APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

S/114/61/000/001/002/009
E194/E355

Tubular Surfaces with Longitudinal Ribbing for Regenerators and Water Heaters of Gas-turbine Sets

are arranged to flow counter to one another so as to make the best use of the temperature difference between them. The longitudinal ribbing increases the rigidity of the tubes and makes them stronger, so that with relatively small increase in resistance a heat-exchanger can be constructed for higher gas speeds. The ribbing is not particularly subject to contamination and is convenient for cleaning.
Accordingly, the Khar'kov Turbine Works was recommended to use such tubes for their regenerator for gas turbine type 50-800. By agreement with the works, the Institute of Thermal Power of the AS Ukrainian SSR made investigations of the heat transfer and resistance of longitudinally-ribbed tubes of 16 mm diameter, with ribs 12 mm high, convenient for use in the regenerator. The object of the investigation was to obtain more accurate design formulae on heat transfer and hydraulic resistance of ribbed tubes with various numbers of ribs round the tube perimeter.

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Simultaneously, the Institut elektrosvarki imeni Ye.O.Patona AN UkrSSR (Electric Welding Institute imeni Ye.O. Paton of the AS Ukrainian SSR) developed automatic equipment for manufacturing longitudinally-ribbed tubes by welding the ribs to the plain tubes. Aluminium tubes may be made by pressing or drawing from molten metal.
Heat-transfer investigations for a single ribbed tube were made in an open-circuit wind tunnel of cylindrical shape, a sketch of which is given in Fig. 2.
In the test rig the tube consisted of measuring, stabilising, experimental and tail-end sections. Compressed air was obtained from a compressor and could be passed at rates from 5 to 30 m/sec. The seamless tubes and ribs were made of steel, grade 20. The tubes were electrically heated and the power input measured. The instrumentation and experimental procedures are described. The accuracy of the experiments depends very much on the correct measurement of the mean

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temperature of the tube surface and so particular attention must be paid to this point. An assessment of the accuracy of determination of the heat-transfer coefficient including heat lost by radiation showed that the maximum relative error is 8-10%.

Heat-transfer coefficients were determined and for comparison and generalisation the results were expressed as relationships between the Nusselt and Reynolds criteria, the resistance being also plotted as a function of the Reynolds number. The tube dimensions are tabulated. The tests were made with air-flow rates of 7 - 26 m/sec which corresponds to Reynolds number range of 3 000 to 20 000 with a temperature difference of 30 - 75 °C and with the specific thermal loading in the range 11 000 to 36 000 kcal/m^2 hour.

Experimental heat-transfer results are plotted in Figs. 3 and 4 and it will be seen that the points tend to lie higher

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Tubular Surfaces with Longitudinal Ribbing for Regenerators and Water Heaters of Gas-turbine Sets

as the ratio of length to equivalent diameter is decreased. For all tubes investigated the heat-transfer results are satisfactorily described by expression (1).
Resistance tests were made under isothermal conditions. The test results plotted in Fig. 5 show that within the limits of experimental error the resistance follows the usual relationship for smooth tubes given by expression (3). Comparison between ribbed and smooth tubes shows that the ribbed tubes have considerable advantages in weight, volume and heat-transfer characteristics. This is particularly noticeable when the thermal resistance of the heat-transfer medium flowing within the tube is small compared with the resistance to gas flowing over the outside of the ribbed surface.
Comparative data were obtained by building up bundles of tubes, some smooth with longitudinal gas flow, others smooth with cross-flow of gas, and longitudinally-ribbed tubes with gas flowing along the ribbing. In each case the bundles were made

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equal in volume and in active section for passage of gas. The comparison is made in Fig. 6 and considering as unity the heat-transfer coefficient of smooth tubes with longitudinal flow, smooth tubes with a cross-flow have a coefficient of 1.2 and the longitudinally-ribbed tubes have a coefficient of 2.2. In gas-turbine regenerators the longitudinally-ribbed tubes will not give all of this improvement but the reduction is less when the heat-transfer coefficient from the air side is high. Thus, even with the present simple form of ribbing on the gas side it is necessary to intensify the heat-transfer process on the air side. A simple way is to raise the air speed by reducing the active section of the tube with light inserts. Internal ribbing could be used but would be rather difficult to make. Thus, the use of tubes with longitudinal ribbing has improved the process of heat exchange. The use of these tubes for gas-turbine regenerators with high compression ratios and for gas water heaters makes it possible to preserve the

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advantages of the tubular construction. At the same time, the amount of metal used in manufacturing heat-exchangers, their size and the consumption of seamless tubes are all reduced. Acknowledgment is made to senior technician V.I. Kosov for his assistance in the experimental work.
There are 6 figures, 2 tables and 2 Soviet references.

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ZOZULYA, N.V.[Zozulia, M.V.]; KHAVIN, A.A.[Khavin, O.O.]; KALININ, B.L.

Heat transfer and hydraulic resistance of pipes with spirally winding fins. Zbir. prats' Inst. topl. AN URSR no.22:11-20 '61. (MIRA 16:6)

(Heat—Transmission)
(Hydrodynamics)

KREMNEV, O.A. [Kremn'ov, O.O.]; ZOZULYA, N.V. [Zozulia, M.V.]

Intensification of heat losses in longitudinal flow past transversely perforated plates. Dop. AN URSR no.4:484-486 '62. (MIRA 15:5)

1. Institut teploenergetiki AN USSR. Predstavleno akademikom AN USSR I.T.Shvetsom [Shvets', I.T.].
(Heat--Convection) (Hydrodynamics)

KREMNEV, O.A., doktor tekhn.nauk; ZOZULYA, N.V., kand.tekhn.nauk; KHAVIN, A.A., inzh.

Heat transfer of tubes with loop-wire ribbing in case of longitudinal flow around them. Energomashinostroenie 8 no.5:30-31 My '62. (MIRA 15:5)
(Heat--Transmission)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ZOZULYA, N.V. [Zozulia, M.V.]; KHAVIN, A.A. [Khavin, O.O.]; KOZUB, Yu.I.

Layout diagrams of heat exchangers made from longitudinally finned tubes. Zbir. prats' Inst. tepl. AN URSR no.24:24-32 '62. (MIRA 16:3)
(Heat exchangers)

S/021/62/000/004/011/012
D299/D302

24,5200

AUTHORS: Kremn'ov, O.O., and Zozulya, M.V.

TITLE: Intensification of heat transfer by means of vertical perforation of plates in a horizontal flow

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi, no. 4, 1962, 484-486

TEXT: The thickness of the laminar boundary-layer, as well as the formation of this layer, depend on the length of the heat transfer element. A shortening of these elements leads to intensification of heat transfer. This can be achieved by perforation of the plates which constitute the heat-transfer element. Experiments were carried out at the Institute of Heat and Power Engineering of the AS UkrRSR with various types of perforated plates, having following ratios of length a of surface element, to size b of perforation: a/b = 5/1; 5/1.5; 7/1.5; 10/1; 10/1.5; 10/2; 15/1.5; 20/2. It was found that the intensity of the heat transfer is considerably affected by a decrease in the length a, and to a much lesser extent by the size b. The best results were obtained with smallest a (a = 5). A comparative study was made of heat transfer in perforated- and in unperfora-

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ted plates. It was found that the perforations increase the heat transfer by a factor of 1.75 (with a = 5 mm). By processing the obtained data, the heat-transfer coefficient was determined by means of the function Nu = f(Re). This function has the form

$$Nu = 0.038\ Re^{0.8}$$

for tubes with perforated plates (a = 5 mm, b = 1.5 mm). It is noted that the size b should equal 1 to 1.5 mm. A further reduction in size is hardly possible from technological considerations. The above type of surface can be used for heat-transfer elements, if the heat carrier does not form precipitates on the surface of the heat-exchanger. There are 4 figures and 3 Soviet-bloc references.

