Acc. Nr.
AP0055621

Abstracting Service:
CHEMICAL ABST.

Ref. Code

111879z Elementary constants of chain growth and termination during the radical polymerization of methyl methacrylate in the presence of aluminum bromide. Achim, L. B.; Zubov, V. P.; Kabanov, V. A. (USSR). Vysokomol. Soedin., Ser. B 1970, 12(1), 4-5 (Russ). In the polymn. of Me methacrylate (I) in the presence of AlBr₃ with uv irradn., it was found that the initiation rate const. (k_i) increases and the chain-transfer const. (k_{tr}) decreases in the $0 < AlBr_3/I < 0.05$ mole ratio range. This supports the view that AlBr₃ participates in the polymer chain-growth mechanism (V. I. Zubov, et al., 1967) and explains the decrease in the polymer mol. wt. with increase in AlBr₃ concn.
CPJR

Y/

REEL/FRAME
19840923

Organophosphorus Compounds

USSR

KIRILOV, M., LACHKOVA, V., Department of Organic Chemistry imeni
Kliment Okhridskiy, Sofia University, Bulgaria

"Phenylation of Benzylphosphonates by Bromo-Benzene in a Sodium
Amide-Liquid Ammonia System"

Abstract: Research in the reactivity of carbanions stabilized
with a phosphonium group aroused considerable interest in the
arylation of carbanions of compounds such as phosphonoacetic ester,
phosphonoacetonitrile and benzylphosphonic esters, and others, and
in this connection their nucleophilic was evaluated. This paper
presents the first results of phenylation of benzylphosphonic
esters with bromo-benzene in a sodium amide-liquid ammonia system.
The reaction was carried out with a 1:1:2 ratio of benzylphospho-
nate: bromo-benzene: sodium amide for ½ hr and resulted in mono-
phenylation products, i.e., diphenymethane phosphonic esters with
1/2

USSR

KIRILOV, M., et al, Doklady Akademii Nauk SSSR, Vol 191, No 6,
1970, pp 1295-1296

yields of 18-23%. The basic product was aniline (10-10%). In
addition to aniline and the monophenylation product there was also
an appreciable quantity of unreacted benzylphosphonate. The data
indicate the lower nucleophilic capacity of benzylphosphonate
carbanions (as compared to amide-anions) and their high specificity
with respect to monophenylation. The above phenylation reaction
is a new convenient method for preparing dimethylmethane phospho-
nates, and may be used for obtaining hard-to-produce esters of
mixed aryl-phenylmethanophosphonic acids.

2/2

USSR

UDC: 621.96—621.91/95

LACHUGIN, F. S.,and DROZDOV, G. D.

"Briquetting the Wastes of High-Quality Steels and Alloys"

Moscow, Kuznechno-shtampovochnoye proizvodstvo, No. 5, 1971, p 46

Abstract: The wastes in question are the residue of the process of cutting rods of such refractory nickel alloys as EI437B and EI698 on anode-mechanical machines. This short article describes the process developed by the authors for briquetting the powdered waste in a thin-walled metal container; the description is quite detailed. It is stated that the metal thus obtained can be used as an alloying ingredient in the production of steels and nickel-based metals. The assistance of M. V. POLYAKOV, and M. V. ALESHINA is acknowledged.

1/1

UDC $\left[537.226 + 537.311.33\right]$: $\left[537 + 535\right]$

USSR

GOLOVEY, M. I., PERESH, Ye. Yu., LADA, A. V., POTORIY, M. V.

"Some Electrophysical Characteristics of Metathiobismutite and Metaselenobismutite of the Alkali Metals"

Uzhgorod, V sb. Nekotor. vopr. khimii i fiz. poluprovodnikov slozhn. sostava (Some Problems of the Chemistry and Physics of Complex Semiconductors -- collection of works), 1970, pp 150-157 (from RZh-Fizika, No 11, 1971, Abstract No 11E952)

Translation: $XBiSe_2$ and $YBiS_2$ where X is Na, K, Rb, Cs; and Y is Li, Na, K, Rb, Cs are synthesized. Aquadag or Pt contacts are applied for measuring the electrical conductivity σ and the thermal emf α of the specimens. All synthesized materials are impure p-semiconductors. The thermal activation energy found in the natural conductance region increases with increasing ion radius of the alkali metals. The growth in α is apparently the result of the increase in mobility of the charge carriers. With the attainment of the natural conductivity temperature, α begins to fall off.

1/1

102072d Experimental determination of the dynamic charac-
teristics of evaporating apparatus in a sugar refinery. Iudanich.
A. P.; Kornienko, L. I.; Skoblo, D. I. (USSR). Sakh. Prom.
1970, 44(1), 55-8 (Russ). A 4-stage evaporator was equipped
with sensors for levels in all stages and in the feeding tank, for
amts. of juice fed to the evaporator, for temp. and pressure of
vapors and juices in the chambers and collectors and for the amt.
of condensate from the 1st stage. The data were treated by
computer to yield differential equations describing the response
of the evaporator to changes in feed rate of steam to the 1st stage,
steam take-off from the 1st stage to the 1st vacuum stage of the
1st product, vacuum in condenser, and changes in levels caused
by changes in the feed. As for vapor pressure in the heat ex-
changers and pressure of secondary vapor, the evaporator is self
regulating. As for levels, no regulation occurs within per-
missible ranges.   Olaf Thomsen

REEL/FRAME
19810806

UDC 681.325.6

USSR

CHKHEIDZE, M. V., and LADARIYA, Tbilisi Branch, All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev (Tbilisskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta metrologii in. D. I. Mendeleyeva)

"Flip-Flop Register with Correction of Shift Errors"

USSR Author's Certificate No 258736, filed 30 Jul 68, Moscow, Otkrytiya Izobreteniya Promyshlennyye Obraztsy i Tovarnyye Znaki, No 1, Jan 70, p 130

Translation: A flip-flop register with correction of shift errors which consists of flip-flop and "AND" and "OR" logic elements is presented. Its distinctive feature is the fact that for the purpose of improving reliability of register performance, the zero and unit output of the flip-flop of every position of the register is connected with the input of the respective coincidence circuit, the second input of which through the delay element is coupled to the output of the collector circuit, connected in turn to the input circuit of the opposite flip-flop arm. The output of the coincidence circuit through the
1/2

USSR

CHKHEIDZE, M. V., et al., USSR Author's Certificate No 258736, filed
39 Jul 68, Moscow, Otkrytiya Izobreteniya Promyshlennyye Obraztsy i
Tovarnyye Znaki, No 1, Jan 70, p 130

Translation: multi-input collector circuit is connected with the in-
puts of the two coincidence circuits and the input of the delay
element, the output of which is coupled with the other outputs of
these same coincidence circuits.

2/2

- 42 -

USSR

LADERNO, Yu. B., ODINTSOV, V. V.

"Production of Metal Dodecaborides by Borothermal Reduction of Metal Oxides"

Translation: Studies are performed of the production of metal dodecaborides by reduction of metal oxides in a vacuum using a charge with an excess of B. Single-phase dodecaborides with UB_{12} structure are formed when the initial charge contains 4-6 % excess B, which apparently results from defects in the metal dodecaboride lattices. 2 tables; 11 biblio refs.

1/1

UDC 577,4

USSR

LADES, V. I.

"Synthesis of Logical Comparison Circuits"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines -- collection of works), Moscow, Nauka Press, 1972, pp 104-113 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V379)

No abstract

1/1

USSR

KAZUSHCHIK, V. A.; LADES, V. I.; PONOMARENKO, V. K. (Institute of Mathematics,
Belorussian Academy of Sciences)

"Combinative Schemes for Comparing Values of a Linear Function with a Number
Different from Zero"

ABSTRACT: The authors present an algorithm for the synthesis of combinative
schemes for comparing the values of linear functions with a number L which is
different from zero, for the case in which an interrogating signal is propa-
gated from the low-order digit to the high-order digit of the expression. Con-
ditions are found for the regularity of the structure for the class of compari-
son schemes considered. It is shown that if the arguments of a linear function
are binary numbers with a fairly large quantity of digits and if it is possible
to isolate sequences in the number L consisting only of zeros or only of ones,
then the comparison schemes considered have portions with a regular structure.
     The method of synthesis suggested is illustrated with examples. The article
contains three tables and two figures. There are 3 bibliographic references.

1/1

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UNCLASSIFIED   PROCESSING DATE--30OCT70

1/2   026

TITLE--ON ONE CLASS OF NONLINEAR SYSTEMS WITH SELF ADJUSTMENT WITH RESPECT
   TO THE INPUT SIGNAL -U-

AUTHOR--LADIK, A.I.

COUNTRY OF INFO--USSR

SOURCE--NOVOCHERKASSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY,
   ELEKTROMEKHANIKA, NO 3, 1970, PP 304-308

DATE PUBLISHED----------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--NONLINEAR AUTOMATIC CONTROL SYSTEM, SERVOSYSTEM, WHITE NOISE,
   ELECTRIC FILTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1660   STEP NO--UR/0144/70/000/003/0304/0308

CIRC ACCESSION NO--AT0123493
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0123493

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYNTHESIS HAS BEEN PERFORMED OF
A NONLINEAR SELFADJUSTING SERVO SYSTEM WITH FREQUENCY FILTERS UNDER
CONDITIONS OF THE ACTION ON ITS INPUT OF STATISTICALLY PRESET USEFUL
SIGNAL AND AN INTERFERENCE CLOSE TO "WHITE NOISE." IT WAS SHOWN THAT
THE METHOD OF STATISTICAL LINEARIZATION ENSURES SUFFICIENT ACCURACY OF
CALCULATIONS. RESULTS OF MODELLING CONFIRM THE CORRECTNESS OF
CALCULATIONS.

UNCLASSIFIED

UDC 533.6.011

USSR

LADNOVA, L. A.

"Effect of Injection on Nonequilibrium Hypersonic Flow in the Neighborhood of the Critical Point of a Body With Arbitrary Catalytic Activity of the Surface, Including the Effects of Small Reynolds Numbers"

V sb. Teplo- i massoperenos. T. 1. Ch. 3 (Heat and Mass Transfer. Vol. 1, Part 3 -- Collection of Works), Minsk, 1972, pp 150-160 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B404)

Translation: The system of equations for the flow of a binary mixture of gases (molecules and atoms) is solved with the aid of diagrams of a thin shock layer and modified Rankine-Hugoniot equations. It is hypothesized that a nonequilibrium dissociation process occurs in the gas phase and a nonequilibrium recombination process occurs on the surface of the body. The following computational results are given: profiles of the temperature and concentration of atoms, frictional stress, and thermal flow for various values of the injection parameter. 8 ref. G. I. Maykapar.

