

IMYANITOV, I. M.

ELECTRICITY OF CLOUDS

By I. M. Imyanitov, Ye. V. Chubarina,
and Ya. M. Shvarts

Translation of: "Elektrichestvo oblakov."
Hydrometeorological Press,
Leningrad, 1971

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ANNOTATION

The electricity of the clouds substantially affects their evolution, particularly the development of thunderstorms and the formation of precipitation. The probability of lightning hitting aircraft and the reliability of the aircraft's radio communication and navigation devices are closely connected with the electricity of the clouds. In the Brodningmagian scale of the atmosphere, as compared with the Lilliputian scale of the atmosphere, our ideas developed in hours of what is possible and what isn't begin to lose scope. The case of ball lightning can be cited as an example.

At the same time, meteorologists know very little about the electrical properties of the clouds, their "electrical nature," especially modern ideas and data that are not yet published in the widely spread literature.

The booklet "Electricity of the Clouds" is an attempt to compile complete data on cloud electrical characteristics and to outline modern knowledge on the electrical properties of clouds, to describe the processes which lead to their electrification, methods devised by man to change the clouds' electrical properties and to evaluate the influence of cloud electrical properties on their development.

The book is designed for meteorologists and other specialists who are interested in atmospheric electricity.

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CATALYST FOR THE SYNTHESIS OF ALCOHOLS BY THE REPPE METHOD -U-

AUTHOR--(03)-BOGORADOVSKAYA, N.M., IMYANITOV, N.S., RUOKOVSKIY, D.M.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(3), 584-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYTIC ORGANIC SYNTHESIS, ALCOHOL, ALKENE, ION EXCHANGE
RESIN, TERTIARY AMINE, CATALYST, CHEMICAL REACTION RATE/(U)KUZ ION
EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/D03 STEP NO--UR/0195/70/011/003/0584/0587

CIRC ACCESSION NO--AP0140286

~~UNCLASSIFIED~~

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REAL CATALYST FOR REPPE SYNTHESIS OF ALCS. FROM OLEFINS IS THE STRONG ACID H SUB2 FE SUB3 (CO) SUB11 (I). I WAS PREPD. FROM (HNET SUB3) (HFE SUB3 (CO) SUB11) USING ION EXCHANGE RESIN KU,2. THE EXPT. REVEALS THAT THE PRESENCE OF A TERTIARY AMINE IN THE REACTION MIXT. (OLEFIN CO,H SUB2,CATALYST) CAUSES A 3000 TIMES LOWER RATE OF ALC. SYNTHESIS. I SYNTHESIS IS REPORTED.

FACILITY: VSES. NAUCH.-ISSLED. INST. NEFTEKHIM. PROTSESS., LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INTENSIFICATION OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER
SOLUTIONS -U-
AUTHOR--(04)-TUYCHYEV, I.S., RIZAYEV, N.U., YUSIPOV, M.M., INAGAMOV, A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 74-7
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--WATER PURIFICATION, ION EXCHANGE, GLYCERINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0424 STEP NO--UR/0322/70/000/001/0074/0077
CIRC ACCESSION NO--AT0114704
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0114704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER SOLNS. IN THE PSEUDOLIQUEFACTION LAYER OF THE IONITE WAS INVESTIGATED. THE SOLNS. USED HAD A GLYCERIN CONTENT OF 11PERCENT. CA PRIME POSITIVE POSITIVE AND MG PRIME POSITIVE POSITIVE IONS AT 0.98 MG-EQUIV-L., FREE FATTY AND MINERAL ACIDS AT 3.28 MG-EQUIV-L. THE SORPTION PROCESS WAS INVESTIGATED IN BOTH CYLINDRICAL AND CONICAL COLUMNS. RESULTS SHOWED THE CONICAL ONES WITH SMALL ANGLE OF CONICITY TO BE THE MOST EFFICIENT. FACILITY: TASHKENT, POLITEKH. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

INAMOV, I.

"Unbiased Nonparametric Estimates of a Priori Distribution of the Probabilities of Defective Articles From the Results of Alternative Stochastic Acceptance Inspection"

Uch. zap. Tashkent. gos. ped. in-t (Scientific Notes. Tashkent State Pedagogical Institute), 1972, 100, pp 40-49 (from RZh-Kibernetika, No 5, May 73, abstract No 5V255 by the author)

Translation: In statistical acceptance inspection the problem frequently arises of finding an unbiased nonparametric estimate of probabilities of a priori distribution of a number of defective articles in batches of volume N presented for inspection with the use of a single statistic -- the number of defective articles. For a number of plans of alternative statistical inspection the solution of this problem is known. This paper presents a solution of the given problem for alternative statistical acceptance inspection with a double level.

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USSR

ABDURAKHIMANOV, T., INAMOV, I.

"Unbiased Estimates of Discrete Distribution of Probabilities of Defective Products Based on the Results of Statistical Plans Such as the Single Sample with Double Testing Level"

Nauch. tr. Tashkent. Un-t. [Scientific Works of Tashkent University], 1972, No 418, pp 3-11 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V252 by V. Kolchin).

Translation: A plan is studied for acceptance testing with two levels, in which of a group submitted for testing a random sample of volume n is selected and the group is accepted if the number $x(n)$ of faulty products in the sample is not over c_1 ; the group is rejected if $x(n) \geq c_2$, and subjected to complete testing if $c_1 < x(n) < c_2$. This article produces unbiased estimates for the probabilities

$$P\{X^{(m)}=l\}, m=0, 1, 2; l=0, 1, \dots, n,$$

where $X^{(0)}$ is the number of defective products in the group submitted for testing, $X^{(1)}$ is the number of defective products in an accepted group and $X^{(2)}$ is the number of defective products in a rejected group.

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USSR

UDC: 519.2:658.562.012.7

INAMOV, I., EDEL'NANT, M. I.

"Concerning an Application of the Method of Unbiased Estimates to Statistical Acceptance Monitoring"

Nauch. zap. Tashkent. in-t nar. kh-va (Scientific Notes of the Tashkent Institute of National Economy), 1970, vyp. 34, pp 14-18 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V273)

Translation: A monitoring plan with parameters n, c is considered. Let x be the number of defective items in a sample. In the case $x > c$ a batch is rejected, and in the case $x \leq c$ it is subjected to continuous monitoring. Let X be the number of defective items in a batch, $P_L = P(X = L)$. For a given X , the number of defective items in a sample x is assumed to be hypergeometrically distributed. Let X^{II} be the number of defective items detected during continuous monitoring of $N - n$ articles (if the batch is rejected, X^{II} is taken as zero). Let t batches be checked with identical distribution of the number of defective items in a batch X . Unbiased estimates based on the statistics of X^{II} are given

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USSR

INAMOV, I., EDEL'NANT, M. I., Nauch. zap. Tashkent. in-t nar. kh-va,
1970, vyp. 34, pp 14-18

for the probabilities P_i for these t batches, as well as an unbiased
estimate of the variance of these estimates. A. Zaslavskiy.

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Acc. Nr:

AP0037015

I

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 254 - 260

ON SECRETORY ORIGIN OF PYLORIC PEPSINOGEN
AND AMYLASE

Korot'ko, G. F.; Kamakin, N. F.; Inamova, K. B.

Dept. of Normal Physiology, Kalinin's State Medical Institute, Andizhan

Increase of pepsinogen and amylase contents in the blood after excluding of the renal way of their excretion from the organism and clamping of the pancreatic ducts, was shown to intensify excretion of these enzymes through pyloric secretion and urine. Decreasing blood contents of the pepsinogen after gastrectomy and subtotal gastric resection entails lowering of the enzymes excretion by pyloric glands and kidneys. The data confirmed by high positive correlation coefficient between blood contents of the pepsinogen and amylase and their excretion by pyloric glands, indicate secretory origin of these enzymes (their major part anyway) in the pyloric secretion.

D. n.

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REEL/FRA
19721951

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USSR

UDC: 8.74

SHKUTA, Yu. K., INCHIN, A. S., Editorial Staff of the "Izv. AN KirgSSR"

"A Program for Quadratic Approximation of a Function Assuming That it Passes Through Predetermined Nodes"

Programma kvadraticheskogo priblizheniya funktsii pri uslovii prokhozheniya veye cherez zadannyye uzly (cf. English above), Frunze, 1971, pp 13, ill. No 3669-71 Dep. (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V562 DEP)

Translation: The paper describes realization of a method of quadratic approximation of a function assuming that it passes through predetermined nodes. The use of this method in practice means that the process of approximation can be made correctable, and that the approximation itself can be made better on given sections. The results of computations which show the possibilities of the method are presented together with a program and instructions for using it. Authors' abstract.

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USSR

UDC: 518.5:681.3.06

INCHIN, A. S., TARASOV, V. F.

"Programs for Calculating Multiple, Singular and Coulomb Integrals"

Tr. In-ta mat. i mekh. AN KazSSR (Works of the Institute of Mathematics and Mechanics of the Academy of Sciences of the Kazakh SSR), 1970, 1, pp 140-145 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V747)

Translation: Several programs are presented for computing integrals of arbitrary multiplicity, as well as singular and Coulomb integrals. The general scheme of integration realizes Gauss' formula with equal step with respect to three or five points. Authors' abstract.

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USSR

UDC 669.28.051

ZELIKMAN, A. N., KFEYN, O. YE., TESLITSKAYA, M. V., and INLENBAUM, G. V.

"Synthesis and Some Properties of Molybdenum Disulfide"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 47-60 (from RZH-Metallurgiya, No 1, Nov 70, Abstract No 11G179)

Translation: A review is presented of work conducted by the Moscow Institute of Steel and Alloys on the investigation of methods of synthesis of MoS_2 from elements and on the production of MoS_2 by the method of interaction of S with molybdates in the melt and on the study of the structure and lubricating properties of synthetic MoS_2 . 6 ill., 4 tables, 11 bibl. entries. S. Krivonosova

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UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--DIFFUSION OF OXYGEN INTO CADMIUM TELLURIDE STUDIED WITH A MASS SPECTROMETRIC MICROCANALYZER -U-

AUTHOR--VCCOVATOV, F.F., INDENBAUM, G.V., VARYUKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--FIZL. TVERD TELA 1970, 12(1), 22-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS DIFFUSION, OXYGEN, CADMIUM TELLURIDE, MASS SPECTROMETER, VISIBLE LIGHT QUANTUM GENERATOR, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1979/1999

STEP NO--UR/C181/70/012/001/0022/0025

CIRC ACCESSION NO--AP0048277

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Acc. Nr:

AP0048277

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

ZR0181

104045w Diffusion of oxygen into cadmium telluride studied with a mass-spectrometric microanalyzer. Vodovator, E. F.; Indenbaum, G. V.; Vanyukov, A. V. (Inst. Stali Splavov, Moscow, USSR). Fiz Tverd. Tela 1970, 12(1), 22-5 (Russ). The distribution of O in pure CdTe produced as a result of oxidn. at various temps. was studied by probing with a beam from an optical quantum generator and subsequent mass-spectrometric anal. Temp. dependences were detd. of the diffusion coeffs. of O in p- and n-type specimens. A. Libackyj

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19791999

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INDENBAUM, S. V.

