USSR

UDC 621.373.826:621.396

ARSEN'YAN, T. I. and RIMSKIY, N. N.

"Using an Amplitude Grating to Investigating Approach Angle Fluctuations for Laser Radiation Propagated Through the Atmosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 259-263 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D414)

Translation: A method is described for investigating fluctuations in approach angle of coherent laser radiation, using a helium-neon laser, by measuring the shift in the shadows of the lines in an amplitude grating illuminated by the incoming beam. An analytic relationship between the shift in the shadows and the approach angle is given. The shadow image of the grating was recorded on cinematic film with simultaneous recording of the meteorological parameters. The experimental curve for the radius of correlation of the approach angles as a function of the wind velocity is given. Three illustrations, bibliography of two. A. L.

1/1

Materials

USSR

UDC: 621.791.754

RYBSKIY, S. T., UL'YANOV, V. I., Institute of Electric Welding imeni Ye. O. Paton

"A Method of Welding in an Atmosphere of Shielding Gases"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 74, patent No 261604, filed 24 Feb 69

Abstract: This Author's Certificate introduces a method of welding in an atmosphere of shielding gases. Flux is fed into the arc zone. As a distinguishing feature of the patent, the quality of the joints welded at high currents is improved by adding crushed dry ice to the flux in quantities of 5-30% of the weight of the flux.

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Hydraulic and Pneumatic

USSR

UDC 534.232

ZHULIN, V. I., RIMSKIY-KORSAKOV, A. V., REKHTMAN, V. I., and YAMSHCHIKOV, V. S., Acoustics Institute of the Academy of Sciences USSR, Moscow; Moscow Mining Institute

"Hydropneumatic Low-Frequency Radiator"

Moscow, Akusticheskiy Zhurnal, Vol 19, No 1, Jan-Feb 73, pp 32-41

Abstract: A short review is presented of some works on hydro-acoustic and pneumoacoustic radiators recently appeared in technical and patent literature. Their working principle is described and theoretical considerations for the calculation of their main parameters are given. Results of experimental developments and the investigation of a low-frequency hydro-pneumatic radiator of harmonic signal, conducted by the chair "Acoustics and Ultrasonic Technology" of the Moscow Mining Institute together with the Acoustics Institute of the Academy of Sciences USSR, are discussed. The possibility is considered of practical utilization of the hydropneumatic low-frequency radiator in the industry. Eight figures, three formulas, nine-teen bibliographic references.

1/1

USSR

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UDC: 621.791.019.8

KISELEV, S.N., GRECHISHKIN, V.I., and RING, I.L., Moscow

"Obtaining High-Quality Weld Joints in Tubes Made of SAV-1 Aluminum Alloy"

Kiev, Avtomaticheskaya Svarka, No 5, May 70, pp 49-50

Abstract: Investigations were made of a technique for obtaining high-quality weld joints in tubes made of SAV-1 aluminum alloy. A dangerous flaws in the welding of tubes made of aluminum alloys are the oxide inclusions in the root of the weld. Correction of defective seams by auxiliary welding does not yield positive results, inasmuch as the porosity of the seams increases considerably. The reason for the formation of oxide inclusions in the root of the weld is the oxidation of the metal during welding. Thus, during the investigations the parts were carefully dressed It was decided that the metal in the maximum heating zone could best be protected by two means: blowing shielding gas into the tube and direct protection of the joint against oxidation. In the first case, before welding, a choke was inserted inside the tube at a distance of 300-400 mm from the weld. The hollow was filled with an approximately fivefold volume of protective gas (argon) blown through it. To compensate for gas leakage in the joint and connecting-piece ends, 8-10 liter/minute was continuously blown into the tube hollow. For welding with blowing of the protective gas directly into the weld-metal zone, a centering device was prepared with a hollow in the backing ring, from which the protective gas was fed

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USSR

KISELEV, S.N., e t al., Avtomaticheskaya Svarka, No 5, May 70, pp 49-50

through an 0.8 mm diameter hole. A radial groove 1.0 mm deep and 8 mm wide was made on the ring (its dimensions were increased to obtain greater amplification of the root of the weld); after welding, the root of the weld was machined to a height of 0.2-0.4 mm. The use of a deep groove with subsequent machining of the root of the weld increased the probability of obtaining defect-free welds. Argon consumption in welding by this method is 3-4 times less than in blowing the tube hollow with argon. External examination and x-ray and metallographic control of weld joints performed with supplementary protection of joints by blowing argon through the centering device showed the absence of nonfusion-type defects in the seams.

USSR

UDC: 51:330.115

DAVYDOV, E. G., RINGO, N. I.

"Problems of Optimum Control in Open Dynamic Production Models"

V sb. Kibernetiku -- na sluzhbu kommunizmu (Cybernetics to the Service of Communism--collection of works), T. 6, Moscow, "Energiya", 1971, pp 133-172 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V752)

Translation: The authors consider open linear dynamic production models in which fixed and working capital make up the import. Expenditures for obtaining a given amount of goods by a predetermined time are minimized. It is assumed that the controlling parameters are the rates of expenditures for acquiring the fixed and working capital. Models are considered for various types of restrictions on the region of variation of the controlling parameters. The apparatus of the L-problem of moments is worked out for a region of simplex type. Explicit solutions for macromodels are found and studied. D. Epshteyn.

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USSR UDC 621.375.82

RINKEVICHUS, B. S., and SMIRNOV, V. I.

"Use of Lasers to Study Liquid Flow Turbulence"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 108, pp 110-120 (from RZh-Fizika, No 8, Aug 72, Abstract No 8D1149 by A. I. Serbin)

Translation: The authors considered the measurement of the degree of hydrodynamic flow turbulence. The experimental setup, operating according to a differential circuit, consisted of a laser, beam-forming optics, and a radiometric unit. The optical part made it possible to obtain an interference lattice at the investigated point of the liquid flow with prescribed parameters. The degree of turbulence as a function of Reynolds number was investigated in a rectangular channel as well as in a vortex chamber. The results of measurements of tangential velocities and the degree of turbulence in the two-dimensional vortex chamber are given as a function of the radius of swirling flow at flow velocities of 10 and 15 cu cm/sec. A significant decrease in the degree of turbulence from 8 to 2% in proportion to the stream swirl is noted.

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USSR

UDC: 629.78.018.1

RINKEVICHYUS, B. S., TOLKACHEV, A. V., KHARCHENKO, V. N.

"Determination of the Velocity of a Hypersonic Stream by the Doppler Effect"

Uch. Zap. Tsentr. Aero-Gidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, Vol 4, No 1, pp 25-32 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 6, 1973, Abstract No 6.41.133, from the Resume).

Translation: The operation of an optical Doppler velocity measuring device is studied. A narrow-band Fabry-Perot interferometer filter is used to separate the Doppler frequency shift. Experimental data are presented on the stream velocity profile in a hypersonic wind tunnel at M_∞ = 5 with prechamber temperatures of 120 and 250° C. The maximum value of velocity measured was 1040 m/sec. The results are compared with data produced by temperature and pressure measurements. 4 figures, 8 biblio. refs.

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Adsorption

USSR

UDC 541.183

RIGRIG, V., and SHIRILIS, V. I., Patrice Lamumba Peoples Friendship University, Moscow, Council of the University

"Polymolecular Autoadsorption of Fluids"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1779-1782

Abstract: The intermediate zone in autoadsorption consists of several atomic layers, so that it must be regarded as formed by polymolecular adsorption. T. L. Hill (J. Chem. Phys., 20, 141, 1952) obtained S-shaped curves for the distribution of density in the interphase (intermediate) zone, but values of surface tension calculated on this basis differed significantly from those obtained experimentally. In the present work, the isotherm of polymolecular autoadsorption was derived from the Gibbs adsorption equation on the assumption that the van-der-Waals two-dimensional equation of state applied to every molecular layer. This treatment led to the result that the changes of density in the autoadsorbed polymolecular layer next to the interphase boundary must proceed along a wavy or stepwise curve, with every step corres-

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USSR

RIOFRIO, V., et al., Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1779-1782

ponding to the mean intermolecular distance. A conclusion to this effect had already been reached for vapor-liquid interphases on carrying out a calculation based on molecular distribution functions. A calculation of the isotherm of autoadsorption of Ar at 90°K resulted in a wavy curve, which in the initial stage, at a degree of filling of the first layer up to 0.5, coincided with the Hill isotherm. At degrees of filling above 0.5, adsorption in the second layer began.

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USSR

UDC 541.183

SHIMULIS, V. I., and RIOFRIO, V., University of the People's Friendship Imeni P. Lumumba, Moscow

"Autoadsorption Model of the Surface of Simple Liquid. I. Delocalized Monomolecular Autoadsorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 11, Nov 72, pp 2845-2848

Abstract: A model is discussed of the transition region between the liquid and its saturated vapor. This transition region consists of the border zone -- a one molecule layer adjacent to the vapor and a border-adjacent zone -- the remaining volume of the transition region, and the homogeneous liquid. An assumption was made that the border zone consists of a layer of autoadsorbed molecules comprizing a chaotic movement downward from the surface. The distribution of local density in the border-adjacent zone in the perpendicular direction to the surface of the separation has been approximated by an oscillating function with eventual attenuation. Using such a model, the delocalized adsorption of argon at 90°K has been calculated.

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USSR

UDC: 519.24

RASTRIGIN, L. A., RIPA, K. K.

"Representation of Random Search as a Stochastic Automaton"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 3-13 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V400)

Translation: The paper demonstrates the feasibility of representing algorithms of random search as stochastic automata, which enables use of the apparatus employed in the theory of stochastic automata in describing and studying these algorithms. Two algorithms of random search in optimization of a two-dimensional function under circumstances of normal interference are considered as examples. Authors' abstract.

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USSR

UDC: 519.24

RIPA, K. K.

"Random Search for the Extremum of a Multidimensional Object as a Stochastic Automaton"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 15-30 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V401)

Translation: Two algorithms of random search for the extremum of a function of n variables in the presence of additive normal interference are studied in terms of the behavior of automata in random media. The effectiveness of the given search algorithms is evaluated. Author's resumé.

UDC: 621.373.431

USSR

DOMBROVSKAYA, G. S., LAN'KO, E. V., RIPINSKIY, A. N.

"A Nanosecond Pulse Shaper-Limiter"

Tr. 7-y Konferentsii po yadern. elektron. T. 2, Ch. 2 (Works of the Seventh Conference on Nuclear Electronics. Vol 2, Part 2), Moscow, Atomizdat, 1970, pp 171-173 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G271)

Translation: The article describes a shaping circuit which uses a section of line shorted across the end and connected in the cathode circuit of a cathode-plate buffer stage. Use of this type of circuit extends the range of amplitudes of the input pulses while maintaining a very steep leading edge. Bibliography of two titles. N. S.

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AA0040628

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

234642 PLASTIC COMPONENT PRESS MOULD comprises a split case 1 with a runner and a demountable shaped cavity 2 made of rubber with a slit 3. The cavity is taken out from the carcass when the poured plastic is solidified, and is opened up along the slit.

AUTHORS: Beylin, A. M.; Reynsburg, A. M.; Bondar', M. Yu.; Ripman, D. M.; Bakunin, V. A.; and Golovkov, G. V.

