CHERNYSHEV, V.M.

Differential photoelectric device for recording dynamic displacements. Priborostroenie no.7:28-29 Jl '62. (MIRA 15:7)
(Photoelectric measurements)

S/740/62/000/007/004/004

AUTHOR: Chernyshev, V. M.

TITLE: Damping properties of plastics employed in structural elements.

SOURCE: Akademiya nauk SSSR. Institut mashinovedeniya. Problemy prochnosti v mashinostroyenii. no.7. 1962, 75-83.

TEXT: An experimental determination of the energy-dissipating properties of plastics employed in machine structures was undertaken. Testing methods are described and test results reported. The basic testing method consists of the observation of free damped vibrations of specimens fastened at their respective nodal points. Sinusoidal low-frequency signals (3-40 cps) were used to excite the desired vibrations through magnetic exciters (general arrangement shown schematically). The damped vibrations were recorded by a differential photoelectric displacement-measuring device (circuitry shown). The linear displacements measured were within a ±10-mm range. Sixteen materials were tested, including 5 epoxy-polyester, 6 polyester, and 1 phenol binder cold-setting vitreous plastics, the phenol-formaldehyde plastic АГ-4 (AG-4), textolite, "getinaks" (micarta), and the fillerless methyl-metacrylate (organic glass). The specimens were rectangular beams with working-section dimensions $h = 5.5 \pm 0.5$ mm; $b = 14 \pm 4$ mm; $l = 110 \pm 10$ mm and

Card 1/3

having tips with thicker ends equipped with caps of various weight. The first stage of the tests (damping decrement versus amplitude) was performed at 4 ± 0.3 cps. The graphic plots manifest a greater effect on the damping properties by the resins than by the fillers. Among the cold-setting vitreous plastics the most highly damped is that based on the polyester resin ПН-1+ТГМ-3 (PN-1+TGM-3); a scale of the other resin materials and of the various glass-fiber fillers is given. Among the phenol plastics, textolite (with a cotton-fabric filler) has the best damping qualities, followed by micarta (paper filler), at a level comparable with that of the epoxy-polyester-resin vitreous plastics (somewhat lower than the above-cited optimal polyester-resin plastic). The damping of the methylmetacrylate lies between that of the polyester-resin and that of the epoxy-polyester-resin plastics (this statement is necessarily vague, because the fillers differ). A theoretical method for the reduction of the measured logarithmic decrement (which, in essence, is a volumetric mean) to the true value of the energy scatter in a given stressed structural element is set forth. It is concluded that the true energy dissipation in plastics is in part a function of the second and third power of the deformation. A second stage of the subject tests was devoted to the effect of the vibrational frequency on the damping properties. For that purpose the basic tests (4 ± 0.3 cps) were repeated at frequencies 2.4x and 8.1x higher, obtained by changes in the moments of inertia of caps placed over the tips of the specimen beams. To avoid inter-specimen

scatter, a complete test series was run on each given individual specimen; to avoid the heating of a specimen which occurs at frequencies higher than 18-20 cps, the specimen was mechanically bent to an initial position, a bowstring was tied between the two ends to hold the initial bend until the measuring equipment was in readiness, and the bowstring was burned to release the specimen to its vibratory motion. The energy dissipation in most of the plastics investigated decreased substantially with increasing frequency. There are 5 figures, 3 tables, and 2 Russian-language Soviet references (one, by V. M. Chernyshev (On the dynamic modulus of elasticity of some structural plastics) in print, the other, by G. S. Pisarenko (ZhTF, v. 15, no. 9, 1945, 663).

ASSOCIATION: None given.

35679

15.8500

S/032/62/028/004/017/026
B124/B101

AUTHOR: Chernyshev, V. M.

TITLE: Methods of determining the dynamic moduli of elasticity of plastics

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 488 - 491

TEXT: The dynamic moduli of elasticity of 12 different glass-reinforced cold-cured plastics, one resin-impregnated laminated cloth (textolite), and one glass-like polymer were determined from the measured natural vibration frequency of a self-supporting sample plate. This is done by transmitting the amplified signal emitted from a ЗГ-10 (ZG-10)-type audio oscillator to the current coil of a vibrator carrying the sample which had been attached to the core of the coil. The sample is tuned to resonance using a strain gauge and a measuring-point amplifier with a cathode-ray voltmeter. The signal transmitted from the amplifier is measured with a tuning-fork frequency meter and a cathode-ray oscilloscope to $\pm 0.4\%$ at least. The dynamic moduli are then calculated from the equation

Card 1/3

$E_d = \frac{48\pi^2 \gamma f_n^2 l^4}{gh^2 (K_n l)^4}$, where f_n is the frequency of the n-th harmonic vibration, γ the specific gravity of the material, l the length of the self-supporting portion of the sample, h the height of the sample, and $(K_n l)$ the n-th root of the frequency equation. The experimental error was reduced from about 4 to 1%, when the dimensions of the glass-reinforced plastic samples were measured very accurately. The static moduli of elasticity were determined in the same way. The results can be well reproduced by the equation: $E_d = E_o - (E_o - E_i)e^{-bf}$ (3), where E_d is the dynamic modulus of elasticity at the frequency f, E_i the "instantaneous", and E_o the "true" modulus of elasticity (found, e. g., at loading frequencies of 1000 to 1500 cps). Since b was found to be $3.65 \cdot 10^{-3} cps^{-1}$ for the materials tested, Eq. (3) can be written in the form: $E_d = E_o - (E_o - E_i)e^{-0.00365f}$. There are 2 figures and 2 tables.

Card 2/3

ASSOCIATION: Institut mashinovedeniya (Institute of the Science of Machines); Volgogradskiy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya (Volgograd Scientific Research Institute of Machine Technology)

Card 3/3

IC 7540

S/032/62/028/004/023/026
B116/B104

AUTHOR: Chernyshev, V. M.

TITLE: Apparatus for investigating the effect of training on the internal energy dissipation in plastics

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 4, 1962, 501 - 502

TEXT: Sample 1 is suspended in the nodal points from thin strings 3 (Fig. 1). The vibration of the sample-clamp system is excited by means of electromagnetic exciter 9. A sinusoidal signal passing from the carrier-frequency generator 5 (about 1000 cps) to the modulator 4 is amplitude-modulated by the low-frequency generator 6. The modulated signal is amplified by the preamplifier 7 and the power amplifier 8. The frequency of the generator 6 is adjustable. During training the sample-clamp system is in resonance. The modulator used gives a unilaterally modulated signal needing no demodulation. For normal operation of the exciters it is sufficient to filter the carrier frequency by the filter 10. No filter is needed with a high ratio between carrier frequency and working frequency. The vacuum-tube voltmeter 11 and the cathode ray oscilloscope 12 are used to control level and shape of the modulated signal. The internal energy

Card 1/2

Apparatus for investigating the...

dissipation in the sample was determined by evaluating oscillograms of free (damped) vibrations. The logarithmic decrement was taken as a measure for the internal energy dissipation. The free vibrations are recorded on the loop oscilloscope 15 with the aid of a special photoelectric differential apparatus 13 - 14. The scaler 16 serves for counting the number of alternating loads. The training is interrupted for a few seconds at the moment of taking the oscillogram from the control panel 17. Samples of 110 ± 10 by 17 ± 4 by 5.5 ± 0.5 mm were tested. Results show that the rate of decrement increase grows with increasing frequency and training amplitude. There are 2 figures.

ASSOCIATION: Institut mashinovedeniya (Institute of the Science of Machines)

Card 2/3

CHERNYSHEV, V.M., inzh.

Dynamic modulus of elasticity of some industrial plastics.
Vest.mash. 42 no.1:46-49 Ja '62. (MIRA 15:1)
(Plastics--Testing)

S/122/63/000/003/007/008
A004/A127

AUTHOR: Chernyshev, V.M., Engineer

TITLE: Experimental dependences characterizing the internal energy dissipation of some structural plastics

PERIODICAL: Vestnik mashinostroyeniya, no. 3, 1963, 44 - 47

TEXT: The author investigated the internal energy dissipation of 16 plastics, including 12 cold-setting glass plastics made of various resins and fillers, textolite, pertinax, and the thermosetting -4 (AG-4) glass plastic, and presents the composition and mechanical properties of the tested materials in a table. Tests proved that in structures of plastics, the main portion of energy is dissipated in the elastic element of the material owing to the high damping property of plastics. Thus, in determining the natural frequency and amplitude of forced oscillations of such structures, it is sufficient to take into account the energy dissipation in the material. The investigation of the effect of the deformation amplitude on the logarithmic decrement of oscillations was carried out at a frequency of 4 ± 0.3 cps. The author presents the logarithmic decre-

Card 1/2

Experimental dependences characterizing the ....

ments of oscillations of plastics depending on the frequency, derives appropriate formulae and points out that the results obtained do not only serve for a quantitative evaluation of the damping properties of the investigated plastics, but also for developing a method of vibration calculation of structures made of this type of material. There are 3 figures and 3 tables.

CHERNYSHEV, V.M.

Correction to the G.I.Pogodin-Alekseev method studying the properties of a metal under bending impact. Zav.lab. 29 no.7:888-889 '63. (MIRA 16:8)

1. Volgogradskiy nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

(Metals--Testing)

L 29116-65 EWT(m)/EPF(c)/EWP(j)/T/EWP(t)/EWP(b) [illegible]

ACCESSION NR: AP5005479 S/0032/65/[illegible]

AUTHOR: Chernyshev, V. M.

TITLE: On determining internal friction of plastics

SOURCE: Zavodskaya laboratoriya, v. 31, no. 2, 1965, 207-208

TOPIC TAGS: absorption coefficient, vibration damping, plastic, friction

ABSTRACT: A brief analysis is made of the formula (1) $\psi = 2\delta$ relating the absorption coefficient ψ to the logarithmic decrement δ as an index of internal friction in plastics. It is shown that equation 1 above is an approximation of the formula (2) $\psi = 1 - e^{-2\delta}$, if derived from the difference formula (3) $\delta = \frac{A_n - A_{n+1}}{A_n}$ where A_n and A_{n+1} are the maximum potential energies of n and n + 1 vibration cycles. However, it is contended that equation (3) does not take into account the continuous change in the energy of the system throughout a cycle and, consequently, if equation [illegible] integrated continuously over a given period, then equation (1) becomes [illegible] art. has: 10 formulas and 1 figure.

