DUYSEMALIYEV, U.K.

82219

S/031/60/000/006/002/004

18.1250

AUTHORS: Savitskiy, Ye.M.; Duysemaliyev, U.K.

TITLE: The Effect of Vanadium on the Properties of Industrial Nickel-Base Alloys

PERIODICAL: Vestnik akademii nauk Kazakhskoy SSR, 1960, No. 6, pp. 43 - 47

TEXT: The authors describe experiments carried out to determine the effect of vanadium on structure and properties of Monel metal and constantan. The alloys were prepared at the Balkhashskiy zavod po obrabotke tsvetnykh metallov (Balkhash Non-Ferrous Metal Working Plant) and the vanadium was introduced in the form of a Ni + 10% V alloy. They were tested as to microstructure, hardness, electric resistance, strength and plasticity during stretching. The stretching tests were carried out at temperatures of from 20 to 1,100°C. Additions of vanadium of up to 0.5% had no effect on the microstructure of either the Monel metal or the constantan. Measuring the hardness of the alloys in the deformed and tempered phases showed that introduction of up to 0.5% vanadium had no effect on the hardness of the Monel metal and slightly increased the hardness of the constantan. The va-

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82219
S/031/60/000/006/002/004

The Effects of Vanadium on the Properties of Industrial Nickel-Base Alloys

nadium slightly raised the electric resistance of both alloys, and increased their strength and plasticity at all temperatures in the tests. The most remarkable effect of the vanadium, in the opinion of the authors, was that on the plasticity of the alloys. At 400 - 800°C this increase was 1.5 - 2 times, a fact of great scientific interest which makes it possible to reduce or even entirely eliminate the temperature zones of brittleness of nickel alloys by alloying them with small quantities of vanadium and certain other rare metals. The authors recommend more extensive tests on the effect of vanadium on nickel-based alloys. Conditions and results of the tests are shown in tables and graphs. There are 4 tables, 2 figures and 3 references: 2 Soviet and 1 French.

Card 2/2

S/136/60/000/011/011/013
E193/E483

AUTHORS: Presnyakov, A.A., Duysemaliyev, U.K. and Mironenko, Yu.P.

TITLE: On Plasticity of Some Zinc-Base Alloys

PERIODICAL: Tsvetnyye metally, 1960, No.11, pp.76-81

TEXT: The object of the investigation, described in the present paper, was to obtain data on plasticity (as measured by the reduction in area of tensile test pieces) of zinc-rich binary alloys containing 0 - 5.5% Al, 0 - 3.0% Cu, 0 - 3.0% Pb and 0 - 10.0% Cd both in the as-cast and homogenized condition. The test pieces, with the gauge length 5 mm in diameter and 20 mm long, were machined from cast rods. The homogenization treatment consisted of 144 h at 365°C in the case of Zn-Al alloys, and 104 h at 370°C in the case of the Zn-Cu alloys. The tensile tests were carried out at various temperatures covering the 20 to 400°C range. All alloys were subjected to static tensile tests which also provided data on the strength of these alloys; in addition, the Zn-Al and Zn-Cu alloys were tested under dynamic conditions, the rate of strain in this case being of the order of several m/sec. Side by side with the mechanical tests, microhardness measurements and metallographic examination were carried out (by engineer

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S/136/60/000/011/011/013
E193/E483

On Plasticity of Some Zinc-Base Alloys

N.S.Sakharova). The following conclusions were reached: (1) Unalloyed zinc is characterized by two temperature ranges of high plasticity (150 to 230 and 350 to 400°C) and two brittle ranges (20 to 150 and 230 to 350°C); at temperatures above 400°C, plasticity of zinc rapidly decreases. In this respect, electrolytic zinc differs little from granulated metal, except that the maximum values of plasticity, attained by the latter material, are somewhat higher. (2) The general character of the temperature-dependence of plasticity of zinc is unaffected by the introduction of small quantities of aluminium, copper, lead and cadmium. The position of the first maximum of plasticity changes from 200 to 100°C in the Al- and Cd-bearing alloys and to 125 - 150°C in the Cu- and Pb-bearing materials; the position of the second maximum is practically unaffected by the presence of these alloying additions. (3) With increasing content of the alloying additions studied, the plasticity of zinc decreases in the ranges of high plasticity and remains constant or slightly increases in the brittle temperature ranges. Cadmium reduces plasticity of zinc at all temperatures, its effect being most pronounced within the plastic

On Plasticity of Some Zinc-Base Alloys

temperature ranges. (4) Plasticity of Zn-Al alloys containing up to 0.25% Al is higher than that of pure zinc. (5) On changing the conditions of testing from static to dynamic, plasticity of zinc and Zn-Al alloys sharply increases and the second brittle range is, in the case of zinc, shifted towards the lower temperatures. no such effect has been observed in the Zn-Cu alloys. (6) Prolonged homogenization treatment brings about a considerable increase in plasticity of the Zn-Cu and Zn-Al alloys. The first plastic temperature range becomes wider at the expense of the second brittle range, plasticity in the second brittle range increases and the second plastic temperature range becomes less well defined. (7) The temperature dependence of U.T.S. of pure zinc has two maxima, each of which is located in one of the plastic temperature ranges of this material. (8) The temperature dependence of U.T.S. of the Zn-Cu and Zn-Pb alloys has only one maximum in the first plastic temperature range. The corresponding curves for the Zn-Cd alloys have two maxima when the cadmium content is less than 2.0% and only one maximum in the case of alloys with more than 2.0% Cd. (9) U.T.S. of the Zn-Al alloys (both cast and homogenized) decreases

S/136/60/000/011/011/013
E193/E483

On Plasticity of Some Zinc-Base Alloys

with rising temperature, passes through a minimum at about 50°C and a maximum at 100°C, after which it gradually decreases again. (10) With increasing alloying content, U.T.S. of zinc generally increases at all temperatures. The Zn-Pb alloys which are subject to liquation effects are an exception to this rule. Also, U.T.S. of the Cd-rich (2 ~ 10% Cd) alloys at temperatures above 200°C is lower than that of alloys with a lower cadmium content. (11) Hardness of the Zn-Al alloys decreases monotonically with rising temperature. There are 7 figures, 1 table and 10 references: 8 Soviet and 2 German.

Card 4/4

S/129/61/000/003/010/011
E073/E335

18.1250

AUTHORS: Savitskiy, Ye.M., Doctor of Chemical Sciences, Professor, Duysemaliyev, U.K., Engineer

TITLE: Mechanical Properties of Copper-vanadium and Nickel-vanadium Alloys at Elevated Temperatures

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1961, No. 3, pp. 52 - 55

TEXT: The authors studied the mechanical properties at room and at elevated temperatures of copper- abd nickel-base alloys with admixtures of vanadium. The alloys were smelted in a high-frequency induction furnace in corundum crucibles inside an argon stream. From these, 300-g ingots were produced, which were forged to 10 x 10 mm cross-section. These were then annealed in evacuated quartz ampules. Alloys of the system Cu-V were annealed at 900 °C for 50-100 hours and alloys of the system Ni-V were annealed at 1 000 °C for 100 hours. The vanadium contents of the Cu-base alloys were 0.07, 0.34, 0.64, 2.25 and 3.29% and the nickel-base alloys contained 0.5, 1, 3, 5, 6 and 10%. The microstructure, hardness at room temperature,

S/129/61/000/003/010/011
Mechanical Properties E073/E335

ductility and tensile strength were determined for deformed and for annealed specimens. The mechanical tests were carried out at 20, 100, 300, 500 and 700 °C. Specimens were preliminarily heated in an electric furnace to the required temperature and held at that temperature for 20 min. Microstructure investigations of alloys after homogenisation annealing indicate that specimens contained up to 0.07% V for a single phase, whilst the others are two-phase alloys. The temperature dependence of the mechanical properties of Cu-V alloys is plotted in Fig. 1 - upper graph: relative contraction, ψ, % - lower graph: ultimate strength, σ_B, kg/mm^2. Vanadium increases the hardness whereby the highest hardness, 59 kg/mm^2, was obtained for a vanadium content in excess of 3%. Thus, additions of vanadium increase the hardness, strength and ductility of copper and reduce its tensile strength temperature coefficient. V-Ni alloys were investigated by Pearson and Hume-Rothery (Ref. 4). The authors of this paper investigated Ni-V alloys with V contents up to 10%. The mechanical properties of such alloys

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Mechanical Properties ....

at various temperatures are entered in Table 3 for V contents of 0-10%. Data are also given on the temperature coefficient of the strength of Ni and its alloys between 20 and 700 °C. V additions bring about an increase in hardness, strength and ductility and a decrease in the temperature coefficient of the tensile strength. The following conclusions are arrived at: 1) Vanadium is a useful deoxidation and alloying addition to Cu and Ni. Small additions (up to 0.4 in Cu and up to 1% in Ni) bring about an increase in the mechanical strength and a decrease in the temperature coefficient in the case of static tension.
2) Introduction of V into Cu eliminates the brittleness at 500 °C.
There are 2 figures, 4 tables and 4 references: 1 Soviet and 3 non-Soviet.

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Mechanical Properties S/129/61/000/003/010/011
E073/E335

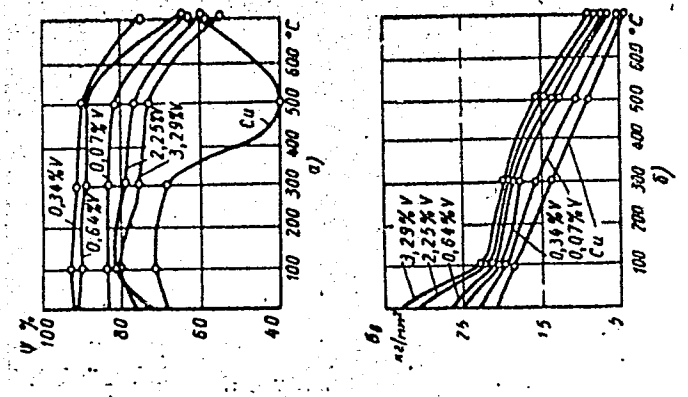
ASSOCIATIONS: Institut metallurgii AN SSSR (Institute of Metallurgy of the AS USSR)
Institut yadernoy fiziki AN Kazakhskoy SSR (Institute of Nuclear Physics of the AS Kazakh SSR)

Card 4/6

S/129/61/000/003/010/011
E073/E335

Mechanical Properties ....

Fig. 1:



Фиг. 1. Температурная зависимость механических свойств меднованадиевых сплавов: *а* — относительное сужение; *б* — предел прочности.

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20263

S/129/61/000/003/010/011
E073/E335

Mechanical Properties ....

