

172 012 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--USE OF GAS LIQUID CHROMATOGRAPHY FOR THE ANALYSIS OF ADIPONITRILE
 AND HEXAMETHYLENEDIAMINE OBTAINED FROM ADIPIC ACID -U-
 AUTHOR--(04)-USOVA, E.P., MITINA, L.I., MILYUKOVA, YU.F., ZNAMENSKAYA, A.P.

COUNTRY OF INFO--USSR
 SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 571-5
 DATE PUBLISHED-----70

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SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--GAS CHROMATOGRAPHY, ADIPONITRILE, HEXAMETHYLENEDIAMINE, ADIPIC
 ACID, CYCLOPENTANE, KETONE, CYANIDE, ORGANIC OXIDE, BENZENE, PYRIDINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3005/0003

STEP NO--UR/0075/70/025/003/0571/0575

CIRC ACCESSION NO--AP0132303
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PROCESSING DATE--13NOV70

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CIRC ACCESSION NO--AP0132303

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

ABSTRACT. GAS LIQ. CHROMATOG. WAS USED TO ANALYZE ADIPONITRILE AND HEXAMETHYLENEDIAMINE OBTAINED FROM ADIPIC ACID. OPTIMUM CONDITIONS HAVE BEEN FOUND FOR THE QUANT. DETN. OF CYCLOPENTANE, CYCLOPENTYLIDENECYCLOPENTANONE, 2,CYANOCYCLOPENTANONE, BIPHENYL, DIPHENYL OXIDE, TRIS(TRIMETHYLENE)BENZENE, 1,CYANO,2,AMINOCYCLOPENTENE. 3,4,5,6,BIS(TRIMETHYLENE),2, AMINOPYRIDINE, 3,4,5,6,BIS(TRIMETHYLENE),2,BUTYLPYRIDINE, DELTA CYANOVALERAMIDE IN ADIPONITRILE. THE MOST UNIVERSAL STATIONARY PHASE WAS 20PERCENT POLYETHYLENE GLYCOL ON CELITE IN A 2 M COLUMN. LESS VOLATILE COMPS. WERE SEPD. ON A 1 M COLUMN WITH 5PERCENT POLYETHYLENE GLYCOL ON CELITE AT 190DEGREES. FACILITY: STATE SCI.-RES. DES. INST. NITROGEN IND. ORG. SYN. PROD., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: **AP0048480** Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:
2130070

M

105253z Magnetic properties of rare-earth stannates, $R_2Sn_2O_7$. Mitina, L. P.; Belyaev, L. M.; Dem'yanets, L. N.; Dmitrieva, T. V.; Lyubutin, I. S. (Inst. Kristallogr., Moscow, USSR). *Kristallografiya* 1970, 15(1), 183-8 (Russ). The temp. dependence of the magnetic susceptibility (χ) was measured for compds. of the $R_2Sn_2O_7$ type, where R = La, Pr, Nd, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, and Y in magnetic fields of 7 and 10 kOe at 100 - 600°K by means of a balance with electromagnetic compensation. Curves are shown. The values of molar susceptibility at 293°K, Curie const., paramagnetic Curie temp., and effective magnetic moment calcd. from the values measured are tabulated. The deviations from linearity of the $1/\chi(T)$ dependence were discussed. The effect of cryst. fields is mentioned as a possible cause of the deviation from the Curie law at lower temps. V. Burjan

1/1

REEL/FRAME
19800188

1814

ELECTRICAL ENGINEERING
Equipment/Machinery

USSR

UDC 621.311.21:621.3.076.7

MITINA, S. A., engineer, and NEYSHTADI, I. S., TsNIIKA (Tsentral'nyy nauchno-
isledovatel'skiy institute kompleksnoy avtomatizatsii--Central Scientific-
Research Institute of Complex Automation)

"Noncontact Automatic Operator for Optimization of the Number and Composition
of Operating Components of Hydroelectric Power Plants"

Elektricheskiye stantsii, No 1, Jan 72, pp 31-34

Abstract: The paper discusses a noncontact automatic operator for components
of hydroelectric power plants. The operator was developed at the Central
Scientific-Research Institute of Complex Automation and which can operate
both in a generating regime and in a regime of a synchronous compensator.
The device is made on the base of URAL-10 standard semiconductor logic
elements. It is concluded that the non-contact automatic operators possess
a number of advantages in comparison with electromechanical automatic operators
in use at the present time, notably the effective tuning out of frequent
start-ups and stops and automatic selection of the sequence. It is advisable
to use the automatic operator described at hydroelectric power plants of
average power where the equipment of the control machines is economically
unsound. 5 fig. 8 ref.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
 TITLE--A COMPARATIVE ASSESSMENT OF SOME MATERIALS EMPLOYED FOR THE
 PROTECTION OF SILICATE FILLINGS FROM THE DISSOLVING EFFECT OF THE ORAL
 AUTHOR--(02)-MITINA, V.I., PIRYIEVA, R.A.
 COUNTRY OF INFO--USSR
 SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 62-64
 DATE PUBLISHED-----70
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--SILICATE, DENTAL MATERIAL, CELLULOID, SHELLAC, LACQUER
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1998/0216 STEP NO--UR/0511/70/049/003/0062/0064
 CIRC ACCESSION NO--AP0120914
 UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120914
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SUMMARY. UNDER STUDY WAS THE INFLUENCE OF SOME ISOLATING MATERIALS ON THE SOLUBILITY AND MECHANICAL RESISTANCE OF SILICIN AND SILIDONT CEMENTS. THE AUTHORS ARRIVED AT THE CONCLUSION THAT FOR THE MAXIMAL REDUCTION OF THE SOLUBILITY OF THE SILICIN CEMENT IT IS NECESSARY TO ISOLATE THE FILLING FROM MOISTURE FOR NOT LESS THAN THREE HOURS, AND SILIDONT CEMENT, NOT LESS THAN ONE HOUR. FOR THE PROTECTION OF FILLINGS ONE MAY EMPLOY WAX, VASELINE AND SHELLAC CELLULOID LACQUER.

FACILITY: OTDEL TERAPEVTICHESKOY STOMATOLOGII I LABORATORIYA MATERIALOVEDENIYA ODESSKOGO N-I INSTITUTA STOMATOL.

UNCLASSIFIED

Acc. Nr: AP0047181

Ref. Code: UR0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp25-27

M

- SOME INDICES OF THE PROPERTIES OF DENTAL

CEMENTS

Mitina, T. I.; Pyr'eva, R. A.

Summary. Under investigation was the influence of temperature, humidity and time on the volume, hardness, resistance to compression, viscosity and detrition of dental cements - silicin and silidont.

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REEL/FRAME

19790676

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USSR

UDC: 621.397.7

SUSHCHENKO, V. P., SEN'IVSKIY, I. I., MITINEV, V. A.

"A Device for Facsimile Recording on Electrochemical Paper"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 31, Nov 71, Author's Certificate No 318175, Division H, filed 30Dec69, published 19Oct71, p 214

Translation: This Author's Certificate introduces a device for facsimile recording on electrochemical paper. The device contains a scanning drum, a writing element pressed against paper, a spool for the paper roll, take-up rollers, and a heater. As a distinguishing feature of the patent, blurring of the image is reduced by locating the heater in an enclosed chamber with a horseshoe cross section which directs the heat rays through a slot in the chamber wall onto the paper in the region of contact with the writing element.

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USSR

UDC 621.735.32.016.3:621.882.31

MITIKIN, A. N., Candidate of Technical Sciences, KULIKOV, V. P.,
BOGODIST, V. A., Scientific Research Institute of Technology
of the Motor-Vehicle Industry, Kremenchug Motor-Vehicle Plant

"A New Process for Producing Parts Such as a Connecting Nut by
the Method of Cold Heading"

Moscow, Avtomobil'naya Promyshlennost', No 12, Dec 70, pp 29-31

Abstract: In the USSR and outside of it, a constantly increasing number of parts of complex configuration is being produced by the cold heading method. Among such parts is an air-line connecting nut, which is a typical representative of an entire group of parts that are used for connecting pipelines of various purposes. The process of producing such a connecting nut by the cold heading method is described in detail. The conclusion is drawn that considerable savings of metal are made possible by the employment of this process. 2 tables, 6 figures, 2 bibliographic entries.

1/1

- 45 -

USSR

UDC 666.1.053.525

MIT'KIN, V. M. and SHCHAVELEV, O. S., Candidate of Sciences

"Thermo-optical Characteristics of Optical Types of Glass"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 9, Sep 73, pp 26-29

Abstract: Calculated values are presented of the thermo-optical constants of industrial and experimental types of optical glass. It is shown experimentally that there is a relation between induced optical distortions and the value of a combination of thermo-optical constants, and not with the value of the known constant W . Ways are indicated for the development of types of glass that are suitable for use in optical devices employed under conditions of unstable temperature fields. 4 figures. 10 references.

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USSR

UDC: 621.375.82

VANYUKOV, M. P., MITKIN, V. M., SEREBRYAKOV, V. A., SOKOLOV, D. V.,
and STARIKOV, A. D.

"Monopulse Lasers Using Neodymium Glass With Diffraction Divergence
of Radiation"

Moscow, V sb. Kvant. elektronika (Quantum Electronics--collection
of works) "Sov. radio," No 1(13), 1973, pp 85-89 (from RZh--Fizika,
No 7, 1973, Abstract No 7D985)

Translation: An investigation is made of a number of monopulse
lasers using neodymium glass with various optical resonator con-
figurations for the purpose of determining the optimal variant of
the master oscillator in a power laser device with intense bright-
ness. The basic physical requirements for designing a stable mono-
pulse oscillator with diffraction angular divergence of the radia-
tion are formulated. Bibliography of 12. Authors' abstract

1/1

USSR

UDC 621.378.3; 535.89

MAK, A. A., Doctor of Sciences, MIT'KIN, V. M., SOMS, L. N., STEPANOV, A. I.,
Candidate of Sciences, SHCHAVELEV, O. S., Candidate of Sciences

"On Thermo-Optical Constants of Activated Glass"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71, pp 42-45

Abstract: A simple method is described for determining the thermo-optical constants of glass and the possibilities of obtaining glasses with small thermo-optical constants is discussed. It is noted that optical pumping of the active element of a laser is accompanied by heating of the laser and the formation of temperature gradients in the transverse cross section which cause stresses and double refraction, so that optical distortions arise in the element. Although many methods have been described for overcoming the harmful effects of distortions caused by these effects on the generation process, it is suggested that a more radical method would be the development of materials in which thermal distortions would be sufficient small. Three constants are discussed: W , the thermo-optical constant ordinarily applied in optics; P and Q , constants characterizing the distortion averaged for two polarizations, and the double refraction.

