1/2   028   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--THE INFLUENCE OF PYROGENAL ON THE LIVER OF RATS SUBJECTED TO THE
   EFFECT OF CCL SUB4 -U-
AUTHOR-(04)-AVRAMENKO, M.M., ODINOKOVA, V.A., DROZDOVA, G.A., GLADYSHEV,
   B.N.
COUNTRY OF INFO--USSR

SOURCE--BYULLETIN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
   NR 3, PP 43-46
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGAN REGENERATION, LIVER, RAT, TOXICOLOGY, CARBON
   TETRACHLORIDE, CYTOPLASM, GLYCOGEN, ALBUMIN, CHOLINESTERASE, ENZYME
   ACTIVITY, BETA GLOBULIN, PYROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/0851   STEP NO--UR/0219/70/069/003/0043/0046

CIRC ACCESSION NO--AP0052285
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0052285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF PYROGENAL ON PROCESSES OF REGENERATION IN THE LIVER IN RATS WITH EXPERIMENTAL CCL SUB4 HEPATOSIS WAS STUDIED. AS THE RESULT OF PYROGENAL TREATMENT IN THE LIVER TISSUE OF ANIMALS THERE APPEARED SIGNS OF REGENERATION; THE NUMBER OF DIVIDING CELLS INCREASED, THERE APPEARED LARGE HEPATOCYTES WITH A SIGNIFICANT ACCUMLATION OF GLYCOGEN IN THE CYTOPLASM. THE EMPLOYMENT OF PYROGENAL WAS CONDUCTIVE TO NORMALIZATION OF THE PICTURE OF BLOOD SERUM PROTEINS, AN INCREASED CONTENT OF ALBUMINS AND A REDUCED CONTENT OF BETA GLOBULINS DOWN TO NORMAL VALUES. THERE WAS FOUND NO STATISTICALLY SIGNIFICANT CHANGES IN THE ACTIVITY OF CHOLINESTERASE AND HISTIDASE IN THE BLOOD SERUM AND IN THE HOMOGENATE OF HEPATIC TISSUE OF RATS RECEIVING PYROGENAL, IN COMPARISON WITH ANIMALS NOT GIVEN THE LATTER. DURING PYROGENAL TREATMENT IN THE PROCESS OF CCL SUB4 INTOXICATION THERE WAS NOTED A MORE RAPID NORMALIZATION IN THE CONTENT OF ALBUMINS AND BETA GLOBULINS OF THE BLOOD SERUM DURING RECOVERY.

1/2   015   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--INFLUENCE OF MIXING ON THE EFFECTIVENESS OF LIQUID ORGANIC COMPOUND
   SEPARATION OF ZONE MELTING -U-
AUTHOR-(03)-AVRAMENKO, N.V., DUGACHEVA, G.M., ANIKIN, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 356-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZONE MELTING, ORGANIC CHEMISTRY, CHEMICAL COMPOUND, BENZENE,
   HEPTANE, MATERIAL MIXING

CONTROL MARKING--NO RESTRICTIONS'

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0446   STEP NO--UR/0076/70/044/002/0356/0359

CIRC ACCESSION NO--AP0121120
                        --UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121120

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SEPNS. OF LIQ. ORG. COMPDS. BY
ZONE M. AT ROOM TEMP. WITH MIXING OF THE LIQ. ZONE WERE MADE USING THE
APP. EMPLOYED FOR ZONE M. OF LOW M. COMPDS.   MECH. MIXING OF THE COMPDS.
WAS THE SAME AS THAT USED WITH ZONE MELTING OF SOLID ORG. COMPDS., WITH
MIXING OF THE LIQ. ZONE DURING ZONE M. OF TOLUENE REDUCED THE QUANTITY
OF IMPURITIES, COMPARED WITH RESULTS WHEN THE LIQ. ZONE WAS NOT MIXED.
ZONE M. OF BENZENE-N-HEPTANE WAS CARRIED OUT TO DET. THE OPTIMAL
CONDITIONS OF SEPN.   THE DEPENDENCE OF THE CONCN. OF IMPURITIES IN
BENZENE ON THE INTENSITY OF MIXING IN THE LIQ. ZONE WAS DISCUSSED.   THE
CORRESPONDING DEPENDENCE CURVE SHOWS A MAX.   FURTHER INCREASING OF
INTENSITY OF MIXING LEADS TO THE FORMATION OF HOMOGENEOUS CRYSTALS
(I.E., A HIGHER PROBABILITY OF CAPTURE OF THE IMPURITIES).   THE RESULTS
WERE CONFIRMED BY CHROMATOGRAPHIC AND CRYOSCOPIC ANAL.   FACILITY:
KHIM. FAK., MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.373.531.3

AVRAMENKO, V. D.

"A High-Linearity Sawtooth Voltage Generator"

V sb. poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Technical Electrical Communications--collection of works), Moscow, "Svyaz'", 1970, pp 106-112 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract 1G237)

Translation: The author considers operation of the circuit of a sawtooth voltage generator with tracking feedback. An analysis is made of the operation of the oscillator with regard to the effect of feedback on the coefficient of nonlinearity of the output voltage. An oscillator circuit is presented which provides a linearly changing voltage with coefficient of nonlinearity close to zero. Resumé.

1/1

USSR

UDC 539.3

AVRAMENKO, S. A.

"Calculating Multisided Convex Shells Reinforced with Ribs"

V sb. Prostranstv. konstruktsii v Krasnovarsk. kraye (Three-Dimensional Struc-
tures in the Krasnoyarsk Region -- Collection of Works), Krasnoyarsk, 1972,
pp 39-50 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V117)

Translation: Differential equations for the equilibrium and concurrence of
deformations of multisided convex shells of plane panels reinforced with ribs
along the lines of the breaks are derived. The breaks in the middle surfaces
are described as impulses in the curvature of the shell by using delta functions.
The solution of the system of differential equations obtained is found in the
form of binary trigonometric series. 9 ref. Author's abstract.

1/1

USSR

AVRAMENKO, V. G., SHIRNYUK T. Ya., and SUVOROV, N. N., Moscow Chemico-Technological Institute imeni D. I. Mendeleyev, Moscow

"Derivatives of Indole. LXXXV. The Willgerodt-Kindler Reaction With 3-Acylindoles"

Abstract: 3-Acylindoles Ind-C(=O)(CH$_2$)$_n$H (Ind = 3-indolyl; n = 1-4) (0.01 mole) were subjected to the Willgerodt-Kindler reaction carried out with sulfur (0.02 g-at) and morpholine (0.2 mole) at the boiling point of morpholine. Upon boiling of the reaction products with NaOH in EtOH, 3-indolylalkanic acids Ind-(CH$_2$)$_n$COOH were obtained with a yield of 30, 21, 14, and 1% from the ketone with n equal to 1, 2, 3, and 4, respectively. The 3-indolylalkanic acid with n = 1 (3-indolylacetic acid, "heteroauxin") has auxin properties. The thiomorpholides of the indolylalkanic acids with n = 1,2,3, which formed as intermediate products in the first stage of the reaction, were also isolated. On conversion of skatylacetone Ind-(CH$_2$)$_2$C(=O)Me with S and morpholine, 3-indolylbutyric acid Ind-(CH$_2$)$_3$·COOH was obtained with a yield of 40-48%.
1/1

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USSR

PREOBRAZHENSKAYA, M. N., ORLOVA, L. M., LIBERMAN, S. S., KOSINA, G. S., AVRAMENKO, V. G., SOROKINA, N. P., and SUVOROV, N. N., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Synthesis and Investigation of Pharmacological Activity of the Indole Series Hydroxyketones"

Abstract: 10 g of 3-chloroacetylindole (I) in 300 ml dimethylformamide is added to 18.3 g molten potassium acetate, the mixture is stirred at 60-70°, filtered, and evaporated. The residue is recrystallized from water yielding 44% of 3-acetoxyacetylindole (II), m.p. 139-140°. Analogously a series of other 3 α-acetoxyacylindoles is obtained. To synthesize 3-benzoylhydroxyacetylindole (III), m.p. 187-189°, an analogous procedure was used employing potassium benzoate instead of the acetate. When (II) was heated with 2% NaOH solution, it hydrolysed easily yielding 3-hydroxyacetylindole (IV), m.p. 167-169°. 5-Acetoxyacetylindole, m.p. 123-124.5° was obtained similarly to (II) starting from 5-hydroxyacetylindole, m.p. 177-179°. In each group several representative compounds were synthesized using reported reactions. 3-Hydroxyacetylindole was found to have neurotropic activity; modifications in its structure as a rule led to a lower biological activity.
1/1

TITLE--INDOLE -U-

AUTHOR--(03)-SUVOROV, N.N., AVRAMENKO, V.G., SHKILKOVA, V.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,904
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(7)
DATE PUBLISHED--04FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, INDOLE, HYDRAZONE, OXIDE
 CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1776   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132042
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0132042
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDOLE WAS PREPD. BY PASSING THE
PHENYLHYDRAZONE OF ACH THROUGH A LAYER OF HETEROGENEOUS CATALYST, SUCH
AS METAL OXIDES, HEATED TO 350 PLUS OR MINUS 10DEGREES.
FACILITY: MENDELEEV, D. I., CHEMICAL TECHNOLOGICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

USSR   UDC: 547.752.07

SUVOROV, N. N., AVRAMENKO, V. G., SHKIL'KOVA, V. N., Moscow Institute of
Chemical Technology imeni D. I. Mendeleyev Moscow, Ministry of Higher and
Secondary Specialized Education RSFSR

"A Method of Producing Indole"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, 4 Feb 70, p 23, patent No 262904, filed 13 Jul 64

Translation: This Author's Certificate introduces: 1. A method of pro-
ducing indole with a high degree of purity. Acetaldehyde vinylhydrazone
is passed through a heated heterogeneous layer of metal oxides acting as
a catalyst. 2. The method as given above differs in that the layer of
heterogeneous catalyst is heated to a temperature of the order of $350 \pm 10^\circ$C.