ASSOCIATION: Instytut teploenerhetyky AN URSR (Institute of Heat and Power Engineering of the As UkrRSR)

PRESENTED: by Academician I.T. Shvets', As UkrRSR

SUBMITTED: July 27, 1961

ZOZULYA, I.V., kand.tekhn.nauk; SHVARTS, V.A., inzh.; KALININ, B.L.

Heat transfer and hydraulic resistance in a bank of tubes with longitudinal ribbing. Izv. vys. uchob. zav.; energ. 6 no.8:114-119 Ag '63. (MIRA 16:9)

1. Institut teploenergetiki AN UkrSSR i Khar'kovskiy turbinnyy zavod imeni Kirova.

(Steam pipes)

ZOZULYA, N.V [Zozulia, M.V.]; BALITSKIY, S.A. [Balits'kyi, S.P.]

Analytical method for determining the initial thickness of a liquid layer during boiling in a downward flowing film. Dop. AN URSR no.3: 342-344 '65. (MIRA 18:3)

1. Institut tekhnicheskoy teplofiziki AN UkrSSR.

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L 4005-66 EWT(d)/EWT(l)/EPF(c)/EPF(n)-2/ETC(m) MW
ACCESSION NR: AP5024422 UR/0286/65/000/015/0125/0126

AUTHORS: Zozulya, N. V.; Klyaylenko, N. A.; Sokolov, M. A.; Chavdarov, A. S.

TITLE: Ribbed surface for tubular and plate heat exchangers. Class 46, No. 173546

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 125-126

TOPIC TAGS: heat exchanger, heat diffusion, heat exchange panel

ABSTRACT: This Author Certificate presents a ribbed surface for tubular and plate heat exchangers containing parallel rows of tubes or plates (see Fig. 1 on the Enclosure). To decrease the area of its frontal section and to increase its coefficient of heat exchange, the ribs on the adjacent rows of tubes or plates are axially shifted in respect to one another, while the rows of tubes or plates are separated by deflectors. The tubes or plates and the deflectors form defusers, curve ducts, and gas inlets. The ribs may be longitudinal (smooth or corrugated), or they may be made of wires of desired diameters. The tubes may be flattened. Orig. art. has: 1 figure.

ASSOCIATION: Institut teploenergetiki, AN UkrSSR (Institute of Heat Power Engineering, AN UkrSSR)

UDC 621.565.94

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L 4005-66
ACCESSION NR: AP5024422

ENCLOSURE: 01

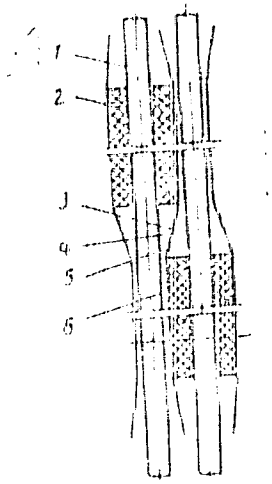

Fig. 1. 1- tube; 2- ribbed portion; 3- deflector; 4- diffuser; 5- convector; 6- gas duct

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KREMNEV, O.A. [Kremniev, O.A.]; ZOZULYA, N.V.

Investigating corrugated heat exchanging surfaces. Khim.prom. [Ukr.] no.2:42 Ap-Je '65. (MIRA 18:6)

PROTASHIK, Vasiliy Anufriyevich; ZOZULYA, Nikolay Vasil'yevich, inzh.; ISAYEV, Yuriy Borisovich; UDAL'TSOV, A.N., glavnyy red.; KONAREV, M.I., kand.khim.nauk; red.; POLUROVSKAYA, O.M., kand.khim.nauk, red.; TOLCHINSKIY, Ye.M., inzh., red.

[Equipment for gauging the surface of hard objects by adsorption of radioactive carbonic acid. Device for measuring the thickness of liquid films in a vacuum. A receiver-condenser] Ustanovka dlia izmereniia poverkhnosti tverdykh veshchestv po adsorbtsii radioaktivnoi uglekisloty. Pribor dlia izmereniia tolshchiny zhidkikh plenok v usloviiakh vakuuma. Priemnik-kondensator. Moskva, 1956. 12 p. (Pribory i stendy. Tema 8, no. P-56-439) (MIRA 11:3)

1. Moscow. Institut tekhniko-ekonomicheskoy informatsii.
(Radioactive substances--Industrial applications)
(Surfaces (Technology)) (Thickness measurement)

AFONIN, L.A.; ZOZULYA, P.I.; MANEN'KOV, P.I.

Organizing communication channels in 6/04 kv. power-distribution networks on oil fields. Mash. i neft. obor. no.4:17-19 '65.
(MIRA 18:5)

1. Groznenskiy filial Vsesoyuznogo nauchno-issledovatel'skogo i proyektno-konstruktorskogo instituta kompleksnoy avtomatizatsii neftyanoy i gazovoy promyshlennosti.

YEFIMENKO, O.M.; MEL'NIKOVA, T.A.; ZOZULYA, R.N.; KOSTYUKOV, N.M.

Polyporenic acid A, an antibiotic from the fungus Polyporus betulinus (Bull) Karst. Antibiotiki 6 no.3:215-220 Mr '61. (MIRA 14:5)

1. Laboratoriya biokhimii nizshikh rasteniy (zav. - prof. P.A. Yakimov) Botanicheskogo instituta AN SSSR i kafedra farmakologii (zav. - prof. T.A.Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo instituta.

(ANTIBIOTICS)

SELENINA, L.V.; GLADKOV, V.I.; ZOZULYA, R.N.

Valerian culture in the Karelian Isthmus. Trudy Len. khim.-farm. inst. 12:335-343 '61. (MIRA 15:3)

1. Kafedra farmakognozii i botaniki Leningradskogo khimiko-farmatsevticheskogo instituta.
(LENINGRAD PROVINCE—VALERIAN)

ZOZULYA, R.N.

Effect of anicaine, difacil, and tetamon "I" on the external secretory function of the pancreas. Trudy Len.khim.-farm.inst. no.13:167-173 '62. (MIRA 15:10)

1. Kafedra farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. prof. T.A.Mel'nikova).
(AMMONIUM COMPOUNDS, SUBSTITUTED) (DIFACIL) (PARASYMPATHOLYTICS) (PANCREAS)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

MEL'NIKOVA, T.A.; ZOZULYA, R.N.

Pharmacology of fir balsam. Trudy Len.khim.-farm.inst. no.13:174-179 '62. (MIRA 15:10)

1. Kafedra farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. prof. T.A.Mel'nikova).
(BALSAMS)

ZOZULYA, R.N.; KUZNETSOVA, G.A.; MEL'NIKOVA, T.A.; YAKIMOV, P.A.

Chemical and pahrmacological study of preparations extracted from Podophyllum Peltatum L. growing in Leningrad Province. Trudy Len.khim.-farm.inst. no.13:245-252 '62. (MIRA 15:10)

1. Kafedra farmakologii (zav. prof. T.A.Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo institua.
(LENINGRAD PROVINCE--PODOPHYLLUM)

DRIZGALOVICH, Yu.; ZOZULYA, S.; MALYSHKIN, K.; GOLOVKO, V. (g.Stryy L'vovskoy oblasti)

Readers' letters. Izobr.i rats. no.1:38 Ja '60. (MIRA 13:4)

1. Ispolnyayushchiy obyazannosti predsedatelya Tul'skogo oblastnog soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Drizgalovich). 2. Predsedatel' rayonnogo soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov, Riga (for Zozulya). 3. Starshiy inzhener upravleniya mashinostroyeniya Sverdlovskogo sovnarkhoza (for Malyshkin).

