

REEL #366

FROM: MOKROUSOVA,
A.N.

TO:

begin

MOKROUSOVA, A.N.

Experiment in the assembly of automobile tires. Kauch.i rez.
21 no.5:54 My '62. (MIRA 15:5)

1. Kirovskiy shinnyy zavod.
(Tires, Rubber)

PROKOPENKO, A.I., kand.sel'skokhoz.nauk; MOKROUSOVA, L.A.

Naturalization of a new parasite. Zashch. rast. ot.vred. 1 bol.
8 no.11:49-50 N '63. (MIRA 17:2)

1. Abkhazskaya karantinnaya laboratoriya (for Prokopenko). 2. Star-
shiy agronom Abkhazskoy karantinnoy laboratorii (for Mokrousova).

KOVSHOV, G.N., inzh.; MOEROUKOVA, N.I., inzh.; NESTEROV, Ye.P., kand.
tekhn.nauk

Computing planned car movements on an electronic calculating machine. Vest.TSNII MPS 19 no.5:23-25 '60.
(MIRA 13:8)

1. Institut kompleksnykh transportnykh problem Akademii nauk SSSR.

(Railroads--Traffic)

(Electronic calculating machines)

PETROV, A.P., doktor tekhn. nauk, prof.; DUVALYAN, S.V., kand. tekhn. nauk; ABADUROVA, Ye.V., inzh.; ZHURAVLEV, M.M., inzh.; KHANDKAROV, Yu.S., inzh.; SAMARINA, N.A., inzh.; ZAV'YALOV, B.A., kand. tekhn. nauk; BERNGARD, K.A., doktor tekhn. nauk, prof.; VASIL'YEV, G.S., kand. tekhn. nauk; BIKHENTAY, M.A., inzh.; FROLOV, I.A., inzh.; SIDEL'NIKOV, V.M., inzh.; MOKROUSOVA, N.I., inzh.; POZAMANTIR, E.I., kand. tekhn. nauk; GLUZHENG, E.A., retsenzent; MAKSIMOVICH, B.M., kand. tekhn. nauk, retsenzent; FREDE, V.Yu., inzh., red.

[Use of electronic digital computers in compiling train sheets] Sostavlenie grafika dvizhenia poezdov na elektronnykh tsifrovyykh vychislitel'nykh mashinakh. Moskva, Transzheldorizdat, 1962. 199 p. (MIRA 15:9)

1. Chlen-korrespondent Akademii nauk SSSR (for Petrov).
(Railroads--Train dispatching)
(Railroads--Electric equipment)

AVANOV, B.S.; MOKROV, A.I.; MERECHENKOV, Yu.V.

PSK-1 sliding welding bracket. Mash. i neft. obor. no. It:41-43'64
(MIRA 1787)

1. Zavod imeni Petrova, g. Volgograd.

AVAROV, B.S. & MOKROV, A.I.

Double-bracket machine for gas-oxygen cutting of shells.
Bul. tekhn.-skhoz. inform. Gos. nauch.-issl. inst. nauch. i
tekhn. inform. no. 8:24-25 Ag '65.

(MIRA 18:12)

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3045L
S/126/61/012/003/009/021
E193/E135

AUTHORS: Kristal, M.A., and Mokrov, A.P.
TITLE: Work hardening of surface layers formed by diffusion of molybdenum into iron and its alloys
PERIODICAL: Fizika metallov i metallovedeniye, vol.12, no.3, 1961, 389-394

TEXT: One of the shortcomings of the diffusion method of surface-hardening of metal components is that they produce diffusion layers whose hardness and strength decrease with the distance from the surface. Means of attaining uniform mechanical properties across such diffusion layers are required, and a possible method for achieving uniformity in the mechanical properties is described in the present paper. The method proposed is based on the fact that (a) the variation of hardness is associated with the gradient of the alloying element concentration across the thickness of the diffusion layer; and (b) the rate of work-hardening of ferrite decreases with increasing content of alloying additions. Consequently, a diffusion layer subjected to plastic deformation should work-harden most in its softest part

Card 1/5

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30454

Work hardening of surface layers ...

S/126/61/012/003/009/021
E193/E135

and least in the hardest region with the maximum concentration of the alloying additions. To verify this proposition a series of diffusion experiments were carried out. Diffusion couples were formed by a molybdenum foil (0.04-0.05 mm thick) sandwiched between strips of iron or one of the five types of iron-base alloys, containing up to 5 at.% Co, Si, Cr, W, and V. Good contact at the diffusion interface was ensured by spot-welding the components in hydrogen, after which they were subjected to a vacuum diffusion treatment for 10 hours at 1250 °C. Each diffusion couple was sectioned, and microhardness, H_u , measurements were taken across the thickness of the diffusion layer at regular intervals. Each type of the specimen was then compressed to 10, 20, 30 and 40% reduction in thickness, after which the microhardness measurements were again carried out, the degree of localised deformation ϵ , %, in the diffusion layer being determined from the decrease in the distance between the original microhardness tester indentations. From these data the so-called specific microhardness $\Delta H_u/\epsilon$ (where ΔH_u is the increase in H_u due to deformation ϵ) was determined which gave the measure

Card 2/ 74

30454

Work hardening of surface layers S/126/61/012/003/009/021
E193/E135

of work-hardenability of a particular region of the diffusion layer. The results are reproduced graphically, those obtained for the 5 at.% Co-Fe alloy being shown in Fig.3 where H_u (kg/mm², left-hand scale), $\Delta H_u/c$, and c (% extreme right-hand scale) are plotted against the distance (mm) from the surface of the diffusion layer formed by diffusion of molybdenum. Circles and squares denote H_u before and after 40% total deformation, respectively; the variation of localised deformation c in a specimen deformed to 10% reduction in thickness is denoted by white triangles, black triangles relating to specific microhardness ($\Delta H_u/c$) of specimens deformed to 40% reduction in thickness. Analysis of these and other results showed that hardness of the diffusion layers studied varied across their thickness in accordance with the variation of the molybdenum content. The effect of plastic deformation (compression) on the variation of H_u , c , and $\Delta H_u/c$ across the thickness of a diffusion layer was also dependent on the molybdenum content, the regions of low Mo content being preferentially work hardened. This proved the possibility of using plastic deformation to attain greater uniformity of mechanical

Card 3/54

30454

S/126/61/012/003/009/021
E193/E135

Work hardening of surface layers ...

properties across surface diffusion layers. The beneficial effect of plastic deformation was most pronounced in the diffusion layers formed by molybdenum in the Fe-Si, and least noticeable in the Fe-V alloys.

There are 7 figures and 12 references: 4 Soviet-bloc, 4 Russian translations of foreign language articles, and 4 non-Soviet-bloc. The English language references read as follows:

Ref.2: C. Austin. Trans. ASM, 1943, Vol.31, 321.

Ref.4: C. Austin, L. Luite, R. Lindsay. Trans. ASM, 1945, Vol.35, 446.

Ref.5: C. Lacey, M. Gensamer. Trans. ASM, 1944, Vol.32, 88.

ASSOCIATION: Tul'skiy mekhanicheskiy institut
(Tula Mechanical Institute)

SUBMITTED: December 19, 1960

Card 4/5

S/126/62/014/002/006/018
E111/E192

AUTHORS: Krishtal, M.A., and Mokrov, A.P.

TITLE: Data processing in reaction diffusion

PERIODICAL: Fizika metallov i metallovedeniye, v.14, no.2, 1962,
200-204

TEXT: A general method of determining diffusion coefficients is described and applied to molybdenum and tungsten solutions in α - and γ -iron. The method is especially interesting for elements forming substitutional solid solutions in α - and γ -iron; and relates to the situation where an α -phase layer grows through diffusion on the γ -phase specimen. The diffusion specimens were prepared from electrolytic iron and alloys of Fe + 3% w/w W, and Fe + 1.9% w/w Mo, respectively. The method of melting and annealing was described in FMM, v.12, no.3, 1961, 389. For tungsten the diffusion coefficient in α -iron was 9.6×10^{-11} cm/sec at 1090 °C and 3.2×10^{-9} at 1280 °C; in γ -iron 5.6×10^{-11} at 1090 °C and 1.4×10^{-9} at 1250 °C; for
Card 1/2

Data processing in reaction ...

S/126/62/014/002/006/018
E111/E192

molybdenum the values were 7.0×10^{-12} at 800 and 3.3×10^{-9} at 1250 °C in alpha, the values in gamma being substantially the same as for alpha-iron. The activation energy for diffusion of tungsten in alpha- and gamma-iron was 71.0 and 81.0 kcal/g atom, respectively, and the entropy change 17 and 23 cal/g atom. °C, respectively. For Mo the diffusion activation energy is 57.0 kcal/g atom in both alpha- and gamma-iron, the entropy-change values being 9 cal/g atom. °C. There are 2 figures and 2 tables.

ASSOCIATION: Tul'skiy mekhanicheskiy institut
(Tula Mechanical Institute)

SUBMITTED: October 20, 1961, initially, and
March 20, 1962, after revision.

Card 2/2

KRISHTAL, M.A.; MOKROV, A.P.

Mechanism of diffusion in body-centered iron. *Fiz.met.i metalloved.*
15 no.3:456-458 Mr '63. (MIRA 16:4)

L. Tul'skiy mekhanicheskiy institut.
(Crystal lattices) (Diffusion)

1. (S) (U) (A) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MM) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NN) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)

ACCESSION NO: AR1045886

8/0137/64/069/007/1036/1037

SOURCE: Ref. zh. Metallurgiya, Abs. 71228

AUTHOR: Krihtal, M. A.; Golovin, S. A.; Mokrov, A. P.

TITLE: Measurement of energy required for formation of vacant sites in alloys of the iron-molybdenum system

CITED SOURCE: Sb. Relaksats. yavleniya v met. i spivakr. M., Metallurgizdat, 1963, 155-158

TOPIC TAGS: vacant site, energy, iron, molybdenum, crystal lattice, alloy, internal friction

TRANSLATION: The investigation was carried out on alloys of the Fe-Mo system with different Mo content (0-8.37%). Internal friction was measured in a vacuum apparatus of the EKE M18 type in the interval 300-600°C. Shear deformation did not exceed 10^{-5} to 10^{-6} . Dependence of $\log \eta$ on temperature was also determined. With an increase in the Mo content of the alloy, the high temperature branch of the internal friction curve is displaced toward the high

Card 1/2

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ACCESSION NR: RB4015886

temperature side, indicating an increase in Fe bond strength on alloying with Mn. The energy required for formation of vacant sites ΔU for the various alloys was determined from the slope of the linear dependence of internal friction on the reciprocal of the temperature. The magnitude of ΔU , determined from ΔM , was almost twice as small as when measured according to internal friction. An electrical resistance method was used to substantiate the validity of the values obtained, and the values of electrical resistance were measured

to an alignment of the vacant sites but also due to other defects in
the crystal lattice.