1/1

Epidemiology

UDC 616.912-039-022.6:576.858.13

USSR

MARENNIKOVA, S. S., SHELUKHINA, E. M., MAL'TSEVA, N. N., and LADNYI, I. D.,
Moscow Scientific Research Institute of Virus Preparations

"Monkey Pox Virus -- the Agent of a Smallpox-Like Disease in Man"

Abstract: After a case of smallpox (boy aged 9 months) was reported from a
remote village in equatorial Congo where, due to vaccination, no smallpox
had occurred during the preceding two years, the patient was taken for special
observation and treatment. The skin eruption, though initially identical with
regular smallpox, subsequently changed, with the vesicles and pustules becoming
polymorphous and developing hemorrhagic points. Exudate collected from the
vesicles was incubated at 35°C on chorio-allantoic membranes of chick embryos,
and a virus was isolated after the first passage. Unlike the standard small-
pox virus, the newly isolated virus displayed strong hemagglutinating and
hemadsorptive activity, induced necrosis after intradermal injection in
rabbits, and caused eruption on the chorio-allantoic membrane even when in-
cubated at a higher temperature (39°C). Additional comparative tests performed
on the newly isolated virus, on smallpox, cowpox, and monkey smallpox viruses,
and on Vaccinia virus established the identity between the newly isolated virus

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USSR

MARENNIKOVA, S. S., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 468-469

and monkey smallpox virus. Epidemiological investigation of the village re-
vealed no other cases of this disease. Nor was it possible to establish by
what route the child had contracted the disease. Nevertheless, the results
clearly indicate that monkey smallpox virus is pathogenic for man and causes
a smallpox-like disease in humans.

UDC 519.24

USSR

LADOKHIN, V. I., KOBCHIKOV, A. V., NEZHMETDINOV, T. K., PANKOVETS, V. V.,
IVANYCHEV, Yu. N.

"Experimental Determination of the Correlation Function of Processes of Changing
Intensity in Adaptive Information Processing Systems"

Translation: The problem of determination of the sampling estimate of the cor-
relation function in adaptive information processing systems (ADIPS) on the
basis of observation data is studied. The Cauchy-Bunyakovskiy inequality is
used to write an upper estimate for the dispersion of the estimate of the correla-
tion function. In conclusion, the authors present examples of practical problems
which can be solved using the results they produce.
    Abstractors Note. The replacement of the actual processes occurring in
ADIPS with stable Gaussian processes in this work requires foundation.

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1/1

USSR

UDC 519.214

DUBROVIN, V. T., LADOKHIN, V. I., MOSKVIN, D. A.

"The Central Limit Theorem for Sums of Functions of Independent Quantities"

Uch. Zap. Kazan. Un-t. [Scientific Writings of Kazan' University], Vol 130, No 3, 1970, pp 28-40 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V17 by Yu. Davydov).

Translation: A new proof is presented of two theorems on estimating the residual term in a central limit theorem for functions of independent random quantities, proven earlier by I. A. Ibragimov (RZhMat, 1968, 5V20).

1/1

- 2 -

USSR

UDC 632.954:631.5/9:581.1

LADONIN, V. F., KHACHATRYAN, S. M., and GAL'PER-BLICHENKO, Ye. M., All Union Scientific Research Institute of Fertilizers and Agricultural-Soil Science, Moscow

"Effect of Monuron and Linuron on Some Physiological-Biochemical Processes in Plants"

Moscow, Agrokhimiya, No 3, Mar 73, pp 103-112

Abstract: Mechanisms of the intake, distribution and detoxication of the phenylalkylurea derivatives monuron and linuron in various plants have been discussed. On the basis of various degrees of accumulation of these herbicides and similar activity and effectiveness against weeds shown in field trials, an assumption has been made that their toxic activity is not directly related to the inhibition of photosynthetic processes alone. The effect of monuron and linuron on the metabolism of nuclei acids, proteins and free aminoacids in the plants has been demonstrated. It has been assumed that the phytotoxicity of monuron and linuron relates directly to the metabolism of proteins and nucleic acids.

1/1

USSR   UDC 632.957:547.963.3

TAOVA, V. I., and LADONIN, V. F., All-Union Scientific Research Institute of
Fertilizers and Agrology

"Effect of Lenacil on the Metabolism of RNA, Protein and Acid-soluble
Nucleotides in Bean Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 49-52

Abstract: The authors studied the effect of the herbicide lenacil on the
metabolism of RNA, protein and acid-soluble nucleotides in etiolated and green
bean plants. Hitherto there had been no data on this question in foreign or
Soviet literature. It was found that lenacil in herbicidal concentrations
sharply disturbs the growth and development of etiolated and green bean plants.
A concentration of 6 mg/l stops root growth and kills the growing point.
Lenacil disturbs nuclein-protein metabolism in all organs of etiolated and green
bean plants. The amount of RNA, protein and acid-soluble nucleotides per gram
of weight of raw green plant mass increases with increased concentration of the
herbicide, but decreases per plant. In etiolated plants the increase in nucleo-
tide content is accompanied by a decline in the RNA and protein content, prob-
ably as a result of disturbed RNA synthesis. A mechanism for the action of
lenacil is suggested.
  1/1

UNCLASSIFIED   PROCESSING DATE--27NOV70

1/2   022

TITLE--EFFECT OF HALOPHENOXY ACIDS ON THE PROTEIN NUCLEIC ACID METABOLISM
OF ETIOLATED PEA SHOOTS -U-

AUTHOR-(02)-LADONIN, V.F., BEKETOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (3), 115-23

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ALIPHATIC
ACID, PLANT GROWTH REGULATOR, LEGUME CROP, NUCLEIC ACID METABOLISM,
PROTEIN METABOLISM, RNA, MITOCHONDRION, CYTOPLASM, PLANT PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0511   STEP NO--UR/0485/70/000/003/0115/0123

CIRC ACCESSION NO--AP0134279
UNCLASSIFIED

CIRC ACCESSION NO--AP0134279
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   2,EMTHYL,4,CHLOROPHENOXYACETIC
    ACID (I), 2,METHYL,4,CHLOROPHENOXYPROPIONIC ACID (II), AND
    2,METHYL,4,CHLOROPHENOXYBUTYRIC ACID STIMULATED SYNTHESIS OF PROTEIN AND
    RNA IN ETIOLATED PEA SHOOTS.   I HAD NO EFFECT ON RNASE IN VITRO, BUT
    INCREASED THE RNA IN EVERY PART OF THE STEM.   I AND II INCREASED BOTH
    PROTEIN AND RNA IN THE NUCLEI, PLASTIDS, MITOCHONDRIA, RIBOSOMES, AND
    CYTOPLASM OF THE PLANT CELLS.   EVIDENTLY THESE HERBICIDES STIMULATE RNA
    SYNTHESIS, WHICH LEADS TO DISORGANIZED PROTEIN SYNTHESIS.
    FACILITY: VSES. NAUCH.-ISSLED. INST. UDOBR. AGROPOCHVOVED., MOSCOW,
    USSR.

UNCLASSIFIED

USSR

RISKIN, I. V., et al., Zashchita Metallov, Vol 8, No 6, 1972, pp 704-705

In the aerated solution with the same concentration and temperature, mixing does
not lead to depassivation of the alloy. In the deaerated solution at 80° and
with boiling the alloy potential fluctuates, remaining 0.3-0.5 volts more
negative than in the aerated solution. Thus, the dissolved oxygen has a pas-
sivating effect on the corrosion behavior of titanium alloy with 0.2% palladium
at various hydrochloric acid concentrations to the boiling point.

2/2

USSR

UDC 620.193.013:669.29?

UZBEKOV, A. A., RISKIN, I. V., LADOZHINA, Z. I. and TOMASHOV, N. D.

"Study on the Corrosion of Titanium Alloyed With 0.2% Palladium in Hydrochloric Acid Using the Radioactive Tracer Method"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 8-14

Abstract: The study of palladium dissolution rate at various stages of corrosion conducted on a titanium alloy with 0.2% palladium in both aerated and deaerated 20% solutions of hydrochloric acid using the radioactive tracer method indicates that the transfer of palladium into the solution takes place at room temperatures. Rotating the specimen increases the transfer rate of palladium into solution and decreases its amount on the surface which is apparently related to the mechanical removal of some of the palladium from the specimen's surface. The study of the kinetics of palladium transfer to both aerated and deaerated solutions indicates that palladium transfer to the aerated solution ceases on passivation while the transfer to a deaerated solution continues for the entire period of active dissolution of the alloy. It is suggested that the ionization of palladium

1/2

USSR

UZBEKOV, A. A., et al, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 8-14

from the Ti-0.2% Pd alloy begins only with the loss of contact of the
palladium particles (or Ti_2Pd intermetallides) with the surface of the alloy
and the subsequent displacement of their potential toward the positive
side. A schematic diagram of the experimental equipment is presented.
(4 illustrations, 1 table, 14 bibliographic references).

2/2

Second Page Missing

USSR   UDC 620.193.41:669.295

RISKIN, I. V., LADOZHINA, Z. I. and TOMASHOV, N. D.

"Crevice Corrosion of Titanium and its Alloy with 0.2% Palladium in Hydrochloric Solutions"

Moscow, Zashchita metallov, Vol 8, No 2, Mar-Apr 72, pp 177-181

Abstract: Described are the results of corrosion tests on specimens of VT-1 titanium and Ti alloys with 0.2% palladium under crevice corrosion conditions in both aerated and deaerated hydrochloric solutions using argon. The test results indicate that Ti alloy with 0.2% Pd -- as compared to pure Ti -- not only is capable of maintaining a higher corrosion resistance in the crevice than in the bulk of the solution but will also promote the passivation of pure Ti provided the crevice is formed by the specimen pair Ti-Ti alloy with 0.2% Pd in the state of electric contact. (1 illus. 1 table, 12 biblio. ref.)

1/2

UNCLASSIFIED

1/2   021   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--USE OF FIBRINOGEN IN THE COMPLEX TREATMENT OF PATIENTS WITH
THROMBOCYTOPENIA -U-
AUTHOR-(02)-LADUBA, T.L., YELYASHKEVICH, E.S.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 40-42

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THROMBOCYTOPENIA, FIBRINOGEN, SYNDROME, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1751   STEP NO--UR/0475/70/000/006/0040/0042

CIRC ACCESSION NO--AP0129119
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129119
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   OBSERVATIONS ON 40 PATIENTS WITH
  THROMBOCYTOPENIA AT THE PERIOD OF DEVELOPMENT OF HEMORRHAGIC SYNDROME
  AND AFTER TRANSFUSION OF FIBRINOGEN COMBINED WITH OTHER HEMOSTATIC
  SUBSTANCES (BLOOD, PLASMA, THROMBOCYTIC SUSPENSION, ADMINISTRATION OF
  VITAMINS P, C, K, RUTINUM) INDICATE THAT SUCH TREATMENT RESULTED IN
  REGULAR SHORTENING OF THE BLEEDING TIME AND IN CONTROL OR REDUCTION OF
  THE BLEEDING.   FACILITY: NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT
  GEMATOLOGII I PERELIVANIYA KROVI.

UNCLASSIFIED

TITLE--USE CF A SWOLLEN PERLITE IN SIRUP GLUCOSE PRODUCTION -U-

AUTHOR--LADUR, T.A.