1/1

1/2   015   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--INDOLE DERIVATIVES. V. SYNTHESIS AND TUBERCULOSTATIC ACTIVITY OF
   INDOLE,3,ALKANOIC ACIDS -U-
AUTHOR-(05)-AVRAMENKO, V.G., PERSHIN, G.N., MUSHULOV, P.I., MAKEYEVA,
   O.O., YERYSHEV, B.YA.
COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 15-18

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDOLE DERIVATIVE, ORGANIC ACID, CHEMICAL SYNTHESIS, MOLECULAR
   STRUCTURE, TUBERCULOSIS

CONTROL MARKING--NO RESTRICTIONS,

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0361   STEP NO--UR/0450/70/004/003/0015/0018

CIRC ACCESSION NO--AP0121049
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0121049
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 0.05 MOLE INDOLE, 0.1
  MOLE OMEGA CHLORO OR BROMOALKANECARBOXYLIC ACID, 0.4 MOLE KOH AND 50 ML
  H SUB2 O WAS PLACED IN AN AUTOCLAVE, TEMP. RAISED TO 240-50DEGREES
  DURING 2-2.5 HR AND KEPT 12 HR AT THIS TEMP. TO YIELD 10 I AND THEIR
  ESTERS AND HYDRAZIDES. THE TUBERCULOSTATIC ACTIVITY OF I AND I
  HYDRAZIDES IS GIVEN.   FACILITY: MOSK. FHIM.-TEKHNOL. INST. IM.
  MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR A UDC 615.281.221.1:547.757

AVRAMENKO, V. G., PERSHIN, G. N., MUSHULOV, P. I., MAKEYEVA, O. O.,
YERYSHEV, B. YA., SHAGALOV, L. B., SUVOROV, N. N., Moscow Institute
of Chemical Technology imeni D. I. Mendeleyev, Moscow, Ministry of
Higher and Secondary Specialized Education RSFSR; All-Union Scien-
tific Research Chemical and Pharmaceutical Institute imeni S.
Ordzhonikidze, Moscow, Ministry of Health USSR

"Indole Derivatives. Part V. Synthesis and Tuberculostatic Acti-
vity of Omega-Indolyl-3-Alkannic Acids"

Abstract: Indolylalkannic acids have been the subject of numerous
studies for quite some time. Most of this research, however, has
been devoted to lower members of the series of indolylalkannic acids,
namely indolyl-3-acetic, β-indolyl-3-propionic and γ-indolyl-3-butyric
acids. It is expected that some of these compounds may possess
physiological activity. Of particular interest is ω-indolyl-3-
undecanoic acid, which is the indole analog of hydnocarpic acid.
Indole alkylation with haloalkannic acids shows considerable promise.
Earlier research describes the synthesis of heteroauxin from indole
1/2

USSR

AVRAMENKO, V. G., et al, Moscow, Khimiko-Farmatsevticheskiy Zhurnal,
Vol IV, No 3, 70, pp 15-18

and chloracetic acid. In recent years ω-chloroalkannic acids with
an odd number of carbon atoms have become readily available. Indole
was alkylated with ω-haloalkannic acids in a strongly alkaline
medium by heating in an autoclave; 240 -- 250°C, 18 -- 20 atm pres-
sure and a 1:2 indole-to-haloalkannic acid ratio appear to be the
optimum reaction conditions. The yield of ω-indoly-3-alkannic
acids was 42 -- 90%. The tuberculostatic activity was determined
in vitro in a Soton medium with and without blood serum of a horse.
Use was made of human microbacteria Academia and H37Rv. The com-
pounds were found to have tuberculostatic activity.

2/2

USSR   UDC 621.791.79:669.7.014

AVRAMENKO, V. I., Engineer, LEBEDEV, B. F., Doctor of Technical Sciences, and
BOZHKO, V. I., Engineer, Institute of Electric Welding imeni Ye. O. Paton;
and RUBANOVICH, B. B., Engineer, Stal'konstruktsiya Trust

"Some Means of Increasing Electroslag Welding Productivity"

Moscow, Svarochnoye Proizvodstvo, No 10, 1973, pp 16-17

Abstract: Reducing the gap in a butt joint while simultaneously increasing
the feed rate of electrode wire is the most advantageous and simple method of
increasing electroslag welding productivity, and work has been done in this area
at the Institute of Electric Welding imeni Ye. O. Paton, where samples of low-
alloy steels 09G2S and 10G2S were welded using wire Sv-10G2 and AN-48 flux. An
empirical formula was established making it possible to determine the critical
rate of electrode wire feed during electroslag welding which is based on the
cross sectional area of the gap and electrode wire diameter. Gaps of 16, 18,
20, 20, 20, and 20 mm were determined for steel thicknesses of 20, 24, 30, 36,
40, and 50 mm. Experiments showed that gaps 20 ± 2 mm were optimum for steel
thicknesses of 30-50 mm. The optimum electrode diameter was 2-3 mm and optimum
welding wire feed rate--40-50 m/hr. 1 figure, 2 bibliographic references.

1/1

USSR   UDC: 519.2

AVRAMENKO, V. I., PERLIK, V. I.

"A Method for Approximate Calculation of Functions of Multi-
dimensional Normal Distributions"

Dnepropetrovsk, Ob odnom metode priblizhennogo vychisleniya
funktsiy mnogomernykh normal'nykh raspredeleniy (cf. English
above), Dnepropetrovsk University, 1972, 16 pp, bibl. of four
titles (manuscript deposited in VINITI, No 5368-73, Dep. from
8 Jan 73) (from RZh-Kibernetika, No 5, May 73, abstract No
5V278 Dep by the authors)

Translation: An approximate method is presented for calcu-
lating multidimensional normal distribution functions. By
simple transformations, multidimensional conditional distri-
butions are introduced into consideration which differ from
normal, and their moments are determined. In view of the
similarity of such distributions to normal, it becomes feasible
to construct algorithms for approximate calculation of multi-
dimensional normal distribution functions based on replacing

1/2

USSR

AVRAMENKO, V. I., PERLIK, V. I., Ob odnom metode priblizhennogo
vychisleniya funktsiy mnogomernykh normal'nykh raspredeleniy,
Dnepropetrovsk, 1972, 16 pp

conditional distribution by normal distribution with mathe-
matical expectation, mean square deviations and correlation
moments of the initial distribution. The paper gives the
results of numerous calculations by the proposed approximate
formulas which show accuracy sufficient for engineering cal-
culations.

2/2

USSR

AVRAMENKO, V. I., POZNYAKOV, V. V.

"Approximate Calculation of n-Dimensional Normal Distribution Functions by Means of Edgeworth Series"

Translation: A method is studied for constructing approximate estimates for multidimensional normal distribution functions. Approximate analytic expressions are produced by means of expansion of conditional distribution functions into Edgeworth series, for calculation of the distribution functions of the two and three-dimensional random normal vectors. Numerical calculations are performed using the formulas suggested, and the results are compared with precise tabular values. The approximate expressions produced are recommended for engineering calculations.

1/1

USSR   UDC 621.791.79.046.003.13

IVOCHKIN, I. I., ALEKSEYEV, A. I. (Candidates of Techn. Sciences),
SOSEDOV, A. F. (Engineer), /VNIImontazhspetsstroy/, LEBEDEV, B. F.,
(Doctor of Techn. Sciences), AVRAMENKO, V. I. (Engineer) /Electric
Welding Institute imeni Ye. O. Paton/, and IVOCHKIN, I. M.,
/Sokolovskiy Plant of Metal Structures/

"Electroslag Welding With the Use of Powdered Filler Metal"

Moscow, Svarochnoye proizvodstvo, No 5, May 72, pp 17-19

Abstract: The article describes an electroslag process involving the
feed of powdered filler metal (PFM) to the slag bath. The use of PFM
enables more effective utilization of the welding heat, doubles the
welding efficiency, and yields a weld with better properties. In
addition, the article discusses equipment designed for electroslag
welding of low-carbon and low-alloy steels, 25-60 mm thick, with PFM
and a consumable electrode of continuous cross sections. A block
diagram of a unit for proportioning and feeding PFM to the slag bath
is shown. Various PFM compositions for low-carbon and low-alloy steels
are cited and test data on the strength properties of the welds are
given. (2 illustrations, 4 tables, 4 bibliographic references)
1/1

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USSR   UDC 621.311.016.352.001.24:681.3

AVRAMENKO, V. N., UMED'YAN, V. V., TSUKERNIK, L. V.

"Study of Programs for Calculating Dynamic Stability and the Electromechanical Transmission Process of Power Systems"

V.sb. Probl. tekhn. elektrodinamiki (Problems of Technical Electrodynamics -- collection of works), vyp. 25, Kiev, Naukova Dumka Press, 1970, pp 76-83 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye212)

Translation: A program for calculating the synchronous dynamic stability in the first cycles of variation of relative angles and a program for more precisely defined calculation of the electromechanical transmission process in complex power systems on the Ural-2 digital computer are described. The maximum possible volume of problems solved by these programs and the time required for their solution are indicated. There are 2 tables and a 6-entry bibliography. [Electrodynamics Institute of the Ukrainian SSR Academy of Sciences].

1/1

USSR

AVRAMENKO, V. P., KUTSENKO, N. T., SHAGAYEV, Yu. V.

"Solution of One Problem Concerning the Distribution of Orders"

Translation: The problem is reduced to the transport problem with one additional limitation $\sum_{ij}\sum x_{kj} \geq N$.

1/1

UDC 577.4

USSR

AVRALENKO, V. P., KUTSENKO, N. T.

"A Method of Solving the Transport Problem"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Instruments and Automation Systems. Republic Interdepartmental Thematic Scientific and Technical Collection), 1972, vyp. 21, pp 170-173 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V479)

Translation: A method of solving the transport problem which is convenient for execution on a computer is proposed. With respect to concept this method is similar to the potentials method. The method is especially convenient for solving degenerate transport problems.

1/1

USSR   UDC [537.226+537.311.33]:[537+535]

AVRAMENKO, V. P.

"Dielectric Properties of Nickel Ferroxplanes of the Y and Z Types"

Translation: In order to explain the polarization mechanism of Ni-ferrox-
planes of the Y and Z types, the effect of the synthesis conditions and
additional heat treatment on the dielectric properties was investigated:
the dependence of ε and tan δ on temperature and frequency. The results
agree with the electron exchange mechanism and make it possible to hypo-
thesize that ε and tan δ are caused by electron relaxation. Resume.

1/1

USSR   UDC [537.226+537.311.33]:[537+535]

AVRAMENKO, V. P.

"Electrical Properties of Solid Solutions of Nickel-Zinc and Cobalt-Zinc
Ferroxplanes of the Y Type"

V sb. Segnetoelektriki i okisnyye poluprovodniki (Ferroelectrics and Oxide
Semiconductors -- Collection of Works), Dnepropetrovsk, 1971, pp 41-49 (from
RZh Fizika, No 12, Dec 71, Abstract No 12Yel217)

Translation: The author investigated the variation, with temperature, of
the electrical conductivity (σ) and the thermal emf (α) and also the de-
pendence of σ and α on the composition of the two systems of mixed hexagonal
ferrite-ferroxplanes of the Y type $M_{2-n}Zn_nBa_2Fe_{12}O_{22}$, where $M = Ni^{2+}$ or
Co^{2+} (n = 0, 3, 5, 15, 25, 50, 100 mol %).

1/1

USSR

VILITIS, O. Ye., AVRAMOV, Yu. T., SVETLAKOV, V. P.

"A Pulse Shaper"

Translation: This Author's Certificate introduces a pulse shaper which
contains a shaping accumulator made in the form of a Π-shaped CLC network
with input connected to a DC voltage supply through a semiconductor diode
in the conducting direction and a resistor. Also incorporated in the
device is a discharge circuit which contains a controlled switch and load
connected in series. The shaper also contains a commutating transistor
whose emitter-collector circuit is connected in parallel with the input of
the CLC network. To improve resistance to interference and simplify the
shaper, it is equipped with a semiconductor diode connected in parallel with
a capacitor, the anode of the diode being connected to the emitter of the
commutating transistor while the cathode is connected to the load, and
through a resistor to the base of the commutating transistor.
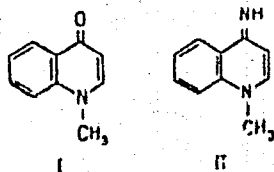
1/1

USSR

UDC: 547.94

AVRAMOVA, B., ZHELYAZKOV, L., DALEVA, L., STEFANOVA, D., Scientific Research Chemico Pharmaceutical Institute, Sofia

"Biologically Active 1-Substituted-4-Quinolonimines. I."

