

USSR

UDC 550.42

LI, L. V., and DATSENKO, V. M., Siberian Scientific-Research Institute of Geology, Geophysics and Mineral Raw Material, Krasnoyarsk

"Characteristics of Gold Distribution in Granitoids of Proterozoic Intrusions in the South-Yenisey Ridge"

Moscow, Geokhimiya, No 6, Jun 73, pp 848-855

Abstract: Newly obtained results of the gold content in metasomatic and palingenic granitoids of the region determined by the radioactivation method are reported. It has been shown that the more basic and melanocratic rocks of the endocontact and central zones of the Tarask and Posolnensk metasomatic granitoid massifs are slightly enriched in gold. The absence of significant differences in the gold content in palingenic granites of different phases of the Nizhnokansk massif is accounted for by the inert behavior of gold during the differentiation of granite magma. The outlined tendency towards a decrease in the concentration of gold in granitoids of intrusions of the later formations may be connected with peculiarities of the substrate over which the granite melt has been formed and with the facial conditions of its crystallization.

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UDC: 8.74

DATSENKO, V. P., ZAYTSEV, N. G.

"General Characteristic of Problems of Data Transmission in Automated Systems of Enterprise Management"

Kibernet. i vychisl. tekhn. Resp. mezhved. sb. (Cybernetics and Computer Technology. Republic Interdepartmental Collection), 1971, vyp. 12, pp 54-64 (from RZh-Kibernetika, No 5, May 73, abstract No 5V774 by the authors)

Translation: The paper defines the structure, makeup of equipment, operating criteria and basic factors on which a data transmission system depends. A diagram is presented for structural classification of the elements of a data transmission system.

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1/2 019

UNCLASSIFIED

TITLE--TRANS STERNAL PHLEBOGRAPHY AS AN INDEX OF REGRESSION OF METASTASES
INTO PARASTERNAL LYMPH NODES IN RADIUM THERAPY OF MILK DUCT CARCINOMA

AUTHOR--(02)--KRYMOVA, K.B., CATSENKO, V.S.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 6, PP 29-34

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--REPRODUCTIVE SYSTEM, CARCINOMA, METASTASIS, LYMPHOID TISSUE,
RADIOTHERAPY, RADIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1021

STEP NO--UR/0241/70/015/006/0029/0034

CIRC ACCESSION NO--AP0130056

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130056

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. DATA OF TRANS STERNAL PHLEBOGRAPHY WERE STUDIED IN 151 PATIENTS SUFFERING FROM MILK DUCT CARCINOMA. IN 31 PATIENTS THE METHOD WAS EMPLOYED BEFORE AND AFTER IRRADIATION OF THE PARASTERNAL SPACE. TRANS STERNAL PHLEBOGRAPHY IS THE MOST EFFECTIVE METHOD WHICH MAKES IT POSSIBLE TO DIAGNOSE METASTASES INTO PARASTERNAL LYMPH NODES. THE AUTHORS OBSERVED A RELATION BETWEEN THE INCIDENCE OF METASTASES AND STAGE AND LOCALIZATION CARCINOMA INTO PARASTERNAL LYMPH NODES ARE DEFECTS OF FILLING ON THE CONTOUR OF THE VEIN, BLOCK OR "STUMP" OF THE VEIN, REDUCTION OF THE CALIBER AND CONVOLUTION OF VEINS, AS WELL AS THE DEVELOPMENT OF COLLATERALS. PHLEBOGRAPHY PERFORMED BEFORE AND AFTER IRRADIATION OF METASTASES INTO PARASTERNAL LYMPH NODES ENABLES TO EVALUATE THE EFFECTIVENESS OF RADIUM TREATMENT.
FACILITY: KAFEDRA KLINICHESKUY RADILOGII TSENTRAL'NOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY MZ SSSR, MOSKVA.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ROLE OF STRESSES IN ACCELERATING THE PENETRATION OF MOLTEN METALS
INTO SOLID METALS -U-
AUTHOR--CHAYEVSKIY, M.I., TOROPOVSKAYA, I.N., POPOVICH, V.V., DATSISHIN,
~~AM~~
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6), 692-698
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--LIQUID METAL, ZINC, COPPER, BISMUTH, LITHIUM, IRON, METAL
STRESS, INTERNAL STRESS, METAL SURFACE IMPREANATION, PLASTIC DEFORMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0625 STEP NO--UR/0369/70/005/006/0692/0698
CIRC ACCESSION NO--AP0105604
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105604

ABSTRACT/EXTRACT--(J) GP-0- ABSTRACT. THE EFFECT OF APPLIED STRESSES ON THE RATE AT WHICH MOLTEN METAL PENETRATES SOLID METAL DEPENDS ON THE INTERACTION OF THE METALS WHICH IN TURN IS DETD. BY THEIR STRUCTURE. REGULAR DIFFUSION OF MOLTEN INTO SOLID METALS IS LEAST AFFECTED BY STRESSES OF PLASTIC DEFORMATION. IT FOLLOWS THAT ACCELERATION OF DIFFUSION IS LEAST WHEN THE 2 METALS FORM SOLID SOLNS. OR INTERMETALLIC COMPS. WHEN THIS IS NOT THE CASE APPLIED STRESSES WILL ENHANCE DIFFUSION. THESE CONTENTIONS WERE TESTED BY EXPTS. ON THE DIFFUSION OF MOLTEN ZN INTO CU, MOLTEN BI INTO CU, AND MOLTEN LI INTO ARMCO FE.

UNCLASSIFIED

Acc. Nr:

AP0047635

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR0057

104146e Adsorption of hydrogen on the [110] and [111] faces of silicon. Datsiev, M. I.; Belyakov, Yu. I. (Leningrad Gos. Univ., Leningrad, USSR). Zh. Tekh. Fiz. 1970, 40(1), 229-33 (Russ). To study the adsorption of mol. H on Si, the direct flash method in an impulse mass spectrograph was used. Si single crystals treated with a mixt. of $5\text{HNO}_3 + 3\text{HF} + 3\text{AcOH} + 0.02\text{Br}$ and rinsed with distd. H_2O were degassed in a vacuum chamber at $1-2 \times 10^{-9}$ torr. By anal. of the desorbed gas, the most efficient method for degassing and cleaning of crystal surfaces was found: starting from 5×10^{-7} torr, the adsorbent was held at a temp. 400°K higher than the temp. of the vacuum chamber and after reaching 2×10^{-9} torr, the sample temp. was further increased by 550°K so that its abs. value was 1550°K . The approx. residual gas compn. was 70% H_2 , 20% CO , and 10% $\text{CO}_2\text{-H}_2\text{O}$. The pressure of Pd purified H_2 in the adsorption chamber was $2 \times 10^{-9} - 1 \times 10^{-6}$ torr. Desorption curves of H_2 on [111] faces, relating pressure difference with time reach 2 max., which attest to 2 stages of adsorption β_1 and β_2 . On the [110] face, only 1 max. was detected. The amt. of the more strongly bound hydrogen (β_2) was 1.3×10^{14} mol./ cm^2 , which corresponds to the surface coverage value of 0.3. Both values do not depend on the compn. of the adsorbate. Approx. 5% of the H is adsorbed as SiH_2 and SiH_3 .

M. Soucek

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REEL/FRA
19791207

18nt

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DIAPHRAGM DENSIMETER -U-
AUTHOR-(03)-GUGLYA, V.G., GOLDEN, A.D., DATSKEVICH, A.A.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(2), 240-2
DATE PUBLISHED-----70
SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS
TOPIC TAGS--MANOMETER, PRESSURE MEASUREMENT, PRESSURE MEASURING INSTRUMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1427 STEP NO--UR/0032/70/036/002/0240/0242
CIRC ACCESSION NO--AP0112421

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112421

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. CONSISTING OF A DETECTOR AND MANOMETER IS SUITABLE FOR D., MOL. WT., AND GAS COMPN. DETNS. THE MANOMETER HAS A "GETINAKS" DIAPHRAGM CAPABLE OF MEASURING PRESSURE DIFFERENTIALS OF 0.01-0.1 MM H SUB2 O AS ELEC. OUTPUT SIGNALS WITH A SENSITIVITY OF 15 UV-MM H SUB2 O AT A TIME DELAY OF 0.1-0.2 SEC. THE DETECTOR (VOL. SIMILAR TO 0.1 CM PRIME3) COMPARES SMALL STREAMS OF SAMPLE GAS, WITH A HE OR H CARRIER GAS. A LINEAR RELATION WAS OBSD. BETWEEN CCL SUB4, CHCL SUB3, C SUB2 H SUB4, AND C SUB6 H SUB6 SAMPLE WTS. AND DETECTOR OUTPUTS. GAS ANALYSES MADE WITH A KATHAROMETER AND THE DENSIMETER DESCRIBED WERE WITHIN 2.5PERCENT. FACILITY: MOSK. INST. SKALI SPLAVOV, MOSCOW. USSR.

USSR

UDC: 669.25:539.67

BAR'YAKHTAR, F. G., DATSKO, O. I., KUSHNEREV, V. I., PILIPENKO, N. P.,
POGORELOV, V. A. and YABLUKOV, B. G., Donetsk Physicotechnical Institute.

"Study of the Internal Friction of Cobalt Near 300°C"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 32, No 5, Nov 71,
pp 1101-1104

Abstract: Earlier research indicates the 300°C region as the position of low-frequency maximum internal friction for cobalt. Described here is an attempt to explain its nature and properties. The experiment involved machined specimens of 99.98% pure Co measuring 3x40 mm and specimens additionally deformed by drawing (by 8%). The specimens were gradually annealed at 300, 600 and 900°C and cooled down to room temperature. The measurements included internal friction (150-350°C), oscillation frequency (7 cps) and maximal shearing strains ($2 \cdot 10^{-6}$). Interrupted anneal of the material appears to lower the maximum friction temperature position which is most pronounced at 900°C and particularly manifest on the drawn specimen. The relationship between the temperature position of maximum internal

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BAR'YAKHTAR, F. G., et al, Fizika metallov i metallovedeniye, Vol 32, No 5, Nov 71, pp 1101-1104

friction of Co, the thermomechanical treatment of the material and the conditions of polymorphous transformation indicate its close association with crystal lattice defects, i.e., the maximum internal friction of Co at 300°C is of deformational nature. It is most likely to be caused by the plastic deformation of the material, including polymorphous transformation of Co. (2 illustrations, 3 bibliographic references).

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USSR

UDC 615.916:546

DATSZENKO, I. I.

"Some Biochemical Changes in the Organism During Chronic Poisoning with Carbon Monoxide"

Gigiyena naselen. micts'. Resp. mizhvid. zb. (Hygiene of the Populated Areas. Republic Indepartmental Collection), 1972, vyp 11, pp 79-82 (from RZh--Farmakologiya. Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.671)

Translation: In investigating the effect of CO on the peroxidase activity and the total iron level in the blood of rats, they were subjected to inhalation poisoning for five hours a day each of CO in a concentration of 0.009-0.018 mg/liter for 1.5 months (first group); then for three months with a concentration of 0.03-0.04 mg/liter (second group) and in the subsequent one month, for a concentration of 0.08-0.1 mg/l (third group); guinea pigs were poisoned with CO in a concentration of 0.03-0.04 mg/liter for five hours a day each during a period of 1.5 months. The peroxidase activity of the blood of the rats in the first group was significantly improved, for rats of the second and third

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DATSZENKO, I. I., Gigiyena naselen. micts'. Resp. mizhvid. zb.,
1972, vyp 11, pp 79-82

group and the guinea pigs it was reduced. The amount of total
iron in the initial period of poisoning of the animals was high;
subsequently it was low.

