"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 615.472:616.33-085.832.9-031.84-72

YABMARKOV, L. G., STADNITSKIY, YU. P., and GALLINGER, YU. I., Moscow Instrument Factory, II Moscow Medical Institute imeni N. I. Pirogov

"New Apparatus for Local Hypothermy of the Stomach"

Moscow, Meditsinskaya Tekhnika, No 3, 1971, pp 20-23

Abstract: Groups of engineers from the Moscow Instrument Factory and researchers from the Second Moscow Medical Institute imeni N. I. Pirogov collaborated in the development of a new device, the AGZh-1, for producing local cooling of the stomach and other organs. A 50% alcohol/water solution (4 liters) is introduced through an overflow opening in a two-section chamber; a connecting cock is kept open until the upper mark of a level gauge is reached. The air contained in the chamber is driven out through the connecting cock to the outside. A diaphragm pump evacuates a latex ballon which envelopes a double sonde protruding from the measuring section of the device. After the air has been evacuated, the latex ballon is sealed off around the sonde, lubricated with glycerin and inserted into the stomach of the patient. The alcohol/water solution is chilled in the heat-exchange section of the vessel into which are built the vaporizers from Freon coolers which are equipped with special condensers. The temperature of the solution is lowered automatically to a present level by

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USSR

YABMARKOV, L. G., et al., Meditsinskaya Tekhnika, No 3, 1971, pp 20-23

an automatic unit consisting of a rectifier with a quenching resistor, a transistorized amplifier and intermediate relays of the MKU-48 type. The temperature in the heat exchange chamber is usually maintained at 2° to -8°C, within ±1°. The latex ballon is filled with the cooled alcohol/water mixture, by means of the diaphragm pump. Approximately 600-900 ml are filled into the ballon, under control by the level guage. Electrothermometers are used to measure the temperature of the alcohol/water mixture, the body temperature of the patient, and the stomach temperature. The electrothermometers are calibrated by a microammeter, and they can measure temperatures in the range from 16 to 42° with an accuracy of ± 0.2°. An autotransformer is used to control the productivity of the pump. The device is capable of keeping a constant volume of cooling mixture in the latex ballon for the entire procedure (without exceeding atmospheric pressure in the ballon) at a required temperature and with controlled pumping. The device was succesfully tested on 34 patients with acute pancreatitis and gastro-duodenal bleeding. It was possible to reduce by stomach cooling the number of operations and the death rate in destructive forms of acute pancreatitis. The device is claimed to be simple, convenient, and free of danger to operate. It can be used for local cooling of the intestine, urinary bladder, and other caval organs.

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MEDICINE

GALLYAMOV, A. B.

SO:JPRS 54940
20 DEC 71

UDC: 616.12-008.313.1-092:614

THE EFFECT OF SOME SOCIOHYGIENIC FACTORS ON ONSET OF ESSENTIAL HYPERTENSION

[Article by A.B. Gallyamov, Chair of Social Hygiene and Public Health Organization (headed by Professor M.Kh) Vakhitov), Kazan' Medical Institute imeni S.V. Kurashov; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1971, submitted 18 May 1971, pp 8-10]

We took two occupational groups, workers from three plants engaged mainly in physical labor, and secondary school teachers from one of the rayons of Kazan' as the objects of our investigation.

Preliminary data were obtained from ambulatory polyclinic institutions caring for this group of patients about their age, sex and occupation, date when dispensary care began, and some other information. Workers who were not suffering from essential hypertension were interviewed on a sample basis (every 5th one). The teachers interviewed constituted 95 percent.

Concurrently, 821 questionnaires were gathered, including 191 sick people, among the workers, and 765 from teachers, 113 of whom were sick (23.2 and 14.7 percent sick workers and teachers, respectively). Thereafter the data were transferred to histograms. Before histogramming, the questionnaire consisted of 83 tags [signs] on the workers and 79 for the teachers. After histogramming there were 76 and 77 tags, respectively. This enabled us to determine the composition of tags that could affect onset of essential hypertension. When the share of a given factor had the same numerical value among the healthy and the sick, this sign was ruled out from subsequent processing since it did not influence onset of hypertension.

We were concerned with the factors whose share was greater in the patient group than in the healthy group. In the following we discuss a factor which, in our opinion, has important sociohygienic significance and which has not been discussed in the literature available to us. We refer to the influence of change of residence, of moving from rural regions to a city, with the consequent change in life style and work, on onset of essential hypertension.

Among others (age, sex, housing and living conditions, rest, athletics,

*Preliminary data.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 541.138 + 540.799.4

PERETRUKHIN, V. F., KROT, N. N., and GAL'MAN, A. D., Institute of Physical Chemistry, Academy of Sciences USSR

"Formal Redox Potentials of Hepta- and Hexavalent Plutonium in Alkaline Solutions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 70, pp 2644-2645

Abstract: The authors measured (to ± 0.002 V) in 1-14 M NaOH the formal redox potentials E_0 for the pair Pu(VII)-PU(VI), as well as the pair Np(VII)-Np(VI). The results indicate that the oxidizing properties of heptavalent plutonium and neptunium decrease with increased alkali concentration. Neptunium (VII) is thermodynamically stable toward reduction with water at alkali concentrations in excess of 6 M NaOH, while Pu(VII) is unstable over the entire investigated range of alkali concentrations. The potentials of the pair Pu(VII)-Pu(VI) in 1-7 M NaOH are poorly reproducible and depend on the solution stirring rate.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 669.243

GAL'NBEK, A. A., YUZHANINOV, I. A., DEKOPOV, YU. D., and ~~ZHELDYBIN, O.~~ I.,

"Examination of the Process of Continuous Converter Blowing of Ferronickel"

Moscow, Tsvetnyye Metally, No 2, Feb 71, pp 18-21

Abstract: The article considers results of the first phase of investigations of continuous converter blowing of ferronickel conducted at the Leningrad Mining Institute in cooperation with the "Gipronikel' " Institute. The basic regime characteristics of the process are determined. Conversion to the continuous Bessemer process eliminates many shortcomings of the periodic process carried out in vertical converters. Blowing is carried out in the following manner: after arc firing of the furnace up to 800-1000°C, the bath is set by discharging lump electric-furnace ferronickel. Then the bath is preheated to 1500-1550°C and the arc is disconnected. The electrodes are removed from the furnace, the electrode holes are filled with refractory chokes,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR

GAL'NBEK, A. A., et al., Tsvetnyye Metally, No 2, Feb 71, pp 18-21

and positioning of the tuyere blast is conducted. Blowing begins at a bath temperature of 1350-1450°C. The blast in experiments varied from 1.5 to 3.2 m^3/min at different degrees of carburization.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 621.314.263.072.6 (088.8)

GALOCHKIN, N.A., BAZHENOV, I.A., SMIRNOV, S.L., MUDROV, L.P. [Ivanov. energ.in-t --Ivanov Power Institute]

"Device For Control Of Ferromagnetic Frequency Multiplier"

USSR Author's Certificate No 272424, filed 19 July 68, published 11 Sept 70 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B657P)

Translation: A device is proposed for control of a ferromagnetic frequency multiplier which is equipped with a choke coil with a magnetization winding connected in parallel to the input; the device contains a magnetic amplifier with operating and control windings located in its magnetic circuit, and diodes and a voltage data unit [datchik] at the output of the multiplier. In order to simplify the multiplier and to improve its characteristics, it is supplied with a data unit for the load current, the output of which is connected to the control winding of the magnetic amplifier situated at the center bar [sterzhen'] of the magnetic circuit. The latter is fulfilled by 3 bars; the operating windings are located at the outside bars, connected into the arms of an auxiliary rectifier which is fed from the winding of the voltage data unit and connected from the output side with the magnetization winding of the choke coil.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR

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UDC 621.372.85(088.8)

GALOCHKIN, V. I.

"A Dispersion Distortion Corrector"

USSR Author's Certificate No 256831, Filed 27 Jan 64, published 10 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B187 P)

Translation: The proposed corrector for dispersion distortions in waveguide lines consists of phase link stages connected in series. Each link contains a balance circuit and two identical correcting elements. To provide correction of several waveguide trunks by a single corrector, the correcting elements are made in the form of cavity resonators with waveguide diameter at least 4-6 times as great as the critical cross section for the wave which is excited in the resonator, and these elements are fastened on two arms of the balance circuit which are decoupled from each other. The difference between two adjacent resonance frequencies in each resonator is selected as equal to the difference between the carrier frequencies of the two adjacent trunks. Two illustrations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 621.373:530.145.6

BASOV, N. G., GALOCHKIN, V. T., KULAKOV, L. V., MAFKIN, Ye. P., NIKITIN, A. I., ORAYEVSKIY, A. N.

"A Chemical Laser Based on the Mixture $D_2+F_2+CO_2$"

Kratk. soobshch. po fiz. (Brief Reports on Physics), 1970, No 8, pp 10-14 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D226)

Translation: To produce emission on the mixture $D_2+F_2+CO_2$, the authors used the idea of creating a population inversion by transmitting excitation from a "hot" to a "cold" reaction product. With the ratio of D_2 and F_2 pressures equal to 0.9:0.9 mm Hg, the half-width emission pulse duration is ~3 μsec. The addition of 0.1 mm Hg of CO_2 to this mixture cuts the pulse duration in half, and when the pressure is increased to 0.3 mm Hg, emission is cut off on a wavelength of 4 μ, but emission appears on a wave of 10.6 μ. As the pressure rises further, the emission intensity of the pulse increases, reaching a maximum in the range of 1-2 mm Hg. The pulse duration of emission on activated CO_2 molecules is 400 μsec, i. e. it corresponds to the time of existence of chemiluminescence of excited DF* molecules. The energy in the emission pulse on CO_2 molecules increases in comparison with the emission energy of DF* by a factor of 10, which corresponds to an increase in the quantum yield by a factor of 25. A. K.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PREPARATION AND SOME PROPERTIES OF ZINC CYANAMIDE -U-

AUTHOR-(05)-GALOCHKINA, G.M., GORYUNOVA, N.A., SEYFER, G.B., VAYPOLIN, A.A., KHARITONOV, YU.YA.