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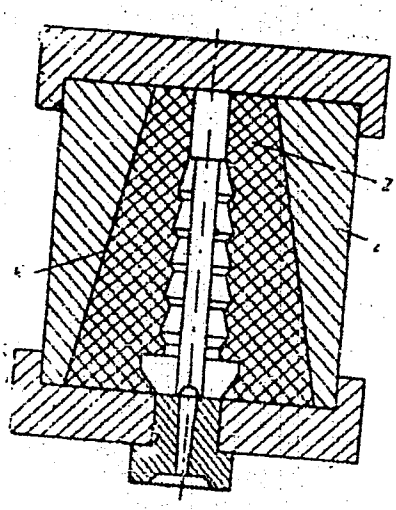

27.12.65. as 1045751/23-5, BEILIN, A.M. et al.
(26.6.69) Bul. 4/10.1.69. Class $39a^2$ Int. Cl.
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USSR

UDC: 661.66+677

DERGUNOV, N. N., FROLOV, V. I., RIPP, N. Ye., SOSEDOV, V. P., BARABANOV, V. N.

"Toughening of Carbon Fiber Under Cyclic Loading"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 1, 1 May 73, pp 70-71

Abstract: It was found that carbon fibers obtained by heat treating polyacrylonitrile filaments are toughened by cyclic stressing. The maximum toughening effect is observed when the maximum stress in a cycle is 60% of the ultimate strength of the fiber and 1000 cycles are used. The results are attributed to localized plastic deformation with resultant stress relaxation, as well as the crushing of fibrils. Increasing the number of stress cycles to 10,000 and the maximum stress in a cycle to 80% of the ultimate strength of a fiber brings the toughness of carbon filaments back to the original level. This is explained by an increase in cracks and pores.

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USSR

UDC 541.1

RIPS, S. M.

"Diagram of Saturated Vapor Pressure of Nitrogen and Oxygen Compounds with Fluorine and Chlorine"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 9, 1971, pp 2323-2324

Abstract: Saturated vapor pressures P at temperatures between bp (at P=1 atm.) and critical temperature (at $P=P_c$) were calculated for 24 compounds representative of all known types of N or O compounds with F and/or Cl and the N=O compounds with F or Cl. A satisfactory verification of the formulas used in calculations was obtained by comparing the calculated P values of 14 different compounds or elements with the previously determined experimental P values of these compounds or elements. The P-T phase diagram of the cited 24 compounds was plotted in semi-logarithmic coordinates using the tabulated P and T data.

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USSR

UDC 681.326.35

DOROSHENKO, A. V., MANDRICH, V. G., PETROV, V. Ye., RIRAKHOVSKIY, Yu. V., BALASHOV, L. L.

"A Very-Low-Frequency Sinusoidal Voltage Generator"

USSR Author's Certificate No 315259, filed 15 Dec 69, published 9 Feb 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A68 P)

Translation: This Author's Certificate introduces a very-low-frequency sinusoidal voltage generator equipped with a master oscillator, a digital--analog converter, and a DC output amplifier. To simplify the circuit of the generator and improve its operational reliability, the digital--analog converter contains a stepped voltage shaper and a shaper for the beginning and end of linear sections. These shaper circuits are interconnected by logic nets and a voltage divider and are connected to the DC output amplifier. Two illustrations.

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USSR

UDC: 621.315.592

RISBAYEV, T., FISHMAN, I. M., and SHRETER, Yu. G.

"Radiation Recombination at Repelling Centers in GaAs:Cu"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2003-2005

Abstract: In earlier papers written by the authors named above and published in the same journal (Ryvkin, S. M., et al, 5, 1971, p 1212; Kastal'skiy, A. A., et al, 5, 1971, p 1596) the characteristics of radiation recombinations of unbalanced current carriers in gallium antimonide repelling centers were considered, and it was shown that the Coulomb interaction of a recombining electron and a repelling impurity center completely determines the characteristics of the radiation center. In the present article, the authors investigate radiation recombination at centers whose charge condition is fully known, those centers existing in GaAs mixed with Cu. The specimens in these experiments had concentrations of $n = 2 \cdot 10^{15}/cm^3$ and a mobility of $\mu = 5.5 \cdot 10^2$ $cm^2/V \cdot sec$ at room temperature, and the photoluminescence spectra were obtained at 77° K with the specimens under excitation from a ruby laser with modulated Q. Curves for the experimental results are given. The authors express their

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USSR UDC: 621.315.592

RISBAYEV, T., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2003-2005

gratitude to S. M. Ryvkin for his encouragement and attention to the work.

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1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF A HEATING ELECTRICAL FIELD ON THE EDGE RADIATION OF GALLIUM ARSENIDE -U-

AUTHOR-(02)-IVANOV, YU.L., RISBAYEV, T.

R

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV, 1970, 4(2), 265-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GALLIUM ARSENIDE SEMICONDUCTOR, PHOTOLUMINESCENCE, ELECTRIC FIELD, RADIATION INTENSITY, EXCITON, ELECTRON ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0112 STEP NO--UR/0449/70/004/002/3265/3268

CIRC ACCESSION NO--AP0105198

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EDGE PHOTOLUMINESCENCE OF N TYPE GAAS WITH CARRIER CONCN. OF 10 PRIME15-10 PRIME16-CM PRIME3 WAS STUDIED AT 77DEGREESK WITH APPLIED ELEC. FIELD STRENGTH SMALLER THAN 10 PRIME3 V-CM. THE APPLIED ELEC. FIELD DOES NOT CHANGE THE SHAPE OF THE RADIAITON BAND; HOWEVER, IT DECREASES THE RADIATION INTENSITY. THIS DECREASE MAY BE EXPLAINED AS DUE TO A DECREASE IN THE CONCN. OF RADIATION CENTERS. EXCITONS ARE SUPPOSED TO BE SUCH CENTERS, AND THE DEPENDENCE OF EXCITON CONCN. ON THE ELEC. FIELD STRENGTH IS ANALYZED. THE ANAL. LEADS TO THE FOLLOWING ONCLUSIONS: (1) A PERCEPTIBLE INCREASE IN ELECTRON ENERGY AT 77DEGREESK STARTS AT FIELD STRENGTH GREATER THAN 300 V-CM AND (2) THE ELECTRON ACQUIRES THE ENERGY NECESSARY FOR EXCITON IONIZATION IN THE LENGTH OF THE FREE PATH. FACILITY: FIZ. TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.357.7:669.776(088.8)

YANITSKIY, I. V., PATSAUSKAS, E. I., RISELIS, S. P.

"Method of Electrochemical Deposition of a Selenium Alloy"

USSR Author's Certificate No 314818, filed 28 Mar 70, published 2 Nov 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L335P)

Translation: A procedure has been patented for electrochemical deposition of a Se alloy from an electrolyte containing selenic acid. The procedure is distinguished by the fact that in order to obtain a uniform film of a Se-Bi alloy, Bi nitrate and HNO_3 are introduced into the electrolyte, and the process takes place at room temperature, D_c 1-20 ma/cm^2. The electrolyte contains (in g/liter): H_2SeO_3 0.5-15, $Bi(NO_3)_2$ 1-53, HNO_3 188-189. Se-Bi alloy with semiconductor properties is obtained by the proposed procedure.

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1/2 035 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CORRELATION OF THE STRUCTURE, ELECTRICAL RESISTANCE, AND IMPACT STRENGTH OF CHROMIUM AND MANGANESE STEELS -U-

AUTHOR-(02)-LYAKHOVICH, L.S., RISHCHEV, I.A.

R

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ.-TEKH. NAVUK 1970, (1), 98-101

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE STEEL, CHROMIUM STEEL, IMPACT STRENGTH, STEEL HEAT TREATMENT, COOLING RATE, STEEL TEMPERING, RESISTIVITY, TEMPERATURE DEPENDENCE, CARBIDE PHASE, STEEL MICROSTRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0759 STEP NO--UR/0201/70/000/001/0098/0101

CIRC ACCESSION NO--AP0104207

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104207

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS WERE STUDIED OF ALLOYING ELEMENTS, TEMPERING TEMP., AND THE RATE OF SUBSEQUENT COOLING ON THE MICROSTRUCTURE, ELEC. RESISTIVITY, AND IMPACT STRENGTH OF STEEL. THE INVESTIGATION WAS PERFORMED ON SAMPLES OF STEEL 40, ALLOYED WITH 0.9-2.04PERCENT CR AND 1.0-2.23PERCENT MN. CR AND MN INCREASE THE ELEC. RESISTIVITY OF MEDIUM C STEEL, WITH THE CR ADDNS. HAVING A SOMEWHAT GREATER EFFECT THAN THE MN ADDNS. WITH INCREASING TEMPERING TEMP. THE ELEC. RESISTIVITY OF STEEL 40KH2 CONTG. 2.04PERCENT CR DECREASES. A 500-50 AND 600-50DEGREES THERE IS OBSD. A SLIGHT DECREASE OF THE ELEC. RESISTIVITY AND A SLIGHT INCREASE IN IMPACT STRENGTH FOR STEEL 40KH2 AS WELL AS FOR STEEL 40KH (CONTG. 0.9PERCENT CR). ANALOGOUS RESULTS WERE OBTAINED FOR STEEL 40G (CONTG. 1.0PERCENT MN) AND STEEL 40G2 (CONTG. 2.23PERCENT MN). HOWEVER, THE ELEC. RESISTIVITY VALUES HERE DECREASE MORE SMOOTHLY. AS A RESULT OF SLOW COOLING AFTER TEMPERING THE ELEC. RESISTIVITY OF THESE STEELS DECREASES. AT 550-650DEGREES THERE APPARENTLY TAKES PLACE COAGULATION OF THE CARBIDES, WHICH IS ACCOMPANIED BY A SIGNIFICANT DECREASE IN ELEC. RESISTIVITY AND AN ANALOGOUS INCREASE IN THE IMPACT STRENGTH OF THY STEEL. THE DECREASE IN THE IMPACT STRENGTH VALUES FOR STEEL TEMPERED AT 550DEGREES IS APPARENTLY CAUSED BY THE ISOLATION OF THE CARBIDES. THE NON UNIFORM DISTRIBUION OF THE CARBIDE PHASE WITH RESPECT TO GRAIN SIZE AND THE ENRICHMENT OF THE NEXT TO THE BOUNDARY ZONES OF THE GRAINS WITH P DET. THE IMPACT STRENGTH OF STEEL COOLED AFTER TEMPERING IN THE FURNACE.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--URANIUM IN ORGANISM OF ANIMALS FROM THE ADRIATIC SEA -U-

AUTHOR--RISIK, N.S.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK ZOOLOGII, 1970, NR 3, PP 12-15

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--URANIUM, ALPHA RADIATION, AQUATIC ECOSYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0739 STEP NO--UR/0575/70/000/003/0012/0015

CIRC ACCESSION NO--AP0131334

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131334

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO ELUCIDATE THE ROLE OF URANIUM IN RADIOECOLOGICAL PROCESSES AND ITS EFFECT (AS ALPHA EMITTER) ON THE LIVING ORGANISMS IT IS NECESSARY TO STUDY THE ACCUMULATION OF THIS ELEMENT IN ORGANISMS UNDER NATURAL CONDITIONS. THE DATA OBTAINED PERMITTED DETERMINING THE COEFFICIENTS OF URANIUM ACCUMULATION AND ITS RADIOACTIVITY IN THE ORGANISM OF SOME ANIMALS IN THE ADRIATIC SEA. THE CONCENTRATION FACTORS CAN BE OF VARIOUS MAGNITUDE FROM UNITS AND TENS IN MYTILUS GALLPROVINCIALIS TO HUNDREDS IN ARBACIA SP. IN THE BODY OF VERONGIA AEROPHORA THE MICROCONGERIES OF URANIUM ARE FOUND IN WHICH ITS CONCENTRATION IS HIGHER BY TWO THREE ORDERS THAN THE AVERAGE CONTENTS IN THE ORGANISM. IN PLACES OF LOCALIZATION OF SUCH MICROCONGERIES HIGHER DOSES OF RADIATION CAN BE CREATED. / FACILITY: INSTITUTE OF BIOLOGY OF SOUTHERN SEAS, ACADEMY OF SCIENCES, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 546.821:669.295:543.53

UZEKOV, A. A., AKALAYEV, G. G., RISKIN, I. V., and LIKHOBABIN, V. A.