Card 1/2

L 29116-65

ACCESSION NR: AP5005479

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy i proyektnyy institut tekhnologii khimicheskogo i neftyanogo apparatostroyeniya (All-Union [illegible] Research and [illegible] Institute of Chemical and Petroleum Instrument [illegible] Technology)

SUBMITTED: 00 ENCL: 00 [illegible]

NO REF SOV: 004 OTHER: 000

Card 2/2

L 3790-66 EWT(m)/EWP(w)/EPF(c)/EWP(j)/T/ETC(m) WW/EM/RM

ACCESSION NR: AP5023214 UR/0374/65/000/004/0136/0145
678:624.072.5

AUTHOR: Chernyshev, V. M. (Volgograd)

TITLE: Free vibrations of plastic structures taking into account the specificity of elastic and damping properties of the construction material. (Systems with distributed parameters)

SOURCE: Mekhanika polimerov, no. 4, 1965, 136-145

TOPIC TAGS: random vibration, vibration damping, vibration analysis, plastic strength, elastic modulus, elasticity theory, elastic scattering, elastic deformation

ABSTRACT: A method for calculating the free vibrations of plastic constructions with distributed parameters is considered. The method takes into account the frequency dependence of the modulus of elasticity and inelastic scattering of plastics. The differential equation of the system motion is calculated by means of Krylov-Bogolyubov's asymptotic method in the first degree of approximation. The differential equation is solved by the Pisarenko method. For practical purposes, the

Card 1/2

L 3790-66

ACCESSION NR: AP5023214

Krylov-Bogolyubov method followed by the Pisarenko solution technique was found to be unacceptable because of its great complexity. It was found that an identical differential equation of the system motion is obtained more directly by using the Panovko method and assuming that the Viller rule holds. (The Viller rule states that in systems with weak damping the mode of vibration is identical to that in a friction-free system.) Orig. art. has: 44 formulas.

ASSOCIATION: none

SUBMITTED: 06Oct64 ENCL: 00 SUB CODE: ME

NO REF SOV: 007 OTHER: 000

Card 2/2

ACC NR: AP7007747 SOURCE CODE: UR/0314/67/000/001/0044/0047

AUTHOR: Chernyshev, V. M. (Candidate of technical sciences); Kuznetsov, F. S. (Engineer); Yermakov, A. A. (Engineer)

ORG: none

TITLE: Visual methods of x ray inspection of welded seams

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye, no. 1, 1967, 44-47

TOPIC TAGS: x ray detection, x ray equipment, weld defect

ABSTRACT: Due to the labor and material cost of photo x-raying welds in chemical and petroleum equipment, most manufacturers now actually examine only 10--15% of welded seams. Visual x-ray inspection is expanding with the use of fluorescent or luminescent screens, scintillation detectors, and electrooptical shadow converters, all of which methods are 10--15 times mroe efficient than photo x-raying and allow 100% inspection of all welds. For fluorescent-screen radioscopy of steel products more than 12 mm thick the Soviet industry uses betatrons as the radiation source, whereas foreign, e.g., British, industry prefers linear accelerators, but both are too cumbersome for use on welded pipe. A description is given of x-ray apparatus with fluorescent screen. The apparatus cannot be used with steel more than 12 mm thick. A much better type is the British fluoroscope with a Marconi superorthicon image tube, used to detect shrink holes in steel blooms. In the Soviet Union, radioscopy

Card 1/2 UDC: 621.774.63.06

ACC NR: AP7003747

with scintillation detectors is being developed at the VNIIintroskopiya, Moscow, and NIIintroskopiya at Tomsk Polytechnic Institute (NIIintroskopiya pri Tomskom politekhnicheskom institute). The x-ray amplifier produced by the Müller company in Hamburg is described. This method of visual inspection is called the most efficient. The Soviet Union is now producing serially the ERGA-S roentgenograph, developed at the NIIelektrografiya Vilnius, which detects flaws in steel up to 30-mm thick, employing selenium plates which can be used repeatedly. Orig. art. has: 6 figures.

SUB CODE: 13, ~~14~~ 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 003

Card 2/2

CHERNYSHEV, V.N.

86-5-12/24

AUTHORS: Chernyshev, V. N., Lt.Col. commander of unidentified Air Force unit, and Proskurin, V. Ya., Gu LtCol, political officer

TITLE: Our Engineer (Nash inzhener)

PERIODICAL: Vestnik Vozdushnogo Flota, 1957, Nr 5, pp. 66-68 (USSR)

ABSTRACT: A description of the initiative shown by Deputy Commander for the Air Engineering Service, G. A. Sumerkin, as reflected in the following achievements. (1) He eliminated the time-consuming towing of airplanes to the preliminary takeoff line (liniya predvaritel'nogo starta) and back for the preflight airplane preparation and replaced it by preflight preparation at the parking area. The location of the preliminary takeoff line is not given in the source. It may be surmised that this is not the actual takeoff line and that, therefore, its use was time wasting. Thus, he shortened preparation by two hours daily. (2) He improved the process of refueling airplanes by carrying it out directly at the parking area, without using the refueling trucks, and by improving the refueling installation at the parking area. Thus, he cut the refueling time nearly in half, raised the efficiency, and relieved the refueling

Card 1/2

Our Engineer (Cont.)

trucks for other duties. (3) He raised the standard of technical instruction given to flying personnel by dropping the detailed subjects on the construction of airplane and airplane parts, stressing, instead, the subjects proved to be of more real importance in teaching them to fly intelligently and safely. (4) Last year, he organized a drive for better dissemination of aeronautic science among the personnel, and also an exchange of experiences in which some of the better aviation specialists took part. (5) He organized a technical conference at which cases of efficiently and poorly organized work in the Air Force subunits were discussed. One figure. (6) He directs the activities of the "rationalizers" of his unit.

AVAILABLE: Library of Congress

Card 2/2

CHERNYSHEV, V.N., podpolkovnik, voyennyy letchik pervogo klassa;
RUBINSHTEYN, A.M., inzh.-mayor

How to determine an airplane's ceiling. Vest.Vozd.Fl. 41 no.2:85-87
F '59. (MIRA 12:4)
(Airplanes)

CHERNYSHEV, V.N., starshiy inzhener-leytenant

Reconnaissance for radar stations by means of artificial earth satellites (as revealed by foreign press data). Vest.protivovozd. obor. no.12:57-59 D '61. (MIRA 15:3)
(Artificial satellites--Radio observations)
(Radar, Military)

CHERNYSHEV, V. N., inzh.

Long-distance antenna position indicating system with signal fed to the deflection coil of the indicator. Mor. flot 21 no.12:17-19 D '61. (MIRA 14:12)
(Radar in navigation)

S/799/62/000/002/009/011

L 10638-63 EWT(d)/FCC(w)/BDS--ASD/APGC/ESD-3--Pg-4/Pk-4/Po-4/Pq-4--IJP(c)/GC

74

AUTHORS: Reynburg, M. G., Chernyshev, V. N.

TITLE: A semiconductor translator of voltage into digital code

SOURCE: Akademiya Nauk SSSR, Institut elektronnykh upravlyayushchikh mashin. Tsifrovaya tekhnika, vychislitel'nyye vstroystva, no. 2, 1962, 125-136.

TEXT: A semiconductor voltage - to - digital - code translator (VtDCT) was developed. The following performance characteristics are adduced: (1) The scale of the variable input voltage, +10V. (2) Input resistance, ≥ 150-200 kohm. (3) The VtDCT delivers a sequential 9-digit binary position code with an 8-digit mantissa and a sign digit (negative voltages are coded in positive code). (4) If the aforementioned maximum voltage value is exceeded, the equipment operates at the limiting regime. When the limit is attained in the negative range, the code 100..001 is formed, whereas at the upper end of the positive range the code 111...010 is formed. (5) Breadboard VtDCTs were constructed with a pulse-repetition rate of f 50, 100, and 200 kcps. The time expended in the coding of a single voltage value amounts to $T_k = 2^n/f$ msec, where n is the number of digits in the code. (6) Ferrite-transistor units (FTU) were used as basic logical elements. A FTU was also used as an output element of the VtDCT to connect it with the computer. (7) The error of

Card 1/2

L 10638-63
A semiconductor translator of voltage into digital code. S/799/62/000/002/009/011

nonlinearity of a linearly-varying voltage does not exceed 0.2%. (8) The additional translation error caused by changes in the ambient temperature from 20 to 40° C does not exceed 0.4%. The block scheme of the translator is shown, also a full page functional scheme of the translator, a schematic network diagram of the temperature-stabilized DC amplifier and of the linearly-varying voltage generator and the shaper network. Schematic network diagrams are also shown for the comparison equipment (shaper), the FTU, and the diode transformer gate with the shaper unit. The use of FTUs permitted the accomplishment of the coding equipment with a relatively small number of elements (94 triodes, 15 diodes). All connections within and between continuously-operating elements are accomplished on DC, which permits the re-establishment of the initial regime during an interval between successive translation cycles. The equipment is, therefore, suitable for utilization in multi-channel information-translation systems with sharply differing levels in neighboring channels. Stabilized power supplies must be used without fail to ensure maintenance of a perscribed accuracy of coding. Continuously-operating elements should be fed from independent sources with a small internal resistance and small pulsation and instability coefficients, which must be no greater than one-half the weight of the smallest digit. There are 7 figures and 1 English-language: Blecher, Transistor circuits for analog and digital applications. Bell Syst. Tech. J., v. 35, no. 2, 1956.

sc
Card 2/2

BALASHOV, A.A.; LOSSIYEVSKIY, V.L.; CHERNYSHEV, V.N.; SHVAB, A.F.; SHELEMIN, B.V.; ANDREYENKO, Z.D., red.; POPOVA, S.M., tekhn. red.

[Flow sheets and means of automation of radiochemical industries; automation of radiochemical extraction processes] Skhemy i sredstva avtomatizatsii radiokhimicheskikh proizvodstv; k voprosu ob avtomatizatsii radiokhimicheskikh ekstraktsionnykh protsessov. Moskva, Gosatomizdat, 1963. 186 p. (MIRA 17:2)

PAVLOV, I.M.; KOROLEV, A.A.; ILKA IOAN; CHERNYSHEV, V.N.

Device for the investigating of the asymmetrical process of longitudinal rolling. Izv. vys. ucheb. zav.; chern. met. 7 no.11:105-111 '64. (MIRA 17:12)

1. Moskovskiy institut stali i splavov.

L 18302-65 EWT(m)/EPF(n)-2/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4/Pu-4 IJP(c)/
AFWL/ASD(m)-3/AFETR/ASD(f)-2/AFTC(p)/SSD JD/HW/JG
ACCESSION NR: AP5000944 S/0136/64/000/012/0071/0074

AUTHOR: Krupin, A. V.; Solov'yev, V. Ya.; Chernyshev, V. N.; Izotov, V. M.; Korolev, V. M.

