

USSR

UDC 591.104

FINAKOVA, G. V., ROMANOV, G. V. BYKOV, E. G., and PIRUZYAN, L. A., Institute
of Chemical Physics, Academy of Sciences, USSR, Moscow

"The Effect of Permanent Magnetic Field Pretreatment on Histochemical Indexes
of the Adrenal Cortex of X-ray-Irradiated Animals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 73,
pp 913-916

Abstract: Experimental results are reported on the effect of permanent
magnetic field (PMF) and x-ray irradiation on the contents of sudanophilic
lipids, keotsteroids, cholesterol and nonspecific esterase activity in the
rat's adrenal cortex. Animals pretreated with PMF before irradiation did not
show any more pronounced changes of the indexes studied in the first 72 hrs
than those treated with x-ray alone. The data suggest that PMF pretreatment
of animals prevents development of changes in the content of sudanophilic
lipids, double refracting substances, nonspecific esterase activity charac-
teristic of isolated x-ray treatment.

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UDC 627.81.034(47+57)

FINAROV, D. P.

"Slides and Avalanches in the Yenisey River Valley and Forecasting their Development After Filling the Sayano-Shusha Reservoir"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of Coordinating Meetings on Hydroengineering), No 59, 1970, pp 110-114 (from RZh-Elektrotehnika i Energetika, No 2, Feb 71, Abstract No 2 D50)

Translation: The state of the stability of the banks of the Sayano-Shusha reservoir was investigated in 1965 and 1969. It was established that in the Yenisey Valley, slides and avalanches have the most intense development in the southern part of Western Sayan, in the region above the mouth of the Chinge River. In order to refine the forecasts, natural observations for the first years of operation of the reservoir are required. The development of landslides and avalanches will occur in the vicinity of Bol'shoy Porog, Dzhoyskiy Porog and at other points. Further study of the state of stability of the slopes of the Yenisey Valley is required, and it is necessary to forecast their development in connection with operation of the reservoir for timely warning and prevention of possible severe consequences of these phenomena which can lead to significant losses of regulating capacity of the reservoir and disruption of navigation. There are 2 illustrations and a 5-entry bibliography.

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UDC 621.81.001.5(47+57)

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LEVIT, G. O., BAKHTIAROV, V. A., MAKAROV, A. I., and FINAROV, D. P.

"State of the Art in Studies to Generalize the Experience of Planning and Operating Complex-Purpose Reservoirs in the USSR"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 3-9 (from RZh-Elektrotekhnik i Energetika, No 2, Feb 71, Abstract No 2 D37)

Translation: The studies of the given problem started in 1966 are participated in by 31 institutes. The basic areas of this research, the organizations participating in it and the results obtained are described. The forms and procedure for publication of the USSR Reservoir Cadaster have been worked out as it is developed. All the reservoirs are divided into three groups: >50 million m³ in volume, the thermal electric power plant reservoirs and reservoirs 10-50 million m³ in volume. As methods of improving the effectiveness of using reservoirs have been developed, an effort has been made to create a procedure for planning and designing complex reservoirs. The basic difficulty consists in the absence of a united approach by the cooperating institutes to the providing of a basis for optimal operating conditions of the reservoir and a united point of view with respect to the

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LEVIT, G. O., et al., Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 3-9 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D37)

procedure used to estimate losses in various branches on deviating from these operating conditions. The results of research to improve the procedure for forecasting variations of natural conditions when creating reservoirs have been described in greatest detail. The dependence of the intensity of reformation of the reservoir shores on their operating conditions, the variation of ice conditions when building the reservoirs, and the variation of channel reformations when regulating runoff have been noted. The development of methods of planning measures and determining expenditures when building reservoirs has been carried to the level of procedural instructions. The research has led to the conclusion that land evaluation must be reduced to the cost of measures to conserve the agricultural production balance while insuring a net profit. The increasing role of engineering protection of the land and increased requirements on sanitary by-passes have been established. The future research goals are formulated. There is 1 table.

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UDC 627.81.034.001.1

FINAROV, D. P.,

"Theoretical Problems of the Process of Reformation of Reservoir Shores"

Tr. koorkinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 40-49 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D38)

Translation: An effort has been made to provide a further theoretical basis for the application of natural analogies, the necessity of considering standard and specific differences in reformation of shorelines and also various types of interaction of the water mass of the reservoirs and shore strip when compiling forecasts and calculating the reformation of the reservoir banks. There are 6 illustrations and a 21-entry bibliography.

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UDC: 533.95

FINAT'YEV, Yu. P., SHCHERBAKOV, L. A., FILIN, V. T.

"Investigation of the Gasdynamic Structure and Electron Distribution in a High-Temperature Supersonic Jet With Solid Phase"

V sb. Teplo- i massoperenec (Heat- and Mass-Transfer--collection of works), T. 1, Minsk, 1972, pp 227-231 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B118)

Translation: The article presents the results of investigations of the position of the central shock wave (Mach disc) in the first "barrel" of a jet which is produced when condensed systems with an admixture of aluminum powders are ignited in the prechamber of a vacuum installation. Data are also given on the concentration of electrons in the zones of the nozzle tip and the Mach disc. The experiments included motion picture photography of the inherent luminescence of the jet as well as determining the schlieren pattern of the jet; electron concentration was determined by radioscopy of the jet. The results of experiments on determining $x = x_c/d_a$ (x_c is the distance from the nozzle tip to the Mach disc, d_a is the nozzle diameter at the tip) lead to the expression $x \approx (2+3) M_a^2 n^{0.4} / (M_a^2 + 1) \quad (n = P_a / P_c)$.

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FINAT'YEV, Yu. P. et al., Teplo- i massoperenos, T. 1, Minsk, 1972, pp 227-231

is the degree of deviation of the conditions of escape from the nozzle from the calculated conditions). The experimental results did not reveal any influence of the solid phase on $\bar{x}$ or on k -- the adiabatic exponent-- nor on the electron concentration.

The calculations and experiments showed that frozen-flow conditions are realized beginning with $M=1.5-2$. Bibliography of ten titles. V. L. Azarov.

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J-4448

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From the observed patients, 15 connected the start of allergic asthma with influenza, bronchitis, angina, or with tooth ailments. In three the disease did not seem to have a tie with any process. The asthma lasted from 6 months to 6 years. The anamnesis showed that 24 patients suffered from exanthematous diathesis in childhood, 44 had common cold ailments yearly (2 - 3 times), 19 had otitis, 1 had myopia, and so on.

Endoscopies showed reduced pneumatization of all nasal sinuses in 21 patients, of both maxillary sinuses in 23, of one in 46, of the maxillary sinuses and of the ethmoid cells in 14, in 75 patients. The procedure was painful, in 39 it was mucopurulent, in 14 it was serous. All 25 bacteriological examinations of the sinuses were detected in 24 patients, streptococcus in 15, Proteus vulgaris in 12, a mixed microflora in 18. In 21 cases the cultures remained sterile, Escherichia coli was cultivated in 19 patients in the blood in 25 in the nasal mucus in 38 in the content of the mucus.

For skin tests, bacterial allergens of hemolytic streptococcus, hemolytic streptococcus, and of Proteus vulgaris were used which were prepared in the known scientific research Institute of endocrinology and microbiology. Allergens are purified filtrate of bacterial cultures in the form of a transparent fluid in ampoules containing 2.5 or 10 skin doses, and destined for the detection of allergy to the corresponding microbe, and for the degree of allergic state. We used them in three concentrations: 1, 2, and 4 skin doses.

The skin tests were made on the inner surface of the forearm, treated with alcohol and ether. With a special sterile (tuberculin) syringe, 0.1 ml allergen was given intracutaneously. This contained 1 cutaneous dose (skin injection). In case of a negative reaction, 42 hours after three injections, 0.1 ml allergen containing 1 skin dose was administered, which resulted in increasing the number of positive reactions in 16 patients (possibly because of the development of false positive reactions). In 15, this caused the administration of allergen in many patients immediately after the injection, a slight non-specific reaction of the skin was manifested in form of redness and slight tenderness, which disappeared after 2-3 minutes.

The counting and evaluation of skin reaction was made by degree, character and spread of the infiltration at the site of the allergen administration. For the sake of convenience and objectification of reaction evaluation, we used a special plexiglass ruler on which orbicular divisions with indication of areas were placed which were foreseen for the directions according to the employment of allergens. By applying one of the circles of the ruler to the infiltration, the degree of skin reaction could be determined without additional calculation. In case of a reaction of the delayed type, evaluation was made after 24 hours, and recorded accordingly to the general rule set up outline (reaction of the delayed type occurred only once). The skin tests were made before the start and after the completion of treatment with non-specific anti-allergic agents.

As a rule, in all patients at the puncture, the maxillary sinus was washed out with physiological solution (100-150 ml), then 0.5 ml hydrocortisone emulsion was introduced into the cavity, with additional antibiotics depending upon the microflora's sensitivity to them. In case of a viscous punctate, erypsine or chymotrypsin was added to the antibiotic. For internal use dimedrol, suprastin, pipolfen were prescribed. Physiotherapy and general robustive treatment was widely used.

USSR

UDC 536.521.082.52

KANDYBA, V. V., FINDEL'SHTEYN, V. Ye.

"Investigation of the Blackness of Sodium Spectral Lines in a Flame"

Tr. Metrol. In-tov SSSR (Works of Metrological Institutes of the USSR),
No 110 (170), 1971, pp 142-151 (from Referativnyy Zhurnal, Metrologiya i
Izmeritel'naya Tekhnika, No 12, Dec 72, Abstract No 12.32.1129)

Translation: A description is given of an installation which serves for measurement of the relationship of the blackness coefficient to the concentration of sodium chloride vapor in a flame, and the results of blackness measurements of the center of the sodium spectral line, conducted on the installation, are described. It is shown that blackness is attained at vapor concentrations on the order of 10^{-9} atoms per cubic centimeter; this permits the method of the saturated center of a spectral line to be used for temperature measurement. 3 figures. 1 table. 4 references.

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--STRUCTURAL FEATURES OF VISCOSE TEXTILE THREADS OBTAINED BY VARIOUS
METHODS -U-
AUTHOR--(03)--KHAZANOVA, A.S., FINGER, G.G., MOGILEVSKIY, YE.M.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (1), 30-2
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--TEXTILE, RAYON, MECHANICAL STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1823

STEP NO--UR/0183/70/000/001/0030/0032

CIRC ACCESSION NO--AP0100397

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0100397
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF VISCOSE (I) YARN,
PREPD. BY CONTINUOUS, SEMICONTINUOUS, AND CENTRIFUGAL METHODS UNDER
IDENTICAL PROCESSING CONDITIONS, WAS STUDIED BY MEASURING THE ISOMETRIC
STRESS. THE STRESS IN A VISCOSE YARN DEPENDS ON RECOVERY FROM EXTENSION
AND DRYING. THE PRESENCE OF 2 MAX. ON A STRESS TEMP. CURVE FOR A I
YARN, PREPD. BY A CONTINUOUS METHOD, SUGGESTED THE PRESENCE OF 2
STRUCTURAL MODIFICATIONS IN THE AMORPHOUS REGIONS OF THE FIBERS.

UNCLASSIFIED

Acc. Nr:

AP0044698

Ref. Code:

UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 25-29

RADIOISOTOPE SCANNING OF THE LUNGS

V. S. Afanas'yeva, T. A. Finikova, A. N. Zbants, Yu. V. Balabanov,
T. A. Chernyakova

Summary

Scanning opens up new vistas in the diagnosis of circulatory disturbances in diseases of the lungs. The report is based on an analysis of investigations carried out in 109 patients suffering from different diseases of the lungs (embolism of the pulmonary artery, pulmonary tuberculosis, malignant tumors). After roentgen-tomographic investigation scanning of the lungs was performed 5-10 minutes after intravenous introduction of 200-300 μ C of radio-iodine-labelled macroaggregate albumin. The scintigrams reflected the degree of vascularization of the pulmonary tissue and enabled to establish the volume of disturbances by the presence of «silent» zones and reduction of the radioactivity. The technique is simple and safe for the patients.