SUB CODE: MM, AS ENCL: 00

Card 2/2

ACCESSION NR: AP4017364

S/0126/64/017/002/0285/0287

AUTHOR: Mokrov, A. P.

TITLE: Energy of formation and vacancy concentration measurements in iron-molybdenum alloys

SOURCE: Fizika metallov i metallovedeniye, v. 17, no. 2, 1964, 285-287

TOPIC TAGS: lattice vacancy, electric resistance, iron molybdenum alloy, activation energy

ABSTRACT: Large vacancy creation in lattices at high temperatures introduces an additional electric resistance which is an exponential function of temperature, thus,

$$\Delta R \sim \exp\left(\frac{Q_v}{RT}\right).$$

where Q_v - energy of vacancy formation, R - gas constant, T - absolute temperature.

An investigation was made of this resistance as a function of temperature in iron-molybdenum alloys with variable composition. It is shown that the vacancy concentration increases exponentially with temperature, and for a fixed temperature the

Card 1/2

ACCESSION NR: AP4017364

activation energy of formation increases, whereas the vacancy concentration decreases upon increasing the molybdenum content in the alloy. The author expresses his gratitude to M. A. Krishtal for his interest in the work and to G. A. Vedenyapin for supplying the alloys. Orig. art. has: 3 figures, 3 tables, and 2 formulas.

ASSOCIATION: Tul'skiy mekhanicheskiy institut, Tula (Tula Institute of Mechanics)

SUBMITTED: 08Feb63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: PH

NO REF SOV: 001

OTHER: 000

Card 2/2

L 18267-65 EWP(m)/GPP(n)-2/T/ENP(t)/ENP(L) Pt-4 LJP(c)/ASD(a)-3/AEDC(a)
ASD(T)/ASD/AS(mp)-2/AFWL/ESD(L) JD/JG S/G126/64/018/007/0198/0202
ACCESSION NR. AP404446

AUTHOR: Kristal, M. A.; Mokrov, A. F.; Mokrova, A. M.

TITLE: Investigation of the mechanism of diffusion in Fe-alloys with a body-centered cubic lattice

SOURCE: Dzika metalloy i metalovedeniye, v. 18, no. 2, 1964, 198-202

TOPIC TAGS: diffusion, porosity, body-centered cubic lattice, marker, homogenizing, dislocation, Kirkendall effect, iron alloy, molybdenum, tungsten, chromium

ABSTRACT: The Kirkendall effect and diffusion porosity were studied during the diffusion of Mo and Cr in Fe-base alloys having a body-centered cubic lattice. A W 40 diam. rod was employed as a marker. Specimens were homogenized at 1120 and 1220C for 25-225 and 16-200 hrs. respectively. Observations showed that the zone where maximum pore formation had occurred was also that of maximum saturation of vacancies. The authors attribute the mechanism of marker displacement to the theory of dislocations. It is suggested that not all the

Card 1/2

ACCESSION NR: 23014146

vacancies are absorbed by dislocations and that they join each other in the zone of maximum saturation, forming vacancies which grow until they acquire a coarse spherical shape. Occasionally, diffusion porosity assumed such proportions that the microscopic displacement of markers remained negligible and hardly exceeded the mean error of ± 0.003 mm. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Tul'skiy mekhanicheskiy institut (Tula Mechanical Institute)

SUBMITTED: 20 Jun 63

ENCL: 00

SUB CODE: MM

NO REF SOV: 007

OTHER: 008

Card 2/2

SOURCE CODE: UR/0137/66/000/009/1076/1076

ACC NR: AR6035428

AUTHOR: Golovin, S. A.; Molotov, A. P.; Shishkhanov, T. S.; Zapol', Yu. N.

TITLE: Study of physical and mechanical properties of deformed and annealed molybdenum

SOURCE: Ref. zh. Metallurgiya, Abs. 91515

REF SOURCE: Sb. Proiz-vo stali i splavov i vliyaniye obrabotki na ikh svoystva. Tula, 1965, 36-41

TOPIC TAGS: molybdenum, metal deformation, annealing, x ray scattering, metal rolling, crack propagation, metal hardening, metal aging, metal recrystallization

ABSTRACT: The authors studied the change in the microstructure, the mechanical (σ_b , H_B , δ) and physical properties (distortions of the second kind $\Delta a/a$ in the [100] direction, and dimensions of the regions of coherent scattering of x rays) of molybdenum as a function of the annealing temperature (300 - 1100°) at different rolling thicknesses (1.2 and 6 mm). At the instant of deformation by rolling, large microstresses develop, the magnitude of which in strongly deformed regions can exceed the σ_b of the material. The microcracks or microscopic incipient cracks which are produced in this manner can be one of the causes of the stratification of the rolled section. With increasing annealing temperature of the deformed molybdenum, hardening of the metal is observed in the interval 400 - 500° and is attributed to the deformation aging. Above ~600°, up to the recrystallization temperature, intense weakening is observed. With decreasing thickness of the rolled section, the temperature of the recrystallization drops (from

UDC: 669.28: 620.17

Card 1/2

ACC NR: AR6035428

1000 to 850°). In the recrystallized molybdenum, one observes separation of brittle phases which apparently are compounds of the impurities (C, N) with the molybdenum. The presence of such phases can also lead to microscopic incipient cracks during the process of hot rolling of the sheet, owing to the unequal coefficient of thermal expansion of the matrix and of the phase. I. Tulupova [Translation of abstract]

SUB CODE: 11

Card 2/2

ACC NR AR004682

SOURCE CODE: UR/0277/66/000/010/0019/0019

AUTHOR: Golovin, S. A.; Mokrov, A. P.; Shishkhanov, T. S.; Zapol', Yu. N.

TITLE: Study of the physical and mechanical properties of formed and annealed molybdenum

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruksii i raschet detaley mashin. Gidroprivod. Abs. 10.48.116

REF SOURCE: Sb. Proiz-vo stali i splavov i vliyaniye obrabotki na ikh svoystva. Tula, 1965, 36-41.

TOPIC TAGS: molybdenum, metal physical property, molybdenum micro structure, molybdenum physical property, molybdenum mechanical property

ABSTRACT: Changes in the microstructure, physical and mechanical properties
(in. 3B, 6) of molybdenum as a function of annealing temperature ranging from 300 to 1100 C were studied for various gages of rolled material (1.2 and 6 mm). There are five illustrations and a bibliography of 3 titles. [DW]

[Translation of abstract]

SUB CODE: 13/

Card 1/1

UDC: 669.28

37672
S/125/62/000/004/011/013
D040/D113

1.1110

AUTHORS: Mel'nichenko, N.T., and Mokrov, B.I.
TITLE: Plasma jet cutting attachment for AR-9 welding torch
PERIODICAL: Avtomaticheskaya svarka, no. 4, 1962, 38-39

TEXT: The authors designed, made and industrially introduced a simple plasma jet cutting attachment (Figure) to a common AP-9 (AR-9) torch used for manual argon arc welding with a tungsten electrode. The attachment body (1) is connected to the torch instead of the welding nozzle. Current is fed by a 4 mm² (if bare wire is placed in a rubber pipe with cooling water), or 6 mm² copper wire (without water cooling). Water is fed by a rubber pipe 6-7 mm in inner diameter. The wire and pipes are attached to the torch handle from below. If water pressure is sufficient (over 1 atm), the cooling of the torch proper is switched on in sequence with the cooling of the plasma jet nozzle; at low pressure it is better to switch on the

Card 1/0 3

Plasma jet cutting attachment ...

S/125/62/000/004/011/013
DO40/D113

cooling in parallel. The body (1) is made of M1 (M1) copper; the joints are soldered with ПСР-40 (PSR-40) silver solder. The connecting thread and taper must be finished after soldering the blanks. The replaceable nozzle (2) is also made of M1 copper. Its advantages compared to the VNIIESO, IMET and ПП-1 (GP-1) nozzles are: simplicity of shape, no thread, small quantity of metal needed, simple in assembly, no sealings. This is achieved by placing the cooling system in the body only, without connecting it to the nozzle. The nozzle is ground into the body and pressed on with a brass or bronze nut. A nozzle with this cooling system works for a long time without overheating at 100 amp current in the electrode-nozzle circuit, and 250-300 amp in the electrode-work circuit. Practically, cutting by penetrating arc requires not more than 40 amp for the auxiliary arc between the electrode and the nozzle. Current is supplied from two series-connected welding generators, ПС-300 (PS-300) or ПС-500 (PS-500). The auxiliary arc is ignited from an ОЭПЗ-2М (OSPZ-2M) oscillator which is switched off by a current relay after the arc has been ignited. Pure argon is fed into the torch during ignition, and commercial argon or commercial argon with hydrogen during operation. The centering accuracy of the tung-

Card 2/0 3

Plasma jet cutting attachment ...

S/125/62/C00/004/C11/013
D040/D113

sten electrode depends on the fabrication accuracy of the insulating bushing (5). The centering of the electrode and the width of the electrode-nozzle space is checked by switching on the oscillator. The spark must arc over the gap evenly from all sides. A washer (4) of larger diameter prevents disruptive discharge between the torch body and the plasma jet attachment. The torch is light in weight, handy and dependable. It can be used for cutting stainless steel up to 50 mm thick and aluminum alloys up to 40 mm thick. There is 1 figure. [Abstracter's note: Essentially complete translation] .