(Technological innovations)

ACCESSION NR: AP4041033 S/0120/64/000/003/0126/0128

AUTHOR: Nazarenko, O. K., Zozulya, S. I., Baranov, G. V.

TITLE: Cathodes for sharp-focused electron guns for electron-beam welding

SOURCE: Pribory* i tekhnika eksperimenta, no. 3, 1964, 126-128

TOPIC TAGS: electron beam welding, electron gun cathode, cathode emitter, lanthanum hexaboride emitter, tungsten emitter

ABSTRACT: The Electric Welding Institute, AN USSR, has developed two types of electron-gun cathodes for electron-beam welders. Both cathodes have indirectly heated emitters. The emitter of the first cathode is a lanthanum hexaboride pellet held in a molybdenum cup positioned with a molybdenum rod. In tests, the pellet operated at a temperature higher than 1700C, ensuring a thermionic current density of about 20 amp/cm^2. The contamination of the emitter surface can be prevented by decreasing the solid angle at which the vapors of welded metal can reach the emitter. or by shifting the beam focal spot relative to the anode aperture axis. The second cathode has a tungsten

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ACCESSION NR: AP4041033

rod emitter, 2 mm in diameter. With this cathode at an accelerating voltage of 20 kv, a specific energy of 1 kw/mm^2 is developed at the focus spot, which is 120 mm distant from the anode. In general, cathodes of both types perform equally well, producing electron beams with a specific energy of 10 kw/mm^2 with a beam current of several hundred milliamperes at an accelerating voltage of about 30 kv. Orig. art. has: 3 figures.

ASSOCIATION: Institut elektrosvarki AN UkrSSR (The Electric Welding Institute, AN UkrSSR)

SUBMITTED: 02Jul62 ATD PRESS: 3048 ENCL: 00

SUB CODE: EC, MM NO REF SOV: 002 OTHER: 001

Card 2/2

KATKOV, Yu.D.; PODCHESOV, E.N.; STROYNOVSKIY, V.V.; ZOZULYA, S.Ya.; mashinist-instruktor; KURAPOV, V.P., mashinist; BOGDANOV, V.I., mashinist; PORTYANKO, V.G., mashinist.

One more circuit for the antislippage protection of VL23 electric locomotives. Elek. i tepl. tiaga 4 no.11:19-21 N '60.
(MIRA 13:12)

1. Mashinist-instruktor lokomotivnogo depo "Oktyabr'" Yuzhnoy dorogi (for Katkov). 2. Nachal'nik slushby lokomotivnogo khozyaystva Yuzhnoy dorogi (for Podchesov). 3. Glavnyy inzhener depo "Oktyabr'" Yuzhnoy dorogi (for Stroynovskiy).
(Electric locomotives)

ZOZULYA, S.Ya., mashinist-instruktor

Experience in the operation of a VL23 electric locomotive.
Elek. i tepl. tiaga no.1:34-36 Ja '61. (MIRA 14:3)

1. Depo "Oktyabr'" Yuzhnoy dorogi.
(Electric locomotives)

ZOZULYA, S.Ya., mashinist

How to act in case of the failure of starting resistances.
Elek.i tepl.tiaga 3 no.8:40-41 Ag '59. (MIRA 12:12)

1. Depo "Oktyabr'," Yuzhnaya doroga.
(Electric locomotives)

ZOZULYA, T.A.; MISHENKO, L.P.; SHESTOPALOV, K.S.; DANILEVSKIY, V.V., redaktor; KOGAN, F.L., tekhnicheskiy redaktor

[Repair of the MAZ-205 automobile] Remont avtomobilia MAZ-205. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1955. 195 p. (MLRA 8:6)
(Automobiles--Repairing)

TSERENYA, N.; KUZNETSOV, V. (Kimry, Kalininskaya oblast'); KARYAZHKIN, M. (Moskovskaya oblast'); ZHUKOV, N. (Khar'kov); [illegible] (Khar'kov); ZENKIN, A. (Vladimirskaya oblast'); TIBABSHEV, I. (Popasnaya, Luganskaya oblast'); NASSONOV, V. (Chelyabinks); SERKEROV, A. (Artemovsk, Krasnoyarskiy kray)

Our readers' letters. Pozh.delo 4 no.8:24-25 Ag '58. (MIRA 11:9)

1. Redaktor stennoy gazety "Za protivopozharnuyu profilaktiku," Sverdlovsk (for TSerenya).

(Fire prevention)

L 10352-67 EWT(d)/EWT(m)/EWP(k)/EWP(h)/EWP(l)/EWA(d)/EWP(v) DD

ACC NR: AP6015355 (A) SOURCE CODE: UR/0226/66/000/005/0103/0106

AUTHOR: Zozulya, V. D.

ORG: Institute for the Problems of Materials Science, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Operating life of porous bearings as a function of impregnating lubricant

SOURCE: Poroshkovaya metallurgiya, no. 5, 1966, 103-106

TOPIC TAGS: antifriction bearing, bearing, bearing material, oil, friction machine, lubricant, metal ceramic material/ ZhGr1.5D2.5-20P bearing material, MK-22 oil, MI-1M friction machine

ABSTRACT: To determine the effects of various impregnating lubricants on the operating life (between impregnations) of self-lubricating, porous bearings, bushings of ZhGr1.5D2.5-20P were soaked for 1 hour (at 100C) in industrial lubricants 20, 50 (GOST 1707--51), aviation oil MK-22 (GOST 1013--49), Baku petrolatum (GOST 4096--62), and a consistent petroleum product with a melting temperature of 55C (Nefteprodukty i produkty pererabotki tverdykh topliv. Tekhnicheskiye trebovaniya, Standartgiz, M., 1963). The bearing wear and operating life were measured on an MI-1M friction machine at 0.9 m/sec and a load of 50 dynes/cm^2, using previously described experimental methods of V. D. Zozulya and A. M. Grigor'yev (Poroshkovaya metallurgiya, No. 8, 1965). Curves of bearing wear and bearing life as a function of time, load, and

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L 10352-67

ACC NR: AP6015355

lubricant are presented, as are the curves of the lubricant evaporation (as a function of operating temperature). It was found that the Baku petrolatum lubricant gave minimum wear and maximum life and that it had least evaporation at high temperature. Orig. art. has: 5 figures.

SUB CODE: 11, 13/ SUBM DATE: 13Oct65/ ORIG REF: 005

Card 2/2 JB

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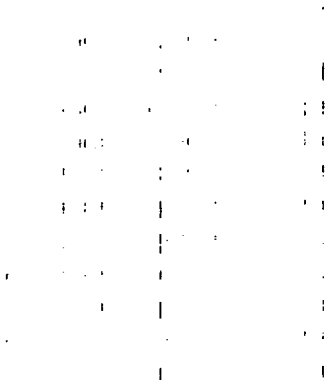

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ZOZULYA, V.D.; GRIGOR'YEV, A.M.

Selection of lubricants for iron-graphite sliding friction bearings. Poroshk. met. 5 no.8:82-86 Ag '65. (MIRA 18:9)

1. Institut problem materialovedeniya AN UkrSSR.

L 21419-66 EWP(e)/EWT(m)/T/ETC(m)-6 WW/JG/DJ/WH

ACC NR: AP6009612 (A) SOURCE CODE: UR/0369/66/002/001/0089/0091

AUTHOR: Zozulya, V. D.; Ishchuk, Yu. L.

ORG: Institute of Materials Technology, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR); UkrNIIgipronefT, Kiev

TITLE: Selection of greases for sliding cermet bearings

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 2, no. 1, 1966, 89-91

TOPIC TAGS: cermet, bearing, lubrication, lubricant grease

ABSTRACT: Under conditions of abrasive wear and humidity, oils have a number of disadvantages in the lubrication of cermet bearings. The authors found that new, compounded synthetic greases are preferable for the lubrication of sliding cermet bearings. High temperature, water resistant, compounded synthetic greases are recommended for soaking and lubricating iron-graphite bearings. Orig. art. has: 2 figures. [VS]

SUB CODE: 11/ SUBM DATE: 15Oct64/ ORIG REF: 004/ ATD PRESS: 4227

Card 1/1

Zozulya, V.F.