Table 3:

Таблица 3

Механические свойства никелеванадиевых сплавов при различных температурах

(V content, %) Содержание ванадия в %	20°			100°		300°		500°		700°	
	HB в кг/мм²	$\sigma_в$ в кг/мм²	ψ в %	$\sigma_в$ в кг/мм²	ψ в %	$\sigma_в$ в кг/мм²	ψ в %	$\sigma_в$ в кг/мм²	ψ в %	$\sigma_в$ в кг/мм²	ψ в %
(Nickel) Никель	58	45	59,0	43	60,5	21,0	62,5	18	38	7	70,0
0,5	61	50	59,5	47	61,0	24,0	56,0	19	67	8	72,0
1,0	62	52	64,0	49	74,0	25,5	52,5	21	65	10	75,0
3,0	68	53	58,0	50	72,5	28,0	59,0	23	61	11	64,0
5,0	72	55	48,0	52	72,0	32,0	60,0	24	40	12	58,0
7,0	78	57	45,0	54	50,0	38,0	57,5	27	41	14	57,5
10,0	84	58	45,0	55	47,5	40,0	49,0	31	42	15	27,5

Card 6/6

PRESNYAKOV, A.A.; DUYSEMALIYEV, U.K.; CHERVYAKOVA, V.V.

Effect of small amounts of addition alloys on the serviceability of LS59-1 brass. Izv. AN Kazakh. SSR. Ser. met., obog. i ogneup. no.3: 99-104 '61. (MIRA 15:1)

(Brass--Metallurgy)

SAVITSKIY, Ye.M., doktor khimicheskikh nauk; DUYSEMALIYEV, [illegible]

The copper corner of the structural diagram of the copper-vanadium system. Vest.AN Kazakh.SSR 18 no.5:55-60 My '62. (MIRA 17:[illegible])

S/031/62/000/005/002/002
B144/B138

AUTHORS: Savitskiy, Ye. M., Doctor of Chemical Sciences, Duysemaliyev, U. K.

TITLE: Cu-corner of the constitution diagram of the copper-vanadium system

PERIODICAL: Akademiya nauk Kazakhskoy SSR. Vestnik, no. 5, 1962, 55 -60

TEXT: Microstructure, thermal, and x-ray diffraction analyses and data on hardness, microhardness, and resistivity of Cu-V alloys are used to construct the Cu corner of the constitution diagram of the Cu-V system for which reliable data were still lacking. The alloy consisting of V (containing 0.25 % C, 0.02 % N_2, 0.0228 % O_2, and up to 0.2 % metal impurities) and electrolytic Cu (containing up to 0.05 % overall impurities) is melted in a corundum crucible in a high-frequency oven in Ar atmosphere. A bottom layer of V is covered with Cu purified from oxides. Uniform V distribution is obtained by remelting; then the samples are forged and annealed at 900°C for 50 - 100 hrs and their microsection surface etched with HNO_3. Microscopic analysis reveals lamination in the liquid state
Card 1/2

Cu-corner of the constitution diagram ...

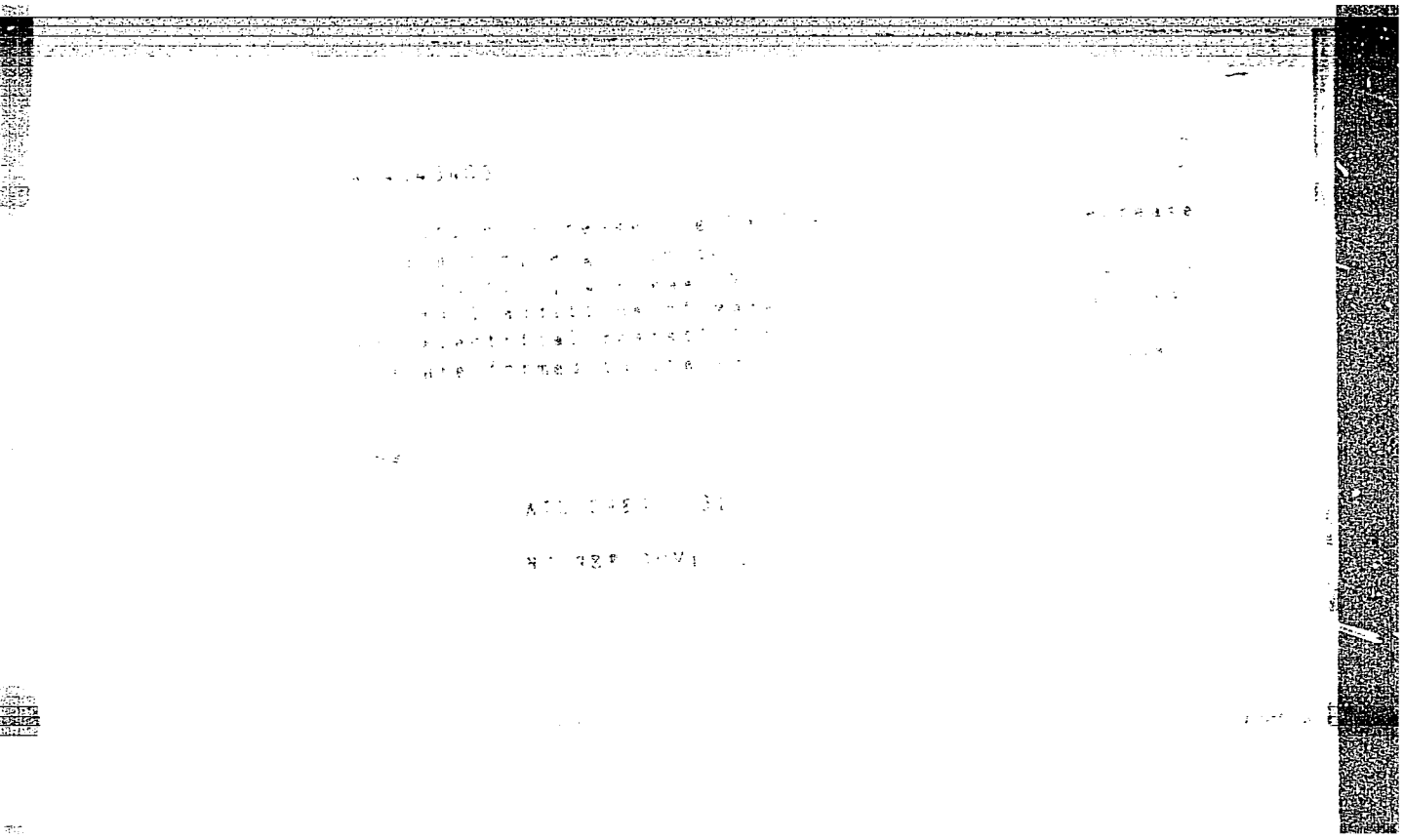
in the 3 - 10 % V range and a very inhomogeneous V distribution. With less than 3 % V lamination is not observed. X-ray analysis shows that the matrix is a solid solution of 0.32 - 0.04 % by weight V in Cu, while the inclusions are a solid solution of Cu in V containing 3.3 - 0.4 Cu. The solubility of V in Cu in solid state at different temperatures is determined by hardening and increases with rising temperatures; the interaction in the Cu-corner is peritectic. The temperature of the peritectic reaction is measured by differential thermal microanalysis. Additions of V up to 0.64 % by weight increase the temperature of initial fusion from 1083 to 1120°C and the microhardness from 98 to 104 kg/mm^2. Further addition has no effect. The Brinell hardness increases gradually with the V content. The resistivity is hardly influenced at all. X-ray diffraction analysis detects 2 solid solutions in the alloys: a solid α-solution rich in Cu with a face-centered cubic lattice and a solid β-solution rich in V with a body-centered cubic lattice. Introduction of V into the solid solution results in a slight increase of the Cu lattice parameter. There are 4 figures and 3 tables.

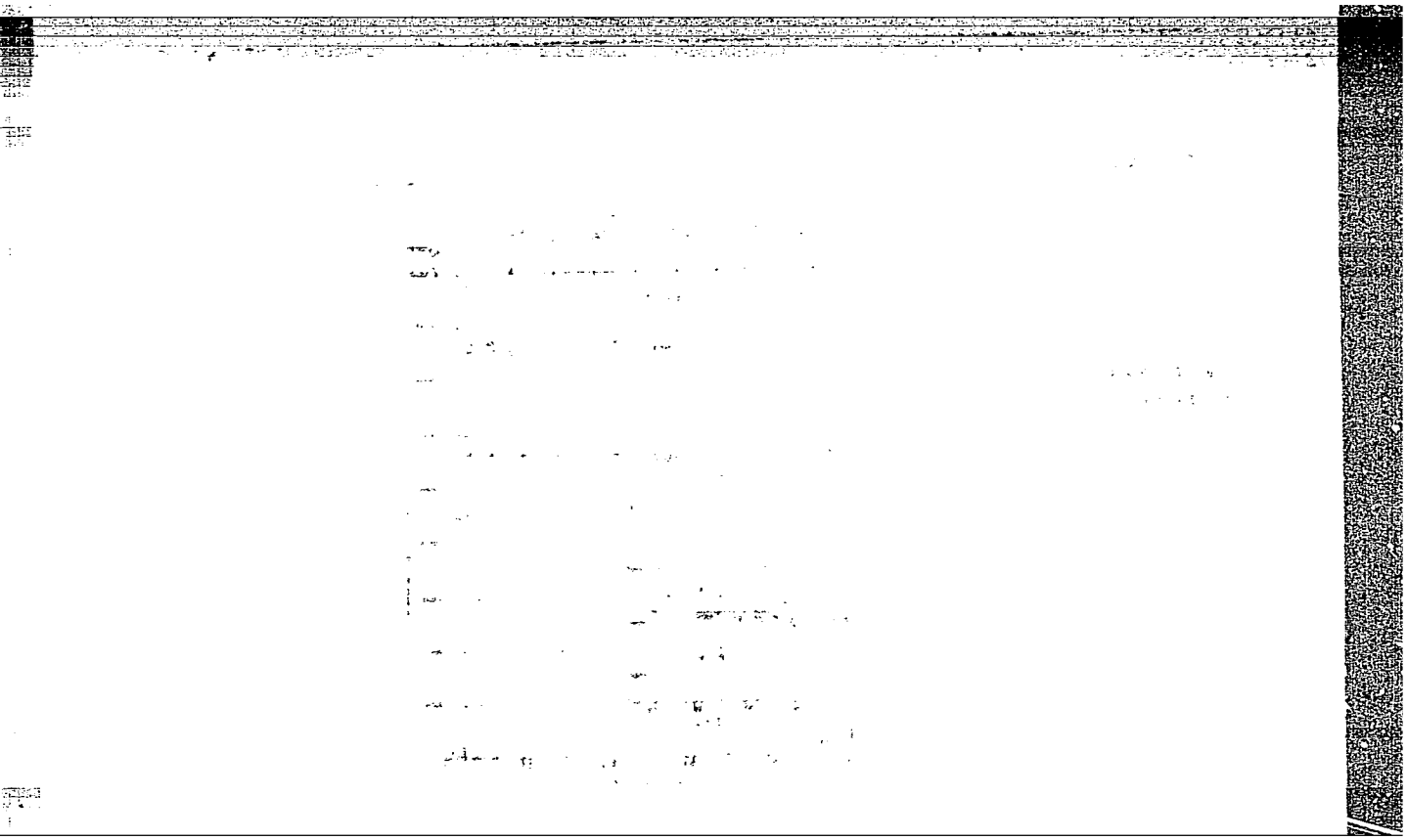
Card 2/2

DUYSEMALIYEV, U.K.; NOVIKOV, A.V.; CHERVYAKOVA, V.V.; FRIDMAN, L.P.

