

SIBS:

S/125/60/000/05/06/015

Electroslag Casting of Copper and Some Copper Alloy Ingots

vyborzhets" plant, without any defects in the band, whilst bands rolled for comparison from ingots produced by semicontinuous casting did have defects. The copper alloys experimented with, contained berillium, Zirconium and titanium. High-mechanical properties of the copper ingots obtained are compared with properties of copper cast conventionally (Table 4). There are 6 photographs, 4 tables, and 4 Soviet references.

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

[Handwritten mark]

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S/125/60/000/05/07/015

AUTHORS: Gurevich, S. M., Didkovskiy, V. P., Matveyev, A. P., and
Os'mushkin, V. K.

TITLE: Experience with Electroslag Welding for Welding Rings of
"VT6" Titanium Alloy

PERIODICAL: Avtomaticheskaya svarka, 1960, No. 5, pp. 56-61

TEXT: Thick titanium alloy rings and flanges used in chemical and some other industries were welded up to now on resistance butt welding machines like the "MSG-300" (Ref. 1), and the quality of the joints was not always satisfactory. The article gives a detailed description of the electroslag process used for joining rings, 1,500 mm in diameter and 95x75 mm cross section, consisting of two forged halves, with forged plate electrodes of same "VT6" titanium alloy; work was done on an "A-550" welding machine designed by the Electric Welding Institute with a single-phase "TShS-3000-1" transformer. The information includes details on the preparation of "AN-T2" flux for this purpose, on the chemical composition of the parent metal, on electrode and weld (Table 1); photographs of joints and microstructure of the weld, and detailed engineering recommen- ✓

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Experience With Electroslag Welding for Welding Rings of "VT6" Titanium Alloy

dations as to how to eliminate weld defects in the process. The technique can easily be learned by operators. The process will be employed for series production of welded "VT6" alloy rings. There are 4 photographs, 2 tables, and 3 Soviet references.

ASSOCIATION: Ordena Trudovogo Krasnogo Znameni Institut elektrosvariki im. Ye. O. Patona AN USSR (Red Banner of Labor Electric Welding Institute imeni Ye. O. Paton AS UkrSSR) (S. M. Gurevich and V. P. Didkovskiy); Kuybyshev (A. P. Matveyev and V. K. Os'mushkin)

SUBMITTED: January 12, 1960

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DIDKOVSKIY, V. P.

Cand Tech Sci - (diss) "Study of the process of electroslagging smelting of titanium." Kiev, 1961. 13 pp; (Academy of Sciences Ukrainian SSR, Order of Labor Red Banner Inst of Electro-Smelting imeni Ye. O. Paton); 200 copies; price not given; list of author's works at end of text (10 entries); (KL, 10-61 sup, 214)

1.2300 also 1573

22238
S/125/61/000/001/007/016
A161/A133

AUTHORS: Didkovskiy, V.P., Gurevich, S.M.

TITLE: Electro-slag welding of titanium with wire electrodes

PERIODICAL: Avtomaticheskaya svarka, no. 1, 1961, 48-51

TEXT: The electro-slag welding process with plate electrodes is used in industry for joining titanium and titanium-alloy parts of large cross sections, but plate electrodes are not suitable for long seams because of the high electric resistance of commercial titanium, which causes a heating of the plate and consequently saturation of the electrode metal with gas that spoils the weld. Experiments with long seams were carried out at the Electric Welding Institute im. Ye. O. Paton with wire electrodes. Commercial BT1 (VT1) titanium plates 40-50 mm high were joined by filling a 25-28 mm wide gap between them with a single wire and AN-T2 (AN-T2) flux. Transverse oscillation of electrode wire was not employed. Alternating current was supplied from a TMC --3000-1 (TShS-3000-1) transformer. The welding zone was shielded with

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A161/A133

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Electro-slag welding of titanium ...

argon. Wire from VT-1 titanium 3, 4 and 5 mm in diameter was tested. The best results were obtained with 4 mm wire, a welding current of 550-600 amp, 22-24 v, an electrode feed of 200 m/hour, and a slag depth of 30-35 mm. The welds were sound (Fig.1). The microstructure of the weld metal (Fig.2) was same as in welding with plate electrodes, its hardness slightly exceeding that of base metal, which seems to be due to the acicular structure of the seam. The difference in hardness between the center and the outside of the weld was only slight, and no contamination with oxygen, nitrogen and hydrogen during the process was stated. The mechanical properties of welded joints were close to those of base metal. It seems that standard equipment used for welding steel can be employed for titanium if some details are changed (design of the water-cooled slides, nozzles, and more). The transformer must have a rigid characteristic and low idle-run voltage, such as the TShS-3000-1 or TShS-3000-2 types. Conclusions: 1) The welding of heavy plate titanium by the electro-slag process with wire electrodes is possible. Optimum results are obtained with 4 mm wire. 2) Welds in commercial titanium have the same strength as the base metal. Their ductility and toughness is sufficient. There are 3 figures and 5 Soviet-bloc references.

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Electro-slag welding of titanium ...

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S/125/61/000/001/007/016
A161/A133

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 AS UkrSSR)

SUBMITTED: May 17, 1960

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1-2300

1573

26792
S/125/61/000/005/014/016
A161/A127

AUTHOR: Didkovskiy, V. P.

TITLE: Electro-slag welding of heavy titanium sections with consumable tip

PERIODICAL: Avtomaticheskaya svarka, ¹⁴no. 5, 1961, 91 - 92

TEXT: Brief information is given on experiments carried out at the Institut elektrosvarki im. akad. Ye. O. Patona (Electric Welding Institute im. Academician Ye. O. Paton). Forged titanium alloy sections of 70 to 150 mm thickness were welded using an A-645 welding apparatus; a TUG-3000-3 (TShS-3000-3) transformer; a 12 mm thick tip of the same metal, with 4 mm wide grooves milled in it for guiding the 3 mm wire, and AM-12 (AN-12) flux. Pure argon was used for shielding the slag pool. The sections were spaced 26 mm. Water-cooled copper linings were installed over the entire length of the weld. The process was triggered in a pocket (cavity) under the joint, formed by the copper linings. Special copper plates were used to lead the slag pool and the weld crater out on the top of joint. Argon was blown between these plates. The process was stable. Details of process used for 70 and 110 mm sections are given in the table below:

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Electro-slag welding of heavy titanium sections...

Metal thickness	Number of wires	Wire feed, V, m/hr	Welding current, I, amp	U, volt	Slag pool depth, mm	Argon, liter/min	Space between wires
70	2	198	1,300	22	25	9	40
110	2	198	1,700	22	25	12	80

It was found that welding with consumable tips may be effected with less strong current than with heavy electrodes. The throat of a consumable tip heats in the established process not above 350 - 450°C, and no intermediate conduit is necessary. The appearance of the welds produced under optimum process conditions is the same as of welds produced with heavy electrodes. The fusion depth in the base metal is not above 10 mm. The welds are sound. A gas analysis proved the absence of contamination in the process. The mechanical properties of welds produced in BT1 (VT1) titanium forgings with consumable tips are equal to the mechanical properties of the base metal, and the ductility and notch toughness are sufficient. Longer seams can be welded with a consumable tip than with a heavy electrode. The method is suitable for joining parts of over 40 mm thickness with up to 1,500 - 2,000 mm long welds. [Abstracter's note: Essentially complete translation]

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35870

S/125/62/000/005/008/010
D040/D113

12300

AUTHORS: Gurevich, S.M. and Didkovskiy, V.P. (see Association); Tikhov, N.N.
(Moscow)

TITLE: Electroslog welding of titanium alloy VT5-1

PERIODICAL: Avtomaticheskaya svarka, no. 5, 1962, 78-84

TEXT: The described experiments were conducted in connection with the introduction of electroslog welding in the industrial lot production of large parts of BT5-1 (VT5-1) alloy which is weldable and was hitherto used extensively for thin-sheet weldments. The alloy contains 4 - 5.5% Al and 2 - 3% Sn and has higher mechanical strength than other Ti alloys at continuous loads up to 500°C and during short-term heating at 900°C. The experiments were conducted with forged and pressed rectangular billets with cross-sections varying from 40 by 42 to 60 by 70 mm and welding rings 60 by 70 mm in cross-section. Sound joints were obtained with forged billets using the following data of welding: 1600 - 1800 amp, 14 - 16 v, 26 mm wide gap, 130 g of AH-T 2 (AN-T2) flux and argon

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Electroslag welding of titanium alloy....