Card 3/0 3

MEL'NICHENKO, N.T. (Leningrad); MOKROV, B.I. (Leningrad)

Mobile laboratory with a helium leak detector.
Avtom.svar. 15 no.10:81-84 0 '62. (MIRA 15:11)
(Welding--Testing)

MEL'NICHENKO, N.T. (Leningrad); MOKROV, B.I. (Leningrad)

Universal equipment for semiautomatic welding in assembly
plants. Avtom. svar. 15 no.12:66-68 D '62. (MIRA 16:2)
(Electric welding—Equipment and supplies)

45406
8/125/63/000/001/008/012
A006/A106

112300

AUTHORS: Mel'nichenko, N. T., Mokrov, B. I. (Leningrad)

TITLE: Portable machine for welding aluminum

PERIODICAL: Avtomaticheskaya svarka, no. 1, 1963, 80 - 81

TEXT: An assembly organization has developed and manufactured a portable YPC -62A (URS-62A) machine for argon-arc welding aluminum on the site. It can also be used to weld ferrous metals with consumable electrode on a-c. The unit consists of a welding transformer; a ballast rheostat; a high-frequency throttle; a gas system; a reductor; a rotation meter; an electric valve and hoses; a torch cooling system; an extension oscillator; a drum with a feed cable; a panel bearing the control devices and special boxes for materials. The unit is power-supplied from a 220/380 v network and is ground-connected by an extension welding cable. The h-f throttle, protecting the transformer against h-f current from the oscillator, and the ballast rheostat are connected in series into the welding circuit. If the unit is completed by transformers a knife-switch shunts the rheostat and the throttle during welding with a consumable electrode. The welding

Card 1/2

Portable machine for welding aluminum

8/125/63/000/01/008/012
A006/A106

conductors can be extended to 30 m by using a portable oscillator. A redesigned AP-9 (AR-9) torch with a ceramic nozzle is being used. The unit operates satisfactorily under difficult field conditions. The weld joints show good quality. There is 1 figure. ✓

SUBMITTED: April 28, 1962

Card 2/2

MEL'NICHENKO, N.T. (Leningrad); MOKROV, N.I. (Leningrad)

Mobile welding shop. Avtom. svar. 16 no.6: ~~16:7~~ Je '63. (MIRA 16:7)

(Electric welding--Equipment and supplies)

MOKROV, I.F.
USSR/General Division - History. Classics. Personalities.

A-2

Abs Jour : Ref Zhur - Biologiya, No 7, 10 April 1957, 25704

Author : Mokrov, I.F., Melekhin, P.I.
Inst : Moscow Academy of Veterinary Science
Title : Professor Serafim Vasilyevich Ivanov

Orig Pub : Tr. Mosk. vet. akad., 1956, 10, 309-310

Abst : This marks the 50th birthday and the 26th anniversary of the teaching and social activities of Professor Ivanov (born 1904) of the Moscow Academy of Veterinary Sciences, who has compiled and published a number of atlases of the anatomy of horses, cattle, swine, etc., as well as school guides to the anatomy of farm animals. Ivanov is also the co-author of several textbooks, among them the "Anatomy and Physiology of Farm Animals" (1951) and the "Anatomy of Horned Cattle" (1950).

Card 1/1

NAYGUZ, Natan Iosifovich; BASIN, Mikhail Natanovich; MOKROV, I. I., ~~red.~~,
retsensent; PILIPENKO, Yu. P., inzh., red.; GORNOSTAYPOL'SKAYA, N. S.,
tekh. red.

[Presses for cold briquetting of metal scrap] Pressy dlia kholod-
nogo briketirovaniia metallicheskoj struzhki. Moskva, Mashgiz,
1963. 94 p. (MIRA 16:6)
(Power presses) (Scrap metals)

MOKROV, L.

New names. Sov.shakht. ll no.2:20-21 F '62. (MIRA 15:1)
(Donets Basin—Coal mines)

SOBOLEVSKIY, M.Ya., inzh.; MOKHOV, N.F., inzh.

Assembly-line construction of launches. Sudostroyeniye 24 no.11:54-55
N 58. (MIRA 12:1)
(Launches)

MOKROV, N. I.

Geography - Study and Teaching

Scientific level of teaching geography in school. Geog. v shkole No. 1, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

MOKROV, N. I.

Solifluction in bottom lands. Priroda 44 no.5:116 My '55.
(MIRA 8:7)

1. Irkutskiy pedagogicheskiy institut
(Erosion)

MOKROV, P. M.

AUTHOR:
TITLE:

LEVINA, S. D., MOKROV, P. M.

32-6-34/54

Glass Cook for Working with Liquids and a Vacuum. (Steklyannyi
kran dlya robot s zhidkost'yu i vakuumom, Russian)

PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol 23, Nr 6, pp 744-745 (U.S.S.R.)

ABSTRACT:

Glass cocks were produced for laboratory use by means of which any damage caused by lubricating oils or by exposure to air is excluded. The ground parts of the cock are connected with the stopper by means of an axis. The ground parts are lubricated. If the cock separates two parts of an apparatus and the apparatus contains a liquid, the cock is lubricated by the liquid. A side tube leads to the vacuum. In the case of poisonous oil vapors only the second cock is used, in which case the lubricant does not penetrate into the interior of the apparatus because the ground parts are on the outside of the apparatus.

ASSOCIATED:

Institute for Physical Chemistry of the Academy of Science of the
U.S.S.R.

PRESENTED BY:

SUBMITTED:

AVAILABLE:

Library of Congress

Card 1/1

MOKROV, S. V.

"The Influence of the Amount of Pollen on the Selectivity
of the Fertilization of Smut", Agrob. 4, 1948. Cand
Biol Sci All-Un Agr. Genetic Inst, Odessa -c.1949-

MOKROV, S.V.

Growing perennial rye in the south of the Ukrainian S.S.R. Zemle-
delle 4 no.8:113-116 Ag '56. (MIRA 10:1)

1. Odesskiy sel'skokhozyaystvennyy institut.
(Odessa Province--Rye)

USSR / General Biology. Evolution.

B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14496

Author : Mokrov, S. V.

Inst : Moscow Institute of Agriculture

Title : The Formation of Wheat Species in a Subwinter
Sowing of Spring Forms

Orig Pub : Tr. Odessk. s.-kh. in-ta, 1957, 9, 12-19

Abstract : At subwinter sowings of six species of spring
wheat, the appearance of forms was observed
which were related to other botanical spe-
cies and varietes.

Card 1/1

MOKROV, S.V.

Changing spring durum wheat into winter durum and winter soft wheat
as a method of breeding. Agrobiologiya no.3:359-363 My-Je '63.
(MIRA 16:7)

1. Odesskiy sel'skokhozyaystvennyy institut, kafedra selektsii.
(Wheat)

EW (a)/EPF(n)-2/T/EWP(c)/EWP(b) Pu-4 IJP(c)/ASD(m)-3/AEDC(a)/
AFWL/ESD(t) JD/JG
S/0136/64/018/002/0198/0202

M. A. Mokrov, A. P. Mokrova, A. M.

tion of the mechanism of diffusion in Fe-alloys with a bodycen-

metalloy i metallovedenye, v. 18, no. 2, 1984, 198-202

diffusion, porosity, bodycentered cubic lattice, marker, homogen-
on, Kirkendall effect, iron alloy, molybdenum, tungsten, chrom-

The Kirkendall effect and diffusion porosity were studied during the
and Cr in Fe-base alloys having a body-centered cubic lattice.
red was employed as a marker. Specimens were homogenized
220C for 25-225 and 10-200 hrs, respectively. Observations show
one where maximum pore formation had occurred was also that of
saturation of vacancies. The authors attribute the mechanism of mark-
ment to the theory of dislocations. It is suggested that not all the

18367-65

ACCESSION NR: AP4044146

vacancies are absorbed by dislocations and that they join each other in the zone of maximum saturation, forming vacancies which grow until they acquire a coarse spherical shape. Occasionally, diffusion porosity assumed such proportions that the macroscopic displacement of markers remained negligible and hardly exceeded the mean error of ± 0.003 mm. Orig. art. has: 5 figures and 1 table.

ASSOCIATION: Tul'skiy mekhanicheskiy institut (Tula Mechanical Institute)

SUBMITTED: 20Jul63

ENCL: 00

SUB CODE: MM

NO REF SOV: 007

OTHER: 008

Card 2/2

BABICHEV, F.S.; MOKROVA, L.N.; RYZHEVA, L.V.

Benzothiazolylalkylcarboxylic acids and their derivatives.

Part 3: Some 2-benzothiazolylhydroxyalkyl- and oxoalkyl-
carboxylic acids. Zhur.ob.khim. 32 no.2:506-510 F '62.

(MIRA 15:2)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G. Shevchenko.
(Acids, Organic)

Black and white

*Precipitation chromatography as a means of separating organic ingredients of pharmaceutical mixtures. S. M. Chernykh, A. A. Andreyev, L. G. Gusevskiy, and V. M. Stetsko. Moscow Pharm. Inst. Ministry of Health, *Trav. Pharm. Chim. (USSR)* No. 2, 53-57 (1957).*

The method is based on the difference between the solubility of the compounds which are formed as a result of interaction between the ingredients of a mixt. and the precipitant. The zones follow each other in order of increasing solubility. A column 100 mm high and 2-10 mm in diam. is filled up to 70-80 cm. with a mixt. consisting of precipitant, phosphorescent zone, and a carrier: Al_2O_3 , starch, silica gel, etc. The column is placed in a dark chamber illuminated by a quartz lamp. The zones containing the spots stand out as dark strips on a lighted background. The method was applied to the sepn. of salts of formic, citric, oxalic, carbonic, and benzoic acids with alumina as carrier. These salts form colored spots with Cu and noncolored with Ba. However, when more than 2 acids are present the zones cannot be distinguished from each other. After 25-30 hrs. while still shutting, they stand out distinctly. Cu, Co, and Fe salts can be sepd. with the aid of carbonyl as a precipitant and bentonite as carrier. NH_4 benzoate and silicic gel as carrier make possible the sepn. of Cu, Cr, Co and Al, Fe, C and Co. Aminopyrine and thiotropin can be sepd. with the aid of $Cu(NO_3)_2$ and Al_2O_3 as carrier. On the other hand, by using aminopyrine or thiotropin as precipitant it is possible to sepn. Pb and Cu, Co, Pb, and Fe can be sepd. with aspirin as precipitant and Al_2O_3 with $Cu(NO_3)_2$ as carriers. The quality of the chromatogram depends on the content of the spots, of the precipitant in the carrier, order of the carrier, and width of the column. There is also a factor helping to make the lines stand out more distinctly.

*Chernykh
Analytical Chem.*

A. S. Mirkin

LOMPATIDZE, G.A.; VEDERNIKOV, A.A.; Primali uchastiye: SHARONOV, G.Ye. &
Inzh.; ZAKURDAYEV, A.G.; MOKROVA, V.P.; ROZHKOV, I.M.