Increasing the technical and economic indices in the rolling of LS59-1 brass with complex additives in industrial conditions. Trudy Inst. met. i obog. AN Kazakh. SSR 7:105-111 '63.
(MIRA 17:6)

TOPIC TAGS: vanadium copper system, vanadium copper alloy, vanadium





DUYSEMALIYEV, U.K.

Effect of misch metal on the mechanical properties of certain industrial copper-base alloys. Trudy Inst. met. i obog. AN Kazakh. SSR 10:55-58 '64.

Cerium solubility in nickel and the mechanical properties of nickel-cerium alloys. Ibid.:59-62 (MIRA 18:7)

ACCESSION NR: AP4019500 S/0078/64/009/003/0755/0756

AUTHOR: Duyzemaliyev, Yu. K.

TITLE: Solubility of cerium in nickel and mechanical properties of nickel cerium alloys.

SOURCE: Zhurnal neorg. khimii, v. 9, no. 3, 1964, 755-756

TOPIC TAGS: cerium solubility, nickel solubility, cerium nickel alloy, mechanical property, microstructure, microhardness, Brinell hardness, electric resistance, cerium nickel solid solution, grain size, strength, ductility, solubility, Nisub5Ce

ABSTRACT: The structure and properties of nickel-cerium alloy systems, rich in nickel, were investigated by analysing microstructure and measuring microhardness of the phases, Brinell hardness and electric resistance. Nickel alloys containing 0.05, 0.10, 0.20, 0.30 and 0.50 wt.% cerium were studied. Microphotographs showed that 0.05% Ce forms a solid solution with Ni and reduces the grain size, with more Ce two phases form, one containing Ni_5Ce. Comparison of microstructures shows that the solubility of Ce in Ni at room temperature is only about 0.10 wt.%.

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ACCESSION NR: AP4019500

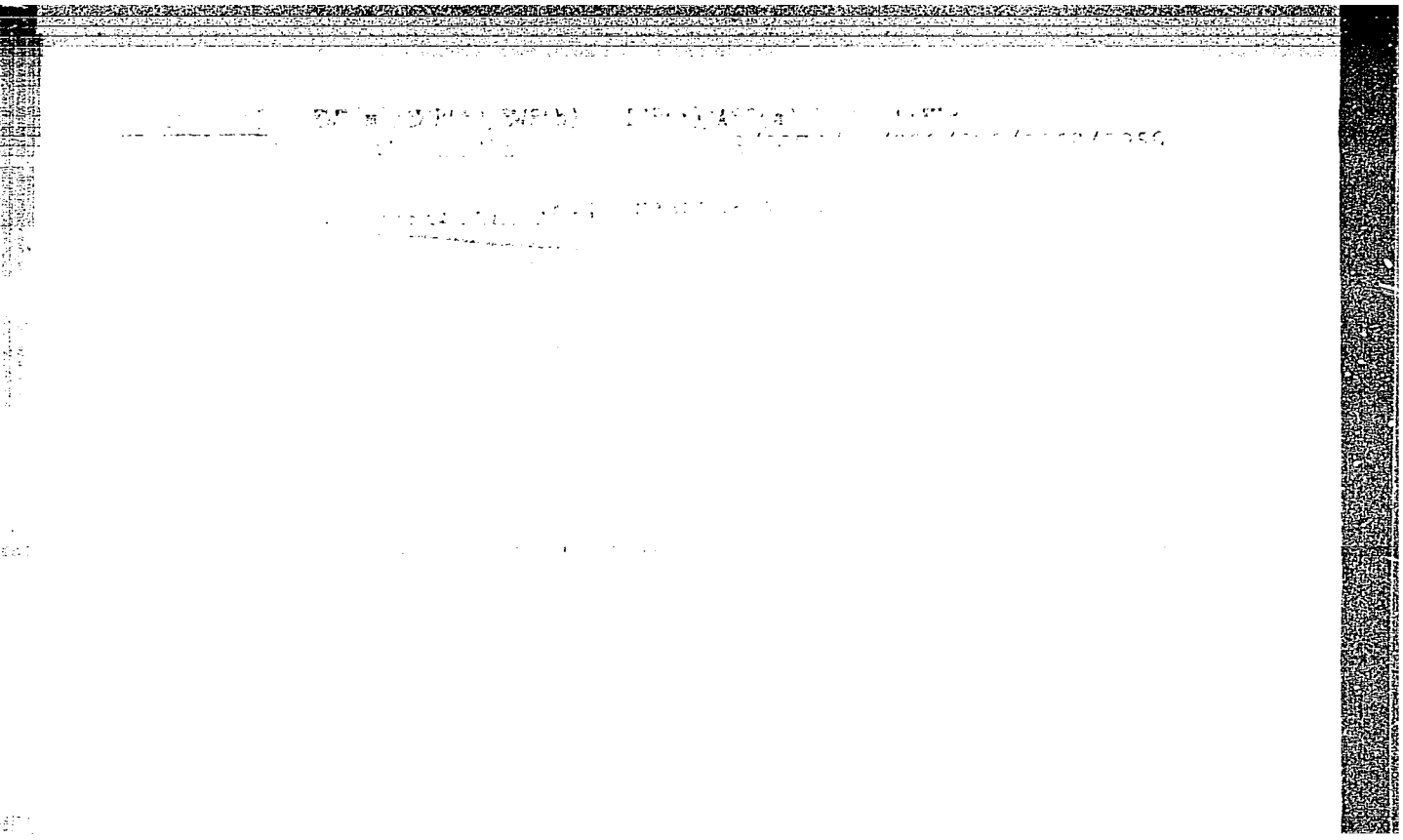
The solubility was also determined at 500, 900 and 1200C; it does not change much with temperature and is maximum at 1200C-- 0.125 wt.% Ce. Hardness and microhardness increase with an increase in Ce content in the solid solutions of the annealed Ni-Ce alloy. On transition into two phases, hardness increases only slightly. The strength increases with the addition of Ce within the limits of the solid solution, from 49.6 to 53.4 kg./mm^2. Ductility increases at room temperature, attaining a maximum at 0.05% Ce. Electric resistance increases slightly with up to 0.1% Ce; there is little change therafter to 0.5% Ce. The line of limiting solubility of the Ni-Ce alloys was constructed. Orig. art. has: 5 figs.

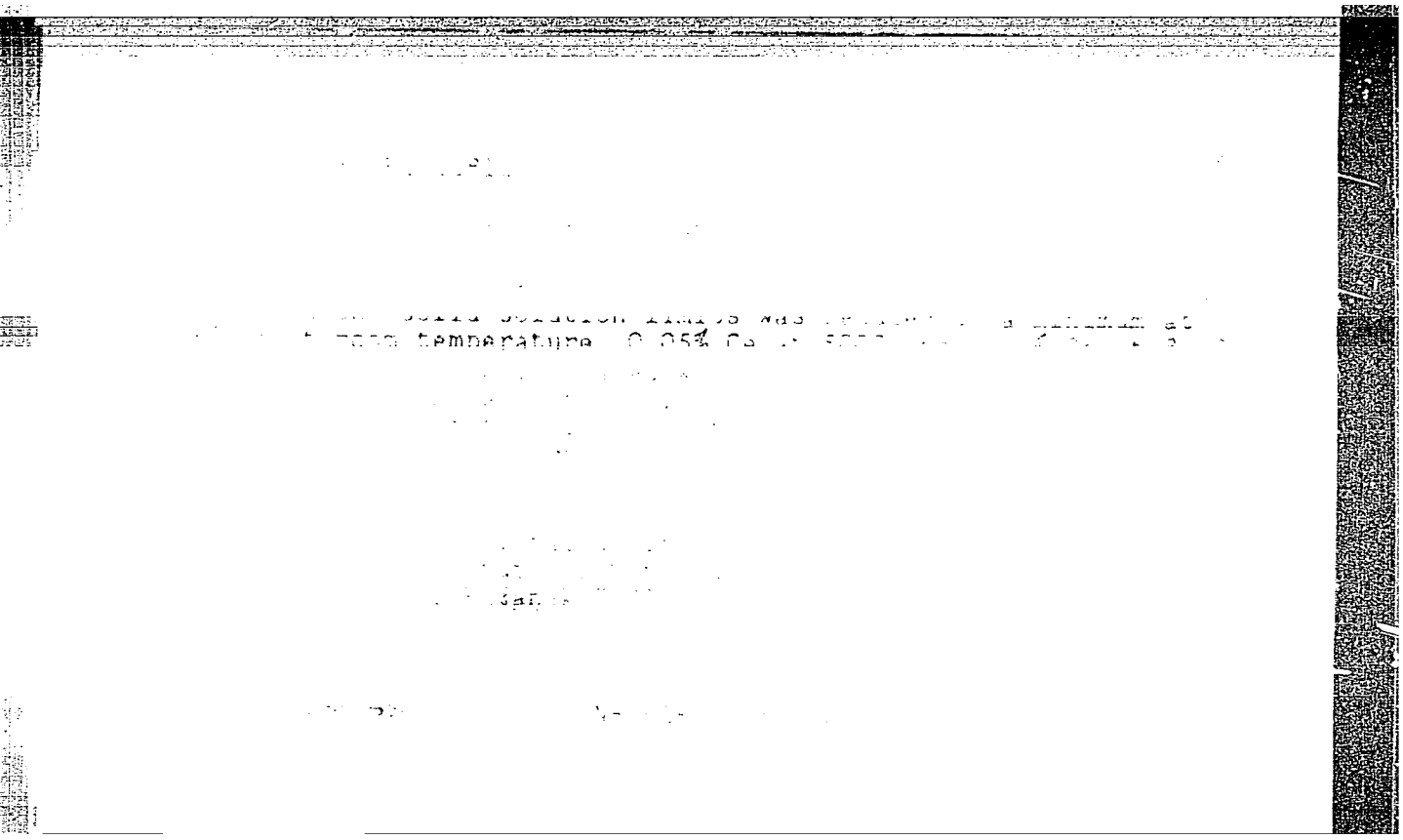
ASSOCIATION: Institut metallurgii i obogashcheniya AN KazSSR (Institute of Metallurgy and Enrichment, AN KazSSR)