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USSR

MAK, A. A., et al, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71,
pp 42-45

A table is given showing the values of P , Q and W for the following types of glass: KGSS3, KGSS7, LGS24-5, LGS28-2, LGS36, KGSS56 and KGSS1621. It is noted that for laser applications one should use a glass with zero or fairly small values of the constants W , P and Q . Studies showed that the thermo-optical constant W of the glass changes considerably with the composition of the glass. Its values can be much less than zero, 0 and negative. The constant P should be highly dependent on the composition of the glasses and its value can vary from -1 to +1 to the fifth power, so that the majority of compositions of industrial glasses and neodymium glasses should be characterized by values of P considerably less than zero. The constant Q depends on the composition of the glass to a considerably less degree than P . In the majority of silicate and phosphate glasses the constant Q is small and does not exceed $0.1 \cdot 10^{-5} \text{ deg}^{-1}$. It is concluded that it is possible in principle to obtain glasses with small values of the thermo-optical constants W , P and Q .

2/2

USSR

UDC 541.123.2:[546.621-31+546.45-31]:[532.6+542.3]

YELYUTIN, V. P., MITIN, V. S., and ANISIMOV, YU. S., Moscow Institute of Steel and Alloys

"Surface Tension and Density of Al₂O₃-BeO Melts"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 9, Sep 73, pp 1585-1587

Abstract: Researchers today are paying considerable attention to the study of the properties of liquid oxides of aluminum and beryllium because of the expanding use of powders from these metals and their alloys in solid rocket fuels. One of the main factors in this research is the determination of density and surface tension of oxides in the liquid state. The authors of this article established the concentration dependence of surface tension and density of liquid Al₂O₃-BeO melts. They measured the surface tension and density of pure aluminum oxide and melts of Al₂O₃ as a function of temperature. The values of surface tension of pure Al₂O₃ were found to be lower than that found previously. The value of the density of liquid aluminum oxide, equal to 3.03 g/cm³, at the melting point is found to be in good agreement with previous data, but the temperature coefficient of the density is somewhat higher. The article contains 2 figures, 1 table, and 4 bibliographic references.

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Acc. Nr:

AP0055924

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code:

4R0075

M

116326b Infrared spectra of complexes of platinum(II) with hydroxylamine and o-methylhydroxylamine. Mitkinova, N. D.; Ivannikova, N. V.; Varshavskii, Yu. S.; Stetsenko, A. I. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 572-4 (Russ). Redn. of $K_2[PtCl_6]$ by NH_2OH or NH_2OMe gave $[Pt(NH_2OH)_4]Cl_2$ (I) and $[Pt(NH_2OMe)_4]Cl_2$ (II), resp. $[Pt(L')_4]Cl_2$ (III) ($L' = ND_2OD$ or ND_2OMe) were prepd. analogously. Ir spectra of I, II, III, and $[PtL'_4][PtCl_4]$ ($L' = NH_2OH$ or ND_2OH) are tabulated and their absorption bands are assigned. The study reveals that acidity of NH_2OH complexes is correlated with OH and not with NH_2 group.

HMJR -

pc

REEL/FRA
19841253

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Instrumentation and Equipment

USSR

UDC 620.171.251.1

NOVIKOV, N. V., ALEKSYUK, M. M., VOYNITSKIY, A. G., KOVAL'CHUK, B. I.,
MITLIKIN, M. D., and ZARUBIN, L. I., Kiev

"Specifics of Mechanical Tests of Structural Materials Over a Broad Range of
Low Temperatures"

Kiev, Problemy Prochnosti, No 4, Apr 71, pp 20-26

Abstract: Methods and equipment for mechanical testing at low temperatures used at the Institute of Problems of Strength of the Academy of Sciences Ukrainian SSR are described. The equipment is used to study the temperature dependence of the mechanical properties of steels, aluminum, and titanium alloys. Equipment illustrated includes a device for maintenance of temperatures from 0 to -196°C , multiposition clamps for circular and flat specimens, the UN-30 tensile testing device, allowing loads of up to 30 tons to be applied at temperatures down to -269°K , a miniature semiconductor thermometer, the SZF-1 tensile testing machine, equipped with a chamber for testing at down to -269°C , and an electromechanical tensometer for measurement of linear and angular displacements.

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Water Treatment

USSR

UDC 542.48.003.1

DYKHNO, A. Yu., KEGAMYAN, Yu. Sh., MALYSHEVA, A. E., ~~MITLITSKIY, G. A.~~
and SENDEROVICH, A. E.

"Technological and Economical Comparison of Two Multipurpose TETs [Heat and Electric Power Stations] for Distillation of Sea Water"

Moscow, Vodostabzheniye i Sanitarnaya Tekhnika, No 1, 1972, pp 2-5

Abstract: Results of performance, maintenance cost, reliability, and the cost of distilled water for two types of distillation plants (A and B) are analyzed. Plant A is equipped with separate zones for water boiling and uses seed crystals for reducing the formation of low-temperature boiler scale, consisting mainly of calcium carbonate and magnesium hydroxide.

Plant B operates by the open cycle principle with the feeding of vapor generators with demineralized sea water. Both plants produce electrical energy, steam, and distilled water. The cost of distilled water is 59 and 86 kopeks/ton water for plants A and B, respectively, with an electrical energy consumption of 66 kopeks/kwatt/hour.

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Water Treatment

USSR

UDC 628.16.094.9

MIRKIS, I. M., DYKHNO, A. Yu., MIKHAYLOV, I. P., MITLITSKIY, G. A., and
KEGAMYAN, Yu. Sh.

"Removal of Calcium From Caspian Sea Water by Ion Exchange"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 10, 1972, pp 1-5

Abstract: Three types of sediments form during evaporation of sea water: calcium carbonate, magnesium hydroxide and calcium sulfate. The first two precipitate due to the presence of carbonate and bicarbonate ions whose content is rather low in comparison to other sediment-forming ions. Pilot plant studies were carried out with Caspian Sea water in an attempt to develop preventive measures against formation of sediment in the evaporators, by means of the decomposition of carbonates formed with acid, followed by removal of the calcium with the ion exchange technique. Scrubbed water was used for the regeneration of cation exchange resin. It was shown that it is possible to carry out a long-lasting cyclic process. The technology of such a process was developed. Effective exchange capacity of sulfonated coal and cation exchange resin KU-2 was determined.

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USSR

UDC 621.371:538.569.4 4

ABLYAZOV, V. S., BASHARINOV, A. Ye., GORELIK, A. G., GORDON, Z. I.,
KALASHNIKOV, V. V., KUTUZA, B. G., MITNIK, L. M., PENYAZ', L. A.,
FROLOV, A. V., and FROLOV, Yu. A.

"Absorption and Radiation of the Atmosphere in the 0.5-10 cm
Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 3-7 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10A309)

Translation: The method and the results of measuring the absorption
and radiation of the atmosphere for waves of 0.5-10 cm and, in par-
ticular, in the absorption bands of oxygen and water vapor, are
given. The measurements were made for the purpose of investigating
the propagation of uhf waves under various meteorological condi-
tions, which were recorded simultaneously with the radio measure-
ments. Curves are given of the attenuation and radio brightness
temperature for rain clouds. Two illustrations, bibliography of
five. N. S.

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USSR

UDC 621.317.799:538.569.4

AKVILONOVA, A. B., GORELIK, A. K., KALASHNIKOV, V. V., KRYLOVA, M. S., KUTUZA B. G., KUKHARSKAYA, N. F., MITNIK, L. M., PUZANOV, V. A., and FROLOV, Yu. A.

"Measuring the Full Absorption in a Cloudless Atmosphere in the 0.55-0.59 Range"

Moscow, V sb. X Vses. konf. no rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 8-11 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A422)

Translation: Experimental data is given on the full absorption of radio waves in a cloudless atmosphere in the 0.55-0.59 cm range, with simultaneous recording of vertical profiles for temperature, pressure, and humidity at the observation point. Resume

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- 60 -

AA0040521

Mitnitskiy, B.G. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

236964 AUTOMATIC RESISTANCE WELDING OF CHAINS

1-70

involves attaching the electrode holders (10) to the spring loaded slide rails (11), operating in guides mounted in the levers (12), which carry clamping die (13). The link ends are brought together by slides (6), the clamping pressure depending on springs (7) strength. The electrodes are brought into position by operation of levers (12) from cams (14), through levers (15) and concentric splined shafts (16), one of which is hollow. Switch (17) switches on the welding current, upsetting takes place, and the current is switched off by switch (19). Further movement of levers (12) bring dies (13) into contact with the link, and simultaneously retract the electrodes by means of pushrods (20). The electrode holders (22) are rotated to permit passage of the dies (13) to the link. Retraction of the levers (12) is by springs (23). The machine welds alternate links,

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19750032

AA0040521

26.10.67 as 1192873/25-27. A.P. CHIZHOV & B.G.
MITNITSKII. PRESS FORGE ENGINEERING OFFICE. (16.6.69)
Bul 7/3.2.69. Class 49k, 21h. Int.Cl.B 21 1, B 23k.
and the chain is turned through 90° and fed through
a second time to complete the operation. A
reciprocating blade (26) is incorporated for
flashing removal.

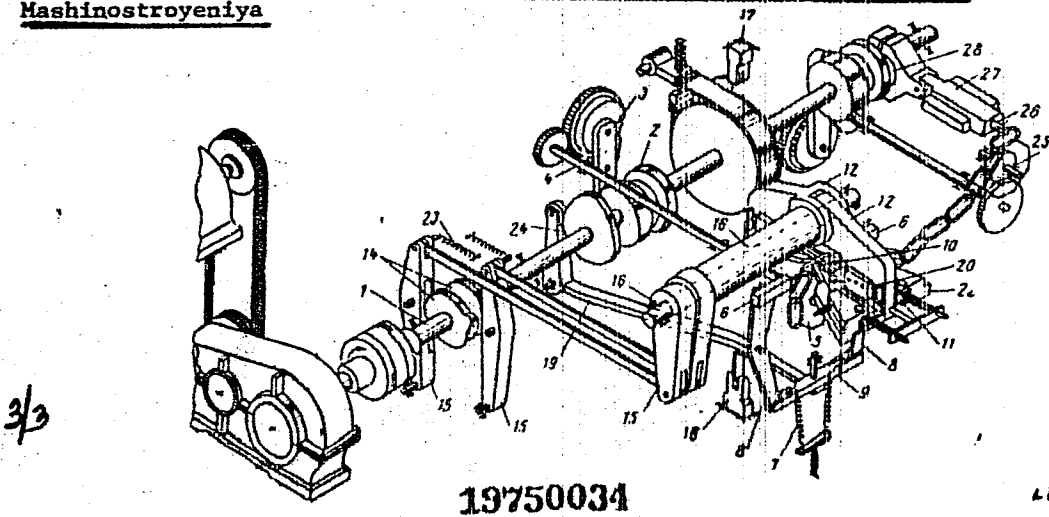
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19750033

AA0040521

AUTHORS: Chizhov, A. P; Mitnitskiy, B. G.

Tsentral'noye Proyektno-Konstruktorskoye Byuro Kuznechno-Pressovogo Mashinostroyeniya



USSR

UDC 621.375.82

KIDYAROV, B. I., KRIVOSHCHKOV, G. V., MITNITSKIY, P. L., SAMARIN, V. I.,
STROGANOV, V. I., TARASOV, V. M.