Abstract: Echinopsine-1-methyl-4-quinolone (I) and its structural analog echinopsidine (II) both show physiological activity, but in different ways.
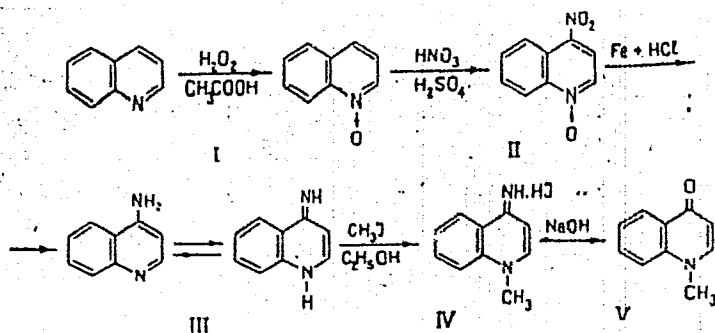
(a)

It is assumed that the difference in the biological effects of these two compounds are due to the structural difference -- the substitutent in the fourth position (=O or the NH group). New 1-substituted quinolonimines which may be considered structural analogs of echinopsidine were synthesized by a four-stage process similar to that used for synthesis of echinopsine:
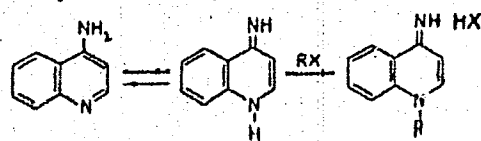1/3

USSR

AVRAMOVA, B., et al, Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1970, pp 98-101

(b)

I   II

III   IV   V

except that on the fourth stage, in addition to the methylating agent, 4-amino-quinoline is interacted with various alkyl of aralkyl halides, halosubstituted ketones or other alkylating agents:

(c)

2/3

USSR

AVRAMOVA, B., et al, Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1970, pp 98-101

The reaction was carried out with boiling 4-aminoquinoline together with an excess of the appropriate alkylating agent in a suitable solvent. Reaction time varies from 6 to 25 hours. All the resultant quinolonimines were found to be biologically active with respect to the central nervous system, most of them having centrally stimulating and antidepressant properties. The strongest antidepressant action is shown by echinopsidine, the first member of the homologic series (R = CH$_3$). As the carbon chain associated with the nitrogen atom increases in length to four atoms, the antidepressant property decreases, and there is an increase in non-specific stimulation of the central nervous system. Two aromatic derivatives showed elements of antidepressant activity, though weaker than in echinopsidine, and the double bond in the substitutent seems to lead to a tranquilizing effect. Larger doses of the compounds produce a curare-like myorelaxant effect which increases in strength when the methyl group associated with the nitrogen atom is replaced by heavier radicals. Carbonyl groups in the molecule reduce the myorelaxant effect. With respect to anticholinesterase activity, quinolonimines are much more active than echinopsine, but less active than galanthamine. The quinolonimines are more biologically active and more toxic than echinopsine.

3/3

USSR

UDC 576.858.9.095.51

AVRAMOVA, R. S. and LEVASHEV, V. S., Second Moscow Medical Institute imeni Pirogov

"Transduction by the C-Mutant of P_{22} Bacteriophage"

Abstract: A comparison was made of transduction by the C-mutant of P_{22} phage, obtained after reversion of the L form of S. typhimurium strain 680, with that by the wild type of the same phage. S. typhimurium, strain LT_2, was used as the donor, while auxotrophic strains of S. typhimurium leu 110, trp 29, Hfr B_3, his 23, and gal 50 served as recipients. The Mutation of P_{22} phage was manifested by partial impairment of its capacity to lysogenize sensitive bacteria, but there was no loss of its transduction activity. The C-mutant was able to transduce various genetic determinants, i.e., retain the nonspecific character of transduction, but the frequency of the latter was one to three orders lower than that by the wild type of phage P_{22}.

1/1

TITLE--EFFECT OF SURFACE ACTIVE ADDITIVES IN THE ANNEALING MEDIUM ON THE
   TEXTURE OF SECONDARY RECRYSTALLIZATION -U-

AUTHOR-(03)-AVRAMOV, YU. S., GRIGORYEV, G.A., PETLYAKOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 384-7

DATE PUBLISHED------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL TEXTURE, TRANSFORMER STEEL, HALIDE, MOLTEN CHLORIDE,
   FLUORIDE, ANNEALING, SURFACE ACTIVE AGENT, BROMIDE, METAL
   RECRYSTALLIZATION, GRAIN BOUNDARY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0184   STEP NO--UR/0048/70/034/002/0384/0387

CIRC ACCESSION NO--AP0115888
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0115888
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSFORMER STEEL SPECIMENS WERE
ANNEALED IN A BACL SUB2 MELT AT 1000-1100DEGREES FOR 30-160 MIN WITHOUT
AND WITH AN ADDN. OF K HALIDES. ON THE BASIS OF THE ETCHED FIGURES,
DIFFERENT RESULTS WERE OBSD. OWING TO THE PREVIOUS TREATMENT. FOR THE
SPECIMENS, HIGH TEMP. ANNEALED AFTER DEFORMATION, THE FRACTION OF CUBIC
COMPONENT INCREASED IN THE SECONDARY RECRYSTN. TEXTURE PROPORTIONALLY
BOTH TO INCREASING ANNEALING TIME AND TEMP. UNDER THE SAME CONDITIONS,
THE (110)(001) TEXTURE OF LAMINAR COMPONENT WAS IMPROVED IF THE SAMPLES
WERE HEATED PREVIOUSLY IN VACUUM AT 750DEGREES FOR 30 MIN. THE SURFACE
ACTIVITY OF HALIDES IN THE BACL SUB2 MELT INCREASES IN A SERIES BR-CL-F
AND IN ESP. PREVIOUSLY HEATED SAMPLES. DURING THE ANNEAL OF SPECIMENS
AFTER DEFORMATION ONLY THE PRIMARY RECRYSTN. ALSO OCCURRED AS A RESULT
OF A BOUNDARY AND GRAIN ENERGY ACTION.   FACILITY: MOSK. INST.
STALI SPLAVOV, MOSCOW, USSR.

1/2   017   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--CIRCULATION OF ALUMINIUM IN THE ECONOMY OF A COUNTRY -U-

AUTHOR-(02)-GRATSERSHTEYN, I.M., AVRASHKOV, L.YA.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METALLY, MAR. 1970, (3), 66-68

DATE PUBLISHED----MAR70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MATERIALS, MECH., IND.,
CIVIL AND MARINE ENGR
TOPIC TAGS--ECONOMICS, ALUMINUM, WASTE RECYCLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1922   STEP NO--UR/0136/70/000/003/0066/0068

CIRC ACCESSION NO--AP0132184
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0132184

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROSPECTS FOR THE REPEATED RE USE
OF AL IN INDUSTRIAL UNDERTAKINGS OF VARIOUS KINDS ARE DISCUSSED. THUS,
TO A CERTAIN EXTENT, THE EXPANSION OF PRIMARY AL PRODUCTION IS ONLY
NECESSARY TO A LIMITED DEGREE, IN VIEW OF THE LARGE AMOUNT OF SCRAP
BECOMING AVAILABLE FROM AL ARTICLES AND PARTS WHICH HAVE FULFILLED THEIR
ORIGINAL PURPOSE. A TYPICAL EXAMPLE OF THE RE USE OF AL SCRAP MAY BE
FOUND IN THE PRODUCTION OF AL SHEATH CABLES. SOME STATISTICS ARE
PRESENTED TO INDICATE THE EXTENT TO WHICH THE REPROCESSING OF AL WASTE
IS ECONOMICALLY JUSTIFIABLE.

UNCLASSIFIED

USSR   UDC 678.06-419.8:677.521]01:586

KIRILLOV, V. N., AVRASIN, Ya. D., YEFIMOV, V. A. and DOBROKHOTOVA, R. A.

"Effect of the Conditions of Thermal Treatment of Fiberglass on Their Thermophysical Properties"

Abstract: Results are reported of the study of the effect of the conditions of thermal treatment of fiber glass on its thermophysical properties in temperature range 20-300°C. It was shown that a considerable effect is exerted by thermal treatment and thermal aging on numerical values and temperature function of thermophysical properties. The type of change of the coefficient of heat transfer can be correlated to the structural aspects of the material. Due to the direct relationship between the depth of solidification of polymer and its thermophysical properties, the latter may be used in selecting technological conditions for the manufacturing of these materials. For example, on the basis of the change in thermal capacity the temperature range may be determined in which the processes of structuralization, of the emission of low-molecular-weight volatile products, destruction processes, etc., are taking place.
1/1

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USSR   UDC 678.06-419:677.521.01:53

SHISHKO, V. I., BARANOVSKIY, V. V., AVRASIN, YA. D., HEKST, V. B., YAKOBSON,
B. V., ZANKEVICH, V. N., and VALUYENKO, YE. G.

"Glasstextolites Based on Non-Woven Fiberglass Reinforced Materials"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 70-73

Abstract: Properties are described of the binding, suturing non-woven fiber-
glass materials and glasstextolites made from them for structural materials,
and electrical insulation. It was established that it is economically feasible
to use the non-woven materials in production of glasstextolites for various pur-
poses. Production of non-woven fiberglass reinforced materials from non-twisted
glass thread facilitates the production expansion of the glasstextolites and
reinforced plastics, both in regard to the volume and variety of materials.
One of the most promising materials, in this area is the VPR-10 reinforcing
material consisting of two glass laminated systems, in which 10 layers are
overlaid at 95°, stitched with glass thread.

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USSR   UDC 678.067.5

GARANINA, S. D., ZHERDEV, YU. V., KOROLEV, A. YA., CORMUSHKIN, V. A., and AVRASIN, YA. D., All-Union Scientific Research Institute of Aviation Materials, Moscow, State Committee for Aviation Technology USSR

"Water Diffusion in Fiberglass Plastics"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 4, Jul-Aug 70, pp 508-511

Abstract: The sorption method was used to study water diffusion in brand EDT-10-VO unidirectional winding epoxy fiberglass plastics in relation to the type of surface filler pretreatment, the direction of water molecule diffusion (along and across the fibers) and other factors. It was found that in the case of water penetration across the fibers the diffusion coefficient is lower than for solidified binder EDT-10, which indicates the absence of through pores in this direction. In the case of water penetration along the fibers the diffusion constant is almost two orders higher than across the fibers, which indicates the presence of a large number of microdefects in the plastic mainly in the boundary layer between the glass fiber and the polymer.

1/2

USSR

GARANINA, S. D., et al., Kolloidnyy Zhurnal, Vol 32, No 4, Jul-Aug
70, pp 508-511

Boiling of specimens in water results in the formation of additional
microdefects in this boundary layer, which results in a significant
increase in the rate of water molecule diffusion. Pretreating the
glass-fiber filler surface with chemically active substances (fin-
ishes) leads to a significant decrease in the water diffusion coeffi-
cient.

2/2

USSR   UDC: 772.99

AVRORIN, A. V., KOPYLOV, Ye. A., KUZNETSOV, V. V., LAZAKOV, V. N., Novosibirsk

"Optical Production of Images by Means of SHF Holograms"

Abstract: This article presents the results of experiments on SHF holography
in the centimeter waveband, in which an improvement is achieved in the quality
of images   produced by some improvements in the circuit for electronic
processing of the signals received, to achieve linearity of recording of the
signals on the photographic material. The maximum Rayleigh resolution, defined
by the geometry of the equipment   was 2.7 cm. Indeed, bands separated by
30 mm are clearly   shown   as separate bands in the photographs presented
with the article.