SUBMITTED: 01Jun63 DATE ACQ: 31Mar64 ENCL: 00

SUB CODE: ML NO REF SOV: 001 OTHER: 000

Card 2/2





L 16035-65

ACCESSION NR: AP4044814

ENCLOSURE: 01

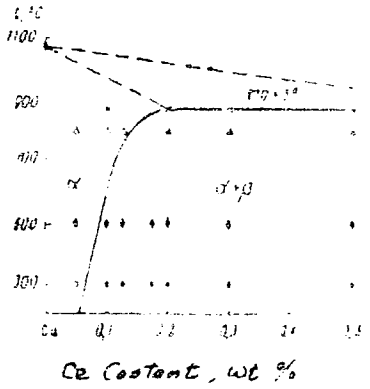


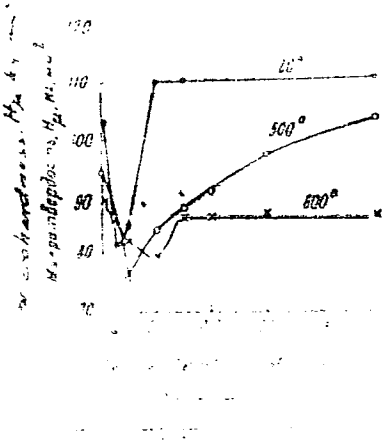
Figure 1

Solid solubility of copper-cerium ...

T. 16075-65

ACCESSION NR: AP4044814

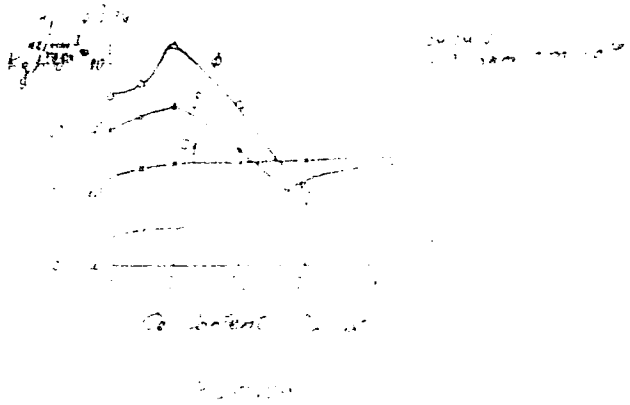
ENCLOSURE: 02



L 16035-65

ACCESSION NR: AP4044814

ENCLOSURE: 03



/EWP(w)/EWA(d)/T/EWP(t)/EWP(b) IJP(c) JD/HW/JG

...yev, P. K.

... nickel and the ...

pressure), no. 3, 59-62.

... solubility, cerium solid solution, cerium alloy, nickel alloy,

... property

... properties of nickel ...

... tests for phase ...

... micrographs show that ...

... with increasing ...

... temperature is ...

... and reaches a maximum ...

... and microhardness ...

AT5001279

... for a certain ... with an
... somewhat ...
... of the solid solution ...
... of Ni ... with additi...
... 0.5% Ce. Addition of ...
... somewhat, further addition up to 0.5% ...
... art. has: 1 table and 5 figures.

... metallurgii i obogashcheni...
... Concentration Institute, Academy of ...

ENCL: 00

OTHER: 000

SAVITSKIY, Ye.M.; BARON, V.V.; DUYSEMALIYEV, B.K.; YEFIMOV, Yu.V.

Phase diagram of the system vanadium - copper. Vest. AN Kazakh. SSR 20 no.7:38-44 Jl '64. (MIRA 17:11)

DUYSENOV, Yesen Duysenovich; GOLUBEV, I., red.; ZLOBIN, M., tekhn. red.

[Alma-Ata today and tomorrow] Alma-Ata segodnia i zavtra. Alma-Ata, Kazgosizdat, 1963. 173 p. (MIRA 17:2)

IL'YASOV, Sattar Il'yasovich; DUYSHEMALIYEV, T.D., otv. red.; KOVAL'CHUK, V.V., red. izd-va; ANOKHINA, M.G., tekhn. red.

[Victory of socialist relations in the agriculture of Kirghizia] Pobeda sotsialisticheskikh otnoshenii v sel'skom khoziaistve Kirgizii. Frunze, Izd-vo AN Kirgizskoi SSR, 1961. 81 p. (MIRA 14:11)
(Kirghizistan—Collective farms)

KYDYNOV, M., nauchnyy sotrudnik; BATYRCHAYEV, I.; LOPINA-SHENDRIK, M.D.; KALBAYEV, A.; IMANAKUNOV, B.; SULAYMANKULOV, K., kand.khim.nauk; DUYSHENALIYEVA, N.; AKBAYEV, A.; KAZIYEV, K.; GOLOVIN, F.I.; BAKASOVA, Z.; KOVALENOK, Z.P.; SHELUKHINA, N.P.; BUGUBAYEV, A.B., starshiy prepodavatel'; BAYBULATOV, E.B., mladshiy nauchnyy sotrudnik; FILIPPOV, N.A., mladshiy nauchnyy sotrudnik; MAMBETAKUNOV, T., aspirant; IMANKULOV, A., aspirant; TURMAMBETOV, S., mladshiy nauchnyy sotrudnik; MUKHAMEDZIYEV, M.M., nauchnyy sotrudnik; KONURBAYEV, A.O.; PAK, L.V.; RUDAKOV, O.L.; TOKTOSUNOV, A.; KULAKOVA, R.I.; ASHIRAKHMANOV, Sh., aspirant; ALYSHBAYEV, B.; SULTANALIYEV, A.; AKHMETOV, K.; POLONOVA, A.P.; NIKITINSKIY, Yu.I.; SHAMBETOV, S.Sh.; DZHUMBAYEV, B.O., nauchnyy sotrudnik; DRUZHININ, I.G., red.; ANOKHINA, M.G., tekhn.red.

[Papers by junior scientists of the Academy of Sciences of the Kirghiz S.S.R.] Trudy molodykh nauchnykh rabotnikov AN Kirgizskoi SSR. Frunze, 1958. 411 p. (MIRA 12:3)

(Continued on next card)

KYDYNOV, M.---(continued) Card 2.

1. Akademiya nauk Kirgizskoy SSR, Frunze. 2. Institut khimii AN Kirg.SSR (for Kydynov). 3. Kirgizskiy gosudarstvennyy universitet (for Bugubayev). 4. Institut geologii AN Kirg.SSR (for Baybulatov). 5. Institut vodnogo khozyaystva i energetiki AN Kirg.SSR (for Filippov). 6. Otdel fiziki i matematiki AN Kirg.SSR (for Mambetakunov, Imankulov). 7. Institut zoologii i parazitologii AN Kirg.SSR (for Turmambetov). 8. Kirgizskiy meditsinskiy institut (for Mukhamedziyev). 9. Otdel pochvovedeniya AN Kirg.SSR (Ashirakhmanov). 10. Institut botaniki AN Kirg.SSR (for Alyshbayev, Sultanaliyev, Akhmetov, Polenova, Nikitinskiy). 11. Institut istorii AN Kirg.SSR (for Dzhumbayev).
(Science--Collections)

DRUZHININ, I.G.; DUYSHENALIYEVA, N.D.

Solubility of urea and manganese sulfate in water and the solid phases present. Izv.AN Kir.SSR.Ser.est.i tekh.nauk 2 no.3:85-92 '60. (MIRA 13:9)

(Urea) (Manganese sulfate)

DUYSHENALIYEVA, N.; SULAYMANKULOV, K.; DRUZHININ, I.G.

Solubility, specific gravity, and viscosity isotherms of the system $ZnSO_4$ - CO (NH_2) - H_2O at 30°. Zhur.neorg.khim. 6 no.8:1919-1921 Ag '61. (MIRA 14:8)
(Zinc sulfate) (Urea)

DRUZHININ, I.G.; DUYSHENALIYEVA, N.

Properties of double compounds of urea, manganese sulfate, and water. Izv.AN Kir.SSR.Ser.est.i tekh.nauk 4 no.9:123-127 '62.
(MIRA 16:4)

(Urea) (Manganese sulfates)

DUYSHENALIYEVA, N.; DRUZHININ, I.G.

Formation of complex compounds and the distribution of urea in a solid system and in solutions. Izv. AN Kir. SSR. Ser. est. i tekh. nauk 3 no.2:73-82 '61. (MIRA 16:7)

(Urea) (Complex compounds)

DUYSHENALIYEVA, N.

"A Study of the Chemical Interaction of Urea With Manganese Sulfate";

dissertation for the degree of Candidate of Chemical Sciences (awarded by the Timiryazev Agricultural Academy, 1962)

(Izvestiya Timiryazevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2, 1963, pp 232-236)

DUYSHEYEV, Esenkan, Cand Phys-Math Sci — (diss) "Studies of the theory of spillways. (The flat problem)." Frunze, 1958. 12 pp (Kirgiz State University). 160 copies (KL, 20-58, 92)

AUTHOR: Duyshayev, Esenkan SOV/140-58-2-7/20

TITLE: Investigations on the Theory of Overflows (Plane Problem) (Issledovaniya po teorii vodoslivov (ploskaya zadacha))

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego obrazovaniya SSSR, Matematika, 1958, Nr 2, pp 61-83 (USSR)

ABSTRACT: The author considers a plane parallel irrotational motion of a heavy, incompressible, ideal fluid over a hindrance consisting of rectilinear pieces. The velocity in a large distance from the hindrance is assumed to be given. The author seeks the amounts of the hindrance, the free surface, and the local velocities. In the first approximation the problem is reduced to numerical quadratures according to the method of Marchi. A example is computed and the data are compared with experimental results of the author.
There are 5 figures and 6 references, 4 of which are Soviet, 1 German, and 1 Italian.