STUDY OF THE STRUCTURE AND TEMPERATURE OF THE BRITTLE-DUCTILE TRANSITION OF SOME ALLOYS OF THE Cr-Ti-V-B SYSTEM

Article by V. S. Zolotarevskiy, S. V. Indenbaum, G. V. Karanov, T. P. Khazanova, Moscow Steel and Alloy Institute, Department of Physical Metallurgy of Konstruem, Rare and Radioactive Metals; Ordzhonikidze, Institutya Vyshtikh Uchenykh i Vvedeniya Sveremnya Metallurgiya, Kuznits, No 5, 1971, submitted 6 March 1971, pp 133-135

71005 5-8-72
J.M.B. 111
UNC 211,728

One of the prospective groups of heat-resistant materials developed at this time is dispersion-hardened low-alloy chrome alloys [1-3]. Along with good high-temperature properties, these alloys must have plasticity at close to room temperatures. This depends on the content of alloying elements and the structure of the alloy.

In this paper the goal was to study the effect of the titanium concentration on the structure and temperature of the brittle-ductile transition of hot-extruded bars of alloys of the Cr-Ti-V-B system in the initial and heat-treated states. The titanium concentration in alloys varied from 0.25 to 1.5 percent, and the vanadium and boron content were constant and amounted to 1.5 and 0.05 percent, respectively.

Samples 10 x 10 x 15 mm cut from bars obtained by hot extruding of ingots were used for the structural studies. The samples were heated in the TVV-4 furnace in an argon atmosphere for 5, 15, 25 and 50 hours at 1,100, 1,200 and 1,400 degrees. After completion of isothermal holding the samples were cooled with the furnace. The structure was studied by means of light and electron (UMV-100V) microscopes. The metallographic microsections and thin foils were prepared in an electrolyte with the following composition: 8g ml of concentrated H₂PO₄, 51 ml of concentrated H₂SO₄ and 100 g of CrO₃. The electron microscope study was performed on single-stage carbon replicas with extracted particles and on self-supporting foils prepared by the procedure of [4]. The phase analysis by means of calculating the electronograms taken from the particles extracted in the replica was performed by the standard procedure of [5]. In addition, a phase x-ray micrograph analysis was performed with respect to the debyeograms of the previously electrolytically deposited second phase powder. The transition temperature from the brittle state to the plastic

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UDC 577.153

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BRESTKIN, A. P., ROZENGART, E. V., SOBOLEVA, I. N., KHROMOV-BORISOV, N. V.,
INDERBOM, M. L., TIKHONOVA, L. N., ABDUVAKHAEV, A. A., and TOREMURATOV, K.,
Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenova,
Academy of Sciences USSR, Institute of Experimental Medicine, Academy of
Medical Sciences USSR, Leningrad, and Tashkent State University imeni V. I.
Lenin

"Unproductive Bonding of Cholinesterase Substrate"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 717-720

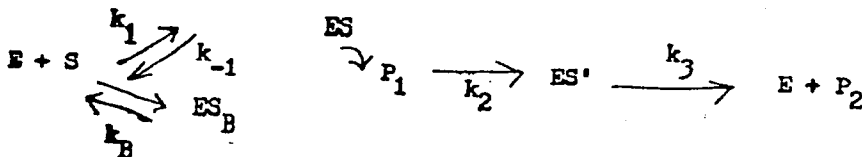
Abstract: Experiments have shown that the rate-limiting step in the Michaelis-Menton substrate reaction is the acylation or deacylation rather than the initial formation of the Michaelis complex. The specificity of the cholinesterase is also determined by the latter steps in the reaction and it is only the L optical isomer of acetyl- β -methylcholine which is hydrolyzed by the acetylcholinesterase. The D isomer is an inhibitor as it is adsorbed on the active sites but not subsequently removed. The system can be generalized as follows:

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BRESTKIN, A. P., et al., Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 717-720



where E is the enzyme; S, the substrate; ES, the Michaelis complex; ES' , the acylating enzyme; ES_B , the unproductive complex; and P_1 and P_2 , the products of the reaction - alcohols and acids. The general implications of differences in the relative magnitudes of k_1 , k_{-1} , k_2 , k_3 , and k_B are presented. Actual data are given for five substrates.

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USSR

INDENBOM, M. L., Institute of Experimental Medicine, USSR Academy of Medical Sciences

"Structure of Compounds Capable of Blocking Skeletal Muscle Choline Receptors"
(Abstract of Dissertation Presented for Defense at Leningrad Chemical-Pharmaceutical Institute)

Moscow, Farmatsiya, No 6, 1972, p 82

Abstract: A study was made of the relationship between curariform activity and magnitude of fractional positive charges present in cationic groups of compounds reacting with the "S-10 structure" of muscle choline receptors. The relative activity increases in direct proportion to the sum of the fractional positive charges found at optimum distances for reaction with the anionic sites of the choline receptors. The compound in which the chain between the quaternary nitrogen atoms contains 9 methylene radicals proved to be the most active.

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UOOR

VED 615.001.01.07

KHICHOV-KHICHOV, N. V., ~~XXXXXXXXXXXXXX~~ and KUCHIKOV, A. S.; Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad

"Bis-Quaternary-Ammonium Quaternary Compounds with Rigid Molecular Structure"

Moscow, Khimiko-Fizicheskii Zhurnal, Vol 5, No 9, 1963, pp 1-7

Abstract: It has been proposed, in the case of the bis-quaternary-ammonium compounds, which exhibit the highest curariform action, that the amino positions in the choline centers of the molecule are situated at distances of 14-15 Å apart and also at distance of 10-12 Å (the so-called O-10 and O-15 structures, respectively); but this has not been verified in the case of structure O-10. The authors synthesized two series of alkaloids -- derivatives of naphthalene-pyridine-isoquinoline and pyridine-isoquinoline, which were subjected to chemical-physical and biological tests. All compounds synthesized had rigid molecular structure and near-optimal inter-N distances. Toxicological-chemical data, including structural formulas, were obtained.

All the compounds were powerful muscle relaxants, all except one (of the n.-p. t. group) being more effective than 2-a curare; the pyridine-isoquinoline acid derivatives were only 3-10% as effective as the 2-a curare, probably owing to their shorter inter-N distance. With substitution of ethyl for methyl

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KHROMOV-BORISOV, N. V., et al., Khimiko-Farmatsvuticheskiy Zhurnal, Vol 3,
No 9, 1971, pp 3-7

radicals in the cation groups, physiological activity was definitely increased
in both groups of compounds tested. The C-16 structure was considered superior
by the tests.

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USSR

UDC 539.67

CHERNOV, V. M., and INDENBOM, V. L.

"Overcoming Point Defects by Elastic Field Dislocation as an Internal Friction Mechanism"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo, "Nauka", 1970 pp 26-32

Abstract: A dislocation theory of the hysteresis internal friction which takes into account the latest achievements in the theory of strengthening by addition and radiation is developed. Nonactivated and thermally activated dislocation breakaway from points of strengthening was considered under rigorous formulation. The form and energy of the dislocation segment overcoming the point defects field are determined, and basic characteristics of dislocation hysteresis are formulated. 4 figures, 9 references.

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USSR

UDC 539.67

AL'SHITS, V. I., and INDENBOM, V. L.

"Dynamic Energy Losses by Moving Dislocations and Internal Friction"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials"), Moscow, Izd-vo "Nauka", 1970, pp 37-41

Abstract: Mechanisms of viscous retardation of uniformly moving high-speed dislocations are analyzed. The dislocation retardation resulting from elastic wave radiation with nonuniform motion along the Payerls potential relief is evaluated.

A calculation of the dislocation retardation coefficient, which is in good agreement with experimental data, is presented. 1 table, 1 figure, 18 references.

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USSR

UDC 617.7-007.681-039.31-02:550.38

ZHOKHOV, V. P., Candidate of Medical Sciences, and ~~INDEVKIN, Ya. I.~~, Candidate of Medical Sciences, Chair of Ophthalmology, Military Medical Academy imeni S. M. Kirov, Leningrad

"Relationship Between Acute Attacks of Glaucoma and Variations in the Magnetic Field of the Earth"

Moscow, Vestnik Oftal'mologii, No 5, Sep/Oct 70, pp 29-30

Abstract: The relationship between acute attacks of glaucoma and variations in the earth's magnetic field was studied on the basis of 1,304 requests for aid in acute attacks of primary glaucoma at the emergency clinic of the Leningrad City Ophthalmological Hospital between 1961 and 1967. The number of such attacks treated per year varied from 154 to 216 and showed a direct relationship to the planetary index of magnetic activity. Medical aid in connection with acute attacks of glaucoma was sought on 916 days, while there were no requests for such aid on 1,640 days. On the days when attacks were reported, the mean amplitude of the horizontal component of the geomagnetic field was lower by 1.3 gamma than on the days when no attacks occurred. Decompensation
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USSR

ZHOKHOV, V. P., and INDEYKIN, Ye. I., Vestnik Oftal'mologii, No 5, Sep/Oct 70,
pp 29-30

in the glaucoma process is evidently affected either directly or indirectly
(through variations in meteorological conditions) by the state of the earth's
magnetic field.

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1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HYSTERESIS PROPERTIES OF HIGHLY ELASTIC MATERIALS STUDIED BY
THERMAL MEASUREMENTS -U-
AUTHOR--(03)--INDEYKIN, B.A., NIKITINA, L.B., SEMAK, B.D.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3), 32-5
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--THERMAL CONDUCTIVITY, ELASTIC HYSTERESIS, ELASTICITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0654 STEP NO--UR/0138/70/029/003/0032/0035
CIRC ACCESSION NO--AP0124326
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124326

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL COND. OF A HIGHLY ELASTIC CYLINDER WAS STUDIED ANAL. THE HEAT EVOLUTION WAS DETD. BY MEASURING THE TEMP. INCREMENTS AT SEVERAL POINTS OF THE STRAINED CYLINDER. METHODS WERE PROPOSED FOR THE DETN. OF TIME DURING WHICH THE TEMP. INCREMENTS SERVED AS AN ADEQUATE CRITERION OF HYSTERESIS PROPERTIES AND STRAIN. FACILITY: DNEPROPETROVSK. FILIAL NAUCH. ISSLED. INST. SHINNOI PROM., DNEPROPETROVSK, USSR.