COUNTRY OF INFO--USSR

SOURCE--SAKH. PROM. 1970, 44(4), 72-4

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOD TECHNOLOGY, GLUCOSE, AQUEOUS SOLUTION, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0302   STEP NO--UR/0339/70/044/004/0072/0074

CIRC ACCESSION NO--AP0135797
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0135797
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THE USE OF SWOLLEN PERLITE AS A
  FILTRATION AID LENGTHENS THE FILTRATION CYCLE FROM 45-80 TO 120-150 MIN
  AND ALSO REDUCES THE AMT. OF FILTRATION SLIME SINCE LESS OF THE MATERIAL
  HAS TO BE ADDED THAN WITH THE USUAL FILTRATION AIDS.   MOREOVER, THE
  FILTER PRESS RESIDUES ARE MORE EASILY WASHED BECAUSE OF THEIR GREATER
  POROSITY, SO THAT THE LOSSES OF SIRUP DRY SUBSTANCES ARE REDUCED, I.E.
  OF THE ORDER OF 11PERCENT COMPARED WITH 27PERCENT WITH THE USUAL AIDS,
  SUCH AS DIATOMITE.   THUS, REPLACEMENT OF DIATOMITE BY SWOLLEN PERLITE AS
  AN AID IN THE FILTRATION OF GLUCOSE SIRUP INCREASES THE AV. FILTRATION
  RATE OF THE NEUTRALIZED SIRUP BY A FACTOR OF 2-3 BUT LENGTHENS THE
  FILTRATION CYCLE TO 2-2.5 HR (VS. 0.7-1.0 HR).

USSR   UDC   539.2+539.173+669-154

NOVOKHATSKIY, N. A., LAD'YANOV, V. I., ARKHAROV, V. I., Academician of the
UkrSSR Academy of Sciences, VELYUKHANOV, V. P., Donetsk Physicotechnical
Institute, UkrSSR Academy of Sciences

"The Two-Isotherm Method in Diffractometry of Melts"

Abstract: A "two-isotherm" method based on Fourier analysis is proposed
for interpreting the diffraction patterns of melts with regard to the
specific characteristics of their micrononhomogeneities. The procedure
shows the partial diffraction effects of structural components, in
principle,is applicable to multicomponent melts consisting of several types
of clusters and a general disordered zone, and can be extended to analysis
of the diffraction patterns of molten salts, oxides,and so forth.

1/1

LADYGIN, A. Ya.

(6)

RADIATION SWELLING OF STEEL [...]

UDC: 621.039.531:669.015.3

Article by A. Ya. Ladygin, V. D. Onufriev, [...]; Moscow, Atomnaya Energiya, Russian, Vol IV, N. [...], submitted 8 January 1973, pp 235-[...]

[...] austenitic steels after irradiation [...] in reactors [...] of type [...] and [...] stainless steel has been subjected to [...] investigation. Information on the swelling of [...] dose for individual temperatures and integral doses [...] electron-microscopic analysis of the radiation porosity of [...] are presented in this article.

Experimental Material and Technique

The specimens for electron-microscopic analysis were discs 1.5 mm in diameter and 0.4 mm thick, cut from various fuel element jackets made of [...] steel and irradiated with integral fluxes of up to [...] neutron/cm² in the 450-550°C temperature range. The method of thinning of the specimens in a stream of electrolyte [...] is described in [4].

Processing of the results was accomplished directly from the negatives with the aid of an instrumental microscope. The measurement error of cavity diameters was 20 Å. The concentration of the pores in the specimen was determined by measuring at least 600 cavities in a specimen with a thickness of 1,500 Å. The summary error of determination of the swelling of the material was 20%, but the scattering of the values from the arithmetic mean value for several measurements of the same specimen did not exceed 20%.

Investigation of the Swelling of [...] Steel

Electron-microscopic analyses of the specimens revealed pores, homogeneously distributed through the body of the grain, the concentration

- 1 -

[I - USSR - I]

1/2   031   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--HEMATITE CONCRETE FOR SHIELDING FROM HIGH NEUTRON FLUXES -U-

AUTHOR-(05)-DUBROVSKIY, V.B., IBRAGIMOV, SH.SH., KORENEVSKIY, V.V.,
    LADYGIN, A.YA., PERGAMENSHCHIK, V.K.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 258-60

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--CEMENT, NEUTRON SHIELDING, IRON ORE, MECHANICAL
    STRENGTH/(U)298 CEMENT, (U)2134 HEMATITE ORE, (U)298 HEMITITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0752   STEP NO--UR/0089/70/028/003/0258/0260

CIRC ACCESSION NO--AP0131347

UNCLASSIFIED

CIRC ACCESSION NO--AP0131347
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   IRRADN. OF HEMATITE CONCRETE
   (PREPD. USING CEMENT 298, HEMATITE ORE 2134, FINELY DISPERSED HEMATITE
   298, AND H SUB2 O 300 KG, AND HAVING A BULK D. OF 3030 KG-M PRIME 3)
   WITH AN INTERGRATED DOSE OF 2.6 TIMES 10 PRIME 20 N-CM SUB2 AT
   250DEGREES CAUSES EXPANSION OF THE SAMPLES BY 1.2-1.5PERCENT, BUT
   FURTHER INCREASED IN THE DOSE (LESS THAN OR EQUAL TO 6.1 TIMES 10 SUB20
   N-CM SUB2) AND TEMP. OF IRRADN. (350-400DEGREES) REDUCES THE EXPANSION
   TO ONLY 0.7-0.9PERCENT.   THE IRRADN. REDUCES THE WT. OF THE SAMPLES BY
   UP TO 4PERCENT AT A DOSE OF (5-6) TIMES 10 PRIME 20 N-CM SUB2 AND
   REDUCES SOMEWHAT THE THERMAL COND., MECH. STRENGTH, AND DEFORMATION
   MODULI OF THE CONCRETE.

UNCLASSIFIED

1/2   009   UNCLASSIFIED   PROCESSING DATE--30OCT70

TITLE--NEW BINDER FOR GUNITE TYPE CONCRETING -U-

AUTHOR-(05)-BAKLANOV, G.M., KAZAKEVICH, E.V., PONOMARENKO, O.I., LADYGIN, F.F., KRIPITSER, A.M.

COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (3), 26-7

DATE PUBLISHED-------70

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

TOPIC TAGS--CEMENT, BLAST FURNACE SLAG, GYPSUM, CONSTRUCTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1650   STEP NO--UR/0228/70/000/003/0026/0027

CIRC ACCESSION NO--AP0112644

                UNCLASSIFIED

CIRC ACCESSION NO--AP0112644
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FAST SETTING AND FAST HARDENING
  CEMENT WAS DEVELIPED FOR GUNITE TYPE CONCRETING, SO CALLED SPUTTER
  CEMENT. IT CONSISTED OF CLINKER WITH DEGREE OF CAO SATN, EQUALS
  0.83-0.87 OCNTG. 3CAO.AL SUB2 O SUB3 4.5-8, 3CAO.SIO SUB2 47-55PERCENT,
  SYNTHETIC SLAG WITH 7OPERCENT 12CAO.7AL SUB2 O SUB3, GRANUALTED BLAST
  FURNACE SLAG AND GYPSUM. THE BLAST FURNACE SLAG REDUCED THE COST AND
  INCREASED ITS RESISTANCE IN CORROSIVE MEDIA. AT A WATER-CEMENT RATIO OF
  0.4 A SETTING DURATION OF 1-10 MIN WAS OBSD. IN THE 1ST 2 HR A STRENGTH
  OF 20 KG-CM PRIME2 WAS ATTAINED. AFTER 28 DAYS A COMPRESSIVE STRENGTH OF
  250-374 KG-CM PRIME2. IN SUBTERRANEAN CONSTRUCTIONS IN ORE MINES THE
  SPUTTER CEMENT MET ALL THE REQUIREMENTS.   IT NEEDS NO SETTING
  ACCELERATORS, AND THE NO. OF SERVICE PERSONNEL FOR THE PREPN. AND ADDN.
  OF ADDITIVES CAN BE REDUCED.   A CONCRETE COATING OF 20-25 CM CAN BE
  APPLIED IN 1 STAGE. THE METHOD CAN BE USED NOT ONLY IN MINES, TUNNELS,
  SUBWAYS BUT OWING TO ITS CHEAPNESS ALSO IN CONSTRUCTION WORK.

UNCLASSIFIED

XADYGIN, I.I

An algorithm for finding the reference points of the dependence of the reliability index on the parameters of means of improving reliability is shown by way of example of simulation of the reliability of a specialized digital computer. Execution of the given algorithm made it possible to shorten simulation time to less than half compared with the algorithm employing the nondirectional sorting method.

It is well known that analytical calculation of the reliability of a complex system involves considerable difficulties, and sometimes is simply impossible. In this connection the method of statistical trials is widely employed. This method, however, having many advantages (see the literature), possesses one important disadvantage. The execution time of a statistical algorithm in a computer is great. In this connection programmed simulation of reliability is employed for simple analysis problems of a finished system or for evaluating several versions of a planned system. However, as computer capacity increases, the role of programmed simulation in the planning process of any system will increase considerably. For this reason it is essential even now to convert from simple reliability analysis algorithms to complex ones that make it possible to vary system parameters for analysis of their effect on the reliability index and to select their optimum values. Such algorithms require the use of methods of directional sorting to cut down the number of executions and consequently their solution time. We will discuss one such method of reducing reliability simulation time with consideration of features of the means of increasing computer reliability by way of example of the planning of a reliable specialized digital computer.

Suppose we are required to develop a specialized digital computer that satisfies certain requirements. We will assume that one such requirement is attainment of a given average operating time without failure

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USSR

VDOVENKO, V. M., LADYGIN, I. N., SUGLOBOV, D. N.

"Characteristic Nature of the Valence Oscillation Frequency of Uranyl"

Abstract: The characteristic nature of the valence frequencies of UO_2^{2+} was analyzed on the basis of data on the low-frequency oscillation spectra of uranyl complexes [Vdovenko, et al, ZhMKh, No 13, 297, 1968; S. S. Bukalov, ZhPS, No 12, 341, 1970] and detection of a linear relation between the valence oscillation frequencies of isotopically substituted uranyl [V. M. Vdovenko, et al., DAN SSSR, No 185, 824, 1969]. The shifts of the valence frequencies of uranyl exceeding a value on the order of 5 cm^{-1} are related in a defined manner to the variation of the force constant of the U-O bond; that is, the variation of the electron state of the latter.

When analyzing the oscillations of the mononuclear complexes of uranyl, the authors used the model of the D_{nh} symmetry complex. This permits the fullest explanation of the role of individual parameters affecting the uranyl frequencies.

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TITLE--RAMAN SPECTRA OF ANION COMPLEXES OF URANYL -U-

AUTHOR--BUKALOV, S.S., VOOVENKO, V.M., LADYGIN, L.N., SUGLOBOV, D.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 341-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RAMAN SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, POTASSIUM, CESIUM, RUBIDIUM, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0237   STEP NO--UR/0368/70/012/002/0341/0344

CIRC ACCESSION NO--AP0106893

UNCLASSIFIED

2/2 031
CIRC ACCESSION NO--AP0106893
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RAMAN SPECTRA OF (SHOWN OF
MICROFICHE) WERE RECORDED WITH A LASER SPECTROGRAPH. BY ANALOGY WITH IR
SPECTRA FREQUENCIES LARGER THAN 200 CM PRIME NEGATIVE1 ARE ATTRIBUTED TO
U HALOGEN VIBRATIONS.