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D040/D113

shielding at a rate of 8.0 l/min. The mechanical properties of pressed billets welded with the use of pressed unalloyed BT 1-1 (VT1-1) titanium were inconstant, but it is supposed that electrodes of the same chemical composition as that of the base metal will give joints of satisfactory strength and plasticity. All welding was conducted with plate electrodes. Rings were welded from two halves in an automatic process on a welding unit with rotary table. Welding one joint in rings took 4-5 min. No defects were found in welds on X-ray inspection and after machining. Conclusions: (1) Large parts of VT5-1 can be welded by electroslag process using an AN-T2 flux; (2) welded joints produced with VT5-1 plate electrodes in forgings are as strong as the base metal and have sufficient plasticity and toughness; (3) the plasticity and toughness of welds of pressed VT5-1 elements must be increased; (4) electroslag welding of various sizes of rings made of VT5-1 alloy has been introduced into serial production. There are 7 figures and 4 tables.

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) (S.M. Gurevich and V.P. Didkovskiy)

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DIDKOVSKIY, V.P.

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S/762/61/000/000/029/029

AUTHORS: Morozov, Ye. I., Ronzhin, A. S., Prostov, I. A., Matveyev, V. S.,
Gurevich, S. M., Didkovskiy, V. P., Yasinskiy, K. K., Ussov, V. N.

TITLE: Electroslag smelting of titanium ingots.

SOURCE: Titan v promyshlennosti; sbornik statey. Ed. by S. G. Glazunov.
Moscow, 1961, 314-326.

TEXT: The paper describes a method of electroslag smelting of Ti ingots with desirable mechanical properties and with a surface that requires almost no machining prior to plastic working. The principal objective of the development is the smelting of flat ingots for the rolling of sheet material with uniform transverse distribution of rolling deformation (cylindrical ingots are deformed more greatly at the center; tensile stresses produce edge cracking on the resulting sheets). Several organizations collaborated with the Institute of Electric Welding imeni Ye. O. Paton in 1959 in adapting the splashless electroslag method of Ti smelting (3 electrodes) developed in 1958 to the smelting of slab ingots of up to 200x800x700 mm and 500 kg. Good mechanical properties and high electric-power utilization result from the improved current- and heat-flow uniformity of the arc established underneath the protective flux layer. Since 3, as well as one, electrodes can be employed, the 3 phases of an a. c. power supply can be utilized uniformly. The fused flux layer contributes to the formation of a singularly compact ingot structure. Flux must: (1) Not contain O; (2) have a m. p. close to that of the metal and be readily fusible; (3) have a high b. p. Card 1/2

Electroslag smelting of titanium ingots.

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(not less than 2,000°C). Neutral-gas shielding above the flux is mandatory to avoid O reaction. Details of the experiments with various fluxes, which led to the adoption of CaF_2 (brand " " (Ch)) and a purifying remelt of the flux in an induction furnace prior to use, are reported and tabulated. Comparison of BT (VT) -1, -3-1, and -5, OT4, and Ti-8Mn ingots obtained by the electroslag (ES) and vacuum arc (VA) methods. Differences between ES and VA ingots initially observed were found to be attributable to the use of pressed electrodes in the ES method; use of once-VA-melted ingots as starting electrodes in both ES and VA methods yielded BT (VT) and OT ingots of practically identical mechanical properties (described and tabulated). The mechanical properties of the Ti-8Mn were considerably improved by the ES method; this is attributed to the more uniform distribution of the high-vapor-pressure Mn in the ingot under the protection of the flux. The BT (VT) and OT alloys showed either increased strength or impaired notch toughness when smelted under a fluor-spar flux, probably as a result of uncontrollable admixtures contained in the fluor-spar. Furnace: The design of the 3-electrode furnace, with a crystallizer, electrode chamber, flux dispenser, electrode-advance mechanism, protective shield, and power transformer, is described and illustrated (cross-section, photos); its operation and process control are described in detail. A 500-kg ingot shows the result of deliberate manual delays in electrode advance in the form of nonuniformities (photo). Design criteria were obtained for future furnace designs. There are 6 figures, 3 tables, and 2 Russian-language Soviet references identified in footnotes.

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ASSOCIATION: None given.

ACCESSION NR: AP4013083

S/0125/64/000/002/0054/0058

AUTHOR: Didkovskiy, V. P.; Grabin, V. F.; Gurevich, S. M.

TITLE: Electroslog welding of VT6-alloy forged pieces

SOURCE: Avtomaticheskaya svarka, no. 2, 1964, 54-58

TOPIC TAGS: electroslog welding, welding, VT6 alloy, VT6 alloy forging, VT6 alloy welding, titanium alloy, titanium alloy welding

ABSTRACT: Forged pieces 60 to 100 x 100 to 120mm made from VT6 titanium alloy (4.9%Al, 3.8%V, 0.21%Fe, 0.11%O, 0.11%Si, 0.03%N, 0.06%H, balance Ti) were welded by an A-550 machine under AN-T2 flux-slag in argon atmosphere. Plate electrodes 10-14 mm thick were used. Increasing the plasticity of the weld metal was attempted by (a) subsequent heat treatment of the welds filled with the base VT6 metal was ineffective; hence, VT6

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ACCESSION NR: AP4013083

electrodes can be regarded as acceptable only when these plasticity characteristics are tolerated: relative elongation, 5-6%; reduction of area, 15-20%. Welds of a strength equal to that of the base metal and of adequate plasticity were obtained with AT8 complex alloy and with composite electrodes consisting of VT1-1 and VT6 plates. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Institut elektrosvariki im. Ye. O. Patona AN Ukr SSR
(Institute of Electric Welding, AN UkrSSR)

SUBMITTED: 10Apr63

DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: ML

NO REF SOV: 005 OTHER: 005

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AID Nr. 994-4 20 June
Didkovskiy, V.P.
ELECTROSLAG MELTING OF TITANIUM ALLOYS (USSR)

Gurevich, S. M., *V.P. Didkovskiy*, and Yu. K. Novikov. Avtomaticheskaya svarka, no. 4, Apr 1963, 27-33. S/125/63/000/004/005/011

The Electric Welding Institute, Ukrainian Academy of Sciences, has studied the electroslag melting of titanium alloys with special attention to the casting of ingots of oblong cross section. Consumable electrodes were compacted from titanium sponge of various degrees of purity. The melting was done under oxygen-free AH-T2 flux [unidentified] in an argon atmosphere. Alloying additions, when used, were added to the electrodes. The 12- to 15-kg round and flat ingots of BT1 titanium [commercial grade] and OT4 [2.0-3.5% Al, 1.0-2.0% Mn] and OT4-1 [1.0-2.5% Al, 0.8-2% Mn] alloys had a clean, smooth surface. Mechanical properties of the alloys, though dependent on the grade of titanium sponge used, were satisfactory even in alloys melted from low-purity sponge. The BT1 melted from TT00 sponge [high-purity] had a tensile strength of 41.4 kg/mm², elongation of 29.9%, reduction of area of 65.2%, notch toughness of 17.0 kg-m/cm², and hardness H_B of 131. The corresponding figures for BT1 melted from TT2 [low-grade] sponge were

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AID Nr. 994-4 20 June

ELECTROSLAG MELTING [Cont'd]

8/125/63/000/004/005/011

54.1 kg/mm², 24.8%, 43.9%, 9.4 kg-m/cm², and 190. Similar results were obtained with OT4 and OT4-1 alloys. Generally it was found that alloys produced by a single electroslag melting have mechanical properties in the as-cast condition equal to those of the same alloys double-melted in a vacuum-arc furnace. Mechanical properties of ingots with oblong cross section were found to be the same as those of round ingots. Vacuum (10⁻⁴ mm Hg) annealing of electroslag-melted alloys produced no further improvement in mechanical properties. [WB]

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GUREVICH, S.M.; DIDKOVSKIY, V.P.; NOVIKOV, Yu.K.

Making titanium alloy ingots by the electric slag method.
Avtom. svar. 16 no.10:37-42·0 '63. (MIRA 16:12)

1. Institut elektrosvarki imeni Patona AN UkrSSR.

ACCESSION NR: AP4002090

S/0125/63/000/012/0040/0048

AUTHOR: Grabin, V. F.; Didkovskiy, V. P.; Gurevich, S. M.; Gordonnaya, A. A.

