USSR

UDC 621.791.8:669.715

KISELEV, S. N., KHAVANOV, V. A., ROSHCHIN, V. V., and TARAN, V. I.

Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

Translation of Foreword: Welded structural elements made of aluminum and its alloys find wide application in various branches of industry. It is difficult to find a single industry where aluminum welded parts are not used. It is worthwhile to note that structural assemblies made of aluminum alloys can function under complex conditions of loads, temperature and aggressive media. It is now possible to produce structural members of aluminum alloys which are capable of functioning for long periods under complex operating conditions. Parts made of aluminum alloys can be welded regardless of thickness: from fractions of a millimeter for bellows assemblies, to several hundreds of millimeters, as in the case of heat exchangers. It is almost impossible to say at what thickness aluminum parts can no longer be welded. Application of the electroslag welding method, which was developed at the Institute of Electric Welding imeni Ye. O. Paton, has opened great possibilities for the welding of very thick aluminum parts. Development of heat-resistant aluminum alloys is being actively pursued in the Soviet Union and abroad. Because of high specific strength and resistance to corrosion, aluminum alloys find wide

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972 176 pp

application in the construction industry. Aluminum alloys are used for the production of wall panels, vitrages, casings, doors, various architectural decorative details, window casings, and pedestrian and transportation welded bridges. The high corrosion resistance of aluminum alloys has made possible their extensive use in the ship-building industry, especially for superstructures. Aluminum alloys are also used for the manufacture of large transportable containers, tanks, and other volume vessels, including railroad rolling stock. A large volume of welding of aluminum items is performed in the electrical industry. A gradual introduction of aluminum alloys in industries producing heat-exchanging equipment is one of the characteristic trends with respect to aluminum. Further application of welded aluminum structural elements in various branches of the machine-building industry depends to a great extent on new methods of welding aluminum alloys. Heretofore, aluminum alloys have been welded mainly in the horizontal position because of the high fluidity of molten aluminum. Lately, new welding methods have been developed which make it possible to weld aluminum alloys in all positions. For example, a new

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USSR

KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

pulsed welding method with fusable electrodes was developed at the Institute of Electric Welding. A new method for welding pipes by using pressure within the pipe was developed recently at the Scientific Research and Design Institute of Installation Technology (NIKIMTe). Automated welding of thick aluminum sheets in the vertical position was developed abroad. This method makes it possible to produce high-quality butt and angular welds. The development of new welding methods requires, as a rule, new welding equipment, in order to produce high-quality welds for structural members. This book summarizes the experience on production of weld assemblies from aluminum alloys in the Soviet Union and presents information on work carried out by Soviet and non-Soviet specialists on the production of weld construction members made of aluminum. Considering that this undertaking is very broad, the authors did not attempt to elucidate all problems related to the welding of aluminum alloys but emphasized mainly the gas-electric welding of aluminum. Welding of pipes and parts of large sizes that are used in critical assemblies are described in detail. Chapters 2, 7, and part of Chapter 6 were prepared by S. N. Kiselev;

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys). Moscow, "Mashinostroyeniye," 1972, 176 pp

Chapters 1 and 5 by V. V. Roshchin; Chapters 3 and 8 by V. I. Taran; and Chapters 4 and 6 by V. A. Khavanov.

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

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USSR

SOVKIN, V. F., LEUSHKIN, I. P., and KHAVIN, V. M.

"Increasing the Productivity of Grinding Valves Made From Heat-Resisting Steel"

Abstract: Studies were conducted at the Kuybyshev Valve Plant with the aim of selecting optimal disc characteristics and cutting conditions for the centerless grinding of valves made from EI69 grade steel. A table is given for the 12 PP600X150X305 grinding discs tested. The following basic indices were used in evaluating the quality of these discs and the effectiveness of the grinding process: Q_m-- removal of metal in mm^3/minute, Q_a-- disc wear in mm^3/minute,

$g = \dfrac{Q_m}{Q_a}$ -- specific productivity, T -- stability of a disc in minutes, and R_a

-- roughness of the ground surface in microns. The results show that the stabilization of the speed of the disc by increasing its active surface and by determining optimal truing conditions represent a reserve for increasing the effectiveness of grinding heat-resisting grades of steel. The E550S1K6 disc proved optimal for all cutting conditions. The introduction of the study results increased labor productivity, improved the quality of the machined parts, saved diamonds, abrasives, and saved 738 rubles in only one operation of grinding 200 thousand valves. 1/1

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--EFFECT OF ACTIDION, PUROMYCIN ANC CHLORAMPHENICOL ON P PRIME32 AND K PRIME42 UPTAKE BY MAIZE ROOTS -U-

AUTHOR-(02)-KHAVKIN, E.YE., HAZEL, YU.YA.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGIYA RASTENIY, 1970, VOL 17, NR 3, PP 452-457

DATE PUBLISHED-------70

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CIRC ACCESSION NO--AP0123129

UNCLASSIFIED

CIRC ACCESSION NO--AP0123129   UNCLASSIFIED   PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ROOTS OF INTACT TWO AND THREE DAY
OLD MAIZE SEEDLINGS WERE PLACED IN A SOLUTION CONTAINING P PRIME32 AND
AN INHIBITOR OR WERE PREINCUBATED IN THE INHIBITOR SOLUTION AND THEN
KEPT IN THE SOLUTION WITH P PRIME32 (OR K PRIME42) AND THE INHIBITOR.
AFTER 2.5 TO 6 HOURS INCUBATION ACTIDION (0.25-1 MG-L) PRONOUNCEDLY
INHIBITED P PRIME32 AND K PRIME42 UPTAKE BY THE ROOTS. THE INHIBITING
ACTION OF PUROMYCIN (100 MG-L) ON P PRIME32 UPTAKE WAS MANIFEST AFTER 6
HOURS INCUBATION. D AND L TREO CHLORAMPHENICOL (1 G-L) APPRECIABLY
STIMULATED P PRIME32 ABSORPTION AFTER A 1.5-3.0 HOUR INCUBATION PERIOD
BUT DID NOT HAVE NAY EFFECT AFTER A LONGER PERIOD.   IN THE AUTHORS
OPINION THE COMPARATIVELY LATE SUPPRESSION OF ION UPTAKE BY ACTIDION AND
PUROMYCIN SHOULD BE CONSIDERED AS A NONSPECIFIC GENERAL EFFECT OF
INHIBITION OF PROTEIN SYNTHESIS AND VIOLATION OF GROWTH AND THE GENERAL
METABOLISM OF THE ROOT. IT DOES NOT SEEM PROBABLE THAT INHIBITION OF
PROTEIN SYNTHESIS SELECTIVELY VIOLATED THE CELL PERMEABILITY OR
SYNTHESIS OF SPECIFIC CARRIER PROTEINS.

UNCLASSIFIED

USSR

UDC 621.396.677(088.8)

ZAGREBEL'NYY, A. A., POLINOV, YU. S., STESIN, V. V., KHAVKIN, I. M., TSYGANKOV, O. S., YUSHIN, S. I.

"Telescopic Cylindrical Rod"

USSR Author's Certificate No 275177, Filed 17 Oct 68, Published 26 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B85P)

Translation: The proposed rod contains a drive mechanism for unwinding a metal elastic tape from a drum and formation of a hollow tube from it.

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USSR

UDC 62-41:539.431.2.001.24

KHAVKIN, I. YA., Engineer

"Relation of the Tensile Strength During Uniaxial Stretching to That During Biaxial Stretching"

Moscow, Vestnik Mashinostroyeniya, No 2, Feb 72, pp 34-36

Abstract: Calculation formulas are proposed for determining the tensile strength of transversally isotropic metals during biaxial stretching on the basis of the characteristics of strength, ductility, and anisotropy established for uniaxial stretching. Such a method of calculation makes it possible to forego fullscale tests of structures with various diagrams of biaxial stretching, and also to use a more valid approach to designation of the optimal dimensions of structural elements and selection of the material for specific parts and subassemblies. Four figures, 1 table, 8 references.

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USSR

BUKHAROV, A. K., GOR'YAN, I. S., KOROCHKIN, E. V., KHAVKIN, L. M.,
and TSUKKERMAN, I. I.

"Television Automaton for Recognition Study"

Abstract: The recognition or classification of images can be auto-
mated by the use of histograms statistically representing the char-
acteristics of the structures to be recognized. This article de-
scribes an automatic device operating on this principle, which
uses the time scale and video signal of a standard television
camera. The television equipment is operated in combination with
an electronic computer using a specific algorithm and programmed
for recognition. A general block diagram of the equipment is gi-
ven together with specific block diagrams of individual assemblies.
Photographic samples are also provided of the type of structures
and textures recognized: soil specimens and cross sections of
metals. Results of experiments with the device are comparable
with those obtained by modeling with a computer.

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Measuring, Testing, Calibrating

USSR

UDC: 531.788

TVOROGOV, I. V., KHAVKIN, L. P.

"Absolute Graduation of Manometric Converters by the Method of Comparison With a Compression Manometer on a Cryostatically Controlled Installation"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 162-164

Abstract: One of the simplest methods of absolute graduation of manometric converters is comparison with an absolute standard — usually a mercury compression manometer. However, at low pressures an error arises due to the evacuating effect of the mercury jet escaping as vapor from the manometer into the cold trap. One way of eliminating the error is to cool the entire measurement installation including the compression manometer. In this paper the authors determine the temperature at which the principal error disappears. The experimental installation is described in detail. It is found that the measurement system must be cooled to 0-2.5°C to eliminate error due to evacuation by the mercury vapor jet.

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USSR

TVOROGOV, I. V., KHAVKIN, L. P.

"Eliminating the Error of a Compression Manometer Due to the Evacuating
Effect of a Mercury Vapor Jet"

Abstract: At low pressures, a mercury compression manometer is inaccurate
because of the evacuating action of the mercury vapor jet which escapes
from the manometer into the cold trap. This paper describes a method of
eliminating this error by using McLeod manometers with tubes of a known and
different diameter connecting them to the cold trap. A diagram of the vacu-
um installation is shown in the figure. Formulas for pressure calculation
are given as well as the results of an experimental check. It was found
that a pair of compression manometers with connecting tube diameters of
8.22 and 21.58 mm almost completely eliminates measurement error due to
mercury vapor jet action. The authors thank L. F. Nosyreva and G. I. Il'in
for assistance in preparing and carrying out the experiments.