0123

UNCLASSIFIED

Acc. Nr:
AP0034229

Abstracting Service:
CHEMICAL ABST.   4-70

Ref. Code:
UR0078

72768r   Manifestation of coordinative polymerization of uranyl fluoride complexes in uranium-fluorine vibrational frequencies. Vdovenko, V. M.; Ladygin, I. N.; Suglobov, D. N. (USSR). Zh. Neorg. Khim. 1970, 15(1), 263-8 (Russ).   The ir absorption frequencies of bridging and terminal U-F bonds in $[UO_2F_4]^{1-}$, $K_3(UO_2F_4)$, $[(C_6H_5)_2NH](UO_2F_3)$ and $[(C_6H_5)_2NH]F$ were examd.   Bridging U-F bonds are weaker and absorb at 270-330 cm^{-1} while terminal U-F bonds absorb at 350-400 cm^{-1}.   HM|R

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REEL/FRAME
19710882

USSR   UDC 546.791.6-386:535.343-15

VDOVENKO, V. M., LADYGIN, I. N., SUGLOBOV, D. N.

"Manifestation of Coordination Polymerization of Fluoride Complexes of Uranyl in Frequencies of the Uranium-Fluoride Oscillations"

Abstract: For a clear idea about the position of the frequencies of bridge and terminal bonds of uranium-fluoride, a study was made of infrared spectra of fluoride complexes of uranyl, whose composition includes only F_{end}, only F_{bridge}, or both fluoride atoms. Infrared absorption spectra were measured in the frequency ranges 190-500 and 800-1000 cm^{-1}. Results of the study showed that infrared spectra can be used to determine the U-F bond type in secondary complexes of uranyl. Bridge bonds are less stable and are characterized by lower frequencies of the U-F valency vibrations (270-330 cm^{-1}) than the end vibrations (350-430 cm^{-1}).

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USSR   UDC 546.791.6-535.343

VDOVENKO, V. M., LADYGIN, I. N., and SUGLOBOV, D. N.

"Ionic Equilibria in the Solutions of Uranyl Complexes With Tridecylammonium Salts"

Leningrad, Radiokhimiya, Vol 14, No 4, 1972, pp 552-558

Abstract: Hydrogen bonding between the cation and anion has been observed in the spectra of nonpolar solutions (benzene, CCl_4) of uranyl anion complexes with R_3NH^+ cations by a shift towards lower frequencies of the γ_{III} vibration and by the change in the vibrational spectrum of the complex anion in general. The degree of this change depends on the H-bond strength and on the nature of acid ligand. The interaction between the R_3NH^+ and the $[UO_2F_5]^{3-}$ and $[UO_2Cl_4]^{2-}$ complexes weakens the bond between uranium and the ligand leading to a dissociation of the complex, resulting in the trimethylammonium salt being split off. In mixed solutions of uranyl complexes and alkylammonium salts a shift of the cation R_3NH^+ has been observed from the complex anion to the anion of the salt which forms stronger H-bonds with the R_3NH^+. Associations with following compositions have been noted to form in such mixed solutions: $[(R_4NH)_nNO_3]^{(n-1)+}$ and $[(R_3NH)_nCl]^{(n-1)+}$, where n = 1, 2 or 3.

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1/2   014   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--PITMENT MUTATIONS OF CHLAMYDOMONAS REINHARDI INDUCED BY
  N,NITROSOETHYLUREA AND BY UV,IRRADIATION -U-
AUTHOR--LADYGIN, V.G.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA: 6: NO. 3. 42-50(MAR 1970).

DATE PUBLISHED----MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--UV IRRADIATION, RADIATION INDUCED MUTATION, MUTAGEN, PITMENT,
  PLANT MUTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0483   STEP NO--UR/0473/70/006/003/0042/0050

CIRC ACCESSION NO--AP0132578
                          UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132698
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITROSOETHYLUREA AND UV
   IRRADIATION EXERTED STRONG MUTAGENIC EFFECTS ON CELLS OF CHLAMYDOMONAS
   REINHARDI. THESE MUTAGENS BOTH INDUCE VISIBLE MUTATIONS OF ANY TYPE.
   NITROSOETHYLUREA, HOWEVER, INDUCED A HIGHER LEVEL OF PIGMENT MUTATIONS.
   THE HIGHEST YIELD OF MUTATIONS WAS OBTAINED AT THE DOSE OF UV
   IRRADIATION AT WHICH 10 PER CENT OF CELLS SURVIVE. PHOTOREACTIVATION
   REDUCE BOTH LETHAL AND MUTAGENIC ACTION OF UV IRRADIATION.
   FACILITY: INST. OF BIOLOGICAL PHYSICS, PUSCHINO-ON-THE OKA, USSR.

UNCLASSIFIED

USSR   UDC 612.35.017.1

SUKERNIK, R. I., SKVORTSOVA, T. A., LEONT'YEVA, L. I., and LADYGIN, V. I.,
Central Scientific Research Laboratory, Novosibirsk Medical Institute

"Induction of Auto-Immune Cellular Response to Liver Cells in Mice by
Implantation of Spleen Cells From Syngenic Donors With Toxic Hepatitis"

Leningrad, Tsitologiya, Vol 13, No 5, May 71, pp 636-643

Abstract: The effect of lymphoid spleen cells from donor mice, after
repeated treatment with CCl_4, on the liver parenchyma was studied. Both the
eight control and the 12 test animals (CBA strain) were given H^3-thymidine
intraabdominally over a period of 6 days, thrice daily. Toxic hepatitis was
produced by CCl_4 inhalation. The animals were sacrificed 16-20 hours after
the last CCl_4 inhalation and 9-10 hours after the last H^3-thymidine injection.
The spleens were removed, ground and cell suspensions prepared for implanta-
tion. The recipients were sacrificed 58 hours after the transfer and their
liver, spleen, and inguinal lymph nodes removed and studied. Spleen cells
from test and control donor mice were transfused in a dose of 25×10^6 into
normal recipient mice and into mice which were subjected to a single CCl_4
intoxication immediately after the transfusion. This led to stimulation of
DNA synthesis and to reutilization of labelled products of regenerating
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hepatocytes. Cytophotometric examination and evaluation of DNA in hepatocyte nuclei of recipients injected with spleen cells obtained from test donors showed that the number of tetraploid and octoploid nuclei had slightly increased. The activated DNA synthesis is considered a response of the liver cells which had been attacked by cell-bound auto-antibodies transferred in the spleen cells from CCl_4-treated donor mice. Histograms are shown.

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1/2   019   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--EFFECT OF PATHOGENIC AGENTS ON ENERGY STORING PROCESSES AND THE
    ELECTRON PARAMAGNETIC RESONANCE SPECTRA OF PLANTS -U-
AUTHOR-(03)-LADYGINA, M.YA., RUBIN, B.A., TIMOFEYEV, K.N.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGIYA RASTENIY, 1970, VOL 17, NR 2, PP 416-424

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOTOEFFECT, PHOSPHORYLATION, ADENOSINE TRIPHOSPHATE, EPR
    SPECTRUM, FUNGUS, ACTINOMYCES, PLANT PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/1600   STEP NO--UR/0326/70/017/002/0416/0424

CIRC ACCESSION NO--AP0052796
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0052796

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   PHOTOPHOSPHORYLATION, ATP CONTENT
AND ELECTRON PARAMAGNETIC RESONANCE SPECTRA WERE STUDIED AFTER INFECTION
WITH TOBACCO MOSAIC VIRUS ERYZIPHE CICHORACEARUM OF LEAVES OF AN IMMUNE
TOBACCO PLANT (NICOTIANA GLUTINOSA) AND A NONIMMUNE SPECIES (N.
TABACUM); THE EFFECT OF AN ENDOGENOUS PRODUCT OF THE SAPROPHYTIC FUNGUS
ACTINOMYCES STREPTOMYCINI (STREPTOMYCIN) ON LEAVES OF BARLEY SEEDLINGS
WAS ALSO STUDIED.   IRRESPECTIVE OF THEIR NATURE THE PHYTOPATHOGENIC
AGENTS INDUCED SIMILAR SHIFTS IN ENERGY TRANSFORMATIONS AND EPR SPECTRA
OF THE PLANTS. THE CHARACTER OF THE ALTERATIONS DEPENDED ON THE DEGREE
OF STABILITY OF THE PLANTS.   FACILITY: BIOLOGICAL DEPARTMENT,
MOSCOW STATE UNIVERSITY.

UNCLASSIFIED

USSR

LADYGINA, M. YE., and   RUBIN, A. B., Biofizicheskiye Metody v Fiziologii
Rasteniy, Nauka, 1971, pp 72-84

the PEM, which is amplified by means of a special USh-2 amplifier and conducted
to a measuring instrument, is recorded by an automatic electronic potentio-
meter (type EPP-09). The instrument is calibrated with a pure ATP solution
of known concentration.
       The bioluminescent method is highly sensitive, accurate,   and fast,
and it constitutes a reliable method for a differential determination of the
various components of the adenyl system jointly present in a sample.

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USSR

SOKOLOV, V. Ye., LADYGINA, T. F., and SUPIN, A. Ya., Institute of Evolutionary Morphology and Ecology of Animals imeni A. N. Severtsov, corresponding member of the Academy of Sciences USSR ·

"Localization of Sensory Areas in the Cerebral Cortex of the Dolphin"

Abstract: Morphological studies have failed to yield definite information on the cortical localization of the dolphin's sensory areas. A different method — evoked potentials — is now being applied in localizing the visual, audial, and somatic sensory analysors of the dolphin's cerebral cortex. Primary evoked potentials located the visual projection area in a small portion of cortex lying at the bottom of the lateral fissure. Secondary potentials, registered in adjoining portions of the lateral and suprasilvius convolution, determined the associated regions surrounding the primary projection area. The primary acoustic area occupies a large space in the middle of the suprasilvius convolution. A secondary acoustic area exists in the ectosilvius convolution. The somatic sensory projection area lies beside the frontal fissure on the postfrontal convolution. The relatively 1/2

USSR

UDC 612.825.5

LADYGINA, T. F., and SUPIN, A. YA., Institute of Evolutionary Animal Morphology and Ecology imeni A. N. Severtsov, Academy of Sciences USSR, and Moscow State University imeni M. V. Lomonosov, Moscow

"Acoustic Projection in the Dolphin Cerebral Cortex"

Leningrad, Fiziologicheskiy Zhurnal SSSR, Vol 56, No 11, Nov 70, pp 1554-1560

Abstract: To determine the boundaries of the acoustic zone in the cortex of the dolphin (phocaena phocaena), the responses to clicks were recorded from different spots. Maximum activity was detected in the parietal region 1.5 to 2.5-3 cm lateral to the sutura sagittalis and 3.5 to 5.5-6 m caudal to the sutura coronalis. Two main responses were found: rapid negative with a latent period of about 6 msec, and slow positive with a latent period of 15 to 20 msec. The distribution of potentials in the cortex appears to be different from that in other animals. In addition to these two main responses, a very rapid one (with a latent period of less than 1 msec) was recorded from all of the electrodes. The fact that it did not disappear or even decrease when the electrodes were shifted beyond the cortex suggests that it is of noncortical origin.