UNCLASSIFIED

I

USSR

SOLOV'EV, V. S. *Journal of Chemical Physics*, 1964, 40, 10, 2700-2704.

"Calculation of the number of vibrational degrees of freedom of several molecules. I. The case of acetylene, ethylene, and acetylenic acid, acetylenic acid and the theory of the vibrational degrees of freedom."

Leningrad, *Doklady Akademii Nauk SSSR*, 1964, No. 1, p. 111-112.

Abstract: The article gives the analysis of the specific heat capacity (C_v) and vibrational (C_v) and other thermodynamic functions of several molecules. The number of vibrational degrees of freedom is calculated for acetylene, ethylene, and acetylenic acid. The number of vibrational degrees of freedom is calculated of the number of vibrational degrees of freedom of several compounds from their chemical formulas in acetylenic acid solved in benzene.

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USSR

UDC 549.746

INDOLEV, L. N., ZHDANOV, YU. YA., KASHIRTSEVA, K. I., SUKIEV, V. S., and DEL'YAHIDI, K. I., Institute of Geology, Yakutsk Branch, Siberian Department of the Academy of Sciences USSR

"Magnesium and Aluminum Hydrocarbonates -- the New Mineral Indifirite"

Zapiski Vsesoyuznogo Mineralogicheskogo Obshchestva, 2nd Series, No 2, 1971, pp 178-183

Abstract: A new mineral has been found along the Indifirka river in North-east Yakutia (near the Arctic Circle). Called "indifirite," the mineral is a rosette-like divergent, randomly arranged aggregate. In the center of the rosette there are occasionally fine "seed" hips. In the fine cracks, fan-shaped deposits are cleaved by a mass of very fine fibers, needles, or lamina about 1 mm in length. Indifirite is snow-white, and has a glossy luster with a silky cast. The hardness is about 2. The lamina and fibers are elastic. The specific weight is 1.6 ± 0.1 .

Indifirite is not radioactive and is optically anisotropic. It is insoluble in water, alcohol, and ammonia. In acids and KOH it dissolves instantly, with the formation of odorless gas bubbles. Chemical analysis gave the following composition, (in wt.%): MgO, 12.08%; Al_2O_3 , 14.58%; CaO 1/2

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USSR

INDOLEV, L. N., et al., Zapiski Vsesoyusnogo Mineralogicheskogo Obshchestva, 2nd Series, No 2, 1971, pp 173-183

0.45% Fe₂O₃, 0.64% CO₂, 24.18%; H₂O, 44.36%; SO₃, 0.45%.

Electron microscopic pictures revealed elongated tabular forms with uneven edges. Fine material was noted in the crystalline spaces and dehydration of the mineral under vacuum was observed. The parameters of the dehydrated crystals were found to be for c_0 , $6.23 \pm 0.02\text{\AA}$ lengthwise and $3.16 \pm 0.02\text{\AA}$ crosswise, which was close to that of artinite. Debye powder patterns for the untreated mineral did not match any known mineral or synthetic compound. Heat treatment at 100°C also gave an original Debye pattern, but material heat treated at 900°C showed a spinel-type pattern which is natural for a magnesium-aluminum hydrocarbonate. Heat loss curves showed endothermic minima at 120°, 160°, and 215°C. Very little change in weight was noted above 200°C. A very slight endothermic effect was noted at 550°C for two of three samples. The peaks suggested loss of water of crystallization, hydroxyl water, and dissociation of complex carbonates. Infra-red spectra confirmed the proposed structure of the new mineral. Comparisons were also made with other water-containing magnesium or magnesium-aluminum carbonates.

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USSR

UDC 576.858.75

DZEGUZE, D. R. AND INDULEN, M. K., Institute of microbiology, Latvian Academy of Sciences

"Fluorescent Antibody Study of the Inhibitory Effect of 1-Aminoadamantane on Influenza A₂ Virus"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7, 1973, pp 70-73

Abstract: The inhibitory effect of 1-aminoadamantane hydrochloride on the replication of influenza A₂/Frunze virus was studied in a culture of chick embryonic kidney cells by the fluorescent antibodies method. 20 g/ml of the compound was added to the culture 30 minutes before it was infected with virus. After 24 hours incubation at 37° only 2.6% of the cells fluoresced compared to 34% of the controls and after 48 hours specific fluorescence was observed in 8.1 and 55%, respectively. The absence of virus-specific antigen in cells treated with aminoamantadane suggests that the latter blocks one of the stages of virus replication preceding the formation of virus antigen.

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USSR

UDC 576.858.85

DZEGUZE, D. R. and INDOLEN, M. K., Institute of Microbiology im. August Kirkhenshteyn, Academy of Sciences, Latvian SSR

"Inhibitory Effect of Some Adamantane Derivatives on Sendai Virus"

Riga, Izvestiya Akademii Nauk Latvian SSR, No 3, 1973, pp 39-43

Abstract: Study of the effect of some adamantane derivatives, known to be active against influenza viruses, on the reproduction of Sendai virus in developing chick embryos showed that N-(adamantyl-1)-N¹-phenylpiperazine, N-propylaminoadamantane, and 3-aminohomoadamantane inhibited Sendai virus but less than they did influenza A₂ virus. N-(adamantyl-1)-N¹-cyclohexylpiperazine, active against influenza A, A₁, A₂, and B viruses, had no effect on Sendai virus. This study confirms the authors' earlier finding that the various myxoviruses differ in sensitivity to antiviral preparations.

1/1

USSR

UDC 576.858.75

KANEL', I. A., INDULEN, M. K., RYAZANTSEVA, G. M., DZEGUZE, D. R., and POLIS, YA. Yu., Institute of Microbiology imeni A. Kirkhenshteyn, Academy of Sciences, Latvian SSR, Riga

"Antiviral Activity of 2-Aminoadamantane"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 11, 1972, pp 42-47

Abstract: Studies were undertaken on the antiviral effectiveness of 2-amino-adamantane (2-AA) on the following viruses: influenza types AO, A1, A2, and B, Sindbis virus, and smallpox virus. Comparison with 1-aminoadamantane (1-AA) showed that 2-AA was less toxic for KHAO tissue culture and cultures of chick embryo fibroblasts, equally toxic for the chick embryo, and evidenced greater toxicity than 1-AA for white mice. The TD_{50} of 2-AA for a monolayer of chick fibroblasts was $250 \mu\text{g/ml}$, and $100-150 \mu\text{g/ml}$ for a suspension of these cells. Evaluation of 2-AA in terms of inhibition of multiplication of the different viruses in KHAO tissue culture showed that the greatest decrease in the $\lg ID_{50}$ was obtained with influenza types A2/Frunze and A2/Hong Kong; 2-AA was less effective against AO/WSN and A1/Pan, and showed no significant inhibition of B/Amakusa and B/Sofia viruses. A2 hemagglutinin titers were also depressed, and the effects were dependent on 2-AA concentration and the dose $1/2$

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USSR

KANEL', I. A., et al., Izvestiya Akademii Nauk Latvyskoy SSR, No 11, 1972, pp 42-47

of the infecting virus. For chick embryo studies the eggs were injected with 500 μ g of 2-AA and the results evaluated in terms of the fall of lg EID₅₀. The most pronounced effects were obtained with A2/Frunze and A2/Hong Kong, but antiviral activity against AO/WSN, A1/Pan, B/Tokyo, and B/Amakuza was also significant. Again, the viral hemagglutinating activity was found to be decreased and the effects of 2-AA were dependent on the size of the viral inoculum. Further in vivo studies showed that 2-AA protected white mice against death as a result of infection with A2/Frunze or B/Tokyo: the mortality rate among the untreated controls was about 50% greater. Furthermore, 2-AA decreased the lung titers of mice infected with A2/Hong Kong and B/Amakuza by about 1.5 lg ID₅₀ in both instances. Thus, 2-AA was shown to be an effective agent against influenza viruses and its therapeutic index in white mice was 21. 2-AA also inhibited influenza B virus. 2-AA was ineffective with respect to Sindbis and smallpox viruses.

2/2

USSR

UDC 576.858.75

RYAZANTSEVA, G. M., and INDULEN, M. K., Institute of Microbiology imeni Avgust Kirkhenshteyn, Academy of Sciences Latvian SSR.

"Virucidal Properties of Some Adamantane Derivatives"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 7, (300), 1972, pp 69-72

Abstract: The virucidal activity of aminoadamantane hydrochloride, aminoadamantane derivatives coded JP-6, JP-7, and JP-76, and adamantane derivatives coded JP-20 and JP-56 with respect to influenza type A2 viruses of the Franze, Hong Kong, and Leningrad strains and influenza type B virus of the Tokyo strain was investigated in vitro on cultures grown in chick embryos. None of the compounds exerted any significant virucidal activity. Since most of them have a marked virustatic property in vivo, it is concluded that their antiviral activity becomes effective in certain stages of mutual interaction between the virus and the host cell.

1/1

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USSR

UDC: 577.1:578

CHEBOTAREV, Ye. Ye., RABOVA, E. Z., INDYK, V. M.

"Antiradiation Properties of DNA in the Case of Neutron Exposure"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology--
collection of works), vyp. 3, Kiev, "Nauk. dumka", 1972, pp
74-79 (from RZh-Biologicheskaya Khimiya, No 12, Jun 72, Ab-
stract No 12F2353)

Translation: The antiradiation properties of hetero-, homo- and isologic DNA, as well as products of thermal denaturation and enzymatic hydrolysis of DNA were studied on a Saccharomyce vini yeast culture. The corresponding solutions of DNA were exposed to fast neutrons in a dose of 10 kilorads (LD₅₀; the dose rate was 10-12 rads/min). It was found that the shielding properties of DNA do not depend on the degree of isologism and polymerism of its operators. The shielding action disappeared completely only when the DNA was broken down to its nitrogen bases. Possible mechanisms for the antiradiation action of DNA are discussed.

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3

USSR

UDC: 621.643.002.2 + 411.4

ZERNOV, A. V., ZAV'YALOV, V. E., INDYUKOV, A. F.,
IVANTSOV, V. YA., Ural NITI, Chelyabinsk; and
SHCHEPKIN, E. V., MITROSHIN, S. S., Nefteprovodmontazh
Trust, Ufa.