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USSR

1, 2, 3--McLeod manometers; 4--cold
trap; 5--ionization manometer; 6--
leak-in valve; 7--vacuum tank; 8--
bottle with graduation gas; 9--dif-
fusion pump; 10, 11--backing pumps;
12-16--vacuum valves.
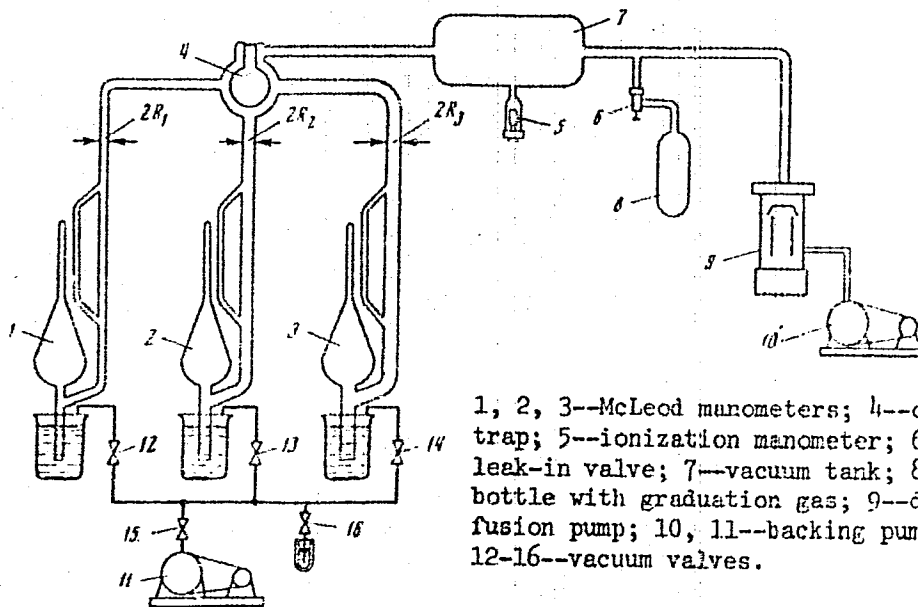
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USSR

UDC 665.534

OSIPOV, L. N., KHAVKIN, V. A., AGAFONOV, A. V., ROGOV, S. P., RYSAKOV, M. V., and PEREZHIGINA, I. Ya., All Union Scientific Research Institute of the Petroleum Industry

"Hydrofining of Sulfur-Containing Secondary Gasolines to Obtain Stock for Catalytic Reforming"

Moscow, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

Abstract: The article describes results of experiments on the hydrofining of thermal-cracked and TCC gasolines, as well as mixtures of these gasolines with straight-run gasoline for the purpose of obtaining stock for catalytic reforming. The experiments were carried out on an apparatus with alumina-cobalt-molybdenum catalyst loading of 0.5 l, a total pressure of 35 at, a temperature of 350-425°C, space velocity 0.5-5.0 hr^{-1}, gas circulation 300 l/l stock. The object of the experiments was to obtain a product containing not more than 0.003 percent sulfur by weight or 0.0002 percent nitrogen by weight, with an iodine number no greater than 1 g I$_2$/100 g. The results indicate that these gasolines can be successfully improved on existing blocks or units for the preliminary hydrofining of straight-run gasoline L-24-300 following a slight
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USSR

OSIPOV, L. N., et al, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

modification of the design requiring merely a 50-100 percent increase in the loading volume of the alumina-cobalt-molybdenum catalyst.

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USSR

UDC 681.327.02(088.8)

KHAVKIN, V. Ye., and ZHELEZNYAK, A. B.

"Device for Time Selection"

Translation: The device for time selection suggested contains a digital
winding of a magnetic accumulator connected into a bridge circuit, a write
pulse shaper, and an amplifier-shaper. The essence of this invention is the
creation of a device for the formation of a pulse for time selection of
signals read from the magnetic accumulator, containing two differential
read amplifiers, the opposite inputs of which are connected in pairs with
two outputs of the digital winding of the magnetic accumulator, while the
output of each one is connected to the input of an individual strobing
amplifier. The two amplifiers have opposite initial imbalance, the magni-
tude of which is greater than the amplitude of the leading noise but less
than the amplitude of the signal. The outputs of the strobing devices are
connected through an OR circuit to the amplifier-shaper of the narrow strobe
pulse, which appears at the moment the read signal appears at the output of
the strobing amplifier. 1 fig.
1/1

USSR   UDC 681.327

KHAVKIN, V. Ye., DUBROVSKIY, G. V.

"Test Device"

USSR Author's Certificate No. 275141, Filed 6/03/69, Published 6/10/70   (Trans-
lated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No. 5, 1971, Abstract No. 5B283P).

Translation: A device is known for testing address decoders of magnetic operative
memory units (MOMU). However, this device tests the operation only of the first
stage of the address decoding of the MOMU,   does not allow testing of the opera-
tion of the coodinate switches in the second stage of decoding, and requires a
large quantity of equipment. The purpose of the invention is the creation of a
device for built-in testing of the entire address portion of a MOMU, the output
decoding stage of which is supplied by a voltage generator. In the device sug-
gested, the emitters of all lower coordinate switches are combined together and
connected to the test element. The test element is connected to one kth input
of a differential amplifier, the other input of which receives a reference volt-
age which is dependent on fluctuations in temperature, equal to the voltage drop
from the selection current across the test element with normal operation of the
MOMU. Both outputs of the differential amplifier are connected to a flip-flop
indicating defective operation of the address portion of the MOMU. 1 fig.

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AA0043468

KHAVKIN V. E.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

242966 DECIPHER for the memory systems has two ortagonal lines X and Y connected at their junctions by diodes D and loads H. This system includes additional lines Xo and Yo connected through the diodes (D_1 and D_2) and the resistors (Rl and Ro) to X and Y lines. The lines Xo and Yo have also switches (1) and (2). Applying to the (2Y) lines a pulsegenerated locally which switches on the switches (1) and (2) and at the same time opens the switch (3(. The diodes D1 and D2 ar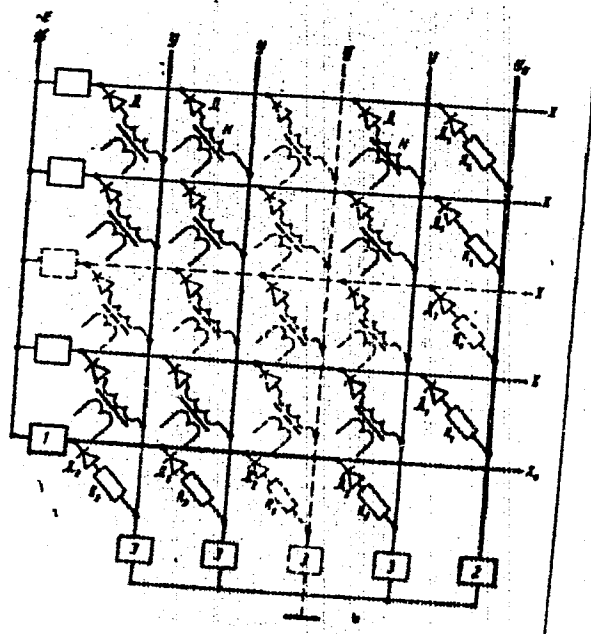e to relieve the shunting effect of the resistors. 18.3.68 as 1226302/18-24. V.E.KHAVKIN(17.9.69)Bul 16/ 5.5.69. Class 21a1. Int.Cl.H 03k.

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19761836

AA0043468

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USSR

UDC 615:372:576.852.23].012.8

KHAVKIN, Yu. A., AKATOVA, E. N., and VOROB'YEV, A. A., Ufa Institute of Vaccines and Sera imeni Mechnikov

"A Method of Obtaining Highly Purified Diphtheria Toxin"

Abstract: A new method of producing large quantities of pure diphtheria toxin is described. The method includes removal of porphyrin and other ballast substances from the crude toxin through adsorption on charcoal; a 50-70-fold concentration of the filtrate by ultrafiltration through molecular sieves; separation of the ultrafiltrate (2-3% proteins) into three fractions on sephadex gel columns; elimination of two fractions through precipitation with ammonium sulfate; and purification of the middle-peak fraction through sephadex ion-exchange chromatography. The product has a specific activity of 2,700-3,400 Lf/mg of total nitrogen and 40-50 MLD/Lf. It contains no admixtures of somatic antigens and is homogeneous, as indicated by electrophoresis in poly-acrylamide, ultracentrifugation, thin-layer gel filtration, and precipitation in agar. The purified toxin is composed of four to six discrete components with isoelectric points at a pH of 4.5-5.0. All the components have toxic and nuclease properties and are neutralized and precipitated with pure anti-toxin.
1/1

ON THE STRUCTURE AND RHEOLOGICAL PROPERTIES
OF AQUEOUS EMULSIONS OF POLYETHYLENE TEREPHTHALATE

Mikhaylov, N. V.; Sharay, T. A.; Khavkina, B. L.; Arsen'yev, A. N.

Summary

A study has been made of the rheological properties of aqueous suspensions of poly-ethylene terephthalate (PETPH) stabilized with rosin soap as well as of some compositi-ons consisting of PETPH dispersion and a polymer thickener-polyvinyl alcohol. The vis-cosity of the compositions has been found to be much higher (50—100 times) than those of its components. A mechanism of structure formation in compositions has been sugges-ted. An empirical linear equation $\eta = f(P)$ in a logarithmic form is given and some as-sumptions are made regarding the physical significance of the constants in these equations.

REEL/FRAME
19721379

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USSR

UDC 612.172+612/76

PROKHAZKA, I., KHAVKINA, I. V., and BARBASHOVA, Z. I., Physiological Institute, Czechoslovakian SSR, Prague and Institute of Evolutionary Physiology and Bio- chemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"The Effect of Prolonged Hypokinesia on the Heart Muscle of Rats"

Abstract: The effects of 30- to 4-day hypokinesie on the heart muscle of ten white rats was investigated. Sharp weight losses were observed for the whole organism, the heart and particularly its right ventricle. A weakening of the contractile ability of the myocardium in response to rhythmic electrical impulses was seen, as well as a further weakening after 20-minute anoxia, said to indicate a loss of resistance to stress. Additionally a small deceleration of anerobic energy exchange in the ventricles was found, on the basis of lactic acid accumulation. The right ventricle showed a slowing of glycolysis and glycogenolysis, the left only slower glycogenolysis. Glycogen content in the heart muscle was unchanged. While not decisive, the distur- bance of energy exchange is said to play an important role in the loss of the heat is stress resistance from prolonged limiting of movement.
1/1

USSR

UDC 591.105

PIRUZYAN, L. A., GLEZER, V. M., LOMONOSOV, V. A., BARSEGYAN, L. KH., KHAVKINA, L. S., Institute of Chemical Physics of the USSR Academy of Sciences

"Effect of a Constant Magnetic Field on the State of the Blood System of Mice"

Abstract: A study was made of the effect of a constant magnetic field on the state of the blood system and the free radical content in the blood of mice. The constant magnetic field intensity was 5,000 oersteds for exposure times of 4, 24 and 72 hours. After exposure to a constant magnetic field, the number of erythrocytes, reticulocytes and leukocytes in the blood of mice increases, the hemoglobin content increases, the erythrocyte production per cubic milli- meter of blood per day increases, and the free radical content increases. A change in the qualitative composition of the erythrocytes expressed in an increase in the number of cells of increased stability is observed. A correlation between the number of erythrocytes, reticulocytes, the diurnal erythropoiesis and the variation in free radical activity of the blood of mice after the effect of a constant magnetic field were established. Analysis of the dynamics of the variations of the hematologic indexes and free radical activity in the blood of mice after the effect of the constant magnetic 1/2

USSR

PIRUZYAN, L. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya,
No 1, 1972, pp 142-145

field shows that they are of a monotypic nature.