TITLE: Nature of ductility drop in electrosag-welded VT6 alloy joints

SOURCE: Avtomat. svarka, no. 12, 1963, 40-48

TOPIC TAGS: VT6 titanium alloy welding, titanium alloy electrosag welding, VT6 alloy weld property, VT6 alloy weld structure, electrosag welding, ductility drop, brittleness, VT6 titanium alloy, titanium, titanium alloy, alloy welding, titanium alloy welding, weld brittleness, weld structure, weld ductility, weld property

ABSTRACT: The reasons for the decrease in ductility of welds performed by electrosag welding of VT6 titanium alloy have been investigated by determining changes in microstructure and microhardness and by local spectral analysis. It was concluded that the main reason is the 0.7-1.0% higher concentration of vanadium in the grain boundaries of the welded zone than in the weld; the increase in concentration was proved by using a mass spectrometer. The concentration was found to be related to the rate of cooling of the weld. At cooling rates not lower than 4.5 degrees/second, minimum concentration results. It is concluded that the concentration in the boundaries at temperatures below the melting point proceeds with maximum intensity at 1200-1250 C, which

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ACCESSION NR: AP4002090

corresponds to the temperature ranges at which the diffusion mobility of the vanadium atoms is relatively high. Orig. art. has: 9 figures and 4 tables.

ASSOCIATION: Institut elektrosvariki im. Ye. O. Patona AN SSSR (Electric Welding Institute)

SUBMITTED: 05Feb63

DATE ACQ: 03Jan64

ENCL: 00

SUB CODE: ML, MA

NO REF SOV: 011

OTHER: 002

Card 2/2

DIDKOWSKI, A.

18
 /Shielded arc welding of austenitic 18/8 steel in argon atmosphere. I. Andrezej Didkowski and Julian Kieronski. *Przeqd. Spawalnictwa* 10, 118-21(1968). The welding properties of austenitic steel 18/8 were briefly described, and difficulties in obtaining a well-made weld joint were outlined. By C_2H_2 welding defects were likely to occur because of comparatively low intensity of heating; there are also possibilities of forming Cr compds. with O or C. To avoid these defects shielded arc-welding in Ar was recommended, and the advantages thereof were discussed. It was possible to apply higher speed of welding, limit the heat-affected zone, and eliminate high welding stresses and distortions. The conditions which Ar should meet to be suitable for shielded arc-welding were discussed. The addn. of N and O should be limited to 18 and 0.2%, resp. Water vapor could be present only as a trace. The equipment for purifying of Ar was described. The O was sepd. by reaction with Cu chips at elevated temp. For Ar drying silica gel and cryst. KOH were used. W. Tomaszewski

AEZ
1-11-68
4

P/008/61/000/009/003/004
D219/D304

AUTHORS: Didkowski, Andrzej, and Kiercński, Julian,
Engineers

TITLE: Gas-shielded arc welding

PERIODICAL: Technika lotnicza, no. 9, 1961, 204-210

TEXT: This article reviews gas shielded arc welding technology and comments on its merits. The source of heat in the above-mentioned method is an electric arc between the welded object and an electrode which is made of either non-melting or melting material. The electrode made of non-melting material is extensively used in welding thin walled elements and is primarily discussed in the article. The arc and its vicinity are shielded by inert gases (argon, helium) or carbon dioxide and to lesser extent by nitrogen. The shielding gases are blown from the handle, or when welding elements of complicated shapes or high oxygen affinity (e.g. titanium and its alloys) the welding is done in chambers filled with the shielding gases. The welding

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Gas-shielded arc welding

stand consists of 1) welding apparatus, 2) welding handle, 3) bottle containing shielding gas, 4) gas pressure reducing mechanism, 5) valve regulating gas flow. For welding steel d.c. is suited best. For light alloys, high frequency a.c. Welding handles used for thick elements, output larger than 120 A, are water cooled. After switching off the current, the shielding gas should flow a while longer; this prevents the oxidization of the electrode ending and the weld itself. For aluminum welding the apparatus should be fitted with a condenser or at least a resistance to counteract the rectifying effect of the arc. The welding process should be adjusted to the optimum conditions (voltage, size of electrode, gas outlet and gas output and speed of welding) according to material, shape to be welded and thickness. The authors follow with a brief description of the welding technique and correct procedure. The main merits of arc welding in gas shield are the possibility of welding thin walled elements, alloys of aluminum, magnesium and titanium, corrective welding of assembled elements, elimination of fusing materials from the process, clean appearance and good mechanical and anti-corrosive

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Gas-shielded arc welding

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properties of the weld, simplicity of the process and the possibility of making it automatic. The above points are enlarged and comments are made on the superiority of the method, as compared to other welding processes. The handicaps are the high price of pure shielding gases and the tungsten electrode, the need for thoroughly cleaning the edges and fitting of the welded elements. Then the authors discuss welding of steels. After pointing out the difficulties of gas welding, such as cracks, oxidization, deformation, carbonization in the welding of austenitic and nickel chromium steel, the authors say that they can be eliminated by using gas shielded arc welding. In tables they give welding parameters for steel gap welding, joint efficiencies and resistance to corrosion respectively for steel 1H18N9T, for gas-shielded arc welds and for acetylene and unshielded arc welds. Graphs give the mechanical properties of welded and original material for steels 1H18N9T and H20N80T respectively. In welding of stainless steels, the mechanical properties are shown; the advantages of gas-shielded welding are the elimination of cracks, formed by other methods of welding. In welding

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Gas-shielded arc welding

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light alloys, gas-shielded arc welding is particularly advantageous as the aluminum oxides present no problem here and it is possible to obtain efficient joints for concave sections. The above method is also the only one for welding. It is also used for welding aluminum castings and magnesium and its alloys. There are 8 figures and 8 tables.

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DIDKOWSKI, Andrzej, inż.; KIERONSKI, Julian, inż.

Deformations in argon shielded arc welding. Przegl spaw 13 no.10:
275-278 '61.

DIDMANIDZE, E.A.

Materials on the study of Lepidoptera in the Lagodekhi State
Preserve. Soob. AN Gruz. SSR 20 no. 3:345-351 Mr '58. (MIRA 11:7)

1. Lagodekhiy gosudarstvennyy zapovednik. Predstavleno chlenom-
korrespondentom AN GruzSSR L.P.Kalandadze.
(Lagodekhi Preserve--Lepidoptera)

BIDMANIDZE, E.A.

Study in attraction of ultraviolet lamps for insects. Soob. AN Gruz.
SSR 26 no.1:59-65 Ja '61. (MIRA 14:3)

1. AN Gruzinskoy SSR, Gruzinskiy gosudarstvennyy muzey imeni akademika
S.N. Dzhnashia, Tbilisi. Predstavleno oblenom-korrespondentom Akademii
L. P. Kalandadze.

(Ultraviolet rays--Physiological effect)
(Insects)

22341

S/200/61/000/004/001/005
D228/D305

18 3100

AUTHORS:

Val'tsev, V. K., Artamonova, S. M., Didora, N. F. and
Kravchenko, L. Kh.

TITLE:

Precipitation of elements from fused salts. Report 1.
Precipitation of some elements from fused ammonium
nitrate

PERIODICAL: Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya,
no. 4, 1961, 38-42

TEXT: This article reports on an investigation into separating
rare earth metals by means of precipitation of their insoluble
compounds by different precipitants from fused ammonium nitrate.
It is known that rare earth oxides react with fused ammonium nitrate
forming soluble double nitrates as cited by L. Oredit and Ya. Kleyn-
berg / Abstracter's note: Names taken from Russian / (Ref. 1: Nevo-
dnyye rastvoriteli (Non-aqueous Solvents) IL, M. 1955). At high
temperatures double rare earth nitrates react with ammonium sul-
phate at the formation of double rare earth sulphates, e.g. double

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D228/D30L

Precipitation of elements...

lanthanum sulphate at 330°C as cited by V. K. Val'tsev and V. P. Kovyrzina (Ref. 4: Izv. SO AN SSSR, No 10, 1960). The same reaction in fused ammonium nitrate used as a solvent takes place at 180°C. The use of fused ammonium nitrate allows work at lower temperatures, mainly at 180°C. The following experiments were conducted: Rare earth oxides previously ignited to 900°C - La₂O₃, Nd₂O₃, Er₂O₃, Dy₂O₃ and alkaline earth oxides - MgO, CaO, SrO, BaO, uranium nitrate and thorium nitrate, were dissolved in fused ammonium nitrate at a temperature of 180°C concurrently with the formation of soluble double nitrates. The solubility of double lanthanum nitrate is 60% by weight. The oxides do not react with fused NH₄NO₃. The reactivity of uranium oxide with fused ammonium nitrate is very low. The solution of Th and U was produced as follows: hydrated nitrates of U and Th were fused with ammonium nitrate at 250°C, twice, to a dry cake, a part of which (assumed to be double nitrates) was soluble in fused solvent. A precipitant in the form of salt or dissolved in fused ammonium nitrate was then added to the solution of metal nitrates. The precipitate formed was separated from the

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Precipitation of elements...

mother-liquor by filtration (centrifusion could be used instead, state the authors) and washed with a fused solvent from the excess of precipitant, maintaining the temperature of 130°C. Then the precipitate was analyzed in the case of ammonium sulphate for metal, ammonium ion and sulphate ion. The results of precipitate analysis are given in tabulated form.