1/1

Epidemiology

USSR   UDC 616.932-092.9

AVROROV, V. P., SAYAMOV, R. M., ILYUKHIN, V. I., GLYAN'KO, Ye. V., and
BARDYKH, I. D., Rostov-on-Don Cholera Institure Laboratory of Pathological
Physiology and Laboratory of Emergency Prophylaxis and Treatment of Cholera

"Factors That Promote the Development of Experimental Cholera in Puppies"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 6, 1972, pp 18-20

Abstract: Two- to 3-month-old puppies were inoculated with various strains of
El Tor vibrio under different conditions to determine the suitability of these
animals as an adequate model of cholera for pathophysiological and immunologi-
cal studies. Infection was generally induced only when the animals received
bacterial suspensions freshly isolated from cholera patients. The administra-
tion of actinomycin D, which lowers resistance to intoxication and infection,
increased the probability of infection with the typical clinical symptoms and
isolation of the causative agent from the stools and intestinal contents. The
rate of infection was also increased by blocking gastric secretion either with
alcohol or 3 days' fasting.

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USSR   UDC: 681.34

AVROV, O. M., GOLENDBERG, N. A., KUTSITSKIY, V. G., MIRZOYEV, G. A.,
MOZZHUKHIN, M. S., POKROVSKIY, V. S., SHAKHPAZOV, S. Kh.

"A Device for Combining the Readings of a Multichannel Angle-Phase-Code
Converter"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 4, Feb 71, Author's Certificate No 292182, Division G, filed 11 Aug 69,
published 6 Jan 71, p 137

Translation: This Author's Certificate introduces a device for combining
the readings of a multichannel angle-phase-code converter which contains
charging elements, series-connected switches, combining circuits and flip-
-flops. As a distinguishing feature of the patent, conversion time is re-
duced by connecting the output of the coarse reading channel of the converter
to the input of the chief readout switch, the second input of this switch
being connected to the output of the chief readout flip-flop. The switch
output is connected to the input of the first delay element and to the second
input of the control flip-flop. The output of the channel for the least
significant reading of the converter is connected to the second input of the
chief readout flip-flop. The first input of this flip-flop is connected to
the first input of the control flip-flop and to the output of the control
switch, and the second input of the control switch is connected to the output
of the control flip-flop.
1/1

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USSR   UDC: 621.762:669.018.5(088.8)

DAVIDOVICH, Ya. G., GLUSKIN, A. Ya., TEMKIN, I. V., AVROROVA, G. V., PETROSYAN, L. S., KOZHEVNIKOV, V. I.

"Method of Manufacture of Metal-Graphite Brushes"

Translation: A method is suggested for the manufacture of metal-graphite brushes, for example copper-graphite brushes, by mixing of graphite and pitch in the solid state with the addition of Cu powder and subsequent pressing of the mixture. In order to improve the characteristics of the brushes, the Cu powder is mixed with the prepared mixture of graphite and pitch.

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USSR   UDC 621.771.8

POLYKHIN, P. I., BERKOVSKIY, V. S., ZHADAN, V. T., FEDOSOV, B. M., STETSENKO,
N. V., OSADCHIY, N. A., AVRUNIN, P. M., and KOVTANYUK, Yu. P.

"Developing New Technology for Rolling the PSh-20 Section from Kh18N10T Steel
on the 550 Mill"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya"
Publishing House, No. 64, 1970, pp 106-113

Translation: A brief description is given of the technology for rolling the
shaped sections being studied. An analysis is made of the existing rolled
pass design and deformation parameters by templets, and data are given from
an investigation of the power parameters of rolling. On the basis of an
analysis of the data received and the technical-economic indicators, a new
technology for the process of rolling the sections under study is developed.
Eleven illustrations and one table.

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USSR

SARNAVSKIY, N. M., AVRUTIS, M. G., DINER, I. G., Kiev

"Manufacture of Combined Parts of Hard Alloy Cutting Punches by the Electric Spark Method Using Chemical Nickel Plating"

Kishinev, Elektronnaya Obrabotka Materialov, No 3, 1970, pp 91-92

Abstract: At the Kiev Relay and Automation and Equipment Plant, a special hard alloy equipment section has been set up. Cutting dyes and matrices are being manufactured by chemical nickel plating, which has completely replaced the old method combining direct and inverse copying. Two steel copies are made by the chemical nickel plating method together. One of these is used to cut a layered electrode of AVM (tungsten plus copper plus nickel alloy for working by the inverse dye copying method. The second model is coated with a layer of chemical nickel. The nickel covers the surface of the part in an even layer. This second model is used as a guide in cutting the matrix. By selecting the thickness of the nickel layer applied and the cutting modes, any even clearance or interference can be produced 1/1 between the matrix and dye.

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USSR   UDC 616.212-018.73-091-02:615.285.7.025.1

SADRIYEVA, R. V., Candidate of Medical Sciences, AVSALYANOV, I. F., Candidate
of Medical Sciences, and GLEBKASHANSKAYA, N. V., Medical Institute imeni'
Academician I. F. Pavlov

"Dynamics of Morphological Changes in the Nasal Mucosa During Prolonged
Peroral Administration of Small Doses of Hexachloran"

Abstract: Since organic compounds of chlorine are widely used as pesticides
and herbicides, the toxicity of hexachloran to nasal mucosa was investigated
on rabbits.   The animals were given daily peroral doses of hexachloran (1
ng/kg body weight) for up to 104 days. They were serially sacrificed at
various time intervals, and the nasal mucosa was investigated microscopically.
No changes were observed during the first 40-50 days. Then, evidently
due to weakened resistance, vascular disorders such as congestion and swelling
of vascular in mucosal dystrophy and acute catarrhal rhinitis. On the 90th
day of poisoning, exudative processes were diminished and regeneration began,
leaving only small pathological changes on the 104th day. The results
indicate that hexachloran is a very toxic chemical and that protective masks
must be worn when working with this compound.
1/1

AVTANDILOV, G.G.

medicine

QUANTITATIVE ASSAY OF ACTIVITY OF RENAL OXIDIZING ENZYMES IN THE PRESENCE OF ISCHEMIA AND METABOLIC PROTECTION

[Article by G.G. Avtandilov, L.A. Sushalov, L.I. Kruglova, D.I. Murakhovskiy, Institute of Human Morphology, USSR Academy of Medical Sciences, Moscow; Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 10, 1971, pp 64-67]

When treating a "dry" heart in cardiosurgery by means of carotid-coronary perfusion, there is temporary arrest of blood supply to the organs below the diaphragm. The permissible duration of lack of blood supply to the organs depends on the degree of development of hypoxic changes and, in the opinion of a number of authors (A.A. Vishnevskiy et al.) it constitutes 30 minutes. Our previous investigations (G.G. Avtandilov et al. 1969) revealed that histochemical changes arise sooner in ischemic organs. Subsequent programs and successful use of the method of carotid-coronary perfusion in clinical practice confronts investigators with the problem of finding means to increase the tolerance of organs when they are excluded from the circulation.

In the present work we investigated the consequences of 20- and 40-minute ischemia with reference to the oxidizing enzymes of the dog's kidney and the protective influence of some metabolic activators on this organ. To test the tolerance of the kidney we studied the activity of oxidizing enzymes related to metabolism of amino acids and proteins: glutamate dehydrogenase, carbohydrates, and lipids -- α-glycerophosphate dehydrogenase of plasma and mitochondria, and succinate dehydrogenase which serves as an indicator of intensity of oxidizing processes in Krebs' cycle. We used cytochrome "c", ATP (adenosine triphosphate), and cocarboxylase as metabolic activators.

Experiments were conducted on 12 dogs of both sexes, weighing 7-5 kg. The animals received morphine premedication, hexenal induction and ether, by means of continuous electroencephalography. When a specific depth of anesthesia was reached the animals were cooled by the immersion method to a temperature of 30° (in the esophagus and rectum). After laparotomy, the left kidney was cut out of the circulation by applying a clamp to its pedicle. Then, one of the mentioned preparations was injected into the inferior vena cava (ATP and cytochrome "c" in

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1/2   023
UNCLASSIFIED
TITLE--HYPERTROPHY OF THE MYOCARDIUM OF THE RIGHT VENTRICLE AND ITS
  EXPERIMENTAL REVERSIBILITY -U-
PROCESSING DATE--02OCT70
AUTHOR-(02)-AVTANDILOV, G.G., NESTEROV, YE.N.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
  NR 4, PP 51-54
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CELLULOSE, LUNG, ARTERY, RABBIT, MYOCARDIUM, DNA, HYPERTROPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1589
STEP NO--UR/0219/70/069/004/0051/0054

CIRC ACCESSION NO--AP0106335
UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0106335
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPEATED INTRAVENOUS
ADMINISTRATION OF CARBOXYMETHYL CELLULOSE INDUCED CHRONIC LUNG ARTERITIS
AND ANGIOSCLEROSIS IN THE RABBITS WITH FOLLOWING HYPERTROPHY OF THE
RIGHT VENTRICLE OF THE HEART AFTER 12-14 WEEKS. HYPERTROPHY OF THE
MYOCARDIUM, REGISTERED BY FRACTIONAL WEIGHING OF THE HEART WALLS, WAS
FOLLOWED BY THICKENING OF THE MUSCLE FIBERS OF THE MYOCARDIUM, BY AN
INCREASE OF THE NUCLEI VOLUME AND A RISE OF CYTOMETRIC INDEX OF THE DNA
CONTENT.   12-16 WEEKS AFTER ADMINISTRATION OF CARBOXYMETHYL CELLULOSE,
ALONG WITH DISAPPEARANCE OF ARTERITIS, THE WEIGHT OF THE RIGHT VENTRICLE
FALLS, DIAMETER OF THE FIBERS AND OF THE NUCLEI AND THE DNA CONTENT
DECREASES. A DISCUSSION IS GIVEN OF POSSIBLE CAUSES OF A POSITIVE
CORRELATION BETWEEN THE VOLUME OF THE MYOCARDIUM NECLEI AND THE DNA
CONTENT IN THEM DURING HYPERTROPHY AND IN THE REVERSE PROCESS.

UNCLASSIFIED

USSR   UDC 681.325.65

POLTORATSKIY, E. A., VARLAMOV, I. V., AVTONOMOV, V. A., and OVCHINNIKOV, V. V.

"A Logic Threshold Device"

Translation: A logic threshold device is proposed which contains a diode-
resistor adder and a discriminator made from a tunnel diode and a transistor.
Their purpose is to increase the operational reliability of the device and to
expand its logic capabilities. The discriminator contains supplementary
photodiodes, and the adder contains electroluminescent diodes and a tunnel
diode. The anode and cathode of the tunnel diode are joined to the anodes
of the electroluminescent diodes and optically connected with the photo-
diodes of the discriminator, whose anodes, in turn, are connected via
tunnel diodes to the bases of the transistors.

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USSR

AVTONOMOV, V. A., BORISOV, B. S., GRUDININ, A. S., VARLAMOV, I. V., KANDYBA, Pe, Ye., KOLYASNIKOV, V. A., KRASYUK, B. A., MESKIN, S. S., PETRUSEVICH, V. A., POLTORATSKIY, E. A., RAVICH, V. N., and CHICHERIN, L. A.