"Application of Neutron Activation Analysis for Determination of Some Micro-impurities in Titanium and the Study of Their Behavior in the Process of Corrosion"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 7, 1972, pp 816-818

Abstract: W, Au, Mn, Cu, Mo, Na, and Ta were detected in specimens of technically pure titanium by using the method of nondestructive neutron activation analysis. Quantitative determination in titanium samples weighing 7-10 mg and irradiated with 3.10^{13} neutr/cm^2-sec for 22 hr yielded 1.10^{-2}% W, 6.10^{-7}% Au, 3.10^{-2}% Mn, $1.5\cdot10^{-2}$% Cu, 2.10^{-2}% Mo, and 7.10^{-4}% Ta. The possibility was investigated of using the Sc^{47} radioisotope formed in the reaction Ti^{47} (n,p) Sc^{47} for determining the content of titanium in its alloys, as well as for studying the corrosion of titanium. Two tables, 2 figures, 4 references.

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USSR

UDC 620.193.013:669.295

UZBEKOV, A. A., RISKIN, I. V., LADOZHINA, Z. I. and TOMASHOV, N. D.

"Study on the Corrosion of Titanium Alloyed With 0.2% Palladium in Hydrochloric Acid Using the Radioactive Tracer Method"

Moscow, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 8-14

Abstract: The study of palladium dissolution rate at various stages of corrosion conducted on a titanium alloy with 0.2% palladium in both aerated and deaerated 20% solutions of hydrochloric acid using the radioactive tracer method indicates that the transfer of palladium into the solution takes place at room temperatures. Rotating the specimen increases the transfer rate of palladium into solution and decreases its amount on the surface which is apparently related to the mechanical removal of some of the palladium from the specimen's surface. The study of the kinetics of palladium transfer to both aerated and deaerated solutions indicates that palladium transfer to the aerated solution ceases on passivation while the transfer to a deaerated solution continues for the entire period of active dissolution of the alloy. It is suggested that the ionization of palladium

USSR

UZBEKOV, A. A., et al, Zashchita metallov, Vol 8, No 1, Jan-Feb 72, pp 8-14

from the Ti-0.2% Pd alloy begins only with the loss of contact of the palladium particles (or Ti_2Pd intermetallides) with the surface of the alloy and the subsequent displacement of their potential toward the positive side. A schematic diagram of the experimental equipment is presented. (4 illustrations, 1 table, 14 bibliographic references).

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NO 2nd Page

USSR

UDC 620.193.41:669.295

RISKIN, I. V., LADOZHINA, Z. I. and TOMASHOV, N. D.

"Crevice Corrosion of Titanium and its Alloy with 0.2% Palladium in Hydrochloric Solutions"

Moscow, Zashchita metallov, Vol 8, No 2, Mar-Apr 72, pp 177-181

Abstract: Described are the results of corrosion tests on specimens of VT-1 titanium and Ti alloys with 0.2% palladium under crevice corrosion conditions in both aerated and deaerated hydrochloric solutions using argon. The test results indicate that Ti alloy with 0.2% Pd -- as compared to pure Ti -- not only is capable of maintaining a higher corrosion resistance in the crevice than in the bulk of the solution but will also promote the passivation of pure Ti provided the crevice is formed by the specimen pair Ti-Ti alloy with 0.2% Pd in the state of electric contact. (1 illus. 1 table, 12 biblio. ref.)

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HIGHLY BASIC ZINC CHROMATE AS A PIGMENT -U-

AUTHOR--RISKIN, I.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 888-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZINC COMPOUND, ALKALI METAL, CHROMATE, CORROSION RESISTANCE, METAL OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1062 STEP NO--UR/0080/70/043/004/0888/0889

CIRC ACCESSION NO--AP0123055

UNCLASSIFIED

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0123055 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ZNO AND CRO SUB3 WITH ALKALI METAL OXIDES IN H SUB2 O GIVES A MATERIAL THAT IS USEFUL AS A CORROSION RESISTANT PIGMENT.

UNCLASSIFIED

USSR

UDC 620.193.01:669.29

RISKIN, I. V., ORLOVA, F. A., LADOZHINA, Z. I.

"Effect of Oxygen on the Corrosion Behavior of Titanium Alloyswith 0.2% Palladium in Hydrochloric Acid"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 704-705

Abstract: During deoxidation of hydrochloric and sulfuric acid solutions, activation of titanium alloys containing cathode additives can occur [F. A. Orlova, et al., Tr. konf. po korrozionnoy stoykosti splavov na osnove titana i niobiya, Moscow, 124, 1967; N. D. Tomashov, et al., Zashchita metallov, No 6, 145, 1970]. In the described experiment, the solutions were scavenged in advance and during the experiment with pure argon, technical argon (0.003 O_2), nitrogen with 2-3% O_2, and air, respectively. Before the experiment the specimens were pickled in concentrated HNO_3, cleaned with emery paper, and washed in alcohol and distilled water. Intense mixing took place with rotation of the sample at 3,000 rpm in the shape of a vane with the tip bent at 90 degrees to the axis of rotation. In the deoxidized solutions with a concentration of 10-20% HCl at 20° the alloy behaves in practice like pure titanium. In an atmosphere of technical argon (0.003% O_2) the corrosion rate in a 5% solution at 80° is 0.1-0.2 g/m^2-hour, and under intense mixing conditions, 0.5 grams/m^2-hour.

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USSR

RISKIN, I. V., et al., Zashchita Metallov, Vol 8, No 6, 1972, pp 704-705

In the aerated solution with the same concentration and temperature, mixing does not lead to depassivation of the alloy. In the deaerated solution at 80° and with boiling the alloy potential fluctuates, remaining 0.3-0.5 volts more negative than in the aerated solution. Thus, the dissolved oxygen has a passivating effect on the corrosion behavior of titanium alloy with 0.2% palladium at various hydrochloric acid concentrations to the boiling point.

2/2

Corrosion

USSR

UDC:620.193.01

RISKIN, P. V., KOLOSOV, M. G. and TOMASHOV, N. D.

"Corrosion Behavior of Titanium and Its Alloys with Palladium During Heat Transfer in Moving Solutions"

Moscow, Zashchita Metallov, Vol 10, No 1, Jan-Feb 74, pp 28-32

Abstract: The influence of heat transfer and motion of hydrochloric acid on the corrosion behavior of titanium and its alloy with 0.2% Pd is studied using a rotating heat transmitting disc electrode designed by the Ukrainian Scientific Research Institute for Chemistry. The saturation of solutions of hydrochloric acid with air causes an increase in the temperature boundary of corrosion stability of titanium and its alloys with 0.2% palladium. The boundaries of corrosion stability of titanium and its palladium alloy in solutions of hydrochloric acid depend on the wall and medium temperature, the temperature drop and the direction of the heat flux. Upon transition of laminar flow mode around a disc to turbulent flow, the temperature boundaries of corrosion stability in aerated solutions of hydrochloric acid increase.

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1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ELASTIC OPTICALLY SENSITIVE MATERIAL -U-

AUTHOR-(03)-SOKOLOV, S.I., RISKINA, M.A., KUZMINSKIY, A.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 253,422
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(8)
DATE PUBLISHED--10FEB70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ELASTICITY, POLYBUTADIENE, VULCANIZATION, OPTIC PROPERTY, CHEMICAL PATENT, SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1158 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116623

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0116623
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO INCREASE THE TRANSPARENCY AND OPTICAL SENSITIVITY WITH COEFF. OF ELASTICITY SMALLER THAN OR EQUAL TO 18 KG-CM PRIME2, STEREOREGULAR POLYBUTADIENE RUBBER OR CIS,TRANS,POLYBUTADIENE RUBBER IS VULCANIZED IN A PRESS AND ROLLED 3-5 MIN TO A GIVEN THICKNESS AT A HEATING RATE OF 5DEGREES-MIN. THE RUBBER IS HELD 20-50 MIN AT 220-40DEGREES AND COLLED AT 5DEGREES-MIN.
FACILITY: MOSCOW INSTITUTE OF CHEMICAL ENGINEERING.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--OPTICAL SENSITIVITY AND POLARIZABILITY ANISOTROPY OF CROSSLINKED POLYSILOXANES -U-

AUTHOR-(04)-RISKINA, M.A., SOKOLOV, S.I., VARAKSIN, M.E., KURLOVA, T.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 890-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSILOXANE, BENZENE DERIVATIVE, NITRILE, FLUORINATED ORGANIC COMPOUND, ELASTOMER, ANISOTROPY, OPTIC PROPERTY, POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0681 STEP NO--UR/0459/70/012/004/0890/0894

CIRC ACCESSION NO--AP0124353

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124353
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPLICATION OF TENSION CHANGES THE BIREFRINGENCE OF POLY(METHYLVINYLSILOXANE), POLY(METHYLVINYLPHENYLSILOXANE), POLY(METHYL(GAMMA CYANOPROPYL)SILOXANE), AND POLY(METHYL(TRIFLUOROPROPYL)SILOXANE). THE INCREASE OF THE ELASTOMERS' CROSSLINKING HAS NO EFFECT ON THEIR OPTICAL SENSITIVITY (C SUB0) AND THE SEGMENTAL ANISOTROPY (DELTA ALPHA). THE REPLACEMENT OF ME WITH PH OR F SUB3 CCH SUB2 CH SUB2 GROUPS CHANGES DELTA ALPHA FROM NEGATIVE 16.5 TIMES 10 PRIME NEGATIVE25 TO NEGATIVE 17.4 TIMES 10 PRIME NEGATIVE 25, OR NEGATIVE 2.4 TIMES 10 PRIME NEGATIVE25, RESP. THE TEMP. INCREASE EITHER INCREASES OR HAS NO EFFECT ON C SUB0 DEPENDING ON THE DONFIGURATIONAL CHANGES OF THE ELASTOMER HELIXES AND THE SIDE GROUPS. FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--OPTICAL PROPERTIES OF POLYBUTADIENE ELASTOMERS -U-

AUTHOR-(03)-RISKINA, M.A., SOKOLOV, S.I., KUZMINSKIY, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHIM. OBSHCHEST. 1970, 15(1) 119

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OPTIC PROPERTY, POLYBUTADIENE, ELASTOMER, VULCANIZATE, BUTADIENE RUBBER/(U)SKB BUTADIENE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1414 STEP NO--UR/0063/70/015/001/0119/0119

CIRC ACCESSION NO--AP0112408

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMAL VULCANIZATES OF CIS,TRANS-POLYBUTADIENE (I) RUBBER (CONTG. 90-2.5PERCENT DOUBLE BONDS IN THE MAIN CHAIN) AND NA-BUTADIENE RUBBER SKB (CONTG. DOUBLE BONDS MAINLY IN THE SIDE CHAIN) WERE STUDIED BY A COMPENSATION METHOD IN A SYNCHRONIZED POLARIMETER AT 25-200DEGREES. I VULCANIZATES EXHIBITED HIGH POS. OPTICAL SENSITIVITY, THE OPTICAL SENSITIVITY COEFFS. BEING 3500-800 CM PRIME2-KG. PREDOMINANT DISTRIBUTION OF DOUBLE BONDS IN THE MAIN CHAIN CAUSED INCREASED OPTICAL SENSITIVITY.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--COMPARATIVE ANALYSIS OF THE HYDROCARBON COMPOSITION OF FRACTIONS OF HYDROGENATED GASOLINE OF THERMOCRACKING AND STRAIGHT RUN GASOLINE -U-

AUTHOR-(05)-RISUV, B.YA., MAMAYEVA, K.N., SMIRNOV, N.P., BERG, G.A., KOLBIN, M.A.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (6), 59

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--CHEMICAL ANALYSIS, HYDROCARBON, GASOLINE, THERMOCRACKING, HYDROGENATION, PETROLEUM CATALYTIC REFORMING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605060/C04 STEP NO--UR/0318/70/000/006/0059/0059

CIRC ACCESSION NO--AP0144347

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0144347

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF THE TITLE FRACTIONS WAS SIMILAR ENOUGH TO PERMIT THE USE OF THE DEEP HYDROFINED FRACTION OF THERMOCRACKING AS STOCK FOR CATALYTIC REFORMING.