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USSR

UDC 539.375

SAVRUK, M. P. and DATSYSHIN, A. P., Physicomechanical Institute, Academy of Sciences, Ukrainian SSR

"The Limit Equilibrium of a Plate Weakened by Two Arbitrarily Oriented Cracks"
Kiev, Prikladnaya Mekhanika, Vol 9, No 7, Jul 73, pp 49-56

Abstract: Consideration is given to an infinite elastic plane weakened by two arbitrarily oriented cracks of differing length. The edges of the cracks are being acted upon by arbitrary self-balancing loads. Under the assumption that the cracks are situated far from one another, the complex potentials are represented in the form of a series according to the powers of a small parameter. Coefficients of stress intensity are found in the form of corresponding expansions. Graphs are presented, which illustrate the interactions of the cracks in the case of uniaxial stretching of the plate. 5 figures. 7 references.

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UDC 539.375

SAVRUK, M. P., DATSYSHIN, A. P.

"The Limiting Equilibrium State of a Body Weakened by a System of Arbitrarily Oriented Cracks"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2 [Thermomechanical Methods of Rock Rupture, Part 2 -- Collection of Works], Kiev, Nauk Dumka Press, 1972, pp 97-102, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V600 by S. Ya. Yarema).

Translation: The planar problem from the theory of elasticity for an unlimited area containing N arbitrarily placed linear sections (cracks) is reduced to a system of N singular integral equations for functions characterizing the rupture of displacements along the lines of the cracks. A general solution of the integral equations and the coefficients of stress intensity at the tips of the cracks are produced as an expansion with respect to powers of a small parameter for the case of cracks located far from each other. The limiting equilibrium of an infinite plate weakened by a system of N arbitrarily oriented cracks is discussed. As an example, the limiting equilibrium of a plate with two arbitrarily oriented cracks subjected to biaxial extension at infinity is analyzed. In this case, a dia-
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UDC 539.375

SAVRUK, M. P., DATSYSHIN, A. P., Termomekh. Metody Razrusheniya Gorn. Porod.
Ch. 2, Kiev, Nauk Dumka Press, 1972, pp 97-102.

gram of limiting stresses is constructed.

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USSR

UDC 539.375

DATSYSHIN, A. P., SAVRUK, M. P.

"Limiting Equilibrium of a Half Plane with an Arbitrarily Oriented Crack"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2 [Thermomechanical Methods of Rock Rupture, Part 2 -- Collection of Works], Kiev, Nauk Dumka Press, 1972, pp 93-97, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V603 by S. Ya. Yarema).

Translation: A semi-infinite elastic plane containing a crack, the line of which forms angle α with the edge of the half plane, is studied. The sides of the crack are loaded with an arbitrary, self-balancing load. Assuming that distance d from the center of the crack to the edge of the half plane is greater than half the length of the crack a , the coefficients of stress intensity at the tip of the crack are written as a series with respect to powers of $\lambda = a/d$ with an accuracy to the value of λ^5 . The limiting equilibrium of the half plane with the arbitrarily oriented crack is determined. In the case of constant pressure on the side of a crack, graphs are presented of the dependence of rupture load on orientation of the crack with various values of λ , illustrating the interaction of the crack and boundary.

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1/2 014 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ACCURACY OF A DETERMINATION OF ATOM COORDINATES IN STRUCTURAL
NEUTRONOGRAPHY -U-
AUTHOR-(03)-DATT, I.D., RANNEV, N.V., OZEROV, R.P. D
COUNTRY OF INFO--USSR
SOURCE--KRISTALLEOGRAFIYA 1970, 15(1), 25-30
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--CRYSTAL LATTICE STRUCTURE, NEUTRON DIFFRACTION, FOURIER SERIES
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/0159 STEP NO--UR/0070/70/015/001/0025/0030
CIRC ACCESSION NO--AP0048451
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--A00048451

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULAS FOR DETG. THE ACCURACY OF AT. COORDINATES ON THE FOURIER MAPS OF NUCLEAR D. ARE GIVEN FOR NEUTRON STRUCTURAL ANAL., TAKING INTO ACCOUNT THE INTERRUPTION OF THE FOURIER SERIES. THESE FORMULAS ARE DISCUSSED FOR THE CASE OF SPHERICALLY SYM. ATOMS IN CRYSTALS WITH MONOCLINIC OR ORTHORHOMBIC SYMMETRY.
FACILITY: NAUCH.-ISSLED. FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 681.3.519.2

OTKHMEZURI, G. L., GOGIBERIDZE, A. Sh., GURULI, V. V., ZUBIASHVILI, Sh. M., SIRADZE, Sh. M., SIGUA, V. F., DATUASHVILI, A. N., Tbilisi Affiliate of the All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleev

"A Device for Determining the Mathematical Expectation of Random Processes"

Moscow, Otkrytiya, Izbreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 48, Dec 73, Author's Certificate No 409244, Division G, filed 4 May 72, published 30 Nov 73, pp 120-121

Translation: This Author's Certificate introduces a device for determining the mathematical expectation of random processes. The device contains a pulse generator, source of input information, an amplifier, diodes, a rectifier, and a shifter. The pulse generator is connected to a modulator directly and to the first input of an interrupter through an accumulator. The source of input information is connected to the modulator through a comparison circuit. The shifter is connected through a multiplier to the output of the device. As a distinguishing feature of the patent, the working precision of the device is improved by adding magnetic accumulator elements.

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OTKHMEZURI, G. L. et al., USSR Author's Certificate No 409244

The inputs of these accumulator elements are connected to the corresponding diodes, and the diode inputs are connected to the output of the interruptor. The output of the rectifier is connected to the shifter and to the comparison circuit. The modulator output is connected through the amplifier to a second input of the interruptor.

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USSR

UDC: 539.171.017

AZIMOV, S. A., DAUDOV, Z. Kh., KOCHETKOV, G. A., KRATENKO, Yu. P., LEV-KOVICH, S. G., Tashkent State University imeni V. I. Lenin

"Fluctuations of the Number of Particles, and Transition Effects in Electron-Photon Showers in Lead at Energies Greater Than 20 GeV"

Moscow, Izvestiya Akademii Nauk SSSR: Ser. Fizicheskaya, Vol 37, No 7, Jul 73, pp 1354-1355

Abstract: Experimental data are presented on fluctuations of the number of particles at depths of 1.5, 4, 11, 15, 19, and 23 radiation units in electromagnetic cascades at energies greater than 20 GeV for four energy intervals. The lead-brass transition curve is given for five brass layers located at a depth of 9.9 radiation units.

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USSR

UDC 612.58.019

DAUDOVA, G. M., and IPAT'EVA, N. V.

"The Effect of Environmental Temperature on the Spontaneous Warming of the Suslik on Awakening From Hibernation"

Leningrad, Fiziogicheskij Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 6, 1971, pp 893-896

Abstract: This article presents research on further exploration of the influence of the temperature factor on rates of organism warming as a whole, and by individual body areas and organs, particularly the heart and brain. Susliks were used, awakening at various environmental temperatures. Additionally, small negative temperatures were used at which, according to data in the literature, prolonged hibernation is possible. These were interrupted by brief spontaneous awakenings (and rewarming). The animals were divided into three groups. Hibernation temperatures were maintained of: Group I -- 10° ; II -- 1° ; and for III, -1 and -2° . On awakening the same temperatures were maintained. Results showed that all susliks experienced spontaneous warming on awakening, without any additional external warmth. Susliks from Group I took 60-90 minutes to warm themselves and awaken. For Group II, the process took 150-180 m. The third group took an average of 300 minutes, the initial phase being the slowest. In susliks emerging from hibernation, heart tem-

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DAUDOVA, G. M., and IPAT'EVA, N. V., *Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova*, Vol 57, No 6, 1971, pp 893-896

peratures rise sooner than those of the brain. Apparently heat generates in anterior zone muscles and, in initial phases, in adipose tissue. Heat, via blood, enters the heart, then anterior sections and brain.

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1/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--THE ACTIVITY OF THE ENZYMES OF GLUCONEGENESIS FROM THE LIVER OF THE
GROUND SQUIRREL CITELLUS SUSLICUS -U-

AUTHOR--(02)-DAUDOVA, G.M., USATENKO, M.S.

D

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 1,
PP 35-41

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, LIVER, GLUCOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1293

STEP NO--UR/0385/70/006/001/0035/0041

CIRC ACCESSION NO--AP0054181

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0054181

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HIGH ACTIVITY OF KEY ENZYMES OF GLUCONEOGENESIS PHOSPHOENOLPYRUVATE CARBOXYKINASE (PEPK ASE) AND GLUCOSE-6-PHOSPHATASE (G6PASE) HAS BEEN OBSERVED IN THE LIVER OF THE GROUND SQUIRRELS DURING ACTIVE PERIOD (JULY, AUGUST). AT THIS TIME OF YEAR, THE ACTIVITY OF PEPKASE OF THE SOLUBLE FRACTION WHICH IS LIMITING TO THE OVERALL RATE OF GLUCONEOGENESIS, WAS CONSIDERABLY LOWER THAN THE ACTIVITY OF THIS ENZYME IN MITOCHONDRIA ON THE ACTIVITY OF G6PASE OF THE EXTRACT (CORRESPONDINGLY 2.1, 15.9 AND 5.9 MUMALES-MIN-G OF WET WEIGHT OF THE LIVER AT 37DEGREES). JUST BEFORE HIBERNATION AND ESPECIALLY DURING THE LATTER, THE ACTIVITY OF PEPKASE IN MITOCHONDRIA DECREASED, WHEREAS THAT IN THE SOLUBLE FRACTION INCREASED. CHANGES IN THE ACTIVITY OF G6PASE WERE SIMILAR TO THOSE IN THE ACTIVITY OF PEPKASE OF THE SOLUBLE FRACTION, ALTHOUGH THEY WERE LESS SIGNIFICANT. THE INCREASE IN THE ACTIVITY OF G6PASE AND PEPKASE OF THE SOLUBLE FRACTION OF THE LIVER DURING HIBERNATION INDICATES THE INCREASED ROLE OF GLUCONEOGENESIS IN MAINTENANCE OF THE REQUIRED LEVEL OF GLYCAEMIA IN THE ORGANISM. 3-3.5 HOURS AFTER ARTIFICIAL AWAKENING THE ACTIVITY OF G6PASE AND PEPKASE IN THE FRACTIONS STUDIED WAS ESSENTIALLY THE SAME AS IN HIBERNATING ANIMALS. 24 HOURS AFTER ARTIFICIAL AWAKENING (ANIMALS REMAINED UNFED) ONLY THE INCREASE IN THE ACTIVITY OF PEPKASE IN BOTH LIVER FRACTIONS WAS OBSERVED.

UNCLASSIFIED

1/2 020 UNCLASSIFIED
TITLE--SECONDARY ELECTRON EMISSION ON REFLECTION FROM FISSION FRAGMENTS
AND ALPHA PARTICLES -U- PROCESSING DATE--16OCT70
AUTHOR--(02)-DAUKEYEV, D.K., LEBEDEV, S.YA.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970. 12(2), 655-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SECONDARY ELECTRON EMISSION, ELECTRON SPECTRUM, ANGULAR
DISTRIBUTION, ALPHA PARTICLE, FISSION PRODUCT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1244 STEP NO--UR/0181/70/012/002/0655/0656
CIRC ACCESSION NO--AP0115261
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115261

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

ABSTRACT. THE ENERGY SPECTRUM OF SECONDARY ELECTRONS AND THEIR ANGULAR DISTRIBUTION WERE RECORDED. FOR ALPHA PARTICLES, AS WELL AS FOR THE FISSION FRAGMENTS, THE COS OMEGA LAW IS WELL OBEYED.