TITLE: Investigation of the basic indices in cold rolling of niobium

SOURCE: Tsvetnyye metally, no. 12, 1964, 71-74

TOPIC TAGS: niobium, cold rolling, specific pressure, friction, torque, forward slip

ABSTRACT: An investigation has been made of the effect of reduction in cold rolling of niobium on the total and specific roll pressure, torque, friction, and forward slip, and also of the effect of the width of the rolled bar on the mean specific roll pressure and spread. Ingots of 99.88%-pure, vacuum arc-melted niobium were preforged and cold rolled into 5-mm thick strip. Test specimens 30 mm wide and 120 mm long cut from this strip were subjected to recrystallization annealing in a vacuum of $1 \cdot 10^{-5}$ mm Hg at 1200C, and cold rolled with a reduction of 5—80% in one pass. The mean specific pressure was found to rise sharply with increasing reduction, reach a maximum of about

Card 1/2

L 18302-65
ACCESSION NR: AP5000944

68 kg/mm^2 at a reduction of 20%, and then to decrease gradually to about 85% of the maximum value at a reduction of 80%. The approximate value of the friction coefficient for cold rolling of niobium in ground, cast-iron rolls was determined as 0.08—0.09. The initial width of the strip was found to have an insignificant effect on the mean roll pressure. The absolute magnitude of the spread increased almost linearly with increasing reductions from 0.7 mm at 20% reduction to 2.9 mm at 80% reduction. Orig. art. has: 6 figures and 4 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 005 OTHER: 000 ATD PRESS: 3156

Card 2/2

L 29920-66 EWP(k)/EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) DJ/JD/HW/JG

ACC NR: AP6017300 (A, N) SOURCE CODE: UR/0136/66/000/005/0093/0094

56

B

AUTHOR: Krupin, A. V.; Pavlov, I. M.; Linetskiy, B. L.; Chernyshev, V. N.; Zarapin, Yu. L.; Starkov, V. N.; Korchagin, P. A.; Vinogradov, V. V.; Tyukalov, T. V.

ORG: none

TITLE: Rolling of tungsten and molybdenum under conditions of low partial pressures of oxygen

SOURCE: Tsvetnyye metally, no. 5, 1966, 93-94

TOPIC TAGS: tungsten, molybdenum, hot rolling, tungsten rolling, molybdenum rolling, vacuum rolling

ABSTRACT: Tungsten and molybdenum plates (8 x 40 x 150 mm) preforged or prerolled from sintered ingots were hot rolled in air, argon containing 0.03% O_2 and 0.01% N_2, or in a vacuum of 0.1—0.005 mm Hg. Tungsten was rolled at 1200, 1300, and 1450C with reductions of 10, 20, and 30% per pass; molybdenum was rolled at 950, 1050, and 1150C with reductions of 10, 20, 30, 50, and 55% per pass. A sharp increase in the roll pressure, torque, forward slip, and friction coefficient was observed with change from air atmosphere to a pressure of 0.1 mm Hg. This was caused by increased friction. Lowering the pressure from 0.1 to 0.005 mm Hg had little or no additional effect. Increasing the rolling temperature in vacuum of 0.01 mm Hg had an insignificant effect on the specific pressure in rolling molybdenum, but appreciably

Card 1/2 UDC: 669.27/.28:621.771

L 29920-66

ACC NR: AP6017300

decreased the specific pressure in rolling tungsten, e.g., from 74 at 1200C to 64 and 60 kg/mm^2 at 1300 and 1450C, respectively. The specific pressure increased with increasing reduction. In rolling tungsten in a vacuum of 0.1 mm Hg, increasing the reduction from 20 to 30% led to a specific pressure increase from 74 to 91 kg/mm^2 at 1200C and from 60 to 69 kg/mm^2 at 1450C. In rolling molybdenum the specific pressure increased from 44 to 96.5 kg/mm^2 with increasing reduction from 10 to 45% at 1050C. In vacuum rolling at high temperatures and reductions a sticking of metal to the rolls was observed. In rolling of tungsten at 1450C with a reduction of 35%, an intensive sticking resulted in splitting of metal. Little or no sticking was observed at 1200C. Noticeable sticking was observed in rolling molybdenum at 1150C. [MS]

SUB CODE: 11,13/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 5011

Card 2/2

CHELYUSTKIN, A.B., red.; ITSKOVICH, E.L., red.; PLISKIN, L.G., red.; RAYZMAN, N.S., red.; CHERNYSHEV, V.N., red.; VOLKOV, V.L., red.; CHADEYEV, V.M., red.

[Automatic operational control of production processes; transactions] Avtomaticheskoe operativnoe upravlenie proizvodstvennymi protsessami; trudy. Moskva, Nauka, 1965. 244 p. (MIRA 18:11)

1. Vsesoyuznaya konferentsiya po avtomaticheskomu operativnomu upravleniyu proizvodstvennymi predpriyatiyami. 1st. Moscow, 1963.

L 45294-66 EWP(e)/EWP(v)/EWT(d)/EWT(m)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c)
ACC NR: AR6017489 JD/HW/JG/AT/WH SOURCE CODE: UR/0137/66/000/001/D024/D024

AUTHORS: Pavlov, I. M.; Krupin, A. V.; Chernyshev, V. N.; Bogolyubov, V. S.; Linetskiy, B. L.

67
B

TITLE: Devices for working refractory metals in vacuum and in inert media

SOURCE: Ref. zh. Metallurgiya, Abs. 1D170

REF SOURCE: Tr. Mosk. in-ta stali i splavov i Mosk. energ. in-ta, vyp. 61, ch. 2, 1965, 89-94

TOPIC TAGS: physical metallurgy, metal rolling, rolling mill, refractory metal

ABSTRACT: Problems associated with rolling some metals in a vacuum are discussed. Special types of mills used in vacuum rolling and the technique of rolling some refractory metals are described. A. Leont'ev [Translation of abstract]

SUB CODE: 11

Card 1/1

UDC: 669.621.771.27

L 20024-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b) Pf-4 IJP(c)/ASD(f)-3/ASD(m)-3
JD/HW
ACCESSION NR: AR4048249 S/0137/64/000/009/I082/I082

SOURCE: Ref. zh. Metallurgiya, Abs. 9I531

AUTHOR: Krupin, A. V.; Bernshteyn, M. L.; Chernyshev, V. N.; Chzhao Dzhan-go

TITLE: Effect of thermomechanical treatment on properties of titanium

CITED SOURCE: Tr. Mosk. in-ta metallurgii, Mosk. energ. in-ta i Mosk. in-ta stali i splavov, vyp. 44, 1963, 271-276 *

TOPIC TAGS: thermomechanical treatment, titanium, rolling, annealing

TRANSLATION: The effect of hot rolling (300 and 500°) in conjunction with low temperature annealing on the properties of technical grade titanium was studied. Samples were cut from titanium which had been forged and annealed at 700°; the samples measured 10 x 15 x 150 mm. Hot rolling was carried out with shrinkage of 5, 10, 15, and 30%; cold rolling with shrinkage of 5, 10, and 13%. The rolled samples

Card 1/2

*[So cited in original Ref. Zh.]

L 20824-65
ACCESSION NR: AR4048249

were annealed for 1 hr at 250, 350, and 500°. As a result of thermomechanical treatment the strength properties of Ti increased compared to its properties after hot rolling, while δ and ψ were practically not decreased. Thus, after working under conditions of hot rolling at 300° with shrinkage of 10% and annealing at 250° for 1 hr, σ increased from 79.5 (after rolling) to 86.0 kg/mm^2 while ductility hardly changed. The best conditions for thermomechanical treatment of Ti are: rolling at 300° with a shrinkage of 6-13% and rolling at 500° with shrinkage of 28% with subsequent annealing at 250° for 1 hr.

SUB CODE: MM ENCL: 00

Card 2/2

CHERNYSHEV, V.N.

Dynamics of mass transfer in counterflow extraction apparatus.
Avtom. proizv. no.4:5-21 '64. (MIRA 18:3)

L 42964-65 EWT(d)/EWT(m)/EPF(n)-2/EWG(m)/EWA(d)/EWP(v)/EPR/EWP(t)/EWP(k)/EWP(h)/EWP(z)/EWP(b)/EWP(l)/EWA(c) Pf-4/Ps-4/Pu-4 IJP(c) JD/HW/JG

ACCESSION NR: AP5008388 S/0148/65/000/003/0089/0093

AUTHOR: Krupin, A. V.; Pavlov, I. M.; Chernyshev, V. N.; Bogolyubov, V. S.; Linetskiy, B. L.

TITLE: The vacuum rolling mill 210 14

SOURCE: IVUZ. Chernaya metallurgiya, no. 3, 1965, 89-93

TOPIC TAGS: vacuum rolling mill, rolling mill equipment, rolling mill 210 16

ABSTRACT: The vacuum rolling plant 210 has been designed and built at the Moscow Institute for Steel and Alloys. The plant consists of a rolling mill and heat-treating furnaces enclosed in a common vacuum chamber, which makes it possible to heat, roll, and heat-treat metals and alloys either in a vacuum or in a protective atmosphere in one continuous operation. The one-stand, two-high reversible mill has rolls 210 mm in diameter and 340 mm long. The maximum permissible roll pressure is 100 tons, and the maximum roll opening is 50 mm. The mill is driven by a 22-kw, d-c motor at speeds of 400 to 1000 rpm. The rolls can be preheated if necessary. The maximum temperature in

Card 1/2

L 42984-65

ACCESSION NR: AP5008388

one furnace is 1650C and in another, 1300C. The vacuum chamber is 1020 mm in diameter and is made of a steel plate 10 mm thick. The vacuum system can evacuate the chamber to $1 \cdot 10^{-2}$—$1 \cdot 10^{-3}$ mm Hg. The mill has been used to roll refractory metals (V, Nb, Ta, Zr, Mo, and W) and metal-to-metal laminates (e.g., titanium alloy-bronze, titanium alloy-stainless steel, titanium alloy-niobium-stainless steel, titanium alloy-tantalum-stainless steel). Orig. art. has: 1 figure. [AZ]

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute for Steel and Alloys)

SUBMITTED: 25Sep64 ENCL: 00 SUB CODE:

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3236

Card 2/2

L 07979-67 EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/JG/WB

ACC NR: AT6022710 SOURCE CODE: UR/2848/66/000/041/0196/0204

AUTHORS: Krestovnikov, A. N.; Krupin, A. V.; Linetskiy, B. L.; Chernyshev, V. N.; Bogolyubov, V. S.