NOVO-UFIMSK. NPZ, USSR.

FACILITY:

UNCLASSIFIED

USSR UDC 621.317.757 (088.8)

YAROMENKO, A.S., ZEMLYANSKIY, A.V., MAKAL'SKIY, V.I., RISSE, V.S.

"Digital Analyzer Of Time Characteristics Of Transistor Circuits"

USSR Author Certificate No 297011, filed 16 Jan 69, published 4 June 71 (from RZh: Radiotekhnika, No 2, Feb 72, Abstract No 2A286P)

Translation: A digital analyzer is proposed for precise monitoring of the time characteristics of semiconductor devices which has an increased resolution and precision of measurements and assures the possibility of automation of measurements, which is achieved by the introduction into the analyzer of a time scaling device which assures operation of the analyzer in an extended time scale; a coincidence circuit, shapers of test and inhibiting pulses of square form, a subtraction circuit, three-amplitude discriminators, and also AND and NAND circuits. The time scaling device includes two crystal oscillators, the outputs of which are connected with the inputs of the coincidence circuit and the pulse shapers. The inputs of the latter are connected to the outputs of the logical control device; the AND and NAND circuits are connected with the outputs of the amplitude discriminators, to the inputs of which are fed the output signals of the subtraction circuit. The output of the shaper of inhibiting pulses is connected to one of the inputs of the subtraction circuit and the object under test to the other. One of the terminals for connection of the object under test is connected with the shaper of test pulses. A.K.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COLLISIONS OF EXCITED THALLIUM ATOMS IN THE 6 PRIME2 D SUBTHREE HALVES STATE WITH NITROGEN AND HYDROGEN -U-

AUTHOR-(03)-RITINS, E., CHAYKA, M.P., CHERENKOVSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 636-40

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--COLLISION CROSS SECTION, EXCITED STATE, THALLIUM, ATOM, NITROGEN, HYDROGEN, MOLECULE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1034

STEP NO--UR/0051/70/023/004/0636/0640

CIRC ACCESSION NO--AP0124693

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COLLISION CROSS SECTIONS WERE DETD. FOR TL IN THE EXCITED T PRIME2 O SUBTHREE HALVES STATE WITH N AND H MOLS. BY OBSERVING THE QUENCHING OF THE LUMINESCENCE AND ITS POLARIZATION FOR THE 351.9 AND 352.9-NM LINES AND BY DETG. THE RELATIVE INTENSITY OF THE LINES. THE APP. DESCRIBED EARLIER WAS USED (S. TEPLOVA, ET AL., 1968). THE VALUES OF THE EFFECTIVE COLLISION CROSS SECTIONS ARE TABULATED.

UNCLASSIFIED

RITMAN R.I.

AA0044249

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/10

243910 FLEXIBLE MAGNETIC STRAIN RECORDER comprises a magnetic conductor an excitation winding and a measuring winding in the form of a parallogram with a diagonal crosspiece joining the front and back edges. It contains two vertical supports 1 and 2, two horizontal crosspieces 3 and 4 and two diagonal crosspieces 5 and 6 of a magnetic material. The elements are selected in such a way, that the magnetic resistance of the supports 1 and 2 and crosspieces 3 and 4 are equal. On one of the diagonal crosspieces there is wound an excitation coil and on the other a measuring winding. Thus the recorder forms a bridge of magnetic resistances in which the supports are connected to the opposite shoulders of the bridge.

21.6.67 as 1166575/18-10.R.I.RITMAN et al.(26.9.69) Bul 17/14.5.69. Class 42k.Int.Cl.G 01 1.

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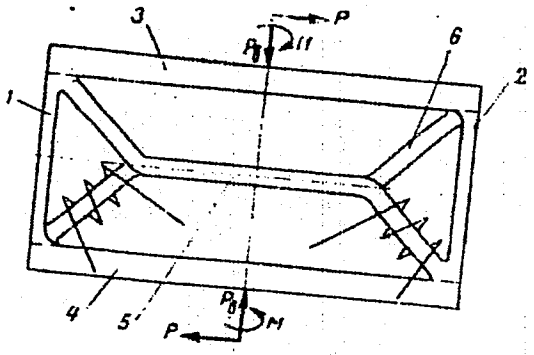
AA0044249



AUTHORS: Ritman, R. I., Shaver, A. B., Vorontsov, A. A.

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19770759

USSR

UDC 616.288.75+616.2-036.11]-053.2-085.339:576.858]-039.71

YERMOL'YEVA, Z. V., BLINOVA, M. I., FURER, N. M., RITOVA, V. V., KUCHERENKO, L. P., NEMIROVSKAYA, B. M., SHCHERBAKOVA, E. G., SCHASTNYY, E. I., ORLOVA, L. N., and FAYNSHTEYN, S. L., Chair of Microbiology, Central Institute for Advanced Training of Physicians, and Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Prophylaxis of Influenza and Other Acute Respiratory Diseases Among Children Through Administration of Leukocytic Interferon and a Stimulant of Interferon Production (UF Virus)"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

Abstract: An express method of preventing influenza and other acute respiratory diseases was tested in childrens' institutions in Moscow during the interepidemic period of March-June 1968 and during the influenza epidemic in January-February 1969. The project was carried out under strictly controlled, coded experimental conditions. The 750 children, aged 10 months to 7 years, were divided into four groups at random, and the preventive agents were administered intranasally. One group received leukocytic interferon two times per day for 7 to 42 days. The second group received interferon with liquid ecmoline. The third group received UF virus once daily for 3-4 days with

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USSR

YERMOL'YEVA, Z. V., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

intervals of 3-4 days. The fourth group received placebos. The effectiveness index of interferon was 3.0 (frequency of diseases three times smaller than in the placebo group) in the interepidemic period and 2.2 during the epidemic. The effectiveness index of interferon with ecmoline was 1.8, and that of UF virus was 3.0 in the interepidemic period. All differences are statistically significant. Since no toxic effects were observed, the method is recommended for the prevention of influenza and other acute respiratory diseases.

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USSR

UDC 616.988.75-022.14-092.9-07

RITOVA, V. V., LARIONOV, A. S., MOISEYEV, V. P., and PSHENICHNIKOV, V. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR and Second Moscow Medical Institute imeni N. I. Pirogov

"Experimental Mixed Influenza-RS-Virus Infection in White Mice"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 12, 1971, pp 31-33

Abstract: Mice were infected with respiratory syncytial (RS) virus, influenza A_2 Hong Kong 68 virus, or both by intranasal injection or aerosol inhalation. The course of the resulting infection was more severe when the animals received nasal injections of the material. The death rate was higher in the animals receiving both viruses simultaneously than in those given only one. The death rate was still higher when the animals received RS virus first and influenza virus 18 hours later, but not vice versa. Injected with placebo, all the mice, as in the control, survived.

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USSR

MOISEYEV, V. P., LARIONOV, A. S., and RITOVA, V. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Experimental Study of Mixed Influenza and RS-Virus Infection of Cell Cultures"

Moscow, Voprosy Virusologii, No 5, 1971, p 625

Abstract: A mixed viral infection of green monkey cells caused by influenza A2/Hong Kong and RS virus strains was studied. Infection was induced simultaneously and consecutively with the two viruses at intervals of 3 and 18 hours. Using the immunofluorescence method, the authors found the antigens of influenza A2 and RS viruses in the cells at the same time. When the cells were infected first with RS virus and then 18 hours later with influenza A2 virus, there was a distinct mutual potentiation of the effect of the influenza A2 virus in the RS virus -- cell -- influenza A2 virus system. This phenomenon did not occur in other variants of the experiment.

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USSR

UDC 576.858.75(A2).06

RITOVA, V. V., SCHASTNYY, E. I., OGANESYAN, O. T., CHEBOTAREV, V. V., MOISEYEV, V. P., LARIONOV, A. S., BYKOVSKIY, A. F., SOKOLOVA, N. N., and MEL'NICHENKO, YE. N., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Study of Influenza A2 Virus Strains Isolated During the 1968-1969 Epidemic from Children in Moscow and in the Moscow Region"

Moscow, Voprosy Virusologii, No 3, May/Jun 1971, pp 291-196

Abstract: Since 1957, there have been five influenza epidemics in the USSR caused by the A2 virus: in 1957, 1959, 1962, 1965 and 1968-1969. The last one was produced by a newly formed variant of the virus and began in July in Hong-Kong, subsequently spread over Japan, and hit the countries of South-east Asia and the US. In fall 1968 there was a sharp rise in the influenza incidence in England and in other countries of Central Europe. In December, individual A2 and B influenza foci were reported in the Soviet Union in organized children's collectives (child care centers, schools, etc), and by the middle of January in many cities of the USSR, the incidence of influenza surpassed the mean seasonal rate by a factor of five. From 350 sick children 141 strains of the flu virus were isolated from nasopharyngeal washings.

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USSR

RITOVA, V. V., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 291-296

Diagnosis was confirmed serologically. All strains had high receptor activity and were antigenically identical. Neutralization tests showed that the 1969 flu virus is not a new serotype. A structural study showed that the virus consisted of spherical (diameter 2000-3500Å) and filiform. (diameter of the nucleus 700-900Å, length to several microns) structures. Sera from guinea pigs and horses inhibited hemagglutination of the newly separated strains. The effect of sera was not completely removed after heating to 57°C for 30 minutes and processing with KIO_4; but was removed by treatment with cholera vibrios. Only two strains were inhibitor-resistant, all remaining strains were inhibitor-sensitive. The isolated strains were readily adaptable to white mice and from the second or third passage produced death and lung lesions in test animals. Also, in mice, the strains exhibited toxic properties. The immunological responses in convalescents and in immunized animals were high.

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USSR

UDC: 616.988.75-085.371:576.85.23(ECHO)7-036.8

BLINOVA, M. I., KITOVA, V. V., VOROSHILOVA, M. V., YERMOL'YEVA, Z. V., Central Institute for the Advanced Training of Physicians, Institute of Virology imeni Ivanovskiy, Academy of Medical Sciences USSR, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR, Moscow

"Study of the Epidemiological Effectiveness of the Stimulator of Interferon Formation During an Outbreak of A2 (Hong Knog) Influenza"

Moscow, Zhurnal Mikrogiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 70-73

Abstract: More than 100 new viruses producing respiratory diseases have been discovered during the past ten years, requiring development of new prophylactic methods.