"Dispersion of Wave Synchrony in a LiIO_3 Crystal"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 399-407 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D858)

Translation: A study is made of the dependence of the nonlinear characteristics of LiIO_3 on the frequency in order to discover new possibilities of applying this crystal for cascade laser emission frequency multipliers. The LiIO_3 crystals in the hexagonal version were grown from an aqueous solution containing 10% HIO_3 with respect to LiIO_3 . The nonlinear characteristics of the crystal were investigated by means of a glass Nd-laser with a broad generation spectrum of 0.008 \AA . An experimental check was made of the intensity of the excited second harmonic as a function of the wavelength of the radiation propagated along the direction of synchrony. A study was also made of the dependence of the intensity of the second harmonic on the pumping beam deflection from the direction of synchrony. When determining the magnitude of $d\theta_c/d\lambda$, additional possibilities for a nonlinear frequency discriminator were discovered. The bibliography has 7 entries.

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MITNITSKIY, P.L.

SPRS 59208

6-73

3

XI-1. STUDY OF THE CRYSTALLIZATION LAWS OF SEMICONDUCTOR SUBSTANCES

SESSION XI

Article by B. L. Kidparov, P. L. Mitnitskiy, L. I. Alexandrov, Novosibirsk; Novosibirsk, Ill Sibirskiy na Kholmogorovskaya St. Sibirskiy Poluprovodnikoviy Institut i Pribor, Russian, 12-17 June 1972, p 1249

A statistical study was made of the initial stage of crystallization of semiconductors: lithium and cesium fluoride from the melt and also lithium iodide from an aqueous solution. It was demonstrated that there is a discrete series of temperatures and concentrations for which the beginning of crystallization of the supercooled melt and the supercooled solutions is most probable. The height of the peaks of the nucleation rate of the crystallization centers decreases with an increase in superheating and duration of holding in the superheated state, and their position does not depend on the preliminary treatment of the melt. The existence of such a discrete series of temperatures is detected at the present time for the following substances which melt with different violation of the chemical bond type: semiconductor-semiconductor (Te), semiconductor-metal (Ge, In, Sb), semiconductor-metal (LiIO₃), metal-metal (Hg, Sn), dielectric-metal (LiNO₃).

The waiting time distribution function for the appearance of the first crystallization center (1) at the peaks of the nucleation rate is subjected to the exponential law of the nonuniform batch (1) and at the minima it has a tailization period (2):

(1) $f = \frac{dN}{dt} = N_0 \exp(-\frac{t}{\tau})$
(2) $f = \frac{dN}{dt} = N_0 \exp(-\frac{t}{\tau}) \cdot \exp(-\frac{t}{\tau_0})$

where N₀ is the total number of samples for the number of tests on one sample, n is the number of samples crystallized by the time t.

The indicated relations (1) and (2) were also observed when studying the crystallization of tin wires, and they obviously have a general nature.

USSR

UDC 669.71.472(088.8)

BALDOVSKIY, L. A., VOLODCHENKO, V. O., GRECHUKHIN, N. V., MELIKYANTS, R. V.,
MITREYKIN, N. V., and RABINOVICH, B. V.

"Device for Sampling Melted Electrolyte"

USSR Author's Certificate No 271105, Filed 29/11/68, Published 19/08/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G145 P)

Translation: A device for sampling a melted electrolyte, including a
spring-mounted perforated cup with a support rod, is presented. To in-
crease the effectiveness of its operation the outer surface of the cup
is wrapped with paper and contains a concentrically mounted cylinder,
equipped with cells mounted on a spiral and fastened to the supporting
rod by a quick-change joint such as a wedge.

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- 19 -

BIOLOGY

Agriculture

USSR

UDC 614.449.57:615.285.7]:576.895.77+595.771

KRIVTSOVA, Ye. N., MITROFANOV, A. M., KOZIN, N. P., TIMOFEYeva, L. V.,
TULUPOVA, A. M., VINOGRADSKAYA, O. N., YERMISHEV, Yu. V., PLOTNIKOVA, A. S.
and RYAZANTSEV, V. A., Institute of Medical Parasitology and Tropical Medicine
imeni Ye. I. Martainovskiy, Ministry of Health USSR, and Institute of Agri-
cultural and Specialized Application of Civil Aviation

"Testing of Some Organophosphorus Compounds and Carbamates against Larvae of
Aedes Mosquitoes (Culicidae) in Experiments with Aerial Spraying"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5,
Sep/Oct 70, pp 599-603

Abstract: The use of organophosphorus compounds and carbamates against
mosquito larvae was tested in the Yakut ASSR, in the area of the villages of
Novy, Aikhal, and Mirny, and the Udachnaya deposits. Water reservoirs were
treated by aerial spraying from an AN-2 plane. The following pesticides were
tested: bytex, methylnitrophos, trolen, sevine, and dipterex; DDT was used as
the reference. Comparatively uniform marshy territories with occasional for-
ests and bushes were selected. Bytex was shown to be especially effective as
a larvicide, a dose of 40 g/hectare proving to be sufficient. Methylnitrophos

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USSR

KRIVTSOVA, Ye. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5, Sep/Oct 70, pp 599-603

required a 100 g/hectare dose to be effective; trolen in doses 40 and 80 g/hectare reduced the density of mosquito larvae only insignificantly. Dipterex and sevin proved ineffective as larvicides, being significantly inferior to DDT. The effect of mosquito larvae eradication with organophosphorus compounds lasts for 7-14 days.

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USSR

UDC 615.235.7.065:639

TROFIMOVA, M. G., and MITROFANOV, A. M., Institute of Medical Parasitology and Tropical Medicine imeni Ye. P. Martynovskiy, Ministry of Health USSR, Moscow

"Effect on Aquatic Organisms of Granulated DDT Applied for the Control of Mosquitoes"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 5, Sep-Oct 72, pp 620-622

Abstract: Ten percent granulated DDT in the amount of 5 kg/ha dusted from aircraft was used on an experimental basis for the control of Aedes mosquitoes in the vicinity of the town of Mirnyy in the Yakut ASSR. A study carried out on three bodies of water with areas in the range from 4.5 to 9.0 sq. m. and a depth of 0.3-1.5 m showed that the larvae of Aedes mosquitoes were exterminated completely in 24 hrs. The DDT accumulated in the bottom silt, killing the Chironomidae that inhabited the bottom layer. The Copepoda and Cladocera distributed throughout the thickness of the water did not diminish in number, but in the case of Copepoda even increased in comparison with the amount present in bodies of water not treated with DDT. DDT was not present either in the upper layers of water or in the water vegetation.

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USSR

UDC 911.3.616.9.576.895.771(571.56)

TIMOFEYEVA, L. V., MITROFANOV, A. M., VINOGRADSKAYA, O. N., RASNITSYN, S. P.,
PETRUCHUK, O. Ye., RYAZANTSEV, V. A., and YERMISHEV, Yu. V.

"Organizational Principles in the Struggle Against Blood-Sucking Midges and
Aedes Mosquitoes on the Basis of Their Biological Characteristics"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med.
parazitol. i tropich. med., 1970 (Proceedings on the Conference Commemorating
the 50th Anniversary of the Institute of Medical Parasitology and
Tropical Medicine 1970 — collection of works), Moscow, 1970, pp 50-51
(from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.75)

[No abstract]

1/1

USSR

UDG 621.382(047.1)

ZHDANOV, V.I., AKSENOV, A.I., BORISOV, V.A., MITROFANOV, A.V.

"New Semiconductor Devices For Radioelectronics Apparatus"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 2(59), pp 11-20 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B9)

Translation: The paper considers the principal characteristics and directions in the development of contemporary discrete semiconductor devices for radioelectronics apparatus for wide-scale application. In the development of power transistors, three principal directions are indicated: (1) Creation of a transistor for increasing the power with a high critical frequency of amplification of the current and small interelectrode capacitances applicable to high-frequency and microwave techniques; (2) Development of a transistor with a large amount of production of the maximum current of the collector at the permissible collector voltage with large power dissipation and a critical frequency of amplification up to 20 MHz, broadening use in amplifier and switching circuits; and (3) Creation of high-voltage transistors necessary for the final stage of the horizontal sweep of television and a number of other circuits. 7 ill. V.K.

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- 157 -

AA0040677- MITROFANOV 3D UR 0482 3

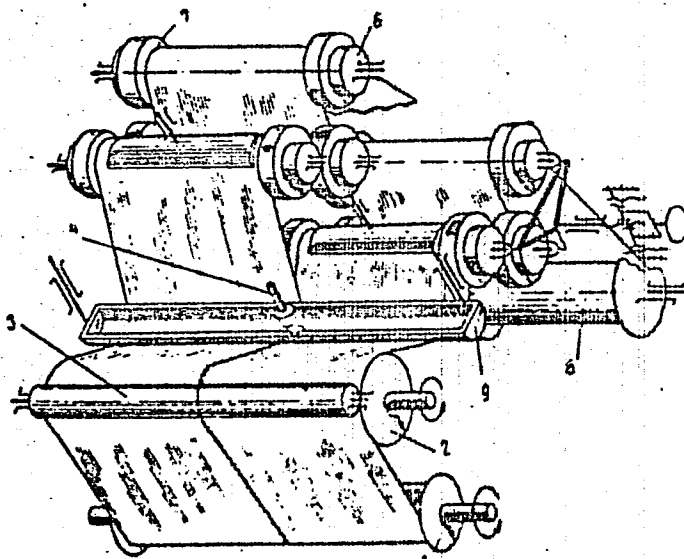
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

241581 SHEET, STEEL WELDING MACHINE with continuous weld deformation where to improve the weld quality of thin gauge sheet steel, a drum type welding machine was equipped with a semi-cylindrical trough 9 of a small diameter with a slot for the welding electrode 4. During welding, the steel sheets pass round the trough 9; the material expands under the heat and the edges of the sheets are bent downwards which ensures good contact of the welded seam with the backing support.

8.8.66 as 1096074/25-27. A.V.PETROV et alia(8.9.69)
Bul 14/18.6.69. Class 21h. Int.Cl.B 23k. 18

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19750281

AA0040677



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L.D.

19750282

AA0040677

AUTHORS: Petrov, A. V.; Slavin, G. A.; Leonov, V. D.; Kuleshov,
M. P.; Zhukov, V. F.; Shorokhov, V. I.; and Mitrofanov,
E. D.

19750283

3/5

USSR

UDC: 539.3

MITROFANOV, B. P.

"Plane Contact Problem for an Elastic Body With Regard to the Effect of the Surface Layer"

Izv. Tomsk. politekhn. in-ta (News of Tomsk Polytechnical Institute), 1970, 157, pp 24-25 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V35)

Translation: The paper presents the results of calculations of the contact stress $p(x)$ and dimensions ($2a$) of the contact area for the plane Hertz problem with regard to the surface structure of the contacting bodies according to I. Ya. Shtayerman (Contact Problem of Elasticity Theory, Gos-tekhteorizdat, 1949), according to which the problem is formulated as an integral equation

$$kp(x) + \theta \int_{-a}^a p(t) \ln \frac{1}{|t-x|} dt = \alpha - f(x)$$

This equation is reduced by the author to a Prandtl equation and solved numerically. G. Ya. Popov.

