals. Problems of cutting, abrasion, friction, and wear of solid materials. (metals) are discussed.