A study in groups of children and adults showed that ZhEV-4 (Zhivaya enterovirusnaya vaktsina--live enterovirus vaccine), a stimulator of interferon formation, had a prophylactic effect for healthy persons in contact with infected persons. Per=oral immunization of children by vaccine (in a 1:10 dilution) at

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USSR

BLINOVA, M. I., et al., Zhurnal Mikrogiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 70-73

two-week intervals reduced incidence by a factor of 2.8; the protective coefficient was 64%. The same results were obtained with adults. After intranasal administration of the vaccine, the incidence of influenza dropped by a factor of 2.6 and the protective coefficient was 61%. Persons who received a single vaccine administration had a mild form of flu. When people received the vaccine twice or three times, only isolated cases were observed. There were no incidents of allergy or side reactions. The best effect was observed when the vaccine was used in a 1:10 dilution perorally.

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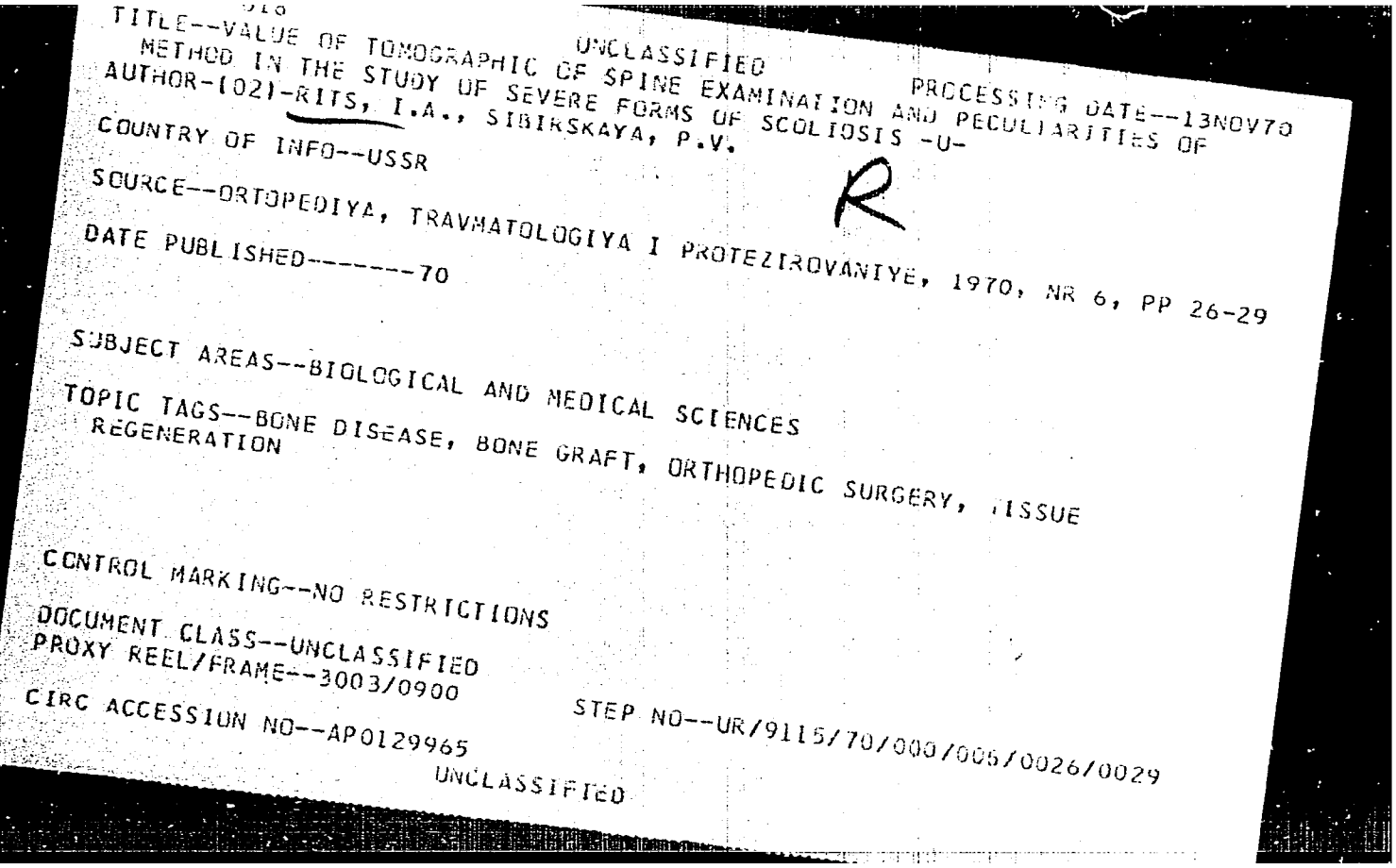


UNCLASSIFIED

TITLE--VALUE OF TOMOGRAPHIC OF SPINE EXAMINATION AND PECULIARITIES OF METHOD IN THE STUDY OF SEVERE FORMS OF SCOLIOSIS -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-RITS, I.A., SIBIRSKAYA, P.V.

R

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 26-29

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, BONE GRAFT, ORTHOPEDIC SURGERY, TISSUE REGENERATION

CONTROL MARKING--NO RESTRICTIONS

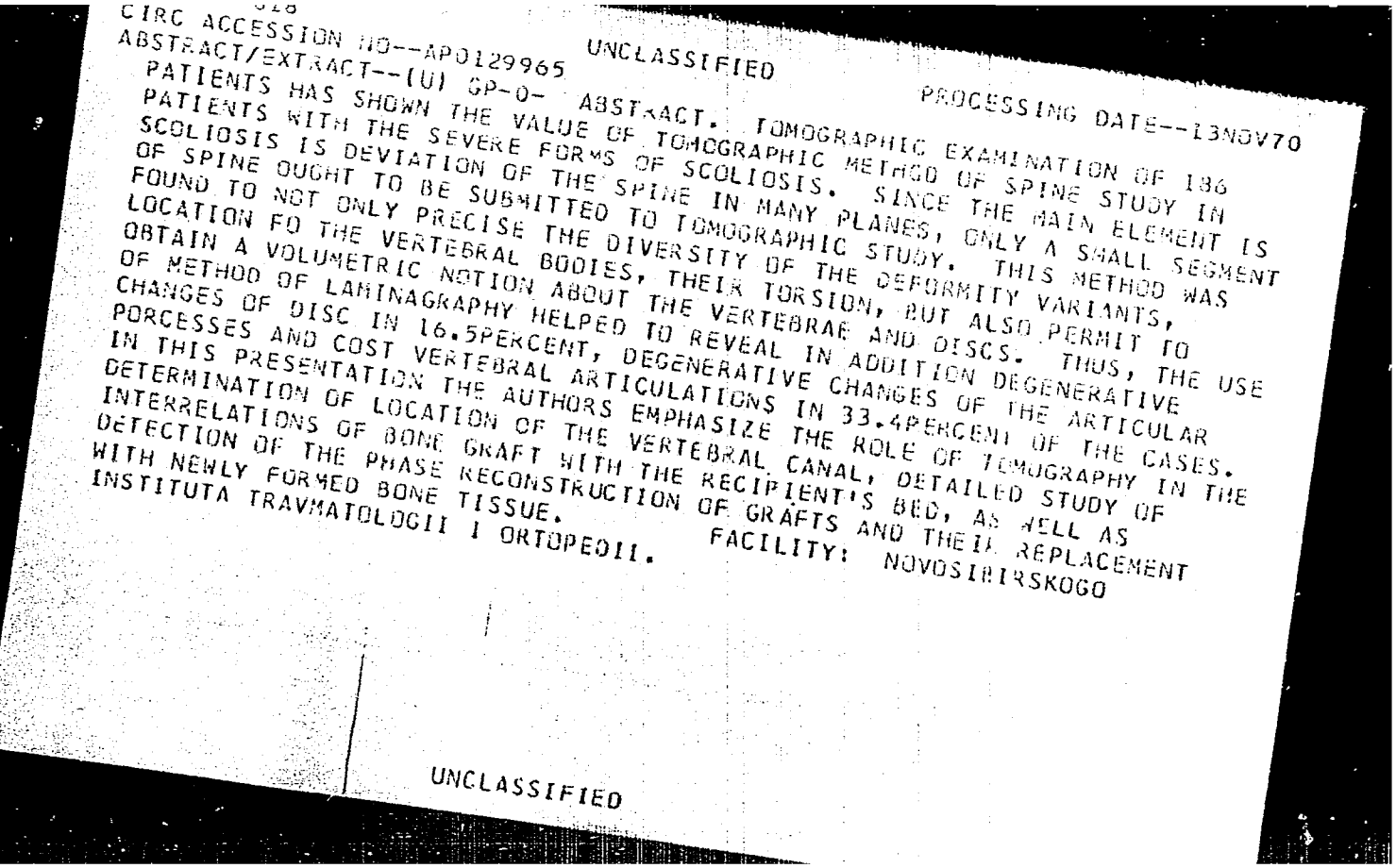
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0900

STEP NO--UR/9115/70/000/006/0026/0029

CIRC ACCESSION NO--AP0129965

UNCLASSIFIED



CIRC ACCESSION NO--AP0129965 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TOMOGRAPHIC EXAMINATION OF 186 PATIENTS HAS SHOWN THE VALUE OF TOMOGRAPHIC METHOD OF SPINE STUDY IN PATIENTS WITH THE SEVERE FORMS OF SCOLIOSIS. SINCE THE MAIN ELEMENT IS SCOLIOSIS IS DEVIATION OF THE SPINE IN MANY PLANES, ONLY A SMALL SEGMENT OF SPINE OUGHT TO BE SUBMITTED TO TOMOGRAPHIC STUDY. THIS METHOD WAS FOUND TO NOT ONLY PRECISE THE DIVERSITY OF THE DEFORMITY VARIANTS, LOCATION FO THE VERTEBRAL BODIES, THEIR TORSION, BUT ALSO PERMIT TO OBTAIN A VOLUMETRIC NOTION ABOUT THE VERTEBRAE AND DISCS. THUS, THE USE OF METHOD OF LAMINAGRAPHY HELPED TO REVEAL IN ADDITION DEGENERATIVE CHANGES OF DISC IN 16.5PERCENT, DEGENERATIVE CHANGES OF THE ARTICULAR PORCESSES AND COST VERTEBRAL ARTICULATIONS IN 33.4PERCENT OF THE CASES. IN THIS PRESENTATION THE AUTHORS EMPHASIZE THE ROLE OF TOMOGRAPHY IN THE DETERMINATION OF LOCATION OF THE VERTEBRAL CANAL, DETAILED STUDY OF INTERRELATIONS OF BONE GRAFT WITH THE RECIPIENT'S BED, AS WELL AS DETECTION OF THE PHASE RECONSTRUCTION OF GRAFTS AND THEIR REPLACEMENT WITH NEWLY FORMED BONE TISSUE. FACILITY: NOVOSIBIRSKOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED

USSR

MAL'TO, V. I., RITTER, A. N. UDC: 621.396.6-181.48

"Wide-Format Projection Photodie Model EM-528"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, p 86 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V252)

Translation: A photodie has been developed for making photomasks used in the manufacture of parts by the etching method. Resumé.