Legend: (1) Results of chemical analysis of precipitates; (2) Formula; (3) Content %; (4) Calculated; (5) Found

Результаты химического анализа осадков - (1)

Формула (2)	(3) Состав, %					
	расчитанный (4)			найденный (5)		
	Nd ⁺⁺⁺	SO ₄ ⁻²	NH ₄ ⁺	Nd ⁺⁺⁺	SO ₄ ⁻²	NH ₄ ⁺
2Nd ₂ (SO ₄) ₃ · 3(NH ₄) ₂ SO ₄	37,25	55,78	6,87	37,50	55,40	7,10
2Er ₂ (SO ₄) ₃ · 5(NH ₄) ₂ SO ₄	35,32	55,15	9,42	34,62	55,58	9,77
2La ₂ (SO ₄) ₃ · 3(NH ₄) ₂ SO ₄	36,39	56,54	7,07	36,97	54,90	8,12

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D228/D305

Precipitation of elements...

Temperature does not alter the reaction but it does change the ratio x and y in the double lanthanum sulphate - $x \text{La}_2(\text{SO}_4)_3 \cdot y (\text{NH}_4)_2 \text{SO}_4$. Ammonium oxalate precipitates La, Nd, Dy, Ca, Mg, Sr, Ba, Thorium. Double thorium oxalate is soluble in the excess of precipitant. Uranium under these conditions is not precipitated. Alkali oxalate can be used instead of ammonium oxalate with exactly the same results. Time of precipitation varies from immediate to 30 hours for different rare earth metals. The authors conclude that on the basis of new ideas on the structure of solvents, it may be suggested that this ratio varies also, depending on the precipitant concentration. The different behavior of rare earth metals during precipitation by different precipitants opens up new possibilities for their separation. There is 1 table and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: R. C. Vickery. I. Chem. Soc., 10, 2800 (1949), T. Meller, D. Aftandilian. Inorg. Syntheses, 5, 37 (1957), D. H. Gruen. I. Inorg. Nucl. Chem. Soc., 4, 1, 74 (1957)

ASSOCIATION: Institut neorganicheskoy khimii Sibirskogo otdeleniya
Card 4/5

Precipitation of elements...

22341

S/200/61/000/004/001/005
D228/D305

AN SSSR, Novosibirsk (Institute of Inorganic Chemistry,
Siberian Division, AS USSR, Novosibirsk)

SUBMITTED: July 19, 1960

X

Card 5/5

KUZNETSOV, F.A.; DIDORA, N.F.; CHUSOVA, T.P.; ARTAMONOVA, S.M.

Electrode function of the carbon oxide electrode $\text{Nd}_2\text{O}_3 - \text{C} - \text{CO}_2$
in chloride melts containing trivalent neodymium chloride. Izv.
SO AN SSSR no.7 Ser. khim. nauk no.2:10-14 '64 (MIRA 16:1)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR, Novosibirsk.

DIDORENKO, I.

Some remarks on textbooks on the theoretical principles of electrical engineering. Elektrichestvo no.3:84 M^r '65.

(MIRA 18:6)

1. Luganskiy mashinostroitel'nyy institut.

DIDORENKO, I.A., inzhener.

"General electrical engineering". [professor] S.A.Press, ed.
Reviewed by I.A.Didorenko. Elektrichestvo no.3:72 Nr '54. (MLRA 7:4)

1. Voroshilovogradskiy mashinostroitel'nyy institut (for Didorenko).
(Electric engineering)

DIDORENKO, I.A.

Double-collector frequency changer. Trudy LVMI 1:117-119 '62
(MIRA 17:7)

Collector frequency changer with multiple winding. Ibid.:
120-127

DIDORENKO, P. P. Cand of Med Sci ^(dis) "Enervation of the Human and Animal Larynx,"

Odessa, 1959, 11 pp (Odessa State Medical Institute in N. I. Pirogov) (KL, 7-60, 110)

DIDORENKO, I. A.

110-10-9/18

AUTHOR: Didorenko, I.A., Engineer and Kovtun, I.M., Candidate of Technical Sciences.

TITLE: Extension of the Sparkless Zone of Commutation of d.c. Machines. (Rasshireniye bezyskrovoy zony kommutatsii elektricheskikh mashin postoyannogo toka)

PERIODICAL: Vestnik Elektropromyshlennosti, 1957, Vol.28, No.10, pp. 47 - 48 (USSR)

ABSTRACT: In machines operating under sudden changes of load, problems of commutation are not yet resolved either in theory or in practice. The problem is becoming particularly important in view of plans for widespread electrification of the railways. Commutation is bad when the load changes suddenly because there is no compensation of the reactive e.m.f. of the inter-poles. Sparkless operation of a machine may be characterized by the area of the zone of sparkless commutation, which it is therefore very desirable to extend. The article describes verification of a new method of improving commutation by including semi-conductor rectifiers between parallel sections of a brush. In this way, it is possible to extend the sparkless zone by a factor of 1.5 - 2. The article gives the results of tests made on four machines of different size and in all cases the test results were in quantitative agreement.

Card 1/3

110-10-9/18

Extension of the Sparkless Zone of Commutation of d.c. Machines.

Curves taken without a rectifier are given in Fig. 1, whilst Figs. 2 and 3 show curves using a rectifier on a d.c. machine of 3 kW and 110 V manufactured in the Volta factory. When testing the machines without a rectifier the additional brush was connected to the main one so that the total brush width was the same in both cases. The machine was tested as a generator with shunt field at rated speed. It is concluded that the improvement of commutation by means of semi-conductors is worth attention. The methods should be most effective in a.c. commutator machines where, because of the presence of a transformer e.m.f. in the commutating sections, the uncompensated e.m.f. is greater and current rectification should improve matters appreciably. The magnitude of the uncompensated e.m.f. is relatively small and the rectified properties of selenium rectifiers are not so good at low voltages. Therefore, a still greater effect is to be expected if use is made of rectifiers that operate well at low voltage. This method of improving the commutation is easy to carry out particularly if use is made of small-sized germanium rectifiers which can easily be built into the machine or directly into a cut in the brush.

Card 2/3 There are 3 figures.

Extension of the Sparkless Zone of Commutation of d.c. Machines. 110-10-9/18

ASSOCIATION: The Voroshilovgrad Evening Engineering Institute
(Voroshilovgradsky Vecherniy Mashinostroitel'nyy
Institut)
The Kharkov Polytechnical Institute (Kharkovskiy
Politekhnicheskiy Institut)

SUBMITTED: June 29, 1957.

AVAILABLE: Library of Congress

Card 3/3

BURMISTORV, V.R.; DIDORENKO, V.A.

Characteristics of a pile-up pulse spectrometer. Izv. AN
Kazakh. SSR. Ser. fiz.-mat. nauk no. 2:52-57 '63.
(MIRA 17:6)

DIDOV, B. V.

21666 DIDOV, B. V. O raschetu balok na uprugikh oporakh. Trudy Mosk.
elektromekhan. in-ta inzhenerov zh.-d. transporta im. Dzerzhinskogo.
vyp. 58, 1949, s. 99-110.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

124-57-1-1254

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 172 (USSR)

AUTHOR: Didov, B. V.

TITLE: Forces Acting During the Shrink Fitting of a Tire on a Wheel
(Usiliya v bandazhe pri goryachey nasadke na kolesnyy tsentr)

PERIODICAL: Tr. Mosk. in-ta inzh. zh. -d. transp., 1955, Nr 82/3, pp 120-133

ABSTRACT: An approximate calculation of the forces arising during the force fitting of a tire on a wheel consisting of a rim, spokes, and a hub is set forth. The connection between the tire and the rim following the fitting are stimulated by means of springs which connect their axes and are directed along the normals to the rim; the interaction forces between them are represented in the form of the normal reactions of an elastic foundation of the Zimmerman-Winkler type. The rim and the tire are considered as curvilinear beams of small curvature on an elastic foundation. A numerical example is shown. The initial assumption relative to the coefficient of rigidity k (formula 3), the magnitude of which is not substantiated, leaves room for doubt.