Carbon oxidation during the finishing period of the oxygen blowing
of an open-hearth furnace bath. [Sbor. trud.] TSNIICHM no.29:
65-72 '63. (MIRA 17:4)

MOKROVIC, J.

Yugoslavia (430)

Science

Deep focus earthquakes. p. 118. Glasnik Matematicko
Fizicki I Astronomski, Vol 2, No 3, 1947.

East European Accessions List, Library of Congress,
Vol I, No 14, Dec 1952.

UNCLASSIFIED

MOKROVIC, JOSIP

MOKROVIC, JOSIP. Zagrebacke hodochrone prostornih seizmickih valova
za potrese normalnih dubina. (Travel-Time Curves of Zagreb for
Seismic Space Waves and Earthquakes of Normal Depths). Zagreb,
1952 (Geophysical Institute, ser. 3, no. 2).
SO: AFCIN-1A1, IR-1186-57, 19 Feb 57, uncl.

MOKROVIC, JOSIP

MOKROVIC, JOSIP. Travel-Time Curves of Zagreb for Seismic Disturbances of Normal Depth. Scientific Bulletin, Ljubljana, (Council of Academies of Yugoslavia), Ap 1955, v. 2, no. 2, p. 58.

SO: AFOIN-IAL, IR-1186-57, 19 Feb 57, uncl.

MOKROVSKAYA, S.P.; BLINOV, N.I., professor, zavednyushchiy; MISHCHUK, N.N., professor, direktor.

Use of penicillin in infections of the oral cavity; experimental study. Vest. khir. 73 no.4:25-29 JI-Ag '53. (MLA 6:8)

1. 3-ya khirurgicheskaya kafedra Leningradskogo gosudarstvennogo Ordena Lenina instituta usoverashenstvovaniya vrachey imeni S.M.Kirova (for Blinov and Mokrovskaya). 2. Leningradskiy gosudarstvennyy Ordena Lenina institut usoverashenstvovaniya vrachey imeni S.M.Kirova (for Mishchuk). (Mouth--Sepsis) (Penicillin)

MOKROVSKAYA, S.P.

Adenoma of pancreas. Khirurgiia 32 no.2:62-64 F 56. (MLHA 9:7)

I. Iz 3-y khirurgicheskoy kafedry (sav. - prof. N.I.Blinov)
Gosudarstvennogo ordena Lenina instituta usoverashstvovaniya
vrachey imeni S.M.Kirova.

(PANGREAS, neoplasm
adenoma)

EXCERPTA MEDICA Sec 14 Vol 12/11 Radiology Nov 58

1840. THE COURSE OF WOUNDS OF THE INTESTINE IN EXPERIMENTAL RADIATION SICKNESS (Russian text) - Mokrovskaya S. P. - MED. RADIOL. 1957, 1 (64-70) Ref. 5

Experiments were carried out on rabbits. The animals were subjected to general irradiation (300-600 r.). One to 2 hours later intestinal wounds were produced in these animals, and were sutured 3-4 hr. later when observations were made on the condition of the animals. The author comes to the conclusion that general irradiation markedly aggravates the course of wounds of the intestine: it depresses the reactivity of the organism and increases the mortality. The period of treatment of wounds of the intestine in irradiated animals is of essential importance in their survival: the earlier the intestinal wound is sutured the greater the number of animals surviving after operation. Histological examinations of the intestinal wounds in irradiated animals reveal more pronounced oedema and necrotic processes than in the controls. The sutures were observed to cut out more often. (S)

MOKROVSKAYA, S.P.

Metallic osteosynthesis in fracture of the calcaneum. Ortop.travm.
i protez. 20 no.2:56-57 F '59. (MIRA 12:12)

1. Iz 3-y khirurgicheskoy kafedry (zav. - prof. N.I. Blinov) Gosu-
darstvennogo ordena Lenina instituta usovershenstvovaniya vrachey
im. S.M. Kirova.

(CALCANEUM, fract.
metallic osteosynthesis (Rus))

MOKROVSKAYA, S.P.

Gall bladder disease as one of the causes of pyloric stenosis.
Vest. khir. 84 no. 2:20-24 F '60. (MIRA 14:1)
(PYLORIC STENOSIS) (GALL BLADDER—DISEASES)

MOKROVSKAYA, S.F.

Leiomyoma of the mesentery simulating acute appendicitis. Vest.
khir. no.6:87-88 '62. (MIRA 15:11)

1. Iz 3-y khirurgicheskoy kliniki (zav. - prof. N.I. Elinov)
Leningradskogo ordena Lenina instituta usovershenstvovaniya
vrachey im. S.M. Kirova.
(MESENTERY--TUMORS) (APPENDICITIS)

MOKROVSKAYA, S.P.

Complications following surgery for pancreonecrosis. *Khirurgia*
38 no.12:114-115 D '62. (MIRA 17:6)

1. Iz 3-y khirurgicheskoy kafedry (zav. - prof. N.I. Blinov)
Gosudarstvennogo instituta dlya usovershenstvovaniya vrachev
im. Kirova.

MOKROVSKAYA, S.P.

Surgical treatment of nonparasitic cysts of the liver. Vest.
khir. 93 no.11:121-123 N 64. (MIRA 18:6)

1. Iz 3-y khirurgicheskoy kliniki (zav. - prof. N.I. Blinov)
Leningradskogo ordena Lenina instituta usovershenstvovaniya
vrachey imeni Kirova.

ABRAMOV, Sh.I., prof.; BAIROV, G.A., prof.; BLINOV, N.I., prof.;
GADZHIYEV, S.A., prof.; GODUNOV, S.F., prof.; GOMZYAKOV,
G.A., prof.; DEMIN, V.N., prof.; ZVORYKIN, I.A., prof.;
KAPITSA, L.M., kand. med. nauk; MOKROVSKAYA, S.P., kand.
med. nauk; POSTNIKOV, B.N., prof.; PORKSHEYAN, O.Kh.,
prof.; SIDORENKO, L.N., kand. med. nauk; TAL'MAN, I.M.,
prof.; FEDOROVA, A.D., kand. med. nauk; FILATOV, A.N.,
prof.; KHROMOV, B.M., prof.; SARKISOV, M.A., red.

[Errors, hazards and complications in surgery] Oshibki,
opasnosti i oslozhnenia v khirurgii. Leningrad, Me-
ditsina, 1965. 563 p. (MIRA 18:7)

PROVSKIY, N. P.

SSR/Physics - Semiconductors,
Conductivity

Mar/Apr 52

Study of Electric Conductivity of Semiconductors
and of Intermetallic Alloys in Solid and Liquid
States. I, "A.I. Blum, N.P. Mokrovskiy, A.R. Regel;
Leningrad Phys-Tech Inst, Acad Sci USSR

"Iz Ak Nauk, Ser fiz" Vol XVI, No 2, pp 139-153.

Study was started on suggestion of A.I. Ioffe.
Analysis of data on processed samples (Ge, Te, Fe,
* 124 Se, HgSe, HgTe, InSb) and from literature
record that conditions concerning transition of
electrons into "free state," enable them to become
current carriers, depend on a review of foreign liter-
ature from this viewpoint and from literature
current from this viewpoint in solids and in
atoms. From this Ioffe sees no basic difference
in formation of free electrons in solids and in
liquids. Indebted to A.I. Ioffe and V.P. Zhuze.

220195

USSR/Physics - Electron Conductivity

AUG 52

"Connection Between Variations of Density and Electron Conductivity During Fusion of Zinc Blende With Structure of the Diamond or Zinc Blende Type," M. P. Mokrovskiy, A. R. Regel, Leningrad Phys.-tech Inst, Acad Sci USSR

"Zhur Tekh Fiz" Vol 22, No 8, pp 1281-1289
Measures the density and temp coeff of expansion of Ge, GaSb, InSb, HgSe, and HgTe in solid and liquid state. Establishes the relation of density variation to elec conductivity of these

226192

substances in intermediate transition state from solid to liquid. Data confirmed, therefore, bonds decisive role of these substances. Indebted on elec properties of these substances. Received 8 May 52. to A. F. Ioffe and V. P. Zhurze.

226192

MOKROVSKIY, N. P.

МОКРОВСКИЙ, Н. Р.

U.S.S.R.

The electrical conductivity of liquid silicon. N. P. Mokrovskii and A. R. Regel. *Zhur. Tekh. Fiz.* 23, 779-82 (1953). A report of expts. made in order to study the semiconductor properties of Si. The Si samples to be studied were cut from the middle part of a monolithic bar of com. Si (88.2% Si). Pieces of Si of known conds. were used as control samples. The sp. resistance was measured by the nonelectrode method at temps. from 20° to 300°. Results showed that the region of impurity cond. extended approx. to 800° and the region of natural cond. of the Si extended from approx. 900° to the m.p. From the sp. resistance vs. temp. relation, the dissep. energy of the electrons was calcd. and found to equal 1.05 e.v., as compared to 1.12 e.v. given in the literature. A possible reason for the lower figure might be the large concn. of impurity present in this Si. Also the sp. resistance of the Si was somewhat larger than that obtained by extrapolation of the literature values. For molten Si, the sp. resistance decreased by about 20 times. In the liquid state the sp. resistance can be represented by the formula $\rho_{sp} = 31(1 + 0.0014(t - 1420))$ microhm cm., where $t \geq 1420$. Gladys S. Macy.

MOKROVSKIY, N. P.