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AA0043461

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Soviet Inventions Illustrated, Section II Electrical, Derwent, UR 0482

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241800 MEASURING SPEED OF MOVING OBJECTS involves using a device comprising a light ray such as a laser, which deflecting from the moving object, falls on the diffraction grid 1 fixed to axis 2 as a result of which the power on the photo-receiver 3 is modulated with the modulation frequency depending both on the displacement speed of the controlled object and pitch of the grid 1. The signal spectre from the photo-receiver falls on two disturbed in relation to frequency filters 4 and 5. The discharge of the filters is connected to the block 6.

18 1 68 as 1211880/18-10.E.G.RITTER (5.9.69) Bul 14/ 18.4.69. Class 42o. Int.Cl.G 01 p.

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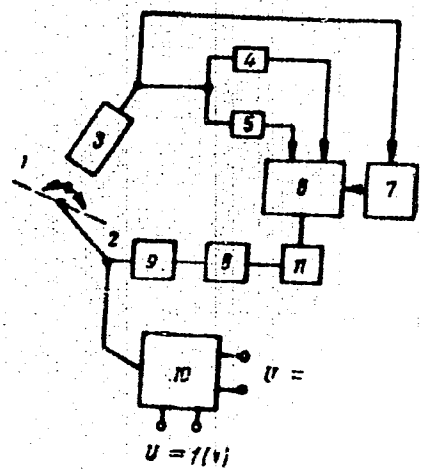

J.C.

2/2

19761824

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ZIRCONIUM SULFUR TRIOXIDE WATER SYSTEM -U-

AUTHOR-(02)-MOTOV, D.L., RITTER, M.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 789-95

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZIRCONIUM DIOXIDE, ZIRCONIUM OXIDE, SULFUR TRIOXIDE, WATER, SOLUBILITY, ISOTHERM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0452

STEP NO--UR/0078/70/015/003/0789/0795

CIRC ACCESSION NO--AP0126204

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 010

CIRC ACCESSION NO--AP0126204

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF THE ZRO SUB2 SO SUB3 H SUB2 O SYSTEM WAS DETD. AT 150, 200, 250, AND 300DEGREES AND THE DATA IS TABULATED. SOLY. ISOTHERMS AT 150 AND 200DEGREES ARE CONSTRUCTED. CRYSTN. FIELDS OF ZR SUB2 (OH) SUB2 (SO SUB4) SUB3 4H SUB2 O, 2ZR(SO SUB4) SUB2 3H SUB2 O, 2ZR(SO SUB4) SUB2 H SUB2 O, ZR(SO SUB4) SUB2, AND ZR(SO SUB4) SUB2, H SUB2 SO SUB4 ARE DETD. AND A POLYTHERM IS CONSTRUCTED. FACILITY: INST. KHIM. TEKHNOL. REDK. ELEM., USSR.

UNCLASSIFIED

USSR

UDC 621.378.001

RIVLIN, L.A.

"Space Synchronization Of Modes In A Laser"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11),1972, pp 46-52

Abstract: The possibility is shown of constructing coherent wave fields in a laser cavity, in the form of a synchronized superposition of the oscillations of degenerate transverse modes. This makes it possible to refine the spectrum and to improve the directional pattern of radiation. A numerical example is given. 3 fig. 6 ref. Received by editors, 29 Sept 1972.

1/1

Molecular Physics

USSR

UDC 621.375.82

RIVLIN, L. A.

"Coherent Interaction of a Beam of Particles with Matter"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 3, Moscow, Soviet Radio, 1972, pp 90-92 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D846)

Translation: It is demonstrated that in the case of collective interaction of an ordered beam of particles with a material it is necessary to expect coherent resonance effects(excitation, forced emission, ionization, and so on) if one of the natural frequencies of the beam caused by its periodic structure coincides with the frequency of the quantum transition of the substance. Here, the energy transmitted to the substance calculated for one beam particle can be appreciably less than the quantum transition energy.

1/1

USSR UDC: 8.74

RIVIN, G. S.

"Numerical Data Processing on the BESM-6"

Obrabotka chislovoy informatsii na BESM-6. AN SSSR, Sib. otd. Vychisl. tsentr. (cf. English above. Academy of Sciences of the USSR, Siberian Department, Computing Center), Novosibirsk, 1970, 37 pp, ill. 18 k. "Knizh. letopis'", 1971, No 25, 35 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V570 K)

[no abstract]

1/1

USSR

UDC: 8.74

RIVIN, V. M.

"Concerning the Principle of Compulsion in the Ethocycle Process"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 191-204 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V605)

Translation: It is stated that in the course of the psychic and behavioral cycle (or ethocycle), the endocrice and nervous systems participate in series rather than in parallel, the decisive triggering factor being the activity of the endocrine system which acts on the nerve tissue; on the other hand, actions of the nervous system on the endocrine system are corrective in nature, depending on the state of the external environment at the given instant. In this approach to the problem of determining the specific mechanisms of mentality and behavior of highly developed organisms, the author depends on the concept of regularity in cyclic behavior as formulated in the principle of compulsion. Bibliography of 12 titles.

1/1

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NAZAROVO LIGNITE STUDIED AFTER ITS PREPARATION FOR COMBUSTION AS A DUST -U-

AUTHOR-(02)-YAVORSKIY, I.A., RIVKIN, A.S.

R

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (2), 125-33

DATE PUBLISHED--------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--COMBUSTION R AND D, SOLID FUEL, STEAM BOILER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0968 STEP NO--UR/0467/70/000/002/0125/0133

CIRC ACCESSION NO--AP0133054

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF NAZAROVO LIGNITE DUST WERE TAKEN AT A POINT CLOSE TO THE BURNERS OF A STEAM BOILER AND THE DUST WAS SCREEN CLASSIFIED INTO 7 FRACTIONS OF SMALLER THAN 40, 40-75, 75-90, 90-140, 140-200, 200-500, AND LARGER THAN 500 MU. THE FRACTIONS AND THEIR ASH CONTENTS (RESULTING FROM MILD COMBUSTION AT 550DEGREES) WERE ANALYZED AND THE TEMP. PROPERTIES OF THE ASH WERE DETD. THE DUST FRACTIONS WITH PARTICLE SIZE SMALLER THAN 90 MU CONTAINED 72PERCENT OF THE TOTAL AMT. OF THE MINERAL COMPONENTS IN THE LIGNITE AND 87PERCENT OF THE COMPONENTS WERE PRESENT AS FREE MINERAL PARTICLES. THE SMALLER THEN 40 MU FRACTION CONTAINED SIMILAR TO 38PERCENT OF THE TOTAL DUST AMT. AND WAS QUITE DIFFERENT FROM OTHER FRACTIONS IN THAT THE ASH CONTENT (10PERCENT) WAS MAX., THE ASH CONTAINED MAX. AMTS. OF SIO SUB2 MOSTLY AS FREE QUARTZ PARTICLES, AND THE ASH WAS EASILY MELTED. THE SMALLER THAN 40 MU FRACTION IS THEREFORE CHIEFLY RESPONSIBLE FOR SLAG FORMATION ON THE SCREENS AND HEATED SURFACES OF THE STEAM BOILER. FACILITY: VSES. GOS. TREAT ORG. RATSIONAL. RAION. ELEKTROSTA. SETEI, USSR.

UNCLASSIFIED

USSR

UDC 621.382.5

VENGEROVSKIY, L.V., NAGANOV, M.A., RIVKIN, A.S.

"Transient Processes In Thermoelectric Devices"

Sb. Tr. po agron. fiz. (Collection Of Works On Agricultural Physics), 1970, Vyp 25, pp 70-86 (from RZh--Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6B266)

Translation: There is a solution in the paper of the problem of the temperature change at the cooled surface of a semiconductor thermoelement in a nonstationary regime. Formulas are obtained for calculation of the temperature and the effect is investigated of the thermal output of the surface of a thermopile and the thermal capacity of the mass attached to it on the course of thermoelectric cooling. 7 ill. 2 tab. 10 ref. Author's Abstract.

1/1

USSR

LOVTSOV, V. V., RIVKIN, L. A., POTEKHIN, B. I., ANDRIYANOV, A. M.

"New Air Distributors with Twisted Supply Streams"

Naladka i Proyektir. Sistem Prom. Ventilyatsii i Konditsionir. Vozdukha [Adjustment and Planning of Commercial Ventilation and Air Conditioning Systems -- Collection of Works], Moscow, 1971, pp 10-21, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B309 by A. S. Malyutin).

Translation: New air distributors have been created, distinguished by great damping of relative velocities and temperatures, as well as simplicity of design: an input pipe, a wall ejection air distributor, a floor ejection air distributor. Comparative are presented on the air distributors with similar devices created earlier, showing that when the new air distributors are used, the quantitative loads can be increased and the working temperature difference can be up to 50°. The air distributors suggested allow the quantity of supply air to be changed between 10 and 150% of the nominal quantity without reducing the quality of air distribution.

1/1

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 013

TITLE--CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH N,CYCLOHEXYL,N PRIME,BE,4,METHYLMORPHOLINIUM, ETHYLCARBODIIMIDE -U-

AUTHOR-(04)-GIRSHOVICH, A.S., GRACHEV, M.A., ORESHKOVA, S.F., RIVKIN, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. SIB. OTD. AKAD. NAUK SSSR, SER. KHIM. NAUK 1970, (1), 90-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOSIDE, CHEMICAL REACTION, UV SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0542 STEP NO--UR/0289/70/000/001/0090/0097

CIRC ACCESSION NO--AP0137631

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 013

CIRC ACCESSION NO--AP0137631

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF N,CYCLOHEXYL,N PRIME,(BETA,(4,METHYLMORPHOLINYL)ETHYL)CARBODIIMIDE (I) AS THE P-MEC SUB6 H SUB4 SO SUB3 H SALT WITH GUANOSINE (II) AND INOSINE (III) WAS FOLLOWED BY USING LABELED I. A SOLN. OF 29.6 MG I SALT, 10 MG II IN 15 ML H SUB2 O SUB 0.1N KOH TO PH 8.4 WAS KEPT 24 HR AT 37DEGREES. THE REACTION OF I WITH III WAS PERFORMED SIMILARLY. KINETICS OF THE CONDENSATIONS, FOLLOWED BY UV SPECTRA, WAS FIRST ORDER IN BOTH COMPONENTS. THE CONDENSATION PRODUCT OF I WITH II (PK 3.8) AND OF I WITH III (PK 3.5, H SUB2 O, 23DEGREES) ARE STABLE BETWEEN PH 2 AND 7. IN AN ALK. SOLN., HYDROLYSIS OCCURS. THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS WERE DETD.

FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE CHEMICAL MODIFICATION OF GUANOSINE AND INOSINE WITH N,CYCLOHEXYL, N', BETA, (4,METHYLMORPHOLINIUM) ETHYLCARBODIIMIDE -U-

AUTHOR-(04)-GIRSHOVICH, A.S., GRACHEV, M.A., ORESHKOVA, S.F., RIVKIN, M.I.

R

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSR, NO 2, SERIYA KHIMICHESKIKH NAUK, 1970, NR 1, PP 90-97

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEOSIDE, IMIDE, CYCLIC GROUP, MORPHOLINE, CHEMICAL KINETICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1825 STEP NO--UR/0289/70/000/001/0090/0097

CIRC ACCESSION NO--AP0100399

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100399

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICAL STUDIES HAS BEEN PERFORMED AND THE ARRHENIUS EQUATION PARAMETERS FOUND FOR THE REACTION OF GUANOSINE AND INOSINE WITH CME CARBODIIMIDE IN AN AQUEOUS SOLUTION. THE REACTION PRODUCTS (CME, NUCLEOSIDES) ARE STABLE IN NEUTRAL AND ACIDIC MEDIA DOWN TO PH 1. THEY CONTAIN GROUPINGS WITH PK 3,8 (CME, GUANOSINE) AND 3,5 (CME INOSINE) AT 23DEGREES. THE REACTION KINETICS HAS BEEN ALSO STUDIED OF THE HYDROLYSIS OF CME, NEUCLEOSIDES TO THE STARTING NUCLEOSIDES IN ALKALINE MEDIUM AND THE CORRESPONDING ARRHENIUS EQUATION PARAMETERS DETERMINED.

