

SHLYAPIN, V.B., kand.tekhn.nauk, VINOGRADOV, Yu.G., inzh,
LEONT'YEV, D.V., inzh., LOUSKIY, Ye.D., kand.tekhn.nauk.

Built-up welding under flux by means of a weaving arc.
Svar. proizv. no.2:24-26 P '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zhelez-
nodorozhnogo transporta Ministerstva putey soobshcheniya.
(Electric welding)
(Machinery--Maintenance and repair)

AKIMOV, Vyacheslav Filippovich, inzh.; VINOGRADOV, Yuriy Ivanovich,
inzh.; GINZBURG, Mark Yakovlevich, inzh.; KASPAR'YANTS,
Konstantin Saakovich, inzh.; FRANKFURT, Yakov Mironovich,
inzh.; MAMIKONOV, A.G., red.; NOVICHKOVA, M.M., ved. red.;
VORONOVA, V.V., tekhn. red.

[Automation of field petroleum processing and gas transporta-
tion] Avtomatizatsiya promyslovoi podgotovki nefti i transporta
gaza. [By] V.F. Akimov i dr. Moskva, Gostoptekhizdat, 1963. 166 p.
(MIRA 16:3)

(Oil fields--Equipment and supplies) (Automation)
(Gas, Natural--Pipelines)

VINOGRADOV, Yu.I.; YERYUSHEV, N.N.

X-radiation from flares originating behind the solar disc. Izv.
Krym. astrofiz. obser. 29:141-145 '63. (MIRA 16:10)

AUTHORS: Vinogradov, Yu. I.

Effect of proton and non-proton flares on the ionosphere, as observed at

and there is a significant correlation between the ionospheric

potential obtained at the ionospheric

S/035/61/000/005/022/042
A001/A101

3,1540

AUTHORS: Vinogradov, Yu.I., Savich, N.A.

TITLE: Comparison of development of individual parts of flares in H α with the temporal course of ionizing radiation

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 5, 1961, 55, abstract 5A358 ("Izv. Krymsk. astrofiz. observ.", 1960, v. 24, 48-51, Engl. summary)

TEXT: The authors presume that radiation, active for the ionosphere, may be emitted by individual parts of the flares. There are 5 references.

Authors' summary

VB

[Abstracter's note: Complete translation]

Card 1/1

I 47309-46 5711/101 51

ACC NR: AR602579"

SOURCE CODE: UR/0058/66/000/004/1058/1058

AUTHOR: Vinogradov, Yu. I.

TITLE: Concerning the connection between the sporadic E layer of the ionosphere and solar flares

SOURCE: Ref. zh. Fizika, Abs. 4Zh404

REF. SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 319-327

TOPIC TAGS: ionospheric propagation, ionosphere, solar flare, E layer, solar radio emission

ABSTRACT: On the basis of material obtained in the ionospheric station of the Crimean Astrophysical Observatory during 1958 -- 1959, the author considers the connection between the variation of the critical frequency of the sporadic E layer of the ionosphere (E_s), solar flares, and radio emission from the sun. It is shown that the correlation between solar flares and the variation of the excess critical frequency of the E_s layer over the month reaches 76%. No connection was observed between the mean value of the critical frequency of the E_s layer and radio emission from the sun at wavelengths 3 and 10 cm and 1.5 meters. [Translation of abstract]

SUB CODE: 04, 03

Cord 1/1 ps

L 47025-66 GAT(1)/FCC

ACC NR: AR6028406

SOURCE CODE: 523.75+523.164+525.23

AUTHOR: Vinogradov, Yu. I.

TITLE: Correlation between the sporadic E layer of the ionosphere and solar flares

SOURCE: Ref. zh. Astronomiya, Abs. 5.51.443

REF SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 319-327

TOPIC TAGS: solar flare, sporadic layer, E layer, ionosphere

ABSTRACT: Observations at the ionosphere station of the Crimean Astrophysics Observatory in the period 1958-1959, showed a relationship between the line of critical frequency of the sporadic E layer of the ionosphere (E_g), solar flares, and radio emission. It was shown that the correlation between the line for an excess value of the critical frequency of E layer and solar flares during one month

Card 1/2

UDC: 523.75+523.164+525.23

L 17075-00

ACC NR: AR6028406

0

amounted to 76%. No correlation was observed between the average value of the critical frequency of E layer and solar radio emissions in the 3 cm, 10 cm, and 1.5-m waves. Orig. art. has: 14 reference items. [Translation of abstract]
[FM]

SUB CODE: 03/

ms
Card 2/2

L 34116-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WH/JG

ACC NR: AP6008828

SOURCE CODE: UR/0294/66/004/001/0050/0054

AUTHOR: Vinogradov, Yu. K. (Moscow); Volyak, L. D. (Moscow)

ORG: none

TITLE: Experimental determination of the saturated vapor pressure of sodium and potassium

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 1, 1966, 50-54

TOPIC TAGS: vapor pressure, sodium, potassium

ABSTRACT: Using the equilibrium method, the authors measured the saturated vapor pressures of sodium and potassium in order to be able to use these values for calculating the dissociation energy of the Na_2 and K_2 molecules. It is shown that the equations describing the experimental data obtained for the vapor pressure are of the form

$$\lg p = A - \frac{B}{T} - C \lg T + DT - ET^2 + F \lg e^{-\theta/T} - \frac{F^2}{2} \lg e^{-2\theta/T}$$

the coefficients of these equations being (in physical atmospheres)

Card 1/2

UDC: 546.32+546.33:536.421.3.001.5

L 34116-66

ACC NR: AP6008828

Element	A	B	C	D · 10 ⁴	E · 10 ⁴	Floge	β
Sodium	10.58987	5720.4	2.00789	5.00352	0.92555	0.48510	2458
Potassium	10.10888	4768.1	1.97400	4.98965	1.070	0.56762	2641

Table 1. Coefficients of equations in the measurement of saturated vapor pressures in physical atmospheres.

From these equations, the vapor pressures of sodium and potassium were obtained for 700, 750, 800, 850, 900, and 950C. The experimental values of P and equations $\log p = f(T)$ obtained will be used further to calculate the dissociation energies of Na_2 and K_2 molecules. The work was carried out under the guidance of N. B. Vargaftik, to whom the authors express their sincere appreciation. Orig. art. has: 2 figures, 3 tables, and 8 formulas.

SUB CODE: 07 / SUBM DATE: 06Jul65 / ORIG REF: 003 / OTH REF: 007

Card 2/2

VINOGRADOV, Yu.A., inzh.

Device for checking cable strands. Energetik 12 no.2:19-20
1964. (MIRA 1964)

S/883/62/000/000/004/020
E194/E155

AUTHORS: Vinogradov, Yu. M., Kireyeva, Z. P.
TITLE: Methods of testing ~~and~~ assessing the anti-seizure
properties of wear-resistant surface coatings
SOURCE: Metody ispytaniya na iznashivaniye; trudy soveshchaniya
sostoyavshegosya 7-10 dek. 1960. Ed by.
M. M. Khrushchov. Moscow, Izd-vo AN SSSR, 1962, 48-56
TEXT: Standardised methods of assessing the wear-resistant
properties of treated metal surfaces are required, because new
treatments are coming into use. Although the procedures developed
for testing extreme-pressure lubricants might be applied, the anti-
friction mechanism is different in the two cases. Three-contact
machines are widely used for testing E.P. lubricants, notably the
four-ball machine abroad and four-roller machine in the USSR.
Neither the machines themselves nor the test procedures and methods
of assessment have been standardised. It is wiser to use several
methods of assessment. Comparative tests were made on a ЛТС-4
(LTS-4) four-roller machine and a Shell-Seta four-ball machine,
and also on an Amsler friction machine and a type ЛТС-5 (LTS-5)
Card 1/4

Methods of testing and assessing... S/883/62/000/000/004/020
E194/E155

bearing test machine. The steel specimens were given the following surface treatment: sulphiding; "seleniding"; sulphocyaniding; and chloriding. As there was no clear evidence of seizure in the four-roller machine, it was difficult to use the seizure load as the criterion. The size of wear scar for a given load is a useful method of assessment. Frictional torque, which can be accurately measured in this machine, is another useful criterion. In the Shell-Seta four-ball machine the surface treatment had little influence on the wear scar diameter at light loads, but the differences showed up at heavy loads. Once again the seizure load was not clear. Bearing in mind that the rollers and balls were made of different materials there is satisfactory agreement between tests in the four-cylinder and the four-ball machines. Friction machine KT-2 (KT-2) differs in principle, in that the property measured is the oil temperature at which stick-slip motion commences. This corresponds to the temperature at which the oil film is desorbed from the metal surface. In this machine the presence of lubricant masked the differences between the different surface treatments, which could only be revealed in

Card 2/4

Methods of testing and assessing...

S/883/62/000/000/004/020
E194/E155

the absence of lubricant. Long-term tests are carried out on friction machine LTS-5 and the Amsler machine. In the LTS-5 machine surface-treated cast iron bearings were tested and coefficient of friction measured as function of load at different speeds. In the Amsler machine the wear of a steel roller and a cast iron bush lubricated with spindle oil are measured every three hours. The differences in surface treatment showed up particularly clearly at high pressures. It is concluded that surface treatments which give good results in three-contact friction machines are also effective in the LTS-5 machine at high specific pressures. Three-contact friction machines are recommended for tests under severe conditions, particularly when the main object of the surface treatment is to prevent scoring. Either four-ball or four-roller machines may be used, but in the latter the preparation of the surface-treated specimens is simpler. It is recommended to assess the surface treatments by the ratio of wear scar diameter at a given load, the seizure load if it is clearly expressed, and the coefficient of friction. It is urgently necessary to develop and manufacture standard three-contact friction machines, preferably

Card 3/4

Methods of testing and assessing... S/883/62/000/000/004/020
E194/E155

those which could use either cylinders or balls.
There are 4 figures and 2 tables.

Card 4/4

VINOGRADOV, Yu.M.; KIREYEVA, Z.P.

Using the methods of chemical heat treatment for increasing
the wear resistance of surface layers of bearings. Trudy
Sem.po kach.poverkh. no.5:138-145 '61. (MIRA 15:10)
(Bearings (Machinery)) (Case haderning)

L 3418-66 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) MJW/JD/GS

ACCESSION NR: AT5020441

UR/0000/65/000/000/0176/0182

AUTHOR: Vinogradov, Yu. M.