UNCLASSIFIED

Refractory Materials

USSR

UDC 666.76:620.1

BLUVSHTEYN, M. N. (deceased), ZYKOVA, Z. K. (All-Union Institute of Refractories), ~~DAUKNIS, V. A.~~ PERAS, A. Ya., YURENAS, V. L., YANULYAVICIYUS, A. I. (Institute for Physical and Technical Problems of Power Engineering, Academy of Sciences Lithuanian SSR), and RABINOVICH, M. A. (Snigirevskiy Plant of Refractory Articles)

"Strength of Ultralight-Weight Refractories"

Moscow, Ogneupory, No 2, June 72, pp 43-47

Abstract: The Institute for Physical and Technical Problems, Academy of Sciences Lithuanian SSR has designed, built, and adapted for practical application an LV-1 set-up for testing the tensile, compressive, and bending strength of ultralight-weight refractories at temperatures up to 1200°C. A BV-662 inductance pickup is used for both measuring and recording the deformation values for the latter two types of stress tests. The test materials were ShLB-0,4 and ShLB-0,6 ultralight-weight refractory bricks. Curves are shown to illustrate the strength values of the bricks as a function of temperature and apparent density. There is only a slight variance in strength values up to 700-800°C. At 900°C there is a marked increase in strength for all types of load tests. At 1000-1100°C and higher

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BLUVSHTEYN, M. N., et al, Ogneupory, No 2, June 72, pp 43-47

the refractories begin to soften and change to viscoelastic state. The strength drops with an increase in temperature. (7 illustrations, 7 bibliographic references)

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USSR

UDC 666.764:539.374:536.49

DAURNIS, V.I., KAZAKYAVICHYUS, K.A., and YURENAS, V.L., Institute of Physical Technical Energy Problems: Academy of Sciences, Lithuanian SSR

"Role of Plastic Deformation in the Thermal Destruction of Refractory Materials"

Moscow, Ogneupory, No 6, 1971, pp 31-35

Abstract: Methods of quantitatively estimating the effect of plastic deformation on the heat-resistant qualities of refractory materials should be further explored. In this article, several methods are developed for making such estimates. The effect of plastic deformation on refractoriness can be considered an aspect of the theory of plasticity or on the basis of creep theory. Since the duration of thermal loading on refractory materials is usually large compared to short-term mechanical loading, on which the plasticity theory is based, it is best to use creep theory based on extended mechanical tests. The authors begin their analysis with an expression for the permissible cooling -- or heating -- velocity in the elastic-viscous state under the condition of full limiting of temperature deformation in one direction, given in terms of the deformation speed under stresses equal to the stability limit, the coefficient of linear expansion, the criterion for thermal stability of the material, the absolute temperature, the elasticity modulus, and the stability limit. Tests were made on fine- and coarse-grained materials made of zirconium
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USSR

DAUKNIS, V.I., et al, Ogneupory, No 6, 1971, pp 31-35

and magnesium oxide developed at the Ukrainian and Eastern Refractory Materials Institutes. Tables of the characteristics of these materials are given. A sketch of the experimental apparatus is reproduced. The authors conclude that the changes in the amount of admixtures and porosity of the material only slightly affect the temperature dependence of thermal stability.

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Conferences

USSR

STEPANOVA, G. A., DAULBAYEV, E. A.

"Plenary Session of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V. I. Lenin/ and Moscow Board of VKhO /All-Union Chemical Association/ imeni D. I. Mendeleev Devoted to the Problem of Polymer Application in Agriculture"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70,
pp 73-77

Abstract: The meeting was held on 17-19 December 1969 with 180 members attending from 41 scientific institutions. Introductory remarks were made by S. V. NERPIN, followed by talks on the theory and effective utilization of polymers and hydrophobic materials in agriculture. Professor I. B. REVUT, et al, talked about oil structuralization by means of polymers and the mechanism of action of soil particles reacting with polymers. Professor N. A. KACHINSKIY,
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USSR

STEPANOVA, G. A., et al, Khimiya v Sel'skom Khozyaystve, Vol 8,
No 6, Jun 70, pp 73-77

et al (Moscow State University), reported on the nature of structure formation in soils and on the attempts at artificial structuralization by means of polymers, citing data on the reaction of polymers with minerals and soils. Considerable attention was given to the use of polymers in control of soil erosion during irrigation and road building. Professor I. B. REVUT and Candidate of Agricultural Sciences I. A. ROMANOV discussed preservation of sandy soil from wind erosion by means of various latexes. Candidate of Biological Sciences A. I. MOSOLOVA elaborated on the effect of polymers on the activity of soil microflora. The use of polymeric materials in control of soil crust was reported by V. I. ALEKSASHIN and T. S. KALINICHEV. G. M. OZEROV talked about production problems of polymer films for agricultural use. The advantages of reinforced polymer films were expounded by B. M. TSOGOYEV, et al. T. Ye. PASHCHENKO discussed the use of polymers for intensification of agricultural productivity. Control of light conditions by means of various optically active polymers was reported by G. I. KOSOBOKOV.

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USSR

STEPANOVA, G. A., et al, Khimiya v Sel'skom Khozyaystve, Vol 8, No 6, Jun 70, pp 73-77

A series of papers concerned fruit bearing problems. Z. S. LEZHANKINA, N. I. OSINA, N. S. GONCHARUK, L. V. STRYAPKOVA, Z. I. CHEKUNOVA, O. A. KROTOVA, G. V. VINOGRADOVA, S. A., URONOV, et al, discussed mulching by means of plastic films, growing of seedlings under the cover of plastic film, and the method of covering the seeds with plastic film to slow down their germination in winter planting. V. F. KUZNETSOVA and T. Ye. PASHCHENKO reported on a new method of covering the seeds with synthetic film so that they would become rounded, larger, and heavier, assuring a uniform seeding. R. V. ROZDOLNAYA's talk concerned the use of plastic materials as binders in budding. The effect of the addition of synthetic resin on physical, agrochemical properties of fertilizers was discussed by N. V. BABENKO. Prof. S. Ya. ZAFREN (All Union Scientific Research Institute of Fodder imeni V. R. Vilyams) reported on the use of polymers in conservation and treatment of fodder.

3/3

USSR

UDC 615.5

DAULETBEKOV, L. S. and DZHUMAGALIYEVA, F. D., Institute of Physiology,
Kazakh SSR Academy of Sciences

"The Influence of Ziziforin on the Activity of the Oxidative Enzymes During
Hypoxia"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya,
No 4, Jul/Aug 73, pp 69-72

Abstract: The effect of ziziforin administration on succinate dehydrogenase, lactate dehydrogenase, alpha-ketoglutarate dehydrogenase and cytochrome oxidase in the tissues of the myocardium, liver and kidney of white rats which had been subjected to moderate chronic hypoxia was investigated. It was found that the activity of all the enzymes increased in the experimental animals compared to untreated controls subjected to hypoxia. This result is said to indicate that ziziforin increases the resistance of cells to hypoxia by activating these enzymes.

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USSR

UDC 539.385

BARGYALIS, A. S., MEDEKSHA, G. G., DAUNIS, M. A., TIMOFEYEV, B. T.

"Behavior of Pearlitic Welded Seams with Low-Cycle Loading at High Temperatures"

Soprotivl. Materialov. Materialy XXII Resp. Nauch.-tekhn. Konf. [Strengths of Materials, Materials of XXII Republic Scientific and Technical Conference -- Collection of Works], Kaunas, 1972, pp 32-36, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V1226 by A. P. Gusenkov).

Translation: The static and cyclical strength and ductility characteristics of materials 15Kh2MF, 22K and Kh18N22V2T2 at 350° are presented. Diagrams of static deformation, values of yield points and strength, rupture resistance and coefficient of reduction in area are produced. Curves of low-cycle fatigue are constructed for rigid loading in the coordinates initial loading deformation vs. number of cycles to crack formation. The maximum durability is $5 \cdot 10^4 - 10^5$ cycles.

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USSR

UDC 621.791.053:620.178.3

TIMOFEYEV, B. T., Engineer, KARZOV, G. P., Candidate of Technical Sciences, ZEMZIN, V. N., Doctor of Technical Sciences, and DAUNIS, M. A., Candidate of Technical Sciences

"Low-Cycle Fatigue of the Metal of Welded Seams Made by Mechanized Methods"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 71, pp 38-40

Abstract: This work presents a study of the cyclical strength of welded joints of 22K steel produced by automatic welding under flux and by the electric slag method for low-cycle loading. The low-cycle fatigue resistance of the metal in a low-carbon seam and its strength properties depend significantly on the welding method, welding materials used, and heat treatment of the joint or structure: the greatest strength is achieved by hardening the metal of the seam, produced by electric slag welding with Sv-10GSMT wire, the least strength by normalizing the seam metal and using Sv-10G2 welding wire. Stress concentrators should not be allowed in welded structures of 22K steel made by mechanized methods, since this reduces the resistance to repeated static loading. The experimental data produced on durability for the welded seam metal with automatic and electric slag welding corresponds to the well known equation of Coffin.

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USSR

UDC: 621.317.1

DAUNORAS, I. I., ZHILINSKAS, R.-P. P.

"Application of the Method of Signal-Flow Graphs to Solution of Some Nonlinear Problems"

Tr. nauch.-tekhn. konferentsii "Radio-elektronika" (Works of the Scientific and Technical Conference on Radio Electronics), Vol. 6, Kaunas, 1970, pp 324-328 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A294)

Translation: The authors discuss the problem of using the method of graphs for analyzing some systems of complex structure such as microwave measurement circuits with feedback. A microwave reflectometer which operates on the principle of automatic power control is analyzed. The block diagram, the complete graph, and calculations are presented. Bibliography of two titles.
E. L.

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USSR

UDC Z612.833.81

DAUROVA, F. K., and KOLOTYGINA, R. F., Institute of Higher Nerve Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Study of the Specificity of Feedback Connections"

Moscow, Zhurnal Vysshey Deyatel'nosti imeni I. P. Pavlova, Vol 20, No 5, Sep/Oct 70, pp 1,083-1,085

Abstract: Two series of tests were conducted, one using "current-sound" stimuli and a second using both "current-sound" and "food-tactile" stimuli. In the study, three dogs were used upon which conditioned-reflex experiments had been previously conducted. The experiment did not yield clearly defined results. One dog responded three times out of four to a sound stimulus by a defensive movement of his paw; another dog responded four times out of eight with a "food" response to tactile stimulation. It is claimed that these results indicate the specificity of the feedback connection and thus suggest that it is of the conditioned reflex type.

1/1

172 024 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--A NEW HEMOSTATIC MATERIAL -U-
AUTHOR--(02)-DAUFLOVA, T., VIRNIK, A.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA GAZETA, SEPTEMBER 25, 1970, P 3, COLS 6-7
DATE PUBLISHED--25SEP70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MEDICAL SUPPLY, HEMOSTASIS, ACRYLIC ACID, CALCIUM COMPOUND,
BLOED COAGULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----F070/605038/B08 STEP NO--UR/9034/70/000/000/0003/0003
CIRC ACCESSION NO--AN0142471
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142471

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INSTITUTE OF SURGERY IMENI VISHNEVSKIY AND THE COMPREHENSIVE RESEARCH LABORATORY, KOMPLEKSNAYA NAUCHNAYA LABORATORIYA, OF THE MOSCOW TEXTILE INSTITUTE HAVE PROPOSED A NEW HEMOSTATIC MATERIAL OBTAINED BY TREATING THE ORDINARY MEDICAL GAUZE WITH CALCIUM SALT OF THE POLYACRYLIC ACID. THE GAUZE IS STERILIZED IN AN AUTOCLAVE WITHOUT IMPAIRING THE HEMOSTATIC PROPERTIES OR STRENGTH OF THE GAUZE. TESTS CONDUCTED IN SIX SURGICAL CLINICS HAVE SHOWN THAT THE NEW MATERIAL STOPS BLEEDING OF SMALL ARTERIAL AND RENAL VESSELS. THE COAGULATION TIME WAS REDUCED TO ONE THIRD OF THE STANDARD. COMMERCIAL PRODUCTION OF THE NEW GAUZE WAS STARTED IN 1969.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF GAS TEMPERATURE ON THE BREAKDOWN POTENTIAL -U-

AUTHOR--(03)-DANDARON, G.N., DAUTOV, G.YU., MUSTAFIN, G.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. MAKH. TEKH. FIZ. 1970, (1), 148-151

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS DISCHARGE, TUNGSTEN, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0080

STEP NO--UR/0207/70/000/001/0148/0151

CIRC ACCESSION NO--AP0138945

UNCLASSIFIED

2/2 023
CIRC ACCESSION NO--AP0138945

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BREAKDOWN WAS STUDIED FOR HEATED AIR AT T EQUALS 500-3500DEGREESK, FOR A DISCHARGE GAP LENGTH OF DELTA EQUALS 0.1-0.5 CM AND P EQUALS 760 MM HG IN THE DISCHARGE GAP BETWEEN W ELECTRODES. THE GENERALIZED PASCHEN RULE FOR THE BREAKDOWN POTENTIAL FOR AIR IS VALID UP TO 2200DEGREESK. ABOVE THIS, THERE IS A MARKED DEVIATION FROM THIS RULE. AT 3300DEGREES FOR DELTA EQUALS 0.5 CM, THE POTENTIAL IS ONE FOURTH THAT PREDICTED BY THIS RULE.

