SHAPOVAL, A.P.

Ways for improving yhe working of wood by rotary cutting. Bum. i der. prom. no.3:52-56 Jl-S '63. (MIRA 17:2)

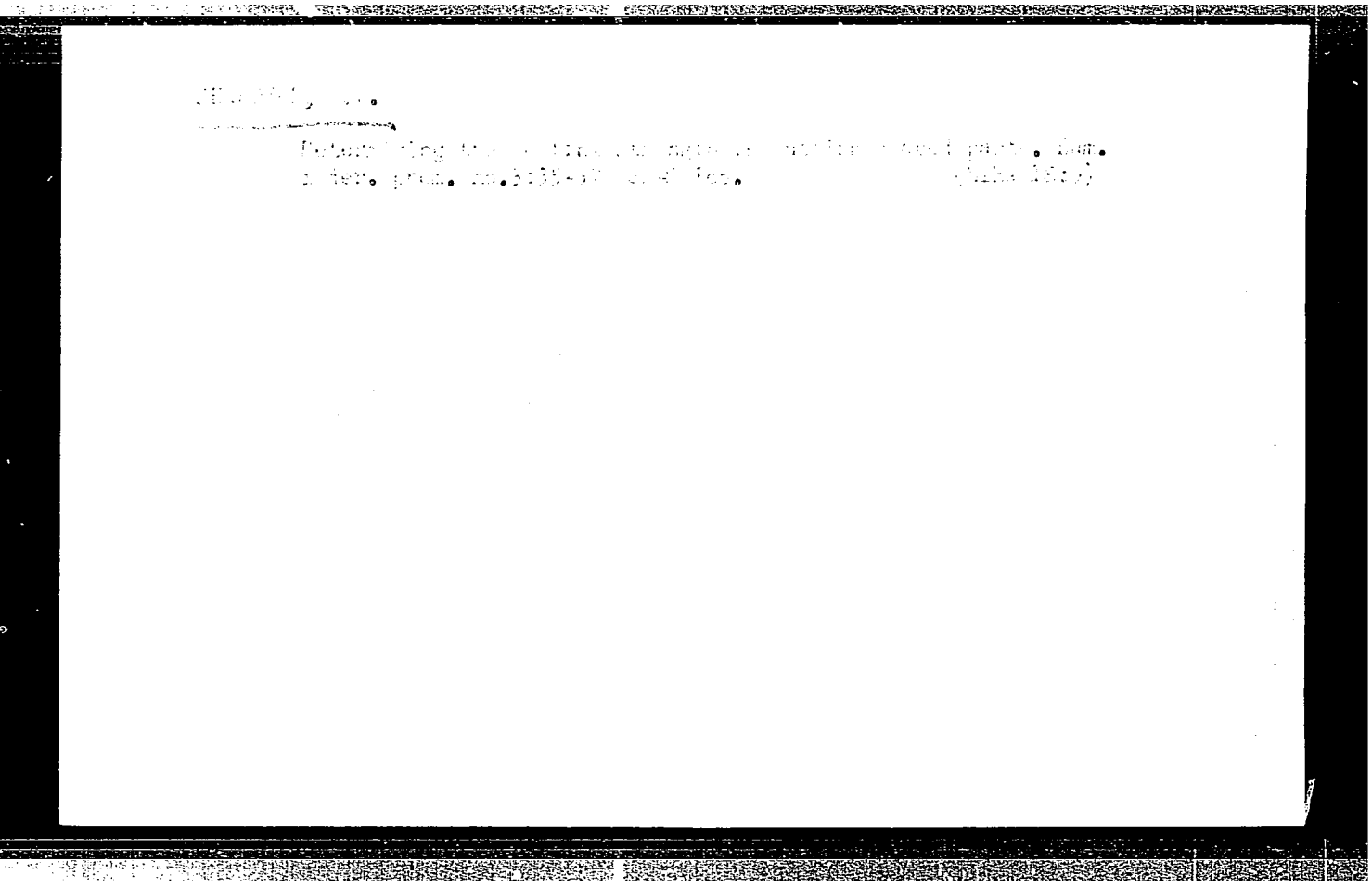
1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanicheskoy obrabotki drevesiny.

SHAPOVAL, A.P.

Veneering furniture with the 0.4 - 0.6 mm. sliced veneer and rotary cut veneer. Bum. i der. prom. no.2:23-26 Ap-Je '64. (MIRA 17:9)

SHAPOVAL, A.P.

Basic indices of the manufacture of wooden chairs. Bum. i der. prom. no.2:19-20 Ap-Je '65. (MIRA 18:6)



ZABRODIN, D.M., kand.istorich.nauk; KALYUZHNAYA, N.K.; MAYSTRENKO, L.F.; MYSNICHENKO, V.P.; PAKHNIN, Ye.I.; SHAPOVAL, A.P.; VASHCHENKO, G.I., red.; KAMINSKIY, L.N., red.; LIMANOVA, M.I., tekh.red (MIRA 16:6)

[Work and live the communist way, 1958-1962] Rabotat' i zhit' po kommunisticheski; 1958-1962. Sbornik dokumentov i materialov. Khar'kov, Khar'kovskoe knizhnoe izd-vo, 1963. 250 p. (MIRA 16:6)

1. Kommunisticheskaya partiya Ukrainy. Khar'kovskiy oblastnoy komitet. Partiynyy arkhiv.
(Kharkov--Efficiency, Industrial)

SOV/126-7-6-9/24

AUTHORS: Amonenko, V.M., Vasyutinskiy, B.M., Lebedev, V.V. and Shapoval, B. I.

TITLE: Vacuum Distillation of Metals with Condensation on a Heated Surface

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 7, Nr 6, pp 862-867 (USSR)

ABSTRACT: The properties of heat-resisting alloys are influenced to a considerable extent by the purity of the starting materials. Vacuum distillation is a promising way of purifying such materials. The authors describe their use for purifying iron of the method developed in 1952 at the Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute, Ac.Sc. Ukrainian SSR) for vacuum distillation with condensation of the metal on a surface at a high temperature. The authors consider this more efficient than published methods and they have used it successfully for purifying beryllium (Ref 5). The distillation of the iron was effected in a working vessel (Fig 1) with evacuation by an oil diffusion pump (2500 litres/sec) and a type VN-2 backing pump. 0.5-3 litre alundum or beryllium-oxide crucibles wound

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Vacuum Distillation of Metals with Condensation on a Heated Surface

with molybdenum or tungsten heating coils, contained the metal. The heated column directly over the crucible was generally lined with thin iron sheet, on which condensation occurred. The temperature of the column surface was chosen such that iron condensed while the impurities remained vaporized: the lower part up to 1300°C, the upper to about 1100°C. Assuming as a first approximation that the condensing metal and impurities form an ideal solid solution, the authors apply the Knudsen-Langmuir equation to calculate rates of evaporation. From a crucible at about 1580°C evaporation of metal occurred at 1 g/cm$^2$ hr., 75-80% of which was recovered at a column temperature of 1250-1300°C. Tables 1-3 show compositions before and after distillation (single and double) of armco, electrolytic (single only) and carbonyl irons, respectively. Purification from Mn, Mg, Cu, S, P, $N_2$ and $O_2$ was good and somewhat less so from aluminium. Considerable contamination from evaporation of crucible material was possible, but with double distillation the impurities could be reduced to

0.01%. The resistances of some long-needle single crystals of iron in the condensate were compared at 0°C and at low temperatures in the laboratory of B.G.Lazarev, acting member of the Ac.Sc. UkrSSR: the ratio values agree fairly closely (Table 4) with those of Meysner (Ref 6) for the purest iron and indicate that the needles were 99.996% Fe. The authors have also studied the purification of high-carbon (7% C, 73% Mn) and medium-carbon ferromanganese. The same apparatus was used, evaporation temperatures being 1100-1400°C. Rates of evaporation tended to fall through impoverishment of surface layers with manganese and formation of a graphite layer. Lower iron contents were obtained when baffles (Fig 2) were fitted in the column. On the lower baffles, kept at about 1000°C, almost all iron condensed, the manganese condensing mainly on the middle baffles (750-800°C). Table 6 shows the composition of the condensate from the third and fourth baffles. A carbon content of under $5 \times 10^{-3}$% is inferred. The purity of the manganese after a single distillation is over 99.96%.