COUNTRY OF INFO--USSR

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SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 486-92

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, IR SPECTRUM, ABSORPTION SPECTRUM, THERMAL DECOMPOSITION, CYANAMIDE, ZINC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1901 STEP NO--UR/0363/70/006/003/0486/0492

CIRC ACCESSION NO--AP0115720

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING INVESTIGATION OF THE ZN(OAC) SUB2 H SUB2 NCN SUB2 H SUB2 O NH SUB4 OH SYSTEM BY PHYS. CHEM. ANAL. METHODS, THE FORMATION OF ZNCN SUB2 AND BASIC (ZN(OH)) SUB2 CN SUB2 WAS ESTABLISHED. IN THE ABSENCE OF A CONST. GAS EXCHANGE THE THERMAL DECOMPN. OF ZNCN SUB2 PROCEEDS AT GREATER THAN 824DEGREES WITH THE EVOLUTION OF N AND THE FORMATION OF METALLIC ZN AND FREE C. THE D. OF NORMAL ZNCN SUB2 WAS DETD. TO BE 2.825 G-CM PRIME3 AND THE WIDTH OF THE FORBIDDEN BAND WAS SIMILIAR TO 3.1 EV. THE IR ABSORPTION SPECTRA OF NORMAL CYANAMIDES OF ZN AND CD WERE STUDIED, ATTESTING TO THE SYM. STRUCTURE OF THE CYANAMIDE GROUP IN BOTH COMPDS. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PRODUCTION OF HIGH PURITY GERMANIUM TETRACHLORIDE BY REMOVING PHOSPHORUS IMPURITY -U-

AUTHOR-(05)-FEDOROV, P.I., MOLOCHKO, V.A., KURDYUMOV, G.M., GALOCHKINA, V.G., SMIRNOVA, T.YU.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 82-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PRODUCTION, GERMANIUM COMPOUND, CHLORIDE, PHOSPHORUS, CHEMICAL SEPARATION, CRYSTALLIZATION, PHOSPHORUS CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0632 STEP NO--UR/0149/70/013/001/0082/0086

CIRC ACCESSION NO--AT0137717

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0137717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DTA INDICATED THAT PCL SUB3, POCL SUB3, AND PCL SUB5 ARE INACTIVE COMPONENTS AND ARE PRESENT IN THE EUTECTIC. VERY SMALL QUANTITIES OF PCL SUB3 AND POCL SUB3 ARE SOL. IN GECL SUB4 SOLID PHASE. THE EQUIL. DISTRIBUTION COEFF. AND THE SOLIDUS LINE ARE DEFINED FOR VERY SMALL AMTS. OF POCL SUB3 AND PCL SUB3 IN GECL SUB4. THE MEANS FOR CALCG. THE THICKNESS OF A DIFFUSION LAYER DURING CRYSTN. REFINEMENT IS PROPOSED. FOR PURIFICATION OF GECL SUB4, RECRYSTN. IS THE MOST SUITABLE METHOD. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL., MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

Industrial

USSR UDC: 669.15

PROKOSHKIN, D.A., Professor, Doctor of Technical Sciences, and GALOV, A.G., Candidate of Technical Sciences (MVTU [Moscow Higher Technical School] imeni N. E. Bauman)

"Strengthening of Martensite-Aging Steels by Deformation in Liquid Nitrogen"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 6, 1972, pp 121-126

Abstract: Nickel-molybdenum-cobalt, martensite-aging steels have high strength and ductility but lack corrosion-resistance. By adding 17% of chrome a good corrosion-resistance is obtained, but the martensite point is displaced into very low temperature region. Therefore it is not possible to form martinsite by the usual heat-treatment methods.

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USSR

PROKOSHKIN, D. A. and GALOV, A. G., Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 6, 1972, pp 121-126

An investigation has been conducted on strengthening these steels by elongating them by 23-35% while immersed in liquid nitrogen. It was established that this treatment resulted in more complete transformation of austenite into martensite and in increasing the strength.

Graphs of mechanical properties as functions of low-temperature elongation for several steels are presented.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

Molecular Biology

USSR UDC 547.963.3

GALOYAN, A. A., ZAKHARYAN, R. A., KARAPETYAN, L. A. and MANUKYAN, E. B., Institute of Biochemistry, Armenian SSR Academy of Sciences

"The Action of Dexamethazone (16-alpha-methyl-9-alpha-fluorprednisolone) on the Nucleotide Composition of the Nucleolus-Chromosome RNA of the Brain"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol 56, No 5, 1973, pp 308-311

Abstract: The changes in the nucleotide composition of the nucleolus-chromosome RNA of whole rat brains under the influence of the prednisolone analogue dexamethazone were studied. The rats were decapitated four hours after dexametazone introduction and the brain RNA was obtained by thermal phenol fractionation. The phenol-water interface was used to obtain the total nucleolus-chromosome RNA. It was observed that the coefficient of specificity G+C/A+U was increased for the experimental animals, which is said to indicate a sharp lowering in the quantity of DNA-like RNA. These results are considered to show that dexamethazone inhibits DNA-like RNA synthesis, acting on the genome level to delay the synthesis of informational RNA responsible for the formation of a corticotropin-liberating harmone of a polypeptide nature.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR

UDC 533.15

YALAMOV, Yu. I., ALADZHYAN, V. M., GALOYAN, V. S., and DERYAGIN, B. V., Corresponding Member of the Academy of Sciences USSR, Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"Diffusiophoresis of Volatile Aerosol Particles in a Slipping Mode"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 2, 1972, pp 316-318

Abstract: In earlier articles the authors developed a diffusiophoresis theory for moderately large, nonvolatile aerosol particles whose radius satisfies the condition:

$$0{,}01 \lesssim \lambda/R \lesssim 0{,}03,$$

where λ is the mean free path length of gaseous molecules in binary gaseous mixtures. A diffusiophoresis theory was also considered for very large volatile particles. The present article deals with the derivation of a formula for the diffusiophoresis velocity of moderately large volatile particles, with allowance for all factors which are proportional to the Knudsen number, equal to λ/R. The authors consider a spherical drop consisting of a substance which can be evaporated (or condensed), forming

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USSR

YALAMOV, Yu. I., et al., Doklady Akademii Nauk SSSR, Vol 206, No 2, 1972, pp 316-318

one of the components (for example, the first) of a binary gaseous mixture. Allowance is made for gas slippage along the particle surface.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 541.182.2/.3

DERYAGIN, B. V., YALAMOV, YU. I., and GALOYAN, V. S., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"Theory of the Thermophoresis of Moderately Large Volatile Aerosol Particles"

Moscow, Kolloidnyy Zhurnal, Vol 33, No 4, Jul-Aug 71, pp 509-514

Abstract: The article considers a spherical, moderately large volatile aerosol particle placed in a binary gas mixture. The problem is to determine the total force acting on the particle and then, on the basis thereof, the thermophoresis rate, using the hydrodynamic method. The total force acting on the particle is calculated by integrating the total stress tensor along the surface of the particle allowance is made of the jump of the absolute concentration of the volatile component at the boundary of the Knudsen layer at the particle surface. The following expression is obtained for the thermophoresis rate:

$$u_T = -\frac{2\delta\left[K_{sl} + \frac{m_1}{m_2}\left(1 + 6\frac{c_m\lambda}{R}\right)\right]\varkappa_c D_{12}}{n_0\Phi\left(1 + 2c_m\frac{\lambda}{R}\right)\left(1 + \frac{2K_c\lambda}{R}\right)}(\nabla T)_\infty -$$

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DERYAGIN, B. V., et al., Kolloidnyy Zhurnal, Vol 33, No 4, Jul-Aug 71, pp 509-514

$$-\frac{2KT_{Ts}\nu}{T_0\Phi}\left[\varkappa_e+\left(\varkappa_i+\frac{2Lm_1D_{12}\delta}{1+\frac{2K_e\lambda}{R}}\right)\right](\nabla T)_\infty$$

$$\Phi=\left[2\varkappa_e+\left(\varkappa_i+\frac{2Lm_1D_{12}\delta}{1+2K_e\frac{\lambda}{R}}\right)\left(1+\frac{2c_i\lambda}{R}\right)\right]$$

The thermophoresis rate is found to differ significantly from the rate obtained previously by two of the authors (DERYAGIN and YALAMOV) for moderately large nonvolatile aerosol particles. In the absence of volatility the above expression changes to the DERYAGIN-YALAMOV formula for nonvolatile particles.

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1/2 030 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--STUDY OF PRIMARY GAMMA RAYS OF ENERGIES HIGHER THAN 100 MEV BY MEANS OF A SATELLITE CARRIED SPARK CHAMBER -U-

AUTHOR-(05)-VOLOBUEV, S.A., GALPER, A.M., KIRILLOV-GRIUMOV, V.G., LUCHKOV, B.I., CZEROV, I.V.

COUNTRY OF INFO--USSR, HUNGARY

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SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY, AUGUST 25-SEPTEMBER 4, 1969, PROCEEDINGS. VOLUME 1 ORIGIN AND GALACTIC

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--GAMMA RAY, SPARK CHAMBER, SPACECRAFT CARRIED EQUIPMENT, ARTIFICIAL EARTH SATELLITE/(U)COSMOS 264 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605061/B06 STEP NO--HU/2506/70/029/000/0127/0129

CIRC ACCESSION NO--AT0144431

UNCLASSIFIED

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2/2 . 030 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144431

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IDENTIFICATION OF EVENTS CORRESPONDING TO GAMMA RAY REGISTRATION AND ASSEMENT OF THE GAMMA RAY FLUX USING A DVEICE WITH A MULTIPLATE WIDE GAP SPARK CHABER. AN ATTEMPT HAS BEEN MADE TO ISULATE GALACTIC GAMMA RAY FLUX. THE INSTRUMENT WAS MOUNTED ON THE SATELLITE COSMOS 264. MORE THAN 100,000 STEREUPHOTOS WERE TAKEN OF EVENTS IN THE SPARK CHAMBER. FACILITY: MOSKOVSKII INZHENERNO-FIZICHESKII INSTITUT, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 523.165

VOLOBUYEV, S. A., GAL'PER, A. M., KIRILLOV-UGRYUMOV, V. G., LUCHKOV, B. I., OZEROV, YU. V.