UNCLASSIFIED

USSR

UDC: 621.396.677.85

DAUTOV, O. Sh.

"Calculation of Axisymmetric Lenses According to a Predetermined Amplitude Radiation Pattern"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 122, pp 3-8 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B68)

Translation: A procedure is outlined for calculating axisymmetric lenses according to a predetermined amplitude radiation pattern with regard to the polarization properties of the dielectric. The initial equations describe the behavior of rays in the lens according to the laws of geometric optics. With regard to reflections, the wave front of the primary radiator is assumed to be locally flat. The resultant relationships can be used to check on the absence of complete internal reflection and to find the necessary coefficient of refraction for the lens material from a given radiation pattern for the antenna and the radiation pattern of the radiator. An example is given of calculation of a lens irradiated by the open end of a circular waveguide. One illustration, bibliography of three titles. N. S.

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USSR

UDC 541.64:543.872

DAVANKOV, A. B. (deceased), LEYKIN, Yu. A., SMIRNOV, A. V., SLOZHENIKINA, T. Ya., and KORSHAK, V. V., Moscow Chemical Technological Institute imeni D. I. Mendeleev

"Investigation of the Thermooxidative Destruction Processes of Some Phosphorus Containing Ion Exchange Resins"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 11, Nov 73, pp 2446-2452

Abstract: Some phosphorus-containing cationic and amphoteric ion exchange resins were studied by means of thermal analysis. The mechanism of decomposition of phosphorus containing ionogenic groups has been investigated by a combination of thermal analysis, IR-spectroscopy, potentiometric titration, paper chromatography and elemental analysis data of the dry residue of the pyrolytic products. It was established that the amphoteric ion exchange resin decomposes by a mixed mechanism including reactions of free phosphonic and phosphonous acid groups in the intralayer form.

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Polymers and Polymerization

USSR

UDC 541.64:547.419

DAVANKOV, A. B., (deceased), LEYKIN, Yu. A., RATAYCHAK, V., and KORSHAK, V. V., Moscow Chemico-Technological Institute imeni D. I. Mendeleev, Moscow

"Synthesis and Study of Polymeric Complex-Forming Agents with Aminoethylphosphonic Acid Groups"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15, No 6, Jun 73, pp 1203-1214

Abstract: A macroporous chloromethylated styrene-divinylbenzene copolymer with 20% divinylbenzene that contained 17.7-18.2% Cl was aminated with N,N-dialkyl-beta-aminoethylphosphonic acid diethyl esters $R_2N(CH_2)_2P(O)(OEt)_2$ (I; R = Me, Et). At high temperatures and in polar solvents, conversion of the initially introduced diester groups to monoester groups took place by the mechanism $-CH_2\overset{\pm}{R}_2-(CH_2)_2-\overset{Cl^-}{P}(O)(OEt)_2 \xrightarrow{-RCl} -CH_2NR_2(CH_2)_2 \cdot P(O) \left\langle \begin{matrix} OEt \\ O^- \end{matrix} \right.$. Amination with I (R = Me) proceeded more effectively and with a higher yield than that with I (R = Et). In a side reaction,

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USSR

DAVANKOV, A. B., et al., Vysokomolekulyarnyye Soyedineniya, Vol 15, No 6, Jun 73, pp 1203-1214

monoester groups that had been introduced into the copolymer reacted with chloromethyl groups under formation of phosphonic acid benzyl esters that contained a readily hydrolyzable C-O-P link. Tests with the aminated copolymer that contained monoester groups and was obtained upon the reaction with I(R = Me) showed that the product of this reaction acted as a selective chelating agent adsorbing preferentially UO_2^{++} cations from HNO_3 solutions in the presence of Ca^{++} , Co^{++} , and Fe^{3+} .

2/2

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USSR

UDC 541.64:678.745

SMIRNOV, A. V., LEYKIN, YU. A., DAVANKOV, A. B., KORSHAK, V. V.,
Moscow Institute of Chemical Technology imeni D. I. Mendeleev,
Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Study of Acid-Base Equilibrium and Complex Formation on Polyam-
pholites with Pyridine and Phosphonic Acid Groups"

Moscow, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1480-
1489

Abstract: Polyampholites (PA) of the APF-type (i.e. based on co-
polymers of styrene with pyridines) possess iogenic groups of
opposing polarity and interesting physicochemical properties, such
as formation of inner salts, high thermal stability, and a specific
mechanism for the sorption of heavy metals. The sorption mechanism
of uranyl nitrate and the acid-base equilibrium were studied.
Formation of inner salts in PA was shown by IR spectra and thermal
analysis. It was found that the sorption involves complex forma-
tion of the phosphonic acid groups with the heavy metals. It is
proposed that the sorption mechanism for uranyl nitrate from
strongly acidic media involves the formation of a four-membered
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USSR

SMIRNOV, A. V., et al, Vysokomolekulyarnyye Soyedineniya 12, No 7, 1970, pp 1480-1489

ring, including two oxygen atoms and the phosphorus atom of the phosphonic acid group plus the uranium atom of a uranyl group. The structure of this complex was confirmed by IR spectroscopy, liquid chromatography, and thermal analysis.

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USSR

UDC 541.183.2 + 541.64 + 547.538.141

LEYKIN, Yu. A., DAVANKOV, A. B., KORSHAK, V. V., and CHERKASOVA, T. A.,
 Institute of Element-Organic Compounds Academy of Sciences USSR, and Moscow
 Chemical-Technological Institute imeni D. I. Mendeleev

"The Influence of the Substituent Effect on the Strength of Functional Groups
 in Polystyrenephosphonic Acid Cationites"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 71,
 pp 273-277

Abstract: Acid strength of ionic groups in three-dimensional cationites depends on physical and chemical factors. Physical factors such as the degree of crosslinking or hydrophilicity of the polymer matrix determine the amount of free and hydrated water in the cationite gel. The chemical factors include intramolecular electric effects of the substituents which shift the electron density in common cation exchange systems. These effects were studied in a series of monofunctional polystyrenephosphonic acid cationites and an equation was developed relating the electron-donor effect of the polymer substituents in a mixture of *p*- and *m*- isomers to apparent dissociation constant of the cationite

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$$\sigma_F = \frac{pK' - pK'_0}{\rho} - \sigma_F^x$$

USSR

LEYKIN, Yu. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 71, pp 273-277

where σ_{K} = the values for substituents -OR, R, obtained by Kabachnik. It was determined that the pk' value for nonporous resins corresponds to the pk' value of 1-20% crosslinked resins containing 1-3% of divinylbenzene; this may be due to the content of free water in the micropores.

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AA0040631 D

DAVANKOV A.B. 0482

3-76

Soviet Inventions Illustrated, Section I Chemical, Derwent,

233657 MERCURATED POLYSTYRENE CATALYST used in preparation of polymerisable vinyl carboxylates ensures less toxicity of the process improved catalyst life and economy of production and also renders the process continuous. The catalyst is prepared by soaking 15.6g of polystyrene in 174.6g of nitrobenzene overnight at room temp. A further 40g. of nitrobenzene are then added and the mixt. heated to 120°C for 1½-2hrs followed by the addition of 52.5g mercuric acetate and 9 ml. acetic acid. The mixture is heated for a further 6-7 hrs. at 120°C with stirring. The product is washed with methylated spirit and acetone and dried at 60°C. The catalyst is used in amount of 5% wt. of the fatty or aromatic acid used. 29.7.67. as 1175988/23-4, DAVANKOV, A.B. et al. In. G. Mamedaliev Petrochemical Inst. Sumgait Filial. (30.6.69) Bul. 3/24.12.68. Class 12o, 21, 12o, 12. Int. Cl. C 07c. C 07c.

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20 7

19750191

AA0040631

AUTHORS: Dayankov, A. B.; Renard, T. L.; Pishnamazzade, B.-A. F.;
Shabanova, D. A.; and Kotlyarevskaya, V. N.

Sumgaytskiy Filial Instituta Neftekhimicheskikh Protssessov
imeni Yu. G. Mamedaliyeva

19750192

2/2

Ion Exchange

USSR

DAVANKOV, A.B., Candidate of Technical Sciences

Ionity (Ionites), Moscow, Znaniye, 1970, 48 pp

Abstract: This popular-type booklet discusses the economic and technological significance of ionites. The applications of ionites in water purification, the chemical industry, petroleum refining, petrochemistry, biology, medicine, and the pharmaceutical industry are discussed. A section of the booklet deals with uranium in the waters of the Atlantic Ocean. Experiments in the extraction of various elements from the waters of the Atlantic were carried out by a group of Soviet scientists in 1959 as a part of the Sixth Scientific-Research Expedition of the Marine Hydrophysical Institute of the Academy of Sciences USSR. Water was collected from various parts of the Atlantic and filtered through an absorbent column filled with H-O anion-exchange resin; the height of the vinyl plastic column was 1600 mm and the inside diameter 63 mm. Granular H-O anion-exchange resin (3.5 kg) in the CI form, with a moisture content of 64%, was put into the column. Prewar data gave the uranium content in sea water as $0.35 \cdot 10^{-2} - 2.3 \cdot 10^{-3}$ g/l. The expedition findings showed a much larger uranium content in Atlantic waters. Inorganic substances such as granulated titanium hydroxide can be used for the extraction of uranium. An experimental facility for uranium extraction from sea water is in operation at Mekhay Strait. The installation has a capacity of 1000 tons/year.

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DAVANKOV, V.A.

CHEMISTRY

ISSN 60515 19 Nov 73

12

UDC: 547.466

THE CHEMICAL SYNTHESIS AND APPLICATIONS OF AMINO ACIDS

Article by Doctor of Chemical Sciences V. M. Delikovi Moscow, Yeastnik Akademii Nauk SSSR, Kuvstian, No 8, August 1973, pp 33-

Proteins of all organisms from the virus to man consist of 24 amino acids which on the basis of their biological value are divided into the replaceable (the organism can itself synthesize them for the construction of proteins at least 75% rate) and the irreplaceable (it cannot synthesize them and must obtain them from outside in the form of food). Each protein contains a definite quantity of each amino acid. If in a consumed protein there is none or little of any irreplaceable amino acid, the protein of the organism will not be constructed. From this arises the need for balancing of the ration, that is, the addition to low-valued proteins of lacking amino acids, which leads to an increase of their nutrient value.

On the diagram on the following page, casein -- a natural animal protein -- was taken as a standard. The crosshatched part of each column corresponds to the nutrient value of the natural protein in HEC (protein effectiveness coefficient) units. The addition of a certain quantity of lysine, the first limiting amino acid, to the product leads to a sharp increase of nutrient value, and the addition of a second limiting amino acid increases the nutrient value to the level of animal proteins.

