UNCLASSIFIED

019

TITLE--QUASI LINEAR SPECTRA OF PORPHYRINS -U- PROCESSING DATE--30OCT70

AUTHOR-(03)-SEVCHENKO, A.N., SOLOVYEV, K.N., SHKIRMAN, S.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 527-35

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--METAL COMPLEX COMPOUND, PORPHYRIN, ELECTRON SPECTRUM, VIBRATION FREQUENCY, PHTHALOCYANINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2032

STEP NO--UR/0048/70/034/003/0527/0535

CIRC ACCESSION NO--AP0125620

UNCLASSIFIED

USSR

UDC 539.67

SOLOV'YEV, L. A.

"Dislocation Hysteresis and Internal Friction of Polycrystal Solid Solutions"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 94-99

Abstract: Certain features of the amplitude dependence of internal friction of FCC solid solutions brought about by strong dislocation splitting are considered. It was concluded that the spiral dislocations should sharply contribute to damping in the areas of high concentrations of impurities. The model considered here explains qualitatively all damping features of FCC solid solutions. 4 figures, 18 references.

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2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125620
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ENERGY LEVEL DIAGRAM OF THE PORPHIN RING SYSTEM IN NONMETALATED PORPHYRINS AND THEIR METAL COMPLEXES IS GIVEN. THE VIBRATIONAL STRUCTURE OF THE ELECTRONIC SPECTRA OF PORPHINE, DIHYDROPORPHINE, AND THE 2 TETRAHYDROPORPHINES ARE REPORTED. THE QUASI LINEAR SPECTRA OF AZABENZOPORPHYRINS ARE COMPARED, AND THE FUNDAMENTAL VIBRATIONAL FREQUENCIES OF TETRABENZOPORPHINE, ITS MONO, DI, AND TRIAZA ANALOGS, AND PHTHALOCYANINE ARE TABULATED. THE QUASI LINEAR SPECTRA OR PORPHINE DERIVS. TOGETHER WITH LOW TEMP. POLARIZATION MEASUREMENTS YIELDED ADDNL. EVIDENCE FOR THE VIBRATIONAL CHARACTER OF THE BANDS IN THE ELECTRONIC SPECTRUM OF PORPHYRINS AND FOR THE ALMOST EQUAL INTENSITY OF THE VIBRATIONS INDEPENDENT OF THEIR SYMMETRY.
FACILITY: INST. FIZ., USSR.

UDC 539.67

USSR

VARYPAYEV, E. S., PANIN, V. E., and SOLOV'YEV, L. A.

"Amplitude Dependence of internal Friction of a Series of Concentrated Copper Solid Solutions"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 104-110

Abstract: Internal friction of single-phased concentrated Cu - Ga and Cu - Ge solid solutions was investigated in the range of 10^{-6}-10^{-3} relative amplitudes.

An amplitude-independent region and sections described by linear function appeared on characteristics of the decrement dependence on deformation amplitude.

It is shown that critical stress τ', determining the onset of micro-deformation, depends on alloy concentration and is determined by the resistance to motion of a free dislocation from solid solution impurities atoms. The second critical stress τ'' characterizes the appearance of irreversible processes in structure. 5 figures, 13 references.

1/1

USSR

UDC 535.37:546.841

STOLYAROV, K. P., GRIGOR'YEV, N. N. and SOLOV'YEV, L. A.

"Luminescent Titrimetric Micromethod of Determining Thorium"

Leningrad, Vestnik Leningradskogo Universiteta, No 1, Feb 72, pp 130-134

Abstract: It is known that morin in weak acid solutions forms, with thorium ions, a complex compound like the compounds of that reagent with the ions of aluminum, scandium, gallium, etc., this compound being luminescent in ultraviolet beams of yellow-green light. Based on their own and other published data, the authors studied conditions for the luminescent microtitration of a thorium-morin complex with use of oxalic acid and selection B at pH of 1.5 to 3.0. Sensitivity of titration of 1 μg of thorium in 2 ml of solution was determined. The interval of determined concentrations of thorium with solutions of oxalic acid amounts to 1 - 40 μg/2 ml; in the case of selection B, it is 1 - 100 μg/2 ml. Relatively large amounts of the rare earths, lead ions, calcium, iranyl and iron (III) atoms do not hinder the process of the titration; the presence of sulfate ions does so.

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1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ASYMPTOTICS OF FEYNMAN GRAPHS WITH INFRARED DIVERGENCES AND OF COULOMB INTERFERENCE -U-

AUTHOR-(02)-SOLOVYEV, L.D., SHCHELKACHEV, A.V.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 430-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--STRONG NUCLEAR INTERACTION, ASYMPTOTIC SOLUTION, GRAPHIC TECHNIQUE, SCATTERING AMPLITUDE, NUCLEAR MODEL, IR RADIATION, COULOMB INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0372 STEP NO--UR/0367/70/011/002/0430/0436

CIRC ACCESSION NO--AP0111565

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 035

CIRC ACCESSION NO--AP0111565

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROMAGNETIC CORRECTIONS TO THE HADRON ELASTIC SCATTERING AMPLITUDE AT HIGH ENERGIES ARE INVESTIGATED WITH A SIMPLE RELATIVISTIC MODEL AS AN EXAMPLE. IN THE MODEL THE AMPLITUDE IS DESCRIBED BY SIMPLE FEYNMAN GRAPHS. A METHOD IS DEVELOPED TO OBTAIN ASYMPTOTICS OF THE FEYNMAN INTEGRALS WITH IR DIVERGENES.

FACILITY: OB'EDIN. INST. YAD. ISSLED., DUBNA, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ACCOUNTING FOR THE INTERMEDIATE ENERGY REGION IN DISPERSION SUM RULES -U-

AUTHOR-(02)-AZNAURYAN, I.G., SOLOVYEV, L.D.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(4), 870-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SCATTERING AMPLITUDE, REGGE POLE, PION PROTON INTERACTION, PION SCATTERING, DISPERSION EQUATION, HIGH ENERGY PARTICLE, PHASE SHIFT ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1080 STEP NO--UR/0367/70/011/004/0870/0879

CIRC ACCESSION NO--AP0136500

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136500

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DEVELOPED TO ACCOUNT FOR THE INTERMEDIATE ENERGY REGION IN THE DISPERSION SUM RULES. THE METHOD MAKES IT POSSIBLE TO FIND THE PARAMETERS FOR THE HIGH ENERGY PROCESSES WITH USE OF THE LOW ENERGY PHASE SHIFT ANAL. THE METHOD IS APPLIED TO OBTAIN THE REGGE POLE RESIDUES FOR THE AMPLITUDES B PRIME(PLUS OR MINUS) (NU, T) OF THE PION-N SCATTERING. THIS ENABLES ONE TO PREDICT, IN PARTICULAR, THE MAGNITUDE OF ROTATION OF THE N SPIN IN THE HIGH ENERGY PI PRIMEPLUS OR MINUS RHO SCATTERING IN FRAMEWORK OF THE REGGE-POLE MODEL. FACILITY: INST. FIZ. VYS. ENERG., SERPUKHOV, USSR.

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(12)

UDC 539.1.074.3

USSR

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A., DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P., MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV, Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of High-Energy Particles"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at the Institute of High-Energy Physics, for investigation of the elastic scattering of high-energy particles within the pulse range of 30-60 gigaelectron volts/sec. The range of dispersion angles covered by the installation is 0-29 millirads with an angular resolution of $\pm$ 0.17 millirad. The total solid angle is 39 microsteres. The pulse is determined to within $\pm$ 0.22%. The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per hour. The installation is electrically coupled to a "Minsk-22" computer, which stores and processes the information during the experiment. The

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USSR

UDC: 531.717.1

SHARAPOV, A. S., SOLOV'YEV, L. K.

"A Device for Measuring the Exit Diameter of a Jet Nozzle"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, Mar 72, Author's Certificate No 330331, Division G, filed 30 Oct 70, published 24 Feb 72, p 124

Translation: This Author's Certificate introduces a device for measuring the exit diameter of a jet nozzle. The device contains a housing which accommodates a set of guides radially arranged in a single plane and equal in number to the number of nozzle flaps. Measuring rods which contact the nozzle flaps during measurement are located in the guides so that they can be moved in the axial direction. As a distinguishing feature of the patent, measurement accuracy is improved by equipping the device with a converter which changes the displacement of the measuring rods to an electric signal. The converter is made in the form of variable resistors in series connected into the electric circuit. The resistors are fastened to the guides, and their slide wires are fastened to the measuring rods. Readout is on a meter graduated in linear quantities.

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UDC 533.6.011.3

USSR

SOLOV'YEV, L. S., YAVLINSKIY, Yu. N.

"The Hydrodynamic Instability of Cylindrical Ruptures"

Moscow, Doklady Akademii Nauk SSSR, No 2, 1971, pp 309-311

Abstract: An investigation is made of the hydrodynamic instability of the cylindrical flow of an ideal fluid. If the velocity gradients v and the density gradients ρ of the fluid are sufficiently great, so that the change of v and ρ may be approximated by a rupture, the solution of the problem of stability can be expressed in terms of precise solutions of the oscillation equations. 7 bibliographic entries.

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USSR

UDC 462-531.7

BONDAREV, B. I., MURIN, B. P., and SOLOV'YEV, L. YU.

"The Operational Effectiveness of a System for Suppressing Coherent I
Vibrations"

Pribory i Tekh Eksper, No 4, 1971, pp 29-31

Abstract: The authors modeled the longitudinal motion of protons in
accelerator on a computer; they used the Monte-Carlo method to inves
change in the phase volume produced by errors in preparing and assc
the accelerating structure and by fluctuations in the accelerating f
They showed that the effective phase volume of a bunch can be decre
using the system for suppressing the coherent vibrations of partic
results confirmed that such a system can be used in linear proton a
to solve at least two problems. The first problem occurs in high-en
accelerators where in order for the particles to reach a certain ene
(approximately 100 MeV) the authors suggest converting to a smaller
length for the accelerating field; in such a case the suppression sy
allowed them to decrease the effective phase width of the bunch at t
to the short-wave part of the accelerator, to improve the condition
capture of the particles, and to diminish their losses. The second

USSR

BONDAREV, B. I., et al., Pribory i Tekh Eksper, No 4, 1971, pp 29-31

involves using this suppression system at the output of the linear accelerators for the purpose of improving the energy spectrum of the beam. The article contains 2 figures and 2 bibliographic entries.

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USSR UDC 616.935-022.931-078.73:576.8.073.4

SOLOV'YEV, M. M., and PSHENICHNYY, G. S., Department of Medical Protozoology, Insttitute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, and Chair of Infectious Diseases, Kiev Medical Institute.