ASSOCIATION: Kirgizskiy gosudarstvennyy universitet (Kirghiz State University)
SUBMITTED: February 3, 1958

Card 1/1

88856

S/044/60/000/007/010/058
C111/C222

16.7600

AUTHOR: Duysheyev, Esenkan

TITLE: On the flowing out of a fluid under a shield (to the problem of Marchi)

PERIODICAL: Referativnyy zhurnal. Matematika, no.7, 1960, 77. Abstract no.7538. In sb: Materialy 8-y Nauchn. konferentsii professorsko-prepodovat. sostava Fiz.-matem.fak. (Kirg. un-t). Frunze, 1959, 12-14

TEXT: The author applies the method elaborated in an earlier paper (abstract 7537) and considers the problem of the motion of a non-tenacious incompressible fluid between parallel walls. The upper wall ends at the right side with a shield which is inclined to the axis of abscissas, while the horizontal lower wall at the right side has an obstacle with an infinitely broad horizontal threshold, where the obstacle to the axis of abscissas is inclined under the angle β, $0 \leq \beta \leq \pi$. It is assumed that the velocity at the top of the shield is given. An analogous problem (only with a shield) was investigated by the Italian scientist Marchi who constructed a complicated and very approximate solution. The problem is solved by the author in the first approximation,

Card 1/2

88856

On the flowing out of a fluid... S/044/60/000/007/010/058
C111/C222

i.e. he determines only the two first coefficients of the expansion of power series of the logarithm of the velocity at the surface of the free ray which is unknown in advantage. The author determines the sought velocity, the compression of the ray, and the depth in an arbitrary point of the flow. The problem is brought up to a numerical example.

[Abstracter's note: The above text is a full translation of the original Soviet abstract.]

Card 2/2

S/169/62/000/007/112/149
D228/D307

AUTHORS: Duytseva, M. A. and Zverev, N. I.

TITLE: Possibility of applying L. Kletter's method of forecasting charts of the mean three-day N-850 values

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 49, abstract 7B260 (Tr. Tsentr. in-ta prognozov, no. 116, 1962, 65-66)

TEXT: The method, suggested by L. Kletter (Praktische Erfahrungen mit einer neuen Methode zur Ausarbeitung mittelfristiger Wetterprognosen, Arch. Meteorol., Geophys. und Bioklimatol. A, 1956, Bd. 9, H 2), was verified in conformity with the circulation conditions over the USSR's European territory. L. Kletter's method is based on the use of the linear regression equation, relating the mean three-day N-850 values to the values at 18 hrs on the initial day. For the USSR's European part the regression coefficients were determined by the method of least squares from the daily AT-850 charts for Moscow, Leningrad, Kiev, and Sverdlovsk for January and July,

Card 1/2

Possibility of applying ...

1950-1952. Out of 27 forecasts 15 proved to be correct in sign, the other 12 being incorrect. The method does not give the dynamics of the development of processes. The reason for the low justifiableness of the forecasts evidently consists of the fact that no adequate allowance is made for the regression equation's free term. [Abstracter's note: Complete translation.]

Card 2/2

DUYTSEVA, M.A.

Fluctuations of the demarcation line between the western and eastern wind components in different months. Trudy TSIP no.116:67-70 '62. (MIRA 15:5)

(Winds)

DUYTSEVA, M.A.; PED', D.A.

Fluctuations of planetary upper frontal zones of natural synoptic periods. Trudy TSIP no.120:34-43 '63. (MIRA 16:6)

(Weather forecasting)
(Solar radiation)

DUYTSEVA, M.A.; FED', D.A.

Cold and heat waves in the European U.S.S.R. Trudy TSIP no.123: 34-62 '63. (MIRA 16:9)

ACCESSION NR: AT4035463 S/2546/63/000/127/0137/0143

AUTHOR: Duytseva, M. A.; Ped', D. A.

TITLE: Strong cold and heat waves in the European territory of the SSSR

SOURCE: Moscow. Tsentral'ny*y institut prognozov. Trudy*, no. 127, 1963. Voprosy* sezonny*kh prognozov pogody* (Seasonal weather forecasting), 137-143

TOPIC TAGS: meteorology, climate, climatology, weather extreme, temperature, anomaly

ABSTRACT: The authors provide a brief climatic description of strong cold and heat waves in the European territory of the SSSR. The study was based on data for anomalies of mean daily air temperature at 22 standard stations uniformly distributed over the European USSR during the period 1951-1960. By strong cold and heat waves the authors mean cases when the anomaly of mean daily air temperature (Δt) is appreciable. The criterion used is $\Delta t \geqslant \pm 10C$. The following characteristics were determined: number of days with $\Delta t \geqslant \pm 10C$, continuous duration of such periods and intensity of waves. It is noted that strong heat waves virtually never occur in July (one of the two months studied); this phenomenon is primarily

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ACCESSION NR: AT4035463

characteristic of the cold season of the year, when there is a strong variability of air temperature. The occurrence of these temperatures extremes is clear from a series of maps (Figures 1-4 of the Enclosure); the patterns and causes of these distributions are elaborated in the text. Orig. art. has: 4 figures.

ASSOCIATION: Tsentral'nyy institut prognozov, Moscow (Central Institute of Forecasts)

SUBMITTED: 00	DATE ACQ: 20May64	ENCL: 04
SUB CODE: ES	NO REF SOV: 001	OTHER: 000

Card 2/6

ACC NR: AT6028446 SOURCE CODE: UR/2546/66/000/153/0047/0063

AUTHOR: Duytseva, M. A.; Ped', D. A.

ORG: none

TITLE: Formation of a seasonal air temperature anomaly in relation to its distribution over the Northern Hemisphere

SOURCE: Moscow. Tsentral'nyy institut prognozov. Trudy, no. 153, 1966. Statisticheskiye metody dolgosrochnogo prognoza pogody (Statistical methods of long-range weather forecasting), 47-63

TOPIC TAGS: air temperature, atmospheric temperature, long range weather forecasting, statistic analysis

ABSTRACT: Asynchronous relations of an air temperature anomaly at points of the Northern Hemisphere are examined, the most significant parameters of the relation are elicited, and on the basis of them, a statistical method is proposed for forecasting the seasonal air temperature anomaly over the European territory of the Soviet Union. The investigation utilized the data on the mean seasonal air temperature anomaly from 1901 to 1950 for 50 stations of the Northern Hemisphere. In the European part of the Soviet Union the authors took five stations, and for each of them the asynchronous relations between temperature anomalies for the season and temperature anomalies in various regions of the Northern Hemisphere were elicited. A season was understood to be a two-month period beginning with January-February. Charts for

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ACC NR: AT6028446

each season and of the air temperature anomaly were plotted to establish these relations and to determine the active, dynamically significant regions. On the basis of the dynamically significant regions found it is possible to compile forecasts of the seasonal air temperature anomaly. Such forecasts can be of two types: the sign of the anomaly alone, or the sign and magnitude of the air temperature anomaly. The forecast of the sign of the air temperature anomaly with respect to a dynamically significant region reduces to the following: the central part of the region with the greatest relation is selected and the values of the air temperature anomaly in it during the two months are examined; then the sign of the anomaly is forecasted. To calculate the expected sign and magnitude of the air temperature anomaly, the latter is calculated for two months at stations of the Northern Hemisphere which are used for the forecast; the forecast of the sign of the seasonal air temperature anomaly is compiled for stations of the European part of the Soviet Union; then the seasonal air temperature anomaly is calculated at two dynamically significant regions for stations in the European part of the Soviet Union. The obtained forecasts are matched and the more reliable one is selected. The value of the anomaly based on the forecasts was close to the actual values, the absolute error being on the average, about 1.6°. Consequently, these forecasts are completely satisfactory. In the future the authors propose to make a more complete calculation of the initial information from the entire Northern Hemisphere and not only at individually selected regions. Orig. art. has: 3 tables and 7 figures.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

KALYUZHNYY, N.; DUYUNOV, A., inzh. po tekhnike bezopasnosti

Dust control. Sov.shakht. 10 no.9:20-21 S '61.
(MIRA 14:8)

1. Zamestitel' glavnogo inzhenera kombinata Luganskugol' (for Kalyuzhnyy).

(Mine dusts)

Duyunov, E.A.

DUYUNOV, E.A.

Letter to the editor. Zhivotnovodstvo 20 no.2:86 F '58. (MIRA 11:1)
(Stock and stockbreeding)

DUYUNOV, I.K.

Calculating the inflow of water into drains under natural conditions of the Chu Valley. Izv.AN Kir.SSR.Ser.est.i tekh.nauk 2 no.4:103-120 '60. (MIRA 14:8)

(Chu Valley--Drainage)

DUYUNOV, I. K., Cand Tech Sci -- (diss) "Research into the inflow of ground waters to drainage under the natural conditions of the Chuyskaya Valley." Moscow-Frunze, 1960. 24 pp; with graphs; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Inst of Water Economy Engineers im V. R. Williams); 150 copies; price not given; (KL, 28-60, 160)

EZAFOVICH, A.S. (g.Frunze); DUYUNOV, I.K. (g.Frunze)

Utilization of ground waters for irrigation purposes by the regulation of drainage. Gidr. i mel. 13 no.4:14-21 Ap '61. (MIRA 14:4)

(Chu Valley--Water, Underground) (Drainage)

DUZ', P. D. Doc/h Tech Sci -- (diss) "History of the technology of aeronautics and aviation in the USSR." Mos,1957. 23 pp 21 cm. (Acad Sci USSR. Inst of History of Natural Science and Technology). 120 copies. (KL, 23-57, 111).

DUZ', Petr Dmitriyevich; SEMENOV, V.A., prof., doktor tekhn.nauk, general-mayor, zasluzhennyy deyatel' nauki i tekhniki, retsenzent; GROMOV, M.M., prof., general-polkovnik, retsenzent; ANOSHCHENKO, N.D., prof., retsenzent; BERKOVICH, D.M., kand. tekhn.nauk, red.; BELEVTSEVA, A.G., izdat.red.; ROZHIN, V.P., tekhn.red.

[History of aeronautics and aviation in the U.S.S.R.; period of the First World War, 1914-1918] Istoriia vozdukhoplavaniia i aviatsii v SSSR; period pervoi mirovoi voiny, 1914-1918 gg. Moskva, Gos.nauchno-tekhn.izd-vo Oborongiz, 1960. 298 p. (MIRA 13:11)
(Aeronautics--History)

DUZ', S.D., inzh.

Water-covered rools. Prom. stroi. 39 no. 1:24-27 '61. (MIRA 14:1)

1. Nauchno-issledovatel'skiy institut po stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR v Rostove-na-Donu.
(Roofing, Concrete) (Air condititoning)

DUZ', S.D., inzh.

New type of leader head. Vod.i san.tekh. no.4:14-16 Ap '63.
(MIRA 16:4)
(Drainage, House)

SAWCZUK, Antoni; DUZEK, Maria

A note on the interaction of shear and bending in plastic plates. Archiw mech 15 no. 3:411-426 '63.

1. Department of Mechanics of Continuous Media, Institute of Basic Technical Problems, Polish Academy of Sciences, Warsaw.

DUZENKEVICH, S.Yu., inzh., red.; KUROCHKIN, A.M., inzh., red.

[Instructions for designing silos for loose materials] Ukazaniia po proektirovaniiu silosov dlia sypuchikh materialov (SN 302-65). Moskva, Stroiizdat, 1965. 50 p. (MIRA 18:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

MURN, Rudolf, dipl. inz.; DUŽEVIC, Dusko, dipl. inz.

