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characteristics of a single shaft turbo-fan engine permit only a small degree of throttling due to limitations in the operation of the engine, namely, the appearance of surging in the main flow compressor (with constant geometry and constant temperature laws), exhausting the expansion capability of the final jet nozzle of the main flow and reaching the limiting gas temperature at turbine inlet. 2. With the constant geometry and constant speed laws, throttling is accompanied by a continuous increase in the degree of by-pass so that a higher turbine inlet temperature is required compared with the simple turbo-jet engine. Surging of the main flow compressor may occur. 3. Throttling a turbo-fan engine leads to a progressive increase of the fan thrust and the operation of the engine gradually moves away from the optimum. 4. The relative increase in the turbine inlet temperature and in the pressure ratio of the outer flow compressor leads to a decline in efficiency at part load. 5. Raising the speed and altitude of flight improves the throttling characteristics of the turbo-fan engine by widening the range of safe operation. 6. The most appropriate regulating law is that of constant geometry.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.G.

Using a three-wire power supply system for streetcars. Sbor. nauch.rab.AKKH no.13:18-24 '62. (MIRA 16:4)
(Streetcars) (Electric currents, Leakage)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

TOMLYANOVICH, D.K.; SMIRNOV, A.G.

Methods of making electric computations for the power supply system of streetcars and trolley buses with parallel feed to the contact network. Sbor.nauch.rab.AKKH no.13:25-48 '62. (MIRA 16:4)

(Streetcars) (Trolley buses)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

VARFAKHOVSKIY, A.S.; DYATLOV, V.V.; KUZ'MKO, I.T.; MIKHEL'SON, G.S.; SMIRNOV, A.G.; KOMONOV, A.S., red.

[Elements of contactless remote control systems] Elementy beskontaktnykh sistem telemekhaniki. Moskva, TSentr. nauchno-tekhn. informatsii Gos.proizvodstvennogo kom-ta po gazovoi promyshl. SSSR, 1963. 16 p. (MIRA 17:11)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

USSR

ACCESSION NR: AP4002992 S/0286/63/000/018/0089/0089

AUTHOR: Kiperman, S. Ya.; Grigor'yev, B. V.; Smirnov, A. G.; Filippov, A. V.; Ivanov, G. F.; Lur'ye, V. S.; Tsy*plukhin, P. G.

TITLE: Method of electrolytic machining of bodies of revolution, Class 49, No. 157598

SOURCE: Byul. izobret. i tovarn. znakov, no. 18, 1963, 89

TOPIC TAGS: electrolytic machining, band cathode, cathode tool, body of revolution

ABSTRACT: A method of electrolytic machining of bodies of revolution by a moving ribbon cathode. The distinguishing feature is increased capacity. The blank connected to the anode is mounted, for example, in centers and, turning about the axis is machined by lengthwise and crosswise transmission onto the ribbon.

ASSOCIATION: none

SUBMITTED: 21Apr62 DATE ACQ: 13Dec63 ENCL: 00

SUB CODE: IE, ML NO REF SOV: 000 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.G., inzh.

Comparative evaluation of the capacity of drilling rigs. Nauch. zap. Ukrniiproekta no.2:133-140 '60. (MIRA 15:1)
(Boring machinery)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

KAMYSHKOV, A.S., kand.tekhn.nauk; PETRAKOV, A.F., inzh.; ANTONOV, Ye.G., inzh.; SMIRNOV, A.G., inzh.

Use of 25KhSNVFA high-strength steel for high-pressure vessels. (MIRA 16:2)
Svar.proizv. no.1:33-34 Ja '63.
(Chromium-nickel steel—Welding)
(Pressure vessels—Welding)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. G. (Engineer)

"Automatic welding of steel No. 25 SkhNVFA with accompanying induction heating". As a result of increasing the time, the metal of the seam zone remains at the optimum temperature prevents appearance of coarse martensite structures in this zone and accordingly increases plasticity.

Report presented at the regular conference of the Moscow city administration NTO Mashprom, April 1963.
(Reported in Avtomaticheskaya Svarka, No. 8, August 1963, pp 93-95, M. M. Popekhin)

JPRS24,651 - 19 May 64

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 17349-63 EWP(k)/EWP(q)/EWT(m)/BDS AFFTC Pf-4 JD/HM

ACCESSION NR: AP3006477 S/0135/63/000/009/0004/0007

64

AUTHOR: Lyubavskiy, K. V. (Dr. of technical sciences, Prof.); Smirnov, A. G. (Engineer); Antonov, Ye. G. (Engineer); Yakovlev, V. A. (Cand. of technical sciences); Dubrovskiy, S. M. (Engineer); Ly*kova, Z. V. (Engineer)

TITLE: Automatic welding of 25KhSNVFA steel with induction post-heating

18 16

SOURCE: Svarochnoye proizvodstvo, no. 9, 1963, 4-7

TOPIC TAGS: high strength pearlitic 25KhSNVFA steel, carbon dioxide shielded automatic welding, automatic submerged arc welding, weld metal ductility, weld metal strength, weld metal notch toughness, weld metal microstructure, induction postheating, postheating effect, combined welding postheating unit, high pressure vessel welding

ABSTRACT: Heat-treated (hardened and tempered) 25KhSNVFA pearlitic high-strength steel [0.23—0.25% C; 0.5—0.8% Mn; 0.9—1.2% each of

Card 1/3

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 17349-63

ACCESSION NR: AP3006477

0

Si, Cr, and Ni; 0.5—1.0% W, 0.05—0.15% V] sheets were welded with a carbon dioxide shielded arc and Sv-08G2S electrode wire without backup. Annealed plates 6 mm thick were submerged-arc-welded with 20KhSNVFA electrode wire and AN-15 flux [23.5% SiO_2, 21.0% Al_2O_3, 1.0% Fe_2O_3, 14.0% CaO, 9.3% MgO, 2.7% MnO, 21.3% CaF_2, 0.03% P, 0.03% S] using a copper backup plate. All welds were single-pass square-butt welds. Induction postheating was applied with an induction heater rigidly attached to the welding head at a distance of 350 or 500 mm. This distance was found experimentally and determined the weld temperature at which postheating was applied — 620K, about 20K higher than the M_s point. The heater length, 300 or 450 mm, determined duration of heating, 60 or 90 sec; the postheating temperature was 770—920K for heat-treated steel welds and 970K for annealed steel welds. It was found that in welding hardened or annealed steel, the induction postheating significantly increased the ductility of the weld metal without decreasing the strength of the joint. For example, the tensile strength of the postheated joints of heat-treated 25KhSNVFA steel plates welded with a CO_2 shielded arc varied between 112 and 120 kg/mm^2, the

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L 17349-63

ACCESSION NR: AP3006477

bend angle, between 50 and 82°, and the notch toughness, between 5 and 6 mkg/cm^2, compared to 117—121 kg/mm^2, 44—52°, and 3.4—4.2 mkg/cm^2 for welds not postheated. The induction-heated zone adjacent to the weld consisted of martensite, bainite, and pearlite instead of the coarse acicular martensite formed in welds without postheating. This technique has been successfully employed to fabricate industrial high-pressure vessels from 25KhSNVFA steel. The vessels consisted of three cylindrical shells with a wall thickness of 6 mm and two hemispherical end closures formed of 8 mm-thick plate welded to the cylindrical portion. The closures had welded-in central pipe connections. All welds were made with a submerged arc from both sides using 20KhSNVFA filler wire and AN-15 flux. Separate welding units with induction heaters fed by a current at 2500 cps were used for making the longitudinal, circumferential, and circular welds. Orig. art. has: 9 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 30Sep63 ENCL: 00

SUB CODE: MA NO REF SOV: 002 OTHER: 000

Card 3/3

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 40290-65 EWT(d)/EPA(s)-2/EWT(m)/EWP(c)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(c) Pf-4 JD/HM

ACCESSION NR: AP5002885 S/0135/65/000/001/0013/0017

30
28
B

AUTHOR: Smirnov, A. G. (Engineer); Lyubavskiy, K. V. (Doctor of technical sciences)

TITLE: Modeling of thermal welding cycles

SOURCE: Svarochnoye proizvodstvo, no. 1, 1965, 13-17

TOPIC TAGS: welding, thermal welding cycle, thermal cycle modeling, weld testing, weld strength

ABSTRACT: After discussing various drawbacks of the existing methods for testing the reaction of metals to thermal cycles (cylindrical sample method, IMET-1 machine method (M. Kh. Shorshorov, G. N. Klebanov, VINITI, No. M-57-134/12, 1957), modified IMET-I method (K. V. Lyubavskiy, Yu. M. Nikitin, Avtomaticheskaya svarka, 1960, no. 7), and the micromechanical method (I. M. Roytman, Ya. B. Fridman, Mikromekhanicheskiy metod ispytaniya metallov, Oborongiz, 1950)), the authors propose a new method in which models are electrically heated according to given thermal cycles. Samples are subsequently cut from the models and subjected to mechanical testing. Samples were heated by means of the standard welding machine MTP-75 coupled to the PIT-50 interrupter which can handle a wide range of sample shapes. Re-

Card 1/2

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 40290-65

ACCESSION NR: AP5002885

2

sults from modeling samples agreed very well with data from the cut of an actual welding joint. "N. I. Nikolayev and N. P. Zenin participated in the development of the method." Orig. art. has: 9 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 01467-66 EWT(1)/EWP(m), EPA(s)-2/EPA(w)-2/T-2/EWA(m)-2 IJP(c)

ACCESSION NR: AP5016656 UR/0382/65/000/002/0089/0091
538.4

AUTHOR: Pekhteleva, N. I.; Smirnov, A. G.