"High-Spped Optical-Electronic Switch"

Translation: An optical-electronic pair is developed, on the basis of which a hybrid microcircuit is produced which assures a high galvanic decoupling and is compatable with respect to the input and output parameters with integrated logic circuits manufactured by domestic industry. 4 ill. 4 ref. Summary.

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USSR   UDC: 621.372.632(088.8)

KRAUS, V. V., AVTONOMOV, V. N.

"A Frequency Multiplier"

USSR Author's Certificate No 277879, filed 17 Feb 69, published 6 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D60 P)

Translation: A frequency multiplier for the decimeter wave band is pro-
posed which contains a transistor, an input loop and two tank circuits
which are connected to each other and to the collector lead of the tran-
sistor. To eliminate parasitic coupling reactances, one of the tanks in
the collector circuit takes the form of a quarter-wave short-circuited
section of coaxial cable placed inside the quarter-wave output capacitance-
-shorted coaxial resonator.

1/1

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USSR

UDC 621.375.82

AVTONOMOV, V. P., ANTROPOV, Ye. T., SOBOLEV, N. N., TROITSKIY, Yu. V.

"Separation of Rotational Lines of a CO_2-Laser by a Film Selector in a Resonator"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 3, Moscow, "Sov. radio", 1972, pp 112-115 (from RZh-Fizika, No 1, Jan 73, Abstract No 1D922)

Translation: A technique is proposed for the selection of rotational-vibrational lines of radiation and for producing a single-frequency oscillation mode for a CO_2-laser. Selection is achieved by tuning a reflecting interferometer formed by a thin absorbing film and one of the mirrors of the resonator. Separation of individual rotational-vibrational lines of CO_2 was achieved experimentally. The possibility of separation of rotational lines under retuning is shown. 8 ref. I. O. S.

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AVTONOMOVA V.A.

IMAGE RECOGNITION

EXPERIMENTAL INVESTIGATION OF VISUAL IMAGE RECOGNITION CHARACTERISTICS

V. A. Avtonomova and Yu. M. Sholodier

USSR   UDC 616.832.9-002.931.611.3-092.9

AVTSYN, A. P., BEREZINA, Ye. K., KENIG, E. E., DURSUNOVA, S. M., BELOVA, Ye. M.,
SHTEGEL'MAN, and ZHUKOV, V. G., Scientific Research Institute of Human Mor-
phology, Academy of Medical Sciences USSR, and All-Union Scientific Research
Institute of Antibiotics

"An Experimental Model of Leishmanial Meningoencephalitis"

Abstract: Intercerebral inoculation of mice with Leishmania donovani, strain
T-1, obtained from dogs, and other strains obtained from reptiles resulted in
the typical clinical picture of meningoencephalitis. The reaction to Leish-
mania and to the trauma was evident at the injection site in 14 days and 40
days later there were signs of inflammation of the meninges. The process be-
came generalized in the central nervous system after 160 days. Lymphoid in-
filtrates appeared in the pia mater and small granulomas in the brain tissue
proper. Within the lymphoid infiltrates and granulomas, Leishmania were ob-
served. The granulomas consisted mainly of epithelioid cells. Actual pene-
tration of Leishmania into nerve cells could not be conclusively demonstrated.
The ease with which meningoencephalitis can be induced in mice with Leishmania
makes these animals suitable for use in experimental chemotherapy.
1/1
                                   - 41 -

USSR   UDC: 621.398.03

AVTUSHKO, V. M. and POCHAPSKIY, V. I.

"Switching Device for Separating and Detecting Operative Information"

V sb. Tonkiye magnitn. plenki, vychisl. tekhn. i radiotekhn. T I
(Thin Magnetic Tape, Computer and Electronic Engineering, Vol. I--
collection of works) Krasnoyarsk, 1971, pp 143-146 (from RZh-
Avtomatika, telemekhanika i vychislitel'naya tekhnika, No. 12,
1971 Abstract No. 12A206)

Translation: Standard telemechanical devices of the "Kolos" (1"10) [sic] type
are used for transmitting information from gas-decontaminated buildings to the
dispatcher point of the Kremenchug Automobile Plane reclamation shop. The
specialized switching equipment switches the telemechanical complexes and
separates and detects the information at the outputs of the device. A con-
trolling system receives and records urgent information in an intermediate
receiving register. An assembly of flip-flop registers in the second part of
the equipment performs functions independently of the type of telemetering sys-
tem. The order of information recording in the constant receiving registers
is described. Some important technical data is given.
1/1

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AVVAKUMOV, Yu. I., DEGTYAR', L. E., ZELINOVSKIY, Z. I., KERITSKIY, L. P.,
SOLOMYANCHUK, L. K., TSAYREF, K. M., Kishinev, Scientific Research Institute
of Instrument Building

"A Wire-Wound Resistor"

Translation: This Author's Certificate introduces a wire-wound resistor
which consists of wires connected in parallel and wound on a common form.
As a distinguishing feature of the patent, reactance is reduced by using
an even number of wires in the winding, connecting the initial ends of
even-numbered wires and terminal ends of odd-numbered wires to one of the
current leads arranged along the axis of the form, and connecting the
initial ends of odd-numbered wires and terminal ends of even-numbered
wires to the other current lead.

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Single Crystals

USSR   UDC 548.55

PERFILOVA, V. E., BODYACHEVSKIY, S. V., AVVAKUMOVA, L. A., and DERMAN, A. S.

"Study of the Temperature Fields of Melts for Growing Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, pp 100-103

Abstract: An investigation was made of the temperature fields of aggressive solutions of V_2O_3-Fe_2O_3 in BaO-B_2O_3 and PbO-PbS_2-B_2O_3 melts to determine the optimal temperature conditions for growing single crystals. The temperature fields were measured in the 1000-1250°C range. During one experiment the temperatures were measured in several horizontal planes of the melt and the temperature field was constructed from this. It was established that there are zones of thermal conductivity and free convection zones in the melt.

        It is pointed out that the planar isotherms in the upper part of the melt arise from the fact that the heat transfer is realized as a result of thermal conductivity. The absence of convection in the liquid is characterized by the fact that the Rayleigh criterion does not exceed 1710, i.e., $Ra + Pr \cdot Gr < 1710$. The value of Ra was calculated for a boron-barium melt. In order to spread the region of existence of convection to the entire volume of the melt, it is necessary to increase the mean temperature level. In order to maintain crystallization
1/2

USSR

PERFILOVA, V. E., et al, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70,
pp 100-103

conditions when doing this, the concentration of crystal-forming oxides must be
increased.

It is also pointed out that the calculated values of the Rayleigh num-
bers confirm that the measured temperature fields correctly reflect the heat-
exchange processes taking place in the melt. When growing single crystals from
the investigated systems on a seed charge, the crystal grows in the upper part
of the melt. As the temperature is decreased, the zone of thermal conductivity
increases. Crystal growth becomes difficult since the melt surrounding the
crystal is impoverished by the garnet phase. At the same time, the zone of
thermal conductivity prevents penetration of the convective fluxes rich in
crystal forming oxides into the crystal. Consequently, the mass transfer in this
region can be realized only by diffusion.

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USSR   UDC 612.273.2+616-003.96

EPSHTEYN, I. M., ALLIK, T. A., KOROBKOV, A. V., AYDARALIYEV, A. A.,
DZHUNUSHEV, M. D., AND KUTLEV, A. N., All-Union Scientific Research Institute
of Physical Education, and Kirgiz State Medical Institute

"Adaptation Mechanisms of the Cerebral Cortex and of Skeletal Muscles to
Hypoxia"

Abstract: The utilization of oxygen by the cerebral cortex and skeletal
muscles was determined on the basis of the rate constant of oxygen   consump-
tion (RCOC). The control group of rats was kept in Frunze and the experimental
group was taken to a 3,200 m elevation, where pO_2 was 103 mm Hg. Consump-
tion of oxygen by the brain tissues was recorder by platinum electrodes
implanted at a depth of 500 μ. The RCOC by the brain cells was 0.0119,
0.0073, 0.0077, 0.0084, 0.0042, 0.0044 on the 3d, 10th, 20th, 30th, 45th,
and 60th days at 3,200 m, respectively (controls 0.0055). Physical exercises
(30 min on treadmill) changed these values to 0.0109, 0.0050, 0.0042,
0.0038, 0.0046, 0.0044, respectively (control 0.0034). The RCOC of the calf
muscles was 0.0300, 0.063, 0.073, 0.11, 0.23, 0.24 without exercises
(control 0.091), and 0.161, 0.161, 0.178, 0.18, 0.17, 0.18 (control 0.148)
1/2

USSR

EPSHTEYN, I. K., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 2,
Mar/Apr 72, pp 7-10

with exercises. A lower RQCO in the cerebral cortex than in the calf
muscles is attributed to the presence of glial cells in the brain which are
characterized by a slow oxidative process. The physical exercises inhibited
to some extent the oxidative processes in the brain, although the initial
adaptation stages to the hypoxia are characterized by acceleration of the
excitation processes in the cerebral cortex. Sharply reduced oxygen con-
sumption by the calf muscles during the first several days at 3,200 m is
attributed to low permeability of the muscle fibers by oxygen. The oxidative
activity in the same muscles increased considerably after physical exercises.
Evidently the physical load is more powerful factor than hypoxia with
respect to oxygen consumption by muscles.

2/2

1/2   024   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--ANTITUMOR, RADIOSENSITIZING AND RADIOPROTECTIVE PROPERTIES OF SOME
    FLAVONOIDS IN RELATION TO THEIR STRUCTURE -U-
AUTHOR-(03)-KABIYEV, O.K., VERMENICHEV, S.M., AYAPBERGENOV, YE.K.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA. INFORM. BYUL. (RADIOBIOLOGY. INFORMATION
REFERENCE--RZH, BIOLOGICHESKAYA KHIMIYA, NO 6, MAR 70, ABSTRACT NO 6 F2570
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, RADIATION SENSITIVITY, RADIOPROTECTIVE
    AGENT, FLAVONOID COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1218   STEP NO--UR/0673/70/000/012/0033/0035

CIRC ACCESSION NO--AR0120062
                        UNCLASSIFIED

CIRC ACCESSION NO--AR0120062
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEUKODELPHINIDIN, ONE OF THE
LEUKOANTOCYANIDINS, WAS FOUND TO POSSES THE GREATEST ANTITUMOR ACTIVITY.
THE CATECHINS MANIFESTED RADIOSENSITIZING PROPERTIES. QUERCETIN
EXHIBITED MODERATE ANTITUMOR BUT PRONOUNCED RADIOPROTECTIVE ACTION. THE
DIFFERENCES IN THE ACTIVITY OF THE FLAVONOIDS SEEMS TO BE DUE TO THE
PRESENCE OF DOUBLE BONDS AND TO THE NUMBER OF HYDROXY GROUPS WHICH
BECOME MORE ACTIVE AS THEY INCREASE IN NUMBER. THE INDIVIDUAL HYDROXY
GROUPS OCCUPY THE SAME POSITION IN THE COMPOUNDS STUDIED. THE LOW
ACTIVITY OF RUTIN IS ATTRIBUTED BY THE AUTHORS TO THE SPECIFICITY OF THE
SUGAR COMPONENT.