38
34
B+

TITLE: Investigation of the effectiveness of chemical-thermal treatment of various metals

SOURCE: AN SSSR. Nauchnyy sovet po treniyu i smazkam. Teoriya smazochnogo deystviya i novyye materialy (Theory of lubricating action and new materials). Izd-vo Nauka, 1965, 176-182

TOPIC TAGS: metal surface treatment, sulfidization, tellurization, sulfocyanidation, selenocyanidation / VTZ 1 titanium alloy, 45 steel, Sch18 36 cast iron, 1Kh18N9T steel

ABSTRACT: The use of active group VI elements in surface treatment of metals, in particular, sulfidization, sulfocyanidation, selenocyanidation, and tellurization of steel 45, cast iron Sch18-36, steel 1Kh18N9T, and titanium alloy VTZ-1, was investigated. It is noted that during each process the effects are not only due to a single compound but are complicated chemical reactions which also depend on the environmental conditions. In steel 45 the microhardness is substantially increased by selenocyanidation, sulfocyanidation, and tellurization and almost

Card 1/2

* [VT3-1 designation instead of VTZ-1]
18

L 3418-66

ACCESSION NR: AT5020441

unaffected by sulfidization. Only selenocyanidation improves microhardness in cast iron and, to a lesser extent, in titanium (factor of 2), while the other treatments are ineffective. Wear tests showed that the wear properties of steel 45 exhibited the most improvement of the four metals investigated (sulfidization most effective) with cast iron next (sulfidization). Steel 1Kh18N9T wear properties were least affected by sulfidization and were somewhat improved by the other treatments. Titanium alloy VTZ-1 responded least to the treatments, with tellurization being most effective. It was concluded that sulfidization was the best treatment for carbon steel and cast iron, while sulfocyanidation, selenocyanidation, and tellurization are most effective for stainless steels and titanium alloys. Orig. art. has: 3 figures and 1 table. 44, 55, 27

ASSOCIATION: none

SUBMITTED: 22May65

NO REF SOV: 00%

ENCL: 00

OTHER: 00%

SUB CODE: MM

Card 2/2 *nd*

L 8130-66 EWT(d)
 ACC NR: AP5024980 SOURCE CODE: UR/0286/65/000/016/0043/0044
 AUTHORS: Vinogradov, Yu. M.; Vulis, M. L. 21
 ORG: none B
 TITLE: A device for the demodulation of binary single-cycle phase-manipulated signals. Class 21, No. 173803 /announced by the State All-Union Central Scientific Research Institute of Comprehensive Automation (Gosudarstvennyy nauchno-issledovatel'skiy institut kompleksnoy avtomatizatsii)
 SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 43-44
 TOPIC TAGS: demodulator, binary control signal, automatic control equipment
 ABSTRACT: This Author Certificate presents a device for the demodulation of binary single-cycle phase-manipulated signals (see Fig. 1). The device operates on a non-synchronous reception method using the phase demodulation according to the difference of the interchange sequence of the sinusoidal signal half-cycles. The device is designed for the reception of signals with amplitude-phase distortions without a pause between the shifted half-cycles. A polarity discriminator and an amplitude discriminator are included in the input of the device. These discriminators are
 Card 1/2 UDC: 621.394.376
 Z

L 8130-66
ACC NR: AP5024980

connected with the duration discriminators of the two channels and with the input of the common duration discriminator which triggers only with the merging of the half-periods.

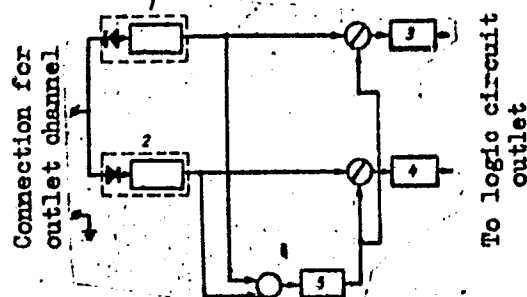


Fig. 1. 1 and 2- amplitude discriminator and polarity discriminator;
3 and 4- duration discriminators; 5- common duration discriminator

Orig. art. has: 1 figure.

SUB CODE: EC/ SUBM DATE: 06Feb64

Card 2/2 (u)

VINOGRADOV, Yu.M., inzh.; KIREYENKOV, V.K., inzh.; KRITS, B.O., inzh.;
PROKOF'YEV, V.F.

Quick-response telemechanical system for data transmission
by telephone lines. Mekh. i avtom. proizv. 19 no.7:43-47
J1 '65. (MIRA 18:9)

VINOGRADOV, Yu.M.

Sulfidizing, selenizing and tellurizing steels, cast iron
and alloys. Metalloved. i term.obr.met. no.10:36-41 O '65.
(MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy i konstruktorskiy
institut khimicheskogo mashinostroyeniya.

VINOGRADOV, Yu.M.

Effect of lubrication on the seizing process during metal cutting.
Trudy Sem. po kach. poverkh. no.1:30-41 '51. (MLRA 10:8)
(Metal cutting) (Lubrication and lubricants)

VINOGRADOV, Yu.M.

Correlation between friction and surface smoothness in metal
cutting in various media. Trudy Sem.po kach.poverkh.2:28-50 '53.
(MIRA 7:2)

(Metal cutting) (Friction) (Surfaces (Technology))

VINOGRADOV, YU. M.

32-6-18/54

AUTHOR:
TITLE:

VINOGRADOV, Yu.M., ZELENOVA, V.D.
The Application of the Radiostructural Analysis for the Investigation
of Steel Sulphidization. (O primeneni rentgenostrukturnogo ana-
liza pri issledovanii sulfidirovaniya staley, Russian)
Zavodskaya Laboratoriya, 1957, Vol 23, No 6, pp 697-699 (U.S.S.R.)

PERIODICAL:

ABSTRACT:

For the purpose of determining the results of the thermochemical treatment of steel, - of sulphidization - the results of friction- and wearability tests can be compared with those obtained by the phase analysis of the upper layer of the products to be sulphided. In this way it is possible to find out upon which of the reagents existing in the upper metal layers the efficacy of sulphidization depends. The investigation was carried out by means of radiostructural analysis. A direct connection was found to exist between the increase of the frictional properties of steel sulphidization and the forming of the chemical compound FeS on the metal surface. Results showed that during sulphidization in the case of different compositions and at different temperatures, the surface layer has different compositions of the respective phases. The top layer of the product to be sulphided can contain the following reagents by which the phase is composed: the α -Fe lattice, FeS-sulphide, FeN-nitride (ϵ -phase), Fe₄N-nitride (γ -phase), the ferric oxides: FeO₄, Fe₂O₃, FeO.

Card 1/2

32-6-18/54

The Application of the Radiostructural Analysis for the Investigation of Steel Sulphidization.

Experiments were carried out with a machine with four rollers (LTC-4). The roll rotating with a velocity of 300 wg/min was made of (40x) steel and was hardened to 40-42 R_c. Pure sulphidization was obtained with the following compositions:
2 g NaCN₂S, 6 g Na₂S₂O₃ per 100 g mixture of 55% Na₂SO₄ and 45% KOI at a temperature of 560° and a duration of one hour.

ASSOCIATION: Institute for the Construction of Chemical Machines for Scientific Research.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 2/2

VINOGRADOV, Yu. M.

24-1-20/26

AUTHORS: Vinogradov, Yu. M., and Dombrovskaya, N. S. (Moscow).

TITLE: Improvement of the anti-seizing properties of steel by chlorination
(Povysheniye protivozadirnykh svoystv staley putem
khlorirovaniya).

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh
Nauk, 1958, No.1, pp. 128-130 (USSR).

ABSTRACT: It is shown in this paper that chlorating is promising from the point of view of improving the anti-seizing properties of rubbing parts. Chlorating can be effected in a gaseous medium as well as in a salt bath containing active chlorine compounds. It is important to ensure optimum temperature conditions during the process. The temperature graph characterising the interaction of gaseous chlorine flowing above iron powder or steel chips for the heating temperatures from room temperature up to 600°C, Fig.1, p.128, indicates that after a period of continuous temperature rise there is a sudden peak in the curve at 232°C and this indicates that for gas chlorination a temperature of 200°C is required. NIIKHIMAShe carried out experiments with specimens of steel "45" chlorinated at 150 and 200°C for durations of ten minutes. As a result of this treatment, thin

Card 1/3

Improvement of the anti-seizing properties of steel. 24-1-20/26
 (Cont.) films of chemical compounds formed; X-ray diffraction analysis of the chlorinated specimens revealed the presence in the surface layers of the compounds FeCl_2 and Fe_2O_3 . "Steel 45" specimens which have been thus treated were tested on a 4-roller test machine (Ref.3) MTC-4. The tests were carried out in the dry state, the conical rollers consisted of steel "40" in the non-hardened state, the roller speed was 300 r.p.m. The diameter of the cavity, d in mm, caused by wear applying a load P, kg, was used as a criterion for judging the anti-seizing properties. In Fig.2, p.128 curve 1 (values designated by +) applies for steel in the "raw" state, whilst curves 2 and 3 apply to steels chlorinated respectively at 150°C and 200°C. It can be seen from these results that chlorination has an appreciable anti-seizing effect which is somewhat higher for a treatment temperature of 200°C than for a lower treatment temperature. The character of the disruption during friction of chlorinated metal surfaces also differs from that of non-treated metal. In the latter case friction of clean (unlubricated) metallic surfaces Card 2/3 is accompanied by deep plastic deformations, whilst in

Improvement of the anti-seizing properties of steel. 24-1-20/26
(Cont.) the case of chlorinated surfaces the disruption is localised inside thin surface layers even at high load values. Figs. 3 and 4 show micro-cuts of cross sections of wear cavities of specimens of non-treated "Steel 45" tested with a load of 17 kg and of chlorinated "Steel 30" tested with a load of 130 kg, both at magnifications of thirty times. The diameter of the wear cavities is almost equal (1.7 mm) but the texture penetrates considerably deeper in the case of untreated specimens. The surface layers of chlorides forming after treatment by the here described method can be easily removed by means of solvents and this is a disadvantage of this method of chlorination. In spite of this, chlorination may prove an effective means for improving the anti-seizing properties of steel. Of particular interest is the combination of processes of chlorination and sulphating in the same way as lubricant additives are used which contain compounds of Cl and S. There are 4 figures and 3 references, all of which are Russian.

Card 3/3 (Note: This is a complete translation except that the introductory paragraph has been omitted).

SUBMITTED: August 8, 1957.

AVAILABLE: Library of Congress.

VINOGRADOV, Yu. M.

5(2);25(1)

PHASE I BOOK EXPLOITATION

SOV/2313

Akademiya nauk SSSR. Institut mashinovedeniya

Povysheniye stoykosti detaley mashin /sul'fidirovaniye/; sbornik statey (Increasing the Wear Resistance of Machine Parts /Sulfurization/; Collection of Articles) Moscow, Mashgiz, 1959. 126 p. Errata slip inserted. 4,500 copies printed.

Ed. (Title page): M. M. Khrushchov, Doctor of Technical Sciences;
Ed. (Inside book): A.G. Nikitin, Engineer; Tech. Ed.: V.D. El'kind; Managing Ed. for Literature on General Technical and Transport Machine Building (Mashgiz): K.A. Ponomareva, Engineer.

PURPOSE: This collection of articles is intended for engineering and technical workers of machine-building and overhauling plants.

COVERAGE: This book presents results of investigations of methods to increase the resistance of machine parts to seizure. A new method of sulfurization which improves the friction behavior of cast iron and steel and an analysis of the effect of sulfurization on the antifriction properties and wear of metal are given.

Card 1/6

Increasing the Wear Resistance (Cont.)

SOV/2313

These articles are the transactions of a seminar held at the Institute of Mechanical Engineering of the Academy of Sciences, USSR, in December 1956.

TABLE OF CONTENTS:

D'yachenko, P. Ye., Doctor of Technical Sciences. Use of Sulfurization in Czechoslovakia 5

The author reviews the development and introduction of sulfurization in several Czech plants. The process and its advantages are described.

Vinogradov, Yu. M., Candidate of Technical Sciences. Properties of Metals Following Thermochemical Sulfurization. 11

The author describes investigations of sulfurization and other similar treatment carried out at the NIIKhIMMASH (Scientific Research Institute of Chemical Machinery) and gives formulas for the bath used, methods of operation, and results obtained.