TITLE: Electrolyte hydrodynamics with electrochemical processes in the rectangular bath with flat electrodes in a constant magnetic field

SOURCE: Magnitnaya gidrodinamika, no. 2, 1965, 89-91

TOPIC TAGS: electrolyte, MHD flow, hydrodynamics, magnetic field, gravitation effect

ABSTRACT: The influence of longitudinal and transverse constant magnetic field on the hydrodynamic behavior of an electrolyte undergoing electrochemical processes in a tub with non-conducting walls is investigated. Several cases are investigated where the strength of electric and magnetic fields and their relative orientations are varied. A $CuSO_4$ electrolytic cell was used in this study. It is found that gravitation has an effect on the flow as well as direction of the magnetic field which can help or retard the flow. Orig. art. has: 1 formula, 3 figures.

ASSOCIATION: none

SUBMITTED: 27Jan65 ENCL: 00 SUB CODE: EM, ME

NO REF SOV: 005 OTHER: 000

Card 1/1

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 50332-65 EPA(s)-2/EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c)
Pf-4 MJW/JD/HM UR/0135/65/000/005/0005/0008
ACCESSION NR: AP5012640

AUTHOR: Smirnov, A. G. (Engineer); Lyubavskiy, K. V. (Doctor of technical sciences)

TITLE: Investigation of the heat-affected zone in the 25KhSNVFA and VL-1D steels

SOURCE: Svarochnoye proizvodstvo, no. 5, 1965, 5-8

TOPIC TAGS: complex alloy steel, high strength structural steel, steel welding, steel weld, weld zone, zone property, heat affected zone/25KhSNVFA steel, VL 1D steel

ABSTRACT: The effect of welding on the mechanical properties of the heat-affected zone of 25KhSNVFA (0.27% C, 0.57% Mn, 1.12% Si, 1.05% Cr, 1.03% Ni, 0.82% W, 0.15% V, 0.17% Cu) and VL-1D (0.32% C, 1.10% Mn, 1.03% Si, 1.63% Cr, 1.18% Ni, 1.17% W, 0.42% Mo) steel have been investigated. The steels were subjected to heat treatment under conditions imitating those which occur in automatic CO_2 shielded arc welding: heating to 400—1350C at a rate varying from 25 to 800 C/sec, and cooling at rates determined for different points of the heat-affected zone of a real welded joint. The room-temperature properties of 25KhSNVFA steel were not affected by rapid heating to 500C, whereas the properties of VL-1D steel deteriorated with heating to 400C. Thermal cycles with heating to 500—750C progres-

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

ACCESSION NR: AP5012640

sively decreased the strength and increased the ductility of hardened and tempered steels. In annealed steels, the changes in properties were insignificant. The weakened metal zone was 4 mm from the fusion line and was 3—4 mm wide. Thermal cycles with heating above 750C increased the strength and decreased the ductility of both steels, not only near the weld, but also in the region of partial austenization. Under conditions of the welding cycle, the austenitic transformation in both steels occurred at appreciably higher temperatures than under conditions of furnace heat treatment. The coarse ferritic-pearlitic structure transformed at higher temperatures than did the fine-grained sorbite structure. The ferritic-pearlitic structure of the VL-1D steel transforms completely at a higher temperature than that of 25KhSNVFA, probably because of a higher alloying of the former. In annealed 25KhSNVFA steel, the welding cycles with heating to 910—1350C produce roughly the same amount of residual austenite. Orig. art. has: 4 figures and 3 tables. [MS]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 006 OTHER: 000 ATD PRESS: 4006

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 2130-66 EWT(m)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) MJW/JD/HM

ACC NR: AP5022344 SOURCE CODE: UR/0135/65/000/009/0001/0005

AUTHOR: Smirnov, A. G. (Engineer); Lyubavskiy, K. V. (Doctor of technical sciences)

44,55 44,55

ORG: none

TITLE: Post-heating in welding of 25KhSNFVA steel

31
B

SOURCE: Svarochnoye proizvodstvo, no. 9, 1965, 1-5

TOPIC TAGS: super strength steel, steel welding, automatic welding, weld heat treatment, weld metal property/25KhSNVFA steel

ABSTRACT: Experiments have been made to determine the optimum conditions for welding hardenable steels, specifically 25KhSNVFA steel, which would ensure the best combination of mechanical properties and prevent cold cracking. The experiments consisted of simulating the heat cycles which occur in the weld and heat-affected zone of 25KhSNVFA steel sheets (2.2 mm thick) during automatic CO_2 shielded-arc welding. Specimens were rapidly cooled to 20—450C and then reheated to 400 or 600C, held at these temperatures for 75—180 sec, and air cooled. The best results were obtained with onset of heating at 400C and maintaining this temperature for 120 sec. The initial condition of the steel structure (annealed or hardened and tempered) had no effect on the properties of the heat-affected zone of 25KhSNVFA steel. In actual welding of hardened and tempered 25KhSNVFA steel, the metal in the heat-affected zone had a tensile strength of about 125 kg/mm^2, a bend angle of 120 deg, an elongation of 11%, a notch toughness of

Card 1/2 UDC: 621.791.011:669.15-194

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 2130-66

ACC NR: AP5022344

about 7.5 kgm/cm^2, and a cyclic strength of $3.6 \cdot 10^3$ cycles at a stress of 87.5 kg/mm^2. Post-heating, in which isothermal holding takes place at 500—700C, lowered the ductility of the 25KhSNVFA steel in the heat-affected zone. Orig. art. has: 8 figures. [MS]

SUB CODE: MM, IE/ SUB DATE: 00 / ORIG REF: 004/ OTH REF: 000/ ATD PRESS: 4122

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 50736-65

ACCESSION NR: AP5015321

ASSOCIATION: Organizatsiya gosydarstvennogo komiteta po oboronnoy tekhnike SSSR (Organization of the State Committee for Defense Technology SSSR)

SUBMITTED: 29Jun64 ENCL: 01 SUB CODE: IE, PR

NO REF SOV: 000 OTHER: 000

Card 2/3

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 22456-66 EWT(d)/EWT(m)/EWT(v)/T/EWT(t)/EWT(k)/EWP(h) IJP(c) JD/WW 4C

ACC NR: AP6006332 (N) SOURCE CODE: UR/0413/66/000/002/0056/0057

AUTHOR: Yakovlev, V. A.; Dubrovskiy, S. M.; Lykova, Z. V.; Berman, A. S.; Lyubavskiy, K. V.; Antonov, Ye. G.; Smirnov, A. G.; Makhanev, V. I.; Vesenko, N. V.

ORG: none

TITLE: Device for automatic welding of hardening steels. Class 21, No. 177981

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 56-57

TOPIC TAGS: automatic welding, induction welding, steel

ABSTRACT: An Author Certificate has been issued for a device for automatic welding of hardening steels. The device consists of an automatic welder and an inductor. To make it possible to control the heating rate, the welder and conductor have a movable interconnection which can by adjusted by a screw or a rod. [LD]

SUB CODE: 13/ SUBM DATE: 31Jan63/ ORIG REF: none/ OTH REF: none/

Card 1/1 UDC: 621.791.037:621.078.012

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

BRUK, E.S.; GOL'BERG, I.G.; SMIRNOV, A.I.

Unit for electroplating. Mashinostroitel' no.6:26 Je '61. (MIRA 14:6)

(Electroplating—Equipment and supplies)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

GRIGOR'YEV, A.V.; ZALUTSKAYA, T.L.; PECHEREY, L.Ye.; SMIRNOV, A.I.