S/126/60/010/01/010/019
E111/E335

AUTHORS: Gavranek, V.V., Bol'shutkin, D.N. and Zozulya, V.F.

TITLE: Microfractographic Investigation of the Cavitation Erosion of Metals

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol. 10, No. 1, pp. 84 - 89

TEXT: The authors describe their use of the technique of micro-examination of fractured surfaces, previously used by some other investigators (Refs.1-3) in studies of alloy fracture, for getting information on cavitation erosion of metals. Changes in relief of eroded metal after cavitation tests of various durations and the influence of heat treatment and chemical composition on relief structure of alloys were studied. Annealed type 1Kh13 chromium stainless steel, type U7 carbon steel hardened to martensite structure and tempered for 1 hour at 100-600 °C, types Br.A2, BrA4 and Br.A6 aluminium bronzes in the annealed state and types BrA10, BrA12 and Br.A13 in both annealed and hardened states were studied. Cavitation tests were made with a magnetostriction vibrator (Ref.4) at 75. cps in water. Micro-examination of eroded specimens was effected with the aid of

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

Microfractographic Investigation of the Cavitation Erosion of Metals

titanium replicas (Ref 5). Photographs were obtained with a type EM-3 electron microscope at X1200. The characteristic appearance of brittle-fracture relief type "08KP" steel and ductile fracture of chromium-nickel steel are shown in Figure 1 (left- and right-hand, respectively). Orientation and size of planes was also determined and compared with erosion speed (Ref. 6). Fig. 2 illustrates the surface relief of type 1Kh13 steel in the peripheral and central parts of the specimen and after a 3-minute test and the same after 90 minutes. The reliefs of type U7 steel specimens after tempering at 100, 400 and 600 °C and cavitation testing for 3 hours are compared in Figure 3 and those of Br.A2, Br.A6 and Br.A13 aluminium bronzes after 3-hours' cavitation testing in Fig. 4. The relief obtained with specimens of hardened Br.A10 and Br.A13 aluminium bronzes after 3-hours' testing is shown in Fig. 5. With the alloys studied cavitation erosion occurs by way of "brittle fracture" of crystals. The size and mutual orientation of planes from which crystals have broken away determine the erosion stability of the alloys: the smaller the planes and the

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E111/E335

Microfractographic Investigation of the Cavitation Erosion of Metals

degree of their disorientation the greater the stability. Stability can be increased either by hardening and tempering or by additional alloying. There are 5 figures, 1 table and 7 references: 5 Soviet and 2 French.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut im. V.I. Lenina (Khar'kov Polytechnical Institute im. V.I. Lenin)

SUBMITTED: September 16, 1959

VB

Card 3/3

GAVRANEK, V.V.; BOL'SHUTKIN, D.N.; ZOZULYA, V.F.

Photomicrography of the cavitation erosion of metals. Fiz.met. i metalloved. 10 no.1:84-89 Jl '60. (MIRA 13:8)

1. Khar'kovskiy politekhnicheskiy institut im. V.I.Lenina.
(Alloys--Corrosion)
(Photomicrography)

ZOZULYA, V.I.

50 c

L 41182-65 EWT(d)/EWP(e)/EWP(v)/T/EWP(k)/EWP(l) Pf-4
ACCESSION NR: AP5004677 S/0115/64/000/009/0058/0059 70 18 B

AUTHOR: none

TITLE: Fourth scientific and technical conference on "Cybernetics for the improvement of measurement and inspection methods"

SOURCE: Izmeritel'naya tekhnika, no. 9, 1964, 58-59

TOPIC TAGS: cybernetics, electric measurement, electric quantity instrument, digital computer, electronic equipment, electric engineering conference

ABSTRACT: The conference was held 1-4 July at the All-Union Scientific Research Institute of Metrology by the Section of Electrical Measurements of the Council on the Problem of "Scientific Instrument Making" of the State Committee on Coordination of Scientific Research Work in the SSSR together with the All-Union Scientific Research Institute of Electrical Measurement Instruments and the Leningrad Regional Administration of the Scientific and Technical Division of the Instrument Making Industry. More than 400 delegates from 29 cities of the country participated. Fifty-seven reports were heard and discussed. Reports were given by: P. V. NOVITSKIY (Leningrad)--"Definition of the Concept of Informational Error in Measurement and its Importance in Practical Use" and "On the Problem of the Average Informational Criterion of Accuracy Throughout the Entire Scale of an Instrument"; Ye. A.

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KUPERSHMIDT (Moscow)--"On Determination of the Criteria of Accuracy for Measurement Devices"; S. M. MANDEL'SHTAM (Leningrad)--report on a new criterion of accuracy of measurement instruments; P. F. PARSHIN (Leningrad)--report on optimization when using Fourier transforms on electronic digital computers; S. P. DMITRIYEV, O. Ya. DOLGINTSEVA and A. A. IGNATOV (Leningrad)--proposal of a new method for solving problems of optimum filtering for non-stationary random signals and interference; I. B. CHELPANOV--"Calculation of the Dynamic Characteristics of an Optimum Complex Two-Channel System which Uses Signals from a Position Meter and from a Speed Meter"; R. A. POLUEKTOV (Leningrad)--"Optimum Periodic Correction in the Measurement of Continuous Signals"; S. P. ADAMOVICH (Moscow)--"Analysis and Construction of Devices for Correction of Non-linearity and Scaling for Unitary Codes; G. V. GORBLOVA (Taganrog)--"A Method for Statistical Optimization in Graduating the Scales of Electrical Measuring Instruments"; M. A. ZEMEL'MAN (Moscow)--"Analog-Digital Voltage Converter with Automatic Error Correction"; B. N. MALINOVSKIY, V. S. KALENCHUK and I. A. YANOVICH (Kiev)--"Automatic Monitoring of the Parameters of the Electrical Signals of Complex Radio and Electronic Equipment"; V. P. PEROV (Moscow)--"Operational Cybernetics as an Independent Scientific Specialization"; Ye. N. GIL'BO (Leningrad)--"On the Problem of Effective Non-linear Scales"; A. I. MARKHLOV (Moscow)--"Devices for Preliminary Processing of the Results of Measurements Presented in the Form of

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ACCESSION NR: AP5004677

Graphic Recordings For Subsequent Introduction of the Information into Universal Digital Computers"; O. M. MOGILEVER and S. S. SOKOLOV (Leningrad)--"On a Method for Reducing Excess Information"; T. V. NIKOLAYEVA (Leningrad)--"A Device for Temporal Discretization of Continuous Signals"; A. A. LYOVIN and M. L. BUTIS (Moscow)--"Optimization of the Transmission of Telemetric Information as a Means for Raising the Efficiency and Eliminating Interference"; D. E. GUKOVSKIY (Moscow)--"On a Statistic Approach to the Detection of Events in Automatic Inspection"; N. I. LANIN (Leningrad)--"Method for Calculating the Holding Time of Communications in a Centralized Inspection System or Constant Servicing Time"; O. N. BRONSHTEYN, A. L. RAYKIN and V. V. RYKOV (Moscow)--"On a Single-Line Mass Service System with Losses"; V. M. SHLYANDIN (Penza)--report on circuit designs for direct compensation electrical digital measuring instruments; A. N. KOMOV (Novocherkassk)--report on a new method for compensation of digital bridges; M. N. GLAZOV (Leningrad)--report on the problem of voltage-to-angular rotation conversion; V. S. GUTNIKOV (Leningrad)--"Methods for Construction of Frequency Capacitance Pickups with a Linear Scale"; R. Kh. SYROPYATOVA and R. R. KHARCHENKO (Moscow)--report on the determination of the amplitude-frequency and phase characteristics of PFM and PWM modulators; Yu. I. TRUYAKOV (Novocherkassk)--"The Phototransistor as a Switch for Electrical Measurement Purposes"; N. V. MALYGINA (Leningrad)--a report on ways for making universal equipment for measurement of current, voltage and power; P. P. ORNATSKIY and Y. I. ZOZULYA (Kiev)--reports on the construction of static voltmeters, wattmeters and