Card 2/6

Increasing the Wear Resistance (Cont.)

SOV/2313

Vaynshteyn, V.E., and Yu. M. Vinogradov, Candidates of Technical Sciences. Investigating Wear of Sulfurized Metal Surfaces by Means of Radioactive Isotopes 30

The authors describe an investigation carried out by the NIIKhIMMASH (Scientific Research Institute of Chemical Machinery), in which isotope S35 was used to determine the distribution of sulfur in the metal.

Somin, B.Kh., Candidate of Technical Sciences, and Ye. V. Gorbachevskiy, Engineer, Sulfocyanation as a Means of Increasing Resistance to Seizure. 44

The authors describe the combined process of sulfurization and cyanation of surfaces. The mechanism and the role of both of these processes in the combined process is given.

Dombrovskaya, N.S., Doctor of Chemical Sciences, Ye. A. Alekseyeva, and N.V. Khakhlova, Engineers. Selecting Salt Baths for Sulfurization of Iron Alloys 62

The authors recommend the use of a salt bath as the most controllable and uniform method of sulfurization. They develop the compositions of these baths and the optimum

Card 3/6

Increasing the Wear Resistance (Cont.)

SOV/2313

temperatures of operation.

Zinovich, N.S., Engineer. Investigation of the Sulfurization Process 79

The author discusses sulfurization in the liquid bath, baths operating at medium and low temperatures, control of the process, x-ray and metallographic investigations, hardness, work-in, and wear resistance tests.

Zelenova, V.D., Engineer. X-ray Analysis of the Surface Layer of Sulfurized Specimens 95

The author investigated various bath compositions by x-ray analysis in order to evaluate the character of sulfurization in respect to simultaneous formation of nitrates.

Gil'man, T.P., Engineer. Sulfurization of Iron Carbide With Gas 99

The author describes a process in which a sulfur suspension in mineral oil and ammonia are introduced together into the furnace. This process is a combined sulfurizing and cyaniding process having several advantages in comparison

Card 4/6

Increasing the Wear Resistance (Cont.)

SOV/2313

with other sulfurization methods according to the author.

Gil'man, T.P., Engineer. Sulfurization of Bushings Made of Iron Powder by Introducing Sulphur Into the Charge

105

The author describes the results of experiments using a method, claimed by the author to be new. The work was carried out at Stalingrad Tractor Plant in collaboration with NATI (Automobile and Tractor Scientific Research Institute). The author stresses the advantages of this process which gives a uniform distribution of sulfides in the metal.

Smovt, M.S., Engineer. Results of Work on the Technology of the Sulfurization Process in Rostsel'mash /Rostov-na-Donu Agricultural Machinery Plant/

111

The author describes an investigation carried out at the Rostov plant aimed at improving wear resistance of cutting tools by sulfurization.

Lifshits, Ya. G., Candidate of Technical Sciences. Uses of Card 5/6

Increasing the Wear Resistance (Cont.)

SOV/2313

Sulfurization in Manufacturing Agricultural Machinery 115
In this article the author presents the results of laboratory and bench tests of sulfurized and nonsulfurized machine parts carried out by RISKhM (Rostov Institute for Agricultural Machinery) and ROSTSEL'MASH.

Blokhin, M.A., P.S. Nesterenko, and A.T. Shuvayev. X-ray and Spectrum Analysis of Sulfurized Samples 121
The author describes an investigation of depth distribution of sulfur in type 45 steel and gray cast iron sulfurized at the ROSTSEL'MASH.

Lesnykh, D.S., Candidate of Chemical Sciences. Electrosulfurization 126
The author presents the results obtained from sulfurizing parts in various molten salts at 240 to 270°C and in aqueous solution of salts and 50 to 75°C using electrolytic methods.

AVAILABLE: Library of Congress

Card 6/6

GO/ec

10-20-59

VINOGRADOV, YU. M.

PHASE I BOOK EXPLOITATION

SOV/5053

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Iznos i iznosostoykost'. Antifrictionnyye materialy (Wear and Wear Resistance. Antifriction Materials) Moscow, Izd-vo AN SSSR, 1960. 373 p. Errata slip inserted. 3,500 copies printed. (Series: Ita: Trudy, V. 1)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Ed.: M. M. Khrushchov, Professor; Eds. of Publishing House: N. Ya. Klebanov, and S. L. Orpik; Tech. Ed.: E. V. Polyakova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection published by the Institut mashinovedeniya, AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya Konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in 5 main areas: 1) Hydrodynamic theory of lubrication and friction; Bearings and Lubrication (Chairman: Ye. M. Gut'yar, Doctor of Technical Sciences); 2) Lubrication and Lubricant Materials (Chairman: O. V. Yegorov, Doctor of Technical Sciences); 3) Dry and Boundary Friction (Chairman: N. V. Derjagin, Corresponding Member of the Academy of Sciences USSR, and I. V. Kragelskiy, Doctor of Technical Sciences); 4) Wear and Wear Resistance (Chairman: M. M. Khrushchov, Doctor of Technical Sciences); and 5) Friction and Antifriction Materials (Chairman: V. E. Krasovskiy, Doctor of Technical Sciences). Ye. M. Gut'yar, Doctor of Technical Sciences, was Chairman of the general assembly (on the first and last day of the conference) was Academician A. A. Blagonravov. L. Yu. Puchanatskiy, Candidate of Technical Sciences, was scientific secretary. The transactions of the conference were published in 3 volumes, of which the present volume is the first. This volume contains articles concerning the wear and wear resistance of antifriction materials. Among the topics covered were modern developments in the theory and experimental science of wear resistance of materials, specific data on the wear resistance of various combinations of materials, methods for increasing the wear resistance of certain materials, the effects of friction and wear on the structure of materials, the mechanism of the wearing of metals, the effect of various types of lubricating materials on wearing, abrasive wear of a wide variety of materials and components under many different conditions, modern developments in antifriction materials, and the effects of finish machining on wear resistance. Many personalities are mentioned in the text. References accompany most of the articles.

Krasovskiy, V. E. Increasing the Wear Resistance of Steel by Means of Treatment by a Flow of Compressed High-Temperature Gases

93

2. Seizing of Metals. Structural Changes in Metals Due to Friction. Mechanical Properties of Metals. Arnol'd, J. B., and A. S. Franch. On the Mechanism of the Formation and Breakdown of Wrapping in the Case of Friction of Metals

99

Vinogradov, Yu. M. Effect of Sulfides on the Friction and Wear of Metals

105

Gentkin, M. D., M. P. Kuz'min, and Yu. A. Misharin. Investigation of the Seizing of the Surfaces of Steel Rollers

115

Gentkin, M. D., and Yu. A. Misharin. Method for Testing the Lubricating Capacity of Oils in a Gear Box

122

Card 6/13

7

VINOGRADOV, Yu. M. (Candidate of Technical Sciences)

Improving the Antifriction Properties of Metals by Methods of Thermochemical Surface Treatment.

Povsheniye iznosostoykosti i sroka sluzhby mashin. t. 2 (Increasing the Wear Resistance and Extending the Service Life of Machines. v. 2) Kiyev, Iz-vo AN UkrSSR, 1960. 290 p. 3,000 copies printed. (Series: Its: Trudy, t. 2)

Sponsoring Agency: Vsesoyuznoye nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Tsentral'noye i Kiyevskoye oblastnoye pravleniye. Institut mekhaniki AN UkrSSR.

Editorial Board: Resp. Ed.: B. D. Grozin; Deputy Resp. Ed.: D. A. Braygor; M. P. Braun, I. D. Faynerman, I. V. Kragel'skiy; Scientific Secretary: M. L. Sarabash; Ed. of v. 2: Yu. A. Samokhvalov; Tech. Ed.: N. I. Rukhlina.

COVERAGE: The collection contains papers presented at the Third Scientific Technical Conference held in Kiyev in September 1957 on problems of increasing the wear resistance and extending the service life of machines. The conference was sponsored by the Institut stroitel'noy mekhaniki AN UkrSSR (Institute of Structural Mechanics of the Academy of Sciences Ukrainian SSR), and by the Kiyevskaya oblastnaya organizatsiya nauchno-tekhnicheskogo obshchestva mashinostroitel'noy promyshlennosti (Kiyev Regional Organization of the Scientific Technical Society of the Machine-Building Industry).

I. 35465-65 EPF(c)/EWT(m)/EWP(b)/T/EWA(d)/EWP(t) Pr-4 IJP(c) RIW/
 DJ/MJW/JD/GS UC
 S/0000/64/000/000/0083/0089

ACCESSION NR: AT4049816

AUTHOR: Vinogradov, Yu. M.

TITLE: Increasing the wear resistance of steel, cast iron and titanium alloys by sulfocyaniding, sulfiding and seleniding

SOURCE: Soveshchaniye po uprochneniyu detaley mashin, 1962. Protsessy uprochneniya detaley mashin (Processes in the hardening of machine parts); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1964, 83-89

TOPIC TAGS: steel, cast iron, titanium alloy, steel wear resistance, cast iron wear resistance, titanium alloy wear resistance, sulfiding, seleniding, sulfocyaniding

ABSTRACT: One of the ways of increasing the wear resistance and friction resistance of metals is the creation of chemical compounds on the surface differing from the base metal. Elements of groups V, VI and VII of the periodic table are used, the methods being known as sulfiding, sulfocyaniding, seleniding, etc. The number of thermochemical procedures worked out at present is quite high. In the present paper, 4 metals are used as examples: carbon steel 45, stainless steel

Card 1/3

L 35465-65

ACCESSION NR: AT4049816

1Kh18N9T⁴ grey iron SCH 18-36 and titanium alloy VT-1. Samples of these metals were treated in salt baths for sulfocyaniding, sulfiding and seleniding with tests afterwards by methods worked out by NIIKhIMMASH. The methods included: 1) sulfiding in the NIIKhIMMASH bath with 50.9% sodium sulfate, 41.7% potassium chloride, 1.8% sodium sulfocyanate and 0.4% sodium thiosulfate at a working temperature of 560C for 1 hour; 2) sulfocyaniding in a bath with 66.1% yellow potassium ferrocyanide, 1.1% sodium sulfate, 0.4% sodium thiosulfate and 2.1% ammonium thiocyanate at a working temperature of 560C for 1 hour; 3) sulfiding by the SATS (Societe d'Application de Traitements de Surface) method with 34% sodium cyanide, 1% sodium sulfite, 16% sodium carbonate, 16% potassium carbonate and 2% potassium chloride at a working temperature of 580C for 1 hour; 4) seleniding by the NIIKhIMMASH method with 49.1% sodium sulfate, 41.7% potassium chloride, 5.5% potassium chromate and 0.4% sodium thiosulfate at a working temperature of 560C for 1 hour; and 5) selenium-cyaniding by the NIIKhIMMASH method with 1% yellow potassium ferrocyanide, 1% sodium hydroxide and 1% selenium at a working temperature of 560C for 1 hour. The metals were then examined under the electron microscope and tested by common metallographic methods. Wear was tested

Card 2/3

L 354

4

ACCESSION NR: AT4049816

on friction machines. The tests indicated that enrichment of metals by sulfides and selenides results in higher microhardness at the surface. It is advisable to use sulfiding in the NIKHDMASH 2/6 bath and sulfocyaniding by the SATS method for carbon steel and cast iron. Sulfocyaniding in a bath with yellow potassium ferrocyanide and seleniding should be used for stainless steel and titanium. The SATS method and methods using selenium are highly toxic and safety precautions should be observed. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 21May64

NO REF SOV: 006

ENCL: 00

SUB CODE: MM

OTHER: 002

Card 3/3

L 24863-66 EWP(e)/EWT(m)/EWP(j)/I/ETC(m)-6 IJP(c) WW/DJ/GS/RM/WH
 ACC NR: AT6008950 (Q) SOURCE CODE: UR/0000/65/000/000/0107/0112

AUTHORS: Vinogradov, Yu. M.; Vasil'yev, I. V.; Gopius, A. D.; Brusnichkin, N. S.