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USSR

UDC 621.762.01(088.8)

POGODIN-ALEKSEYEV, G. I., GAVRILOV, V. M., KHRAMOV, S. P., KHAVROSHKIN, O. B., SYRKIN, V. G., and UEL'SKIY, A. A.

"Method of Producing Dispersed Materials"

USSR Authors' Certificate No 301379, Cl. C 23c 11/02, B 22 f 1/00, filed 7 Apr 66, published 2 Jun 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1C263P)

Translation of Abstract: A method is suggested for producing dispersed materials by the application of refractory metal compounds to powders through thermal decomposition of vapor of the metal-containing component, with the powder with enhanced mechanical properties, delivery of a layer of powder of the refractory compound is alternated with vapor of the metal-containing component in amounts sufficient to grow a layer of metal, with the metallic component that forms during thermal decomposition undergoing treatment by ultrasonic vibrations through a gaseous medium.

1/1

AA0044300

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

243976 POWERFUL ULTRASONIC OSCILLATIONS IN GASES, method for their generation. The purpose of the invention is the generation of an ultrasonic stream and braking it. This is achieved by generating additional gas flows on the main stream periphery, and in case of an electrically conducting gas, by applying a coaxial magnetic field directed from the centre to the periphery.

The main gas stream is produced by blowing gas from a nozzle under an excess pressure. 14.6.67 as 1164203/18-10.STANYUKOVICH.K.P.et alia. (1.10.69) Bul 17/14.5.69. Class 42s. Int.Cl.B 06b.

AUTHORS: Stanyukovich, K. P., Pogodin-Alekseyev, G. I., Kolesnikov, S. M., Khavroshkin, O. B.

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USSR

UDC 669.3'24.053.4

KHAVSKIY, N. N., KRASNOZHEN, S. V., ZELIKMAN, Yu. L., STARIKOV, A. M.

"Study of Effectiveness of Application of Ultrasound for Dispersion of Sulfide Copper-Nickel Ore"

Primeneniye Ul'trazvuka v Metallurg. Protsessakh [Use of Ultrasound in Metallurgical Process -- Collection of Works], Moscow, 1972, pp 145-147, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G362 by the authors).

Translation: The possibility is studied of dispersion of sulfide Cu-Ni ore using US oscillations under atmospheric and increased hydrostatic pressure. The US source was a magnetostriction convertor type PMS-6M. With an S-L ratio of 1:100, temperature 75°, and pressure in the operating chamber of 5 atm, an ore with a grain size of 100% + 0.1 mm is fully dispersed in 2 hours to a grain size of 100% - 0.1 mm, 80% of the initial mass of the initial ore specimen being dispersed to this size in the first 15 minutes. 1 Figure; 3 Tables.

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USSR

UDC 621.762.2:669.5

MITIN, I. I., SOKOLOV, M. A., KHAVSKIY, N. N., PREOBRAZHENSKIY, N. A., YAKUBOVICH, I. A., KIRILLOV, O. D.

"Obtaining Zinc Powder by an Acoustic Eddy Disperser"

V sb. Primeneniye ul'trazvuka v metallurg. protsessakh (Application of Ultrasound in Metallurgical Processes -- collection of works), Moscow Steels and Alloys Institute, 67, Moscow, 1972, pp 149-151 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G403)

Translation: A new procedure is described for obtaining finely dispersed Zn-powder from a melt using an eddy acoustic pneumatic atomizer. Two illustrations.

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USSR

UDC 621.762.002.5

MITIN, I. I., KHAVSKIY, N. N., SOKOLOV, M. A., KIRILLOV, O. D., YAKUBOVICH, I. A.,
PREOBRAZHENSKIY, N. A.

"Acoustic Vortex Disperser to Obtain Finely Dispersed Metal Powders"

V sb. Primeneniye ul'trazvuka v metallurg. protsessakh (Application of Ultrasound
in Metallurgical Processes -- collection of works), Moscow Steels and Alloys
Institute, 67, Moscow, 1972, pp 171-173 (from RZh-Metallurgiya, No 4, Apr 72,
Abstract No 4G424)

Translation: A description of an acoustic eddy atomizer used to obtain finely
dispersed metal powders is presented. One illustration.

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USSR

UDC 621.762.01

MITIN, I. I., KIRILLOV, O. D., KHAVSKIY, N. N., SOKOLOV, M. A., YAKUBOVICH, I. A., PREOBRAZHENSKIY, N. N.

"Problem of Using Sound Vibrations in Powder Metallurgy"

V sb. Primeneniye ul'trazvuka v metallurg. protsessakh (Application of Ultra-sound in Metallurgical Processes -- collection of works), Moscow Steel and Alloys Institute, 67, Moscow, 1972, pp 147-149 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G387)

Translation: The prospects for using sound vibrations in powder metallurgy are demonstrated. 4-entry bibliography.

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USSR

UDC 669.71.053.4.094

PREOBRAZHENSKIY, N. A., KHAVSKIY, N. N., YAKUBOVICH, I. A., SAMOYLOVA, L. I.,
KIRILLOV, O. D., ULANOV, V. I.

"Studies of the Influence of Ultrasound on the Process of Sulfuric Acid
Leaching of Phosphorite"

Translation: It is demonstrated that US oscillations, breaking down the film
of phosphogypsum, intensify the process of sulfuric acid leaching of phospho-
rites. 1 Table.

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USSR

UDC 669.295.48

SMIRNOV, Yu. R., LISKOVICH, V. A., KHAVSKIY, N. N., MEYERSON, G. A., BOYKO, A. I.

"Some Results of Investigation of Application of Ultrasound in Hydrometallurgical Processing of Titanium Alloy Wastes"

Primeneniye Ul'trazvuka v metallurg. Protsessakh [Use of Ultrasound in Metallurgical Processes -- Collection of Works], Moscow, 1972, pp 98-102, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G267 by the authors)

Translation: Results are presented from studies of combined reagent modes of leaching of trinary Ti-Al-V alloy hydride with the application of US oscilla- tions. The duration of the process and temperature decrease in comparison with leaching in an ordinary tank. However, the ultrasound causes undesirable overfine breakdown of some portion of the solid phase, hindering further treat- ment of the suspensions. 3 Figures; 2 Tables; 4 Biblio. Refs.

1/1

1/2   030

UNCLASSIFIED

TITLE--OPTICAL PROPERTIES OF NITROGEN DOPED ALPHA SILICON CARBIDE CRYSTALS

PROCESSING DATE--30OCT70

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AUTHOR-(02)-PURTSELADZE, I.M., KHAVTASI, L.G.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 45-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL OPTIC PROPERTY, SILICON CARBIDE, CRYSTAL IMPURITY, NITROGEN, ABSORPTION SPECTRUM, ABSORPTION COEFFICIENT, LIGHT REFLECTION COEFFICIENT

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CIRC ACCESSION NO--AP0117777

UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0117777   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION AND REFLECTION
   COEFFS. OF N DOPED ALPHA SIC SINGLE CRYSTALS WERE INVESTIGATED IN THE
   2-15MU SPECTRAL RANGE. THE SHAPE OF THE ABSORPTION SPECTRUM IS
   ATTRIBUTED TO ABSORPTION FROM THE N LEVEL TO THE CONDUCTION BAND.   THE
   ENERGY OF THIS TRANSITION WAS DETD.   FACILITY: TBILIS. GOS.
   UNIV., TBILISI, USSR.

UNCLASSIFIED

USSR

SAMITOV, YU. YU., PUDOVIK, M. A., KHAYAROV, A. I., and KIBARDINA, L. K.

"Stereochemistry of Organophosphorus Compounds. III. Nuclear Magnetic Resonance Spectra of ^1H and ^{31}P and the Geometric Isomerism in a Series of 1,2,3-oxaazaphospholanes"

Abstract: In containing the studies in the field of the stereochemistry of phosphorus-containing hetero cycles, the presence of stereoisomers in the series if substituted 1,3,2-oxaazaphospholanes was detected in which isomerism is caused by the presence of the chiral carbon atom in the ring and the mentioned property of the P^{III} phosphorus atom. The proof of the presence of the stereoisomers was obtained by the method of gas-liquid chromatography and nuclear magnetic resonance, the conformation of the high-element ring was established by analysis of the nuclear magnetic resonance spectra. The series of 5-ethyl-1,3,2-oxaazaphospholanes which are tabulated were synthesized and investigated. The predominant conformation of the 5-number heterocycle is the form of the envelope with the oxygen atom at the top of the vent.

1/1

KARANOVA, YE. K., DEMAKOV, D. K., STARININ, K. V., STREL'TSOV, and KHAYBULLIN, I. B.

"Study of Single-Crystal SiC Films Obtained by Bombardment of Si Single Crystals With C+ Ions"

Abstract: The authors obtained SiC films by bombarding Si single crystals with atomic carbon ions with an energy of 40 kev and a dose of over 10^{17} ions/cm^2 at 600 and 700°. IR absorption spectra were used to identify the ion-implanted films with the SiC compound. Electron-diffraction studies made on the ion-implanted SiC layers by the reflection method showed that a temperature of 700° is necessary to create single-crystal SiC film by the ion bombardment method. To study the structure of the n-SiC-n- and p-Si hetero-junctions created by the ion method, measurements were taken of the photo-emf spectra and I-V characteristics of these junctions. The results indicate a correspondence between the real energy structure of the hetero-junction and the theoretical one. The method of creating heterostructures by ion irradiation makes it possible to create single-crystal layers of com-pounds of the implanted ion with atoms of the elements making up the sub-

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USSR

KARANOVA, YE. K., et al., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 869-870

strate, even in the case of a great difference between the lattice constants of the compound and thos. of the substrate.

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USSR

KHAYDAROV, I. Sh.

"Sensor for Measurement of Concentration of Gases in Liquid Media"

Otkrytiya Izobreteniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972,
Patent No 355554.