1/1

USSR

UDC 621.396.6.002-76



MITROFANOV, G. I.

"A Method for Hermetically Sealing the Shafts of Control Mechanisms at Points of Exit"

V sb. Obmen opytom v radiopromyshlennosti (Experience Pooling in the Electronics Industry--collection of works), Vyp. 6, Moscow, 1970, p 79 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V259)

Translation: The author proposes using rubber rings of circular cross section (GOST 9833-61) as the sealing element for shafts at points of exit. This principle of construction for a shaft seal may also be used for preventing leaks during horizontal displacement of a shaft. Resumé.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PHOTONEUTRON CROSS SECTIONS FOR THALLIUM 203 AND THALLIUM 205 -U-
AUTHOR--(04)-ANTROPOV, G.P., MITROFANOV, I.YE., PROKOFYEV, A.I., RUSSKIKH,
V.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 116-21
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--PHOTONEUTRON, EXCITATION CROSS SECTION, THALLIUM ISOTOPE,
COMPUTER CALCULATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0209 STEP NO--UR/0048/70/034/001/0116/0121
CIRC ACCESSION NO--AP0105285
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 017

CIRC ACCESSION NO--AP0105285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE YIELDS OF THE N FROM THE REACTIONS (GAMMA, N) AND (GAMMA, 2N) ON PRIME203 TL AND PRIME203 TL NUCLEI WERE MEASURED AT E PRIMEMAX. SUBGAMMA EQUALS 7-20 MEV. THE EXPTL. DETD. VALUES WERE USED TO CALC. THE CROSS SECTIONS OF THESE REACTIONS. THE CALCN. WAS CARRIED OUT ON A COMPUTER BY THE PENFOLD LEISS METHOD WITH A 0.5 MEV STEP. THE RESULTS ARE PLOTTED AND DISCUSSED.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RESONANCE REGISTRATION OF COBALT-57 GAMMA QUANTA -U-

AUTHOR--(03)-MITROFANOV, K.P., PLOTNIKOVA, M.V., ROKHLOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 75-6

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--QUANTUM RESONANCE PHENOMENON, COBALT ISOTOPE, GAMMA QUANTUM,
ABSORPTION SPECTRUM, GAMMA COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1063

STEP NO--UR/0120/70/000/002/0075/0076

CIRC ACCESSION NO--AP0136483

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARAMETERS ARE GIVEN OF A RESONANCE COUNTER FOR REGISTRATION OF PRIME57 CO GAMMA QUANTA WITHOUT RECOIL. THE ABSORPTION SPECTRUM OF THE COUNTER IS A SINGLE LINE. THE COUNTER IS COVERED WITH 70PERCENT FE PLUS 20PERCENT NI PLUS 10PERCENT CR. THE REGISTRATION EFFICIENCY FOR RESONANCE GAMMA QUANTA EQUALS SIMILAR TO 15PERCENT, THEIR COUNT EXCEEDS THE NOISE LEVEL TENFOLD. FACILITY: NAUCH.--ISSLED. INST. YAD. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 553.98:551.247:550.837.622.241(574.12/13)

ANISHCHENKO, G. N., DEMENT'YEVA, I. G., VILENCHIK, A. M., ~~MITROEANOV, K. P.~~
POGREBINSKIY, S. A., ROMANENKO, V. P., and FOMENKO, K. Ye., Trust for Special
Geophysical Operations, Ministry of Geology, USSR

"Electrometric Research on the Border Zone of the Pre-Caspian Depression by
the Method of Telluric Currents"

Moscow, Neftgazovaya Geologiya i Geofizika, No 5, 1972, pp 36-42

Abstract: The article summarizes the results of research in the pre-Caspian depression by the method of telluric currents. This method was used for mapping the elements of the salt tectonics in this territory on the basis of the acute difference between the specific resistance of the salt and that of the sediments of the persalt complex. The results, classified according to the regions of the investigated territory and the character of the relation with the cross-section, are briefly set forth. An analysis of the nature of the telluric anomalies is given. 4 figures.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ALKYL OR PHENYLALKYL SULFONATE ESTERS -U-

AUTHOR--(03)-KOSTYUCHENKO, V.M., MITROFANOV, H.G., GERSHENOVICH, A.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 218,882
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, SULFONIC ACID, ESTER, ALKYL RADICAL, PHENOL,
BENZENE DERIVATIVE, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1597

STEP NO--UR/0402/70/000/000/0000/0000

CIRC ACCESSION NO--AA0135238

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0135238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPS. ARE PREPD. BY
TREATING N,PARAFFIN SULFONYL CHLORIDES CONTG. C SUB2 -C SUB4 WITH ALCS.
CONTG. C SUB8 -C SUB16 OR WITH ALKYLPHENOLS CONTG. C SUB8 IN THE SIDE
CHAIN. THE REACTION IS CARRIED OUT IN THE PRESENCE OF NH SUB3 AT
SMALLER THAN 50DEGREES. FACILITY: VOLGOGRADSKIY
NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT NEFTYANOY I GAZOVOY PROMYSHLENNOSTI.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--INDUSTRIAL EXPERIENCE FOR OBTAINING ELECTRODE COKE FROM VACUUM-
RESIDUE OF MANGYSHLAK PETROLEUM -U-
AUTHOR--ZMIYEVSKIY, P.K., TIMOFEYEV, A.A., MITROFANOV, M.G., DEREKH, P.A.,
MARTIROSOV, V.G.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1) 5-8
DATE PUBLISHED----- 70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PROPULSION AND
FUELS
TOPIC TAGS--PETROLEUM PRODUCT, CRUDE OIL, ELECTRODE, COKE, PETROLEUM
DISTILLATION, VACUUM DISTILLATION, KEROSINE, PETROLEUM DESALTING,
CHEMICAL COMPOSITION, SULFUR, VANADIUM, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1140

STEP NO--UR/0318/70/000/001/0005/0003

CIRC ACCESSION NO--AP0107629

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 023

CIRC ACCESSION NO--AP0107629

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

ABSTRACT. RESIDUE, DISTG. 10PERCENT SMALLER THAN OR EQUAL TO 500 DEGREES, D PRIME 20 0.926, ASH 0.06, S 0.26, V 0.001, NI 0.002, COKE 8.0, TAR 28, ASPHALTENES 1.75, OIL 70, HARD PARAFFINS 17 WT. PERCENT, YIELDED, BY DELAYED COKING, ELECTRODE COKE CONTG. 7PERCENT VOLATILE MATTER. GOOD RESULTS WERE OBTAINED WHEN THE CRUDE PETROLEUM WAS DESALTED TO 10-15 MG AND THE RESIDUE CONTAINED MAX. 30-45 MG NACL-L., YIELDING GAS 9PERCENT, GASOLINE B. SMALLER THAN OR EQUAL TO 200DEGREES 10, KEROSENE, GAS OIL, AND FUEL 62, COKE 16, INCLUDING ELECTRODE COKE 6.5 WT. PERCENT. THE LATTER CONTAINED S 0.6 AND V 0.0014-0.0022PERCENT.

UNCLASSIFIED

Acc. Nr:

AP0040943

Abstracting Service:

CHEMICAL ABST. 4/76

Ref. Code:

UR0068

M

81264a Experimental adoption of the smokeless charging of coke ovens. Mitrofanov, N. I. (Yasinov, Koksokhim, Zavod, Yasinovka, USSR). ~~Abstr. Khim.~~ 1970, (1), 16-19 (Russ). Vapor and gas injection into furnace chambers had a similar effect on the smokeless charging of coke ovens. For pilot-plant and industrial circular coke ovens using coal from the Bachatskoe open-cut mine, adoption of the smokeless charging method was studied in detail. The compn. of the gases in the vicinity of the ovens was detd. without and with smokeless charging. Gas injection compared with vapor injection gave higher service life of the injecting device, a smaller amt. of ammonia water and lower costs, although a higher loss in the circulating coke-oven gas was observed. After adoption of the method, the dust content in the air decreased from 173.3 to 15.4-38.9 mg/m³ and the CO content from 92.8-147 to 8.3-18.9 mg/m³.

J. Brzezinski

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ALS

REEL/FRAME
19750682

18

USSR

UDC 537.525.1

KAGAN, YU. M., and MITROFANOV, N. K.

"Energy Spectrum of Electrons in a Striated Column of a Glow Discharge in Hydrogen"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, Issue 10, Oct 71,
pp 2065-2072

Abstract: Investigations were conducted on the striated form of a discharge in hydrogen at various pressures and densities. The striated structure of the discharge column was controlled by means of a metal diaphragm located in the vicinity of the cathode. The diaphragm, not connected externally, could be positioned with the help of a magnet.

Measurements of electron energy were made by means of the current flowing through a probe located between the diaphragm and the anode. This current was modulated by means of an a.c. potential, and the harmonics of the probe current corresponding to the modulating frequency was then used to determine the second derivative of the probe current with respect to the probe voltage. The required distribution function was then determined from the derivative. Electron density was found by integrating the energy distribution function.

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USSR

KAGAN, YU. M. and MITROFANOV, N. K., Zhurnal Tekhnicheskoy Fiziki, Vol 41, Issue 10, Oct 71, pp 2065-2072

Results were presented in the form of series of curves for different discrete values of pressures and discharge currents. It was observed that high-energy electrons were concentrated in the vicinity of the cathode and that they lost their energy gradually through inelastic collisions and scattering (drift) towards the walls of the tube as they moved through the region of lower potential gradients. Isotropy of electron velocities was not observed in the present experiments; on the contrary, a considerable non-uniformity of the positive column was noted, with fast-particle groups present everywhere.

A special probe was used for detecting and measuring the radial component of electron velocities. Caution was recommended for this type of measurement, particularly if a spherical probe was to be used, since the probe distorts the shape of the electric field in its vicinity and the assumption of the spherical character of the field components is no longer justified.

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USSR

UDC 621.382.2

ORESHIN, P.T., SEMENOV, V.A., MITROFANOV, O.V.

"Active Elements Based On Chalcogenide Glasses (Short Communication)"

Elektron.tekhnika. Nauch.-tekhn.sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, No 3(29), pp 35-37
(from RZh:Elektronika i yeye orizenaniye, No 2, Feb 72, Abstract No 2B165)

Translation: The switching parameters are considered of bead elements based on glasses with a different temperature of softening, in the composition of which Ge, Se, As, Si, and Ga enter. V.K.