ORG: none

TITLE: The use of antifriction plastics for slip bearings in chemical machine building

SOURCE: Moscow. Institut mashinovedeniya. Plastmassy v podshipnikakh skol'zheniya; issledovaniya, opyt primeneniya (Plastics in friction bearings; research and experiment in application). Moscow, Izd-vo Nauka, 1965, 107-112

TOPIC TAGS: friction coefficient, wear resistance, antifriction material, antifriction bearing, steel, teflon, polyamide / Kh23N27M2T steel

ABSTRACT: Teflon-4 and teflon-40 (with and without fillers), pyroceramic plas-
tics, polyamides, textolites, fiber plastics, and graphite plastics are examined
 as the currently most promising antifriction materials for chemical machine
 building. The use of the Kh2M, MT-2, MT2M, and MT-8M friction machines is dis-
 cussed. The Kh2M is very convenient for laboratory research in aqueous solutions
 of bases, acids, and salts. The other machines permit the determination of the

Card 1/2

L 24863-66

2

ACC NR: AT6008950

dependence of wear resistance and the friction coefficient upon various factors studied. The life of a bearing assembly was increased to 8000--10 000 hrs by the use of teflon-40. Teflon-4 is found to be unsuitable for use in certain media. In view of the higher chemical stability of teflon-4 and of its good antifriction qualities, work should be continued in creating its compositions with other materials. Orig. art. has: 1 table and 1 diagram.

SUB CODE: 11/ SUBM DATE: 31Jul65

Card 2/2 dda

L 30364-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB/GD

ACC NR: AT6012377

SOURCE CODE: UR/0000/65/000/000/0102/0109

AUTHORS: Kornilov, I. I. (Doctor of chemical sciences, Professor); Vinogradov, Yu. M.

ORG: none

72
64
B+1

TITLE: ²¹ Titanium and its alloys for large-scale chemistry

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow, Izd-vo Nauka, 1965, 102-109

TOPIC TAGS: ^{CHEMICAL PLANT EQUIPMENT, PIPE} titanium, titanium alloy, corrosion resistance, corrosion resistant alloy, heat exchanger, corrosion resistant metal / VT1 titanium, OT4-1 titanium alloy, AT2 titanium alloy, AT3 titanium alloy, AT4 titanium alloy, AT6 titanium alloy

ABSTRACT: Examples are given of the use of titanium and its alloys in recent years on the basis of research and design work of various organizations. The Scientific Research Institute of Chemical Machine Construction (Nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya) built one of the first containers of OT4-1 titanium alloy and also welded pipe of VT1 titanium for operation in a medium

Card 1/2

12

L 30354-66

ACC NR: AT6012377

containing H_2SO_4 , $(NH_4)_2SO_4$, acid resin, hydrogen, benzene hydrocarbons, ammonia, 27
hydrogen sulfide, etc, at temperatures of 60-70C. Heat-exchange and filtering
apparatus have also been made with VT1 titanium. Titanium inserts for lining steel
chemical apparatus have been created. AT2 titanium alloy is designed for cryogenic
devices to liquid-helium temperatures; AT3 titanium alloy is designed for operation
in a sulfuric acid medium at 300-350C under pressure. Alloy AT4 is used for com-
pressor machines, and alloy AT6 is used for autoclaves. The new corrosion-
resistant alloys required now and in the future are outlined. Orig. art. has: 8
figures and 1 table.

SUB CODE: 0711/ SUBM DATE: 02Dec65/ ORIG REF: 021

Card 2/2 11

L 01307-57 EWT(d)/EWT(m)/EWP(w)/EWP(c)/EWP(v)/I/EWP(L)/ETI/EWP(k)/EWP(h)/EWP(l)

ACC NR: AF6003317 IJP(c) JD/WW/JG/WB SOURCE CODE: UR/0365/66/CO2/CO1/CO25/CO31

AUTHOR: Kornilov, I. I.; Vinogradov, Yu. M.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii)

TITLE: Use of titanium in the chemical machine building industry and its principles of alloying ²⁷

SOURCE: Zashchita metallov, v. 2, no. 1, 1966, 25-31

TOPIC TAGS: titanium, titanium alloy, chemical ^{plant equipment,} ~~engineering,~~ corrosion resistant alloy, creep, solid solution

ABSTRACT: Titanium has a high resistance to corrosion and relatively high strength properties. This makes it an excellent structural material for producing chemical machine parts and apparatuses. At the present time only technically pure titanium (BT-1) is widely used in the industry for the production of pipes, heat-exchange apparatuses for heating electrolytes, condensers for condensation of ammonium pyrodine bases, heaters, tanks, filters, blades for centrifugal pumps for organic salts containing HCl, valve pumps, sprayers, atomizers, etc. However, titanium alloys will be more widely used in the future because BT-1 has a relatively low strength, it shows creep at room temperature, and stresses of ~80% of the yielding point, as well as a low corrosion resistance in hot solutions of some acids. Some known titanium alloys

Card 1/2

UDC: 669.295 : 620.193.4

L 01307-67

ACC NR: AP6003317

21/

have a higher corrosion resistance than pure titanium. Titanium alloyed with 0.2-0.3% palladium has high stability in mineral acids. The selection of alloying elements for metals, including titanium, is controlled by their reaction with the metal. A study of the metal chemistry of titanium resulted in the separation of four groups of elements in the periodic system. The elements of the first group form continuous solid solutions with titanium; the elements of the second group form limited solid solutions; the elements of the third group form ionic compounds; and the elements of the fourth group do not react with titanium. Only the first two groups are of interest for efficient alloying. The main alloying elements for the formation of corrosion- and heat-resistant titanium alloys in the form of α -solid solution are zirconium and hafnium in unlimited concentration, and Al, Sn, Pd, Si, Cu, Ag, Mn, Cr, Fe, Mo and Nb within the limits of solubility. Oxygen, nitrogen, and hydrogen cause brittleness and can be used only for special purposes. Alloys in the form of β -solid solution can be made by using Mo, Nb, and V as alloying elements in large concentrations (>20-30%) and Zr, Al, Cr, and Fe in small concentrations to preserve a stable β -structure of the alloy. Since there is a shortage of tantalum, it can be recommended only for special cases. The titanium compounds TiAl, Ti₃Al, TiB₂, TiC, TiN, and their solid solutions have high melting points and heat resistance and can be used as heat-resistant coatings. The ternary and more complex systems are also of interest: Ti-Mo-Nb, Ti-Mo-Zr, Ti-Cr-Cu, Ti-Zr-Sn, Ti-Pd-Cu, Ti-Mo-Pd, Ti-Mo-Cr, Ti-Cr-Pd, and others. With respect to corrosion resistance interesting results can be obtained in the region of β -solid solutions with a high concentration of molybdenum and niobium. Orig. art. has: 5 fig. and 1 table.

SUB CODE: 11,07/3/SUBM DATE: 11Mar65/ ORIG REF: 024/ OTH REF: 002
Card 2/21

KORNILOV, I.I.; VINOGRADOV, Yu.M.

Using titanium in chemical machinery manufacture and principles
of its alloying. Zashch. met. 2 no.1:25-31 Ja-F '66.

(MIRA 19:1)

1. Institut metallurgii imeni A.A. Baykova, Moskva. Submitted
March 11, 1965.

L 3364-66 EWT(m)/EPF(c)/ETC/ENG(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) IJP(c) ILW/
 ACC NR: AP5025598 JD/DJ UR/0129/65/000/010/0036/0041
 621.785.53:669.131.6:669.14.018.8

AUTHOR: Vinogradov, Yu. M.

TITLE: Sulfurizing, selenizing and tellurizing of steels, cast iron and alloys

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1965, 36-41

TOPIC TAGS: sulfurizing, tellurizing, selenizing, stainless steel, carbon steel, cast iron, titanium alloy, wear resistance, friction

ABSTRACT: Specimens of steels, cast iron and a titanium alloy were sulfurized, selenized and tellurized in different salt baths, and principally in a bath consisting of 78% $K_2Fe(CN)_6$, 17% KOH, and 5% Se (or Te), at 550-570°C for 3 hr (selenizing, tellurizing) or 1 hr (sulfurizing). They then were tested in a friction testing machine to determine their anti-seizing properties and wear resistance. The findings, as well as the data of X-ray and electron diffraction analysis show that the anti-friction properties of metal surfaces improve if the structure contains sulfides, selenides or tellurides, particularly if the lower layers are at the same time nitride-enriched. For example, sulfurizing doubles the service life of the piston rings of marine engines, diesels, and compressors. Sulfurizing and sulfocyaniding are the best method for carbon steels and cast iron, whereas selenizing and tellurizing are best for stainless steels and titanium alloys. The last two methods involve the

Cord 1/2

L 3364-66

ACC NR: AP5025598

3

use of toxic elements and hence may be recommended only for cases where no other method is effective. Sulfurizing and sulfocyaniding may be recommended for introduction. Orig. art. has: 3 figures, 2 tables.

ASSOCIATION: NIKhIMASH

44,55

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, CC

NO REF SOV: 011

OTHER: 001

Card

2/2

DP

AUTHOR: Vinogradov, Yu. M. (Engineer), Kireyenko, V. K. (Engineer); Krits, B. G. (Engineer); Prokof'yev, V. I. (Engineer)

TITLE: High-speed telemechanical system for data transmission on telephone lines

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 7, 1965, 43-47

TOPIC TAGS: data transmission, computer application, data processing, system, production engineering, punched paper tape, punched card, telemetry

ABSTRACT: The authors describe a high-speed telemechanical system for transmission of information developed by TsNIIKA together with the special design office at the Vilnyus Computing Machine Plant. The system was designed to transmit large volumes of production type alphanumeric data to a central computer processing point. The input console consists of an RTA-10 teleprinter terminal and a 1100 tape perforator (from the Pyazin Computing-Analyzing Machine Plant) by means of a simple relay circuit. The output console consists of a 1100 tape reader and a 1100 tape punch. The system is designed to transmit data from the TsNIIKA to the Vilnyus Computing Machine Plant. The system is designed to transmit data from the TsNIIKA to the Vilnyus Computing Machine Plant. The system is designed to transmit data from the TsNIIKA to the Vilnyus Computing Machine Plant.