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ACCESSION NR: AP5004677

phase motors; A. V. TRIKHANOV, I. G. SMYSHLYAYEV, N. I. SABLIN, V. M. RAZIN and V. A. GORBUNOV (Tomsk)--report on a device for automatic processing of the measurements of vibration amplitude of pneumatic hammers; L. K. RUKINA and V. G. KNORRING (Leningrad) --report on the development of a digital compensator for measuring pressure, force, etc.; N. B. DADUKINA (Leningrad)--report on a method for constructing frequency pickups for gas analysis; Ye. M. KARPOV, V. A. BRAZHNIKOV and B. Ya. LIKHTTSINDER (Kuybyshev)--reports on analysis and recording of boring speeds; Yu. V. PSHENICHNIKOV (Kuybyshev)--"A High Speed Voltage-to-Digital Code Converter for ac Pickups"; G. P. VIKHROV and V. K. ISAYEV (Vilna)--"A Highly Accurate Digital Peak-to-Peak Voltmeter"; and S. M. PERGIN (Leningrad)--"A Low Level Analog-Digital Voltage Converter."

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: EE, EC

NO REF SOV: 000 OTHER: 000 JPRS

mc

Card 4/4

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ORNATSKIY, P.P., kand.tekhn. nauk; ZOZULYA, V.I.; DEREVOYEDOV, A.A.

Using electrochemical converters in electric measuring equipment. Avtom.i prib. no.1:67-70 Ja-Mr '62. (MIRA 15:3)

1. Kiyevskiy politekhnicheskiy institut (for Ornatskiy, Zozulya).
2. Krasnodarskiy zavod izmeritel'nykh priborov (for Derevoyedov).

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

S/194/62/000/006/026/232
D295/D308

9.2140

AUTHORS: Faynitskiy, V.M., and Zozulya, V.I.

TITLE: A bimetallic thermal device as a universal starting unit of automatic equipment for controlling a capacitor battery

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-2-15 v (Tr. Kiyevsk. politekhn in-ta, Sb. statey elektrotekhn. fak., Kiyev, 1961, 246-255)

TEXT: The design of a bimetallic thermal device is considered with a view to its use in various versions of control circuits. Measurement circuits including the device are analyzed, where the controlled quantity is respectively the voltage, total current, reactive current, voltage with current correction, voltage with time-of-the-day correction, and current with voltage cut-off. It is pointed out that the automatic system developed for the control of the reactive power of capacitor batteries, using the bimetal device as the starting unit, is of general application and meets the spe-

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A bimetallic thermal device as a ... S/194/62/000/006/026/232
D295/D308

cifications for control equipment of capacitor-battery power in power systems. 7 figures and 7 references. [Abstractor's note: Complete translation.]

Card 2/2

ORNATSKIY, P.P.; ZOZULYA, V.I.; ZORIN, V.V.

Integrating voltmeters and their use in municipal electric power distribution networks. Energ. i elektrotekh. prom. no.3:10-14 Jl-S '62. (MIRA 18:11)

1. Kiyevskiy politekhnicheskiy institut.

ZOZULYA, V.N.; KOZUBOV, A.S.; LOSKUTOVA, R.F.; CHERNOZHUKOV, K.N.; YAROSHENKO, F.D.. Prinimal uchastiye: SITNYUK, S.N.. KOLOKOLOV, V.S., prof., red.

[Chinese-Russian dictionary of scientific and technical terms] Kitaisko-russkii slovar' nauchnykh i tekhnicheskikh terminov. 32000 terminov. Pod red. V.S.Kolokolova. Moskva, In-t nauchn. informatsii Akad.nauk SSSR, 1959. 568 p. (MIRA 13:2)
(Chinese language--Dictionaries--Russian)
(Science--Dictionaries)
(Technology--Dictionaries)

4165. ON UNCONDITIONED REFEX VASCULAR REACTIONS OF THE CROSS TYPE WITH THERMAL AND PAIN STIMULATIONS (Russian text) - Zozulya Ya. A. and Pedachenko G. A. - VOPR. KURORT 1958, 3 (242-247) Graphs 3 Tables 3

In 25 healthy individuals vasomotor reactions on the hands and forearms of both sides to warm-, cold- and painful stimuli applied to one foot were registered by plethysmography. The reaction to cold and painful stimuli was homolateral in most cases; to warm stimuli, heterolateral. In 4 cases with traumatic lesions of the brachial plexus, no vasomotor reactions were obtained to thermic stimuli of either foot on the side of the lesion. In 6 patients with traumatic lesion of the sciatic nerve, thermic stimuli applied to the foot on the side of the lesion provoked only a weak or no vasomotor reaction on both hands. In 9 cases with transverse lesions of the spinal cord, there was a weak vasomotor reaction on the homolateral hand in most of the cases, but no reaction whatsoever on the contralateral hand. These observations and their inference to the application of physiotherapeutic procedures are discussed further.

Černáček - Bratislava (VIII, 9*)

[illegible], kand. sel'skokhoz. nauk; [illegible], veterinarnyy vrach

[illegible] in a veterinary laboratory.
Veterinariia 42 no.5:108-111 My '65. (MIRA 18:6)

1. Ukrainskaya respublikanskaya veterinarnaya laboratoriya.

GERMAN, A.N., veterinarnyy vrach; ZOZULYA, Ye.A., veterinarnyy vrach; SUKHENKOV, G.Ye.

Sanguinicolosis of carp. Veterinariia 41 no.8:54-55 Ag '64. (MIRA 18:4)

1. Respublikanskaya veterinarnaya laboratoriya Ukrainskoy SSR (for German, Zozulya). 2. Ukrainskiy nauchno-issledovatel'skiy institut rybnogo khozyaystva (for Sukhenkov).

ZOZULYA, Yu.A.

Peculiarities of the distribution of streptomycin in the brain and spinal cord depending upon the site of its introduction into the cerebrospinal fluid. Probl.tub. no.5:25-30 S-O '53. (MLRA 6:12)

1. Iz Instituta neyrokhirurgii (direktor - professor A.I.Arutyunov) i immunobiologicheskoy laboratorii (zaveduyushchiy - professor R.O.Drabkina) Ukrainskogo instituta tuberkuleza (direktor A.S.Mamolat, nauchnyy rukovoditel' - professor M.A.Klebanov).
(Cerebrospinal fluid) (Streptomycin) (Tuberculosis)

USSR/Medicine - Antibiotics Sep/Oct 53

"The Dynamics of Streptomycin Concentration in the Brain, Depending on the Method of Introduction and the Functional Condition of the Central Nervous System," Yu. A. Zozulya, Inst of Neurosurgery, Min of Health, Ukr SSR; Immunobiol Div Inst of Tuberculosis, Min of Health, Ukr SSR

Vop Neyrokhirurg, Vol 17, No 5, pp 55-60

Stresses the importance of the application of streptomycin in neurosurgical practice as a prophylactic treatment against tubercular meningitis occurring after a surgical removal of tuberculomas of the

269T36

brain. Expts on animals revealed that the method of ventricular injection is superior to the endolumbar or cisternal. It assures longer retention of an effective concn of the antibiotic in the brain.

ROZHDIAKOV, A. P.; ZOZULYA, Yu.A.