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USSR

UDC 678.06-419.8.677.521].05

VOLKOV, R. A., KOVALEV, V. A., and ~~MITROFANOV, S. A.~~

"Flow Line for Fabrication of Fiberglass Lifeboats"

Moscow, Plasticheskiye Massy, No 6, 1971, pp 17-20

Abstract: The article describes a pilot line for the constant flow production of fiberglass lifeboats. Despite the difficulties encountered in the adjustment and introduction of the complex of equipment the result was a significant increase in labor productivity, as well as improved sanitary and hygienic conditions for the workers. The flow line is designed for the production of 1500 boats a year. The line makes provision for the production of single-layer and sandwich-type boats. The sandwich-type boats consist of an exterior and interior fiberglass shell, with the space between the shells filled with polyurethane foam. The line has two parallel flows for making the exterior and interior shells. The following operations are performed at sequentially arranged specialized work places: preparation of forming equipment; fabrication of the exterior and interior hull shells; hydroremoval of the shells; testing of the exterior shell for watertightness by filling with water; filling the space between the shells with polyurethane foam; installing of deck covers; assembling of machinery and equipment; testing of the boat; elimination of

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USSR

VOLKOV, R. A., et al., *Plasticheskiye Massy*, No 6, 1971, pp 17-20

minor defects found during the tests and painting of the boat; outfitting of the boat.

The flow line includes polymerization chambers equipped with individual ventilation and heating devices, a special device for the preparation and pouring of PPU-3S polyurethane foam, transport equipment (transfer-bar and intermittent conveyors), special equipment for making the exterior and interior shells of the boat hulls, and a traffic control panel.

The following are used to make the shells: polyurethane resin NPS-609-21 (STU [Sovnarkhoz Technical Specifications] 30-14366-65), glass cloths ASTT(b) - C₂-0 (MRTU [Interrepublic Technical Specifications] 6M-836-62), TZhS-0.56-0 (MRTU 6-11-62-67) and glass gauze SE-0-1 (MRTU 6-11-64-67).

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1/2 015

TITLE--IMPROVEMENT IN THE COMPLEX TREATMENT OF COPPERMOLYBDENUM ORES FROM
THE KAL'MAKYR DEPOSIT -U-
AUTHOR--MITRUFANOV, S.I.

UNCLASSIFIED

PROCESSING DATE--20NOV70

COUNTRY OF INFO--USSR

M

SOURCE--TSVET. METAL. 1970, 43(5), 36-40

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--COPPER ORE, MOLYBDENUM, OXIDATION, FLOTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1914

STEP NO--UR/0136/70/043/005/0036/0040

CIRC ACCESSION NO--AP0132176

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AP0132176

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INDUSTRIAL ORE TREATMENT PLANT WAS REBUILT TO ALLOW THE TREATMENT OF 3 KINDS OF ORE: OXIDIZED, MIXED (SULFIDE PLUS 10PERCENT OXIDIZED), AND SULFIDE ORES. THE BASIC ELEMENTS OF THE REBUILT PLANT WERE: FLOTATION WITH SUBSEQUENT CLASSIFICATION TO SEP. SLIMES FROM SANDS, FLOTATION OF THE SLIMES, AND GRINDING OF INTERMEDIATE PRODUCTS. SLIMES ENRICHED IN CU AND MO CAN GO TO THE CU-MO CONC. EITHER DIRECTLY OR AFTER ONE ADDNL. FLOTATION. SANDS WERE GROUND AND FLOATED UNDER STRONGLY ALK. CONDITIONS (TO DEPRESS PYRITE). THE EXTN. OF CU, MO, AND AG WAS INCREASED 27.26, AND 76.80PERCENT, RESP., TO 77.17, 47.67, AND 73.6PERCENT, RESP. THE DECREASE OF MINUS 74 MU PARTICLES BY 5PERCENT DECREASED THE CU EXTN. BY 1PERCENT, WHILE THE PRODUCTIVITY WAS INCREASED BY 5-8PERCENT.

UNCLASSIFIED

014

TITLE--MEANS FOR INCREASING THE OPERATIONAL EFFICIENCY OF THE MEKHANDBR
FLOTATION MACHINE -U-
AUTHOR--MITRECFANOV, S.I.

UNCLASSIFIED

PROCESSING DATE--20NOV70

COUNTRY OF INFO--USSR

M

SOURCE--TSVET. METAL. 1970, 43(4), 86-8

DATE PUBLISHED--70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--AIR, FLGTATION, PRODUCTION EFFICIENCY, ORE BENEFICATION
EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3004/1905

STEP NO--UR/0136/70/043/004/0086/0088

CIRC ACCESSION NO--AP0132167

UNCLASSIFIED

2/2 014

CIRC ACCESSION NO--AP0132167
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THIS MACHINE SHOULD BE FITTED WITH A 4 BLADE IMPELLER AND THE CHAMBER SHOULD BE MODIFIED TO GIVE 2 SIDED FROTH DISCHARGE. IT IS ALSO ADVANTAGEOUS TO INCREASE THE VOL. OF THE CHAMBER. THUS, INCREASING THE CHAMBER VOL. AT THE EXPENSE OF ITS DEPTH REDUCES THE FLOTATION RATE BUT INCREASES THE AIR BUBBLE LOAD, I.E. INCREASES THE COEFF. OF AIR UTILIZATION. THE CRIT. CHAMBER DEPTH IS 1 M.

UNCLASSIFIED

USSR

UDC 615.214.32.099

MITROFANOV, V. S., RUNOVA, M. F., UL'YANOVA, O. V., and PORFIR'YEVA, R. P.,
Institute of Pharmacology, USSR Academy of Medical Sciences, Moscow

"Evaluation of the Toxicity of Fluoracisine"

Moscow, Farmakologiya i Toksikologiya, No 5, Vol XXXIV, Sep-Oct 71, pp 540-542

Abstract: Fluoracisine (hydrochloride 10 (β -diethylaminopropionil)-2-trifluoromethylphenothiasine) is an antidepressant whose possible undesirable side-effects is of medical interest.

Heart action, respiration, liver function and blood sugar were tested in groups of dogs administered 2.5 mg/kg fluoracisine daily for 30-45 days followed by an increase to 5.0 mg/kg for the next 25-35 days. A group of rats was also tested.

No effect on the cardiovascular system or liver was observed. However, skin lesions and a tendency to weight loss, as well as increased excitability, were produced. It is concluded that long-term administration of fluoracisine in effective dosages produces little or no toxic effect.

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USSR

UDC 621.357.1.035(088.8)

NOVOSELOV, V. A., NELIDOV, V. B., ~~MITROFANOV, V. S.~~, ARCHAKOV, V. P.,
EPEL'FEL'D, F. I., SOLOVEY, L. F., PETROVSKII, P. P.

"Device for Distribution of Amalgams"

USSR Author's Certificate No 295736, filed 30/09/69, published 8/04/71.
(Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract
No 4L245 from the resume).

Translation: A device is patented for distribution of amalgam in scrubber
separators, consisting of a perforated grid with a circular tip, separating
the upper plane of the grid into central and peripheral zones with apertures
for distribution of the amalgam and output of hydrogen, differing in that
in order to improve the flow of amalgam, eliminate wear of the fitting and
prevent hydraulic shock, the apertures in the peripheral zone are made in
the form of slits covered with a screen, while the apertures for passage of
amalgam are located at the points of intersection of slots made on the lower
plane of the grid and forming projections, preventing blockage of the aper-
tures with granules of the packing.

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MITROFANOV, V.V.

RAN / R-760 / 5-22-1971-73

Doc 1973

(6)

I. SHOCK WAVES AND EXPLOSIONS IN GASES

Ivlev, V. K., B. N. Kuznetsov, V. P. Korobeynikov, V. V. Mitrofanov, R. I. Soloukhin, and M. Ye. Topchuyan.
Research on explosion gas dynamics and reacting systems. FGIV, no. 2, 1971, 311-317.

The Third International Colloquium on explosion gas dynamics and reacting systems took place in September 12-17, 1971 in Marrakech, France. Basic topics of theoretical and experimental research reported on were in the field of unsteady dynamic gas flow, dynamic aspects of detonation; and problems of the medium; gas-chemistry of rocket-fuel combustion and working processes in engines. The colloquium also dealt with the gas dynamics of explosions in space. The conference was divided into seven sections: a) space phenomena, b) vortex flow, c) explosion gas dynamics, d) detonation, e) shock waves, f) gas-liquid systems, and g) reacting systems. V. P. Korobeynikov gave a gas-dynamic description of the motion and explosion of meteorites on the basis of the supposed explosion pattern of the Tunguska meteorite.

A session on twisted flows included a joint report by four U.S. delegates and V. P. Korobeynikov on the influence of heat conduction and viscosity on wave propagation from a powerful explosion. A. A. Vasil'yev, T. P. Gavrilenko, and M. Ye. Topchuyan described planned experimental research on the position of the Chapman-Jouguet plane in a multi-front detonation wave in gas. V. P. Korobeynikov, G. G. Chernyy, et al. presented a theoretical analysis and an example of a numerical

USSR

UDC 621.315.592:546.28

OHETYRKINA, N.A., KARACHENTSEVA, Z.V., MITROFANOV, V.V., DEDECKAYEV, T.T.,
BELOV, N.A., ERLIKH, R.N., VASYUTINA, Z.V.

"Carbon Insertion In Epitaxial Layers Of Silicon And Effect Of Growth Conditions
On Their Formation"

Elektron.tekhnika. Nauch.-tekhn.sb. Poluprovodn.pribory (Electronics Technology.
Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 1(58), PP
47-50 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No
9B79)

Translation: A study is made of the defectiveness of epitaxial layers of Si
connected with a high carbon content. It is shown that in the initial state
epitaxial layers grown by hydrogen reduction of tetrachlorated silicon have a
microuniformity characteristic of the presence of finely-divided insertions of
the second phase. In the process of heat treatment at 1150° C in an oxygen at-
mosphere, a decrease takes place of the density of microdefects and an increase
of separation of the second phase containing carbon and oxygen. The results are
presented of tests of preparation of epitaxial layers with a reduced carbon con-
tent. 6 ref. Summary.

1/1

USSR

UDC 532.593+662.215.1

VASIL'YEV, A. A., GAVRILENKO, T. P., MITROFANOV, V. V., SUBBOTIN, V. A., and
TOPCHIYAN, M. Ye.

"The Position of the Point of Transition Through Sonic Velocity Behind a
Detonation Front"

Novosibirsk, Fizika Goreniya i Vzryva, No 1, 1972, pp 98-104

Abstract: An attempt is made to determine experimentally the position of the
Chapman-Jouguet surface behind the front of a detonation occurring in a pipe.
In pipes filled with various gas mixtures, the interaction of a detonation
wave with a thin plate, situated along the pipe axis, is studied at various
pressures to determine the position of the Chapman-Jouguet point. 2 figures.
1 table. 9 references.

1/1

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USSR

UDC 528.514

NEVEROV, L. A., KORTEV, N. V., LARIONOVA, T. A., MITROFANOV, V. V.,
MILASHEVSKIY, A. K., POPOV, YU. V., Candidate of Sciences,
RYZHENKO, B. V.