Card 1/2

L 62973-65

ACCESSION NR: AP5018529

ACCESSION NR: APSU18529

⁴
reader reads the data from the punched tape at a rate of 200 lines/second and feeds them to the telemetry transmitter (in the same cabinet), which transmits them in a standard telegraph code to the telemetry receiver at the processing point. At the latter station the data are fed to an analyzer, which sorts the data into conventional er and parity, a perforator assembly, where they are punched at a rate of 100 lines/minute. The telecode and transferred to punched are at a rate of 200 lines/minute. The telemetry transmitter receiver at the processing point is also equipped with error detecting and correcting features. The output of the telemetry receiver can also be fed directly into a suitable digital computer, such as the "Minc 2". The Telemechanics Division of TsNIKA has completed fabrication of experimental samples of attachment to the telemetry system, which will operate on municipal and industrial telephone lines, as well as private lines. The system with these attachments employs phase modulation of the data and pulse-frequency modulation of the carrier. It has a rate of 100 lines/minute. A comparison of the reliability and performance of the BII system and the proposed system is shown in Figure 1.

ASSOCIATION: none

PH 11-100

SUB CODE: DE

COMMITTEE

NO RLF SOV: 000

Ca-d 2/2

_VINOGRADOV, Yu.M., kand.tekhn.nauk

Conference on the chemical and heat treatment of metals. Khim. i
neft. mashinostr. no.1:42 Ja '65. (MIRA 18:3)

KHRUSHCHOV, M.M., doktor tekhn. nauk, prof., otv. red.; VINOGRADOV, Yu.M., red.; KUGEL', R.V., red.; MATVEYEVSKIY, R.M., red.; PRUZHANSKIY, L.Yu., red.; ORPIK, S.L., red.; POLYAKOVA, T.V., tekhn. red.

[Methods for wear testing]Metody ispytaniia na iznashivanie; trudy. Moskva, Izd-vo Akad.nauk SSSR, 1962. 237 p.
(MIRA 15:12)

1. Soveshchaniye po metodam ispytaniya na iznashivaniye, Moscow, 1960.

(Testing machines) (Radioisotopes--Technological innovations)

S/123/62/000/019/001/010
A006/A101

AUTHORS: Vinogradov, Yu. M., Kireyeva, Z. P.

TITLE: Improved wear resistance of surface layers of bearings by chemical and thermal treatment

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 19, 1962, 21 - 22, abstract 19B110 (In collection: "Kachestvo poverkhnosti detaley mashin, v. 5", M., AN SSSR, 1961, 138 - 145)

TEXT: The authors studied the effect of chemical processing and heat treatment methods (sulfonation, selenization, chlorination) upon the wear resistance of surface layers of cast-iron slide bearings. The investigation was made in a laboratory with C418-36 (SCH-18-36) cast-iron, subjected to sulfonation in a "NIIKHIMMASH 2/6 no. 1" salt bath, at 560°C; selenization at the same temperature in a salt bath, containing a mixture of selenium, sodium cyanide and others; and chlorination in gaseous chlorine at 220°C. Tests on a 4-roll machine have shown that the studied chemical- and heat-treatment methods increased considerably the antigalling properties of cast-iron as compared

Card 1/3

Improved wear resistance of surface layers of...

S/123/62/000/019/001/010
A006/A101

with non-treated cast-iron or bronze OUC 6-6-3 (OTS 6-6-3); at heavy loads (100 - 200 kg) the highest effect is obtained by sulfonation and selenization, and the least effect by chlorination. Simultaneously it is confirmed that the chemical and thermal treatment reduces considerably the friction coefficient of cast iron which differs only slightly from that of bronze. Wearing tests on an Amsler machine were carried out in a wide range of specific pressure (50 - 120 kg/cm²) and speed (200 - 500 rpm). The tests show that the chemical and thermal treatment increases wear resistance of friction pairs only to a certain limit. The stricter the friction conditions, the more positive is the effect of the chemical and thermal treatment. The range of the positive effect of the investigated chemico-thermal treatment upon the wear-resistance is wide; therefore it is actually possible to employ these methods for bearings. This was confirmed by tests on the JTC -5 (LTS-5) machine at 300 - 1000^o rpm. These experiments prove the possibility of using, within certain limits, mineral oil-greased cast-iron bearings which had been subjected to chemico-thermal treatment, instead of non-ferrous metal bearings. The highest practical interest for raising the wear resistance is offered by sulfonation. However, in individual cases selenization is

Card 2/3

S/123/62/000/019/001/010
A006/A101

Improved wear resistance of surface layers of...

recommended. The corrosion resistance of X18H9 (Kh18N9) type stainless steel in nitric, phosphoric and acetic acid is not reduced after sulfonation, and anti-friction properties are improved. Therefore the use of sulfonated corrosion-resistant materials is possible for bearings operating in aggressive media.

L. Litvinenko

[Abstracter's note: Complete translation]

Card 3/3

s/514/61/000/005/014
1001/1201

AUTHORS : Vinogradov, Yuri., and Kireyeva, Z.P.

TITLE: Increased wear resistance of surface layers of bearings by combined chemical-heat treatment

SOURCE: Akademiya Nauk SSSR. Komissiya po tekhnologii mashinostroyeniya. Seminar po kachestvu poverkhnosti. Trudy no.5, 1961. Kachestvo poverkhnosti detalей машин; metody i pribory, uprochneniye metallov, tekhnologiya mashinostroyeniya, 133-145

TEXT: Tests were carried out to find the most efficient method for the surface-coating of sliding-contact bearings to increase their wear resistance. The first series determined the anti-seizing properties of surface coatings. Wear resistance was tested on the AM-100 friction-machine. The dependence of the friction moment at the start on the specific pressure at various speed was plotted and definite conclusions drawn on the effectiveness of surface-coating methods. A second series of tests was conducted under conditions simulating the field operation of bearings. Wear and specific-load resistance of friction couples were found to increase as a result of combined chemical heat-treatment. From these tests the

Card 1/3

S/5,14/61/000/005/005/014
1001/1207

Increased wear resistance...

following table was plotted showing maximum loads at which bearings made of different materials may work with sufficient reliability:

Bearing (load in kg/cm ²) material	Rotation speed rpm			
	300	500	800	1000
Plain cast-iron	10	10-12	15-20	20
Sulfide-coated cast iron	40	45-50	55	60
Selenium-coated cast iron	45	55-60	65-70	70-75
Bronze	45	55-60	65-70	70-75
Chloride-coated cast iron	55	65-70	70-75	70-80

The test results permitted the following conclusions to be drawn: 1). Surface-coating of cast iron increases the wear resistance of bearings and improves their friction properties permitting them to replace non-ferrous metals operating with mineral lubricants. 2). Sulfide-coated bearings subjected to surface coating may be used in corrosive media. 3). Anti-friction and anti-seizing (gripping properties of bearing components are greatly improved as a result of combined chemical-heat

Card 2/3

3/514/61/000/005/005/014
1001/1207

Increased wear resistance...

treatment. Of most practical interest are sulfide coatings. Industrial methods of chloride coating still need further refinement. There are 4 figures and 1 table

✓

Card 3/3

VINOGRADOV, Yu.M., kand.tekhn.nauk; ZELENОВА, V.D., inzh.;
SHISHOKINA, K.V., kand.tekhn.nauk

Using X-ray diffraction and electron diffraction examination
in investigating wear-resistant coatings. Trudy NIIKHIMMASH
no.27:168-175 '59. (MIRA 14:8)
(Protective coatings--Testing) (X rays--Diffraction)
(Electron diffraction examination)

VINOGRADOV, Yu.M., kand.tekhn.nauk

Chlorination, sulfurization and thiocyaniding used as means
for increasing the wear resistance of metals. Trudy NIIKHIMMASH
no.27:150-167 '59. (MIRA 14:8)
(Cash hardening)

S/137/62/000/006/145/163
A057/A101

AUTHORS: Vinogradov, Yu. M., Kireyeva, Z. P.

TITLE: Increase of the resistance to wear of surface layers of bearings by methods of thermo-chemical treatment

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 105, abstract 6I666 (V sb. "Kachestvo poverkhnosti detaley mashin Sb. 5". Moscow, AN SSSR, 1961, 138 - 145)

TEXT: The most effective method for the increase of antifriction properties of a metal was sought for. Tests were carried out on friction machines, imitating the work of a bearing under real conditions. The thermo-chemical treatment of the OMC 6-6-3 (OTS6-6-3) bronze and pig iron was carried out by the following technology: 1) sulfurization in a salt bath of the type NIIKhIMMASH 2/6 no. 1 at 560°C during 1 hr; a metal layer enriched with FeS is formed on the surface; 2) selenization in a salt bath containing 3 parts of Se and 6 parts of Na-cyanide per 100 parts of the melt (55% Na₂SO₄ and 45% KCl) at 560°C; the surface of the metal is enriched with FeSe; 3) chlorination in gaseous Cl₂ at 220°C during 15 minutes; the surface layer of the metal is en-
Card 1/2

Increase of the resistance...

S/137/62/000/006/145/163
A057/A101

riched with FeCl_2 . It was determined that an increase of the resistance to wear of bearings can be effected by covering their surface with selenides and chlorides. Sulfurized, selenidized, and chlorinated cast iron can be used as a substitute for non-ferrous metals in service with mineral oil lubrication. Bearings from 18-8 steel can be used after sulfurization in service in aqueous acid solutions, since sulfurized Cr-Ni-steel does not change its corrosion resistance. Of the most practical interest is sulfurization. There are 9 references.

A. Babayeva

[Abstracter's note: Complete translation]

Card 2/2

BORISOGLEBSKIY, B.N., kand. tekhn. nauk, red.; VINOGRADOV, Yu.M.,
kand. tekhn. nauk, red.; GALITSKIY, B.A., red.;
GORYAINOVA, A.V., kand. tekhn. nauk, red.; ZHEREBTSOV,
A.N., red.; KORETSKIY, I.M., red.; MAKAROVA, N.S., red.;
MORDOVSKIY, S.I., kand. tekhn. nauk; SALAMATOV, I.I.,
doktor tekhn. nauk; SHVARTS, G.L., kand. tekhn. nauk,
red.; YUKALOV, I.N., kand. tekhn. nauk, red.; YUSOVA, G.M.,
kand. tekhn. nauk, red.; VASIL'YEVA, G.N., red.

[Manufacture of filters in the U.S.S.R.; collection of reports at the united session of the scientific and technical councils of the All-Union Scientific Research Institute of Chemical Machinery, the Ukrainian Scientific Research Institute of Chemical Machinery and the technical council of the Ural Chemical Machinery Plant] Fil'trostroenie v SSSR; sbornik dokladov na ob"edinennoi sessii nauchno-tekhnicheskikh sovetov Niikhimasha, Ukrniikhimasha i tekhnicheskogo soveta zavoda "Uralkhimash." Moskva, Otdel nauchno-tekhn. informatsii, 1963. 107 p. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut khimicheskogo mashinostroyeniya (for Borisoglebskiy, Mordovskiyy).

VASYUTINSKIY, G.N., inzh.; VINOGRADOV, Yu.N., inzh.; DUDYREV, A.K., inzh.

Experience in the organization of the current maintenance of electric locomotives using the shift system on the Ural and Siberia railroads. Trudy TSNII MFS no.246:5-39 '62.

(MIRA 16:2)

(Electric locomotives—Maintenance and repair)

VINOGRADOV, Yu.N., inzh.; RUDAKOV, B.V.; inzh.; KIRILLOV, G.B., inzh.