Balancing is widely used in agriculture, especially in animal husbandry, according to the data of M. E. Tsvetkov and F. Tkachev, the inclusion of 0.2-0.5% lysine to the ration of young pigs and chicks permits reducing the consumption of food protein by 25% and increasing productivity of the animals by 10-15%. Generalizing the results of research of both Soviet and foreign authors, S. D. Shevtsov calculated that when the production of 20,000 tons of lysine per year has been organized it is possible to obtain an additional 1.2 million tons of meat

not assimilated by the organism and are ballast. Consequently, separation is necessary, and that inevitably has a negative influence on the economy. Recently, important successes were achieved in the area of cleaving racemic mixtures of amino acids. In the works of S. V. Rogozhin and V. A. Davankov it has been shown that optically active amino acids being covalently added to an insoluble polymeric carrier, finally form complexes with copper, nickel, etc. Another racemic acid present in the solution occupies two vacant coordination places on the atom of a metal, the strength of the complexes of L- and D-isomers being different. Small as that difference may be, upon being repeated many times in the process of chromatography, it assures complete or partial separation of optical antipodes. The best results have been obtained with DL-proline, which can be preliminarily separated into optical isomers.

The efforts of many investigators have been directed also toward the development of a chemical process of synthesis, which would give only one desired natural optically active isomer, the isomer synthesized by living nature -- asymmetric synthesis. Important successes have been achieved in that direction in recent years. In the work of A. Cagan (France) and R. Corey (USA) practically quantitative optical yields have been achieved. Extremely alluring is the reproduction of the paths of synthesis of amino acids by natural enzymatic systems. A large number of such syntheses is accomplished by pyridoxal-dependent enzymes, and the necessary optical isomer of the amino acid is obtained at once. A large contribution to the study of these processes has been made by Academician A. Ye. Braunshlenn (USSR) and Professor H. Brill (USA).

The author of this article jointly with Yu. N. Polozhenko set himself the goal of finding chemical systems which could not only model biochemical reactions but also accomplish processes not occurring in the living organism. Selected as such a system were complexes of Schiff bases of amino acids with transition metals. It was assumed that allylaldelyde in those complexes plays the role of pyridoxal, increasing the activity of the C-H bond of the amino acid, and the metal ion will do the same thing but will still hold the system in a rigid flat state, which in nature assure the protein of the enzyme. The general asymmetry of the complex permitted the hope that a reaction could be carried out stereospecifically, that is, as a result give the optically active acid, in nature such stereospecificity is assured by the protein of the enzyme.

The conducted investigation confirmed the correctness of those assumptions. It turned out that the anion of bis-salicylaldehyde of trivalent cobalt reacts not only with acetaldelyde, giving threonine, which models the natural process, but

USSR

UDC 541.65:547.1'118

ROGOZHIN, S. V., DAVANKOV, V. A., and EELOV, YU. P., Institute of Metal Organic Compounds, Acad. Sc. USSR

"Optically Active Diethyl Ester of α -Aminobenzylphosphonic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 955-956

Abstract: Separation of the racemic mixture of the diethyl ester of α -amino-benzylphosphonic acid has been achieved by repeated crystallization with debenzoyl-d-tartaric acid taken in a 2:1.25 ratio.

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USSR

UDC 541.49:547.466.2

DAVANKOV, V. A., ROGOZHIN, S. V., and KURGANOV, A. A., Institute of Metalorganic Compounds, Academy of Sciences USSR

"Existence of Two Forms in Solutions of Copper (II) Bis-Complexes with Bidentate α -Amino Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 72, p 486

Abstract: Normally absorption spectra of aqueous solutions of Cu(II) bis-complexes with bidentate α -aminoacids show a single maximum at λ_{\max} 600 m μ . Copper complexes with racemic N,N-dimethylisovaline show two maxima at 529 and 602 m μ , the ratio of these peaks changing from 0.809 to 1.168 when the temperature is changed from 25 to 85°. The bis-complex of Cu(II) with N-benzyl-L-proline also shows an increase of the peak at 510 m μ and a decrease at 580 m μ with temperature elevation. The intensity of the short wavelength band increase in the following order of some of the solvents studied: CH₃OH < H₂O \approx C₂H₅OH < CH₃COOH \approx dioxane < CHCl₃ < C₆H₆ \approx CS₂. Analogous, although less marked behavior is also observed in Cu (II) bis-complexes with L- and DL-dimethylisoleucine, benzylisoleucine, dimethylvaline, methylproline, benzylvaline, etc. 1/1

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USSR

UDC 542.91:541.183.1+541.49

ROGOZHIN, S. V., DAVANKOV, V. A., and YAKSKOV, I. A., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Synthesis and Properties of an Asymmetric Complexing Sorbent With L-Histidine"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2325-2327

Abstract: An asymmetric complexing sorbent based on D-methionine bound to the macroreticular polystyrene skeleton through the α -amino group was synthesized by reacting chloromethylated copolymer with D-methionine methyl ether in a dioxane-methanol mixture at 60°. The reaction lasted 15 hrs, NaI being used as a catalyst. The sorbent showed high selectivity towards the sorption of metals: the pH values for decomplexing of Cu^{2+} , Ni^{2+} , and Zn^{2+} were 2.35, 6.30 and 6.50 respectively. It has been shown that this new sorbent treated with Cu^{2+} or Ni^{2+} salts is capable of separating optical isomers of proline, isovaline, isoleucine, allo-threonine and mandelic acid.

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CSO: 1841-W

- END -

- 80 -

USSR

UDC 541.183.12

ROGOZHIN, S. V., DAVANKOV, V. A., and ZHUCHKOVA, L. YA., Institute of Element-Organic Compounds, Academy of Sciences USSR

"Asymmetric Anion Exchange Sorbents Based on the Optical Isomers of 1-p-Nitrophenyl-2-aminopropanediol-1,3 and its Derivatives"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 71, pp 459-461

Abstract: Optimal conditions were found for synthesis of asymmetric anion exchange resins from chloromethylated styrene copolymer with divinylbenzene and (-)-threo-1-p-nitrophenyl-2-aminopropanediol-1,3 (I) and some of its derivatives. The synthesis consists of the treatment of chloromethylated crosslinked styrene copolymers with (I) in presence of NaI catalyst. To increase the basicity of the primary amino group, (I) was dimethylated. The anion exchange sorbents obtained showed good swelling not only in water but also in organic solvents. D-mandelic acid was successfully separated into optical isomers by chromatography on (-)-threo-1-p-nitrophenyl-2-dimethylaminopropanediol based anion exchange resin.

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Acc. Nr.

AA0045397

Abstracting Service:

CHEMICAL ABST

D 4/70

Ref. Code

G40000

90875c Chromatographic method to separate optical isomers of compounds forming complexes with the ions of transition metals. Rogozhin, S. V.; Davankov, V. A. (Institute of Heteroorganic Compounds, Academy of Sciences, U.S.S.R.) Ger. Offen. 1,932,190 (Cl. B 01d), 08 Jan 1970, USSR Appl. 01 Jul 1968; 19 pp. Optical isomers of compds. contg. 1 or more functional groups forming complexes with the ions of transition metals are sepd. by contacting a soln. of the isomers with a layer of asym. ion exchange resin, previously treated with a soln. of a salt of the transition metal. Thus, an ion exchanger is prepd. as follows; 98.5% styrene and 1.5% divinylbenzene is copolymd. The fraction of the copolymer with a diam. of 0.05-0.10 mm is chloromethylated. The product, with a Cl-content of 20.5%, is treated with L-proline (2.25 mole per mole chloromethyl groups) and NaI (0.30 mole/mole chloromethyl groups) in excess dioxane with methanol (vol. ratio 6:1) for 15 hr at 60°. The substrate is treated with 0.1N CuSO₄ in 0.5N NH₃ (300 ml soln./g substrate), 13 g of the deep-blue substrate is brought into a column (diam. 9 mm, length 500 mm) and washed with 0.5N

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REEL/FRAME

19780332

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NH₃ and H₂O to neutrality. Below the main column a smaller column (diam. 9 mm, length 100 mm) packed with 2 g substrate, not treated with the CuSO₄ soln., is mounted. On the first column a soln. contg. 0.5 g DL-proline in 5 ml H₂O is added and the column washed with distd. H₂O (10 ml H₂O/hr). The eluate, giving a pos. reaction with ninhydrin, is evapd. to give 0.25 g L-proline, $[\alpha]_D^{25} -80.5^\circ$. The D-proline is eluted with 100 ml N NH₃ soln. to give 0.25 g D-proline, $[\alpha]_D^{25} 80.5^\circ$. The substrate in the column is regenerated by washing with distd. H₂O to neutrality. After 3 chromatographic cycles, the substrate of the second column is satd. with Cu ions and regenerated with 0.5N HCl. The eluted Cu is resorbed on the substrate of the main column, by bringing the pH of the Cu soln. with NH₃ to pH 6.

Harry De Moor

19780333

USSR

UDC 681.325.3

GITIS, E. I., and DAVARASHVILI, G. I.

"Multichannel Voltage-Code Converter"

USSR Author's Certificate No 275546, Filed 8/01/69, Published 13/10/70
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i
Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B491P)

Translation: A multichannel voltage-to-code converter was described in Author's Certificate No 153399, containing a pulse counter, connected through a switching circuit to a pulse generator, and individual comparison circuits in each channel. However, this converter has comparatively long conversion time in all channels, particularly when the range of voltages converted is relatively large. Furthermore, in the usual converters for any channel, regardless of the range of change of the input voltage, a constant absolute conversion error is retained, which results in a variable relative error for each channel. In order to eliminate these defects, a device has been added to the converter circuit, providing for a variable quantization step with respect to the level as a function of the input voltage. 1 fig.

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172 .032 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CHANGE IN THE ADENOSINE DEAMINASE ACTIVITY IN THE SKELETAL AND
CARDIAC MUSCULATURE DURING EXPERIMENTAL INTOXICATION WITH
AUTHOR--DAVID, G.
COUNTRY OF INFO--USSR
SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, 1970, NR 2, PP 31-34
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, TOXICITY, MUSCLE PHYSIOLOGY,
ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1289 STEP NO--UR/0177/70/000/002/0031/0034
CIRC ACCESSION NO--AP0136695
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136695

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF ADENOSINE DEAMINASE INCREASED CONSIDERABLY IN THE CARDIAC AND SKELETAL MUSCULATURE IN WHITE RATS INTOXICATED WITH SARIN (GIVEN INTRAPERITONEALLY IN SEVERAL DOSES OF 50 MG-KG FOR A TOTAL DOSE OF 200-250 MG-KG). BIOCHEMICAL STUDIES SHOWED THAT ADENOSINE WAS IRREVERSIBLY CONVERTED TO HYPOXANTHINE BY THE ENZYME, WITH RELEASE OF AMMONIA. PREVIOUS STUDIES SHOWED THAT THE CONTENT OF ADENOSINE TRIPHOSPHATE IN RATS INTOXICATED WITH TABUN INCREASED IN THE CARDIAC MUSCLES AND DECREASED IN THE SKELETAL MUSCLES. COMPARING THE RESULTS OF BOTH STUDIES, IT IS POSSIBLE TO SUGGEST A CONNECTION BETWEEN CHANGE IN THE AMOUNT OF HIGH ENERGY PHOSPHATES AND INCREASE IN ADENOSINE DEAMINASE ACTIVITY. IN THE SKELETAL MUSCULATURE AT WORK, ADENOSINE DEAMINASE ACTIVITY INCREASES DURING BREAKDOWN OF ATP-ADP-AMP-ADENOSINE, WHILE IN SOME PARTS OF THE CARDIAC MUSCLE THE OPPOSITE PROCESS OCCURS, AND ADENOSINE IS CONVERTED TO AMP-ADP-ATP. IN OTHER PARTS OF THE CARDIAC MUSCLE, THE PROCESS IS THE SAME AS IN SKELETAL MUSCLE. FACILITY: MEDITSINSKAYA SLUZHBA VENIGERSKOY NARODNOY ARMII.