"The New KDG-3 Phototachymeter With Semiconductor Emission
Source"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70,
pp 35-39

Abstract: The authors describe the operating principle, optical system, construction and test results of the first serially produced phase phototachymeter with gallium arsenide diode as the emission source. The instrument can be used to measure distances of up to 2 km with an error of no more than 15 mm over its entire range. Measurement time is 10-15 minutes. The instrument is equipped with thermostatic control and can be used at temperatures from -50 to +50°C. Power consumption is no more than 5 watts.

1/2 064

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--SPIN DETONATION NATURE OF THE TANGENTIAL HIGH FREQUENCY VIBRATIONS
IN LIQUID ROCKET ENGINE COMBUSTION CHAMBERS -U-

AUTHOR--(04)-ARKOV, D.F., VOYTSEKHOVSKIY, B.V., MITROFANOV, V.V.,
TOPCHIAN, M.E.

COUNTRY OF INFO--USSR

SOURCE--PMTF ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNICHESKOI FIZIKI,
JAN.-FEB. 1970, P. 155-157

DATE PUBLISHED-----70

SUBJECT AREAS--ORDNANCE, PROPULSION AND FUELS

TOPIC TAGS--COMBUSTION INSTABILITY, COMBUSTION CHAMBER, ROCKET ENGINE,
LIQUID PROPELLANT, SPINNING DETONATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1549

STEP NO--UR/0207/70/000/000/0155/0157

CIRC ACCESSION NO--AP0118532

UNCLASSIFIED

2/2 064

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118532

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THE MAIN FEATURES OF A HIGH FREQUENCY INSTABILITY OBSERVED IN THE COMBUSTION CHAMBERS OF LIQUID ROCKET ENGINES WITH THE FEATURES OF A SPIN DETONATION. IT IS SHOWN THAT THE CONDITIONS CREATED NEAR THE ATOMIZERS OF A LIQUID ROCKET ENGINE ARE THE SAME AS THOSE OCCURRING BEHIND THE LEADING EDGE IN A SPIN DETONATION. IT IS CONCLUDED THAT THE OBSERVED HIGH FREQUENCY INSTABILITY IS A SPIN DETONATION UNDER THE SPECIFIC CONDITIONS OF A LIQUID ROCKET ENGINE COMBUSTION CHAMBER. METHODS OF PREVENTING THIS INSTABILITY FROM OCCURRING ARE CONSIDERED.

UNCLASSIFIED

USSR

UDC 539.374

GREKHOV, V. A., MANZHELEY, V. I., MITROFANOV, V. V., NIKOLAYEV, V. P.,
TITOVA, N. S., SHOYKHET, G. Ya.

"Experimental Study of the Strength of Thin-Walled Rectangular Tube Under
Cyclic Axial Loading in the Elastic-Plastic Region"

V sb. Dinamika splosh. sredy. Vyp. 8 (Dynamics of a Continuous Medium.
No. 8 -- Collection of Works), Novosibirsk, 1971, pp 144-151 (from RZh-
Mekhanika, No 8, Aug 72, Abstract No 8V361)

Translation: The strength of a tube with a transverse cross section in the
form of a rectangular trapezoid welded at the ends to fixed rigid parts
under a cyclic temperature effect was studied. Experiments were made on
the object itself and on models, reduced tubes of rectangular cross section.
The tube was subjected to a variable load and cooling up to given tempera-
tures. The models were deformed without changing the temperature, com-
pression was achieved up to a given deformation, and stretching was achieved
up to a given value of the axial force. The material for the tube and the
models was Kh18N10T steel. Test results based on 100 cycles are discussed.
Stability losses in the walls and limited growth of deformation under the
first cycles are noted. The test ended with the formation of cracks in some
cases. D. A. Gokhfel'd.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--GROUP THEORETICAL METHOD FOR DETERMINING PERMITTED TERMS OF THE
ELECTRONIC STATES OF POLYATOMIC MOLECULES TAKING ACCOUNT OF SPIN ORBIT
AUTHOR--(05)--MEN, A.N., CHEREPANOV, V.I., FARBEROV, D.S., MITROFANOV,
V.YA., CHUFAROV, G.I.
COUNTRY OF INFO--USSR

SOURCE--INT. J. QUANTUM CHEM. 1970, 4(1), 109-19

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, SPIN ORBIT COUPLING, EXCITED ELECTRON
STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0649

STEP NO--US/0000/70/004/001/0109/0119

CIRC ACCESSION NO--AP0055352

UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0055352

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GROUP THEORETICAL METHOD FOR
DETG. THE PERMITTED STATES OF POLYAT. MOLS., PROCEEDING FROM GIVEN AT.
STATES IN WHICH THE SPIN ORBIT INTERACTION HAS BEEN TAKEN INTO ACCOUNT,
IS PROPOSED.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.315.3(088.8)

MITROPANOV, Ye. V.

"A Flexible Connector"

USSR Author's Certificate No 259210, filed 18 Jun 68, published 28 Apr 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V416 P)

Translation: This Author's Certificate introduces a flexible connector designed for electrical connection of computer modules. To improve reliability, the element is made in the form of a dielectric tape. This tape is fitted with lugs and with holes made in the lugs and in the gaps between them which accommodate the connecting wires. Two illustrations. Ye. M.

1/1

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1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DETERMINATION OF SULFURIC ACID CONCENTRATION -U-
AUTHOR--(04)-KONOVALOV, V.A., LOLENKO, I.Z., MITROFANOV, YU.A., KHLYNIN,
V.I.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,544
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL PATENT, SULFURIC ACID, ELECTRICAL CONDUCTIVITY,
MEASUREMENT, IONIZATION CONSTANT, AQUEOUS SOLUTION, SULFATE, SODIUM
COMPOUND, ZINC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0834 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0131427
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0131427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. H SUB2 SO SUB4 CONCN. IS DETD. IN
A TERNARY SOLN. BY MEASURING THE ELEC. COND. OF THE SOLN. TO REMOVE THE
EFFECT ON THE MEASUREMENT OF 7-10PERCENT ZNSO SUB4 AND NA SUB2 SO SUB4
CONTAINED IN H SUB2 SO SUB4, THE ELEC. COND. FOR A SOLN. DILD. IN A
1:(1-1.2) RATIO. FACILITY: RYAZAN RADIOTECHNICAL INSTITUTE.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AUTOMATIC CONTROL AND REGULATION OF THE CONCENTRATION OF SULFURIC
ACID AND ZINC SULFATE IN PRECIPITATING AND PLASTICIZING BATHS -U-
AUTHOR-(03)-MITROFANOV, YU.A., LOLENKO, I.Z., KONVALOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (3), 53-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AUTOMATIC CHEMICAL PROCESS CONTROL, SULFURIC ACID, RAYON, ZINC
COMPOUND, SULFATE, ELECTRIC CONDUCTIVITY, TEXTILE ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/C09 STEP NO--UR/0183/T0/000/003/0053/0054

CIRC ACCESSION NO--AP0140275

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0140275
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. COND. OF THE COAGULATING AND PLASTICIZING BATHS, USED IN THE MANUF. OF RAYON FIBERS, DEPENDS PREDOMINANTLY ON THE CONC. OF H SUB2 SO SUB4; THE CHANGES OF ZNSO SUB4 AND NA SUB2 SO SUB4 CONCNS. HAVE NEGLIGIBLE EFFECTS. AN AUTOMATIC RECORDING CONTROLLING DEVICE IS DESCRIBED WHICH CONTINUALLY DETS. THE COND., H SUB2 SO SUB4 CONC., AND ADJUSTS ITS FEED IN THE 0-50 G PER L. RANGE WITH PLUS OR MINUS 1.2 G PER L. ACCURACY. THE CONC. OF ZNSO SUB4 IS DETD. PERIODICALLY BY COLORIMETRY WITH TRILON B, CHROME DARK BLUE DYE, AND A BUFFER MIXT. FACILITY: BALAKOVSKII KOMB., USSR.

UNCLASSIFIED

172 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INDIVIDUAL AND COMBINED INFLUENCE OF RADIATION AND INHIBITORS OF
PROTEIN AND DNA SYNTHESIS ON THE CELLS OF CREPIS CAPILLARIS -U-
AUTHOR--(02)-MITROFANOV, YU.A., KOTOMINA, I.F.
COUNTRY OF INFO--USSR *M*
SOURCE--GENETIKA; 6: NO. 3, 18-29(MAR 1970)
DATE PUBLISHED----MAR70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PLANT PHYSIOLOGY, RADIATION BIOLOGIC EFFECT, CHROMOSOME,
MITOSIS, DNA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0667 STEP NO--UR/0473/70/006/003/0018/0029
CIRC ACCESSION NO--AP0117892
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODIFICATION OF CHROMOSOME AND CHROMATID ABERRATIONS WAS FOUND TO APPEAR IN THE DIFFERENT PHASES OF THE MITOTIC CYCLE. THE FORMER WERE MODIFIED IN G SUB1 AND S, WHILE THE LATTER IN S AND G SUB2. IT IS APPARENTLY CONNECTED WITH THE PRODUCTION OF THE CHROMOSOME ABERRATIONS IN THE S PHASE (POSSIBLY JUST BEFORE THE DNA SYNTHESIS IN A CHROMOSOME) AND THE CHROMATID ABERRATIONS, IN G SUB2 (PROBABLY JUST BEFORE THE MITOSIS). FUDR INDUCED MODIFICATION OF THE RADIATION EFFECT WAS FOLLOWED BY CHROMOSOME FRAGMENTATION, WHICH ACCOUNTED FOR THE CHANGES IN THE ABERRATIONS SPECTRUM. A VERY APPRECIABLE EFFECT WAS NOTED FOR THE CHROMATID ABERRATIONS WHEREAS FOR THE CHROMOSOMES IT WAS LESS PRONOUNCED. THE MUTAGENIC AND MODIFYING EFFECT OF FUDR WAS IN ACCORDANCE WITH THE RATE OF DNA SYNTHESIS IN THE CELL. THE STRONGEST FUDR EFFECT WAS NOTED ONLY WHEN THE FOLLOWING THREE EVENTS WERE SYNCHRONIZED: IRRADIATION, DNA SYNTHESIS IN THE CELL, INCORPORATION OF AN INHIBITOR. IN THIS CASE ONE COULD OBSERVE THE EXTRA FUDR EFFECT ON THE RADIATION INDUCED CHROMOSOME DAMAGES. PYROMYCIN CONSIDERABLY INCREASED THE CHROMOSOME ABERRATION NUMBER IN IRRADIATED CELLS, BUT FAILED TO CHANGE THEIR SPECTRUM. THE STRONGEST ACTIVITY OF THE CHEMICAL WAS NOTED FOR THE CELLS IN G SUB1 AND G SUB2. IT WAS LESS ACTIVE IN THE S PHASE. FACILITY: INST. OF GENERAL GENETICS, MOSCOW.

UNCLASSIFIED

USSR

UDC 8.74

GAVRILOV, YU. A., DOLGANOVSKIY, V. YU., MITROFANOV, YU. I.