"Possibility of Automatic Double Welds of the Elbow Joints in
Large Diameter Pipelines"

Moscow, Stroitel'stvo Truboprovodov, No 8, Aug 71, pp 15-17

Abstract: The Ural Pipe Industry Research Institute developed a
method for producing automatic double-V welds under flux with an
overhanging welding head in plates of 6-12 mm thickness with
2-2.5 mm gap.

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USSR

ZERNOV, A. V., et al., *Stroitel'stvo Truboprovodov*, No 8, Aug 71, pp 15-17

With this method the welding arc is stabilized by a magnetic field created by a solenoid concentric with the electrode. The solenoid winding is in series with the welding circuit. The magnetic field is controlled by varying the distance of the solenoid from the weld.

This method makes it possible to make the initial root weld either from inside or from outside in the elbow joint of a pipe.

Analysis of weld sections showed that the quality of the welds is adequate. The subject solenoids can be installed on existing welding heads. This will result in increased productivity and quality.

1/2

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Petroleum Processing Technology

USSR

UDC 665,635:665.644,2:/661,715.7.001:665,4+621.436

INDYUKOV, N. M., and DANIYELIAN, M. K.

"Production of Naphthalene and Marine Diesel Fuel From Gas Oils of Catalytic Cracking"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 36-39

Abstract: The authors investigated simultaneous production of naphthalene and marine diesel fuel from gas oils of catalytic cracking. The initial raw materials were light and heavy gas oils of catalytic cracking, mixtures of these oils and fractions isolated from a mixture. The content of aromatic hydrocarbons was: 33.33 vol.% in the light gas oil, 40.00 vol.% in the heavy gas oil, and 35.0 vol.% in the gas oil mixture. The basic indices of the process of naphthalene production were determined both with respect to catalytic and with respect to thermal hydrodealkylation of the 240-300° fraction of the aromatic concentrate. The naphthalene yield was 40.5 and 51.7% of the aromatic concentrate respectively. Marine diesel fuel produced from the refined product of the low-boiling-to-300° fraction and the residue of gas oils of catalytic cracking with a boiling point above 300° satisfies all requirements of State Standards (GOST).

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1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PRODUCTION OF TETRALIN FROM NAPHTHALENE -U-
AUTHOR--(02)--DANIELYAN, M.K., INDYUKOV, N.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 226-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NAPHTHALENE, HYDROGENATION, NICKEL, CATALYST, SATURATED
HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0824 STEP NO--UR/0064/70/046/003/0226/0227
CIRC ACCESSION NO--AP0124491
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124491

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TETRALIN (I) WAS PRODUCED IN 97-8PERCENT YIELD BY HYDROGENATION OF PETROLEUM DERIVED NAPHTHALENE (II), OVER A NI (ON KIESELGUHR) OR A NIS WS SUB2 (ON AL SUB2 O SUB3) CATALYST, IN AN AUTOCLAVE AT 220-50DEGREES-107-8 ATM, AND 1:4 (MOLE) II H. HYDROGENATION OF II OVER THE SAME CATALYSTS IN A CONTINUOUS FLOW APP. AT 120-400DEGREES-C-75 ATM GAVE 22-64PERCENT I, WHILE HYDROGENATION OF 1:2 II C SUB6 H SUB6 GAVE QUANT. DECALIN CYCLOHEXANE.

UNCLASSIFIED

Acc. Nr: **470103019**

Abstracting Service: **6-20**
INTERNAT. AEROSPACE ABST.

Ref. Code:
4N 0020

A70-25397 # Estimation of the structure of the solar corona from a rocket experiment on February 15, 1961 (Otsenka struktury solnechnoi korony po raketnomu eksperimentu 15 II 1961 g.). A. A. Dmitriev, R. G. Indzhnia, A. E. Mikirov, and S. M. Poloskov (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). *Akademiia Nauk SSSR, Doklady*, vol. 190, Feb. 1, 1970, p. 803, 804. In Russian.

Determination of the brightness distribution in the outer solar corona from information obtained by rockets equipped with scanning devices during a solar eclipse. The problem of determining the true brightness from an integral equation giving the relation between the experimentally observed brightness and the true brightness is considered. It is found that, starting from a measurement error of 9.5%, the reconstructed function does not have any negative roots, thus reliably indicating that the error in the initial data is no less than 9.5%.

A.B.K.

REEL/FRAME
19861101

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12

USSR

UDC 542.921+547.333.4

MINASYAN, R. B., INDZHIKYAN, M. G., BABAYAN, A. T., Institute of Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Research in the Field of Amines and Ammonium Compounds. LXVIII. Alkaline Splitting of Quaternary Ammonium Salts Containing the 1-Alkoxy-2-Bromoethyl Group"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 3, 1970, pp 234-239

Abstract: In a previous paper by these same authors (Izv. AN ArmSSR, KhN, 18, 572, 1965), it was shown that quaternary ammonium salts containing the 1-ethoxy-2-bromoethyl group, in addition to a group of the allyl type, are dehydrobrominated by alkali hydroxide followed by regrouping and splitting with the formation of esters of the free acids produced by ester hydrolysis. It is reported in this article that substitution of the butoxyl group for the ethoxy group completely suppresses alkaline hydrolysis, resulting in the formation of nothing but unsaturated carboxylic acid esters. For instance, alkali hydroxide splitting of dimethylallyl(1-butoxy-2-bromoethyl)ammonium bromide yields only butyl ester of butene-3-carboxylic acid (64%). Similarly interacting alkali with bromine salts of dimethylmethallyl(1-butoxy-2-bromoethyl)-
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USSR

MINASYAN, R. B., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 3, 1970, pp 234-239

and dimethyl- α -methylcrotyl(1-butoxy-2-bromoethyl)-ammonium produces butyl esters of 3-methylbutene-3-carboxylic (59%) and 2-methylpentene-3-carboxylic (63%) acids. Nucleophilic substitution or hydration of the α -alkoxyvinyl group may take place in quaternary ammonium salts in an alkali hydroxide. Results of investigation of alkaline splitting are tabulated for six compounds.

Organometallic Compounds

USSR

UDC 547.26.119

KAMAY, G. Kh., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A., CHACHABA,
G. N., Tbilisi State University

"Concerning Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971,
pp 61-64

Abstract: The tri-sec-alkyl esters of arsenous acid, as prepared from arsenous acid anhydride and secondary alcohols, were investigated. A suspension of a arsenous acid anhydride in a mixture of the secondary alcohol in n-octane was heated. The resulting tri-sec-alkylarsenites then react with acetic acid anhydride to form dialkoxyarsinoacetates. Tri-sec-alkylarsenites also react with acetyl chloride. Di-sec-alkoxy-arsinoacetates and especially di-sec-alkylarsinous acid chloride are vesicants. The physical constants of eight compounds are presented.

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Organometallic Compounds

USSR

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KAMAY, G. KH., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A.,
CHACHAVA, G. N., Tbilisi State University

UDC 547.26.119

"Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61,
No 1, Jan 71, pp 51-64

Abstract: The authors studied the reaction of some secondary alcohols and arsenic trioxide, as well as properties of the resultant esters. Heating of an arsenic trioxide suspension in an alcohol-octane mixture gives tri-sec.-alkyl arsenites. The latter react with acetic anhydride to give dialkoxyarsinoacetates and two esters of acetic acid. Tri-sec.-alkyl arsenites react with acetyl chloride to give acid chlorides of di-sec.-alkylarsenous acid. The article lists properties of the resultant compounds.

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microelectronics

USSR

UDC 621.396.6-161.5

LEN'DORENKO, B. N., LENEV, R. Kh., SHCHERBA, V. G.

"Automating the Design Planning of Large Functional Modules"

Izv. Leningr. elektrotexn. in-ta (News of the Leningrad Electrical Engineering Institute), 1971, v. 92, pp 27-40 (from Izv. Elektrotexn., No 7, Jul 71, Abstract No 7276)

Translation: The authors consider the design of large functional modules containing more than 100 simple microcircuits arranged on a common substrate and interconnected by at least two layers of connections. A principal difficulty is breaking down the schematic circuit into complexes of microcircuits, arranging them, and making the wiring layout. A system is described for designing large functional modules with the use of digital computers of the "Minsk-02" type. This system is made up of a number of programs including a program for preliminary breakdown of the circuit, a program for making up sets of substrates for the simple microcircuits, a program for arranging these sets, etc. Bibliography of two titles. R. S.

1/1

USSR

UDC: 547.222.26'118.07

ZHURAVLEVA, M. P., BEBIKH, G. F., INFANT'YEV, E. Ye., Moscow State University imeni
M. V. Lomonosov

"A Method of Producing Dithioalkylenechlorophosphites"

Moscow, Original. Izobreteniya. Promyshlennyye Obrabotki, Tovarnyye Znaki, No 26,
1970, Soviet Patent No 270689, Class 12, filed 23 Jun 69, pp 23-2-

Abstract: This Author's Certificate introduces: 1. A method of producing dithio-
alkylenechlorophosphites. As a distinguishing feature of the patent, the raw ma-
terial base is expanded and the procedure is simplified by interacting alkylene-
chlorophosphites with phosphorus pentasulfide in the presence of heat in an organic
solvent with subsequent isolation of the goal product by conventional methods.
2. A modification of this method distinguished by the fact that the process is
carried out at a temperature of 140°C.

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USSR

UDC 541.138

LEVINSKAS, A. L., SINYUS, Ya. Yu., and INGAUNITE, B. I., Vilnyus State University

"Electrode Processes in Ether-Hydride Electrolyte Used in Aluminum Plating"

Moscow, Elektrokimiya, Vol 6, No 10, Oct 70, pp 1505-1508

Abstract: A study of the electrode processes in the "hydride mixture" was performed by the classical polarization curve method, and also by gas chromatography and gas volumetric methods. The systematic study of the current yield under gas separation conditions confirmed the complexity of the mechanism of cathode and anode gas liberation in the ether-hydride electrolyte. The gas volumetric data indicated that the cathode and anode hydrogen in the ether-hydride electrolyte can hardly be related to the various types of ionization of compounds in the "hydride mixture." It is possible that gas separation on the cathode and anode may be a result of spontaneous separation of hydrogen under the influence of the freshly formed aluminum surface, which catalyzes the process of decomposition of complexes in the "hydride mixture."

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USSR

UDC 621.375.82

GUREVICH, G. L., INGEL', L. Kh., KHANIN, Ya. I.