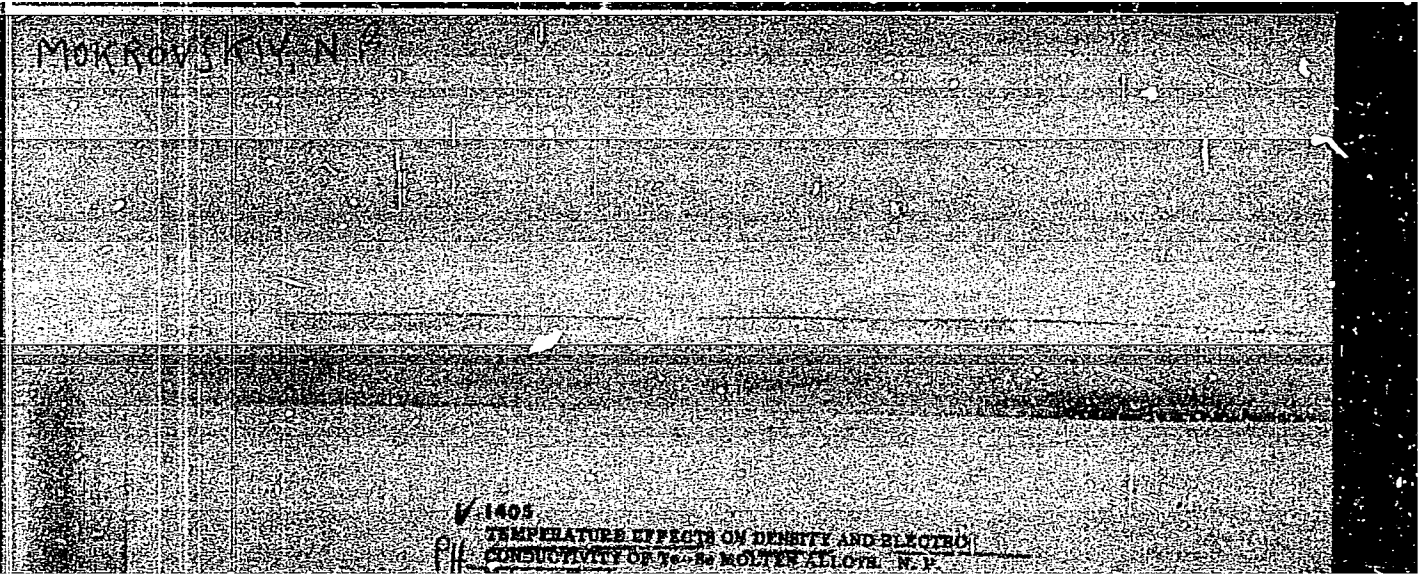
USSR 1

537.311.31

8264. The electroconductivity of copper, nickel, cobalt, iron, and manganese in the solid and liquid states. N. P. MOKROVSKIY AND A. R. REZEL. Zh. tekhn. fiz., No. 12, 2121-3 (1953) in Russian.

This is measured experimentally by a magnetic method, described previously (Abstr. 4793 (1949)), the results showing deviations from the Peritz law for a certain group of elements. The conductivities for melting Fe, Co and Mn are found to disagree with the Mott formula. A relationship is demonstrated between the electric conductivity and the position in the periodic table, for the metals investigated.

V. V. ZAKHAROV



MOKRESHANSKIY, B.V.

Status and immediate tasks of scientific research on the briquetting
of peat. Torf. prom. 35 no. 4:26 '58. (MIRA 11:7)

1. Zamestitel' glavnogo inzhenera Giprotopproma po nauchnoy rabote.
(Briquets(Fuel))
(Peat)

~~MOYSEVICH B. V.~~

Briquetting dry peat in a plunger press with an open matrix. *Trof.*
prom. 35 no. 4:27 '58. (MIRA 11:7)

1. Zaestitel' glavnogo inzhenera (iprotopproma po nauchnoy rabote.
(Briquets(Fuel))
(Peat)

E. V. Mokrshansky, A. K. Khaluga (USSR)

~~_____~~
"Mechanical and thermal processes involved during dried-peat briquetting in a plunger-die press with an open end press mold" - . . .

Report submitted for the 2nd International Peat Congress, Leningrad,
15-22 Aug 63.

MOKRSHANSKIY, B.V., dotsent

Problems in the development of the technology for the manufacture
of peat briquets. Torf.prom. 40 no.1:1-7 '63. (MIRA 16:5)
(Briquets (Fuel))
(Peat industry—Equipment and supplies)

SAKHAROV, A.A., inzh.; MAL'CHENKO, T.V., inzh.; MOKRUSHIN, K.V., inzh.;
DUBOV, B.G., inzh.; BABICH, L.S., inzh.

Improving the construction of high-capacity open-hearth furnaces
of the Cherepovets metallurgical plant. Stal' 25 no.8:694-697 Ag
'65. (MIRA 18:8)

LIDER, V.A.; PERVAGO, V.A., otv.red.; MOKHUSHIN, K.V., red.; YERMAKOV, N.P.,
red.; KOROL'KOV, A.A., red.; KOZHEVNIKOV, K.Ye., red.; NECHAYEV, P.V.,
red.; FOIARKOV, M.A., red.; PURKIN, A.V., red.; SOBOLEV, I.D., red.;
TARKHANEYEV, B.F., red.

[Geology of the Northern Sos'va brown coal basin.] Geologiya
Severosos'vinskogo burougol'nogo basseina. Moskva, Nedra,
1964. 144p. (Materialy po geologii i poleznym iskopaemym
Urala, no.11) (MIRA 18:4)

MOKRUSHIN, M. S., inzh.

Improving pneumatic conveying of chips in the production of
fibrolite, Der. prom. 12 no.2:27-28 F '63.

(MIRA 16:4)

1. Tavdinskiy lesokombinat.

(Pneumatic conveying) (Hardboard)

ACCESSION NR: AP4042861

S/0114/64/000/007/0011/0015

AUTHOR: Mokrushin, S. A. (Engineer); Gusak, Ya. M. (Engineer)

TITLE: Calculation of temperature fields and stresses in a cooled rotor of a gas turbine during starting

SOURCE: Energomashinostroyeniye, no. 7, 1964, 11-15

TOPIC TAGS: gas turbine, gas turbine rotor, rotor air cooling, gas turbine cooling

ABSTRACT: An approximate method for calculating unsteady temperature fields and stresses in a cooled or uncooled turbine rotor is proposed. The method leads to the evaluation of the influence of the air-cooling system (lateral heat transfer, cooling air blowing under the shroud of the blades and through the mounting gaps of blade roots, etc.) and also of the materials used (austenite or perlite steels) on the radial distribution of temperature and stresses in cross sections lying below the rotor's collar. The calculation results make possible the adequate selection of: 1) the cooling system; 2) suitable materials for rotor construction; and 3) the optimum starting time, in the

Card 1/2

ACCESSION NR: AP4042861

case when it is limited by the starting stresses in the rotor. The proposed method was used in designing the gas turbine GT-6-750 unit of Ural Turbomotor Plant TM3. The rotors of this installation allow a comparatively quick start at normal operation of the cooling system. The author concludes that: 1) the rotor air-cooling system of the GT-6-750 turbine improves the starting characteristics of the turbine under various starting conditions and increases safety under steady and unsteady operating regimes; 2) perlite rotors are substantially superior to austenite rotors in respect to manufacturability, cost, and operating characteristics when the rotors are air cooled, ensuring allowable temperature levels of the metal; 3) with the application of the "Ural-1" computer it is possible to determine unstable temperatures and stresses in turbine disks without consuming too much time and labour. Orig. art. has: 7 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 00

ATD PRESS: 3071

ENCL: 00

SUB CODE: PR

NO REF SOV: 003

OTHER: 001

Card 2/2

L 2941 66 EPA/EF(m)/EWP(w)/EWP(f)/EFF(n)-2/EWP(v)/T-2/EWP(k)/ETC(m) WW/EM/GS
 ACC NR: AT5024283 SOURCE CODE: UR/0000/65/000/000/0167/0171

AUTHOR: Mokrushin, S. A. (Sverdlovsk)

ORG: none*

TITLE: Calculation of nonstationary temperature fields and stresses in gas turbine impellers on the BESM-2M computer

SOURCE: *16 Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh konstruktsiy. 5, Kiev. Teplovyye napryazheniya v elementakh konstruktsiy (Thermal stresses in construction elements); doklady nauchnogo soveshchaniya, no. 5. Kiev, Naukova dumka, 1965, 167-171

TOPIC TAGS: 24 temperature distribution, transient heat transfer, turbine, 26 impeller stress, impeller temperature/ BESM 2M digital computer

ABSTRACT: A universal computer program for calculating the transient temperature fields and corresponding stresses in gas turbine impellers with radial blades was developed. The temperature field was assumed axisymmetric, with the blade temperature equal to the gas temperature at that radius. Based on the heat transfer

Card 1/3

L 7941-66

ACC NR: AT5024283

equation

$$\frac{1}{a} \frac{\partial t}{\partial z} = \frac{\partial^2 t}{\partial r^2} + \frac{1}{r} \frac{\partial t}{\partial r} + \frac{\partial^2 t}{\partial z^2}$$

for this case, a finite difference equation with appropriate boundary conditions was derived for a grid geometry as shown in Fig. 1,

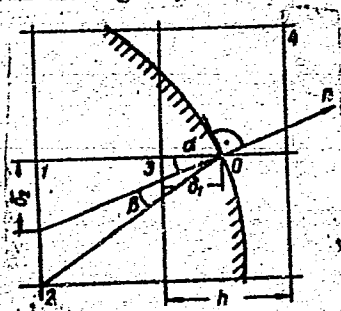


Fig. 1.

where all points of the grid were classified as inside the profile (1 and 2), on the boundary (3), or outside the profiles (4). The temperature of the boundary points was derived as

$$t_s = A\delta_1 + B\delta_2 + Ct_r$$

where A, B, and C are complicated functions of δ_1 , δ_2 , t_{gas} , and $\alpha_2 h / \lambda$ (Bio
Card 2/3

L 7941 -66

ACC NR: AT5024283

critereon). Based on the plane sections hypothesis, the deformations at any point were expressed as a combination of a radial displacement u and a rotation θ . The equations for radial, tangential, and blade stresses were derived, and the conditions for equilibrium of a plane element yielded two lengthy differential equations. It was found that a minimum of 200 points was required to give satisfactory results. This process took 10 minutes on the computer BESM-2M for 400 iterations. Orig. art. has: 5 figures and 10 formulas.

SUB CODE: PR/ SUBM DATE: 14May65/ ORIG REF: 003

PC

Card 3/3

MOKRUSHIN, S.A., inzh.; GUSAK, Ya.M., inzh.

Calculation of temperature fields and stresses in the cooled
rotor of a gas turbine during its start. Energomashinostroenie
10 no.7:11-15 J1 '64. (MIRA 17:9)

KITAYEV, G.A.; MOKRUSHIN, S.G.; URITSKAYA, A.A.