SOV/126-7-6-9/24

Vacuum Distillation of Metals with Condensation on a Heated Surface

There are 2 figures, 6 tables and 6 references, 3 of which are Soviet, 1 English and 1 French and 1 German.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-Technical Institute, Ac.Sc. UkrSSR)

SUBMITTED: July 22, 1957

Card 4/4

SOV/126-8-2-14/26

AUTHORS: Amonenko, V.M., Shapoval, B.I. and Lebedev, V.V.

TITLE: Temperature Dependence of Internal Friction and Elastic Constants of Pure Iron

PERIODICAL: Fizika metallov i metallovedeniye, 1959, Vol 8, Nr 2, pp 249 - 254 (USSR)

ABSTRACT: The authors point out that in investigations of the internal friction of iron (Refs 1, 2), the purity of the metal has been insufficient for studying the nature of the internal-friction peaks. For the present investigation the authors used iron vacuum-distilled by the vacuum-distillation method developed at the Fiziko-tekhnicheskiy institut AN UkrSSR (Physico-technical Institute of the Ac.Sc. Ukrainian SSR), in which iron vapour condenses on a surface heated to 1 200 - 1 300 °C and covered with pure-iron foil. Evaporation was effected at 1 600 °C from alundum crucibles. The distilled iron, remelted in a high vacuum, was poured into 5-kg ingots (cast-iron moulds) from which 120 x 15 x 15 mm pieces were cut for shaping into test

pieces - 10 mm in diameter and 100 mm long. Their 20-mm long working length was turned down to a diameter of 3 mm. Before tests, the specimens were vacuum annealed at 900 °C for two hours and cooled in the furnace. The composition of the metal was: 0.003% each C, $O_2$; 0.001% each S, P. Al; 0.0001% each $N_2$, Mg; 0.0007% Mn; 0.008% Ni; 0.0006% Cu. The tests were carried out in vacuum in a resistance furnace (Figure 1); for the measuring circuit the system proposed by Tsobkallo and Chelnokov (Ref 5) was used and test-piece oscillation was produced by a self-oscillating system (V.A. Zhuravlev - Ref 4). The relative deformation on the test-piece surface did not exceed $5 \times 10^{-5}$. Figures 2 and 3 show internal friction as functions of temperature. Figure 2 refers to pure iron without (Curve 1) and with (Curve 2) a magnetic field of 100 oE. Curve 1 in Figure 3 refers to armco iron and Curve 2 to vacuum-distilled armco iron. The internal-friction dependence on the temperature was

Temperature Dependence of Internal Friction and Elastic Constants of Pure Iron

found to be similar for 99.99% iron as for other metals; but the absolute value over the whole temperature range is several times that for armco iron and other metals. The high value for pure iron is due to losses in magneto-mechanical hysteresis arising in periodic deformation in the range of very small strains. The application of a magnetic field reduces the value greatly. The results showed that not all the carbon in the iron is in the form of solid solution. From the internal-friction measuring technique the dependence of the elastic constants on temperature were obtained (Figure 4); for the moduli of normal elasticity and shear the relations are almost linear in character.
There are 4 figures, 1 table and 8 Soviet references.

SOV/126-8-2-14/26

Temperature Dependence of Internal Friction and Elastic Constants of Pure Iron

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physico-technical Institute of the Ac.Sc., Ukrainian SSR)

SUBMITTED: June 9, 1958

Card 4/4

SHAPOVAL, B.I.

Resonance method of determining internal friction in metals. Issl. po zharopr. splav. 6:206-210 '60. (MIRA 13:9)
(Internal friction) (Resonance)

SHAPOVAL, B.I.; SKOBETS, Ye.M. [Skobets', IE.M.]

Features of the diffusion kinetics on an amalgamated silver electrode. Dop.AN URSR no.7:932-935 '60. (MIRA 13:8)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk. Predstavleno akademikom AN USSR Yu.K.Delimarskim [IU.K.Delimars'kym].
(Electrodes, Silver)

18.8200 1413, 1418, 1154

89940

S/126/61/011/001/006/019
E021/E406

AUTHORS: Ivanov, V.Ye., Shapoval, B.I. and Amonenko, V.M.

TITLE: Study of Phase Transformations in Zirconium and Beryllium by an Internal Friction Method

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.1, pp.52-58

TEXT: The phase transformations were studied by following the changes in internal friction during heating. The method of measuring the internal friction used force oscillations during resonance, when changes in internal friction can be followed by changes in the resonance amplitude. The method consisted in clamping one end of a specimen and applying torsional vibrations to the free end by the use of solenoids, measuring the amplitude produced. The working part of the sample was placed in a tube furnace. Measurements were carried out in a vacuum of $10^{-4}$ to $10^{-5}$ mm Hg. Samples of zirconium were prepared by the iodide method, preliminarily rolled in a vacuum mill at 900°C with 65% reduction. Samples for testing were cut from the strip and annealed in vacuo for two hours at 800°C. Samples of beryllium were cut from the cylindrical specimens made by powder metallurgical

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89940

S/126/61/011/001/006/019
E021/E406

Study of Phase Transformations in Zirconium and Beryllium by an Internal Friction Method

methods, and annealed at 1000°C for one hour in high vacuum. Three peaks were observed in the temperature vs internal friction ($Q^{-1}.10^4$) curve of zirconium, i.e. at 260, 645 and 875°C (Fig.3). The peak at 645°C was caused by viscous flow in the grain boundaries. The peaks at 260 and 875°C were of more interest. These peaks did not change with change in frequency (from 56 cps to 29 and 72 cps) of the applied oscillations. This confirmed that the maximum at 260°C was caused by a transformation in the metal structure. The height of the peak at 260°C depended on the rate of heating of the sample. At rates of 2°C/minute and less the maximum did not appear and at higher rates the value of the maximum increased. It was proposed that this was caused by the formation of hydride. Additional experiments showed that the peak disappeared after treatment in vacuum at 700°C for seven hours which removed the hydrogen. The peak at 875°C was present even at the low rate of heating and corresponded to a polymorphic transformation. A peak was observed in the internal friction vs temperature curve of beryllium between 600 and 700°C. This peak also appeared after

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89940

S/126/61/011/001/006/019
E021/E406

Study of Phase Transformations in Zirconium and Beryllium by an Internal Friction Method

high rates of heating and was not present at low rates. After heating in hydrogen, both the internal friction of zirconium in the region of 260°C and that of beryllium at 600 to 700°C showed a hysteresis effect. Acknowledgments are expressed to I.A.Gindin for discussion of the work. There are 6 figures, 2 tables and 5 references: 4 Soviet and 1 non-Soviet.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN UkrSSR
(Physicotechnical Institute AS UkrSSR)

SUBMITTED: July 2, 1960

Card 3/4

89940

S/126/61/011/001/006/019
E021/E496

Study of Phase Transformations in Zirconium and Beryllium by an Internal Friction Method

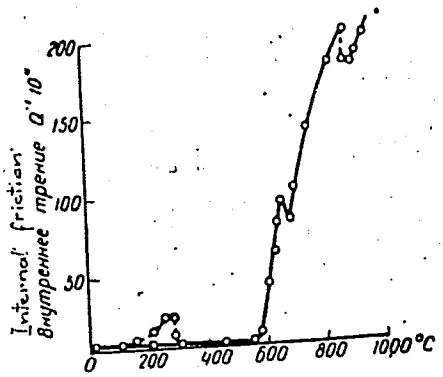


Рис. 3. Зависимость внутреннего трения циркония от температуры.

Fig.3.

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IVANOV, V. Ye.; SHAPOVAL, B. I.

"Vnutrenneye Treniye V Uranye"
Report presented at the Symposium on Radiation Damage
in Solids and Reactor Materials (IAEA) Venice, 7-11 May 1962

S/180/62/000/001/014/014
E040/E155

18.1720

AUTHORS: Azhazha, V.M., Vasyutinskiy, B.M., and Shapoval, B.I. (Khar'kov)

TITLE: Mechanical properties of high purity nickel

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo. no.1, 1962, 160-161

TEXT: Nickel of 99.98% purity (0.006% Fe, 0.003% Si, 0.001% Al) was produced using a vacuum distillation column described previously by V.M. Amonenko et al. (Ref.1: Fizika metallov i metallovedeniye, v.7, no.6, 1959, 369). Spectrochemical analysis data showed that the nickel prepared by vacuum distillation from alundum crucibles at 1480 °C had the impurities of Bi, Pb, S, Mg, Sb, Cd and P not exceeding 3 x 10-3%. Mechanical strength tests were carried out on specimens prepared from distilled nickel subjected subsequently to re-melting under vacuum. The test castings were then cold-worked to 40-50% and annealed in order to produce a grain diameter of 0.06-0.08 mm. Tensile strength specimens were

Card 1/3

30 mm in length and 6 mm in diameter. The specimens were annealed after polishing in order to remove the effects of cold-working. It was found that in tensile tests at 20 °C high-purity Ni behaves in the same manner as pure polycrystalline Al, i.e. after formation of one or several necks further deformation proceeds by slip. Impact strength was > 36 and > 34 kgm/cm$^2$ at 20 and -196 °C, respectively, compared with 18.9 kgm/cm$^2$ for commercial grade Ni. Specimens were not fractured but on those tested at -196 °C clearly visible cracks were observed. The room-temperature tensile strength was 34.0 kg/mm$^2$; yield strength 6.7 kg/mm$^2$; elongation 63%; and Brinell hardness 56 to 58 kg/mm$^2$. Because magnetic properties of ferromagnetic materials depend on the presence of impurities, especially gases, the ferromagnetic anomaly of ductility of high-purity nickel, which contains only a negligible quantity of gases, was expected to be indicated more clearly than in ordinary purity nickel. There are 3 figures and 2 tables.