Cutting the time of preliminary drying of the armature of electric traction engines before impregnation. Trudy TSNII MPS no.246: 113-118 '62. (MIRA 16:2)

(Electric railway motors)

VINOGRADOV, Yu.N. (Sverdlovsk)

Servicing of electric locomotives by shifting crews. Zhel.
dor.transp. 40 no.4:74-75 Ap '58. (MIRA 13:4)

1. Glavnyy inzhener depo Sverdlovsk--Sortirovochnyy.
(Electric locomotives--Maintenance and repair)

VINOGRADOV, Yu.N.

Using distilling wash concentrate in pressing particle boards.
Der.prom. 9 no.8:13-14 Ag '60. (MIRA 13:8)

1. Sibirskiy tekhnologicheskoy institut.
(Hardboard)

VINOGRADOV, Yu.N.; KNIZHNIK, S.O.; ANDROSOV, N.N., nauchnyy sotrudnik

Burnishing as a means for increasing the hardness of collector
copper. Elek. i tepl. tiaga 7 no.10:11-12 0 '63.

(MIRA 16:11)

1. Rukovoditel' laboratorii Ural'skogo otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Vinogradov).
2. Glavnyy inzh. depo Kurgan (for Knizhnik).
3. Ural'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Androsov).

VINOGRADOV, Yu.N., inzh.; KONSTANTINOV, Ye.S., inzh.

Wear of collectors and use of EG-2a brushes with shock
absorbing construction in the traction motors of electric
locomotives. Elektrotehnika 34 no.11:14-19 N '63.
(MIRA 17:2)

VINOGRADOV, Yu.N., inzh.; MEDVEDEV, N.F., inzh.

Methodology for determining the time for the repair of electric locomotive parts and analysis of their wear. Trudy TSNII MPS no.266:4-36 '63. (MIRA 17:2)

VINOGRADOV, Yu.N., inzh.; BESSONOV, V.P., inzh.

New engineering principles in the manufacture of traction wheel
pairs. Elek. i tepl. tiaga no.1:28-29 Ja '61. (MIRA 14:3)
(Car wheels)

32(3)

SOV/112-59-3-5093

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 112 (USSR)

AUTHOR: Vinogradov, Yu. N.

TITLE: Energy Regeneration Without Invertors
(Rekuperatsiya energii bez invertorov)

PERIODICAL: Elektr. i teplovozn. tyaga, 1958, Nr 1, pp 30-31

ABSTRACT: The article describes tentative experience in the Sverdlovsk railroad with regenerative braking on heavy-weight trains with VL-22^m locomotives, without invertors at the traction substations. Based on the above experience, an instruction for regenerative braking was developed which stipulates that the best speed for the regenerative braking is 45-55 km/hr. The regenerative braking is most stable when the traction motors are connected in parallel and voltages up to 4,000 v are possible. To avoid collapse of the regenerative braking, quick setting on the zero position of the engineman's controller handle is prohibited for locomotives operating under traction conditions.

L.A.Ch.

Card 1/1

VINOGRADOV, Yu.N.; DENISOV, O.B.; TRAYTEL'MAN, G.Ya.

Pressing particle boards with the use of slops concentrates.
Der.prom. 9 no.3:11-12 Mr '60. (MIRA 13:6)

1. Sibirskiy tekhnologicheskii institut.
(Hardboard)

VINOGRADOV, Yu.N.

Recuperation of electric power without using inverters. Elek. i
tepl. tiaga 2 no.1:30-31 Ja '58.' (MIRA 11:3)

1.Glavnyy inzhener lokomotivnogo depo Sverdlovsk-Sortirovochnyy.
(Electric railroads)

VINOGRADOV, Yu. N.; IVANTSEV, A. M., inzh.

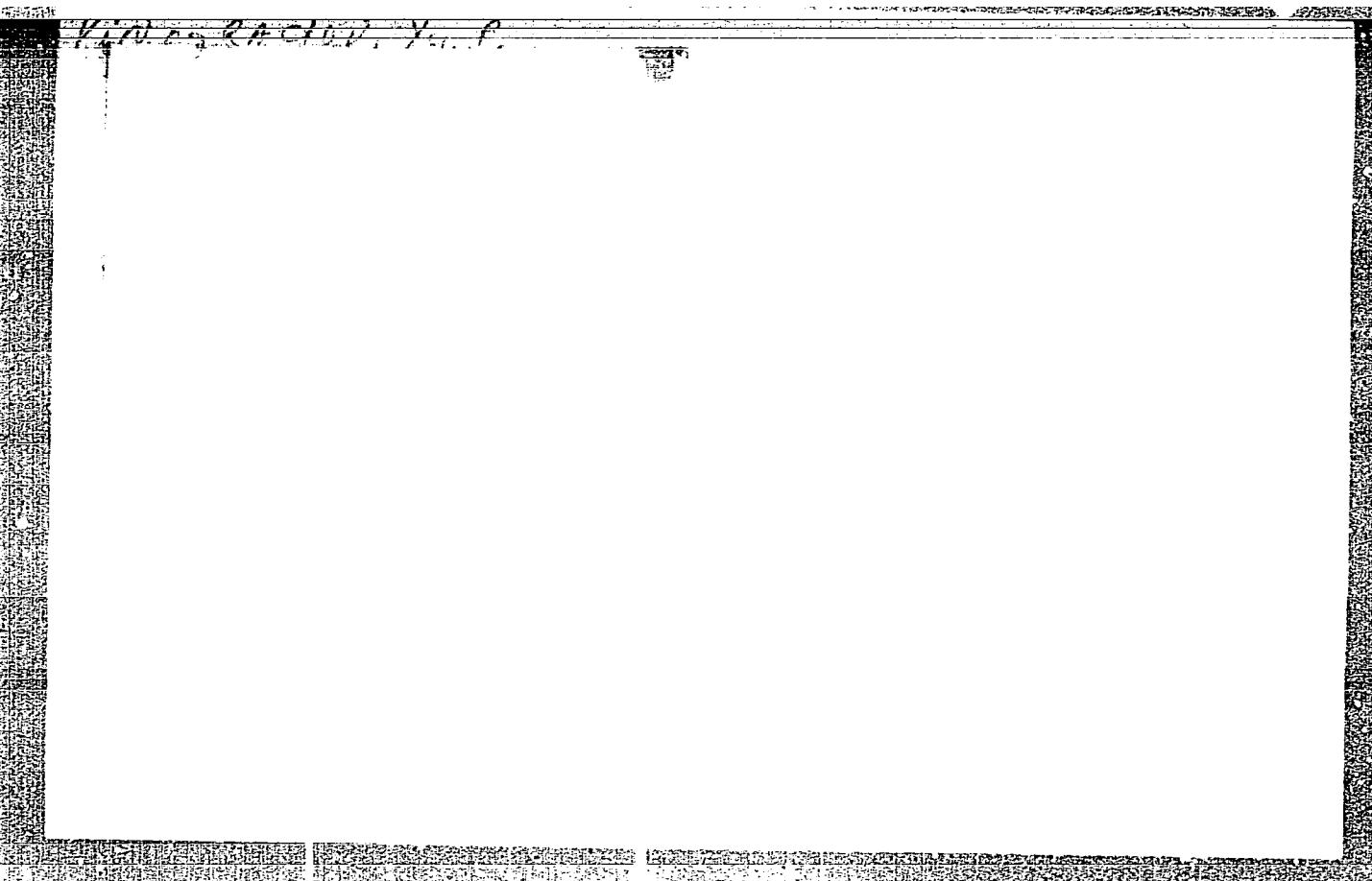
Device for measuring the pressure of the prongs of a brush holder. Elek. 1 tepl. tiaga 6 no.9:25-27 S '62.
(MIRA 15:10)

1. Rukovoditel' Ural'skogo otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya (for Vinogradov).

(Electric railway motors--Equipment and supplies)
(Brushes, Electric)

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859920015-1



APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001859920015-1"

VINOGRADOV, YU. P.

FA 53T88

USSR/Petroleum Industry
Oil Wells
Filtration

Aug 1947

"Some Frequent Solutions of Problems of Filtration,"
Yu. P. Vinogradov, P. P. Kufarev, Physical Engin
Inst, Tomsk State U imeni V. V. Kuybyshev, 32 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 4

Discusses specific cases of formulas for calculating
filtration in oil bores applied to filtration prob-
lems of wells. Submitted by Academician S. L.
Sobolev, 23 Feb 1947.

53T88

L 15742-63

EWT(d)/FCC(w)/BDS

AFFTC/IJP(C)

ACCESSION NR: AR3002682

8/0124/63/000/005/B139/B139

53

SOURCE: Rzh. Mekhanika, Abs. 5B851

AUTHOR: Vinogradov, Yu.P.

TITLE: Approximate solution of equations of the type of the equation of the filtration problem for some initial regions

CITED SOURCE: Uch. zap. Rostovsk.-n/D gos. ped. in-t. Fiz.-matem. fak. vyp. 6, 1961, 51-55

TOPIC TAGS: filtering, liquid, series solution, series, surface, boundary condition, differential equation

TRANSLATION: The solution of the filtering problem for a heavy liquid with a free surface reduces to the finding of the function $z(w, t)$, holomorphic with respect to w , and single sheeted for $|w| < 1$. The case is considered for boundary condition of the form

$$\operatorname{Re} \left[\frac{\partial z}{\partial t} w \frac{\partial z}{\partial w} + \alpha w \frac{\partial z}{\partial w} \right] = 1$$

Card 1/2

L 15742-63

ACCESSION NR: AR3002682

where α is small. The solution is presented in the form of a series, arranged according to the increasing degree of α , $z(w, t) = z_0(w, t) + \alpha z_1(w, t) + \alpha^2 z_2(w, t) \dots$. An approximate solution is obtained for the cases when the initial regions are the circle $|w| < 1$ and the strip in the center of the aperture is found at the point $w = 0$. I.F. Shelikhova

DATE ACQ: 14Jun63

SUB CODE: PH

ENCL: 00

Card 2/2

VINGRADOV, 170

... P. ...
... (Russia)
... some
... exist
... which ch
... to b
... interval
... the me
... occupi
... of the
... Med
... 90 (19
... 750-254
... C. R.
... 1945); the
... of a
... there
... inclusion
... boundary
... had been
... two me

S/044/62/000/001/015/061
C111/C444

AUTHOR: Vinogradov, Yu. P.

TITLE: On the solution of filtration problems for some initial domains

PERIODICAL: Referativnyy zhurnal. Matematika, no. 1, 1962, 30, abstract 1 B 142. (Uch. zap. Rostovsk. - n/D. gos. ped. in-t, 1960, vyp 5 (42), 73-77)

TEXT: Considered in the contraction of the contour of a mineral oil region. In the initial moment $t = 0$ the plane domain G_0 is filled with mineral oil and bounded by the contour $\Gamma(t_0)$; inside of G_0 there exists an oil well (drain). It is supposed that on the contour $\Gamma(t)$ and on the contour of the oil well there is a constant pressure given. The solution of the problem leads to the determination of a function $z(w, t)$ [$z(0, t) = z_0$] holomorphic with respect to w and schlicht for $|w| < 1$ which on the circle $|w| = 1$ satisfies the condition

$$w \frac{\partial z}{\partial t} \frac{\partial z}{\partial w} + \frac{1}{w} \frac{\partial z}{\partial t} \frac{\partial z}{\partial \bar{w}} = 2.$$

(1)

Card 1/2

On the solution of filtration ...