UNCLASSIFIED

USSR

ZHANE, L.N., MANEVICH, A.E. and RIVKIN, S.S.

"Ship Gyroscope Errors in Waves"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Tverdogo Tela, No 2, Mar-Apr 71, pp 142-146

Abstract: Probabilities were defined for characteristics of the orbital motion of the center of gravity of a ship and the necessary transfer functions for computing dynamic errors in gyroscopic devices. Typical wave conditions were used to obtain numerical values for the acceleration spectrum parameters. The wave-to-ship relation was treated as a dynamic statistical random signal moving across a dynamic system. Relations were established for wave spectral density of acceleration, ship transfer function, ordinate dispersion of wave profile, horizontal motion of ship, vertical deviation angle of pendulum, and movement of pendulum support from ship's center of gravity. Computations were made for error caused by horizontal displacement of the ship's center of gravity. The conclusions were that dynamic errors caused by orbital motion and by pitch and roll motions are in the same order of magnitude. Therefore it is necessary to consider the effect not only of ship's pitch and roll motion but also of the orbital motion of ship's center of gravity. This is necessary when calculating errors of gyroscopic devices affected by wave motions.

1/1

Instrumentation and Equipment

UDC: 620.178.38.05

USSR

RIVKIN, Ye. Yu. and VASHIN, A. M.

"Machine for Fatigue Tests in Water and Steam at High Temperatures and Pressures"

Moscow, Zavodskaya laboratoriya, No. 5, 1971, pp 611-612.

Abstract: The machine described by this article was devised to study the resistance of a specimen to cyclical destruction in water and steam at temperatures of up to 400° C and pressures of up to 200 kg/cm^2. It permits tests involving repeated bending and twisting of the specimens. A cross-sectional diagram of the machine is shown, together with a curve giving the results of testing specimens of heat-resistant steel by repeated twisting at a temperature of 310° C and a pressure of 110 kg/cm^2, in water originally containing 0.06 mg/liter of chlorides and 0.2 mg/l of oxygen, as well as in air. These tests indicated that the water did not reduce the cyclical strength of the steel compared to its cyclical strength in air.

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1/3 030 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ABSENCE OF A PRECISE MIRROR EQUALITY BETWEEN OPTICAL ANTIPODES -U-

AUTHOR--RIVKIND, A.I.

R

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 18-22

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ORGANIC CRYSTAL, CRYSTAL STRUCTURE, PHOTOLYSIS, EPR SPECTRUM, ANTIPODAL PROPAGATION, UV RADIATION, AMINO ACID, PHENYLALANINE, HYDROGEN CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0074 STEP NO--UR/0386/70/011/001/0018/0022

CIRC ACCESSION NO--AP0105166

UNCLASSIFIED

2/3 030 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105166

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF PULSE PHOTOLYSIS WITH SUBSEQUENT EXAMN. OF THE FORMED FREE RADICALS BY THE EPR SPECTRA (V SUB0 EQUALS 930 MHZ) WAS USED TO INVESTIGATE POSSIBLE DIFFERENCES IN THE STRUCTURE OF OPTICAL ANTIPODES. POLYCRYST. AMINO ACIDS WERE IRRADIATED IN AIR AT ROOM TEMP.; NOMINAL ENERGY OF THE UV RADIATION PULSE WAS SIMILAR TO 330-860 J AND THE MAX. TOTAL IRRADN. DOSE WAS SIMILAR TO 10 PRIME6 J. THE SPECTRA OF BETA,PHENYL,D(AND L),ALANINES (I AND II, RESP.) CONSIST OF A 1:2:1 TRIPLET, EACH COMPONENT OF WHICH IS SPLIT INTO A QUADRUPLET, AND A SINGLE LINE IN THE TRIPLET CENTER. DURING THE PHOTOLYSIS OF PHENYLALANINE, THE REACTION RH PLUS H YIELDS RH SUB2 TAKES PLACE AND FREE RADICALS ARE FORMED AS A RESULT OF THE CAPTURE OF H ASTOMS BY THE PH RING OF AMINO ACID MOLS. I IS MORE TRANSPARENT FOR H ATOMS. ALSO THE SPECTRA OF I AND II HYDROCHLORIDES WERE EXAMD. THE INTENSE LINES (G SUBEFF EQUALS 2) IN THESE SPECTRA BELONG TO PHENYLALANINE RADICALS WHILE THE WEAK DOUBLET LINES (G SUBEFF EQUALS 2.021 BELONG TO THE TIMES HCL PRIME NEGATIVE RADICALS; DURING THE IRRADN., RADICALS GIVING THE DOUBLET LINE OWING TOA HYPERFINE INTERACTION WITH THE ASSOCD. H ATOM ARE FORMED BY CAPTURING H ATOMS BY THE HALOGEN IONS. ALSO THE CRYSTAL ALTTICE OF I-HCL IS MORE TRANSPARENT FOR H ATOMS; SIMILAR RESULTS WERE OBTAINED FOR OPTICAL ANTIPODES OF ALANINE, TYROSINE, TYROSINE-HCL, VALINE-HCL, AND ARABITE. THE COMPDS. OF L-CONFIGURATION SERIES ARE CHARACTERIZED BY A MORE DENSE PARTICLE PACKING IN THEIR CRYSTAL LATTICES.

UNCLASSIFIED

3/3 030 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0105166
ABSTRACT/EXTRACT--THE STRUCTURE DIFFERENCES OBSD. (THE DEVIATIONS FORM MIRROR EQUALITY) ARE EXTREMELY SMALL AND DO NOT MANIFEST THEMSELVES, PRACTICALLY, IN PHYS. CHEM., CRYSTALLOGRAPHIC, AND OTHER PROPERTIES OF THE ANTIPODES, EXAMD. BY USUAL METHODS. FACILITY: FIZ. TEKH. INST., KAZAN, USSR.

USSR

SEREDIN, V. G., INZHEVATOVA, M. V., MUKHAMEDOV, S. M., RIVKUS, Yu. Z., and BYSTRYY, N. F., Uzbek Antiplague Station

"Testing Cholera Phage With a 'Stamp'"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 11, 1971, pp 75-77

Abstract: The "stamp" is a device to study a number of cholera vibrio strains at the same time. It consists of five aluminum plates connected by cross-pieces. Each plate has five short pins whose distal ends are working surfaces to which phages are applied. The phages to be tested are diluted in test tubes to 10^{-4} and poured into special plates (0.5 to 0.5 ml of each dilution) containing wells arranged in 5 rows of 5 wells each corresponding to the number of pins on the "stamp." The "stamp" is immersed with the pins in alcohol in a Petri dish and heated over an alcohol lamp. It is then dipped into the wells with phage and an impression made on the surface of 0.7% soft agar with the culture under study. After the drops of phage dry, the dishes are incubated for 18 hours. A laboratory technician should be able to apply phage to 300 to 400 dishes in 3 hours.

1/1

USSR

DYATLOV, A. I., MUKHAMEDOV, S. M., RIVKUS, Yu. Z., Uzbek Antiplague Station

"Natural Foci of Plague in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 4, 1971, pp 31-33

Abstract: Plague epizootics have regularly been observed in the northern and northwestern parts of the Kyzyl Kum desert in the Uzbek SSR. This region should be regarded as enzootic for plague bacteria, which are continuously being passed from one rodent to another by fleas. In other territories of the republic to the south, plague epizootics were always observed following development in principal foci, and were due to transfer of microbes in jumps over considerable distances, at times by infected wild animals. The occurrence of a focus is affected to a great extent by the number of carriers, their annual and seasonal dynamics, by climate and topography, as well as by conditions of different years. An intense epizootic flared up in Kyzyl Kum in 1969 after a four-year interval, an independent local epizootic focus occurred in 1964 in the Amu-Dar'ya delta (north Kyzyl Kum) after a 9-year interval, and a year later, after a similar interval, in a neighboring sector. Such sudden reactivations of plague foci are related to natural factors, revealing a certain independence of epizootic development. The results of the investigation demonstrate that the plague epizootic process in Kyzyl Kum is very active, necessitating systematic observation and study of particularly dangerous areas.
1/1

USSR

UDC 669.15 - 194:621.785.7.001.5

VARLI, K. V., GORCHAKOVA, E. N., LANSKAYA, K. A., RIVLIN, A. M., and SKAKOV, Yu. A., Moscow Institute of Steel and Alloys

"Structural and Phase Changes in Ferrite Steel During Heat Treatment"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9, 1970, pp 117-121

Abstract: A study was made of structural and phase changes in EP-503 ferrite steel containing 8% W during heat treatment. The tests were conducted 1) after forging with 960-840°C end temperature, with subsequent water and furnace cooling; and 2) after hardening at 1200°C with subsequent water cooling. The temperature interval of the Fe_2W phase precipitation and related changes in hardness, lattice period of solid solution, and electric resistance were determined. Microstructures of the steel after forging, hardening, and tempering under various conditions are presented, and results are given of metallographic analysis of the steel after hardening at 1200°C. The lattice period of a solid solution of forged samples at certain temperatures is smaller than that of hardened samples, owing to the precipitation of Fe_2W phase particles during forging. The variation of particle size and lattice periods of the Fe_2W phase with tempering temperature we determined.