Card 2/3

Mechanical properties of high ... S/180/62/000/001/014/014
E040/E135

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR
g. Khar'kov
(Physico-technical Institute AS Ukr.SSR, Khar'kov)

SUBMITTED: September 14, 1960

Card 3/3

X

L 10109-63 EPF(c)/EPF(n)-2/EWP(q)/EWT(m)/BDS AFFTC/ASD/SSD Pu-4/
Pu-4 WW/JD/IJP(C)
ACCESSION NR: AP3001699 S/0126/63/015/005/0729/0735 14

AUTHOR: Azhazha, V. M.; Gindin, I. A.; Starodubov, Ya. D.; Shapoval, B. I. 11

TITLE: Effect of low-temperature prestrain on the creep and internal friction of copper 18 14

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 5, 1963, 729-735

TOPIC TAGS: commercial-grade copper, subzero-temperature prestraining, annealing, creep characteristics, internal friction, microstructure changes

ABSTRACT: The effect of low-temperature prestrain on the creep, microstructure, and internal friction of commercial-grade copper was studied. Test specimens annealed in a high vacuum for 2 hr at 850C were prestretched 2.5, 5.0, 7.5, 12.5, or 35% at a constent rate of 0.03 mm/sec at temperatures of 300 or 4.2K. Specimens prestretched at 4.2K were annealed at room temperature for 100 hr. Both groups of specimens were then subjected to short-time creep tests in a vacuum of 0.02 mm Hg at 500C under a stress of 2 kg/mm sup 2. The tests showed that a prestrain of up to 7.5% at room temperature or subzero temperature sharply decreased the rates of the first and second creep stages. The second-stage creep rate, for instance, decreased from 0.95%/hr for annealed specimens, to 0.09 and 0.05%/hr for specimens

Card 1/2

L 10109-63
ACCESSION NR: AP3001699

3

prestrained 7.5% at 300 and 4.2K. The rupture strength of approximately 6.5 hr for annealed specimens increased to approximately 10.0 and 12.3 hr for the specimens prestretched 7.5% at 300 and 4.2K. The purer the metal and the coarser the grain, the higher the effect of prestraining. Oxygen-free copper prestretched 7.5% at 300 or 4.2K and tested under the above conditions had a creep rate of 0.02 or 0.01%/hr and a rupture life of 19.5 or 24 hr. The 10% elongation and reduction of area of the annealed specimen decreased to 4% for the specimens prestrained 7.5% at 4.2 and 300K. Prestrain at 4.2K strengthens grain boundaries and adjacent grain zones and promotes formation of a substructure. This sharply reduces the number of microcracks formed along grain boundaries during creep and inhibits intergranular failure of the metal. Low-temperature prestrain reduces internal friction in copper and significantly increases the temperature at which it begins to rise sharply, e.g., from approximately 100C for annealed specimens to 320 and 470C for specimens prestrained at 300 and 4.2K. Orig. art. has: 1 table and 8 figures.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR (Physicotechnical Institute, AN USSR)

SUBMITTED: 11Nov62 DATE ACQ: 11Jul63 ENCL: 00
SUB CODE: 00 NO REF SOV: 016 OTHER: 003
Card 2/2 YK

L 34539-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(b)/EWA(c) IJP(c) JD

ACCESSION NR: AP4044159 S/0126/64/018/002/0306/0308

AUTHOR: Shapoval, B. I.

TITLE: The internal friction of metals at elevated temperatures

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 2, 1964, 306-308

TOPIC TAGS: internal friction, melting point, duraluminum, brass, annealing, diffusion, melting point

ABSTRACT: The internal friction diagram was plotted by means of an "EPP-09" recorder that provided a continuous curve up to temperatures approximating the melting point of Cu, Al, Mg, brass and duraluminum specimens at a heating rate of 10C/min. After quenching the shape of the temperature-internal friction curve revealed considerable changes but further study is required to determine their origin. Assuming that the shape of curve (5) in the diagram is determined by the diffusion of vacancies in the field of stresses, the coefficient of self-diffusion of vacancies in the field of stresses, the coefficient of self-diffusion may be comput-

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L 34539-65
ACCESSION NR: AP4044159

ed for the temperature of the maximum. However, calculations carried out for a Cu specimen show that its selfdiffusion coefficient is lower by several orders than the same coefficient computed by other methods. Based on the dislocation theory, the author attributes the decrease of internal friction at elevated temperatures to the fixation of dislocations by vacancies and dislocated atoms whose number increases conspicuosly at elevated temperatures. Orig. art. has: 3 figures and 1 table

ASSOCIATION: None

SUBMITTED: 01Aug63 ENCL: 01

SUB CODE: MM NO REF SOV: 004 OTHER: 001

Card 2/3

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L 34539-65
ACCESSION NR: AP4044159

ENCLOSURE: 01

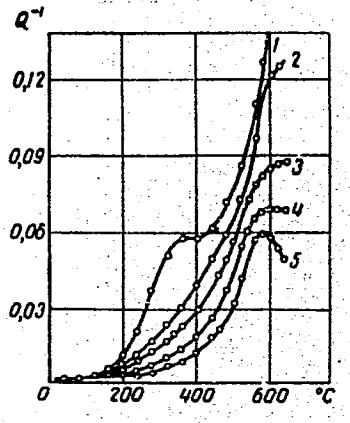



fig. 1

Changes in the character of the temperature-internal friction relationship in an Mg specimen under the effect of high-temperature annealing.

Card 3/3

L 18288-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(b) Pad IJP(c)/AFWL/SSD MJW/JD/HW

ACCESSION NR: AP5001250 S/0126/64/018/005/0796/0798

AUTHOR: Shapoval, B. I.; Azhazha, V. M.; Bolgov, I. S.; Zeydlits, M. P.

TITLE: Investigation of effect of boron on the properties of nickel by the method of internal friction

SOURCE: Fizika metallov i metallovedeniye, v. 18, no. 5, 1964, 796-798

TOPIC TAGS: nickel, boron, nickel alloy, boron containing alloy, nickel alloy property, nickel alloy internal friction

ABSTRACT: The effect of alloying with small quantities of boron on the internal friction of nickel has been investigated. Alloys containing 0.005, 0.01, 0.05, and 0.1 wt% boron were melted from N-0 grade nickel in a vacuum, high-frequency induction furnace. The curves of the temperature dependance of internal friction show three maxima at approximately 200, 430, and 630C. As established by previous studies, the first maximum is brought about by ferromagnetism of nickel and the second, by stress relaxation at the grain boundaries. The third maximum is apparently connected with the block structure of grains. In the case of pure nickel, all three maxima are rather flat. The peaks achieve maximum height at a

Card 1/2

L 18288-65

ACCESSION NR: AP5001250

boron content of 0.01%. With an increase in boron content, the level of internal friction at high temperatures decreases. In the opinion of some authors, the level of internal friction can be considered as an indirect characteristic of heat resistance, i.e., the lower the level, the higher heat resistance. This was confirmed by stress-rupture tests at 600C under a stress of 6 $kg/mm^2$, in which the alloys with 0, 0.005, 0.01, 0.05, and 0.1% boron had a rupture life of 3.5, 36, 41, 156, and 502 hr with a total elongation of 42, 55, 57, 45, and 43%. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 20Nov63 ENCL: 00 SUB CODE: MM, AS

NO REF SOV: 005 OTHER: 001 ATD PRESS: 3156

Card 2/2

L 31369-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(l)/EWP(e)/EWP(w)/EWP(v)/EWP(t)

ACC NR: AT6013552 ETI IJP(c)(N) JD/HW/GD SOURCE CODE: UR/0000/65/000/000/0063/0068

AUTHOR: Amonenko, V. M.; Azhazha, V. M.; Bolgov, I. S.; Zeydlits, M. P.; Ivanov, V. Ye.; Shapoval, B. I.