Translation: Sensor for measurement of concentration of gases in liquid
media, containing electrodes insulated from the medium being tested by a
semi-impermeable membrane, and a stirrer, differing in that in order to in-
crease the stable operating time of the sensor, a floppy brush is fastened
to the circular magnet of the stirrer, and contacts the membrane.
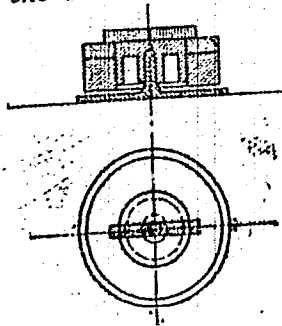
1/1

UDC: 621.378.385

USSR

BEDILOV, M. R. and KHAYDAROV, K.

"Characteristics of Stimulated Radiation of a Ruby Laser Irradiated by Co60 Gamma Rays"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 2, 1972, pp 391-394

Abstract: Asserting that the action of gamma rays on the characteristics of a ruby laser has received relatively little attention and that data of the laser's energy characteristics in the literature is contradictory, the authors describe experiments they performed on the time, energy, and spectral characteristics of the stimulated radiation of the laser. They also investigated the density distribution of the radiation over the beam cross section during one pulse of the pumping lamp, and the change in absorption capability of the active ruby element before and after radiation by Co60 gamma rays in dosage intervals of 0-10^6 roentgens. Block diagram of the experimental equipment is given together with plots of the laser energy characteristics and the transmission spectra of the ruby in the 4000-7000 Å range, both plots showing the effects before and after the irradiation. Before-and-after photographs of the laser time characteristics are

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also reproduced. The authors explain the substantial change in the laser's characteristics as the result of the reduction in the concentration of the Cr^{3+} activator in connection with transitions to Cr^{2+} and Cr^{4+}. They are associated with the Institute of Nuclear Physics at Tashkent.

USSR   UDC 615.786-092.259:612.746

KHAYDAROV, K. Kh., LEBEDEVA, L. D., GLAZUNOVA, Ye. M., and GLEBOVA, N. V.,
Institute of Chemistry, Academy of Sciences Tadzhik SSR; Tadzhik State
Medical Institute imeni Abuali ibn-Sino

"Physiological Effect of Carbamates of Dihydropyranol Derivatives"

Abstract: The effect of 2,5,6,6-tetramethyl-2-ethyl-dihydro-5-pyranol (K_3)
and 2,6,5,6-tetramethyl-6-ethyldihydro-5-pyranol (K_6) on the central nervous
system of mice was studied. In both of these compounds the methyl was sub-
stituted for ethyl at the 2d and 6th positions. A transfer of the ethyl radi-
cal from the 2d to 6th position increased to some extent the toxicity of these
compounds, regardless of the method of administration. At the same time, it
improved some of their effects on the central nervous system, such as soporific
and muscle-relaxation properties. An intraperitoneal dose of 200 mg K_3/kg did
not cause any visible effect on animals, but a dose of 300 mg/kg produced a
very strong depressing effect, and 400 mg/kg made all mice lie on their sides
in 4-5 min. In the case of K_6, a strong depression was produced by 250 mg/kg.
A large subcutaneous doses of K_3 and K_6 (900, 1000, 1100, 1200, 1300, 1400
mg/kg) produced depression in 60 min. Doses of 700, 800, 900, 1000, 1200
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KHAYDAROV, K. Kh., et al., Izvestiya Akademii Nauk Tadzhikskoy SSR, No 4(45), 1971, pp 41-46

mg K_3 and K_6/kg administered orally produced a sedative effect in 15 min., and all animals were lying down in 45 min. A combination of caffeine and phenamine with 300 mg K_3 or K_6/kg removed partially and doses of 500 mg/kg completely removed the stimulation produced by caffeine and phenamine. Animals slept for 30, 62, 87, and 150 min. when given 400, 500, 550, and 600 mg K_3/kg, respectively. In the case of 300 and 350 mg K_6/kg, the sleep was prolonged to 300 and 350 min., respectively. The effect of these compounds disappeared completely in 18-24 hr. All mice perished in sleep when injected with 650-700 mg K_3/kg, or 500-600 mg K_6/kg. The sleep produced by hexenal (60 mg/kg given intra- veneously) was prolonged 2.5-14 times when animals were preliminarily injected with 10, 25, 50, or 100 mg K_3 and K_6. A displacement of the ethyl radical from the 2d to 6th position did not improve much the anticonvulsion properties of these compounds. The data obtained indicate that both compounds act on the central nervous system, although the cholinolytic properties cannot be ascribed to them.

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Alkaloids

USSR   UDC 947.943

POROSHIN, K. T. (DECEASED), SADYKOV, YU. D., KHAYDAROV, K. KH., VOVSI-KOL'-
SHTEYN, A. L., DEGTYAREV, V. A., and BURICHENKO, V. K., Institute of Chemistry
Academy of Sciences TadzhSSR

"Physiologically Active Papaverine Derivatives"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1972, pp 83-84

Abstract: Papaverine reacted with acyl chlorides of sulfonic acids, carboxylic
acids and chloroacetic acid, yielding N-benzenesulfonylpapaverinium chloride,
m.p. 200° (dec.); N-benzoylpapaverinium chloride; m.p. 193°; N-acetylpapaverinium
chloride, m.p. 217° (dec.); and the chloride of N-papaverineacetic acid, m.p.
210° (dec). The products exhibited hypotensive and spasmolytic properties.

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KHAYDAROV, K. KH., TUKHTAYEV, T. M., and NIKITIN, V. I., Member of the Tadshik Academy of Sciences; Institute of Chemistry of the Tadzhik Academy of Sciences, and the Tadzhik State Medical Institute imeni Abual' ibn-Sino

"Anticholinesterase Activity of Certain Derivatives of Carbamic Acid"

Abstract: Carbamates, generally, are already known as sedatives, soporifics, tonics, antispasmodics, muscle-relaxants and anticholinesterasic agents; the Institute of Chemistry is attempting to extend the list of physiologically active carbamates, having thus far synthesized 10 compounds in this series not previously described. The compound 5-carbamyloxy-2,2,5,6,6-pentamethyl-Δ^3-pyran (K_2) was the object of the present study.
In vitro tests of K_2 showed that various concentrations produced different degrees of inhibition of the anticholinesterase activity of the blood serum of a healthy rabbit; concentrations of 10^{-3} and 10^{-4} produced strong inhibition (25.1 and 24.1%), and weaker concentrations of 10^{-5} and 10^{-6}, only weak inhibition. In vivo tests, K_2 injections of 50 mg did not produce any change in 15 and 30 minutes, but did produce a 6.8% reduction after an hour, and a 10% reduction after two hours. A 100 mg/kg dose, however, produced a 1/2

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KHAYDAROV, K. KH., et al., Doklady Akademii Nauk Tadzhikskoy SSR, Vol XIII, No 11, 1970, pp 65-67

10% reduction in cholinesterase activity in a half-hour, and this increased to 16.0, 15.6, 17.0 and 22.9%, after 1,2, 3 and 4 hours, respectively.

2/2

USSR

KHAYDAROV, K. Kh., PAUK, S. I., and NIKITIN, V. I., Institute of Chemistry, Academy of Sciences Tadzhik SSR, and Tadzhik State Medical Institute imeni Abuali ibn-Sino

"Effect of Certain Derivatives of Carbamic Acid on the Cholinesterase Level in Blood Serum of Intact Rabbits

Abstract: To determine whether a derivative of carbamic acid, preparation K_2, affects the cholinesterase level in blood serum of intact rabbits, two derivatives of this series were investigated. The preparations were: 5-carbamyloxy-2,5,6,6-tetramethyl-2-ethyl-delta^3-dihydropyrane (K_3) and 5-carbamyloxy-2,2,5,6-tetramethyl-6-ethyl-delta^3-dihydropyrane (K_6). These compounds are white crystalline powders poorly soluble in water. Both preparations were given intraparenterally in doses of 50-100-200 mg/kg in starch. The results were compared with proserine (10 mg/kg). During the first hours after the administration of 50, 100, and 200 mg of the K_3 and K_6 preparations, no marked changes were discovered in the activity of pseudocholinesterase. A sharp decline in this level was detected 5 hours after the administration of 100 mg/kg of the K_3 preparation, and on the third day after the administration
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of 200 mg/kg of the K_6 preparation. Experiments with proserine were tested under similar conditions to compare its effect with the K_3 and K_6 preparations. Proserine was tested in a dose of 10 mg/kg. A reduction in the cholinesterase level of 30-34% was noted already in the first 5 hours. The maximum decrease was detected in the first day -- 53%, and a 45% reduction was observed by the third day. It was thus shown that the K_3 and K_6 preparations have some anti-cholinesterasic properties, but that the action is much weaker and less pro-longed , in that of proserine.

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USSR

KHAYDAROV, U., Chair of Children's Infections Tashkent Institute for the
Improvement of Doctors

"Dynamics of Immunological Indices in People Immunized With Live Brucellosis
Vaccine"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1972, pp 79-80

Abstract: The dynamics and sensitivity of the passive hemagglutination reaction
was compared with the Wright, Huddleson's and opsonin phagocytic reactions,
with the intradermal Burnet test and with opsonin determination in people
vaccinated against brucellosis. One group of subjects was composed of 18 workers
in the Tashkent meat industry who may have been infected with brucellosis.
This group and a control group of 10 people not in contact with livestock or
meat products were vaccinated and then tested every two months. It was found
that the passive hemagglutination reaction was more sensitive than the other
tests studied in detecting immunologic shifts in vaccinated people, and that
antibody titers were higher and the test stayed positive about twice as long
(to 2 years in 50% of cases) in subjects with occupational exposure. It was
concluded that the test should be used to select candidates for revaccination.

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USSR

KHAYDAROV, U., Chair of Childhood Diseases, Tashkent Institute for the
Advanced Training of Physicians

"Dynamics of the Passive Hemagglutination, Wright, and Huddleson Tests in
Brucellosis Patients"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 70, pp 40-42

Abstract: A study of 90 brucellosis patients showed the passive hemagglutina-
tion (PH) test to be more sensitive than either the Wright or Huddleson tests.
The results of all three tests varied according to the form of the disease.
With the acute form, the PH test was positive in all patients, the Wright
test in 81.8%, and the Huddleson test in 90.9%. The titers in the PH test were
invariably higher than in the other two. With the chronic form, positive.
results were recorded in 92.3%, 50.0%, and 84.62% of the patients, respectively.
The indices of the PH test in patients with chronic brucellosis were high during
relapses, the titers ranging from 1:800 to 1:3200. They were low (1:100 to
1:200) in patients with the severe form of chronic brucellosis and in those with
primary involvement of the nervous system. The PH test remained positive for
as long as 10 years after recovery.

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KHAYDUKOV, N.