"Observation of Gamma-Ray Quanta With an Energy Over 100 Mev From the Region of the Crab Nebula"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2463-2465

Abstract: The Cosmos-251, Cosmos-264, and Cosmos-280 artificial earth satellites had a device to record gamma-ray quanta with energies $E_\gamma \gtrsim 100$ Mev. The device was a gamma-ray telescope consisting of two scintillation counters and one directional Cerenkov counter with a lead converter. In flights 1 and 3 the viewing angle of the device took in the galactic plane. In flight 1 the device viewed the region of space where the Crab Nebula is found. A detailed analysis of the flight 1 data, consisting in a study of the initial, intermediate, and final orbit results, showed that excessive gamma radiation emanates from the region bounded by the coordinates $\delta = 0 + 13^\circ$, $\alpha = 3.6 + 5^h$,

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VOLOBUYEV, S. A. et al, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 12, Dec 71, pp 2463-2465

which includes neither the Crab Nebula nor the galactic plane. The excessive flux from this region is 2.0 ± 0.6 per interval. It is suggested that this flux is due to a point source in the region of the constellation Taurus rather than a line source in the galactic plane.

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Miscellaneous

USSR UDC 523.164

GAL'PER, A. M., KIRILLOV-UGRYUMOV, V. G., LUCHKOV, B. I., and PRILUTSKIY, O. F.

"Cosmic Gamma-Radiation Research"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 105, No 2, Oct 71, pp 209-250

Abstract: The article is a survey systematizing methods, experimental data, and theoretical work on cosmic gamma radiation. Gamma radiation is formed in the interaction of energetic particles with matter and radiation, the annihilation of matter and antimatter, and in radioactive decay. Methods for studying cosmic gamma radiation include gamma-ray telescopes with Geiger, scintillation, Čerenkov, and semiconductor detectors used as counters; "blind" gamma-ray telescopes (used on some artificial earth satellites); spark gamma-ray telescopes of G. H. FRYE et al (used in many cases on balloons); and the nuclear photoemulsion method. Areas of gamma-astronomy research include measurements of the intensity of diffuse cosmic gamma radiation (isotropic metagalactic and anisotropic galactic components), the search for discrete sources, the study of secondary gamma radiation in the upper layers of the atmosphere. A great deal of work has been devoted to the search for gamma radiation from the Crab Nebula as well as the radio sources Swan A and Virgo A and the sun. Al-

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GAL'PER, A. M., et al., Uspekhi Fizicheskikh Nauk, Vol 105, No 2, Oct 71, pp 209-250

though the results of cosmic gamma-radiation research are rather indefinite and sometimes even contradictory, important conclusions can be drawn on a number of cosmological problems (estimates of the density of metagalactic cosmic rays, the density of antimatter in the universe) and our ideas concerning processes occurring in some cosmic objects (radiogalaxies, quasars, remnants of supernovae, etc.) can be refined. The survey concludes by considering astrophysical applications of the results of cosmic gamma-radiation research, models explaining the origin of different components, and experiments important for the verification of particular models, as well as prospects for the further study of cosmic gamma radiation.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 632.954:631.5/9:581.1

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

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

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

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

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Luminescence

6

USSR UDC 541.124

GURVICH, A. M., KATOMINA, R. V., and GAL'PERIN

"Kinetics of the Formation of Sulfide Crystal Phosphors"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 2, Feb 70, pp 360-365

Abstract: In the preparation of luminophores based on ZnS and CdS, annealing of the charge is continued for tens of minutes or even several hours. Determination of the intensity of luminescence of ZnS(Cl), ZnS(Ag), ZnS(Cu), and ZnS.CdS(Ag) in relation to the length of the time of annealing at 800 and 950° in the presence of NaCl and $MgCl_2$ + NaCl added as fluxes showed that the crystal phosphors formed within 1-2 min, while at 1100° formation of ZnS phosphors was completed in 30-40 sec. In this temperature range, which is optimal for the formation of sulfide phosphors, the effect of the rate of heat transfer was negligible and the limiting factor in the formation of the phosphors was diffusion of the activators rather than recrystallization. Recrystallization leading to an increased grain size reduced the losses of light in excitation of thick layers of a powdered crystal phosphor; it increases the intensity of luminescence induced by X-rays, while that of luminescence induced by ordinary light may

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GURVICH, A. M., et al., Zhurnal Fizicheskoy Khimii, Vol 44, No 2, Feb 70, pp 360-361

even decrease. In the industrial production of sulfide phosphors under conditions in which temperatures in the optimum range are applied, the length of the time of annealing can be reduced considerably if the phosphor may be fine-grained. At the high temperatures in question, the charge should be added gradually (continually or in small portions) to reduce the length of the time of heating and other measures (e. g., addition of a flux to the charge) taken to prevent oxidation.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 51

GAL'PERIN, A. M.

"On Methods of Truncation in Convex Programming"

Tr. 4-y Zimn. shkoly po mat. programmir. i smezh. voprosam, 1971, vyp. 1 (Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 1), Moscow, 1971, pp 196-211 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V416)

Translation: A truncation method is proposed for the problem of minimizing a convex piecewise-linear function in the presence of linear constraints, which gives an optimum solution in a finite number of steps, and enables dropping those truncations during the computations which are satisfied as strict inequalities. S. Lebedev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 512.25/.26+519.3:330.115

GAL'PERIN, A. M.

"The Principle of Branches and Boundaries in Problems of Optimum Redundancy"

Tr. 3-y Zimney shkoly po mat. programmir. i smezhn. vopr., 1970. Vyp. 1 (Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 1), Moscow, 1970, pp 224-242 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V620)

Translation: The problem of optimum redundancy is formalized as follows. To find $(m_1, m_2, \ldots, m_n)$ of the conditions

$$\prod_{j \in J_i} (1 - q_j^{m_j}) \geq \pi_i, \; i = 1, \ldots, k, \tag{1}$$

$$m_j \text{ natural}, \; j = 1, \ldots, n \tag{2}$$

$$\sum_{j=1}^{n} c_j x_j \to \min. \tag{3}$$

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GAL'PERIN, A. M., Tr. 3-y Zimney shkoly po mat. programmir. i smezhnym vopr., 1970. Vyp. 1, Moscow, 1970, pp 224-242

Here $c_i > 0$, $0 < q_i < 1$, $0 < \pi_i < 1$. An algorithm is proposed for exact solution of problem (1)-(3). The proposed algorithm is based on the principle of branches and boundaries (and realizes a new scheme of this principle). Yu. Finkel'shteyn.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 512.25/.26+519.3:330.115

VAKSMAN, V. S., GAL'PERIN, A. M.

"A Modified Kelly Method of Solving Descriptive Piecewise-Linear Problems of Convex Programming"

Tr. 3-y Zimney shkoly po mat. programmir. i smezhnym vopr., 1970. Vyp. 1 (Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 1), Moscow, 1970, pp 124-133 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V609)

[No abstract]

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ELECTRICAL ENGINEERING

Materials

USSR UDC: 621.317.8(088.8)

GAL'PERIN, B. S., SOLDATOVA, L. P., MIRETSKAYA, I. Ye.

"A Resistive Composition"

USSR Author's Certificate No 283367, filed 24 Jun 69, published 22 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V364 P)

Translation: This Author's Certificate introduces a resistive composition based on a resin binder containing particles of a current-conducting substance in the form of carbon black distributed through the resin. As a distinguishing feature of the patent, resistance limits are extended and resistance characteristics are improved by using highly dispersed partially oxidized destroyed carbon black as the current-conducting material. The carbon black is used in quantities of 6-40 volumetric percent.

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UDC 616.127-005.8-039:/616.9-022,38-039:616.3-008.17-07-039.11

GAL'PERIN, E. A.; KACHUR, M. B.; Moscow Hospital imeni S. P. Botkin

"Diagnosis of Myocardial Infarct That Simulates Food Poisoning"

Moscow, Sovetskaya Meditsina, No 4, 1971, pp 99-104

Abstract: A study of the literature and 31 case histories of patients with myocardial infarct hospitalized for food poisoning showed that gastrointestinal disturbances occur fairly frequently during the first few hours after an attack and especially 3 to 4 days later. The diagnosis of such cases is difficult because pain in the epigastrium is often combined with elevated temperature, nausea, vomiting, liquid stools, and so forth, although less intense than in food poisoning. Early differential diagnosis between the two diseases can be made by: (a) careful study of the anamnesis to determine whether the patient has had other diseases (e.g., of the cardiovascular system) and epidemiological inquiry regarding the possibility that other persons may have eaten the same foods that the patient did prior to the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

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GAL'PERIN, E. A., et al, Sovetskaya Meditsina, No 4, 1971, pp 99-104

attack, (b) nature and sequence of symptoms, and (c) EKG examination and analysis of WBC, transferases, and ESR. Food poisoning may provoke myocardial infarction in persons suffering from chronic coronary insufficiency.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CLINICAL FORMS OF ACUTE HEPATIC INSUFFICIENCY AND MODES OF THEIR THERAPY -U-

AUTHOR-(05)-GALPERIN, E.I., NEKLYUDOVA, YE.A., IVANOV, P.A., OVNATANOV, B.S., YAREMA, I.V.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 2, PP 40-48

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER FUNCTION, JAUNDICE, CIRRHOSIS, PROTEIN METABOLISM, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1730 STEP NO--UR/0531/70/000/002/0040/0048

CIRC ACCESSION NO--AP0103494

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER OBSERVATIONS OVER 158 PATIENTS IN WHOM AFFECTION OF THE LIVER AND BILE DUCTS WAS ACCOMPANIED BY MANIFESTATIONS OF HEPATIC INSUFFICIENCY. THESE PATIENTS WERE DIVIDED INTO TWO GROUPS, VIZ. WITH BILIARY HYPERTENSION (OBSTRUCTIVE JAUNDICE) AND WITH CIRRHOSIS AND TUMORS OF THE LIVER, AS WELL AS DISTURBED PORTAL AND HEPATIC CIRCULATION. COMPLEX TREATMENT IS INDICATED IN HEPATIC INSUFFICIENCY IT BEING AIMED AT IMPROVING HEPATIC FUNCTION, CORRECTION OF THE WATER ELCTROLYTE BALANCE, PROTEIN METABOLISM, REDUCTION OF AMMONIA INTOXICATION, CHACKING HEMORRHAGES IN PATIENTS WITH PORTAL HYPERTENSION AND BLEEDING FROM DIALTED ESOPHAGEAL VEINS. WITH THE DEVELOPMENT OF A SEVERE FORM OF INSUFFICIENCY PREMATOUS STATE AND INEFFECTIVENESS OF CONSERVATIVE THERAPY, EXTRACORPOREAL CLEARANCE OF THE BLOOD, WHICH DIMINISHES INTOXICATION, IS INDICATED.