UNCLASSIFIED

USSR

UDC: 616.127:615.739.16-099

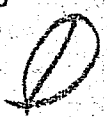
DAVID, G.

"Changes in Adenosine Deaminase Activity in Skeletal and Cardiac Muscles Following Experimental Poisoning by Organophosphorus Substances"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1970, pp 31-34

Abstract: In an earlier study, the author found that tabun poisoning increases the adenosine triphosphate content in the myocardium, but decreases it in the skeletal musculature. This series of experiments on rats revealed that sarin (0.5 ml per 100 g of weight) markedly increases adenosine deaminase activity in both the myocardium and the skeletal musculature. The results of the two series of experiments suggest that there is a relationship between changes in the amount of macroergic phosphates and increase in adenosine deaminase activity.

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1/2 029 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THE SPONTANEOUS ELECTRICAL ACTIVITY OF MUSCLES IN THE POLYCHAET
NEPHTHYS HOMBERGII -U-
AUTHOR--DAVID, D.F. 
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VCL 6, NR 1,
PP. 88-90
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOELECTRIC PHENOMENON, MUSCLE PHYSIOLOGY, SWIMMING, ABDOMEN,
NERVOUS SYSTEM, ANIMAL EXPERIMENT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0386 STEP NO--UR/0385/70/006/001/0088/0090
CIRC ACCESSION NO--AP0132615
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132615

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES HAVE BEEN MADE ON THE SPONTANEOUS ELECTRICAL ACTIVITY IN LONGITUDINAL MUSCLES OF THE BODY WALL. IT WAS DEMONSTRATED THAT IN ANIMALS WITH INTACT INNERVATION, THE SPONTANEOUS ELECTRICAL ACTIVITY IS OBSERVED ONLY DURING SWIMMING SINUSOIDAL MOVEMENTS WHICH OCCUR PERIODICALLY. IN MOST CASES THE ACTIVITY WAS RECORDED IN A FORM OF FIRING. PARTIAL REMOVAL OF THE ABDOMINAL NERVOUS CHAIN TOGETHER WITH LATERAL NERVES COMPLETELY ABOLISHED THE ELECTRICAL ACTIVITY OF MUSCLES IN DECENTRALIZED SEGMENTS WHEREAS THE BACKGROUND ACTIVITY WAS STILL PRESENT IN MUSCLES OF THE INTACT SEGMENTS. THE DATA OBTAINED SUGGEST THAT THE SPONTANEOUS ELECTRICAL ACTIVITY OF LONGITUDINAL MUSCLES IN POLYCHAETS IS OF A NEUROGENIC ORIGIN, BEING COMPLETELY DEPENDENT ON THE ACTIVITY OF THE CENTRAL NERVOUS SYSTEM WHICH AFFECTS THE MUSCULAR APPARATUS MAINLY AS A TRIGGER. FACILITY: INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, USSR ACADEMY OF SCIENCES, Leningrad.

UNCLASSIFIED

DAVIDAN I. N.

Oceanography

POSSIBILITY OF UTILIZING MODERN SELF-CONTAINED BUOY STATIONS FOR OCEANOGRAPHIC RESEARCH IN STRONG CURRENT AREAS

UDC 551.49.08:627.913

[Article by Candidate of Technical Sciences A. S. Gerasimov, U. N. Gerasimov, Doctor of Geographic Sciences I. N. Davidan, L. B. Yevdokimov, Candidate of Geographic Sciences Yu. V. Sushkov, Central Scientific Research Institute of the Ministry of the Navy, State Oceanographic Institute, Moscow, Meteorology, Gidrometeorology, Russian, No 11, 1972, submitted 13 June 1972, pp 67-74]

The results are discussed from calculations and simulation testing to determine the hydrodynamic and weight loads exerted by self-contained buoy stations in deep-water strong current zones of the ocean. The flow velocities were established at which it is possible to install GN-31 and US-6000 buoy stations. Recommendations are made with respect to the development of self-contained buoy stations for strong-current areas.

Beginning in 1960, the method of measuring currents by installing self-contained buoy stations began to be introduced into the practice of oceanographic operations of the institutions of the hydrometeorological service. In the initial step, the buoy stations were assembled from nonstandard equipment using standard US-720 type buoys (lifting capacity 650 kg with a mass of 417 kg) and "pinch" type buoys (lifting capacity 2,000 kg with a mass of 1,500 kg) or homemade buoys made of metal and foam plastic with a lifting capacity of 1,000-1,500 kg.

In the middle of the 1960's, a definite amount of experience had already been accumulated which permitted the development and gradual introduction of more modern designs of self-contained buoy stations into practice (GN-46, GN-47, GN-49, GN-50, and GN-51). These buoys were designed for taking oceanographic measurements in areas with different depths. Procedural instructions with respect to working with the self-contained buoy stations were published simultaneously. The measurements of the oceanological characteristics on the self-contained buoy stations permitted broad information to be obtained on the currents which contributed greatly to the precision of definition of our concepts of the dynamic processes taking place in the oceans and seas.

Oceanography
Source: SIKS #157025
19 Jan 73
5

USSR

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

VALATSKA, K. K., ~~DAVIDENENE, D. K.~~, KNISHEVSKIY, K. M., and LEONAS, P. I.

"Investigation of Photoeffect in Germanium and Silicon Under Photoreflex Conditions"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 269-275 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE790 by authors)

Translation: The authors investigated the intrinsic photoeffect in Ge and Si under photoreflex conditions. Theoretical calculations are given of spectral characteristics of the photoreflex signal for specimens of varying thickness with varying surface treatment, as well as a comparison of these calculations with experimental results.

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USSR

UDC 669.822:621.039.5

GOLOVCHENKO, YU. M., VOROB'YEV, M. A., BYCHKOV, B. A., DAVLIDENKO, A. S., PORTNOV, V. F.

"Mechanical Properties of Uranium Irradiated to 0.45 Atomic % Burn-up"

Radiatsion. fiz. tverd. tela i reaktornoye materialoved. -- V sb (Radiation Solid State Physics and Reactor Material Science -- collection of works), Moscow, Atomizdat Press, 1970, pp. 185-191 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I825)

Translation: Uranium samples containing ≤ 0.3 weight % of admixtures (Fe, Si, Al, and C) were irradiated to 0.45 atomic % burn-up with a maximum temperature of 500°. Mechanical tensile, compressive, bending, and fatigue testing was carried out at temperatures up to 500°. The properties of the irradiated uranium depend essentially on the type ("rigidity") of the tests. This is not only connected with the difference in the stress state but also the characteristic features of accumulation of the defects. For uranium irradiated at higher temperatures, σ_T is lower. This is explained by annealing the defects of the first and second type. However, even at an irradiation temperature of 350 and 450°, σ_T is higher than for the unirradiated samples since

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USSR

GOLOVCHENKO, YU. M., et al., Radiatsion. fiz. tverd. tela i reaktornoye materialoved., Moscow, Atomizdat Press, 1970, pp 185-191

defects of the third type are not annealed. At a test temperature of 20°, σ_B is lowered with an increase in burn-up. This lowering is sharper for an irradiation temperature up to 360°. There are 3 illustrations and a 5-entry bibliography.

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1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT71
TITLE--PROPERTIES OF IRRADIATED BERYLLIUM -U-
AUTHOR--(04)-KORNIYENKO, L.A., PAPIROV, I.I., TIKHINSKIY, G.F., DAVIDENKO,
A.S.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(2), 155-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--BERYLLIUM, MECHANICAL PROPERTY, NEUTRON IRRADIATION,
ANNEALING, COMPRESSIVE STRENGTH, GRAIN SIZE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1544 STEP NO--UR/0089/70/028/002/0155/0157
CIRC ACCESSION NO--AP0120323
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120323

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEUTRON (N) IRRADN. OF SE (WITH A MEAN GRAIN SIZE OF 120 MU AND A BEO CONTENT OF 0.1-0.3PERCENT) WITH AN INTEGRATED FAST N (LARGER THAN 1 MEV) FLUX OF 1.2 TIMES 10 PRIME20 N-CM PRIME2 AT 280DEGREES INCREASED THE HARDNESS H SUBGAMMA FROM 130 TO 160 KG-MM PRIME2 BUT REDUCED THE COMPRESSIVE STRENGTH SIGMA SUBLIM FROM 106 TO 90 KG-MM PRIME2; SUBSEQUENT ANNEALING AT 850DEGREES REDUCE H SUBGAMM TO 130 KG-MM PRIME2 AND INCREASED SIGMA SUBLIM TO 98 KG-MM PRIME2. THE H SUBGAMMA AND SIGMA SUBLIM INCREASED (FOR BOTH IRRADIATED AND NONIRRADIATED SAMPLES) WHEN THE GRAIN SIZE WAS REDUCED TO 25 MU AND THE BEO CONTENT WAS INCREASED TO 1-5PERCENT; MOREOVER, SAMPLES OF LOWER GRAIN SIZE AND HIGHER BEO CONTENT WERE AFFECTED TO A LESSER EXTENT BY THE IRRADN. THE IRRADN. AND SUBSEQUENT ANNEALING AT 600-850DEGREES CAUSED NO CHANGE IN THE D. OF THE SAMPLES, WHILE ANNEALING AT 1000DEGREES INCREASED THE VUL BY 0.15-1PERCENT (THE SWELLING WAS LESS PRONOUNCED IN SAMPLES OF SMALLER GRAIN SIZE). DISLOCATION LOOPS OF SIZ 200-500 ANGSTROM AND AAT A D. OF 5 TIMES 10 PRIME13-10 PRIME14 LOOPS-CM PRIME3 WERE OBSD. AFTER THE N IRRADN.; WHILE SUBSEQUENT ANNEALING AT 600DEGREES ANNIHILATED THE LOOPS AND LED TO THE FORMATION OF 150-200 ANGSTROM BUBBLES (LOCATED ON THE DISLOCATION LINES) WHOSE SIZE INCREASE WITH INCREASING ANNEALING TEMP., E.G., TO 1000-1500 ANGSTROM AT 850DEGREES AND 1-2 MU AT 1000DEGREES.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MECHANICAL PROPERTIES OF IRRADIATED URANIUM -U-
AUTHOR--(04)-VOROBYEV, M.A., GOLOVCHENKO, YU.M., DAVIDENKO, A.S., BYCHKOV,
B.A.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(2), 107-11
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY, MATERIALS
TOPIC TAGS--MECHANICAL PROPERTY, URANIUM, IRRADIATION, TENSILE STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1561 STEP NO--UR/0089/70/028/002/0107/0111
CIRC ACCESSION NO--AP0120340
UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TENSILE STRENGTH OF U SAMPLES IRRADIATED TO 0.09-0.4PERCENT BURNUP AT 250-450DEGREES DECREASES WITH INCREASING BURNUP, IN PARTICULAR FOR SAMPLES IRRADIATED AT 250-360DEGREES; E.G., THE STRENGTH OF SAMPLES IRRADIATED TO GREATER THAN 0.3PERCENT BURNUP MAY BE LESS THAN 10 KG-MM PRIME2, WHILE THAT OF NONIRRADIATED SAMPLES IS 60-70 KG-MM PRIME2. THE COMPRESSIVE STRENGTH OF IRRADIATED SAMPLES AT ROOM AND ELEVATED TEMPS. IS HIGHER THAN THAT OF NONIRRADIATED SAMPLES. THE IRRADN. REDUCES THE FATIGUE RESISTANCE OF U E.G., IN A STD. TEST (AT ROOM TEMP.) UNDER A LOAD OF 12-15 KG-MM PRIME2 THE NO. OF CYCLES TO FAILURE RANGED FROM 1 TIMES 10 PRIME4 TO 4.5 TIMES 10 PRIME5 FOR IRRADIATED SAMPLES AND FROM 1.5 TIMES 10 PRIME6 TO 3.1 TIMES 10 PRIME6 FOR NONIRRADIATED SAMPLES.