"Study of the Characteristics of a Time-Sharing Computer System by the method of Programmed Simulation"

V sb. Sistemn. modelirovaniye (Systems Simulation -- collection of works), vyp. 2, Novosibirsk, 1971, pp 71-96 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V625)

Translation: A hypothetical single-processor time sharing computer system the composition, structure and functioning algorithms of which were selected on the basis of analyzing existing foreign systems was used as the object of investigation the results of which are presented in this paper. The technical parameters of almost all the devices entering into the hypothetical time-sharing computer system are taken equal to the parameters of the corresponding Soviet series-manufactured devices.

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- 72 -

USSR

UDC 8.74

GAVRILOV, YU. A., ~~MITROFANOV, YU. I.~~

"Program Simulation of the AIST-0 Computer System"

V sb. Sistemn. modelirovaniye (Systems Simulation --- collection of works), vyp. 2, Novosibirsk, 1971, pp 111-137 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V626)

Translation: A comprehensive description of the principles of construction, structure and functioning of the program model of the AIST-0 computer system developed at the computation center of the Siberian Department of the USSR Academy of Sciences is presented. The program model is structurally a set of processes programmed in the form of ALGOL-60 procedures. The relation of the processes to each other is insured in terms of global variables and files. The model processes represent the physical devices entering into the AIST-0 system and the indexes of the system together with the control panels. Certain global files of the model depict the queues of the requests existing in one form or another in a real system. The requests in the model represent the signals which are exchanged between the various devices of the AIST-0 system during its operation, the mathematical interrupt characteristics, the numbers of the panels and the processes. The requirements of various types going from certain processes to others are represented by various codes by the values of which the type of request and the set and nature of operations are defined

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USSR

GAVRILOV, YU. A., et al., Sistemn. modelirovaniye, vyp. 2, Novosibirsk, 1971, pp 111-137

which must be performed in order to service the given requests. The process algorithms of the model are described, and some results of simulation of the AIST-0 system are presented.

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UDC 8.74

USSR:

GUR'YANOV, A. I., MITROFANOV, YU. I.

"Simulation of Time-Sharing Computer Systems by Queueing System Networks"

V sb. Sistem. modelirovaniye (Systems Simulation -- collection of works), vyp. 2, Novosibirsk, 1971, pp 97-109 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V627)

Translation: The possibility of simulating time-sharing computation systems by closed linear networks of queueing systems is analyzed. A study was made of the time-sharing systems in which a constant number of users work each of which can generate the next command from the control panel only after output of the results of execution of its preceding command to the panel. The commands of the users are interpreted as requests, and the commands entering into the composition of the time-sharing systems of the device are interpreted as queueing systems. The users together with the control panels are also considered as the queueing system with identical instruments. In this queueing system each instrument reflects one of the users, and the servicing of the request by the instrument reflects the output to the user panel of the results of execution of the current command, consideration by the user of these results and further actions and input by the user of the next command from the control panel. The models of two single-processor time-sharing systems are described: the CDSS and the hypothetical one. It is noted that when constructing

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USSR

GUR'YANOV, A. I., et al., Sistem. modelirovaniye, vyp. 2, Novosibirsk, 1971, pp 97-109

the given models in the form of queueing system networks all the real distributions defining the time sharing systems, the users and the problems solved in the time-sharing system were approximated with respect to the first moments by the exponential distributions. A comparison of the results of an analytical simulation with the results of programmed simulation for which the actual distributions were used and with the results of gathering experimental data was made.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

1/2 024

TITLE--ASTROSPECTRA IN THE LABORATORY -U-

AUTHOR--MITROFANOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--PRIRODA, NO. 5, 1970, P. 31-38

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, PHYSICS

TOPIC TAGS--PLANETARY ATMOSPHERE, ABSORPTION SPECTRUM, SIMULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605011/F03 STEP NO--UR/0026/70/000/005/0031/0038

CIRC ACCESSION NO--AP0140225

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 024

CIRC ACCESSION NO--AP0140225

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

ABSTRACT. REVIEW OF TECHNIQUES FOR STUDYING THE ABSORPTION SPECTRA OF PLANETARY ATMOSPHERES BY SIMULATION IN ABSORPTION TUBES. THE OPTICAL SYSTEM OF AN ABSORPTION TUBE PROPOSED BY WHITE IN 1942 IS DESCRIBED IN DETAIL. ALSO DISCUSSED IS THE ABSORPTION TUBE OF THE PULKOVO OBSERVATORY. PUBLISHED STUDIES OF PLANETARY ATMOSPHERES USING THIS TECHNIQUE ARE SURVEYED. THE IMPORTANCE OF FUTURE GROUND SIMULATION STUDIES OF PLANETARY ABSORPTION SPECTRA IS STRESSED, NO MATTER HOW PRODUCTIVE ADVANCED ROCKET OBSERVATIONS OF PLANETARY ATMOSPHERES MAY BE.

FACILITY: GLAVNAIA ASTRONOMICHESKAIA

OBSERVATORIIA, PULKOVO, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RARE EARTH HYDROXYNITRILOTRIACETATES IN AN AQUEOUS SOLUTION -U-
AUTHOR--(05)-VARLAMOVA, G.L., MITROFANOVA, N.D., MARTYNEKNO, L.I.,
PECHUROVA, N.I., VARLAMOV, V.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1239-43
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RARE EARTH COMPOUND, ACETATE, COMPLEX COMPOUND, LANTHANUM
COMPOUND, CESIUM COMPOUND, YTTRIUM COMPOUND, IONIC BONDING,
POTENTIOMETRIC TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0947

STEP NO--UR/0078/70/015/005/1239/1243

CIRC ACCESSION NO--AP0137975

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--A0137975

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPN. AND STABILITY CONSTS. (K) OF HYDROXYNITRILOTRIACETATE COMPLEXES OF IONS OF THE LA TO LU RARE EARTH ELEMENTS AS WELL AS Y AND CS WERE DETD. BY POTENTIOMETRIC TITRN. AT 20DEGREES AND IONIC STRENGTH OF 0.2. THE VALUE OF K (TIMES 10 PRIME NEGATIVE5) RANGES FROM 1.17 FOR LA TO 73.94 FOR LU. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.3.032.35

KUTUKOV, L. V., MITROFANOVA, N. V., TIMOFEYEV, Yu. P., FRIDMAN, S. A., and SHCHAYENKO, V. V.

"Using Luminophores to Investigate the Heat in Electronic Circuits"
Moscow, Pribery i Tekhnika Eksperimenta, No. 3, 1971, pp 147-149

Abstract: Although infrared radiometry has been used for investigating thermal situations in electronic circuits, its results are not reliable. The purpose of this paper is to research further the recently applied luminophores for investigating temperature fields in electronic circuitry in printed circuit and integrated circuit form, a method free from many of the deficiencies involved in the use of infrared observations. The experiments described in this paper used as luminophores 5 μ -thick coatings of ZnS, CdS + Ag, and Ni crystal phosphors, which emit visible radiation when excited by ultraviolet light. The intensity of this visible radiation drops sharply with small increases in temperature. Also used were nichrome resistance films covered with a protective layer of SiO₂. Among other results they obtained, the authors find that this method is convenient for direct visual tests and checks of operating integrated circuits. Curves of the ZnS, CdS + Ag, Ni luminophore sensitivity as a function of the temperature are given. The authors are in the Moscow Physical Institute, Academy of Sciences, USSR.

1/1

USSR

UDC: 632.952:634.13

MITROFANOVA, O. V., Nikitskiy State Botanical Garden

"Effectiveness of Some Fungicides Against Pear Rust"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 34-35

Abstract: Pear rust, a plant disease, affecting the above-ground parts of the plant, has been most injurious in certain areas of the Crimea. Described here are tests involving polycarbacin (75% active ingredients), cuprocin (70% active ingredients), heximide (50% active ingredients) and karpin RV-69. Karpin RV-69 exhibited a protective and eradicating action. The test was reproduced four times by spraying. The infestation of the leaves was assessed prior to each spraying. All tested compounds, specifically polycarbacin, were found to be superior to the Bordeaux mixture which served as the control preparation. It was therefore suggested that polycarbacin, cuprocin, karpin RV and heximide be given preference to the Bordeaux mixture which is fairly elaborate to prepare and frequently burns the plant.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNTHESIS AND SOME REACTIONS OF DIETHYL (ALPHA, (TERT-BUTYLPEROXY)
ETHOXY) THALLIUM -U-
AUTHOR--(04)-RAZUVAYEV, G.A., MITROFANOVA, YE. V., DOONOV, A.A., MOLKOVA,
L.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 465-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ALKOXIDE, THALLIUM COMPOUND, PEROXIDE,
CHEMICAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0841

STEP NO--UR/0062/70/000/002/0465/0466

CIRC ACCESSION NO--AP0119745

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70


CIRC ACCESSION NO--AP0119745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 1.39 G ME SUB3 COOCHMEOH IN ET SUB2 O TO 3.03 G ET SUB3 TI AT 5 DEGREES GAVE C SUB2 H SUB6, AND AFTER 15 MIN, THE MIXT. WAS COOLED TO MINUS 75 DEGREES TO PPT. 50-5 PERCENT ET SUB2 TIOCHMEOOCME SUB3, M. 10 DEGREES. THIS IN DEGASSED C SUB6 H SUB6 HEATED 24 HR AT 50 DEGREES GAVE ET SUB2 TIOAC AND ME SUB3 COH. SIMILARLY IN CUMENE THE PEROXIDE DECOMP. AT ROOM TEMP. IN 2.5 DAYS TO YIELD ET SUB2 TIOAC, ME SUB3 COH, DICUMYL, AND ET SUB2 TIOH; A LOW YIELD OF ACH WAS DETECTED ALSO. REACTIONS WITH ISO, PRBR AND ME SUB3 CBR IN C SUB6 H SUB6 GAVE ET SUB2 TIOAC AND ME SUB3 COH. FACILITY: LAB. STABIL. PULIM., GORKI, USSR.

UNCLASSIFIED

Organometallic Compounds

USSR

 UDG 542.91 + 541.459 + 547.214

ZUBAYEV, G. A., ~~MITROFANOVA, YE. V.~~, DODONOV, Y. A., and MOL'KOVA, L. N., Laboratory of Polymer Stabilization, Academy of Sciences USSR

"Synthesis and Some Reactions of Diethylthalliumethoxy- α -peroxy-tert.-butyl"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 465-466.

Abstract: The interaction of triethylthallium with α -hydroxy-tert.-butyl peroxide gives diethylthalliumethoxy- α -peroxy-tert.-butyl. The latter is an organometallic peroxide compound which decomposes on heating in benzene, cumene, isopropyl bromide and tert.-butyl bromide with cleavage of the oxygen-oxygen bond to give diethylthallium acetate and tert.-butyl alcohol.

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USSR

UDC: 621.396.6.017.72(088.8)

VORONIN, G. I., KUZNETSOV, I. D., MITROKHIN, V. M., MURAV'YEV, V. P.,
ZAKHAROV, V. S.