"Examination of Sera from Amebic Dysentery Patients Using the Fluorescent Antibody Method"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp643-647

Abstract: The indirect fluorescent antibody method with Evans blue was used to study sera from six confirmed cases of amebic dysentery. The antigen was prepared from the BN, A, and K strains of Entamoeba histolytica. In test tubes with 48-hour cultures, most of the amebas were concentrated in the sediment together with starch and bacteria. However, many of the organisms remained on the sides of the test tubes and these were used to prepare the antigen because they were freer from impurities. Five of the sera in tests with antigen from the BN strain reacted positively in titers o of 1:80 and 1:160. However, in tests with antigens from the A and K strains, only 1 of the 4 reacted positively (titers of 1:80 and 1:40); none of the other sera fluoresced even in a 1:10 dilution. Thus, there were antigenic differences between E. histolytica strains studied. Whether they were due

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SOLOV'YEV, M. M., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 6, 1971, pp 643-647

to original qualitative differences or to prolonged culturing of the A and K strains remains unclear. At any rate, the negative results with antigens from these strains underline the need to make a careful choice of the strain when using the fluorescent antibody technique as a diagnostic aid.

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USSR

SOLOV'YEV, N. A.

"Unconditional Minimum Tests for Tables with Separated Blocks of Ones"

Diskretn. Analiz [Discrete Analysis -- Collection of Works], No 20, Novosibirsk, 1972, pp 22-65 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V712).

Translation: The theory of tests is significant in pattern recognition, and in problems of diagnosis, both technical and medical. This work studies one class of tables arising in the analysis of recognition problems, with primary attention concentrated on the method of construction of minimal tests. This work studies problems of the construction of minimal tests for tables consisting of sections such that neighboring sections are separated from each other by at least a certain predetermined number of positions. The primary apparatus used in the work is the general algorithm for construction of tests suggested by S. V. Yablonskiy.

USSR UDC: 621.396.6.002.72(088.8)

ZAYTSEV, V. G., TARILOV, V. N., SOLOV'YEV, N. A., POVERENNAYA, T. V.

"A Magnetic Manipulator"

USSR Author's Certificate No 263706, filed 15 Aug 68, published 15 Jun 70 (from RZh-Radiotekhnika, No 12, Dec 70, abstract No 12V320 P)

Translation: This Author's Certificate introduces a magnetic manipulator designed for grasping and moving ferromagnetic elements. The device contains a permanent magnet located inside a housing. To simplify removal of ferromagnetic elements from the manipulator, the permanent magnet is fastened to a spring-return rod connected by hinged levers to a pushbutton located on the end face of the magnet housing.

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Acc. Nr. AP0105553 Abstracting Service: CHEMICAL ABST. Ref. Code 6-70 UR 0449

126935p Infrared reflection and transmission spectra of boron. Averbakh, E. M.; Ugai, Ya. A.; Yatsenko, O. B.; Solov'ev, N. E. (Voronezh. Gos. Univ., Voronezh, USSR). *Fiz. Tekh. Poluprov.* 1970, 4(3), 623–5 (Russ). The ir reflection and transmission spectra of B in the β-rhombohedral form were investigated in the range 1–15 μ. Instrumentation and sample prepn. are described for reflectance and transmission studies. Spectra are presented. Transmittance of B single crystals decreases sharply at wavelengths >4.5 μ and increases beyond 13 μ. Reflectance and transmission spectra show considerable agreement. A band at 8.15 μ is assigned as a result of crystal lattice vibration. Bands at 7.2 and 2.7 μ are the result of crystal impurities.

Edward F. King

ELB

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REEL/FRAME
19880568

13

UDC 53.07/.08+53.001.5

USSR

MOROZ, YE. M., MOLCHANOV, S. S., PYSHKIN, B. N., SOLOV'YEV, N. S., Physics Institute imeni P. N. Lebedev

"A Method for the Stabilization of Synchrotron Radiation Intensity"

USSR Author's Certificate No. 256117, Filed 26 Jun 68, published 31 Mar 70 (from RZh-Fizika, No 1, Jan 71, Abstract No 1A453 P)

Translation: Precise (or programmed) switching on of accelerating field voltage is necessary to stabilize and raise the level of beam intensity in a synchrotron. It is proposed that the time of switching on be controlled with the aid of a pulse of a current of particles circulating in orbit at the time of injection in each acceleration cycle. This made it possible to increase intensity by 20% as compared with circuits connecting the switching on to the level of the magnetic field. V. Papadichev.

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USSR UDC:536.468

MARGOLIN, A. D., MARGULIS, V. M., SOLOV'YEV, N. V., Moscow

"Theory of Combustion of Liquid-Filled Porous Explosives"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 272-276

Abstract: The burning of porous explosives filled with an inert liquid develops in two combustion modes: laminar and turbulent. In the turbulent mode, the flame penetrates into the porous charge, and the liquid is ejected from the pores. The rate of turbulent combustion is many times greater than that of laminar combustion. Turbulent combustion is also observed in the combustion of two-phase charges consisting of grains of an oxidizer, the spaces between which are filled with a liquid fuel. This work presents an experimental and theoretical study of the combustion of a simple model of a porous charge -- a slit charge consisting of two flat parallel plates with liquid poured between them. Under certain conditions, the flat surface of the liquid becomes unstable, waves are formed, forming droplets and streams, carried away by the stream of combustion products. Combustion then penetrates

USSR UDC:536.468

MARGOLIN, A. D., MARGULIS, V. M., SOLOV'YEV, N. V., Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 272-276

into the depth of the slit. The experimentally measured values of turbulent combustion speed were lower than the theoretically calculated values, resulting from the fact that the slit was filled with kerosene, which wets the powder of the plates, as water does not. This results in the formation of a screening liquid film on the surface of the plates, which decreases the combustion rate.

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Acc. Nr.: AP0044049

Ref. Code: UR0387
JPRS 52052

Nature of the East Kurile Magnetic Anomaly

(Abstract: "Nature of the East Kurile Magnetic Anomaly," by I. K. Tuyezov, M. L. Krasnyy, O. A. Solov'yev and Ye. V. Kochergin, Sakhalin Multi-Discipline Scientific Research Institute; Moscow, Izvestiya Akademii Nauk SSSR, Fizika Zemli, No. 1, 1970, pp. 90-93)

The east Kurile regional anomaly stands out clearly in the regional field obtained by analytical continuation of the anomalies of the Okhotsk-Kurile region into the upper half-space at the levels 12.5, 25 and 40 km. This anaomaly extends for more than 1,500 km along the Kurile-Kamchatkan island arc and for a distance of 50-100 km to the east of it. Its axis is situated between the island arc and the abyssal trench. The northern part of the observed anomaly is about 300 km wide at an altitude of 12.5 km; in the south it is about 150 km wide. On the west it joins the anomalies of the Sea of Okhotsk and on the east it adjoins the sign-variable field of the Pacific Ocean. A comparison of the map of regional magnetic anomalies with seismic deep seismic sounding cross sections shows a rather good correlation between the intensity of the regional magnetic anomaly and the thickness of the basalt layer. In the Kurile-Kamchatkan island

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arc the thickness of the granite layer is generally insignificant and therefore it is entirely natural to assume that the regional magnetic anomaly is caused by the behavior of the upper and lower boundaries of the basalt layer. Computations were made for determining the quantitative relationships between deep seismic sounding cross sections and magnetic anomalies scaled to an altitude of 25 km. The computations revealed a good agreement between the computed T values from the basalt layer and the regional anomaly. The computations prove that the regional east Kurile magnetic anomaly is caused for the most part by the magnetic properties, thickness and depth of the basalt layer.

USSR

UDC 621.515:628.517.2

KUDRYAVTSEV, F. S., Engineer, LAGUNOV, L. F., Candidate of Technical Sciences, SOLOV'YEV, R. V., Engineer, and KOZLOVA, N. G., Engineer

"Exhaust-Noise Muffler for a Compressor Station"

Moscow, Vestnik Mashinostroyeniya, No 7, June 1972, pp 31-32

Abstract: The compressor station of the Gor'kiy Motor Vehicle Plant has three turbine compressors, each with a capacity of 500 m^3/min and one with a capacity of 250 m^3/min; the air exhaust ducts leading out of the compressor-station building are directed toward the office building of the plant management, situated in the immediate vicinity. The frequency spectrum of the exhaust noise of a 500 m^3/min compressor, measured at a distance of 2 m from the wall of this office building, was above the permissible maximum; it was necessary to reduce the noise level at 1,000, 2,000, 4,000, and 8,000 Hz by 57, 59, 60, and 57 db, respectively. A muffler of simple design was constructed, the exhaust air being passed through layers of rubble and crushed stone. The muffler was designed for suppression of the noise created by a single compressor, since the air was exhausted by each compressor in turn. The calculations involved in designing the muffler are presented, and the

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USSR

KUDRYAVTSEV, F. S., et al., Vestnik Mashinostroyeniya, No 7, June 1972, pp 31-32

muffler is described. It was impossible to conduct tests on the efficiency of the muffler near the office building, i.e., at the point for which all the calculations had been made, due to noise created by the air intake ducts, for which the appropriate mufflers had yet been installed. However, results of measurements conducted near the muffler, and calculations based on these measurements, show that this exhaust-noise muffler provides the required noise reduction over the entire frequency range. 3 figures, 2 references.

USSR UDC 77

SOLOV'YEV, S. M., IVANOV, V. O., MAL'TSEVA, A. S.

"Effect of Gelatin on the Storage Life of Light-Sensitive Layers"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 124-133 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1336)

Translation: The effect of the selection of gelatin on the change in the properties of photoemulsion layers in storage and on certain darkening processes in them is investigated. It was shown that the choice of gelatin can have a very considerable effect. The dark discoloration and the photostability of the sensitizing dye, the oxidation products of which can react with sensitivity centers, strongly depend on the choice of gelatin. The choice of gelatin has an effect (and a very individual effect) on the sensitivity of the dye emulsions and on its storage qualities; the gelatin used in the second aging has a much greater effect on the latter than that used in the first aging. If the differences in the effect of the gelatin reduce to differences in their content of thiosulfate (I),

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their effect could be simulated by an additional introduction of I into the emulsion. According to the experiments of the authors, however, the thiosulfate did not have a considerable effect on the initial sensitivity and storage qualities of optically unsensitized emulsion but had a strong and very far-ranging effect (depression or activation of sensitivity, especially by the additional emulsion) on emulsions with different dyes. The effect of thiosulfate on the aging of any optically sensitized emulsions was slight, and a clear depression appears only for very small concentrations of it. Authors abstract.

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Acc. Nr.: AP0029332 Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp5-7

GENIMYCIN, A MEMBER OF A NEW GROUP OF ANTIFUNGAL PENTAENIC ANTIBIOTICS

Severinets, L.Ya.; Yefimova, V.M.; Bol'shakova, L.O.; Karnaushkina, A.I.; Solov'yev, S.N.; Yegorenkova, A.N.;

Leningrad Institute for Antibiotics

A soil culture LIA-0174 was isolated and classified as belonging to the genus of Actinosporangium. An antibiotic named genimycin was recovered from the fermentation materials of this culture. By a number of physico-chemical properties the antibiotic was beleved to belong to a new group of pentaenic antibiotics. Genimycin possesses antifungal activity, which is 10—100 times higher than that of pentaens from other groups.

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REEL/FRAME

19680904

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S. N. SOLOWYEV

Acc. Nr: AP0101134 Ref. Code: UR0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 3, pp208-212

PRODUCTION OF ANTIBIOTICS OF AZALOMYCIN F TYPE BY ACTINOMYCES IMBRICATUS N. SP.