Errors of coaxial calorimeter-type power measuring device due to unequivalent heat losses. Trudy inst. Kom. stand., mer i izm. prib. no.53:10-20 '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.
(Microwaves) (Electric measurements)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

PHASE I BOOK EXPLOITATION SOV/4396

Akademiya nauk SSSR. Energeticheskiy institut

Konvektivnyy i luchistyy teploobmen (Convection and Radiation Heat Exchange) Moscow, Izd-vo AN SSSR, 1960. 254 p. Errata slip inserted. 3,200 copies printed.

Ed.: M.A. Mikheyev, Academician; Ed. of Publishing House: G.B. Gorshkov; Tech. Ed.: V.V. Brusgul'.

PURPOSE: The book is intended for scientists and engineers working in various branches of science and industry concerned with thermodynamics and heat transfer problems.

COVERAGE: The book consists of 19 original articles on various problems in thermodynamics. The following subjects are discussed: mechanism of heat transfer processes, intensification of heat exchange, determination of thermophysical properties of operating media, heat transfer in supersonic flow of gas, and combustion chambers and nuclear reactors. Theory and experimental techniques are described. Each article describes the conditions of the experiment and tables of the experimental data obtained are given. The data may be used for calculations of heat transfer and heat exchangers, always taking account of

Mikheyev, M.A., S.S. Filimonov, and B.A. Khrustalev. Investigation of Heat Exchange and Hydraulic Resistance of Water Moving in Pipes 33

Pchelkin, I.M. Heat Transfer in Vertical Pipes in Natural Convection 56

Alad'yev, I.T., and L.D. Dodonov. Critical Thermal Currents in Boiling Underheated Water in Channels of Complex Form (100 ata pressure) 65

Alad'yev, I.T., L.D. Dodonov, and V.S. Udalov. Experimental Data on Heat Transfer in Bubbling Boiling of Underheated Water in Pipes 79

Usmanov, A.G. Generalization of Experimental Data on Viscosity and Heat Conductivity of Liquid Metals 97

Adrianov, V.N., and S.N. Shorin. Investigation of the Process of Combined Heat Exchange in a Combustion Chamber 107

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Dul'nev, G.N. Theory of the Heat Regime of Some Constructions of Radioelectronic Installations 150

Dul'nev, G.N., G.P. Pokrovskaya, and A.I. Smirnov. Engineering Method for Calculating the Heat Regime of Radioelectronic Equipment 161

Baum, V.A. Thermal Modeling of the Heat-Producing Elements of an Atomic Reactor 176

Usmanov, A.G., and A.I. Zereshnoy. Investigation of Molecular and Thermic Diffusion by the Similarity Method 188

Minashin, V.Ye., V.I. Subbotin, P.A. Ushakov, and A.A. Shalakhov. Measuring Error Connected With the Distortion of Isotherms in the Region of the Location of Thermocouples 205

Filimonov, S.S., and B.A. Khrustalev. Calculation of Heat Exchange and Hydraulic Resistance in Laminar Motion of Fluids in Pipes 221

Alad'yev, I.T. Heat Transfer in Bubbling Boiling 233

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

30046
S/046/61/007/004/001/014
B139/B102

6.8000 (1031,1063,1159)

AUTHORS: Gershman, S. G., Smirnov, A. I., Tuzhilkin, Yu. I.

TITLE: Converter for obtaining the correlation function of infrasonic processes

PERIODICAL: Akusticheskiy zhurnal, v. 7, no. 4, 1961, 415-420

TEXT: A device is described for the conversion of infrasonic signals to the frequency range of the sound correlometer. The traditional modulation method with filtering out one side band cannot be applied since the side bands in the infrasonic range are too close to one another. In the device described both side bands of the amplitude-modulated spectrum are used and filtering is not applied. Signals with spectra from a frequency of 0 cps onward are converted. The device consists of a heterodyne (1) of the frequency 7.5 kc/sec and two analogous channels, each with an input amplifier (2), a phase-difference modulator (3), a filter (6900 - 8100 cps)(4), and an output amplifier (5).

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

30046
S/046/61/007/004/001/014
Converter for obtaining the correlation ... B139/B102

AN SSSR (Acoustics Institute AS USSR). A considerable advantage of the heterodyne converter is the possibility of converting signals with a constant component. In connection with this converter, the correlometer becomes a universal device for determining the correl ation of signals from lowest infrasonic to highest ultrasonic frequencies. There are 8 figures and 3 Soviet references.

ASSOCIATION: Akusticheskiy institut AN SSSR Moskva (Acoustics Institute AS USSR, Moscow)

SUBMITTED: May 20, 1961

Card 3/3

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

S/169/61/000/005/042/049
A005/A130

Recording the intensity of atmospherics ...

point out a possible connection between these effects and solar processes proceeding prior to the beginning of flare development in the Hα-line.

Authors' summary

[Abstractor's note: Complete translation.]

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

POSTNIKOV, N.N.; FRENKEL', M.G.; YEVZLINA, B.B.; SMIRNOV, A.I.; PLOTNIKOVA, V.I.

Composition and properties of defluorinated phosphates. Zhur. prikl. khim. 31 no.10:1453-1460 O '58. (MIRA 12:1)
(Phosphates)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., inzh.; FEL'DBLYUM, B.I., inzh.

Over-all inspection of crane equipment. Bezop.truda v prom. 2 no.10:14-15 O '58. (MIRA 11:11)

1. Upravleniye TSentral'nogo okruga Gosgortekhnadzora RSFSR.
(Cranes, derricks, etc.--Safety measures)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Automatization and modernization of equipment. Mashinostroitel' no.2:11-14 F '57. (MLRA 10:5)

1. Zavod "Frezer."
(Automatic control) (Machine tools)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., inzh.

On V.S.Bondarenko's article "Improve the inspection of boiler units." Bezop.truda v prom. 3 no.5:20-21 My '59. (MIRA 12:8)

1. Upravleniye TSentral'nogo okruga Gosgortekhnadzora RSFSR.
(Boiler inspection)
(Bondarenko, V.S.)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

DOBROVOL'SKIY, Aleksandr Petrovich; ROZENFEL'D, L.M., doktor tekhn. nauk, prof., retsenzent; SMIRNOV, A.I., inzh., retsenzent; SELIVANOV, K.I., nauchnyy red.; OZEROVA, Z.V., red.; TSAL, R.K., tekhn. red.

[Refrigerating installations on ships] Sudovye kholodil'nye ustanovki. Leningrad, Sudpromgiz, 1962. 390 p. (MIRA 15:5)
(Refrigeration on ships)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Replacing the suspended ceiling over operating papermaking machines. Bum.prom. 35 no.1:22-23 Ja '60. (MIRA 13:6)

1. Nachal'nik remontno-stroitel'nogo otdela Balakhninskogo kombinata.
(Balakhna--Paper industry--Equipment and supplies)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

YEFIFANOV, Boris Yefimovich, dotsent; IONOV, Boris Dmitriyevich, dotsent; KORUNOV, M.M., prof., retsenzent; SHCHELKUNOV, V.V., dotsent, retsenzent; SHCHENNIKOV, P.N., dotsent, retsenzent; SMIRNOV, A.I., dotsent, red.; PITERMAN, Ye.L., red.izd-va; VDOVINA, V.M., tekhn.red.

[Road-building machinery in the forest industries and principles of road building] Dorozhno-stroitel'nye mashiny v lesnoi promyshlennosti i osnovy dorozhnogo dela. Moskva, Goslesbumizdat, 1961. 376 p. (MIRA 14:12)

1. Ural'skiy lesotekhnicheskiy institut (for Korunov). 2. Arkhangel'skiy lesotekhnicheskiy institut (for Shchelkunov).
(Road machinery) (Wood-using industries)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

Pa 253T12

USSR/Medicine - Listerellosis
Virus Diseases

May 53

"The Problem of the So-Called Atypical Form of Tick Encephalitis," Ye. N. Pavlovskiy, A. I. Smirnov, A. N. Shapoval, K. P. Chagin, I. V. Ryzhov, Military Med Acad imeni S. M. Kirov

Zhur Mikro, Epid, i Immun, No 5, pp 41-46

Investigation of cases of infection with the so-called atypical tick encephalitis or 2-stage ("2-wave") memingoencephalitis showed that the disease in question is not transmitted by ticks and that it is actually listerellosis.