1. Shrink fittings--Stresses--Mathematical analysis 2. Shrink fittings
--Stresses--Theory 3. Tires--Shrink fitting D. B. Vaynberg
--Stress analysis

Card 1/1

DARKOV, A.V., prof., doktor tekhn.nauk; MITROPOL'SKIY, N.M., prof.,
dokt.tekhn.nauk; SHPIRO, G.S., kand.tekhn.nauk; DIDOV, B.V., prof.,
retsenzent; BYCHKOV, P.G., dotsent, retsenzent; ITSKOVICH, G.M.,
nauchnyy red.; ANOSHINA, K.I., red.izd-va; TITOVA, L.L., tekhn.
red.

[Strength of materials] Soprotivlenie materialov. Moskva, Gos.
izd-vo "Vysshnaia shkola," 1959. 741 p. (MIRA 13:4)
(Strength of materials)

DIDOV, B.V., doktor tekhn.nauk, prof.

Design of three-dimensional frames. Uch.zap. VZIIIT no.13:
36-44 '64. (MIRA 19:1)

DIDOV, D. and PETROVICH, S.

"Atomic Energy and Its Use," Military Publishing House, 1954

DIDOV, V.Ya., inzh.; YAROKHNO, V.I., inzh.; SEMERUKHIN, L.N., inzh.

Using centrifuges for the production of reinforced concrete shells with a 2m. diameter. Trans. stroi. 13 no.8:22-24
Ag '63. (MIRA 17:2)

DIDOVETS, S. R.

USSR/Medicine - Veterinary, Organization

Card 1/2

Author : *Didovets, S., and **Satsyuk, B.

Title : Veterinary care in animal husbandry in the Ukrainian SSR under the new organizational setup

Periodical : Veterinariya, 31, 13-17, May 54

Abstract : The purpose of veterinary-service reorganization is to assure constant flow of fodder to livestock raising farms. Under the new set up the machine-tractor station (MTS) plays an increased role, serving not only as fodder supply base, but also as a base of operations for zootechnicians and other specialists. A network of MTS veterinary districts and veterinary posts have been organized in the Ukrainian SSR; there are now 4,200 such districts and posts within the republic. There are also in the Ukrainian SSR 770 rayon veterinary hospitals organized within the 25 oblasts of the republic, 200 veterinary bacteriological labs, and 400 meat inspection stations. The Ukrainian Institute of Experimental Veterinary Science is functioning as before: it is the only scientific-research veterinary experimental establishment in the republic.

DIDOVETS, S.R.

~~DIDOVETS, S.R.~~

Forty years of veterinary medicine in the Ukraine. Veterinaria 34
no.10:16-24 0 '57. (MLBA 10:11)

1. Nachal'nik Upravleniya veterinarii Ministerstva sel'skogo kho-
zyaystva USSR.

(Ukraine--Veterinary medicine)

DIDOVETS, S.R.

Preparation of fodder antibiotics under local conditions. Veter-
inariia 36 no.11:55-62 N '59 (MIRA 13:3)

1. Nachal'nik veterinarnogo upravleniya Ministerstva sel'skogo
khozyaystva USSR.

(Antibiotics) (Feeding and feeding stuffs)

DIDOVETS, S. R.

"About the foot-and-mouth disease as zoonosious disease."

Veterinariya, Vol. 37, No. 2, 1960, p. ~~7~~ 16

(DIDOVETS, S. R.) - Nachal'nik Veterinarnogo Upravleniya, Min. sel'skogo Khozyaistva Ukr SSR.

BONDARENKO, G.F., *otv. red.*; DIDOVETS, S.R., *red.*; MUCHNIK, S.R., *prof., red.*;
PUCHKOVSKAYA, N.A., *prof., red.*; SHULYUMOVA, Ye.S., *prof., red.*;
DOBRZHANSKIY, V.N., *red.*; LAPCHENKO, Ye.P., *tekhn. red.*

[Tissue preparations in animal husbandry] Tkanevye preparaty v
zhivotnovodstve; materialy. Kiev, Gossel'khozizdat USSR, 1962.
235 p. (MIRA 16:2)

1. Nauchno-proizvodstvennaya konferentsiya po primeneniyu tkanevykh preparatov po V.P.Filatovu v zhivotnovodstve i veterinarii, Odessa, 1960. 2. Ghlen-korrespondent Akademii meditsinskikh nauk SSSR, Ukrainskiy nauchno-issledovatel'skiy eksperimental'nyy institut glaznykh bolezney i tkanevoy terapii im. akad. V.P.Filatova (for Puchkovskaya). 3. Ukrainskiy nauchno-issledovatel'skiy eksperimental'nyy institut glaznykh bolezney i tkanevoy terapii im. akad. V.P.Filatova (for Muchnik).
4. Odesskiy sel'skokhozyaystvennyy institut (for Shulyumova).
5. Nachal'nik Upravleniya veterinarii Ministerstva sel'skogo khozyaystva Ukr.SSR (for Didovets).
(Tissue extracts) (Stock and stockbreeding)

DIDOVETS, S.R.; LEVITSKIY, N.A.

Introduce the achievements of veterinary medicine into the practice of animal husbandry. Veterinariia 39 no.7:20-23 JI '62.

(MIRA 18:1)

1. Nachal'nik Upravleniya veterinarii Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov UkrSSR (for Didovets).
2. Glavnyy veterinarnyy vrach Upravleniya veterinarii Ministerstva proizvodstva i zagotovok sel'skokhozyaystvennykh produktov UkrSSR (for Levitskiy).

DZHALMALOVA, Z.M., dotsent; DIDOVICH, B.A.

Potentiated anesthesia in gynecological operations.
Med. zhur. Uzb. no.1:20-24 Ja '62. (MIRA 15:3)

1. Iz II akushersko-ginekologicheskoy kliniki (zav. - dotsent
Z.M. Dzhamalova) Tashkentskogo instituta usovershenstvovaniya
vrachey.

(OBSTETRICS--SURGERY)
(ANESTHESIA IN OBSTETRICS)

DIDOVSKIY, D.Z.; TRAKHMAN, A.I.; HYBAKOV, I.P.; KOGNOVITSKIY, I.I., re-
daktor; NADEYNSKAYA, A.A., tekhnicheskij redaktor

[Work practice of the Karaganda opencut coal mines] Opyt raboty
Karagandinskikh ugol'nykh kar'erov. Moskva, Ugletekhizdat, 1954.
66 p. (Karaganda--Coal mines and mining) (MLRA 8:7)

DIDRIKH, A., inzh.

From Irkutsk to Moscow on a "Viatka" motor scooter. Za rul. 21
no.6:27 Je '63. (MIRA 16:11)

1. Gosudarstvennyy institut po proyektirovaniyu lesnogo transporta,
Irkutsk.

USSR/General Problems of Pathology. Neoplasms.

U

Abs Jour: Ref Zhur-Biol., No 8, 1958, 37341.

Author : Didriulis, A.

Inst :

Title : A Case of Bronchogenic ("Small") Carcinoma With Pericardial and Myocardial Metastases.

Orig Pub: Sveikalos apsauga, 1957, No 9, 47-49.

Abstract: A case of primary bronchial carcinoma, grade III, with metastases of the connective tissue of the mediastinum, regional lymphatic lymph nodes, pericardium, epicardium myocardium, adrenals, kidneys, bone marrow, right lung pleura. The immediate cause of death of the patient was fibrino-hemorrhagic pericarditis with cardiac tamponade.

Card : 1/1

179

I 54491-65 T/EMP(a)/EMP(b)/EWA(c) JD
ACCESSION NR: AP5017751 RU/CK17/64/000/011/0494/0488

AUTHOR: Dica, H. (Professor); Stefan, M. (Engineer)

TITLE: Quantitative microanalysis of ARMCO Iron

SOURCE: Metabergia, no. 11, 1964, 484-488

TOPIC TAGS: Iron, metallography, alloy/ARMCO iron

ABSTRACT: The establishment of structural parameters of ARMCO iron (0.035% carbon content) has increased the possibility of using metallographic analysis in the study of very old mechanical parts of machinery. The relationship between the physical and mechanical characteristics of an alloy and its structural parameters may allow to determine these characteristics by metallographic analysis and to improve them by adequate treatment. Orig. art. has: 1 graph, 10 formulas, 6 tables.