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UDC: 621.39.414

FINK, L. M., BARANOV, Yu. M.

"On Optimality of Some Short Codes"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t
svyazi. Vyp. 1 (Materials of the Scientific and Technical Con-
ference of Leningrad Electrical Engineering Institute of Com-
munications--collection of works, No 1), Leningrad, 1971, pp
59-73 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A46)

Translation: Certain general limitations are set on code
spacing for optimum codes. Proof is given of the optimality of
a number of specific short codes. A list of some optimum codes
is presented. The results are discussed. Resumé.

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UDC: 621.391

FINK, L. M.

"Theory of Discrete Message Transmission"

Teoriya peredachi diskretnykh soobshcheniy (cf. English above), Moscow, "Sov. radio", 1970, 727 pp, 2 r., 55 k. [as reviewed by N. P. Khvorostenko, "Radiotekhnika", 1971, 26, No 3, 108] (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A24 RETs)

Translation: The book is the second edition of a monograph published in 1963 with considerable revisions as compared with the first edition. The work includes two new chapters dealing with systems with feedback and problems of multiplexing communications channels. It is noted that the author has not only brought the work into complete accord with the current state of science and technology, but has introduced a considerable number of previously unpublished basic data. As a weak point of the book, the reviewer mentions that the author does not deal with problems of synchronizing communications systems, and does not adequately investigate resistance to interference under conditions of rapid and selective fading. N. S.

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UDC 621.391.1:621.391.7

FINK, L. M.

"Analog Methods of Decoding and Prospects for their Application in Communications Systems"

Radioelektronika v nar. kh-ve SSSR. Ch.1 -- V sb. (Radio Electronics in the National Economy of the USSR. Part 1 -- collection of works), Kuybyshev, 1970, pp 28-40 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A68)

Translation: The history of analog methods of decoding is discussed. A proof of the optimality of this method of decoding with respect to any criteria is presented. There are 6 entries in the bibliography.

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1/2 037 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TRANSMISSION THEORY OF DISCRETE INFORMATION -U-
AUTHOR--FINK, L.M.
COUNTRY OF INFO--USSR
SOURCE--(TEORIYA PEREDACHI DISKRETNYYKH SOOBSHCHENIY) 2ND ED. MOSCOW,
SOVETSKOYE RADIO, 1970, 726 PP
DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--DATA TRANSMISSION, SIGNAL TRANSMISSION, MULTIPLEX SIGNAL,
COMMUNICATION SYSTEM, ELECTRONIC FEEDBACK, MONOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0239 STEP NO--UR/0000/70/000/000/0001/0726

CIRC ACCESSION NO--AM0132506
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0132506

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. INTRODUCTION 5. CHAPTER I BASIC CONCEPTS OF THE TRANSMISSION THEORY OF DISCRETE INFORMATION 9. II DISCRETE CHANNEL AND THEORETICAL PRINCIPLES OF CODING 62. III CHANNEL WITH CONSTANT PARAMETERS AND ADDITIVE FLUCTUATION NOISE 142. IV CHANNEL WITH A RANDOMLY CHANGING SIGNAL PHASE AND ADDITIVE FLUCTUATION NOISE 217. V CHANNEL WITH SLOW TOTAL FADING (SINGLE RECEPTION) 328. VI CHANNEL WITH SLOW TOTAL FADING (SPACED RECEPTION) 398. VII CHANNELS WITH PARAMETERS DEPENDING ON FREQUENCY AND WITH FAST FADING 446. VIII CHANNEL WITH LUMPED AND PULSE NOISE 517. 563. 567. IX MULTIPLEXING OF COMMUNICATION CHANNELS 568. X RECEPTION OF INFORMATION WHICH WAS CODED WITH REDUNDANCE 630. XI FEEDBACK SYSTEMS 671. APPENDIX 715. MAIN SYMBOLS 716. SUBJECT INDEX 719. THE MONOGRAPH DEALS WITH THEORETICAL PROBLEMS IN TRANSMISSION OF DISCRETE INFORMATION. ANALYZED IS THE DESIGN OF OPTIMUM COMMUNICATION SYSTEMS WITH ASSIGNED CHANNEL CHARACTERISTICS, AS WELL AS THE DETERMINATION OF PARAMETERS OF A SYSTEM WHICH DEVIATES IN ONE OR ANOTHER DEGREE FROM OPTIMUM SYSTEMS. THE SECOND EDITION HAS BEEN REVISED AND EXPANDED. THE BOOK WAS WRITTEN FOR RESEARCH ENGINEERS WORKING ON DESIGN AND DEVELOPMENT OF COMMUNICATION SYSTEMS, COLLEGE PROFESSORS, POST GRADUATE AND SENIOR STUDENTS.

UNCLASSIFIED

USSR

UDC 65-658.562

KARTAMYSHEV, G.N., MALKIS, A.D., and FINKEL', A.I., Engineers

"Machineless Information Monitoring and Control System"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 1, 1971, pp 19-22

Abstract: The use of still-expensive centralized monitoring machines in comparatively small enterprises is not always advantageous, since it significantly increases capital costs without any increase in output. However, it is possible for comparatively small enterprises to have a modern information monitoring and control system possessing most known merits of centralized monitoring machines. All the basic functions usually performed by such machines (except for digital recording) are effected in this system by groups of series devices and the unit method of circuit construction, in which each of the groups has the function of an analogous machine unit. The machineless system was developed by a branch of Yuzhgiproblomintez [Southern State Institute for the Planning of Biosynthesis]. The article uses a hydrolysis plant to illustrate the construction principle of the system. A group centralized monitoring and control system is created, consisting of five functional units.

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KARTAMYSHEV, G.N., et al., Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 1, 1971, pp 19-22

Unit 1 includes pickups for various parameters of each hydrolysis apparatus, normalizing transducers, controllers with program setters, and slave mechanisms coupled with stop-control valves. The number of units corresponds to the number of hydrolysis apparatuses. Unit 2 consists of multiple-point recording and signaling potentiometers, with their number corresponding to the number of controlled parameters for each hydrolysis apparatus. Unit 3 is a mnemocircuit on a console with built-in signal indicators. Unit 4 consists of displays, the number of which corresponds to the number of controlled parameters in each hydrolysis apparatus. Unit 5 consists of remote-control blocks, slave mechanism position indicators, and bulbs signaling the position of the valves. The potentiometers are of the EPR-109RDNZ type; the electronic controllers, of the RPIB-T type. BR-01 relay units with a controlled dead zone serve as "overshoot" signals. The "overshoot" signaling system is similar to that existing in nearly all series information machines: for example, MARS-200, ELRU-2M, "Zenit," "Tsikl-2," "Pusk-3" etc., but is distinguished by the group display principle. The program setters used are BPVZ-01

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KARTAMYSHEV, G.N., et al., Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 1, 1971, pp 19-22

program blocks with a cam program carrier, with three slide wires connected to the cam in the block. The instruments making up the machineless system are placed in two adjoining rooms with 6 x 9 m total floor space. The cost of this system is 49 percent below that of a system using the ELRU-2M machine and 16 percent below that of a system using individual measuring instruments for each parameter and individual control panels for each hydrolysis apparatus.

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1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POLAR PROPERTIES OF BONDS AND ABSOLUTE INTENSITIES OF INFRARED
BANDS OF ACROLEIN -U-
AUTHOR-(04)-VAKHLYUYEVA, V.I., FINKEL, A.G., SVERDLOV, L.M., ANDREYEVA,
A.I.
COUNTRY OF INFO--USSR
SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 97-102
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTROOPTIC EFFECT, CHEMICAL BONDING, IR SPECTRUM, DIPOLE
MOMENT, ACROLEIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1987 STEP NO--UR/0379/70/006/001/0097/0102
CIRC ACCESSION NO--AP0132248
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0132248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SYSTEM OF ELECTROOPTICAL PARAMETERS CHARACTERIZING THE POLAR PROPERTIES OF THE BONDS OF ACROLEIN (I) IN THE GASEOUS PHASE, WAS CALCD. BY USING THE EXPTL. VALUES OF THE ABS. INTENSITIES OF THE IR SPECTRAL BANDS OF I, AND THE VALUE OF ITS DIPOLE MOMENT. THE EXPTL. VALUES OF THE INTENSITIES AGREED WELL FOR ALL THE BANDS WITH THE CALCD. ONES. THE VECTOR SUM OF THE ESTD. BOND MOMENTS (3.19 D) IS CONSISTENT WITH THE EXPTL. VALUE OF THE DIPOLE MOMENT OF I (3.11 D). THE EFFECT OF CONJUGATION OF THE ALDEHYDE AND VINYL GROUP IN I THE ELECTROOPTICAL PARAMETERS WAS STUDIED.
FACILITY: SARATOV. POLITEKH. INST., SARATOV, USSR.

UNCLASSIFIED

172 011 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--EXPERIMENTAL AND THEORETICAL STUDY OF THE ABSOLUTE INTENSITIES OF
INFRARED BANDS FOR CYCLOPENTADIENE -U-
AUTHOR--YEVSEYEVA, L.A., FINKEL, A.G., SVERDLOV, L.M., PRONINA, L.V.
COUNTRY OF INFO--USSR F
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(1), 42-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ABSORPTION BAND SPECTRUM, CYCLIC GROUP, DIENE, CONJUGATE BOND
SYSTEM, BUTADIENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0173 STEP NO--UR/0139/70/013/001/0042/0046
CIRC ACCESSION NO--AT0105249

2/2 011 UNCLASSIFIED PROCESSING DATE--11SEP70
 CIRC ACCESSION NO--AT0105249
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VALUES OF INTEGRATED
 INTENSITIES OF THE IR ABSORPTION BANDS IN THE SPECTRA OF CYCLOPENTADIENE
 (I) WERE CALCD. BY MEANS OF ELECTROOPTICAL PARAMETERS; A GOOD AGREEMENT
 WITH EXPTL. VALUES WAS OBTAINED. POLAR PROPERTIES OF THE CH BONDS,
 NEIGHBORING THE C:C BOND, CHANGE LITTLE DURING THE TRANSITION FROM
 SIMPLE OLEFIN MOLS. TO THOSE POSSESSING CONJUGATE C:C BONDS EITHER OF
 THE 1,3,BUTADIENE OR I AND C SUB6 H SUB6 TYPES. OWING TO THE EFFECT OF
 HETEROATOM, THE DMUCH-DQCH VALUES CHANGE CONSIDERABLY AND THE STRETCHING
 BAND INTENSITIES DECREASE WHILE THE DIPOLE MOMENT OF THE CH BONDS AND
 BAND INTENSITIES OF THE OUT OF PLANE VIBRATIONS CHANGE LITTLE IN THE
 SERIES I, THIOPHENE, AND FURAN. THE CH BOND PROPERTIES OF THE CH SUB2
 GROUPS IN I DIFFER SOMEWHAT FROM THOSE OF BOTH THE CH SUB2 AND :CH SUB2
 GROUPS IN SATD. AND UNSATD. COMPS., RESP.; IT IS ATTRIBUTED TO THE
 EFFECT OF THE C:C BONDS. QUASI AROMATIC CHARACTER OF THE RING CAUSES
 INTENSITY DECREASE OF THE I VIC:C) BOND, IN COMPARISON WITH 1,3,
 BUTADIENE.