"Effect of a Nonlinear Lens on the Stability of Steady-State Laser Oscillation"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 3, Moscow, "Sov. radio," 1972, pp 45-52 (from RZh-Fizika, No 1, Jan 73, Abstract No 1D882)

Translation: The problem of the stability of stationary laser oscillation when a medium is present in its resonator, the refractive index of which depends on the radiation intensity, is discussed. It is shown that the instability threshold drops as diffraction losses rise. The value of the threshold is determined for cases in which an inertialess nonlinear dielectric plays the role of such a medium or the substance itself is active. 13 ref. Authors' abstract.

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UDC 620.178.32

USSR

RANNAT, E. I., and INGERMA, A. I.

"Experimental Device for Testing Specimens Under Axial Alternating Loading Cycles"

Tr. Tallin. politekhn. in-ta (Works of Tallin Polytechnic Institute), 1970, A, No 294, pp 95-98 (German summary) (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31909 by authors)

Translation: The article describes the design and operating principle of a testing device designed to test metals with a given cyclic load according to a tension-compression scheme. The device makes it possible to obtain loads of any asymmetry from pulsating tension to pulsating compression. Two illustrations. Bibliography with one title.

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USSR

UDC 624.07:534.1

KAN, S. N., INGUL'TSOV, V. L., KALACHEV, A. Yu.

"Stability and Free Oscillations of Conjugate Conical Shells"

Soprotivl. materialov i teoriya sooruzh. Resp. mezhyed. nauch.-tekhn. sb.
(Resistance of Materials and the Theory of Structures. Republic Inter-
departmental Scientific-Technical Collection), 1972, No. 18, pp 31-33
(from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V300)

Translation: The problem is solved within the framework of the engineering moment theory. The equilibrium equation and the corresponding boundary conditions are represented in displacements. The search for critical loads and natural frequencies consists in reducing the boundary value problem to a series of Cauchy problems, the solution of which is obtained by the Runge-Kutta numerical method. Authors' abstract.

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USSR

UDC 612.82-089:615.837.3

TYURIN, S. I., BRAZOVSKAYA, F. A., ~~ININ, Yu. S.~~, PAYKIN, D. I., SIROTYUK, M. G., and GAVRILOV, L. R., Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Central Design Bureau, Academy of Medical Sciences USSR, and Acoustic Institute, Academy of Sciences USSR

"Use of Focused Ultrasound for Local Destruction of Brain Structures Through Intact Skull"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1973, pp 120-121

Abstract: Using a focusing emitter to create an ultrasonic field, the authors irradiated portions of rabbit brains 16 to 20 mm from the surface in the region of the hypothalamus and mesencephalon without preliminary trephination. A single sonication produced a lesion 0.2 to 1 mm in diameter and 1 to 3 mm in length. No pathological changes were noted on the way to the target area in which histological examination of frontal sections revealed a focus of coagulation necrosis.

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USSR

UDC 615.471:[614.777+628.19]074:543.42.062

SINEL'NIKOV, V. Ye., TIMAKHOV, O. N., ININ, Yu. S., IKONNIKOVA, S. V., GIKKEL', A. A., GONCHAROV, A. T., AFOININ, V. I., PERSIYANTSEVA, V. B., and SOKOLOV, B. K., Central Design Bureau and Pilot Plant, USSR Academy of Medical Sciences, Moscow and Institute of Biology of Inland Waters, USSR Academy of Sciences, Borok, Yaroslavl Oblast

"A Multipurpose Spectrofluorimeter to Study Natural and Polluted Water"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 65-68

Abstract: The akva-MF spectrofluorimeter developed by the authors can be used for rapid determination of individual organic and mineral compounds present in water, for automatic regulation of fluorescent substances in a stream, for detection in lakes and seas of water masses differing in chemical composition and origin, and for study of the conversion and breakdown of compounds under the influence of biological and physicochemical factors. Analyses can be made in the laboratory, in the field, or on a research vessel. The spectrum of fluorescent compounds can be obtained directly at the sampling site. The apparatus is a single-beam recording spectrofluorimeter designed to function in the visible and UV regions of the spectrum. With the use of interchangeable attachments, it can record spectra of fluorescence, excitation, and phosphorescence in a solution as well as substances separated in chromatographic zones on paper.

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USSR

UDC 621.314.58(088.8)

SAKOVICH, A.A., IN'KCV, YU.M.

"Method Of Control Of Thyristors Of A Three-Phase Frequency Converter With Direct Coupling"

USSR Author's Certificate No 260735, filed 13 Mar 68, published 11 May 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B523P)

Translation: The invention pertains to a system of control of a direct frequency converter powered by 3-phase voltage and operating in a regime of natural commutation by means of the delivery of control pulses to the respective thyristors at the natural firing point with subsequent omission of a number of operating cycles. With the object of an increase of the power factor and a decrease of the effect of the converter on the power network, it is proposed to feed the control pulses in an operating cycle to the thyristors which are fed from a similar phase of the network. 3 ill. I.R.

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USSR

UDC 621.371.334.3:591.463.7:555.3

LOBACH, V.T., GARNIKER'YAN, A.A., POLOZHENISEV, R.G., TYMOCV, N.S., ~~LEKUCHIY, A.A.~~

"Experimental Investigation Of The Statistical Characteristics Of Radar Signals Reflected From Disturbed Sea Surface And Small-Sized Surface Objects"

Tr. Taganrog. radiotekhn. in-ta (Works Of The Taganrog Radio Engineering Institute), 1971, No 22, pp 14-25 (From RSR:Radiotekhnika, No 2, Feb 72, Abstract No 2814)

Translation: The correlation intervals and the variation factor were measured of signals reflected from a disturbed sea surface and small-sized surface objects. A block diagram is presented of a measuring device with use of the "Donets" marine radar station ($\lambda = 2.2$ cm). An analysis is given of the results obtained; it is shown that they can be used for measurement of the degree of roughness of the sea and for evaluation of the effectiveness of detection of small-sized objects on a background of reflections from the sea surface. 1 ill. 2 tab. 3 ref. R.S.

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INO GAMOV, I. I.

Rev / 12-160 / 3-11-1973
117

It is shown that the air casing of a charge has a significant effect on practically all the parameters of a wave disturbance propagating in the ground from an explosion. The characteristic wave processes in ground masses from explosions by air-casing charges can be used for calculating explosion effects when cutting through mine workings and other underground structures in compressible soil.

Inogamov, I. I., and F. N. Pyri.
Destruction mechanism of rocks from explosions. IAN USSR. Ser. tekhn. nauk, no. 3, 1972, 77-80.

Soviet research on the mechanism of rock destruction by explosive action is surveyed. Vlasov et al (IAN SSSR, 1962) showed that an approximate solution of explosion problems can be obtained by assuming that transmission of the explosion energy to the surrounding medium is instantaneous, and that the medium is incompressible. Principles were developed on this basis for the calculation of rock fragmentation by an explosion. The granulometric composition of the blown-up rock mass can consequently be theoretically determined by classical mechanics, and the fragmentation action of cylindrical charges can be calculated. However, the only changes and deformations taking place in the medium which can be evaluated using this model of the rock-fragmentation process, are the end results of explosive action.

Sukhanov (IN: Sbornik. Voprosy teorii razrusheniya gornykh porod v zryva. IAN SSSR, 1958) proposed a formula for taking into account the resistance of rock to separation along the lateral surface of the explosion funnel, and the passage of the gravitational forces of the rock within the funnel. Khanukayev suggested (IN: Energiya voln

USSR

UDC 622.235.2

INOZAMOV, I. I., PYS', F. N.

"Methods of Increasing the Energy of an Explosion"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, No 3, 1970, pp 50-52

Abstract: The article deals with methods for breaking up rock in mining operations, which increase the efficiency of the explosion. In an explosion, there is a lag between the application of a load upon the medium and its destruction, depending upon the physical and mechanical properties and upon the duration of the explosive impulse. The intensity of the process of rock breakup increases with an increase in the duration of the explosive impulse. Thus, the basic physical factor affecting the intensity of rock breakup under the action of an explosion is the time of application of the explosive impulse. A formula is given to describe the process of the explosive decomposition of a high-explosive charge in a rock borehole. Methods of increasing the duration of the explosion are briefly described. It is found that methods for increasing the efficiency of the explosion energy considerably improve the degree and uniformity of rock pulverization, and increase the productivity of mining and transport equipment.

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USSR

UDC 661.832.43

~~INOZAMOV, U. A.~~, MANSUROV, P. KH., NIZAMETDINOVA, M. A., Institute of Chemistry, Academy of Sciences Uzbek SSR

"Study of the Kinetics of Ion Exchange in an Ionite-Solution System"

Tashkent, Uzbekskiy Khimicheskiy zhurnal, No 3, 1971, pp 23-25

Abstract: The rate of ion exchange between the ionite and the solution which occurs by penetration of the ion from the solution into the ionite grain is determined by diffusion. During exchange, the opposite process takes place: the desorbed ion is diffused from the ionite grain interior into the external solution. This makes ion distribution between the two phases a function of the mobility of the exchanging ions. The objective of this study was the ion exchange rate between solutions of nitric acid, potassium and sodium chlorides using KU-2 cationite in K^+ , Na^+ and H^+ forms. The ion exchange rate was determined from the hydrogen ion exchange for potassium-sodium-cationite ions and from that of potassium and sodium ions for the H cationite. The concentration $1/2$

- 30 -

USSR

INOAMOV, U. A., et al, Uzbekskiy khimicheskiy zhurnal, No 3,
1971, pp 23-25

of the exchanging ions of the contacted solution was determined from the difference in concentration of the initial solution by titration both before and after contact with the ionite. It was found that the ion exchange process in the synthesis of sodium and potassium nitrites is determined by internal diffusion. The ion diffusion coefficients of H^+ , K^+ and Na^+ increase in the order $D_H > D_{Na} > D_K$.

2/2

USSR

UDC 576.311:591.436.044

ZUFAROV, K. A., SHNEYVAYS, V. B., and INOGANOVA, T. Ya., Laboratory of Electron Microscopy and Cytophotometry, Tashkent Medical Institute, Tashkent

"The Response of Ergastoplasm of Liver Cells of White Rats to the Effect of an Electromagnetic Field"

Leningrad, Tsitologiya, Vol 13, No 7, Jul 71, pp 813-819

Abstract: Rats were exposed for three hours to the effect of an electromagnetic field with a frequency of 1.625 MHz. Electron microscope study and biochemical analysis showed that the protein-synthesizing structures of liver cells were affected by the action of the electromagnetic field. The most pronounced changes in the ergastoplasm (a part of the endoplasm network of cells, the principal functions of which are synthesis and transportation of proteins) were found in liver cells just after exposure. There were also distinct changes in the nucleoli, i.e., in the ribosome-synthesizing apparatus. In later periods following exposure, there was a correlation between morphological and biochemical changes in liver cells. The decrease in the synthesis of nucleic acids and proteins, which set in initially as a result of dystrophic changes produced in the cells, was followed by an increase of the content of these substances in the liver homogenate.