Fast coincidence gates. Automatika 5 no.6:486-489 '64.

1. Jozef Stefan Nuclear Institute, Ljubljana.

PHASE I BOOK EXPLOITATION SOV/5233

Duzhabua, Shalva Andreyevich, and A.L. Churayan

Obosnovaniye izmeneniy nekotorykh trebovaniy "Norm i pravil stroitel'stva v seysmicheskikh rayonakh" (Basis for the Change of Certain Requirements for Construction Norms and Specifications in Seismic Regions) Tbilisi, Izd-vo AN Gruzinskoy SSR, 1960. 49 p. 500 copies printed.

Sponsoring Agency: Akademiya nauk Gruzinskoy SSR. Institut stroitel'nogo dela.

Ed.: R.S. Lordkipanidze; Ed. of Publishing House: L.N. Sarkisyan; Tech. Ed.: A.R. Todua.

PURPOSE: This booklet is intended for construction engineers and scientific workers of construction research institutes.

COVERAGE: The booklet contains a number of amendments to the 1957 regulations governing the construction of earthquake-proof buildings in seismic regions of the USSR. The suggestion to make spans monolithic is considered to be especially important. No personalities are mentioned. There are 7 references: 6 Soviet.

Card 1/3

VOZDVIZHENSKIY, V.M.; DUZHAK, A.A.

Measurement of microthickness by the application of small loads. Zav.lab. 27 no.2:197-198 '61. (MIRA 14:3)
(Thickness measurement)(Metals--Testing)

DUZHAK, V.G. [Duzhak, V.H.]

Mechanism of the cardiotonic effect produced by the cardiac glycoside gofruside. Fiziol. zhur. [Ukr.] 7 no.1:32-37 Ja-F '61.
(MIRA 14:1)

1. Kafedra farmakologii Kiyevskogo meditsinskogo instituta im. akad. A.A.Bogomol'tsa.

(GOFRUSIDE)

DUZHAK, V.G. [Duzhak, V.H.]

Influence of gofruside on the cardiovascular system. Farmatsev. zhur. 16 no. 2:67-69 '61. (MIRA 14:4)

1. Kafedra farmakologii Kiyevskogo meditsinskogo instituta, zav. kafedroy deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR prof. O.I. Cherkes.
(GOFRUSIDE) (CARDIOVASCULAR SYSTEM)

DUZ-KHOTIMITSKIY, F. I.

5904. DUZ-KHOTIMITSKIY, F. I. - Izbrannyye partii. pod red. V. N. Panova. M., (Fizkul'tura i sport), 1954. 160 s. s ill. 20 sm. 20.000 ekz. 4R. 5K. -(55-1038) 794.1

SO: Knizhmaya Letopis', Vol. 1, 1955

DUZ'-KRYATCHENKO, M. A.

Duz'-Kryatchenko, M. A.

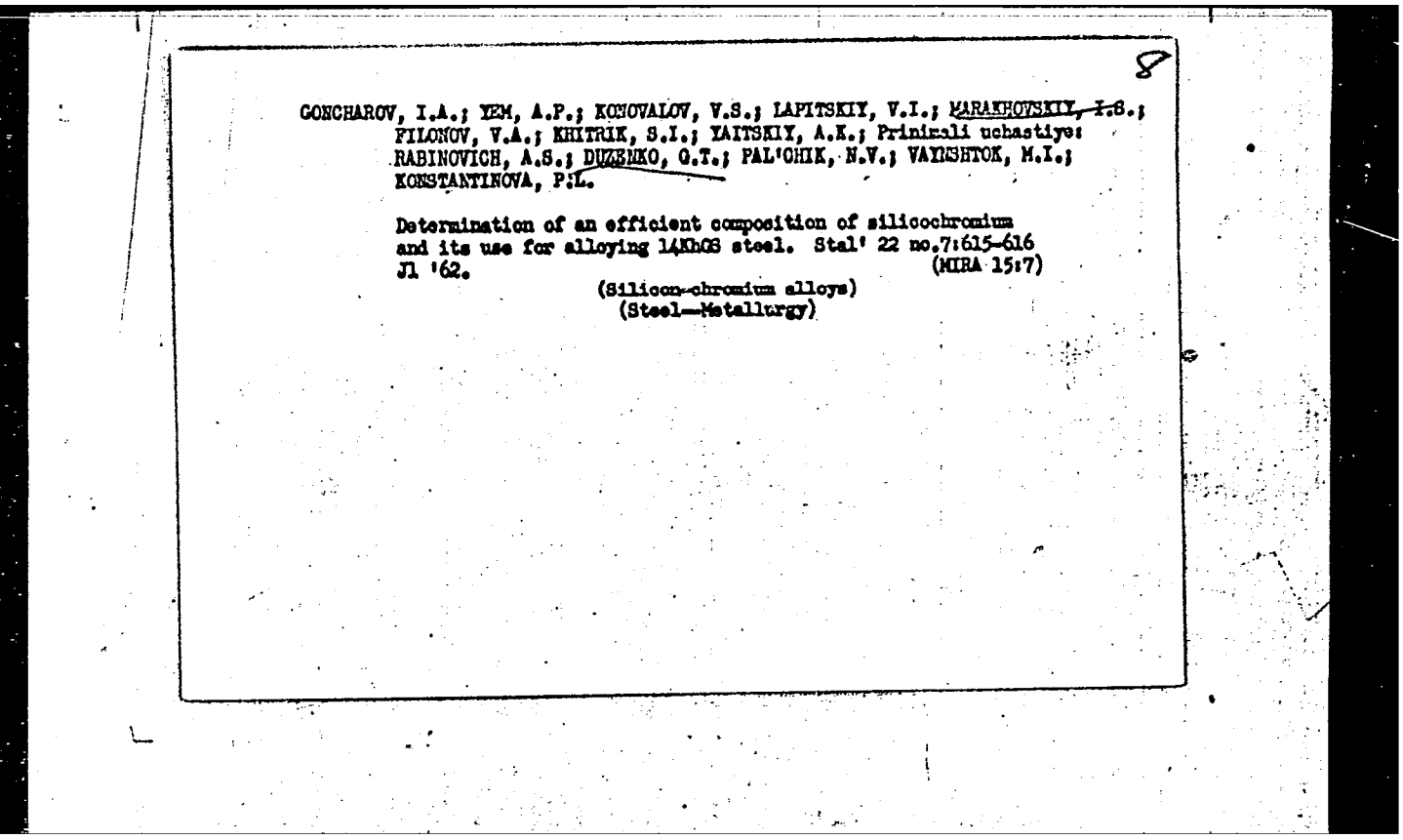
"The Selection and Multiplication of Agriculturally Valuable Types of Mulberry Tree in the Mountain Regions of the Zeravshan Watershed under the Conditions of Tashkent." Min Higher Education USSR. Tashkent Agricultural Inst. Tashkent, 1955 (Dissertation for the degree of Candidate in Agricultural Sciences)

SO: Knizhnaya letopis' No. 27, 2 July 1955

DUZDZEL, J.

The erection of the Lodz II thermal-power plant by using heavy prefabricated sections. p. 343.
(INZYNIERIA I BUDOWNICTWO Vol. 13, No. 9, Sept. 1956, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 9, Sept. 1957, Uncl.



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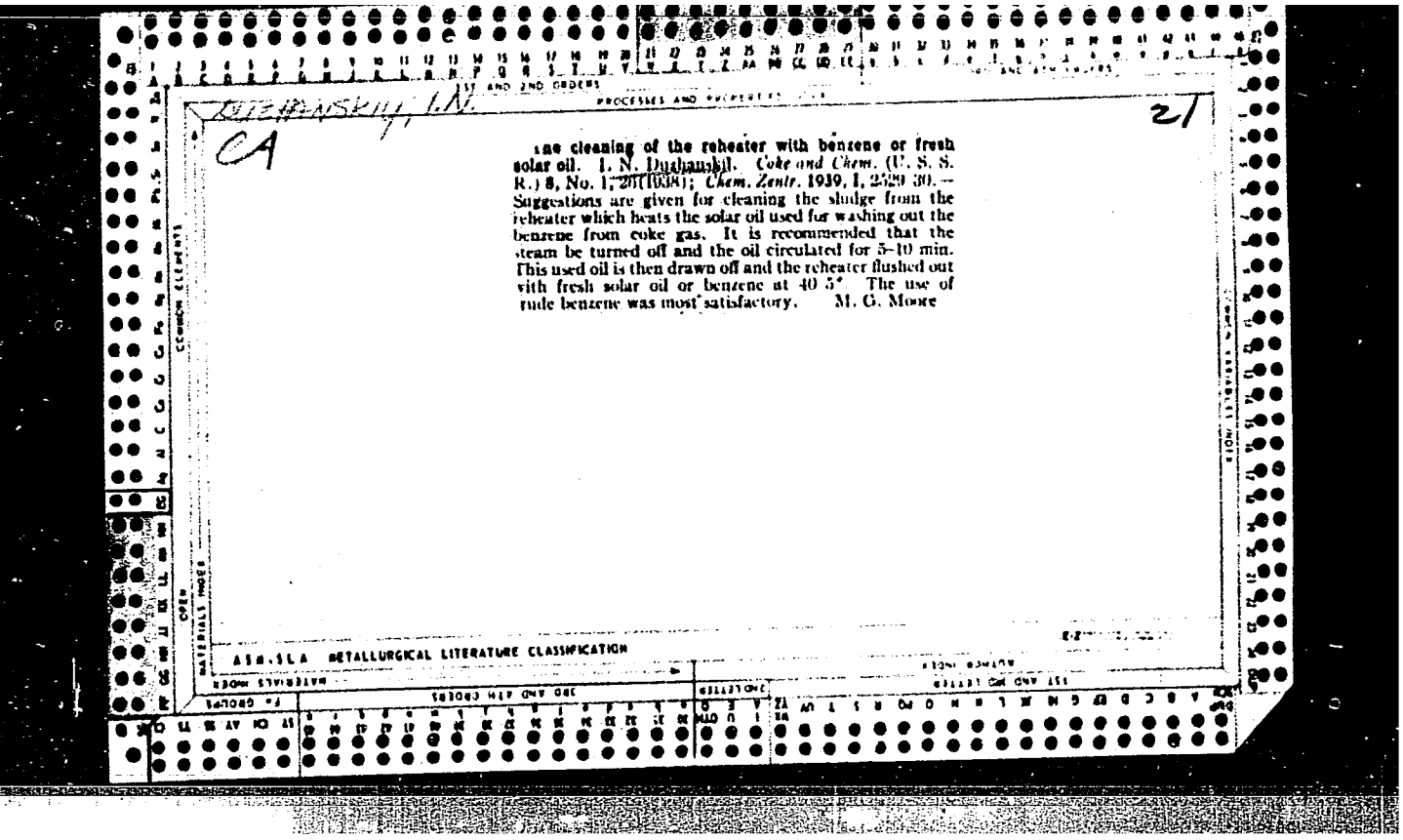
GONCHAROV, I.A.; YEM, A.P.; KONOVALOV, V.S.; LAPITSKIY, V.I.; MARAKHOVSKIY, I.S.; FILONOV, V.A.; KHITRIK, S.I.; YAITSKIY, A.K.; Prinimali uchastiye: RABINOVICH, A.S.; DUZENKO, O.T.; PAL'CHIK, N.V.; VAYNSHTOK, M.I.; KONSTANTINOVA, P.L.