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EXPERIMENTAL AND THEORETICAL STUDY OF THE ABSOLUTE INTENSITIES OF
BANDS IN THE TETRAHYDROFURAN INFRARED SPECTRUM -U-
AUTHOR-(04)-YEVSEYEVA, L.A., FINKEL, A.G., SVERDLOV, L.M., PRONINA, L.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 301-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--IR SPECTRUM, FURAN, CALCULATION, CHEMICAL PURITY, VIBRATION
FREQUENCY, DEUTERIUM COMPOUND, ELECTROOPTIC EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1244 STEP NO--UR/0368/70/012/002/0301/0305
CIRC ACCESSION NO--AP0116706
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116706

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABS. INTENSITIES OF BANDS IN THE IR SPECTRUM OF TETRAHYDROFURAN (I) WERE CALCD. THEORETICALLY AND MEASURED EXPTL. THE PURITY OF I WAS SIMILAR TO 99PERCENT. BY USING THE DATA, A SYSTEM OF ELECTROOPTICAL PARAMETERS OF I AS WELL AS VIBRATION COORDINATES ARE PRESENTED. EXPTL. AND CALCD. FREQUENCIES AND CALCD. INTENSITIES FOR DEUTERATED I ARE ALSO GIVEN.

UNCLASSIFIED

USSR

TUTORSKII, I. A., et al., Kauchuk i Rezina, No 11, 1973, pp 21-23

explain these effects. It was also found that G values are independent of the amount of styrene in the copolymer, indicating that styrene does not protect polybutadiene from radiation effects.

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USSR

UDC 541.6+541.15

KARPOV, V. L., FINKEL', E. E., BERLYANT, S. M., and BRAGINSKIY, R. P.

"Radiation Modification of Polyolefines"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 18, No 3, 1973, pp 270-278

Abstract: A review with 87 references analyzing the effect of radiation on the changes in physico-mechanical and electric properties of polyethylene and other polyolefines as well as the thermal stabilization of the radiation modified polyolefines. The reported data suggest that radiation modification of polyethylene is one of the most promising radio-chemical processes. The polyethylene modified by radiation exhibits several novel qualities in comparison to the nonirradiated one, expanding considerably its applicability. The properties and areas of application of the products manufactured from radiation modified polyethylene have been noted.

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USSR

UDC 678.742.2:66.018.88/01:53 1

BRAGINSKIY, R. P., PARFENOVA, D. S., TROITSKIY, I. D., FINKEL', E. E.,
and CHERVONTSEVA, G. M.

"Radiation Modification of Self-Extinguishing Polyethylene Compositions"

Moscow, Plasticheskiye Massy, No 1, Jan 72, pp 15-18

Abstract: The authors consider possibilities for radiation modification of self-extinguishing compositions based on low-density polyethylene to improve thermal stability and physical and mechanical characteristics at high operating temperatures. The self-quenching composition studied was made up of 77.0 percent P2015KU polyethylene, 11.3 percent chloroparaffin 70, and 11.7 percent Sb_2O_3 . The control specimens were unmodified P2015KU polyethylene.

Pressed plates about 0.3 mm thick were exposed to Co^{60} gamma radiation at room temperature in helium to absorbed doses of 1-500 Mrad. The gel fraction content was then determined. Deformation characteristics were measured on special specimens. The thermomechanical characteristics and quenching properties were also studied. It was found that an optimum dose of about 15 Mrad considerably improves the deformation characteristics of the self-extinguishing composition. Thermomechanical tests of specimens which had absorbed this dose showed that shape stability is adequate for use of 1/2

USSR

BRAGINSKIY, R. P., et al., Plasticheskiye Massy, No 1, Jan 72, pp 15-18

finished articles at 100°C, which extends the region of application of this material. The authors thank L. Ye. Sokolova, L. Khokhlova and N. K. Kozlova for assistance in the experimental studies. Four figures, bibliography of twenty-four titles.

2/2

- 72 -

FINKEL, V. A.

FEATURES OF THE STRUCTURE AND PLASTIC DEFORMATION OF ZINCONIUM SATURATED BY NITROGEN AND OXYGEN

ENC 530.374

V. M. Azhukhin, P. V. Yuryukov, L. N. Ryabchikov, and V. A. Finkelshteyn, *Physics Engineering Institute of the Ukrainian SSR Academy of Sciences*, submitted to press 1 February 1972

0001-4021-1300

The purpose of this work is the study of the effect of the saturation with nitrogen and oxygen at low pressure on the mechanical properties, features of plastic deformation, and structure of zirconium iodide, a pure metal obtained by the zone smelting method [1].

specimens with the given content of kaeseum impurities were prepared by saturation of the zirconium bands with a thickness of 0.1 millimeters, heated by alternating current in a vacuum chamber, as a result of the feeding of nitrogen or oxygen through a measuring valve. The temperature of the specimens was 1260°C, the saturation time 2 minutes. The pressure of the gases was 10.5–10⁻¹ torr. The quantity of ka₂ absorbed was calculated according to data on the rate of absorption [2] and was controlled by chemical analysis. After saturation by ka₂, the zirconium ribbons were annealed for the purpose of homogenization for 5 minutes, at the same temperature in a vacuum of 1 x 10⁻⁶ torr.

The mechanical properties were studied at room temperature on specimens with dimensions of the working part of $20 \times 50 \times (0.1$ millimeter at a constant rate of tension 1.6×10^{-3} seconds $^{-1}$. The load was measured by the DF-0.2 specimen dynameter.

For the study of the crystal structure of zirconium, a methodology developed earlier for obtaining specimens with a temperature gradient was used [3]: a shaped specimen was heated by alternating electric current, and in this case a temperature difference from 700 to 1400°C was created

Collectif Universitaire
Theology, JFAS 556,
-30 March 1973 - Fika
McNellon ; Metallorodrigues
Vol. 34 # 6, 1972

in it. Because of the different rate of absorption, the concentration of nitrogen or oxygen varied along the length of the specimen, aside from this, a $\beta \rightarrow \alpha$ phase transformation (OTK-GPU), while the other part was in the α -phase all the time.

X-ray photographs of the sections of the specimen corresponding to various saturation temperatures were taken in a Debye chamber with a diameter of 114 millimeters in $\text{CuK}\alpha$ -radiation. For precision measurement of the parameters of the lattices, the zirconium was subjected to x-ray photography according to the reverse photography method, and reflections from planes (211), (114) and (211) of the GPU lattice were fixed in the $\text{CuK}\alpha$ -radiation.

On x-ray photographs of zirconium saturated with nitrogen to a concentration of 0.075 with respect to mass, only α -Zr lines were observed; at a high content of nitrogen on the x-ray photographs of specimens cooled from a temperature higher than 900°C, a splitting of specific diffraction lines occurred. The nature of the splitting of certain reflexes indicates the fact that in these conditions, instead of an ordinary $\beta \rightarrow \alpha$ transformation (OTK-GPU) a $\beta \rightarrow \alpha'$ transformation (OTK-Rhomboïd) occurs.

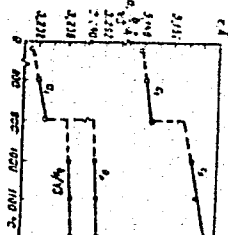


Figure 1. Parameters of the crystal lattice of zirconium saturated with nitrogen at a pressure of 6×10^{-4} torr as a function of the annealing temperature.

Beryllium

USSR

UDC 669.725:539.374

FINKEL', V. A., PAPIROV, I. I., and PALATNIK, M. I., Physicochemical Institute of the Academy of Sciences, Ukrainian SSR

"X-Ray Study of the Plastic Deformation of Beryllium Single Crystals"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 2, Aug 71, pp 377-384

Abstract: Changes of the substructure and periods of the crystal lattice by deformations of beryllium single crystals at the expense of basal plane sliding were experimentally investigated. The investigation results discussed include differences in the behavior of single crystals under similar deformation conditions, development of new intensity peaks at the beginning of deformation, and vibrations of individual fragments in the course of deformation. It was found that the change of the substructure by deformation depends on the quantity of fragments and their integral disorientation. New fragments develop, previous fragments combine, and turns and vibrations of fragments take place during deformation. The angular distribution of fragments and their density changes with increasing pressure were determined. The dependence was established of periods of the crystalline lattice on the compression stress of beryllium single crystals with two orientations. The periods of the crystalline lattice were found to be susceptible to plastic deformation. Seven illustr., ten biblio. refs.

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USSR

UDC 539.375

FINKEL', V. M., BRUSENTOV, Yu. A., JURAVIN, G. B., DOBKEVICH, V. A.,
Tambov

"Dynamic Method of Crack Inhibition"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 57-60.

Abstract: A new electron logic device is described, allowing the beginning of rupture, its direction and rate to be determined for purposes of timely switching of a barrier (explosive charge). The experiments performed indicate the possibility of changing the mode of motion of a crack and even of stopping it.

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USSR

UDC 669.22/296:620.178.2

FINKEL', V. M.

"Tendency of Metals to Cold Brittleness and the Relationship of This
Tendency to Crystalline Lattice Parameter"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 9, 1970,
pp 68-70

Abstract: All the metals in the periodic table are laid out in order of increasing crystalline lattice constant. A comparison of experimental data on brittleness with the distribution of elements by constant suggests that the crystalline lattice parameter is an indicator of the tendency of a metal to brittleness. The author therefore concludes that the crystalline lattice parameters of brittle metals should be increased by alloying to prevent cold brittleness.

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- 86 -

1/2 030 UNCLASSIFIED PROCESSING DATE---13NOV70
TITLE--SLOWING OF FAST CRACKS BY CERTAIN STRUCTURAL DEFECTS -U-
AUTHOR--(05)-FINKEL, V.M., VORONOV, I.N., SAVELEV, A.M., ELISENKO, A.I.,
FEDOROV, V.A.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAR, 1970, P. 8-16
DATE PUBLISHED----MAR70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TRANSFORMER STEEL, CRACK PROPAGATION, LITHIUM FLUORIDE, SODIUM
CHLORIDE, LATTICE DEFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--2000/0122 STEP NO--UR/3663/70/002/000/0008/0016
CIRC ACCESSION NO--AP0123894
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE INTERACTION OF A FAST, BRITTLE CRACK WITH THE MECHANICAL TWINS IN TRANSFORMER STEEL AND WITH THE SLIP BANDS IN LiF AND NaCl CRYSTALS. FAST MICROKINEMATOGRAPHY AND PHOTOPLASTICITY METHODS WERE USED IN THIS STUDY. IT IS SHOWN THAT THE CROSSING OF TWINS OR SLIP BANDS BY A CRACK IS ACCOMPLISHED BY A HIGHLY PRONOUNCED SHEAR AND LOCAL PLASTIC STRAIN. THE AMOUNT OF TWINS AND SLIP BANDS FOR COMPLETE INHIBITION OF CRACK PROPAGATION IS DETERMINED FOR DIFFERENT INITIAL PROPAGATION RATES.