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USSR

GAL'PERIN, L. N., IL'YASOV, A. Z., and LEMBERG, I. Kh., Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR, Institute of Nuclear Physics of the Academy of Sciences Uzbek SSR

"Probabilities of M1-Transitions Between Levels of the Ground Rotational Band of Rare Earth Nuclei"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 8, Aug 70, pp 1644-1645

Abstract: Calculations of the cascade Coulomb excitation of levels of the Tb-159, Dy-161, Dy-163, Er-167, Yb-171, Yb-173, and Lu-175 nuclei are presented. The values of B(E2) between levels of the ground state necessary to obtain $B(M1)_{exp}$ were calculated on the basis of data on quadrupole moments of the ground states of these nuclei given by Elbek. A comparison of experimental and theoretical data on B(M1) showed that within the limits of the combined errors the experimental data are satisfactorily described by the generalized model.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--AUTOMATIC DIFFERENTIAL MICROCALORIMETERS -U-

AUTHOR-(03)-GALPERIN, L.N., KOLESOV, YU.R., ZELENOV, N.A.

COUNTRY OF INFO--USSR

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SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 525-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CALORIMETER, HEAT LOSS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2249 STEP NO--UR/0076/70/044/002/0525/0527

CIRC ACCESSION NO--AP0125827

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125827

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIVICES ARE OPERATED ON THE BASIS OF CONST. RECORDING OF THE HEAT EVOLVED AS WELL AS OF THE RATE OF ITS EVOLUTION. THE MAX. RATES OF THE LIBERATED HEAT WERE 1, 5, 10, AND 50 CAL-HR. THE DETN. ERROR OF THE HEAT LIBERATED (5 CAL-HR) IS 4-2.5PERCENT. THE TIME CONST. IS 35-55 SEC. FACILITY: FILIAL INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 681.332.65

ALEKSEYEVSKIY, M. A., GAL'PERIN, M. P., KOMINAROV, I. Z.

"A Device for Interrupting a Multicomputer System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293242, Division G, filed 3 Mar 69, published 15 Jan 71, p 164

Translation: This Author's Certificate introduces a device for interrupting a multicomputer system. The device contains logic circuits, comparison circuits, diodes, flip-flops, a search module for the "one" furthest to the left, a command number register, an interrupt register, priority registers, protection registers and a synchronization circuit. As a distinguishing feature of the patent, the functional possibilities of the device are extended by connecting as many priority registers as there are computers to the inputs of the comparison circuits, connecting the second inputs of the comparison circuits to the search unit for the "one" furthest to the left in the priority registers, and connecting the outputs of the inhibit-enable flip-flops to the third inputs of the comparison circuits. Some outputs of the comparison circuits are connected to diodes between the command counters and the command number register. The other outputs are connected through a logic circuit to the terminate flip-flop. The outputs of this flip-flop are connected

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USSR

ALEKSEYEVSKIY, M. A. et al., USSR Author's Certificate No 293242

to the search unit for the "one" furthest to the left in the priority registers, while the second input of the terminal flip-flop is connected through a logic circuit to the outputs of comparison circuits for protection codes. The inputs of these comparison circuits are connected to the decoder of the search unit for the "one" furthest to the left in the interrupt register, and to the outputs of the interrupt register, protection registers, and inhibit-enable flip-flops. The second outputs of these comparison circuits are connected through a logic circuit, the synchronization circuit and the initiate flip-flop to the search unit for the "one" furthest to the left in the interrupt register. The output of the interrupt register is connected to the input of the search unit for the "one" furthest to the left in the priority registers, and the other outputs are connected through diodes to the computer command counters. The synchronization circuit is connected to the inhibit-enable flip-flop for interruption of all computers.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

Acc. Nr: AP0040899

Ref. Code: UR 0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 198-200

PECULIARITIES OF FULFILLING ANALOG OPERATIONS ON DIFFERENTIAL OPERATIONAL AMPLIFIERS

M. V. GALPERIN

Specific schemes of switching — in operational amplifiers with a differential input when fulfilling analog operations are considered and the correlations for the calculation of scales are given.

REEL/FRAME
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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 621.35.082.75

GAL'PERIN, T. B., DMITRIYEV, V. I., and STRIZHEVSKIY, I. V., Academy of Communal Farming imeni K. D. Pamfilov, Moscow

"Theory of Rectification in the Electrolytic Cell with a Diffusion Barrier"

Moscow, Electrokhimiya, Vol 9, No 1, Jan 73, pp 26-29

Abstract: In the previous paper the phenomenon of valve effect [rectification] has been shown to occur in a dielectrode electrolytic cell after introduction of a diffusion barrier between the electrodes. A diffusion barrier is considered to be a border hampering the diffusion process but exhibiting no selective properties. In this paper mathematical treatment of the theory of this phenomenon is undertaken.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 547.491.8:543.422.4

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

"Reaction of Cyanuric Acid and Its Amides with Ammonia"

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

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

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR

UDC: 678.746.2-139.01:53

GAL'PERIN, V. M., and NIKOLAYEV, A. F.

"Heat Stable and Impact Resistant Compositions Based on the Copolymers of Styrene and Metacrylic Acid"

Moscow, Plasticheskiye Massy, No 10, 1970, pp 7-9

Abstract: Styrene and methacrylic acid copolymers (SMAA) have low impact resistance. To improve it the SMAA was combined with various rubbers: butadiene-styryl, methylvinylpyridyl (SKS-25-MVP-5 and SKS-20-MVP-10), butadiene-nitrile SKN-26-1,25 and SKN-26-5, and carboxylate butadiene-nitrile rubber. The ingredients were combined on rollers at 160-190°C, the operation lasting 15-20 min. Before mixing, the rubbers were plasticized on cold rollers for 15-20 min. Compositions of SMAA and nonpolar or weakly polar rubbers showed slightly better impact resistance, but were extremely nonhomogeneous due to poor compatibility. This compatibility appeared to improve with higher content of methacrylic acid in the mixture. Best results were obtained with compositions containing the copolymer SMAA, the rubber SNK-26-5, and salts or oxides of the I or II group metals. They exhibited high thermo-physical and durability indicators with excellent chemical stability. They are processable by the die casting method.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

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UDC 681.325.65

GAL'PERIN, V. S.

"Combination Logic Circuit"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 33, 1971, pp 190-191

Abstract: This is an integrated circuit using MOS transistors, with transmitting and receiving gates. Between the transmitting and receiving gates are MOS transistors with the drains of each connected with the corresponding transistor of the receiving group. The sources of the transistors are connected together with each other and with one end of the common bus. The purpose of the device is to reduce the number of common bus bars.

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USSR

GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors)

"Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

Abstract: The book is one of the volumes in the series "Radio Electronic Circuits Based on Semiconductor Devices. Design and Computation."

The book presents a classification and the operating peculiarities of special elements of computer memory devices. Various pulse current shaping circuits, composite switches, reproduction amplifiers, and their requirements for memory devices and type of magnetic storage are presented. General information for each type of circuit is given, different variations are considered, and a method for engineering calculations is given, which is illustrated by a large number of examples of calculating practical circuits.

A separate chapter is devoted to the problems of microminiturization of special elements for memories, and also to the application of integrated silicon circuits in computer memory structures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR

GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors) "Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

The book is intended for engineer-technical workers involved in the development, production, and operation of electronic computers. It may be used as a text for students of universities during course or thesis design. The book has 4 tables, 104 figures, and 96 citations.

The chapter headings are as follows:

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Chapter 2.	Reproduction Amplifiers for Magnetic Memory Structures	19
Chapter 3.	Practical Examples of Reproduction Amplifiers Circuits for Magnetic Memory Structures	71
Chapter 4.	Pulse Shapers for Magnetic Memory Structures	158
Chapter 5.	Practical Examples of Pulse Shapers of Magnetic Memory Structures	205

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GAL'PERIN, Ye. I., and GORDONOV, A. Yu., (editors) "Special Elements of Digital Computer Memory Based on Semiconductor Devices" (Spetsial'nyye Elementy Zapominayushchikh Ustroystv EVM Na Poluprovodnikovykh Priborakh), Moscow, Izd-vo "Sovetskoye Radio," 30,000 copies, 352 pages

Chapter 6. Matrix Switches 256
Chapter 7. Special Integrated Components for Memory Structures 315

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 621.374

GAL'PERIN, Ye. I., STEPANENKO, I. P. (editors)

"Pulse Circuits Based on Semiconductor Devices. Design and Calculation"

Impul'snyye skhemy na poluprovodnikovykh priborakh. Proyektirovaniye i raschet (Cf. English above), Moscow, "Sov radio", 1970, 238 pp, ill. 75 k. (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G171 K)

Translation: The book presents general methods of designing and calculating pulse circuits based on semiconductor devices. There are eight chapters, each of them dealing with some fundamental class of circuits — keying circuits, emitter followers, multivibrators, flip-flops, blocking oscillators, etc. N. S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/3. 020 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--FIRST TESTS OF ELECTROCHEMICAL SEISMIC DETECTORS -U-

AUTHOR-(04)-GALPERIN, YE.I., GRAFOV, B.M., LUKOVETS, P.D., NOVITSKIY, M.A.