UNCLASSIFIED

TITLE--EFFECT OF THE SEQUENCE OF INTRODUCING COMPLEX ADDITIVES INTO
  SOLUTIONS AND CONCRETES -U-
AUTHOR-(02)-AYAPOV, U.A., ANDARBAYEV, D.S.

COUNTRY OF INFO--USSR

SOURCE--VESTN. AKAD. NAUK KAZ. SSR 1970, 26(1), 52-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CONCRETE, PROCESSED PLANT PRODUCT, ELECTROLYTE, HARDNESS,
  SODIUM SULFATE, CALCIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0198   STEP NO--UR/0031/70/026/001/0052/0054

CIRC ACCESSION NO--AP0113137
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0113137
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX ADDITIVES CONSISTING OF
MOLASSES AND NA SUB2 SO SUB4 (OR CACL SUB2) ARE EFFECTIVE HARDENING
ACCELERATORS OF MORTAR AND CONCRETE. THE ORG. ADDITIVE SHOULD BE
INTRODUCED 1ST, FOLLOWED BY THE ELECTROLYTE. CRUSHING STRENGTH OF
CONCRETES WITH COMPLEX ADDITIVES WAS 30-40PERCENT MORE AFTER 24 HR FOR
STEAMED SAMPLES AND 50-5PERCENT FOR USUALLY HARDENED SAMPLES.

UNCLASSIFIED

USSR   UDC 612.82+612.74;612.275.1

MIRRAKHIMOV, M. M., AYDARALIYEV, A. A., and NEPOMNYASHCHAYA, Kirgiz State
Medical Institute, Frunze

"State of the Brain and Muscles During Gradual Acclimatization to High Altitudes"

Abstract: The dynamics of oxygen tension, blood flow, oxidation-reduction
potential, brain and gastrocnemius temperature during gradual adaptation of
rats to an altitude of 3,200 m were studied in the Tyan Shan mountains. All
the physiological parameters changed significantly by day 7 when the oxidation-
reduction potential, blood flow, and temperature reached a peak in the brain,
after which they returned to normal by day 45, except PO_2 which did not attain
the original level. Meanwhile all the parameters decreased in the gastrocnemius,
reaching the low point on day 7 and then returning to normal by day 45. The
functional changes occurred more slowly with abrupt adaptation and normalcy
was not reached until day 60. Keeping the animals for a while at the inter-
mediate altitude of 2,200 m promoted earlier stabilization of the physiological
functions.

1/1

Physiology

USSR

MEYERSON, F. Z., MIRRAKHIMOV, S. M., AYDARALIYEV, A. A., and DZHUMUSHEV, M. D., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, Moscow, and Kirgiz State Medical Institute, Frunze

"Effect of Preliminary Conditioning on Oxygen Pressure in the Cerebral Cortex During Gradual High-Altitude Hypoxia"

Abstract: Adaptation to the discontinuous action of high-altitude hypoxia has a significant effect on the resistance of the cerebrum to oxygen insufficiency. This effect is considered to be due to the combination of two mechanisms acting at two different levels. One of these mechanisms enhances the transport of oxygen to the brain. The dynamics of the oxygen pressure in the cerebrum of trained and untrained rats subjected to step-wise "ascent" in a pressure chamber was studied polarographically. The O_2 pressure was measured chrono-amperometrically with a 100-micron Pt electrode which had been inserted 500 microns deep into the rats' brains. For each experiment, the electrodes were calibrated in solutions of known O_2 content. Four series of experiments were run, with 11-12 animals in each series. In the first series, untrained animals were tested; in the other series, the

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USSR

MEYERSON, F. Z., et al, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970,
pp 252-255

animals were trained for periods of 10, 20, or 40 days. Training consisted
of keeping the animals in the pressure chamber for 6 hours each day, with
the pressure simulating that at an altitude of 1,000 m on the 1st day, 2,000
m on the 2nd day, 3,000 m on the 3rd day, 4,000 m on the 4th day, 5,000 m
on the 5th and 6th days, 6,000 m on the 6th and 7th days, and 7,000 m for
the remainder of the training period. Some measurements were made with the
test animals at a simulated altitude of up to 12,000 m. The results of the
measurements were tabulated. It was found that at a height of 4,000 m the
drop in cerebral oxygen pressure is still almost the same for both trained
and untrained groups. At greater altitudes, the difference between trained
and untrained groups becomes more obvious. After 20 and 40 days of train-
ing, it was found that protein synthesis in the blood was increased by 60-
80%. It is speculated that ATP may be used in the adaptation of the blood
to the surrounding medium. It is concluded that, whereas up to a height of
6,000-7,000 m trained alpinists may not experience any discomfort, at higher
altitudes disturbances in brain functions may occur.

2/2

USSR   UDC 614.2

SIDOROVA, L. N., RUZIYEV, Kh. R., NOVOKRESHCHENOVA, F. A., and AYDARALIYEV,
K. A., Ministry of Health Kirgiz SSR

"From the Fight Against Malaria and Steps Taken to Prevent the Disease From
Entering Kirgizia"

Abstract: The Soviet Central Asian republic of Kirgizia had long been an
endemic focus of malaria. In 1933, for example, it accounted for 30% of all
cases of infectious diseases with a morbidity rate of 1.090 per 10,000 popula-
tion. The rate began to decline after World War Two because of systematic
efforts to eradicate the disease and by 1959 not a single local case was recorded
throughout the republic. To prevent the importation of malaria, all persons
arriving from parts of the Soviet Union where it is still prevalent as well as
visitors from Africa and Asia are registered and carefully examined. All persons
with a history of the disease are checked from time to time. Other steps
include the drainage of swamps within a radius of 3 to 5 km from inhabited
localities, introduction of gambusia and grass carp into bodies of water infested
with mosquito larvae, and continuous monitoring of changes in the mosquito
population to determine whether active control measures may be required.
1/1

- 14 -

USSR   UDC 621.357.1:669.3-492.2

GEYNRIKHO, K. YA., AYDAROV, R. ZH., SAPRYGIN, A. F., and YAROSLAVTSEV, A. S.

"Preparation of Copper Powders at High Velocities of Electrolyte Circulation"

Tr. In-ta organ. kataliza i elecktrokhimii. AN Kaz SSR (Proceedings of the Institute of Organic Catalysts and Electrochemistry. Academy of Sciences Kazakstan SSR), No 33, 1972, pp 37-42 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L332)

Translation: It was determined that to prepare a copper powder in a circulating electrolyzer the optimum conditions are as follows: the velocity of the electrolyte flow must not be less than 2 m/sec, temperature of the solution 30-40°C, concentration of Cu in solution 1-8 g/ℓ . Under these conditions, the D_k may attain 2-3 x 10^4 a/m^2.

1/1

1/2   021   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--PILOT PLANT TESTING OF VIBRATING MIXERS IN CADMIUM PLANT TECHNOLOGY
 -U-
AUTHOR-(05)-KHAN, O.A., GUSHCHIN, YU.A., PIKOV, N.KH., AYDAROV, R.ZH.,
 AYDAROVA, P.I.
COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(1) 19-21

DATE PUBLISHED-------70

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

TOPIC TAGS--MATERIAL MIXING, VIBRATION EFFECT, CADMIUM, COPPER, ZINC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0751   STEP NO--UR/0136/70/043/001/0019/0021

CIRC ACCESSION NO--AP0107293
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0107293
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE MIXER USED IS DESCRBIED.   THE
RESULITS ARE PRESENTED OF PILOT PLANT TESTING OF VIBRATING MIXERS IN
DISSILN. OF CD AS WELL AS OF CU CONTG. INDUSTRIAL PRODUCTS; ALSO
PRESENTED ARE THE RESULTS OF CEMENTATION OF CD AND CU IN SOLNS. BY ZN
DUST UNDER CD PLANT TECHNOLOGY CONDITIONS. THE DATA OBTAINED WERE
SUBMITTED AS THE BASIC DATA ON WHICH TO BASE THE DEVELOPMENT AND
CONSTRUCTION OF EXPTL. INDUSTRIAL VIBRATING MIXERS (VIBROAGITATORS) WITH
CAPACITIES OF 10-15 M PRIME3.

UNCLASSIFIED

ITLE--PILOT PLANT TESTING OF VIBRATING MIXERS IN CADMIUM PLANT TECHNOLOGY
-U-

UTHOR-(05)-KHAN, O.A., GUSHCHIN, YU.A., PIKOV, N.KH., AYDAROV, R.ZH.,
AYDAROVA, P.I.

CONTRY OF INFO--USSR

OURCE--TSVET. METAL. 1970, 43(1) 19-21

ATE PUBLISHED-------70

UBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

OPIC TAGS--MATERIAL MIXING, VIBRATION EFFECT, CADMIUM, COPPER, ZINC

ONTROL MARKING--NO RESTRICTIONS

OCUMENT CLASS--UNCLASSIFIED

ROXY REEL/FRAME--1989/0751   STEP NO--UR/0136/70/043/001/0019/0021

IRC ACCESSION NO--AP0107293
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70
IRC ACCESSION NO--AP0107293
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE MIXER USED IS DESCRBIED.   THE
RESULTS ARE PRESENTED OF PILOT PLANT TESTING OF VIBRATING MIXERS IN
DISSOLN. OF CD AS WELL AS OF CU CONTG. INDUSTRIAL PRODUCTS; ALSO
PRESENTED ARE THE RESULTS OF CEMENTATION OF CD AND CJ IN SOLNS. BY ZN
DUST UNDER CD PLANT TECHNOLOGY CONDITIONS.   THE DATA OBTAINED WERE
SUBMITTED AS THE BASIC DATA ON WHICH TO BASE THE DEVELOPMENT AND
CONSTRUCTION OF EXPTL. INDUSTRIAL VIBRATING MIXERS (VIBROAGITATORS) WITH
CAPACITIES OF 10-15 M PRIME3.

USSR   UDC: 51

KHANMAMEDOV, O. K., AYDA-ZADE, K. R.

"A Method of Global Optimization With 'Smoothing' of the Initial Function"

Za tekhn. progress, 1973, No 1, pp 9-11 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V507 by the authors)

Translation: The paper deals with a method of global extremization of a function with many extrema. The procedure of global extremization is broken down into two procedures: unimodalization in which the original problem is reduced to minimizing an equivalent unimodal function whose minimum coincides with the global minimum, and local descent on the resultant one-extremum function. The procedure of unimodalization is a Lagrange variational problem. The convergence of the procedure to a limiting variational problem is proved.

1/1

USSR   UDC: 539.107.45

AZIMOV, S. A., AYDINOVA, D. M., MUMINOV, R. A., YAFASOV, A. Ya., Physico-technical Institute imeni S. V. Starodubtsev, Academy of Sciences of the UzbekSSR

"Concerning Certain Characteristics of Si(Li) Nuclear Emission Detectors"

Abstract: Research is done on diffusion-drift, spectrometric detectors based on a p-i-n structure made from p-type single-crystal silicon with and without dislocations and with various conductivities. The parameters of the detectors are compared, and optimum conditions are determined for using such detectors and realizing their advantages. The thickness of the working section was 2-6 mm, area 1.25-2.5 cm^2, and minimum dead layer approximately 12 nm. It is shown how dislocations affect the nuclear physics characteristics of the detectors. Optimum operating conditions are determined for similar detectors used as spectrometers for beta-rays, soft gamma-rays, and x-rays.