V. A. Tsyganov, Yu. Yu. Konev, N. P. Barashkova, L. Ya. Petrova, S. N. Solov'ev

Leningrad Institute for Antibiotics

Three actinomycetes belonging to non-chromogenic actinomycetes were isolated from soils of arid zones of the South regions of the USSR. The aerial mycelium of the cultures was slightly developed of whitish color. The sporophores were spiral, the spores oval with smooth membrane. When grown on soybean media with glucose, the cultures produced antifungal antibiotics close to azalomycin F. Comparison of the isolates with the organism producing azalomycin F described in the literature and close species of actinomycetes allowed to classify it as a new species designated as Actinomyces imbricatus (Konev, Tsyganov, Barashkova) n. sp.

111

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REEL/FRAME
19850759

USSR UDC: 539.1.074.55

PODSEKIN, A. K., SOLOV'YEV, S. P., KHARCHENKO, V. A.

"Making PN-Junctions by the Method of Radiation Doping in a Nuclear Reactor"

Moscow, Atomnaya Energiya, Vol 31, No 5, Nov 71, pp 521-522

Abstract: A method is proposed for low-temperature synthesis of PN-junctions in semiconductor crystals by exposure in a nuclear reactor to initiate the necessary nuclear reactions which lead to formation of the required impurity atoms. For practical reasons, the proposed method is most readily applied to silicon-30, resulting in N-silicon doped with phosphorus-31. The semiconductor can be produced with a given resistivity. The paper is devoted to a theoretical analysis of the optimum conditions for producing a PN-junction by the proposed method. In principle, the method should be applicable to synthesis of more complicated junctions such as PNP, PIN, and the like. One figure, one table, bibliography of eight titles.

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UNCLASSIFIED PROCESSING DATE--15OCT70

1/2 030

TITLE--NEUTRON DIFFRACTION STUDY OF ORDERED PHASES IN A TITANIUM-OXYGEN SYSTEM -U-

AUTHOR-(05)-EYKIN, L.YE., VAVILOVA, V.V., KORNILOV, I.I., OZEROV, R.P., SOLOVYEV, S.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD NAUK SSSR 1970, 191(1), 96-9

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS, CHEMISTRY

TOPIC TAGS--NEUTRON DIFFRACTION, TITANIUM ALLOY, OXYGEN, TITANIUM OXIDE, PHYSICAL PROPERTY, CRYSTAL LATTICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1113 STEP NO--UR/0020/70/191/001/0096/0099

CIRC ACCESSION NO--AT0116579
UNCLASSIFIED

CIRC ACCESSION NO--AT0116579

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ORDERING OF O ATOMS IN TI-O ALLOYS WAS STUDIED BY NEUTRON DIFFRACTION. THE ALLOYS WERE PREPD. BY A PREVIOUS METHOD (I. KORNILOV AND GLAZOVA, 1963). AN ORDERED PLACEMENT WAS OBSD. FOR THE ATOMS IN ALL OF THE ALLOYS THAT CORRESPOND TO THE STOICHIOMETRIC COMPNS. TI SUB6 O, TI SUB3 O, AND TI SUB2 O. IN ALL OF THESE THE O ATOMS ARE IN ORDERED POSITIONS IN THE OCTAHEDRAL VACANCIES IN LAYERS PERPENDICULAR TO THE O AXIS, EVERY 2ND LAYER BEING UNOCCUPIED. IN THE UNIT CELL FOR TI SUB6 O, 1 VACANCY IN 3 IS OCCUPIED IN ORDER IN THE LAYER; FOR TI SUB3 O, 2 OF 3; AND FOR TI SUB2 O, ALL VACANCIES ARE OCCUPIED. THE DIFFERENCE IS DUE TO THE DIFFERENCE IN THE TI-O BOND STRENGTH, WHICH IS REFLECTED IN THE DIFFERENCE IN THE RIGIDITY OF THE CRYSTAL LATTICE AND IN THE PHYS. PROPERTIES OF EACH ALLOY.

FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120009-2"

USSR

UDC 620.193.6

SOLOV'YEV, S. P., and KUZ'MIN, I. I.

"Radiation Modification of Inorganic Materials"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev, Vol 18, No 3 1973, pp 308-312

Abstract: A review with 41 references discussing the effect of radiation on inorganic nonmetallic materials. In general, γ-irradiation increased the catalytic activity of the materials tested. Radiation proved to be also beneficial in case of piesoceramic materials designed for strong electric fields, lowering the nonlinearity of the relationship between dielectric permeability and the voltage applied, and decreasing the dielectric losses. The ageing process increases under the influence of γ-irradiation. Finally, radiational modification can be used in alloying silicon materials uniformly throughout even large crystals. The authors believe that this branch of science will be explored even more in the near future.

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USSR

UDC 519.2

SOLOV'YEV, S. S.

"Approximate Graphical Determination of the Correlation Coefficient"

Tr. Latv. s.-kh. akad. (Works of the Latvian Agricultural Academy), 1972, vyp. 47, pp 151-155 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V95)

Translation: An approximate graphical method of determining the correlation coefficient which can be used for preliminary approximate calculations is proposed.

1/1

USSR

SOLOV'YEV, V.

"Reviving the Brain"

Moscow, Izvestiya, 19 Aug 72, p 6

Translation: Coworkers of the cerebral hypoxia laboratory of the Belorussian Scientific Research Institute of Neurology, Neurosurgery, and Physiotherapy together with the spectral analysis group of the Belorussian State University are conducting important experimental research. They are searching for a means of chemical protection for the brain from the irreversible changes during severe oxygen starvation.

It is known that the brain will die after a 5-minute stoppage of blood circulation, and at the same time, it is possible to restore the functioning of the heart after a more prolonged period. This biological barrier appears to be a hindrance to the development and modernization of cardiovascular surgery, neurosurgery, reanimatology -- the science of revitalizing the body.

Having used chemical compounds with characteristic oxidation-reduction properties, scientists have succeeded in restoring the functioning and activity of the brain after prolonged cessation of cerebral blood circula-

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USSR

SOLOV'YEV, V., Izvestiya, 19 Aug 72, p 6

tion. If rabbits from the experimental control group, where no protective substances have been applied, die after 10 minutes, then those living, to which these compounds have been administered together with other pharmacological substances, will regain their activity after an even longer period. The experiment is continuing.

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USSR

UDC 621.039.531:669.27

BYKOV, V. N., BIRZHEVOY, G. A., ZAKHAROVA, M. I., and SOLOV'YEV, V. A.

"The Nature and Thermal Stability of Radiation-Induced Defects in Single-Crystal Tungsten"

Moscow, Atomnaya Energiya, Vol 33, No 4, Oct 72, pp 809-813

Abstract: The analysis of radiation-induced defects in tungsten shows that the interpretation of the types of defects characteristic for different annealing stages in tungsten is not well-defined. Investigation results are presented on the nature of radiation defects and their stability at temperatures to 2200°C in single-crystal tungsten irradiated at 450-500°C with a dose of $1.4 \cdot 10^{22}$ neutrons/cm^2. This irradiation brings about an increase in electric resistance by 18% at 298°K, by 140% at 77°K, and nearly by 1000 times at 4.2°K; it also results in an accumulation of rhenium in the amount of 0.2 at%. The characteristics of three identified annealing stages of radiation defects and their activation energies are given. The change of the specific electric resistance of single-crystal tungsten during irradiation is associated with the development of small accumulations by hydrogen atoms (20.2%), single vacancies and small accumulations of vacancies (16.5%), complex defects (43.3%), and also with

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120009-2"

USSR

BYKOV, V. N., et al., Atomnaya Energiya, Vol 33, No 4, Oct 72, pp 809-813

the formation of rhenium (20%). The high integral flow of neutrons, the high irradiation temperature [$(0.20-0.21)T_{fusion}$], and the absence of grain boundaries for the discharging of defects lead to an accumulation of basically complex defects, stable up to 1900°C and giving rise to the change of electric resistance. Four figures, three tables, twenty-two bibliographic references.

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USSR

UDC 681.327.66.002.72

ATOVM'YAN, A. E., ANFIMOV, M. A., V'YUGIN, V. A., KOLOBASHKIN, N. I., LITVAN, A. B., MAZAN'KO, B. P., AND SOLOV'YEV, V. A.

"Device for Checking Bunched Conductors"

USSR Author's Certificate No 277858, filed 27 May 69, published 6 Nov 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B153 P)

Translation: A testing device containing a memory, coincidence circuit, and a display circuit is well known. This device does not provide for automation of control of bunched conductors during the manufacturing process. The proposed device for similar purpose is distinguished by the fact that it contains two ferrite cores with an open magnetic conductor, into one of which wires corresponding to the code "1" are introduced, and into the other, wires corresponding to the code "0." These are the primary coils of transformers the secondary windings of which are connected to the first input of each of two coincidence circuits respectively. The second input of each coincidence circuit is connected to the memory output, and their outputs are connected to the interrogation device connected to the conductors of the tested bunched conductors and the interrogation current control circuit. The control of the bunched conductors during the production process is automated in this way. There is 1 illustration.
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USSR

UDC: 51:155.001.57:681.3.06

VORONIN, Yu. A., BOROVIKOV, A. M., SALIN, Yu. S., SOLOV'YEV, V. A., BURKHANOV, Kh. Kh.

"On Computer Realization of Stratigraphic Constructions"

V sb. Mat. probl. geofiz. (Mathematical Problems of Geophysics--collection of works), vyp. 2, Novosibirsk, 1971, pp 295-304 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1027)

Translation: A procedure is given for computer realization of stratigraphic constructions which briefly reduces to the following: 1) with given classifications and enumerations of rocks and types, and a given method of separating lithomatter and biomatter, columns q_k are separated into one-dimensional lithobodies and biobodies, and a set of separated columns (q_k) is obtained in part of the geological space G'; 2) a description of the (q_k) is given, specifically, a stratigraphic summary column is constructed for G'; 3) on the basis of the resultant description of the (q_k), a hypothesis is adopted on the method of identifying columns q_k and a set of identified columns $\{q_k\}$ in G' is obtained. The axioms and algorithms for primary description of the set of columns are considered. Bibliography of 17 titles. V. Mikheyev.

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USSR

UDC 534.22

MIKHAYLOV, I. G., POLUNIN, V. M., and SOLOV'YEV, V. A., Leningrad State University

"Velocity and Absorption of Ultrasonic Waves in Several Viscous Liquids at Pressures up to 1000 atm"

Moscow, Akusticheskiy Zhurnal, Vol 27, vyp 1, 71, pp 103-109

Abstract: This article discusses the results of measuring the velocity and coefficient of absorption of ultrasound in several viscous liquids as a function of pressure (1-1000 atm) and temperature (8-50°).

The various devices used for the acoustic measurements are described and depicted graphically in six figures and two tables.

Figure 1 is a block-schematic of the device used to measure the velocity and coefficient of absorption of ultrasound in liquids under pressure. The acoustic cell is shown in Figure 2, and the relative change in sound velocity is shown graphically in Figure 3 as a function of pressure at 20°; Table 1 gives the results of measuring the sound velocity as a function of pressure and temperature.