UNCLASSIFIED

Recorders and Transducers

USSR

UDC 621.397.621

BEL'SKIY, V. N., ~~DAVIDENKO, S. N.~~, MARKOVA, Yu. V., PILATOVSKIY, A. I., SMIRNOV, A. Ye., and UAKIN, Ye. S.

"Mobile Magnetic Video Recording Station PVS-1"

Moscow, Tekhnika kino i televideniya, No. 6, 1971, pp 33-37

Abstract: The advantage of this mobile video recording station is that it enables personnel involved in TV programming not only to escape the confines of the studio but to transcend the line-of-sight limitations of the portable transmitter. The station was built by order of the State Committee of the Council of Ministers, USSR, for Television and Radio, in the VNIITR /expansion unknown/ and was completed in 1970. Short descriptions are given of the equipment complement, the functional system of the station, the video channel, the sound accompaniment, the recording of directors' comments, and other facilities the station affords. Diagrams are given of the equipment layout in this mobile recording studio, and of interconnections of the system blocks. Photographs of some of the equipment are also shown.

1/1

12 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STEREOCHEMISTRY OF HETEROCYCLES. IV. 2, SUBSTITUTED
5, ALKYL, 1,3, DITHIANES -U-
AUTHOR--(05)-VOSTROVA, L.N., SOMCHINSKAYA, V.N., BOGATSKAYA, Z.O.,
MAMONTOV, V.P., DAVIDENKO, T.I.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (4) 462-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--STEREOCHEMISTRY, HETEROCYCLIC SULFUR COMPOUND, ORGANIC
SYNTHESIS, BROMINATED ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0935 STEP NO--UR/0409/70/000/004/0462/0465
ARC ACCESSION NO--AP0134662
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134662

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY THE METHOD OF BOGATSKAYA (1962)
WERE SYNTHESIZED CH SUB2 BRCHRCH SUB2 R (R, B.P., D PRIME20, N PRIME20
SUBD, AND PERCENT YIELD GIVEN): SHOWN ON MICROFICHE. FACILITY:
ODESS. GOS. UNIV. IM. MECHNIKOVA, ODESSA, USSR.

UNCLASSIFIED

Acc. Nr:

AP0038035

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 130-132

IDENTIFICATION OF HIGH ENERGY PARTICLES
IN A STREAMER CHAMBER

Davidenko, V. A.; Dolgoshein, B. A.; Somov, S. V.;
Starosel'tsev, V. N.


Relativistic growth of the specific primary ionization is measured in the following mixtures: 50 torrs Ne + 50 torrs He + 2 torrs H₂O and 320 torrs Ne + 320 torrs He. The accuracy of the measurements is 2.5%. The possibility of employing a streamer chamber for separation with respect to mass of particles with momenta up to 200 GeV/c is discussed.

REEL/FRAME
19731077

14

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USSR

 UDC 621.396.4(088.8)

POLISHCHUK, Ya. L., TIKHOMIROV, Ye. V., OSTAPENKO, V. A., DAVIDENKO, V. I.

"A Device for Eliminating and Introducing Communications Channels"

USSR Author's Certificate No 259188, Filed 19 Aug 68, Published 28 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D416 P)

Translation: This Author's Certificate introduces a device for eliminating and adding IF communications channels in radio relay systems. The device contains an IF amplifier, a frequency and pulse-position modulator, a frequency-modulated oscillator and a synchronization module. To reduce transient interferences from channel to channel when pulse-position relative FM is used with elimination of the nonstationary processes which arise at the beginning and end of the temporarily added interval, keying stages are connected respectively between the IF power amplifier, the FM oscillator and the IF amplifier. The control circuits of these keying stages are connected to the outputs of the synchronizing module for coherent pedestal pulses, and the phase AFC circuit connected between the IF amplifier and the outputs of the synchronization module and FM oscillator is matched by actuation to time periods a little greater than the duration of the leading and trailing fronts of the blocking pedestal pulses. V. P.

1/1

1/3 014 UNCLASSIFIED PROCESSING DATE--13KOV70
TITLE--GENETICS OF DIABETES MELLITUS -U-

AUTHOR--(02)-DAVIDENKOVA, YE.F., LIBERMAN, I.S.

COUNTRY OF INFO--USSR

D

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 1, 1970,

PAGES 78-83

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIABETES MELLITUS, HUMAN GENETICS, STATISTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0948

STEP NO--UR/0248/70/025/001/0078/0083

CIRC ACCESSION NO--AP0130011

UNCLASSIFIED

2/3 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINCE ANCIENT TIMES RESEARCHERS WERE DRAWN TO HEREDITARY FACTORS IN DEVELOPMENT OF DIABETES MELLITUS. AS FAR BACK AS THE 16TH AND 17TH CENTURIES, FAMILIES WERE DESCRIBED WHERE MULTIPLE CASES OF DIABETES HAD BEEN OBSERVED. TO DATE A SIGNIFICANT QUANTITY OF FACTS HAS BEEN ACCUMULATED INDICATING THE IMPORTANT ROLE OF GENETIC MECHANISMS IN THE DEVELOPMENT OF THIS DISEASE: HIGHER INCIDENCE OF DIABETES MELLITUS AND LOWER GLUCOSE TOLERANCE DEMONSTRABLE WITH A GLUCOSE LOAD AMONG THE RELATIVES OF DIABETICS, HIGH DEGREE OF CONCORDANCE FOR DIABETES MELLITUS AMONG MONOZYGOTIC TWINS AS COMPARED TO DIZYGOTES. IN 1966-1968 WE CONDUCTED TWO CONSECUTIVE SURVEYS OF DIABETICS ON RECORD IN ENDOCRINOLOGICAL OFFICES IN THE POLYCLINICS OF LENINGRAD. IN THE FIRST SURVEY A QUESTIONNAIRE WAS FILLED BY 4,959 PEOPLE ON RECORD AT TEN POLYCLINICS. THE REST OF THE DIABETICS (11,577 PEOPLE) WERE COVERED BY A SECOND AND CONSIDERABLY EXPANDED QUESTIONNAIRE. THUS, A TOTAL OF 16,536 ADULT (OF AGE) DIABETICS RESIDING IN LENINGRAD WERE COVERED BY THE QUESTIONNAIRE SURVEY. THE FIRST QUESTIONNAIRE WAS FILLED AND RETURNED TO THE LABORATORY BY 3,414 PEOPLE (68.8PERCENT), 3,147 OF WHOM ANSWERED EVERY QUESTION. THE SECOND, MORE COMPLICATED FORM WAS FILLED AND RETURNED BY 6,705 PEOPLE ACCORDING TO THE ORIGINAL COUNT (57.9PERCENT). IN THIS ARTICLE WE SUBMIT THE DATA FROM THE FIRST SURVEY ANALYZED BY PROCESSING THE INITIAL DATA ON A URAL-2 ELECTRONIC COMPUTER, AND SAMPLES FROM THE SECOND QUESTIONNAIRE REFLECTING DATA ON DIABETICS WHO CONTRACTED THE DISEASE IN CHILDHOOD AND YOUTH. THE LATTER DATA WERE PROCESSED MANUALLY.

UNCLASSIFIED

3/3 014

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130011

ABSTRACT/EXTRACT--THE RESULTS OF BOTH ANALYSES WERE TOTALLED.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE ROLE OF GENOTYPICAL FACTORS IN THE ORIGINATION OF HEMORRHAGICAL
STROKES -U-
AUTHOR-(03)-DAVIDENKOVA, YE.F., KOLOSOVA, N.N., MURAVYEVA, Z.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 4, PP 506-511
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, HEMORRHAGE, BLOOD COAGULATION, HYPERTENSION, ARTERY,
ATHEROSCLEROSIS, ENDOCRINE SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1662

STEP NO--UR/0246/70/070/004/0506/0511

CIRC ACCESSION NO--AP0106408

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NU--AP0106408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENTATION IS RELATED TO CLINICAL, GENEALOGICAL AND BIOCHEMICAL DATA OF 83 PROBANDS WITH SUBARACHNOIDAL AND INTRABRAIN HEMORRHAGES AND 168 MEMBERS OF THEIR FAMILIES. ANALYZING THEIR PEDIGREE A DEMONSTRABLE WIDE DISTRIBUTION OF VASCULAR PATHOLOGY WAS EVIDENT IN THE FAMILIES OF PATIENTS WITH SUBARACHNOIDAL (24.3PERCENT) AS WELL AS WITH INTRACEREBRAL (21.7) HEMORRHAGES. A STUDY OF THE COAGULATIVE AND ANTICOAGULATIVE SYSTEMS, INCLUDING THE ENZYMIC BLOOD ACTIVITY (FACTOR VII, FACTOR VIII) DEPICTED DISTINCT SIGNS OF HYPOCOAGULATION IN SOME OF THE PRACTICALLY NORMAL MEMBERS OF THE STUDIED FAMILIES. A TENDENCY TO CHANGED BLOOD COAGULATION PROPERTIES IN FAMILIES OF PATIENTS WITH HEMORRHAGES WAS ACCOMPANIED BY A HIGH FREQUENCY AND EARLY DEVELOPMENT IN THE FAMILIES OF PROBANDS OF HYPERTENSIVE DISEASES, ARTERIAL HYPOTENSION, ATHEROSCLEROSIS, AS WELL AS VEGETATIVE VASCULAR AND ENDOCRINOLOGICAL DISORDERS.

UNCLASSIFIED

Public Health, Hygiene, and Sanitation

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USSR

UDC 614.7:66

POPOV, T., BASMADZHIYEVA, K., KURCHATOVA, ~~DAVIDKOVA, K.~~, and NEYKOVSKA, L.,
Scientific Research Hygiene Institute, Sofia

"Combined Effect of Chemical Agents That Pollute Air and Water Simultaneously"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 77-79

Abstract: In a two-month experiment, rats were poisoned by simultaneous round-the-clock inhalation of the contact herbicide dinitroorthocresol (DNOC) at the maximum permissible level and by daily ingestion of doses twice the maximum permissible dose. The results of 32 tests (behavior, change in weight, blood inorganic phosphorus, content of sulfhydryl groups, RBC, WBC, hemoglobin, catalase, peroxidase, and cholinesterase activities, and so forth) failed to reveal any functional disturbances in the main organs and systems of the animals. This is attributed to the absence of changes in the balance of energy-rich phosphorus compounds and in the content of sulfhydryl groups. It would appear that brief exposure to DNOC, peroral at a concentration twice the maximum permissible dose and by inhalation at the maximum possible concentration, does not constitute a danger to human health.

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AA0043574 -

UR 0482

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

238228 GENERATOR OF BINARY CODE. A wider range of operations has been achieved by introducing a module of determining the end of the shift. The inputs to this module have been connected directly and through a switch of the shift register cells and triggers. The outputs of the module determining the end of shift are taken to the shift valves. The unit outputs of the shift register cells are connected through a switch to the 'AND' circuit of the module determining the end of shift. The second input of the circuit 'AND' is connected to the unit output of the trigger of lower value digits.