FACILITY: TAMBOVSKII INSTITUT KHIMICHESKOGO MASHINOSTROENIYA, TAMBOV, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TRANSMISSION OF DEFORMATION THROUGH INTERCRYSTALLITE BOUNDARIES -U-
AUTHOR--(02)-FINKEL, V.M., VAKHONIN, V.V. F
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., CHERNAVA MET., 1970, (2), 108-112
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PLASTIC DEFORMATION, SILICON STEEL, IRON ALLOY, BIBLIOGRAPHY,
DEFORMATION RESISTANCE, GRAIN SIZE, METAL CRYSTAL, PHOTOELASTICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1531 STEP NO--UR/0148/70/000/002/0108/0112

CIRC ACCESSION NO--AP0125159
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSMISSION OF PLASTIC DEFORMATION THROUGH THE INTERCRYSTALLITE BOUNDARIES OF METAL SPECIMENTS (FE-3PERCENT SI) WAS STUDIED WITH THE HELP OF PHOTO ELASTIC COATINGS AND RELATED TO THE GRAIN SIZE AND DEGREE OF CRYSTALLITE DISORIENTATION. BOUNDARIES PROCESSING CONCENTRATIONS OF VACANCIES SUFFICIENT TO INTERFERE WITH THE NORMAL MOTION OF DISLOCATIONS WERE PARTICULARLY DEFORMATION RESISTANT. FOR DISORIENTATIONS OF LARGER THAN 15DEGREES, IN PARTICULAR, THE TRANSFER STRESSES DEPENDED GREATLY ON GRAIN SIZE AND DISORIENTATION ANGLE. THE THEORETICAL REASONS FOR THESE EFFECTS ARE CONSIDERED.

UNCLASSIFIED

1/2 * 007 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--BRONCHOSCOPY IN DIAGNOSING CHRONIC DUST INDUCED BRONCHITIS -U-
AUTHOR--(05)-YELOVA, M.YA., MALTSEVA, L.M., SOROKIN, V.M., GENINA, O.D.,
EINKELBERG, E.I.
COUNTRY OF INFO--USSR
SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 4, PP
56-58
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RESPIRATORY SYSTEM DISEASE, DIAGNOSTIC METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1227

STEP NO--UR/0391/70/000/004/0056/0058

CIRC ACCESSION NO--AP0054122

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054122

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CARRIES DATA OF CLINICO ROENTGENOLOGICAL, ENDOSCOPIC AND FUNCTIONAL EXAMINATIONS OF 97 PATIENTS PRESENTING DUST INDUCED PATHOLOGY. OF THESE 62 HAD CHRONIC BRONCHITIS, 12, PNEUMONCONIOSIS AND 23 WERE SUSPECTED OF SUFFERING FROM THE LATTER. AN ANALYSIS OF THESE FINDINGS IS SUGGESTIVE THAT BOTH IN CHRONIC BRONCHITIS AND IN PNEUMONCONIOSIS, AS WELL AS IN SUSPECTED PNEUMOCONIOSIS THERE APPEAR MANIFESTATIONS OF ENDOBRONCHITIS, MOSTLY OF SUB AND ATROPHIC NATURE AND LESS OFTEN OF HYPERTROPHIC ONE. CHARACTERISTIC SIGNS OF ENDOBRONCHITIS ARE DISCERNABLE EARLIER AND MORE FREQUENTLY THAN ROENTGENOLOGICAL MANIFESTATIONS OF THE DISEASE. THERE WERE INSTANCES WHEN ENDOSCOPIC CHANGES BECAME APPARENT IN THE ABSENCE OF BRONCHOGRAPHIC ONES. THUS, IN CASES GIVING GROUND TO SUSPECT CHRONIC DUST INDUCED BRONCHITIS OR PNEUMOCONIOSIS BRONCHOSCOPY OS TO BE REGARDED A VALUABLE PROCEDURE CONDUCIVE TO AN EARLY IDENTIFICATION OF THE AFFECTION.

UNCLASSIFIED

USSR

UDC 547.491.8:543.422.4

GAL'PERIN, V. A., and EINKEL'SHTEYN, A. I., State Scientific Research and Development Institute of Nitrogen Industry and Products of Organic Synthesis, Dzerzhinskiy Branch

"Reaction of Cyanuric Acid and Its Amides with Ammonia"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, Jul 71, p 1002

Abstract: Using IR spectrophotometric analysis of the reaction products of solid cyanuric acid, ammelide, and ammeline with ammonia at 200-270° it was shown that no urea forms in that reaction, in contrast to the claims of Giger and Kinoshita. In the range 200-250° a monoammonium salt of cyanuric acid is obtained, and above 250° the carboxylic groups are exchanged for amine groups. At 270°, 80 atms pressure, after 2 hrs the content of cyanuric acid, ammelide, ammeline and melamine in the reaction products was 10.3; 42.2; 44.3; and 3.3% respectively.

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Acc. Nr: **APC038054**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 341-347

A METHOD FOR OBSERVING PERIODICITY OF A VORTEX
LATTICE IN ROTATING He II

Finkel'shteyn, A. M.

A method is suggested for observing the periodicity of a vortex lattice by scattering light on He II ions. Negative ions in rotating He II tend to concentrate on the vortexes. Thus coherent scattering of light in a plane perpendicular to the axis of rotation will have a diffraction maximum, providing the vortex lines form a regular lattice. In order to assess the feasibility of such an experiment the behavior of a quasi-neutral mixture of ions in rotating He II is considered.

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SECTION IV

Sci Selection Advisory Committee

Exercises

65-37

June 1971

Name: Puerto Research Institute, Puchelino
Description:

(U) During this quarterly reporting period, two new articles were

located from the Protein Research Institute at Pushchino. On the basis of one of the articles, which dealt with escherichia coli ribosomes, it was possible to associate one new person, M. I. Smirnov, with the Institute (32). The other article, also on escherichia coli, was issued jointly from the Institute of Genetics and Selection of Microorganisms, Moscow, and the Protein Research Institute at Pushchino (33). Previous articles by V. I. Ponomarev have been issued from the former Institute. No previous facility association could be located for V. D. Vasil'yev, but it is likely that he represents the latter Institute. This article probably represents some joint work between the two Institutes.

(U) As a ready source of reference, given below is a complete listing of personalities identified with the Protocol Research Institute to the present time:

Bill - Dickinson

Редетина, И. В.

Всехлеу, Т. М.

Chiradze, Yu. M.

Tudorov, B. A.

Flinkel' dhteyn, A. V.

Glinckaya, O. V.

Lavliosa, L. P.

عن أبي عبد الله عليه السلام

Mich, Yu. V.

Результаты, полученные в результате исследования, свидетельствуют о том, что в настоящее время в России наблюдается тенденция к снижению уровня жизни населения, что связано с экономическими трудностями, вызванными пандемией COVID-19. В то же время, несмотря на сложную ситуацию, наблюдается рост интереса к различным формам досуга и отдыха, что может способствовать развитию туристической отрасли.

Pelican, D. B.

Российская, 70. 1.

Serd'yuk, I. M.

STARKOV, N. I.

Sprain, A. S.

Ташкент, Ға. 1.

Yasli'yan, V. D.

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תחבורה

FINKEL'SHTEYN, A.V.

chemistry

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--EFFECT OF PH ON REGRESSION EQUATION PARAMETERS PHI SUBIOVER2 AT
DELTAV SUB1.2 FOR SUBSTITUTED BENZYLIDENEACETONE DERIVATIVES -J-
AUTHOR-(03)-~~FINKELSHTEYN~~, A.V., YAROSHENKO, A.I., TARBYEVA, V.A.
COUNTRY OF INFO--USSR F
SOURCE--ELEDTROKHIMIYA 1970, 6(2) 268-71
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DROPPING MERCURY ELECTRODE, HYDROGEN ION CONCENTRATION,
BENZENE DERIVATIVE, ACETONE, CARBONYL RADICAL, POLAROGRAPHIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0462 STEP NO--UR/0364/70/006/002/0268/0271
CIRC ACCESSION NO--AP0107068
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107068

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE POLAROGRAMS (I VS. Φ) AND THEIR DERIVS. (DI-D Φ , Φ) WERE RECORDED ON A POLAROGRAPH OF THE ON-102 TYPE AT 20 DEGREES. THE CATHODE WAS A DROPPING HG ELECTRODE, THE ANODE A HG MACROELECTRODE. THE CONC. OF THE STUDIED SUBSTANCE WAS 5 TIME 10 PRIME NEGATIVE 4 M. FOR ALL Φ VALUES STUDIED THERE IS A CLEAR CORRELATION BETWEEN THE HALF WAVE POTENTIALS, Φ SUB1-2, OF THE SUBSTITUTED BENZYLIDENEACETONE DERIVS. AND THE SOLVATOCHROMIC EFFECT (DELTA V SUB1-2): Φ SUB1-2 EQUALS ALPHAS PLUS BETA DELTA V SUB1,2. THE GENERAL FORM OF THE EQUATION RELATING DELTA V SUB1,2 TO Φ SUB1-2 FOR REDN. OF BENZYLIDENEACETONE DOES NOT DEPEND ON Φ AT Φ EQUALS 2-5. THE PARAMETER BETA OF THIS EQUATION IS ALSO PRACTICALLY CONST. WITHIN THIS Φ RANGE. THE PARAMETER ALPHAS DECREASES WITH INCREASING Φ AND IS A LINEAR FUNCTION OF THE H INDEX WHICH IS DESCRIBED BY THE EQUATION ALPHA NEGATIVE 0.481-0.058 Φ . THE LINEAR CORRELATION BETWEEN Φ SUB1-2 AND DELTA V SUB1,2 CONFIRMS THE MECHANISM PROPOSED IN LITERATURE THAT THE CARBONYL GROUP AND NOT THE DOUBLE BOND IS REDUCED AND APPEARS AGAIN AFTER REGROUPING.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SOLVATOCHROMIC EFFECT AND ELECTROCHEMICAL REDUCTION OF SOME
AROMATIC COMPOUNDS ON A DROPPING MERCURY ELECTRODE -U-
AUTHOR-(02)-FINKELSHTEYN, A.V., YAROSHENKO, A.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 194-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTROLYTIC REDUCTION, DROPPING MERCURY ELECTRODE,
NITROBENZENE, CHEMICAL SUBSTITUENT, BROMINE, CHLORINE, HYDROXYL RADICAL,
AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1104 STEP NO--UR/0153/70/013/002/0194/0196
CIRC ACCESSION NO--AT0134790
UNCLASSIFIED

2/2

013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORRELATIONS ARE PRESENTED BETWEEN THE SOLVATOCHROMIC EFFECT AND THE HALF WAVE POTENTIAL (IN 26 OR 35PERCENT ETOH AT PH 3) FOR 24 SUBSTITUTED MONONUCLEAR AROMATIC COMPODS. THE CORRELATION IS OF THE FORM Φ SUBONEHALF EQUALS ALPHA PLUS BETA DELTAV SUB1,2, WHERE Φ SUBONEHALF IS THE HALF WAVE POTENTIAL, DELTAV SUB1,2 IS THE SOLVATOCHROMIC EFFECT AND NEGATIVE ALPHA AND BETA TIMES 10 PRIME3 HAVE THE FOLLOWING VALUES: RC SUB6 H SUB4 NO SUB2 (R EQUALS H, M, NO SUB2, M, BR, M, CL, P, OH, O, OH, M, OH, M, ME, M, NH SUB2, P, ME, P, CO SUB2 H, P, CL), 0.200 AND 0.120; RC SUB6 H SUB4 NMEN (R EQUALS P, OET, M, CL, H, P, BR, P, CL, M, CL, M, BR), 1.088, 0.288; AND RC SUB6 H SUB4 CHO (R EQUALS M, CL, M, OET, M, OME, O, OME, P, ME, P, NH SUB2), 0.75, NEGATIVE 0.050. FACILITY: SIB. TEKHNOL. INST., KRASNOYARSK, USSR.

UNCLASSIFIED

AA0044232

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243747 ELECTROCHEMICAL AMPLIFIER CELL for use in chemo-
tronic measuring instruments consists of a
dielectric top plate and bottom plate, with spacers to
prevent a contact between the electrodes. The input
control electrode consists of a system of flat concentric
rings connected in parallel and arranged in concentric
slots left by the output electrodes. All electrodes are
made of metal which is inert to the active solution.
26.7.67 as 1175574/18-10.1.V. STRIZHEVSKI; et al.(1.10.
69) Bul 17/14.5.69. Class 21g. Int.Cl. H 01 1.