253T12

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Experimental data on diagnositic significance of serological reactions in listerellosis. Zhur.mikrobiol.epid. i immun. 29 no.7:75-79 Jl'58 (MIRA 11:8)

1. Iz kafedry mikrobiologii i kafedry obshchey biologii i parazitologii Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(LISTERIA, infections
serodiag. in exper. animals (Rus))

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

MIKHAYLIN, Ivan Ivanovich; SMIRNOV, Anatoliy Ivanovich, inzh.; SHNEYDERMAN, K.A., red.; ABRAMOVA, Ye.A., tekhn.red.

[Swine plant; mechanized fattening center of the "Donsvinovod" State Farm] Fabrika svininy; mekhanizirovannyi otkormochnyi punkt sovkhoza "Donsvinovod". Rostov-na-Donu, Rostovskoe knizhnoe izd-vo, 1960. 30 p. (MIRA 14:12)

1. Direktor sovkhoza "Donsvinovod", Mechetinskogo rayona (for Mikhaylin).

(Swine)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; TSOKANOVA, T.G.; BONDARENKO, Ye.M.; NOVOGRENKO, N.M.; DOROFEYEV, B.G.

Heat transfer of type SF-80 and LF-9B tape-wound resistors with air cooling. Sbor. nauch. trud. EINII 2:205-212 '62. (MIRA 16:8)

(Electric resistors--Cooling)
(Heat--Transmission)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

ALTAYEV, Sh.A.; MUKUSHEV, M.N.; SMIRNOV, A.I.; POPOV, Yu.G.; NOVIKOV, V.Ya.

Analysis of coal losses in Karaganda Basin mines and ways of curtailing them. Nauch. trudy KNIUI no.14:50-62 '64. (MIRA 18:4)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

"The Method of Scarification in the Campaign Against Foot-and-Mouth Disease". Vestn. sovren. veterin., 1930, 1929.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

"Treatment of Dictyocaulosis Complication in Calves," Veterinariya, 23, Nos. 5-6, 1946

Chief veterinarian, Sysol'sk Rayon, Komi ASSR

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I. (Asst., Kiev Veterinary Inst)

"The Influence of the Weight and Age of Heifers during their First Fertile Impregnation on their Further Productivity".

Report given at 13th Inter-VUZ (Higher Educational Insts.) Scientific-Industrial Conference, held February 1956 at Kiev Vet Inst.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

Country : USSR
Category : Farm Animals. Q-2
Cattle.
Abs. Jour : Ref Zhur-Biol., No 16, 1958, 74023

Author : Smirnov, A. I.
Institut. : -
Title : The Effects of Intensity and the Characteristics of Weight Increases in Claves upon Their Future Milk Productivity.
Orig Pub. : Zhivotnovodstvo, 1958, No 1, 36-42

Abstract : A direct correlation between the live weight (LW) of 6, 12, and 18 months old calves and LW of adult cows was established. LW at birth and at the ages of 6 and 12 months is not correlated to milk productivity in disparity to LW at 18 months. At 18 months, the weight of calves constituted 45-55 percent of the weight attained in adulthood. At this age, 350-400 kg should be considered the best LW for the development of the Simmental breed cows producing high milk yields.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., assistent

Some problems in raising young cattle. Zhivotnovodstvo 21 no.5:81-84 My '59. (MIRA 12:7)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk.
(Cattle)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

"Reproduction and Development of the Black Sea Red Mullet (Mullus Barbatus Ponticus Esspiov)," Dokl. AN SSSR, 68, No.6, 1949

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

C.A. SMIRNOV, A.I.

Significance of carotenoid pigmentation of the embryonic larval stage of fish of the carp family (Cyprinidae). A. I. Smirnov. *Doklady Akad. Nauk S.S.S.R.* 73, 609-12 (1950).—Pigments of fish eggs were exam'd. among specimens of the carp family. Generally colorless eggs arise under high O supply, while colored ree is found among fish with poor O supply. The role of the pigments is discussed and it is concluded that the carotenoid pigments may supplement the embryonic circulatory system of the fish as far as respiratory functions are concerned. The high pigmentation of some fishes may be regarded as a result of deficient or difficult access of O. G. M. Kosolanoff

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

1. SMIRNOV, A. I.

2. USSR (600)

4. Fish Culture

7. "Interspecies hybridization of fish. N. I. Nikolyukin. Sov. kniga no. 9, 1952.
REVIEWED BY SMIRNOV

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

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Biology of propagation and development of the Black Sea red mullet (Mullus barbatus ponticus Essipov). Biul.MOIP Otd.biol. 58 no.4:35-46 '53. (MLRA 6:11)

(Black Sea--Red mullets) (Red mullets--Black Sea)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

USSR/Biology - Embryology

Card : 1/1

Authors : Smirnov, A. I.

Title : Effect of mechanical actions on the developing spawn of Oncorhynchus Gorbuscha (Walbaum) Salmonidae.

Periodical : Dokl. AN SSSR, 97, Ed. 2, 365 - 368, July 1954

Abstract : Report explains the effect of mechanical actions on the developing spawn of salmon (Oncorhynchus Gorbischa (Walbaum) Salmonidae). Table supporting the given explanation is included. Three references.

Institution : The M. V. Lomonosov State University, Moscow.

Presented by : Academician K. I. Skryabin, May 3, 1954

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Some characteristics of the embryology of mirror carp. Vop.ikht. no.3:69-76 '55. (MLRA 8:11)

1. Laboratoriya ikhtiologii Moskovskogo universiteta imeni M.V.Lomonosova

(Carp)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Kinship of the Caspian salmon Salmo trutta caspius Kessler and the salmon S.salar L. Vest.Mosk.un.10 no.10:131-134 O '55. (MLRA 9:4)

1.Kafedra ikhtiologii.
(Salmon)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Effect of mechanical actions on the developing eggs of the autumn Siberian salmon (Oncorhynchus keta infrasp. autumnalis Berg, Salmonidae). Dokl. AN SSSR 105 no.4:873-876 D '55. (MLRA 9:3)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova. Predstavleno akademikom K.I. Skryabinym.
(Salmon) (Embryology--Fishes)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

17(4)

AUTHOR: Smirnov, A. I. SOV/20-123-2-46/50

TITLE: Some Peculiarities of the Biology of Propagation and the Development of the Salmon Subspecies Nerka - Oncorhynchus Nerka (Walbaum) (Nekotoryye osobennosti biologii razmnozheniya i razvitiya lososevoy ryby nerki - Oncorhynchus nerka (Walbaum))

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 371-374 (USSR)

ABSTRACT: The subspecies mentioned in the title is a very valuable object of fishery. In spite of numerous studies (Refs 1-4) data on its development are scarce. Nerka is bred in Kamchatka and on the Kuril'skiye Islands. (Thanks to the co-operation of F. V. Krogius and Ye. M. Krokhin) the author was able to study the development of Nerka at the Paratunskiy Point of the Kamchatskoye otdeleniye Tikhookeanskogo instituta morskogo rybnogo khozyaystva i okeanografii (Kamchatka Branch of the Pacific Institute of Maritime Fishery and Oceanography) on Lake Dal'neye in the catchment area of the river Paratunka. The exceptional variability of Nerka within the subspecies is especially characterized by its fecundity and the size of

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

Some Peculiarities of the Biology of Propagation and the Development of the Salmon Subspecies Nerka - Oncorhynchus Nerka (Walbaum) SOV/20-123-2-46/50

an existence under bad conditions of air supply: the smallest eggs with thin shell among related types, red-orange color of the eggs that tends to show a high content of carotenoid pigments. Carotenoids are oxygen carriers and catalysts of redox processes. The netting of capillaries of the embryo is very fine; finally the active movements of the embryo start already at the blastodisc stage. Later the movements of muscles begin and intensify till they bring about a turn of the embryo in the egg membrane. Fish-breeders, however, must not forget that in the case of Nerka the vascular net on the vitelline sac shrinks during the last period of incubation just at a time of increased need of oxygen of a now big embryo. It is necessary to provide a good flowing through in containers with Nerka spawn during this time. There are 1 figure and 11 references, 9 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Card 3/4

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., kand. biol.nauk

Intergenetic hybridization of Pacific salmon. Priroda 48 no.6: 98-100 Je '59. (MIRA 12:5)

1.Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Salmon)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Characteristics of the biology of reproduction and development of the silver salmon Oncorhynchus kisutch (Walbaum). Vest.Mosk.un. Ser. 6: Biol., pochv. 15 no.1:9-19 '60. (MIRA 13:8)

1. Kafedra ikhtiologii Moskovskogo Universiteta.
(Soviet Far East--Salmon)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Some results of sutdies on the biology of Pacific salmon (g. Oncorhynchus) during the past decade. Biul. MOIP. Otd. biol. 65 no. 4:145 Jl-Ag '60. (MIRA 13:10)

(PACIFIC OCEAN—SALMON)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Some biological and practical conclusions from the experience in acclimatizing Pacific salmon. Biul. MOIP. Otd. biol. 67 no.1:149-151 Ja-F '62. (MIRA 15:3)

(SALMON)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

Reproduction ecology of Oncorhynchus masu (Brevoort). Dokl. AN SSSR 143 no.6:1449-1452 Ap '62. (MIRA 15:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom K.I.Skryabinym.
(Salmon)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Production of sperm by the Pacific salmon Oncorhynchus. Vop. ikht. 3 no.1:84-98 '63. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
(Pacific Ocean—Salmon) (Semen)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

KOZLIKOV, M.F., kand. tekhn. nauk; SMIRNOV, A.I., kand. tekhn. nauk; ARBUZOV, I.P., inzh.