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UDC 661.143(088.8)

- USSR

LADYGINN. A., TOLMACHEVA, K. F., and KHOROSHILOVA, L. I.

"Process for Preparing Phosphors"

USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72
(from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L170
by N. Sh.)

Translation: A method is described for preparing high quality luminescent
compounds of diphenyl or diphenylamine or triphenylamine or their deriva-
tives or urea or thiourea mixed with one of the salts of inorganic or organic
acids (with halogens, nitrates, sulfates, phosphates, or acetates) of the
metals of groups I-VIII of the periodic table in subsequent heating of the
mixture from 120 - 220° for 30-120 minutes. The product obtained was then
cooled, filtered, washed with a suitable solvent and dried. The listed com-
ponents, for example diphenylamines and ammonium chloride had a relative
weight ratio of 1:0.01-1. The new luminescent compounds in contrast to those
which are known are prepared in different organic solvents and form luminescent
solutions. By treating paper and fabric with these solutions a thin lumine-
scent screen may be prepared using only a small amount of the compound. For
example, a mixture made up of 1 gram of diphenylamine and 1 gram of aluminum

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USSR

LADYGIN, N. N., et al., USSR Author's Certificate No 334856, filed 24 Mar 69, published 18 Aug 72

chloride, after careful mixing is heated to $150^\circ C$ for 30-40 minutes. The product obtained is cooled to 20°, dissolved in acetone and filtered from the undissolved particles. After evaporating the acetone, the powder is recrystal-lized. from ethanol and ground to   necessary powder size. During excita-tion with ultraviolet light, the powder has a bright luminescent in the blue area of the spectrum.

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TITLE--ON INTERPRETATION OF PRIBAIKALIE GRAVITATIONAL ANOMALIES -U-

AUTHOR--LADYNIN, A.V.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 1 (121) PP 115-119

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ISOSTACY, GRAVITATION FIELD, EARTH CRUST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1286   STEP NO--UR/0210/70/000/001/0115/0119

CIRC ACCESSION NO--AP0103168
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0103168
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT SHOWN BY COMPARISON OF
  PRIBAIKALIA GRAVITATIONAL ANOMALIES WITH THOSE THEORETICAL OF DEPRESSION
  MODEL WITH AND WITHOUT COMPENSATION, THAT ISOSTASY IS BROKEN IN
  PRIBAIKALIA. THE BAIKAL MINIMUM IS EXPLAINED BY THE NON COMPENSATED
  SEDIMENTS TERRANE AT THE LAKE'S FLOOR THE LOCAL MAXIMA ARE CONNECTED
  WITH ARCHEAN METAMORPHIC ROCKS AND BASIC INTRUSIONS. AS IT MAY BE SEEN
  FROM ANALYSIS OF GIVEN DATA, IT IS IMPOSSIBLE TO DRAW THE GROUNDED
  CONCLUSION ON THE DEEP STRUCTURE OF THE CRUST USING ONLY, GRAVIMETRIC
  DATA.

USSR   UDC 669.046.5

KUPERSHTOK, V. Ye., LADYZHENSKIY, B. N., OPENGENDEN, A. M., and SERBIN, V. A.

"Slag Formation and Metal Desulfuration in Covering Slag With Dust-Like Lime"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys)
Izd-vo "Metallurgiya," No 61, 1970, pp 132-134

Translation of Abstract: The results of an investigation on slag formation
and metal desulfuration in a 142-ton martin furnace with lime blowing are
presented. 2 figures, 1 table.

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S

UDC: 620.193.5

TSEYTLIN, Kh. L., SOROKIN, Yu. I., BALASHOVA, A. A., BABITSKAYA, S. M.,
LEVIN, Ya. S., KONYUSHENKO, A. T., GOLD, R. V., and LADYZHINSKIY, B. S.,
Scientific Research Institute of Organic Intermediates and Dyestuffs

"High-Temperature Corrosion of Metals in Gaseous Ammonia"

Abstract: Processes involving the use of ammonia are known to cause corrosion
of equipment. The homogeneous reaction of ammonia dissociation in the gas
phase begins above 1200--1300°C. In the presence of a catalyst this tempera-
ture drops to 300--400°C. Experiments have shown that this type of metal
considerably affects the thermal dissociation of ammonia and that this effect
is a function of temperature. This study describes in detail the testing and
effects of gaseous ammonia on KhN10T steel, KhN78T, N70M27F, and Kh15N55M16V
alloys, VT-1 titanium and MZS copper. The analysis of experimental data shows
that there is a fundamental correspondence between the effect of metals on
ammonia dissociation and their resistance. Therefore, to insure continuous
service of equipment in gaseous ammonia, it is advisable to use materials which

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TSEYTLIN, Kh. L., et al, Zashchita Metallov, Vol 6, no. 4, 70, pp 451-454

will not readily catalyze ammonia dissociation. Materials which are suitable
for service under these conditions include carbon steel and N7GM27F, Kh15N5516V
alloys up 400°C; Kh18N10T steel and nickel up to 300°C; Kh78T up to 600°C;
aluminum, titanium, and copper up to 450°C. Considering the low specific gravity,
good technological properties, relative availability, and low cost of aluminum,
this metal is preferred in selecting materials for equipment operated in
gaseous ammonia at high temperatures. A table illustrating the performance of
the above metals during 400 hours of testing with gaseous ammonia at high
temperatures, including corrosion rate tensile strength, relative elongation,
% and Vickers hardness, prior to and after the experiment, is given in the
original article.

2/2

USSR   UDC 621.791.052.011:669.14.018.8 + 669.14.018.44

SHMAKOV, V. M. (Cand. of Techn. Sciences), IZMIRLIYEVA, A. N., and LADZIN, Yu. S.
                                                          (Engineers)

"Properties of Weld Joints of EI654 Stainless Steel With EP202 High-
Temperature Alloy"

Moscow, Svarochnoye proizvodstvo, No 6, June 72, p 34

Abstract: A study has been made of the properties of weld joints of EI654
Ni-base stainless steel with EP202 heat-resistant alloys. Automatic helium
welding with EP367 filler wire is shown to have produced a good weld of
EI654 steel with EP202 alloy. Metallographic examinations of the weld
indicate good shaping with smooth transition to the base metal without any
defects. There were no visible microstructural changes and cracks in both
the welds and the weld-affected areas following testing at various tempera-
tures. Special assemblies were made for structural strength tests by
hydraulic loads to failure. All assemblies passed the rated failure
pressure. The weld joints appear to have fairly good strength properties
at higher (up to 700°C) and below-zero (-100°C) temperatures with no visible
tendency to crack formation. (2 illustrations)

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USSR

LAGAR'KOV, A. N., SERGEYEV, V. M., Institute of High Temperatures of the Academy of Sciences of the USSR

"Infinitesimal Canonical Transform for Obtaining the Coefficient of Thermal Conductivity in the Theory of Linear Response"

Abstract: Linear response theory gives expressions for transfer coefficients under conditions of small inhomogeneity in cases where the perturbing force can be represented as a small additional term in the Hamiltonian of the system. In the case of "thermal" perturbations, this type of representation runs into difficulties. However, it has been shown that a canonical transform can be used to "create" a flux corresponding to shear viscosity, giving a perturbing term in the Hamiltonian which describes flow with a non-zero shear tensor. At the same time, use of the canonical transform is a formal procedure, and from the physical standpoint the fluxes in the system arise due to interaction between particles and walls. It is shown in this paper that the interaction of particles

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with walls in the case where the characteristic times of flux change are much greater than the relaxation time in the system can be accounted for by analogy with the virial theorem for the equilibrium case. This leads to replacing the potential of the walls with an "effective potential" which is defined in a natural way from the virial theorem. By treating this potential as an additional term in the Hamiltonian, expressions are found in the theory of linear response for thermal transfer coefficients, and it is shown that the given procedure is equivalent to the method of canonical transformation used to obtain viscous flow. At the same time, the effective potential is determined for the energy flux, and an infinitesimal transform is found which can be used in deriving a formula for the coefficient of thermal conductivity. The authors thank I. Z. Fisher for discussing the work.

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USSR   UDC: 533.95

BRONIN, S. Ya. and LAGAR'KOV, A. N.

"Radiation Transmission in Heterogeneous Layers of a Shock Profile Spectral Line"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 8, No 4, 1970, pp 741-748

Abstract: This paper proposes a method of determining, by spectral lines, the
radiation transmitted by a shock profile in nonuniform layers, in which the
multiplet structure of a spectral line and the dependence of its absorption factor
on local pressure and temperature values are taken into account. The method is
convenient for computations on an electronic computer; the asymptotic expressions
obtained easily from the general formulas can be used without the computer. The
authors state that problems of a similar type have already been considered in
the literature, which he cites, but that the results they obtained are not general
enough and are not presented in a form convenient for use in practical applica-
tions. They also derive expressions describing the transmission of the radiation
by several closely positioned spectral lines a commonly encountered situation,
since atomic states usually have a multiplet structure.

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- END -

USSR

BIBERMAN, L. M., BRONIN, S. Ya., LAGAR'KOV, A. N., Moscow

"Radiation-Convective Heat Exchange in Hypersonic Flow Over a Blunt Body"

Moscow, Mekhanika zhidkosti i gaza, No. 5, Sep/Oct 72, pp 112-123

Abstract: Flow close to the critical point over a blunt body in a hypersonic
air flow is considered. It is assumed that the parameters of the gas at the
front of the shock wave are discontinuous and that the gas in the shock wave
is in a state of local thermodynamic equilibrium. Heat exchange in the
neighborhood of the critical point is determined by examining the gasdynamic
conservation equations in conjunction with the radiation transfer equation
written in integral form. Viscosity, heat conductivity, and the actual
radiation properties of air, including the radiation of the spectral lines,
are taken into account. Profiles of the thermodynamic values along the
critical line are obtained. The dependence of the radiation and convective
components of aerodynamic heating on the velocity, pressure ahead of the front
and the radius of curvature of the blunt portion of the body is discussed.
Approximate relationships are obtained for heat flows in the neighborhood of

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the critical point which have the form of similarity laws. The limits of
applicability of the approximation of locally thermodynamic equilibrium in
the compressed area are discussed. Also considered is the effect of absorp-
tion of radiation of the compressed air by the cold incident flow on aero-
dynamic heating. The relationship between the spectral coefficient of
absorption of the cold air and the intensity of the radiation incident on it
is taken into account. It is noted that if considerable ablation of the
heat shield and noticeable screening of the surface of the body from radia-
tion due to this occur, the problem is considerably complicated since possible
illumination of the boundary layer must be taken into account in cases of
strong injection. In the opposite case the values of the radiant flows may
be greatly lowered. This formulation of the problem requires the simul-
taneous solution of equations of gasdynamics and physical kinetics consider-
ing radiation transfer. Considerable difficulties arise in considering heat
exchange far from the critical point that are associated with a sharp rise
in the complexity of the system of equations of gasdynamics. It is recommended
that the approximations of the theory of radiation transfer used in this paper
be used in solving this more complex problem.
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LAGAR'KOV, A.N.