Experimental studies of laminar systems. Part 29: Conditions for
the formation of thin cadmium sulfide films on a glass surface.
Koll. zhur. 27 no.1:51-56 Ja-F '65. (MIRA 18:3)

1. Ural'skiy politekhnicheskiy institut imeni Kirova, Sverdlovsk.

ACC NR: AP6032183

SOURCE CODE: UR/0096/66/000/010/0049/0052

AUTHOR: Mokrushin, S. A. (Engineer)

ORG: Ural Polytechnical Institute (Ural'skiy politekhnicheskiy institut)

TITLE: The effect of the blade structural elements on nonsteady-state temperature stresses in gas turbine blades

SOURCE: Teploenergetika, no. 10, 1966, 49-52

TOPIC TAGS: gas turbine, turbine blade, turbine blade design, ~~turbine blade~~ temperature stress, *computer calculation, digital computer/Ural-1 computer*

ABSTRACT: The results are presented of calculations of the temperature stresses in blades using a universal program for the Ural-1 digital computer. Orig. art. has: 4 figures and 7 formulas.

SUB CODE: 21, 29, 01/SUBM DATE: none/ ORIG REF: 003/

Card 1/1

UDC: 621.438.539.4.013.001.24

PROCESSING AND REPRODUCTION

2

CA

The viscosity, electric conductivity and diffusion of the aqueous solutions of isomorphous salts. S. G. MOKRUSHIN AND K. I. KRILOV. *J. Russ. Phys.-Chem. Soc.* 61, [285-33] (1929).—By assuming that the heat of soln. is the sum of the heat of ionization and the heat of hydration, and that the vols. of hydrated ions of isomorphous substances are equal, it is shown that solns. of isomorphous substances have the same viscosity. Equality of the elec. cond. follows from the assumption that the heats of ionization are equal and are similar functions of the degree of dissociation. Equality of the diffusion coeffs. results from the equality of viscosities and of mol. vols. The theoretical deductions were supported by many expts. V. VASATOVSKY

ASME-ISA METALLURGICAL LITERATURE CLASSIFICATION

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REMARKS: [illegible]

Surface energy of molecules and their physicochemical properties. II. Surface tensions and boiling point of homologs. S. G. MOKHLESIM. *J. Gen Chem. (U.S.S.R.)* 7, 911-15 (1932); cf. *C. A.* 26, 4989.—Plummer's empirical equation connecting surface tensions and b. pt. of homolog is derived mathematically. III. Surface tensions and boiling points of acyclic organic homologs. S. G. MOKHLESIM AND E. I. KRYUKOV. *Ibid.* 916-20.—The application of the formula $T_s \cdot r = a(M/d)^{1/2} + b$, where M is mol. wt., d density of liquid, and a and b are const., to homologous org. chain compounds was investigated experimentally. The series studied were some org. acetates, normal primary alcs., Et esters of fatty acids, aldehydes, primary amines and straight-chain hydrocarbons. The agreement between exptl. and theoretical data is very close. S. I. MAJORSKY

ASB:ELA METALLURGICAL LITERATURE CLASSIFICATION

FROM 814199

FROM 814199

PROCESSES AND PROPERTIES INDEX

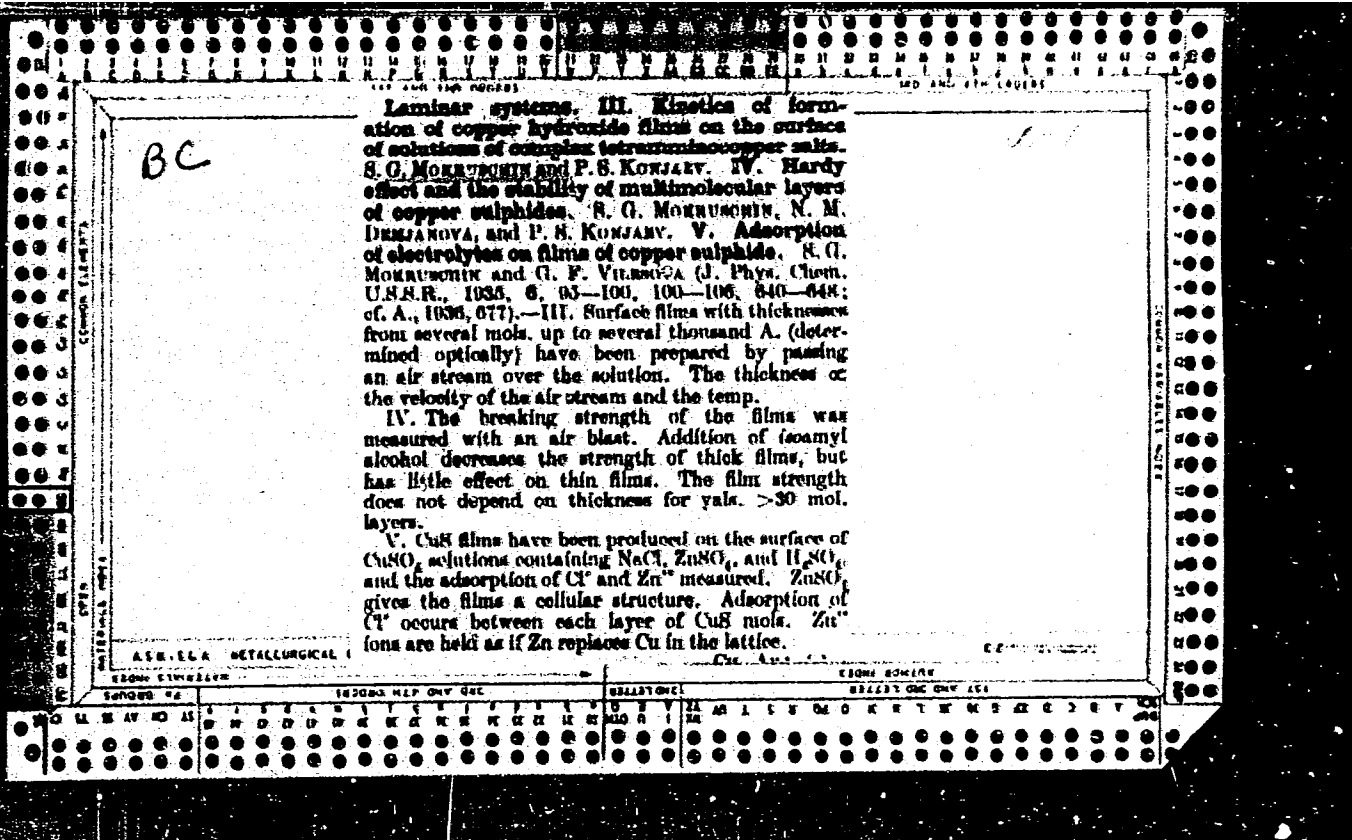
ca

Surface energy of molecules and their physicochemical properties. IV. Boiling points of some organic and inorganic homologs. S. G. Mokrushin and E. I. Krut'kov. *J. Gen. Chem.* (U. S. S. R.) 4, 877-8(1984); cf. *C. A. B.* 3971. —B. pt. of neutral esters of H_2CO_3 of SiH_4 , n , $PNCln$, $SiCl_4$, and alkyl silicanes were correctly calculated by means of a formula suggested by M. (C. H. 20, 200): $T_{bp} = a(M/d)^{1/2} + b$ in which M is mol. wt., d is sp. grav., a and b are consts. Correct results are also obtained by using the formula $T_{bp} = am + b$, in which a is the no. of atoms of homologous groups and m and b are consts. V. Surface energy and dissociation temperature of complex compounds. S. G. Mokrushin. *Ibid.* 3981 G. —Dissoci. temps. and heats of tetra- and hexa-ammonium compds. can be calcd. by means of equations $T = k_1(A/d)^{1/2}$ and $Q = k_2(A/d)^{1/2}$, resp., in which A is the at. wt. and d is the density of the central atom. Right tables show agreement of observed with calcd. values. I. G. Talpin

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438-514 METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

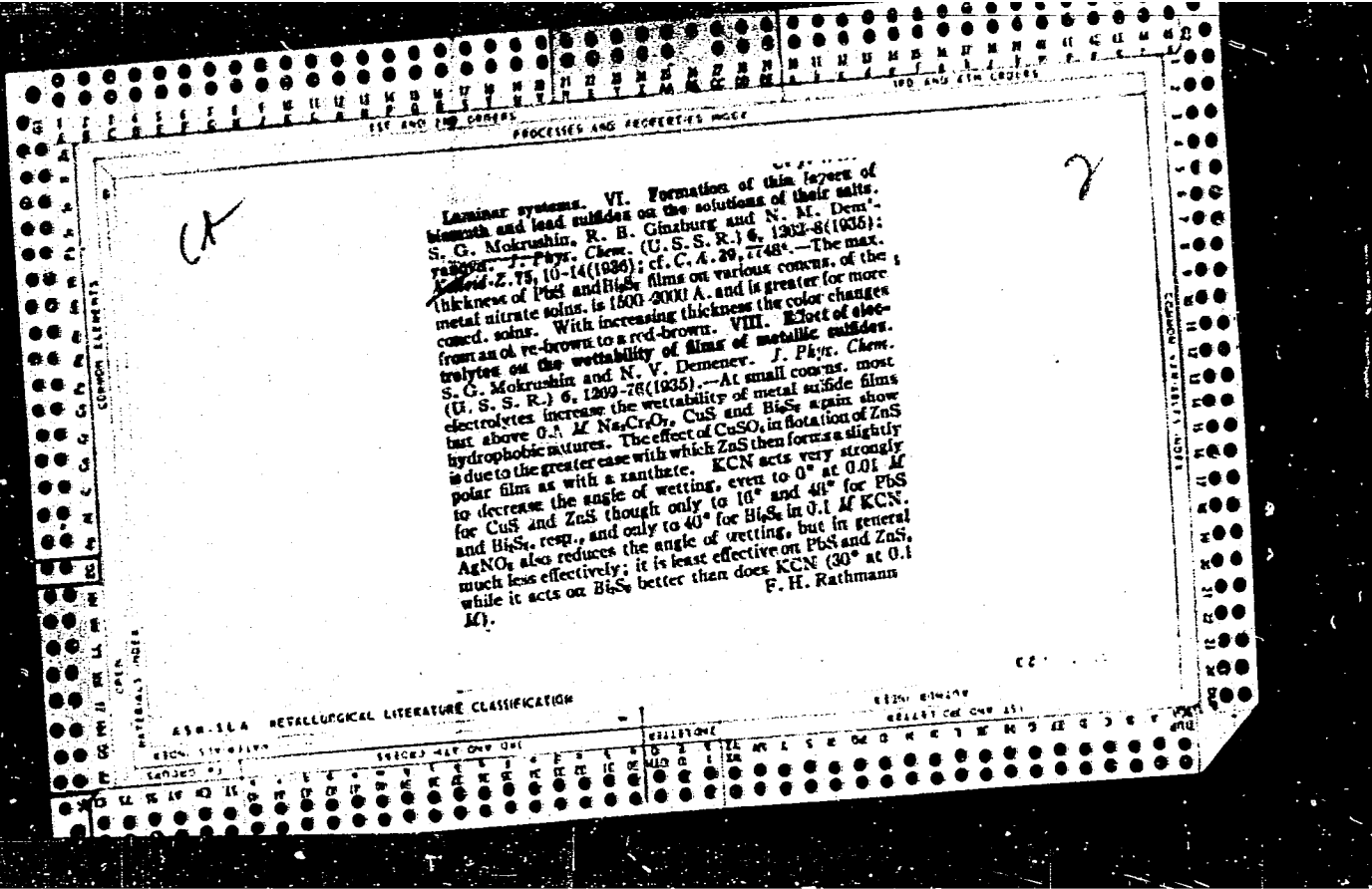
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ca