S/044/62/000/001/015/061
C111/C444

The function $z(w,0) = f_0(w)$ is given ; the point z_0 determines the centre of the oil well. It is proved that for some special initial domains G_0 the searched function $w(z,t)$ may be set up in the form

$$z(w,t) = a(t)w^2 + b(t)w + \frac{c(t)w}{c+1} + m_0 \ln \frac{1-\alpha(t)w}{1-\alpha(t)} + z_0(|\alpha(t)| = 1) \quad (2)$$

where $a(t)$, $b(t)$, $c(t)$ are functions of the time parameter t which takes real values; m_0 is a purely imaginary number. The problem leads to a certain system of ordinary differential equations for $a(t)$, $b(t)$, $c(t)$; the corresponding system of equations is obtained by substituting (2) into (1). Under some suppositions on $a(t)$, $b(t)$, $c(t)$, m_0 one obtains well-known special solutions of the general problem.

[Abstracter's note : Complete translation.]

Card 2/2

h1755

S/044/62/000/010/021/042
B166/B102

5.4407

AUTHOR: Vinogradov, Yu. P.

TITLE: Approximate solution to an equation of the type encountered in the filtration problem for certain initial domains

PERIODICAL: Referativnyy zhurnal. Matematika, no. 10, 1962, 26, abstract 10V129 (Uch. zap. Rostovsk.-n/D gos. ped. in-t. Fiz.-matem. fak., no. 6, 1961, 51 - 55)

TEXT: The solution of the filtration problem for a heavy liquid with a free surface can be reduced to finding a function $z(w, t)$ which is holomorphic with respect to w and one-sheeted when $|w| < 1$. The case examined is when the boundary condition has the form $\operatorname{Re} \left[\frac{\partial z}{\partial t} w \frac{\partial z}{\partial w} + \alpha w \frac{\partial z}{\partial w} \right] = 1, (1)$ where α is small. The solution is sought in the form of a power series of α : $z(w, t) = z_0(w, t) + \alpha z_1(w, t) + \alpha^2 z_2(w, t) + \dots$. An approximate solution is obtained for cases when the initial domains are a circle $|w| < 1$ and a strip (the center of the slit is located at point $w = 0$).
[Abstracter's note: Complete translation.]
Card 1/1

112-57-8-17597

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 8, p 244
(USSR)

AUTHOR: Vinogradov, Yu. P.

TITLE: Wraparound Antenna (Spiral'naya antenna)

PERIODICAL: Tekhn. televideniya (TV Engineering), 1956, Nr 19, pp 30-42

ABSTRACT: Bibliographic entry.

Card 1/1

VINOGRADOV, Yu.P.; KOLOSOV, I.N.

Bench drilling machine with pneumatic drives. Stan. 1 instr. 29
no.3:20 Mr '58. (MIRA 12:1)
(Drilling and boring machines)

VINOGRADOV, Yu. P.

Category : USSR / Radio Physics. Radiation of Radio Waves. Trans- I-5
mission Lines and Antennas

Abs Jour : Ref Zhur - Fizika No 3, 1957, No 7278

Author : Vinogradov, Yu. P.
Title : Helical Antenna

Orig Pub : Tekh. televideniya, 1956, vyp. 19, 30-42

Abstract : A method is proposed for calculating the directivity pattern of a helical antenna. The antenna is broken up into elementary dipoles, and its field is determined as the sum of the fields of the elementary dipoles. Expressions are derived for the components of the electric field intensity, which contain Anger functions. These expressions are valid for antennas with an integral number of turns n . It is indicated that if n is not an integer, the resulting expressions are quite cumbersome and contain along with the Anger function also the Weber function. An analysis is also made of the polarization characteristics of the antenna. The calculated directivity patterns are compared with the experimental ones

Card : 1/2

- 26 -

Category : USSR / Radio Physics. Radiation of Radio Waves. Transmission Lines and Antennas

I-5

Abs Jour : Ref Zhur - Fizika No 3, 1957, No 7278

for $\lambda = 23.3, 32.8, \text{ and } 37 \text{ cm}$. The antenna was made of copper tubing 8 mm in diameter, the inside diameter of the helix was 81 mm, and the shield was made of brass, 330 mm in diameter, with a center opening of 15 mm. The experimental diagrams turned out to be somewhat narrower (by approximately 5 percent) than the calculated ones, with the width of the directivity pattern varying by a factor of 1.3 over the band. The SWR of the antenna is greater than 0.75. Certain features of the matching of the antennas over a wide frequency range are also noted.

Card : 2/2

- 27 -

VINOGRADOV, Yu.S., dotsent, kand. tekhn. nauk

Critical analysis of the methods for determining unevenness
in textile products. Tekst. prom. 24 no.9:16-20 S '64.
(MIRA 17:11)

1. Ivanovskiy tekstil'nyy institut.

VINOGRADOV, Yu.S., dotsent

Need for a revision of the methods for determining unevenness in
textiles. Tekst. prom. 25 no.8:78-81 Ag '65. (MIRA 18:9)

1. Ivanovskiy tekstil'nyy institut imeni Frunze.

VINOGRADOV, Yuriy Sergeyevich; SEVOST'YANOV, A.G., prof., retsenzent;
NESHATAYEVA, N.M., red,

[Mathematical statistics and its application in the textile
industry to research] Matematicheskaya statistika i ee pri-
menenie k issledovaniyam v tekstil'noi promyshlennosti.

2. izd., perer. i dop. Moskva, Legkaia industriia, 1964.

319 p.

(MIRA 17:10)

VINOGRADOV, Yu.S., dotsent, kand. tekhn. nauk

"Methods for studying the unevenness of the products of spinning."
Reviewed by IU.S. Vinogradov. Tekst. prom. 24 no.7:84-86 J1 '64.

In foreign countries. Ibid.:81.

(MIRA 17:10)

1. Ivanovskiy tekstil'nyy institut.

VINOGRADOV, Yu.S., kand.tekhn.nauk

For a correct use of mathematical statistics in research. Tekst. prom.
18 no.3:64-66 Mr '58. (MIRA 11:3)
(Mathematical statistics) (Textile research)

VINOGRADOV, Yuriy Sergeyevich; BOYEV, G.P., professor, retsenzent; SOLOV'YEV, A.N., professor, retsenzent; SEVOST'YANOV, A.G., kandidat tekhnicheskikh nauk, retsenzent; ARKHANGEL'SKIY, S.S., redaktor; MEDVEDEV, L.Ya., tekhnicheskii redaktor

[Mathematical statistics and their application to studies in textile production] Matematicheskaya statistika i ee primeneniye k issledovaniyam v tekstil'nom proizvodstve. Moskva, Gos. nauchno-tekhn. izd-vo Ministerstva legkoi promyshl. SSSR, 1956. 260 p. (MIRA 10:1)
(Mathematical statistics)

VINGULADUN, Yuriy Sergeyevich

611.01
.77

MATEMATICHESKAYA STATISTIKA I YEYE PRIMENENIYE K ISSLEDOVANIYAM V TEKSTIL'
NON PROIZVODSTVE (MATHEMATICAL STATISTICS AND THEIR APPLICATION TO RESEARCH
IN THE MANUFACTURE OF TEXTILES) MOSKVA, GIZLEGPROM, 1956. 260 p. DIAG.S.,
TABLES. "LITERATURA": p.257

VINOGRADOV, Yu. S.

"On the Theory of Friction Transmissions." Sub 16 May 51, Inst of Machine
Science, Acad Sci URSS

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

SO: Sum. No. 480, 9 May 55

VINOGRADOV, Yu.S. (Ivanovo)

Consumer's satisfaction with goods for personal use dependent
on the number of standard sizes and other factors. Shvein.
prom. no.1:15-19 Ja-F '63. (MIRA 16:4)

(Clothing industry—Standards)
(Mathematical statistics)

*Applied Mechanics
Review*

*Soil Mechanics,
Supage*

1001. Yu. P. Vinogradov and P. P. Kudarev, On a problem of filtration (in Russian), Prikl. Mat. Mekh. 12, 181-188 (1948).

The following problem is considered. In an incompressible fluid, which fills some two-dimensional region G , that varies with the time t , there exists at a point $z = 0$ an overflow of magnitude $2\pi g(t)$ which changes with time. The velocity potential is assumed to be constant on the boundary C of G , during some interval of time. It is required to determine the nature of the motion and the shape of the region G , if the region G_0 occupied by the fluid at time $t = 0$ is given. On the basis of the results of P. J. Polubarinova-Kochina [Prikl. Mat. Mekh. 9, 79-80 (1945); C. R. Acad. Sci. USSR 47, 250-254 (1945)], and L. A. Chajn [C. R. Acad. Sci. USSR 47, 246-248 (1945)] this problem is reduced to the solution of a system of integrodifferential equations. A study of these equations permits the authors to draw certain conclusions on the existence and nature of the solution of a boundary-value problem to which the present problem had been reduced by Polubarinova-Kochina, and to develop two methods for the solution of the problem.

Courtesy of Mathematical Reviews H. P. Threlman, 1948

1960

VINOGRADOV, Yu.S.

Possibilities and prospects of the application of mathematical statistics in the problems of textile manufacture. Izv.vys.ucheb.zav.; tekhn. tekst.prom. no.3:150-155 '63. (MIRA 16:9)

1. Ivanovskiy tekstil'nyy institut imeni M.V.Frunze.
(Mathematical statistics) (Textile industry)

19

PROCESSES AND PROPERTIES

Use of sandstone with a high alumina content in the production of pane glass by the Fourcault method. Yu. I. Vinogradov and S. V. Kozlov. *Nekhot'saya Prom.* 15, No. 13 (1969). - The compn. of sandstone and problems confronting its use for glass manufacture according to the Fourcault method are dealt with. M. A. Comolov