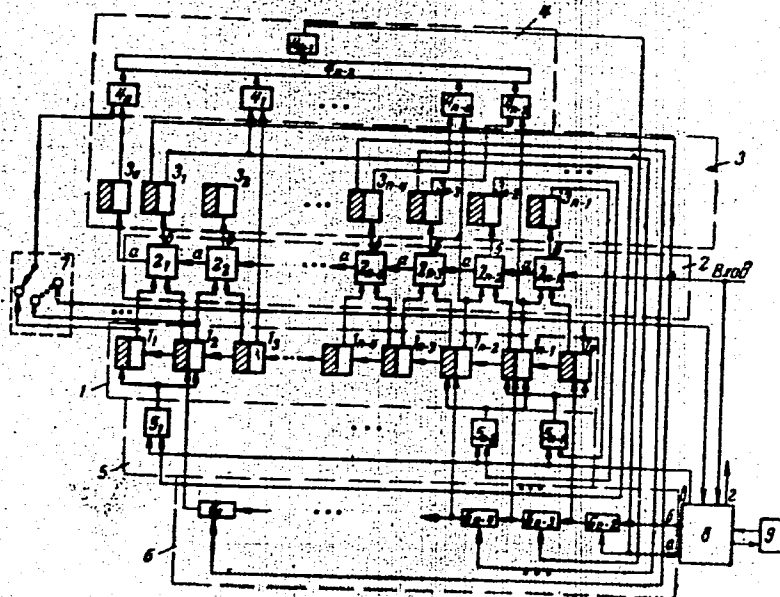
28.12.67 as 1206822/18-24. A. A. DAVIDOV (18.7.69)
Bul 9/20.2.69. Class 42m³. Int. Cl. G 04f.

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19762040

AA0043574



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19762041

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UDC 539.374

DAVIDOV, I. V.

"The Limit Load of a Thin-walled Double-T Rod During Skew Bending with Torsion"

Samoletostr. i Tekhn. Vozd. Flota. Resp. Mezhved. Tenat. Nauch-Tekhn. Ab.
(Aircraft Construction and Air Force Equipment. Republic Interdepartmental
Thematic and Scientific Collection of Works), No 24, 1971, pp 37-43 (from
Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V379, Author's
Abstract)

Translation: The limit state of a thin-walled rod during skew bending with torsion has been studied in detail only for cases in which the yield extended to all points of the cross section. Meanwhile cases are possible, in which to cross section contains individual elastic sectors. In addition, the conditions of the limit state are usually written in terms of forces, whereas it is more convenient to have the relationships just for the limit load. In the article is determined the value of the limit load for the two possible forms of the limit state when the cross section is in the shape of a double-T with two axes of symmetry. Calculation relationships are given in general form, and a numerical example, explaining the procedure, is worked out.

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USSR

UDC: 621.373.531(088.8)

DAVIDOV, P. D., SOKOLOV, V. V.

"A Square Pulse Generator"

USSR Author's Certificate No 259954, filed 11 Mar 66, published 28 Apr 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G177 P)

Translation: This Author's Certificate introduces a square pulse generator which contains a semiconductor switching diode, a transistor, a storage capacitor and two resistors. To improve the pulse shape, the switching diode, transistor and resistors are connected in a bridge circuit with the storage capacitor connected in one diagonal between the cathode of the semiconductor diode and the base of the transistor. The plates of the capacitor are connected through resistors to the negative terminal of the power supply, the positive terminal being connected to the tiepoint between the anode of the semiconductor switching diode and the emitter of the transistor. The output load is connected in the collector circuit of the transistor.

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- 41 -

USSR

UDC 621.314.61 (088.8)

PRIVALOV, A.I., OSOKIN, YE. I., PRIKHOD'KO, A. YA., DAVIDOV, P.D., LASAREV, I.A.,
TSYPLYAYEV, M.S., ALEKSANDROV, I.V., SHARIPO, V.I.

"Multiphase Rectifier Using Controlled [Semiconductor] Rectifiers"

USSR Author's Certificate No 262250, filed 29 Nov 66, published 29 June 70 (from
RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B576P)

Translation: A circuit is proposed for control of a 3-phase bridge semicontrolled rectifier [vypryamitel']. The control circuit contains an auxiliary bridge non-controlled rectifier, a relaxation oscillator for triple frequency using a dynistor, 3 auxiliary thyristors, and 3 output pulse transformers. The relaxation oscillator supplies pulses to the gates of the auxiliary thyristors. The anodes of these thyristors are connected with the primary windings of the pulse transformers. The second terminals of these windings are switched in to phases of the voltage for inherent [sobatvennyy] needs, from which is also supplied the noncontrolled bridge rectifier of the relaxation oscillator. The cathodes of the auxiliary thyristors are connected at a common point and are connected across a resistor to the negative terminal of the noncontrolled 3-phase rectifier. The secondary windings of the pulse transformers are connected with the gates of the power thyristors. 1 ill.

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USSR

UDC 534-8

MAKHKAMOV, S., SHARIPOV, Sh., IVANOV, A. A., DAVIDOVICH, L. A.,
KHALIULIN, M. G., KHABIBULLAYEV, P. K.

"Concerning the Acoustical Relaxation Mechanism in Certain Pure Fluids and Their Solutions"

Uch. zap. Tashkent. gos. ped. in-t (Scientific Notes of Tashkent State Pedagogical Institute), 1970, Vol. 90, pp 35-45 (from RZh-Fizika, No 10, Oct 72, Abstract No 10Zh609)

Translation: The acoustical properties of the following low-viscous liquids were investigated: carbon sulfide, carbon tetrachloride, chloroform, methylene chloride, methylene boride, benzene, pyridine, thiophene, cyclohexane, acetic acid and its solutions in pyridine. The amplitude coefficient of the absorption was measured at frequencies from 285 kHz to 5 MHz by the substitution method with an accuracy of 7-10% and in the range from 5 MHz to 3 GHz by the pulse method with an accuracy of 3-5% at low frequencies and 7-10% at high frequencies. The speed of sound was measured by the phase method with an accuracy up to 0.1%. The results are discussed from the aspect of vibrational and structural relaxation and their mutual effect. V. Ye. Gordeyev.

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Analytical Chemistry

USSR

UDC 543.422.4+541.49+546.331/832

SERGIYENKO, V. I., DAVIDOVICH, R. L., LEVCHISHINA, T. F., SKLYADNEV, Yu. N.
(Chemistry Department, Far Eastern Branch, Siberian Department Acad. Sci.
USSR)

"Infrared Absorption Spectra of Zirconium and Hafnium Hexafluoro complexes"

Moscow, Izvesiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70,
pp 1021-1025

Abstract: In the present work are presented the results of the study on the infrared-spectral absorption of hexafluorozirconates and hexafluorohafnates of the composition: M_2EF_6 ($M^I = Li, K, Rb, Cs$), $M^{II}EF_6 \cdot 6H_2O$ ($M^{II} = Ni, Co, Fe$), $MnEF_6 \cdot 5H_2O$ and $CuEF_6 \cdot 4H_2O$ in which M^I represent a monovalent - and M^{II} divalent cations and $(EF_6)^{2-}$ represent the octahedral ions in the crystal molecules (E + Zr, Hf). The spectra of all hexafluoro complexes of zirconium and hafnium with divalent cations showed strong absorption in the regions 400-800, 1600-1700, and 2900-3600 cm^{-1} . In the region 470-495 cm^{-1} there is a strong absorption which agrees with the phase of the monovalent complexes. From the analysis of the infrared spectra it becomes evident that the groups $(ZrF_6)^{2-}$ and $(HfF_6)^{2-}$ are present in all specimens studied.

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Uranium Compounds

USSR

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DAVIDOVICH, R. L., Corresponding Member, Academy of Sciences USSR, and ZUSMAYEV, YU. A., Department of Chemistry of the Far Eastern Branch imeni V. L. Komarov, Siberian Department of the Academy of Sciences USSR, and Institute of General and Inorganic Chemistry imeni N. S. Kurnakov, Moscow, Academy of Sciences USSR

"Solvolytic Reactions of Complex Fluorouranylates"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 2, 11 Mar 70, pp 355-357

Abstract: Uranofluorides, UO_2F_2 , in combination with fluorides of alkaline metals and ammonium forms complex compounds, some of which undergo decomposition during recrystallization from solutions. When $M_3UO_2F_5$ ($M=K, Rb, Cs, NH_4$), is dissolved in water, there is decomposition with separation of the fluoride of the alkaline metal. The reaction is not due to hydrolysis; it is the result of interaction of the fluoride ion with molecules of water, with the formation of hydrogen bonds during dissociation of the complex anion in solution. The authors present a simple method for the synthesis of the compounds $M(UO_2)_2F_5$ ($M=K, Rb, Cs$) by recrystallizing $M_3UO_2F_5$ in a 40% HF solution.

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1/2 023 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--IR SPECTRA OF M SUB2 UD SUB2 F SUB4 .H SUB2 O COMPLEXES -U-
AUTHOR--(02)--SERGIENKO, V.I., DAVIDOVICH, R.L. D
COUNTRY OF INFO--USSR
SOURCE--SPECTROSC. LETT. 1970, 3(2), 35-42
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--IR SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, RUBIDIUM
COMPOUND, CESIUM COMPOUND
CCNTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1679 STEP NO--US/0000/70/003/002/0035/0042
CIRC ACCESSION NO--AP0125300
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125300

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA (50-4000 CM PRIME NEGATIVE) WERE RECORDED OF M SUB2 UO SUB2 F SUB4 .XX PRIME O (M EQUALS RB, CS; X, X PRIME EQUALS H, D). THE ASYM. UO SUB2 PRIME2 POSITIVE STRETCHING FREQUENCIES (855 AND 847 CM PRIME NEGATIVE1 FOR COMPS. WITH M EQUALS RB AND CS RESP.) ARE CONSIDERABLY HIGHER THAN THOSE OF THE CORRESPONDING M SUB3 UO SUB2 F SUB5. VERY NARROW (HALF WIDTH 3-5 CM PRIME NEGATIVE1) SYM. UO SUB2 PRIME2 POSITIVE STRETCHING VIBRATIONS WERE OBSD. AT 614 CM PRIME NEGATIVE1. THE U-O FORCE CONST. (6.40 MILLIDYNES-ANGSTROM) IN BOND ORDER (2.14) AND THE U-F BOND ORDER (0.430) ARE HIGHER IN RB SUB2 UO SUB2 F SUB4 .H SUB2 O THAN IN RB SUB3 UO SUB2 F SUB5. ANAL. OF THE OH AND OD VIBRATIONS INDICATE STRONG H BONDS (BOND ENERGIES 2.5-4.0 KCAL-MOLE), THE PRESENCE OF 2 KINDS OF H SUB2 O MOLS., AND STRONG COORDINATION OF H SUB2 O IN THE COORDINATION SPHERE OF UO SUB2 PRIME2 POSITIVE. IN M SUB2 UO SUB2 F SUB4 .H SUB2 O, THE COORDINATION POLYHEDRON IS A DISTORTED PENTAGONAL BIPYRAMID WHOSE EQUATORIAL PLANE CONSISTS OF 4 F ATOMS AND 1 H SUB2 O MOL.

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1/2 029

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--IR ABSORPTION SPECTRA OF THE M SUB3 UD SUB2 F SUB5 COMPLEXES -U-

AUTHOR--(02)--SERGIENKO, V.I., DAVIDOVICH, R.L.

COUNTRY OF INFO--USSR

SOURCE--SPECTROSC. LETT. 1970, 3(1), 27-34

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, URANIUM COMPOUND, COMPLEX COMPOUND, AMMONIUM COMPOUND, HYDROGEN BONDING, FLUORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1856

STEP NU--US/0000/70/003/001/0027/0034

CIRC ACCESSION NU--AP0112840

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112840

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF UO SUB2 PRIME2 POSITIVE IN M SUB3 (UO SUB2 F SUB5) (M EQUALS NA, K, RB, CS, OR NH SUB4 PRIME POSITIVE) AT 180-4000 CM PRIME NEGATIVE1 ARE DESCRIBED AND THE CHARACTERISTIC BANDS ARE ASSIGNED. THE ASYM. STRETCHING FREQUENCY OF UO SUB2 PRIME2 POSITIVE EXHIBITED A REGULAR DEPENDENCE ON THE M IONIC RADIUS, EXCEPT WHEN M EQUALS NH SUB4 PRIME POSITIVE, APPARENTLY OWING TO THE FORMATION OF H BONDS BETWEEN NH SUB4 PRIME POSITIVE AND F IN THE COMPLEX. FACILITY: F. E. DEP., SIB. BR., VLADIVOSTOK, USSR.

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