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shape of the shock wave, the surface pressure distribution, and the wave resistance of the body. The research was performed on a cylinder with spherical bluntness, and on a truncated cone with a developing break. The surface porosity was 60%, the Mach numbers were $M = 3-5$, and the relative flow rate of the injected gas was varied within the limits of 0 to 1.0. Two experimental regimes were established: a regime with moderate injection intensity (relative flow rate less than 0.2) and a regime of "strong" injection (flow rate greater than 0.2). In the moderate flow regime, a sharp change of the flow characteristics takes place as the rate is increased (increased resistance, shock-wave separation, and increased angle of shock-wave incidence). The flow calculation can there-fore be conducted on the basis of boundary-layer theory, taking viscous interaction into account. The regime of "strong" injection is characterized by the presence of a boundary "blow-off" region of the boundary layer. In this case the flow parameters cannot be determined on the basis of boundary-layer theory.

Biberman, L. M., S. Ya. Bronn, and A. N. Lagar'kov. Heating and flow around blunt bodies during atmospheric entry. IN: Trudy Sektsii po chislennym metodam v gazovoy dinamike 2-go Mezhdunarodnogo kollokviuma po gazodinamike vzryva i reagiruyushchikh sistem. 1969. Moskva. v. 3, 1971, 134-153. (RZhMekh, 5/72, no. 5B424)

The problem of the aerodynamic heating of blunt bodies entering the atmosphere at velocities higher than parabolic is considered. A detailed justification is given of the theoretical assumptions, permitting an efficient solution to the problem of determining the total heat flux at the
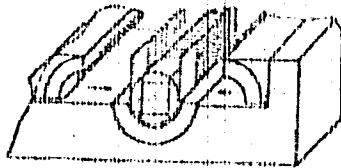
USSR   UDC 621.372.823

BAZARNYY, Ye. M., ISAKOV, V. N., NEFEDOV, V. G., LAPINEV, L. I.

"A Device for Making Corrugated Waveguides of Circular Cross Section"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 22, Aug 71, Author's Certificate No 309422, Division H, filed 24 Oct 69,
published 9 Jul 71, p 206

Translation: This Author's Certificate introduces a device for making
corrugated waveguides of circular cross section. The device contains a
frame and a sectional corrugated mandrel. As a distinguishing feature
of the patent, the manufacturing process is simplified by using sliders
which move in a direction perpendicular to the axis of the waveguide. The
inner spherical surface of the sliders is corrugated with respect to the
waveguide profile.

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USSR

UDC   621.372.631.1

LAGEREV, L. I., BAZARNYY, Ye. M., ISAKOV, V. N., MARTIN, V. I.

"New Waveguide Couplings"

Elektron. prom-st'. Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 121-123 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B177)

Translation: The authors consider two types of circular waveguide couplings made by the cold pressing method -- a permanent coupling (a sleeve into whose opening the sections to be joined are pressed) and a detachable coupling (a flange unit). One such flange coupling is a rapid-action unit made up of two flanges connected by bolts and a drift pin. The reliability and simplicity of the new couplings is noted. Three illustrations. N. S.

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TITLE--EXPERIMENTAL STUDIES ON OLEMORPHOCYCLINE AEROSOLS -U-

AUTHOR-(02)-LAGERT, I.K., POLYAK, M.S.

CCUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 554-557

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AEROSOL, ANTIBIOTIC, STAPHYLOCOCCUS, CLINICAL
   MEDICINE/(U)OLEMORPHOCYCLINE ANTIBIOTIC

CCNTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1841   STEP NO--UR/0257/70/015/006/0554/0557

CIRC ACCESSION NO--AP0125452
                             UNCLASSIFIED

CIRC ACCESSION NO--AP0125452
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDIES ON
  OLEMORPHOCYCLINE AEROSOLS SHOWED THE POSSIBILITY OF CREATING HIGH
  ANTIBIOTIC LUNG LEVELS. THE PREPARATION WAS ABSORBED BY THE BLOOD AND
  DETECTED IN THERAPEUTIC CONCENTRATIONS IN THE URINE AND THE TISSUES OF
  THE LIVER AND THE KIDNEYS. OLEMORPHOCYCLINE AEROSOLS WERE EFFECTIVE IN
  THE TREATMENT OF MICE INFECTED INTRANASELY WITH GRAMNEGATIVE BACTERIA
  ADN STAPHYLOCCI. CHEMOTHERAPEUTIC ACTIVITY OF MORPHOCYCLINE AND
  OLEANDOMYCIN WAS OBSERVED. THE DATA OF THE STUDY PROVIDED
  RECOMMENDATION OF OLEMORPHOCYCLINE FOR THE USE IN AEROSOLS. IT IS
  APPROVED FOR CLINICAL TRIALS.   FACILITY: LENINGRAD INSTITUTE FOR
  ANTIBIOTICS.

UNCLASSIFIED

USSR

UDC 542.91

LAGIDZE, R. M., LAGIDZE, D. R., and KERDIKOSHVILI, E. I., Academy of
Sciences, Georgian SSR, Institute of Physical and Organic Chemistry imeni
P. G. Melikishvili)

"Synthesis of Several New O,O-Diethyl 3-Arylbutylphosphonates"

Abstract: Nine new 3-arylbutylphosphonates were synthesized by subjecting
previously synthesized 1-bromoacetoxybutane and 1-bromobutanes with the
various aryl substituents in the 3-position to the conventional Arbuzov
rearrangement with triethyl phosphite. Boiling points, refractive indices,
and molecular refractions of the new compounds are reported. The compounds
have potential application as intermediates or starting materials in the
synthesis of biologically active compounds.

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Oncology

UDC 576.5

USSR

LAGIDZE, R. M., LAGIDZE, D. R., TSVENIASHVILI, V. Sh., and KOPALADZE, R. A.,
Institute of Experimental and Clinical Surgery, Ministry of Health GSSR

"Half-Wave Potentials (φ 1/2) and Biological Activity of Some Antitumor Compounds"

Translation: Compounds which differ considerably in their chemical structure frequently exhibit similar physiological activity. This leads to the speculation that it might be possible to find some similarities in their ultrafine structures by means of modern physical methods. Wright and Serr have reported interesting facts on this type of relationship for a specific group of redolent substances. In this connection, we believe that various compounds with antitumor activity should also exhibit some common physical properties. Application of the results of spectroscopic studies, polarography, and other physical research methods, for this purpose may prove to be a promising lead in an approach to a more rational selection of new antitumor agents from among the tremendous number of organic compounds and natural products. However, it should be noted that, with the exception of systematic studies investigating the relationship between the hydrolysis rate of certain groups of alkylating compounds and their antitumor activity, no other physical

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USSR

LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58, No 1,
Apr 70, pp 217-220

methods have been used for such purposes to any extent. All this also pertains to
some extent to the polarographic studies of antitumor compounds.

Z. V. Pushkareva and her coworkers determined the half-wave potentials of a
large group of nitrogen mustards with aliphatic, aromatic, and heterocyclic car-
riers. Having investigated the nature of the reduction and hydrolysis processes
of these compounds, they proposed reaction mechanisms for their conversions. It
was shown that the φ 1/2 of these compounds is contained in a wide range (from
-0.97 to -1.42 volts with a saturated calomel reference electrode). A polarographic
technique was also successfully used in a quantitative determination of ethylene
immonium ions of N,N-di-(2-chloroethyl)-amines with aliphatic and aromatic groups.

We believe that valuable results could be obtained in this area from systematic
studies of individual series of specific organic compounds, leading to elucidation
of a relationship between their antitumor activity and minute structural changes
and physical properties. It was shown in earlier studies that compounds of the 3-
arylbutyl-N,N-di-(2-chloroethyl)-amine type are well suited for such studies. As
a result of biological studies of these compounds, it has been established that
their antitumor activity depends substantially on the nature, number, and position
of the substituents in the aromatic nucleus. In the present paper, we report the
2/4

USSR

LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58,
No 1, Apr 70, pp 217-220

results of polarographic determinations of 3-arylbutyl-N,N-di-(2-chloroethyl)-amines
and 3-arylbutyl-2-chloroethylsulfides obtained earlier by R. M. Lagidze and his
coworkers.

All of these compounds exhibit proven antitumor activity. The polarograms
were determined on the LP-60 polarograph. The potentials were measured with a
saturated aqueous calomel reference electrode. The $\varphi_{1/2}$ values of these compounds
are reported in a table. In contrast to the above compounds, 3-arylbutyl-2-chloro-
ethyl sulfides are insoluble in water. Therefore their $\varphi_{1/2}$ were determined in
dry dimethyl formamide against 0.1 M LiClO$_4$ and a 10^{-3} M concentration of the ....
depolarizer. For comparison, the $\varphi_{1/2}$ values of 3-arylbutyl-N,N-di-(2-chloro-
ethyl)-amines obtained by us were also determined in dimethylformamide under iden-
tical conditions. It was shown that replacement of dimethylformamide with water
had no effect on the $\varphi_{1/2}$ value in this case.

Literature values of the $\varphi_{1/2}$ for various antitumor agents are reported.
The $\varphi_{1/2}$ of 37 compounds studied by Z. V. Pushkareva and her coworkers are
included. In spite of the small differences in the conditions under which the
$\varphi_{1/2}$ values were determined by various investigators, including some variations
in the pH of the media, the results are in agreement with each other and with data
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LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskuy SSR, Vol 58, No 1, Apr 70, pp 217-220

obtained by us.

It is noteworthy that the $\varphi_{1/2}$ interval for these various classes of anti-tumor agents is quite narrow, even though some of them are quite different from the standpoint of both their structural relationship and the polarography of their active groups. Obviously it should not be concluded from this fact that all compounds with the halfwave potentials, in the reported region will have antitumor activity. Furthermore, in many cases, for example with steroid hormones, the antitumor activity relates closely to the hormonal activity. Nevertheless, it may be hoped that accumulation of a large amount of this type of experimental data, coupled with a thorough analysis of the data in relation to other physical properties, may generate a new complex of criteria for rational selection of new, effective antitumor agents.