REVIEW OF NEW FORENSIC PSYCHOLOGY TEACHING AID

[Book review by Prof D. Rasseykin, Doctor of Juridical Sciences, V. Kozlov, lecturer, and N. Khaydukov, instructor at the Saratov Juridical Institute; Moscow, Sotsialisticheskaya Zakonnost', Russian, No 12, 1971, signed to press 12 November 1971, pp 85-86]

During the last decade interest in psychology has noticeably grown. And forensic psychology, the elaboration and development of which began relatively recently, is attracting attention. The development of forensic psychology and the timely introduction of its achievements into practice are directly connected with teaching it in the higher juridical education institutes. Therefore, texts and teaching aids for this discipline are extremely needed.

The work of A. Dulov being reviewed is one of the first attempts to create a teaching aid for forensic psychology. The role of psychological regularities and the psychological characteristics in implementing the tasks of socialist justice is shown in it. The author gives special attention to studying the activity of implementing justice and investigates the psychological sides and special features. The aid contains a general and a special part.

The first section (the general part) is an introduction to forensic psychology. Here its significance for the activity of implementing justice, its subject, method, tasks, and place in the system of other sciences are shown. The author exhaustively argues for the theoretical basis of making forensic psychology an independent science. He says that the use of psychological laws and characteristics by themselves in any form of human activity still cannot create the bases for making it an

*A. Dulov, Sudebnaya Psikhologiya (uchebnoye posobiye) [Forensic Psychology (Teaching Aid)], Vysshaya Shkola Publishing House, Minsk, 1970, 363 pp.

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JPRS 5568
11 May 72

USSR

UDC: 548.5:535.37

KUZ'MINA, I. P., LOBACHEV, A. N., PREDTECHENSKIY, B. S., STAROSTINA. L. S.,
STOPACHINSKIY, V. B., KHAYDUKOV, N. M., Institute of Crystallography,
Academy of Sciences of the USSR

"Luminescent Crystals of Cuprous Oxide"

Abstract: The paper describes a method of growing large perfect crystals
of Cu_2O to study bright narrow luminescence lines of recombination of free
excitons. A polycrystal like specimen of Cu_2O is treated by zone melting
with an electron beam. The resultant specimen usually consists of 2-3
crystals. A single crystal is grown, using one of these crystals as a
seed. The result is a transparent cylindrical rod up to 10 mm in diameter
and 100 mm long. These large crystals can be used to study many new
properties of excitons -- interaction between excitons and the feasibility
of making lasers based on cuprous oxide crystals.

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USSR

KOVALEV, B. A., VERESHCHIN, A. F., SHIRUNOVA, S. T., KHALFIROVA, A. K.

"Concerning the Question of the Possibility of Developing Low-Voltage Electroluminescent Capacitors"

Translation: The authors consider the feasibility of making low-voltage powder electroluminescent devices. A study is made of the effect which the thickness of the luminescent layer, the filling of the luminescent composition in the dielectric and the permittivity of the material in the reflecting layer have on the distribution of voltage between the reflecting and luminescent layers. It is shown on the example of a blue electroluminescent device that a brightness of 11-12 nits can be produced at a voltage of 50 V and a frequency of 400 Hz when the thickness of the luminescent layer is 10-13 microns, the weight ratio of luminescent composition to dielectric is 3 to 1, the effective permittivity of the reflecting layer is 600 or more, and the thickness of the reflecting layer is 7-20 microns. Test results are presented for experimental CRT models. Bibliography of 6 titles. Resumé.

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ARBUZOV, M. P., KHAYENKO, B. V., and KACHKOVSKAYA, E. T., Institute of the'
Problems of Material Science, Academy of Sciences UkrSSR

"Investigation of the Real Structure of Titanium Mononitride in the Region
of Its Homogeneity"

Abstract: The boundaries of the homogeneity region of titanium mononitride,
the concentration dependence of its lattice periods, and its density in the
annealed and tempered (from $1400^{\circ}C$) states are specified for equilibrium
samples. After annealing and tempering, titanium mononitride possesses
throughout the whole homogeneity region a NaCl-type structure with statis-
tical disposition of titanium atoms in the metallic sublattice and of
nitrogen atoms in the metalloid sublattice. The actual disposition of the
atoms in sublattices is explained by a comparison of values of reflection
factors and theoretically calculated values. The degree of filling each
of the sublattices with titanium and nitrogen atoms, depending on the
nitrogen content of titanium mononitride, is determined. Two figures,
two tables, six formulas, twelve bibliographic references.

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1/2   025   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--REAL STRUCTURE OF THE HIGHER VANADIUM CARBIDE -U-

AUTHOR-(03)-ARBUZOV, M.P., FAK, V.G., KHAYENKO, B.V.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 196-9

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, VANADIUM COMPOUND, CARBIDE,
CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0754   STEP NO--UR/0070/70/015/001/0196/0199

CIRC ACCESSION NO--AP0107296
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0107296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANNEALED (1500-1950DEGREES)
SAMPLES OF V CARBIDE WERE STUDIED BY X RAY DIFFRACTION. AT 43-5 AT.
PERCENT C CONTENTS, THE SAMPLES HAVE A STRUCTURE OF NACL TYPE ONLY; FOR
C IS GREATER THAN 45 AT. PERCENT, SOME VERY WEAK REFLECTION LINES, THE
INTENSITY OF WHICH ARE MAX. FOR THE COMPN. VC SUB0 TIMES 88, WERE ALSO
OBSD. IN THE DIFFRACTION PATTERNS. FOR THE INTERPLANAR DISTANCES OF THE
CUBIC UNIT CELL, ALPHA EQUALS 8.334. IN AGREEMENT WITH D. (EXPTL.)
EQUALS 5.67, 32 V ATOMS AND SIMILAR TO 28 C ATOMS OCCUR IN THE UNIT CELL
OF VC SUB0 TIMES 88, SPACE GROUP P4 SUB1 32 (P4 SUB3 32). THE
COMPLEMENTARY REFLECTIONS SHOW AN ORDERED DISTRIBUTION OF VACANCIES IN
THE SUBLATTICE OF C WITH DOUBLED LATTICE PARAMETER (ALPHA EQUALS 2A
SUB1) AND ALSO SLIGHT SHIFTS (0.07-0.08 ANGSTROM) OF V NEAREST OT THESE
VACANCIES IN THE DIRECTION OF A VACANCY NODE. THE SAME TYPE OF
DIFFRACTION SPECTRUM OF COMPLEMENTARY REFLECTIONS, WAS OBSD. ALSO FOR
THE CONCNS. VC SUB0 TIMES 82 MINUS VC SUB0 TIMES 88.

USSR

UDC 619:616.988.43.085.37

KALMYKOV, V. A., NURIYEV, G. G., ROMANOVICH, T. N., and KHAYERTYNOV, S. Kh., Kazan' Veterinary Institute, Kazan'

"Use of a Transplantable Line of Cattle Embryo Kidney Cells for the Preparation of a Vaccine Against Foot-and-Mouth Disease"

Moscow, Veterinariya, No 5, May 73, pp 62-64

Abstract: Foot-and-mouth disease virus of strain A_{22} 550 and of an epizootic A strain was cultured on a monolayer culture of transplantable cattle embryo kidney cells (CEKC). The virus that had been cultured on CEKC was inactivated with hydroxylamine, whereupon the virus suspension was freed of the excess hydroxylamine by dialysis. An experimental vaccine was prepared by combining 70% of the inactivated virus suspension with 25% of a 6% $Al(OH)_3$ suspension, 0.1% quinosol, and 5% glycerin. Saponin (0.05%) or vitamin B_{12} was added as an adjuvant. The activity of the vaccine was estimated on the basis of the antigenic effect on rats, the index of resistance for mice 4-5 days old, and the protective dose for adult mice. The effect of the number of passages on CEKC on the activity of the vaccine was determined. The antigenic activity of the vaccine derived from the epizootic strain was the

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USSR

KALMYKOV, V. A., et al., Veterinariya, No 5, May 73, pp 62-64

same as that of the vaccine prepared for the strain A_{22} 550, but the index of resistance produced by it was somewhat lower. The vaccine to which vitamin B_{12} had been added was somewhat more active than that prepared with saponin.

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UNCLASSIFIED   PROCESSING DATE--03JUL70

TITLE--IMPACT STRENGTHENING OF HARD ALLOY TOOLS--U-

AUTHOR--KHAYET, G.L., UKRAINTSEV, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 1, 1970, PP 32-35

DATE PUBLISHED-------70 .

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MACHINE TOOL, METAL HARDENING, SHOT BLASTING, COBALT
CONTAINING ALLOY, TUNGSTEN CONTAINING ALLOY, TOOL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0190   STEP NO--UR/0122/70/000/001/0032/0035

CIRC ACCESSION NO--AP0046969
                        UNCLASSIFIED

Acc. Nr.: _AP0046869_   Ref. Code: _URO122_

USSR   UDC 621.9.025.13:669.018.25/:621.787.6

KHAET, G. L., Candidate of Technical Sciences and UKRAINTSEV,
G. A., Engineer

"Impact Strengthening of Hard Alloy Tools"

Moscow, Vestnik Mashinostroyeniya, No 1, 1970, pp 32-35

Abstract: The results of tests conducted for tool strengthening
by a blast of metal spheres of 0.1 mm in diameter and by hydro-
abrasion, are described. The tests were conducted with 76.2 x
19 x 1.27 mm plates of different alloys, clamped in a special
jaw, with a blast directed normally to the plates. It was observed
that the plate deflection under blast increased rapidly with time,
but after 1-2 minutes slowed down and after 3-5 m. ceased com-
pletely. Diagrams of residual stress, calculated from plates
deflection, presented in a graph show that residual compression
stresses are up to 60-80 kg/mm^2 with 0.1 mm thickness of hardened
layer. It was established that substantial residual stresses

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19790190

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may be obtained by blast method on hard alloys with various co-
balt contents. The single and double tungsten alloys are less
susceptible to strengthening. In order to check the efficiency
of surface strengthening of hard alloy tools and to establish the
rational domain of application of this method to industry, ex-
tensive performance tests were conducted by different tool plants.
Their results presented in a table show, that the strengthening
of the entire tool is recommended for rough and semi-finish jobs.
It is stated that the blast process for strengthening is used
simultaneously for cleaning the tools from scales and solder.
The economy obtained by the application of this method to current
production is emphasized. Original article has 3 figures and 2
tables.

½   27

19790191

UDC 536.46:533.6

USSR

BLOSHENKO, V. N., MERZHANOV, A. G., PEREGUDOV, M. I., KHAYKIN, B. I.