ORG: Moscow Institute of Steel and Alloys, Department of Technology and Automation of the Rolling Industry (Moskovskiy institut stali i splavov, Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva)

TITLE: Thermodynamic analysis of the conditions of nonoxidizing rolling of tungsten in a vacuum at high temperatures

SOURCE: Moscow. Institut stali i splavov. Sbornik, no. 41, 1966. Fizicheskaya khimiya metallurgicheskikh protsessov i sistem (Physical chemistry of metallurgical processes and systems), 196-204

TOPIC TAGS: tungsten, tungsten compound, tungsten containing alloy, tungsten alloy, THERMODYNAMIC ANALYSIS, METAL ROLLING, METAL OXIDATION

ABSTRACT: Thermochemical calculations of tungsten behavior at various temperatures and residual pressures and conditions under which oxidation cannot occur are presented. The thermodynamic calculations for the oxidation reactions which form WO_3, W_2O_5, and WO_2 are given for temperatures 1200--1600C, and the thermodynamic characteristics (as well as enthalpy and entropy) are tabulated for the tungsten oxides over the temperature range 1473--1873K. The characteristic temperatures of the oxides are given and

Card 1/2

ACC NR: AT6022710

the Debye functions for tungsten and oxygen in W_2O_5 are tabulated. Based on this data, curves of the isobaric potentials for oxide formation and of the equilibrium pressures of oxygen as a function of temperature are constructed as shown in Figs. 1 and 2.

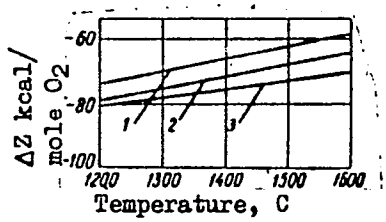


Fig. 1. Isobaric potentials of oxide formation: 1 - WO_3; 2 - WO_2; 3 - W_2O_5.

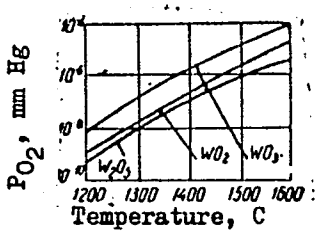


Fig. 2. Dissociation constants of tungsten oxides.

It is concluded that rolling of tungsten in a vacuum to prevent oxidation is feasible. Orig. art. has: 9 tables, 12 formulas, and 2 figures.

SUB CODE: 13/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 003

CHERNYSHEV, V.O.

Ways of increasing the efficiency of navigation radar sets on ships.
Mor. sbor. 48 no.11:54-56 N '64. (MIRA 18:3)

CHERNYSHEV, Valeriy Olegovich; VARLEY, V.V., inzh., retsenzent; [illegible], Yu.M., inzh., red.

[Rotary transformers and their use in computers and automatic systems] Povorotnye transformatory i ikh primenenie v vychislitel'nykh i avtomaticheskikh ustroistvakh. Moskva, Energiia, 1965. 103 p. (Biblioteka po avtomatike, no.127) (MIRA 18:4)

CHERNYSHEV, Vladimir Nikolayevich; STELLIGOV, V.L., red.

[Lasers in outer space, on the earth, and under water] Lazery v kosmose, na zemle i pod vodoi. Moskva, Voenizdat, 1964. 102 p. (MIRA 17:6)

L 18541-66 EWT(d) BC

ACC NR: AP6002175 SOURCE CODE: UR/0146/65/008/006/0077/0083

AUTHOR: Chernyshev, V. O.

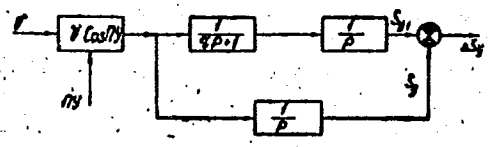
ORG: Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut im. V. I. Lenina)

TITLE: Effect of dynamic errors of sensors and information-input devices upon the accuracy of automatic dead reckoners

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 6, 1965, 77-83

TOPIC TAGS: dead reckoning, dead reckoning accuracy

ABSTRACT: The accuracy of automatic dead reckoning of geographical coordinates of ship position depends on the accuracy of determining navigational corrections and on the instrument error of the automatic-reckoner computer. With an allowance for delays in the electric log and gyro compass, equations describing dynamic error of dead reckoning are set up for a block diagram (see figure) which shows one channel of an automatic dead reckoner. Also, the errors of a servo system supplying speed and course signals and liable to self-oscillations are



Card 1/2 UDC: 531.383

L 18541-66

ACC NR: AP6002175

evaluated. By considering the problem grapho-analytically, these conclusions are reached: (1) The automatic-reckoner error depends on the form of the function describing periodic errors of the information-input system; (2) The relative error due to sinusoidal errors of the course-input system is one-half as large as the reckoning error due to step-type periodic errors; (3) The dynamic errors of the information-input system may considerably affect the accuracy of dead reckoning; hence, the possibility of self-oscillations in these systems must be precluded by their design. Orig. art. has: 3 figures and 30 formulas.

SUB CODE: 17 / SUBM DATE: 24Oct64 / ORIG REF: 002

Card 2/2 nlg S

CHERNYSHEV, V. P.

4419. CHERNYSHEV, V. P. -- Izgotovleniye, naveska i remont vodostochnykh trub. (M.)., 1954. 36 s. s chert. 20 sm. (zhil. upr. ispolkoma mossoveta. tekhn. kabinet). 3.000 ekz. 1r. 15k. -- Sost. Ukazan na oborote tit. L. -- (55-444)p 69.024.93)

SO: Knizhnaya Letopsis', Vol. 1, 1955

CHERNYSHEV, V. S. PHASE I BOOK EXPLOITATION SOV/6228

Agafonov, Vasiliy Prokhorovich, and Aleksey Valer'yanovich Sakovich

Voyennaya svyaz' (Military Communications) Moscow, Voyenizdat M-va obor. SSSR, 1962. 232 p. Errata slip inserted. 8000 copies printed.

Ed.: A. V. Vrublevskiy, Engineer-Colonel; Tech. Ed.: T. F. Myasnikova.

PURPOSE: This book is intended for officers of ground forces and may also be useful to officers and noncommissioned officers in signal communications who are studying problems in military communications.

COVERAGE: The book discusses the means and types of military communications, their tasks and requirements, and methods for the organization and development of communications. According to the annotation, the book is a reflection of the viewpoints of the authors and is not to be considered as an official statement regarding military communications. The book is based on Soviet and non-Soviet open-

Card 1/4 3

CHERNYSHEV, V.V., kandidat veterinarnykh nauk.

The level of scientific research in veterinary science should be higher.
Veterinariia 33 no.9:12-15 S '56. (MLRA 9:10)

1.Glavnoye upravleniye sel'skokhozyaystvennoy nauki Ministerstva sel'skogo khozyaystva SSSR.
(Veterinary research)

CHERNYSHEV V.V.

CHERNYSHEV, V.V.; VASIL'KOV, G.V.

Joint plenum of the Section of Infectious and Parasitic Diseases of the Department of Livestock Farming of the All-Russian Lenin Agricultural Academy and the Main Administration of Veterinary Medicine of the Ministry of Agriculture of the R.S.F.S.R. Veterinariia 34 no.10:92-96 O '57. (MLRA 10:11)

1. Uchenyy sekretar' sektsii infektsionnykh i invazionnykh bolezney otdeleniya zhivotnovodstva Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I. Lenina (for Chernyshev). 2. Starshiy nauchnyy sotrudnik sektsii infektsionnykh i invazionnykh bolezney otdeleniya zhivotnovodstva Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk im. V.I. Lenina (for Vasil'kov).
(Veterinary medicine)

CHERNYSHEV, V.V., kand.vet.nauk

Out-of-town meeting of the All-Union Lenin Academy of Agricultural Sciences. Veterinariia 36 no.3:94-95 Mr '59. (MIRA 12:4)
(Novosibirsk--Veterinary hygiene)

CHERNYSHEV, V. V., agronom po zashchite rasteniy (Azerbaydzhanskaya SSR)

On advanced farms. Zashch. rast. ot vred. i bol. 5 no.10:8-9 O '60. (MIRA 16:1)

(Kuba District—Fruit—Diseases and pests)
(Kuba District—Spraying and dusting in agriculture)

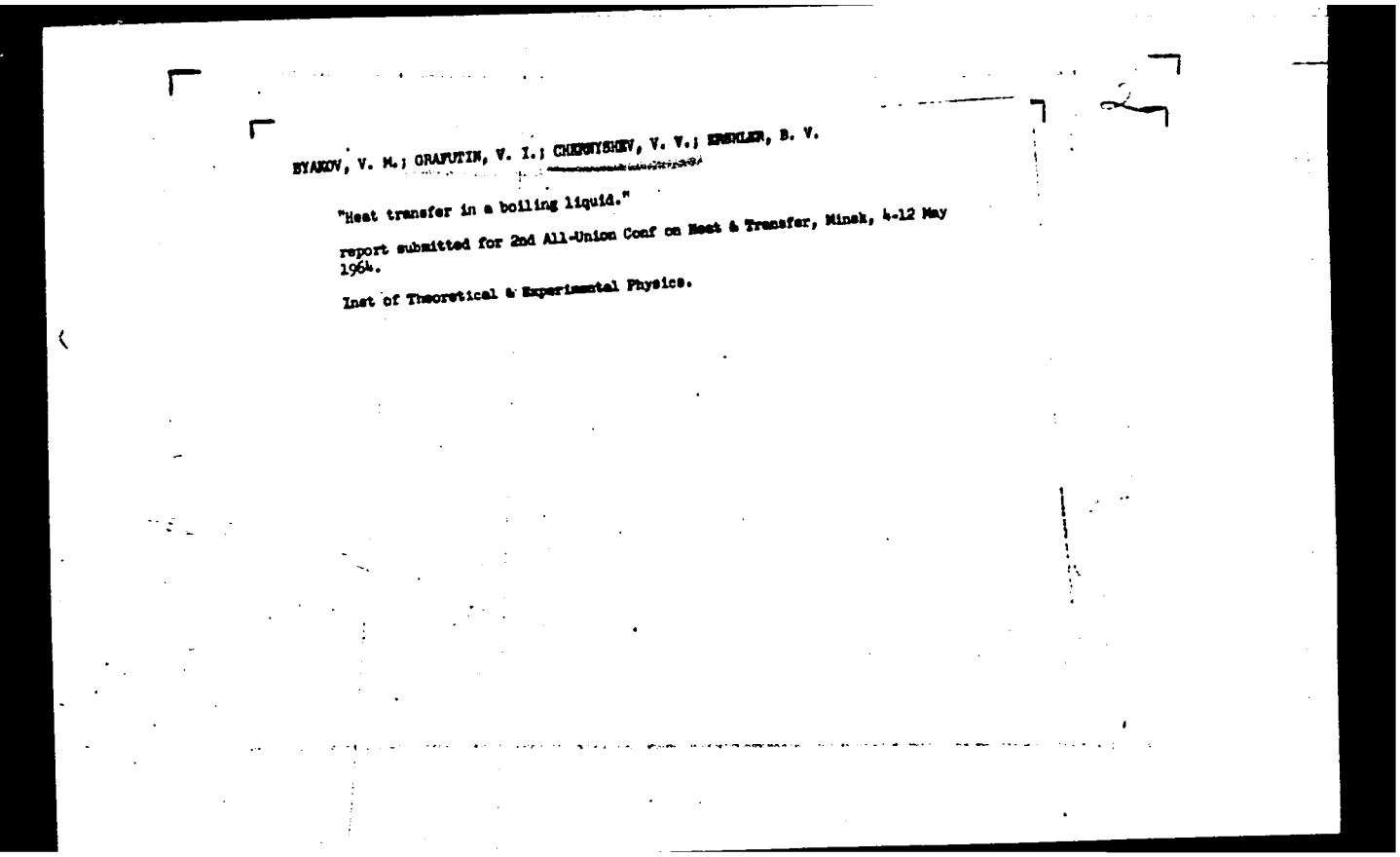
CHERNYSHEV, V.V.