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UNCLASSIFIED   PROCESSING DATE--13NOV70

TITLE--SYNTHESIS OF 4,ARYLVALERIC ACIDS, 5,ARYLHEXANOLS, AND SOME OF THEIR
  HALO DERIVATIVES -U-

AUTHOR-(03)-LAGIDZE, D.R., SAMIKIDZE, N.S., MALATSIDZE, YU.L.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(2), 333-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GRIGNARD REAGENT, HEXANOL, BROMINATED ORGANIC COMPOUND,
  CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1223   STEP NO--UR/0251/70/057/002/0333/0336

CIRC ACCESSION NO--AP0124041
                        UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001    CIA-RDP86-00513R002201710020-6
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UNCLASSIFIED   PROCESSING DATE--13NOV70

2/2   009
CIRC ACCESSION NO--AP0128641
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. THE PREPNS. OF ARCHMECH SUB2 CH
SUB2 CO SUB2 H (II), ARCHMECH SUB2 CH SUB2 COCL (III), ARCHMECH SUB2)
SUB4 OH (III), AND ARCHME(CH SUB2) SUB4 BR (IV) STARTING WITH ARCHMECH
SUB2 CH SUB2 BR (V) ARE DESCRIBED. SOLID CO SUB2 WAS ADDED TO A
GRIGNARD REAGENT PREPD. FROM MG AND V (AR EQUALS PH) (VI) IN ET SUB2 O
WITH COOLING UNTIL A THICK MASS WAS OBTAINED, A MIXT. OF CONCD. HCL AND
H SUB2 O ADDED GRADUALLY WITH COOLING, AND THE PRODUCT WORKED UP IN THE
USUAL MANNER TO GIVE I(AR EQUALS PH) AS SHOWN IN THE TABLE SHOWN ON
MICROFICHE (THE OTHER I WERE PREPD. SIMILARLY). I AND DRY SOCL SUB2 (AT
A H RATIO OF 1:1.5) HEATED IN DRY REFLUXING C SUB6 H SUB6 FOR 4-5 HR
GAVE THE CORRESPONDING II. A SOLN. OF ETHYLENE OXIDE AND ABS. ET SUB2 O
WAS ADDED DROPWISE TO A GRIGNARD REAGENT PREPT. FROM MG AND VI IN ABS.
ET SUB2 O WITH COOLING AND STIRRING, THE MIXT. BOILED MILDLY FOR 1-1.5
HR, COOLED, AND WORKED UP TO GIVE III (R EQUALS PH) (VII) AS GIVEN IN
THE TABLE. A MIXT. OF VII, 40PERCENT AQ. HBR, AND CONCD. H SUB2 SO SUB4
WAS HEATED AT 120-400EGRESS FOR 10-12 HR AND DILD. WITH H SUB2 O, THE
OILY LAYER FORMED EXTD. WITH ET SUB2 O, DRIED, EVAPD., AND THE RESIDUE
TREATED WITH CONCD. H SUB2 SO SUB4 TO REMOVE IMPURITIES, WASHED WITH
WATER UNTIL NEUTRAL, DRIED OVER CACL SUB2, AND DISTD. IN VACUO TO GIVE
IV (AR EQUALS PH) AS GIVEN IN THE TABLE.

UNCLASSIFIED
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APPROVED FOR RELEASE: 08/09/2001    CIA-RDP86-00513R002201710020-6"
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USSR

LAGIDZE, A. M., LAGIDZE, D. R., and KERDIKOSHVILI, E. I., (Academy of Sciences, Georgian SSR, Institute of Physical and Organic Chemistry imeni P. G. Melikishvili)

"Synthesis of Several New 0,0-Diethyl 3-Arylbutylphosphonates"

Abstract: Nine new 3-arylbutylphosphonates were synthesized by subjecting previously synthesized 1-bromoacetoxybutane and 1-bromobutanes with the various aryl substituents in the 3-position to the conventional Arbuzov rearrangement with triethyl phosphite. Boiling points, refractive indices, and molecular refractions of the new compounds are reported. The compounds have potential application as intermediates or starting materials in the synthesis of biologically active compounds.

Oncology

USSR   UDC 576.5

LAGIDZE, R. M., LAGIDZE, D. R., TSVENIASHVILI, V. Sh., and KIPALADZE, R. A.,
Institute of Experimental and Clinical Surgery, Ministry of Health GSSR

"Half-Wave Potentials (φ 1/2) and Biological Activity of Some Antitumor Compounds"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58, No 1, Apr 70, pp 217-
220

Translation: Compounds which differ considerably in their chemical structure fre-
quently exhibit similar physiological activity. This leads to the speculation that
it might be possible to find some similarities in their ultrafine structures by
means of modern physical methods. Wright and Sere have reported interesting facts
on this type of relationship for a specific group of redolent substances. In this
connection, we believe that various compounds with antitumor activity should also
exhibit some common physical properties. Application of the results of spectro-
scopic studies, polarography, and other physical research methods, for this purpose
may prove to be a promising lead in an approach to a more rational selection of
new antitumor agents from among the tremendous number of organic compounds and
natural products. However, it should be noted that, with the exception of systematic
studies investigating the relationship between the hydrolysis rate of certain groups
of alkylating compounds and their antitumor activity, no other physical
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LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58, No 1,
Apr 70, pp 217-220

methods have been used for such purposes to any extent. All this also pertains to
some extent to the polarographic studies of antitumor compounds.
    Z. V. Pushkareva and her coworkers determined the half-wave potentials of a
large group of nitrogen mustards with aliphatic, aromatic, and heterocyclic car-
riers. Having investigated the nature of the reduction and hydrolysis processes
of these compounds, they proposed reaction mechanisms for their conversions. It
was shown that the φ 1/2 of these compounds is constant in a wide range (from
-0.97 to -1.42 volts with a saturated calomel reference electrode). A polarographic
technique was also successfully used in a quantitative determination of ethylene
immonium ions of N,N-di-(2-chloroethyl)-amines with aliphatic and aromatic groups.
    We believe that valuable results could be obtained in this area from systematic
studies of individual series of specific organic compounds, leading to elucidation
of a relationship between their antitumor activity and minute structural changes
and physical properties. It was shown in earlier studies that compounds of the 3-
arylbutyl-N,N-di-(2-chloroethyl)-amine type are well suited for such studies. As
a result of biological studies of these compounds, it has been established that
their antitumor activity depends substantially on the nature, number, and position
of the substituents in the aromatic nucleus. In the present paper, we report the
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USSR

LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58, No 1, Apr 70, pp 217-220

results of polarographic determinations of 3-arylbutyl-N,N-di-(2-chloroethyl)-amines and 3-arylbutyl-2-chloroethylsulfides obtained earlier by R. M. Lagidze and his coworkers.

All of these compounds exhibit proven antitumor activity. The polarograms were determined on the LP-60 polarograph. The potentials were measured with a saturated aqueous calomel reference electrode. The $\varphi_{1/2}$ values of these compounds are reported in a table. In contrast to the above compounds, 3-arylbutyl-2-chloroethyl sulfides are insoluble in water. Therefore their $\varphi_{1/2}$ were determined in dry dimethyl formamide against 0.1 M LiClO$_4$ and a 10^{-3} M concentration of the depolarizer. For comparison, the $\varphi_{1/2}$ values of 3-arylbutyl-N,N-di-(2-chloroethyl)-amines obtained by us were also determined in dimethylformamide under identical conditions. It was shown that replacement of dimethylformamide with water had no effect on the $\varphi_{1/2}$ value in this case.

Literature values of the $\varphi_{1/2}$ for various antitumor agents are reported. The $\varphi_{1/2}$ of 37 compounds studied by Z. V. Pushkareva and her coworkers are included. In spite of the small differences in the conditions under which the $\varphi_{1/2}$ values were determined by various investigators, including some variations in the pH of the media, the results are in agreement with each other and with data

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USSR

LAGIDZE, R. M., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 58, No 1,
Apr 70, pp 217-220

obtained by us.

It is noteworthy that the $\varphi_{1/2}$ interval for these various classes of anti-
tumor agents is quite narrow, even though some of them are quite different from
the standpoint of both their structural relationship and the polarography of their
active groups. Obviously it should not be concluded from this fact that all com-
pounds with the halfwave potentials, in the reported region will have antitumor
activity. Furthermore, in many cases, for example with steroid hormones, the
antitumor activity relates closely to the hormonal activity. Nevertheless, it may
be hoped that accumulation of a large amount of this type of experimental data,
coupled with a thorough analysis of the data in relation to other physical proper-
ties, may generate a new complex of criteria for rational selection of new, effec-
tive antitumor agents.

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LAGIDZE, R. M., CHIGOGIDZE, L. P., IREMADZE, N. K., and CHAVCHANIDZE, D. G., Institute of Physical and Organic Chemistry imeni P. G. Melikishvili, Tbilisi, Academy of Sciences Georgian SSR

"Synthesis and Reactions of Some Substituted Tetrahydroindenoindenes and 2-Phenyl-1,3-dialkylindanes"

Abstract: The authors condensed the diacetate of 3,6-dimethyl-4-octene-3,6-diol with cumene, 2,6-dimethyl-3-heptene-2,5-diol with p-xylene and cumene, and 3,6-diethyl-4-octene-3,6-diol with toluene, p-xylene and cumene in presence of $AlCl_3$ yielding 2-phenyl-1,3-dialkylindane and a series of derivatives of tetrahydroindenoindene. Physical properties of all products are reported. Chlorosulphonation of an earlier synthesized spiro-/2,3,6,7-dibenzo-4,1',8,1"-dicyclohexylbicyclo(3,3,0)octane_7 gave a series of new sulfonylamides.

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TITLE--FACTORS AFFECTING THE QUALITY AND STABILITY OF DRY ENZYME
   PREPARATIONS -U-

AUTHOR-(02)-LAGODA, I.V., BANNIKOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--MOLOCH. PROM. 1970, 31(2), 11-15

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, BACILLUS, STREPTOCOCCUS, MOISTURE
   MEASUREMENT, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0086   STEP NO--UR/0333/70/031/002/0011/0015

CIRC ACCESSION NO--AP0120786
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0120786
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DRY ENZYME PREPNS. WERE MADE FROM
   CONCS. OF LACTOBACILLUS ACIDOPHILUS, STREPTOCOCCUS LACTIS, S.
   ACETONICUS, AND S. CREMORIS MIXED IN PROPORTION OF 1:20 WITH A
   PROTECTIVE MEDIUM CONSISTING OF A 10PERCENT AQ. SUCROSE SOLN., 5PERCENT
   GELATOSE, 2PERCENT NA GLUTAMATE, AND 5PERCENT NA CITRATE OR ACETATE.
   DRYING BY SUBLIMATION AT AN INITIAL TEMP. OF 23-9DEGREES AT 0.08-0.1 MM,
   FOLLOWED BY 32-5DEGREES FOR 1.5-2 HR WITH A TOTAL DURATION OF 10-12 HR
   GAVE A PREPN. OF 2.2-3.6PERCENT MOISTURE CONTENT, WITH A HIGH ACTIVITY
   (ACIDIFICATION OF MILK IN 6-11 HR) AND CONTG. 1-10 BILLION CELLS IN 0.1
   G.   WHEN STORED AT 4-6DEGREES ITS QUALITY WAS MAINTAINED 6 MONTHS, AT
   MINUS 18DEGREES 1 YEAR.   FACILTITY: VSES. NAUCH. ISSLED. INST.
   MOLOCH, PROM., MOSCOW, USSR.

                         UNCLASSIFIED

LAGODINSKIY, V.M.