1/1

USSR

UDC: 621.376.5

TROKHIN, V. M., AYDYNYAN, A. A., Ukrainian Polytechnical Correspondence
Institute

"A Digital Pulse Duration Modulator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 18, Jun 71, Author's Certificate No 305577, Division H, filed 20 Feb 70,
published 4 Jun 71, p 191

Translation: This Author's Certificate introduces a digital pulse duration
modulator which contains a cadence pulse oscillator, end-around shift
register, synchronization modules, flip-flop counters, a control and pro-
tection unit which includes gating cells, shift registers, controlling
flip-flops and protection flip-flops, and also AND gates, analog-digital
converters and a summing amplifier. As a distinguishing feature of the
patent, the operating precision of the modulator is improved by connecting
the outputs of the most significant digital places in the counters through
the gating cells to the input of end-around and reversible registers whose
outputs are connected to the inputs of three controlling flip-flops and two
protection flip-flops whose outputs are connected to the input of the sum-
ming amplifier.
1/1

- 110 -

TITLE--PROBLEM OF THE MECHANISM OF THE THERAPEUTIC ACTION HOMOPOIETIC
    TISSUE TRANSPLANTATIONS AFTER DAMAGE BY IRRADIATION -U-
AUTHOR-(02)-RYABUKHA, A.K., AYEZVAYA, S.P.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, MAR. 1, 1970, P. 244-246

DATE PUBLISHED--01MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE TRANSPLANT, BONE MARROW TRANSPLANT, RAT, RADIATION
    PROTECTION, RADIOPROTECTIVE AGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1091   STEP NO--UR/0020/70/191/000/0244/0246

CIRC ACCESSION NO--AT0115110
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0115110
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THE
 THERAPEUTIC EFFECTS OF TRANSPLANTED BONE MARROW ON IRRAIDATED RATS, IN
 THE CASE WHERE THE TRANSPLANTED TISSUE IS PREVENTED FROM RESETTLEMENT IN
 THE BODY. THE BONE MARROW WAS TRANSPLANTED IN DIFFUSION CHAMBERS (0.45
 MICRON PORE DIAMETERS) AFTER 500 AND 600 R DOSED OF IRRADIATION. THE
 TISSUE WAS CONTAINED IN THE DIFFUSION CHAMBER TO PREVENT ITS
 RESETTLEMENT IN THE BODY WHILE ALLOWING THE EFFECTS OF ITS ACTIVITY OT
 INFLUENCE THE IRRADIATED ANIMALS. SURVIVAL CURVES FOR THE RATS
 SUBJECTED TO 500 R DOSES SHOW A STRONG BENEFICIAL INFLUENCE OF THE
 MARROW TRANSPLANT; 41PERCENT OF THE ANIMALS WITH THE TRANSPLANT SURVIVED
 21 DAYS AS COMPARED TO 10PERCENT OF THE ANIMALS WITH NO MARROW IN THE
 IMPLANTED DIFFUSION CHAMBER. RATS SUBJECTED TO 600 R DOSES SHOWED NO
 EFFECTS OF THE TRANSPLANT, AND MOST ANIMALS DIED WITHIN 12 DAYS.
 FACILITY: TSENTRAL'NYI NAUCHNO ISSLEDOVATEL'SKII RENTGENO
 RADIOLOGICHESKII INSTITUT, LENINGRAD, USSR..

UNCLASSIFIED

USSR   UDC: 621.438-253.5.001.5

ROZENBERG, G. SH., AYKASHEV, F. I.

"Determination of the Coefficients of Energy Losses in the Impeller of a
Reversible Centripetal Radial-Axial Flow Turbine With Off-Design Angles of
Incidence"

Tr. TSNII Mor. Flota (Works of the Central Scientific Research Institute of
the Merchant Marine), No 148, 1971, pp 28-35 (from Referativnyy Zhurnal,
Turbostroyeniye, No 1, Jan 72, Abstract No 1.49.110)

Translation: The loss coefficient in an impeller is presented with off-design
angles of incidence, determined on the basis of measurements on the rotating
impeller in terms of relative motion. Calculation methods for determining the
coefficient of entry losses for off-design angles of incidence are analyzed.
The calculation results are compared with experimental data. On the basis of
experimental data, the accuracy of the calculation of loss coefficients in
the impeller for variable regimes is increased. Four figures. Two tables.
Seven references.

1/1

USSR
Adsorption

USSR   UDC 661.728.82,663.63

GULYAMOV, T., RASHIDOV, B. R., MAKSUDOV, E., and AYKHODZHAYEV, B. I., Institute
of 'Nuclear Physics, Academy of Sciences Uzbek, SSR

"Acetylcellulose Membranes for Reverse Osmosis"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 39-41

Abstract: A method was developed for the preparation of semipermeable mem-
branes for reverse osmosis from cellulose acetate dissolved in dimethyl-
formamide. The optimum conditions of preparing the membranes were evaporation
of a solution containing 20% cellulose acetate + 80% dimethylformamide
at 28-34° within less than 2 hrs, immersion in water for 2 min at 20-21°, and
thermal fixation for 5 min at 81-86°. In tests conducted at 50 atm with a
solution of 10 g NaCl/l., the efficiency of the membranes was 200-300
l./sq. m. per 24 hrs at a 95% degree of NaCl retention. When a solution with
the composition cellulose acetate 20, dimethylformamide 75, H_2O 5% was used

and thermal fixation was carried out at 86°, the efficiency increased to 500
l./sq. m. per 24 hrs while the degree of desalination remained at 94-5%.
To increase the efficiency, the same inorganic additives as those used in the
forming of membranes from acetone solutions of cellulose acetate could be
1/2

USSR

GULYAMOV, T., et al., Uzbekskiy Khimicheskiy Zhurnal, Vol 17, No 3, 1973, pp 39-41

used (cf. S. Loeb and S. Sourirajan, Adv. Chem. Soc., 38, 117, 1963), but the degree of salt retention dropped. It follows from this that the optimal conditions of forming must be determined experimentally in every instance.

2/2

USSR

UDC 678.13+677.37

YUNUSOV, R., YUNUSOV, L. YU., and AYKHODZHAYEV, B. I., Tashkent Institute of Textile and Light Industry

"Production of Grafted Copolymers of Natural Silk from Some Monomers"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 5, 1970, pp 91-93

Abstract: The copolymer grafting was carried out by placing raw silk in a glass or stainless steel vessel and covering it with an emulsion consisting of 0.006-0.15% hydrogen peroxide, 1-3% of the monomer, and 0.25% emulsifier (alkamon-OS2). This mixture was heated for varying time periods at 80°, then the fiber was taken out, washed thoroughly and dried down to a constant weight. When styrene was used as the monomer, optimal conditions were as follows: duration of the process - 15 min, emulsion consisting of 0.009% hydrogen peroxide, 2.7% styrene and 0.25% emulsifier. In general it was found that copolymers may be grafted on silk using such monomers as styrene, butylmetacrylate, methylmetacrylate, and the conditions reported for styrene. Grafting of these copolymers does not affect the appearance nor the mechanical properties of silk fibers.

1/1

Epidemiology

AYKIMBAYEV, M. A., KORNEYEV, G. A., KUNITSA, G. M., TLEUGABYLOV, M. K., TRYKIN,
V. S., SKVORTSKOVA, S. S., KUZIN, I. P., and SURMIN, V. M., Central-Asian
Scientific Research Antiplague Institute, Alma-Ata

"A Tugai Focus of Tularemia in Dzhambulskaya Oblast in the Lower Chu Flow"

Abstract: Rhipicephalus pumilio, the tick which carries and transmits tularemia
bacteria, can circulate the bacteria over a long time-span due to its ability
to parasitige hares and other rodents at all stages of its development. The
flooded fields in this region, on which cattle graze, create ideal conditions
for the spread of the ixodid tick. Dermacentor daghestanicus is the dominant
species because of its high percentage of infection by tularemia bacteria and
because it preserves the bacteria in its body for a long period. Bacteriolog-
ical studies were made of 117 mammals and 19,000 ticks of various species. In
infected hares pathological-anatomic changes were manifested by enlargement
of the spleen, in some cases by a change in the color and texture of the liver,
and by the characteristic mound arrangement of cocci-bacteria in the spleen,
liver, lungs, lymph nodes, and blood. 30 strains of Pasteureela tularensis
were found in ixodid ticks and 7 strains, in the hare (Lepus tolai). These
strains decompose glycerine and circulate in the tugai focus.
1/1

AYKIMBAYEV, M. A.

BIOCHEMICAL CHARACTERISTICS OF FRANCISELLA TULARENSIS STRAINS OF THE CENTRAL ASIAN GEOGRAPHIC RACE

Two geographic races of Francisella tularensis are known to exist at present in the Soviet Union, the holarctic (Olsuf'yev, 1968, 1970) and the Central Asian (Aykimbayev, 1966). The former is unable to ferment glycerin or split citrulline, whereas the latter ferments glycerin and contains the enzyme citrullinureidase. However, the two races differ little from one another (they are virtually apathogenic for rabbits) in other biological characteristics, specifically, in pathogenicity for laboratory animals.

The purpose of this study was to determine the biochemical activity of 17 F. tularensis strains of the Central Asian geographic race isolated mainly from hares and ticks in a natural focus of the tuxaic type in Dzhambulskaya Oblast in the Chu river valley and in the Ili and Amu-Dar'ya river valleys. Two typical strains of the holarctic race were studied for purposes of comparison.

Two methods were employed to determine fermentative activity: (i) Downs' method (Downs and Bond, 1935), normally used to study the biochemical activity of F. tularensis, but in Yemel'yanova's modification (1962) and (ii) Friedemann's method (Friedemann et al., 1942) in Rodionova's modification (1968).

Downs' method does not, of course, permit any quantitative assessment of the ability of different strains to split a given substrate. Moreover, it may be unsuitable if a strain possesses weak activity or if there are two fermentative processes that mask the final effect of the reaction. Accordingly, we thought it worthwhile to study biochemical activity at some intermediate stage in the oxidation of sugar or alcohol and not to record only

- 1 -

[I - USSR - C]

EQUIPMENT
Aeronautical and Space

USSR

UDC: 528.022.2

AYLAMAZYAN, A. K., BUNYAKIN, S. V., TARASOV, V. S., FILATOVA, O. N.

"An Angle-of-Attack Meter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 9, Mar 72, Author's Certificate No 331242, Division G, filed 24 Nov 70,
published 7 Mar 72, p 114

Translation: This Author's Certificate introduces an angle-of-attack meter
which contains a high-pressure receiver whose static pressure chamber is
connected to a static and dynamic pressure pickup, while the total pressure
chamber is connected to a dynamic pressure pickup, and auxiliary chambers
which sense pressures along the upper and lower generatrices of the receiver
nozzle are connected to the cavities of a differential pressure pickup. The
meter also contains a scale with sliding index. As a distinguishing feature
of the patent, precision is improved by connecting a source of information
on the magnitude of the Mach number of the air signal systems to the supply
winding of the inductive unit of the differential pressure pickup through a
summing transformer. The output winding of the differential pickup is con-
nected through a decoupling amplifier to the sine winding of a sine-cosine

1/2

USSR

AYLAMAZYAN, A. K. et al., USSR Author's Certificate No 331242

rotary transformer whose cosine winding is connected to the output of the
dynamic pressure pickup amplifier. The output winding of the rotary trans-
former is connected through an amplifier to the motor of a servosystem which
is kinematically connected to the pointer index.

