"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EPR STUDY OF AN EXCHANGE COUPLED PAIR OF FE PRIME3 POSITIVE IONS IN CORUNDUM -U-

AUTHOR-(03)-GARIFULLINA, R.L., ZARIPOV, M.M., STEPANOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1), 55-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--EPR, IRON, ANTIFERROMAGNETIC MATERIAL, SAPPHIER, CORUNDUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0217 STEP NO--UR/0181/70/012/001/0055/0058

CIRC ACCESSION NO--AP0055013

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UNCLASSIFIED PROCESSING DATE--18SEP70

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CIRC ACCESSION NO--AP0055013

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. AND ANGULAR DEPENDENCIES WERE STUDIED OF THE EPR SPECTRUM OF EXCHANGE COUPLED PAIRS OF FE PRIME3 POSITIVE IONS IN NATURAL SAPPHIRE (1PERCENT FE). FOUR LINES WERE SEPD. AT H PERPENDICULAR TO C SUB3 AND 2 LINES AT H PARALLEL TO C SUB3 WHICH ARE RELATED TO THE LEVEL WITH S EQUALS 3 OF THE ANTIFERROMAGNETIC PAIR OF THE CLOSEST NEIGHBORS. FOR THAT PAIR, CALCN. WAS CARRIED OUT OF THE ENERGY LEVELS FOR S EQUALS 1, 2, AND 3. THE CONST. OF DIPOLE DIPOLE INTERACTION WAS CHOSEN AS 974 OE, WHICH IS CLOSE TO THE CONST. CALCD. FROM THE INTERIONIC DISTANCE AND EQUAL TO 912.9 OE. FROM THE TEMP. DEPENDENCE OF THE INTENSITY OF LINES THE CONST. WAS CALCD. OF THE ISOTROPIC EXCHANGE INTERACTION J EQUALS 250 PLUS OR MINUS 50 CM PRIME NEGATIVE1. BY USING AN 8 MM SPECTROMETER AT H PARALLEL TO C SUB3, FROM THE TEMP. DEPENDENCE, A LINE WAS SEPD. RELATED TO THE LEVEL WITH S EQUALS 1 FOR THE SAME PAIR. THE POSITION OF THE LINE COINCIDES WITH THE CALCD. POSITION.

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USSR

STEPANOV, V. G.; GARIFULLINA, R. L.; ZARIPOV, M. M. (Kazan State University)

"Study of Exchange-Coupled Pair of Fe^{3+} Ions in Corundum by EPR Method"

Leningrad, Solid State Physics; January, 1970; pp 55-8

Δ Δ Δ

ABSTRACT: By means of a three-centimeter spectroscope the authors studied the variation of the EPR spectrum of exchange-coupled pairs of Fe^{3+} ions in a natural sapphire (concentration of iron ions on the order of 1%) with temperature and angle. Four lines with $H \perp C_3$ and two lines with $H \parallel C_3$, related to the level with S = 3 of the antiferromagnetic pair of the nearest neighbors, were isolated. Energy levels for S = 1, 2, and 3 were determined for this pair. In this case a dipole-dipole interaction constant equal to 974 oersteds, which is close to that calculated according to the inter-ion distance and equal to 912.9 oersteds, was selected. The constant of isotropic exchange interaction $J = 250 \pm 50\ cm^{-1}$ was determined by the relation of the line intensity to the temperature.

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STEPANOV, V. G., et al, Solid State Physics; January, 1970; pp 55-8

A line related to the level with S = 1 for this same pair was isolated on an eight-millimeter spectroscope with $H \parallel C_3$ according to the temperature relationship. The position of the line agreed well with the calculated position.

The authors thank S. A. Al'tshuler for his interest and discussion of the work and I. Fattakhov and R. Yu. Abdulsabirov for their assistance. The article includes three equations. There are 8 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

ABDULSABIROV, R. Yu., GREZNEV, Yu. S., ZARIPOV, M. M., STEPANOV, V. G.,
Kazan' State University imeni V. I. Ul'yanov-Lenin

"Temperature Dependence of the Electron Paramagnetic Resonance Spectrum of Bivalent Manganese Cation in Cesium Sulfate"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 6, Jun 72, pp 1816-1817

Abstract: The EPR spectrum of Mn^{2+} was studied in the temperature range of 4.2-300°K on a wavelength of 8 mm in Cs_2SO_4 crystals grown from an aqueous solution doped with about 1.5% $MnSO_4$. It was found that the Cs_2^+ ions replace the Mn^{2+} ions and that the excess positive charge is compensated by a vacancy in the position of the adjacent Cs_1^+. The angles calculated for the Cs_2^+-Cs_1^+ pairs with the a, b, and c axes were 71°10', 55°30', and 40°30' respectively. The temperature dependence of the EPR spectrum shows a phase transition of λ-type at 44±5°K. Confirmation of the type of phase transition will require studies of the temperature behavior of EPR spectra of isostructural crystals. The authors thank T. B. Bogatov for growing the crystals.

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USSR UDC 669.184.2.66-25K

ISAYEV, V. A., AFANAS'YEV, S. G., and STEPANOV, V. I.

"Specifics of the Kinetics of Desulfuration During Production of Steel in a Rotating Converter"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 104-107

Translation: Problems of the kinetics of desulfuration of metal during production of steel in a 5 T converter with two axes of rotation are studied.

It is established that a significant role in the process of desulfuration in the rotating converter is played by transition of sulfur to the gas phase, determined by the oxidation potential of the atmosphere over the converter bath. About half of all sulfur extracted from the metal is converted to the gas phase as the metal is blown in the rotating converter. The transition of sulfur to the gas phase is also determined by the distribution of sulfur between slag and metal, requiring improvement of the degree of contact between metal and slag for successful desulfuration. 5 figures; 1 biblio. ref.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC 669.046.5

STEPANOV, V. I., YAVOYSKIY, V. I., and MAYOROV, A. I.

"Phosphorus and Sulfur Removal Processes in an Oxygen Converter"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 170-172

Translation of Abstract: The results of investigations on metal quality carried out during operation of a 3-ton test oxygen converter with two axes of rotation are presented. By varying the converter rpm and oxygen flow rate it is possible to control the phosphorus and carbon oxidation rate in reduction of high-phosphorus pig iron. The sulfur oxidation process is described. It occurs along two directions: the sulfur removal with the slag and through the gas phase (more than 35% S is removed through the gas phase). The results show that favorable conditions for dephosphoration and desulfuration reactions are generated in a converter with two axes of rotation. 1 figure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC: 681.325.65

DOLKAR, V. M., NOVIK, G. Kh., STEPANOV, V. I., REDINA, S. F.

"A Pulse Shaper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299957, Division H, filed 2 Apr 70, published 26 Mar 71, p 210

Translation: This Author's Certificate introduces a pulse shaper which contains two flip-flops and an AND-OR-NOT gate. As a distinguishing feature of the patent, pulses of constant length with a short delay are produced by connecting the set terminals of the flip-flops to the input of the device and to the first input of the first AND circuit in the gate. The second input of this AND circuit is connected to the one-output terminal of the first flip-flop, the reset terminal of this flip-flop being connected to the output of the gate and the output of the device, while its zero-output terminal is connected to the reset terminal of the second flip-flop. The one-output terminal of the second flip-flop is connected to the input of the second AND circuit in the gate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC 669.184.2.66-25K

ISAYEV, V. A., AFANAS'YEV, S. G., and STEPANOV, V. I.

"Specifics of the Kinetics of Desulfuration During Production of Steel in a Rotating Converter"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 104-107

Translation: Problems of the kinetics of desulfuration of metal during production of steel in a 3 T converter with two axes of rotation are studied.

It is established that a significant role in the process of desulfuration in the rotating converter is played by transition of sulfur to the gas phase, determined by the oxidation potential of the atmosphere over the converter bath. About half of all sulfur extracted from the metal is converted to the gas phase as the metal is blown in the rotating converter. The transition of sulfur to the gas phase is also determined by the distribution of sulfur between slag and metal, requiring improvement of the degree of contact between metal and slag for successful desulfuration. 5 figures; 1 biblio. ref.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

STEPANOV, V. K.

Respiration Physiology

SO: JPRS 54762
22 DEC 71

UDC 612.014.464:546.264-31

REACTION OF THE HUMAN BODY DURING BREATHING OF GAS MIXTURES CONTAINING 3-5% CO_2

All - Respiration Physiology

[Article by I. I. Malkiman, V. N. Polyakov and V. K. Stepanov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 5, 1971, submitted for publication 20 February 1970, pp 17-22]

A relatively small number of investigations has been devoted to the toxic effect of carbon dioxide on the human body. The literature gives cases of poisoning of human subjects by CO_2 (Ye. A. Vigdorchik; A. M. Matusov; A. M. Raskin and B. B. Mishchenko; A. N. Tret'yakov), but none of these studies give any precise data on the CO_2 and O_2 content in the inhaled air and this naturally considerably lowers the value of these observations.

Kulenberg feels that 6 percent is the limiting CO_2 concentration in air whose breathing does not induce considerable functional impairments. Ye. A. Vigdorchik, citing Weil, assumes that breathing a mixture containing 5-6 percent CO_2 can cause fatal poisoning. Flury and Zernik cite data from Lemans, who believes that there is a lethally dangerous concentration of 4.0-4.5 percent CO_2 when the exposure is 30 minutes and N. V. Lazarev believes that a lethal outcome is possible when there is a 3 percent CO_2 content in the breathed air, not mentioning the duration of exposure.

A. N. Mazin believes that the admissible time for man's exposure in an atmosphere with 2-3 percent CO_2 is limited to 10-20 minutes. However, S. G. Zharov, et al. and Schaefer have under similar conditions noted only moderate impairments in the principal physiological functions even with a more prolonged exposure to CO_2 in these concentrations. V. S. Moskalenko, on the basis of his own observations, concluded that 2-hour breathing of a gas mixture containing 4 percent CO_2 is entirely tolerable for a healthy man both at rest and when performing light physical work (300 kg·m/minute). White, et al. and Brown feel that it is admissible to breathe air containing 8.8 percent CO_2 for 10 minutes.

Brown, Meduna, Pollock, et al. feel that the breathing of a gas mixture containing 12-15 percent CO_2 can be tolerated by man for only

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USSR

ASKAR'YAN, G. A.; SAVCHENKO, M. M.; STEPANOV, V. K. (Lebedev Physics Institute, USSR Academy of Sciences)

"Diamagnetic Moment of a Strong Shock Wave from a High-Temperature Light Explosion in Gases"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; October, 1970; pp 1133-45

ABSTRACT: Extensive experimental material is presented pertaining to an investigation of diamagnetic perturbations of a strong shock wave from a light spark in various gases at different pressures. A theoretical description of the phenomenon is given on the basis of the theory of strong shock waves. It is shown that a long life of the diamagnetic moment indicates a high temperature of the process in the light spark. Experiments on reflection and focussing of a shock wave and on its cumulative effect on the fire ball of the light spark are carried out with the aim of repeated use of a dense hot plasma. Some new possible effects of interaction between a strong magnetic field and the shock

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ASKAR'YAN, G. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fizi'.., Oct 70, pp 1133-1145

wave plasma are described. Practical applications of the results obtained are mentioned.