COUNTRY OF INFO--USSR

G

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ZEMLI, NO 2, 1970, PP 81-87

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMOLOGIC INSTRUMENT, OSCILLATION, ELECTROCHEMICAL PROPERTY, BOREHOLE, SEISMIC SOUNDING, SEISMIC REFLECTION, SEISMIC REFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0729 STEP NO--UR/0387/70/000/002/0081/0087

CIRC ACCESSION NO--AP0110456

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2/3 020 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110456

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINCE THE SPRING OF 1965 THE INSTITUTE OF PHYSICS OF THE EARTH AND INSTITUTE OF ELECTROCHEMISTRY HAVE ENGAGED IN JOINT EXPERIMENTAL WORK FOR EVALUATING THE POSSIBILITIES OF USING ELECTROCHEMICAL CONVERTERS FOR REGISTERING SEISMIC OSICLLATIONS. IT IS EMPHASIZED THAT ONLY THE FIRST STEPS IN THIS DIRECTION HAVE BEEN TAKEN, ALTHOUGH THE POSSIBILITIES ARE CLEAR. THE ELECTROCHEMICAL SEISMIC DETECTOR HAS A SOLID HOUSING WHICH HOLDS A SENSING ELEMENT, CONSTITUTING AN ELECTROCHEMICAL CONVERTER. IT CONSISTS OF A CYLINDRICAL PLASTIC CONTAINER TO WHOSE OPPOSITE SIDES ELASTIC MEMBRANES ARE ATTACHED. WITHIN THE SENSOR THERE IS A PARTITION WITH AN OPENING WHICH DIVIDES IT INTO TWO CHAMBERS. THE SENSOR IS FILLED WITH AN ELECTROLYTE WHICH TOGETHER WITH THE MEMBRANE AND THE CHANNEL FORMS A MECHANICAL OSCILLATORY SYSTEM. PLATINUM GRID ELECTRODES ARE INSERTED IN THE CHANNEL. THE ELECTRODES TOGETHER WITH THE ELECTROLYTE CONSTITUTE A REDOX SYSTEM. THE ELECTROCHEMICAL SEISMIC DETECTOR USED IN THE EXPERIMENTS IS A CYLINDER 40 MM IN LENGTH AND 30 MM IN DIAMETER AND WEIGHS ABOUT 70 G. THE SENSOR IS PARAMETRIC. IN THE ABSENCE OF A USEFUL SIGNAL A D-C CURRENT FLOWS THROUGH IT. WITH THE APPEARANCE OF FORCED OSCILLATIONS THE SENSOR HOUSING TOGETHER WITH THE ELECTRODES OSCILLATES RELATIVE TO THE FLUID IN THE CHANNEL AND A VARIABLE COMPONENT, WHOSE FREQUENCY IS EQUAL TO THE FREQUENCY OF THE FORCED OSCILLATIONS, AND WHOSE AMPLITUDE IS PROPORTIONAL TO THE AMPLITUDE OF THE FORCED OSCILLATIONS, APPEARS IN THE SENSOR CIRCUIT.

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3/3. 020 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110456

ABSTRACT/EXTRACT--FIELD EXPERIMENTS ARE DESCRIBED (REGISTERING NEARBY IMPACTS, USE IN THE REFLECTED WAVES, REFRACTED WAVES AND DEEP SEISMIC SOUNDING METHODS, REGISTERING EARTHQUAKES). IT WAS FOUND THAT IN ALL CASES WHEN REGISTERING EXPLOSIONS AT DIFFERENT DISTANCES AND WHEN REGISTERING EARTHQUAKES THE ELECTROCHEMICAL SEISMIC DETECTORS HAD A GREATER RESPONSE THAT THE ELECTRODYNAMIC INSTRUMENTS. THE FREQUENCY CHARACTERISTIC OF THE TESTED ELECTROCHEMICAL DETECTORS IS CLOSE TO THE CHARACTERISTIC OF AN ELECTRODYNAMIC DETECTOR WITH A CHARACTERISTIC FREQUENCY OF 1 CPS. THE SMALL SIZE AND WEIGHT OF THE ELECTROCHEMICAL SEISMIC DETECTOR AFFORD GREAT POSSIBILITIES FOR INCREASING RESPONSE OF THE ENTIRE APPARATUS AND CHANGING OBSERVATIONAL TECHNIQUES. IN PARTICULAR, THERE CAN BE AN INCREASE IN INSTRUMENT RESPONSE BY LOWERING IT INTO DEEP BOREHOLES. IT IS CLEAR THAT ELECTROCHEMICAL DETECTORS IN THE FUTURE WILL BE USED EXTENSIVELY IN SEISMIC OBSERVATIONS, BUT ONLY AFTER MANY PROBLEMS ARE SOLVED. FACILITY: INSTITUTE OF PHYSICS OF THE EARTH. FACILITY: INSTITUTE OF ELECTROCHEMISTRY.

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Acc. Nr: AP0054067 Ref. Code: UR0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 4, pp 65-71

THE TREATMENT OF ACUTE CHOLECYSTITIS

B. A. Petrov, E. I. Galperin, N. N. Ivanova

The authors analyze 1173 operations for acute cholecystitis and 100 repeated interventions. During the last years the number of aged and senile patients has risen sharply. Between 1960—1966 the number of operated patients over 60 years of age augmented by 40 per cent. The number of patients with a complicated course of cholecystitis with involvement into the process of the bile ducts, liver and pancreas. In operations at the peak of an attack of acute cholecystitis it is impossible to carry out a meticulous preoperative preparation and during the operation to explore the bile ducts. Such operations are attended by a high mortality and, frequently, by unsatisfactory remote results. Emergency operations should be performed only in manifestations of peritonitis. The majority of patients with acute cholecystitis should be operated 8—10 days after admission after the subsidence of acute manifestations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PHASE STUDY IN A BISMUTH SESQUIOXIDE MOLYBDENUM TRIOXIDE SYSTEM -U-

AUTHOR-(02)-YERMAN, L.YA., GALPERIN, YE.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 868-74

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE ANALYSIS, CRYSTAL STRUCTURE, X RAY ANALYSIS, BISMUTH OXIDE, MOLYBDENUM OXIDE, PHASE EQUILIBRIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1708 STEP NO--UR/0078/70/015/003/0868/0874

CIRC ACCESSION NO--AP0115537

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BI SUB2 O SUB3-MOO SUB3 SYSTEM WAS INVESTIGATED BY USING AN X RAY DIFFRACTION METHOD. THE OXIDES WERE PREPD. BY COPPTN. OF BI(NO SUB3) SUB3 AND (NH SUB4) SUB2 MOO SUB4 WITH A SUBSEQUENT BAKING AND FUSING OF THE PPT. THE METHOD OF PREPN. OF THESE OXIDES AFFECTED THE PHASE EQUIL. AND CRYST. STRUCTURE OF THE INDIVIDUAL PHASES. PHASE DIAGRAMS OF SYSTEMS PREPD. UNDER DIFFERENT CONDITIONS ARE GIVEN.

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burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foregion so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low -Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

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JPRS 5016 2

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Gal'perin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Temnyy, N. I. Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 20 December 1968. Orbital inclination to the equator was 71°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/3 024 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--AURORAL PROTONS AND RESONANCE CONCEPT OF SUBSTORMS --U-

AUTHOR-(05)-GALPERIN, YU.I., GLADYSHEV, V.A., GUREVICH, A.V., KUZMIN, A.K., PONOMAREV, YU.N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP 457-460

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--AURORA, PROTON, MAGNETOSPHERE, ELECTRIC FIELD, SOLAR WIND, GEOMAGNETIC STORM, PROTON RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0508 STEP NO--UR/0293/70/008/003/0457/0460

CIRC ACCESSION NO--AP0132711

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/3 024 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132711

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PROPOSE A "RESONANCE" CONCEPT OF THE APPEARANCE OF A SUBSTORM. IT CAN BE SUMMARIZED AS FOLLOWS: 1) THERE IS A MORE OR LESS STATIONARY QUASITRAPPED COMPONENT OF AURORAL PROTONS (AND POSIBLY ELECTRONS) WITH A CHARACTERISTIC ENERGY OF ABOUT 10 KEV, HAVING A STRUCTURELESS "BACKGROUND" SPACE DISTRIBUTION. 2) THIS CHARACTERISTIC ENERGY OF AURORAL PARTICLES IS THE "RESONANCE" ENERGY OF QUASITRAPPED PROTONS OF THE RING CURRENT AND AURORAS. 3) IT IS POSTULATED THAT THERE IS AN ACCUMULATION OF THE RESONANCE COMPONENT IN THE EVENING AND NIGHTTIME REGIONS OF THE "SACK" AS A RESULT OF THE ASYMMETRICAL INJECTION OF THESE PARTICLES INTO QUASITRAPPED TRAJECTORIES, THE APPEARANCE OF A RING CURRENT AS A RESULT OF THIS ASYMETRY, AND AS A RESULT, THE GENERATION OF A LARGE SCALE SELF CONSISTENT ELECTRIC FIELD IN THE MAGNETOSPHER. 4) IT IS POSTULATED THAT THE INCREASE IN DENSITY OF RESONANCE PARTICLES WITH THEIR ACCUMULATION IN THE REGION OF THE "CUSP" OR "SACK" ABOVE SOME CRITICAL VALUE GIVES RISE TO THE PHENOMENON OF A "MAGNETOSPHERIC EXPLOSION," A SUBSTORM, AND SUCH A PROCESS CAN BE REPEATED WITH CONTINUATION OF "PUMPING" OF THE MAGNETOSPHERE WITH RESONANCE PARTICLES. 5) IT IS POSTULATED THAT THERE IS A SELECTIVITY OF THE REACTION OF THE EARTH'S MAGNETOSPHERE TO THE APPEARANCE OF PARTICLES WITH ENERGIES CLOSE TO "RESONANCE" IN THE SOLAR WIND FLOWING AROUND IT.

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CIRC ACCESSION NO--AP0132711

ABSTRACT/EXTRACT--6) IT IS POSTULATED THAT THE PHENOMENON OF A LAG IN MAGNETIC STORMS IN COMPARISON WITH THE ACTIVE HELIOPHYSICAL PROCESSES RESPONSIBLE FOR THEM IS DETERMINED BY THE TIME OF INTERPLANETARY SPACE PROPAGATION OF THAT COMPONENT OF A "CORPUSCULAR STREAM" EJECTED FROM THE SUN WHICH IS RESPONSIBLE FOR "RESONANCE" IN THE EARTH'S MAGNETOSPHERE. THIS CONCEPT DOES NOT PRECLUDE PROCESSES LEADING TO THE APPEARANCE OF TYPICAL SHARPLY DEFINED AURORAL ZONES, USUALLY SITUATED ALONG THE AURORAL OVAL AND CAUSED BY THE INJECTION OF PARTICLES WITH A CHARACTERISTIC ENERGY 1-5 KEV AND HIGH ENERGY PARTICLES (UP TO 10 PRIME2 -10 PRIME4 KEV), WHOSE INTERPRETATION EVIDENTLY REQUIRES A DETAILED EXAMINATION OF OSCILLATORY AND OTHER COLLECTIVE PROCESSES IN MAGNETOSPHERIC PLASMA.