Experimental investigations of laminar systems. IV. The Hardy effect and the stability of polymolecular layers of copper sulfide. S. G. Mokrushin, N. M. Dem'yanova and P. S. Kotyayev. *J. Phys. Chem.* (U. S. S. R.) **6**, 110-6 (1935); cf. preceding and following abstrs.—The time of endurance of an air bubble under films of CuS and Cu₂S was studied. Tables are given of the av. times with change in film thickness. The breaking strength of the films was also detd. by tearing away a definite-sized section by a blast of air through a capillary tube (diam. = 0.04 cm.) which for CuS was $K = 1.4 \times 10^4$ kg./sq. cm. The introduction of isobutyl alc. into a Cu₂S soln. sharply increases strength of thick films, but slightly effects thin films. With thicknesses above 30 mol. layers the film strength does not depend upon thickness. Zelikov

A.S.M.-S.A. METALLURGICAL LITERATURE CLASSIFICATION

<p>EX 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>		<p>EX 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100</p>	
<p>1ST AND 2ND ORDER PROCESSES AND PROPERTIES INDEX</p>		<p>1ST AND 2ND ORDER PROCESSES AND PROPERTIES INDEX</p>	
<p>CH</p>		<p>Experimental investigations of laminar systems. V. Adsorption of electrolytes by films of copper sulfide. G. Mukrushin and G. F. Vileva. <i>J. Phys. Chem.</i> (U.S. ed.) 67:1018(1963); cf. 3 preceding abstrs. - CuS films were prepd. on the surface of solns. of CuSO₄ (30 g./l.) contg. NaCl (0.1-0.75 N), and on CuSO₄ (0.1 mol.) with ZnSO₄ (0.25 to 1.00 N) and H₂SO₄ (0.25 N). From 30 to 100 films were collected and analysed for adsorbed Cl⁻ and Zn⁺⁺ as well as for Cu. Thin films of CuS are golden yellow and cryst.; thicker ones are dark brown to black. NaCl acts to retain the golden color even in thick layers and to give the films the properties of a liquid (at NaCl 2 N) owing to formation of S and hence of CuS-S solns. by reduction of CuCl₂. ZnSO₄ gives the films a silvery gray color, and a cellular structure. Adsorption of Cl⁻ takes place between each layer of CuS moln. and takes place before further pptn. of CuS and is independent of Cl⁻ concn. but is sharply lowered by presence of S. Zn⁺⁺ ions are adsorbed only to 1/4 the extent of Cl⁻ ions, are held only weakly and are easily washed out, and the amt. of adsorption is not proportional to the film thickness. Zn⁺⁺ ions are held as if a Zn atom had gotten into the place of a Cu atom in the crystal lattice while Cl⁻ ions are held as if by a true adsorption. H. H. Rathmann</p>	
<p>ASR-514 METALLURGICAL LITERATURE</p>		<p>CLASSIFICATION</p>	
<p>RESEARCH CENTER</p>		<p>RESEARCH CENTER</p>	
<p>SEARCHED</p>		<p>SEARCHED</p>	
<p>INDEXED</p>		<p>INDEXED</p>	
<p>FILED</p>		<p>FILED</p>	



EST AND ... PROCESSES AND PROPERTIES INDEX

EXPERIMENTAL STUDIES OF LAMINAR SYSTEMS. VII.
 Wetting phenomena on surface films of metalloids.
 G. Mokrushin and N. Demenev. *J. Phys. Chem.*
 (U. S. S. R.) 6, 1066-70(1935); cf. C. A. 30, 7415f.
 1964. — The angles of contact for various sulfide films were
 stud. photomicrographically as CaS, 82°; PbS, 78°;
 BiS, 77°; Bi₂S₃, 72°; ZnS, 70°; S, 86°. From these
 it is concluded that the wetting of the films is a temporary
 phenomenon that cannot be explained by orientation of
 ions only, but is due also to adsorption of ions from the
 soln. Sulfide films adsorb anions preferentially.
 P. H. Rathmann