2/2

USSR

UDC: 681.3:51

AYLAMAZYAN, A. K., BELOTELOV, V. P., DOLGOPOLOV, V. V., KRAVTSOV, V. G., LOZA, T. M., MARKINA, N. V., KHAKHIN, M. D.

"A Device for Computing Aerodynamic Parameters"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, 1970, Author's Certificate No 276528, Filed 28 May 69

Abstract: This Author's Certificate introduces a device for computing aero-dynamic parameters such as altitude, velocity, and Mach number. The unit contains converters of primary information to binary code which are connected through a shift register and adder to the input of an arithmetic device. Also included in the computer are a memory unit, decoder, pulse generator, control device, and recording unit. As a distinguishing feature of the patent, the electrical circuit is simplified and the overall dimensions are reduced by connecting the most significant digital places of one of the registers in the arithmetic device to the least significant digital places of the address section of the command register in the control unit through diodes controlled by the decoder and the pulse generator. The most significant digital places of the address section and the code section of the command register in the control device are connected to the memory unit.
1/1

USSR   UDC: 551.508.54

GORENSHTEYN, I. A., AYLAMAZYAN, A. K., KRAVTSOV, V. G.

"True Air Speed Indicator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 10, Apr 72, Author's Certificate No 332383, Division G, filed 20 Oct 70,
published 14 Mar 72, p 174

Translation: This Author's Certificate introduces a true air speed indi-
cator which contains a tube with ionizing and measurement electrodes con-
nected to a generator of periodic pulses and placed in the direction of
flow. As a distinguishing feature of the patent, in order to reduce dis-
tortions introduced into the flow, the electrodes are located symmetrically
in ridged sections in the body of the tube with internal section in the
form of a figure formed by two intersecting circles of the same diameter,
the distance between the points of intersection being at least ten times
less than the diameter.

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USSR   UDC 547.341.26'118.07

ZARIPOV, R. K., AZERBAYEV, I. N., and AYMAKOV, U. A., Chemical-Metallurgical
Institute, Academy of Sciences, KazakhSSR

"Reaction of the Esters of Hydroxymethylphosphonic Acid With Orthoformate
Esters"

Abstract: A mixture of 29.6 g triethylorthoformate and 44.8 g di-n-butyl
ester of hydroxymethylphosphinic acid was heated in an oil bath to 130° for
30-35 min distilling over about 12 ml of ethyl alcohol. The residue was
vacuum distilled yielding di-n-butyl ester of diethoxymethyl(hydroxymethyl)-
phosphinic acid. A series of homologues was obtained in an analogous manner.
The products are colorless volatile liquids without a marked odor, soluble
in organic solvents.

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USSR

AYNBERG, V. D., KONOVODCHENKO, I. G., MOLOSTVOVA, L. V., RUMYANTSEVA, G. D., SABSOVICH, L. L.

"Expansion of the Library of Standard Procedures of the TA-1M Translator"

Translation: A list of developed standard procedures of the TA-1M translator is presented for: 1) formation of matrices and algebraic operations on them; 2) printout of files using the alphanumeric printer; 3) exchange of files in ready-access memory with the external memory of the computer. It is noted that reference to all the developed procedures is made using the standard procedure operator $pN(q_1, q_2, \ldots, q_n)$ where N is the library number of the standard procedure, and $q_1, q_2, \ldots, q_n$ are its actual parameters in place of which the identifiers of the variables and files, the numbers and arithmetic expressions can be substituted. All of these described procedures are formulated as standard programs in the IS-2 system, and the TA-1M translator is used without auxiliary shaping subprograms. They are written on the magnetic tape of the translator library and find broad application, increasing the volume of the ready-acces and external memories used, facilitating the programming process in ALGOL and reducing the solution time of the problems.
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USSR   UDC 8.74

AYNBERG, V. D.

"Inclusion of Standard Programs from the Standard Compiler System in ALGOL
Programs in the Input Language of the TA-1M Translator (the M-220 Computer)"

Translation: A procedure is proposed for inclusion of standard subroutines
operating in the standard compiler system in an ALGOL program. Its essence
consists in the following. The standard compiler sets up each program file of
the standard subroutines with respect to given parameters when loading it into
the ready-access memory. The standard subroutine parameters are the actual
addresses in memory of the given standard subroutines and the files required
for operation of the standard subroutines and also the numerical values of
certain parameters. This information is formulated as the memory configuration
table. After translation of the ALGOL program in the standard compiler, infor-
mation is given on the location of the parameters required by the given standard
subroutines in memory. A special file is allocated for the standard subroutines.
During practical implementation of the described procedure, it is proposed that
the following remarks be considered: 1) as a result of certain operating pe-
culiarities of the standard compiler, the files, the standard subroutine and
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USSR

AYNBERG, V. D., _Tr. TsNII stroit. konstruktsiy_, 1971, vyp. 20, pp 8-10

other parameters information about which is transmitted to the standard compiler via the memory configuration table must not be put in the memory of the computer with an address greater than 7,200; 2) the standard subroutine file must not fall in the cells where the compiler itself is operating; 3) all the standard subroutines access to which is available in the given standard subroutines must be in the translator library, and if reference is not made to them in the ALGOL program, they must be included in the subroutine library of the user by means of the standard operator of the TA-1M r0706.

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USSR   •   UDC: 624.131.43+539.21.084-492.3

SKOMOROVSKIY, Ya. Z., AYNBINDER, A. B.

"Longitudinal Displacements of Undergound Pipelines With Regard to Physical
Nonlinearity of the Shear Resistance of the Ground"

Tr. VNII po str-vu magistral'n. truboprovodov (Works of the All-Union Sci-
entific Research Institute on Construction of Main Pipelines), 1971, vyp.
25, pp 47-60 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V526)

Translation: The authors consider displacement of the end of an underground
pipeline which emerges onto the surface of the earth and is loaded by a
longitudinal force for two cases of soil shear resistance as a function of
displacement: for loose soil -- with a nonlinearly elastic section and
constant resistance in the plastic stage; for coherent soils -- with an
analogous pattern, but with an additional section of separation when the
limiting resistance is reached. In solving the differential equations of
displacements, two sections are considered lengthwise of the tube: a sec-
tion nearest the end with constant soil shear resistance, and a following
section with elastic resistance. Computational formulas are derived for
determining the displacement of the end of the pipeline for both cases.

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SKOMOROVSHIY, Ya. Z., AYNBINDER, A. B., Tr. VNII po str-vu magistral'n.
truboprovodov, 1971, vyp. 25, pp 47-60

It is noted that the proposed solution with regard to nonlinearity of soil
shear resistance gives a more precise reflection of the actual conditions
of operation of underground pipelines as compared with existing methods.
Bibliography of 9 titles. V. M. Shamin.

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1/2   020
UNCLASSIFIED
TITLE--THE CAUSES OF BULGING OF GAS PIPELINE SECTIONS BUILT IN CENTRAL
ASIA -U-   PROCESSING DATE--23OCT70

AUTHOR-(02)-SPIRIDONOV, V.V., AYNBINDER, A.B.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STROITEL'STVO TRUBOPROVODOV, NO 2, FEB 70, PP 14-15

DATE PUBLISHED----FEB70

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

TOPIC TAGS--NATURAL GAS, PIPELINE TRANSPORTATION SYSTEM, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0381

STEP NO--UR/0095/70/000/002/0014/0015

CIRC ACCESSION NO--AP0119332

UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE PRESENTS AND
INVESTIGATION OF CAUSES OF BULGING ON 1020 MM GAS PIPELING IN CERTAIN
REGIONS OF CENTRAL ASIA, WHERE THE LARGE PART OF IT IS LAID IN SANDY
SOILS, THE CHARACTERISTIC PROPERTIES OF WHICH ARE: 1) A NEARLY TOTAL
ABSENCE OF BONDS; 2) A SMALL ANGLE OF INTERNAL FRICTION (Y IS LESS THAN
15DEGREES); AND 3) LOW HUMIDITY (UP TO 5PERCENT IN SUMMER). THE
CONSTRUCTION AND AREA CHARACTERISTICS ARE DESCRIBED. THE BULGING
OCCURRED ON THREE SECTIONS, LOCATED AT 9, 12, AND 19KM FROM A COMPRESSOR
STATION, AND WAS PROCEEDED BY A CHANGE IN OPERATION CONDITIONS AT THE
COMPRESSOR STATION, WHERE THE GAS TEMPERATURE AT THE OUTPUT ATTAINED
52DEGREESC AT 55KG-CM PRIME2 PRESSURE. CRIMPS OF 150MM HEIGHT WERE
OBSERVED IN THE COMPRESSED ZONE OF THE PIPE SECTION. THIS INDICATED
THAT METAL DEFORMATIONS TURNED INTO PLASTIC DEFORMATION AS A RESULT OF
LARGE LONGITUDINAL COMPRESSIVE FORCES AND LARGE TRANSVERSE TENSILE
STRESSES.   PHOTOGRAPHS OF THE BULGING PIPELINE SECTION AND A COMPRESSED
PIPE SECTION COVERED BY CRIMPS, AND ALSO A PHOTOGRAPH SHOWING THE
TRANSLATION OF PIPE ENDS ARE PRESENTED. A GEODESIC SURVEY WAS CONDUCTED
BEFORE AND AFTER THE ELIMINATION OF BULGED SECTIONS IN ORDER TO
DETERMINE THE STRAIN STATE OF THE AREA. A SERIES OF RECOMMENDATIONS ARE
PRESENTED FOR IMPROVING THE RELIABILITY OF GAS PIPELINE OPERATION.
ORIG. ART. HAS: 3 FIGURES.

UNCLASSIFIED

1/2   015   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--A TWO FREQUENCY METHOD FOR CONTROLLING QUADRUPOLE RELAXATION -U-

AUTHOR-(04)-AYNBINDER, N.YE., GRECHISHKIN, V.S., OSIPENKO, A.N., SHISHKIN,
YE.M.
COUNTRY OF INFO--USSR   A

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1543-1548
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUCLEAR ENERGY LEVEL, QUADRUPOLE MOMENT, EXCITATION ENERGY,
SPIN LATTICE RELAXATION, RELAXATION PROCESS, RF FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0010   STEP NO--UR/0056/70/058/005/1543/1548

CIRC ACCESSION NO--AP0127660
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NUMBER OF NOVEL PHYSICAL EFFECTS WHICH APPEAR ON EXCITATION OF NUCLEAR QUADRUPOLE ENERGY LEVELS WITH TWO FREQUENCIES ARE DESCRIBED. IT IS SHOWN THAT BY INTRODUCING A SATURATING POWER IN TO THE ADJACENT TRANSITION ONE CAN CONTROL SPIN LATTICE RELAXATION. THE METHOD CAN BE EMPLOYED FOR DETERMINING THE RATION OF THE RELAXATION PROBABILITIES AND THE MAGNITUDE OF THE RADIO FREQUENCY FIELD IN A SATURATING PULSE.   FACILITY: PERMSKIY GOSUDARSTVENNYY UNIVERSITET IM. A. M. GOR'KOGO.

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