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1/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STRUCTURAL CHANGES DURING PROLONGED AGING OF LOW ALLOY TUBE STEELS -U-

AUTHOR-(02)-KONTOROVSKIY, A.Z., RIVLIN, A.M.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 66-68

DATE PUBLISHED--------70

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

TOPIC TAGS--LOW ALLOY STEEL, ALLOY DESIGNATION, METAL TUBE, METAL HEAT TREATMENT, ELECTRON MICROSCOPE, METAL AGING, TEMPERING/(U)ST20 CARBON STEEL, (U)12KHIMIF LOW ALLOY STEEL, (U)15KHIMIF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0936 STEP NO--UR/0129/70/000/003/0066/0068

CIRC ACCESSION NO--AP0133023

UNCLASSIFIED

2/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133023

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CHANGES WERE STUDIED IN STEELS 20, 12KHIMF, AND 15KHIMIF (C 0.23, 0.10, 0.16; SI 0.31, 0.31, 0.32; MN 0.40, 0.50, 0.69; S 0.023, 0.015, 0.016; P 0.02, 0.022, 0.02; CR -, 1.05, 1.23; MO -, 0.35, 1.12; AND V -, 0.28, 0.29 WT. PERCENT). STEEL 20 WAS HEAT TREATED IN TWO WAYS (1) ANNEALED (40 MIN AT 920DEGREES) AND (2) NORMALIZED (40 MIN 15 920DEGREES) WITH TEMPERING (2 HR AT 600-50DEGREES). STEEL 12HIIMF WAS (1) NORMALIZED 45 MIN AT 960-70DEGREES AND TEMPERED 5 HR AT 740DEGREES, (2) QUENCHED IN OIL AFTER 45 MIN AT 960-70DEGREES AND TEMPERED 5 HR AT 740DEGREES. STEEL 15KHIMIF WAS (1) NORMALIZED 45 MIN AT 1050-60DEGREES AND TEMPERED 5 HR AT 745DEGREES, (2) QUENCHED IN OIL AFTER 45 MIN AT 1050-60DEGREES AND TEMPERED 15 HR AT 745DEGREES. STEEL 20 WAS AGED 5000 HR AT 450DEGREES OR 2000 HR AT 500DEGREES, STEEL 12KH1MF AND 15KH1M1F WERE AGED 5000 HR AT 585DEGREES OR 2000 HR AT 625DEGREES. SPECIMENS AGED WITHOUT STRESS AND AFTER TESTING FOR LONG RANGE STRENGTH WERE STUDIED UNDER THE ELECTRON MICROSCOPE. THE STRUCTURE OF STEEL 20 AFTER AGING CHANGED (PARTICULARLY DURING THE 1ST 500-1000 HR) FROM LAMELLAR PEARLITE INTO FERRITE AND CEMENTITE. THE LATTER COAGULATED AND ASSUMED OVAL AND GLOBULAR SHAPE. DURING AGING MICROCRACKS FORMED AT THE INTERFACE PEARLITE FERRITE, WHICH DEVELOPED INTO PORES AND FINALLY CAUSED DISINTEGRATION. THE STRUCTURE OF STEEL 12KH1MF AFTER HEAT TREATMENT CONSISTED OF FERRITE AND CARBIDE. THE AGING FOR 5000 HR AT 585DEGREES CAUSED FORMATION OF COARSE PARTICLES ALONG GRAIN BOUNDARIES, HEAT TREATMENT OF STEEL 12KH1MF ACCORDING TO METHOD NO. 2 GAVE A MORE STABLE STRUCTURE.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

3/3 025

IRC ACCESSION NO--AP0133023

BSTRACT/EXTRACT--THE STRUCTURE OF STEEL 15KH1M1F SUBJECTED TO HEAT TREATMENT CONDITIONS NO. 1 AND 2 AFTER AFING UNDERWENT GREATER STRUCTURAL CHANGES THAN STEEL 13KH1MF AFTER TREATMENT NO. 2. THE DISINTEGRATION OF STEELS 12KH1MF AND 15KH1M1F WAS INITIATED AT THE SURFACE OF COARSE CARBIDE PARTICLES, WHILE IN STEEL 20 THE DISINTEGRATION STARTED AT THE BOUNDARY BETWEEN FERRITE AND PEARLITE GRAINS. FACILITY: VSES. INST. PROEKT. ORG. ENERG. STROITEL., USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CONDENSATION PRODUCTS OF ALUMINUM CHELATES WITH MANNITOL AND SORBITOL HEXAACETATES -U-

AUTHOR--VEVERE, I., RIYEKSTINA, D., MAY, L.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 3-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALUMINUM COMPLEX, ORGANOALUMINUM COMPOUND, CONDENSATION REACTION, ORGANIC COMPLEX COMPOUND, NEUTRON ACTIVATION ANALYSIS, ACETATE, ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1065 STEP NO--UR/0464/70/000/001/0003/0009

CIRC ACCESSION NO--AP0104463

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104463

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION PRODUCTS OF AL CHELATES (ACETYLACETONATES, ETHYL ACETOACETATES) WITH MANNITOL AND SORBITOL HEXAACETATES CONTG. 1, 2, AND 3 CHELATE GROUPINGS HAVE BEEN OBTAINED AND IDENTIFIED. THE DETN. OF AL IN THESE COMPDS. BY MEANS OF NEUTRON ACTIVATION ANAL. IS REPORTED.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ION EXCHANGE REFINING OF TANNIN -U-

AUTHOR-(04)-RIZAYEV, N.U., BERIDZE, P.Z., YAVICH, P.A., SARABUNOVICH, A.G.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK. GRUZ. SSR 1970, 57(3), 597-600

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, TANNIC ACID, CHEMICAL PURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0136413 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENT CATION AND ANION EXCHANGE RESINS WERE EMPLOYED FOR THE REFINING OF TANNIN FROM TWO SOURCES. IN SOME REFININGS THE PURITY OF TANNIN WAS AS HIGH AS 94.5PERCENT. THE MERITS OF THESE RESINS ARE DISCUSSED FROM AN EXPTL. VIEW. FACILITY: INST. FARMAKOKHIM. IM. KUTATELADZE, TBILISI, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PRINCIPLES OF THE SORPTION OF TANNIN, PYROGALLOL SERIES, ON ION EXCHANGERS -U-

AUTHOR-(04)-YAVICH, P.A., RIZAYEV, N.U., BERIDZE, P.Z., SARABUNOVICH, A.G.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 101-4

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, TANNIC ACID, ION EXCHANGE RESIN/(U)KB4 ION EXCHANGE RESIN, (U)KU2 ION EXCHANGE RESIN, (U)AN1 ION EXCHANGE RESIN, (U)AN2F ION EXCHANGE RESIN, (U)AV16 ION EXCHANGE RESIN, (U)EDE10P ION EXCHANGE RESIN, (U)AN31 ION EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1372 STEP NO--UR/0251/70/057/001/0101/0104

CIRC ACCESSION NO--AP0128772

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SORPTION DYNAMICS WAS STUDIED BY USING A COLUMN PACKED WITH 3 G DRY ION EXCHANGER, FILTRATION RATES OF 0.47-2.85 ML-MIN, AND TANNIN (I) SOLNS. OF EXTS. FROM TURKISH GALL NUTS, EACH CONTG. 7.5-8.5PERCENT I. THE SORPTION CAPACITY FOR I SOLNS. INCREASED IN THE FOLLOWING SERIES OF ION EXCHANGERS: KB-4, KU-2, KU-1, AN-1, AN-31, AN-2F, AV-16, EDE-10P, AV-17, WHEREAS FOR I EXTS. IN THE SERIES: KU-2, KU-1, KB-4, AN-1, AN-31, AN-2F, AV-17, EDE-10P, AV-16. THERE WAS A LITTLE DIFFERENCE BETWEEN THE SORPTION OF I FROM SOLNS. AND EXTS. THE SORPTION OF I WAS ACCOMPANIED BY THAT OF MINERAL IONS. HOWEVER, THEIR PRESENCE REDUCED THE SORPTION CAPACITY WITH RESPECT TO I. IT ALSO DROPPED MARKEDLY WITH INCREASING FILTRATION RATE, WHEREAS THE SORPTION WITH RESPECT TO MINERAL IONS DROPPED ONLY SLIGHTLY. WEAKLY BASIC ION EXCHANGERS FAILED TO SORB I OVER THE FLOW RATE RANGE 1.8-2.85 ML-MIN CM PRIME2, WHEREAS STRONGLY ACIDIC ONES SORBED LARGE AMTS. OF I EVEN AT HIGH RATES. I EXTS. CAN BE LIBERATED FROM MINERAL SALTS, ACIDIC COMPONENTS, AND NATURAL DYES BY FILTERING THEM THROUGH ION EXCHANGERS. IT IS ALSO POSSIBLE TO REMOVE I LIKE SUBSTANCES FROM PLANT EXTS. USING A SYSTEM COMPRISING A STRONGLY ACIDIC CATION EXCHANGER AND A STRONLY BASIC ANION EXCHANGER. FACILITY: INST. FARMAKOKHIM. IM. KUTATELADZE, TBILISI, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTENSIFICATION OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER SOLUTIONS -U-

AUTHOR-(04)-TUYCHYEV, I.S., RIZAYEV, N.U., YUSIPOV, M.M., INAGAMOV, A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 74-7

DATE PUBLISHED-------70

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

TOPIC TAGS--WATER PURIFICATION, ION EXCHANGE, GLYCERINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0424 STEP NO--UR/0322/70/000/001/0074/0077

CIRC ACCESSION NO--AT0114704

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0114704

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF THE ION EXCHANGE PURIFICATION OF GLYCEROL WATER SOLNS. IN THE PSEUDOLIQUEFACTION LAYER OF THE IONITE WAS INVESTIGATED. THE SOLNS. USED HAD A GLYCERIN CONTENT OF 11PERCENT. CA PRIME POSITIVE POSITIVE AND MG PRIME POSITIVE POSITIVE IONS AT 0.98 MG-EQUIV-L., FREE FATTY AND MINERAL ACIDS AT 3.28 MG-EQUIV-L. THE SORPTION PROCESS WAS INVESTIGATED IN BOTH CYLINDRICAL AND CONICAL COLUMNS. RESULTS SHOWED THE CONICAL ONES WITH SMALL ANGLE OF CONICITY TO BE THE MOST EFFICIENT. FACILITY: TASHKENT. POLITEKH. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 66.074.7

TURSUNOV, M., RIZAYEV, N. U., MIRZAKARIMOV, R. M., IBRAGIMOV, A. P., and SUKHININA, L. A., Tashkent Polytechnical Institute

"Change in the Sorption Capacity of Ion Exchange Resin Towards Gossypol and Free Fatty Acids Under the Influence of γ -Irradiation"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 8, Aug 72, pp 1828-1832

Abstract: Increase in the γ -irradiation dose leads to an increased swelling of the anion exchange resin AV-17-6(m) and EDE-10p in the OH^- form in distilled water and in methanol; the anion exchange resin EDE-10p in the CO_3^{2+} form and FAN-2 in the OH^- form increase their swelling also, but only to a certain specific dose. The weight of the anion exchange resin has been noted to increase also. Under the influence of γ -irradiation AV-17-6(m) anion exchange resin in the OH^- form exhibits selective sorption towards gossypol. Both the AV-17-6(m) and the EDE-10p anion exchange resins in the CO_3^{2+} form become lighter in color under the influence of increasing radiation dose.

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Nitrogen Compounds

USSR

UDC 541.127:547.486.41

RIZAYEV, R. G., SHEYNIN, V. Ye., MEKHIYEV, S. D., and GEYDARLY, N. I.

"Investigation of the Kinetics of Ammonolysis of m-Xylene by a Gradientless Method"

Baku, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

Abstract: In this paper the authors study the kinetics of ammo-oxidation of m-xylene over a vanadium oxide catalyst (6% V_2O_5 and 2% MoO_2) applied to calcined aluminum oxide in a system with continuous circulation. To determine the fraction of homogeneous reaction, noncatalytic experiments were conducted under conditions similar to the catalytic experiments. More than 90% of the m-xylene was unreacted. Use of the gradientless method made it possible to find the reaction rates in differential form. After the onset of the steady state, the reaction rate was determined from the formula $\omega = n/G \cdot \Delta t$, where n is the number of moles of reacted or formed products in time Δt, G is the amount of catalyst in grams, and Δt is the time from the instant of the onset of the steady state in hours. The effect which the concentrations of O_2 and NH_3 have on the bulk conversion of m-xylene, and on the rate of formation of main products and byproducts of the reaction was studied. It was found that

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RIZAYEV, R. G., et al, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

in the region of partial pressures $O_2 > P_{O_{2_{min}}}$ and $NH_3 > P_{NH_{3_{min}}}$, a zero kinetic order is observed with respect to O_2 and NH_3.

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USSR

RIZAYEV, R. G., et al, Azerbaydzhanskiy Khimicheskiy Zhurnal, No 3 (69), 1970, pp 29-32

in the region of partial pressures $O_2 > P_{O_2 min}$ and $NH_3 > P_{NH_3 min}$, a zero kinetic order is observed with respect to O_2 and NH_3.

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