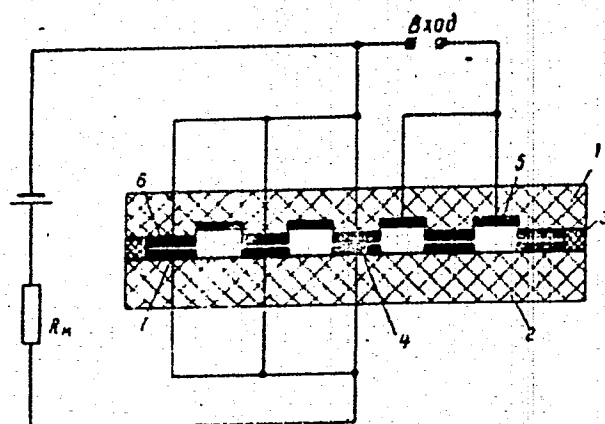
AUTHORS: Strizhevskiy, I. V., Kharanovich, G. I.
Einkel'shteyn, E. B., Tarnizhevskiy, M. V.

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AA0044232



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USSR

UDC 528.422.024.5:531.767.2

PRIKHODA, A.G. and FINKEL'SHTEYN, E.I.

"Application of New Optical Microbarometer Type OMB-3P"

Moscow, Geodeziya i Kartografiya, No 4, 1971, pp 45-49

Abstract: The OMB-3P is an improved aneroid altimeter for geodesic and geophysical surveys. Its specifications are: instrument error $\pm .02$ mb [millibars] at up to 20 mb, 60-80 mb spread without range switching, ocular scale divisions of .03-.04 mb each, weight 3.1 kg, and dimensions 145 x 134 x 300 mm. The instrument can be adjusted for mountain usage for a spread of 400 mb within one range setting, ocular scale divisions of .20 mb and an instrument error of $\pm .05$ mb. The altimeter is a two-section aneroid unit connected below a spiral-ribbon spring mounted along a vertical axis. The lower end of the spring is immersed in a cylinder containing damping fluid. The upper end of the spring is fixed to a range-setting screw. A rotatable mirror is attached to the center of the spring. An optical system illuminates the mirror (requires an external power source) and projects the angular position of the mirror to the instrument panel to provide a direct measurement of atmospheric pressure in terms of mirror rotation. The entire mechanism is hermetically sealed in a Dewar flask except for the intake tube. Two hundred units have been in field use since 1968-1969.

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USSR

UDC 621.375.8

FINKELSHTEYN, L. A.

"Problem of Planning and Designing Multicircuit Parametric Frequency Amplifiers-Multipliers"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-ta svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 3), Leningrad, 1970, pp 179-185 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D263)

Translation: This article contains an investigation of the operating features and some arguments with respect to selecting the schematics of multicircuit parametric frequency amplifiers-multipliers. Relations are presented which permit estimation of the basic characteristics of the parametric frequency amplifiers-multipliers suitable both for calculating two-circuit and multicircuit frequency amplifiers-multipliers.

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USSR

UDC 669.71.053.4

ARONZON, V. L., GANZBURG, YA. D., LEVIN, M. V., LOKSHIN, R. G., FINKEL'SHTEYN, L. I.

"Algorithmization of Control of the Section for Preparing the Charge of the Alumina Shop at a Nepheline Plant"

Tr. Vses. n.-i. i provektn. in-ta alyumin., magn. i elektrodn. prom-sti
(Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 28-34 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G136)

Translation: Principles are formulated for a production raw material input control which insures stabilization and synchronization of material flows with observation of the required quality of the charge obtained. Control algorithms for individual sections are developed on this basis: bins, mills, a repulping machine, and a correction unit. There is 1 illustration.

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AA0051847 ..

UR 0482

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

239656 LEAKAGE LOCATOR for compressed air mains contains a differential manometer (5) by which the pressure drop to the leakage point can be measured from the two ends of the mains. The distance to the leakage point can be calculated from the pressuredrop ratio. A four-way cock (4) and reducing valve (1) with strainer (2) complete the equipment.

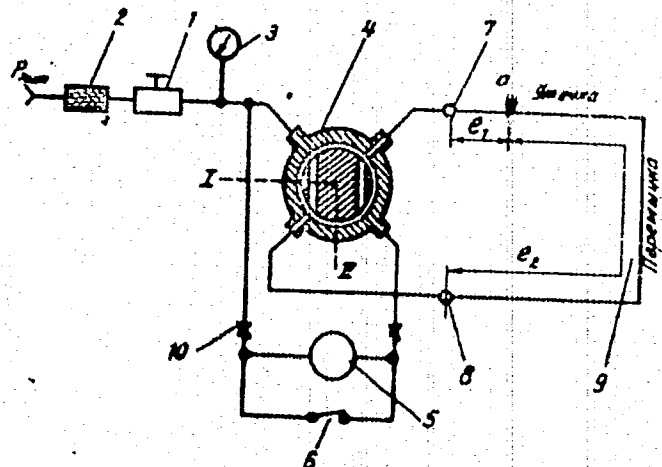
31.7.67 as 1176151/18-24. S.Y.CHEGINOT et al.
(28.7.69) Bul 11/18.3.69. Class 42 m² Int.Cl.G 06 d.

AUTHORS: Chestnov, S. V.; Fadeyev, A. V.; Finkel'shteyn, L. G.

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AA0051847

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 $\in B$

USSR

UDC 621.383.292.001.24

PINKEL'SHTEYN, L. Ye.

"On a Method of Calculating the Pulse Characteristics of Photomultipliers"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 10, Oct 71, pp 1936-1940

Abstract: Approximate formulas are proposed for calculating the parameters of the pulse response of photomultipliers from the experimentally measured parameters of the transient response. A reverse-connected gallium phosphide light guide is used for measuring the transient response. The author thanks I. M. Gurevich for interest in the work and discussion of the results.

1/1

USSR

UDC: 621.391.2.018.756

FINKEL'SHTEYN, M. I.

"On the Optimum Pulse Shape for Radar Probing of Sea Ice"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 12, Dec 70, pp 2468-2472

Abstract: Simple low-frequency and high-frequency filters are used for modeling reflection from sea ice, and a procedure is developed for selecting the probe pulse shape so that the resolving properties of the signal are retained after reflection from the edges of the ice and resolution cannot be improved by further expansion of the signal pass-band.

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1/2 039 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--USE OF ENAMEL COATINGS BASED ON CYCLODURBER AND CHLORINATED RUBBER
FOR PROTECTING EQUIPMENT AND STRUCTURES USED IN THE CHEMICAL INDUSTRY
AUTHOR--KOFMAN, N.I., FINKELSHTEYN, M.I. F
COUNTRY OF INFO--USSR
SOURCE--LAKOKRASOCH MATER. IKH PRIMEV. 1970, (1) 40-2
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--ENAMEL, PROTECTIVE COATING, CHLORINATED ORGANIC COMPOUND,
SYNTHETIC RUBBER, PROTECTIVE COATING, CHEMICAL INDUSTRY, HYDROGEN
SULFIDE, NITRIC ACID, SULFURIC ACID, HYDROCHLORIC ACID, AMMONIA,
CONCRETE, METAL COATING, CHLORINE, SULFUR DIOXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0550 STEP NO--UR/0303/70/000/001/0040/1042
CIRC ACCESSION NO--AP0107155
UNCLASSIFIED

2/2

039

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107155

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ENAMELS BASED ON CHLORINATED RUBBER OR CYCLO RUBBER RESIST THE CONDITIONS IN CHEM. PLANTS, WHERE THEY ARE EXPOSED TO THE PERMITTED CONCNS. OF H SUB2 S, SO SUB2, SO SUB3, CL, HCL, HF, AND VAPORS OF HNO SUB3, H SUB2 SO SUB4, NH SUB3, CYCLOHEXANONE, OR C SUB6 H SUB6. THESE ENAMELS CAN BE USED FOR COATING METAL OR CONCRETE. THEY ARE NOT STABLE AGAINST 5-7PERCENT SOLNS. OF H SUB2 SO SUB4, HCL, AND H SUB3 PO SUB4 AT 60DEGREES.

UNCLASSIFIED

USSR

UDC 621.791.76:669-122.4.621.7.04

FELIKSON, Ye. I., Candidate of Technical Sciences, and FINKELSHTEYN, M. J., Engineer, Scientific Research Design Institute for Testing Machines, Instruments, and Equipment for Measuring Mass Devices

"Diffusion Welding, of Materials in Fluid Media"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 71, pp 24-25

Abstract: The basic idea of the process is heating the fluid medium to the welding temperature before the welding begins, thus speeding up the heating rate of the welded material by three to six times. A further advantage of this preliminary heating of the fluid is that it protects the surface of the material from oxidation and prevents access of oxygen in the air to the material during its immersion in the bath and while it is cooled after welding in air. This is possible because a layer of the salt usually in the fluid medium remains on the surface of the material in the form of a fine film. The process is also time-saving and can be done with cheaper equipment. In addition, the welds it produces are of excellent quality.

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USSR

UDC 621.791.08:620.17

BLANTER, M. Ye., and FINEKL'SHTEYN, M. L.

"Kinetics of Dissolution of Oxide Film and Strength of Welded Joints"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No. 2, 1971, pp 53-55

Abstract: The nature of the change in strength of welded joints, rate of dissolution of the oxide film and degree of deformation by creep were studied for various initial states of the surfaces joined. Studies were performed on 23-mm specimens 16 mm in diameter consisting of type E steel (0.04% C; 0.15% Mn; 0.18% Si; 0.026% S; 0.006% P). The surface states were created by oxidation in air for 20 minutes at 100, 200, 300, and 400°C, as well as 1 hour at room temperature. A dependence is demonstrated between the degree of dissolution of the oxide film and strength of the welded joint produced by heating and pressure in the solid state. The rate of dissolution of the oxide film can sometimes be determined by the nature of the change in strength of the welded joint.

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USSR

UDC 621.357.12.035.2

CHUPRINA, V. I., ~~FINKEL'SHTEYN, S. D.~~, RYABUSHIN, A. G., GRISHAYENKOV, B. G.,
GAVRILOV, B. A.

"Mechanism of the Protective Effect of Lithium during Anode Oxidation of Porous Nickel"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 80-84 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L259)

Translation: A study was made of the mechanism of the protective effect of Li during anode oxidation of cast porous Ni-electrodes under the conditions of electrolysis of water. It is demonstrated that effective inhibition of the process of anode oxidation of the Ni arises from the formation of a thin film containing solid solutions of LiO_2 , NiO on the Pb electrodes.

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USSR

UDC [621.357.7:669.295]:669.293

BELYAYEVA, G. I., ANFINOGENOV, A. I., ILYUSHCHENKO, N. G., FINKEL'SHTEYN,
S. D.

"Influence of Melt Composition on Rate of Titanation of VN-2 Alloy"

Tr. In-ta Elektrokhimii. Ural'sk. Nauch. Tsentr. AN SSSR [Works of Institute of Electrochemistry, Ural's Scientific Center, Acad. Sci. USSR], No 17, 1971, pp 131-136 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L357 by A. V. Dribinskiy).

Translation: The influence of potassium fluorotitanate, time and temperature on the rate of titanation of Nb alloy in a chloride melt, phase composition and heat resistance of the diffusion coating is studied. It is demonstrated that the heat resistance of the titanated alloy is greater than the resistance of pure Nb.

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Metrology, Surveying, Mapping, Graphics

USSR

UNC 536.521.003.6

GOLUB, L. M., FINKEL'SHTEN, V. Ye.