ASSOCIATION: Institute of Metallurgy, Timisoara (Polytechnical Institute)

SUBMITTED: (X) ENCL: (X) SUB CODE: TM
NR REF SOV: (X) OTHER: (X) JPIS

Card 1/1

DIDUK, G.A. (Leningrad)

Study of automatic control systems using a matrix transformation
technique. Izv. AN SSSR. Tekh. kib. no.6:89-92 N-D '63.
(MIRA 17:4)

L 60208-65 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(1) Po-4/Pq-4/Pf-4/Pg-4/Pae-2/
Pu-4/Pk-4/Pi-4 IJP(c) EW/GS/BC
ACCESSION NR: AT5013559 UR/0000/64/000/000/0108/0114 69
131

AUTHOR: Diduk, G. A.; Yesipov, V. M.

TITLE: Investigation of the stability of automatic-control systems on digital computers 14

SOURCE: AN SSSR. Institut elektromekhaniki. Avtomatika, telemekhanika i priborostroyeniye (Automatic control, remote control, and instrument manufacture). Moscow, Izd-vo Nauka, 1964, 108-114 9

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory, digital computer, automatic control system stability

ABSTRACT: One of the possible methods of numerical (computer) solution of the stability problem was proposed by V. I. Zubov ("Cycling in nonlinear and controllable systems," Sudpromgiz, 1962); the method does not require the construction of the characteristic polynomial on the basis of the initial differential equations that describe the automatic system being studied. New approaches to a determination of the stability-region boundaries given in the present article are based on the Zubov method. Various modifications of this method are drawn from

Card 1/2

L 60208-65

ACCESSION NR: AT5013559

the matrix B:

$$B \approx E - 2(E + A + A^2 + \dots + A^m)$$

where E is a unit matrix connected with the matrix A of the automatic-control-system coefficients in the following way: For asymptotic system stability, it is necessary and sufficient that all eigenvalues of A lie in the left semiplane of the complex variable λ , i.e., $\text{Re } \lambda_i < 0$ (for all $i = 1, 2, 3, \dots, n$), where λ_i are the roots of the algebraic equation $|A - \lambda E| = 0$. "Sufficiently reliable results" of verification of the above method on a digital computer are claimed. The method proved to be "very effective" in studying the systems describable by higher-order differential equations. The possibility of synthesizing a complex multi-variable automatic system on the basis of its stability and transient-response specifications is also mentioned. Orig. art. has: 2 figures and 12 formulas.

ASSOCIATION: none

SUBMITTED: 24 Oct 64

ENCL: 00

SUB CODE: DP, IE

NO REF SOV: 004

OTHER: 000

Card

2/2

L 60209-65 EWT(d)/EPF(n)-2/EWP(v)/EWP(k)/EWP(h)/EWP(l) Po-4/Pq-4/Pf-4/Pg-4/
Pae-2/Pu-4/Pk-4/Pl-4 IJP(c) NW/GS/BC
ACCESSION NR: AT5013560 UR/0000/64/000/000/0115/0120

AUTHOR: Diduk, G. A.; Yesipov, Y. M.; Siryi, N. S.; Filatova, E. P.

TITLE: Plotting stability regions of automatic-control systems by digital computers

SOURCE: AN SSSR, Institut elektromekhaniki. Avtomatika, telemekhanika i priborostroyeniye (Automatic control, remote control, and instrument manufacture). Moscow, Izd-vo Nauka, 1964, 115-120

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory, digital computer, power system stability

ABSTRACT: The results are reported of an investigation of the stability of an excitation-control system which controls the operation of synchronous generators feeding, via a transmission system, into infinite-power buses (Volga Hydroelectric Station to Moscow). After a linearization, the control system was describable by 7th order differential equations. The stability regions of the frequency-control factor K_f^0 and its first derivative K_f^1 were plotted in a two-

Card 1/2

L 60209-65

ACCESSION NR: AT5013560

parameter plane. The plotting was performed by the V. I. Zubov method (see Abstract AT5013559) and was verified by direct computation of all roots of the characteristic equation. Four stability regions corresponding to various stability degrees (0, 0.25, 0.5, 0.75) were plotted. The stability-region boundaries were determined by dissecting the plane of $K_f^0 - K_f^1$ factors with the straight lines parallel to the x-axis. The plots show that, for increased stability degrees, the regions contract irregularly; a comparison of the plots for transmission angles of 66° and 105° shows that the stability regions become essentially narrower with increasing transmitted power; these factors are important for selecting the voltage-regulator settings. Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: none

SUBMITTED: 24 Oct 64

ENCL: 00

SUB CODE: IE, DP

NO REF SOV: 005

OTHER: 000

Card *2/2*

I, 12/01-66 EWP(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD/BC
ACC-NR: AT6008921 SOURCE CODE: UR/0000/65/000/000/0046/0053

AUTHOR: Diduk, G. A.; Yesipov, V. M.

62

ORG: none

61

TITLE: Investigation of linear-stationary-system dynamics not requiring the setting up of the characteristic polynomial

B+1

SOURCE: AN SSSR. Institut elektromekhaniki. Avtomaticheskiye i teleanformatsionnyye sistemy (Automatic and teleinformation systems). Moscow, Izd-vo Nauka, 1965, 46-53

TOPIC TAGS: automatic control, automatic control system, automatic control theory, power system stability

ABSTRACT: V. I. Zubov suggested a new numerical solution of the stability problem which does not require setting up the characteristic polynomial ("Mathematic methods of investigating automatic control systems," Sudpromgiz, L., 1959; "Cycling in nonlinear and controlled systems," Sudpromgiz, L., 1962).

Card 1/2

L 42201-66

ACC NR: AT6008921

This article presents a further development of the Zubov method. Let the behavior of an automatic control system be described by $dx/dt = Ax$, where A is the matrix of coefficients of the n th-order system and x is a single-column matrix with elements x_1, x_2, \dots, x_n . The characteristic determinant of the above equation is: $|A - \lambda E| = 0$, where E is the unit matrix. The determinant is transformed into: $|B - pE| = 0$, where $p = \frac{\lambda+1}{\lambda-1}$. The transformed matrix of coefficients

B can be written in either of two forms:
$$\left. \begin{aligned} B &= E + 2(A - E)^{-1} \\ B &= E - 2(E - A)^{-1} \end{aligned} \right\} \text{The automatic control system will be asymptotically stable if any norm of matrix } B \text{ is less than unity:}$$

The above method was tested in calculating the static stability of the Volga-GES Moscow power transmission line on a digital computer. Orig. art. has: 2 figures and 29 formulas.

SUB CODE: 13, 09 / SUBM DATE: 14Jul65 / ORIG REF: 004 / OTH REF: 001

Card 2/2 of

I 42220-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD/BC

ACC NR: AT6008922

SOURCE CODE: UR/0000/65/000/000/0054/0061

AUTHOR: Diduk, G. A.; Yesipov, V. M.

ORG: none

61
B+1

TITLE: Methods for approaching boundary and construction of stability regions of multidimensional automatic systems on a digital computer

SOURCE: AN SSSR. Institut elektromekhaniki. Avtomaticheskije i teletinformatcionnyye sistemy (Automatic and teleinformation systems). Moscow, Izd-vo Nauka, 1965, 54-61

TOPIC TAGS: automatic control, automatic control system, automatic control theory

ABSTRACT: Some methods of directional search are discussed which can be used for constructing the stability region in a permissible parameter space and for isolating a subregion having specified qualitative characteristics. The maximum eigen-value $|\rho_{max}|$ of matrix B is recommended as a quantitative measure of

Card 1/2

L 42220-66

ACC NR: AT6008922

stability; the matrix B is given by: $B = E - 2(E - A)^{-1}$, where E is the unit matrix and A is the matrix of the coefficients of the automatic control system in question. Gradient methods, and particularly the steepest descent method, are recommended for minimization of the functional $G(\mu_1^*, \mu_2^*, \dots, \mu_n^*)$ of the parameter space. The algorithm of tracking the region boundary describes a motion along the sides of a square. The above approaches were tested in studying the automatic excitation system of synchronous generators at the Volga-GES power station connected via a transmission line to an infinite-power line (the Moscow power system). Orig. art. has: 2 figures and 22 formulas.

SUB CODE: 13, 09 / SUBM DATE: 14Jul65 / ORIG REF: 006 / OTH REF: 001

Card 2/2 of

ACC NR: AR6024029

SOURCE CODE: UR/0044/86/000/004/B042/B042

AUTHOR: Diduk, G. A.; Yesipov, V. M.