Determination of an efficient composition of silicochromium and its use for alloying 14KhGS steel. Stal' 22 no.7:615-616 Jl '62. (MIRA 15:7)

(Silicon-chromium alloys)
(Steel—Metallurgy)



ROTHMANSKII, I.N.

CA

21

The cleaning of the reheater with benzene or fresh solar oil. I. N. Dudhanskii. *Coke and Chem.* (U. S. S. R.) 8, No. 1, 20(1938); *Chem. Zentr.* 1939, I, 2529-30.—Suggestions are given for cleaning the sludge from the reheater which heats the solar oil used for washing out the benzene from coke gas. It is recommended that the steam be turned off and the oil circulated for 5–10 min. This used oil is then drawn off and the reheater flushed out with fresh solar oil or benzene at 40 5°. The use of rude benzene was most satisfactory. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

DUZHANSKIY, I.N.

Analysis of natural gas. Zav.lab.21 no.8:1004-1005 '55. (MLRA 8:11)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya "Ukrgaz"
(Gas, Natural--Analysis)

DUZHANSKIY, I.N.

DUZHANSKIY, I.N.

Laboratory determination of the specific surface of carbon black.
Zav.lab. 22 no.3:320-322 '56. (MLRA 10:5)

1.Tsentral'naya nauchno-issledovatel'skaya laboratoriya ob"yedineniya "Ukrgaz".
(Carbon black)

DUZHANSKIY, I.N.

AUTHOR: Duzhanskiy, I.N. 32-8-26/61

TITLE: A Perfection of the Method for Measuring the Specific Surface of Carbon Deposit. (Usovershenstvovaniya v metodike izmereniya udel'noy poverkhnosti sazhi)

PERIODICAL: Zavodskaya Laboratoriya, 1957 , Vol. 23, Nr 8, pp. 948-948 (USSR)

ABSTRACT: The relevant kinetic method is based on the property of thermal decomposition of hydrocarbons and on the deposit of elementary carbon on soot particles. The quantity of separated carbon is in this connection proportional to the surface of carbon deposit. An experiment according to this method takes 3 hours. For the purpose of accelerating the process a method as well as a better suited apparatus were worked out in the "Ukrgas" (Ukrainian Gas) laboratory which permits the performance of 2o works of this kind in the source of one working day. The paper describes the modifications in the corresponding apparatus. They mainly consist of the fact that the number of samples which are treated is doubled or quadrupled and that the entire work is arranged in a manner that the individual parts of the apparatus do not have to pause. The principle of the process is as follows:
The reference samples are dried at the same time as the test samples at 11o°C. Then they are annealed at a temperature of 78o-8ooºC and brought into the reaction zone of natural gas where temperatures up to 94o-96oºC are suitable. Various types of soot (thermal,

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32-8-26/61

A Perfection of the Method for Measuring the Specific Surface of Carbon Deposit

soot, heating furnace soot, etc.) require different degrees of reaction temperature. A flow of 120 ml/min of natural gas is provided here. The author states that this method, due to its simplicity, is practical and productive and therefore seems to be valuable for industrial enterprises. The possibility of errors is estimated to lie between 2 and 2,4 %. A table is given. (1 table).

ASSOCIATION: Central Scientific Research Laboratory "Ukrgas" (Tsentral'naya nauchno-issledovatel'skaya laboratoriya "Ukrgas")

AVAILABLE: Library of Congress.

Card 2/2

5(4)
AUTHOR: Duzhanskiy, I. N. SOV/32-24-12-17/45

TITLE: Exchange-Adsorption Method for Determining the Specific Surface Area of Soot (Obmenno-adsorbtsionnyy metod opredeleniya udel'noy poverkhnosti sazhi)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 12, pp 1463-1464 (USSR)

ABSTRACT: M. I. Oleynik participated in this work. The dispersity of soot can be determined by a direct measurement of the particles or by the specific surface area. An apparatus (Fig 1) and the volumetric adsorption method are described for the determination of the specific surface area of soot. The method is based on measuring the gas adsorbed by the soot at various pressures. In the experiments reported here the author used n-butane. The surface area of 1 gram of soot (31.3 m^2/g) was calculated (Ref 1) from the adsorption isotherms obtained (Fig 2). By this method the coarseness area and the area of the pores of the soot can also be determined. If a determination of the external surface area is desired the soot sample must be ignited in a current of hydrocarbon gas at 800-900° prior to the determination.

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Exchange-Adsorption Method for Determining the Specific Surface Area of Soot

There are 2 figures and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skaya laboratoriya Ukrgaz (Scientific Research Laboratory Ukrgaz)

KONONYUK, G.Ya.; DUZHANSKIY, M.G., veter. vrach

Postpartum hemoglobinuria in cows. Veterinariia 42 no.10:69-71 O '65. (MIRA 18:10)

1. Donetskaya oblastnaya veterinarnaya laboratoriya.

DUZHENKOV, F.P.

DUZHENKOV, F. P. Aspirant

"An Investigation of Precision Lathe Machining Accuracy in Aviation Instrument Building." Cand Tech Sci, Moscow Aviation Technological Inst, 19 Nov 54. (VM, 9 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

Duzhenkov, F.P.

PHASE I BOOK EXPLOITATION SOV/4161
SOV/11-3-116

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze

Voprosy teorii tochnosti proizvodstva v priborostroyenii; sbornik statey (Problems in the Precision Theory of Instrument Manufacture; Collection of Articles) Moscow, Oborongiz, 1959. (Series: Its: Trudy, vyp. 116) 190 p. Errata slip inserted. 4,150 copies printed.

Sponsoring Agency: USSR. Ministerstvo vysshego obrazovaniya.

Ed. (title page): A.N. Gavrilov, Doctor of Technical Sciences, Professor; Ed. (inside book): S.I. Bumshteyn, Engineer; Ed. of Publishing House: N.A. Gortsuyeva; Tech. Ed.: N.A. Pukhlikova; Managing Ed.: A.S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for design engineers, process engineers, and students in advanced courses at instrument-manufacture departments of schools of higher technical education.

COVERAGE: The collection of articles deals with general problems in the precision theory of instrument manufacture. The theory and practice of calculating process precision for typical processes and products of the aircraft-instrument and component industries are also discussed. References follow several of the articles.

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AVAILABLE: Library of Congress

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9-2-60

37152

S/536/61/000/052/006/008
D201/D301

1.5000

AUTHOR: Duzhenkov, F.P., Candidate of Technical Sciences

TITLE: Some effects of temperature deformation of precision turning machine tool assemblies on the accuracy of machining

SOURCE: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, no. 52, 1961, Nekotoryye voprosy sovremennoy tekhnologii priborostroyeniya, 61 - 72

TEXT: The author considers effects of temperature deformation of machine tool assemblies on the accuracy of machining of high-precision workpieces. Deformation of the following assemblies is considered: 1) Displacement of both spindles on protracted working. Experiments have shown that displacement of the spindle axis may be as great as 34 - 37 microns in the vertical and 6 - 7 microns in the horizontal plane. 2) Heating of the spindle head results in a displacement of the spindle diameter which in turn produces a change in the distance between the end of the cutting tool and its axis of rotation. Experiments have shown that the size of the spindle

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Some effects of temperature ...

diameter increases in this case up to 8 microns. All results of experiments are in good agreement with theoretical calculations. 3) Heating results in shifting the machine tool bench, which in turn changes the workpiece location and fixing. The maximum bend displacement calculated and determined experimentally may be up to 25.5 microns after a 3.5 hour operation. 4) Composite spindle and bend deformation. Experiments and theoretical calculations have shown that heat deformation of the cutter and of the workpiece do not affect the precision of machining of shallow holes (up to 25 mm in length) in cast workpieces of aluminum alloy АЛ3 (AL3). There are 13 figures, 2 tables and 2 Soviet-bloc references.

L 00768-67 EWP(k)/EWT(d)/EWT(l)/EWT(m)/EWP(h)/T/EWP(l)/EWP(w)/EWP(v)/EWP(t)/ETI

ACC NR: AP6022066 IJP(c) JD SOURCE CODE: UR/0146/66/009/003/0131/0136

AUTHOR: Duzhenkov, F. P. 42 B

ORG: Moscow Aviation Institute (Moskovskiy aviatsionnyy institut)

TITLE: Effect which dimensional wear of the cutting tool has on the machining accuracy of precision lathes in instrument building 16 14

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 3, 1966, 131-136

TOPIC TAGS: cutting tool, lathe, precision finishing, precision instrument machinery, MECHANICAL STRESS

ABSTRACT: The author considers wear of the cutting tool in precision lathes and its effect on the accuracy of finished components. Tool wear affects accuracy both directly by the reduction in the length of the tool in the direction normal to the surface being machined and indirectly through cutting force. The indirect effect is due to an increase in the radial component of cutting force as the tool wears, which increases deformation in the machine-holder-tool-workpiece system. Two methods are used for measuring cutter wear: 1. direct measurement along the trailing edge in a direction normal to the surface being machined and 2. measuring the dimensions of components in the sequential order of production. In using the first method, a microscope with a maximum error of 2.5 μ was employed for measuring the distance from the cutting tip to a fine scratch on the upper surface of the cutter before and after turning. Optical

Card 1/2 UDC: 621.75

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ACC NR: AP6022066

inside calipers with a maximum error of 1.5 μ were used for measuring the diameters of holes to determine wear by the second method. Cutters with VK8 hard alloy inserts were studied in the process of machining workpieces made of AL[illegible] aluminum alloy. Curves and tables are given for changes in the dimensions of parts due to tool wear. The results of measurements by the first method show a wear of 34.4 μ after turning 454 components. Calculations based on this result show that permissible accuracy is maintained during machining of 60 components. The second method shows a dimensional wear of 34.65 μ after turning 350 components. Calculations based on this result show that permissible accuracy is lost after machining 45 components. Analysis of the experimental data shows an average wear of 0.54 μ per 1000 meters of cutter travel. The results indicate that the most wear-resistant alloy should be selected for optimum machining conditions. Recommendations are made for optimum cutting conditions and tool geometry. The cutting edges of the tool should have a 9-10th class surface finish. Orig. art. has: 3 figures, 4 tables.