"Concerning the Computation of Corrections Pertaining to Inexactitude of the Wien Formula, During a Construction of the Scale of Monochromatic Pyrometers and Cumulative-Radiation Pyrometers"

Tr. Metrol. In-tov SSSR (Works of Metrological Institutes of the USSR), No. 110 (170), 1971, pp 59-170 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, Dec 71, Abstract No 12.32.1121)

Translation: The article deals with methods for computing corrections, connected with an insufficiency of the Wien formula when λT is greater than 2300 microns times K. Correction tables are presented for quasi-monochromatic pyrometers, as well as for cumulative-radiation pyrometers, the scale of which is constructed in the high-temperature region by means of absorbents; the spectrotransmission τ prime of the absorbents satisfies the condition λT times $\ln \tau = \text{const}$. The presented tables systematize the correction δT in a broad spectral region (0.4-3.0 microns), and in a wide temperature range (1000-6000°C), which fully embraces the region of application of all existing types of pyrometers. 4 tables. 3 references.

1/1

USSR

UDC 535.243:536.508.14

KISEL', A. N., and FINKEL'SHTEYN, V. YE.

"New Spectrocomparator of PSK Type for Temperature Scale Transmission"

Moscow, Izmeritel'naya Tekhnika, No 9, Sep 71, pp 47-48

Abstract: This article presents a description of new semi-automatic PSK-1 spectrocomparator developed at the Khar'kov State Scientific Research Institute of Metrology (KhGNIIM) with the aim of eliminating fundamental and structural deficiencies of preceding apparatus. A zero modulation method used previously is the basis of the new spectrocomparator with the difference that the current control of a standard temperature-calibrated lamp is accomplished automatically by means of a special servo system and a signal from the load of a synchronous detector. The servo system consists of an integrator with a high time constant (10.000-40.000 sec) and built-in transistor controls in the lamp power supply circuit. Structurally the PSK-1 apparatus consists of a control panel including electronics and a system for lamp current measurement, an optical system and a power supply unit containing two stabilized SIP-30 sources. This spectrocomparator makes it possible to change temperature scale transmission from a visual method to photoelectric method thus increasing the accuracy and work productivity.

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1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ELECTRICAL, PHOTO, AND THERMOELECTRIC PROPERTIES OF THIN FILMS OF
ALKALI METAL ANTIMONY SULFIDES AND SELENIDES -U-
AUTHOR--(05)-GNIDASH, N.I., SUKHORUKOVA, L.N., KUZNETSOV, M.S.,
FINKELSHTYN, YA.G., BERUL, S.I.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 237-40

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--THIN FILM SEMICONDUCTOR, PHOTOCONDUCTIVITY, THERMOELECTRIC
PROPERTY, ABSORPTION SPECTRUM, ALKALI METAL COMPOUND, ANTIMONY COMPOUND,
SULFIDE, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/1999

STEP NO--UR/0363/70/006/002/0237/0240

CIRC ACCESSION NO--AP0105073

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC., PHOTOELEC., AND THERMOELEC. PROPERTIES OF THIN FILMS PREPD. BY VACUUM SPUTTERING OF TERNARY COMPS. OF THE A PRIMEI B PRIMEV C SUB2 PRIMEVI TYPE (WHERE A PRIMEI EQUALS LI, NA, K, OR CS; B PRIMEV EQUALS SB; AND C SUB2 PRIMEVI EQUALS S OR SE) WERE STUDIED. THE TERNARY COMPS. WERE PREPD. BY INTERACTING SB SUB2 S SUB3(SB SUB2 SE SUB3) WITH THE FLUORIDES OF THE ALKALI METALS. THE FILMS OBTAINED HAVE SEMICONDUCTOR PROPERTIES. A NOTICEABLE PHOTOCOND. IS OBSD. FOR THE ALKALI METAL SB SELENIDES. FOR THE LATTER, SPECTRAL DISTRIBUTION CURVES FOR THE PHOTOCOND. WERE OBTAINED, FROM WHICH IT FOLLOWS THAT THE MAX. OF THE PHOTOCOND. LIE IN THE VISUAL SPECTRAL REGION NEAR THE LONG WAVELENGTH ABSORPTION EDGE OF THESE SUBSTANCES. MANY OF THE THIN FILMS ARE CHARACTERIZED BY A RELATIVELY LARGE DIFFERENTIAL THERMAL EMF. FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--KINETICS OF THE OXIDATION AND STABILIZATION OF POLYUNSATURATED
COMPOUNDS. II. AUTOXIDATION OF VITAMIN I ACETATE IN THE SOLID STATE -U-
AUTHOR-(03)-FINKELSHTEYN, YE.I., KOZLOV, E.I., SAMOKHVALOV, G.I.
COUNTRY OF INFO--USSR
SOURCE--KINET. KATAL. 1970, 11(1), 71-4
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--VITAMIN, OXIDATION, SPECTROPHOTOMETRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1648 STEP NO--UR/0195/70/011/001/0071/0074
CIRC ACCESSION NO--AP0101703
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0101703

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETICS OF OXIDN. OF 1 MU THIN VITAMIN A ACETATE FILMS BY ATM. O AT 10, 10, AND 25DEGREES WAS STUDIED SPECTROPHOTOMETRICALLY. THE SOLID STATE OXIDN. PROCEEDS FASTER THAN OXIDN. IN THE LIQ. PHASE. FREE RADICAL SCAVANGERS INHIBIT THE OXIDN. ACTIVATION ENERGY OF THE REACTION IS 28 KCAL-MOLE. THE OXIDN. IS LIMITED BY MOL. MOBILITY IN THE SOLID STATE. FACILITY: VSES. NAUCH. ISSLED. VITAM. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 439.293.011.23

FINKEL'SHTEYN, YE. YA. [Institute Of Electronics And Computing Techniques, AS, Latvian SSR]

"Calculation Of Diffusion Current Of A Semiconductor Diode With A Finite Base"

Izv. Akademii Nauk Latvyskiy SSR: Seriya fizicheskikh i tekhnicheskikh nauk
(Bulletin Of The Academy Of Sciences, Latvian SSR: Physics And Technical
Sciences Series), No. 4, 1972, pp 15-24

Abstract: The diffusion current of p-n junctions with the three-dimensional structure taken into account can be calculated in the case of cylindrical symmetrical structures if the function $f(z)$ of the distribution of carriers at the surface adjacent to the emitting contact is known. The present paper considers a method of calculating the currents of such semiconductor structures without preliminary location of the function $f(z)$, and, using a method developed in the paper, the dependences are calculated of the diffusion diode with a limited base on the magnitude of the recombination rates at the free surface of the base and at the contact, and on the diffusion length of the charge carriers. The specific steps necessary for calculation of the diffusion currents of a diode of a particular structure are listed. The results of a calculation of the diffusion currents of the diode in question with various sets of parameters are presented in graphs and formulas. Received, 21 Dec 1971. 4 ref. 5 fig.

1/1

USSR

UDC: 621.372.542.29

EINKEL'SHTEYN, Ye. Z.

"Optimum Reception in the Case of Rapid Fading. (Limiting Cases)"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1971, vyp. 53, pp 38-47 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3D7)

Translation: Algorithms are defined for optimum receivers designed for operation in channels with slow, very fast and ultrafast fading. It is shown that under conditions of this type, the filters used for optimum processing have constant parameters and are realized fairly simply. The general algorithm of a receiver which is optimum in the case of rapid fading implies as special cases the conventional methods of optimum reception for channels with slow fading and channels with constant parameters. Bibliography of seven titles. N. S.

1/1

USSR

UDC: 621.396.62

FINKEL'SHTEYN, Ye. Z., Member of the Scientific and Technical Society of
Radio Engineering, Electronics and Communications imeni A. S. Popov

"Optimum Reception in Communications Channels With Rapidly Changing Parameters. II"

Moscow, Radiotekhnika, Vol 27, No 8, Aug 72, pp 17-23

Abstract: In the first part of this paper ("Radiotekhnika, Vol 27, No 2, 1972) the author found algorithms for optimum operation of receivers in communications channels with rapid overall fading. The results of the first part are now used to determine the probability of errors in the case of optimum reception in a channel with fast Rayleigh fading when the system has an active pause with signals which are orthogonal in the amplified sense, as well as equiprobable and of identical energy. In the presence of slow fading, such systems are known to be the most resistant to interference of all systems with an active pause. In calculating interference immunity, the author considers the case where orthogonality in the amplified sense is retained in the presence of fast fading. Curves are presented for interference immunity, and the results are analyzed.

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USSR

UDC: 51

FINKEL'SHTEYN, Yu. Yu.

"Unilateral Best Approximations and Continued Fractions"

Tr. 4-y Zimm. shkoly po mat. programir. i smezh. voprosam, 1971, vyp. 2
(Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 2), Moscow, 1971, pp 197-209 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V428)

Translation: Let α be a real number, x, y be whole numbers, $x \geq 1$. The rational fraction y/x is called the best approximation (of second kind) of the number α if the condition

$$|\alpha x - y| = \|\alpha x\| < \min_{t=1, 2, \dots, x-1} \|\alpha t\|,$$

where $\|\beta\|$ designates the distance from β to the closest whole number. It is known that the problem of finding the best approximations in the given sense reduces to calculating suitable fractions for the following regular continuous fraction into which the number α is resolved:

$$\alpha = q_0 + \frac{1}{q_1 + \frac{1}{q_2 + \dots}}$$

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USSR

FINKEL'SHTEYN, Yu. Yu., Tr. 4-y Zimm. shkoly po mat. programir. i smesh. vopr., 1971, vyp. 2, Moscow, 1971, pp 197-209

Definition 1". The rational fraction y/x ($x \geq 1$) is called the best approximation from above of number α if the condition

$$y - \alpha = (1 - \{\alpha x\}) < \min_{t=1,2,\dots,x-1} \{1 - \{\alpha t\}\},$$

where $\{\beta\}$ denotes the fractional part of the number β .

Theorem 1". A sequence of rational fractions -- the best approximations from above of the number α (arranged in order of increasing denominators) -- coincides with the series of proper fractions (arranged in order of increasing denominators) for the following reduced regular continued fraction into which the number α is resolved:

$$\alpha = q_0 + \frac{1}{q_1 + \frac{1}{q_2 + \dots}}$$

A definition 1' is also given (corresponding to definition 1") for the best approximations from below, and a theorem 1' is proved (similar to theorem 1").

The author cites works by Moebius (who was the first to consider regular continued fractions), Zurlé (who studied their properties in detail), Ergun and Niven (who studied the properties of unilateral approximations in connection with the resolution of numbers into regular fractions). In

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USSR

FINKEL'SHTEYN, Yu. Yu., Tr. 4-y Zimm. shkoly po mat. programir. i smezh. vopr., 1971, vyp. 2, Moscow, 1971, pp 197-209

this article the derivation of unilateral best approximations is related for the first time to the resolution of numbers into reduced regular continued fractions (theorem 1" for approximations from above), or into continued fractions which differ insignificantly from reduced regular continued fractions (theorem 1' for approximations from below). The content of the paper has a direct bearing on the subject of whole-number linear programming. This problem has been dealt with in a paper by L. I. Aruin (see abstract 6V429). One of the results of Aruin's paper has been investigated independently by Rubin (RZh-Mat, 1971, 6V526). Bibliography of 9 titles. Author's abstract.

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USSR

Materials UDC 621.059.5

VOTINOV, S. N., LOSEV, N. P., PROKHOROV, V. I., SAMSONOV, B. V., TSYKANOV, V. A.,
FIN'KO, A. G., Melekess

"Estimate of Long Term Strength of Structural Materials in Reactor"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 61-64.