Mechanical drive for bar conveyors. Mekh. i elek. sots. sel'khoz. 21 no.5:37-40 '63. (MIRA 17:1)

1. Azovo-Chernomorskiy institut mekhanizatsii sel'skogo khozyaystva.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

PAVLOVSKIY, Ye.N., akademik, glav. red.; MOISEYEV, P.A., otv. red.; SMIRNOV, A.I., zam. otv. red.; BIRMAN, I.B., red.; KAGANOVSKIY, A.G., red.; KROGIUS, F.V., red.; KROKHIN, Ye.M., red.; KURENKOV, I.I., red; LAGUNOV, I.I., red.; PANIN, K.I., red.; SEMKO, R.S., red.; PARIN, N.V., red.

[Salmon fisheries of the Far East; materials] Lososevoe khozyaistvo Dal'nego Vostoka; materialy. Moskva, Nauka, 1964. 201 p. (MIRA 17:9)

1. Soveshchaniye po voprosam lososevogo khozyaystva Dal'nego Vostoka. 3d, Petropavlovsk-Kamchatskiy, 1960. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut morskogo rybnogo khozyaystva i okeanografii (for Moiseyev). 3. Kamchatskoye otdeleniye Tikhookeanskogo nauchno-issledovatel'skogo instituta rybnogo khozyaystva i okeanografii (for Semko, Birman, Krokhin, Kurenkov). 4. Kafedra ikhtiologii Moskovskogo universiteta imeni M.V.Lomonosova (for Smirnov).

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

Spawning stage of development and its specificity. Dokl. AN SSSR 159 no.2:431-433 N '64. (MIRA 17:12)

1. Predstavleno akademikom K.I. Skryabinym.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

S/056/62/042/001/018/048
B104/B102

AUTHORS: Sumbayev, O. I.; Smirnov, A. I.; Zykov, V. S.

TITLE: Mössbauer effect on tungsten isotopes

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 115-123

TEXT: In the present study of the Mössbauer effect, the intense lines near the resonance energy were examined with a focusing crystal diffraction γ-spectrometer of the Du Monde type with a resolution of several tenths of a percent. The experimental arrangement also permitted customary measurements by separating the resonance lines with a scintillation counter. The dependence of nonrecoil nuclear resonance absorption at the 100.09-kev level of W^{182} and at the 99.07-kev and 46.48-kev levels of W^{183} on the relative velocity between the source (Ta) and the absorber (W) was investigated. In contradistinction to the findings of de Nercy et al. (C.R. Paris, 250, 1031, 1960), the observed Mossbauer effect was in no case less than the theoretical value. The Debye temperatures, calculated

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L 27826-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6015453 (N) SOURCE CODE: UR/0181/66/008/005/1379/1381

AUTHOR: Zverev, G. M.; Smirnov, A. I.

ORG: none

32
B

TITLE: Investigation of spin-lattice relaxation of a positive trivalent erbium ion in cadmium fluoride and calcium fluoride single crystals in the 3-70 Gc frequency range

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1379-1381

TOPIC TAGS: spin lattice relaxation, erbium, ion, fluoride, calcium fluoride, cadmium compound

ABSTRACT: The pulse saturation method was used for measuring the relaxation times τ_1 of the Er^{3+} ion in CdF_2 and CaF_2 single crystals at frequencies from 3 to 70 Gc. It was found that relaxation time decreases with an increase in frequency (from 400 to 200 μsec when the frequency is varied from 38 to 71 Gc). In the short-wavelength region of the millimeter range, the experimental data may be approximated by a power function of the form $\omega = \tau_1^{-1} \sim \nu^2$. Measurements on a wavelength of 9.4 cm showed a shorter relaxation time than on a wavelength of 3.2 cm (a reduction from 180 to 65 μsec) with τ_1 being very nearly proportional to ν. The experimental data in totality may be approximated by a function of the form

$$\tau_1^{-1} = \omega = 5 \cdot 10^4/\nu + 0.86\nu^2$$

Card 1/2

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ACC NR: AP6015453

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where ω is in sec^{-1} and ν is in Gc. In weak magnetic fields, τ_1 increases linearly with frequency reaching a maximum followed by a sharp reduction. It is assumed that heating of resonance phonons has a considerable effect on relaxation of erbium ions so that relaxation of the line from even isotopes of the trivalent erbium ion is impeded by the lack of resonance phonons. As a result, the transfer of spin energy to the lattice is affected to a great extent by cross relaxation to the 'wings' of the line which are formed by trivalent erbium ions located in axial crystal fields of varying strength and symmetry. The obstruction to relaxation is relieved by this cross relaxation which introduces phonons in a wide range of frequencies. The effect is amplified when the 'wings' overlap the spectrum of impurities which have a short relaxation time. This type of mechanism gives a qualitative description of the experimentally observed relationship between relaxation time and magnetic field intensity in weak fields but becomes less significant as the magnetic field intensity increases. The experimental results depend considerably on the purity of the specimens studied and the concentration of erbium ions in various environments. The authors are grateful to P. P. Pashinin for giving them the opportunity to carry out the experiment on the 9.4 cm wavelength and for valuable consultation. Orig. art. has: 1 figure. [14]

SUB CODE: 20/ SUBM DATE: 10Sep65/ ORIG REF: 004/ OTH REF: 006/

ATD PRESS: 5003

Card 2/2 PB

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

ACC NR: AP7005883 SOURCE CODE: UR/0181/66/008/012/3686/3688

AUTHOR: Zverev, G. M.; Makarenko, L. V.; Smirnov, A. I.

ORG: none

TITLE: Paramagnetic resonance of Ce^{3+} and Nd^{3+} in $SrMoO_4$ single crystals

SOURCE: Fizika tverdogo tela, v. 8, no. 12, 1966, 3686-3688

TOPIC TAGS: strontium compound, molybdate, epr spectrum, activated crystal, cerium, neodymium

ABSTRACT: To check against results obtained with other scheelites, the authors studied the EPR spectra of Ce^{3+} and Nd^{3+} in single crystals of strontium molybdate grown by the Czochralski method and containing approximately 0.5% of Ce or Nd. The EPR spectra were measured at 4.2K and 14.3 GHz. In the case of cerium, a single intense line was observed, due to the Ce^{3+} ion in a field of tetragonal symmetry. In the case of neodymium, the spectrum consisted of an intense line due to the even isotopes of Nd^{3+}, on which a hyperfine structure due to the odd isotopes Nd^{143} and Nd^{145} is superimposed. The g-factors half widths and the hyperfine structure constants were obtained for all lines and agreed with an empirical relation obtained by others. A wave function agreeing with the obtained data is also found for the lower state of Nd^{3+} in a field of tetragonal symmetry. Orig. art. has: 2 figures and 7 formulas. [02] [WA14]

SUB CODE: 20/ SUBM DATE: 04Jul66/ ORIG REF: 003/ OTH REF: 001

Card 1/1 UDC: none

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

SHCHETINKOV, E.S. and A.I. SMIRNOV.

Eksperimental'noe issledovanie turboreaktivnogo dvigatelia BMW-003. (Tekhnika vozdushnogo flota, 1946, no. 10, p. 13-26, diagrs.)

Title tr.: Experimental investigation of BMW-003 turbojet engine.

TL504.T4 1946

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A. I.