USSR

UDC: 8.74

INOYATOV, A. I., KANTSEL', A. V., PLESHAKOV, M. D.

"An Adaptive Recognition Algorithm Utilizing Statistical Resolving Rules"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works),
vyp. 45, Tashkent, 1971, pp 78-81 (from RZh-Kibernetika, No 5, May 72,
Abstract No 5V572)

[No abstract]

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNCHRONOUS EXTIRPATION OF THE RECTUM FOR CANCER --U--
AUTHOR--(03)--ALEKSANDROV, V.B., FAYN, S.N., INOYATOV, I.M.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 5, PP 63-67
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CANCER, LARGE INTESTINE, SURGERY
CENTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1040 STEP NO--UR/0531/70/000/005/0063/0067
CIRC ACCESSION NO--AP0126678
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126678

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING EXTIRPATION OF THE RECTUM FOR CANCER SYNCHRONOUSLY BY TWO SURGICAL TEAMS MOBILIZATION OF THE INTESTINE TO A GREATER MEASURE WAS PERFORMED BY THE PERINEAL TEAM OF SURGEONS. THE AUTHORS HAVE ELABORATED AND PROPOSE A DETAILED DESCRIPTION OF THE SURGICAL TECHNIQUE OF THE PERINEAL STAGE OF THE OPERATION COMBINED EXTIRPATION OF THE RECTUM. THE REFERRED TO TECHNIQUE WAS EMPLOYED IN OVER 180 PATIENTS. FACILITY: NI LABORATORII PO PROKTOLOGII S KLINIKOY.

UNCLASSIFIED

USSR

UDC 547.944/661.2

ASLANOV, KH. A., ISHBAYEV, A. I., ~~INOYATOVA, K.~~ YUSUPOV, SH., SADYKOV, A. S.,
and ZAKHAROV, V. P., Order of the Labor Red Banner Tashkent State University
Imeni V. I. Lenin

"New Method for Isolation of the Anabasis Aphylla Alkaloids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 3, 1972, pp 324-328

Abstract: A new method has been developed for isolation of individual Anabasis aphylla alkaloids from technical anabasin sulfate. Direct extraction of anabasin sulfate with chloroform yields aphylline, aphyllidine, and some anabasin. The major portion of anabasin and lupinine is obtained by converting them to nitroso derivatives followed by hydrolysis with 18% hydrochloric acid at 98-100°C. Also a modification was developed for production of the anabasin sulfate. The commonly used sulfation method required 40% H₂SO₄ at 70-80°C, leading to considerable hydrolysis of the alkaloids. This could be avoided preserving most of the alkaloids by the use of 40% H₂SO₄ at 50-60°C.

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USSR

UDC 1 947

ABDUVANKHABOV, A. A., ASLANOV, Kh. A., SADYKOV, A. S., and INOYATOVA, K.,
Tashkent State University imeni V. I. Lenin

"Lupinine Esters of O-Alkylmethylphosphonic and O,O-Diethylthiophosphoric
Acids"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1970, pp 771-772

Abstract: To determine anticholinesterase activity, the authors synthesized
lupinine esters of phosphoric acids: O-ethyl-O-lupinanmethylphosphonate,
O-n-butyl-O-lupinanmethylphosphonate, O,O-diethyl-S-lupinanthiophosphate,
and iodomethylates of O,O-diethyl-S-lupinanthiophosphate and O-n-butyl-O-
lupinanthiophosphonate.

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AA0043380

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

4/70

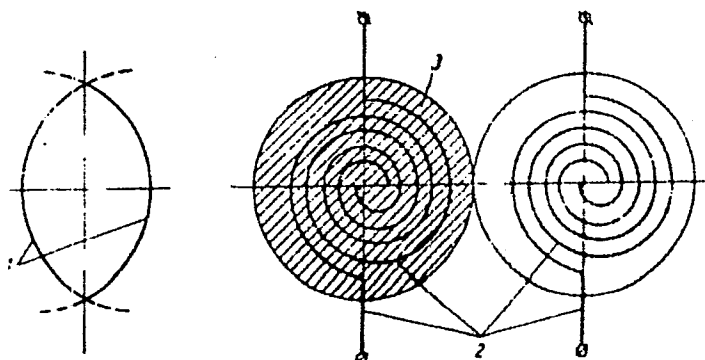
242975 MEMORY ELEMENT for computers consisting of two contact pairs, and mounted on the inside surface of a shell, two shells forming a closed cell. One contact pair is covered with a metal film shorting the contacts. In a high vacuum in the cell current applied to the shorted pair of contacts causes evaporation of the film with a consequent shorting of the opposite contacts. 16.11.68 as 1220128/18-24.A.G. INOZEMTSOV. (17.9.69) Bul 16/5.5.69. Class 21a¹. Int.Cl.G 11B.

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19761649

AA0043380



28

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19761650

USSR

UDC: 621.374.32

INOZEMTSEV, B. I., MAL'SKIY, V. A., NOVIKOV, L. G., and SHURYGIN, I. T.

"Computer Device Using Integrated Circuits"

Moscow, V sb. Svoystva materialov pri povysh. temperature i apparatura dlya ikh ispytaniya (Characteristics of Materials at High Temperatures and the Equipment for Testing Them--Collection of Works), 1972, pp 82-83 (from IZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 2, 1973, Abstract No 2A496)

Translation: The construction and operation principles of a binary-digital computer in a code with a redundancy of 3 are described. The logic circuits of hybrid integrated elements of two types, used in the construction of the computer, and the schematic of the digital readout in lights of the IN-1 type are given. Six illustrations. Bibliography of three. H. S.

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- 1 -

1/2 076 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CHARACTERISTICS OF P N JUNCTIONS IN PBTE -U-

AUTHOR--(05)-ZHEMCHUZHINA, YE.A., FIGUROVSKIY, YE.N., IVANOV, A.I.,
INOZEMTSEV, K.I., KIREYEV, P.S.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, NO. 3, 1970, PP
546-550
DATE PUBLISHED-----70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--PN JUNCTION, LEAD, TELLURIDE, SINGLE CRYSTAL, MANUFACTURING
METHOD, TEMPERATURE GRADIENT, ARGON, ATMOSPHERE, CRYSTAL GROWTH,
ELECTRON HOLE, VOLT AMPERE CHARACTERISTIC, JUNCTION DIODE, IR SENSOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605008/B12 STEP NO--UR/0109/70/015/003/0546/0550

CIRC ACCESSION NO--AP0139945

UNCLASSIFIED

2/2 076

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALTHOUGH LEAD TELLURIDE HAS SOME INTERESTING PROPERTIES, ITS P N JUNCTIONS HAVE NOT BEE GIVEN ENOUGH ATTENTION. THIS ARTICLE CONSIDERS THE PROBLEMS IN THE WAY OF OBTAINING PBTE MONOCRYSTALS, THE MANUFACTURE OF THE P N JUNCTIONS AND THE INVESTIGATION OF SOME OF THEIR CHARACTERISTICS. PBTE IS MADE FROM 99.999PERCENT PURE LEAD AND TELLURIUM, BY WEIGHT, BY THE TEMPERATURE GRADIENT METHOD. THE OVEN IN WHICH THE COMPOUND IS SYNTHESIZED, AND ITS TEMPERATURE DISTRIBUTION WITH HEIGHT ARE SOWN IN A DIAGRAM. THE SYNTHESIS WAS MADE IN AN ATMOSPHERE OF SPECTRAL ARGON, AND THE OPERATING TEMPERATURE IN THE SYNTHESIS ZONE AND CRYSTAL GROWTH ZONE WAS MAINTAINED WITH AN ACCURACY OF PLUS OR MINUS 0.5PERCENT C. THE ELECTRON HOLE JUNCTIONS WERE MADE BY THREE METHODS: DIFFUSION OF THE LEAD; VAPORIZATION OF THE TELLURIUM; DIFFUSION OF INDIUM IN THE PBTE. DETAILS OF EACH OF THESE METHODS ARE GIVEN. THE VOLTAMPERE CHARACTERISTICS FOR VARIOUS DIODES, PLOTTED IN SEMILOGARITHMIC COORDINATES, ARE ALSO GIVEN. IT IS STATED THAT THE JUNCTIONS CAN BE USED FOR INFRARED RADIATION SENSORS, LASERS WITH A TUNABLE RADIATION SPECTRUM UNDER PRESSURE, AND SIMILAR DEVICES.

UNCLASSIFIED

USSR

UDC: 621.382.001.5

ZHENCHUZHINA, Ye. A., FIGUROVSKIY, Ye. N., IVANOV, A. I.,
INOZENTSEV, K. I., and KIREYEV, P. S.

"Characteristics of p-n Junctions in PbTe"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 546-550

Abstract: Although lead telluride has some interesting properties, its p-n junctions have not been given enough attention. This article considers the problems in the way of obtaining PbTe monocrystals, the manufacture of the p-n junction, and the investigation of some of their characteristics. PbTe is made from 99.999% pure lead and tellurium, by weight, by the temperature gradient method. The oven in which the compound is synthesized, and its temperature distribution with height are shown in a diagram. The synthesis was made in an atmosphere of spectral argon, and the operating temperature in the synthesis zone and crystal

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USSR

ZHEMCHUZHINA, YE. A., et al, Radiotekhnika i Elektronika, Vol 15,
No 3, 1970, pp 546-550

Abstract:

growth zone was maintained with an accuracy of $\pm 0.5\%$ C. The electron-hole junctions were made by three methods: diffusion of the lead; vaporization of the tellurium; diffusion of indium in the PbTe. Details of each of these methods are given. The volt-ampere characteristics for various diodes, plotted on semi-logarithmic coordinates, are also given. It is stated that the junctions can be used for infrared radiation sensors, lasers with a tunable radiation spectrum under pressure, and similar devices.

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- 132 -

INOZEMTSEV, O. V.