Equipment for the cultivator of forest soils. Trakt. i sel'-khozmash. 30 no.8:35-36 Ag '60. (MIRA 13:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lesovodstva i mekhanizatsii lesnogo khozyaystva.
(Forests and forestry--Equipment and supplies)

RABUKHIN, A.I., insh.; CHERNYSHEV, V.V., insh.

Using colored diopside in making facing materials. Stroi. mat. 5 no.10:18-20 O '59. (MIRA 13:2)
(Pyroxenes) (Walls)



BYAKOV, V. M.; GRAFUTIN, V. I.; CHERNYSHEV, V. V.; ENSHLER, B. V.

"Heat transfer in a boiling liquid."

report submitted for 2nd All-Union Conf on Heat & Transfer, Minsk, 4-12 May 1964.

Inst of Theoretical & Experimental Physics.

ACC NR: AP6032121 (A,N) SOURCE CODE: UR/0346/66/000/010/0036/0038

AUTHOR: Chernyshev, V. V.; Burtsev, V. I.; Kushnir, A. T.; Orlov, V. A.

ORG: none

TITLE: Immunity to plague in weaned piglets vaccinated with an avirulent, dry, vaccine aerosol

SOURCE: Veterinariya, no. 10, 1966, 36-38

TOPIC TAGS: immunity, plague, pig, biologic aerosol, veterinary medicine, vaccine

ABSTRACT: The time required for vaccination to produce errective immunity, and the duration of immunity, were studied in piglets vaccinated against plague with an avirulent, dry, viral vaccine in aerosol. Healthy, two-month-old, weaned piglets, taken from both vaccinated and nonvaccinated sows, were used. Table 1 shows the results of the attempt to infect piglets, some of which were vaccinated by aerosol and some intramuscularly, with plague. The experimental data showed that by far less vaccine is required for aerosol than for intramuscular vaccination, and that immunity develops after, and is effective for, approximately the same periods with both methods. The authors suggest that wide application of this efficient method will save considerable time for veterinary workers.

Card 1/3 UDC:619:616.988.75-097]:636.4

Table 1 cont.

Vaccination method	Vaccine dose	Time of infection after vaccination (days)	Result of injection*
From vaccinated sows			
By aerosol... i.m.			
Intramuscularly			

*Numerator - number of animals falling sick; denominator - number of animals in experiment.

Orig. art. has: 1 table

[WA-50; CBE No. 14] [EL]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 005

Card 3/3

PROCESSES AND PROPERTIES INDEX

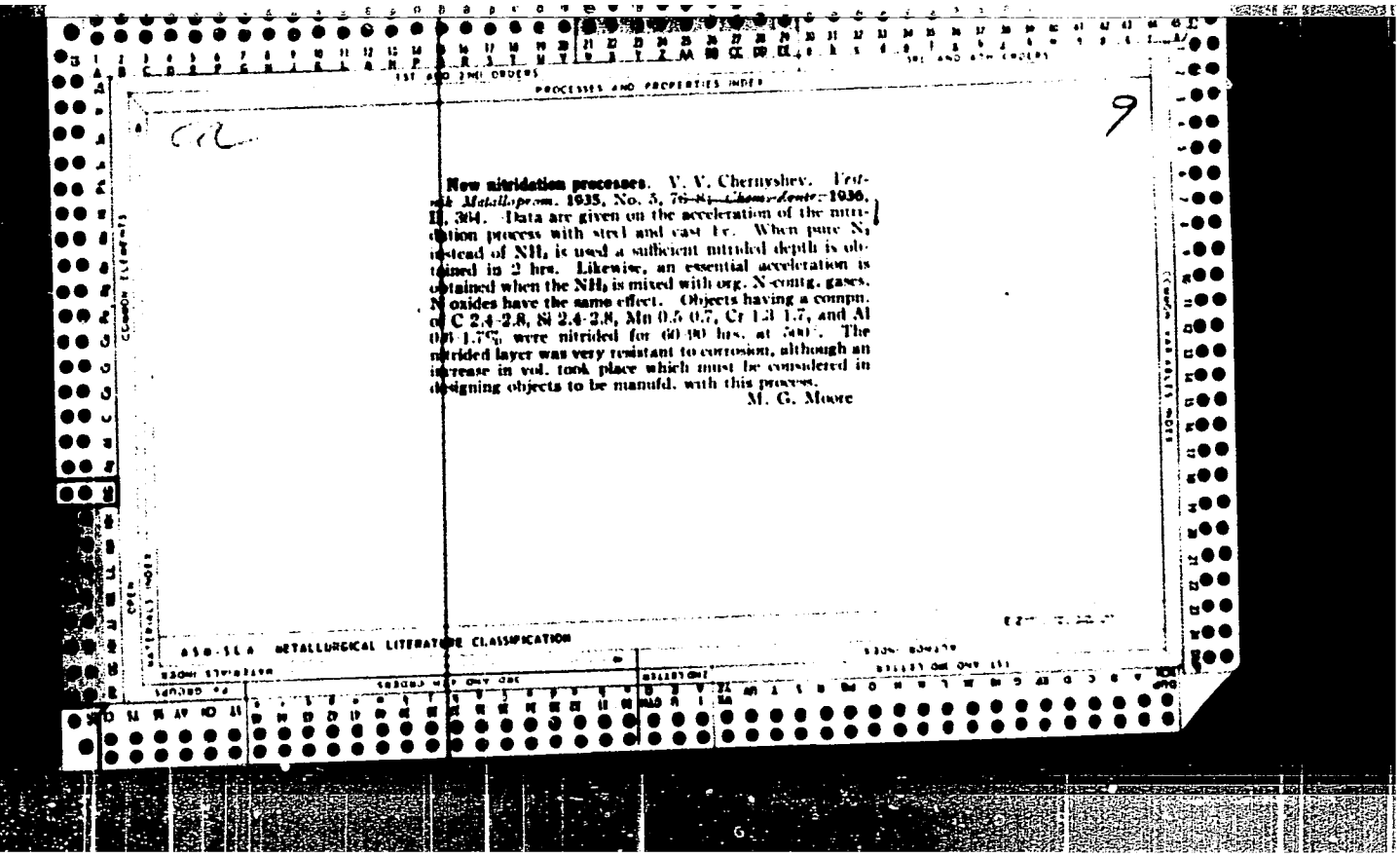
CA

9

Cyaniding of iron for separators. A. P. Selivskii and V. V. Cheruschev, *Vestnik metalloprom.* 14, No. 6, 87-94 (1934); *Chimie & industrie* 33, 631-2.—Increase in the concn. of NaCN in the bath above 30% increases the depth of the nitrided layer but very slightly; it increases its hardness, however. A concn. of 30% NaCN is the one best suited for the treatment of thin articles charged cold into the bath. The temp. of the latter should be at least 830-50°, according to the intensity of evapn. of the salts of the bath; a lower temp., e. g., 800°, gives unsatisfactory results. When the articles are charged cold, the mechanism of satn. of their surface layer with N plays a very important part; the phases of the Fe-N system are arranged in order of decreasing concn. of N from the surface toward the interior of the metal. By quenching in water from 830°, there is obtained a martensite which is formed in the layer between the γ and α phases; this martensite corresponds exactly to the tetragonal martensite formed on quenching C steel. The max. hardness of the nitrided layer corresponds to the presence of martensite at the surface of the metal. When the CN content of the bath increases, the N preferably distributes itself in the deeper portions of the nitrided layer and thus prevents diffusion of the C; on the other hand, when the CN concn. of the bath is relatively low, the superficial portions of the nitrided layer are richer in N than the deeper portions, but this does not prevent a more energetic diffusion of the N. The carbide layer is therefore deeper.