TITLE: A method for the investigation of the dynamics of linear stationary systems not connected with the establishment of the characteristic polynomial 14

SOURCE: Ref zh. Matematika, Abs. 4B204

REF SOURCE: Sb. Avtomat. i teleanform. sistemy. M.-L., Nauka, 1965, 46-53

TOPIC TAGS: control system stability, automatic control system, linear system, digital computer

ABSTRACT: The development of a method for the estimate of the stability of automatic systems whose dynamics is described by the equation $dx/dt = Ax$ and not connected with the establishment of the characteristic polynomial has been investigated. The ideas for the estimate of stability directly from the original matrix of the coefficient A are presented. On the basis of the proposed criteria the authors solve the problem of the synthesis of multidimensional systems. The particular case of the solution of the problem where the system under investigation is subjected to more stringent requirements with regards to possible oscillations is being investigated. It is noted that the presented approach was tested on digital computers during the

Card 1/2

UDC: 517.917

ACC NR: AR6024029

calculations of the statistical stability of electrical power transmission line from the Volzhskaya
GES im. V. I. Lenin to Moscow, and it proved its convenience. [Translation of abstract]

SUB CODE: 012

Card 2/2

3(5)

AUTHOR: Didukh, B. I., Engineer

SOV/99-59-7-7/9

TITLE: Selection of Compacting Plate Parameters for Stabilizing Bound Soils of Natural Formations

PERIODICAL: Gidrotekhnika i Melioratsiya, 1959, Nr 7, pp 43-49 (USSR)

ABSTRACT: The process of stabilization of soils by means of compacting plates comes more and more into general use in hydrotechnics, road-building and other branches of engineering. On the basis of extensive research conducted at the Moscow Power Institute, the author has calculated the most favorable ratio between the compacting plate parameters, which allow the maximum efficiency in the performance of the compacting plates. Under the word "parameters" are assumed the following values: 1) The weight of the plate - Q; 2) The width of its base - B; 3) The height of fall - H; 4) The number of strokes - n. It has to be noted, however, that the same effect (the depth of stabilization) can be obtained by using compacting plates with different ratios between the values Q, B, H and n. Namely, it depends on the kind

Card 1/3

SOV/99-59-7-7/9
Selection of Compacting Plate Parameters for Stabilizing Bound Soils
of Natural Formations

of ground to be stabilized, as well as on whether the ground consists of strewn layers (as encountered in road-building) or is of natural formation. In the first instance, the stabilizing process is applied to the loose layers of material placed upon an already compacted, low compressible bed. In the second case, the problem is to extend the ground compactness into the depth. The depth of compaction is one of the most important features of the stabilizing effect attained. It is determined in vertical direction and should amount to a certain precalculated value. The tests with the compacting plate constructed according to a formula suggested by the author were carried out on loess ground of natural formation, on the occasion of building the canal of the Chir-Yurtskaya GES, whereas the ground compacting was accomplished not only on the canal bottom, but also on its walls. The weight of the compacting plate was 5 tons, its base 1.5 m, and the number of strokes - 8.

Card 2/3

Selection of Compacting Plate Parameters for Stabilizing Bound Soils
of Natural Formations

SOV/99-59-7-7/9

There are 2 graphs, 2 tables, 1 diagram and 8 Soviet references.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power Institute)

Card 3/3

VOSHCININ, N.P., kand. tekhn. nauk.; DIIOKH, B.I., inzh.

Machine for tamping the bottoms and slopes of canals. Stroi. i
dor. mashinostr. 4 no.11:20-21 N '59 (MIRA 13:3)
(Canals) (Soil stabilization)

SHEKHTER, O.Ya.; DIDUKH, B.I.; IOSELEVICH, V.A.; KRYZHANOVSKIY, A.L.

Book reviews and bibliography. Osn., fund.i mekh.grun. 4
no.2:31-32 '62. (MIRA 15:8)
(Bibliography--Soil mechanics)

DIDUKH, B.I.

Dynamic interaction of a ramming plate with the soil compacted by
it. Inzh.-fiz. zhur. 5 no.2:58-63 F '62. (MIRA 15:1)

1. Inzhenerno-stroitel'nyy institut, Moskva.
(Soil stabilization) (Strains and stresses)

DIDUKH, B.I.

Experimental determination of the relation of the density of
loess soil to stress under impact. Osn., fund. i mekh. grun. 5
no.1:13-14 '63. (MIRA 16:5)

(Loess) (Soil mechanics)

DIDUKH, B.I.; IOSELEVICH, V.A.

Description of the deformations of ground samples by
various deformation theories. Osn., fund. i mekh.grun.
8 no.1:3-6 '66. (MIRA 19:1)

L 04227-67 EWT(l)/EWT(m)/EWP(t)/ETI IJF(c) JD

ACC NR: AR6031901

SOURCE CODE: UR/0058/66/000/006/E139/E139

AUTHOR: Didukh, L. D.; Stasyuk, I. V.

49
B

TITLE: Indirect exchange interaction through polar excitation in ferromagnets

SOURCE: Ref. zh. Fizika, Abs. 6E1079

REF SOURCE: Visnyk L'vivs'k. un-tu. Ser. fiz., no. 2, 1965, 14-18

TOPIC TAGS: electron interaction, electron spin, antiferromagnetism, transition metal

ABSTRACT: It is shown that indirect exchange interaction in ferromagnets contributes to an antiferromagnetic ordering of spins. It is pointed out that exchange interaction of this kind explains the antiferromagnetism of some transition metal alloys. [Translation of abstract]

16
21

SUB CODE: 09, 20/

Card 1/1 *sl*

L 07106-57 EWT(1)

ACC NR: AP6029098

SOURCE CODE: UR/004B/66/030/006/0915/0920 45

AUTHOR: Didukh, L.D.; Stasyuk, I.V. 43
B

ORG: Physics Department, L'vov State University (Fizicheskiy fakul'tet L'vovskogo gosudarstvennogo universiteta)

TITLE: Contribution to the theory of exchange interactions in antiferromagnets taking polar excitations into account /Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Sverdlovsk/

SOURCE: AN SSSR, Izvestiya, Seriya fizicheskaya, v. 30, no. 6, 1966, 914-920

TOPIC TAGS: spin wave, antiferromagnetism, electron interaction, exchange interaction, temperature dependence

ABSTRACT: The authors calculate the energy spectrum of the spin waves in an antiferromagnet consisting of two ferromagnetic sublattices with opposite polarizations, having one s electron at each lattice site. Direct exchange interaction is neglected, and the Hamiltonian on which the calculations are based contains only terms representing the energy of the electron in the s state and the Coulomb energy of two electrons at the same site, and terms involving the transfer integrals. This Hamiltonian is subjected to two successive canonical transformations of the type discussed by A.Yu.Glauber and I.V.Stasyuk (Ukr.fiz. zh., 9, 3 (1964)) and with the aid of several simplifying assumptions, including the assumption that the ratio of the transfer inte-

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L 97106-67

ACC NR: AP6029098

2
gral to the Coulomb energy is small, it is expressed in terms of the known delocalization superexchange integral of P.W.Anderson (Phys. Rev., 115, 2 (1959)) and creation and destruction operators for holes, pairs, and magnons. From this Hamiltonian the spin wave energy spectrum is derived by a Green's function technique; it is found to be temperature dependent. The authors thank A.Yu.Glauber and A.M.Muzychuk for valuable remarks and discussions. Orig. art. has: 29 formulas.

SUB CODE: 20

SUBM DATE: 90

ORIG. REF: 008

OTH REF: 003

Card : 2/2 *llh*

KARTASHEVA, V.N.; KOSTYUKOVA, N.N.; DIDUKH, M.S.

Study of histochemical and immunological changes in the
body of guinea pigs following immunization with diphtheria
anatoxin. Zhur. mikrobiol., epid. i immun. 40 no.3:34-39
Mr '63. (MIRA 17:2)

1. Iz Moskovskogo instituta vaktsin i syvorotok imeni
Mechnikova.

L 1396-66 EWT(1)/EWA(j)/EWA(b)-2 BW

ACCESSION NR: AP5017436

UR/0248/65/000/007/0061/0066

616.927.7-092.9

AUTHOR: Rukhadze, E. Z.; Pryamukhina, N. S.; Didukh, M. S.