SPRS 60634
30 November 1973

(1)

OPTICAL METHOD OF MEASURING THE PARAMETERS OF A DISPENSE CONDENSED PHASE OF TWO-PHASE FILMS

Abstract of a Paper by E. P. Zlabin, O. V. Inozemtsev, A. M. Krugerskiy, Z. G. Nibinovich Given at the Magneto-hydrodynamic Conference, pp 275-276

By using the results of measuring the scattering of light at low angles it was demonstrated that it is possible to determine the calculated concentration of particles of a condensed phase in two-phase films simultaneously with determining the distribution function by the sizes of these particles. As is known, the index of scattering of light by a polydisperse system of particles under the condition of $m/\lambda \gg 1$ is defined by the expression

$$I(\theta) = \frac{c}{4} \int_0^{\infty} \frac{dN}{dn} \int_0^{\infty} \frac{dV}{dV} I(\theta, r) n^2 r^3 dr \quad (1)$$

where a is the particle diameter; λ is the wave length of the incident radiation; I_0 is the incident light intensity; θ is the scattering angle; J_1 is the first-order Bessel function of the first type and $n(a)$ is the particle concentration with dimensions from a to $a + da$. K. S. Shifrin proposed the following solution to the integral equation (1):

$$cn(a) = \frac{R_1^2}{\pi \lambda^2} \int_0^{\infty} \frac{d}{d\theta} (I(\theta) \frac{d\theta}{d\theta}) \frac{d\theta}{d\theta} \quad (2)$$

Here V_1 is the first-order Bessel function of the second type. Thus, by measuring the index of scattering of the light by a polydisperse system of particles of the condensed phase in a two-phase medium, it is possible to obtain the distribution function of the scattering particles with respect to size with accuracy to a constant factor.

However, giving the magnitude of the solid angle $d\Omega$ from which the scattered light is recorded and the magnitude of the scattering volume V , it is possible to determine the absolute value of the function $n(a)$. Then the calculated concentration is defined by the integral $N = \int n(a) da$.

USSR

UDC 534.232

DZYGALO, V. I., KONOVALOV, G. P., INOZEMTSEV, V. M., SHEPILAKOV, V. F.,
MALAKHOV, YU. V., Institute of Metallurgy and Enrichment, Academy of Sciences
of the Kazakh SSR

"A Piezoelectric Radiator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki,
No 23, 1970, Author's Certificate No 276552, Filed 11 Nov 68, p 147

Abstract: This author's certificate introduces a piezoelectric radiator which contains a piezoelectric element and electrode plates. As a distinguishing feature of the patent, the reliability is improved by making each of the windings in the device in the form of a conductive layer of liquid which is isolated from the ambient medium by an acoustically transparent membrane tightly connected to the piezoelectric element around the periphery.

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USSR

UDC 621.385.532.12.032

EATYGIN, V.N., YEFIMOVA, N.V., INOZEMTSEVA, A.V., MAZUROVA, L.G.

"Volumetric Absorbers For Power TWTs"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 95-102 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A186)

Translation: The absorber of microwave energy developed for a power traveling-wave tube is characterized by high mechanical stability, good thermal conductivity, and low gas generation. The construction is described of a volumetric absorber for a TWT with a spiral-type delay system. It is shown that damping and matching with the delay system of such an absorber is not worse than with a film absorber obtained by the method of pyrolysis of methane. The absorber makes it possible to dissipate large levels of average power. A volumetric absorber with a delay system of the coupled resonators type is also investigated and its high-frequency characteristics are presented. 3 ref. Summary.

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USSR

UDC: 8.74

MELIKHOV, A. N., IVANOV, G. I., INOZEMTSOV, Z. P., ORLOVA, A. S.

"A Program for Checking an Automaton for Contradiction, Redundancy and Ripple-Through Jumps"

Inform. materialy. Nauch. sovet po kompleks. probl. "kibernetiki" AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54), pp 118-119 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V554)

[No abstract]

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USSR

INSAROV, V.

"Living Hydroelectric Stations"

Moscow, Sovetskaya Rossiya, 2 Sep 72, p 4

Abstract: Electric eel, torpedo ray, electric catfish, American stargazer, elephant fishes of Africa - all of them are capable of producing electric discharges powerful enough to stun their prey or to protect themselves in a dangerous situation. The ratio of electric organs in the electric eel to its total body weight is 1:2.66, and in the torpedo ray, 1:3.46. In the majority of electric fishes the electric organs are located on both sides, but in the stargazer they are located under the eyes, and in elephant fishes of Africa, near the tail. The electric organs of fishes are made of columnar cells assembled in an organized system called "batteries." Discharges produced by some fishes sometimes reach up to 6 kilowatts. The electric eel, for example, can simultaneously light a dozen 100 watt electric bulbs. Along with fishes with strong electric fields there are many fishes which produce very weak electric discharges in the form of rhythmic pulsations. These weak discharges can be used neither for defense nor for attack. With special electric receptors under the skin these fishes can detect extremely small electric

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USSR

INSAROV, V., Sovetskaya Rossiya, 2 Sep 72, p 4

fields equal to a hundredth of a microvolt. Modern technology does not have instruments with such high sensitivity. These fishes use their electric pulsing fields for location and interrelation with their own species. Electrolocation is accomplished by a dipole electric field produced around the fish. The field configuration is controlled by the electric receptors. If a foreign object enters the electric field the fish can instantly change the field configuration. These fishes are capable of detecting small objects (3 mm in diameter). Within their electric field at a distance of 1 m. Scientists are trying to build instruments using the electrolocation principle of these fishes. Recent studies have indicated that all fishes are capable of producing electric discharges when in a state of excitement. In shoals, the individual electric fields are grouped and form one electric field around the entire shoal. This field helps them to maneuver and choose the direction of migration from one place to another.

2/2

1/2 034 UNCLASSIFIED
TITLE--VISCOSITY OF ORIENTED SOLUTIONS -U-

PROCESSING DATE--30OCT70

AUTHOR--INSAROVA, N.I.

COUNTRY OF INFO--USSR

SOURCE--INZH. FIZ. ZH. 1970, 18(2), 347-50

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MACRO MOLECULE, FLUID VISCOSITY, HYDRODYNAMIC PROPERTY,
POLYMER, DEFORMATION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0852

STEP NO--UR/1070/70/018/002/0347/0350

CIRC ACCESSION NO--AP0124515

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124515

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF ORIENTED LINEAR MACROMOLS. ON THE POLYMER SOLN. VISCOSITY FOR THE CASE OF THE AXISYM. STRETCHING WAS ANALYZED. AS THE MEDIUM MODEL WAS USED A SYSTEM OF UNIFORMLY DISTRIBUTED RIGID CYLINDRICAL RODS OF THE LENGTH L AND THE DIAM. R SUBO IN THE SOLVENT OF VISCOSITY N SUBO, WITH THE CONDITION THAT L GREATER THAN R SUBO. THE MEDIUM WAS CONSIDERED TO BE STRETCHED ALONG THE ORIENTATION DIRECTION OF THE RODS. THE HYDRODYNAMIC CORRELATIONS LEAD TO THE EXPRESSION FOR THE EFFECTIVE VISCOSITY N SUBEFF EQUALS 3 SUBN SUBO $(1 + (ONE NINTH) GAMMA C (L-R SUBO) PRIME^2)$, WHERE C IS THE VOL. CONCN. OF THE RODS AND $GAMMA$ IS DEFINED BY THE EQUATIONS $GAMMA$ EQUALS $1 - (C \text{ MINUS } LN C \text{ MINUS } 1)$. E.G., FOR C EQUALS 0.01 AND $L-R$ SUBO EQUALS 100 , N SUBEFF SIMILAR TO $4 N$ SUBO AND FOR C EQUALS 0.1 AND $L-R$ SUBO EQUALS 100 , N SUBEFF SIMILAR TO $80 N$ SUBO. THE INCREASE IN THE MEDIUM N SUBEFF REFLECTED THE INCREASE OF REAL DEFORMATION RATES IN THE SOLVENT IN COMPARISON WITH THE MEAN DEFORMATION RATES IN THE SOLN.

FACILITY: INST. FIZ., MINSK, USSR.

UNCLASSIFIED

USSR

UDC 681.327.67

INSHENETSKIY, V. V., KUZ'MIN, YU. I., SIKORSKIY, YU. M.

"A Method of Recording Information in a Memory Device with Pulse-Position Number Representation"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, 1970, p 127, Patent No 264771, filed 18 Jul 66

Abstract: This Author's Certificate introduces a method of recording information in a memory device with pulse-position number representation. The recorded numbers are distinguished by a time shift in the pulse sequence at the output of the memory device relative to the sequence of reference pulses of the same frequency. As a distinguishing feature of the patent, to cut down recording time and to simplify the recording of information in the pulse-position elements, in the initial state the input of the memory device is excited from the source of the first sequence of phasing pulses corresponding to recording of a zero. To record a number, the source of the first sequence of phasing pulses is cut off and the input of the memory device is excited from the source of the second sequence of phasing pulses of the same frequency as the first,

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USSR

INSHENETSKIY, V. V., et al., Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, 1970, p 127
Patent No 264771, filed 18 Jul 66

but shifted with respect to the first by a time interval corresponding to the number to be recorded in the memory device. In the input pulse scaling mode, recording is done by successive reference to one of a set of phasing pulse trains which are uniformly time-shifted in sequence with respect to each other.

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USSR

SEREDIN, V. G., CHICHENIN, P. I., MUKHAMEDOV, S. M., and LYBRENKOVA,
M. V.

"The Problem of the El Tor Vibrios"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1979, pp 47

Abstract: In recent years, cholera has been caused mainly by the El Tor vibrio. It was first discovered in pilgrims toward the end of the 19th Century in the El Tor Quarantine Station on the Sinai Peninsula. In 1905, when mortality from dysentery increased among pilgrims quarantined at the El Tor Station, Gotschuld was sent there to investigate the possible presence of cholera vibrios among the pilgrims. From 107 excoavers, he isolated 38 vibrio strains, identifying six as cholera vibrios, since they were identical with cholera vibrios in all aspects and were agglutinated by anticholera serum. However, both groups were able to produce true hemolysis in goat and sheep erythrocytes. They contained a hemotoxin and enterotoxin which are characteristic of the non-cholera Nasik vibrios. Furthermore, their antitoxic sera caused cross neutralization but no cross agglutination. For these reasons, the El Tor vibrios were not regarded
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USSR

SEREDIN, V. G., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 3-7

as cholera-producing. However, most Russian scientists, especially those who worked during the 1908-1909 cholera epidemic in Petersburg, were of a different opinion. They found that with diminishing enzymatic activity, the strains would lose their hemolytic ability. By 1938, the number of identified strains of EL Tor vibrios increased to 50. Doorenbos considered them to be cholera-producing vibrios affected by phages. The first cholera outbreak caused by EL Tor vibrios was recorded in 1937 on Sulawesi Island, and the second outbreak, caused by hemolytic vibrios, was recorded in 1943 in India. This gave rise to a polemic about the exact definition of true cholera vibrios, and was followed by extensive investigations of various strains with regard to their morphological, biological, biochemical, serological, and cultural properties. Numerous tests were developed which revealed, among other things, that the hemolytic ability of the vibrios was variable and perishable. As a result, the EL Tor vibrios were divided into three groups: constantly hemolytic, constantly nonhemolytic, and weakly hemolytic, even though hemolysis is not essential in the pathogenesis of cholera. In 1964, 2/3

USSR

SEREDIN, V. G., et al., Tashkent, Meditsinskii Zhurnal Uzbekistana, no L, 1970, pp 3-7

Nobechi isolated strains of the classic cholera vibrios, which were resistant to Muckerjee phage IV. These strains were called intermediate. It was concluded that El Tor vibrios, both pathogenic and non-pathogenic, also occupy an intermediate phylogenetic position and are the predecessors of classical cholera strains.