Method of prolonged drainage of the lateral cerebral ventricles. Vop.neirokhir.19 no.4:15-17 Jl-Ag '55. (MLRA 8:10)

1. Iz Nauchno-issledovatel'skogo instituta neyrokhirurgii Ministerstva zdravookhraneniya USSR

(CEREBRAL VENTRICLES,
drainage, prolonged)
(DRAINAGE,
cerebral ventric., prolonged)

ZOZULYA, Yu.A.; PEDACHENKO, G.A.; OKULOVA, L.P.

Biochemical changes in ventricular fluid and blood following prolonged drainage of the cerebral ventricles. Vopr. neirokhir. 21 no.2:41-44 Mr-Ap '57 (MLRA 10:5)

1. Institut neyrokhirurgii Ministerstva zdravookhraneniya USSR.
(CEREBROSPINAL FLUID
biochem. changes of ventric. fluid in prolonged drainage of cerebral ventricles)
(CEREBRAL VENTRICLES
prolonged drainage, eff., causing biochem. changes in ventric. fluid & in blood)
(BLOOD
biochem. changes in prolonged drainage of cerebral ventricles)

5240. THE IMPORTANCE OF COMPLEMENT FIXATION REACTIONS WITH THE CYSTICERCOID ANTIGEN IN THE DIAGNOSIS OF CYSTICERCOSIS OF THE BRAIN (Russian text) - Zozulya Y. A. and Sklyarenko N. I. - VOPR. NEIROKHIR. 1958, 5 (28-33 and 64) Tables 3

In 792 patients of the Ukraine Institute for Neurosurgery the CFT for hydatid cyst was performed, and in 97 cases was found positive in the blood and/or CSF. In 48 patients single or multiple cysts were found in the brain, in 24 tumours of the brain; in 21 patients an encephalitic condition was found, in 3 vascular disease, and in 4 syphilis of the CNS. In neurological cysticercosis the CFT is positive in both the blood and the CSF, whereas in other conditions the reaction is positive only in the blood. Anigstein - Galveston, Tex. (L, 8, 6)

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

3229. THE IMPORTANCE OF COMPLEMENT FIXATION REACTIONS WITH THE CYSTICERCOID ANTIGEN IN THE DIAGNOSIS OF CYSTICERCOSIS OF THE BRAIN (Russian text) - Zozulya Yu. A. and Sklyarenko N. I. - VOPR. NEIROKHIR. 1958, 5 (28-33 and 64) Tables 3

In 792 patients of the Ukraine Institute for Neurosurgery, the CFT for hydatid cyst was performed, and in 97 cases was found positive in the blood and/or CSF. In 46 patients single or multiple cysts were found in the brain, in 24 tumours of the brain; in 21 patients an encephalitic condition was found, in 2 vascular disease, and in 4 syphilis of the CNS. In neurological cysticercosis the CFT is positive in both the blood and CSF, whereas in other conditions the reaction is positive only in the blood.

Anigstein - Galveston, Tex. (L, 8, 6)

ZOZULIA, Yu.A. [Zozulia, IU.O], PRONZELEV, P.A. [Pronzeliev, P.O.]

Disorders in oxidation processes in patients with brain tumors Report No.1, [with summary in English]. Fiziol.zhur. Ukr. 4 no.5:688-695 S-O '58 (MIRA 11:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii, Kiyev.

(BRAIN--TUMORS)
(OXIDATION, PHYSIOLOGICAL)

ZOZULYA, Yu.A.; SKLYARENKO, N.I.

Significance of complement fixation reactions with the cysticercosis antigen in the diagnosis of cerebral cysticercosis [with summary in English, p. 64]. Vop.neirokhir. 22 no.5:28-33 S-O '58.
(MIRA 12:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.

(BRAIN, dis.
cysticercosis, complement fixation (Rus))
(CYSTICERCOSIS, diag.
brain, complement fixation (Rus))
(COMPLEMENT,
fixation in cerebral cysticercosis (Rus))

ARUTYUNOV, Aleksandr Ivanovich, prof., zasluzhennyy deyatel' nauki; ZOZULYA, Yuriy Afanas'yevich; OGANESYAN, Sokrat Stepanovich; ROMODANOV, A.P., red.; GITSHTEYN, A.D., tekhred.

[Tuberculomas of the brain] Tuberkulomy golovnogo mozga. Kiev, Gos.med.izd-vo USSR, 1959. 199 p. (MIRA 13:7)
(BRAIN--TUMORS)

ZOZULYA, Yu.A.; MIKHAYLOVSKIY, V.S.

Gases, alkaline reserve and glutathione of the blood and liquor in brain tumors of varying histostructure. Probl.neirokhir. 4:185-208 '59. (MIRA 13:11)

(OXIDATION, PHYSIOLOGICAL)
(BRAIN--TUMORS)

ZOZULYA, Yu.A.; PRONZELEV, P.A.

Unoxidized products in the urine of patients with brain tumors of varying histostructure. Probl.neirokhir. 4:209-222 '59. (MIRA 13:11)
(OXIDATION, PHYSIOLOGICAL)
(BRAIN--TUMORS)

ROMODANOV, A.P.; ZOZULYA, Yu.A.

General somatic symptoms in brain tumors of varying histostructure in children. Probl.neirokhir. 4:223-239.'59. (MIRA 13:11)
(BRAIN--TUMORS)

ZOZULYA, Yu.A.

Survey of proceedings of meetings of the Kiev and Kiev Province Neurosurgical Society for 1958. Nov.khir.arkh. no.5 S-O '59.
(MIRA 13:3)

(KIEV PROVINCE--NEUROSURGICAL SOCIETIES)

ZOZULYA, Yu.A. [Zozulia, IU.O.]; PRONZELEV, P.A. [Pronzelev, P.O.]

Change of oxidation processes following brain operations. Fiziol. zhur. [Ukr.] 7 no.1:107-112 Ja-F '61. (MIRA 14:1)

1. Ukrainian Research Institute of Neurosurgery, Kiev.
(BRAIN--SURGERY) (OXIDATION, PHYSIOLOGICAL)

PEDACHENKO, G.A.; DANILENKO, G.S.; ZOZULYA, Yu.A.

Diagnostic significance of changes in superficial and deep veins in patients with tumors in the cerebral hemispheres of different localization (angiographic study). Vrach. delo no.11:79-85 N '61.
(MIRA 14:11)

1. Ukrainskiy institut neyrokhirurgii. Nauchnyy rukovoditel' - zasluzhennyy deyatel' nauki, chlen-korrespondent AMN SSSR, prof. A.I.Arutyunov.

(BRAIN--TUMORS)

ZOZULYA, Yu.A.; SERGIYENKO, T.M.

Clinical and experimental study of cerebral circulation in the dynamics of intracranial hypertension. Zhur. nevr. i psikh. 64 no.2:255-65 '64. (MIRA 17:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.

ROMODANOV, A.P., otv. red.; ZOZULIA, Yu.A., zam. otv. red.; AGASHEV-KONSTANTINOVSKIY, A.L., red.; KHOMINSKIY, B.B., red.; BROTMAN, M.K., red.; DUKHIN, A.L., red.

[Problems of neurosurgery; clinical, pathophysiological and morphological principles in neurosurgical pathology] Problemy neirokhirurgii; klinicheskie, patofiziologicheskie i morfologicheskie zakonomernosti v neirokhirurgicheskoi patologii. Kiev, Zdorov'ia, 1964. 332 p. (MIRA 18:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.

[illegible], A.P.; [illegible]

[illegible] (MIRA 18:10)

Vop. neirokhir. no.5:[illegible]

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii (direktor - doktor med.nauk A.P.Romodanov), Kiyev.

ZOZULYA, Yu.A.