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

1969-1970

1970-1971

1971-1972

1972-1973

1973-1974

1974-1975

1975-1976

1976-1977

1977-1978

1978-1979

1979-1980

1980-1981

1981-1982

1982-1983

1983-1984

1984-1985

1985-1986

1986-1987

1987-1988

1988-1989

1989-1990

1990-1991

1991-1992

1992-1993

1993-1994

1994-1995

1995-1996

1996-1997

1997-1998

1998-1999

1999-2000

2000-2001

2001-2002

2002-2003

2003-2004

2004-2005

2005-2006

2006-2007

2007-2008

2008-2009

2009-2010

2010-2011

2011-2012

2012-2013

2013-2014

2014-2015

2015-2016

2016-2017

2017-2018

2018-2019

2019-2020

2020-2021

2021-2022

2022-2023

2023-2024

2024-2025

2025-2026

2026-2027

2027-2028

2028-2029

2029-2030

2030-2031

2031-2032

2032-2033

2033-2034

2034-2035

2035-2036

2036-2037

2037-2038

2038-2039

2039-2040

2040-2041

2041-2042

2042-2043

2043-2044

2044-2045

2045-2046

2046-2047

2047-2048

2048-2049

2049-2050

2050-2051

2051-2052

2052-2053

2053-2054

2054-2055

2055-2056

2056-2057

2057-2058

2058-2059

2059-2060

2060-2061

2061-2062

2062-2063

2063-2064

2064-2065

2065-2066

2066-2067

2067-2068

2068-2069

2069-2070

2070-2071

2071-2072

2072-2073

2073-2074

2074-2075

2075-2076

2076-2077

2077-2078

2078-2079

2079-2080

2080-2081

2081-2082

2082-2083

2083-2084

2084-2085

2085-2086

2086-2087

2087-2088

2088-2089

2089-2090

2090-2091

2091-2092

2092-2093

2093-2094

2094-2095

2095-2096

2096-2097

2097-2098

2098-2099

2099-2100

2100-2101

2101-2102

2102-2103

2103-2104

2104-2105

2105-2106

2106-2107

2107-2108

2108-2109

2109-2110

2110-2111

2111-2112

2112-2113

2113-2114

2114-2115

2115-2116

2116-2117

2117-2118

2118-2119

2119-2120

2120-2121

2121-2122

2122-2123

2123-2124

2124-2125

2125-2126

2126-2127

2127-2128

2128-2129

2129-2130

2130-2131

2131-2132

2132-2133

2133-2134

2134-2135

2135-2136

2136-2137

2137-2138

2138-2139

2139-2140

2140-2141

2141-2142

2142-2143

2143-2144

2144-2145

2145-2146

2146-2147

2147-2148

2148-2149

2149-2150

2150-2151

2151-2152

2152-2153

2153-2154

2154-2155

2155-2156

2156-2157

2157-2158

2158-2159

2159-2160

2160-2161

2161-2162

2162-2163

2163-2164

2164-2165

2165-2166

2166-2167

2167-2168

2168-2169

2169-2170

2170-2171

2171-2172

2172-2173

2173-2174

2174-2175

2175-2176

2176-2177

2177-2178

2178-2179

2179-2180

2180-2181

2181-2182

2182-2183

2183-2184

2184-2185

2185-2186

2186-2187

2187-2188

2188-2189

2189-2190

2190-2191

2191-2192

2192-2193

2193-2194

2194-2195

2195-2196

2196-2197

2197-2198

2198-2199

2199-2200

2200-2201

2201-2202

2202-2203

2203-2204

2204-2205

2205-2206

2206-2207

2207-2208

2208-2209

2209-2210

2210-2211

2211-2212

2212-2213

2213-2214

2214-2215

2215-2216

2216-2217

2217-2218

2218-2219

2219-2220

2220-2221

2221-2222

2222-2223

2223-2224

2224-2225

2225-2226

2226-2227

2227-2228

2228-2229

2229-2230

2230-2231

2231-2232

2232-2233

2233-2234

2234-2235

2235-2236

2236-2237

2237-2238

2238-2239

2239-2240

2240-2241

2241-2242

2242-2243

2243-2244

2244-2245

2245-2246

2246-2247

2247-2248

2248-2249

2249-2250

2250-2251

2251-2252

2252-2253

2253-2254

2254-2255

2255-2256

2256-2257

2257-2258

2258-2259

2259-2260

2260-2261

2261-2262

2262-2263

2263-2264

2264-2265

2265-2266

2266-2267

2267-2268

2268-2269

2269-2270

2270-2271

2271-2272

2272-2273

2273-2274

2274-2275

2275-2276

2276-2277

2277-2278

2278-2279

2279-2280

2280-2281

2281-2282

2282-2283

2283-2284

2284-2285

2285-2286

2286-2287

2287-2288

2288-2289

2289-2290

2290-2291

2291-2292

2292-2293

2293-2294

2294-2295

2295-2296

2296-2297

2297-2298

2298-2299

2299-2300

2300-2301

2301-2302

2302-2303

2303-2304

2304-2305

2305-2306

2306-2307

2307-2308

2308-2309

2309-2310

2310-2311

2311-2312

2312-2313

2313-2314

2314-2315

2315-2316

2316-2317

2317-2318

2318-2319

2319-2320

2320-2321

2321-2322

2322-2323

2323-2324

2324-2325

2325-2326

2326-2327

2327-2328

2328-2329

2329-2330

2330-2331

2331-2332

2332-2333

2333-2334

2334-2335

2335-2336

2336-2337

2337-2338

2338-2339

2339-2340

2340-2341

2341-2342

2342-2343

2343-2344

2344-2345

2345-2346

2346-2347

2347-2348

2348-2349

2349-2350

2350-2351

2351-2352

2352-2353

2353-2354

2354-2355

2355-2356

2356-2357

2357-2358

2358-2359

2359-2360

2360-2361

2361-2362

2362-2363

2363-2364

2364-2365

2365-2366

2366-2367

2367-2368

2368-2369

2369-2370

2370-2371

2371-2372

2372-2373

2373-2374

2374-2375

2375-2376

2376-2377

2377-2378

2378-2379

2379-2380

2380-2381

2381-2382

2382-2383

2383-2384

2384-2385

2385-2386

2386-2387

2387-2388

2388-2389

2389-2390

2390-2391

2391-2392

2392-2393

2393-2394

2394-2395

2395-2396

2396-2397

2397-2398

2398-2399

2399-2400

2400-2401

2401-2402

2402-2403

2403-2404

2404-2405

2405-2406

2406-2407

2407-2408

2408-2409

2409-2410

2410-2411

2411-2412

2412-2413

2413-2414

2414-2415

2415-2416

2416-2417

2417-2418

2418-2419

2419-2420

2420-2421

2421-2422

2422-2423

2423-2424

2424-2425

2425-2426

2426-2427

2427-2428

2428-2429

2429-2430

2430-2431

2431-2432

2432-2433

2433-2434

2434-2435

2435-2436

2436-2437

2437-2438

2438-2439

2439-2440

2440-2441

2441-2442

2442-2443

2443-2444

2444-2445

2445-2446

2446-2447

2447-2448

2448-2449

2449-2450

2450-2451

2451-2452

2452-2453

2453-2454

2454-2455

2455-2456

2456-2457

2457-2458

2458-2459

2459-2460

2460-2461

2461-2462

2462-2463

2463-2464

2464-2465

2465-2466

2466-2467

2467-2468

2468-2469

2469-2470

2470-2471

2471-2472

2472-2473

2473-2474

2474-2475

2475-2476

2476-2477

2477-2478

2478-2479

2479-2480

2480-2481

2481-2482

2482-2483

2483-2484

2484-2485

2485-2486

2486-2487

2487-2488

2488-2489

2489-2490

2490-2491

2491-2492

2492-2493

2493-2494

2494-2495

2495-2496

2496-2497

2497-2498

2498-2499

2499-2500

2500-2501

2501-2502

2502-2503

2503-2504

2504-2505

2505-2506

2506-2507

2507-2508

2508-2509

2509-2510

2510-2511

2511-2512

2512-2513

2513-2514

2514-2515

2515-2516

2516-2517

2517-2518

2518-2519

2519-2520

2520-2521

2521-2522

2522-2523

2523-2524

2524-2525

2525-2526

2526-2527

2527-2528

2528-2529

2529-2530

2530-2531

2531-2532

2532-2533

2533-2534

2534-2535

2535-2536

2536-2537

2537-2538

2538-2539

2539-2540

2540-2541

2541-2542

2542-2543

2543-2544

2544-2545

2545-2546

2546-2547

2547-2548

2548-2549

2549-2550

2550-2551

2551-2552

2552-2553

2553-2554

2554-2555

2555-2556

2556-2557

2557-2558

2558-2559

2559-2560

2560-2561

2561-2562

2562-2563

2563-2564

2564-2565

2565-2566

2566-2567

2567-2568

2568-2569

2569-2570

2570-2571

2571-2572

2572-2573

2573-2574

2574-2575

2575-2576

2576-2577

2577-2578

2578-2579

2579-2580

2580-2581

2581-2582

2582-2583

2583-2584

2584-2585

2585-2586

2586-2587

2587-2588

2588-2589

2589-2590

2590-2591

2591-2592

2592-2593

2593-2594

2594-2595

2595-2596

2596-2597

2597-2598

2598-2599

2599-2600

2600-2601

2601-2602

2602-2603

2603-2604

2604-2605

2605-2606

2606-2607

2607-2608

2608-2609

2609-2610

2610-2611

2611-2612

2612-2613

2613-2614

2614-2615

2615-2616

2616-2617

2617-2618

2618-2619

2619-2620

2620-2621

2621-2622

2622-2623

2623-2624

2624-2625

2625-2626

2626-2627

2627-2628

2628-2629

2629-2630

2630-2631

2631-2632

2632-2633

2633-2634

2634-2635

2635-2636

2636-2637

2637-2638

2638-2639

2639-2640

2640-2641

2641-2642

2642-2643

2643-2644

2644-2645

2645-2646

2646-2647

2647-2648

2648-2649

2649-2650

2650-2651

2651-2652

2652-2653

2653-2654

2654-2655

2655-2656

2656-2657

2657-2658

2658-2659

2659-2660

2660-2661

2661-2662

2662-2663

2663-2664

2664-2665

2665-2666

2666-2667

2667-2668

2668-2669

2669-2670

2670-2671

2671-2672

2672-2673

2673-2674

2674-2675

2675-2676

2676-2677

2677-2678

2678-2679

2679-2680

2680-2681

2681-2682

2682-2683

2683-2684

2684-2685

2685-2686

2686-2687

2687-2688

2688-2689

2689-2690

2690-2691

2691-2692

2692-2693

2693-2694

2694-2695

2695-2696

2696-2697

2697-2698

2698-2699

2699-2700

2700-2701

2701-2702

2702-2703

2703-2704

2704-2705

2705-2706

2706-2707

2707-2708

2708-2709

2709-2710

2710-2711

2711-2712

2712-2713

2713-2714

2714-2715

2715-2716

2716-2717

2717-2718

2718-2719

2719-2720

2720-2721

2721-2722

2722-2723

2723-2724

2724-2725

2725-2726

2726-2727

2727-2728

2728-2729

2729-2730

2730-2731

2731-2732

2732-2733

2733-2734

2734-2735

2735-2736

2736-2737

2737-2738

2738-2739

2739-2740

2740-2741

2741-2742

2742-2743

2743-2744

2744-2745

2745-2746

2746-2747

2747-2748

2748-2749

2749-2750

2750-2751

2751-2752

2752-2753

2753-2754

2754-2755

2755-2756

2756-2757

2757-2758

2758-2759

2759-2760

2760-2761

2761-2762

2762-2763

2763-2764

2764-2765

2765-2766

2766-2767

2767-2768

2768-2769

2769-2770

2770-2771

2771-2772

2772-2773

2773-2774

2774-2775

2775-2776

2776-2777

2777-2778

2778-2779

2779-2780

2780-2781

2781-2782

2782-2783

2783-2784

2784-2785

2785-2786

2786-2787

2787-2788

2788-2789

2789-2790

2790-2791

2791-2792

2792-2793

2793-2794

2794-2795

2795-2796

2796-2797

2797-2798

2798-2799

2799-2800

2800-2801

2801-2802

2802-2803

2803-2804

2804-2805

2805-2806

2806-2807

2807-2808

2808-2809

2809-2810

2810-2811

2811-2812

2812-2813

2813-2814

2814-2815

2815-2816

2816-2817

2817-2818

2818-2819

2819-2820

2820-2821

2821-2822

2822-2823

2823-2824

2824-2825

2825-2826

2826-2827

2827-2828

2828-2829

2829-2830

2830-2831

2831-2832

2832-2833

2833-2834