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Acc. Nr.: AP0042568

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Ref. Code: UR0293

JPRS 50162

Measurement of Low-Energy Electrons

(Abstract: "Measurement of Low-Energy Electrons," by Yu. I. Gal'perin, N. V. Dzhordzhio, I. D. Ivanov, I. P. Karpinskiy, E. L. Lerin, T. M. Mulyarchik, B. V. Polenov, V. V. Temnyy, N. I. Fedorova, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 108-119)

[Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

A spectrometer for low-energy electrons, operating in the energy range 30 eV-15 keV, is described. Electrons undergo energy selection in a cylindrical capacitor and then are accelerated to 17 keV and are registered by a scintillation counter with two photomultipliers operating in a coincidence circuit. The instrument field of view is circular, the aperture angle is $\pm 3.5°$, the geometry factor is $2 \cdot 10^{-3}$ cm^2·sterad and the energy resolution is $\Delta E/E = 0.19$. In the first range (30-150 eV) energy scanning is done smoothly by applying a sawtooth voltage; in the second analysis it is done smoothly at three fixed energies -- 1, 4.5 and 15 keV. The instrument can be switched from one regime to another by command from

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the earth. The paper gives the first results of measurements on the "Kosmos-261" satellite. The instruments measured the equilibrium energy spectrum of fresh photoelectrons at different latitudes for different pitch angles. Soft auroral electrons with energies from 30 eV to approximately 1 keV were registered both in the "second" zone of auroras and in the main zone of auroras in which electrons with energies 4.5 and 15 keV were also very intensive even during magnetically quiet times. On many revolutions of the satellite about the earth, passing approximately along the auroral oval, with transition from the midnight to the morning sectors there is a structureless "background" of electrons with an almost constant intensity and slowly changing angular distribution. The energy flux of these electrons is approximately 1 erg/cm^2·sec. Near the midnight sector and with transition from the midnight to evening sector the fluxes of auroral electrons are far more irregular, with strong peaks, particularly at about 4.5 keV. No measureable electron intensities were discovered in the middle and low latitudes in the keV range. The upper limit of the energy flux in the quiet atmosphere is approximately $<1.5\cdot10^{-2}$ erg/cm^2·sec. An exception is the equatorial region of the ionospheric anomaly, where as earlier (on the "Kosmos-5" satellite) there was sporadic registry of soft electrons.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

Acc. Nr.: AP0042567 Ref. Code: UR0293

JPRS 50162

Measurements of Intermediate- and High-Energy Particles

(Abstract: "Measurements of Charged Particles of Intermediate and High Energies," by A. D. Bolyunova, A. D. Verevkin, Yu. I. Gal'perin, L. S. Gorn, L. S. Zhurina, I. D. Ivanov, R. N. Isayeva, I. P. Karpinskiy, R. A. Kovrazhkin, V. V. Temnyy, B. I. Khazanov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 126-135) [Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

This article describes the RIE-205 scintillation spectrometer for electrons of intermediate energies, the RIP-802 scintillation spectrometer for protons and the RIG-III lead-shielded Geiger counter. The RIE-205 instrument measured electrons in the ranges 20-45, 45-85, 85-120 and 120-150 keV and the total intensity of electrons with an energy greater than 150 keV (geometry factor $2 \cdot 10^{-3} cm^2 \cdot$sterad). The RIP-802 instrument measured protons in the ranges 0.30-0.45, 0.45-0.70, 0.70-0.95 and 0.95-9 MeV with a geometry factor of $1.5 \cdot 10^{-2} \cdot$sterad. The RIG-111 instrument measured

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AP0042567

protons with $E > 50$ MeV and hard electrons. In the radiation belts and auroral zones the instruments measured the fluxes and energy spectra of electrons and protons, their distribution by pitch angles and spatial-temporal characteristics. It was possible to determine the latitude variation of the intensity of injected electrons, the pitch distribution of intensity for auroral zone electrons and the differential electron spectra. For example, the electron fluxes measured with the RIE-205 spectrometer can be assigned to the following groups: a) trapped electrons in the inner zone ($L \leq 2.5$) were registered for the most part in the region near the Brazilian anomaly; their flux for an energy $E > 150$ keV attained 10^8 particles/cm^2·sec, and was highly dependent on pitch angle; a pronounced maximum was observed for pitch angles 90°; b) trapped electrons in the outer zone $2.5 \leq L \leq 7$, also with a maximum intensity for pitch angles of 90°; in many cases quasitrapped particles were registered in the region of invariant coordinates $h_{min} \leq 100$ km with intensities up to $2 \cdot 10^6$ particles/cm^2·sec·sterad; c) sporadic hard electrons injected into the atmosphere in the middle latitudes; in these cases the mean energy was usually ~ 100 keV and the particle flux attained 10^5 particles/cm^2·sec; d) electrons of intermediate and high energies injected into the atmosphere in the high latitudes; they are frequently observed near the auroral zone.

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USSR UDC: None

GAL'PERIN, Yu. M. and KOZUB, V. I.

"Absorption of Ultrasonics in Superconducting Alloys"

Leningrad, Fizika tverdogo tela, No 11, 1973, pp 3354-3358

Abstract: Starting from the basic principles, the authors solve the problem of sound absorption in a superconductive alloy without limitations on the alloy's purity or the frequency of the sound waves. In their computations they use the isotropic model of the superconductor since, for sufficiently large impurity concentrations, the solution for the equation of self-congruence is isotropic. It is shown that the conclusion arrived at by an earlier writer (T. Tsuneto, Phys. Rev., 121, 1961, p 402) that the only parameter describing the effect of impurities on the sonic absorption by the superconductor is ql (q is the wave vector of the sound, l is the mean free path of the electrons) is valid for both high and low sonic frequencies. The authors thank V. L. Gurevich for his useful comments on the work.

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142 032 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--NONLINEAR EFFECTS DURING THE AMPLIFICATION OF SOUND IN N INDIUM ANTIMONIDE IN A STRONG MAGNETIC FIELD -U-

AUTHOR-(03)-GALPERIN, YU.M., GRICHKO, I.L., LAYKHTMAN, B.D.

G

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970 12(5), 1437-42

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INDIUM ANTIMONIDE SEMICONDUCTOR, AUDIO FREQUENCY AMPLIFIER, NONLINEAR EFFECT, TRANSVERSE MAGNETIC FIELD, CONDUCTION ELECTRON, ACOUSTIC WAVE, VIBRATION RELAXATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0876 STEP NO--UR/0181/70/012/005/1437/1442

CIRC ACCESSION NO--AP0131463

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

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CIRC ACCESSION NO--AP0131463

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NONLINEAR DEPENDENCE WAS OBSD. OF THE COEFF. OF AMPLIFICATION OF SOUND AND ITS INTENSITY IN N INSB AT 77DEGREESK IN A STRONG, NONQUANTIZED, TRANSVERSE MAGNETIC FIELD. THIS EFFECT IS EXPLAINED BY HEATING OF CONDUCTION ELECTRONS BY THE ELEC. FIELD OF THE SOUND WAVE. THE RELAXATION TIME OF THE IMPULSE OF ELECTRONS IS INDEPENDENT OF ENERGY AS WELL AS OF THE MECHANISM OF RELAXATION OF THE ENERGY ELECTRONS. FACILITY: INST. POLUPROV., LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--AUTOMATIC DECIPHERING OF THE ELECTROCARDIOGRAM -U-

AUTHOR--ANIN, YU.L., GALPERINA, A.I., KOGAN, I.V., PEGANOVA, L.V.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 94-97

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROCARDIOGRAPHY, HEART DISEASE, COMPUTER MEDICAL DIAGNOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0966 STEP NO--UR/0475/70/000/003/0094/0097

CIRC ACCESSION NO--AP0102905

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A ATTEMPT IS PRESENTED OF USING ELECTRONIC COMPUTING DEVICES FOR DECIPHERING OF ELECTROCARDIOGRAPHIC RECORDS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 534,232,46-8

GAL'PERINA, ~~A.N.,~~ ANGELOV, N.A.

"Choice Of Operating Conditions Of Packet Piezoelectric Transducer For Technological Application"

Tr. VNII tokov vysok. chastoty (Works Of The All-Union Scientific-Research Institute Of High-Frequency Currents), 1970, Issue 11, pp 289-295 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A426)

Translation: The dependence is considered of the nonlinearity of the resistance losses of a packet piezoceramic transducer, on the specific construction and the conditions of its use. In particular, a transducer is investigated which consists of two piezoceramic rings from the TsTS-19 [expansion unknown]. The transducer operated with forced cooling in a regime of radiation in air. There was investigated how a change of the supply voltage and the constriction force at a bolted-on connection [v boltovom soyedinenii] influence the magnitude of the dielectric resistance and mechanical losses, and also the mechanical quality at the resonance frequency. The effect is considered of the load character on the efficiency and effectiveness of the transducer. On the basis of an analysis of experimental data, conclusions are drawn with respect to the operating conditions of the transducer. 5 ill. 5 ref. N.B.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC: 621.396

GAL'PERINA, A. N.

"On Construction of a Packet Converter For Technological Use"

Tr. VNII tokov vysok. chastoty (Works of the All-Union Scientific Research Institute of High-Frequency Currents), 1970, vyp. 11, pp 295-298 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V360)

Translation: The author discusses conditions of optimum location of the piezoelectric element in a packet piezoceramic converter, and conditions of the optimum reduced loading as functions of the nature of the technological load. One illustration, bibliography of three titles.

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USSR UDC: 621.372.2:621.374.5

BORODOVSKIY, V. S. and GAL'PEROVICH, D. Ya.