Changes of the cerebral blood circulation in glial brain tumors of supratentorial localization. Zhur. eksp. i klin. med. 3 no.3:3-9 '63. (MIRA 17:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.

ZOZULYA, Yu.A., kand.med. nauk (Kiyev)

Changes in the cerebral circulation in the dynamics of intracranial hypertension. Vrach. delo no.1:50-56 Ja'64
(MIRA 17:3)

1. Ukrainskiy institut neyrokhirurgii.

ZOZULYA, Yu.A., kand.med.nauk (Kiyev, 87, ul. Mishchinskogo, d.7, kv.27)

Bilateral momentary angiography of the brain. Klin.khir. no.6: 35-38 Je '62. (MIRA 16:5)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.
(BRAIN--RADIOGRAPHY) (ANGIOGRAPHY)

ZOZULYA, Yu.A., kand.med.nauk (Kiyev)

Significance of the characteristics of the blood supply of cerebral glial tumors for the diagnosis of the degree of their malignancy. Vrach.delo no.2:84-89 F '63. (MIRA 16:5)

1. Ukrainskiy nauchno-issledovatel'skiy institut neyrokhirurgii.
(BRAIN—TUMORS) (ANGIOGRAPHY)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

KLINGER, M.I.; ZOZULYA, Yu.I.

Theory of semiconductors with excited impurity zones. Zhur.tekh. fiz. 27 no.10:2285-2290 O '57. (MIRA 10:11)

1. Chernovitskiy gosudarstvennyy universitet.
(Semiconductors)

AUTHORS: Klinger, M. I., and Zozulya, Yu. I. 57-10-13/33

TITLE: Contribution to the Theory of Semiconductors with the Excited Impurity Zone (K teorii poluprovodnikov s vozbuzhdennoy primesnoy zonoy).

PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol. 27, Nr 10, pp. 2285-2290 (USSR).

ABSTRACT: The electric properties of a semiconductor with a fundamental impurity level and an excited impurity zone are investigated. The electric conductivity σ, the Hall constant R, and the thermoelectromotive force α were investigated. On the strength of the investigation following can be said. 1) $\sigma(T)$, $\sigma(T)$, R (T), and $\alpha(T)$ of a semiconductor with an excited impurity zone behave qualitatively like a semiconductor with a fundamental impurity zone if T is changed. The taking into account of the impurity zone which is more excited than the p-zone in the case of existence of not split up deeper lying impurity zones leads qualitatively to the same results. On the other hand the temperature distribution of σ (T) and R (T) is qualitatively similar to that of σ (T) and R (T) in Ge at low T obtained by H. Fritzsche and K. Lark-Horovitz (Physica, XX, 834, 1954). 2) The impurity concentration in the Ge-sample used by

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Fritzsche and Lark-Horovitz is low: $n_0 \sim 10^{15} cm^{-3}$. n_0 is the impurity concentration. If, however, the anisotropy of the electronic mass m_{ik} and the anisotropy of the dielectric constant ϵ_{ik}, and especially the fact that the excited impurity zone leads to similar results in the paper of F-L-H is taken into consideration, it becomes obvious why already at n_0 10^{18} in Ge at low T the influence of the impurity zone is exercised. This is even the case if it is assumed that the impurity atoms form almost in the fundamental lattice a kind of superstructure - an impurity lattice. Therefore the authors are of the opinion that on the strength of the mentioned paper by Fritzsche one cannot draw the conclusion that an impurity lattice does not exist and that the impurity atoms are statistically distributed in the fundamental lattice.
There are 3 figures and 2 Slavic references.

ASSOCIATION: Chernovtsy State University (Chernovitskiy gosudarstvennyy universitet).

Contribution to the Theory of Semiconductors with the Excited Impurity Zone. 57-10-13/33

SUBMITTED: October 5, 1957.

AVAILABLE: Library of Congress.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ZOZULYA, Z.I., inzh.; VOLODARSKIY, A.V., inzh.

Letter to the editor. Teploenergetika 10 no.7:96 Jl '63.
(MIRA 16:7)

(Boilers) (Fuel)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ZOZULYAK, V.

Vacuum Tubes

Using the 6N7s vacuum tube as a kenotron. Radio No. 5, 1953.

Monthly List of Russian Accessions, Library of Congress
June 1953; UNCL.

DOMBRUGOV, R.M.; FEL'DMAN, L.S.; ZOZULIA-CHURUS, A.P.

Automation of the X-ray quality control of the spot welding of duralu-
minum alloys. Zav.lab. 29 no.12:1464-1468 '63. (MIRA 17:1)

1. Kiyevskiy politekhnicheskiy institut.

42299

S/135/62/000/012/015/015
A006/A101

1.2300

AUTHORS: Dombrugov, R. M., Candidate of Technical Sciences, Fel'dman, L. S., Engineer, Zozulya-Churus, A. P., Engineer

TITLE: Automated quality control of spot welding Duraluminum by means of high-speed X-ray inspection

PERIODICAL: Svarochnoye proizvodstvo, no. 12, 1962, 37 - 39

TEXT: The X-ray method is most efficient in detecting spot-weld defects. The determination of poor fusion in spot welding of Д16 (D16) and В95 (V95) Duraluminum alloys consists in a structural analysis of segregation rings. The most suitable device for this purpose is the portable РУП -7 (RUP-7) type X-ray apparatus, assuring smooth high-voltage control within 10 - 60 kv at 20 ma exposure current. Experiments carried out for the purpose of speeding up the X-ray exposure, show that this can be achieved with the use of characteristic molybdenum radiation and a sharp-focused X-ray tube. The automation of the welding process and reduction of exposure time to the duration of welding one spot, makes it possible to develop devices assuring savings of photographic material, reduced to 1 cm^2 per one welded spot. One variant of such a device is shown in figure 6. The panel

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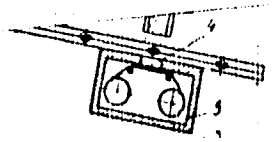

DAULENOV, Sal'kei Daulenovich; ZOZULYA, Mordko Shlemovich; GUSEVA, N.P., red.; SAVICH, M.P., red.; NAGIBIN, P.A., tekhn. red.

[Water resouces of Kazakhstan] Vodnoe khoziaistvo Kazakhstana. Alma-Ata, Kazakhskoe gos. izd-vo, 1959. 269 p. (MIRA 15:5)
(Kazakhstan--Water supply)

DOMBRUGOV, R.M., kand.tekhn.nauk; FEL'DMAN, L.S., inzh.;
ZOZULYA-CHURUS, A.P., inzh.

Automatic quality control of spot-welded duralumin by means of high-speed X-ray examination. Svar. proizv. no.12:37-39 D '62. (MIRA 15:12)

1. Kiyevskiy politekhnicheskiy institut.
(Duralumin—Welding)
(X-rays—Industrial applications)

ZPANY, Viktor, inz.

Negative resistance of storage elements with junction transistors. Slaboproudy obzor 21 no.7:403-408 Jl'60. (EEAI 10:1)

1. Vysoka skola technicka, Kosice
(Magnetic memory (Calculating machines))
(Junction transistors)

1962

S/858/62/000/001/004/013
D296/D307

27 1120
27 1222

AUTHORS: Akuenova, G. V., Zrada, O. S., Krugovaya, G. N., Oleynik, Ya. V., Starostyuk, A. K., Cherkashchenko, L. N. and Chernogalova, A. G.