Figure 4 is a graphic representation of the coefficient of absorption of ultrasound as a function of pressure, measured at a frequency of 4 MHz at

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MIKHAYLOV, I. G., et al., Akusticheskiy Zhurnal, Vol 27, vyp 1, 71, pp 103-109

20°, and of the classical coefficient of absorption computed under these conditions from the Stokes formula. From this figure it is clear that the coefficient of absorption measured at atmospheric pressure is approximately eight times smaller than the Stokes value. Table 2 (and Table 1 also) gives the physical parameters of the liquid measured for various hydrostatic pressures.

Figure 5 shows the curve of the frequency function given for 20° and at atmospheric pressure, indicating that the relaxation time depends identically on pressure and temperature.

Figure 6 shows the relative change in relaxation time as a function of pressure in several liquids; the figure indicates that the relaxation time grows in certain liquids with increase in pressure, whereas in others it diminishes or remains constant. An increase in relaxation time, with the application of pressure, apparently is characteristic only of structural relaxation and thus may be used as an indication thereof.

This article cites 12 literature references; included also are 6 figures, 3 equations, and 2 tables.

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THE NOTIONS SYSTEM OF STATIC TECTONICS OF THE CONTINENTS SEDIMENTARY COVER -U-

AUTHOR-(02)-VOTAKH, O.A., SOLOVYEV, V.A.

5

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 4, P 127-139

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TECTONICS, MODEL, SEDIMENTARY ROCK LAYER, LAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0050 STEP NO--UR/0210/70/000/004/0127/0139

CIRC ACCESSION NO--AP0114446

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0114446
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FIRST ATTEMPT OF CONSTRUCTION OF THE NOTIONS SYSTEM OF STATIC TECTONICS IS CARRIED OUT. THE MODELS ARE CONSTRUCTED AND THE MAIN STRUCTURES OF CONTINENTS SEDIMENTARY COVER ARE DESCRIBED. FACILITY: IGIG SO AN SSSR, NOVOSIBIRSK.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE-HYDRODYNAMIC FLUCTUATIONS IN A RELAXING MEDIUM -U-

AUTHOR-(03)-RUMANOV, V.P., SOLOVYEV, V.A., FILATOVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 3, PP 887-896

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDRODYNAMIC PROPERTY, LIGHT SCATTERING, ENTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1977/0067 STEP NO--UR/0056/70/058/003/0887/0896

CIRC ACCESSION NO--AP0043693

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0043683

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF THE SPECTRAL INTENSITIES OF FLUCTUATIONS IN AN ISOTROPIC MEDIUM IN THE PRESENCE OF INTERNAL RELAXATION PROCESSES IS PRESENTED. IS IST IS SHOWN THAT IN THIS CASE ONLY FLUCTUATIONS OF THE GENERALIZED COORDINATES CAN BE DETERMINED WHEREAS FLUCTUATIONS OF THE GENERALIZED FORCES CANNOT BE FOUND. ONE CONSEQUENCE OF THIS IS THAT THE RYTOV RESULTS (PRIME3 TO PRIME5) FOR A DISPERSIVE MEDIUM ARE ERRONEOUS. DENSITY AND ENTROPY FLUCTUATIONS WHICH AFFECT LIGHT SCATTERING ARE CALCULATED FOR SUCH MEDIA.

UNCLASSIFIED

Publications

UDC 616.988-018.1:577.23

USSR

SOLOV'YEV, V. D., BALANDIN, I. G.

Kletka i virus (Cell and Virus), Moscow, Meditsina, 1973, 192 pp, biblio., 5,000 copies printed

The monograph investigates the molecular-level mechanism of a productive viral infection caused by lytic viruses and describes the development of chronic viral infection in the cell and the transformation process due to oncoviruses. The mechanism of the effect of interferon on these processes and the chemotherapy of viral infections are described. The monograph makes extensive use of the data of the authors and surveys the works of other studies. The book is intended for virologists and medical and biological research institute personnel.

Contents

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USSR

SOLOV'YEV, V. D., BALANDIN, I. G., Kletka i virus, Meditsina, 1973, 192 pp

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USSR

UDC 576.858.095.383.095.18:615.273.53

MENTKEVICH, L. M., ZHDANOVA, L. V., ORLOVA, T. G., and SOLOV'YEV, V. D., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Effect of Heparin on Interferon Induction and Interference Caused by Viruses and Synthetic Polynucleotides"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 401-404

Abstract: Chick embryo cells infected with Newcastle disease virus (NDV) and vesicular stomatitis virus (VSV) were treated with heparin to study the role of interferon in homologous and heterologous viral infections and in the defense reaction caused by synthetic interferon inducer (poly I:C). Although heparin had no effect on interferon activity itself, it did inhibit interferon production stimulated by the viruses and by poly I:C, even when poly I:C was combined with DEAE-dextran. Interference of NDV reproduction remained unchanged when cultures treated with heparin were infected with a homologous virus, while a great degree of suppression of such interference was noted in heparin-treated cultures infected with both NDV and VSV. This indicates that the interferon system is not involved in the interaction between homologous viruses, but that it is involved in heterologous interference. The effect of heparin on the action of poly I:C and a combination of poly I:C and DEAE-dextran indicates also that

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USSR

MENTKEVICH, L. M., et al, Voprosy Virusologii, No 4, Jul/Aug 72, pp 401-404

the interferon system is involved in the action of these synthetic polynucleotides. In addition to suppressing interferon production, heparin also reduced cellular DNA and RNA synthesis. Thus inhibition of DNA and RNA synthesis may be the path by which heparin suppresses interferon production.

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USSR

SOLOV'YEV, V. G., Joint Institute for Nuclear Research

"Model with Multipole and Spin-Multipole Forces for the Study of Highly Excited States of Nuclei"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Oct 73, pp 90-102

Abstract: The fundamental equations of the model describing the structure of highly excited states of nuclei are obtained. Interaction between nucleons is represented in the form of an average nuclear field, interactions leading to pair correlations of the super conducting type, and multipole and spin-multipole forces. The interaction of quasi particles with phonons, which gives rise to the complications of the structure of states with an increase in the excitation energy, is taken into account. The article includes 44 equations. There are seven references.

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USSR UDC: 539.142

SOLOV'YEV, V. G., FAYNER, U. M., Joint Institute of Nuclear Research

"Irrotational States of Odd-Mass Deformed Nuclei in the Region $179 \leqslant A \leqslant 185$"

Moscow, Izv. AN SSSR, Ser. Fiz., Mat. XXII Yezhegod. soveshch. po yadern. spektroskopii i strukture atom. yadra, Kiev, 25-28 yanv. 1972, Vol 36, No 4, Apr 72, pp 698-705

Abstract: The paper presents the results of calculation of the irrotational states of odd-mass deformed nuclei in the region $179 \leqslant A \leqslant 185$. Since the behavior of one-particle energies and wave functions of the Saxon-Woods potential depends on the mass number, the region of nuclei with $150 < A < 190$ is broken up into four zones: $A = 155$, 165, 173, and 181, and the one-particle energies and wave functions for the corresponding zone are assumed in calculations. In this paper the energies and wave functions for zone $A = 181$ computed by Gareyev et al. (Soobshch. OIYaI, P4-4259) are used in the method proposed by Malov et al. (IAN SSSR, Ser. fiz., v. 33, p 1244; v. 35, p 747). The tabulated results agree satisfactorily with experimental data and can be used for computing various characteristics of deformed nuclei. In conclusion, the authors thank L. A. Malov, S. I. Fedotov, and Kh. Shtrusnyy for assistance and discussion.

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USSR UDC 539.14

SOLOV'YEV, V. G.

"Ways of Studying the Structure of the Atomic Nucleus"

Moscow, Atomnaya Energiya, Vol 30, No 1, Jan 71, pp 37-43

Abstract: In modern studies of nuclear theory a large number of approximation methods are used to describe the structure of the atomic nucleus. These methods can be divided into three types: phenomenologic, semi-microscopic, and microscopic. These methods are briefly discussed in the article. Two directions are followed in studying the atomic nucleus structure: measurement of characteristic and fundamental states of activation and the higher activation states and expansion of the areas of the studied nuclei by means of removal from the zone of beta-stability and by conducting studies in the area of ultra-heavy elements. Scattering of rapid electrons indicates the deflection density of an electrical charge in nuclei from a Fermi distribution. The adsorption of K-mesons by the nuclei indicates the possible enrichment of the nucleus surface with neutrons. In hyper-nuclei, interactions of hyperons with nuclons and between themselves are not weakened significantly by the action of the Pauli principle and can therefore be used in studying

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203120009-2"

USSR

SOLOV'YEV, V. G., Atomnaya Energiya, Vol 30, No 1, Jan 71, pp 37-43

new aspects of nucleus structure. Much attention is being given to the study of hyper-nuclei and to the determination of the characteristics of nuclon-hyperon (spin-spin relationship, tensor components, etc.) and hyperon-hyperon potentials, roles of tri-partial forces in hyper-nuclei, etc. If sufficient information on the combined activation states of hyper-nuclei is not obtained, then studies on heavy hyper-nuclei will proceed very slowly.

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USSR

UDC 539.14.142

SOLOV'YEV, V. G.

"Complication of the Structure of Nuclear States With Increase of the Excitation Energy"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 4, 1971, pp 666-677

Abstract: A description of the excited states of complex nuclei in terms of quasi particles and phonons is an entirely good one for a double-magic nucleus and for the nuclei adjacent to it, and it is adequate for the fundamental states and low-level states of strongly deformed nuclei. As the distance from the double-magic nucleus increases and with an increase in the excitation energy, the structure of the levels grows more complex due to the appearance of admixtures to the quasi particle and phonon components. A large number of new experimental data has led to the conclusion that the low-level states of spherical and deformed nuclei are considerably more complex than they had up to recently been held to be. In this survey report, an integrated study is made of the structure of the low-level nuclar states, using a combination of the methods of alpha-, beta-, and gamma-spectroscopy (including n,γ -reactions) with direct nuclear reactions. 1 figure. 4 tables. 14 bibliographic entries.

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USSR

SOLOV'YEV, V. G.

"On α and γ Decays of Highly Excited States of Complex Nuclei"

Moscow, Yadernaya Fizika; January, 1971; pp 48-59

ABSTRACT: The author investigates the possibility of obtaining information on the structure of states of complex nuclei with excitation energies close to or larger than the nucleon binding energy from experimental data on (n,α) and n, γ) reactions with resonance excitation. The wave function of a highly excited state is constructed and the matrix elements are calculated for α and γ transitions from highly excited states to the ground, single-phonon, and two-quasi-particle states. It is shown that α and γ transitions involve a small number of components of the wave function of the highly excited state. Thus, the experimental data on the probabilities of α and γ transitions can give some information on the values of certain components of wave functions of highly excited states.

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USSR

VORONOV, V. V.; SOLOV'YEV, V. G. (Joint Institute for Nuclear Research)

"Magnetic Moments of Highly Excited States of Atomic Nuclei"

Moscow, Yadernaya Fizika; December, 1972; pp 1188-94

ABSTRACT: Based on a semimicroscopic approach, formulae for the magnetic moments of highly excited states are obtained. It is shown that magnetic moments are expressed by means of all the components of the wave functions of highly excited states. According to a rough estimate, the values of the magnetic moments of the states of intermediate excitation energy and highly excited states, including neutron resonance, should be equal in order of magnitude to single-particle values. The situation with magnetic moments differs considerably from that with probabilities of E1- and M1-transitions from highly excited states to the lower ones, which are 10^{-5} - 10^{-7} times as large as single-particle values. Theoretical results agree with the available experimental data on neutron resonance magnetic moments.