A. Papineau-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



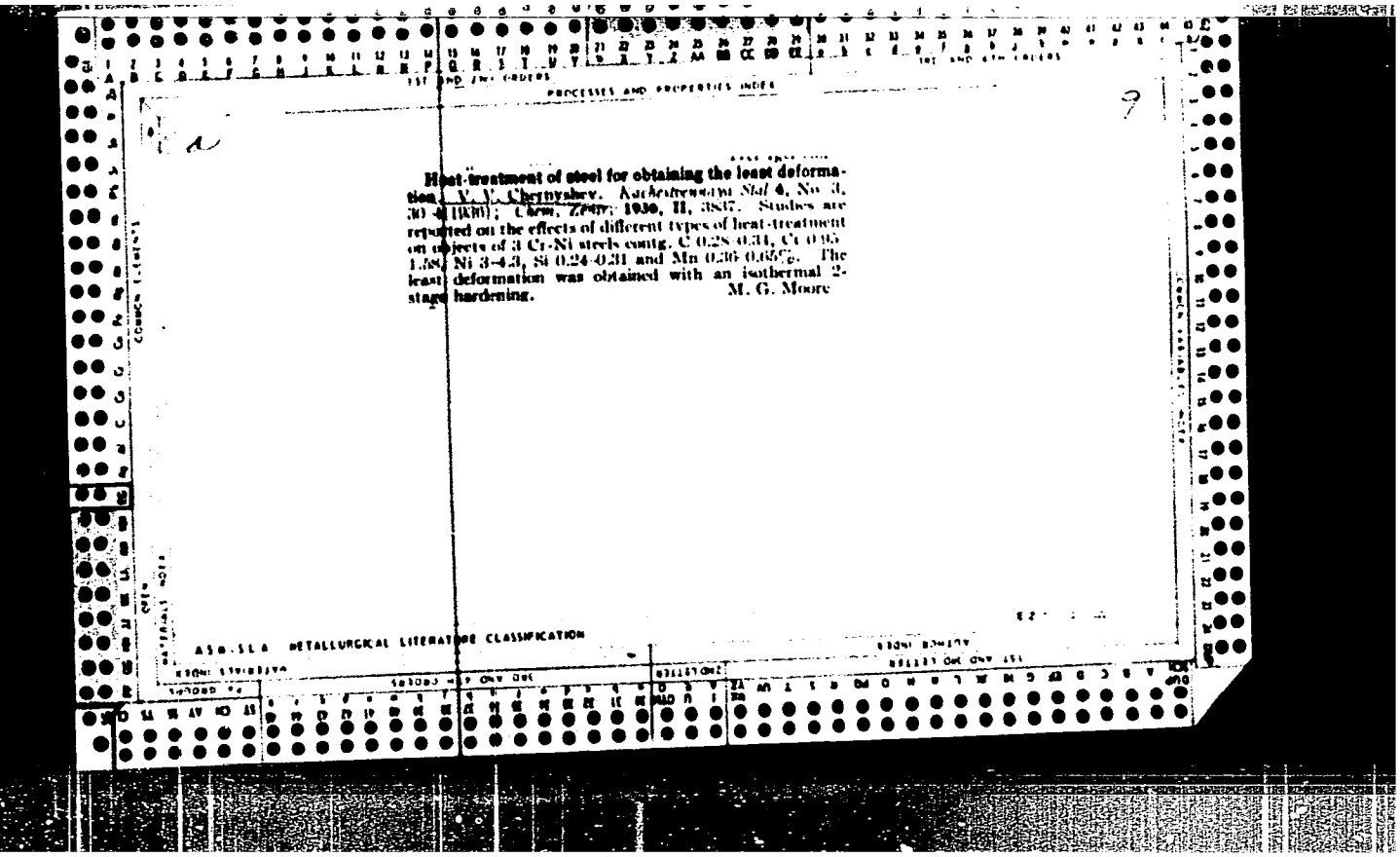
PROCESSES AND PROPERTIES INDEX

9

New nitridation processes. V. V. Chernyshev. *Trudy Metallopercm.* 1935, No. 5, 76–81; *Chem. Zentr.* 1936, II, 384. Data are given on the acceleration of the nitridation process with steel and cast Fe. When pure N_2 instead of NH_3 is used a sufficient nitrided depth is obtained in 2 hrs. Likewise, an essential acceleration is obtained when the NH_3 is mixed with org. N-contg. gases. N oxides have the same effect. Objects having a compn. of C 2.4–2.8, Si 2.4–2.8, Mn 0.5–0.7, Cr 1.3–1.7, and Al 0.9–1.7% were nitrided for 60–80 hrs. at 500°. The nitrided layer was very resistant to corrosion, although an increase in vol. took place which must be considered in designing objects to be manufd. with this process.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Heat-treatment of steel for obtaining the least deformation. V. V. Chernyshev. *Avtotraktornaya Stal* **4**, No 3, 30–4 (1939); *Chem. Zentr.* 1940, II, 3857. Studies are reported on the effects of different types of heat-treatment on objects of 3 Cr-Ni steels contg. C 0.28–0.34, Cr 0.95–1.58, Ni 3–4.3, Si 0.24–0.31 and Mn 0.36–0.65%. The least deformation was obtained with an isothermal 2-stage hardening.
M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

7

Wear and material for precision components for Diesel engines. V. V. Cherepnikov. *Trudy N.A.T.I.* **44**, 137-154 (1946); *Fuel Abstracts* [*N.S.*], **4**, No. 1, 78-9 (1948). Comparative tests have been carried out with a number of steels in an attempt to find the most suitable steel for the production of nitrided components of Diesel injection equipment. The steels included seven Cr-V steels contg. between 1 and 2.5% Cr and between 0.3 and 0.78% V; high Cr steels with 3.5% Cr, and 0.25 Ti or none; a Cr-Al-Ti steel; and 3 Cr-Al-Mo steels with between 1.05 and 0.35% Al. It was found that various types of steel may be used in place of the usual steel with C 0.39, Si 0.44, Mn 0.67, Cr 1.58, Al 1.05, Mo 0.70%. A steel with approx. 0.35% Al, but similar Cr and Mo content as the specified steel was particularly satisfactory. By a single nitriding cycle (10 hrs. at 525°), a Vickers hardness of 900 and more was obtained in the nitrided layer with very much less brittleness than the 1% Al steel. Another good substitute was found to be a 0.4 Al, 0.25 Ti, 1-1.25 Cr steel with 0.45-0.50% C. Adding Ti to a high Cr steel raised the hardness to that of the initially mentioned steel, but did not reduce the excessive brittleness of the nitrided layer. This steel may be difficult to machine. Cr-V steels are not recommended for the present purpose as the hardness of the nitrided layer would have to be reduced, they would be difficult to hot forge as they would have to contain about 2% Cr, and their sensitivity to the nitriding temp. would make heat treatment difficult. Consequently, the best substitute for the present purpose is a Cr-Al-Mo steel with an Al content reduced to 0.33%. In the second place, a Cr-Al-Ti steel with C 0.45-0.50, Cr 1-1.5, Al 0.30-0.40, and Ti 0.20-0.25% is recommended. R. D. H.

CHERNYSHEV, V. V.

"Rationalization of Technological Processes and Performance of High-Frequency Electric Current Heat Treatment of Tractor Parts," Prom. Energet., No. 7, 1948.

Ural Kirov Factory, c-1948-

CHERNYSHEV, V. V.

Low-alloy steel in agricultural machinery construction Moskva, Gos. nauch.-tekhn. izd-vo mashinostroit. lit-ry, 1949. 73 p. (50-22976)

TA472.C48

CHERNYSHEV, V. V. and V. A. IVANOV.

Vysokochastotnaia zakalka traktornykh detalei. Moskva, Mashgiz, 1950. 49 p. illus. (Tekhnologiia mashinostroeniia: Termicheskaia i khimiko-termicheskaia obrabotka metallov)

(High-frequency hardening of tractor parts.)

DLC: TK4601.C5

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

CHERNYSHEV, V. V.

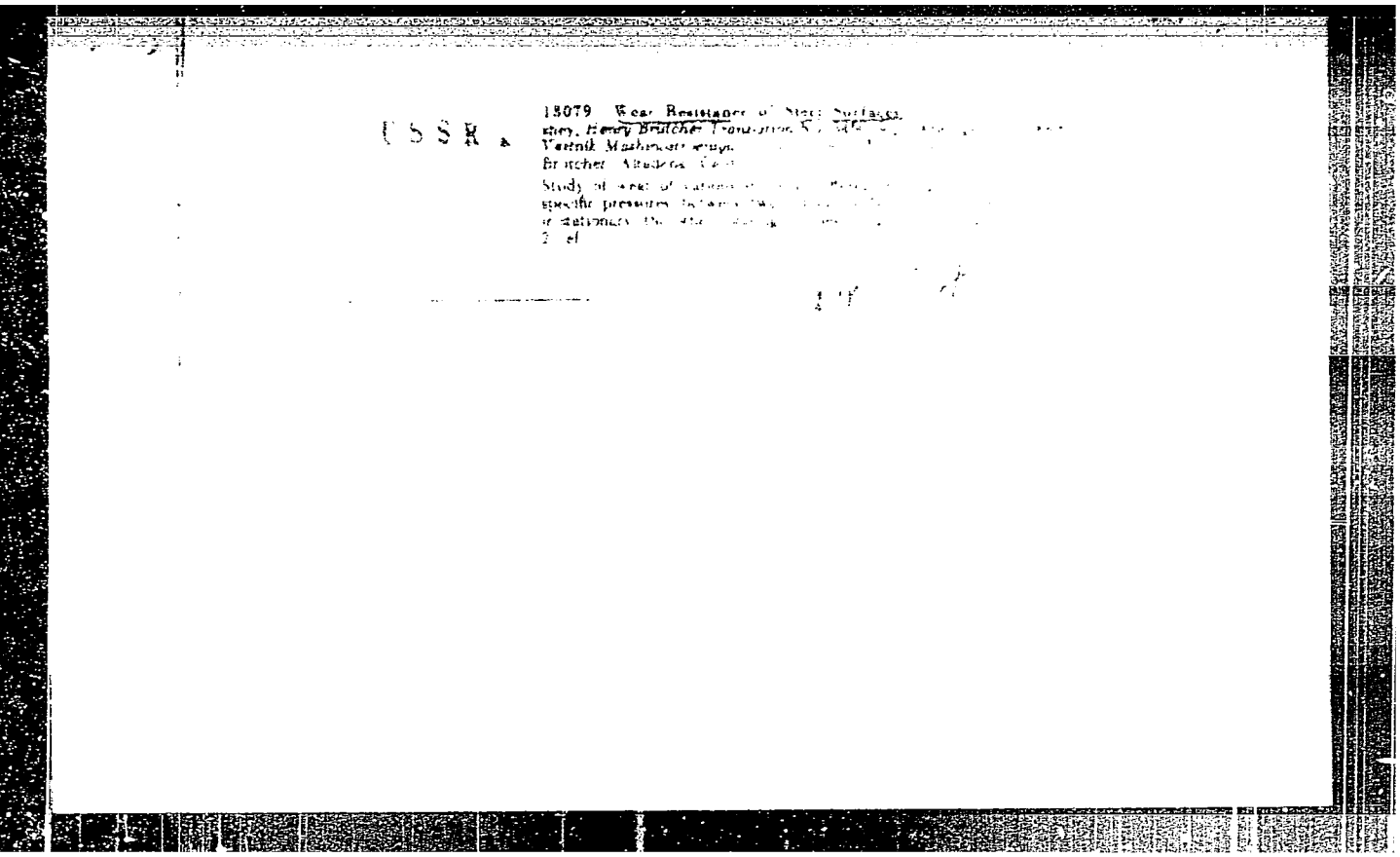
1. CHERNSHEV, V. V.