TITLE: The influence of radiation upon the phosphorous content and its metabolism in the brain

SOURCE: L'vov. Universytet. Problemna lyaboratoriya radiobilohiyi. Biologicheskoye deystviye radiatsii, no. 1, 1962, 30-34

TEXT: Frogs were exposed to total body irradiation of 200r (at 10r/min) from a distance of 16 cm. The brains were then investigated 2 hrs, and 2, 5, 7 and 11 days after exposure. 4 hours before decapitation 0.5 ml of aq. $NaH_2P^{32}O_4$ of a dosage of 25 μc per 100 g weight, was administered by intraperitonal injection. The amount of acid-soluble P and its metabolism, the phospholipids and the protein P of the brain were then investigated. Two hours after ex-

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posure, the total P-content in the acid-soluble fraction increased by 12.8% as compared with the control animals. The inorganic P-content increased by 11%, the total protein P by 21%, and the content of phospholipids decreased by 23.7%. These changes were even more marked after 2 days, when the total acid-soluble P fraction increased by 27.1%, out of which the inorganic P increased by 31%, the total protein P by 27.8% and the phospholipid content decreased by 42%. Six days after exposure, the total acid-soluble P fractions had increased up to 46.2% and the inorganic P-content by 87%. At the same time, however, the phospholipid content decreased by 23% and the content of protein P by 18%. Seven days after exposure the total acid-soluble P fraction increased by 50% but the total quantity of inorganic phosphate increased by 11.1% compared with the control animals. The phospholipid content was still decreased by 33% and the total protein P by 30%. 11 days after exposure, the total acid-soluble P fraction was still increased by 45% out of which the inorganic P exceeded the values found in the control animals by 36%, the content of the phospholipids was again increased by

37% and the content of the total protein P decreased by 39%. Thus the acid-soluble P fraction remained increased throughout the experiment, but the changes in protein P and phospholipids moved in opposite directions. After an initial increase in the protein P level a decrease could be observed, whilst the phospholipids showed an increase. Two hours after exposure, the rate of metabolism, as estimated by the relative specific activity of the fractions, showed changes parallel to those in the P content. After 2 - 5 days, the decrease of the specific activity in all fractions indicated a slowing down of the phosphate metabolism which reverted to its normal level after 8 - 12 days. There are 2 tables.

ASSOCIATION: Kafedra fiziologii cheloveka i zhivotnykh L'vovskogo universiteta (Department of Human and Animal Physiology, L'vov University)

LEWANDOWSKI, Wladyslaw; ZRAWIBORSKI, Olbracht

A new apparatus for quantitative diminution of coal and coke samples based on the centrifugal force. Koks smola gaz 6 no.6: 223-229 '61.

1. Instytut Chemicznej Przerobki Wegla

S/126/62/013/002/010/019
E021/E480

19.1100

AUTHORS: Finkel', V.M., Zraychenko, V.A., Maslovskaya, Z.A., Bykov, S.B.

TITLE: The mechanism of crack propagation in steel

PERIODICAL: Fizika metallov i metallovedeniye, v.13, no.2, 1962, 263-267

TEXT: The propagation of cracks was investigated on a standard micro-apparatus supplied with a device for deforming the samples. The samples had a double-sided groove of 2.5 to 3 mm depth and 50 to 70° angle. A transformer steel and steel CT3 (St 3) were used. The root of one of the grooves was observed; cracks were produced under conditions of constant loading and the process was recorded on a cine-film. The time to fracture varied within wide limits (seconds to hours) depending on the value of the superimposed stresses and the orientation of the grains in the region of the crack. The speed of the cine-camera was therefore varied from 150 sec per frame to 60 - 70 frames per sec. Results showed that the crack originates from a highly localized plastic deformation zone, extending in the case of the transformer steel to

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a depth of 1 to 3 grains. Transcrystalline propagation occurs by the projection of a "fan" of slip bands. These join in the deformation zones with subsequent growth of cracks. The possible nucleation of cracks in the regions of defects, not rare in transformer steels, must also be considered. These regions were observed as bends in the groups of slip planes. The plastically deformed zone is the direct source of microcracks. In addition, it activates the formation of fracture nuclei in front of the fracture in regions where slip planes are still not observed. During this process the grain, in which deformation and fracture are taking place, is bordered by extremely fine boundaries. The appearance of boundaries is very marked in the latter phases of separation of the metal. The grains, as it were, are formed into "globules". This is evidence of the part played by grain boundary flow and slip in the process of fracture. There are 4 figures.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: January 11, 1961

ACC NR: AP6033077 SOURCE CODE: UR/0032/66/032/010/1264/1265

AUTHOR: Zraychenko, V. A.; Zaymovskiy, V. A.; Sapozhkova, I.; Marko, I.

ORG: Moscow Steel and Alloys Institute (Moskovskiy institut stali i splavov); Siberian Metallurgical Institute im. S. Ordzhonikidze (Sibirskiy metallurgicheskiy institut)

TITLE: Tensile test of thermomechanically strengthened steel with the use of high-speed motion pictures

SOURCE: Zavodskaya laboratoriya, v. 32, no. 10, 1966, 1264-1265

TOPIC TAGS: tensile stress, thermomechanical property, high speed photography, steel, thermomechanical treatment, ~~steel~~ tensile test /50KhFA steel

ABSTRACT: A high-speed motion-picture technic was used recording stresses and deformation in tensile tests on thermomechanically strengthened steel. 50KhFA steel specimens, 4 mm in diameter, were subjected to low or high temperature thermomechanical treatment and then to tensile tests. A clock-type indicator made it possible to determine the elongation with an accuracy of up to 0.005 mm. The process of tensile testing and indicator reading were filmed with a movie camera at a speed of 32 frame/sec.; the process of necking and local plastic deformation in time were filmed with a speed from 200 to 1600 frame/sec. On the basis of the obtained data, the curves of load dependence of elongation and reduction of area and kinetic curves of necking were plotted. Orig. art. has: 2 figures.

SUB CODE: 11 / SUBM DATE: none

Card 1/1 UDC: 620.172:778.534.8

FINKEL', V.M.; ZRAYCHENKO, V.A.; MASLOVSKAYA, Z.A.

Dislocation mechanism of ductile failure of simple crystals of transformer steel. Fiz.met. i metalloved. 18 no.5:798-800 N '64. (MIRA 18:4)

1. Sibirskiy metallurgicheskiy institut im. S.Ordzhonikidze.

FINKEL', V.M.; ZRAYCHENKO, V.A.; DEYASHKINA, T.K.

Characteristics of cementite decomposition in hypereutectoid steel. Izv. vys. ucheb. zav.; chern. met. 6 no.10:95-100 '63. (MIR 16:12)

1. Sibirskiy metallurgicheskiy institut.

FINKEL', V.M.; BEREZOVSKIY, V.N.; ZRAYCHENKO, V.A.

Elastic and plastic deformation of transformer steel. Izv. vys. ucheb. zav.; chern. met. 6 no.12:126-132 '63. (MIRA 17:1)

1. Sibirskiy metallurgicheskiy institut.

"APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R002065510013-8"

ACC NR: AP5012487 SOURCE CODE: UR/0020/65/160/002/0329/0331

AUTHOR: Finkel', V. M.; Zraychenko, V. A.; Voronov, I. N.

ORG: Siberian Metallurgical Institute im. S. Ordzhonikidze (Sibirskiy metallurgicheskiy institut)

TITLE: Elastic twinning of ferrosilicon

SOURCE: AN SSSR. Doklady, v. 160, no. 2, 1965, 329-331

TOPIC TAGS: silicon alloy, iron, plastic deformation, twinning, dynamic stress, metallography, high speed photography, photographic equipment

ABSTRACT: Elastic twinning of silicon iron with dynamic loading is reported here. The metallographic structure and the high speed photographic equipment are described. Elastic twinning [illegible] in many metals, but in order to observe it, it is necessary [illegible] to be smaller than the period for setting of plastic deformation. This paper was presented by Academician P. A. Rebinder on 16 July 1964. Orig. art. has: [illegible] figures. [JPRS]

SUB CODE: 20, 11, 14 / SUBM DATE: 14Jul64 / ORIG REF: 011

Card 1/1 BK