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SOLOV'YEV, V.I.

I-8448

VOYENNO-MEDITSINSKIY ZHURNAL, NO. 4, 1970, pp. 60-61

ROLE OF ALKALINE PHOSPHATASE OF THE NEUTROPHILES IN THE DIAGNOSIS OF VARIOUS FORMS OF ACUTE APPENDICITIS

by [illegible], Solov'yev

MEDICINE

In the diagnostics of acute surgical ailments, the timely detection of destructive forms is of great importance. Since symptoms and morphological changes appear not always simultaneously, there is often the main cause of diagnostic errors in surgical tactics and of the postoperative complications connected with them. When the signs of ailment are scanty, the clinician needs to look for additional criteria. Recently, the functional blood examinations (sedimentation rate, leukocyte count, blood picture, residual nitrogen, chlorides, percentage of serum protein, protein fractions, and so on) are not always informative.

During the past five years, search was made for biochemical indices by which it would be possible to judge the presence of destructive forms of acute surgical ailments. As a result, we arrived at the conclusion that determination of the activity of alkaline phosphatase, and C-reactive protein. In 704 patients we got the consolidation of tissue in the development of an inflammation can be established. However, the determination of these indices still gives only a delayed information, and, moreover, it is connected with considerable loss of time. Therefore, we needed to prolong the search after other rapidly available tests. As it was established, such a method can be the cytochemical examination of the blood in particular the determination of the phosphatase activity of neutrophiles (PAN). Data in the literature and materials of our investigations prove an increased activity of the alkaline phosphatase in neutrophiles in patients with various ailments which are accompanied by inflammatory symptoms (in practically healthy persons these indices very between 21 and 43 units as an average).

The study of the activity of alkaline phosphatase is of special interest in the different forms of acute appendicitis. For this purpose, in this category of patients, the PAN was determined. This was made with the general method of azo combination, and evaluated by the method suggested by Kaplow. For this analysis, blood was taken at the admission of the patient, and also on the first, second, fifth, and seventh day after operation. According to morphological signs, the form of appendicitis was established on the basis of published examinations, and it was correlated with the results of surgical interventions and with the histological picture of the appendicular wall. Seventy-three patients were examined who had the diagnosis of acute appendicitis. The PAN indices in the different forms of acute appendicitis are presented in the Table.

Forms of acute appendicitis	Number of exam.	Range of varia-tions	M	± σ
Simple	23	5-89	35.73	3.3
Destructive	50	77-166	115.02	3.82
			18.2	26.75

SOLOVYEV, V.I.

MEDICAL SCIENCES

J-9605

SO: MILITARY MEDICAL JOURNAL 120 NOV 71

UDK 616.017-3:615.5

Dozent V. I. Solov'yev, Candidate of Medical Sciences Z. P. Kuznetsova, F. V. Sysoyev. Thrombo-embolism of the common iliac artery.

The patient S., a 37-year-old woman, was admitted to the clinic on August 15, 1966, complaining of a dull pain in the right lumbar area and a swelling in the right side of the abdomen. She had been sickly since 1959. The diagnosis was established as follows: right-sided tubercular pyonephrosis. On September 1, 1966, a right nephro-ureterectomy was performed. On the third day after the operation, the patient developed pains in the right leg, with marbleization of the skin and cyanotic-crimson spots, as well as a sharp drop in topical temperature and absence of pulse in the peripheral vessels. The new diagnosis was: thrombosis of the common iliac artery.

On September 3, under anesthesia consisting of nitrogen oxide and oxygen, combined with relaxants, the postoperative wound from the first operation was reopened. After additional separation of the peritoneal sac, the right common iliac artery was bared as far as the bifurcation of the aorta.

On examination, it developed that, starting with this bifurcation of the aorta, on the right side of the iliac artery, there could be palpated a soft, elastic thrombus 10 cm. long, and filling the entire lumen of the vessel.

Both above and below the thrombus, rubber tubes were then attached to the vessel and the lumen of the common iliac artery was opened up. With the aid of a clamp and, partially, by squeezing, the thrombus was extracted from the artery and the sector where it had been lodged was rinsed with blood, and then with heparin. The opening in the wall of the artery was ligated with capron thread, with the use of atraumatic needles. After the tubes were removed, a healthy pulse developed in the peripheral arteries. Five minutes later, however, pulsation in the common iliac artery stopped and palpation easily determined the presence of a new thrombus in the same spot as the old.

The rubber tubes were reimposed upon the vessel, the sutures [illegible] rinsed [illegible] solution of heparin [illegible] The artery was then [illegible] blood circulation was restored. [illegible] and the [illegible] the artery, the [illegible] of the vascular [illegible] the wall of [illegible] tissue. There was no bleeding. The vessel was [illegible] with capron [illegible] layer by layer. During the operation, fibrinolysin (20 units) was introduced, a blood transfusion was administered and a [illegible]-percent solution of glucose was injected. Fifteen minutes after the end of the operation, the arterial pulse in the left leg vanished, but it remained well pronounced in the right leg.

In view of the poor general condition of the patient, it was decided to remove the new thrombus with the aid of a rubber catheter. The left femoral artery was not pulsating. After capron clamps were placed on the artery walls, its lumen was opened up. With the aid of a catheter connected to an electric pump, a long and porous thrombus was extracted from the femoral and the left common iliac artery. The free circulation of blood through these vessels was thereby restored. Heparin (25,000 units)

SOLOVYEV, V.I.

Medical Sciences

J-9605

UDK 616.017-3:615.5

Dozent V. I. Solov'yev, Candidate of Medical Sciences Z. P. Kuznetsova,
F. V. Sychev. Thrombo-embolism of the common iliac artery.

The patient S., a 37-year-old woman, was admitted to the clinic on August 15, 1966, complaining of a dull pain in the right lumbar area and a swelling in the right side of the abdomen. She had been sickly since 1960. The diagnosis was established as follows: right-sided tubercular pyonephrosis. On September 1, 1966, a right nephro-ureterectomy was performed. On the third day after the operation, the patient developed pains in the right leg, with marbleization of the skin and cyanotic-crimson spots, as well as a sharp drop in topical temperature and absence of pulse in the peripheral vessels. The new diagnosis was: thrombosis of the common iliac artery.

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On examination, it developed that, starting with this bifurcation of the aorta, on the right side of the iliac artery, there could be palpated a soft, elastic thrombus 10 cm. long, and filling the entire lumen of the vessel.

Both above and below the thrombus, rubber tubes were then attached to the vessel and the lumen of the common iliac artery was opened up. With the aid of a clamp and, partially, by squeezing, the thrombus was extracted from the artery and the sector where it had been lodged was rinsed with blood, and then with heparin. The opening in the wall of the artery was ligated with capron thread, with the use of atraumatic needles. After the tubes were removed, a healthy pulse developed in the peripheral arteries. Five minutes later, however, pulsation in the common iliac artery stopped and palpation easily determined the presence of a new thrombus in the same spot as the old.

The rubber tubes were reimposed upon the vessel, the sutures removed from the vascular wall, and a porous thrombus of the same size as before was removed from the lumen of the artery. The artery was then rinsed with a solution of heparin and [illegible]-amino-caproic acid, and the blood circulation was restored. To prevent bleeding through the wall of the artery, the areas of the vascular seam were recovered with capron tissue. There was no bleeding. The wound was ligated, layer by layer. During the operation, fibrinolysin (60 units) was introduced, a blood transfusion was administered and a 5-percent solution of glucose was injected. Fifteen minutes after the end of the operation, the arterial pulse in the left leg vanished, but it remained well pronounced in the right leg.

In view of the poor general condition of the patient, it was decided to remove the new thrombus with the aid of a rubber catheter. The left femoral artery was not pulsating. After capron clamps were placed on the artery walls, its lumen was opened up. With the aid of a catheter connected to an electric pump, a long and porous thrombus was extracted from the femoral and the left common iliac artery. The free circulation of blood through those vessels was thereby restored. Heparin (25,000 units)

J-9605

So. Military Medical Journal
No1 1959

UDK 616-056.3

Captain of the Medical Service V. N. Glozman. Anaphylactic re-
action when taking analgin.

We have observed an anaphylactic reaction in patient T., aged
34, who took, internally, 0.25 gr. of analgin to relieve a headache.
Twenty minutes later, he suffered nausea, dryness of the mouth,
skin itching, asthmatic cough, shortness of breath, and a urticarian
rash developed on his hyperemic skin all over the body. The respira-
tion rate increased to 30 per minute and became superficial. Ausculta-
tion revealed dry, scattered rales above the lungs. The pulse was
110, rhythmic but weak. Blood pressure was 100/60 mm. Hg., and the
cardiac tones sounded dampened.

Oxygen was administered immediately. Adrenalin and cordiamin
were injected subcutaneously and pipolphen -- intramuscularly. Fifteen
minutes after the beginning of the attack, the manifestations described
began to subside. On examination the next day, the patient reported
slight nausea, as well as some headache, pain in the middle of the
abdomen, in response to palpation. The skin rash vanished. The tongue
was dry, with a whitish cast. Pulse was 80, rhythmic, and of satis-
factory strength. Blood pressure was 120/80. The temperature was 37.3°C.
The blood test showed 90 units of hemoglobin, leukocites 14,000,
p -- 5 percent, s -- 62 percent, erythrocite sedimentation rate: 23 mm.
per hour.

It developed that one of the patient's close relatives also
suffers from oversensitivity to analgin.

Received in November 1958.

USSR

UDC 537.521

POSHEKHONOV, P.V., SOLOV'YEV, V.I.

"To The Problem Of Initiation Of Vacuum Breakdown Of Macroparticles"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific-Technical Collection. Gas-Discharge Devices), 1970, Issue 3(19), pp 107-109 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A31)

Translation: The results are presented of experimental investigations of the dependence of the breakdown voltage of vacuum gaps on the diameter of the particles (50-1000 micron) initiating the breakdown. 6 ref. Summary.

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USSR

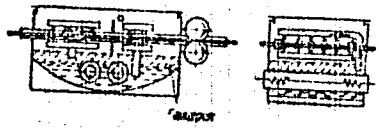
UDC: 621.3.049.75

MARKIN, N. I., SHCHERBAKOV, L. U., SOLOV'YEV, V. I., SADOVNIKOV, I. T.

"A Method of Coating Two-Sided Printed-Circuit Boards with Solder"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298089, Division H, filed 29 Jun 68, published 11 Mar 71, p 198

Translation: This Author's Certificate introduces a method of coating two-sided printed-circuit boards with solder in an inert gas atmosphere. As a distinguishing feature of the patent, the process is mechanized and the quality of the coating is improved by jet-spraying both sides of the board with low-melting solder as it moves continuously in the tank, followed by jet-spray rinsing of the excess solder in glycerin.