TITLE: Reproducing an experimental paratyphoid (Breslau) bacteria carrier state in rabbits

SOURCE: AMN SSSR. Vestnik, no. 7, 1965, 61-66

TOPIC TAGS: experiment animal, intestinal disease, bacterial disease, bacteria, blood, morphology

ABSTRACT: In a series of experiments chinchilla rabbits (1.5-2 kg) were infected perorally with S. typhimurium (2.5-9 bacteria/kg dose) administered together with milk (1 ml) to induce a paratyphoid bacteria carrier state. Bacteriological, immunological, serological, and morphological indices were determined to confirm the presence of paratyphoid. In experimental animals the infectious process was characterized by fever and weight loss and in some cases anorexia and diarrhea developed. Starting with the 10th to 14th days the O- and H-agglutinin titers rose significantly. The causative agent was found in animal feces and in organs of killed animals. Morphological

Card 1/2

L 1396-66
ACCESSION NR: AP5017436

investigations revealed specific changes characterized by hyperplasia and necrosis of lymphoid tissue (Peyer's patches) and necrotic foci in the liver and kidneys. These various indices demonstrate that a paratyphoid carrier state can be successfully induced in animals. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: Tsentral'nyy nauchno-issledovatel'skiy institut epidemiologii Ministerstva zdravokhraneniya SSSR, Moscow (Central Scientific-Research Institute of Epidemiology of the Ministry of Health, SSSR) ⁶⁶ Moskovskiy nauchno-issledovatel'skiy institut vaktsin i syvorotok im. I. I. Mechnikova Ministerstva zdravokhraneniya SSSR (Moscow Scientific-Research Institute of Vaccines and Serums of the Ministry of Health, SSSR) ⁶⁶

SUBMITTED: 21Apr65

ENCL: 00

SUB CODE: LS

NR REF SOV: 000

OTHER: 000

Card 2/2

DIDUKH, Yuriy Iosifovich; KUT'IN, Aleksandr Ivanovich;
KAMINSKIY, Ye.A., red.

[Experience in operating the control apparatus of mercury rectifiers] Opyt ekspluatatsii apparatury rezhimoi avtomatiki rtutnykh vypryamitelei. Moskva, Izd-vo "Energiia," 1964. 63 p. (Biblioteka elektromontera, no.119)

(MIRA 17:5)

DIDULICA, S.

"Sokolje Power Plant" p. 19. (Elektoprivreda, Vol. 6. no. 1, Jan/Feb. 1953, Beograd)

East European Vol. 2, No. 9
SO: Monthly List of ~~Public~~ Accessions,/Library of Congress, Sepatember 1953, Uncl.

DIDUR, M. Ye., (Vinnitsa, ul. Podlesnaya, d. 12)

Study of leucocytosis in the Zakharin-Head zones in peptic ulcer
of the stomach and duodenum and in cancer of the stomach. Nov.
khir. arkh. no.2:71-72 '62. (MIRA 15:2)

1. Kafedra obshchey khirurgii (zav. - prof. A. P. Yurikhin)
Vinnitskogo meditsinskogo instituta.

(PEPTIC ULCER) (STOMACH--CANCER) (LEUCOCYTOSIS)

BURYY, Z.P.; DIDUR, V.T., inzh.-konstruktor

Machine for vineyard protection. Zashch. rast. ot vred. i
bol. 6 no.10:26 0 '61. (MIRA 16:6)

1. Nachal'nik otdela ammiachno-gerbitsidnykh mashin Gosudarstvennogo seriyne-konstruktorskogo byuro L'vovskogo soveta narodnogo khozyaystva (for Buryy). 2. Gosudarstvennoye seriyne-konstruktorskoye byuro L'vovskogo soveta narodnogo khozyaystva (for Didur).

(Grasses--Diseases and pests)

(Spraying and dusting equipment)

DIDUR, V.T., inzh.

The modernized OV-3A vineyard sprayer. Trakt. i sel'khoz mash.
33 no.9:37 S '63. (MIRA 16:10)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro
po mashinam dlya khimicheskoy zashchity rasteniy.
(Spraying and dusting equipment)

DIDURA, V.I.; ROZANOV, N.M.

Prospects of searching for gas and oil in the region of the Baryn monocline. Neftegaz.geol. i geofiz. no.12:10-13 '64.

(MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut, Moskva.

Didurenko, N. F.

USSR/Soil Science - Genesis and Geography of Soils.

J-2

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10464

Author : Lidov, V.P., Didurenko, N.F.

Inst : -

Title : Some Remarks on the Classification of Washed Out Soils.

Orig Pub : Pochvovedeniye, 1955, No 11, 80-85

Abstract : The soil erosion indices used in the classifications of A.S. Kozmenko (1948) and S.V. Naumova (1955) must be handled with extreme care under certain zonal conditions and with certain types of relief. It is recommended that the erosion in small channels and /razmoiny/ be taken into consideration and that areas with broken up microrelief be distinguished from those where the microrelief has been smoothed out. A classification of eroded soils must contain a description of the angles of surface incline as well as indices of the length of the slopes. For successful development of a unified classification of

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USSR/Soil Science - Genesis and Geography of Soils.

J-2

Abs Jour : Ref Zhur - Biol., No 3, 1958, 10464

eroded soils, soil scientists, geomorphologists, and hydrologists must conduct research together toward unified objectives. This is as important as fixed observations.

Card 2/2

DIDUS', V. I.

"Sclerotinia on Timothy," Seleksiia i Semenovodstvo, vol. 14, no. 2, 1947,
p. 71. 61.9 Se5

So: SIRA -S1-90-53, 15 Dec 1953

USSR / General Biology. Genetics. Plant Genetics.

B-3

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 61947

Author : Didus', V. I.

Inst :

Title : Conversion of Winter Drop-Wheat into Spring Wheat.

Orig Pub : Agrobiologiya, 1957, No 3, 131-133

Abstract : No abstract.

Card 1/1

PROCESSES AND PROPERTIES INDEX

1951 AND 1952 EDITIONS

A

K

F
2882 KAKAIA CATALYTIC HYDROCONDENSATION OF CARBON MONOXIDE WITH OLEFINS. 5. HYDROCONDENSATION OF CARBON MONOXIDE WITH PROPYLENE. ZELINSKII, N.D., DIDUS, YA. T., PUZITSKII, K.V. AND PATNEY, M.I. (IZVEST. ANAD.SCI. USSR SECT. TECH. SCI.) 1950, 647-653). Experiments were carried out on equi-molecular mixture of H2 and C3H6 | 5.7 to 7% of CO, under the same conditions as previously. 85 to 90% of the C3H6 reacts, 35% being reduced to C3H8 and 5% going to ~~higher~~ C4 compounds. Analyses are given of the gaseous and liquid reaction products. Liquid material (above C4) has b. p. 30° to 325°C. and contains 35% unsaturates, proportion of these latter decreasing with rise in B.P. Examination of the hydrogenated liquid material showed approximately equal amounts (13) of C5 and C7-9 and about 20% of C6; iso compounds were present in the C5-6 range. IP

METALLURGICAL LITERATURE CLASSIFICATION

CHUMASOV, S.F., doktor tekhn.nauk, prof.; TRUSHIN, A.V., kand.tekhn.nauk,
dotsent; DIDUSEV, B.A., inzh.

Stand for wear tests of lead and lead screws and nuts. Vest.
mashinostr. 45 no.11:35-37 N '65.

(MIRA 18:12)

MUSAPIROVA, N.A.; DOSYMBETOVA, M.K.; DIDYAYEVA, M.V.

Diagnosis of pathologic changes in the cervix uteri by the
compound method (colposcopy, cytology, biopsy). Zdravookhr.
Kazakh. 23 no.1:23-26 '63 (MIRA 17:2)

1. 1. Iz Kazakhskogo instituta onkologii i radiologii.

DIDYCH, V. K.

Didych, V. K. "Treatment of prolapse of the rectum by the method of aponeurotic colopecty." L'vov, State Medical Inst. L'vov, 1956. (Dissertation for the Degree of Candidate in Medical Science)

So: Knizhnaya letopis', No. 27, 1956. Moscow. Pages 94-109; 111.

DIDYCH, V.K.

DIDYCH, V.K. (L'vov, ul, Khar'kovskaya, d. 20, kv. 2)

Treating prolapse of the rectum by sponesurotic colopexy. Nov.khir.
arkh. no.2:56-57 Mr-Ap '57. (MLRA 10:8)

1. Kafedre propedevticheskoy khirurgii (zav. - prof. G.P.
Kovtynovich) L'vovskogo meditsinskogo instituta
(RECTUM--SURGERY)

DIDYCH, V.K.

Fate of an aponeurosis transplanted to the intestinal wall in an experiment [with summary in English]. Eksper. khir. 3 no.1:50-52
Ja-F '58. (MIRA 11:2)

1. Iz kafedry obshchey khirurgii (zav. - prof. G.P.Kovtunovich)
L'vovskogo meditsinskogo instituta.

(INTESTINES, surg.)

implantation of aponeurosis to intestinal wall (Rus))
(TENDONS, transplantation
same)