- 139 -

XVI-19. THEORETICAL AND REAL LAWS OF FORMATION OF THIN SEMICONDUCTOR LAYERS OF COMPLEX COMPOSITIES MANUFACTURED BY THERMAL EVAPORATION IN A VACUUM

The simplest method of manufacturing thin layers of complex composition comprising two components...

The variations in the layer composition were calculated as a function...

The variations in composition of the layers as a function of the proportion of the evaporated substance were calculated for sublimation of mechanical mixtures...

The operating results permit determination of the evaporation conditions insuring the given nature of distribution of the components with respect to the thickness of the layers.

TITLE--SLOW INVERSION AND PMR SPECTRA OF ISOXAZOLIDINE DERIVATIVES -U-

AUTHOR--LAGODZINSKAYA, T.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 31-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PROTON, MAGNETIC RESONANCE, AZO COMPOUND, ORGANIC NITRO
  COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0435   STEP NO--UR/0192/70/011/001/0031/0037

CIRC ACCESSION NO--AP0119371
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0119371
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PMR CHEM. SHIFTS, SPIN SPIN
   COUPLING CONSTS. (J), CONTENT OF CONFORMERS, FREE ENERGY DIFFERENCES
   BETWEEN CONFORMERS, RATE OF INVERSION, AND ARRHENIUS RATE PARAMETERS OF
   8 SUBSTITUTED ISOXAZOLIDINES ARE GIVEN.   BECAUSE OF THE HIGH INVERSION
   BARIER (14.6 KCAL-MOLE), BESIDES INVERSION OF N ATOM IN THE RING,
   INVERSION OF THE 5 MEMBERED RING AND REORIENTATION OF NO SUB2 GROUPS WAS
   CONSIDERED TO CONTRIBUTE TO THE OVER ALL INVERSION PROCESS. WITH
   RESPECT TO THE VALUES OF VICINAL J, THE CONFORMATION OF THE C SUB4-C
   SUB5 FRAGMENT OF THE ISOXAZOLIDIEN RING CORRESPONDS CLOSELY TO A
   SHIELDED ONE. THE N-C SUB3 FRAGMENT OF THE RING MUST BE LOCATED AT THE
   POSITION OF MAX. DISTORTION FROM PLANARITY OF THE RING AND NO SUB2
   GROUPS CAN BE CHARACTERIZED AS PSEUDOZXIAL AND PSEUDOEQUATORIAL.   THE
   CHARACTER OF THE NO SUB2 GROUPS EXPLAINS THE LARGE DIFFERENCES IN
   SHIELDING OF GEMINAL PROTONS BONDED TO NEIGHBORING C ATOMS.
   FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 669.245:539.42:621.785.783

ALFEROVA, N. S., RIZOL, A. I., LAGOSHA, A. V.

"Role of Dispersion Hardening (Aging) in the Embrittlement of Alloys Based on Nickel When Producing Cold-Deformed Pipe"

V sb Legirovaniye i svoystva zharoprochn. splavov (Alloying and Properties of Heat-Resistant Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 124-129 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 41733)

Translation: Cold-deformed pipe made of a number of aging alloys based on nickel has a tendency to rupture during stress-relieving heat treatment. The basic factors promoting rupture are determined, and the causes of rupture are established. The decisive role of aging in the rupture of cold-deformed pipe during heat treatment is demonstrated. Rupture takes place in the intense aging temperature range. The role of the residual stresses in rupture is revealed. It is established that pipe made of EI827 and EI437B alloys which after deformation have significant residual tensile stresses are subject to rupture. Such pipe includes all drawn pipe and pipe rolled with small reductions along the wall (8-10%) which is connected with a sharply expressed inhomogeneity of deformation. Increasing the degree of reduction during rolling insures more uniform deformation, more uniform aging, and the practical absence

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USSR

ALFEROVA, N. S., et al., Legirovaniye i svoystva zharoprochn, splavov,
1971, pp 124-129

of residual stresses, which as a result prevents the tendency of the rolled pipe
toward rupture.
     The basic cause of pipe rupture during heat treatment is localization of
the aging process under the conditions of decreased relaxation capacity of the
alloy and the presence of residual stresses of the first type. Measures were
developed for eliminating tendency of cold-deformed pipe made of aging alloys
based on nickel toward rupture during their stress-relief heat treatment.
Three illustrations, one table, and a 2-entry bibliography.

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USSR

ARONOVICH, A. B., LAGOSHA, B. A.

"Concerning a Problem in Optimizing Equipment Loading"

Translation: In many instances equipment loading in produc-
tion is very uneven. This article attempts to study optimum
technological routes which make no a priori connections
between articles and machines. These routes are laid out
for filling a certain article production quota by a given
deadline and are so designed that by maximum loading of some
subgroup of the available equipment the remaining equipment
can be freed and used in carrying out other production jobs.

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USSR

LAGOVIER, B. A.

"Development of a Device for Control of an Automatic Queueing System Considering the Order of Arrival of Requests"

Abstraktn. i Struktur. Teoriya Releyn. Ustroistv. [Abstract and Structural Theory of Relay Devices -- Collection of Works], Moscow, Nauka Press, 1972, pp 140-146 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 VS93 by the author).

Translation: Conditions for functioning of a device which controls a queueing system with a line are formulated and formalized; coding of the states of the device is suggested, providing certain advantages in comparison with solutions produced earlier, and this coding is used to produce structural formulas realizing the conversion and output functions fixed by sequences of general form.

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USSR

UDC: 621.385.632.2.(633.24)

LAGRANSKIY, L. M., LEPILOV, V. A., NEGANOV, V. A.

"An Electronic SHF Device With Crossed Fields ('Phasmatron')"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 24, 1970, Soviet Patent No 277115, Class 21, filed 2 Feb 68, p 63

Abstract: This Author's Certificate introduces: 1. An electronic SHF device with crossed fields which contains an electron gun and a space where the electron stream interacts with the field of a delayed electromagnetic wave. This interaction space is formed by the opposing surfaces of the decelerating system and the negative electrode. The surface of the negative electrode which faces the interaction space has grooves or projections arranged parallel to the magnetic lines of force. As a distinguishing feature of the patent, efficiency is improved and the length of the device is reduced by installing a phasing electrode between the end of the electron gun and the region of intense collection of electrons by the decelerating system in the area where the grooves or projections are located. This electrode is made in the form of a conducting plate parallel to the surface of the decelerating system. The geometric dimensions of the regions of the interaction space between the phasing electrode and the decelerating system and the negative electrode respectively are selected from conditions of a change
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LAGRANSKIY L. M. et al., Soviet Patent No 277115

by 180° in the phase of improperly phased electrons passing between the opposing surfaces of the phasing and negative electrodes with respect to the phase of the properly phased electrons. 2. A modification of this device distinguished by the fact that its dynamic working range is extended by installing several phasing electrodes in the interaction space in series with the gap. 3. A modification of the SHF device under No 1 distinguished by the fact that an electrically insulated correcting electrode is installed between the phasing and negative electrodes and in parallel with them.

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USSR

UDC 621.385.42.2 (088.8)

LAGRANSKIY, L.M., PAN'KOV, I.A., CHIGIRINSKIY, P.YA.

"M-Type Amplifier"

USSR Author's Certificate No 256094, filed 8 June 65, published 19 Mar 70 (from
RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A155P)

Translation: The M-Type crossfield microwave power amplifier with nonsynchronous
performance described contains an electron gun, collector, a decelerating system,
and a negative electrode. This is for improvement of the uniformity of the amplitude--
frequency characteristics, an increase of the stability of the amplitude of the out-
put signal during change of the feed voltages, and for a decrease of the unit thermal
load in the elements of the decelerating system. In the direction of movement of the
electron flow, the electrode is divided into at least two parts. The parts of the
electrodes found under identical potentials are located at different distances from
the decelerating system, and those found under different potentials -- at equal dis-
tances from the retarding system.

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RADIATION EMULSION POLYMERIZATION OF STYRENE   UNCLASSIFIED   PROCESSING DATE--30OCT70

AUTHOR-(05)-LUKHOVITSKIY, V.I., POLIKARPOV, V.V., LEBEDEVA, A.M.,
LAGUCHEVA, R.M., KARPOV, V.L.

COUNTRY OF INFO--USSR

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION RATE, RADIATION EFFECT, EMULSION
POLYMERIZATION, STYRENE, GAMMA IRRADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1623

CIRC ACCESSION NO--AP0112617   STEP NO--UR/0456/70/004/002/0173/0174

UNCLASSIFIED

UBSR

LAGRANSKIY, L.M., PAN'KOV, I.

"M-Type Beam Device"

Translation: A M-type beam device with a transverse nonuniform magnetic field is
proposed which contains an electron gun, an interaction space formed by a decelerat-
ing system and a negative electrode, and a collector. With the object of increasing
power in the device, a plate of ferromagnetic material is introduced, located outside
of the interaction space as viewed from the direction of the negative electrode and
parallel to the latter.

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CIRC ACCESSION NO--AP0112617   UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS WERE STUDIED OF   PROCESSING DATE--30OCT70
EMULSION POLYMN. OF STYRENE (I) (K LAURATE (II) WAS USED AS THE
EMULSIFIER) IRRADIATED WITH GAMMA RAYS. THE REACTION ACTIVATION ENERGY
IS 7.7 KCAL-MOLE. THE FOLLOWING RELATIONS ARE OBSRVED UPSILON IS
APPROXIMATELY EQUAL TO I PRIMEO.5 IS APPROXIMATELY EQUAL TO (C MINUS C
SUBM) PRIMEO.5 IS APPROXIMATELY EQUAL TO EXP(NEGATIVE 4600-RT) WHERE
UPSILON IS THE REACTION RATE, I IS THE IRRADN. INTENSITY, C IS THE
CONCN. OF II, AND C SUBM IS THE CRIT. I CONCN. OF THE MICELLE FORMATION.
FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

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USSR

LAGUNOV, A. S., BAYVEL, L. P., GUSEV, B. A., and LITVINOV, V. K.,
V. I. Lenin Khar'kov Polytechnical Institute

UDC 532.517.4

"Dimensional Distribution of Drops as a Function of Their Residence
Time in Turbulent Flow and the Flow Velocity"

Abstract: Some results are given in this experimental paper inves-
tigating the fractioning process of a liquid by a gas stream. The
gas flows in a Venturi and is incident on the liquid through an
aerodynamic sprayer. The process occurs in two stages. In the
first, the fractioning is done at high relative velocities of li-
quid and gas; in the second, it is caused by turbulent flow pulsa-
tions. The dimensional spectrum of the drops was determined at a
comparatively large distance from the intersection point of the
liquid and the gas. The experimental equipment was developed by
the authors on the basis of the work of K. S. Shifrin, and the ex-
periments described were suggested by A. N. Kolmogorov to clarify
the dependence of the dimensional distribution on the residence
time in turbulent flow. A diagram of the equipment is given, and
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USSR

LAGUNOV, A. S., et al, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 808-810

curves of the drop dimension spectra plotted for various values of the gas show that the dimensions depend strongly on the residence time.

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