1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EFFECT OF PAPAIN ON THE ORGANOLEPTIC AND PHYSICO CHEMICAL PROPERTIES OF BUFFALO MEAT -U-

AUTHOR-(02)-SOLOVYEV, V.I., GASHIMOVA, L.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(2), 190-5

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROTEINASE, PROTEIN, ENZYME ACTIVITY, FOOD PREPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/60505/B10 STEP NO--UR/0411/70/006/002/0190/0195

CIRC ACCESSION NO--AP0144227

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0144227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PAPAIN HAD A CONSIDERABLE TENDERIZING EFFECT ON BUFFALO MEAT. OPTIMUM RESULTS WERE ATTAINED BY TREATING THE MEAT WITH 0.3-0.4PERCENT PAPAIN SOLNS. AT 20DEGREES AND KEEPING AT 0-4DEGREES FOR 2 DAYS. THE PH OF THE MEAT DECREASED, AND THE AMT. OF BOUND MOISTURE AS WELL AS THE SOL. GLYCOGEN FRACTION INCREASED.

FACILITY: ALL UNION RES. INST. MEAT IND., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 62-531

SOLOV'YEV, V. M.

"Method of Correcting an Automatic Control System"

USSR Author's Certificate No 299825, filed 24 Feb 70, published 25 May 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1971, Abstract No 12A166P)

Translation: Known methods of automatic control system correction, operating on alternating current, are based on the use of the characteristics of passive RC networks and on the use of RC tuned circuits with choppers. Methods based on the use of the characteristics of passive RC networks yield only an approximate differentiation of the alternating current signal envelope. This is explained by the fact that the characteristics of real RC networks differ from those of the ideal differentiating circuit. Also, realization of this method leads to the need for fulfilling rigorous requirements for the stability of the carrier frequency and the stability of the system components, the stability requirements increasing with the growth in carrier frequency. Methods based on the use of RC tuned circuits with choppers provide a phase lead at low frequencies only. This is connected with the fact that to obtain a signal proportional to the derivative, the amplitude of

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USSR

UDC: 62-531

SOLOV'YEV, V. M., USSR Author's Certificate No 299825

the carrier is stored for one half-period and is then compared with the amplitude of the next half-period. These operations lead to the insertion of a delay which, in several cases, does not permit obtaining the required phase lead at low frequencies and results in a lag in phase at the high frequencies, which worsens the correcting system dynamics. Also, comparison of the values for the two signals reduces the accuracy of the differentiation, guarantees obtaining a low transmission factor, and leads to the pulse form of the output signal, the use of which is possible only after transformation and amplification. The known methods of system correction, operating on a-c, substantially weaken the useful signal and pass the low-frequency noise spectrum without attenuation and with resultant increase in system error. All of this markedly limits the utility area of known methods of automatic system control correction operating with a-c and hinders their realization. The aim of the invention is to improve the accuracy and noise immunity of the system. This is accomplished by removing a signal proportional to the upper side band from the amplitude-modulated error signal, amplifying it by a factor of 2, and forming a correcting signal by subtracting it from the error signal.
2/2

USSR

UDC: 621.317.616

SOLOV'YEV, V. M.

"Measuring the Phase-Frequency Characteristics of Linear Four-Terminal Networks"

V sb. Radioelektron. v nar. kh-ve SSSR, Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works) Kuybyshev, 1970, pp 413-419 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A403)

Translation: As a result of analyzing the problem, the following conclusions are arrived at. Measurement of the phase-frequency characteristics by automatic methods is most operative from the viewpoint of processing the measurement information. For work in the broad frequency ranges, the preferred method is of frequency transformation using a delay line; for measuring the characteristics of narrow-band filters and characteristics beginning with zero frequency, the method of pure spectral lines is preferred. Bibliography of one. A. L.

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USSR

UDC: 681.30

SOLOV'YEV, V. M.

"An Angle-to-Code Converter"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 292181, Division G, filed 7 Aug 69, published 6 Jan 71, pp 136-137

Translation: This Author's Certificate introduces an angle-to-code converter which contains a DC voltage source, a code mask consisting of alternating electrically conductive and nonconductive sections, a reversible pulse counter and two kipp oscillators. As a distinguishing feature of the patent, The device is simplified and reliability is improved by adding a voltage divider with a DC voltage cource connected to its input and the conducting sections of the code mask connected to its output. The moving contact is connected through a differentiating network and diodes to the two kipp oscillators. One of these kipp oscillators is triggered by a positive pulse and the other is triggered by a negative pulse. The outputs of the kipp oscillators are connected to the addition and subtraction lines respectively of the reversible pulse counter.

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1/2 023 UNCLASSIFIED

TITLE--SIMULATOR -U-

PROCESSING DATE--30OCT70

AUTHOR-(03)-RASSHCHEPLYAYEV, YU.S., SOLOVYEV, V.M., DEMIDENKO, A.V.

CCUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 243277

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 16

DATE PUBLISHED--12SEP70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--LINEAR CONTROL SYSTEM, ANALOG COMPTER, RC CIRCUIT, ELECTRONIC FEEDBACK, PATENT, SIMULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1510

STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--AA0127019

UNCLASSIFIED

2/2 023 UNCLASSIFIED

CIRC ACCESSION NO--AA0127019 PROCESSING DATE--30OCT7C

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. SIMULATOR TO REPRODUCE DYNAMIC PROPERTIES OF LINEAR CONTROL SYSTEMS FROM THEIR EXPERIMENTAL FREQUENCY CHARACTERISTIC, FOR ANALOG COMPUTER SYSTEMS, IS ASSEMBLED FROM TWO TYPES OF MODULES. ONE MODULE CONTAINS AN OPERATIONAL AMPLIFIER AND ON ITS INPUT A DOUBLE T SECTION RC CIRCUIT, WITH ANOTHER RESISTOR IN A FEEDBACK CIRCUIT. THE SECOND MODULE IS AN OPERATIONAL AMPLIFIER WITH A RESISTOR AND A CAPACITOR IN ITS FEEDBACK CIRCUIT, AND AN L SECTION DIVIDER WITH A RESISTOR AND CAPACITOR IN PARALLEL, AND A RESISTOR ON ITS INPUT. FACILITY: ROSTOVSKOYE VYSSHEYE KOMANDNO-INZHENERNOYE UCHILISHECHE IM. GLAVNOGO MARSHALA ARTILLERII M. I. NEDELINA.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PROFLAVIN EFFECT ON THE CHEMOTHERAPEUTIC ACTIVITY OF ISONIAZID AND STREPTOMYCIN IN EXPERIMENTAL TUBERCULOSIS IN WHITE MICE -U-

AUTHOR-(02)-ZUYEVA, V.S., SOLOVYEV, V.N.

COUNTRY OF INFO--USSR

SOURCE--PROBL TUBERK 48(1): 62-66. ILLUS. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUBERCULOSIS, MOUSE, CHEMOTHERAPY, ISONIAZIDE, SYNERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0439 STEP NO--UR/0000/70/048/001/0062/0066

CIRC ACCESSION NO--AP0134207

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF PROFLAVIN ON THE DRUGS CHEMOTHERAPEUTIC ACTION WAS STUDIED IN MICE INOCULATED WITH MYCOBACTERIUM TUBERCULOSIS, AND ALSO THE DEVELOPMENT OF RESISTANCE TO ISONIAZID IN VIVO. PROFLAVIN ENHANCED THE EFFECTIVENESS OF THE ISONIAZID TREATMENT OF ANIMALS INFECTED WITH M. TUBERCULOSIS TYP HUM H SUB37 RV. 6. IN THESE CONDITIONS THE MICROBIAL POPULATION ISOLATED IN THE LUNGS SHOWED A CHANGE OF THE ISONIAZID SENSITIVITY DISTRIBUTION WITH DISAPPEARACNE OF RELATIVELY RESISTANT FORMS. INTRODUCTION OF PROFLAVIN TO ANIMALS INFECTED WITH M. TUBERCULOSIS AVIUM INCREASED THE BACTERICIDAL ACTION OF STREPTOMYCIN. FACILITY: DEP. CHEMOTHER., INST. PHARMACOL. CHEMOTHER., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.314.14(088.8)

MALEYEV, N. K., SOLOV'YEV, V. P. [Gos. proektno-izyskat. in-t po proyektir. signaliz., tsentraliz. svyazi i radio na zh.-d transp.--State Planning-Research Institute for Planning of Signaling, and Centralization of Communication and Radio on Railroad Transportation]

"Inverter"

USSR Author's Certificate No 251076, Filed 30 May 66, Published 19 Feb 70 (From RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B364P)

Translation: In the proposed circuit for an inverter of d-c voltage to a-c, two series-connected transistors are used in each branch of the final stage. With the object of a uniform distribution of the potentials at the transistors in a regime of cutoff and saturation, capacitors connected in series among themselves are used. Two capacitors are connected in parallel with the collector-base regions of two transistors and another two connected between the bases of the above-mentioned transistors and the emitters of transistors connected to a plus power supply. Use of capacitance compensating dividers instead of resistance makes it possible to increase the reliability of the transistors and to eliminate their output from the system, which accounts for the more uniform distribution of the potentials.
1 ill. V. Sh.
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1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CONTACT EXTRUSION METHOD FOR WELDING THERMOPLASTIC MATERIALS -U-

AUTHOR-(03)-SOLOVYEV, V.P., SOLOVYEVA, V.A., MATSYUK, L.N.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (2), 24-5.

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ETHYLENE, PROPYLENE, COPOLYMERIZATION, POLYPROPYLENE, CHEMICAL DEGRADATION, THERMAL EFFECT, WELDING TECHNOLOGY, THERMOPLASTIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