3

Smirnov, A. I. On the determination of the circulation and lifting force of an arbitrary thin wing located near to a wall. Akad. Nauk SSSR. Inženernyĭ Sbornik 9, 45–56 (1951). (Russian)

Thin wing theory has been applied to the flow past an infinite wing of small curvature and its mirror image with respect to a plane wall. The boundary condition at the airfoil yields an integral equation

$$(*) \qquad 2\pi V_\infty \sin \alpha_{i_k} + \int_0^b I(x, \bar{x}, x_k)\gamma(x)(x-x_k)^{-1}dx = 0$$

for the vortex strength $\gamma(x)$ at $(x, 0)$ on the chord, where $(0, 0)$ is at the leading edge, $(b, 0)$ at the trailing edge, α_{i_k} is the local angle of attack at $(x_k, 0)$, and $I(x, \bar{x}, x_k)$ is an easily determined function of x_k, x, and the mirror image $(\bar{x}, \bar{y})$ of $(x, 0)$ with respect to the wall. The author sets $\gamma(x)I(x, x, x_k)/2V_\infty = B_{k0}\cot\frac{1}{2}\theta + \sum_1^m B_{kn}\sin n\theta$, and $\gamma(x)/2V_\infty = A_0\cot\frac{1}{2}\theta + \sum_1^m A_n \sin n\theta$, where $x = \frac{1}{2}b(1-\cos\theta)$. Then for $\theta_k = k\pi/(m+1)$, $0 \leqq k \leqq m$, (*) is imposed at $x_k = x(\theta_k)$ to obtain $m+1$ linear equations for A_0, $\gamma(x_k)$, from which the circulation $\Gamma = bV_\infty(A_0 + \frac{1}{2}A_1)\sin\alpha$ can be found. In calculating the lift $Y = \rho\int_0^b V\gamma(x)dx$, V must be taken to be the component of velocity at $(x, 0)$ parallel to the wall of the resultant of the velocity V_∞ of the main flow and the velocity induced by the image airfoil. For lift computation the author replaces the vortex distribution $\gamma(x)$ by discrete vortices of strength

$$\Gamma_k = \int_{x_k}^{x_{k+1}} \gamma(x)dx \quad \text{at} \quad x_k = (k-\tfrac{1}{2})b/\nu, \ 1 \leqq k \leqq \nu, \ x_{\nu+1} = b,$$

and $-\Gamma_k$ at their images. His computations with $m=3$ and $\nu=1$ for a flat plate lead to excellent agreement with exact values of Γ and Y as functions of angle of attack α and relative distance H/b from the wall. Γ and Y have also been computed for circular arc airfoils as functions of curvature, α, and H/b. Finally, for $\alpha \leqq 10°$ close agreement has been found between calculated and experimental lift coefficients for symmetrically mounted pairs of NACA four-digit series airfoils. *J. H. Giese* (Havre de Grace, Md.).

Source: Mathematical Reviews, Vol 13 No. 10

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APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.

AID P - 3303

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 9/20

Author : Smirnov, A., Eng. Maj.

Title : Making flights secure under complicated meterological conditions

Periodical : Vest. vozd. flota, 11, 44-47, N 1955

Abstract : The author explains how cooperation with the meteorological service has been organized in his unit. He mentions meteorological instruments and gives a form for collection of data of the actual weather conditions.

Institution : None

Submitted : No date

SMIRNOV, A.I.

86-1-11/30

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

AUTHOR: Smirnov, A.I., Eng Lt Col, Candidate of Technical Sciences

TITLE: Selection of Optimum Cruise Controls for Aircraft (Vybor optimal'nykh rezhimov poleta samoletov)

PERIODICAL: Vestnik Vozdushnogo Flota, 1958, Nr 1, pp. 24-26 (USSR)

ABSTRACT: The article deals with the problem of how to select the optimum cruise control for bombers. For a successful execution of a combat mission the following factors (in addition to the tactical considerations) should be taken into account when selecting the proper cruise control (speed and altitude) for front line bombers: the maximum radius of action, the type of target, the possibility of its identification, meteorological conditions, the time of year and day, the state of air defense of the target, the type and ballistic properties of bombs, the reliability and combat vitality of power plants, units and systems of the aircraft. Further the author tries to determine the best relationship between the speed and the altitude for Il-28 front line bomber and under which conditions the aircraft

Card 1/2

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; GOLOVANOV, A.L., inzhener, redaktor; VERINA, G.P., tekhnicheskiy redaktor.

[Selecting ballast section and least curve radius for industrial railroads] Vybor verkhnego stroeniia i naimen8shego radiusa krivykh promyshlennykh zheleznodorozhnykh putei. Moskva, Gos.transportnoe izd-vo, 1956. 66 p. (Moscow. Vsesoiuznyi nauchno-isledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no.114). (MIRA 9:7)
(Railroads--Track) (Railroads--Curves and turnouts)

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

18.1150

85[illegible]
S/123/59/000/006/002/025
A005/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 6, p. 16, # 20226

AUTHORS: Chelpanov, B. V., Smirnov, A. I.

TITLE: Alloying Cast Iron and Steel With Antimony

PERIODICAL: Nauchn. zap. Odessk. politekhn. in-t, 1957 (1958), Vol. 17, pp. 223-234

TEXT: The influence was investigated of the antimony content on the antifriction, anticorrosion, and mechanical properties of gray iron considered as a substitute of non-ferrous antifriction alloys. The optimum content of Sb in cast iron, which assures high antifriction- and anticorrosion properties, with satisfactory mechanical and casting properties, amounts to 0.40-0.75%. Production of new cast iron is performed by adding Sb to the usual cupola cast iron of the brand СЧ 15-32 (SCh 15-32), СЧ 18-36 (SCh 18-36). Alloying iron-carbon alloys with antimony enhances their resistance against wear and corrosion.

Translator's note: This is the full translation of the original Russian abstract.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

85095

18.1150

S/121/60/000/010/011/015
A004/A001

AUTHORS: Smirnov, A. I., Chelpanov, B. V.

TITLE: Using Antimony-Alloyed Cast Iron Instead of Bronze

PERIODICAL: Stanki i Instrument, 1960, No. 10, pp. 29-31

TEXT: As a result of research work and protracted investigations, a new antifriction material has been developed - antimony-alloyed cast iron. The metallic antimony is added directly into the ladle with the molten cast iron of grades СЧ 15-32 (SCh 15-32) and СЧ 18-36 (SCh 18-36). Based on laboratory and service tests, the optimum composition of antimony alloyed cast iron is the following: C = 3.0 - 3.5%, Si = 1.4 - 2.2%, Mn = 0.6 - 0.8%, Sb = 0.3-0.65%, up to 0.3 % P and up to 0.12% S. The addition of antimony to gray cast iron causes a considerable refining of the macrostructure of the latter. The microstructure of antimony-alloyed cast iron is characterized by a finely laminar pearlite and a uniform graphite deposition over the whole microsection field, while ferrite and cementite inclusions are not present at all. The addition of 0.25 - 0.35% antimony to the cast iron increases the pearlite microhardness from 196 to 245-255 kg/mm^2, while the microhardness of the phosphide eutectic is increased from 350 to 425 kg/mm^2.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

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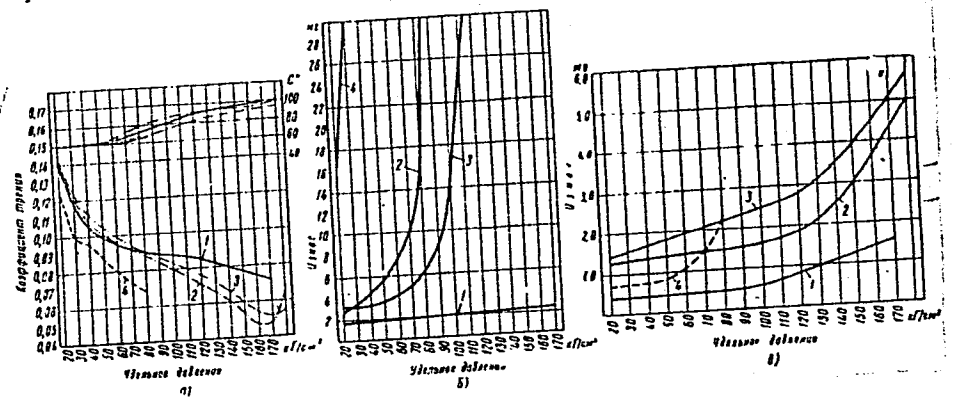
S/121/60/000/010/011/015
A004/A001

Using Antimony-Alloyed Cast Iron Instead of Bronze

9 - Бр. ОЦС 5-5-5 (Br.OTsS 5-5-5) bronze, 10 - Бр. ОФ 10-1 (Br.OF 10-1).
Fig. 3 shows the results of comparative tests to investigate the running-in ability of antimony alloyed cast iron. As it can be seen from the graph 3, a, the friction coefficients of antimony-alloyed cast iron at a specific pressure of 80 kg/cm^2 are practically equal to those of bronze. Fig. 3,a shows the friction coefficient at