2. USSR (600)

4. Mechanical Wear

7. Resistance to wear of steel surfaces. Vest. mash. 32 no. 7 1952.

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



USSR

15079 Wear Resistance of Steel Surfaces

Vestnik Mashinostroyeniya

Study of

specific pressure

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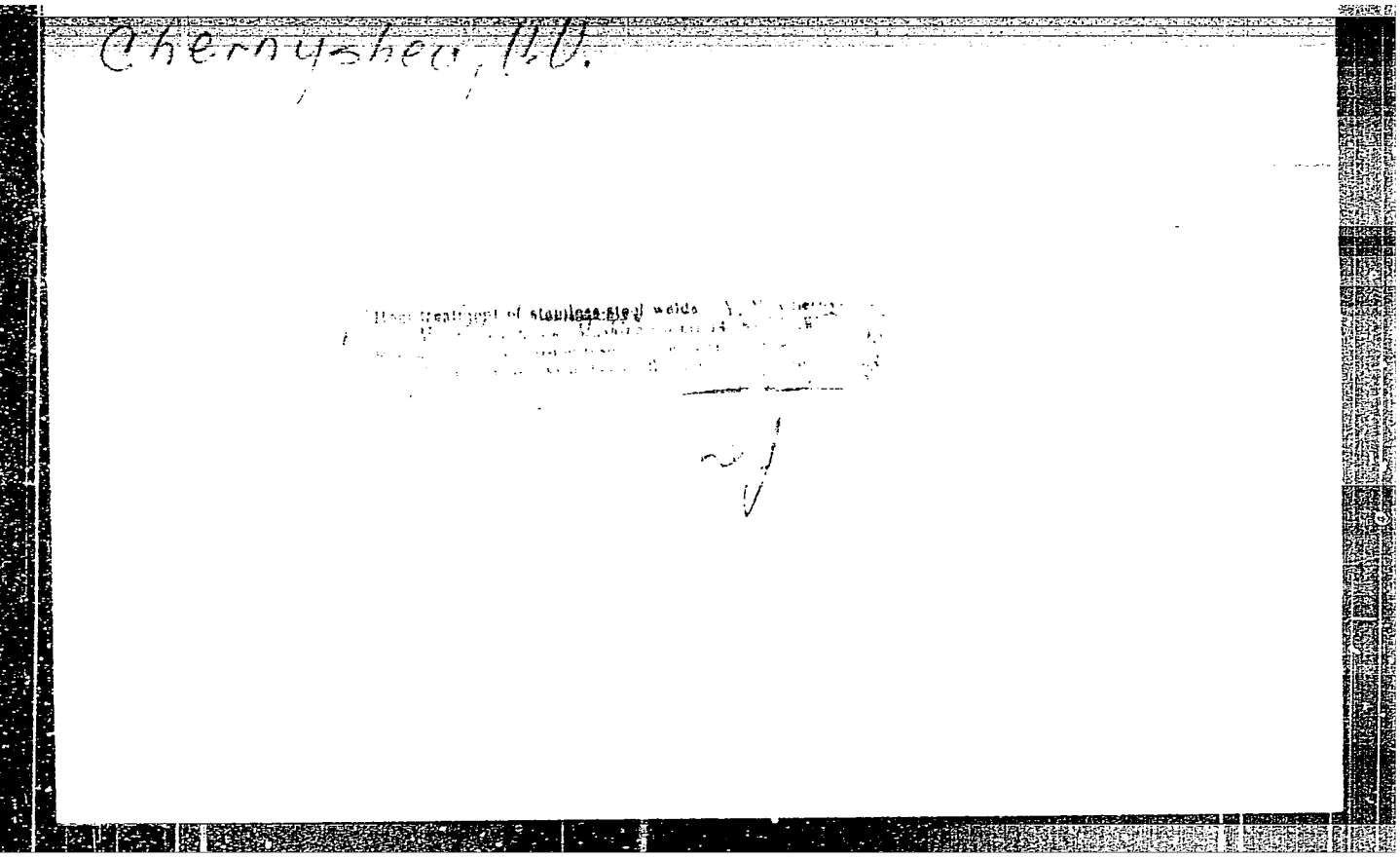

CHERNYSHEV, V.V., kandidat tekhnicheskikh nauk; BOGDANOV, V.V., inzhener

New apparatus for testing the wear resistance of metals. Sbor.st. NIIKHIMMASH no.14:124-130 '53. (MLRA 7:11)
(Metals--Testing)

CHERNYSHEV, V.V.

USSR/Engineering--Welding

Card 1/1 : Pub. 128--25/33

Authors : Chernyshev, V. V., Cand. Tech. Sci.

Title : Thermic treatment of seams of stainless steel

Periodical : Vest. mash. 34/8, 83-85, Aug 1954

Abstract : The effect of titanium in steel in reducing corrosion during welding is noted. An analysis is made of the chemical changes caused by heat in the material near the welded seam. Figures of temperatures involved and dimensions of the area affected are stated. An analysis is made of methods of avoiding such deleterious effects. Illustrations; table.

Institution : .....

Submitted : .....

CHERNYSHEV, V. V.

PERIODICAL ABSTRACTS

Sub.: USSR/Engineering AID 4175 - P

CHERNYSHEV, V. V.
ZHAROZASHCHITNYYE POKRYTIYA METALLOV V ZARUBEZHNOY ENERGETIKE (Heat insulating coating of metals used in power equipment abroad). Teploenergetika, no. 2, F 1956: 54-55.

The treatment of the problem of heat insulation and the various alloys and chemical agents used in the USA are reported.

CHERNYSHEV, V.V., inzh.

Investigating the performance of soil compacting rollers in agricultural machinery. Trakt. i sel'khozmash. no.9:28-31 S '58.
(MIRA 11:10)

(Rollers (Earth work)) (Agricultural machinery)

LIKHACHEV, N.V., red.; CHERNYSHEV, V.V., red.; VASIL'KOV, G.V., red.

[Brucellosis in farm animals and hog cholera; materials of the joint plenum of the Veterinary Section of the Animal Husbandry Division of the All-Union Academy of Agricultural Sciences, of the Chief Administration of Veterinary Medicine, and the Chief Administration of Science of the R.S.F.S.R. Ministry of Agriculture] Brutsellez sel'skokhoziaistvennykh zhivotnykh i chuma svinei; materialy ob"edinennogo plenuma Veterinarnoi sektsii Otdeleniia zhivotnovodstva VASKhNIL, Glavnogo upravleniia veterinarii i Glavnogo upravleniia nauki Ministerstva sel'skogo khoziaistva RSFSR. Moskva, Izd-vo M-va sel'. khoz.SSSR, 1959. 251 p.

(MIRA 13:12)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I. Lenina. Veterinarnaya sektsiya.

(Brucellosis) (Hog cholera)

RABUKHIN, A.I.; CHERNYSHEV, V.V.

Intensified cooling of cast diopside products. Silikaty no.2:92-98 '59. (MIRA 13:6)
(Pyroxenes)

15(2), 15(6) SOV/72-59-3-6/19

AUTHORS: Matveyev, M. A., Rabukhin, A. I., Chernyshev, V. V., Bulgakov, V. P.

TITLE: Utilization of Soluble Glass for the Exact Casting of Products From Silicate Melts (Primeneniye rastvorimogo stekla v tochnom lit'ye izdeliy iz silikatnykh rasplavov)

PERIODICAL: Steklo i keramika, 1959, Nr 3, pp 16 - 17 (USSR)

ABSTRACT: The manufacturing technology and the properties of "diopsidite" products originating from the masterskaya novykh stroitel'nykh materialov Upravleniya stroitel'stva Dvortsa Sovetov /nyne laboratoriya kamennogo lit'ya NII Zhelezobetona/(Workshop of New Building Materials of the "Soviet Palace" Building Administration (now: Laboratory for Cement Casting NII for Reinforced Concrete) have been already earlier described by S. I. Balashov, V. V. Chernyshev, A. Ya. Libman, S. E. Zgerskiy (Ref 1). This method makes it possible to obtain products of complicated shape and especially sculptures (Figs 1 and 2). Press molds of "diopsidite" are shown in figure 3. The table shows the accuracies of this exact casting procedure. The respective

Card 1/2

Utilization of Soluble Glass for the Exact Casting of Products From Silicate Melts SOV/72-59-3-6/19

cast molds are prepared by means of ethyl orthosilicate, which is, however, rather scarce and is therefore expensive. The authors of the present paper have carried out experiments to replace ethyl orthosilicate for mass production by liquid glass. They were based upon the technology of mold production, that had been earlier worked out in the MKhTI imeni Mendeleyeva dlya lit'ya metallov (M. A. Matveyev, A. I. Rabukhin (MKhTI imeni Mendeleyev for Metal Casting)). The method employed for these experiments, which yielded good results, is accurately described. There are 3 figures and 1 table.

Card 2/2

LAPIN, V.V.; RABUKHIN, A.I.; CHERNYSHEV, V.V.

Effect of zirconium dioxide on the crystallization of a diopside-like cast. Izv.vys.ucheb.zav.; khim.i khim tekh. 3 no.1:193-195 '60. (MIRA 13:6)

1. Kafedra obshchey tekhnologii silikatov Moskovskogo khimiko-tekhnologicheskogo instituta imeni D.I. Mendeleyeva.
(Diopside) (Zirconium oxides)

CHERNYSHEV, V.

Determining time consumed in the repair of metallurgical equipment. Biul.nauch.inform.: trud i zar.plata 3 no.5:21-24 '60. (MIRA 13:8)

(Norilsk--Metallurgical plants--Maintenance)

S/137/62/000/012/046/085
A006/A101

AUTHOR: Chernyshev, V. V.

TITLE: Revealing dislocations by selective etching on single crystals

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 12, 1962, 94, abstract 12I581 ("Sb. nauchn. rabot aspirantov Voronezhshk. un-ta", 1962, no. 2, 29 - 36)

TEXT: A method is described for revealing dislocations on calcite, Al, Ge and Si. The compositions of reactive agents are given and operational conditions described for revealing dislocations by the method of etching patterns. The etched specimens were analyzed on a МИМ-8 (MIM-8) microscope at 130 - 300 magnification. It was found that the density of dislocations in calcite varied considerably in one specimen. It is assumed that this phenomenon is related to the conditions of crystal growth. It was found that the dislocation density for Al was 10^5 cm^{-2} and for Ge 10^4 cm^{-2}. Many specimens represent domains grown together, with dislocation boundaries. In the case of helical dislocations, their density is considerably lower, namely 10^2 - 10^3 cm^{-2}. During bending of Ge specimens at 700°C, the dislocation density increases strongly and attains 10^6-10^7 cm^{-2}.

Card 1/2

Revealing dislocations by selective etching on...

S/137/62/000/012/046/085
A006/A101

A method is described for revealing dislocation motion in Si, which is based on the use of a conventional light microscope. A description is given of a case revealed for the first time when a 1-st dislocation is formed as a result of the motion of two dislocations.

R. Yaglov

[Abstracter's note: Complete translation]

Card 2/2

CHERNYSHEV, V.V.; LAYKO, F.M.

Semiautomatic shakeout of molds of truck cylinder block castings.
Lit.proizv. no.3:16-19 Mr '62. (MIRA 15:3)
(Foundries--Equipment and supplies)

CHERNYSHEV, V.V., inzh.

Using "synthetic" stone casting to protect equipment from abrasive wear. Sbor. trud. NIIZHelezobetona no.7:141-154 '62. (MIRA 16:1)

(Stone)

LATYSHEV, V.N.; KLYUKHINOV, A.F.; CHERNYSHEV, V.V.

Experience in the use of the new type of cutting fluid based on water-soluble oils in the namufacture of textile machinery. Izv. vys. ucheb. zav.; tekh. teks. prom. no.6:145-147 '65.
(MIRA 19:1)

1. Ivanovskiy tekstil'nyy institut imeni M.V. Frunze i Ivanovskiy khimicheskiy zavod imeni P.S. Baturina. Submitted April 27, 1965.