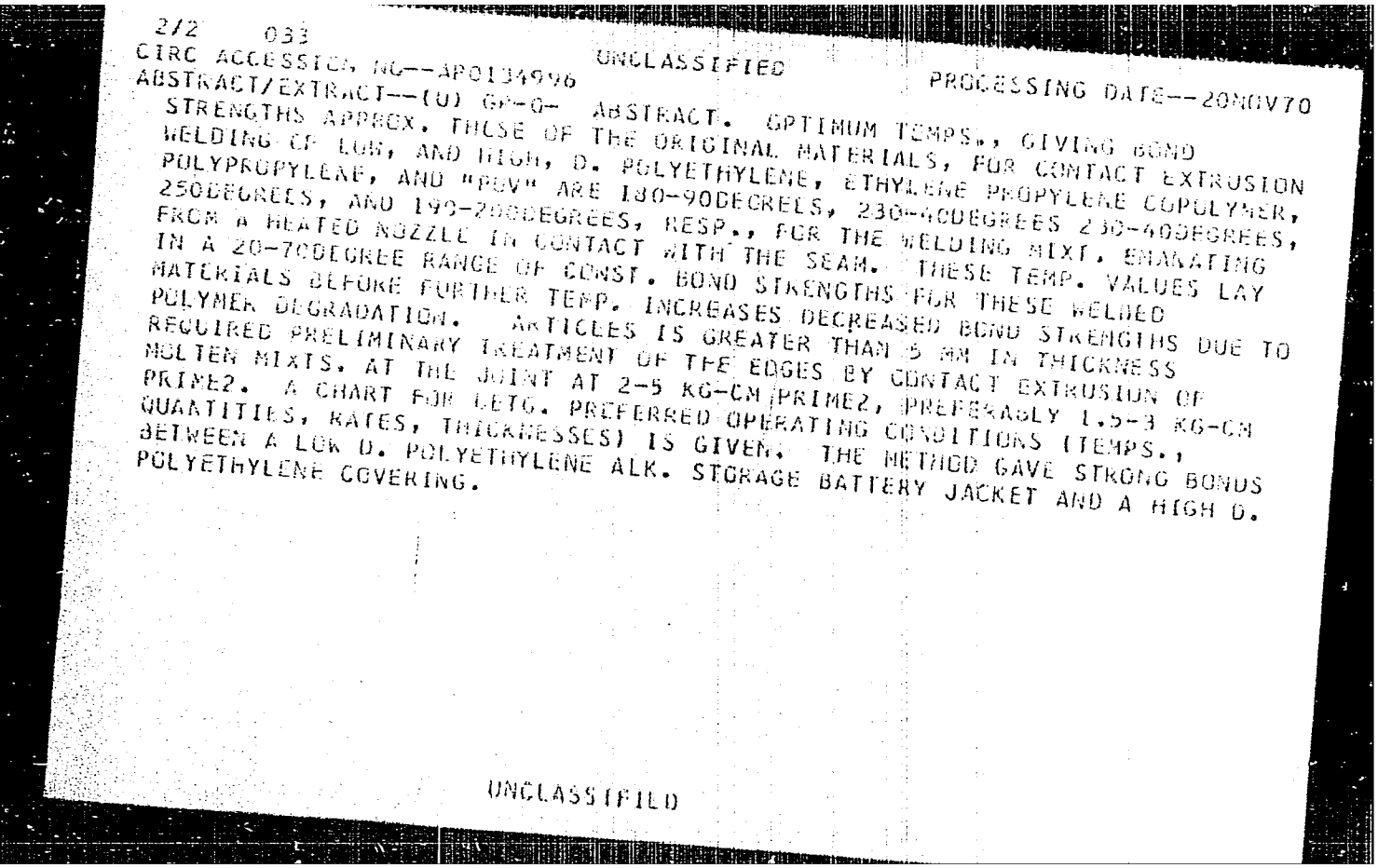
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1322

STEP NO--UR/0135/70/000/002/0024/0025

CIRC ACCESSION NO--AP0134996

UNCLASSIFIED



2/2 033 UNCLASSIFIED
CIRC ACCESSION NO--AP0134996 PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM TEMPS., GIVING BOND STRENGTHS APPROX. THOSE OF THE ORIGINAL MATERIALS, FOR CONTACT EXTRUSION WELDING OF LOW, AND HIGH, D. POLYETHYLENE, ETHYLENE PROPYLENE COPOLYMER, POLYPROPYLENE, AND "PUV" ARE 180-90DEGREES, 230-40DEGREES 230-40DEGREES, 250DEGREES, AND 190-200DEGREES, RESP., FOR THE WELDING MIXT. EMANATING FROM A HEATED NOZZLE IN CONTACT WITH THE SEAM. THESE TEMP. VALUES LAY IN A 20-70DEGREE RANGE OF CONST. BOND STRENGTHS FOR THESE WELDED MATERIALS BEFORE FURTHER TEMP. INCREASES DECREASED BOND STRENGTHS DUE TO POLYMER DEGRADATION. ARTICLES IS GREATER THAN 5 MM IN THICKNESS REQUIRED PRELIMINARY TREATMENT OF THE EDGES BY CONTACT EXTRUSION OF MOLTEN MIXTS. AT THE JOINT AT 2-5 KG-CM PRIME2, PREFERABLY 1.5-3 KG-CM PRIME2. A CHART FOR DETG. PREFERRED OPERATING CONDITIONS (TEMPS., QUANTITIES, RATES, THICKNESSES) IS GIVEN. THE METHOD GAVE STRONG BONDS BETWEEN A LOW D. POLYETHYLENE ALK. STORAGE BATTERY JACKET AND A HIGH D. POLYETHYLENE COVERING.

UNCLASSIFIED

USSR

UDC 621.375.9

DOROGAYA, L. N., ZIMOKOSOV, G. A., LEIKIN, A. Ya., RATNER, A. M., SOLOV'YEV, V. S.

"Simple Method of Operative Measurement of the Angular Divergence of a Laser"

Moscow, Izmeritel'naya Tekhnika, No 4, 1973, pp 30-31

Abstract: A method is described for measuring the angular divergence of the emission of a continuous-action laser based on transformation of the divergence of the laser beam by a prism. The theoretical basis for the method is presented, and the parameters of the device are calculated. The possibility of using the method for the pulse-action laser is investigated.

The described method was used to measure the angular divergence of the LG-56 helium-neon laser with a wave-length of 0.63 microns. A prism with its base in the form of an equilateral right triangle was rotated by an electric motor with a frequency of 7.2 hertz. The receiver was the FAU-68 photomultiplier defined by a slit, the width and position of which were regulated by screws. The signal was transmitted from the photomultiplier to the S1-19 oscillograph. On synchronizing the scanning with the rotation frequency of the prism,

USSR

DOROGAYA, L. N., et al., Izmeritel'naya Tekhnika, No 4, 1973, pp 30-31

clear pulses were observed on the oscillograph screen which reproduced the radiation pattern. With low pumping when only the basic transverse oscillation was observed visually in the near field, the shape of the pulse approached a gaussian curve. The halfwidth of the pulse recalculated for angles was 6'±30", which agrees with the angular divergence of the basic mode field of 5'24" calculated by the well-known formulas. With an increase in the pumping current strength, when the higher transverse modes were visually observed, the pulse on the oscillograph screen revealed a corresponding broadened structure. The shape of the pulse does not depend on the linear width of the slit d or its position c in the region corresponding to a resoltuion of less than 2'.

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USSR

UDC: 621.375.826

BABICH, V. M. and SOLOV'YEV, V. S.

"Studying the Interaction of the Competing Transitions of a He-Ne-Laser"

Tr. metrol. in-tov SSSR. Khar'kov NII metrol. (Works of the Metrology Institutes of the USSR. Khar'kov Scientific-Research Institute of Metrology), 1972, vyp.7, pp 27-32 (from RZh-32.Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.1205)

Translation: The authors study experimentally an He-Ne-laser at $\gamma = 0.63$ with a wide-angle resonator which can serve as an emission source with a narrow line width and with sufficiently high stability. It is shown that the experimental line width exceeds the theoretical several times. This may be related to the presence of competing radiation at an adjacent transition $3S_2-3p_4$ ($\lambda = 3.39\mu$) in the resonator of the laser.

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USSR

UDC 535.22+621.317.36.081:621.375.826

LEYKIN, A. YA., SIKORA, S. V., SOLOV'YEV, V. S., and FERTIK, N. S.

"On Measuring the Speed of Light and Setting Up Frequency Measurements in the Submillimeter Band"

Khar'kov, Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby USSR, 1972 -- sb. (Ukrainian Republic Scientific and Technological Conference Honoring the 50th Anniversary of the Ukrainian SSR's Metrological Service, 1972 -- Collection of Works), 1972, pp 18-19 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.53)

Translation: One of the most precise methods for measuring the velocity of electromagnetic wave propagation was developed under the leadership of G. S. Simkin, and consists of simultaneously measuring the frequency and wave length of radiation in the 8-mm band. It is a well known fact that, in this case, the largest component of the total error is caused by the indeterminacy of the wave front during the measurements of the wave length. The diffraction correction, which must be computed under these circumstances, is determined by calculating the field at a number of points on the radiator's aperture. The natural way of reducing or even eliminating this error is to approximate the radiator's long-range zone, for the purpose of creating a quasiplane wave in

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USSR

IEYKIN, A. YA., et al., Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby USSR, 1972 -- sb, pp 18-19

the area of the measurements. In this case, an approach based on the shorter (on the order of 0.05-0.5 mm) wave lengths proves to be promising. The existence of lasers operating in this band made it possible to develop a set of equipment and to make preliminary measurements on the 0.337 mm wave length. This made it possible for the following to be accomplished: 1) research in the characteristics of lasers; 2) research in frequency transformers operating in the submillimeter band; 3) the creation of frequency synthesizers operating in the submillimeter band; 4) measurement of the wave lengths of lasers operating in the submillimeter band; 5) the creation of a standard for optical band frequencies. The complex of projects that the authors carried out made it possible to make the first measurements of the speed of light in a vacuum for waves with λ= 337 microns.

2/2

SOLOV'YEV, V.S.

temperature front attenuates exponentially with time and does not affect the stress wave motion. After passage of the elastic-wave front, a field of quasi-static stresses is established.

Boyko, M. M., V. A. Letyagin, and V. S. Solov'yev. Experimental investigation of shock wave attenuation in steel. ZhPMTF, no. 2, 1972, 101-104.

Shock wave attenuation in steel specimens from the contact blast of a plane-wave trotyl charge, with a 50 mm diameter and 10 mm height, was studied experimentally. Monotonic attenuation of the maximum shock-compression pressure was observed at increasing distances from the contact surface. Shock wave attenuation was caused by a relief wave which overtook the shock waves from the direction of the charge. The propagation rates of the primary and secondary shock waves were computed using the known shock-wave velocity and the experimentally obtained time intervals between the emergence of the waves to the free surface of variable thickness plates. The experiments show that up to a thickness of $x_1/h=1.35$ (x_1, specimen thickness; h, charge height) the shock waves propagated in steel in three stages, and thereafter degenerated into a two-stage form.

Zak, M. A. Geometric shock waves in an anisotropic elastic body. MTT, no. 3, 1972, 161-162.

An investigation is made of a quasi-linear hyperbolic system of equations for wave propagation in an elastic anisotropic medium. Surface wave front equations of motion are derived and

USSR

UDC 621.376.32.029.7

SOLOV'YEV, V.S.

"On The Problem Of Direct Detection Of A Frequency-Modulated Optical Signal"

Radiotekhnika i elektronika, Vol XVII, No 5, May 72, pp 1024-1029

Abstract: The principal problems are considered which arise during detection of a frequency-modulated laser signal with the aid of optical discriminators. Consideration is given to passage of amplitude- and frequency-modulated signals through an interferometer. The noise characteristics of an optical frequency discriminator and problems of matching the wave front and transverse dimension of a beam with the corresponding parameters of an optical resonator used as a frequency discriminator are discussed, and their effect on the limits of measurement is considered. 2 fig. 5 ref. Received 22 March 1971.

1/1

SOLOV'YEV, V. S.

UDC 550.83.08

QUANTUM MAGNETOMETER WITHOUT ORIENTATION SKIP ZONES

[Article by V. M. Ryzhkov and V. S. Solov'yev, Leningrad, Geofizicheskaya Apparatura, Russian, No 40, 1971, pp 14-19]

In a known quantum magnetometer circuit [Bell, Bloom, 1961] for excitation of an atomic system magnetization precession, pumping light intensity modulation is used in the gas cell, at a frequency close to the precession frequency of the working substance atoms $\omega_0 = \gamma H_0$ (γ is the gyromagnetic ratio, H_0 is the external magnetic field). In this magnetometer the largest magnetization precession amplitude is obtained in that case when the direction of the light ray and that of the external magnetic field are perpendicular. The block diagram of the magnetometer of a self-oscillating type is indicated in Fig. 1.