"Toward a Theory of the Gas-Phase Combustion of a Drop"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 227-233 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B938)

Translation: The gas-phase combustion of a drop of liquid fuel close to critical conditions is considered on the basis of the inertia of the gas medium, and the validity of substituting the equations of multicomponent diffusion for the equations of independent diffusion ordinarily used is also analyzed. A computer solution to the problem is given. It is shown that it is impossible to neglect the inertia of the gas medium in problems concerning the combustion of a droplet and also that the drop is completely evaporated under critical conditions at the moment of combustion, and that the combustion picture at small distances from the limit considerably depend on the magnitude of the total pressure in the gas phase (or in the evaporation intensity which is defined as the evaporation intensity in the absence of chemical reaction).

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USSR

BLOSHENKO, V. N., et al, Goreniye i vzryv, Moscow, "Nauka", 1972, pp 227-233

It is shown that the multicomponent property of the gas medium has a considerable effect on the combustion process. 14 ref. Authors' abstract.

2/2

USSR   UDC: 662.612.3
YUKHVID, V. I., MAKSIMOV, E. I., MERZHANOV, A. G., KHAYKIN, B. I.,
and KOZLOV, V. S.

"Combustion Mechanism of Condensed Systems With Solid Admixtures
in a Mass Force Field"

Novosibirsk, Fizika goreniya i vzryva, No 2, 1973, pp 235-240

Abstract: This paper presents the results of experiments to study
the rarely examined case of the combustion of systems with non-
agglomerating admixtures. The experiments were conducted in a
mass force field on compositions of ammonium perchlorate and tita-
nium. The assumption of non-agglomeration is based on the fact
that the melting point of Ti is, at 1700^{0}, much higher than that of
the perchlorate, at 1100^{0} C. A diagram of the centrifuge in which
the experiments were conducted is given together with a descrip-
tion of the experimental method. The rate of combustion was mea-
sured by film photography. The reader is referred to an earlier
paper (B. B. Serkov, et al, FGV, 1968, 4, 4) for a more detailed
description of the apparatus and methodology. The combustion rate
was measured as a function of accelerations in the interval of 36
to 1200 g at room temperature. A model of the combustion process is devised
to explain the experimental results.
1/1

UDC 629.7.036.536.46

USSR

BLOSHENKO, V. N., MERZHANOV, A. G., PEREGUDOV, N. I., and KHAYKIN, B. I.

"Formation of an Unsteady Diffusive Combustion Front During the Ignition of a Drop of Liquid Fuel"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972--Sbornik(11th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972--Collection of Articles), 1972, pp 42-43 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.11. Resume)

Translation: A theoretical investigation is conducted of the process of the formation of an unsteady diffusive combustion front during the ignition of a quiescent drop of evaporating liquid fuel in an inorganic gaseous atmosphere containing an oxidant. The investigation was conducted for a thermal ignition mechanism and transition from ignition to unsteady diffusive combustion. During the analysis, account was taken of the unsteadiness of the process of heat and mass exchange in the gas medium. It was established that on the basis of the nature of the process taking place, the transition from ignition to unsteady diffusive combustion may be represented as an aggregate of the successive stages: formation of an unsteady diffusive combustion front -- unsteady diffusive combustion.

1/1

"Multizone Burning of Condensed Systems"

Abstract: In the general case, combustion of condensed systems takes place in stages, and the combustion front is multizonal. Investigation of a two-zone model has shown that one of the zones predominates in multizone burning. The velocity of the front is equal to that of the predominant zone, but when there is a change in the parameters of the system, there may be a switch in the predominant role from one zone to another, as well as merging and splitting of zones. A generalization of the two-zone model with possibilities for transition to analysis of a complex multizonal front is considered, and it is shown that for a front with two reactions (in the condensed phase and in the gas) and dispersion, only three variants of the heat-releasing zones are possible (two three-zonal and one two-zonal). All possible types of relations are found for the burning rate as a function of the depth of dispersion.

1/1

Reaction Kinetics

UDC 536.46

USSR

ROMANOV, E. N., and KHAYKIN, B. I., Institute of Chemical Physics, USSR
Academy of Sciences, Moscow

"Flame Propagation through Particle Suspension in a Gas"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 1, Nov-Dec 1971, pp 144-147

Abstract: In the case of a combination of particles or fuel droplets suspended
in a gaseous mixture containing an oxidizer, if the particles are small enough
they will burn with kinetic heating and the combustion of the suspension will
be close to that of a homogeneous system; while the heating zone will be much
wider than the reaction zone, the velocity of the front will depend exponen-
tially on the temperature, etc. But a quite different front structure is
possible.

Various formulas for use in assessing the parameters of flame propagation are
adduced, with consideration of several possible controlling conditions.

1/1

Abstract: General transfer equations in a two-component system are used as the basis in deriving a system of equations which describes the equilibrium of vaporization of a drop when the process takes place at high intensity. The characteristics of vaporization are calculated with regard to Stefan flux, the temperature dependence of the transfer coefficients, the overall pressure differential of the medium due to vaporization, and the difference between the molecular weight of the components of the medium. Expressions are derived for the rate of vaporization, the drop surface temperature, and dimensionless transfer numbers. Generalizing criteria are found which characterize the part played by Stefan flux. Corrections for the rate of vaporization are found which account for the temperature dependence of the transfer coefficients. The pressure differential in the gas is calculated. Vaporization of the drop in an atmosphere of the same vapor is considered. Calculations for water and ethyl alcohol by the proposed formulas show satisfactory agreement with the experimental data of various authors.

1/1

UDC 539.27

USSR

VILKOV, L. V., KHAYKIN, L. S., and EVDOKIMOV, V. V., Moscow State University imeni M. V. Lomonosov

"Electronographic Study of Molecular Structure of $P[N(CH_3)_2]_3$ and $P[N(CH_2)_2]_3$ in the Vapor State"

Moscow, Zhurnal Strukturnoy Khimii, Vol 13, No 1, Jan-Feb 72, pp 7-14

Abstract: Geometric parameters of the tris-dimethylamidophosphite (I) and tris-ethyleneimidophosphite (II) molecules were determined by means of gas electronography at about 100°. Concurrent study of (I) and (II) made it possible to determine whether the correlation between the magnitude of the barrier to the inversion of a pyramidal configuration of the nitrogen bonds and the average value of its valence angle is carried over to the phosphorus derivatives. Principal internuclear distances and average quadratic amplitudes of the vibrations of atomic pairs were determined from the curves of radial distribution using the least square method. Optimal rotational angles of NC_2 groups about the P-N bonds were determined. The configuration of nitrogen atom bonds is nearly planar in (I) and practically pyramidal in (II). An increased r(PN) was noted in (II) as compared to (I).
1/1

- 20 -

USSR   UDC 547.588.1

KHAYKIN, L. S., and VILKOV, L. V., Moscow State University imeni M. V. Lomonosov

"Molecular Structures of Acyclic Organophosphorus Compounds"

Abstract: A review with 231 references. A systematic coverage of the structural data on acyclic phosphorusorganic compounds reported in literature up to 1971 is given. The geometrical parameters found in these compounds are classified in terms of the prevailing concepts on the valence state of the atom in a molecule and types of chemical bonding. On the basis of this classification some general rules of the geometrical molecular structure have been noted. It has been determined that in case of an actual example of the bond type phosphorus-element, their values may vary considerably, exceeding the experimental error. This actually is a manifestation of the influence of the immediate surroundings on these bonds. However, the problem of the interaction of atoms, which are not directly connected is difficult, because the necessary experimental data are missing. This review covers the following subheadings: valence states of the phosphorus atom; the bond lengths and valence angles in trivalent phosphorus compounds; the bond lengths and valence angles in pentavalent phosphorus compounds; and conformational isomerism in acyclic phosphorusorganic compounds.
1/1
- 81 -

USSR   UDC 541.124:532.5

GILINSKIY, S. M., and KHAYKIN, M. L.

"Application of the Boundary-Layer Method to the Solution of Problems Concerning the Movement of Gas Mixtures with Exotic Reactions"

Translation: Solutions of problems dealing with the nonequilibrium hyperonic flow of gas in the vicinity of a wedge and a cone, as well as in front of a moving piston, are obtained by means of the boundary-layer method. Into the equations of gas dynamics for a two-dimensional or axisymmetrical flow, a term is entered which characterizes the supply of heat to the gas as a result of the course of a single irreversible reaction, the rate of which depends exponentially upon the temperature. The solution for two-dimension and axisymmetrical flows is sought in the form of series with respect to the powers of a small parameter, which depends only upon the adiabatic exponent of the gas. An illustration shows the relative position of shock waves for the wedge and the cone, for an equilibrium and frozen reaction and for a nonequilibrium reaction. Pressure profiles on the wedge and on the cone are constructed. Solutions for
1/2

USSR

KHAYKIN, M. S. and YAKUBOVSKIY, A. Yu., Institute of Physical Problems, USSR
Academy of Sciences

"Excitation of Constant Potential Differences by an Ultrahigh-Frequency Field
in Bismuth"

Abstract: The authors investigated the constant potential differences (on the
order of μV) which set in in single crystals of bismuth at helium temperatures
acted on by an ultrahigh-frequency field (with a power on the order of mW) and
a constant magnetic field. They established that two types of emf are excited
in the bismuth samples: (1) Nernst emf, which is the result of heating the
sample with UHF currents and (2) "radio-emf", which is produced by the effect
of UHF magnetoplasma radiowaves which propagate in the bismuth in the presence
of a sufficiently strong magnetic field (on the order of kGs). The authors
also discuss several possibilities for studying radio-emf in metals. The dis-
cussions are rather detailed with numerous references to other works; the
authors use schematics to illustrate and clarify their findings. Figure 1 is
a schematic of the resonator used in the research. Figure 2 shows the record-
ing of the potential difference excited in a sample by a UHF field. Figure 3
1/2

USSR

KHAYKIN, M. S., et al, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2214-2219

gives the curve of emf versus temperature for $H = 1$ kOe. The authors conclude by suggesting that further study, both experimental and theoretical, be made on the phenomenon of exciting radio-emf in metals. The article contains 3 figures and a bibliography of 17 titles.

UDO 621.396.62.028.7:621.391.82

USSR

PENIN, N.A., KHAYKIN, N.SH., YURIST, B.V.

"On The Investigation Of The Noise-Factor Of An Optical Heterodyne Reciver With Impurity Photoresistance"

Abstract: An expression is found for the noise factor F of an optical hetero-dyne receiver with impurity photoresistance and with arbitrary powers of the heterodyne, and for various relations between the resistance of the photo-sensitive semiconductor crystal and the load. The problem of a choice of the parameters of the impurity photoresistance is considered with the object of de-creasing the magnitude of the noise factor F. 3 fig. 7 ref. Received by editors, 12 April 1971.

1/1

UDC 621.376

USSR

VORONIN, V. A., KHAYKIN, N. SH.