"Nanosecond Pulse Transmission Through Superconducting Coaxial Cable"

Moscow, Radiotekhnika, No 11, 1972, pp 51-55

Abstract: A description is given, in theoretical terms, of miniature superconducting cable with an inner niobium conductor and an outer lead conductor. The cable becomes superconductive when placed in a bath of liquid helium, at a temperature of 4.2° K, which is below the critical temperature level for both niobium and lead. The use of superconductive cable is especially beneficial in the transmission of nanosecond pulses because of its tendency to reduced distortion of the pulse shape, the result of low losses in the metal and in the dielectric. Using the experimental data from an earlier article and the theoretical results of another, the authors of the present paper show that the losses in the superconducting cable dielectric in the frequency range corresponding to the spectra of the nanosecond pulses are commensurate with the losses in the metal, and may even be higher. Photographs of the cable and of its transmitted pulses are shown. The authors are grateful to

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USSR UDC: 621.372.2:621.374.5

BORODOVSKIY, V. S., et al, Radiotekhnika, No 11, 1972, pp 51-55

A. Denisov and A. Voloshin for the experimental part of the article in which the transmission of 180 ns pulses with a leading edge of 0.2 ns through superconducting cable 135 m long and with a characteristic impedance of 75 ohms was tested.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HUECKEL, CALCULATION FOR 10,5 CORONENE, C SUB20 H SUB10 -U-

AUTHOR-(03)-BOCHVAR, D.A., GALPERN, YE.G., GAMBARYAN, N.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 435-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR ORBITAL, ELECTRON DENSITY, UNSATURATED HYDROCARBON, ELECTRON DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0637 STEP NO--UR/0062/70/000/002/0435/0437

CIRC ACCESSION NO--AP0119549

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE CALCN. OF ELECTRON D. DISTRIBUTION IN CORONENE USING THE HUECKEL VARIATION OF LCAO HO CALCN. IT WAS SHOWN THAT 10,5,CORONENE (C SUB30 H SUB10) HAS A CLOSED PI ELECTRON CLOUD. ALL ATOMS OF THE INNER RING CARRY AN EXCESS ELECTRONIC CHARGE, THOSE ON THE OUTER RING ALTERNATE IN VALUES OF ELECTRON D. THE APICAL ATOMS APPEAR TO HAVE RATHER HIGH VALUES OF POS. CHARGES AS A RESULT OF ELECTRON FLOW AWAY FROM THESE POSITIONS. A DISTRIBUTION MAP IS SHOWN. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 045 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--APPEARANCE OF TRANSVERSE PHOTO EMF WITH UNPOLARIZED RADIATION -U-

AUTHOR-(02)-GALPERN, YU.S., KOGAN, SH.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL 4, NO 4, 1970, PP 806-808

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOELECTROMOTIVE FORCE, RADIATION EFFECT, POLARIZED SIGNAL, CRYSTAL, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605008/C03 STEP NO--UR/0449/70/004/004/0806/0808

CIRC ACCESSION NO--AP0139949

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 045 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139949

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

ABSTRACT. IN THIS COMMUNICATION AN EXPRESSION IS OBTAINED FOR THE TRANSVERSE PHOTO ENF AS A FUNCTION OF THE RADIATION POLARIZATION FOR ANY ORIENTATION OF THE STRETCH FIELD IN THE CRYSTAL. IT IS ALSO ESTABLISHED THAT THIS EFFECT CAN ALSO BE OBTAINED BY THE ACTION OF UNPOLARIZED RADIATION. THE AUTHORS FIND THAT THE PHOTO EMF EXCITED BY UNPOLARIZED RADIATION MAY REACH ABOUT THE SAME VALUE AS IT DOES IN POLARIZED RADIATION. AT CERTAIN DIRECTIONS OF THE STRETCH FIELD AND INCIDENCE ANGLE OF THE UNPOLARIZED RADIATION, HOWEVER, THE TRANSEVERSE PHOTO EMF DOES NOT APPEAR. FOR EXAMPLE, THE EFFECT IS BASENT IF THE FIELD OR THE RADIATION INCIDENCE DIRECTION IS PARALLEL TO ANY OF THE CUBIC AXES OF THE CRYSTAL (100). THE AUTHORS EXPRESS THEIR GRATITUDE TO V. I. PEREL' WHO DREW THEIR ATTENTION TO THIS PROBLEM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

Photoelectric Effect

USSR UDC: 621.315.592

GAL'PERN, Yu.S. and KOGAN, Sh.M.

"Appearance of Transverse Photo-EMF With Unpolarized Radiation"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 806-808

Abstract: In this communication an expression is obtained for the transverse photo-emf as a function of the radiation polarization for any orientation of the stretch field in the crystal. It is also established that this effect can also be obtained by the action of unpolarized radiation. The authors find that the photo-emf excited by unpolarized radiation may reach about the same value as it does in polarized radiation. At certain directions of the stretch field and incidence angle of the unpolarized radiation, however, the transverse photo-emf does not appear. For example, the effect is absent if the field or the radiation incidence direction is parallel to any of the cubic axes of the crystal /100/. The authors express their gratitude to V.I. Perel' who drew their attention to this problem.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INSTALLATION OF SHIP DIESEL PLANTS -U-

AUTHOR-(02)-BLINOV, B.D., GALPEROVICH, L.G.

COUNTRY OF INFO--USSR

SOURCE--(MONTAZH SUDOVYKH DIZEL'NYKH USTANOVOK) LENINGRAD, SUDOSTROYENIYE, 1970 366 PP

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, PROPULSION AND FUELS

TOPIC TAGS--SHIPBUILDING ENGINEERING, HANDBOOK, DESIGN HANDBOOK, DIESEL ENGINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1737 STEP NO--UR/0000/70/000/000/0001/0366

CIRC ACCESSION NO--AM0130588

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0130588

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. CHAPTER 1 PREPARATORY INSTALLATION OPERATIONS 7. 2 INSTALLATION OF DIESELS 43. 3 INSTALLATION OF COUPLING BOXES 73. 4 OIL SYSTEMS OF SHIP DIESELS 118. 5 WATER SYSTEMS OF SHIP DIESELS 180. 6 FUEL SYSTEMS OF SHIP DIESELS 228. 7 STARTING AIR SYSTEMS OF SHIP DIESELS 255. 8 GAS EXHAUST SYSTEMS AND AIR SUPPLY SYSTEMS OF MAIN ENGINES 286. 9 HAWSER TESTS OF THE SHIP DIESEL PLANT 336. 10 RUN TESTS OF THE SHIP DIESEL PLANT 336. APPENDIX 357. BIBLIOGRAPHY 367.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

USSR UDC 547.759.1

PAPAYAN, G. L., and GALSTYAN, L. S., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Acad. Sc. ArmenianSSR (Yerevan)

"Indole Derivatives. XL. Synthesis of N-Mono- and N,N-Dialkylsubstituted Tryptamines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 11, 1972, pp 963-968

Abstract: In order to study the effect of the substitution of hydrogen atoms of 1-benzyltryptamine with various alkyl groups on its biological properties, a series of N-alkyl and dialkyl derivatives of 1-benzyltryptamine with identical and mixed radicals was synthesized. Two routes were explored: iodoalkylation and formylation-acetylation of the NH_2 group followed by the reduction of formyl or acetyl groups with $LiAlH_4$ to the alkyl derivatives. The later method gives higher yields of the desired products. Several new derivatives of 1-benzyltryptamine were characterized.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CUPRIC CHLORIDE POTASSIUM ALUMINATE POTASSIUM SILICATE WATER SYSTEM AT 20DEGREES -U-

AUTHOR-(03)-BABAYAN, G.G., GALSTYAN, V.D., OGANESYAN, E.B.

G

COUNTRY OF INFO--USSR

SOURCE--ARM. KHIM. ZH. 1970, 23(2), 124-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER CHLORIDE, X RAY DIFFRACTION, ALUMINUM POTASSIUM SILICATE, WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1320 STEP NO--UR/0426/70/023/002/0124/0127

CIRC ACCESSION NO--AP0116780

UNCLASSIFIED

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UNCLASSIFIED PROCESSING DATE--09OCT70

2/2 011

CIRC ACCESSION NO--AP0116780

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM WAS STUDIED BY THE SOLY. METHOD AND BY MEASURING THE PH, SP. COND., AND THE APPARENT PPT. VOL. FOR CUO IS TO SIO SUB2 PLUS AL SUB2 O SUB3 EQUALS 1 IN THE STARTING MIXT., CU ALUMINOSILICATE WITH THE COMPN. AL SUB2 O SUB3 .2SIO SUB2 NEGATIVE 4 CUO.MH SUB2 O PPTS. FOR OTHER VALUES OF THIS RATIO (0.1 TO 8) PPTS. OF VARIABLE COMPN. ARE FORMED. THE PPTS. WERE STUDIED BY THERMOGRAPHIC, X RAY DIFFRACTION, AND CRYSTALLOOPTICAL METHODS.

FACILITY: INST. OBSHCH. NEORG. KHIM., EREVAN, USSR.

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USSR

UDC: 621.382.323

GALSTYAN, V. G., NOSIKOV, S. V., PRESS, F. P., PASTUSHKOV, V. V.

"Use of a Scanning Electron Microscope to Study Defects in Dielectric Films and Semiconductor Structures"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1911-1919

Abstract: A scanning electron microscope was used to study defects in films of silicon dioxide, processes of dopant penetration through defects during diffusion, and the influence of localized diffusion regions on the properties of MOS structures. A procedure is developed for studying semiconductor objects on the scanning electron microscope and interpreting the observed patterns in accordance with the nature of the contrast.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/3 036 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ANALYSIS OF THE RESULTS OF SPECTRAL INVESTIGATIONS OF THE TWILIGHT AUREOLE IN THE EARTH'S ATMOSPHERE FROM THE SOYUZ 5 SPACESHIP, SPECTRAL

AUTHOR-(05)-KONDRATYEV, K.YA., VOLYNOV, B.V., GALTSEV, A.P., SMOKTIY, O.I., KHRUNOV, YE.V.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, STATE UNIVERSITY; MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 4, 1970, PP 388-411

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--TWILIGHT, SPACEBORNE ATMOSPHERIC OBSERVATION, SPECTROPHOTOMETRIC ANALYSIS, ATMOSPHERE/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0366 STEP NO--UR/0362/70/006/004/0388/0411

CIRC ACCESSION NO--AP0114658

UNCLASSIFIED

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UNCLASSIFIED PROCESSING DATE--09OCT70