3/3

USSR

INSHUTINA, G. S., CHERNYSHEVA, T. M.

"The Problem of the Application of the χ^2 Criterion"

Stat. i Elektronno-Vychisl. Tekhn. v Ekon. [Statistics and Electronic Computer Equipment in Economics -- Collection of Works], No 5, Moscow, Statistika Press, 1972, pp 238-247 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V371, by V. Kolchin).

Translation: Results are presented from application of the χ^2 criterion to a number of specific economic and sociological problems to test homogeneity and compare methods of processing and planning of sample volumes.

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USSR

UDC: 621.396.677.833

INSPEKTOROV, E. M.

"On Accounting for the Influence of Edge Diffraction on the Polar Pattern of a Mirror Antenna in the Shadow Region"

Omsk, Vopr. proyektir. radioapparaty v inform.-izmerit. tekhn.--sbornik (Problems of Designing Radio Equipment in Information Measurement Technology--collection of works), 1972, pp 22-27 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12B56 by V. S.)

Translation: A method is considered for studying the effect of different configurations of edges of finite thickness and edge surface impedance on the polar pattern of a mirror antenna in the umbral and penumbral region; the method is applicable to large and small reflectors. As a computational model the author uses an infinitely long ideally conductive parabolic cylinder with edges of finite thickness and arbitrary configuration driven by E- or H-section horns. Integral equations are derived for the surface currents, and a method is given for solving them. It is noted that the results of the calculation agree satisfactorily with the method of eigenfunctions. One illustration, bibliography of two titles.

1/1

USSR

UDC: 621.396.677.833

INSPEKTOROV, E. M.

"On the Mechanism of Radiation of Mirror Antennas"

Omsk, Vopr. proyektir. radioapparatury i inform.-izmerit. tekhn.--sbornik (Problems of Designing Radio Equipment and Information Measurement Technology--collection of works), 1972, pp 61-69 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12B57 by V. S.)

Translation: The author examines the mechanism of radiation of a mirror antenna in the umbral and penumbral region based on the example of a two-dimensional problem: an infinitely long cylinder oriented along the horizontal axis and irradiated by E- or H-section horns. The integral polar pattern of the reflector together with the radiator, and the directional pattern of the currents on the reflector are presented and analyzed. The influence of deviations in the distribution of surface current from the Kirchhoff approximation is considered. Five illustrations, one table, bibliography of one title.

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AA0008729

~~CONFIDENTIAL~~

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 7

229745 BORNYL ACETATE is obtained by the conventional method involving distillation of pine oil using a rectification column but its yield is increased by heating the pine oil with acetic anhydride. Under these conditions borneol acetylates quantitatively and does not crystallise out during rectification (a drawback in the old method).

In an example, 100g of tech. bornyl acetate contg. 8.2% of borneol is heated with 10.8g. of acetic anhydride for 4 hrs. at 150°C. The resulting product is then fractionally distilled at 60mm Hg. residual pressure using a column of 38 theoretical plates 86.2g of a fraction boiling at 137°C contg. 99.6% of bornyl acetate (94% of theory) are obtained. 10.5.67. as 1154830/31-16, INTENBERG, Sh. M. et al. (19 2.69) Bul. 33/10.68. Class 30B, 126, Int.Cl. A 61k, C 07b.

Handwritten notes: 4, 10, 7

Handwritten note: 1/11

19551008

JLL

Handwritten note: 7

Microbiology

USSR

UIC: 614.717-084.48

PODOPRIGORA, G. I. and INTIZAROV, M. M., Laboratory of Experimental Biological Models, Academy of Medical Sciences USSR

"Use of Ultrafine-Fiber Filter Cloth to Purify the Air of Bacterial Contamination"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 130-131

Translation: Various filter materials, intended to purify the air of microbial contamination, are widely used in various areas of experimental investigations and in the practical work of bacteriological laboratories. The requirements for the quality and properties of filter materials are especially high in gnotobiotic technology in order to assure sterile conditions for microbe-free animals (Luckey, 1962). Standard filters (Fg-50; Fiberglas Company, Toledo, Ohio, Nr F. M. 004 1/2) are very widespread in apparatus for microbe-free raising of animals. However, the short supply of that material has led us to seek Soviet analogues which would meet all the requirements of gnotobiotic technology. The principal requirements are high efficiency of purification of the air entering the isolator from microorganisms and resistance to the effect of relatively high temperatures during the sterilization of the filter itself. Autoclaving
1/3

USSR

PODOPRIGORA, G. I and INTIZAROV, M. M., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 130-131

at 123°C or treatment with dry steam at 160°C for 2 hours is used for complete sterilization of the filters (Wescott and Cordner, 1962). The Petryanov filter cloth used previously by us (FPP and FPA) does not completely meet those requirements, as the former is not at all resistant to heat treatment and the latter, although it withstands treatment with dry steam, changes when treated with steam in an autoclave. Ultrafine-fiber (UTV) filter, which we have used as filter material, has completely met all the above-indicated requirements. It preserved its properties after repeated autoclaving and treatment with dry steam.

The following investigation was conducted to test the filtering capacity of UTV cloth. An installation was set up consisting of a Bunsen flask with a medium of liquid thioglycolate, the wide opening of the flask was covered with a layer of UTV filter cloth 2 cm thick and one layer of gauze, and the narrow opening was covered with an 0.5 cm layer of the UTV, the walls of the flask and the filter cloth were hermetically sealed with a heat resistant adhesive tape, that system was autoclaved at 121°C for 20 minutes, and then in the wide opening of the flask covered by the UTV was inserted an elastic connecting pipe connected to a FEN blower with switched off heating, the flask and blower were

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USSR

PODOPRIGORA, G. I. and INPIZAROV, M. M., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 130-131

switched on for 3 days. After blowing air through for 3 days the motor was switched off but the incubation in the thermostat continued for 10-12 more days and after that the results were read.

No growth of any microorganisms capable of being cultivated in a liquid thioglycolate medium was detected. This result permits considering UTV cloth of Soviet origin with fiber 0.5-1 micron in diameter, produced by the experimental plant of the All-Union Scientific Research Institute of Glass Plastics and Fibers, to be an effective filtering material for purposes of gnotobiology and other technological tasks where the purification of air of bacterial contamination is required.

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USSR

UDC 681.3.053

VUL', YU. I., and INYAKIN, V. F.

"Prime Number Method for the Coding of Search Patterns of Objects in Information Retrieval Systems"

Moscow, Tsifrovaya Vychislitel'naya Tekhnika i Programirovaniye, No 7, 1972, pp 104-107

Abstract: The article describes a method for coding the search patterns of objects and interrogations which, in the authors' opinion, because of the simplicity of the search algorithm can be used to program information retrieval problems which use a limited number of descriptors to categorize objects (up to 100-150). Each descriptor of the dictionary is uniquely assigned a numeric code, chosen from a series of prime numbers.

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1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--IMPROVEMENT IN THE WAXING OF CANVAS TENT FABRICS -U-

AUTHOR-(05)-ALTEPESOTSKIY, F.L., ARTEMOVA, L.A., INVANOVA, V.E., PUZYREV,
M.F., SIDROVA, Z.A.
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE RATIO OF FABRIC LEVEL RATE (V SUBR) TO THE COATING ROLLER SURFACE TRAVEL (IN THE SAME DIRECTION) RATE (V SUBR) ON THE AMT. (Q) OF PARAFFIN DEPOSITED TO TENT FABRIC WAS DETD. THE OPTIMUM ANGLE (PHI) SUBTENDED BY THE CLOTH CONTACTING AND LEAVING THE ROLLER WAS SIMILAR TO 15DEGREES; THE DEPTH (H) OF THE ROLLER IMMERSION IN PARAFFIN, KEPT AT 80-95DEGREES, WAS 40-5 MM, THE CLOTH TEMP. 110-15DEGREES, AND THE ROLLER TEMP. 114-17DEGREES. Q INCREASED WITH INCREASING V SUBR-V SUBR, AND COULD BE REGULATED BY CHANGING BOTH H AND PHI.

UNCLASSIFIED

USSR

UDC: 8.74

VUL', Yu. I., ~~XXXXXXXXXXXXXXXXXXXX~~ INYAKIN, V. F.

"The Method of Simple Numbers for Coding the Search Patterns of Objects in Information Retrieval Systems"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 7, Moscow, "Sov. radio", 1972, pp 104-107 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V626)

Translation: The paper describes an original method of coding descriptors when synthesizing information retrieval systems. The authors recommend the use of simple numbers as descriptor codes. The described method may be of interest in various special cases.

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USSR

UDC 621.373.431(088.8)

GOLOVANOV, A. A., INYAKOV, V. G., SVIRIN, V. P.

"Pulse Generator"

USSR Author's Certificate No 252391, Filed 1 Dec 67, Published 17 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G2452)

Translation: A pulse generator is proposed which contains a DC charge source, an ion commutator using a three-electrode discharger, a source of ignition pulse voltage, a storage element and a load. In order to decrease the transient process time between partial and complete ionization of the discharger, a limiting inductance is connected to the cathode circuit of the discharger.

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USSR

UDC 621.38:61

INYUSHIN, V. M.

"Laser Radiation As a Stimulator of Physiological Processes"

V sb. Ispol'z. optich. Kvant. generatorov v sovrem. tekhn. i med. Ch. 2-3 (Use of Lasers in Contemporary Technology and Medicine. Parts 2-3 -- Collection of Works), Leningrad, 1971, p 70 (from RZh Elektronika i yeye primeniye, No 2 Feb 72, Abstract No 2A512)

Translation: Some theoretical principle from the field of photobioenergetics are elucidated. Experimental data are presented concerning the effect of laser light with a 6238 Å wavelength on the liver, peripheral blood, regeneration of skin damages, and the endocrine organs. Concrete proposals are expressed concerning use of the physiological effects of laser radiation in medicine.

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