(A)

L 1333-66 EWP(e)/EPA(s)-2/EWI(m)/EPF(c)/EWP(i)/EPA(w)-2/T/EWP(t)/EWP(b)
ACCESSION NR: AP5020393 DIAAP/IJP(c) JD/WB/WH UR/0105/65/000/008/0092/0093
621.315.61.048.1

AUTHOR: Markova, N. Ye. (Candidate of physico-mathematical sciences); Sukhotina, E. N. (Engineer); Chernyshev, V. V. (Engineer)

TITLE: Residual content of sulfate ions in oxide insulation coatings

SOURCE: Elektrichestvo, no. 8, 1965, 92-93

TOPIC TAGS: anodic oxidation, aluminum, radioisotope, electric insulation

ABSTRACT: The residual content of sulfate ions in oxide insulation coatings is studied by oxidizing 99.99% pure aluminum in sulfuric acid containing radioactive S^{35}. The specimens were smooth foil squares 1 × 1 cm anodized at a current density of 15 ma/cm^2. The acid cocentration was 8-10% and the temperature of the electrolyte during oxidation was 25-27°C. After anodizing, the samples were cleaned and dried, and their radioactivity was measured by an end window counter. Graphs are given showing the relationship between radioactivity and oxidation time for various washing methods. Conventional cleaning (running tap water followed by distilled water) gives a linear increase in radioactivity with anodizing time. Electrochemical cleaning considerably reduces the sulfate-ion concentration after oxidation.

Card 1/2

L 1333-66
ACCESSION NR: AP5020393

3

This cleaning method is recommended for improving the reliability and quality of anodized coatings. Orig. art. has: 2 figures.

ASSOCIATION: Voronezhskiy Gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: 09Oct64 ENCL: 00 SUB CODE: GC, MM

NO REF SOV: 006 OTHER: 002

Card 2/2

MARKOVA, N.Ye., kand. fiz.-matem. nauk; SUKHOTINA, E.N., inzh.; CHERNYSHEV, V.V., inzh.

Residual content of sulfate ions in oxide insulation coatings.
Elektrichestvo no.8:92-93 Ag '65. (MIRA 18:9)

1. Voronezhskiy gosudarstvennyy universitet.

CHERNYSHEV, V.V.

Means of automation for automatic molding lines. Lit. proizv. no.8:12-17 Ag '64. (MIRA 18:10)

CHERNYSHEV, V.V.

Important potential for the increase of labor productivity.
Put' i put. khoz. 9 no.10:25 '65. (MIRA 18:10)

1. Stantsiya Orenburg, Yuzhno-Ural'skoy dorogi.

CHERNYSHEV, V.V.

Detection of dislocations in single crystals by selective corrosion. Sbor.nauch.rab.asp. VGU no.2:29-36 '62.
(MIRA 18:11)

L 46844-66 EWT(m)/T/EWP(t)/ETI IJP(c) DS/JD/GD/JH

ACC NR: AT6024967 (N) SOURCE CODE: UR/0000/65/000/000/0121/0126

AUTHOR: Shatalov, A. Ya.; Markova, N. Ye.; Chernyshev, V. V.; Lavrova, N. N. 35 B+1

ORG: none

TITLE: Electrochemical removal of chloride ion impurities from etched aluminum capacitor foil in nitrate and borate solutions 27

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Zashchitnyye metallicheskiye i oksidnyye pokrytiya, korroziya metallov i issledovaniya v oblasti elektrokhimii (Protective metallic and oxide coatings, corrosion of metals, and studies in electrochemistry) Moscow, Nauka, 1965, 121-126

TOPIC TAGS: chloride, aluminum foil, electrolytic capacitor, electrolytic refining

ABSTRACT: An electrochemical purification of aluminum capacitor foil designed to remove adsorbed chloride ions involved cathodic treatment in neutral solutions of KNO_3 and borate buffer at current densities of $6.75 \times 10^{-5} - 1 \times 10^{-4}$ A/cm^2. It was found that in this range the current density has practically no effect on the degree of purification of the foil, but as the duration of the cathodic treatment (cathodic polarization) is increased, the process of desorption of chloride ions becomes more complete. A batch of electrolytic capacitors prepared from foil which had undergone the

Card 1/2

L 46844-66

ACC NR: AT6024967

cathodic treatment showed that their leakage current was much smaller than in untreated capacitors, and the aging period required was also substantially reduced. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11, 07, 09/ SUBM DATE: 27Nov63/ ORIG REF: 005/ OTH REF: 003

Card 2/2 blg

ACC NR: AP6034020 SOURCE CODE: UR/0226/66/000/010/0071/0077

AUTHOR: Tumanov, V. I.; Gol'dberg, Z. A.; Chernyshev, V. V. Pavlova, Z. I. (Deceased)

ORG: All-Union Scientific Research Institute of Hard Alloys (Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov)

TITLE: Thermal stability of alloys of tungsten-cobalt carbides

SOURCE: Poroshkovaya metallurgiya, no. 10, 1966, 71-77

TOPIC TAGS: thermal shock simulation, heat resistant alloy, tungsten carbide, cobalt, bend strength, grain size, grain structure, hardness

ABSTRACT: Thermal shock testing of alloys of tungsten-cobalt was made by water quenching samples from temperatures up to 1120°K. The furnace capacity was sufficiently great to test 20-40 samples simultaneously. Specimens were held 5 min in the furnace and 0.5 min in the quenching bath. Thermal shock stability was measured in terms of superficial cracks and the decrease in ultimate bend strength after thermal cycling. The cobalt content of the samples ranged from 1 to 30 wt %, while some samples containing 20-30% cobalt were alloyed with 0.8 or 2.1% titanium, chromium, or molybdenum. The porosity did not exceed 0.2 vol %. The first set of experiments was conducted on 5 × × 5 × 35 mm samples quenched from 770°K. Thermal shock resistance increased sharply above 15% Co. Up to 6% Co the number of thermal shock cycles needed to induce macro-

Card 1/2

CHERNYSHEV, V.Ya.

Cartographer's handbook. Geod. i kart. no.10:63-65 O '64.
(MIRA 18:1)

31025
S/573/61/000/005/017/023
D201/D305

9.8200
9.8300

AUTHOR: Chernyshev, V.Ye.

TITLE: The use of magnetic elements in coded telemetering systems

SOURCE: Akademiya nauk SSSR. Institut [redacted]ktromekhaniki. Sbornik rabot po voprosam elektromekhaniki. no. 5, Moscow, 1961. Avtomatizatsiya, telemekhanizatsiya i priborostroyeniye, 201 - 208

TEXT: In the present article, a comparison is made of existing types of contactless elements and the use is discussed of networks in coded telemetering systems. The capacity of normally used telemetering systems is 10 - 200 bits. The transmission speed is 5 to 100 bits per second. All main nodes of a telemetering system should if possible, be designed around pulse circuits. These circuits may be divided into parametric and logic circuits. The parametric circuit is considered to be the one, in which the conditions of normal operation are characterized by a limited variation of each of

Card 1/3

The use of magnetic elements in ...

the parameters. A typical example is a half current memory matrix. A purely logic circuit would be the one, in which the operating conditions are characterized by its being operated by a signal and remaining unoperative under the influence of interference, so that a pure logic circuit should be chosen as often as possible. Its other advantage is the possible application of ferrite or other magnetic material components with rectangular hysteresis loop. They may perform two basic functions: that of a "memory transformer" and of a "memory choke". The latter is used in current distribution circuits. The current distribution circuit operates very reliably and produces an output signal of considerable power. A S/N ratio of 50 to 100 is easily obtainable. Three main types of current configuration are considered in detail: Ferrite diode, ferrite transistor and distribution circuits. Most of them are logic circuits. The ferrite diode circuit is slightly parametric because of the non-linear diode characteristic and its operation is, therefore, slightly less reliable. The ferrite transistor circuits use low power high frequency junction transistors. The inductive load of each transistor is small and operating frequencies are of the order of several hun-

The use of magnetic elements in ...

dred kilocycles; the power consumption depends on the type of elements and frequency. All three main circuit types differ in their output power which is the greatest for ferrite transistor and current distribution circuits. It is stated in conclusion that the ccts of coded telemetering systems should, if possible, be based on semi-conductor devices and ferrites and that its basic circuit meshes should be designed as pure logic circuits. There are 1 table, 2 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: E.A. Sands, An analysis of magnetic shift register operation, Proc. IRE, v. 41, no. 8, 1953.

Card 3/3

NUZHDINA, L.A.; CHERNYSHEV, V.Ye.

Voltage limiters for preventing overload of instruments. Izm. tekh. no.3:41-42 Mr '62. (MIRA 15:2)
(Voltage regulators)

44082

9.8300 (also 8912)

S/573/62/000/007/009/015
D201/D308

AUTHORS: Bartmer, A.Ye., Mikhaylova, N.D. and Chernyshev, V.Ye.

TITLE: Digital converters for the elimination of non-linearities in telemetering

SOURCE: Akademiya nauk SSSR. Institut elektromekhaniki. Sbornik rabot po voprosam elektromekhaniki. no. 7, 1962. Avtomatizatsiya, telemekhanizatsiya i priborostroyeniye, 314-322

TEXT: The authors show that the linearization of the frequency type of measuring transducers may be achieved by the application of telemetering of a digital frequency meter. Such a frequency meter consists of a reference crystal oscillator, two counters and a coincidence circuit, in which the frequency is measured by counting the number of periods of voltage over a calibrated time interval. By introducing certain constants into the two counters, their initial readings and their slopes become changed. If the output

Card 1/2

frequency from the transducer is a nonlinear function of the measured quantity, the introduction of constants makes it possible to reproduce a function which is inverse to the transducer function. The reproduction can be made either in piecewise approximation over a certain (small) frequency range or, to any required degree of accuracy, over the whole frequency range by means of expanding the inverse function into a power series. Experiments with a digital frequency meter have proved the validity of the above mentioned. There are 5 figures.

CHERNYSHEV, V.Ye.; SHCHEKINA, T.V., inzh., red.

[Mechanization and automation of loading and unloading operations] Mekhanizatsiia i avtomatizatsiia pogruzochno-razgruzochnykh rabot. Moskva, 1963. 59 p. (Mekhanizatsiia i avtomatizatsiia tekhnologicheskikh protsessov; materialy zavodskogo opyta, no.6) (MIRA 17:9)

1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut nauchnoy i tekhnicheskoy informatsii.

CHERNYSHEV, V.Ye., inzh.; OL'SHINSKAYA, I.V., inzh., red.

[Advanced methods of assembly work in the machinery industry] Progressivnye metody sborochnykh rabot v mashinostroenii. Moskva, 1963. 83 p. (Mekhanizatsiia i avtomatizatsiia tekhnologicheskikh protsessov; materialy zavodskogo opyta, no.5) (MIRA 17:9)

1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut nauchnoy i tekhnicheskoy informatsii.