"Band Electro-optical Modulator for the Range up to 1 gigahertz"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 153-155

Abstract: The structural design and basic characteristics of a band electro-optical modulator based on high-resistance GaAs are presented. The frequency dependence of the modulation coefficient was measured in the video range. A formula is presented for calculating the critical load frequency. To increase the controlling power it is necessary to increase the load dimensions which in accordance with this formula leads to a decrease in the critical load frequency. The static transmission characteristic, the standing wave coefficient and the frequency characteristic of the optical modulation coefficient were measured. A formula is presented relating the synchronous detector readings to the optical modulation coefficient.

On the basis of the modulator a device with a CO_2-laser was manufactured to take the frequency sensitivity characteristics of radiation receivers sensitive to a wavelength of 10^6 microns. The device operates in the modulation frequency band up to 1 gigahertz.

1/1

UDC: 681.327.11

USSR

IVANENKO, S. D., KLEPIKOV, A. N., KHAYKIN, V. B.

"A Device for Recording Information on an Electrochemical Carrier"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 18, 1970, Author's Certificate No 271888, Filed 18 Dec 68, pp 107-108

Abstract: This Author's Certificate introduces a device for recording infor-
mation on an electrochemical carrier. The unit contains three groups of
electrodes, one of which is made in the form of a flat fixed electrode, while
another is made in the form of plates which are insulated from each other.
The device also contains a cartridge for the carrier, a receiving drum, and
a transport mechanism for the carrier. As a distinguishing feature of the
patent, the speed and reliability of the device are improved by fastening
the third group of electrodes to a movable table and making this electrode
group in the form of needle electrodes arranged in three rows, one of them
corresponding to the common flat electrode, and the other two corresponding
to the insulated plates and set at an angle to the direction in which the
carrier moves.

1/2

USSR

IVANENKO, S. D., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy,
Tovarnyye Znaki, No 18, 1970, Author's Certificate No 271888, Filed 18 Dec
68, pp 107-108
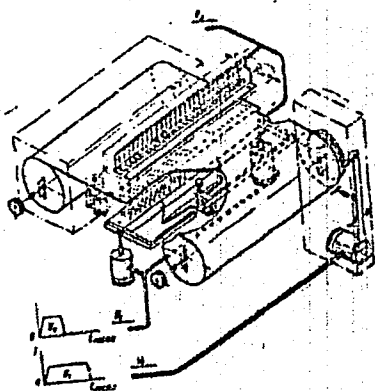
2/2

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USSR

UDC 8.74

KAKURIN, N. YA., KHAYKIN, Z. S.

"Program for Simplifying   and Printing out Logical Formulas Using Digital Computers"

Translation: A study was made of the algorithm and flow chart of the program for finding the parenthetic representations of the switching functions describing the functioning of digital devices using digital computers. The program is executed on the Ural-4 digital computer. It is noted that the results of the experiments on the digital computer confirm the high efficiency of the algorithm. Thus, machine time of 5-10 seconds is required to find the optimal parenthetic representations of functions of 2-4 variables; for functions of 5-7 variables, 45-90 seconds and 10-11 variables, 3-5 minutes.

1/1

USSR   UDC 615.285.7.015:612.018:547.756

KHAYKINA, B. I., and SHILINA, V. F., Laboratory of Biochemistry, All Union
Scientific Research Institute of Hygiene and Toxicology of Pesticides,
Polymer and Plastic Substances, Kiev

"The Effect of Some Chlorinated Organic Pesticides on Serotonin Metabolism"

Abstract: DDT administered orally in 70 mg/kg dose for 2 days or 3.5 mg/kg
dose daily for 5 months (corresponding to 1/5 and 1/100 LD$_{50}$ respectively)
elevated urinary excretion of 5-hydroxyindoleacetic acid by 188 and 105%,
respectively. When Lindane was administered in comparable LD$_{50}$ doses (34
mg/kg for two days or 1.7 mg/kg daily for 3 months) the excretion of 5-
hydroxyindoleacetic acid was increased by 160 and 100%, respectively. This
suggests that a change takes place in the metabolism of serotonin.

1/1

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UNCLASSIFIED   PROCESSING DATE--23OCT70

TITLE--ON THE MODE OF SEVINE ACTION ON THE WORM BLOODED -U-

AUTHOR-(02)-KHAYKINA, B.I., KUZMINSKAYA, U.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY PITANIYA, 1970, NR 3, PP 8-14

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PESTICIDE, TOXICITY/(U)SEVINE PESTICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1181   STEP NO--UR/0244/70/000/003/0008/0014

CIRC ACCESSION NO--AP0123158
                        UNCLASSIFIED

2/2   023
CIRC ACCESSION NO--AP0123158
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LITERATURE SOURSES AND THE
AUTHORS' PERSONAL DATA THAT ARE CONCERNED WITH THE TOXICITY, METABOLISM
AND BASIC BIOCHEMICAL FACTORS UNDERLYING THE SEVINE ACTION UPON THE WORM
BLOODED ARE ADDUCED.   FACILITY: LABORATORIYA BIOKHIMII VSES. N-I
INSTITUTA GIGIYENY I TOKSIKOLOGII PESTITSIDOV, POLIMERNYKH I
PLASTICHESKIKH MASS, KIEV.

Acc. Nr.: AP0030989

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i
Meditsiny, 1970, Vol 69, Nr 1, pp 47-50

SPECIFICITY OF NICOTINAMIDE CO-ENZYMES (NAD AND NADP) DISTRIBUTION
IN CELLULAR STRUCTURES OF THE LIVER AND BRAIN IN PATHOLOGICAL
CHANGES OF CHEMICAL ORIGIN

Pavlova, I.I.; Khaykina, B.I.

Institute of Hygiene and Toxicology of Pesticides, Polymers and Plastics, Kiev

The effect of different doses and exposure periods to the action of the organo-chlorine pesticide DDT on the content of nicotinamide co-enzymes in cellular structures of the liver and brain of albino rats was studied. DDT was administered perorally in amounts of 70 mg/kg three times in succession of in doses of 3.5 mg/kg daily for 5 months. Both with a three-fold introduction of large doses and in a long-term action of small doses of the pesticide a substantial fall of the nicotinamide nucleotides (NAD and NADP) level in the homogenate and their nonuniform distribution in the hepatic cellular structures were revealed. In cellular structures of the brain a uniform decline of the NAD and NADP levels was noted, while protracted introduction of small DDT doses was followed by an appreciable decrease of their content in the mitochondria, due, apparently, to cumulative properties of the pesticide. Falling NAD and NADP content in cellular fractions of the liver and brain is indicative of decreased energy potentialities of the tissues and can be used as one of the early signs of poisoning produced by DDT.

REEL/FRAME

2 mk

19691015

Glass and Ceramics

VIDRO, L. I., MAKHNAVETSKIY, A. S., ZATSMAN, I. R., TROSHIN, N. N., KHAYKINA, M. A., MIKHAYLOVA, Z. G.

"Installation for Measurement of Stresses in Sheet Glass in Reflected Light"

Abstract: The Saratov Affiliate of the State Glass Institute has developed a laser installation for measurement of stresses in sheet glass. A helium-neon laser is used as a light source, the beam of light of which is polarized, then transmitted through the glass, reflected on the second surface of the glass, focussed, compensated and converted to an electric current, measured by an ammeter. The use of the reflection of the light from the second surface of the glass allows all parts of the installation to be located on the same side of the sheet of glass, in many cases the only possible arrangement. The use of the laser allows the light beams reflected from the first and second surfaces of the glass to be fully separated.

1/1

KHAYKIS, L.B.

Construction machinery

TECHNICAL TRANSLATION

FSTC-HT-23- 493-72

ENGLISH TITLE: TECHNICAL SERVICE OF CONSTRUCTION MACHINERY IN MECHANIZED COLUMNS

FOREIGN TITLE: TEKHNICHESKOYE OBSLUZHIVANIYE STROITEL'NYKH MASHIN V MEKHANIZIROVANNYKH KOLONNAKH

AUTHOR: V. G. TAVIS AND L. B. KHAYKIS

SOURCE: MEKHANIZATSIYA STROITEL'STVA, 12/70, pp. 15-16

Translated for FSTC by Eric Peabody, Kanner Associates

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TITLE--PARAMETERS DETERMINING A GAMMA FIELD IN A MEDIUM OF ARBITRARY
   COMPOSITION -U-

AUTHOR--KHAYKOVICH, I.M.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(2), 140-1

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAMMA RADIATION, RADIATION SOURCE, GEOMETRIC FORM, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1234   STEP NO--UR/0089/70/028/002/0140/0141

CIRC ACCESSION NO--AP0115251
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0115251

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA RADIATION FIELD PRODUCED
BY POINT SOURCES IN VARIOUS MEDIA IS UNAMBIGUOUSLY DETED. BY THE
GEOMETRIC SIMILARITY FACTOR AND BY THE EFFECTIVE AT. NO. OF THE MEDIUM,
EQUATIONS FOR THE CALCN. OF THOSE PARAMETERS ARE PRESENTED.

UNCLASSIFIED

UDC 662.75:662.61

USSR

BLINOV, V. I., LUSHPA, A. I., KHAYLOV, V. M., and KHUDYAKOV, G. N.

"Burning Rich Kerosene-Air Mixtures in a Tunnel-Type Combustion Chamber"

Moscow, Goreniye i vzryv -- sb. (Combustion and Detonation -- Collection of Works), Nauka Publishing House, 1972, pp 416-420 (from Referativnyy Zhurnal -- Teploenergetika, No 3, 1973, Abstract No 3T71)

Translation: The authors present the results of experimental research in the effect of the excess air ratio ($\alpha = 1.0$-0.3), the air temperature ($T_a = 0$-$1,000^\circ C$), and the length of the combustion chamber (0.5-0.2 meters) on the degree of approximation of the mixture and the combustion products' parameters to their equilibrium values in a chamber with an internal diameter of 100 mm and at a pressure of 1.1 kg/cm^2. As the values of α and T_a are reduced, the difference between the experimental and theoretical parameters increases, while the curves showing the change in the experimental data along the length of the chamber have a greater slope. The authors show that the process of achieving an equilibrium state is limited by the heterogeneous combustion of the solid carbon given off during the thermal decomposition of the kerosene in the initial combustion zone. (4 illustrations; 5 bibliog. ref.)

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USSR

UDC 629.7.036.3:536.46

BLINOV, V. I., LUSHPA, A. I., KHAYLOV, V. M., and KHUDYAKOV, G. N.