Abstract: Results are presented, produced in testing of tubular specimens of a number of structural materials under conditions of bombardment in a nuclear reactor. Two hundred hour tests performed with a flux of $2.5 \cdot 10^{12} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ fast neutrons and $6 \cdot 10^{13} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ thermal neutrons showed that the time to rupture for tubing of steels Types OKh16N15M5B, OKh16N15M5BR and Kh18N10T at 650°C decreases in comparison to the time to rupture without bombardment by not over 3-10 times. The deformation at rupture is approximately 1.5 times less than for specimens not bombarded. No changes in durability or ductility of copper and copper with chromium were observed in the reactor at 700°C .

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USSR

UDC 622.039.521:621.039.55

IOVNOVICH, M. L., and FIKS, M. M.

"Accumulation of Multicharge Ions in Bunched Relativistic Electrons"

Moscow, Atomnaya energiya, Vol 29, No 6, Dec 70, pp 429-433

Abstract: The authors state that intensive development of the method of collective ion acceleration proposed by V. I. Veksler et al (Atomnaya energiya, 24, 1968, p 317) is now going on. The basis of this method is the possibility of obtaining stable electron-ion bunching. Two-component bunching requires the formation of a thin ring of relativistic electrons in the external magnetic field and the consequent accumulation of ions. This article considers the process of accumulation of multicharge ions of heavy atoms in such a ring, discussing the accumulation of monatomic gas ions in the relativistic electron bunching, electron losses occurring with the accumulation of ions, and electron losses due to single collisions and multiple dispersion. Curves are plotted for the accumulation of xenon in the electron bunching as a function of time.

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USSR

UDC 615.281:547.793.2(Furazolidonum).015.46

YEFREMOVA, YU. M., KIVMAN, G. YA., and FINN, G. R., Chair of Microbiology,
Volgograd Medical Institute

"The Effect of Furazolidone on Some Aspects of Immunity"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 210-213

Abstract: In rabbits previously immunized with killed typhoid bacteria, furazolidone given in daily enteral doses of 7 mg per kg body weight reduces neither the complement and agglutinin titers nor the bactericidal activity of blood serum. In mice given identical doses of furazolidone for two days and then inoculated with an intraperitoneal LD₅₀ of typhoid fever bacteria, phagocytosis and resistance are considerably increased, yielding a higher survival rate: 78% as compared with 58% in the controls. It is suggested that this immunity-promoting effect of furazolidone may find practical application.

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Rare Metals

USSR

UDC 669.85/.86.051

FINOCENOV, A. D., and SEMENKOVICH, S. A.

"Ionization Potentials of Rare Earth Elements"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 28-47 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G161)

Translation: A review of literature and theoretical calculations of the ionization energy of rare earth metals up to the 3-valent state for the utilization of data during thermodynamic calculations is presented. 3 ill., 5 tables, 84 bibl. entries.

A. Tseydler

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FINOGENOV, A.M.

JPRS 51517
15 NOV 70

- 127 -

The investigations were made using 129 subjects; 67 of these were confined in closed spaces from 3 to 70 days, 39 were in temperature chambers with an increased temperature and humidity for 6-72 hours, and 23, outfitted with special suits, for a period of two to eight hours, performed different kinds of work in the pressure chamber with a rarefaction of the surrounding air corresponding to an altitude of 4-37 km (I. I. Akulichev, et al.; D. G. Maksimov, et al.). We registered the ECG and a number of other medical indices using on-board and clinical instrumentation. In conducting the investigations we compared the electrodes used in flights of the "Vostok," "Voskhod," and "Soyuz" ships (N. A. Agadzhanyan, et al.; P. V. Kozlov, et al.; L. I. Kharin, et al.; A. G. Zverev, et al.), electrodes developed by different foreign firms, including those used in the "Gemini" and "Apollo" ships (Gardner and Baker; Wetman, et al.), and 19 modifications of electrodes created in the course of this study. In all subjects not less than two to five times a day we checked interelectrode resistance for a d-c current, and in most cases also determined the interelectrode

resistance. In conducting routine medical monitoring of the condition of a human subject confined in closed ecological systems under ground conditions or during flight the methods which have been broadcast recognition are: electrocardiography, pneumography and monitoring of body temperature (O. G. Gerasimov, et al.; V. G. Velezov, et al.). Pervyye Kosmicheskiye Polety Cheloveka (First manned space flights); Wetman, et al.). Methodological difficulties arise most frequently when registering the ECG because prolonged contact of the electrodes with the body causes an irritation of the skin up to appearance of ulceration. Attempts to replace monitoring of cardiac activity by the registration of bioelectric activity by some other methods (using piezoelectric, mechanical or capacitance effects) for the time being have been unsuccessful (Filimov and Halvorson; Wetman, et al.; R. N. Bayevskiy).

Article by D. G. Maksimov, V. P. Pchel'nyy, I. A. Smolov, and A. M. Finozenov, Kosmicheskaya Biologiya i Meditsina, Russian version of Space Science, October 1972, pp. 79-84, submitted for publication 12 July 1971

RESEARCH MONITORING OF HUMAN CARDIAC ELECTRICAL ACTIVITY DURING GROUND EXERCISES AND IN SPACE FLIGHT

UDC 612.172.4-09:629.78

USSR

UDC 621.374

PLEKHANOV, S. P., FINOGENOV, B. S., MEDVEDEV, N. N., PLEKHANOV, L. P.

"A Square Pulse Shaper Based on Integrated Circuitry"

Moscow, Otkryitya, izobreteinya, promyshlennyye obraztsy, tovarnyye znaki,
No 2, Jan 71, Author's Certificate No 290435, division H, filed 21 Aug 67,
published 22 Dec 70, p 157

Translation: This Author's Certificate introduces a square pulse shaper based on integrated circuits which are made up of individual cells in the form of crystals containing two transistors with common collector. As a distinguishing feature of the patent, the device is designed to shape pulses with a greater duration than that of pulses produced when the cells are connected in series. The shaper is made as a minimum on four cells, the input signal being sent simultaneously to the supply lead of the third cell and to one of the inputs of the first cell. The output of the first cell is connected to one of the inputs of the second cell. The collectors of the transistors in the second cell are connected directly to the supply source, and the emitters are connected to one of the inputs of the third cell, the output of this cell being connected simultaneously to the two inputs of the fourth cell.

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1/2 032 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CHARACTERISTICS OF THE SCATTER OF MECHANICAL PROPERTY DATA FOR
PLASTICS AT VARIOUS TEMPERATURES -U-
AUTHOR-(03)-FINOGENOV, G.N., PANSIN, B.I., CHERENINA, M.K.
COUNTRY OF INFO--USSR
SOURCE--MEKH. POLIM. 1970, 6(1), 29-34
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--PLASTIC MECHANICAL PROPERTY, TENSILE STRENGTH, IMPACT
STRENGTH, GLASS CLOTH, POLYMETHYL METHACRYLATE, LAMINATED STRUCTURE,
THERMAL EFFECT, LOW TEMPERATURE EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1896 STEP NO--UR/0374/70/006/001/0029/0034
CIRC ACCESSION NO--AP0112876
UNCLASSIFIED

ABSTRACT/EXTRACT--TENSILE STRENGTH AT BREAK AND FLEXURAL AND TENSILE CLOTH LAMINATES AND POLY(METHACRYLATE) WAS ANALYZED STATISTICALLY. THE SCATTER INCREASES AS THE TESTING TEMP. IS DECREASED FROM 0DEGREES TO MINUS 100DEGREES AND IT REMAINS CONST. OR IS SLIGHTLY DECREASED IN THE RANGE FROM 0DEGREES TO PLUS 200DEGREES.

UNCLASSIFIED

USSR

Materials UDC 621.039.15

VOTINOV, S. N., LOSEV, N. P., PROKHOROV, V. I., SAMSONOV, B. V., TSYKANOV, V. A.,
FIN'KO, A. G., Melekess

"Estimate of Long Term Strength of Structural Materials in Reactor"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 61-64.

Abstract: Results are presented, produced in testing of tubular specimens of a number of structural materials under conditions of bombardment in a nuclear reactor. Two hundred hour tests performed with a flux of $2.5 \cdot 10^{12} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ fast neutrons and $6 \cdot 10^{13} \text{ cm}^{-2} \cdot \text{sec}^{-1}$ thermal neutrons showed that the time to rupture for tubing of steels Types OKh16N15M5B, OKh16N15M5BR and Kh18N10T at 650°C decreases in comparison to the time to rupture without bombardment by not over 3-10 times. The deformation at rupture is approximately 1.5 times less than for specimens not bombarded. No changes in durability or ductility of copper and copper with chromium were observed in the reactor at 700°C .

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USSR

UDC 622.039.521:621.039.55

IOVNOVICH, M. L., and FIKS, M. M.

"Accumulation of Multicharge Ions in Bunched Relativistic Electrons"

Moscow, *Atomnaya energiya*, Vol 29, No 6, Dec 70, pp 429-433

Abstract: The authors state that intensive development of the method of collective ion acceleration proposed by V. I. Veksler et al (*Atomnaya energiya*, 24, 1968, p 317) is now going on. The basis of this method is the possibility of obtaining stable electron-ion bunching. Two-component bunching requires the formation of a thin ring of relativistic electrons in the external magnetic field and the consequent accumulation of ions. This article considers the process of accumulation of multicharge ions of heavy atoms in such a ring, discussing the accumulation of monatomic gas ions in the relativistic electron bunching, electron losses occurring with the accumulation of ions, and electron losses due to single collisions and multiple dispersion. Curves are plotted for the accumulation of xenon in the electron bunching as a function of time.

1/1

- 20 -

USSR

UDC 615.281:547.793.2(Furazolidonum).015.46

YEFREMOVA, YU. M., KIVMAN, G. YA., and FINN, G. R., Chair of Microbiology,
Volgograd Medical Institute

"The Effect of Furazolidone on Some Aspects of Immunity"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 210-213

Abstract: In rabbits previously immunized with killed typhoid bacteria, furazolidone given in daily enteral doses of 7 mg per kg body weight reduces neither the complement and agglutinin titers nor the bactericidal activity of blood serum. In mice given identical doses of furazolidone for two days and then inoculated with an intraperitoneal LD₅₀ of typhoid fever bacteria, phagocytosis and resistance are considerably increased, yielding a higher survival rate: 78% as compared with 58% in the controls. It is suggested that this immunity-promoting effect of furazolidone may find practical application.

1/1

Rare Metals

UDC 669.85/.86.051

USSR

FINOGENOV, A. D., and SEMENKOVICH, S. A.

"Ionization Potentials of Rare Earth Elements"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev,
"Naukova Dumka", 1970, pp 28-47 (from RZh-Metallurgiya, No 11, Nov 70,
Abstract No 11G161)

Translation: A review of literature and theoretical calculations of the
ionization energy of rare earth metals up to the 3-valent state for the
utilization of data during thermodynamic calculations is presented. 3 ill.,
5 tables, 84 bibl. entries.

A. Tsnyder

FINOGENOV, A.M.