ORG: Physico-Technical Institute, AN UkrSSR (Fiziko-tekhnicheskiy institut AN UkrSSR)

TITLE: Influence of boron on the properties of nickel

SOURCE: AN UkrSSR. Institut problem materialovedeniya. Vysokotemperaturnyye neorganicheskiye soyedineniya (High temperature inorganic compounds). Kiev, Naukova dumka, 1965, 63-68

TOPIC TAGS: boron, nickel, alloy, boron alloy, internal friction

ABSTRACT: The effect of boron concentration (0-0.1 wt %) on mechanical strength limit, relative elongation, and relative plasticity of nickel was examined at 25° and 600°C and also the temperature dependence of internal friction ($Q^{-1}$) for nickel containing 0.005-0.1% B was examined in the 20°-600°C range. Samples of nickel-boron alloys were prepared by fusing mixtures of N-O-grade nickel and NiB standard material in an electrical furnace. After 70-80% deformation for 4 hour at 400°C, the samples were held for 2 hours at 800°C. In general, boron had a beneficial effect on the mechanical properties of nickel. Specifically, boron was found to strengthen the alloy crystals and the intergrain boundaries within the alloy, to improve the internal grain structure and

Card 1/3

to retard harmful recrystallization processes. The effect of boron on strength limit, relative elongation, and relative plasticity of nickel is shown in figure 1.

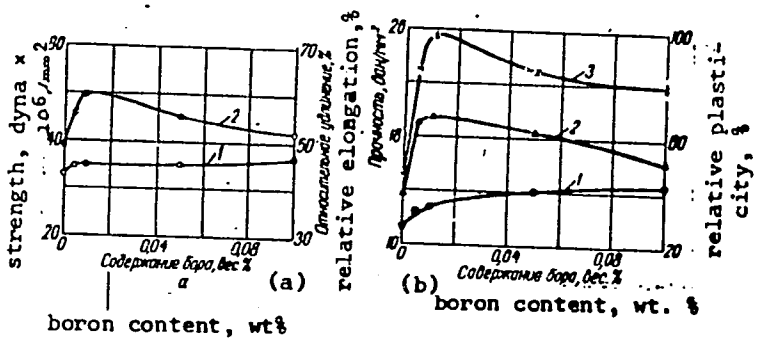



Fig. 1. The effect of boron on strength limit (1), relative elongation (2), and relative plasticity (3) of nickel at 25°C (a) and 600°C (b).

The temperature dependence of internal friction ($Q^{-1}$) of Ni-B alloys is given in figure 2. Orig. art. has: 5 figures.

L 31869-66

ACC NR: AT6013552

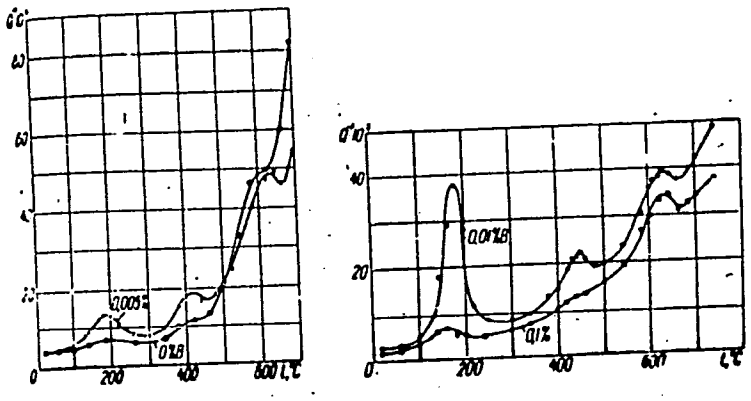



Fig. 2.

UB CODE: 11/ SUBM DATE: 03Jul65/ ORIG REF: 012/ OTH REF: 001

Card 3/3

ACC NR: AP6025597 SOURCE CODE: UR/0413/66/000/013/0036/0037

INVENTORS: Bykov, A. G.; Pochernyayev, Yu. A.; Shapoval, G. G.

ORG: none

TITLE: A device for the running control of electric voltages and currents. Class 21, No. 183258

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 36-37

TOPIC TAGS: electric current, electric measuring instrument, automatic control system

ABSTRACT: This Author Certificate presents a device for the running control of electric voltages and currents with different tolerances which are defined on the basis of a program. The device is self-adjusting in respect to a reference and includes a commutator, a program unit, an analog-digital converter, and a device for storing the zero signal (see Fig. 1). The design provides for self-adjustment of the system on the basis of two combined characteristics for the purpose of increasing the precision and stability of control. The device includes a nullifying unit for the voltage, which consists of two coincidence circuits connected through inverters with two filters. The inputs of the filters are connected, through emitter followers and a calculating device, to the regulator of the compensating current increase in

Card 1/2 UDC: 681.142:53.087.92

ACC NR: AP6025597

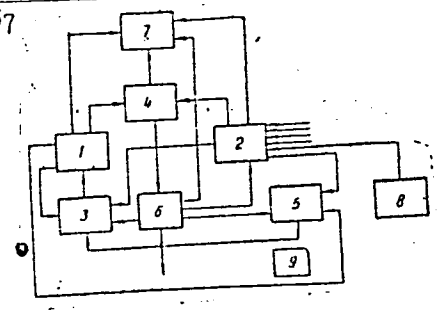



Fig. 1. 1 - switching unit of the reference resistances; 2 - switching unit of the parameters; 3 - zero unit; 4 - program comparison unit; 5 - nullifying unit; 6 - control unit; 7 - signaling unit; 8 - reference source; 9 - power supply unit

the zero unit. The current nullifying unit (which consists of two coincidence circuits) is connected with the control output of the trigger. The output of the trigger is connected, through the filter and emitter follower, to the regulator of the input potential of the zero unit. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 09Dec63

Card 2/2

L 25768-65 EWT(m)/EPF(c)/T/EWP(j) Pc-4/Pr-4 RM/RWH/MLK

24
21
B+1

ACCESSION NR: AT5002668 S/0000/64/000/000/0121/0133

AUTHOR: Shapoval, G. S.; Shapoval, V. I.

TITLE: Electrochemical initiation of acrylamide polymerization

SOURCE: Institut khimii vysokomolekulyarnykh soyedineniy. Sintez i fiziko-khimiya polimerov; sbornik statey po rezul'tatam nauchno-issledovatel'skikh rabot (Synthesis and physical chemistry of polymers; collection of articles on the results of scientific research work). Kiev, Naukova dumka, 1964, 121-133

TOPIC TAGS: acrylamide polymerization, polyacrylamide, polymerization kinetics, electrochemical polymerization, sulfate radical, electrochemical reduction, chain growth

ABSTRACT: The electrochemically initiated homopolymerization of acrylamide was studied in order to define the optimum conditions for high yields and for the production of high polymers. 10% aqueous solutions of acrylamide were polymerized by direct electrochemical reduction in the presence of $K_2SO_4$ or $H_2SO_4$, and via the electrochemical reduction of potassium persulfate producing active sulfate radicals. The first method, studied on mercury and amalgamated silver electrodes, produced only negligible amounts of polymers; the second, investigated on amalgamated silver, platinum, and nickel electrodes, was shown in a preliminary polaro-

Card 1/2

L 25768-65

ACCESSION NR: AT5002668

graphic study to involve the formation of the active ion radicals as the first step of the reduction process and to be suitable for acrylamide polymerization under appropriate conditions. The yield and quality of produced polymers were shown to be significantly affected by the ratio volume (of solution): electrode surface, V/S, and by the current density, and the reaction proceeded only if the electrolytic cell was divided by a porous glass diaphragm. At 20C, 100% polymer with an intrinsic viscosity of 4.3 was produced in 3 hrs. at 40 $\mu$A/cm$^2$ and V/S = 0.36. The characteristics and kinetics of the process are discussed, and the rate is shown to increase with time because new radicals are continuously generated while the existing chains proceed to grow from the electrode surface into the solution. The direction of chain growth reduces the probability of chain termination. Orig. art. has: 8 figures and 4 formulas.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR (High polymer chemistry institute, AN Ukr SSR)

SUBMITTED: 22Jun64 ENCL: 00 SUB CODE: OC

NO REF SOV: 013 OTHER: 018

Card 2/2

L 4921-66 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) RM

ACC NR: AP5026583 SOURCE CODE: UR/0073/65/031/010/1080/1087

AUTHOR: Shapoval, G. S.; Shapoval, V. I.

ORG: Institute of Chemistry of High Molecular Compounds, AN UkrSSR (Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR)

TITLE: Electrochemical properties of certain acrylic monomers

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 10, 1965, 1080-1087

TOPIC TAGS: acrylamide, radical polymerization, polarography, monomer, electrochemical analysis

ABSTRACT: In order to gain a better insight into the mechanism of electrode reduction of acrylamide, polarographic waves were studied with various background electrolytes: $N(CH_3)_4I$, LiOH, LiCl, LiCl acidified with HCl, and alkaline lithium acetate buffer. The half-wave potentials were measured relative to a mercury pool and a saturated calomel electrode. A study of the polarographic waves against these backgrounds confirmed the reproducibility and direct proportion of the heights over a wide concentration range ($10^{-4}$-$10^{-2}$ mole). It was shown that the process of electrochemical reduction of acrylamide takes place without the participation of hydrogen ions; at the same time, acrylamide participates in and facilitates the electrochemical reduction of hydrogen ions. In accordance with the delayed discharge theory, $E_{1/2}$ of hydrogen varies with the acrylamide concentration in the following manner:

$$\Delta E_{1/2} = \frac{2RT}{F} \ln C_R$$

Card 1/2 UDC 541.138.3 + 547.398.1

0901 1391

L 4924-66

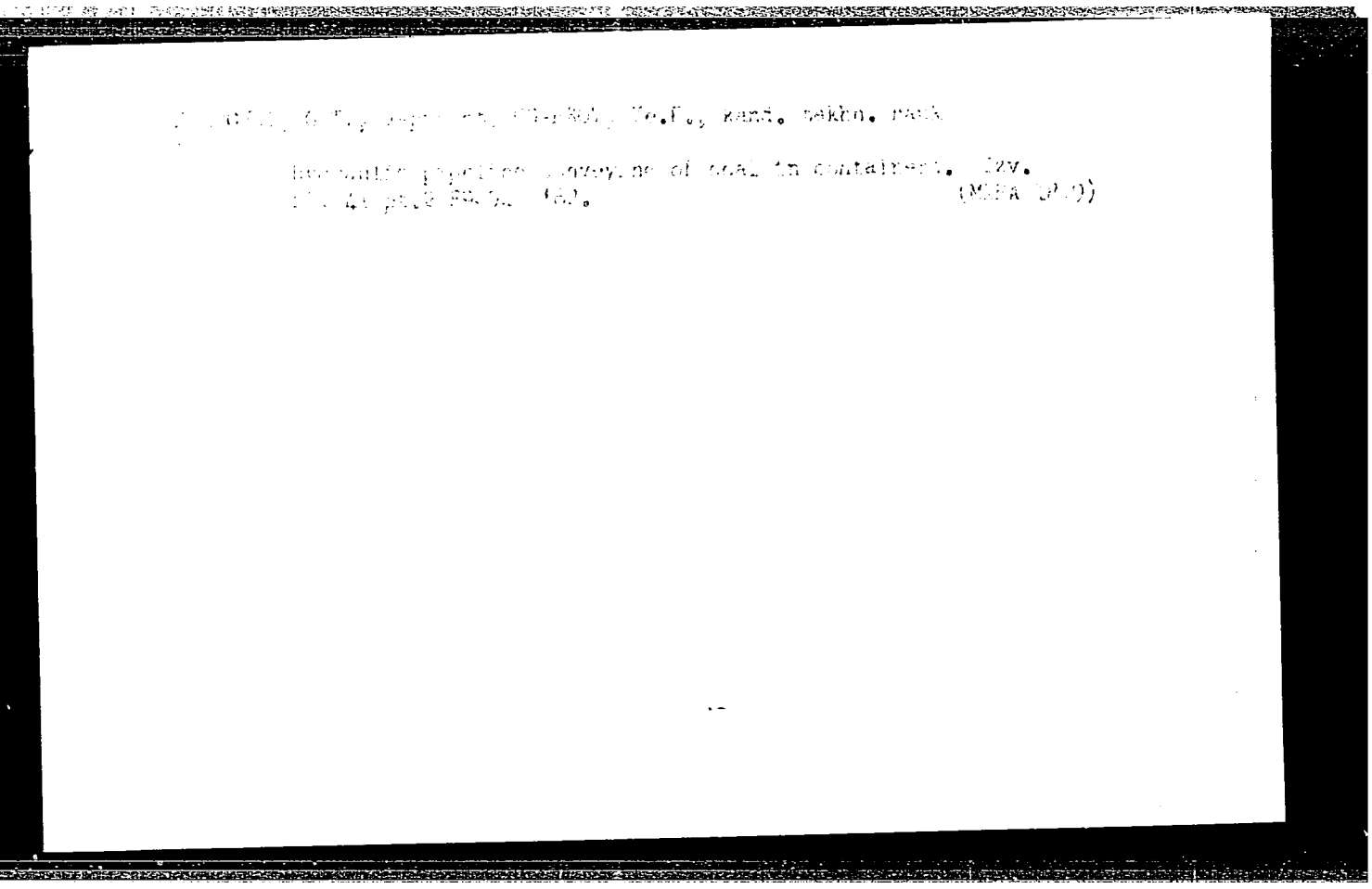
ACC NR: AP5026583

A mechanism is proposed according to which the single-electron, reversible reduction of acrylamide produces an ion radical which is capable of causing radical polymerization in an aqueous solution and ionic polymerization in a nonaqueous solution. It is suggested that the mechanism proposed is applicable to other acrylic monomers as well; this is confirmed by published studies on the electrochemical preparation of polymers. Orig. art. has: 5 figures, 2 tables, and 16 formulas.

SUB CODE: GC, OC / SUBM DATE: 26May64 / ORIG REF: 011 / OTHER REF: 007

OC

Card 2/2



SHAPOVAL, G.I., aspirant

A hydraulic conveying unit for transporting metal and slag samples to the central plant laboratory. Izv. DGI 41 pt.2: 95-99 '62. (MIRA 18:9)

OGARKOV, Ye.F., dotsent; BARDIN, I.G., inzh.; SHAPOVAL, G.T., inzh.

New type of pressure hydraulic transportation. Izv. vys. ucheb. zav.; gor. zhur. no. 12:73-77 '59. (MIRA 14:5)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy rudnichnogo transporta.
(Hydraulic conveying)

SHAPOVAL, G.T., inzh.

Investigating the new type of hydraulic mine hoisting. Ugol' Ukr. 6 no.5:7-10 My '62. (MIRA 15:11)

1. Dnepropetrovskiy gornyy institut.
(Mine hoisting) (Hydraulic machinery)

SHAPOVAL, G.T. [Shapoval, H.T.] (Dnepropetrovsk)

Investigating the resistance of cylindrical vessels in a liquid flow in pipes. Prykl.mekh. 9 no.2:201-211 '63. (MIRA 16:3)

1. Dnepropetrovskiy gornyy institut.
(Fluid dynamics)

SHAPOVAL, G. T., inzh.

Experimental studies of formations of vortexes during the flowing of cylindrical and rectangular vessels in canals and pipes. Izv. vys. ucheb. zav.: gor. zhur. 5 no.8:112-118 '62. (MIRA 15:10)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy rudnichnoy ventilyatsii.

(Hydraulic conveying) (Vortex motion)

SHAPOVAL, G.T., inzh.

Studying resistance coefficients of load carrying cylinders moving in pipes. Izv.vys. ucheb. zav.; gor. zhur. 7 no.3: 129-135 '64 (MIRA 17:8)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy gornoy mekhaniki.

SHAPOVAL, G.T., inzh.

[illegible] natural vibrations. Izv. vys. [illegible]
167-170 '64.

1. [illegible] ski [illegible]
Institute imeni Artema. [illegible]
niki.

SHAPOVAL, G.T. (Dnepropetrovsk)

Investigating the speed of a laminar flow around circular cylinders in vertical pipes. Prikl. mekh. 1 no.4:107-112 '65. (MIRA 18:6)

1. Dnepropetrovskiy gornyy institut.

MOCHALOV, A.; SHAPOVAL, I.; TOMASHPOL'SKIY, L., tekhnolog.

Improving equipment for making lightweight blocks. Stroi. mat. 4 no.3:29-31 Mr '58. (MIRA 11:3)

1. Glavnyy inzhener Krasnopresnenskogo kombinata stroitel'nykh materialov (for Mochalov). 2. Nachal'nik tekhnicheskogo otdela Krasnopresnenskogo kombinata stroitel'nykh materialov (for Shapoval).
(Lightweight concrete)

SHAPOVAL, I., kand.tekhn.nauk

Creative life of a department. Nauka i zhyttia 12 no.9:43 S '62. (MIRA 16:1)

1. Obshchestvennyy korrespondent zhurnala "Nauka i zhittya". (Ukraine--Coal preparation) (Ukraine--Quartzite)

SHAPOVAL, I., kand.tekhn.nauk, dotsent

Greater Donets Basin. Nauka i zhyttia 12 no.1:3 Ja '63. (MIRA 16:3)

1. Dnepropetrovskiy gornyy institut, obshchestvennyy korrespondent zhurnala "Nauka i zhittya".
(Donets Basin--Coal mines and mining)

TEREBIN, M.; SHAPOVAL, L.; GERMAN, D.; FILIPCHUK, S.; ATANASOVICH, I.

Yes, the whole matter is in ability. Grazhd. av. 21 no.8:12-13 Ag '64. (MIRA 18:4)

VESLER, I.M.; SHAPOVAL, I.G.

Over-all mechanization in limestone quarries. Sakh.prom. 28 no.4:15-17 '54. (MLRA 7:7)

1. Ukrsakhkamen'.
(Quarries and quarrying) (Limestone)

SHAPOVAL, I.K.

Experience in assembling structural elements in the Sokolovka-Sarbay Combine. Prom. stroi. 41 no.10:34-36 O '63.
(MIRA 16:11)

1. Upravleniye Rudnyystal'konstruktsiya.

SHAPOVAL, I.K., inzh.

Specialization of assembly work in industrial construction.
Prom. stroi. 41 no.11:26-30 N '63. (MIRA 17:2)

1. Trest Rudnyystal'konstruktsiya.

SHAPOVAL, I.K., inzh.

Erecting elements for the enrichment plant of the Dzhetygara Asbestos Combine. Prom. stroi. 41 no.7:8-11 Jl '64. (MIRA 17:8)

1. Upravleniye Rudnyystal'konstruktsiya.

[illegible], L. I.

USSR/Metals - Steel, Casting Jan 51

"Practice of Casting Steel Into Metal Molds," P.G. Vinnichenko, V. A. Grachev, N. I. Petrov, I. N. Shapoval, Engineers, Riga RR-Car Bldg Plant

"Liteynoye Proiz" No 1, pp 7-11

Discusses generally permanent-mold casting of steel. Describes several constrs of permanent molds as they are used in railroad-car bldg ind. Characteristic feature of these molds is application of risers under atm or higher pressure for feeding the castings.

185789

SHAFOVAI, I. M.

Forming

Technological [illegible] in the manufacture of roller shafts with cast grooves.
[illegible], No. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952 UNCLASSIFIED

SHAPOVAL, I.M.

Shapoval, I. M. -- "Outline of the History of the Development of the Technology of Roller Casting Production in the Ukraine." Cand Tech Sci, Moscow Higher Technical School imeni Bauman, Moscow - Dnepropetrovsk 1953. (Referativnyy Zhurnal--Khimiya, No 1, Jan 54)

So: SUM 168, 22 July 1954

1. VINNICHYENKO, P. G. : SHAPOVAL, I. M.

2. USSR (600)

3. Wheels

4. Shrinkage cavities and hot cracks in wheel centers. Lit.proizv. No. 1, 1953.

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

SHAPOVAL, I. M.

"On the Development of the Technology of Roll-Casting Production in the Ukraine." Cand Tech Sci, Technical Sciences Secion of Commission for the History of Technology, Acad Sci Ukrainian SSR, Kiev-Dnepropetrovsk, 1954. (KL, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

SHAPOVAL, I.M.

History of the development of the rolling mill industry in the Ukraine. Trudy po ist.tekh. no.5:83-102 '54. (MLRA 8:1)
(Ukraine--Rolling mills)

SHAPOVAL, I.M.

Experience with the domestic production of double-layer rolling mill rollers. Lit.proizv. no.2:22-25 F '55. (MIRA 8:4)
(Rolls (Iron mills))

SHAPOVAL, I.M.

Development of rolling and casting technology at the Soviet Ukrainian mills. Nar. z ist. tekh. no.3:53-67 '56. (MLRA 10:6)
(Ukraine--Rolling (Metalwork))
(Ukraine--Founding)

SHAPOVAL, Ivan Maksimovich; SHEVCHENKO, Yevgeniy Pavlovich

[Science and technology in Dnepropetrovsk Province] Nauka i tekhnika na Dnepropetrovshchine. Dnepropetrovsk, Dnepropetrovskoe obl.izd-vo, 1959. 160 p. (MIRA 13:8)
(Dnepropetrovsk Province--Science)

SHAPOVAL, I.M.

History of the T.I. Petrovskii Metallurgical Plant in Dnepropetrovsk. Trudy Inst.ist.est.i tekh. 33:249-265 '60.
(MIRA 13:8)

(Dnepropetrovsk--Steel works)

SHAPOVAL, I.

Creative daring. Metallurg 6 no.3:35 Mr '61. (MIRA 14:5)
(Metalworkers)

NESTERENKO, P.G. [Nesterenko, P.H.], prof.; SHAPOVAL, I.M., dotsent

Contribution of mining scientists. Nauka i zhyttia 10 no.3:21-23 Mr '61. (MIRA 14:8)

1. Direktor Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema (for Nesterenko).
(Dnepropetrovsk—Mining research)

SHILOV, P.M., doktor tekhn.nauk; KRIVOSHEYEV, A.Ye., doktor tekhn.nauk; DEMIDOVICH, N.S., kand.tekhn.nauk; RUDNITSKIY, L.S., kand.tekhn.nauk; FLOROV, K.V., kand.tekhn.nauk; SHAPOVAL, I.M., kand.tekhn.nauk; OLEYNICHENKO, V.G., inzh.; ZAIKIN, N.A., inzh.; TITOV, A.I., inzh.

Replacing alloyed steels by high-strength cast iron in manufacturing machine parts. Mashinostroenie no.4:59-61 Jl-Ag '65. (MIRA 18:8)

SHAPOVAL, I.T.

27

Increase of the efficiency of silica gels. I. T. Shapoval. *Energetik* 6, No. 1, 15-16(1958).—The silica gel under discussion is used to bleach turbine or transformer oils by adsorption. If such gel before the first use, is ground to particles of 0.2 × 0.2 mm., then heated to 120–150°, then used in a layer of 40–50 cm. for 24 hrs. only, it can be regenerated by heating for 1 hr. at 500 ± 25° and can be reused as many as 36 times before its activity diminishes noticeably.

Werner Jacobson

AUTHOR: Shapoval, I.T. (Engineer) SOV/96-59-6-12/22

TITLE: The Selection of the Method of Water Treatment for Small Plants (Vybor skhemy vodoprigotovleniya dlya predpriyatiy maloy moshchnosti)

PERIODICAL: Teploenergetika, 1959, Nr 6, pp 64-67 (USSR)

ABSTRACT: The types of water treatment that the design organisations sometimes recommend for small plants are not well adapted to their needs but are simply copies of the practice in large plants. Small plants have a number of special features that should be taken into account when selecting an appropriate method of water treatment. The equipment must be simple to operate and it will usually only be operated by the day shift. It is seldom possible to provide special staff of the type found in a power station chemical laboratory. It is usually important to keep organic substances out of the water. However, in some respects the requirements can be simplified as compared with power station practice and in any case they should be adapted to the requirements of the specific industry. As an example of this, the requirements of a sugar refinery are cited. The equipment should be cheaply constructed to standard designs. The method of treatment

Card 1/2

The Selection of the Method of Water Treatment for Small Plants

should be adapted to the properties of the available water supply. It will usually be best to remove oxygen by the desorbtion method and indeed desorbtion equipment should be put into regular production and delivered along with low-pressure boilers. A number of other requirements are stated, including the need to avoid accumulations of iron in particular cases. It is strongly recommended that small plants should use the two-stage sodium-cation treatment, adapted as need be to suit local requirements. However, in some cases it may be possible to use hydrogen-cation treatment, soda-regenerative softening and ammonia-cation treatment, although a number of cases are quoted where these treatments have proved entirely unsuitable. There are no figures, 1 Soviet reference.