"A Device for Cooling Radio Electronic Equipment"

USSR Author's Certificate No 268440, filed 18 Oct 68, published 21 Aug 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V292 P)

Translation: A device is proposed for cooling electronic radio equipment. The device contains a closed loop filled with a coolant such as polymethyl siloxane. Connected in series in the loop are a pump and an air-liquid radiator with air collector. To improve the operating efficiency of the device, an evaporator is placed in series with the radiator and connected by tubing through a solenoid valve to a coolant-filled vessel. The evaporator is equipped with an ejector pump which is connected to a compressor through an air line with remote-control valve. Connected in the main air line of the air collector is a second remote-control valve. The control windings of the solenoid valve and the remote-control valves are connected to a control module which is connected in turn to temperature pickups in the closed loop and the air collector.

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1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--POSITRON DECAY OF GOLD-194 AND IRIDIUM-188 -U-
AUTHOR--(03)-AGEYEV, V.A., MITROKHOVICH, N.F., FEOKTISTOV, A.I.
COUNTRY OF INFO--USSR
SOURCE--IAV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 201-3
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--GOLD ISOTOPE, IRIDIUM ISOTOPE, COINCIDENCE COUNTING,
RADIOACTIVE DECAY SCHEME, POSITRON, BETA SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
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PROCESSING DATE--16OCT70

2/2 012

CIRC ACCESSION NO--AP0105350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECAY OF PRIME194 AU (39 HR), AND PRIME188 IR (41 HR) WAS STUDIED WITH A 4 PI BETA PRIME POSITIVE-GAMMA COINCIDENCE SPECTROMETER. THE BETTA PRIME POSITIVE SPECTRUM OF BOTH ISOTOPES CONSISTS OF 2 COMPONENTS. THEIR UPPER ENERGY LIMITS ARE 950 PLUS OR MINUS 30 AND 1210 PLUS OR MINUS 20 KEV FOR AU, 1030 PLUS OR MINUS 50 AND 1650 PLUS OR MINUS 30 KEV FOR IR. THE HIGHER LIMITS WERE KNOWN FROM EARLIER PAPERS. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV. USSR.

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1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--POSITRON DECAY OF GADOLINIUM-146, EUROPIUM-146, AND EUROPIUM-148
-U-
AUTHOR-(03)-AGEYEV, V.A., MITROKHOVICH, N.F., FEOKTISTOV, A.I.
COUNTRY OF INFO--USSR
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SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--BETA SPECTRUM, GAMMA SPECTRUM, RADIOACTIVE DECAY, POSITRON,
GADOLINIUM ISOTOPE, EUROPIUM ISOTOPE, PARTICLE ANNIHILATION, NUCLEAR
ENERGY LEVEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0279 STEP NO--UR/0048/70/034/002/0397/0379
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2/2 015

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PROCESSING DATE--16OCT79

CIRC ACCESSION NO--AP0105353

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BETA PRIME POSITIVE SPECTRA AND THE GAMMA RAY SPECTRA IN COINCIDENCE WITH ANNIHILATION RADIATION WERE MEASURED WITH A 4 PI BETA PRIME POSITIVE GAMMA COINCIDENCE SPECTROMETER COMPRISING A 4 PI BETA DETECTOR (2 STILBENE CRYSTALS WITH PHOTOMULTIPLIERS) AND 3 GAMMA DETECTORS REGISTERING THE ANNIHILATION RADIATION AND GAMMA RAYS. PRIME146 EU, SEPD. RADIOCHEM. FROM THE GD FRACTION WITH ITS DAUGHTER PRODUCT PRIME146 EU, AND AN "OLD" SMAPLE OF THE EU FRACTION CONTG. PRIME148 EU, WERE USED AS SOURCES. THE MAX. ENERGY WAS 350 PLUS OR MINUS 30 KEV, INTENSITY 0.07 PLUS OR MINUS 0.02PERCENT PER DECAY, LOG FT EQUALS 7.2 FOR PRIME146 GD. TWO COMPONENTS OF 940 PLUS OR MINUS 40 AND 540 PLUS OR MINUS 30 KEV (LEADING TO THE LEVEL 1395 KEV) WERE FOUND FOR PRIME148 EU, THE INTENSITY OF THE 540 KEV COMPONENT WAS 0.06 PLUS OR MINUS 0.02PERCENT, WHICH LEADS TO LOG FT EQUALS 8.9. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

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UDC 612.8:797.215

SHAKHOVA, V. I., and MITRONOVA, I. A., Department of Physiology of Higher Nervous Activity at the Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Effect of Physical Load on the State of Human Higher Nervous Activity Under Conditions of Underwater Work"

Kiev, Fiziologichnyy Zhurnal, Vol 19, No 4, Jul/Aug 73, pp 541-542

Translation: Human underwater work results in nervous-emotional tension and is reflected by higher nervous activity.

We studied eight amateur sportsmen 21-23 years old, all members of an underwater swimming team.

The following methods were used: 1) determination of the mobility indexes of nerve processes and work capacity of the brain according to A. E. Khil'chenko¹; 2) correction test (Anfimov tables); 3) determination of the latent period of simple optical-motor reflex.

During the experiment the subjects performed the following tasks:

1) lifting bar-bells on dry land for 3 min; 2) free swimming for 20 min;

1. Higher nervous activity, 1958, VIII, 6.

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3) free swimming under water equipped with aqua-lung at a depth of 5 m for 20 min; 4) bar-bell lifting under water; 5) underwater exercise with an expander at a depth of 5 m; 6) free swimming and bar-bell lifting underwater at a depth of 14 m.

The indexes were noted prior to and after the performance of each task, using all methods.

It is known that any response of an organism to the influence of outer environment is individualistic, that it depends on the characteristics of the organism and most of all on the state and peculiarities of the nervous system. Considering this, prior to the analysis of experimental data, we report the properties of the nervous processes studied for their strength and mobility.

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Jul/Aug 73, pp 541-542

Characteristics of the nervous processes studied for their
strength and mobility

No.	Sub- jects	Indexes of the mobility of nervous processes according to Khil'chenko (number of stimuli per min)		Force (work capacity) of the nervous system according to Khil'- chenko (% errors)	Estimate of the nervous system force	Average latent period of optical motor reflex (in μ sec)
		I signal system	II signal system			
1.	K.	145	120	2%	Strong	195
2.	B.	170	130	3.5	Strong	188
3.	M.	140	--	3.5	Strong	131
4.	I.	110				190
5.	T.	160	125	5.5	Medium	191
6.	A.	150	115	6.0	Medium	188
7.	Z.	140	110	6.6	Medium	163
8.	S.	130	110	8.5	Weak	191

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Experimental results have shown that the proposed tests did not have the same effect on the central nervous system of individual sportsmen. The execution of the first three quite simple tests, which were not heavily demanding on the nervous system resulted in improved work of the subjects by all proposed methods. In a control test, using the Khil'chenko method, the number of errors dropped on the average from 15 to 12. The number of symbols reviewed according to the correction tables increased on the average by 40 symbols per 4 min. The latent period of optical-motor reflex was shortened on the average by 5 μ sec.

Because the changes noted after the first three tasks in the subjects were all in the same direction, it was possible to carry out a statistical analysis of the summary data obtained in the experiments with the first three tasks. Treatment of the results obtained from the Khil'chenko method by the Student test showed a decrease in the number of errors in the performance following these tasks to be statistically valid with $p < 0.01$.

The data obtained point out a positive effect of the first, second and third tasks on the state of the nervous system. A decrease in the number of errors committed during the work on the Khil'chenko apparatus

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and increased work productivity according to the correction method indicate an intensified tone of the cortex.

The currently observed relative increase in the error reactions towards a differential stimulus (according to Khil'chenko method) and a shorter latent period of the optical-motor reflex indicate an increased stimulation process.

The third task, however, led to a less significant increase in the indexes of work capacity and mobility of the nerve processes.

Inasmuch as in the first two tests these improvements may be explained by the positive effect of a moderate physical load, with submersion these effects are counterbalanced by the negative influence on the nervous system due to the depth effects (increased pressure, increased heat loss, hypoxia, etc.).

Different results were obtained in performing the fourth, fifth and sixth tasks which were more complex both from the physical and psychological aspects. In this case individual differences among the subjects were quite noticeable.

Sportsman K., with a strong nervous system and good mobility of nervous processes, showed improvements along all proposed tasks: a drop in error

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reactions according to the Khil'chenko method on the average by two errors (14 before -- 12 after the load), increased work productivity according to the correction test on the average by 12 symbols in 4 min, shortened latent period of motor reflex on the average by 12 μ sec.

The subjects with an average nervous system activity (subjects T. and A.) showed in some cases poorer results by some methods. For example, the performance of subject T. by the correction method dropped from 1525 symbols before the test to 1470 after the test. The latent period of the motor reflex was shortened in one case by 70 μ sec, but prolonged in another by 12 μ sec. The work capacity according to the Khil'chenko method improved somewhat (20 before the test and 18 after).

In case of the subject A. the latent period of the motor reflex after the load became shorter in some cases (on the average by 10 μ sec) and increased considerably in others (by 74 μ sec); according to the Khil'chenko method, in some cases there was no change noticed (21 errors before and 21 after the test), in other cases improvements were noticed (19 errors before, 12 after the experiments).

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It should be noted that the instability of the reactions noticed with this subject was also noted in simpler experiments and they increased with increasing complexity).

Subject S., with a weak nervous system, exhibited poorer results by all methods.

According to the Khil'chenko method the number of errors increased from 14 to 17. The latent period increased on the average by 20 μ sec. The number of symbols scanned according to the correction test dropped from 1535 to 1500.

These results pointed out the role of the nervous system in the loads used.

However, the physical development factor is just as important. Subject B., with unique characteristics of the nervous system but poorly developed physical condition, showed deterioration of all registered indexes after the fourth and fifth tasks. The number of errors according to the Khil'chenko method increased from 7 to 11. The latent period of the motor reaction increased on the average from 170 to 213 microseconds, the work capacity according to the correction method became worse -- 1600 symbols with three

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errors before the load, 1770 symbols with 10 errors after the load. The negative results obtained may obviously be explained by the poor physical state of subject B. The physical load, normal for other subjects, was too difficult for him, requiring considerable physical and nervous stress. However, submersion to 14 m. showed no significant changes in subject B.

The work capacity according to the Khil'chenko and according to the correction method showed practically no changes (5 errors before the load, 5 after; 1800 symbols before the load, 1800 after). The latent period of motor reaction became somewhat shorter (from 224 μ sec to 220 μ sec).

Summarizing the results obtained we can conclude that the proposed tests showed no significant changes in the central nervous system of the examined subjects with strong balanced nervous systems and good physical development.

Subjects with a weaker nervous system or poor physical development showed considerable changes. Therefore, for physical loads connected with underwater performance, obviously only balanced individuals with good physical development and strong nervous systems should be used.

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