The authors express their gratitude to Professor Yu. P. Rayzer for his discussion of the results and L. A. Lapin, V. P. Logvinenko, and I. N. Arutyunyan for their aid in the work.

The article includes four figures. There are 13 bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 611.85:523

MARKARYAN, S. S., SILEL'NIKOV, I. A., PAVLOV, G. I., DROZDOBA, N. T., and STEPANOV, V. K.

"Effect of Vestibular Stimulation During Hypoxia on Some Physiological Reactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1973, pp 33-36

Abstract: The main purpose of the study was to determine whether moderate hypoxia can be used to detect latent vestibulo-autonomic instability in airplane pilots and astronauts. On the assumption that tolerance for cumulative Coriolis accelerations lasting at least 2 minutes is a good criterion of vestibular function, 242 healthy subjects were exposed to hypoxia either by remaining in a pressure chamber at an "altitude" of 5000 m or breathing a gaseous mixture with a low oxygen content and then rotated in a special chair. The results of the test revealed vestibular instability (4th degree) in 24% of the nonfliers, 12% of the flight school candidates, and 6% of the fliers. Other effects of the combined action of hypoxia and Coriolis accelerations included a marked decrease in the cardiac output, increase in the minute volume of respiration, and diminished visual acuity in the sensitive individuals.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Immunology

USSR

UDC 576.851.45.077.3

PEYSAKHIS, L. A., LARIONOV, G. M., and STEPANOV, V. M., Central Asian Plague Research Institute, Alma-Ata

"Diagnostic Value of Serological Tests in Detecting Antibodies to Pasteurella pestis"

Moscow, Laboratornoye Delo, No 3, 1973, pp 162-165

Abstract: Experiments were performed with gerbils exposed to fleas infected with Past. pestis strain 151 to determine the relative merits of the passive hemagglutination and antigen neutralization tests as a means of detecting fraction one of the microbe and specific antibodies to it. Four days after exposure, blood was drawn from the animals to run the two tests simultaneously. The antigen neutralization test was found to be superior during both the infectious and postinfectious periods in the three main criteria of the immunological response: frequency of occurrence of antibodies, mean geometric titers, and maximum titers. The antibodies were found more frequently and in higher titers not only during the first two weeks after infection, but throughout the 6 months' observation period.

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USSR

UDC 616.932-084.47-036.8-078.73

ROSHCHIN, V. V., STEPANOV, V. M., SHMUTER, M. F., and GIL'MANOVA, N. A., Central Asiatic Scientific Research Antiplague Institute and Chardarinskaya Rayon Sanitary-Epidemiological Station

"Use of the Antigen Neutralization Reaction for Determination of Antibody Level in People Vaccinated Against Cholera"

Moscow, Laboratornoye Delo, No 8, 71, pp 499-500

Abstract: The efficacy of cholera antibody erythrocyte diagnosticum used in the antigen neutralization reaction (ANR) to determine the antibody level in people vaccinated against cholera was studied. A group of adults was vaccinated twice in a 7-day interval with killed vaccine in a concentration of 8.10^9, with doses of 1 ml the first time and 1.5 ml the second time. It was found that the largest number of people with an antibody titer exceeding 1:40 and an arithmetic titer equaling 1:97 and 1:127 were found 6-9 days after the second vaccination. The number of people with such titers was considerably smaller during the first three days or 22-60 days after the second vaccination. The antibody titer in these groups also declined. Some variation in titer percentages found in people 22-60

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ROSHCHIN, V. V., et al., Laboratornoye Delo, No 8, 71, pp 499-500

days after vaccination may be due to the fact that immunological rearrangement in the organism of different people may not take place at the same rate. It was established also that using the ANR with the antibody diagnosticum, it is possible to isolate antibodies from people vaccinated against cholera as late as 60 days after the vaccination.

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USSR

UDC 541.183:546.59+541.128.1

YAGODOVSKIY, V. D., STEPANOV, V. M., and ZUBAREV, Yu. A., Patrice Lumumba Friendship University, Moscow

"Effect Which the Adsorption and Catalytic Dissociation of Formic Acid Have on the Absorption Spectrum of Thin Gold Films"

Moscow, Kinetika i Kataliz, Vol 12, No 4, Jul/Aug 71, pp 942-947

Abstract: A film of gold was produced by vapor deposition of gold wire onto the window of a sealed quartz cell at a residual pressure of $1 \cdot 10^{-6}$-$5 \cdot 10^{-7}$ mm Hg. The resultant films were thermally aged for 30 minutes at temperatures from 125 to 200°C in a krypton atmosphere. The absorption spectrum was recorded on a ZMR-2 monochromator and the adsorption isotherms were determined by leakage through a capillary. The rate of dissociation of formic acid was measured from the change in hydrogen pressure (with periodic freezing of the reaction mixture with liquid nitrogen) in the interval from $1 \cdot 10^{-4}$-$2 \cdot 10^{-2}$ mm Hg. The hydrogen pressure was recorded by an LT-2 tube calibrated with respect to a McLeod gage. In five films which were made, a broad peak was observed in the 5500-6700 Å range, which is evidence of the granular structure of the films. A change in the absorption spectra of the metal was observed in the case of strong adsorption

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USSR

YAGODOVSKIY, V. D., et al., Kinetika i Kataliz, Vol 12, No 4, Jul/Aug 71, pp 942-947

of formic acid on granular gold films, indicating an increase in the concentration of the conduction electrons of the metal. A study is made of the kinetics of dissociation of formic acid on these films with simultaneous registration of the absorption spectrum of the metal. The observed changes in the spectrum are interpreted with the aid of the theory of plasma vibrations of electrons. The reaction rate is compared with the rate of change in the number of conduction electrons during the reaction.

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USSR

UDC: 598.842.8:616.981.452

PEYSAKHIS, L. A., STOGOV, I. I., STEPANOV, V. M., and BIBIKOV, D. I., Central Asian Scientific Research Antiplague Institute, Alma Ata

"Experimental Study of Plague in the Wheatear (Oenanthe isabellina) in Connection With Its Possible Role in Natural Foci of the Disease"

Moscow, Zoologicheskiy Zhurnal, Vol 49, No 11, Nov 70, pp 1691-1696

Abstract: Contrary to the widely held view that birds are not susceptible to plague, the wheatear (Oenanthe isabellina) proved to be highly sensitive to the agent of the disease. Of 46 birds inoculated with doses of 10^2 to 10^7 microbial cells, 33 died 2 to 19 days later with the septic form of plague. Xenopsylla cheopis and Ceratophyllus laeviceps fleas allowed to feed on the sick birds just before they died became infected. When placed on healthy wheatears and several rodent species, the fleas transmitted the disease to these animals. Since the wheatear lives in close contact with rodent plague vectors, it probably participates in circulation of the agent and its dissemination throughout the natural foci. The fact that many of the experimentally infected birds did not show any symptoms of plague for more than 6 days indicates the possibility that during their seasonal migrations sick birds may carry the agent long distances during the incubation period of the disease.

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1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CALCULATION OF A THERMODYNAMIC ACTIVITY COEFFICIENT IN INFINITELY DILUTED SOLUTIONS OF NONELECTROLYTES USING THE THEORY OF FREE VOLUME -U-

AUTHOR-(04)-STEPANOV, V.M., DEVYATYKH, G.G., PANASENKO, A.G., SHIROBOKOV, M.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 445-51

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CALCULATION, THERMODYNAMIC PROPERTY, HEAT OF VAPORIZATION, ACTIVITY COEFFICIENT, FLUID STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1426 STEP NO--UR/0076/70/044/002/0445/0451

CIRC ACCESSION NO--AP0116873

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2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116873

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOUR EQUATIONS ARE DERIVED FROM COMPUTING THE THERMODYNAMIC ACTIVITY COEFF. ON THE BASIS OF THE FREE VOL. THEORY. THESE EQUATIONS TAKE INTO ACCOUNT THE LOOSENING OF THE STRUCTURE OF A FLUID WITH THE RISE IN TEMP. WHICH CAUSES THE FORMATION OF HOLES IN THE FLUID. DATA COMPUTED BY MEANS OF THESE EQUATIONS WERE IN GOOD AGREEMENT WITH EXPTL. DATA. THE THERMODYNAMIC ACTIVITY COEFF. (GAMMA21) CAN BE COMPUTED FROM THE FOLLOWING: (FORMULA SHOWN ON MICROFICHE). FACILITY: NAUCH.-ISSLED. INST. KHIM., GOR'K, GOS. UNIV. IM. LOBACHEVSKOGO, GORKI, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--B,5 FRAGMENT FORMED DURING THE SPLITTING OF PEPSIN BY CYANOGEN BROMIDE -U-

AUTHOR-(04)-SUROVA, I.A., AMIRKHANYAN, M.M., MATVEYEVA, R.A., STEPANOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PRIR. SOEDIN. 1970, 6(1), 144

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPSIN, FRACTIONATION, CYANOGEN COMPOUND, BROMIDE, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0563 STEP NO--UR/0393/70/006/001/0144/0144

CIRC ACCESSION NO--AP0131186

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

UNCLASSIFIED

CIRC ACCESSION NO--AP0131186 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. B-5 FRAGMENT OF PEPSIN, REPRESENTING THE CENTRAL PART OF ITS MOL. AND ATTACHED TO THE N-TERMINAL B-2 FRAGMENT OF THE ENZYME, WAS COMPOSED OF 40-3 AMINO ACIDS. ITS STRUCTURE WAS AS FOLLOWS: ASP-GLY-GLU-THR-ILE-(THR, GLY, SER, ALA)-.....-LEU-THR-GLY-PRO-THR-SER-ALA-....(SER, AL, ILE)-MET.

FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

DOLKART, V. M., KANEVSKIY, M. M., NOVIK, G. Kh., and STEPANOV, V. N. UDC: None

"Microprogram Processer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrastsy, tovarnyye znaki, No 4, 1973, p 112, No 363980

Translation: The item contains a memory and microcommand unit, a microcommand register, an address register, an arithmetic unit, a control and synchronization unit, distinguished in that, for the purpose of simplifying the processer, it contains a register of transition symbols as well as AND and OR circuits, with the input of each flip-flop of the register of transition symbols connected with the outputs of the AND circuits; the first inputs of the latter are connected with the corresponding digits of the microcommand register, the second inputs are connected with the single output of the flip-flop for the minor digit of the microcommand register, and the third inputs connected with the control and synchronization unit; the outputs of the transition symbol register flip-flops are connected with the first inputs of the AND circuits, the second inputs of which are connected with the control and synchronization unit, while the outputs are connected through the OR circuits with the inputs of the flip-flops for the corresponding address register digits.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

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USSR

UDC 539.67

STEPANOV, V. N., and GORDIYENKO, L. K.

"Internal Friction Variation in 1Kh18N9 and 1Kh18N12T Steels in the Polygonized Annealing Process"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 143-148

Abstract: The kinetics of internal friction variation in preliminary deformed austenite steels in accordance with a mechanical heat treatment procedure in the process of polygonized annealing is investigated and an analysis is made of the kinetic characteristics at various stages of polygonized structure formation and its subsequent stabilization for different deformation modes and temperatures. A criterion is proposed which makes it possible to evaluate the termination time of the primary polygonization structure formation by a minimum on the kinetic characteristic of internal friction, and to attain the necessary thermal stability of a strengthened state by the emergence of kinetic characteristics onto the horizontal section. The causes of a minimum formation on the internal friction kinetic characteristics and their subsequent stabilization are discussed. 1 table, 3 figures, 5 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 539.67

GORDIYENKO, L. K., and STEPANOV, V. N.

"On Temperature Dependence of Internal Friction in Austenite Steels in the Polygonized State"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 138-142

Abstract: Results are presented of an investigation of relaxation processes in chrome-nickel 1Kh18N9 and 1Kh18N12T steels at various stages of mechanical and heat treatment strengthening, including in the polygonized state. Data are obtained on the effect of plastic deformation and subsequent polygonized annealing on internal friction temperature dependence; the nature of relaxation processes in the 20-650°C temperature range is discussed. 4 tables, 2 figures, 7 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 621.785.53

TERENT'YEV, V. F., STEPANOV, V. N. and MASLOV, L. I., Institute of Metallurgy imeni A. A. Baykov

"Weld Joint Strength of Steels 20 and Kh18N10T at 20-500 C"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, No 6, Nov-Dec 71, pp 11-15

Abstract: Purpose of this work was to study the static and cyclic strength of weld joints of steels 20 and Kh18N10T from 20 to 500°C. Samples were cut from the ends of tubes and argon-arc welded according to three variants: 1) surfacing on steel 20 with welding wire EP-267--first three layers; remaining layers -- welding wire Sv-04Kh19N11M3; 2) surfacing on steel 20 with welding wire Sv-10Kh16N25M6 (EI-395)--first three layers, remaining layers same as variant 1; 3) surfacing on steel Kh18N10T and filling the seam with welding wire Sv-08G2S. Tensile tests showed that, with temperature change, the location and type of failure of dissimilar steel welded joints changes and is associated with the phenomenon of strain aging of pearlitic low-carbon steel. Fatigue tests of the welded joints between 20° and 500° C showed that strain-hardening of the low-carbon steel also tends to shift the failure

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

TERENT'YEV, V. F., et al, Fiziko-Khimicheskaya Mekhanika Materialov, No 6, Nov-Dec 71, pp 11-15

point to the austenitic steel at the blue brittleness temperature. The reinforcing structural heterogeneity of the austenitic and pearlitic at the melting interface at 500°C does not lower fatigue strength of a welded joint of steel 20 + Kh18N10T. 2 figures, 1 table, 6 bibliographical references.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC: 621.374.33

DOLKAR, V. M., NOVIK, G. Kh., REDINA, S. F., STEPANOV, V. N.

"A Pulse Shaper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299959, Division H, filed 30 Jan 69, published 26 Mar 71, p 210

Translation: This Author's Certificate introduces a pulse shaper based on transistor-transistor logic elements and on a transistor with a timing capacitor connected to its base. Connected in the collector circuit are a resistor and a diode. The shaper also contains two feedback circuits. As a distinguishing feature of the patent, pulse rise and fall times are reduced for long pulses at the output by connecting the first feedback circuit between the collector of the transistor and the element connected to the timing capacitor, while the second feedback circuit is connected between the anode of the above-mentioned diode and the element connected to the shaper input.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Mechanical Properties

USSR

UDC: 669.15-196.55

SAVEL'YEVA, T. S., MASLENKOV, S. B., STEPANOV, V. P., and TAL'YANTSEV, V. S., Central Scientific Research Institute of Ferrous Metallurgy, "Elektrostal'" Plant

"Effect of Small Additives on the Anisotropy of the Plasticity in EP637 Steel"

Moscow, Stal', No 5, 1973, pp 448-449

Abstract: This article gives the results of investigations made by the authors into the effect of small quantities of carbon, boron, zirconium, and silicon on the anisotropy of the mechanical characteristics of EP637 (N18K9M5T) steel. The tests were made under industrial conditions in a vacuum induction oven with a capacity of 1.3 tons. The amounts of each additive element were, in percentage, C, 0.01-0.042; Si, 0.04-0.22; B, 0-0.006, and Zr, 0-0.09. Details of the experimental method are given. The mechanical characteristics of the metal were determined for longitudinal and transverse cuts of the ingots. A table is given of the chemical composition of the ingots, and curves are given of the effects of the various additives on the plasticity of the steel. It was found that more than 0.014%C sharply reduces the plasticity in transversely cut samples, and that zirconium increases the plasticity

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

SAVEL'YEVA, T. S., et al., Stal', No 5, 1973, pp 443-449

index of the EP637 specimens. Silicon has little effect on longitudinal cuts but reduces the plasticity in transverse sections. It is recommended that boron content be kept to a minimum.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

REZNICHENKO, L. L., STEPANOV, V. P. [redacted]

UDC 8.74

"A Queueing Problem"

V sb. Sistemn. modelirovaniye (Systems Simulation -- collection of works), vyp. 2, Novosibirsk, 1971, pp 51-57 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V621)

Translation: A study was made of the operation of a system for two-step servicing of a given set of requests during a fixed time interval [0, T]. The requests have a pair of numbers τ and Θ giving the beginnings of the times of primary and secondary servicing. Inside the interval [0, T] there can be intervals during which the servicing of the requests is completely or partially forbidden. Certain restrictions presented below are imposed on the queue of requests.

It is necessary to organize the servicing of the requests for which it is possible to place the maximum number of them in the interval [0, T].

A procedure is proposed in the paper for arrangement of the requests which is obviously close to optimal. The results of solving a specific problem describing the operation of the dispatcher service of an airport are presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

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UDC 669.187.26:669.018.298

ZIMINA, L. N., Candidate of Technical Sciences, TSVETKOVA, V. K., Candidate of Technical Sciences, TOPILIN, V. V., Candidate of Technical Sciences, STEPANOV, V. P., Candidate of Technical Sciences, and KOSHELEVA, G. F., Engineer, Central Scientific Research Institute of Ferrous Metallurgy and Elektrostal' Plant

"Structure and Properties of the EP487 Alloy of Different Smelting Methods"

Moscow, Stal', No 6, Jun 71, pp 547-549

Abstract: On the correlation basis of structures and properties of the EP487 heat-resisting alloy produced in an open-arc furnace (OF) and subjected to electroslag or vacuum arc remelting (VR), it was found that VR must be considered the optimum smelting technology of this alloy. After VR, a spotted liquation is absent in themetal, which produces a stability of mechanical properties, the impact ductility increases in the temperature interval of hot pressure treatment, the contents of lead, oxygen, hydrogen, and nonmetallic inclusions decrease, and strength and plasticity properties at room temperature improve. The process of dispersion hardening of the alloy after VR begins at a 50% higher temperature, the δ-phase separation takes place in a smaller temperature interval (700-850°C), and the carbide phase of the type Me_6C and

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

ZIMINA, L. N., et al., Stal', No 6, Jun 71, pp 547-549

the intermetallic phase Me_7W_6 are present in smaller quantities than in the OF metal. Five illustrations, eight bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 621.73.01

DZUGUTOV, M. YA., STEPANOV, V. P., and MIRONOVA, V. P.

"Effect of Temperature and Degree of Deformation on Grain Size and Grain Variety in KhN77TYuR Alloy"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 7-8

Abstract: This article contains a study of grain size in the KhN77TYuR alloy as a function of two basic technological factors -- temperature and degree of deformation. The experimental procedure is described and the results are presented in the form of graphs and photographs. These results provide a basis for considering that in practice, for any strain it is possible to obtain KhN77TYur alloy with a relatively uniform structure and optimal grain size by selecting the deformation temperature. For degrees of deformation of about 10%, the most favorable results are obtained when heating in the 1,060-1,170°C range, for degrees of deformation of about 25%, in the 950-1,170°C range, and for degrees of deformation of about 90%, heating in the 950-1,100°C range. It is pointed out that for approximately 25% deformation, uniform fine-grained structure is obtained in a broad temperature range of about ~200°C. These are the most favorable degrees of deformation for the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

DZUGUTOV, M. YA., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 7-8

given alloy from the point of view of obtaining an optimal finite structure. The experiments also confirmed the presence of two critical deformation zones -- at low and high degrees of deformation -- for the KhN77TYuR alloy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

TSIBIN, G. I., STEPANOV, V. P.

UDC: 531.781.087.92

"A Reversible Force Pickup"

Tr. Metrol. in-tov SSSR (Works of Metrological Institutes of the USSR), 1970, vyp. 100 (160), pp 65-67 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 11, Nov 70, Abstract No 11.32.369)

Translation: This article describes a new kind of force pickup. Incorporated in the pickup is an elastic unit to which sensing elements are cemented. The upper section of the elastic unit is freely supported by the housing, which is equipped with a locating stud. The lower part of the elastic unit has a thickened section on which current-collecting contacts are mounted for connecting the electrical plug to the sensing elements. The strain gauge operates under pure tension conditions and is protected against the effect of deformation of the housing; the elastic transducer, which operates under tension conditions, ensures uniform strain distribution.
P. N. A.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 017 UNCLASSIFIED

TITLE--DISTRIBUTION AND KINETICS OF EXCRETION OF AMERICIUM-241 FROM RATS -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-STEPANOV, V.S., ZALIKIN, G.A.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 150

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMERICIUM ISOTOPE, LIVER, BONE, EXCRETION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0456

STEP NO--UR/0205/70/010/001/0150/0150

CIRC ACCESSION NO--AP0121130

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 017

UNCLASSIFIED

CIRC ACCESSION NO--AP0121130 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROUTE OF INTRODUCTION OF PRIME241 AM INTO RATS DID NOT AFFECT ITS DISTRIBUTION IN THE LIVER (40-50PERCENT) AND SKELETON (15-20PERCENT). FROM THE LIVER PRIME241 AM WAS EXCRETED IN 2 PERIODS; 90PERCENT WITHIN 8 DAYS, AND 10PERCENT WITHIN THE FOLLOWING 40 DAYS. PRIME241 AM WAS FIXED BY BONE TISSUES, AND WAS NOT REMOVED FROM THE SKELETON, PRIME241 AM WAS ABSORBED VERY QUICKLY BY THE SUBCUTANEOUS LIPID TISSUES, GIVING MAX. CONCNS. IN THE MAIN ORGANS OF DEPOSIT IN 1-2 DAYS.

FACILITY: INST. BIOFIZ., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

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UDC: 597.0/5-15

SHENTYAKOVA, L.F., SHENTYAKOV, V.A., STEPANOV, V.S., SMIRNOVA, N.F., KUZMINA, V.V., BARONKIN, O.F., BAYEVA, G.D., ZAYTSEVA, K.N., Institute of Biology of Inland Waters Academy of Sciences, USSR

"The Effect of Alternating Current on Fish and Aquatic Invertebrates"

Moscow, Voprosy Ikhtiologiya (Problems of Ichthyology) Vol 10, No 3, 70, pp 506-518

Abstract: This study on the influence of alternating currents on fish in various stages of life and development, in many different inland waters, covers a period of several years, and includes a great variety of fish. Trawl fishing with alternating current, the effect of current on spawning, embryo, larvae and fry and the subsequent condition of varieties of fish and their reproductive capacity, were studied. Results (summarized in five tables and a graph) show that alternating current in doses causing electronarcosis does not harm any fish in any phase of life and that from spawn to adult, fish develop normally. The catch of fish by alternating-current trawl is 125-263% above the normal. Studies on zooplankton and benthos showed that some organisms are not affected by low current intensities. Current of higher intensity stirred the little animals to a greater activity, and still higher induced electro-narcosis. Plankton and benthos revive rapidly after withdrawal of current. Only in current doses 15-126 times that necessary to induce narcosis does death occur with about 10% of the plankton and benthos surviving.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Acc. Nr: AP0048342 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0314

S

103237y Formation of hot cracks in nickel welds. Stepanov, V. V.; Krivosheya, V. E. (USSR). *Khim. Neft. Mashinostr.* 1970, (1), 22-3 (Russ). The 40 × 40 × 4 mm plates of Ni (NP-2) were welded to alloys of Ni with Ti, Al, Mn, Si, Zr and with NP-2 Ni, in Ar, by using a nonconsumable W electrode. The weld joints were tensile tested at deformation rates of 1–18 mm/min. The deformation rate v, at which the hot cracks were formed, was a measure of the resistance of alloys to hot cracking. The addns. of Mn, Al, and Ti (up to 4.92, 1.24, and 1.9%, resp.) improved resistance of Ni (v = 12.5, 9.7, and 10.0 mm/min, resp.), owing to the combining of S by these elements. Alloying of Ni with Si (up to 3.19%) caused a rapid drop of the mech. properties of welds (v = 1.8 mm/min), which was attributed to a formation of fusible Si compds. distributed at the crystal boundaries. The v value in the case of Ni–Ni joints was 4.8 mm/min.

J. Pietkiewicz

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REEL/FRAME 19800044

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

TEPANOV, V. V.

SO: JPRS 55015
25 JAN 1972

UDC: 614.4(47-21):658.381.015.2

AVERAGE TIME SPENT BY THE STAFF OF EPIDEMIOLOGICAL DEPARTMENTS OF SANITARY AND EPIDEMIOLOGICAL STATIONS ON PERFORMING EXTRAMURAL EPIDEMIC CONTROL MEASURES IN MEDICAL DISTRICTS OF URBAN POLYCLINICS

[Article by D.B. Rozenfel'd, candidate of medical sciences, Z.F. Samorukova, L.K. Postnikova, V.V. Stepanov, N.G. Kravchenko, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 12, 1971, submitted 20 May 1971, pp 50-56]

The continuous perfection of forms and methods of epidemic control work and optimum planning thereof depend largely on scientific substantiation of the demands of the people with regard to various forms of extramural medical care related to infectious or suspected infectious pathology. One of the special aspects of this important problem is to determine the required scope and nature of extramural measures performed by epidemiologists and their assistants at SES [sanitary and epidemiological stations]. Determination of these data combined with investigation of annual mean work time spent on performing the necessary measures by epidemiological specialists is a mandatory prerequisite for scientifically substantiated estimates pertaining to manpower and resources of the epidemic control service.

Previously we published a method for scientific investigations on the subject of "Determination of the Scope and Nature of Extramural Medical Care for Urban Population as Related to Cases of Infectious and Suspected Infectious Disease,"* conducted in 1968-1970 at the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko. In the present report we submit the results of investigations of work time spent by epidemiologists and their assistants on performing different epidemic control measures and sets thereof. This study was conducted at several SES in Odessa and Kemerovo staffed by epidemiologists and assistants in accordance with the prevailing established staff quotas. The set of measures related to services to patients in the polyclinic districts. The chief method used was timing. Intermediate medical personnel, mainly medical feldshers with a tenure of at least three years, conducted the time studies.

*D.B. Rozenfel'd, et al., Sov.Zdravookhraneniye, No 12, 1966, p 13.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC: 621.791.756:546.821

STEPANOV, V. V., and SITNIKOV, I. I.

"Electroslag Welding of Titanium Alloys Using Combined Electrodes"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 66-67

Abstract: The objective of this study was to analyze the economic aspects of welding titanium alloys (δ =50-100 mm). The experiments involved the use of both consumable and nonconsumable electrodes, and an A-612-based experimental automatic welder powdered from a TShS-1000 a-c source. The titanium alloy was OT4 δ=20-30 mm. The nonconsumable electrodes were tungsten rods 10 and 12 mm in diameter; VT1-00 titanium wire 3 and 4 mm in diameter served as the consumable electrode. The consumption of the 10-mm tungsten electrode, the tungsten content in the weld, and the mechanical properties of the weld metal including elongation (%), tensile strength, reduction in area (%), and impact strength are cited in tabular form. The experimental data on welding rates and linear energy indicate the potentialities of electroslag welding with the use of combined electrodes.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

UNCLASSIFIED

TITLE--ELECTROPHORESIS OF HUMUS SUBSTANCES ON AGAR GEL -U- PROCESSING DATE--23OCT70

AUTHOR-(02)-STEPANOV, V.V., OSTROUKHOVA, T.M.

COUNTRY OF INFO--USSR

SOURCE--POCHVOVEDENIE 1970, (2), 44-54

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ACID, AGAR, GEL, ELECTROPHORESIS, BUFFER SOLUTION, SPECTROPHOTOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0297 STEP NO--UR/0500/70/000/002/0044/0056

CIRC ACCESSION NO--AP0120986

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

CIRC ACCESSION NO--AP0120986 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HUMIC AND FULVIC ACIDS, 0.04-0.5 ML AT 0.1 MG-ML, WERE APPLIED TO 2-4 MM THICK 1.5-3PERCENT AGAR AGAR LAYERS AT 0DEGREES. ELECTROPHORESIS WAS PERFORMED AT 5-10V-CM, 50-80 MA, AND PATH LENGTH OF 25 CM, IN 0.1-0.2 M BARBITURATE OR NA FORMATE BUFFERS AT PH 8.6 OR 5.0, RESP. THE ANIONIC HUMUS SUBSTANCES COULD BE FRACTIONATED IN THE FREE ACID OR IN THE NA SALT FORM. DENSITOMETRY IN THE VISIBLE OR IR WAS EMPLOYED TO VISUALIZE THE FRACTIONATIONS.

FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

UNCLASSIFIED

TITLE--CORROSION RESISTANCE OF BINARY NICKEL ALLOYS IN ALKALI -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-KRIVOSHEYA, V.YE., STEPANOV, V.V., VOCHKANOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(1), 29-30

DATE PUBLISHED-------70

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

TOPIC TAGS--NICKEL ALLOY, METAL CORROSION RESISTANCE, METAL DEOXIDA ION, WELDING, WELDING ELECTRODE, TUNGSTEN, TITANIUM, ALUMINUM, ZIRCONIUM, MANGANESE, SILICON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1179

STEP NO--UR/0365/70/006/001/0029/0030

CIRC ACCESSION NO--AP0049385

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

043

CIRC ACCESSION NO--AP0049385 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION RESISTANCE OF WELD JOINTS CONSTITUTING BINARY NI ALLOYS WITH DEOXIDIZING ELEMENTS TI, AL, ZR, MN, AND SI WAS INVESTIGATED IN AQ. NAOH (65PERCENT) AT 180-200DEGREES OVER 900 HR BY THE WT. AND METALLOGRAPHIC METHODS. THE FOLLOWING ADDITIVES WERE USED: TI 0.23-1.9, AL 0.24-3.88, ZR 0.4-1.5, MN 1.34-8.15, AND SI 0.36-3.19PERCENT. WELDING WAS CARRIED OUT IN AN AR ATM. WITH A NONFUSIBLE W ELECTRODE BY USING D.C. WITH INCREASE OF THE ALLOY ELEMENTS CONTENT, ONLY A SLIGHT CORROSION INCREASE WAS NOTED. NO INTERCRYST. CORROSION WAS OBSD.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

BAYCHENKO, I. P., Candidate of Biological Sciences, STEPANOV, Ye. I., and FEDOROV, Ye. N., Candidate of Biological Sciences, Leningrad Scientific Research Institute of Physical Culture

"Improvement of Vestibular Function in Young Skiers"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 1, 1972, pp 60-63

Abstract: Ninety-eight 11- to 12-year old boys and girls were given 16 skiing lessons over a period of 9 weeks on different kinds of terrain (rugged, flat, combination of rugged and flat) to determine the effect of terrain on the acquisition of motor skills and the effect of practice on different kinds of terrain on vestibular function. The children who skied on rugged terrain did best. Beneficial changes were observed in the vestibular analysor in the form of decreased excibility on the periphery and increased resistance to extreme stimuli. By the end of the program, all the groups showed improvement in technique, speed, and balance, but the latter was most developed in those who skied on rugged terrain.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC: 539.172.3:539.2

ARTEM'YEV, A. N., ALESHIN, K. P., MIRZABABAYEV, R. M., SKLYAREVSKIY, V. V., SMIRNOV, G. V., and STEPANOV, Ye. P.

"Mössbauer High Angular Resolution Diffractometer"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 64-66

Abstract: A Mössbauer diffractometer, designed for a broad variety of measurements with x-rays and gamma radiation, is described. The essential characteristic of this instrument is the low count rate of gamma quanta even with strong gamma ray sources, thus resulting in the repeated and prolonged measurement of a single peak. The instrument contains an x-ray tube in addition to the Mössbauer source, thus permitting the correction and investigation of a crystal structure preparatory to operation with gamma radiation. The basic structure of the instrument is that of the URS-50IM x-ray equipment. A description of it is given together with an external-view photograph and a sample of the spectrum for a quartz crystal and an α-Fe_2O_3 monocrystal. The authors thank I. B. Filippov and M. A. Volkov for their assistance in preparing and setting up the instrument. They are associated with the Institute of Atomic Energy at Moscow.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EVALUATING PROPERTIES OF PLASTICS IN MAKING GASIFIED CASTING MODELS
-U-

AUTHOR-(02)-MOSKALEV, V.G., STEPANOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, POLIMERY V LITEYN, PROIZ VE, SBORNIK (POLYMERS IN CASTING
REFERENCE--REFERATIVNYY ZHURNAL-TEKHNOLOGIYA MASHINOSTROYENIYA, NO 2,
DATE PUBLISHED-------70

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

TOPIC TAGS--PLASTIC MECHANICAL PROPERTY, FOAM PLASTIC, POLYSTYRENE RESIN,
METAL CASTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1663 STEP NO--UR/0000/69/000/000/0112/0116

CIRC ACCESSION NO--AR0117054
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AR0117054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASIC PROPERTIES OF MATERIAL USED IN GASIFIED MODELS ARE LISTED. CURRENTLY, THESE REQUIREMENTS ARE MOST FULLY SATISFIED BY FOAM POLYSTYRENE. METHODS OF EVALUATING QUALITY OF SLABS OF FOAM POLYSTYRENE AND GRANULAR FOAM POLYSTYRENE ARE EXAMINED, ALONG WITH DETERMINATION OF MECHANICAL AND PHYSICOCHEMICAL CHARACTERISTICS OF FOAM POLYSTYRENE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC: 621.315.592

AGEKYAN, V. T., STEPANOV, Yu. A., and SHIRYAPOV, I. P.

"Analysis of the SnO_2 Exciton Absorption Spectrum"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1931-1935

Abstract: This article is in the nature of a survey of the work that has been done in the area of SnO_2 exciton absorption spectra. The method of perturbation theory has been used to compute corrections to exciton energy levels that appear when the anisotropy of the specimen crystal is taken into account. The formula for these energy levels in the first approximation is given. In the SnO_2 spectrum, a series of exciton lines with half-widths of no more than 1 cm^{-1} are observed at a temperature of 1.5° K; such a series is classified as direct, forbidden exciton transitions with dipole nP states and quadrupole 1S state. Quantitative comparisons of theoretical and experimental results on the basis of the articles surveyed are made, and a table of exciton energy levels in SnO_2, obtained through both theory and experiment, is provided. A bibliography of 11 titles is appended.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 533+536.423.1

STEPANOV, Yu. A.

"Optical Method of Studying the Mutual Diffusion of Gases"

Tr. Kazan. khim.-tekhnol. in-ta (Works of Kazan' Chemical Engineering Institute), 1972, No. 48, pp 19-23 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye43)

Translation: A device is described for measuring the coefficient of mutual gas diffusion by an optical method. The diffusion device is of the Loschmidt type with a thin, movable, dividing membrane enclosed in an air thermostat. The change in the density of the diffusing gas mixture during the diffusion process is recorded with a double-beam interferometer, the light source for which is a laser. There are optical windows for the passage of light in the walls of the thermostat and the diffusion device. The number of interference bands occurring in a given time interval were recorded in the experiment. Preliminary experiments on an He-CO_2 system at 490 mm Hg showed the high efficiency of the device. P. Ye. Suyetin.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC: 621.373.423

STEPANOV, Yu. A., YES'KOVA, G. F.

"A Two-Frequency Microwave Oscillator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335758, Division H, filed 4 Oct 69, published 11 Apr 72, p 225

Translation: This Author's Certificate introduces a two-frequency microwave oscillator which contains an amplifier-converter klystron and a modulator. As a distinguishing feature of the patent, the oscillator circuit is simplified by connecting the output and input of the klystron through a feed-through resonator tuned to the frequency of the input cavity of the klystron, a directional coupler, an attenuator, and a phase shifter.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 621.3.032.266

KHVOROV, M.I., STEPANOV, YU.D., PODRECHNEVA, N.V., SENATOV, O.I.

"Experimental Investigation Of Interaction Of Spiral Electron Flow With Electromagnetic Waves In Two-Dimensional Periodic Delay System"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 5, pp 3-9 (from RZh-Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10A26)

Translation: An investigation is conducted of an experimental model of the interaction of spiral electron flows with waves in a two-dimensional periodic delay system. It is shown as a result of the experiments that attainment of synchronism of the electron flow with the electromagnetic waves depends on the values of both the azimuthal and the axial components of the speed of the electron flow. It is established that synchronism with direct and counter waves is attained with substantially equal values of the azimuthal component of the speed of the flow. It is disclosed that with specific relationships of the parameters of the delay system and the electron stream the synchronism voltage does not depend on the frequency. 4 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC: 51

STEPANOV, Yu. G.

"Use of Mathematical Programming for Solving Multivariant Problems"

Cheboksary, V sb. Avtomatiz. sistemy upravleniya (Automation of Control Systems--collection of works) 1973, pp 103-106 (from RZh--Matematika, No 1, 1974, Abstract No 1V559)

Translation: Use of linear programming is considered for the determination of a plan for processing production items in the course of a definite period of time on the machines of a shop which produces the items for another shop. Author's abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

STEPANOV, YU. I.

design/planning

SO. JPRS 56047
19 MAY 1972

design/planning

PROSPECTS FOR DEVELOPMENT OF MACHINE PLANNING OF DESIGN DOCUMENTS

[Article by Yu. I. Stepanov, [illegible] Institute[1], Moscow, [illegible] Russian, No [illegible], 19[illegible], p 9]

The introduction of the set of standards of the United Design Documentation System is now taking place in all enterprises of our country. [illegible] of standards establishes united, interrelated rules and principles with respect to compilation, drawing up and retrieval of design documentation [illegible] used by the industrial, scientific research and planning and design enterprises of the country. Part of the USSR [United system of design documentation] standards will also extend to the rules for making construction drawings.

Increasing the complexity and volume of the planning operations and also the progress in all branches of science and engineering have recently stimulated the search for new, more progressive methods of planning and design. This search was aimed at reducing the time required to plan and design the products and, primarily, to raise the production quality.

The new methods of planning and design are based on broad application of computers in combination with modern mathematical apparatus.

The planning and design operations which have been carried out in practice on computers in the last ten years in the USSR and abroad primarily pertained to those branches where a quite high level of production standardization and culture had developed.

The class of problems solved on computers in the design automation systems is quite large. The most typical of them are the following: programmed simulation of the operation of a product and parts of it; optimization of the structural layout and electric lines; the formation and issue of the set of design documentation; automation of accounting, storage and retrieval of design documentation.

It is necessary to note another important characteristic feature connected with automation of the design process. This is the appearance of new forms of material representation of these documents obtained by means of "computer" information carriers.

1. All-Union Scientific Research Institute for Normalization in Machine Build.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 005 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--STANDARDS OF UNIFIED SYSTEM OF DESIGNER DOCUMENTATION AND PROBLEMS OF UNIFICATION IN MECHANICAL AND PRECISION ENGINEERING -U-

AUTHOR-(02)-STEPANOV, YU.I., SUMSHIK, M.R.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 4, PP 59-62

DATE PUBLISHED--------70

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

TOPIC TAGS--TECHNICAL STANDARD, ENGINEERING STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/2014 STEP NO--UR/0422/70/000/004/0059/0062

CIRC ACCESSION NO--AP0102044

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 005 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0102044

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STANDARDS INCLUDED IN THE UNIFIED SYSTEM OF DESIGNER DOCUMENTATION INFLUENCE THE ADOPTION OF DECISIONS ON PROBLEMS OF UNIFICATION IN SHAPING THE DESIGN DOCUMENTS, ON THE PRINCIPLES OF DESIGN CONTINUITY IN DESIGNING THE PRODUCTS OF MECHANICAL AND PRECISION ENGINEERING, AND ON TYPIZATION OF PRODUCTION PROCESSES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

STEPANOV, YU. V.

JPRS 55982

15 May 72

RESPIRATION OF BOTTLE-NOSED PORPOISES

[Article by A. Z. Kolchinskaya, O. G. Karandeyeva, V. S. Mishchenko, N. N. Shapunov, S. K. Matisheva and Yu. V. Stepanov, Kiev; Kiev, Bionika, Russian, No 5, 1971, Izd-vo "Naukova Dumka," pp 19-28]

The specialization of the respiratory system in cetaceans in a water medium resulted in profound anatomic and functional changes in this system. Despite the fact that the singularity of respiration of marine mammals is of the greatest interest to biologists, zoologists, physiologists and specialists in bionics, until recently information on the physiology of respiration of these animals was limited due to the lack of appropriate conditions, such as oceanariums, large marine aquariums and apparatus for specialized investigations, and also due to certain systematic difficulties which faced biologists in investigating the respiration of marine mammals. Even at the present time not only respiration in the broad sense of this word, but even the pulmonary respiration of cetaceans, which is easier to study, have not been investigated adequately. Although a number of review articles and sections in monographs have been devoted to this subject /1,2,5-9,11-14,16-20,27-30,32, 33, 35-37,40-45/, they give far more information on the ecology of those animals, the anatomy and histology of their organs of respiration than on physiology. Data on pulmonary and respiratory volumes, pulmonary ventilation, and on oxygen consumption have been obtained for a small number of small cetaceans /4, 15,21-26,31,34,38,39/. But even in these animals such important indices as total lung capacity and its components, composition of alveolar air, physiologic dead respiratory space, and alveolar ventilation have not been determined experimentally. Data on them have been cited on the basis of speculative conclusions.

The literature contains no information on the mechanics of respiration of dolphins. There is virtually no precise information on respiration regimes and on the factors exerting

PROCESSING DATE--16OCT70

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2/2 041
CIRC ACCESSION NO--AT0054608
ABSTRACT/EXTRACT--(U) GP-0-

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

ABSTRACT. A METHOD IS PROPOSED FOR THE CALCULATION OF PRIME90 SR IN THE BONE TISSUE OF HUMAN ADULTS FOR ANY YEAR FOLLOWING THE INJECTION OF ACTIVITY INTO THE STRATOSPHERE. THE VARIABLES (FACTORS INFLUENCING THE ACCUMULATION OF PRIME90 SR IN THE SKELETON) THAT ARE EMPLOYED IN THE CALCULATIONS INCLUDE: THE MEAN ANNUAL LEVELS OF PRIME90 SR FALLOUT IN AREAS OF FOOD PRODUCTION; COEFFICIENTS OF PROPORTIONALITY FOR PRIME90 SR TRANSFER FROM FALLOUT AND SOIL INTO DIETARY INTAKE; COEFFICIENTS OF DISCRIMINATION FOR BONE DIETARY INTAKE; AND GENERAL CONSTANTS CHARACTERIZING THE BEHAVIOR OF PRIME90 SR IN THE EXTERNAL ENVIRONMENT. IN COMPARISONS WITH ACTUAL DATA FOR 1963 TO 1967 FOR THE POPULATION OF THE SOVIET UNION, THE MAXIMUM DIVERGENCE WAS 10 PERCENT.

FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--REMOVAL OF OIL FROM WASTE WATERS BY A PRESSURE FREE FLOTATION METHOD -U-

AUTHOR-(03)-ROZHNYATOVSKIY, I.I., SIMONOV, N.F., STEPANOV, YU.V.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM 1970, (2) 35-9

DATE PUBLISHED--------70

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

TOPIC TAGS--CHEMICAL SEPARATION, FLOTATION, COKE, PETROLEUM PRODUCT, WATER PURIFICATION EQUIPMENT, INDUSTRIAL WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0112 STEP NO--UR/0068/70/000/002/0035/0039

CIRC ACCESSION NO--AT0110084

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 014

CIRC ACCESSION NO--AT0110084

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OILS AND TARS CONTAINED IN EFFLUENTS OF COKE CHEM. PLANTS WERE REMOVED BY THE DISPERSED AIR FLOTATION IN OPEN CHAMBERS UNDER BOTH LAB. AND INDUSTRIAL PILOT PLANT CONDITIONS. IN THE LAB. THE DISPERSION OF AIR WAS GENERATED BY A SUBMERGED IMPELLER OF 45 MM DIAM. REVOLVING AT A PERIPHERAL SPEED OF 6 M-SEC. A 80-96PERCENT REMOVAL WAS ACHIEVED AT AN AIR TO LIQ. VOL. RATIO OF 30-40 AND A 13-18 MIN RETENTION. IN THE PILOT PLANT, FLOTATION FOLLOWS AFTER SEDIMENTATION BUT BEFORE ANY NH SUB3 CONTG. WASTE WATERS ARE ADDED, WHICH HAVE AN INHIBITING EFFECT. A 6 HR SEDIMENTATION RESULTS IN REMOVING ONLY 28PERCENT OF 190 PPM OF THE INITIAL OIL AND TAR CONTENTS. THE FLOTATION IS DONE IN 5 PARALLEL 1.5 TIMES 2.3 M CHAMBERS EACH OF WHICH IS EQUIPPED WITH AN IMPELLER OF 320-50 MM DIAM. PLACED AT 1.4 M BELOW THE WATER LEVEL, FED FROM THE OUTSIDE THROUGH 2 SUCTION PIPES AND DRIVEN BY A VERTICAL SHAFT 10 KW MOTOR AT VARIABLE SPEEDS OF 590, 730, AND 970 RPM. THE FLOTATION CHAMBERS ARE ADJOINED BY THE STEAM HEATED SLUDGE COMPARTMENTS RECEIVING SUPERNATANT MATTER SKIMMED BY A MECH. CONVEYOR. AN AV. 37-56PERCENT REDN. OF OIL AND TAR CONCN. TO RESIDUAL 74-58 PPM IS ACHIEVED AT THE OPTIMUM IMPELLER SPEED OF 730 RPM AND FLOW RATE OF 18-20 M PRIME3 HR CHAMBER WITH A CORRESPONDING AIR TO LIQ. RATIO OF 5.5-8.5. THE OPTIMUM RATE OF MECH. SKIMMING IS 1.2 M-MIN.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

STEPANOV, YU. V., Department of Physiology of Aging, Institute of Physiology imeni O. O. Bohomolets, Academy of Sciences Ukrainian, USSR, Kiev

"Oxygen Entering the Lungs, its Transport by Blood, and Consumption During the Static Efforts"

Kiev, Fiziolohichnyy Zhurnal, Vol 16, No 1, Jan/Feb 70, pp 82-89

Abstract: Changes in respiration, hemodynamics, oxygen transport by the blood and oxygen consumption during static work and immediate recovery were studied. It was determined that oxygen requirements and consumption are considerably lower during static work (holding a weight for one minute with upraised hands) than in dynamic work (one minute exercise at maximum rate on a bicycle ergometer). Per minute respiratory capacity was also lower. In comparison to rest periods, the physiological respiratory dead space increases during static effort, and the relationship of alveolar ventilation to the instantaneous blood volume decreases. The ventilation equivalent during static work is higher than in the case of cyclists performing with an intensity below maximum.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

STEPANOV, YU. V., et al., Kiev, Fiziolochichnyy Zhurnal, Vol 16, No 1, Jan/Feb 70, pp 82-89

Immediately after static work oxygen consumption increases, while after a workout on the bicyde ergometer, it decreases. However, the rate of inflow of oxygen into the lungs and alveoli and and oxygen transportation by the blood are lower under static exertion, showing that oxygen requirements are lower for static work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Acc. Nr: AP0052313 Ref. Code: UR0238

PRIMARY SOURCE: Fiziologichniy Zhurnal, 1970, Vol 16, Nr 1, pp 82-89

OXYGEN ENTERING INTO LUNGS, ITS TRANSPORT BY BLOOD AND O_2 CONSUMPTION DURING STATICAL EFFORTS

Yu. V. Stepanov

Department of Age Physiology, the A. A. Bogomoletz Institute of Physiology, Academy of Sciences, Ukrainian SSR, Kiev

Summary

Data are presented on a change in the indices of external respiration, hemodynamics, oxygen transport function of blood O_2 consumption in 36 sportsmen of middle age during statical efforts and within the nearest restoration period after them.

The obtained data made it possible to conclude that under maximum statical efforts (holding during 1 min on the upraised hands the weight accounting for 80% of maximum pressed weight) in contrast to dynamical work (carried out during 1 min at a

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AP0052313

maximum rate on the veloergometer) O_2 consumption and oxygen requirements for work prove to be considerably less. In accordance with this minute respiratory capacity also proves to be less.

Higher ventilation and hemodynamic equivalents under lower oxygen effect of the respiratory and cardiac cycles permit it to be said that of the organism under statical efforts are less economical than under dynamic work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--QUANTITATIVE DETERMINATION OF CHLOROTHIOPHOSPHATE CONTENT BASED ON INFRARED ABSORPTION SPECTRA -U-

AUTHOR-(02)-STEPANOVA, A.A., LITOVCHENKO, G.D.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 177-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND, IR SPECTRUM, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605002/E07 STEP NO--UR/0032/70/036/002/0177/0178

CIRC ACCESSION NO--AP0139478

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139478

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNTHESIS OF THE PESTICIDE CO-RAL (O,O,DI,ET O,(3,CHLORO,4,METHYL,2,OXO,2H,1,BENZOPYRAN,7,YL) PHOSPHOROTHIOATE) CAN BE FOLLOWED BY THE IR DETN. OF PSCL SUB3, ETOP(S)CL SUB2 AND (ETO) SUB2 P(S)CL. THE ABSORBANCE MAX. OF THESE 3 COMPDS., AT 752, 700, AND 658 CM PRIME NEGATIVE1, RESP., ARE EVALUATED ADN THE ABSORPTIVITIES OF THE INDIVIDUAL COMPDS. AND OF MIXTS. CONTG. 0-20PERCENT PSCL SUB3, 0-20PERCENT ETOPSCL SUB2, AND 50-100PERCENT (ETO) SUB2 PSCL ARE TABULATED. THE MAX. ABS. ERROR IS 5PERCENT.

FACILITY: SHCHELKOV, FILIAL, VSES. NAUCH.-ISSLED. INST. KHIM. SREDSTV. ZASHCH. RAST., SHCHELKOVO, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--SPECTROPHOTOMETRIC ANALYSIS OF MICROSAMPLES OF LEAD SULFIDE FOR MAIN COMPONENTS -U-

AUTHOR-(03)-STEPANOVA, A.N., BULATOV, M.I., ALESKOVSKIY, V.B.

COUNTRY OF INFO--USSR

S

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 380-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, LEAD SULFIDE, MICROCHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1894 STEP NO--UR/0075/70/025/002/0380/0382

CIRC ACCESSION NO--AP0115713

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115713

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS SUGGESTED FOR THE SPECTROPHOTOMETRIC DETN. OF PB, S.PRIME NEGATIVE NEGATIVE AND SO SUB4 PRIME NEGATIVE NEGATIVE IN PBS. TO DET. S PRIME NEGATIVE NEGATIVE, ADD TO THE SAMPLE (0.1-0.35 MG) 10 ML IN HCL AND PASS N FOR 15 MIN. BOIL AND PASS N FOR ANOTHER 45 MIN AT A RATE OF 50 ML-MIN. THE ABSORBER CONTAINS 10 ML OF A MIXT. (ZN ACETATE 43 G-L. AND NAOAC 7.5 G-L.) IN 30 ML H SUB2 O. AFTER STOPPING N PASSAGE ADD TO THE ABSORBER SOLN. 1 ML 0.4PERCENT P,AMINO,N,N,DIMETHYLANILINE IN HCL, 1.5 ML 0.4PERCENT FECL SUB3, AND 3 ML HCL, AND DIL. TO 50 ML WITH H SUB2 O. MEASURE THE ABSORBANCE OF THE METHYLENE BLUE AFTER 15 MIN AT 670 NM AND COMPARE WITH A CALIBRATION CURVE PREPD. FROM STD. NA SUB2 S SAMPLES. TO DET. PB, TRANSFER THE SAMPLE TO A 50 ML VOLUMETRIC FLASK AFTER EXPELLING THE H SUB2 S AND COOLING, ADD 5 ML OF A PH 10 AMMONIACAL BUFFER, THEN 2.25 ML 1 TIMES 10 PRIME NEGATIVE3 M 4,(2,PYRIDYLAZO)RESORCINOL, AND DIL. TO VOL. WITH H SUB2 O. MEASURE THE ABSORBANCE AT 516 NM AND COMPARE WITH READINGS OF STD. PB(NO SUB3) SUB2 SAMPLES. FACILITY: LENINGRAD TECHNOL. INST., LENINGRAD, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Conferences

USSR

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

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

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

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

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USSR

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

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

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USSR

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

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

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USSR

UDC 616.988.6-097

GURTSEVICH, V. E., MAZURENKO, N. P., ZHAROVA, Ye. I., PROBATOVA, N. A., and STEPANOVA, G. N., Laboratory of the Virology of Leucoses, Laboratory of Systemic Blood Diseases, and Division of Pathological Anatomy of Human Tumors, Institute of Experimental and Clinical Oncology, Academy of Sciences USSR, Moscow

"Specific Surface Leukosis Antigen and Cellular Malignancy in Mice of the CC57BR Line Infected with Mazurenko Virus"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1970, pp 100-104

Abstract: Mice of the CC57BR line were injected with Mazurenko virus. The time needed for appearance of specific antigen in cells of various organs and tissues was compared with the appearance of malignant cell transformation, detected morphologically and by transplantation. Using the immunofluorescence method, specific surface antigen was detected before the histological diagnosis of leukemia was made and before the cells became transplantable. This antigen was found in spleen, thymus, lymph nodes, and bone marrow at about the same time. A direct relationship was detected between the quantity of fluorescent cells and the degree of morphological change.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Acc. Nr: AP0051972 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 3, pp 106-109

SPECIFIC SURFACE LEUKEMIC ANTIGEN AND CELLULAR MALIGNIZATION IN MICE OF THE CC57BR LINE INFECTED WITH MAZURENKO'S VIRUS

V. E. Gurtsevich, N. P. Mazurenko, Ye. I. Zharova, N. A. Probatova, G. N. Stepanova

Institute of Experimental and Clinical Oncology of the Academy of Medical Sciences, of the USSR, Moscow

A specific surface antigen, detected by means of immunofluorescence in mice of the CC57BR line infected with Mazurenko's virus, was revealed before establishing the cytohistological diagnosis of leukemia and before the cells acquired the capacity to transplantation. The referred to antigen was determined in infected mice approximately at the same periods in the spleen, thymus, lymph nodes and bone marrow, this may be interpreted in favor of the autochthonous origin of the leukemia studied. There was established a direct relation between increase of the quantity of fluorescent cells in the organ investigated and intensification therein of morphological changes accompanied by the development of leukemia.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC 547.571+541.124

STEPANOVA, G. P., and STEPANOV, B. I., Moscow Chemical Technological Institute ~~imeni D. I. Mendeleyev~~

"Intermediate Products in the Vilsmeier-Haack Reaction Using Hexachlorocyclotriphosphazatriene as the Condensing Agent"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 5, May 71, pp 1013-1017

Abstract: Reaction of hexachlorocyclotriphosphazatriene with 3-(N-methyl-N-phenylamino)-2-propenal or 5-(N-methyl-N-phenylamino)-2,4-pentadienal gave respective addition products representing the first intermediate products isolated from the Vilsmeier-Haack reaction of the introduction of polyenal groups into aromatic or heteroaromatic compounds. The products were assigned the structure: $\{N_3P_3[O(CH{:}CH)_n CH{:}N^+(CH_3)(C_6H_5)]_5\}$. Treating the above reaction mixture with dimethylaniline or indole leads to the formation of N-methylaniles of p-dimethylaminocinnamic aldehyde, 5-(p-dimethylaminophenyl)-2,4-pentadienal, 3-(β-indolyl)-2-propenyl and 5-(β-indolyl)-2,4-pentadienal respectively, obtained as chlorides or perchlorates.

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Nitrogen Compounds

USSR UDC 547.571+547.551+666.718

STEPANOVA, G. P., BARTININKAS, R. I., STEPANOV, B. I. Moscow Chemical-Technological Institute imeni D. I. Mendeleyev

"A Condensation of Aromatic Aldehydes with Aromatic Amides of Acetoacetic Acid in the Presence of Hexachlorocyclophosphazatriene"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1256-1260

Abstract: The reaction of benzaldehyde and o-nitrobenzaldehyde with the anilide, o-chloroanilide, and o-aniside of acetoacetic acid in the presence and in the absence of hexachlorocyclophosphazatriene (I) was studied. An excess of the aldehyde in chloroform was used. The reaction products were washed with water and purified by recrystallization. I acts as promotor of the condensation reaction of aldehydes with compounds containing active methylene groups. The proposed mechanism includes adduct formation with a positive charge arising at the carbonyl C atom of the carbonyl group so that the electrophilic activity of the aldehyde is enhanced. The adduct reacts then with acetoacetic acid amide, the phosphorus moiety is eliminated and the arylideneacetylacetamides are obtained. IR and UV spectra were obtained for identification of the products.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SOLUBILITY OF METHANE IN HYDROCARBONS OF VARIOUS STRUCTURES -U-

AUTHOR--STEPANOVA, G.S.

S

COUNTRY OF INFO--USSR

SOURCE--GAZOV. DELO 1970, (1), 26-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, METHANE, MOLECULAR STRUCTURE, ORGANIC SOLVENT, VAPOR PRESSURE, ALKANE, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0973 STEP NO--UR/0508/70/000/001/0026/0030

CIRC ACCESSION NO--AP0136403

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136403

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HENRY'S CONSTS. K SUB0 FOR CH SUB4 DISSOLVED IN N,C SUB5 H SUB12, N,C SUB6 H SUB14, N,C SUB8 H SUB18, N,C SUB10 H SUB22, CETANE, CYCLOHEXANE, METHYLCYCLOHEXANE, DECALIN, C SUB6 H SUB6, M, P, AND O,ME SUB2 C SUB6 H SUB4, AND 1,METHYLNAPHTHALENE WERE DETD. FROM THE VARIATION OF THE CH SUB4 FUGACITY CONCN. RATIO F SUB1 Y SUB1 OVER X SUB1 WITH PRESSURE FOR PRESSURES EQUAL TO THE VAPOR PRESSURE OF THE LIQ. HYDROCARBON AT 0, 20, 40, AND 60DEGREES. AT PRESSURES OF 50-150 KG-CM PRIME2, F SUB1 Y SUB1 OVER X SUB1 WAS GREATER THE HIGHER THE B.P. OF THE HYDROCARBON, BUT AT PRESSURES SMALLER THAN 50 KG-CM PRIME2 FOR ALL OF THE HYDROCARBONS STUDIED AND AT PRESSURES OF 50-150 KG-CM PRIME2 FOR C SUB5-7 HYDROCARBONS, IT WAS NEGLIGIBLE. AT 60DEGREES, K SUB0 FOR THE RESP. SOLVENTS EXCLUDING N,C SUB5 H SUB12 WAS 222, 234, 233, 210, 357, 300, 370, 500, 395, 395, 410, AND 760, RESP. ACTIVITY COEFFS. DEVIATED LESS FROM UNITY THE HIGHER THE B.P. OF THE PARAFFINIC HYDROCARBON.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR UDC 666.763.46.001.4

BRON, V. A., KUKURUZOV, A. P., DIYESPEROVA, M. I., and STEPANOVA, I. A., Eastern Institute of Refractories

"Magnesite-Chromite Products of High Purity Magnesite and Chromite"

Ogneupory, No. 2, 1971, pp 32-37

Abstract: The manufacturing technology, properties, and microstructural peculiarities are studied for products manufactured of magnesite and chromite with low contents of impurity oxides. The products have high refractory properties: the temperature at which deformation begins under load is 1700°C and higher, the bending strength at 1300°C is 2.5-3 times higher, and the deformation rate during creep tests 3 times lower than ordinary periclase-spinellide products. The products have good heat resistance, particularly if a small quantity of granular chromite is introduced to the charge. A direct bond is formed between the crystals of periclase -- periclase -- spinellide in the products. The presence of two forms of direct bonding is established.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THE ELECTRODEPOSITION OF CHROMIUM FROM CHROMIC ACID SOLUTIONS CONTAINING ORGANIC ADDITIONS -U-

AUTHOR-(02)-STEPANOVA, I.A., ZOSIMOVICH, D.P.

S

COUNTRY OF INFO--USSR

SOURCE--ZASHCHITA METALLOV, JAN.-FEB. 1970, 6, (1), 61-62

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELECTRODEPOSITION, CHROMIUM PLATING, STAINLESS STEEL, CHROMIC ACID, ELECTROLYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0320 STEP NO--UR/0365/70/006/001/0061/0062

CIRC ACCESSION NO--AP0129552

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

UNCLASSIFIED PROCESSING DATE--04DEC70

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CIRC ACCESSION NO--AP0129552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE EFFECT OF CERTAIN AROMATIC SULPHO ACIDS, AND THEIR DERIVATIVES, CONTG. ACTIVE POLAR GROUPS, ON THE ELECTROLYTIC DEPOSITION OF CR ON TO ELECTROPOLISHED STAINLESS STEEL. RESULTS WERE ASSESSED FOR THE CURRENT EFFICIENCY OF CR DEPOSITION AS DETERMINED BY WEIGHT INCREASE OF THE CATHODE. ELECTROLYTES (300 G-L. CRO SUB3) CONTG. ADDITIONS OF 7-10 G-L. SULPHANILAMIDE OR SULPHATHIAZOLE CAN BE USED FOR DEPOSITION OF METALLIC CR AND ALSO FOR PROVIDING MIRROR REFLECTIVE CR COATINGS. THE CURRENT EFFICIENCY IS HIGHER THAN IN STANDARD ELECTROLYTES, PARTICULARLY AT LOW TEMP., AND REMAINS HIGH DURING USE, E.G. AFTER 420 AH-L. THE CURRENT EFFICIENCY FELL BY ONLY 2-4PERCENT.

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USSR

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UDC 666.764.13

BRON, V. A., STEPANOVA, I. A., DIYESPEROVA, M. I., PEREPELITSYN, V. A., KUKURUZOV, A. P., ALEKSEYEV, V. V., and KROTOVA, G. S.

"Production of Dense Magnesite Powders From Pure Natural and Caustic Magnesite"

Tr. Vost. in-ta ogneuporov (Transactions of the Eastern Institute of Refractories), 1969, No 9, pp 3-19 (from RZh-Khimiya, No 1(II), 10 Jan 70, Abstract No 1 M54)

Translation: The significance of the effect of chemical composition of magnesian-spinel articles on their properties and stability in use is shown. Various methods of obtaining dense magnesite powders from pure natural (> 95% MgO, up to 1% SiO_2, and up to 1.5% CaO) and from caustic magnesite are examined. Bibliography: 16 entries.

Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

1/2 029

UNCLASSIFIED

TITLE--ON THE PATHOGENESIS OF MICROGENESIS -U- PROCESSING DATE--16OCT70

AUTHOR-(03)-GRUZDKOVA, YE.V., RABUKHINA, N.A., STEPANOVA, I.G.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 46-48

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE DISEASE, JAW, ANATOMY, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0081 STEP NO--UR/0511/70/049/003/0046/0048

CIRC ACCESSION NO--AP0120781

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

2/2 029

UNCLASSIFIED

CIRC ACCESSION NO--AP0120781 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. THE AUTHORS DISCUSS PROBLEMS RELEVANT TO THE PATHOGENESIS OF UNILATERAL AND BILATERAL MICROGENESIS. THE ARTICLE ANALYZES 94 COVERING A SIX YEAR (1963-1968) PERIOD. STUDIES OF CLINICO ROENTGENOLOGICAL DATA MADE IT POSSIBLE TO ESTABLISH THE SEQUENCE OF PATHOLOGICAL CHANGES INVOLVING THE TEMPEROMANDIBULAR JOINT CAUSED BY AN INFLAMMATORY PROCESS, INJURY OF OSTEOMYELITIS. ONLY IN 12 PATIENTS THERE WERE CONGENITAL DISTURBANCES IN THE CRANIAL BONE FORMATION, IN PARTICULAR AN ABSENCE OF ARTICULAR PROCESSES. THE RESULTS OF THE INVESTIGATION TESTIFY TO THE FACT THAT THE OVERWHELMING MAJORITY OF CASES OF MICROGENESIS ARE A COMPLICATION OF PREVIOUS AFFECTIONS OF THE TEMPEROMANDIBULAR JOINT AND COULD NOT BE REFERRED TO THE GROUP OF MALFORMATION OF THE HUMAN JAWS.

FACILITY: TSENTRAL'NYY N-I INSTITUT STOMATOLOGII, MOSCOW.

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USSR

LORANSKIY, D., Deputy Chief Sanitary Doctor of the USSR, GORBOV, V., Doctor of Medical Sciences, and STEPANOVA, L., Senior Inspector, Main Sanitary and Epidemiological Administration, USSR Ministry of Health

"Protecting the Soil Against Contamination"

Moscow, Meditsinskaya Gazeta, 24 Dec 71, p 2

Abstract: In recent times there has been an increase, which is expected to continue, in the use of sewage from small cities and communities for purposes of irrigation, with purification occurring through soil processes. Worries have been expressed concerning this because disease pathogens might reach human beings (either through food or directly with farm workers) as a result, and some types and quantities of pollutants may destroy the biological community in the soil which would normally purify waste water. Under correct conditions, however, this method of handling sewage can be advantageous. Work is now being completed on drafts of new rules for the use of such water to irrigate agricultural fields and for maintaining preventive and current surveillance over such practices. A major question is the location of such fields, and the new draft specifies that they must be from 150-1,000 meters away from residential, children's, or medical facilities, and doctors may

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USSR

LORANSKIY, D. , et al., Meditsinskaya Gazeta, 24 Dec 71, p 2

increase this 1.5-2-fold if necessary. If the sprinkling method is used, a minimum distance of 1,000 meters must be observed, and helminths must be removed from the water. Settling ponds are essential for this method of sewage disposal, but they must have trees and bushes planted thickly around to prevent the spread of Culex mosquitoes. The new draft provides that food crops will not be grown on such irrigated fields, which is not a large setback since perennial grasses, feeds, and industrial crops grow best anyway. Under the new rules, it will require a special permit to use industrial runoff for irrigation purposes, and this permit must be based on careful scientific investigation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 632.95

PUSHKAREVA, Z. V., MURSHTEYN, M. K., and STEPANOVA, L. A.

"Synthesis and Use of 9-Cyanoethyl Derivatives of Carbazole and Some of Their Conversion Products"

Sb. nauch. tr. po khimii Sverdl. in-t nar. kh-va (Collection of Scientific Works on Chemistry of Sverdlovsk Institute of the National economy), Sverdlovsk, 1971, pp 74-79 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N499 by N. B. Vsevolozhskaya)

Translation: 9-Cyanoethylcarbazole (I), its nitro and amino derivatives, as well as their conversion products possess fungicidal properties. Saponification of I in a mixture of a 20-percent aqueous solution of KOH and ethyl alcohol on boiling for 4-6 hours gives 9-(β-carboxy)-ethylcarbazole (II), yield 80%, melting point 171-3° (60% ethyl alcohol+AcOH). Nitration of II with a mixture of HNO_3 and AcOH gives 3,6-dinitro-9-(β-carboxy)-ethylcarbazole (III), yield, 80%, melting point 295° (dioxane). In nitration of 3-NH_2-II the yield of III is 85%. Saponification of the 3-amino derivative of I is performed in a mixture of 40% KOH and ethyl alcohol, yield of 3-NH_2-II 61.5%, melting point 223°. Boiling of II in $SOCl_2$ gives the acid chloride of II, melting point 40°; the action of $POCl_3$ and PCl_5 on III gives the acid chloride

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

PUSHKAREVA, Z. Y., et al., Sb. nauch. tr. po khimii Sverdl. in-t nar. Kh-va Sverdlovsk, 1971, pp 74-79

of III, melting point ~ 300°. 3,6-$(NO_2)_2$-I is specially active against Fusarium, II has a stimulating effect on the growth of dicotyledons; I and III are used to control root rot.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

UDC 576.858.083.1:061.3(47)"1971"

OSIDZE, D. F., Candidate of Biological Sciences, and STEPANOVA, L. G., Candidate of Medical Sciences

"Interinstitute Symposium on the Use of Diploid Cells in Virology"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 507-508

Abstract: Sponsored by the Moscow Scientific Research Institute of Virus Preparations, the symposium was held 16-17 Nov 71 in Moscow. 23 reports were presented in 3 sessions. The 1st session dealt with the problems of obtaining, culturing, and controling diploid cells, and their properties: O. G. Andzhaparidze et al., K. I. Kokovickhina et al., V. B. Mamayeva et al, O. N. Ageyeva and Yu. Z. Gendon (Properties and uses of diploid human embryo cells); O. G. Andzhaparidze et al., S. D. Nitavskaya and A. V. Zhilevich, A. A. Pozdnyakov et al., and others (properties and uses of diploic animal embryo cells, chiefly cattle). The 2nd session dealt with the interaction between diploid cells and viruses: O. G. Andzhaparidze et al. (effect of physical, chemical, and biological factors on genetic apparatus of diploid human embryo cells), Yu. Z. Gendon et al (interaction between human embryo cells and poliomyelitis virus), O. G. Andzhaparidze et al (sensitivity of animal embryo cells to measles, smallpox, and other diseases), G. I. Kozinets et al (use of human lymphocytes in virological research), and others. Transformations in diploid cells induced by some

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

USSR

OSIDZE, D. F., Voprosy Virusologii, No 4, Jul/Aug 72, pp 507-508

viruses and material from leukemia patients were discussed in the 3rd session: O. G. Andzhaparidze et al (transformations of human embryo cells caused by agents from hemocytoblastosis patients and the use of such cultures in studying human leukemia), L. I. Nagayeva et al (interaction of mouse sarcoma virus and cow embryo cells). The participants formalized the definition of diploid cell strains and established the usability criteria for diploid cells in the production of vaccines.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210002-9

Molecular Biology

USSR

UDC 576.858.6.098

SOLOV'YEV, G. Ya., ANDZHAPARIDZE, O. G., and STEPANOVA, L. G., Moscow Scientific Research Institute of Viral Preparations

"Some Physicochemical Properties of Virions of an Oncogenic RNA-Containing Virus (LPV Strain) Isolated From Man"

Moscow, Voprosy Virusologii, No 6, 1972, pp 682-686

Abstract: An RNA-containing virus (LPV strain) was isolated from a patient with acute leukemia and cultured in human diploid cells. Attempts to fully isolate the virus to determine its properties were unsuccessful, as complexes between virus particles and normal cell components could not be broken down. It was determined indirectly by centrifugation that the virus is composed predominantly of 70S RNA. Thus the virus probably belongs to the oncogenic virus group. The nature of peaks produced by labeled RNA at 4S, 50S, and in the 28S zone remains unclear, though these could represent fragments of viral RNA. The presence of an enzyme system responsible for DNA synthesis and detected previously in other oncogenic viruses was sought. RNA-dependent DNA-polymerase was detected after breakdown of virions with dithiotreltol and addition of H3-thymidine phosphate.

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STEPANOVA, L. G., SHUKHMINA, N. R., and ANDZHAPARIDZE, O. G., Moscow Scientific Research Institute of Virus Preparations

"Study of the Variability of Tickborne Encephalitis Virus. Report VI. Some Aspects of Immunogenesis in Mice Vaccinated With the Attenuated I-40 D Strain"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 405-408

Abstract: Following intracerebral inoculation of white mice with the pathogenic I-40 strain of tickborne encephalitis and the attenuated I-40 D strain (antigen and infectious virus), both viruses were isolated from the brain, blood, cervical lymph nodes, and spleen of the animals. All of the mice died 5 to 7 days later. After subcutaneous inoculation of I-40, the virus and antigen were found in the brain blood, cervical and mesenteric lymph nodes, spleen, and small intestine. After subcutaneous inoculation of I-40 D, however, the virus was found only in the lymph nodes and small intestine. The antigen (but not the infectious virus) was isolated from the brain. All of the animals infected subcutaneously with strain I-40 died within 9 days, while those so infected with strain I-40 D remained healthy throughout the 25-day observation period. Both oral and subcutaneous vaccination of mice with the I-40 D strain produced immunity to 1,000 LD_{50} of tickborne encephalitis virus.

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ANDZHAPARIDZE, O. G. and STEPANOVA, L. G., Moscow Scientific Research Institute of Virus Preparations

"Study of the Variability of Tickborne Encephalitis Virus. VII. Reactivity and Immunogenic Properties of the Attenuated I-40 D Strain during Oral Vaccination of Volunteers"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 70, pp 428-432

Abstract: Attenuated I-40 D strain (60,000 and 180,000 CPD_{50}) oral vaccine was administered to 19 human volunteers who had not been previously immunized. The vaccine produced no neurologic or other symptoms during the following 3 weeks; no virus was found in nasopharyngeal washings or in the blood. Specific virus-neutralizing antibodies in titers of 1:4 to 1:64 were detected after 60 days in all 19 volunteers. A second oral vaccination raised the antibody level to titers of 1:32 to 1:512. The same results were obtained for another group of seven volunteers who had been previously immunized with inactivated tickborne encephalitis virus.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF IMMUNOELECTROPHORETIC ANALYSIS WAS APPLIED TO THE STUDY OF THE ANTIGENIC STRUCTURE OF SALMONELLAE IN THE PROCESS OF S YIELDS R DISSOCIATION. IT WAS SHOWN THAT WITH THE LOSS OF SPECIFIC O ANTIGEN THE ZONE OF PRECIPITATION PECULIAR TO THE PRINCIPAL COMPONENT OF THE O ANTIGEN, SLOWLY MOVING IN THE ELECTRIC FIELD, WAS LOST ON IMMUNOPHOREGRAMS. WITH THE CHANGE OF BACILLI FORM THE S TO R FORM THE RAPIDLY MOVING COMPONENT OF THE O ANTIGEN, WICH WAS BUT WEAKLY MANIFESTED IN S FORMS, BECAME DISTINCT. THE ZONE OF R ANTIGEN PRECIPITATION WAS NOSPECIFIC, COMMON FOR ALL THE R ANTIGENS OF SALMONELLAE STUDIED. BOILING DID NOT DESTROY THE R ANTIGENS, THIS POINTING TO THEIR POLYSCCHARIDE NATURE. A SUPPOSITION WAS PUT FORWARD THAT THE PRECIPITATION ZONE OF R ANTIGENS SERVED AS A VISUAL MANIFESTATION OF THE STEM PORTION OF THE SALMONELLAE POLYSACCHRIDE.

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ISOLATION, PURIFICATION AND BIOCHEMICAL STUDY OF SURFACE ANTIGENS FROM S. STANLEY

P. Sh. Gashimova, R. N. Uvarova, L. K. Stepanova, K. K. Ivanov

The authors carried out a comparative biochemical analysis of superficial individual antigens of two representatives of salmonella, group B (S. stanley and S. paratyphi B). Antigens, isolated by water-salt extraction were purified and fractionated by gel filtration on Sephadex G-75 and G-200. The antigens represented phosphorylated protein-lipoid-polysaccharide complexes.

It was established that the qualitative composition of polysaccharide components of K-antigens was similar, and that polysaccharide components of O-antigens were also identical. One of the surface antigens — K-antigen contained galactose, glucose, xylose and traces of mannose, rhamnose and hexosamine, whereas O-antigen additionally contained a carbhydrate not present in the K-antigen. In difference from the polysaccharide of somatic O-antigen, surface O- and K-antigens of S. stanley and S. paratyphi B contained no heptose.

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STARTSEV, V. N., BAKARDZHIYEVA, T. P., STEPANOVA, L. N.

"Ion-exchange Technology for Extraction of Nickel from Cadmium Production Solutions"

Moscow, Tsvetnye Metally, No 11, Nov 72, pp 14-16.

Abstract: This work presents the results of development of an ion-exchange technology for extraction of nickel from the cadmium electrolyte using new ion exchange materials -- ANKB-1 and ANKB-7 ampholytes. ANKB-1 is based on AN-31 anionite; ANKB-7 is based on AV-16 anionite. The technology is based on the significant difference in the affinity for ampholytes of nickel on the one hand and cadmium and zinc on the other. The technology assumes elution of the nickel with a sulfuric acid solution, followed by removal of the H_2SO_4 to correct the pH of the solution. Laboratory-scale tests of the new technology indicated that either of the two ampholytes yields practically identical results.

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PETRZHAK, G. I., STEPANOVA, L. N., and KARAGO, L. V.

"Complexation in Solution Studied by Determination of Charge on Anionic Complexes, Using Ion Exchange"

Moscow, Radiokhimiya, Vol 12, No 2, 1970, pp 266-272

Abstract: Oxalates of uranium (IV), thorium, and neptunium(IV) and (V) were studied by investigating ions formed in solution. It was found possible to study complexation in solutions of complexes with K from 10^{-28} to 10^{-3}. It was found in addition that the complexes $U(C_2O_4)_2 \cdot 6H_2O$ and $Th(C_2O_4)_2 \cdot 6H_2O$, isomorphous in the crystalline state, in aqueous solutions and in oxalic acid behave differently. Uranium oxalate in aqueous solution forms a mono-charged anion, but no anionic complexes were detected for thorium. The presence of free acids of composition $H_2Th(C_2O_4)_3$ and $H_4U(C_2O_4)_4$ in solution was established. It is shown that at concentrations of 10^{-3} to 10^{-4} M, U(IV), Th, and Np(IV) in oxalate solutions form tetra-charged saturated coordination complex anions $[Me(C_2O_4)_4]^{4-}$. No higher charged anions were detected in the solutions studied. A study was made of the behavior of $K_2U_2(C_2O_4)_5 \cdot 8H_2O$ in water and

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