Card 2/2

ASSOCIATION: Kiyevenergo

Shapoval L.D.

AUTHORS: Litvinenko, L. M., Grekov, A. P. 79-11-43/56
Shapoval, L. D.

TITLE: Synthesis of Some Amino- and Nitro-Derivatives of Diphenyl Which Have 2,2'-Dimetoxyl- and 3,3'-Dimethyl-Groups (Sintez nekotorykh amino- i nitroproizvodnykh bifenila, soderzhashchikh 2,2' - dimetoksil'nyye i 3,3' - dimetil'nyye gruppy).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 11, pp. 3115-3122 (USSR)

ABSTRACT: For kinetic investigations performed in the laboratory 2,2'-dimetoxyl- and 3,3'-dimethyl-derivatives of 4-aminodiphenyl and 4-amino-4'nitrodiphenyl had to be made available. It was found that the synthesis of the metoxyl-derivatives is most expediently to be realized according to scheme 1 (see formulae). The easily accessible o-tolidine served as starting product for the synthesis of the methyl derivatives. Their synthesis is represented by scheme 2 (see formulae). The following of the intermediate and end products produced were hitherto not described in publications: 4,4'-dinitro-2,2'-dimetoxydiphenyl, 4-amino-4'-nitro-2,2'-dimetoxydiphenyl, 4-amino-2,2'-

Card 1/2

Synthesis of Some Amino- and Nitro-Derivatives of Diphenyl Which Have 2,2'-Dimetoxyl- and 3,3'-Dimethyl-Groups 79-11-43/56

dimetoxydiphenyl, 4-amino -2,2-dimetoxydiphenyl, 4-nitro-3,3'-dimethyldiphenyl (and 4-amino-3,3'-dimethyldiphenyl). Thus new methods are suggested for the synthesis of a number of intermediate products which are necessary for the production of the given diphenyl derivatives and some already known methods are more precisely defined. There are 13 references, 9 of which are Slavic.

ASSOCIATION: Khar'kov State University (Khar'kovskiy gosudarstvennyy universitet).

SUBMITTED: November 9, 1956

AVAILABLE: Library of Congress

1. Diphenyl - Derivatives - Synthesis

Card 2/2

S/081/62/000/023/091/120
B101/B186

AUTHORS: Nosalevich, I. M., Yastrzhembskaya, O. V., Andreyeva, V. S., Shapoval, L. D.

TITLE: Development of coumarone-indene resins production in the Ukraine

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 678, abstract 23P95 (Sb. nauchn. tr. Ukr. n.-i. uglekhim. in-t., no. 13 (35), 1962, 136 - 143)

TEXT: The method of producing coumarone-indene resins (CIR) was improved so as to obtain neutral, bright, and light-resistant materials with a low-ash content. Continuous operation was introduced. The finished complex is separated in a settler-type supercentrifuge. The polymerizate is stabilized by hydrogenation. New types of catalysts ($BF_3$ complexes) are used. A description of the techniques, a flow sheet of the apparatus for continuous CIR production, and flow sheets showing the hydrogenation of the polymerizate and the separation of resins are given. [Abstracter's note: Complete translation.]

Card 1/1

S/068/62/000/004/001/001
E071/E635

AUTHORS: Yastrzhembskaya, O.V. and Shapoval, L.I.
TITLE: Production of indene-courmarone resins of improved quality.

PERIODICAL: Koks i khimiya, no. 4, 1962, 43-44

TEXT: The method of production of a particularly light coloured (0.3 - 0.6 units of the bichromate scale), low ash resins, developed by UkhIN is outlined. The method consists of washing the indene-coumarone fraction (called heavy benzole) with 0.2 wt. % of 70% sulphuric acid and with 2 wt. % of a 50% alkali, the polymerization process with aluminum chloride should be completed in 30 minutes at a temperature not exceeding 60°C. The polymerized product should be immediately neutralized and distilled. The neutralization should be done with gaseous ammonia with subsequent separation of the precipitate (ammiacate of aluminum chloride) by filtering. The ash content of the resin so obtained does not exceed 0.05 - 0.07%. The neutralization of the polymerized product can also be done with a 15% alkali or soda solution with subsequent washing with water without any deterioration in colour, but the resin so obtained

Card 1/2

Producation of indene-coumarone .... S/068/62/000/004/001/001
E071/E635

is turbid and its ash content increases to up to 0.2-0.3%.

ASSOCIATION: UKhIN

KLF/cs
Card 2/2

YASTREBHEMBSKAYA, O.V.; SHAPOVAL, L.I.

Manufacture of high-quality coumarone-indene resins. Koks i khim. no.4:43-44 '62. (MIRA 16:8)

1. Ukrainskiy uglekhimicheskiy institut.
(Coumarone-indene resins)
(Coke industry)

L 46009-66 EWT(1) GW
ACC NR: AR6029452 SOURCE CODE: UR/0169/66/000/005/D001/D001

AUTHOR: Kozlov, M. F.; Shapoval, L. I.; Fadeyeva, M. V. 15 B

TITLE: Principles of the disposition of a network of deep observation wells on the territory of the Belorussian SSR

SOURCE: Ref. zh. Geofizika, Abs. 5D4

REF SOURCE: Sb. Materialy 1-y Nauchn. konferentsii molodykh geologov Belorussii. Minsk, 1965, 147-148

TOPIC TAGS: geophysical exploration, Belorussian geostructure

ABSTRACT: In establishing a network of exploration wells within the territory of the Belorussian SSR the basic criteria used were geostructural elements which were at the same time large hydrogeological units. Such geostructural elements in the west are the Belorussian Massif and the adjacent Brest and sub-Baltic depressions, and in the east the Moscow and Pripyat' basins. In determining the location of wells within the individual hydrogeological regions, hydrodynamic, hydrochemical, geothermal, and gas characteristics of the different abyssal layers were taken into account. M. Konychev. [Translation of abstract] [SP]

SUB CODE: 08/

Card 1/1 UDC: 550.9(476)

KUSHNIR, N.P.; GOLUBEVA, M.B., tekhnik; VIDREVICH, Ya.V., inzh.-ekonomist; SHAPOVAL, L.Ya., inzh.; ARISTOV, P.I., kand. tekhn. nauk; CHARTARYAN, A.M.; SERGACHEVA, M.

Book reviews and bibliography. Tekst. prom. 25 no.5:87-94 My '65. (MIRA 18:5)

1. Starshiy inzh. nauchno-issledovatel'skoy laboratorii Kineshemskoy fabriki No.2 (for Kushnir). 2. Nauchno-issledovatel'skaya laboratoriya Kineshemskoy fabriki No.2 (for Golubeva). 3, Byuro tekhnicheskoy informatsii Darnitskogo shelkovogo kombinata (for Shapoval). 4. Nauchnyy rukovoditel' Ivanovskogo nauchno-issledovatel'skogo instituta khlopchatobumazhnoy promyshlennosti (for Aristov). 5. Nachal'nik otdela tekhnicheskogo kontrolya Leninakanskoy pryadil'noy fabriki (for Chartoryan).

LIVSHITS, B.Ya.; SHAPOVAL, M.I.; IVANOV, N.P.

Automatic control of the heating of coke ovens. Koks i khim. no. 3:26-29 '61. (MIRA 14:4)

1. Institut avtomatiki Gosplana USSR (for Livshits, Shapoval).
2. Zaporozhskiy koksokhimicheskiy zavod (for Ivanov).
(Coke ovens) (Automatic control)

LIVSHITS, B.Ya.; DUDKO, I.Ye.; SHAPOVAL, M.I.; IVANOV, N.P.

Automatic outlet of gas from coke oven gas collectors. Koks i khim. no.7:25-27 Jl '61. (MIRA 14:9)

1. Institut avtomatiki Gosplana USSR (for Livshits, Dudko, Shapoval). 2. Zaporozhskiy koksokhimicheskiy zavod (for Ivanov).

(Coke-oven gas)

SHAPOVAL, M.S.

Geography center. Geog. v shkole 20 no.5:62 S-O '57. (MIRA 10:12)

1.Lokhvitskoye peduchilishche Poltavskoy oblasti.
(Geography--Study and teaching)

SHAPOVAL, N.A., gornyy inzh.