SUB CODE: 13/ SUBM DATE: 14Jun65

Card 2/2

DUZHENKOV, V. I. and DOLIN, P. I.

"The Influence of X-rays on Dilute Water Solutions of Organic Substances" p.96

Trudy Transactions of the First Conference on Radioaction Chemistry, Moscow, Izd-vo AN SSSR, 1958. 330pp.
Conference 25-30 March 1957, Moscow

DUZHENKOV, V I.

PHASE I BOOK EXPLOITATION 790

Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk

Deystviye ioniziruyushchikh izlucheniy na neorganicheskiye i organicheskiye sistemy (Effect of Ionizing Radiation on Inorganic and Organic Systems) Moscow. Izd-vo AN SSSR, 1958. 416 p. 7,000 copies printed.

Resp. Ed.: Pshezhetskiy, S. Ya.; Ed. of Publishing House: Bugayenko, L.T.; Tech. Ed.; Prusakova, T. A.

PURPOSE: This publication is for scientists working in the field of radiochemistry.

COVERAGE: This collection of articles represents contributions of Soviet scientists in the field of radiochemistry. The papers are concerned with the effect of ionizing radiation on organic and inorganic substances in solutions and in the solid phase. These papers were completed in the years 1951 - 1956 at the Institute of Physical Chemistry, AS USSR, the Institute of Physics and Chemistry imeni L. Ya. Karpov, the Moscow State University, and other scientific institutions. Most of these works are a continuation of those published in "Sbornik rabot po radiatsionnoy khimii" published in 1955. Ts. I. Zalkind and Yu. M. Malinskiy cooperated in the editing of this symposium.

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TABLE OF CONTENTS:

PART 1. REACTIONS IN AQUEOUS SOLUTIONS
AND RADIATION AND ELECTRO-CHEMICAL PROCESSES

There are 4 figures and 8 references, of which 6 are Soviet and 2 English.

Gvozdev, B.A., Shubin, V.N. Effect of Accelerated Electrons on Potassium Permanganate Solutions 12

The reduction of aqueous $KMnO_4$ solutions by accelerated electrons in the concentration range of 10^{-3} to $3 \cdot 10^{-1}$ M is discussed in this paper. The yield of the reaction Mn(VII) $\longrightarrow$ Mn(IV) is determined from the relation between the amount of reduced permanganate and the amount of energy absorbed by the solution. The authors explain the effect of the acidity of the solution (in the range pH = 0.4 to 12) on the rate of reduction. The maximum yield was observed for pH = 2.05. It was determined that the yield of reaction does not depend on the dosage rate in the range from $\sim 10^{17}$ to $\sim 10^{20}$ eV/ml·sec for electron energies from 0.1 to 0.7 Mev. There are 8 figures, 3 tables, and 7 references, of which 4 are Soviet, 2 English, and 1 Polish.

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AUTHORS: Balandin, A. A., Spitsyn, V. I., Duzhenkov, V. I., Barsova, L. I.

TITLE: Radiochemical method of preparing metallic catalysts

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 289-295

TEXT: Platinum and palladium catalysts are reduced by radiochemical reactions from aqueous solutions of suitable compounds. Cyclohexene is hydrogenated for a catalytic check reaction. Chloroplatinic acid samples in Pyrex glass cells, kept by a thermostat at a constant temperature, were irradiated by means of a lineac (maximum dose rate $3 \cdot 10^{18}$ ev/cm^3·sec) and a Co^{60} source of 400 g-equ. Ra. At integral doses of $2 \cdot 10$ ev/cm^3, solid $H_2PtCl_6 \cdot 6H_2O$ and its aqueous solution (0.1-1.0 M) are not reduced to metal owing to the stability of the $PtCl_6^{--}$ ion. In saturated solutions of $Na_2[Pt(OH)_xCl_{6-x}]$ and $K_2[Pt(OH)_xCl_{6-x}]$, which were examined because of the

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lower stability of the hydrocomplexes, irradiation acted indirectly upon the addends in the inner sphere. The least radiation-resistant $Na_2[Pt(OH)_5Cl]$ decomposes completely at $4 \cdot 10^{21}$ ev/cm^3 to form metallic platinum. The third group of compounds presented in the figure exhibits the least radiochemical resistance which drops in the sequence Cl-Pt-Cl > OH-Pt-OH > OH-Pt-Cl. The resulting palladium sharply retards the decomposition of the compounds produced. The optical density of a K_2PdCl_4 solution also depends largely on the dose rate. Zelinskiy's method was used to compare the catalytic activities of the metal samples, measured in low-temperature hydrogenation of cyclohexene in 96% ethanol and in an ethanol solution in 0.1 N H_2SO_4, with the activity of metals obtained by reducing the corresponding salts with formaldehyde. The platinum catalyst produced by radiolysis is 4-5 times more active than platinum black produced by Zelinskiy's method (Table 2). In the radiolysis of aqueous $PdCl_2$ and K_2PdCl_4 solution, Pd^{2+} is completely reduced to metal, the reduction process being noticeably retarded by metallic palladium. The apparent activation energies of a platinum catalyst and platinum black, calculated

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from the rate constants, of zeroth order, amount to 4.0 and 8.8 kcal/mole, respectively, and their surfaces, determined from cyclohexane adsorption, amount to 23 and 18 m^2/g at 0^oC. The catalysts produced by the radiation method are less active than the platinum black obtained by Zelinskiy's method. The catalytic action of radiolytic precipitates of $PdCl_2$ solution of different concentrations differs in intensity. The activation energy of the catalysts in question satisfies the Arrhenius equation $K=K_0e^{-E/RT}$. The activity of the resulting metal was reduced by adding HCl to the irradiated $PdCl_2$ solution. Both irradiated and nonirradiated palladium black samples produced by reduction according to Zelinskiy's method exhibited the same activity. Previous studies did not reveal the causes underlying the change of catalytic activity in radiolytically prepared metal blacks. It is, however, hoped that very active catalysts can be produced radiolytically. There are 4 figures, 2 tables, and 12 references: 7 Soviet and 5 non-Soviet. The four most recent references to English-language publications read as follows: Taylor E. H., Wethington J. A. J. Am. Chem. Soc., 76, 971, 1954; Gibson E. J., Clarke R. W., Dorling T. A., Pope D. II Intern. Conf. Peaceful Uses of atomic Energy, alconf), 15 p/63, 1958; Taylor E. H. J. Chem. Education, 36, 396,

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1959; Haldar, B. C., J. Am. Chem. Soc., 4229, 1954.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR), Moskovskiy gosuniversitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

Table 2. Comparison between activities of Pt black and Pd black, prepared by chemical reduction using Zelinskiy's method, and by radiolysis of salts.
Legend: (1) production process; (2) test temperature, °C; (3) weighed portion of catalyst; (4) rate constant; (5) specific activity of catalyst; (6) ratio of specific activities; (7) platinum; (8) palladium; (9) chemically prepared; (10) radiolytically prepared;

Fig. Structural formulas of the compounds investigated.

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5(4)

AUTHORS: Balandin, A. A., Spitsyn, Vikt. I., Barsova, L. I., Duzhenkov, V. I.

SOV/76-33-3-39/41

TITLE: Radiation Method for the Production of Platinum Catalysts (Radiatsionnyy metod polucheniya platinovogo katalizatora)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 3, pp 736-737 (USSR)

ABSTRACT: Though various papers have already been published on the effect exercised by ionizing radiations on catalytic reactions (Refs 1,2), the action of radiations has not yet been employed in the production of the catalyst. In this case the authors investigated the separation of metallic platinum from some of its complex compounds by the action of a flux of fast electrons; further, they studied the structure and catalytic properties of the precipitates obtained. A radiation source was applied as a linear electron accelerator with 1.5 mev (Ref 3). The capacity of each dose was determined by the ferroussulphate method; it amounted to $1.5 \cdot 10^{18}$ ev/cm^3 per second. It was shown by radiation of saturated solutions of $Na_2[Pt(OH)_6]$ in 0.5-3 n NaOH that in doses above

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$5 \cdot 10^{21}$ ev/cm^3 a yellow precipitate is obtained which assumes a metallic-gray coloration by the action of radiation. N. A. Shishakov made X-ray analyses which indicated that crystalline platinum and the partially unreduced compounds of Pt^{4+} are present in the precipitate. The most interesting results were offered by saturated solutions of $Na_2[Pt(OH)_xCl_{6-x}]$ in 2 n NaOH at doses of $2 \cdot 10^{21}$ ev/cm^3. In this case a black platinum precipitate was obtained, the particle size of which depended on the concentration of the solution and the time of irradiation. The reduction to the metal is perfect in this case. The platinum precipitates obtained were checked with respect to their catalytic activity in the reduction of the low-temperature hydrogenation of cyclohexane and were compared with platinum catalysts produced by Loev's (Lev's) method. During the first days after radiolysis the aforesaid catalysts were more active by fifteen to twenty times, later this activity decreased, yet remained above that of the catalysts according to Loev. The experiments will be continued. There are 4 references, 2 of which are Soviet.

Radiation Method for the Production of Platinum Catalysts SOV/76-33-3-39/41

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S/081/62/000/004/007/087
B149/B101

AUTHORS: Ryabchikova G. G., Duzhenkov V. I., Glazunov P. Ya.

TITLE: Action of a fast electron beam on aqueous solutions of silver compounds

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1962, 73, abstract 4B511 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniyu atomn. energii, v. 1. 1959. Tashkent, AN UzSSR, 1961, 361-364)

TEXT: The radiolysis of aqueous solutions of $AgNO_3$ by the action of 800 kev electrons at 8 μa maximal current was studied. The Ag^+ ion is reduced and a grayish precipitate is formed. G(Ag) is 0.55; 3.7 and 5.95 atoms Ag corresponding to 0.1; 0.5 and 1.0 M solutions respectively. The concentrations of nitrite ions and of H_2O_2 were measured. The study of the dependence of Ag yield on the dose rate shows only a slight increase in G(Ag) when the dose is changed from 10^{17} to 10^{22} ev/ml·sec.

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The possibility of the utilization of silver from fixer wastes was also investigated. The solutions were irradiated with a 6 Mev electron beam (from an emerging betatron beam); the dose rate was $3.5 \cdot 10^{15}$ ev/ml·sec. Radiolysis causes precipitation of silver sulfide with traces of metallic silver. $G(Ag_2S)$ is 5.5. The complete separation of silver occurs when a dose of $1.5 \cdot 10^{21}$ ev/ml is absorbed. [Abstracter's note: Complete translation.]

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