2/3 036

CIRC ACCESSION NO--AP0114658

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER PRESENTS THE RESULTS OF SPECTROPHOTOMETRIC INVESTIGATION OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE, MADE FOR THE FIRST TIME FROM THE "SOYUZ-5" SPACESHIP. THE AUTHORS ANALYZE THE COLLECTED EXPERIMENTAL DATA AS A FUNCTION OF WAVELENGTH, PERIGEE ALTITUDE OF THE LINE OF SIGHT ABOVE THE EARTH'S SURFACE, ANGLE OF SOLAR DEPRESSION AND OTHER PARAMETERS. THIS SIS FOLLOWED BY A COMPARISON OF THE VERTICAL PROFILES OF MONOCHROMATIC BRIGHTNESS OF THE TWILIGHT AUREOLE WITH THE RESULTS OF CORRESPONDING THEORETICAL COMPUTATIONS FOR THE L. ELTERMAN AEROSOL MODEL (1968). COLOR DIAGRAMS WERE CONSTRUCTED FOR THE TWILIGHT AUREOLE USING THE THEORETICAL BRIGHTNESS VALUES FOR DIFFERENT MODELS OF THE EARTH'S ATMOSPHERE AND EXPERIMENTAL DATA AND THE RESULTS OF VISUAL OBSERVATIONS MADE FROM THE "SOYUZ-5". THE PAPER HAS THE FOLLOWING BASIC SECTIONS: 1) OPTICAL CHARACTERISTICS OF THE MANUAL SPECTROGRAPH AND METHOD FOR PROCESSING SPECTROGRAMS; 2) BASIC RESULTS OF VISUAL OBSERVATIONS AND SPECTROPHOTOMETRIC STUDY OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE; 3) THEORETICAL MODEL OF THE FIELD OF SPECTRAL BRIGHTNESS OF THE TWILIGHT AUREOLE IN THE EARTH'S ATMOSPHERE; 4) MOLECULAR ATMOSPHERE; 5) MOLECULAR ATMOSPHERE IN PRESENCE OF AEROSOL PARTICLES; 6) MOLECULAR ATMOSPHERE IN THE PRESENCE OF AEROSOL PARTICLES AND OZONE; 7) COMPARATIVE ANALYSIS OF COMPUTED AND EXPERIMENTAL DATA FROM SPECTROPHOTOMETRIC STUDY OF THE TWILIGHT AUREOLE. MOST IMPORTANTLY, THE STUDY REVEALED THAT IT IS POSSIBLE TO OBTAIN RELIABLE VERTICAL PROFILES OF THE AEROSOL SCATTERING COEFFICIENT FROM SPACESHIPS.

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3/3 036 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114658

ABSTRACT/EXTRACT--THE METHOD IS EFFECTIVE IN ANALYZING THE VERTICAL DISTRIBUTION OF OPTICALLY IMPORTANT ATMOSPHERIC COMPONENTS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--VISUAL ESTIMATES OF THE COLOR OF THE TWILIGHT SKY ACCORDING TO OBSERVATIONS FROM THE SOYUZ 5 SPACECRAFT -U-

AUTHOR-(04)-KONDRATYEV, K.YA., GALTSEV, A.P., SMOKTIY, O.I., KHRUNOV, YE.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 1, 1970, P. 824, 825

DATE PUBLISHED--01APR70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, METHODS AND EQUIPMENT, SPACE TECHNOLOGY

TOPIC TAGS--TWILIGHT, COLOR PHOTOGRAPHY/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1084 STEP NO--UR/0020/70/191/000/0824/0825

CIRC ACCESSION NO--AT0124741

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124741

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY OF VISUAL OBSERVATIONS OF THE TWILIGHT AUREOLE FROM THE SOYUZ 5 SPACECRAFT ON JAN. 15 AND 16, 1969. THE CHANGES IN THE APPEARANCE OF THE TWILIGHT AUREOLE UNDER CLOUDLESS CONDITIONS AND IN THE PRESENCE OF SOLID AND BROKEN CLOUDLINESS ARE REVIEWED. CERTAIN DIFFERENCES NOTED IN THE COLOR PICTURE THUS OBTAINED AS COMPARED WITH THE FIRST HAND FINDINGS OF ASTRONAUTS ARE CITED. FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 047 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--TWILIGHT COLORIMETRY FROM HORIZON SPECTRA OBTAINED ON BOARD THE SOYUZ 5 SPACECRAFT -U-

AUTHOR-(04)-KONDRATYEV, K.YA., GALTSEV, A.P., SMOKTIY, O.I., KHRUNOV, YE.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 191, APR. 11, 1970, P. 1044-1047

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--TWILIGHT, COLORIMETRY, ATMOSPHERIC MODEL, SPACEBORNE ATMOSPHERIC OBSERVATION/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0867 STEP NO--UR/0020/70/191/000/1044/1047

CIRC ACCESSION NO--AT0129936

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 047 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0129936

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CALCULATION OF THE COLORIMETRIC CHARACTERISTICS OF THE TWILIGHT AUREOLE FOR SEVERAL MODELS OF THE VERTICAL STRUCTURE OF THE ATMOSPHERE AND THE OBSERVATION CONDITIONS ON BOARD SOYUZ 5. THE CHROMATICITY COEFFICIENTS (X, Y, Z) OF THE TWILIGHT AUREOLE ARE COMPUTED FOR A PURELY SCATTERING MOLECULAR ATMOSPHERE WITH AND WITHOUT THE PRESENCE OF NONABSORBING AEROSOL PARTICLES AND OZONE. THE RESULTS ARE GIVEN IN GRAPHICAL FORM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

1/2 041 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ANALYSIS OF THE RESULTS OF SPECTRAL STUDIES OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE FROM THE SOYUZ 5 SPACECRAFT -U-

AUTHOR-(05)-VOLYNOV, B.V., KONDRATYEV, K.YA., GALTSEV, A.P., SMOKTIY, O.I., KHRUNOV, YE.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, FIZIKA ATMOSFERY I OKEANA, VOL. 6, APR. 1970, P. 388-411

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, SPACE TECHNOLOGY

TOPIC TAGS--SPECTRUM, TWILIGHT, SPECTROPHOTOMETRIC ANALYSIS, SPACEBORNE ATMOSPHERIC OBSERVATION/(U)SOYUZ 5 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0425 STEP NO--UR/0362/70/006/000/0388/0411

CIRC ACCESSION NO--AP0129650

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200830004-2

2/2 041 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY OF THE RESULTS OF SPECTROPHOTOMETRIC MEASUREMENTS OF THE TWILIGHT AUREOLE OF THE EARTH'S ATMOSPHERE AS FIRST PERFORMED FROM THE SOYUZ 5 SPACECRAFT. AN ANALYSIS IS MADE OF THE EXPERIMENTAL DATA THUS OBTAINED AS A FUNCTION OF WAVELENGTH, PERIGEE HEIGHT OF THE LINE OF SIGHT ABOVE THE EARTH'S SURFACE, ANGLE OF DEPRESSION OF THE SUN, AND OTHER PARAMETERS. THE VERTICAL PROFILES OF THE MONOCHROMATIC BRIGHTNESS OF THE TWILIGHT AUREOLE ARE COMPARED WITH THE RESULTS OF CORRESPONDING THEORETICAL CALCULATIONS FOR ELTERMAN'S (1968) AEROSOL MODEL. COLOR DIAGRAMS AND COLOR PICTURES OF THE TWILIGHT AUREOLE ARE CONSTRUCTED USING THEORETICAL BRIGHTNESS VALUES FOR VARIOUS MODELS OF THE EARTH'S ATMOSPHERE, AND ALSO USING EXPERIMENTAL DATA AND THE RESULTS OF VISUAL OBSERVATIONS CARRIED OUT FROM THE SOYUZ 5 SPACECRAFT. FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

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Acc. Nr.: AT0045335 Ref. Code: UR0020

JPRS 50052

Visual and Instrumental Observations of Twilight Aureole

(Abstract: "Some Results of Visual Observations and Spectrophotometric Measurements of the Twilight Aureole of the Earth's Atmosphere from the 'Soyuz-5' Spaceship," by K. Ya. Kondrat'yev, Corresponding Member, Academy of Sciences USSR, B. V. Volynov, A. P. Gal'tsev, V. V. Kol'tsov, O. I. Smoktiy and Ye. V. Khrunov; Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp. 327-330)

The program for "Soyuz-5" included an optical experiment in space for studying the spectral (color), angular and spatial evolution of the brightness picture of the twilight atmosphere. This program included simultaneous photographic and spectrophotometric studies of the twilight aureole of the earth's atmosphere in the wavelength range 400-650 mμ, accompanied by visual observations. The program for working with the manual spectrograph provided for a survey of the twilight aureole of the earth's atmosphere in the direction of the sun from the time of appearance of the aureole until the total emergence of the spaceship on the illuminated side of the earth. The twilight aureole was also photographed on black-and-white and color film. Visual observations included an evalua-

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tion of the vertical evolution of brightness and color of the twilight aureole as the sun emerged from below the horizon. Some of the results can be summarized as follows. Near the earth's surface the principal contribution to brightness of the twilight aureole is from long-wave radiation. With an increase in the altitude of the sighted layer atmospheric density decreases and the brightness of the twilight aureole is at a wavelength of $\sim$480 mμ. A brightness minimum is observed at a wavelength of $\sim$600 mμ, caused by ozone absorption in the Chappuis band. The depth of this minimum is dependent on the altitude of the particular layer of the atmosphere above the earth's surface. Spectral brightness is greatly dependent on the azimuth of the direction of sighting and the angle of solar depression, sharply increasing with a decrease of the latter. The altitude corresponding to the spectral brightness maximum is also dependent on the angle of solar depression and wavelength, decreasing with an increase of the latter.

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TITLE--STATISTICAL THERMODYNAMICS OF AN IDEAL GAS WITH ELECTRIC AND MAGNETIC DIPOLES -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING MODEL IS CONSIDERED: TWO ATOMIC MOLECULES OF AN IDEAL GAS HAVE DIPOLES WITH CONSTANT ELECTRIC AND MAGNETIC MOMENTS AND ARE SUBJECTED TO STATIC ELECTRIC AND MAGNETIC FIELDS WHOSE VECTORS ARE PARALLEL. THE ELECTRIC AND MAGNETIC PERMITTIVITIES OF THE GAS ARE OBTAINED AS FUNCTIONS OF THE EXTERNAL FIELDS.

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"Effect on Erythrocytes of the Receptor-Destroying Enzyme from Filtrates of Cholera Vibrio Cultures"

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Abstract: Erythrocytes treated with filtrates of cholera vibrio cultures lose their capacity for agglutination by certain viruses. The authors studied this phenomenon of the "receptor-destroying enzyme" (neuraminidase) to determine the possibility of using it as an aid in diagnosing cholera. In in vitro experiments with guinea pig erythrocytes, filtrates of classic NAG, and El Tor vibrio cultures prevented the cells from being agglutinated by swine influenza virus, whereas filtrates of the control cultures (Comamonas, Pseudomonas, and E. coli) did not do so. The same effect was observed in the case of erythrocytes from the intestinal contents of suckling rabbits infected with various cholera vibrio strains. An investigation of the intestinal contents of 279 patients

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