Figure 3:



Card 3/6

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A004/A001

Using Antimony-Alloyed Cast Iron Instead of Bronze

a given specific pressure, Fig. 3, (b) the wear at a given specific pressure for the following materials: 1 - antimony-alloyed cast iron, 2 - Br.OF 10-1 bronze, 3 - Br.OTsS 5-5-5 bronze, 4 - babbitt. Fig. 3, (v) shows the wear of a steel ring working in a couple with antimonous cast iron, bronze and babbitt respectively. In order to determine the surface finish, the specimens were tested on the [illegible]T-17 (IZT-17) profile recorder with an enlargement factor of 1,400 along the vertical and 25.5 along the horizontal. The medium microroughness of the steel rings after rubbing on a cast iron plate amounted to 2.6 - 1.9 μ, while the values for the tested specimens were in the range of 1.8 - 1.5 μ. Comparative tests were carried out to elucidate the wear resistance under conditions of dry friction of antimony-alloyed cast iron, bronze and babbitt. The test results are given in the following table:

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

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Using Antimony-Alloyed Cast Iron Instead of Bronze

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A004/A001

Material	Wear of Specimens in Height in mm	Total Wear of three Specimens in mg	Total Wear of three Specimens in mm^3	Ratio between volumetric Wear of the Specimen and Wear of Babbit	Wear of Steel Ring in mg
Antimony-alloyed cast iron	0.03	53.8	7.3	1.04	47.8
Initial gray cast iron	15.43	26,422.4	3,570.6	510.09	1,032.1
Bronze Br.OF 10-1	0.16	294.4	33.9	4.83	22.7
Bronze Br.OTsS 5-5-5	0.31	618.3	70.3	10.04	6.2
Babbitt B-83	0.04	51.2	7.0	1.00	1.0

Card 5/6

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

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S/121/60/000/010/011/015
A004/A001

Using Antimony-Alloyed Cast Iron Instead of Bronze

The authors point out that the wear resistance of antimony-alloyed cast iron parts is 2 - 3 times as high as that of bronze. In addition to good friction properties, antimony-alloyed cast iron has a considerably higher corrosion resistance than gray cast iron. In sea water its corrosion resistance equals that of admiralty brass. There are 4 figures and 1 table.

Card 6/6

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; CHELPANOV, B.V.

Using antimonial cast iron instead of bronze. Stan.i instr. 31 no.10:29-31 O '60. (MIRA 13:10)

(Bearing metals)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; CHELPANOV, B.V.

Antifriction antinony cast iron. Lit. proizv. no. 5:18-19 My '61. (MIRA 14:5)

(Bearing metals)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., kand.tekhn.nauk, dotsent; CHELPANOV, B.V., kand.tekhn. ~~nauk,~~ dotsent; YEKEL'CHIK, L.L., inzh.

Antimonial cast iron as a bronze substitute. Vest.mashinostr. 42 no.7:48-50 Jl '62. (MIRA 15:8)
(Cast iron) (Antimony)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

GOL'BERG, I.G.; SMIRNOV, A.I.

Pickling unit. Mashinostroitel' no.7:29 Jl '62. (MIRA 15:7)
(Metals—Pickling)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; SOTNIKOV, A.A.

Airtightness of gray cast iron for casting hydraulic system parts. Lit. proizv. no.6:27-29 Je '64.

(MIRA 18:5)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

STARTSEV, I.S., kapitan 1-go ranga; SMIRNOV, A.I., kapitan 2-go ranga.

Lines of positions in navigation taken at different times. Mor. sbor. 47 no.3:95-96 Mr '64. (MIRA 18:7)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I., kand. tekhn. nauk, dotsent; BROVKINA, Ye.P., aspirant

Investigating the wear resistance of sulfur containing cast irons. Izv. vys. ucheb. zav.; mashinostr. no.2:154-161 '65. (MIRA 18:5)

1. Odesskiy politekhnicheskiy institut.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; SOTNIKOV, A.A.

Impermeability of grey cast iron for castings of hydraulic equipment parts. Lit. proizv. no.4:25-27 Ap '64.

(MIRA 18:7)

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.; BROVKINA, Ye.P.

Effect of sulfur on the microhardness of structural components of cast iron. Izv. vys. ucheb. zav.; chern. met. 8 no.2:148-150 '65. (MIRA 18:2)

1. Odesskiy politekhnicheskiy institut.

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

TK[illegible]V, V.M., inzh.; [illegible], V.M., inzh.; [illegible]
[illegible], A.G., [illegible], L.M.; [illegible], T.F.;
[illegible], V.G.; [illegible]; MUZ[illegible]; [illegible], I.I.;
VAS[illegible], A.M.; [illegible], F.F.; TUGAR[illegible], Ye.A.; [illegible],
A.G.; [illegible]SKIY, N.M.; SHAKHALOV, V.; SMIRNOV, A.I.

Developing the technology of producing a high-basicity open-hearth sinter. Stal' 25 no.8:683-686 Ag '65. (MIRA 18:8)

1. Cherepovetskiy metallurgicheskiy zavod (for Tkachev, Sholeminov).

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

SMIRNOV, A.I.

SOV/19-58-4-330/523

AUTHORS: Gershenzon, G.S., Smirnov, A.I. and Vepritskiy, A.S.

TITLE: A Device for Measuring the Volume of Loose Materials (Ustroystvo dlya otmerivaniya ob"yemov sypuchikh tel)

PERIODICAL: Byulleten' izobreteniy, 1958, Nr 4, p 84 (USSR)

ABSTRACT: Class 42e, 27. Nr 112179 (569169, 19 March 1957). Submitted to the Committee for Inventions and Discoveries at the USSR Council of Ministers. The device for measuring the volume of loose materials consists of a cylindrical vessel, a capacitive discrete pick-up and a recorder, whereby the pick-up is located at a distance of two thirds of the radius of the vessel from the axis of the latter.

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

34231
S/181/62/004/002/014/051
B102/B138

24,7900 (1055,1144,1163)

AUTHORS: Zverev, G. M., Korniyenko, L. S., Prokhorov, A. M., and Smirnov, A. I.

TITLE: Electron paramagnetic resonance and spin-lattice relaxation of the Er^{3+} ion in a CdF_2 single crystal

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 392-395

TEXT: Er^{3+} was introduced as an isomorphic impurity into CdF_2, in which the fluor ions form a cubic lattice, the Cd ions being in the centers of cubes formed by the anions. The Er^{3+} ions replace Cd ions. The e. p. r. measurements were made at 4.2°K, with several different frequencies and for an Er^{3+} concentration of 0.1%. The following spectrum parameters were determined:

Card 1/4

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

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S/181/62/004/002/014/051
B102/B138

Electron paramagnetic resonance and ...

ν, Mc/sec	g	A, oe
9500	6.758±0.010	73.0±1.0
25800	6.745±0.005	-
72000	6.735±0.005	73.9±1.0

The frequency dependence of the g-factor is due to the contributions of the wave functions of the excited states. The field-induced change of the g-factor can be determined by using perturbation theory:

$$g = g_0 \left[1 - \frac{\Lambda^2 \beta^2 H^2}{\delta^2} \left| \langle 1 | \hat{J}_z | 2 \rangle \right|^2 \right]$$

g_0 is the g-factor at H=0, Λ - Landé factor, δ is the mean distance to the nearest upper level of the state group (2): $\left\{ \pm \frac{13}{2}, \pm \frac{5}{2}, \mp \frac{3}{2}, \mp \frac{11}{2} \right\}$

Card 2/4

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

34231
S/181/62/004/002/014/051
B102/B1

Electron paramagnetic resonance and ...

$\langle 1|$ and $|2\rangle$ denote the ground and excited states. $A = (2.31 \pm 0.03) \cdot 10^{-2}\ cm^{-1}$. Spin-lattice relaxation was studied by the continuous saturation method and by the pulse method with 3.2 cm waves. The temperature dependence of relaxation time τ_1 was determined by several methods, e. g. between 16 and 18°K from epr line broadening. Though S. A. Al'tshuler has developed a theory of spin-lattice relaxation of rare-earth ions, (ZhETF, 24, 691, 1953), the experimental results for Er^{3+} ions in a cubic lattice can only be explained qualitatively. At $T < 4.2°K$, $\tau_1 \sim T^{-1}$, at higher temperatures the course of $\tau_1(T)$ cannot be described by an exponential law of the $\tau_1 \sim T^{-n}$ type. This is due to anomalies caused by other bi- and trivalent ions. L. M. Belyayev, Kh. S. Bagdasarov and V. Ya. Khaimov-Mal'kov and P. P. Pashinin are thanked for help. There are 1 figure, 1 table, and 13 references: 5 Soviet and 8 non-Soviet. The four most recent references to English-language publications read as follows: M. Dvir, W. Low. Proc. Phys. Soc., 75, 136, 1960; W. Low. Paramagnetic Resonance in Solids. p. 130, New York - London.