Fig. 1 Block Diagram of a Magnetometer of the Self-oscillating Type, Using Intensity Modulation of Pumping Light. 1 -- lens

A circularly polarized (after passing through the linear polaroid 4 and 1/4 plate 5) resonance light from spectral lamp 2, excited by high frequency generator 1, is intensity modulated in the modulator 6 at frequency ω. This light excites magnetization precession of the sample in gas cell 7, and this is then detected by photodetector 8.

JPRS 56059
25 May 72

1/2 043 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--OPTIMAL CONDITIONS FOR NARROWING THE SPECTRUM OF A LASER WITH STRONGLY DEGENERATE MODES -U-

AUTHOR-(04)-KURZHENEVICH, I.M., RATNER, A.M., SOLOVYEV, V.S., TYUNOVA, T.I.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 821-823

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER RADIATION SPECTRUM, RESONATOR, MULTIMODE LASER, LASER BEAM COHERENCE, LINE WIDTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1471 STEP NO--UR/0104/70/015/000/0821/0823

CIRC ACCESSION NO--AP0118460

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118460

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE INFLUENCE OF THE RESONATOR'S GEOMETRICAL PARAMETERS ON THE NUMBER OF TRANSVERSE MODES IN A SOLID STATE LASER HAVING LENSES WHICH ARE USED TO OBTAIN SUFFICIENT ANGULAR DIVERGENCE FOR TOTAL SPECTRAL OVERLAP OF THE EMITTED LONGITUDINAL MODES (STRONGLY DEGENERATE CASE). IT IS SHOWN THAT THE DEPENDENCE OF THE NUMBER OF TRANSVERSE MODES ON THE RESONATOR PARAMETERS HAS A SHARP MAXIMUM FOR A RESONATOR WHOSE LENGTH IS LARGE IN COMPARISON WITH THE LENGTH OF THE ACTIVE ELEMENT. THIS MAXIMUM CAN BE USED FOR EXPERIMENTAL PRODUCTION OF A STABLE REGULAR KINETIC MODE OF EMISSION WITH A NARROW SPECTRAL LINE.

UNCLASSIFIED

USSR

UDC 621.375.82

BABICH, V. M., LEYKIN, A. Ya., SOLOV'YEV, V. S.

"Combined System for the Automatic Tuning of the Frequency of Intermodal Beats of a Laser With Synchronized Oscillations"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radioengineering. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 21, pp 185-194 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D961)

Translation: Stabilization of the resonator length of a multimodal laser operating in the mode of synchronization of longitudinal oscillations is discussed. The transition process of an automatic frequency control system is discussed and the condition for stable concurrent operation of the two-loop system is found analytically. The effect of fluctuations in the frequency of intermodal beats on the operation of the automatic frequency system is analyzed. Authors abstract.

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USSR

UDC 621.373.826:621.317.38

LEYKIN, A. YA, MUNTYAN, K. I., RUBINSHTEYN, B. I., and SOLOV'YEV, V. S.

"Using Resonance Luminescence and the Method for its Registration With the Aim of Measuring the Energy of Pulsed Lasers"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radiotekhnika. Republic Interagency Thematic Scientific-Technical Collection of Articles), 1972, vyp.21, pp 181-185 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A223)

Translation: The authors describe the principles for measuring the energy of lasers with a modulated energy factor by transforming the radiation energy into luminescence energy. Three methods for luminescence resistration are considered. The use of resonance luminescence and the methods described for its registration make it possible to simplify the process for measuring the energy of high power, nanosecond, optical pulses within a broad dynamic range. Original article: one illustration and five bibliographic entries. Resume.

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USSR

UDC 621.373.826

BABICH, V. M., LEYKIN, A. Ya., and SOLOV'YEV, V. S.

"Combined System of Intermode Beat Frequency Automatic Tuning System in a Laser With Synchronous Oscillations"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Electronics Engineering, Republic Interdepartmental Thematic Scientific-Technical Collection) No 21, 1972, pp 185-194 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D157)

Translation: A selective analysis is made of a method proposed earlier for stabilizing the length of the resonator in a multimode laser operating with longitudinal oscillation synchronism. The transient process of the automatic frequency adjustment system is discussed, and the analytic condition for stable combined operation of the two-resonance circuit system is found. The effect of frequency fluctuations of the intermode beat oscillations on the automatic tuning system is analyzed. Three illustrations, bibliography of two. Resume

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USSR

UDC 612.017.1.014.46:615.277.3+612.017.1.014.482

KAZARYAN, K. A., FONTALIN, L. N., PEVNITSKIY, L. A., and SOLOV'YEV, V. V., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow, and Institute of Experimental Biology, Academy of Sciences Armenian SSR, Yerevan

"Effects of Some Alkylating Agents and of Whole-Body Gamma-Irradiation on the Formation and Realization of Immunological Memory"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 58-61

Abstract: Mice were immunized twice with 1 x 10^6 sheep erythrocytes at an interval of 27-44 days. They were subjected to the action of an alkylating agent (sarcolysin, degranol, thioTEP, cyclophosphamide) or gamma-irradiation in a dose of 500 R either at the time of the first immunization, in the interval between immunizations, or at the time of the second immunization, whereupon the secondary response was determined by the method of N. K. Jerne and A. A. Nordin (Science, Vol 140, p 405, 1963) on the basis of the amount of antibody-forming cells in the spleen on the 4th day after the second immunization. As shown by this response, all the agents blocked the realization of immunological memory and weakened its formation. The alkylating compounds had a stronger effect on the process of memory formation than on the already

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KAZARYAN, K. A., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 58-61

formed memory (the secondary response was weaker when agents were applied at the time of the first immunization than between immunizations), whereas the inverse relationship applied to irradiation. The observed phenomena can be explained on the basis of different sensitivities of resting and proliferating lymphoid cells to irradiation as compared with alkylating agents.

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USSR

UDC 621.382.3

YACHEVSKIY, V.I., SOLOV'YEV, V.V.

"To A Computation Of The Transients During Opening Of A Transistor"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 24, Moscow, "Sov.radio," 1970, pp 76-85 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B237)

Translation: The paper analyzes the delay time and the front of the collector current in a circuit with a common emitter, for the three most common forms of the input signal front: linear, in the form of a section of a sine curve, and exponential; problems of an approximation of the expressions obtained are considered. 5 ill. 3 ref. Author's abstract.

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1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THEORY OF THE TOTAL EXPERIMENT FOR LEPTONIC DECAYS OF HYPERONS -U-

AUTHOR-(02)-BELAVIN, A.A., SOLOVYEV, V.V.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESSION FOR THE DIFFERENTIAL PROBABILITY OF LEPTONIC DECAY OF POLARIZED HYPERONS IS DERIVED AND COMPARED WITH EXPTL. RESULTS, BY TAKING INTO ACCOUNT ALL THE COMPLEX FORM FACTORS. THIS EXPRESSION CAN BE USED TO DET. EXPTL. THE VALUES OF THE FORM FACTORS AT FIXED MOMENTUM TRANSFER. FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

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PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 56-60

SOME CONDITIONS ATTENDING DEVELOPMENT AND PROLONGATION OF IMMUNOLOGICAL TOLERANCE INDUCED IN ADULT ANIMALS BY COMBINED INJECTIONS OF ANTIGEN AND CYCLOPHOSPHAN

L. A. Pevnitskiy, V. V. Solovyev, L. N. Fontalin

N. F. Gamalei Institute of Epidemiology and Microbiology of the Academy of Medical Sciences of the USSR, Moscow

Conditions attending development of tolerance in combined injections of an antigen (sheep erythrocytes) and cyclophosphan are analyzed. Injection of cyclophosphan 1—2 days after that of the antigen is shown to be more effective. The use of cyclophosphan 4 days after administration of antigen yielded a reverse effect (increased immunoreactivity to the antigen). High antigen doses are needed to develop the tolerance. The state of tolerance can be prolonged through additional injections of the antigen. Preliminary sensitization of the animals with small antigen doses prevents development of tolerance. The results obtained are interpreted from the standpoint of the clonal-selection theory.

REEL/FRAME
19820402

USSR UDC: 621.375.029.67

ABAZADZE, Yu. V., SOLOV'YEV, Ye. G.

"Miniaturized Traveling-Wave Paramagnetic Quantum Amplifier for the Decimeter Range Based on Chromium-Doped Rutile"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 149-159

Abstract: The authors describe a traveling-wave quantum paramagnetic amplifier which is tunable by a magnetic field over ranges of 1700-2040 and 2100-2460 MHz. A miniaturized rod system with rutile filling is used as the decelerating system. In rod-type decelerating systems where the active medium is a dielectric with anisotropic, high-value relative permittivity, the system can be completely filled with rutile. The characteristics of such a decelerating system are calculated and the principal changes in the dispersion characteristic with increasing relative permittivity of the active medium are indicated. In a 90.8 mm decelerating system completely filled with chromium-doped rutile, the proposed amplifier gives a pure gain of 11-16.4 DB in the given frequency band. The measurements were made at 4.2°K. The instantaneous amplification band (at the -3 DB level) was changed from 21.5 to 10.1 MHz. These data compare favorably with those reported by Rydbeck and Kollberg for an amplifier using a 56 mm decelerating system with incomplete chromium-doped rutile filling. Gain

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ABAZADZE, Yu. V., SOLOV'YEV, Ye. G., Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 149-159

measurements were made at 1.7-2.0°K. Extrapolation of these measurements to 4.2°K indicates a gain of no more than 6-7 DB for an instantaneous amplification band (at the -3 DB level) of 5.0-6.5 MHz. Amplifier tuning by a magnetic field in this case is no greater than 200 MHz. Thus it is obvious that increasing the rutile filling of the decelerating system is effective.

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Acc. Nr.: AP0042553

Ref. Code: UR0203
JPRS 50162

Determining Coefficients of Reaction Rates

(Abstract: "Possibility of Determining the Coefficients of Reaction Rates from Ionospheric Data," by I. A. Krinberg, B. N. Velichanskiy, N. N. Klimov and Yu. F. Solov'yev, Siberian Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Geomagnetizm i Aeronomiya, Vol X, No 1, 1970, pp 84-89)

One of the methods for determining the coefficients of rates of reactions transpiring in the ionosphere is the processing of curves of the diurnal variation of electron concentration n(t). In earlier studies it was shown that as many as six coefficients could be determined. However, there are many other secondary reactions which have not yet been taken into account. In this paper an effort is made to clarify the degree of reliability of the values of the coefficients of reaction rates determined using the n(t) curve and what is the maximum possible number of coefficients which can be determined. The analysis shows that as a result of the quasistationary nature of the process of appearance and neutralization of charges and the presence of fluctuations of electron concentration by using the curve of the diurnal variation of electron concentration $n_e(t)$ at altitudes of 100-200 km it is possible to determine only some algebraic

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combinations A_n of the coefficients of the reaction rates α_i and γ_j. However, for determining the coefficients α_i and γ_j themselves it is necessary to use additional relations.

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