"The Combustion of Rich Kerosene-Air Mixtures in a Tunnel-Type Chamber"

Moscow, Goreniye i Vzryv--Sbornik (Combustion and Explosion--Collection of Works), Nauka, 1972, pp 416-420 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 2, 1973, Abstract No 2.34.26. Resume)

Translation: Results are presented of an experimental investigation of the influence of the air-excess coefficient ($\alpha = 1.0 -- 1.3$), the air temperature ($T_{air} = 0 -- 1000°C$), and the combustion-chamber length ($0.5--2.0$ m) upon the degree of approximation of the composition and parameters of the combustion products to their equilibrium values in a chamber with an inner diameter of 100 mm at a pressure of 1.1 absolute atmospheres. The result is obtained that as α and T_{air} decrease, the difference between the experimental and theoretical parameters increases, and the curves of change of the experimental data with respect to the chamber length become flatter. It is shown that the process of attainment of the equilibrium state is limited by the heterogeneous combustion of solid carbon escaping during the thermal decomposition of kerosene in the initial zone of combustion. 4 figures. 5 references.

1/1

1/2   026   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--DYNAMIC OF SUPERHARMONIC VIBRATION DRIVE MECHANISM -U-

AUTHOR-(02)-BYKHOVSKIY, I.I., KHAIMCHAYEV, I.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, MASHINOVEDENIYE, NR 1, JAN-FEB 70, PP 31-38

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--DYNAMIC SYSTEM, DRIVE TRAIN, HARMONIC OSCILLATION, MECHANICAL
    VIBRATION, FREQUENCY CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1203
                              STEP NO--UR/0380/70/000/001/0031/0038
CIRC ACCESSION NO--AP0103100
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0103100   UNCLASSIFIED   PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SUPER HARMONIC VIBRATION DRIVE
MECHANISM IN THE FORM OF A VIBRATING SYSTEM WITH FIVE DEGREES OF FREEDOM
WITH DEBALANCING EXCITER OF VIBRATIONS OF PENDULUM TYPE IS STUDIED. THE
SYSTEM CONSISTS OF A BOTTOM TABLE SUPPORTED BY PLIABLE SPRINGS. A
PENDULUM WITH BUILT IN DEBALANCER AND REACTION FLYWHEEL JOINED BY A
TORSION UNIT IS SUSPENDED FROM THE TABLE. THE ROTATION FROM THE DRIVE
IS TRANSMITTED TO THE FLYWHEEL AND FURTHER ON THROUGH TORSION UNIT TO
DEBALANCER. THE UPPER TABLE IS JOINED WITH THE BOTTOM ONE BY WORKING
SPRINGS. OF THE TWO GROUPS OF THE SYSTEM, ONE SERVES FOR RESONANCE
AMPLIFICATION OF THE SECOND HARMONIC OF THE TORSIONAL VIBRATIONS OF THE
DEBALANCER, AND THE SECOND, FOR THE AMPLIFICATION OF THE THIRD HARMONIC
OF THE VIBRATIONS OF VIBRATION EXCITER FRAME. THE APPROXIMATE FORMULAS
FOR THE AMPLITUDES AND INITIAL PHASES OF STEADY VIBRATIONS ARE OBTAINED.
THE AMPLITUDE FREQUENCY AND PHASE FREQUENCY CHARACTERISTICS ARE
PRESENTED.

Mechanical

USSR

BYKHOVSKIY, I. I., and KHAIMCHAYEV, I. S., Moscow

"Dynamic of Superharmonic Vibration Drive Mechanism"

Moscow, Mashinovedeniye, No 1, Jan-Feb 70, pp 31-38

Abstract: A superharmonic vibration drive mechanism in the form of a vibrating system with five degrees of freedom with debalancing exciter of vibrations of pendulum type is studied. The system consists of a bottom table supported by pliable springs. A pendulum with built in debalancer and reaction flywheel joined by a torsion unit is suspended from the table. The rotation from the drive is transmitted to the flywheel and further on through torsion unit to debalancer. The upper table is joined with the bottom one by working springs. Of the two groups of the system, one serves for resonance amplification of the second harmonic of the torsional vibrations of the debalancer, and the second, for the amplification of the third harmonic of the vibrations of vibration exciter frame. The approximate formulas for the amplitudes and initial phases of steady vibrations are obtained. The amplitude-frequency and phase-frequency characteristics are presented.

1/1

SURFACE DESTRUCTION OF RUBY CRYSTALS
BY LASER RADIATION

Yu. K. Danilevko, A. A. Manenkov, A. M. Prokhorov,
V. Ya. Khaimov-Mal'kov

Processes of surface destruction of ruby crystals under the action of radiation from a ruby laser are investigated experimentally. The dependence of the threshold destruction power on duration of laser pulses ranging from $3 \cdot 10^{-7}$ to $4 \cdot 10^{-4}$ sec and the effect of structure-optical properties of the surfaces on destruction threshold are studied. A theory of thermal destruction on absorbing surface defects is developed. An expression is obtained for the dependence of the destruction power on duration of the light pulses. Good agreement is found between the experimental data and the theory of thermal destruction proposed.

TITLE--DEPENDENCE OF THE DISTRIBUTION OF AN IMPURITY ON GROWTH RATE DURING
   THE CRYSTALLIZATION CF ISOMORPHIC SYSTEMS FROM SOLUTION -U-

AUTHOR-(02)-ZHMUROVA, Z.I., KHAYMOVMALKOV, V.YA.

CCUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 136-41

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTALLIZATION, CRYSTAL IMPURITY, ZINC COMPOUND, NICKEL
   COMPOUND, POTASSIUM COMPOUND, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0905   STEP NO--UR/0070/70/015/001/0136/0141

CIRC ACCESSION NO--AP0116415
                              UNCLASSIFIED

CIRC ACCESSICN NO--AP0116415
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION CUEFF., K OF AN
   IMPURITY BETWEEN THE LIQ. AND SOLID PHASE DURING CRYSTN. IN THE
   ISOMORPHIC SYSTEM ZNK SUB2(SO SUB4) SUB2.6H SUB2 O-NIK SUB2 (SO SUB4)
   SUB2.6H SUB2 O WAS STRONGLY DEPENDENT ON THE DEGREE OF SUPERSATN. BUT,
   AT CONST. SUPERSATN., PRACTICALLY INDEPENDENT OF THE RATE OF STIRRING,
   CONCN. OF THE IMPURITY (NI PRIME2POSITIVE), AND THE VISCOSITY OF THE
   SOLN., WHICH HOWEVER, STRONGLY AFFECTED THE RATE OF GROWTH OF THE (110)
   FACE OF THE CRYSTALS.   THE INDEPENDENCE OF K AND THE GROWTH RATE SHOWS
   THAT THE INCLUSICN OF THE IMPURITY INTO THE CRYSTAL IS GOVERNED BY
   EXCHANGE PROCESSES WHICH TAKE PLACE BETWEEN THE SURFACE LAYER OF THE
   CRYSTAL AND THE SOLN. LAYER ADHERING TO IT.   FACILITY: INST.
   KRISTALLCGR., MOSCOW, USSR.

UNCLASSIFIED

TITLE--DISTRIBUTION OF ISOMORPHIC IMPURITIES DURING CRYSTALLIZATION FROM
   AQUEOUS SOLUTIONS -U-

AUTHOR-(02)-ZHMUROVA, Z.I., KHAYMOVMALKOV, V.YA.

CCUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 142-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTALLIZATION, AQUEOUS SOLUTION, ALUMINUM COMPOUND, ZINC
   COMPOUND, AMMONIUM COMPOUND, CRYSTAL IMPURITY

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0904   STEP NO--UR/0070/70/015/001/0142/0148

CIRC ACCESSICN NO--AP0116414
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0116414
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE DISTRIBUTION
OF ISOMORPHIC IMPURITIES DURING CRYSTN. FROM AQ. SOLNS. ON THE DEGREE OF
SUPERSATN., TEMP., CONCN. OF THE IMPURITY, AND THE GROWTH RATE OF A
GIVEN CRYSTAL FACE WAS STUDIED FOR THE FOLLOWING SYSTEMS: (1) ALK(SO
SUB4) SUB2.12H SUB2 O-CRK(SO SUB4) SUB2.12H SUB2 O; (2) AL(NH SUB4)(SO
SUB4) SUB2.12H SUB2 O-ALK(SO SUB4) SUB2.12H SUB2 O; (3) K SUB2 SO
SUB4-K SUB2 CRO SUB4; (4) ZN(NH SUB4) SUB2 (SO SUB4) SUB2.6H SUB2
O-NI(NH SUB4) SUB2(SO SUB4) SUB2.6H SUB2 O; (5) ZN(NH SUB4) SUB2 (SO
SUB4) SUB2.6H SUB2 O. THE FOLLOWING CONCLUSIONS WERE MADE: (1) IF
THE IMPURITY IS MORE SOL. THAN THE BASIC SUBSTANCE, THE DISTRIBUTION
COEFF. K IS SMALLER THAN 1, WHEREAS K IS GREATER THAN 1 FOR LESS SOL.
IMPURITIES; (2) THE INCLUSION OF THE IMPURITY IN THE CRYSTAL DECREASES
WITH DECREASING DEGREE OF SUPERSATN. IN SYSTEMS WITH K SMALLER THAN 1
AND INCREASES IN SYSTEMS WITH K GREATER THAN 1; (3) THE DISTRIBUTION
EVEN OF ISOMORPHIC IMPURITIES IS DEPENDENT OF THE GROWTH PYRAMID OF A
GIVEN FACE. (4) THE BERTHELOT NERNST LAW FOR ISOMORPHIC SYSTEMS HOLDS
OVER A WIDE RANGE OF CONCNS. AND SUPERSATNS., EVEN UNDER NONEQUIL.
CONDITIONS; (5) THE DIFFERENCE IN THE INCLUSION OF THE IMPURITY BETWEEN
THE GROWTH PYRAMIDS INCREASES WITH INCREASING IMPURITY CONCN. AND (6)
NO DIRECT RELATION EXISTS BETWEEN THE GROWTH RATE OF A GIVEN CRYSTAL
FACE AND THE INCLUSION OF THE IMPURITY.   FACILITY: INST.
KRISTALLOGR., MOSCOW, USSR.

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GAMMA GAMMA CORRELATIONS FOR ORIENTED NUCLEI IS INVESTIGATED. THE
POSSIBILITY IS CONSIDERED OF DETG. THE SIGN OF THE QUADRUPOLE MOMENT OF
EXCITED NUCLEI. THE EFFECT OF EXTERNAL FIELDS ON THE ANGULAR
DISTRIBUTION OF THE DOUBLE GAMMA QUANTA, EMITTED BY ORIENTED NUCLEI, AND
THE SIGN OF THE QUADRUPOLE MOMENT ARE DETD. THE ANGULAR CORRELATION OF
THE GAMMA QUANTA IS BEST DESCRIBED BY INTRODUCING POLARIZATION TENSORS
OF THE R SUBGN NUCLEI, WHICH ARE MATH. CONNECTED WITH THE MATRIX OF THE
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