Complete caving and smooth lowering of the roof. Ugol' Ukr.
6 no.9:32-34 S '62. (MIRA 15:9)

1. Artemovskiy ugol'nyy kombinat.
(Mining engineering)

SHAPOVAL, N.A., gornyy inzh.; BELYAKOV, P.K., gornyy inzh.; SHVEDOV, T.M., gornyy inzh.; PASISHNICHENKO, G.K., gornyy inzh.

Selecting a method of roof control in seams subject to rock bumps. Ugol' 39 no.7:60-63 Jl '64. (MIRA 17:10)

1. Kombinat Artemugol'.

BELYAKOV, P.K., gornyy inzh.; LARCHENKO, M.B., gornyy inzh.; SHAPOVAL, N.A., gornyy inzh.; PETRENKO, Ye.V., kand.tekhn.nauk

Controlling roofs by complete caving with mechanized knocking-out of supports. Ugol' Ukr. 7 no.6:14-15 Je '63. (MIRA 16:8)

1. Artemovskiy ugol'nyy kombinat.

SHAPOVAL, N.A., inzh.; VOROTYNTSEV, I.D., inzh.

Roof control by complete caving on "OKU" posts in machine-worked longwalls in steep seams. Ugol' Ukr. 7 no.11:44 N '63. (MIRA 17:4)

[illegible]VSKIY, S.A. [Kshanovs'kyi, S.A.], kand. med. nauk; CHAPLYGINA, M.M. [Chaplyhina, M.M.]; SHAPOVAL, N.M.

Intracutaneous revaccination of children and juveniles with the BCG vaccine. Ped. Akush. i gin. 24 no.6:15-18 '62.
(MIRA 17:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut tuberkuleza i grudnoy khirurgii (direktor - dotsent O.S. Mamolat).

KSHANOVSKIY, S. A.; DVOYRIN, M. S.; SHAPOVAL, N. M.; CHAPLYGINA (Kiyev); ZAMDBORG, L. Ya.; KOVOROTNAYA, N. F.; SOKOLOVA, L. N. (Chernigovskaya oblast')

Frequency and significance of tuberculin reactions with an infiltrate of less than 5 mm. Probl. tub. 40 no.4:24-29 '62. (MIRA 15:6)

1. Iz Ukrainskogo nauchno-issledovatel'skogo instituta tuberkuleza i grudnoy khirurgii imeni akad. F. G. Yanovskogo (dir. - dotsent A. S. Mamolat)

(TUBERCULIN—TESTING)

SHAPOVAL, S.I.; ANDRIYENKO, V.V. [Andriienko, V.V.], mekhanik

TSNK-2 operates safely. Mekh. sil'. hosp. 14 no.9:26 S '63.
(MIRA 17:1)

1. Glavnyy inzh. sovkhoza im. Karla Libknekhta Krivorozhskogo tresta ovoshchnykh i molochnykh sovkhozov (for Shapoval).
2. Sovkhoz im. Karla Libknekhta Krivorozhskogo tresta ovoshchnykh i molochnykh sovkhozov (for Andriyenko).

CHUBUK, S.Ye.; SHAPOVAL, S.I.; ANDRIYENKO, V.V.

Capron parts of the PA-1 and PA-2 automatic stock waterer.
Trakt. i sel'khozmash. no.8:45 Ag '65. (MIRA 18:10)

1. Sovkhoz imeni K. Libknekhta Dnepropetrovskoy oblasti.

SHAPOVAL, V. I.: Master Med Sci (diss) -- "The pathogenetic principles of limiting indications to the conservative and operative treatment of tuberculosis of the kidney". Khar'kov, 1958. 15 pp (Khar'kov State Med Inst), 200 copies (KL, [illegible], [illegible], 141)

SHAPOVAL, V.I.

Clinical and pathogenetic classification of renal tuberculosis.
Urologii 23 no.5:14-18 S-O '58 (MIRA 11:11)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A.Z. TSeytlin) Khar'kovskogo meditsinskogo instituta i Khar'kovskoy oblastnoy klinicheskoy bol'nitsy.
(TUBERCULOSIS, RENAL,
clinico-pathogen. classif. (Rus))

SOV/80-32-4-21/47

5(4)

AUTHORS: Barmashenko, I.B., Shapoval, V.I.

TITLE: Hydrogen Overvoltage on a Porous Iron-Nickel Cathode (Vodorodnoye perenapryazheniye na poristom zhelezo-nikelevom katode)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol 32, Nr 4, pp 827-833 (USSR)

ABSTRACT: Hydrogen overvoltage appears in part the electric [illegible] in the industrial electrolysis of water solutions. Voronin, Barmashenko, and Nadezhdina [Ref.1] have pointed out a possibility of reducing the hydrogen overvoltage on iron porous cathodes with slight impurities of cobalt, nickel, tungsten and molybdenum. The purpose of the present investigation was selecting such a material for cathodes which leads to the maximum reduction of overvoltage and which is most advantageous in economical respect for electrolysis of aqueous solutions of salts, alkalis, etc. For this investigation, cathodes were manufactured of iron and nickel powders by the

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metalloceramic method at a pressure of 1,400 kg/cm$^2$ in hydrogen atmosphere at 750°C. Relationships of hydrogen overvoltage on current densities were investigated within a range from 100 to 3,000 amp/m$^2$ at temperatures from 20 to 80°C. The installation used for hydrogen overvoltage determination is shown in Figure 1 and results of experiments in Graphs 2 - 8. Conclusions drawn from these experiments are as follows: 1. The reduction of hydrogen overvoltage on a porous cathode at current density of 1,000 to 3,000 amp/m$^2$ and at a temperature of 20°C amounts to 0.45 v (in comparison with a smooth iron electrode; 2. The considerable reduction of overvoltages when nickel is added to iron electrodes takes place at temperatures 20 and 40°C. At 80°C, the effect is less pronounced; 3. The temperature gradient of overvoltage decreases with an increase in current density above 1,000 amp/m$^2$. On the average, overvoltage decreases by 2.5 to 3.0 mv at the rise of temperature by one degree; 4. It is assumed that the reduction of overvoltage on the porous iron-nickel cathode occurs due to the increase of surface and due to formation on the non-homogeneous surface of active portions

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on which hydrogen liberates in electrolysis with a lesser power consumption than on the smooth electrode; 5. The overvoltage of hydrogen on an electrode made of a mixture of powders may be lower than on any of the components taken separately; 6. For testing under semi-industrial conditions, porous iron electrodes with the pressed-on 1-mm thick layer of 20% Fe and 80% Ni are recommended. Dimensions of these cathodes are determined by the design and overall dimensions of the electrolyzer and the nature of the electrolysis process.

Card 3/4 There are 7 graphs, 1 diagram, 1 table and 6 Soviet references.

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Hydrogen Overvoltage on a Porous Iron-Nickel Cathode

ASSOCIATION: Kiyevskiy politekhnicheskiy institut (Kiyev Polytechnical Institute)

SUBMITTED: September 30, 1957

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SHAPOVAL, V.I.; SKOBETS, Ye.M. [Skobets', IE.M.]

Simultaneous oscillographic investigation of two polarographic cells. Dop.AN URSR no.10:1421-1424 '60. (MIRA13:11)

1. Ukrainskaya akademiya sel'skokhozyaystvennykh nauk. Predstavleno akademikom AN USSR Yu.K.Delimarskim.
(Polarography)

SKOBETS, Ye.M.; SHAPOVAL, V.I.

Oscillographic polarographic system with an amalgamated silver electrode. Zav.lab. 26 no.3:278-282 '60. (MIRA 13:6)

1. Ukrainskaya Akademiya sel'skokhozyaystvennykh nauk.
(Polarography) (Electrodes)

S/073/60/026/004/011/018/XX
B023/B064

AUTHORS: Skobets, Ye. M. and Shapoval, V.I.

TITLE: The Use of Solid Electrodes in the Oscillographic Polarography

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, 1960, Vol. 26, No. 4, pp. 446 -453

TEXT: The authors of the present paper are of the opinion that there is no fundamental difference between a solid and a dropping mercury electrode in the oscillographic polarography as it is the case in the ordinary polarography. It should therefore be possible to use the solid electrode to a larger extent than it has hitherto been the case. A simpler oscillographic scheme is suggested with a given current, rendering possible the polarization on each electrode at the same state of the surface and the layer in the vicinity of the electrode. The possibility of applying an amalgamated silver electrode was studied. The potential shift toward the negative was brought about by parallel connection of the germanium diode D(DG-Ts26). Thus, the method was considerably simplified and the pulse frequency reduced (Fig.4). Hence, with the solid electrode it was possible to obtain time independent oscillograms, which are reproducible from one

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