CLASSIFICATION

REGIONS

SEARCH

INDEX

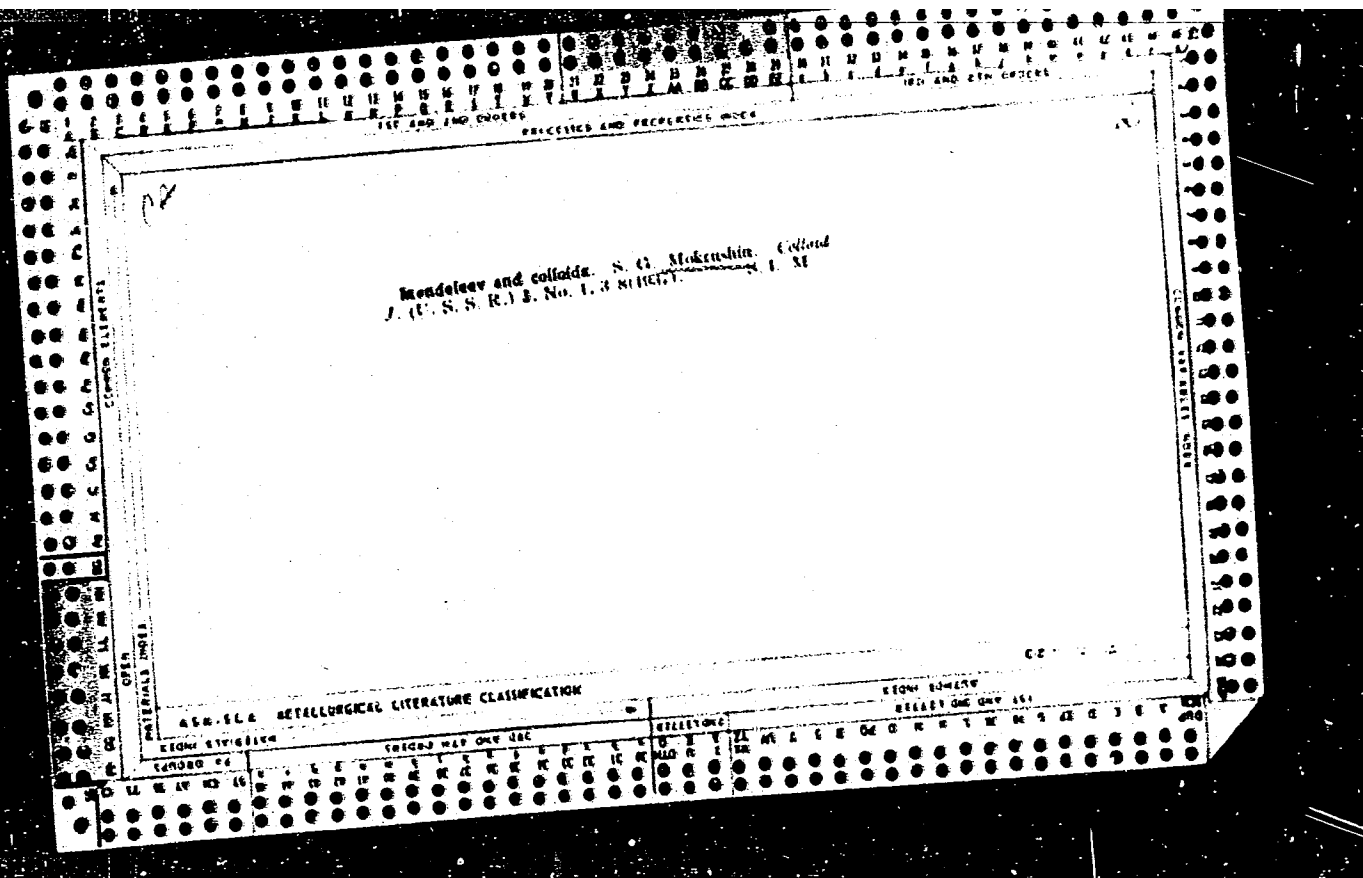
CA

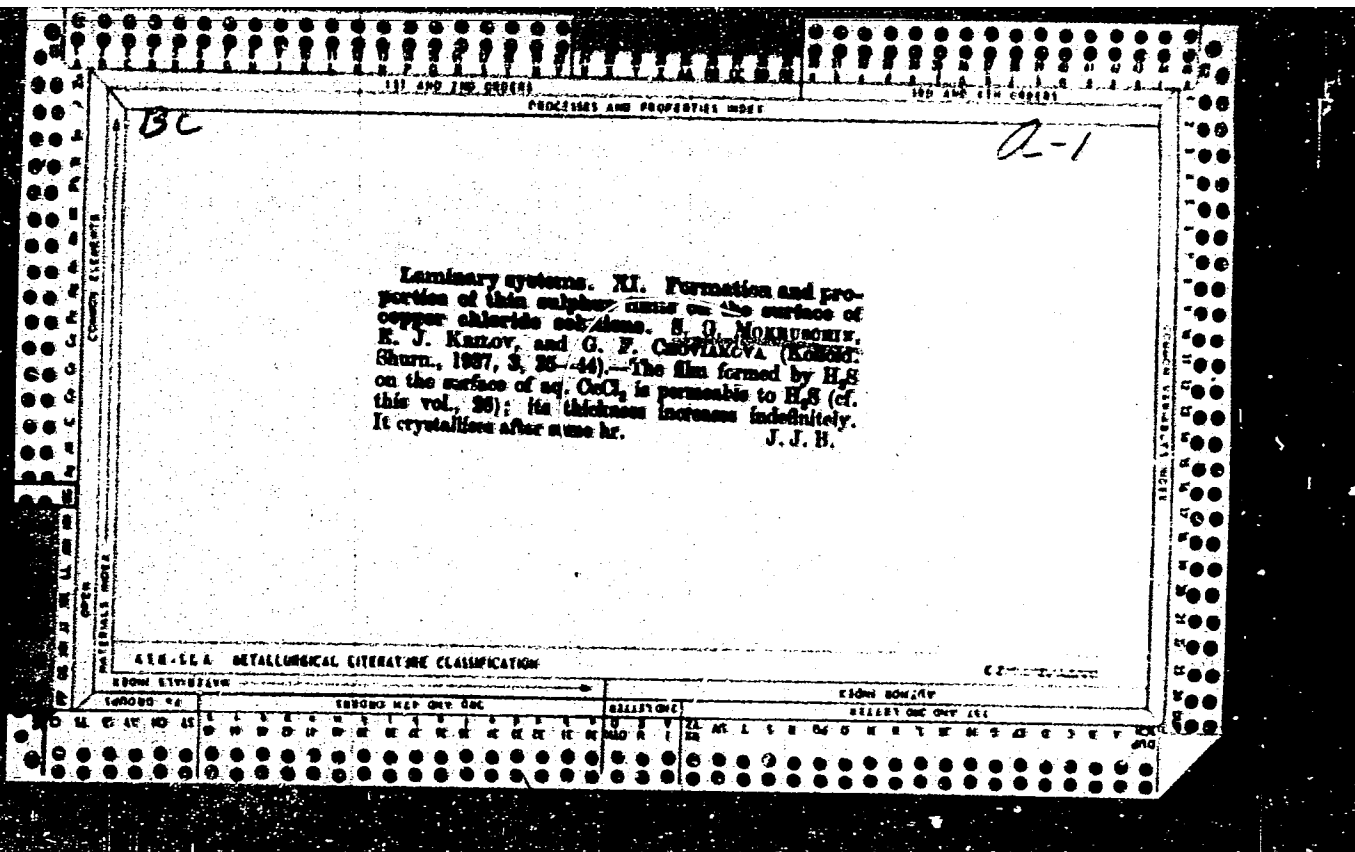
Experimental investigations of laminary systems. IX. Effect of surface-active substances on the wetting of films of metallic sulfides. S. G. Mokrushin and N. Demenev. *J. Phys. Chem.* (U. S. S. R.) 7, 644-50 (1936). — It was detd. in the previous paper that the surfaces of films of heavy-metal sulfides are hydrophobic. The authors by means of an increase of the concn. of the surface-active substances obtain an increase of the wetting, as measured by the angle of wetting. Data are given on the effect of acid concn. on the surface angle of bubbles of air on Cu, Pb, Bi and Zn sulfide for propionic, butyric and isovaleric acids and for the corresponding K alkylsulfate salts. The fact that very smooth curves were not obtained indicated chem. reaction between the polar groups of the fatty acids and the metallic sulfides destroying the proper orientation of the unimol. layer. Oleic and palmitic acids are attached to sulfides by their polar groups and in this form the sulfide is less easily wetted. A layer thicker than unimol. is more hydrophilic than the sulfide. Laminary systems. X. Indications of layer structure in arsenious sulfide films. N. Demenev and S. G. Mokrushin. *Ibid.* 7:63-4. — As_2S_3 films formed by the action of H_2S on the surface of an $AsCl_3$ soln. are hydrophilic and have a layer structure with a layer thickness of 180-200 m μ . The new layers exposed by the action of a drop of water are hydrophobic owing to oxidation of sulfide to oxide. F. H. Rathmann

GEN. SER. METALLURGICAL LITERATURE CLASSIFICATION

RECORD #

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1ST AND 2ND ORDERS 3RD AND 4TH ORDERS

PROCEDURES AND PROPERTIES INDEX

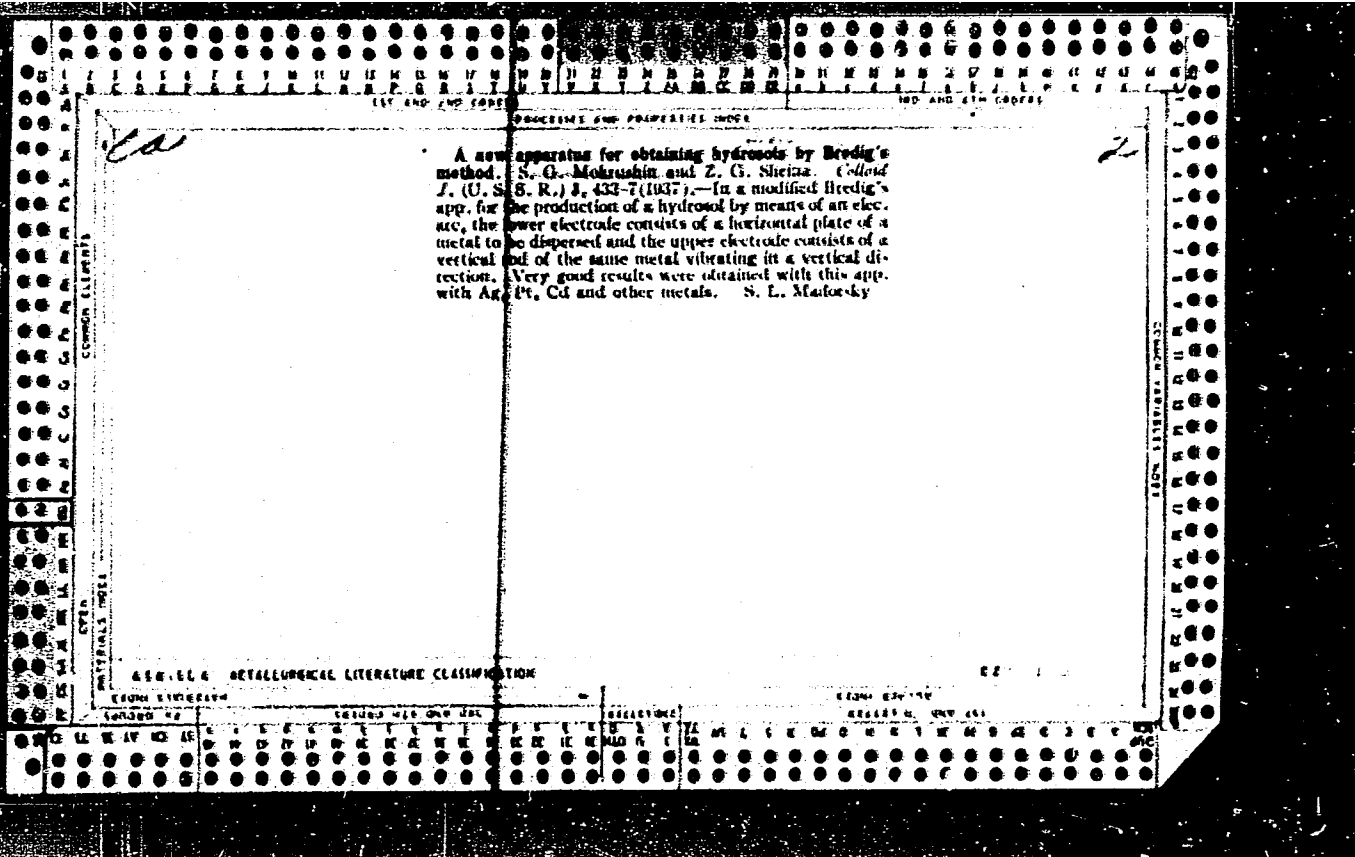
CA

Author: energy and solution, S. G. Mokrushin.
[Cited J. (U. S. S. R.) 3, 291-6(1967); Theoretical.
M. discusses the function of the foam former in the Gota-
F. H. Rathmann
(first process.

ASR-ELA METALLURGICAL LITERATURE CLASSIFICATION

EDGE BOWING

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PROCESSES AND PROPERTIES INDEX

9

ca

Surface energy and flotation. S. G. Mokrughin. *Trudy Ural. Ind. Inst.* 1938, No. 6, 3-8; *Khimi. Referat. Zhur. I.*, No. 11-12, 13-14 (1938); cf. *C. A.* 32, 394^a.—According to the laminar theory of flotation the ore particles adhere to the surface of the foam bubbles without penetrating their liquid films, while according to the linear theory the particles pierce the film, and come in contact with the air contained in the bubble. From theoretical considerations (every system tends to possess the least potential energy and to decrease in surface energy) M. considers the laminar theory more probable. Processes expressed by equations of surface energies are the basis of the present flotation technique, and they det. the direction of its further development. The transition of the mineral particles into the air foam can take place only if the surface of the particles is made hydrophobic by means of adsorption or by chem. action of the collectors on the surface of the mineral. The high η of the bubble films must counteract the penetration of the mineral particles into the film. W. K. Henn

U.S.S.R. METALLURGICAL LITERATURE CLASSIFICATION

K277.02.0000

APPROVED FOR RELEASE: 03/13/2001

PROCESSING AND PROPERTIES INDEX

2

ca

The formation and the properties of thin films of sulfur on the surface of solutions of copper sulfate. S. G. Melnikova, B. I. Krylov and N. P. Khovyakova. *Trudy Inst. Fiz. 1958, No. 6, 9-16; Khim. Referat. Zhur.* 1, No. 11-12, 33 (1958); *cf. C. A. 52, 2400*.—The effects of concn. of the $CuSO_4$ soln., of the concn. of H_2S on the surface of a film; of a definite concn. and of the length of action of the gas were investigated. The exptl. methods, methods for the determination of the film thickness, the concn. of gas, the washing of the films, methods of analyzing them, etc., are described in detail. The exptl. results are tabulated and plotted. The thickness of the film increases with increase in the concn. of the soln., with increase in the H_2S concn. and with the duration of its reaction with the soln. When H_2S (100%) was blown through a soln. of $CuSO_4$, the film was obtained in the form of a foam. The expts. were performed in N_2 and O_2 gas in a specially constructed app. The foam films contain free S (together with $CuSO_4$), and they differ in properties from films obtained on a calm surface of the soln.; they are not so elastic and are of dark color. Films obtained on a calm surface of the soln., when kept for a long time on the surface of water (in a crystallizer) or in a dry state on a glass plate, also lost their elasticity and were transformed gradually into microscopic crystals of rhombic S.

W. R. Henn

A.S.M.-S.E.A. METALLURGICAL LITERATURE CLASSIFICATION

E.S.M.S. SCHLAF