Card 3/4

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 10018-63 EWA(k)/EWP(k)/EWP(q)/BDS/EWT(1)/EWT(m)/3W2/EEC(b)-2/ES(t)-2--
AFFTC/APGC/AFWL/ASD/ESD-3/RADC/SSD--Pf-4/Pl-4/Po-4--IJP(C)/WH/K/WG/JHB/EH

ACCESSION NR: AP3001288 S/0181/63/005/006/1668/1672

88

AUTHOR: Kask, N. Ye.; Korniyenko, L. S.; Smirnov, A. I.

TITLE: Paramagnetic relaxation of Fe sup 3+ ions in corundum 15

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1668-1672

TOPIC TAGS: paramagnetic relaxation; Fe sup 3+, corundum

ABSTRACT: Spin-lattice relaxation-time measurements have been carried out in Fe sup 3+ ions in corundum by the method of pulse saturation and in some cases by transverse saturation. The study involved transitions between different spin levels, as well as parallel and perpendicular orientations of samples of various ion concentration. The temperature dependence of relaxation times was found to be strikingly less marked within the range of 5 to 15K than at higher readings (up to 8CK). The increase of paramagnetic ion concentration from 0.02 to 0.05% brought about a reduction of relaxation time from 10 to 1.5 msec. Relaxation times were computed for various lines at frequencies at which cross-relaxation would be absent; with parallel orientation they amounted to 13 to 14 msec for all five transitions, and with

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L 10018-63
ACCESSION NR: AP3001288

perpendicular orientation to 10 and 7 msec for the first and second transitions, respectively. The influence of spin cross-relaxation was found to be strongest with parallel orientation. Orig. art. has: 3 formulas, 4 figures, and 2 tables.

ASSOCIATION: none

SUBMITTED: 04Feb63 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 005

Card 2/2

APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

AMENITSKIY, N.A.; KORNIYENKO, L.S.; SMIRNOV, A.I.

Spectroscope for studying the spectrum and spin-lattice relaxation of paramagnetic substances at a wavelength of 8 mm. Prib. i tekh. eksp. 8 no.6:119-121 N-D '63. (MIRA 17:6)

1. Nauchno-issledovatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta.

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L 18391-65 EWG(v)/EWT(1) Pe-5/Pae-2 AFETR/BSD/AFWL/SSD/SSD(b)/SSD(c)/ESD(t) GW

ACCESSION NR: AR4040391 S/0269/64/000/005/0022/0022

SOURCE: Ref. zh. Astron. Otd. vy*p., Abs. 5.51.192

AUTHOR: Bruns, A.V.; Smirnov, A.I.

TITLE: Counting rate gage with linear output characteristics

CITED SOURCE: Izv. Kry*msk. astrofiz. observ., v. 30, 1963, 312-319

TOPIC TAGS: counting rate gage, astrophysics, radioactivity meter, meter output characteristic

TRANSLATION: Radiotechnical counting systems for counting the average number of pulses arriving at the input of an instrument in a unit time are called counting rate gages (meters). This paper describes counting rate gage systems with a measuring capacitor which have come into wide practical use. It is noted that counting rate gages have a major shortcoming: their output characteristics (U_{out} in relation to $N_{pulses/sec}$) are linear only for small Uout. A method is proposed for increasing the linearity of the output voltage. In this method the counting rate gage system is composed of individual

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ACCESSION NR: AR4040391

elements operating at low output voltages and the output voltage of the entire counting rate gage system is equal to the sum of the voltages for all the elements. The paper includes a practical counting rate gage system with a linear output characteristic with formulas for its design and practical advice on adjustment. Bibliography with 6 items. N. Voykhanskaya.

SUB CODE: EC ENCL: 00

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"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

L 44288-65 EWT(1)/EEC(b)-2/EWA(h) Peb/Pl-4 GS

ACCESSION NR: AT5011617 UR/0000/64/000/000/0447/0451

26
B+1

AUTHOR: Sitnikov, O.P., Vinogradova, N. V., Smirnov, A. I.

TITLE: Parametron dynamics

25

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 447-451

TOPIC TAGS: parametron dynamics, parametron transient process, monotone parametron transient, nonlinear oscillation, computer design

ABSTRACT: A successful design of computers based on parametric elements requires the elucidation of parametron dynamics. The time intervals needed for the growth and decay of parametric oscillations fixes the limiting frequency of the cycling pulse and, consequently, the operating speed of the logical units. Transient processes caused by small changes in loop parameters can be described by linear equations. However, it is of much greater interest to study the growth of parametric oscillations up to the establishment of the stationary operating conditions which are described by essentially nonlinear equations.

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These effects were studied using the parametron equation

$$\frac{d(L_i)}{dt} + R_i + \frac{1}{C}\int I dt = U_\gamma \sin \omega t, \qquad (1)$$

derived in an earlier paper presented at a conference on magnetic elements held in 1961 in Minsk. After numerous transformations, this equation reduced to a first order system of equations which is discussed in the present paper. A formula is derived for the calculation of the duration of the transient parametron process and recommendations are given regarding the choice of circuit parameters necessary for the attainment of a monotone transition process. All theoretical conclusions were checked and confirmed experimentally. Orig. art. has: 9 formulas and 7 figures.

ASSOCIATION: none.

SUBMITTED: 29Sep64 ENCL: 00 SUB CODE: DP

NO REF SOV: 000 OTHER: 000

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APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6"

"APPROVED FOR RELEASE: 08/25/2000 CIA-RDP86-00513R001651510015-6

ACCESSION NR: AP4011743 S/0181/64/006/001/0096/0100

AUTHORS: Zverev, G. M.; Smirnov, A. I.

TITLE: Spin lattice relaxation of the Er^{3+} ion in single crystals of CdF_2, BaF_2, and CaF_2

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 96-100

TOPIC TAGS: spin lattice relaxation, cadmium fluoride, barium fluoride, calcium fluoride, paramagnetic resonance, relaxation time temperature dependence, elastic scattering, two phonon process, direct relaxation process, excited state

ABSTRACT: The authors have examined both paramagnetic resonance spectra and relaxation processes for the Er^{3+} ion in single crystals of CdF_2, BaF_2, and CaF_2. Spin-lattice relaxation times were measured for 3-cm and 8-mm waves at temperatures ranging from 1.6 to 25K. The results are summarized in Figs. 1-3 of the Enclosures. At temperatures above that of liquid helium, relaxation is determined by the two-phonon process of relaxation through the excited state. This time depends exponentially on temperature: $\tau \sim \exp(\frac{\Delta}{kT})$. At temperatures of 1.6-4.2K, direct relaxation processes are complicated by heating of the phonon spectrum. The

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dependence of relaxation time on temperature is stronger then expected for ordinary direct processes. As mechanisms of phonon relaxation the authors suggest cross relaxation and the inelastic scattering of phonons by phonons. Orig. art. has: 3 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 10Jul63 DATE ACQ: 14Feb64 ENCL: 03

SUB CODE: PH NO REF SOV: 002 OTHER: 004

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L 9051-65 EWT(m)/EWP(b) BSD/RAEM(c)/AEWL/ESD(t)/AS(mp)-2/AFTC(p)/RAEM(t)/
ACCESSION NR: AP4044955 RAEM(i)/ASD(a)-5/ S/0181/64/006/009/2799/2808
ESD(gs)/SSD/RAEM(a) JD/JG

AUTHOR: Voron'ko, Yu. K.; Zverev, G. M.; Meshkov, B. B.; Smirnov, A. I.

TITLE: Investigation of optical and paramagnetic resonance spectra of Er^{3+} in CaF_2

SOURCE: Fizika tverdogo tela, v. 6, no. 9, 1964, 2799-2808

TOPIC TAGS: rare earth compound, electron paramagnetic resonance, light absorption, luminescence, calcium fluoride laser, crystal symmetry, Stark splitting

ABSTRACT: In view of the need of detailed information on the properties of crystals containing rare-earth ion admixtures, which are used for lasers, the authors investigated the electron paramagnetic resonance (EPR) spectrum, the optical absorption, and the luminescence of crystals of CaF_2 doped with Er^{3+} and grown by different

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