SR5 51517
15 Nov 70

- 127 -

The investigations were made using 129 subjects; 67 of these were confined in closed spaces from 3 to 70 days, 39 were in temperature chambers at an increased temperature and humidity for 4-72 hours, and 23, outfitted with special suits, for a period of two to eight hours performed different kinds of work in the pressure chamber with a rarefaction of the surrounding air corresponding to an altitude of 4-37 km (L. T. Akulichev, et al.; D. G. Nasedinov, et al.). We registered the ECG and a number of other medical indices using on-board and clinical instrumentation. In conducting the investigations we compared the electrodes used in flights of the "Vostok," "Voskhod," and "Soyuz" ships (N. A. Agadzhanyan, et al.; P. V. Komichuk, et al.; I. I. Kikurin, et al.; A. G. Zerenin, et al.), electrodes developed by different foreign firms, including those used in the "Gemini" and "Apollo" ships (Geddes and Baker; Welman, et al.), and 19 modifications of electrodes created in the course of this study. In all subjects not less than two to five times a day we checked interelectrode resistance for a d-c current, and in most cases also determined the interelectrode

in conducting routine medical monitoring of the condition of a human subject confined in closed ecological systems under ground conditions or during flight the methods which have been proposed: registration of electrocardiography, pneumography and monitoring of body temperature (O. G. Garenko; T. V. Nasedinov, et al.; P. V. Komichuk; P. V. Chelovskiy (first named Space Flight); Welman, et al.). Methodological difficulties arise more frequently when registering the ECG because prolonged contact of the electrodes with the body causes an irritation of the skin up to appearance of ulceration. Attempts to replace monitoring of cardiac activity by the registry of bioelectric activity by some other methods (using electromagnetism, mechanical or capacitance effects) for the time being have been unsuccessful (Plesner and Halvorson; Welman, et al.; R. M. Bayevskiy).

Article by D. G. Nasedinov, et al., Meditsina i biologiya v kosmose, Vol. 6, No. 5, September-October 1972, pp. 79-84, submitted for publication 12 July 1971

PROLONGED MONITORING OF HUMAN CARDIAC BIOELECTRIC ACTIVITY DURING GROUND EXPERIMENTS AND IN SPACE FLIGHT
UDC 612.172.4-06:629.78

11

USSR

UDC 621.374

PLEKHANOV, S. P., FINOGENOV, B. S., MEDVEDEV, N. N., PLEKHANOV, L. P.

"A Square Pulse Shaper Based on Integrated Circuitry"

Moscow, Otkryitya, izobreteinya, promyshlennyye obraztsy, tovarnyye znaki,
No 2, Jan 71, Author's Certificate No 290435, division H, filed 21 Aug 67,
published 22 Dec 70, p 157

Translation: This Author's Certificate introduces a square pulse shaper based on integrated circuits which are made up of individual cells in the form of crystals containing two transistors with common collector. As a distinguishing feature of the patent, the device is designed to shape pulses with a greater duration than that of pulses produced when the cells are connected in series. The shaper is made as a minimum on four cells, the input signal being sent simultaneously to the supply lead of the third cell and to one of the inputs of the first cell. The output of the first cell is connected to one of the inputs of the second cell. The collectors of the transistors in the second cell are connected directly to the supply source, and the emitters are connected to one of the inputs of the third cell, the output of this cell being connected simultaneously to the two inputs of the fourth cell.

1/1

1/2 032 UNCLASSIFIED PROCESSING DATE--090C170
TITLE--CHARACTERISTICS OF THE SCATTER OF MECHANICAL PROPERTY DATA FOR
PLASTICS AT VARIOUS TEMPERATURES --U-
AUTHOR--(03)--FINDGENOV, G.N., PANSIN, B.I., CHERENINA, M.K.
COUNTRY OF INFO--USSR
SOURCE--MEKH. POLIM. 1970, 6(1), 29-34
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC MECHANICAL PROPERTY, TENSILE STRENGTH, IMPACT
STRENGTH, GLASS CLOTH, POLYMETHYL METHACRYLATE, LAMINATED STRUCTURE,
THERMAL EFFECT, LOW TEMPERATURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1896

STEP NO--UR/0374/70/006/001/0029/0034

AP0112876

2/2 032

CIRC ACCESSION NO--AP0112876

ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. THE SCATTER OF EXPTL. DETNS. OF TENSILE STRENGTH AT BREAK AND FLEXURAL AND IMPACT STRENGTH OF GLASS CLOTH LAMINATES AND POLY(METHACRYLATE) WAS ANALYZED STATISTICALLY. THE SCATTER INCREASES AS THE TESTING TEMP. IS DECREASED FROM 0DEGREES TO MINUS 100DEGREES AND IT REMAINS CONST. OR IS SLIGHTLY DECREASED IN THE RANGE FROM 0DEGREES TO PLUS 200DEGREES.

USSR

UDC 621.384.6
 BASIN, L.A., BOBYKIN, B.V., DAVYDOVSKIY, V.YA., KEL'DIN, V.M., FINGENOV, P.A.,
 YAKUSHEV, YE. M. [In-t yadern. fiz. AN KazSSR--Institute of Nuclear Physics, AS,
 Kazakh SSR]

"Magnetic Prism"

USSR Author's Certificate No 255429, filed 2 Mar 68, published 31 Mar 70 (from
 RZh--Elektronika i yeye prizeneniye, No 11, November 1970, Abstract No 11A268P)

Translation: The magnetic prism which is patented, consisting of an electromagnetic
 with extended pole shoes of parallelepiped form, differs in the fact that with the
 object of reducing the inhomogeneity of a two-dimensional magnetic field and
 suppressing the dispersal of the fields, the prism contains another such electro-
 magnet located above the first, while the winding of both electromagnets is connect-
 ed in opposition, and a gasket [prokladka] is mounted between the poles of the
 magnet and the yoke.

1/1

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1/3 018 UNCLASSIFIED PROCESSING DATE--2306170
TITLE--SYNTHESIS OF POLY, GLYCL, SERYL, HYDROXYPROLINE AND
POLY, GLYCYL, SERYL, PROLINE POLYPEPTIDES USING PENTACHLOROPHENYL ESTERS
AUTHOR--(04)--SHIBNEV, V.A., KHALIKOV, SH.KH., FINOGENOVA, M.P., POROSHIN,
K.T.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 399-404

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL SYNTHESIS, PEPTIDE, POLYMER, PROLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0816

STEP NO--UR/0002/70/000/002/0399/0404

CIRC ACCESSION NO--AP0119722

UNCLASSIFIED

273 018

CIRC ACCESSION NO--AP0119722

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. Z EQUALS CARBOBENZOXY THROUGHOUT. TO 5 G SERINE IN 25 ML SN NAOH WAS ADDED AT NEGATIVE 5 DEGREES OVER 1 HR 22.5 ML 2N NAOH AND 11.5 G Z, GLY, CL AT PH 8-9, AND THE MIXT. WARMED TO 5 DEGREES AND KEPT 40 MIN TO YIELD 48.5 PERCENT Z, GLY, SER (I), M. 98-101 DEGREES. Z, PRO IN ETOAC AT NEGATIVE 6 DEGREES WAS TREATED WITH DICYCLOHEXYLCARBODIIMIDE (DCC) AND C SUB6 CL SUB5 OH TO YIELD AFTER 1 DAY, FINALLY AT ROOM TEMP., Z, PRO, OC SUB6 CL SUB5, DIL, (ALPHA) PRIME 22 D NEGATIVE 40.3 DEGREES, WHICH IN ACOH TREATED WITH 40 PERCENT HBR IN ACOH AT NEGATIVE 20 DEGREES 0.5 HR GAVE PRO, OC SUB6 CL SUB5, M. 112-14 DEGREES, WHICH WITH DCC IN DMF CONVERTED I IN 1 DAY, FINALLY AT ROOM TEMP., INTO 67.5 PERCENT Z, GLY, SER, PRO, OC SUB6 CL SUB5, M. 112-14 DEGREES, WHICH WAS HYDROGENATED OVER PD IN MEOH, ETOH, HCL TO GLY, SER, PRO, OC SUB6 CL SUB5.HCL, M. 170 DEGREES; HBR IN MEND SUB2 IN 20 MIN SIMILARLY GAVE THE CORRESPONDING HBR SALT, M. 187-8 DEGREES. THE LATTER IN ME SUB2 SO WITH ET SUB3 N IN 7 DAYS IN A SEALED TUBE GAVE SOL. AND INSOL. PRODUCTS, IDENTIFIED AS POLY(GLY, SER, PRO), MOL. WT. UP TO 2500. Z, HYP IN THF WITH ISD, BUO SUB2 CCL AND ET SUB3 N, FOLLOWED BY C SUB6 CH SUB5 OH GAVE 89 PERCENT PENTACHLOROPHENYL ESTER, M. 162-4 DEGREES, WHICH WITH HBR IN MEND SUB2 AT NEGATIVE 5 DEGREES 20 MIN GAVE HYP, OC SUB6 CL SUB5.HBR (II.HBR), DECOMPD. 210 DEGREES.

UNCLASSIFIED

3/3 018

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119722

ABSTRACT/EXTRACT--I IN DMF WITH ET SUB3 N TREATED IN THE COLD WITH ISO,BUO
SUB2 CCL, FOLLOWED BY II, GAVE OVERNIGHT 42PERCENT Z, GLY, SER, HYP, OC SUB6
CL SUB5, M. 157-9DEGREES, WHICH IN CF SUB3 CO SUB2 H WITH HBR 0.5 HR
GAVE GLY, SER, HYP, OC SUB6 CL SUB5. HBR DECOMP. 178-80DEGREES, WHICH WITH
ET SUB3 N IN ME SUB2 SO 5 DAYS GAVE POLY(GLY, SER, HYP), MOL. WT. IS
SIMILAR TO 6000. FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

1/3 : 008 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF POLYPEPTIDES OF REGULAR STRUCTURE CONTAINING SERINE
AND GLUTAMIC ACID, AND MODELING NONPOLAR REGIONS OF THE COLLAGEN PROTEIN
AUTHOR--(04)-SHIBNEV, V.A., KHALIKOV, SH.KH., FINIGENOVA, M.P., POROSHIN,
K.T.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. KHIM. 1970, (9), 860-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PEPTIDE, CHEMICAL SYNTHESIS, AMINO ACID, COLLAGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0482

STEP NO--UR/0062/70/000/004/0880/0885

CIRC ACCESSION NO--AP0131119

UNCLASSIFIED

2/3 008 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0131119
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 5 G HYDROXYPROLINE IN
83PERCENT HCO SUB2 H WITH 20 ML AC SUB2 O AT 100DEGREES AND KEEPING THE
MIXT. 1.2 HR. FINALLY AT 300DEGREES

3/3 008

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131119

ABSTRACT/EXTRACT--THIS IN ME SUB2 SO WITH ET SUB3 IN 10 DAYS GAVE 90PERCENT POLY(TRIPEPTIDE) (OF HYDROXYPROLYLGLUTAMYL (GAMMA BENZYL ESTER) GLYCINE), A DARK SOLID, (ALPHA) SUBD PRIME27 MINUS 20.5DEGREES, MOL. WT. SIMILAR TO 85000. THIS HYDROGENATED OVER PD IN MEOH TO POLY(HYP GLU GLY), WHOSE IR SPECTRUM INDICATED THE COLLAGEN TYPE STRUCTURE. TREATING CARBOBENZOXYSERINE WITH DCC IN DMF, FOLLOWED BY GLYCINE 2,4,6 TRICHLOROPHENYL ESTER HBR AND ET SUB3 IN GAVE IN 24 HR IN THE COLD 80.5PERCENT 2,4,6 TRICHLOROPHENYL ESTER OF CARBOBENZOXYSERYLGLYCINE, M. 124-6DEGREES, WHICH IN MEOH WAS HYDROGENATED OVER PD TO THE 2,4,6 TRICHLOROPHENYL ESTER OF SERYLGLYCINE, ISOLATED AS HCL SALT, DECOMPD. 165-70DEGREES. SIMILARLY WERE OBTAINED: 80PERCENT 2,4,6 TRICHLOROPHENYL ESTER OF CARBOBENZOXY HYDROXYPROLYLSERYLGLYCINE, M. 153-40DEGREES; 2,4,6 TRICHLOROPHENYL ESTER OF HYDROXYPROLYLSERYLGLYCINE HCL, M. 180DEGREES; AND POLY (HYP SER-GLY) (ALPHA) SUBD PRIME27 MINUS 15.40DEGREES, WITH MOL. WT. 5500. FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED