"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137195

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OFFICIAL SPECIFICATIONS FOR ANALYZING ETOH PREPD. INDUSTRIALLY IN 2 COLUMN EQUIPMENT CALL FOR TOO SLOW A METHOD. BECAUSE THE IMPURITIES IN INDUSTRIAL ETOH, LIKE ACH, FUSEL OIL, FREE ACID, AND HIGER ESTERS, ALL SHOW A PRONOUNCED ABSORPTION IN THE UV REGION OF THE SPEGTRUM, A METHOD WAS DEVELOPED WHEREBY UNDER USE OF THE UV SPECTROGRAPH IN A CELL OF 50 MM OPTICAL PATH LENGTH AT A TEMP. OF 20 PLUS OR MINUS 1DEGREES THE ABSORBANCES WERE DETD. AT 2200 AND 2500 ANGSTROM. THIS ALLOWS RAPID ROUTINE ANAL. OF THE PURITY OF THE ETOH.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 621.385.63:621.385.65

SUKHODOLETS, L.G., PAVLOV, O.I., PASMANNIK, V.I., PRIYEZZHEV, G.M.

"Waveguide--Coaxial Junction"

USSR Author's Certificate No 276182, filed 28 Mar 69, pub 12 Oct 70 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A169P)

Translation: The proposed waveguide--coaxial junction for lead-out of the energy of high-frequency electrovacuum devices contains an antenna and a section of rectangular waveguide. With the object of eliminating the possibility of development of an electron discharge in a vacuum, the waveguide walls near the antenna are made in the form of metal grids which screen the additional space, producing a chamber--trap for the electrons.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--COMPARISON OF THE RESULTS OF BACTERIOLOGICAL ANALYSIS OF THE URINE AND URINARY CONCREMENTS IN PATIENTS WITH STONES OF THE URINARY BLADDER

AUTHOR-(03)-SUKHODOLSKAYA, A.YE., LEYBEL, S.A., DOBROVOKSKAYA, L.I.

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA I NEFROLOGIYA, 1970, NR 3, PP 19-21

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY DISEASE, STONE, MICROBIOLOGY, DRUG TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1998 STEP NO--UR/0606/70/000/003/0019/0021

CIRC ACCESSION NO--AP0120641

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120641

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMPARED THE RESULTS OF BACTERIOLOGICAL ANALYSIS OF THE URINE AND URINARY CONCREMENTS IN 70 PATIENTS IN WHOM ELECTROHYDRAULIC CYSTOLITHOTRIPSY WAS CARRIED OUT. THE MICROBES FOUND IN THE URINE AND IN THE URINARY CONCREMENTS FAILED TO COINCIDE IN 57PERCENT OF THE PATIENTS. THE AUTHORS ATTRIBUTE THIS TO THE FACT THAT DURING CRUSHING OF THE STONES PATHOGENIC MICROBES FROM THE STONES OR THE WALLS OF THE URINARY BLADDER GET INTO THE URINE AND BEGIN TO MULTIPLY RAPIDLY. THE RESULTS OF BACTERIOLOGICAL EXAMINATION OF THE URINE AND STONES IN THE PATIENTS WITH INFECTED STONES OF THE URINARY BLADDER CAN DIFFER DUE TO PECULIARITIES OF THE PROTECTIVE PROPERTIES OF THE MACROORGANISM, ANTIBACTERIAL TREATMENT APPLIED, SELECTION OF MORE RESISTANT BACTERIAL SPECIES, AND ALSO MAY BE ASSOCIATED WITH BACTERIOCINOGENIA. FACILITY: KIEV. N-I INSTITUT UROLOGII.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

B. Sociocultural Base

1. Engineering Psychology

SUBJECT: FOREIGN PRESS DIGEST 30 SEP 71

39. USSR

LOMOV, B., Corresponding Member of the Academy of Pedagogical Sciences, Doctor of Psychological Sciences, Professor, RUBAKHIN, Y., Doctor of Psychological Sciences, SUKHODOL'SKIY, G., Candidate of Psychological Sciences

"Man and Technology"

Moscow, Sotsialisticheskiy Trud, No 5, May 71, pp 83-90

Abstract: Trends in modern production and stages of development of engineering psychology, the basic problem of psychophysiology -- establishing of the quantitative characteristics of information reception and processing by man -- systems engineering in connection with consideration of the capability of man in planning and designing large systems, operation and maintenance in connection with the psychophysiological qualities and capabilities of man, and the psychological-pedagogical area dealing with the psychological basis for principles and methods of professional selection and training of operators are discussed. Problems in the field of engineering psychology are outlined the solution of which permits the discovery of unused reserves of productivity of labor of specialists in various professions.

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USSR

LOMOV, B., et al., Sotsialisticheskiy Trud, No 5, May 71, pp 83-90

Three stages in the development of engineering psychology are outlined beginning with accumulation and analysis of data to improve the structural elements of individual technical devices for monitoring and control, advancing to engineering-psychological analysis of individual relatively simple man-machine systems, and resulting in the stage represented by the above-mentioned areas. Special emphasis is placed on the principles, methods and criteria of optimal matching of man and the typical characteristics of the system based on their quantitative evaluation.

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Psychology

SUKHODOL'SKIY, G.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 681.327.64'18

BEL'CHENKO, A. A., VYAZEMSKIY, V. O., and SUKHODOL'SKIY, V. Yu.

"Some Problems in the Design of Digital Magnetic Tape Storage"

Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 41-43 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B272, by B. K.)

Translation: Problems connected with the design of tape drive mechanisms for memory units with a capacity of 10^5--10^6 bits are discussed for those mechanisms which allow recording at tape speeds on the order of several microns per second and which allow read-out at considerably greater speeds (2--3 millimeters per second). It is noted that a change in the speed of revolution of the drive motor during the transfer from recording to reproduction and stabilization of its number of revolutions may be ensured by one electronic control bloc. It is recommended that the tape be pulled through with the help of a friction drive with a double loop of the tape, resulting in a complete wrap around angle of more than 360°. In connection with the small consumption of tape, the receiving and feeding cassettes of the tape drive mechanism could be joined by a spring-loaded connection,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

BEL'CHENKO, A. A., et al., Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 41-43 (from Referativnyy Zhurnal — Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B272, by B. K.)

which would replace the winding assemblies. The authors' data on a tape drive mechanism which is being transferred to series production at the present time is cited. 2 titles in bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 681.327.64.001.5:681.327.17

VYAZEMSKIY, V. O., and SUKHODOL'SKIY, V. Yu.

"Methods and Apparatus for Monitoring Digital Storage on Magnetic Tape"

Izv. Leningr. Elektrotekhn. In-ta (News of Leningrad Electrical Engineering Institute), No 92, 1971, pp 44-46 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B275, by B. K.)

Translation: A method and apparatus are suggested which make it possible to implement objective monitoring of equipment for digital magnetic transcription in the stages of design, manufacturing, and operation. The method is based on direct measurement of time intervals of reproduction signals and their subsequent statistical processing. In connection with this, the distribution functions, moments, and autocorrelation function are computed; from the Fourier transform of the latter the spectral density of the time intervals being investigated is found. With the help of a time-interval analyzer, histograms are obtained for the differential distribution law of the periods of a signal during reproduction of the test transcription on magnetic recorders of various types. 2 titles in bibliography.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 621.7.073

SEVERDENKO, V. P., SUKHODREV, E. Sh., CHELYSHEV, A. P., TYURIN, L. N., and ORLOV, A. R.

"Stability of Gear Matrices Obtained by Plastic Deformation Methods"

Minsk, Izvestiya Akademii nauk BSSR--Seriya fiziko-tekhnicheskikh nauk, No 4, 1973, pp 5-7

Abstract: Results are given of research on the stability of gear matrices under production conditions in the Borisovskiy Plant for Auto-Tractor Electrical Equipment, in the process of stamping out ST-8 starter gears by the method of hot combination stamping. This method, discussed in an earlier paper (V. P. Severdenko, et al, Promyshlennost' Belorusii, No 4, 1969), was investigated in the present paper at a stamping tempo of 25 sec with the specimens heated to 750-800° C. The stability of matrices made of fast-cutting steels R12 and R18, obtained by closed broaching, was investigated. Matrices made by gear-shaping and by broaching were compared. Three causes of matrix failure were found: the appearance of thermal cracks; abrasive wear of the pattern; warping of the matrix pattern. Methods for improving the stability of the matrices are recommended.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

SUKHODREV, M. B.

JPRS 55570
29 Mar 72

UDC: 61(091):069.02(474.3-25)

TENTH ANNIVERSARY OF THE MUSEUM OF HISTORY OF MEDICINE IMENI P. STRADYN'

[Article by M.B. Sukhodrev, candidate of medical sciences (Riga); Moscow, Sovetskoye Zdravookhraneniye, Russian, No 2, 1972, pp 83-84]

The end of July 1971 marked the first decade of the Museum of History of Medicine imeni P. Stradyn', in Riga.

It is not by chance that the museum bears the name of P.I. Stradyn'. This famous Latvian surgeon and medical historian was not only the organizer of the museum and collector of its numerous historical and scientific treasures; the name of P.I. Stradyn' is linked with the development of this unique historical and cultural institution. He started modestly, studying and exhibiting the distinctive medical culture of the Baltic peoples; later on P.I. Stradyn' devoted much time to bring Latvian doctors closer to the scientists and physicians of all Soviet republics and many nations in the world.

At present, the museum is known not only in the USSR but far beyond its frontiers. As B.D. Petrov, corresponding member of the USSR Academy of Medical Sciences, stressed in his speech at a scientific session at the museum which convened on 20 July 1971, the museum has gained renown in the entire world. The exhibits of this institution reflect the history of the world's medicine, as was conceived by its organizer, P.I. Stradyn', reported Kh.A. Khanzen, Honored Physician of Latvia and the untiring director of the museum.

Prior to the Great Patriotic War, the collections, exhibits, photographs and negatives, rare manuscripts and books published in the 15th-16th centuries, various ancient objects were stored in an old, crowded, and decrepit wooden hut [or barracks]. Now they are all arranged in 44 light and spacious halls of an excellent building furnished to the museum.

In the years of the museum's operation it was been visited by more than 700,000,000 tourists. This is due to the undiminished interest in it of the population of Latvia and the entire Baltic region, as well as of visitors from Moscow and Leningrad, representatives of other USSR republics and foreign countries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MEASUREMENT OF THE SPECTRAL SENSITIVITY OF PHOTOFILMS UF-2T, UF-R, AND SC-5 IN THE 1.5-23.6 ANGSTROM REGION -U-

AUTHOR--MOVSHEV, V.G., RYABTSEV, A.N., SUKHODREV, N.K.

S

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 274-9

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--MEASUREMENT, PHOTOGRAPHIC FILM, GEL, SILVER, BROMIDE, SENSITIVITY INCREASE, SPECTRUM, PHOTOMETER/(U)UF2T PHOTOGRAPHIC FILM, (U)UFR PHOTOGRAPHIC FILM, (U)SC5 PHOTOGRAPHIC FILM, (U)MF2 MICROPHOTOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0175 STEP NO--UR/0368/70/012/002/0274/0279

CIRC ACCESSION NO--AA0106831

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AA0106831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AFTER EXPOSURE (5 SEC-1 HR) THE FILMS WERE DEVELOPED IN THE D-19 DEVELOPER AT 20DEGREES, WITH DEVELOPMENT TIME 2 MIN FOR SC-5, 6 MIN FOR UF-R, AND 8 MIN FOR UF-2T. PHOTOMETRIC MEASUREMENTS WERE MADE ON THE MICROPHOTOMETER MF-2. THE CHARACTERISTIC CURVE OF THE FILM SC-5 REMAINS PRACTICALLY UNCHANGED WITHIN THE SPECTRAL REGION STUDIED. A SMALL DECREASE IN THE CONTRAST COEFF. WAS OBSD. FOR UF-R AND UF-2T FILMS IN THE LONG WAVELENGTH REGION. THE WAVELENGTH DEPENDENCE CURVES SHOW THAT THE SENSITIVITY OF UF-2T IN THE 5.4-13.3 ANGSTROM REGION AND OF UF-R IN THE 5.4-8.3 ANGSTROM REGION IS CONST., THEN DECREASES WITH WAVELENGTH UP TO LAMBDA 21.7 ANGSTROM. A SLIGHT INCREASE IN THE SENSITIVITY WAS OBSD. AT LAMBDA 21.7 ANGSTROM. IN THE 1.5-24 ANGSTROM REGION, SC-5 HAS THE HIGHEST SENSITIVITY. MEASUREMENTS OF THE ABSORPTION COEFFS. OF GELATIN AND AGBR IN THE 1.5-23.6 ANGSTROM REGION REVEALED THAT AT LAMBDA 10-24 ANGSTROM, THE SENSITIVITY OF THE FILMS FOLLOWS THE ABSORPTION OF THE GELATIN LAYER AND INCREASES WITH DECREASING THICKNESS OF THE LAYER. IN THE 5-10 ANGSTROM REGION, THE ABSORPTION OF THE GELATIN LAYER IS NEGLIGIBLE AND THE SENSITIVITY OF THE FILMS INCREASES WITH INCREASING DIAM. OF AGBR GRAINS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

SUPRUNENKO, V. A., SUKhOMLIN, Ya., and TOLOK, V. T.,

"Current Heating of a Dense Plasma with Collective Interactions in a High-Current Gas Discharge"

Kiev, Fizika Plazmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, No 4, 1973, pp 5 - 15

Abstract: Previous studies have shown that the physical processes occurring in a high-current gas discharge in powerful electrical fields are substantially influenced by the collective interactions of plasma particles with the fields of excited waves. It has been shown that high-frequency instabilities accompanied by microwave radiation can arise, retarding the drift of electrons and stabilizing its velocity at a fixed level. Experiments have also shown the existence of anomalous plasma resistance, leading to the spread of the turbulent method of heating. The development of high-frequency instabilities has been shown to produce effective heating of the electron and ion components of the plasma.

Analysis shows that the anomalous resistance and effective heating of electrons and ions are the result of a complex combination of current instabilities which arise in sequence as various criteria are met in a high-current gas discharge.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

Acc. Nr: AP0043676 Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 2, pp 551-557

EFFICIENCY OF CURRENT HEATING IN A DENSE PLASMA OF A STRONG CURRENT GAS DISCHARGE

Manzyuk, N. A.; Suprunenko, V. A.; Sukhomlin, Ye. A.; Ternopol, A. M.

The physical efficiency of current heating of a dense plasma in a strong current gas discharge stabilized by a strong magnetic field is considered. The heating efficiendy is of the order of 60%. Current heating is the result of successive development of a number of streaming instabilities and takes place as long as the current flows in the active region of the discharge. The value of the plasma thermal energy density previously obtained ($nkT = 3 \cdot 10^{18}$ eV/cm^3) is confirmed.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 620.184.1:669.15'74'291-194

RUBENCHIK, Yu. I., KROSHKIN, V. A., MEDINSKAYA, I. P., ZHEREBIN, A. V., VEYNTRAUB, S. S., and SUKHOMLINA, A. G., VNIIPTKhimneftearpparatury [Expansion unknown], Kommunarsk Metallurgical Plant

"Work Hardening of 10G2FR Plate Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, Nov 70, pp 55-57

Abstract: A study was made of the effect of thermal hardening and hot rolling of 10G2FR plate steel on its mechanical properties. In the thermally work hardened state at elevated temperatures the tensile strength of 10G2FR steel does not change up to 400° C, but thereafter decreases drastically, so that at 450° C the thermally work hardened metal does not differ from the hot rolled one. The mechanical properties of 10G2FR steel of different thickness in the hot rolled and thermally work hardened states are presented. Use of rare earth metals make it possible to produce a sulfurless metal with a uniform distribution of segregated units along the plate section, ensuring sufficient ductility and strength of the metal when it is made into plates of different thickness.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--LAPAROSCOPIC ROENTGENTELEVISION CHOLECYSTOCHOLANGIOSCOPY -U-

AUTHOR-(03)-MILONOV, G.G., VASILYEV, R.KH., SUKHOMLINA, R.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 107-114

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, ANGIOGRAPHY, RADIOGRAPHY, TV SYSTEM, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1774 STEP NO--UR/0531/70/000/006/0107/0114

CIRC ACCESSION NO--AP0129142
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129142

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY IS A VERY VALUABLE METHOD OF INVESTIGATION WHICH ENABLES, APART FROM VISUAL STUDY, TO OBTAIN MATERIAL FOR PATHOMORPHOLOGICAL INVESTIGATION. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY MAKES IT POSSIBLE TO OBTAIN A DISTINCT AND CONTRAST IMAGE OF THE BILIARY TRACT, NOTWITHSTANDING THE FACT THAT THE INVESTIGATION IS CARRIED OUT IN A DAY LIT ROOM. THE ABOVE METHOD HELPS TO OBSERVE ALL THE PHASES OF CONTRAST MEDIUM PASSAGE ALONG THE BILE DUCTS. ONE COULD DISTINCTLY SEE THE CONTRACTILE FUNCTION OF THE GALLBLADDER, PERISTALSIS OF THE DUCTS, DEGREE OF THEIR PATENCY, AS WELL AS THE CHARACTER AND LOCALIZATION OF PATHOLOGICAL CHANGES BEFORE THE OPERATIVE INTERVENTION. THE REFERRED TO TECHNIQUE HAS GREAT DIAGNOSTIC POSSIBILITIES, IT IS TECHNICALLY SIMPLE AND SAFE FOR THE PATIENT. IT IS INDICATED IN ALL CASES WHEN OTHER SIMPLER TECHNIQUES COULD NOT REVEAL THE NATURE OF LESION IN THE BILE DUCTS. LAPAROSCOPIC ROENTGENOTELEVISION CHOLANGIOSCOPY AND CHOLANGIOGRAPHY IS A POLYVALENT METHOD OF INVESTIGATION, WHICH INCLUDES LAPAROSCOPY, TAKING OF THE MATERIAL FOR PATHOMORPHOLOGICAL STUDY AND ROENTGENOCONTRAST INVESTIGATION OF THE BILIARY TRACT WITH THE AID OF THE TELEVISION SCREEN. FACILITY: OTDELENIYA KHIRURGII PECHENI I ZHELCHNYKH PUTEY I RENTGENOLOGII NII KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII, MOSKVA.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DRIP INFUSION CHOLEGRAPHY -U-

AUTHOR-(03)-RABKIN, I.KH., BARMIN, V.S., SUKHOMLINA, R.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 2, PP 54-60

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER FUNCTION, RADIOLOGY, IMAGE CONTRAST, INSULIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1731 STEP NO--UR/0531/70/000/002/0054/0060

CIRC ACCESSION NO--AP0103495

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0103495

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS SET FOR THE RESULTS AND DISCUSS THE SHORTCOMINGS OF ROUTINE METHODS OF PERORAL CHOLECYSTOGRAPHY WITH BILITRAST AND INTRAVENOUS CHOLEGRAPHY WITH BILIGNOST IN 418 PATIENTS. AN ANALYSIS IS GIVEN OF THE TECHNIQUE OF DRIP INFUSION CHOLEGRAPHY CARRIED OUT IN 86 PATIENTS, WHICH INVOLVES A MORE SPARING PRINCIPLE AND IS BASED ON GREATER SATURATION OF THE HEPATIC PARENCHYMA AND BETTER CONTRASTING OF THE BILE DUCTS. THERE WERE NOTED A DECREASED NUMBER OF NEGATIVE RESULTS OF THE INVESTIGATION AND A REDUCED INCIDENCE OF ALLERGIC REACTIONS, THIS ENABLING TO EMPLOY THIS TECHNIQUE WITHOUT COMPLICATIONS EVEN IN PATIENTS WITH A WEAK POSITIVE REACTION TO IODINE. MENTION IS MADE OF THE POSSIBILITY OF COMBINING THIS TECHNIQUE WITH PERORAL CHOLECYSTOGRAPHY, ADMINISTRATION OF INSULIN, THUS EFFECTING BETTER CONTRASTING OF THE BILE DUCTS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--COMPARATIVE STUDYING THE PHYSICOCHEMICAL PROPERTIES AND CHEMICAL STRUCTURE OF HEMOGLOBIN, MYOGLOBIN AND TROPOMYOSIN IN PHYLOGENSIS -U-

AUTHOR--SUKHOMLINOV, B.F.

COUNTRY OF INFO--USSR

SOURCE--UKRAYNS'KIY BIOKHIMICHNIY ZHURANL, 1970, VOL 42, NR 2, PP 244-256

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMOGLOBIN, FISH, AMPHIBIAN, BIRD, MAMMAL, PROTEIN, BIOPOLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1676 STEP NO--UR/0300/70/042/002/0244/0256

CIRC ACCESSION NO--AP0106422

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED PROCESSING DATE--02OCT70

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CIRC ACCESSION NO--AP0106422

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE SUMMARIZED OF THE INVESTIGATIONS CARRIED OUT PREVIOUSLY AND NEW EXPERIMENTAL DATA ARE PRESENTED CONCERNING THE PHYSICOCHEMICAL PROPERTIES AND PARTIAL INITIAL STRUCTURE OF HEMOGLOBIN, MYOGLOBIN AND TROPOMYOSIN OF SOME SPECIES OF VERTEBRATES (FISH, AMPHIBIA, BIRDS AND MAMMALS). ON THE EXAMPLE OF THREE MENTIONED GROUPS OF THE BIOLOGICALLY ACTIVE BIOPOLYMERS THE EVOLUTION IS CONSIDERED OF STRUCTURE AND PHYSICOCHEMICAL PROPERTIES OF PROTEINS UNDER STUDY. FOR EACH PROTEIN UNDER INVESTIGATION THE TOTAL BIOLOGICAL REGULARITY IS PECULIAR: THEY HAVE SPECIFIC SPECIFICITY WHICH IS CONNECTED WITH CHANGES IN THE INITIAL STRUCTURE. THE RESULTS OF THE INVESTIGATION MAKE IT POSSIBLE TO CONCLUDE THAT THE COMPARATIVE STUDY OF THE CHEMICAL STRUCTURE OF HEMOGLOGIN, MYOGLOBIN AND TROPOMYOSIN WHICH ARE GENETICALLY DETERMINED PERMIT TO OBSERVE INTERCONNECTION OF CHEMICAL COMPOSITION AND BIOCHEMICAL PECULIARITY OF BIOLOGICALLY ACTIVE BIOPOLYMERS OF DIFFERENT ORGANISMS WITH THEIR SYSTEMATIC POSITION ORGIN AND EVOLUTIONARY DEVELOPMENT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC: 621.373.531.1(088.8)

SUKHOMLINOV, B. K.

"A Slave Multivibrator"

USSR Author's Certificate No 263654, filed 11 Nov 68, published 21 Sep 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2C264 P)

Translation: This Author's Certificate introduces a slave multivibrator based on vacuum tubes with a time-mark capacitor. To improve stability of pulse duration, a series circuit comprised of a capacitor and a dynistor which is shunted by a semiconductor diode is connected in parallel with the time-mark capacitor.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 621.373.531(088.8)

SUKHOMLINOV, B. K., PIROZHNIKOV, V. D.

"Two-Phase Oscillator"

USSR Author's Certificate No 273269, Filed 21 Feb 69, Published 21 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G215P)

Translation: An oscillator containing two transistorized blocking generators and a timing capacitor is proposed. In order to improve the stability of the pulse repetition rate, a bridge comprising RC-elements is included between the windings of the pulse transformer connected in series to the bases of semiconductor triodes, the timing capacitor and the power supply.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 632.95

SUKHOMLINOV, B. P.

"Production of Wettable Colloidal Sulfur"

V sb. Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya (Problems in the Technology of Trapping and Processing of Coking Products -- collection of works), Kharkov, 1972, pp 50-56 (from RZ-Khimiya, No 18 (II), Sep 73, Abstract No 18 N469 by N. L. Poznanskaya)

Translation: To produce noncaking colloidal sulfur, the moisture content of the finished product must not exceed 16%. Wettability is best when a drop of the sulfur solution with a sulfite liquor (SL) concentration of more than 3% comes into contact with a flat surface. At this time the protective hydrophilic adhesion layer with the necessary amount of bound water is entirely formed; the micelle is already fully completed. A contact angle of wetting of about 20° does not decrease with increasing amounts of SL. The process of wetting the surface of particles in the sulfur-SL-water system takes place more intensively at a pressure of 2 to 5 kg/cm^2. A two-stage scheme has been developed for obtaining high-quality colloidal sulfur that includes: (i) washing and removing the excess moisture using a centrifuge (e.g., the AG automatic horizontal centrifuge); (ii) hydrophilization of the washed

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF COLLOIDAL SULFUR -U-

AUTHOR-(04)-LAZORIN, S.N., SUKHOMLINOV, B.P., SHIPULIN, V.K., STETSENKO, YE.YA.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM. 1970, (3), 30-3

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SULFUR, FILTRATION, CHEMICAL PURIFICATION, ARSENIC, MILDEW, AGRICULTURE CHEMICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1418 STEP NO--UR/0068/70/000/003/0030/0033

CIRC ACCESSION NO--AP0109480
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109480

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID ECONOMICAL PRODUCTION PROCESS IS DESCRIBED FOR PREPG. COLLOIDAL S BY USING NATIVE RAW MATERIALS. FILTER CAKE FROM AN ARSENIC SODA S REFINERY WAS DILD. WITH THE FILTRATE IN A REPULPING APP., WHERE THE S CONCN. WAS REDUCED FROM 60 TO 20PERCENT. THE FILTRATE WAS THEN PIPED INTO A CIRCULATING COLLECTOR AND THE SLURRY LOADED INTO A CENTRIFUGE, WHERE THE S, RINSED WITH WATER, MAINTAINED A SOLIDS TO LIQ. RATION OF 1 IS TO 1.75-2.0. ABOUT 20PERCENT OF THE RINSING LIQ. WAS RETURNED TO THE COLLECTOR AND THAT REMAINING WAS USED TO DISSOLVE THE SODA. AFTER THE SALT CONCN. WAS REDUCED, THE SOLN. WAS RETURNED TO THE SLURRY PREPG. REPULPER. THE EXCESS CIRCULATING FILTRATE WAS THEN COMBINED WITH AN ABSORBING SOLN., THROUGH A FROTH COLLECTOR AND VACUUM FILTER, FOR S PURIFICATION. THE RINSED S, DRIED TO A MOISTURE CONTENT OF 10-12PERCENT, WAS LOADED AS FINES INTO A HOPPER WITH AGITATOR THEN INTO A MIXER FOR PROCESSING WITH SULFITE CAUSTIC. THE COMPONENTS WERE MIXED AND NEUTRALIZED, WETTED, AND LOOSENED FOR FINAL DELIVERY AT 9-7PERCENT MOISTURE AND 40-50DEGREES. SUCH COLLOIDAL S CAN BE STORED UNSEALED FOR ABOUT 3 YEARS, RETAINING ITS QUALITY IN SPITE OF ALMOST COMPLETE MOISTURE LOSS; IN CONCNS. OF 0.5 TO 1PERCENT IT WAS EFFECTIVE FOR TREATING APPLE TREES AND GRAPEVINES AGAINST POWDERY MILDEW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DETERMINATION OF THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL STAGE WORKING IN LOW VACUUM MODES -U-

AUTHOR-(04)-BELOTELOVA, L.N., SUKHOMLINOV, I.YA., KHMARA, V.N., LUBENETS, V.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IVUZ MASHINOSTROYENIYE, NO 1, JAN 70, PP 72-76

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--AXIAL FLOW TURBINE, TURBINE FLOW, TURBINE STAGE, FLOW VELOCITY, CALCULATION, VACUUM MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0232 STEP NO--UR/0145/70/000/001/0072/0076

CIRC ACCESSION NO--AP0103894

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0103894 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS A METHOD FOR CALCULATING THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL VACUUM STAGE WHICH DEPENDS ON THE FLOW MADE IN THE FLOW THROUGH SECTION OF THE STAGE. THE RESULTS OF CALCULATION ACCORDING TO THE PRESENTED METHOD AND THEIR COMPARISON WITH EXPERIMENTAL DATA ARE GIVEN. THE COMPUTATIONS ARE BASED ON RESULTS OBTAINED FOR THE HYDRODYNAMIC ENTRANCE REGION OF A FLAT DUCT BY R. GUPTA (JOURNAL OF THE AMER. INST. OF CHEM. ENG., VOL 11, NO 6, 1965). THE CALCULATION ERROR, WHICH AMOUNTS TO APPROXIMATELY 10 PERCENT, INCREASES WITH INCREASED INTENSITY OF CHANGE IN THE INITIAL VELOCITY VERTICALLY WITHIN THE DUCT. FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL IMENI N. E. BAUMAN.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 621.51

SUKHOMLINOV, I. YA. (Candidate of Technical Sciences), BELOTELOVA, L. N. (Aspirant), KHMARA, V. N. (Candidate of Technical Sciences), and LUBENETS, V. D. (Doctor of Technical Sciences), Moscow Higher Technical School imeni N. E. Bauman

"Determination of the Velocity Field at the Entrance to an Axial Stage Working in Low Vacuum Modes"

Moscow, IVUZ Mashinostroyeniye, No 1, Jan 70, pp 72-76

Abstract: The article presents a method for calculating the velocity field at the entrance to an axial vacuum stage which depends on the flow made in the flow-through section of the stage. The results of calculation according to the presented method and their comparison with experimental data are given. The computations are based on results obtained for the hydrodynamic entrance region of a flat duct by R. Gupta (Journal of the Amer. Inst. of Chem. Eng., Vol 11, No 6, 1965). The calculation error, which amounts to approximately 10 percent, increases with increased intensity of change in the initial velocity vertically within the duct.

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Computers: Digital

USSR

UDC: 681.325.5

TIMOFEYEV, B. B., SUKHOMLINOV, M. M., FERENETS, N. K., STEPKO, D. P., NIKITENKO, V. M., OVERKO, V. A., PRSHISOVSKAYA, T. A., LYFAR', I. N.

"A Specialized Digital Computer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovernyye Znaki, No 47, Dec 73, Author's Certificate No 408304, Division G, filed 23 Jun 70, published 10 Dec 73, p 172

Translation: This Author's Certificate introduces a specialized digital computer which contains registers, counters, and a control module connected to the registers and to the overflow outputs of the counters. The device also contains adders, flip-flops, an auxiliary code formation module, coincidence gates, buffer circuits, and a cadence pulse circuit connected to the input of a circuit for obtaining digit potentials. The outputs of this circuit are connected to the inputs of the control module. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by adding a circuit for isolating transition signals, a transition counter, and three auxiliary registers. The output of the transition counter is connected to the first input of the first adder,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

whose output is connected to the input of the transition counter. The output of the first auxiliary register is connected to its input through the first coincidence gate, while the outputs of the second and third registers are connected through the second and third coincidence gates to the first inputs of the second and third adders whose outputs are connected to the inputs of the second and third registers respectively. The output of the second adder is connected through the fourth coincidence gate to the first input of the first buffer circuit. The second input of this buffer circuit is connected to the output of the first register, and the output of the buffer circuit is connected to the first input of the circuit for isolating transition signals. The second input of this circuit is connected to the output of the transition counter and, through the fifth and sixth coincidence gates, to the first inputs of the second and third buffer circuits. The outputs of these buffer circuits are connected to the second and third inputs, whose outputs are connected to the second inputs of the second and third adders respectively. The output of the circuits for isolating transition signals is connected through the seventh and eighth coincidence gates to the second inputs of the second and third buffer circuits respectively and, through the ninth coincidence gate,

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

to the input of the auxiliary code formation module whose output is connected to the third input of the second buffer circuit. The output of the third register is connected through the tenth coincidence gate to the set input of the flip-flop whose output is connected through the eleventh coincidence gate to the second input of the first adder.

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USSR

UDC 532.528;532.529.5/.6

SUKHOMLINOV, YU. A., CHEREPANTSEV, S. F.

"Device for Simulating the Cavitation Effect"

Tr. Taganrog. radiotekhn. in-ta (Works of Taganrog Radioengineering Institute), 1973, vyp. 34, pp 50-56 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B476)

Translation: The difficulties of an experimental study of cavitation consist in the small scale of the effect complicating the analysis of the final stage of the collapse of bubbles. An experimental device is proposed which permits an increase in the scale of the cavitation process and insures the possibility of studying the dynamics of the growth and collapse of bubbles. The maximum critical dimensions of the cavitation bubble for this device are ~ 10 mm. The device is a rectangular bath made of organic glass 220 × 200 × 860 mm. The bath is partially filled with water. Air is pumped from the upper part of the bath by a prevacuum pump. In the lower part of the bath there is a shock wave emitter which is a mechanical breaker which excites oscillations of a duralumin diaphragm acoustically decoupled from the housing. The dimensions of the cavitation bubbles formed in the water are determined by the amplitude of the shock wave and the degree of rarefaction in the bath filled with air. The relations are presented for the bubble dimensions as functions of time at different depth , the noise spectrum of the shock wave and the noise during

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

SUKHOMLINOV, YU. A., et al., Tr. Taganrog. radiotekhn. in-ta, 1973, vyp. 34, pp 50-56

cavitation and also the results of movie films of the cavitation process. It is noted that the investigated device not only permits an increase in the scale of the process but also the duration of a single cavitation act. The bibliography has 8 entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 621.391.2:621.396.96

SOKOLOV, A. V., SUKHONIN, Yu. V.

"On the Problem of Attenuation of Submillimeter Radio Waves in Rain"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2454-2458

Abstract: Data are given from a theoretical calculation of attenuation in rains in the 0.1-2.0 mm range with regard to new experimental results on the complex index of refraction of water in the liquid phase assuming Best-Polyakova size distribution of raindrops. It is shown that the theoretical calculations of attenuation in rains with intensity of 10-12 mm/hr agree satisfactorily with experimental data on a 0.96 mm wave. The approximate empirical formula for attenuation in this range of intensities if $1.52 \cdot I^{0.638}$ in decibels per kilometer, where I is the rain intensity in mm/hr. The authors thank M. A. Kolosov for constructive advice and criticism, and I. Ya. Gushchina for the computer calculations.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 621.391.2

BABKIN, Yu. S., ISKHAKOV, I. A., SOKOLOV, A. V., STROGANOV, L. I., SUKHONIN, Ye. V.

"On the Problem of Attenuation of Emission on a 0.96 mm Wave in Snow"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 12, Dec 70, pp 2459-2462

Abstract: This work was done to study attenuation on a 0.96 mm wave on a 680 m transmission path in snows of up to 2 mm/hr expressed in the amounts of water precipitated. The experimental part of the work was done in 1969-1970 in the central European section of the Soviet Union. Precipitation was measured by three P-2 recording rain gauges placed at both ends of the transmission path and in the middle. Temperature, pressure, humidity and wind speed were measured at the same time. Rotating one-meter Cassegrain antennas were used. It was found that attenuation in rains of the same intensity (2 mm/hr) is approximately 30-40% lower. A strongly idealized calculation is given within the framework of Mie theory for attenuation in snows. The results agree satisfactorily with experimental data if the effective radii of spherical snow particles are interpolated. The authors thank M. A. Kolosov for advice and for remarks made during the work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 621.391.2:621.396.96

BABKIN, Yu. S., ZIMIN, N. N., IZYUMOV, A. O., ISKHAKOV, I. A., SOKOLOV, A. V., STROGANOV, L. I., SUKHONIN, Ye. V., SHABALIN, G. Ye.

"Measurement of Rain Attenuation on a 0.96 mm Wave Over a 1 km Route"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 12, Dec 70, pp 2451-2453

Abstract: An investigation is made into attenuation in rains of varying intensity and a relationship is found between the attenuation and the mass of water precipitated in a given time interval. The transmitter was a frequency-stabilized unit based on a backward-wave oscillator, and the receiver used an indium antimonide detector cooled to liquid helium temperatures. Rotating one-meter Cassegrain antennas were used. Rainfall was registered by three P-2 recording rain gauges placed at both ends and in the middle of the 1 km transmission path. Temperature, pressure, humidity and wind speed were also measured. Attenuation on a 0.96 mm wave was determined from the change in signal level at the receiver during rains. For rain intensity of 0.12 mm/hr (covering more than 99% of all cases) the attenuation on a 0.96 mm wave in decibels per kilometer is approximately $1.53 \cdot I^{0.038}$, where I is rain intensity in mm/hr. This is 2.5-3 times the attenuation observed on a wave of 8.6 mm.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 621.373.826:550.3

VARDANYAN, A. S., ISKHAKOV, I. A., SUKHONIN, Ye. V., and SOKOLOV, A. V.

"Measurement of Atmospheric Absorption in the Wavelength Range of λ = 980-1600 Microns" by the Radioastronomical Method"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 61-65 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D380)

Translation: The described method is based on relative measurements of the sun's radiation, attenuated by the atmosphere, at various values of its elevation above the horizon. For the measurements, a radiotelescope with an immersion detector of n-type InSb was used. The measurements were made at sea level in the temperate latitudes. The minimum measured absorption value was obtained for the 1260 micron wave in water vapor and in the transparency window, and was equal to about 0.6 dB/hr·m^{-3} at $\theta = 0°$.

A. K.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 621.371:538.569.4:551.57

SOKOLOV, A. V. and SUKHONIN, Ye. V.

"Effect of Rain on Operation of Communications Lines in the Sub-millimeter (SBMM) Wavelength Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 71-75 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A314)

Translation: A calculation is made of the probability distribution of rainfall of varying intensity for the central part of European Russia and Central Asia from the results of observations averaged over 14 years at several points in each rayon. The results of the computation coincide satisfactorily with the measured results (1968-1969). The probability distribution of the attenuation, confirmed by measurement results along paths of the radio relay lines, is plotted in terms of the probability distribution of the rains. Three illustrations, bibliography of six. N. S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

SUKHOPAROV, S. A.

UDC: 535.8

"Computing the Effective Range of Night Vision Devices"

Leningrad, Priborostroyeniye, No 6, 1972, pp 102-105

Abstract: The distance over which infrared night vision devices are effective is an important characteristic in the design of these instruments. A method is developed in this paper for computing this distance from the instrument's structural parameters and optical characteristics. It permits taking into account the effect of atmospheric clarity, the scattered flux in the inverse direction, the integral and spectral sensitivity of the electron-optical converter, the linear amplification of the latter, the density of the photocathode thermoelectronic emission, and the resolving power of the observer's eye. A formula is derived for the maximum effective range of the instrument. This formula was verified in tests where the range of visibility of the instrument for an object with a visible dimension of 1.5' was 700 m as against a theoretical value of 670 m computed from the formula. The author is connected with the Leningrad Institute of Precision Mechanics and Optics.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 669.295:621.77

TSYTSENKO, V. A., BAZHANOV, Yu. M., and SUKHOROSOV, V. V.

"Production of Titanium Tubes by Argon Arc Welding"

Moscow, Tsvetnyye Metally, No 12, Dec 71, pp 51-53

Abstract: The described production of tubes (32 x 2 to 102 x 2 mm) by argon arc welding uses a band of VT1-0 alloy as initial skelp which before welding is cut on disc shears and etched in a solution of hydrochloric acid with ammonium fluoride. The welding is done in a special semi-hermetic chamber filled with type A argon to protect seams from oxidation. Test results of argon-arc-welded tubes are discussed by reference to microstructures and mechanical properties which show that the tensile strength of welded tubes is somewhat higher than of the initial band. The advantage of welded tubes in comparison with seamless tubes consists in their lower cost and sufficiently high reliability. Two illustr., two tables.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 575.24

GAZIYEV, A. I., FOMENKO, L. A., SUKHORUCHKINA, L. V., and KUZIN, A. M., Corresponding Member, Academy of Sciences USSR, Institute of Biophysics, Academy of Sciences USSR, Pushchino-na-oke

"Analysis of Internucleotide Breaks in Gamma-Irradiated DNA Reparable With Polynucleotide Ligase"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 1, 1971, pp 216-218

Abstract: The purpose of the work was to study the quantitative relationships between phosphate breaks in DNA reparable and nonreparable by polynucleotide-(PN) ligase as a function of the irradiation dose. The analysis was carried out by quantitatively joining breaks in the phosphate bond with PN-ligase and by splitting off the free phosphorus with alkaline phosphatase. DNA with a radioactive label was obtained from a culture of Bacillus subtilis SHGW grown on a medium containing P^{32}. The yield of breaks reparable and nonreparable by PN-ligase was in a linear relationship to the dose. The number of reparable breaks constituted 77 to 85% of the total. The large number of $5'PO_4 \sim 3'OH$ internucleotide breaks is ascribed to the oxidation of 3'C-desoxyribose and labilization of the 3'- O - P bond.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 518.9

GERMEYER, Yu. B., SUKHORUCHENKO, E. M.

"Optimum Distribution of Resources When Attempting to Reach a Predetermined Effectiveness on All Sections"

V sb. Kibernetiku -- na sluzhbu kommunizmu (Cybernetics to the Service of Communism -- collection of works), T. 6, Moscow, "Energiya", 1971, pp 233-248 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V667)

Translation: The authors consider a game in which the strategies of the first player are the vectors $x=(x_1, x_2, \ldots, x_n)$ which satisfy the conditions

$$\sum_{i=1}^{n} x_i = X_0, \quad x_i \geq 0, \qquad (1)$$

and the strategies of the second player are the vectors $y=(y_1, y_2, \ldots, y_n)$ which satisfy the conditions

$$\sum_{i=1}^{n} y_i = Y_0, \quad y_i \geq 0. \qquad (2)$$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

GERMEYER, Yu. B., SUKHORUCHENKO, Yu. M., Kibernetiku -- na sluzhbu kommunizmu, T. 6, Moscow, "Energiya", 1971, pp 233-248

The first player attempts to ensure fulfillment of the conditions $f_i(x_i, y_i) \geq w_i$ for all i, which is achieved for instance by maximizing the function $\Phi(x, y) = \min_i (f_i(x_i, y_i)/w_i)$. The pure (maximum) strategy of the first player is determined for various information on the strategies of the second player. The game is generalized to the case where X_i, Y_i, x_i, y_i are vectors. L. Bregman.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 518.9

GERMEYER, Yu. B., SUKHORUCHENKO, E. M.

"Optimum Distribution of Resources in Attempting to Reach a Given Effectiveness on All Sections"

V sb. Kibernetiku -- na sluzhbu kommunizmu. T. 6 (Cybernetics in the Service of Communism--collection of works. Vol 6), Moscow, "Energiya", 1971, pp 233-248 (from RZh-Matematika, No 11, Nov 71, Abstract No 1V667)

Translation: A game is considered in which the strategies of the first player are vectors $x=(x_1, x_2, \ldots, x_n)$ which satisfy the conditions

$$\sum_{i=1}^{n} x_i = X_0, \quad x_i \geq 0,$$

while the strategies of the second player are vectors $y=(y_1, y_2, \ldots, y_n)$ which satisfy the conditions

$$\sum_{i=1}^{n} y_i = Y_0, \quad y_i \geq 0.$$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

GERMEYER, Yu. B., SUKHORUCHENKO, E. M., Kibernetiku -- na sluzhbu kommunizmu. T. 6, Moscow, "Energiya", 1971, pp 233-248

The first player attempts to satisfy the conditions $f_i(x_i, y_i) \geq w_i$ for all i, which can be achieved by maximization with respect to the function $\Phi(x, y) = \min_i (f_i(x_i, y_i) - w_i)$. The pure (maxmin) strategy for the first player is determined for varied information on the second player's strategy. The game is generalized to the case where X_i, Y_i, x_i, y_i are vectors. L. Bregman.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 632.95.021.3

SUKHORUCHENKO, G. I., Candidate of Agricultural Sciences and TOLSTOVA, Yu. S., Candidate of Biological Sciences, (VIZR) (All-Union Institute for the Protection of Plants)

"Susceptibility of Assasain Bugs to Insecticides and Acaricides"

Moscow, Khimiya v Sel'skom Khozyaystne, No 7, Vol 11, 1973, pp 35-38

Abstract: The LD_{50}'s of 18 different insecticides and acaricides, including, Seven, DDT, chlorophos and similar compounds were determined for 10 different pests and for phytophage. The most sensitive species were nabid (transliterated) (Nabis palifer Seid.) and ligeid (transliterated) and the least sensitive was mirid (transliterated) (Deraeocoris punctulatus Schill). The toxicity varied with compounds causing systemic poisoning. A rather high degree of selectivity was observed for gardon, fozalon, rogor, mireks, diior (all transliterated), and methylmercaptophos for nabids and ligeids. The hazards of compounds causing systemic poisoning and possessing a high initial toxicity in natural conditions are reduced due to the rapid loss of insecticidal activity.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 539.125.5.164

SUKHORUCHKIN, S. I.

"Some New Data on the Neutron Spectroscopy of Heavy Nuclei"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 38-46

Abstract: The article presents a survey of some new trends in the data of the last two to three years on the neutron spectroscopy of heavy nuclei. Areas covered include the radiation and fission widths of the resonances of heavy nuclei, the dependence of the neutron force function on the spin of the compound nucleus, and neutron level spacing distributions. Some effects, for example, structures in subthreshold fission, seem reliably established. Others, for example, the spin dependence of the force function and systematic variations of radiation widths, require verification. However, they all influence reactor design constants in greater or lesser degree and therefore should be studied from both the scientific and the practical point of view.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC: 543.544

POSTNIKOVA, G.B., and ~~SUKHORUCHKINA,~~ L.V., Institute of Biological Physics, Pushchino, Academy of Sciences USSR

"Paper and Thin-layer Chromatography of Organic Derivatives of Phosphorus (III,V) Acids"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 772-787

Abstract: A review with 85 references. Methods for separation on paper and in a thin sorbent layer are suitable for the analysis of organic phosphorus compounds of various types, including the highly reactive types. Chromatographic separation is simple and rapid, selective and sensitive. It is highly expedient with small amounts of materials, especially when they are of low stability.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

1/2 014

UNCLASSIFIED

TITLE--NEW DATA ON THE NEUTRON SPECTROSCOPY OF HEAVY NUCLEI -U-

PROCESSING DATE--16OCT70

AUTHOR--SUKHORUCHKIN, S.I.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(1), 38-46

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON SPECTROSCOPY, HEAVY NUCLEUS, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1233

STEP NO--UR/0089/70/028/001/0038/0046

CIRC ACCESSION NO--AP0115250

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

2/2 014

UNCLASSIFIED

CIRC ACCESSION NO--AP0115250 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS GIVEN WITH EMPHASIS ON THE RADIATION WIDTHS OF HEAVY NUCLEI, THE FISSION WIDTHS ON N RESONANCES, THE DISTRIBUTION OF INTERNUCLEAR DISTANCES, ETC.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

SUKHORUKOV, A.G.

CAROL

JPRS 60590

20 November 1973

(8)

UDC 533.98+537.312.62

DISCHARGE OF A SUPERCONDUCTING STORAGE DEVICE THROUGH AN INVERTER

[Article by V. V. Andrianov, V. R. Zenkevich, O. V. Popkov, B. N. Sergeyenkov, A. G. Sukhorukov, K. K. Svichev, V. A. Tovma, and V. S. Sheynkman; reported by Academician V. A. Kirillin on 16 June 1970; Moscow, Doklady Akademii Nauk SSSR, Russian, Vol 196, No 2, 1971, submitted 9 June 1970, pp 320-323]

Superconductive inductive power storage devices are promising for use in a number of scientific and engineering fields as emergency sources of electric power, power sources for covering peak loads in power systems, and as high power electric pulse sources.

The amount of energy stored in this type of a device can be quite large. In particular, a storage device for covering peak loads of 10^{13} joules is discussed [1]. As compared to other possible methods, superconducting storage devices have a number of technical and economic advantages for storing relatively high energies. Frequently, a necessary condition for the efficient utilization of the storing device is the use of an inverter for transferring the energy stored in the magnetic field to the AC network. There is no information at present on any attempts for the practical realization of a process for transferring the energy from a superconducting storage device to an electric power system.

The inversion of energy stored in a superconducting solenoid can be accomplished at a constant average value of the inverted energy as well as at a constant average value of the voltage applied to the solenoid terminals equal to the average value of the counter electromotive force of the inverter.

In the latter case, the velocity of energy transfer is maximal for a given limiting value of the voltage. It should be noted in this connection that it is possible to use the inverter as an external load when transferring the energy from large superconducting magnetic systems for various purposes (power hydromagnetic generators, electric motors, bubble chambers, etc.) in emergency situations (for example, when the normal phase appears in the winding). As compared to load resistances usually used in such cases, semiconductor inverters are incomparably more compact, do not require high power cooling systems, etc.

[I - USSR - F]

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 51

ALDAKIMOVA, M. P., SUKHORUKOV, G. A.

"An Approach to Determining the Quantitative Estimate of the Complexity of Systems"

V sb. Prom. kibernetika (Industrial Cybernetics — collection of works), Kiev, 1971, pp 101-109 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V527)

No abstract

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 51

ALDAKIMOVA, M. P., SUKHORUKOV, G. A.

"Information Approach to Estimating the Complexity of Objects and Control Problems"

V sb. Prom. kibernetika (Industrial Cybernetics -- collection of works), Kiev, 1971, pp 184-193 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V529)

No abstract

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED

TITLE--MAKING COMMERCIAL SILICOMANGANESE [illegible] PROCESSING DATE--13NOV70
[illegible]ING BRIQUET[illegible] OR SINTER -U

AUTHOR-(03)-SUKHORUKOV, A.I., SOSEDKO, P.M., KHITRIK, S.I.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(2), 135-6

DATE PUBLISHED--------70

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

TOPIC TAGS--INDUSTRIAL FURNACE, REFRACTORY MATERIAL, CARBON, MANGANESE, STOICHIOMETRIC MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1946

STEP NO--UR/0133/70/030/002/0135/0136

CIRC ACCESSION NO--AP0115754

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED

CIRC ACCESSION NO--AP0115754 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATS MADE BY USING RAW BRIQUETS COMPOSED OF MN CONC., OTHER INGREDIENTS OF THE FURNACE CHARGE, AND A STOICHIOMETRIC MAT. OF C WERE COMPARED WITH THOSE IN WHICH MN CONC. SINTER WAS USED AS A CONSTITUENT OF A CONVENTIONAL CHARGE. RECOVERY OF MN WAS 10PERCENT HIGHER AND FURNACE OPERATIONS BETTER IN THE 1ST CASE.

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USSR

L 1075-64 EWP(k)/EWP(q)/EWT(m)/EWP(b)/BDS AFFTC/ASD Pf-4 JD/HW/
MLK(a)
ACCESSION NR: AP3007687 S/0286/63/000/012/0010/0010

AUTHOR: Shorshorov, M. Kh.; Nazarov, G. V.; Sukhorukov, A. P.; Senin, A. M.; Kopy*lov, A. K.; Sidorov, N. G.; Borisenko, A. A.; Surkova, I. F.; Belov, V. V.

TITLE: Method of strengthening welded joints in martensitic steel sheets. Class 18, No. 155161

SOURCE: Byul. izobret. i tovarn. znakov, no. 12, 1963, 10

TOPIC TAGS: martensitic steel sheet weld strengthening, martensitic steel weld planishing, weld planishing, martensitic steel weld hot planishing, planishing, austenitic temperature weld planishing, austenitic temperature martensitic steel weld planishing

ABSTRACT: This Author Certificate is issued for a method of strengthening welded joints in martensitic steel sheets by planishing the weld and adjacent zone immediately after welding, while the weld metal is still in the temperature range of austenite stability.

Card 1/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

L 1075-64

ACCESSION NR: AP3007687

ASSOCIATION: none

SUBMITTED: 24Jan62 DATE ACQ: 15Oct63 ENCL: 00

SUB CODE: ML NO REF SOV: 000 OTHER: 006

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

ACCESSION NR: AP4011252 S/0286/64/000/002/0034/0034

AUTHOR: Mikhaylov, A. S.; Senin, A. M.; Slonimskiy, Ye. W.; Sukhorukov, A. P.

TITLE: A method for welding titanium and its alloys with copper and its alloys. Class 21, No. 159905

SOURCE: Byul. izobret. i tovarn. znakov, no. 2, 1964, 34

TOPIC TAGS: titanium, titanium welding, welding, titanium copper welding, copper titanium welding, titanium welding method

TRANSLATION: A method for welding titanium and its alloys with copper and its alloys consisting of the fact that the welded joint is made with an insert of a third metal which welds well with both metals being welded, notable for the fact that with the purpose of lowering the cost of the process, titanium alloys having a stable structure are used as the third metal.

ASSOCIATION: None

SUBMITTED: 21Mar63 DATE ACQ: 14Feb64 ENCL: 00
SUB CODE: ML, EL NO REF SOV: 000 OTHER: 000
Card 1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

ALESHKEVICH, V.A., MIGULIN, A.V., SUKHORUKOV, A.P., CHERNOV, S.P.

UDC 621.375.82

"Limitation Of Intensity And 'Spreading' Of The Light Field Energy With Non-stationary Thermal Defocusing"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11),1972, pp 90-92

Abstract: The results are reported of experiments on the observation of space-time distortions of the pulsed radiation of a xenon laser which passes through a cell with an absorbent liquid (alcohol). Two effects connected with non-stationary thermal defocusing were studied for the first time -- "spreading" of the energy and limitation of the pulse intensity. "Spreading" of the laser beam energy was investigated by an impression of the pulse on a photographic film. An increase of nonlinear dispersion in the pulse time leads to the following pattern of energy density distribution: the front of the pulse - the nonlinear leader - leaves a trace in the form of a bright central spot double the initial diameter; the remaining part of the pulse is distributed in the form of a background to the beam, of a diameter dependent on the total pulse energy and serves as a podestal for the central spot. In accordance with this pattern, distortions of of the pulse at the beam axis were observed. A decrease of the intensity was started after passage of the nonlinear leader through the cell with a liquid.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

ALESHKEVICH, V.A., et al., Kvantovaya elektronika, Moscow, No 5(11), 1972

If the energy at the leading edge exceeded the energy of the leader, then limitation of the peak intensity occured. Theoretical equations of the effects are presented. The results of the experiments were found in accordance with theoretical evaluations of the effects considered. The authors thank A.V.Khokhlov for useful discussions which in many respects contributed to fulfillment of the work. 3 fig. 5 ref. Received by editors of ZhETF, 18 Feb 1972; by the editors of Kvantovaya elektronika, 14 Mar 1972.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 538.56:535

LEDENEV, V. I., SUKHORUKOV, A. P., KHACHATRYAN, A. M.

"Concerning the Change in Structure of the Focal Region With a Change in Spatial Self-Focusing of Short Pulses"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 90-94

Abstract: The authors discuss the effect of tripling of the number of focal points during self-focusing of short pulses. The condition is found which must be satisfied by the ratio between pulse duration and initial beam convergence (linear focus) for this effect to appear. Nonlinear focus motion figures are given together with the distribution of intensity in media with instantaneous or lagging nonlinear response. Three illustrations, bibliography of ten titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC: 538.56:535

SUKHORUKOV, A. P., FEL'D, S. Ya., KHACHATRYAN, A. M., SHUMILOV, E. N.

"Stationary Thermal Self-Focusing of Laser Beams"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 53-61

Abstract: The paper deals with some problems in the theory of thermal self-focusing of continuous laser emission. A theoretical geometric optics equation is found for a nonlinear absorbing medium which can be used to plot the aberration pattern of thermal self-focusing. An analysis is also made of the structure of the focal region, and the behavior of the field at the focus is discussed for a wide range of variation in the absorption of the medium and in the input power. The stability of stationary thermal self-focusing is investigated, and it is shown that thermal self-focusing of actual high-power beams takes place without breakdown into separate filaments. Four illustrations, bibliography of nine titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR UDC 621.375.82

ALESHKEVICH, V.A., MIGULIN, A.V., SUKHORUKOV, A.P., CHERNOV, S.P.

"Limitation Of Intensity And 'Spreading' Of The Light Field Energy With Nonstationary Thermal Defocusing"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11),1972, pp 90-92

Abstract: The results are reported of experiments on the observation of space-time distortions of the pulsed radiation of a xenon laser which passes through a cell with an absorbent liquid (alcohol). Two effects connected with nonstationary thermal defocusing were studied for the first time --- "spreading" of the energy and limitation of the pulse intensity. "Spreading" of the laser beam energy was investigated by an impression of the pulse on a photographic film. An increase of nonlinear dispersion in the pulse time leads to the following pattern of energy density distribution: the front of the pulse - the nonlinear leader - leaves a trace in the form of a bright central spot double the initial diameter; the remaining part of the pulse is distributed in the form of a background to the beam, of a diameter dependent on the total pulse energy and serves as a pedestal for the central spot. In accordance with this pattern, distortions of of the pulse at the beam axis were observed. A decrease of the intensity was started after passage of the nonlinear leader through the cell with a liquid.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

ALESHKEVICH, V.A., et al., Kvantovaya elektronika, Moscow, No 5(11), 1972

If the energy at the leading edge exceeded the energy of the leader, then limitation of the peak intensity occured. Theoretical equations of the effects are presented. The results of the experiments were found in accordance with theoretical evaluations of the effects considered. The authors thank R.V.Khokhlov for useful discussions which in many respects contributed to fulfilment of the work. 3 fig. 5 ref. Received by editors of ZhETF, 18 Feb 1972; by the editors of Kvantovaya elektronika, 14 Mar 1972.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 621.375.82

AKHMANOV, S. A., DRABOVICH, K. N., SUKHORUKOV, A. P., SHCHEDNOVA, A. K.

"Combined Effects of Molecular Relaxation and Dispersion of the Medium in the Case of Induced Scattering of Supershort Light Pulses"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D865)

Translation: A theoretical analysis was made of the effect of the local nonstationarity and dispersion of a medium on the development of the pulse of the first Stokes component of induced Raman emission excited by picosecond pulses of laser radiation as a function of the relation between their duration and the longitudinal and transverse relaxation times of the medium. It is demonstrated that under conditions of group synchrony the pulse build-up coefficient of the first Stokes component can be reduced by comparison with the stationary value; in the case of strong nonstationarity, broadening of the spectrum is possible, and the phase modulation of the pumping radiation has no effect on the amplification. In media with anomalous dispersion in the case of inverse induced Raman emission the amplification saturation always takes place on a quasistationary length. The phase modulation of the pumping radiation in the dispersing medium can have a significant effect on the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

AKHMANOV, S. A., et al., Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), Vyp. 2, Novosibirsk, 1972, pp 3-16

amplification of the first Stokes component. In the absence of group synchrony and in the presence of inverse induced Raman emission, the formation of gigantic first Stokes component pulses is possible with a power exceeding its pumping power and a duration $\tau_c = 2T_2/\Gamma_0\delta^{-1} - 1$, where T_2 is the transverse relaxation time, Γ_0 is the stationary amplification coefficient, δ is the linear loss coefficient. The shift of the level populations in the medium was analyzed. Prospective problems were indicated for further study: in particular, consideration of non-uniform broadening of the levels, analysis of resonance induced Raman emission in equilibrium and excited media, and so on. The bibliography has 34 entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

AKHMANOV, S. A., DRABOVICH, K. N., SUKHORUKOV, A. P., and SHCHEDNOVA, A. K., Moscow State University imeni M. V. Lomonosov

"Combined Effects of Molecular Relaxation and Dispersion of Medium in Induced Raman Emission of Ultrashort Light Pulses"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

Abstract: The article develops a consistent nonstationary theory for induced Raman emission (IRE) which simultaneously considers the effect of molecular relaxation and dispersion of the medium. Broad assumptions are made with respect to pumping modulation (a short rectangular and a bell-shaped pulse without phase modulation, continuous phase-modulated pumping, short pulses experiencing rapid phase modulation). Different relations between the group velocities of interacting waves are considered (forward scattering in the case of normal and anomalous dispersion, backscattering). The most interesting result of the authors' analysis is the fact that, under conditions when inertia of molecular vibrations and dispersion of the medium appear simultaneously, qualitatively new effects arise. The most important of these is the appearance of a mode of exponential amplification of Stokes radiation excited by pumping 1/2

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USSR

AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 62, No 2, Feb 72, pp 525-540

pulses with a duration of $\tau_p < T_2$ at $z < L_\nu$, accompanied by stabilization of the Stokes pulse shape and width. Another important effect is the suppression of IRE as a result of rapid pumping phase modulation (at $\nu = 0$ phase modulation has practically no effect on Stokes amplification). There is competition between the effect of stationary mode formation and IRE suppression due to phase modulation. Estimates show that these effects play an important role in the IRE of picosecond pulses in liquids and crystals and IRE in self-focused beams. They may also appear in other types of stimulated scattering.

The theory developed can be used to analyze characteristics of higher Stokes and anti-Stokes components in nonstationary scattering. An interesting question is nonstationary scattering by polaritons. The use of the calculation method described enabled A. G. GOLGER to establish that the spectral line width of infrared vibrations under nonstationary conditions has the order of the corresponding spontaneous line width, regardless of the width of the pumping spectrum.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

AKHMANOV, S. A., BOL'SHOV, M. A., DRABOVICH, K. N., SUKHORUKOV, A. P., Physics Faculty of Moscow State University imeni M. V. Lomonosov

"Suppression of Induced Raman Scattering in Dispersive Media With a Nonlinear Refractive Index"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No. 11, 5 Dec 70, pp 547-551

Abstract: A theoretical and experimental study of induced Raman scattering of intense picosecond and nanosecond light pulses in self-focusing liquids is presented. The anomalous broadening of the pulse spectra caused by the nonlinearity of the refractive index is accompanied by a considerable decrease in the intensity of the induced Raman scattering and, in many cases, to its complete suppression. It was established that this effect is caused by the simultaneous action of fast phase modulation of the pumping arising due to nonlinearity of the medium and of dispersion of the medium. A generalization of the nonstationary theory of induced Raman scattering yielded quantitative relationships for this mode which had not been

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

AKHMANOV, S. A., et al, Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki, No. 11, 5 Dec 70, pp 547-551

investigated previously. The experiments on induced Raman scattering in self-focusing media were made with the second harmonic of a neodymium laser in single-mode and synchronization mode operation. Anomalous broadening of the spectrum reaching 1000 cm^{-1} in nanosecond pulses and more than 1000 cm^{-1} in picosecond pulses were observed in carbon bisulfide in a collimated beam. It is shown that the broadening of the spectrum of picosecond pulses in these experiments was directly associated with phase self-modulation of the pulse in a nonlinear medium.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 621.375.82

LEDENEV, V. I., SUKHORUKOV, A. P., KHACHATRYAN, A. M.

"On a Change in the Structure of the Focal Region in Three-Dimensional Focusing of Short Pulses"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 90-94 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D880)

Translation: A tripling of the number of focal points in the self-focusing of short pulses is discussed. The condition for the appearance of the effect imposed on the relationship between the pulse duration and the initial convergence of the beam (linear focus) is obtained. Diagrams of the motion of the nonlinear focus and the intensity distribution in media with instantaneous or inertial nonlinear response are shown. 10 ref. Authors abstract.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

SUKHORUKOV, A. P., FEL'D, S. Ya., KHACHATRYAN, A. M., SHUMILOV, E. N.

UDC 621.375.82

"Steady-State, Thermal Self-Focusing Laser Beam"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 53-60 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D877)

Translation: Certain problems in the theory of thermal self-focusing of continuous laser radiation are discussed. A ray equation of geometrical optics was obtained for a nonlinear absorption medium; the equation makes it possible to construct an aberration diagram of thermal self-focusing. The structure of the focal region is analyzed, and the behavior of the field at the focus is analyzed over a wide range of change in the absorption medium and the input power. The stability of steady-state, thermal self-focusing is investigated, and it is shown that thermal self-focusing of actual beams of high power occurs without their decay into separate rays. 9 ref. Authors abstract.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 621.375.826

SUKHORUKOV, A. P. and SHCHEDNOVA, A. K.

"Parametic Amplification of Light in the Field of a Phase-Modulated Laser Pulse"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics — collection of works), Vyp.2, Novosibirsk, 1972, pp 17-26 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D192)

Translation: None.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

UDC 577.15.049

USSR

SUKHORUKOV, B. I., POLTEV, V. I., POLOZOV, R. V., IL'ICHEVA, I. A., Institute of Biological Physics, Academy of Sciences of the USSR, Pushchino-na-Oke

"Concerning a Possible Method of Finding Potential Mutagens and Cytostatics Based on Calculating the Energy of Intramolecular Interactions of DNA-Containing Analogs of Nitrogen Bases"

Moscow, Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

Abstract: Semiempirical calculations of the energy of interaction of nitrogen bases were used to find potential cytostatics and mutagens. The calculation was based on consideration of analogs which do not appreciably distort the double helix in the DNA molecule. The total energy of interaction of bases T is assumed to be comprised of the energy of electrostatic E, induction H and dispersion F interaction, and the energy of short-range forces of repulsion V. Each term was computed in the atom-atom approximation, using a BESM-3M digital computer. Following are the most probable potential cytostatics (upper row) and mutagens (lower row):

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

MARINOV, B. S., L'VOV, K. M., SUKHORUKOV, B. I., KAYUSHIN, L. P., POSTNIKOVA, G. B., Institute of Biophysics, Academy of Sciences USSR, Pushchino (Moscow Oblast)

"On the Possibility of Using Iminoxyl Radicals to Detect Unpaired Electrons in Biological Systems"

Moscow, Biofizika, Vol 16, No 1, 1971, pp 337-340

Abstract: The interaction of iminoxyl radicals with amino acids and proteins in the excited state and with mitochondria (in which active transport of electrons occurs.) is studied. It is noted that stable iminoxyl radicals are widely used as spin labels to analyze conformation changes in macromolecules, and that it is also considered possible to use them to study electron transfer in biological systems. The breakdown of the radicals was observed in solutions of tryptophan, tyrosine, and cysteine. A typical kinetic curve for the photochemical reaction of the radicals with protein shows that the rate of breakdown of the radicals in water is considerably lower than the rate of breakdown in the presence of protein; the reaction does not proceed in the dark. It is hypothesized that the radicals interact with a photoinduced paramagnetic state of protein and that the breakdown of the radicals occurs

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...ASE: 08/09/2001 CIA-RDP86-00513R00220321001

USSR

SUKHORUKOV, B. I., et al., Doklady Akademii Nauk SSSR, 1973, Vol 208, No 2, pp 443-446

transitions Ad:Thy→Gua:Thy more frequently than in the reverse direction. Other cases are possible for other ratios between energies. The ratio between these energies determines which base will probably be replaced by the analog, and in which direction this analog will induce transitions.

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208, No 2,

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

MARINOV, B. S., et al., Biofizika, Vol 16, No 1, 1971, pp 337-340

as a result of electron transfer to the radical from photoexcited paramagnetic centers of protein. It is shown that it is possible to use the radicals to detect and analyze paramagnetic states of protein having a short lifetime, as a result of which the concentration of unpaired proteins in a sample is slight (less than 1.10^{-10} spin). Electron transfer was shown with the aid of the radical in an aqueous solution in a dye-protein system and the feasibility of using the radicals to study oxidation-reduction processes in mitochondria was demonstrated.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

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UDC 577.391:612.119:636.7

USSR

TKACH, V. K., DYAKOV, V. A., and SUKHORUKOV, B. Z., Vinnitsa Medical Institute imeni N. I. Pirogov

"Comparative Studies of the Elastic Properties of Monomolecular Layers of Serum Proteins and the Morphological Indexes of the Blood of Dogs in Cases of Acute Radiation Sickness"

Moscow, Radiobiologiya, Vol 12, No 1, Jan/Feb 72, pp 110-114

Abstract: A study was made of the serum proteins and blood count of 32 dogs x-rayed with 100, 350, and 700 r. In dogs that died, the elastic properties of proteins and the leukocyte and erythrocyte counts decreased rapidly until time of death. In dogs that survived, these indexes reached minimum values by the 15th-20th day and continued to improve. Comparative studies revealed that a smaller dose (100 r) has less lasting effects. Changes in the elastic properties of monomolecular layers, which are complex and phasic, were less significant than changes in the blood, i.e., the elasticity of proteins is more radioresistant and recovers more rapidly. Since changes in proteins begin very soon after irradiation (within the first hours to the first day), however, they can be used to determine molecular and structural shifts caused by radiation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

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UDC: 51:330.115

USSR

SUKHORUKOV, G. A., GUGEL', A. S.

"Structural-Functional Analysis of a Technological Complex as an Open System"

V sb. Tekhn. kibernetika. Vyp. 16 (Technical Cybernetics--collection of works. No 16), Kiev, 1970, pp 39-49 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V525)

[No abstract]

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

CIRC

UDC 681.3.06:51

USSR

GLUKHOVA, V. M., SUKHORUKOV, L. N., TKACH, V. F.

"The "VNIIEM-3" Autocoder and Its Use in Preparation of Computer Control Programs"

Primeneniye Vychisl. Tekhn. v Elektrotekhn. Prom-sti [Use of Computer Equipment in the Electronics Industry -- Collection of Works], Moscow, 1971, pp 262-272, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V792 by V. Mikheyev).

Translation: The specifics of the VNIIEM-3 autocoder are described, allowing the peculiarities and optimality of programming in the language of the system of instructions to be retained while facilitating interfacing of independently composed program sections. An illustrative example is presented in the appendix.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED PROCESSING DATE--18

1/2 009

TITLE--PI PRIME NEGATIVE P YIELDS ETA PRIMEO REACTION BY TAKING INTO ACCOUNT MOVING BRANCH POINTS -U-

AUTHOR--SUKHORUKOV, S.T.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(2), 453-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PION PROTON INTERACTION, PARTICLE TRAJECTORY, PARTICLE MOTION, PARTICLE PRODUCTION, NEUTRON, MESON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0367/70/011/002/0453/0456

PROXY REEL/FRAME--1991/1037

NO--AP0110727 UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 009

CIRC ACCESSION NO--AP0110727

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. DATA ON THE REACTION PI PRIME NEGATIVE P YIELDS ETA SUB0 N ARE ANALYZED IN TERMS OF THE METHOD OF COMPLEX MOMENTA, BY TAKING INTO ACCOUNT MOVING BRANCH POINTS. GOOD AGREEMENT WITH EXPTL. RESULTS IS OBTAINED IN THE REGION OF SMALL MOMENTUM TRANSFER.

FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC: 656.25-50

USSR

MITYUSHEV, S. I., Chairman of the Department of Communications of UEMIIT, FILIMONOV, B. M., Chief Engineer, Computing Center of the Sverdlovsk Road, SUKHOBUKOV, V. G., Engineer, MATSKEVICH, S. N., Engineer, PLOTITSIN, R. I., Engineer

"A System for Continuously Checking the Reliability of Transmitted Information"

Moscow, Avtomatika, Telemekhanika i Svyaz', No 6, Jun 72, pp 12-14

Abstract: A system is described for continuously checking the reliability of data transmission in railway communications systems. The system covers the entire communication channel from the primary document to the computer storage unit. The basis of the procedure is guarding against errors in the primary document by introducing a mod 10 check. A check digit is computed and entered in the primary coded documentation. The check digits give the information of the primary document a certain immunity to interference inasmuch as they make error detection possible. Three versions of the mod 10 check system are examined on the basis of a digital message made up of six digits. A block diagram for data transmission with continuous reliability check is presented and described in detail.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

ROSLYAKOV, G. S., and SUKHORUKOV, V. P.

"The Use of Smoothing for the Calculation of Discontinuous Flows"

Vychislitel'nyye Metody i Programmirovaniye (Chislennyye Metody v Mekhanike Sploshnykh Sred). XV. Sbornik Rabot Vychislitel'nogo Tsentra Moskovskogo Universiteta (Computer Methods and Programming (Numerical Methods in the Mechanics of Continua). XV. Collection of Works of Moscow University Computer Center), Moscow, Moscow University Press, 1970, 199 pp, pp 121-129

Abstract: The article considers the use of the smoothing method for the calculation of discontinuous flows. Several examples of the plane steady flow of an ideal gas in a channel in the case of two independent variables are considered. An analysis shows that smoothing even in simplest form can be used to solve a number of gas-dynamic problems. The effectiveness of the method can apparently be increased by introducing the dependence of the coefficients α_i on the solution (for example, on the gradients of the quantities to be determined). The authors thank N. N. KUZNETSOV, who drew their attention to the question and took part in discussions.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC: 533.6.011

USSR

ROSLYAKOV, G. S., SUKHORUKOV, V. P.

"Application of Smoothing to the Calculation of Discontinuous Flows"

Sb. rabot Vychisl. tsentra Mosk. un-ta (Collection of Works of the Computing Center of Moscow University), 1970, vyp. 15, pp 121-129 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B221)

Translation: The authors study the feasibility of using through calculation for numerical solution of problems on hypersonic flows of gas with discontinuity surfaces. Consideration is given to a number of two-dimensional problems for which exact solutions exist. A numerical solution is found by a certain difference scheme; in this connection, after the solution is determined on the layer x = const, it is smoothed with respect to three points: the value of any defined quantity f_i (i is the number of the point on the layer x = const) is replaced by

$$\alpha_0 f_i + \alpha_1 (f_{i+1} + f_{i-1}), \quad \alpha_0 + 2\alpha_1 = 1$$

Comparison with exact solutions shows that satisfactory results are ob-

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

ROSLYAKOV, G. S., SUKHORUKOV, V. P., Sb. rabot Vychisl. tsentra Mosk. un-ta, 1970, vyp. 15, pp 121-129

tained for flows with shock waves in the case of strong smoothing (α_0 = = 0.8-0.9), and for flows with rarefaction waves and contact surfaces in the case of weak smoothing. Difficulties arise in calculations of flows with discontinuity surfaces of various types. A possible method is indicated for improving the effectiveness of the method by introducing curves for the coefficients α as functions of the nature of the solution. Smoothing by three and by five points was done for one of the problems considered; the results were practically coincident. M. G. Lebedev.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 031

TITLE--ELECTRICAL, PHOTO, AND THERMOELECTRIC PROPERTIES OF THIN FILMS OF ALKALI METAL ANTIMONY SULFIDES AND SELENIDES -U-

AUTHOR-(05)-GNIDASH, N.I., SUKHORUKOVA, L.N., KUZNETSOV, M.S., FINKELSHTYN, YA.G., BERUL, S.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 237-40

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--THIN FILM SEMICONDUCTOR, PHOTOCONDUCTIVITY, THERMOELECTRIC PROPERTY, ABSORPTION SPECTRUM, ALKALI METAL COMPOUND, ANTIMONY COMPOUND, SULFIDE, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0363/70/006/002/0237/0240

PROXY REEL/FRAME--1987/1999

ACCESSION NO--AP0105073 UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 031

CIRC ACCESSION NO--AP0105073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC., PHOTOELEC., AND THERMOELEC. PROPERTIES OF THIN FILMS PREPD. BY VACUUM SPUTTERING OF TERNARY COMPDS. OF THE A PRIMEI B PRIMEV C SUB2 PRIMEVI TYPE (WHERE A PRIMEI EQUALS LI, NA, K, OR CS; B PRIMEV EQUALS SB; AND C SUB2 PRIMEVI EQUALS S OR SE) WERE STUDIED. THE TERNARY COMPDS. WERE PREPD. BY INTERACTING SB SUB2 S SUB3(SB SUB2 SE SUB3) WITH THE FLUORIDES OF THE ALKALI METALS. THE FILMS OBTAINED HAVE SEMICONDUCTOR PROPERTIES. A NOTICEABLE PHOTOCOND. IS OBSD. FOR THE ALKALI METAL SB SELENIDES. FOR THE LATTER, SPECTRAL DISTRIBUTION CURVES FOR THE PHOTOCOND. WERE OBTAINED, FROM WHICH IT FOLLOWS THAT THE MAX. OF THE PHOTOCOND. LIE IN THE VISUAL SPECTRAL REGION NEAR THE LONG WAVELENGTH ABSORPTION EDGE OF THESE SUBSTANCES. MANY OF THE THIN FILMS ARE CHARACTERIZED BY A RELATIVELY LARGE DIFFERENTIAL THERMAL EMF.

FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1"

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(16)

JPRS 60560

16 November 1973

B

DISSOCIATING GASES AS COOLANTS AND WORKING SUBSTANCES AT ATOMIC POWER PLANTS

Translation of Russian-language materials presented at the Third All-Union Conference by A.K. Krasin, et al., Dissotsiiruyushchiye Gazy kak Teplonositeli i Rabochiye Tela Energeticheskikh Ustanovok, 1973, Minsk, UDC: 621.311+622.987, signed to press 12 April 1973

SUKHOTIN, A.M.

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[I - USSR - L]

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC: 620.193.4

USSR

SUKHOTIN, A. M., SEMERIKOVA, I. A., KRIVITSKAYA, N. L., PARSHKOV, I. S.

"Corrosion of Metals in Freon 11 (CCl_3F) at 50-250° C"

Moscow, Zashchita Metallov, Vol 9, No 4, Jul-Aug 73, pp 402-406.

Abstract: This work summarizes and supplements data produced by the same authors earlier on the corrosion resistance of metal materials in freon 11 at temperatures of 50 to 250° C. The corrosion behavior of steels types 3, 1Kh13 and Kh18N10T, N2 nickel, monel metal NMZhMts 82-2.5-1.5, M1 copper, AD1 aluminum, SO lead, BrA5 bronze and LO62 brass was studied. The corrosion tests were performed in 1.5 l autoclaves of Kh18N10T steel. The corrosion rate was determined gravimetrically. During the tests, the freon 11 was partially decomposed, increasingly at increasing temperatures. The corrosion rates determined varied widely with type of material and temperature.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC 539.5

USSR

TRANTSEVICH, Ya. V., POPOVA, L. S., POTAK, Ya. M., SUKHOTIN, A. M., GRIKUROV, G. N., ANTROPOV, N. P., Moscow, Tbilisi, Leningrad

"Study of Mechanical Properties of High Strength Stainless Steel of Transition Class EP288 [Kh16N6, SN-2A] at Cryogenic Temperature"

Problemy Prochnosti, No 10, 1971, pp 97-100.

Abstract: The purpose of this work was to study the properties of one of the most common chrome-nickel low-carbon steels in class EP288 at cryogenic temperatures. The studies were performed using experimental melts distinguished by their low carbon and chromium contents and varying contents of austenite in the steel structure. Heat treatment of the steel included hardening in water from 1,000°C, at which level dissolution of carbides occurs, cold treatment -70°C (2 hours) and tempering at 250°C (1 hour). The data indicated that type EP288 steel with the nominal composition, as well as all experimental melts except for one, has high ductility and impact toughness, including high impact toughness of specimens with cracks at down to -253°C. The nominal steel has high strength at both room and cryogenic temperatures, the level of which increases with decreasing test temperature.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

USSR

TRANTSEVICH, Ya. V., et al., Problemy Prochnosti, No 10, 1971, pp 97-100

It is interesting to note that the strength of EP288 steel determined under such rigid test conditions as rupture of specimens with fatigue cracks at -196°C is retained or even increased in comparison to the strength of smooth specimens.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC 620.17

USSR

TAVADZE, F. N., GRIKUROV, G. N., TRAINSEVICH, YA. V., SUKHOTIN, A. M., ANTROPOV, N. P., and ROGATSKIY, A. L.

"Estimating the Strength of Materials and Their Welded Joints at Cryogenic Temperatures by the Method of Testing Contour-Supported Disks for Flexure"

Kiev, Problemy Prochnosti, No 1, Jan 72, pp 109-112

Abstract: A description is given of the design of an attachment for a tensile testing machine for determining the strength of contour-supported disks by bending tests. Results are presented for the testing of basic sheet material and welded seams in the form of disks of the austenite-martensite class (steel of the SN-2A type) at temperatures of -196 and -253°C. The strength values were determined, and a comparative analysis of the obtained results with data concerning the strength of the basic metal and the welded seams was conducted. Study of the disks led to the conclusion that breakdown takes place at their point of contact with the punch in the zone of thermal influence. One table, 3 figures, 4 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC: 620.193.41

USSR

SUKHOTIN, A. M., and TUNGUSOVA, L. I., State Institute of Applied Chemistry

"The Passivity of Titanium and the Electrochemical Behavior of $TiO_{1.99}$"

Moscow, Zashchita Metallov, Vol 7, No 3, 1971, pp 259-263

Abstract: The authors use the potentiostatic method for studying the cathode reduction of the oxide phase of the $TiO_{1.99}$ compound with a TiO_2 structure in $2\underline{N}H_2SO_4$ at 25 degrees. The results show that the cathode polarization of $TiO_{1.99}$ in $2\underline{N}$ H_2SO_4 results in the reduction of oxygen content in the surface layer of this oxide. Intense dissolution of the oxides of titanium occurs at $\varphi < -0.35v$. A comparison of the electrochemical behavior of Ti and $TiO_{1.99}$ validates the assumption that maximal passivity of Ti is evoked by the formation of a passivating film on its surface. The composition of this film is close to that of $TiO_{1.99}$. It is shown experimentally that the following type of reaction can take place on the oxide electrode at $\varphi < -0.4v$: $TiO_{2hydr}+6H^{+}+6e \rightleftarrows TiH_2+2H_2O$, $\varphi_D = -0.45v$. Original article: one table, two formulas, three figures, and 19 bibliographic entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC 620.193.01

USSR

SUKHOTIN, A. M., and TUNGUSOVA, L. I., State Institute of Applied Chemistry

"Passivity of Titanium and Electrochemical Properties of Ti_2O_3"

Moscow, Zashchita Metallov, Vol 7, No 6, Nov-Dec 71, pp 654-659

Abstract: Results of an experimental investigation of the electrochemical properties of Ti_2O_3 oxide are presented. The beginning passivation of titanium in H_2O_4 in the vicinity of the potential φ=-0.3 v can be explained by the oxide film development of the metal. The diagram φ-pH for titanium in aqueous solutions, plotted for the principal reactions involved in the passivity of titanium at 25° and 95°, is analyzed. The dependence of the acidity of the solution on polarization is discussed by reference to polarization curves of titanium in H_2SO_4+Na_2SO_4 at 95°. On the basis of the analysis of the φ-pH diagram, the existence of a critical value of pH(2.3 at 25° and 1.5 at 95°), above which the electrode activation is impossible, was predicted and confirmed experimentally. Three illustr., three tables, 18 biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203210019-1

UDC 536.7

USSR

SUKHOTIN, A. M., LANTRATOVA, N. YA., MATUSHKIN, V. A., POLYAKOVA, R. YE., and LATERNER, S. A.

"Strength of Structural Materials in N_2O_4 at High Temperatures and Pressures"

Dissotsiiruyushch. Gazy kak Teplonositeli i Rab. Tela Energ. Ustanovok (Dissociating Gasses as Heat Transfer Media and Working Fluids of Power Installations — collection of works), Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 4, 1971, Abstract No 4.50.136)

Translation: In connection with the possibility of using N_2O_4 as a coolant for an atomic power plant, the corrosion resistance of structural materials is studied in an equilibrium mixture of gaseous oxides of nitrogen at temperatures up to 700°C and pressure up to 150 atm. Tests of the corrosion resistance of metal materials in N_2O_4 under static conditions were performed at temperatures of 100 and 500° and pressures of 20 and 50 atm. At 100°, weight loss was observed for all materials tested. At high temperatures, the weight losses of all materials decreased and were gradually replaced by weight gain. The surface of stainless steel specimens is covered by a

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USSR

SUKHOTIN, A. M., et al., Dissotsiiruyushch. Gazy kak Teplonositeli i Rab. Tela Energ. Ustanovok, Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 4, 1971, Abstract No 4.50.136)

compact oxide film. Increasing the pressure increases the rate of corrosion by over 10 times. 4 figures; 4 tables; 3 biblio. refs.

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USSR

SUKHOTIN, A. M., LANTRATOVA, N. YA., MATUSHKIN, V. A., POLYAKOVA, R. YE., LATERNER, S. A.

"Strength of Building Materials in N_2O_4 at High Temperatures and Pressures"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U180)

Translation: Results are presented from a study of the strength of building materials in N_2O_4 at temperatures to 700° C and pressures to 150 absolute atmospheres under static conditions. A loss in weight is observed at a temperature of 100° C for all the tested materials. On making the transition to higher temperatures, the losses of weight of all the materials decrease and are gradually replaced by an increase in weight. The surface of the stainless steel samples is covered with dense oxide films. Increasing the pressure increases the corrosion rate by tens of times. There are 5 illustrations, 4 tables and a 3-entry bibliography.

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SUKHOTIN, A. M., LANTRATOVA, N. YA., ANTROPOV, N. P., SAMOYLYUK, P. P.

"Corrosion Kinetics of Stainless Steels and Aluminum in N_2O_4"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 115-121 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U179)

Translation: The studies of the corrosion strength of stainless steel and aluminum alloys in N_2O_4 which have been performed demonstrated that during the process of preliminary treatment a passive film is formed on the surface of the stainless steel. This film has good protective characteristics and permits a significant reduction in corrosion losses during the prestationary period at 50° C. A favorable consequence of passivation is reduction of the stationary corrosion rate by several times. There are 5 illustrations, 1 table and a 3-entry bibliography.

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