USSR

UDC 576.858.5.097.2.077.3

CHEPULIS, G. K. S., ZHDANOV, V. M., NAS, I., CHERBA, I., and ROZHA, K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow, Institute of Microbiology, Medical University, Hungarian People's Republic, Budapest, and Microbiological Scientific Research Group, Academy of Sciences Hungarian People's Republic

"Detection of Cellular Antigens in Myxoviruses and Paramyxociruses by the Immunodiffusion Method"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 62-70

Abstract: Several types of immunodiffusion methods which so far had been used only in the study of adenoviruses, plant viruses, and a few other viruses were used to study the antigenic composition of myxoviruses and paramyxoviruses. The methods used were double gel diffusion, immuno-electrophoresis, and immuno-osmophoresis. The viruses included in the study were Group A Hong Kong influenza virus, fowl plague virus (strain Weybridge), Group A influenza virus (strain WSN) and A_2 virus (strain England/64 and Hong Kong/68) and Newcastle disease virus (strain Tomlinskiy and Hertfordshire) and Sendai virus (strain No 960). The viruses were cultured on chick embryo cultures and primary cultures of chick fibroblasts. The viruses were

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CHEPULIS, G. -K., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 62-70

purified by column chromatography with a special cellulose fiber material, andconcentrated by dialysis of purified preparations against polyethylene glycol of molecular weight 6,000. S^- and V^- antigens were obtained by washing the virus preparations with ether. Virus antigens were separated by adsorption and elution. Virus-specific antigens were detected and also several cellular antigens included in the composition of virus particles. Three of these cellular antigens were identified as group A, species-specific, and Forsman antigens. It was established that the cellular antigens are located not only at the surface of the virus particles, but also in the deeper structures of the virus particles. Also, experimental data indicate that cellular antigens are not simply mechaniaally admixed impurities; rather, they are essential components of the virus particles.

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USSR

MOZOLYUK, Yu.; CHEPULIS, G. S.; MAL'S, O. A.

"Device for Photographing Precipitation Reactions in Agar"

Moscow, Voprosy Mediko-Biologicheskikh Issledovaniy. Materialy Konferentsii Molodykh Nauchnykh Rabotnikov Mediko-Biologicheskogo Fakul'teta (Aspects of Biomedical Research. Materials of a Conference of Young Scientific Workers of the Biomedical Faculty), Ministerstvo Zdravookhraneniya SSSR, 1970, pp 15-17

Abstract: A device for photographing precipitation bands in agar is described. The device is simple in design, easy to use, and produces photos clearer than the original object. Basically it is a hollow cylinder made of tin plate two millimeters thick. Suspended within the cylinder is a movable holder with a light globe, and a metal lamina which forms a dark background for the object to be photographed. An upper cover made of glass serves as a table for the object. It is covered by nontransparent framework with a frame adjustable to the size of the object. The suspended holder within the cylinder can be moved with respect to the object. Best results are obtained with a 150

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MOZOLYUK, Yu., et al, Voprosy Mediko-Biologicheskikh Issledovaniy. Materialy Konferentsii Molodykh Nauchnykh Rabotnikov Mediko-Biologicheskogo Fakul'teta, 1970, pp 15-17

watt globe. Exposure time is 3-4 sec. Photo camera FMN-3 is used for photographing the object.

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1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE IMPORTANCE OF THERMOMETRY IN STOMATOLOGY -U-

AUTHOR-(02)-CHEPULIS, S.P., SIRVIDENE, YE.A.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 2, PP 22-25

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORAL DISEASE, DENTAL CARIES, BODY TEMPERATURE, TUMOR, X RAY RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1846 STEP NO--UR/0511/70/049/002/0022/0025

CIRC ACCESSION NO--AP0101891

UNCLASSIFIED

2/2 030 UNCLASSIFIED

CIRC ACCESSION NO--AP0101891 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. WITH THE AID OF THE PROPOSED MONITORS THE AUTHORS MEASURED THE TEMPERATURE IN DIFFERENT AREAS OF THE MAXILLOFACIAL REGION IN HEALTHY PERSONS AND IN PATHOLOGY. IN NONCOMPLICATED AND COMPLICATED DENTAL CARIES THE TEMPERATURE IN DIFFERENT AREAS OF THE CARIOUS CAVITY AND ADJACENT HEALTHY TEETH WAS DIVERSE. THE TEMPERATURE OF THE SKIN AND ORAL MUCOUS MEMBRANE IN THE CENTER OF MALIGNANT TUMOR WAS HIGHER THAN IN THE SYMMETRICAL AREA. FROM THE NEOPLASTIC CENTER TO THE PERIPHERAL REGION THE TEMPERATURE DECLINES. X RAY IRRADIATION OF MALIGNANT TUMORS CAUSES AN INCREASED TEMPERATURE OF THE SKIN AND ORAL MUCOUS MEMBRANE WITHIN THE IRRADIATED FIELD, WHEREBY IN ACTINORMYCOSIS, THE TEMPERATURE DROPS.

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UDC 576.858.5.097.2.077.3

CHEPULIS, G.-K. S., ZHDANOV, V. M., NAS, I., CHERBA, I., and ROZHA, K., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow, Institute of Microbiology, Medical University, Hungarian People's Republic, Budapest, and Microbiological Scientific Research Group, Academy of Sciences Hungarian People's Republic

"Detection of Cellular Antigens in Myxoviruses and Paramyxociruses by the Immunodiffusion Method"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 62-70

Abstract: Several types of immunodiffusion methods which so far had been used only in the study of adenoviruses, plant viruses, and a few other viruses were used to study the antigenic composition of myxoviruses and paramyxoviruses. The methods used were double gel diffusion, immuno-electrophoresis, and immuno-osmophoresis. The viruses included in the study were Group A Hong Kong influenza virus, fowl plague virus (strain Weybridge), Group A influenza virus (strain WSN) and A_2 virus (strain England/64 and Hong Kong/68) and Newcastle disease virus (strain Tomlinskiy and Hertfordshire) and Sendai virus (strain No 960). The viruses were cultured on chick embryo cultures and primary cultures of chick fibroblasts. The viruses were

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CHEPULIS, G. -K., et al., Voprosy Virusologii, No 1, Jan/Feb 71, pp 62-70

purified by column chromatography with a special cellulose fiber material, andconcentrated by dialysis of purified preparations against polyethylene glycol of molecular weight 6,000. S^- and V^- antigens were obtained by washing the virus preparations with ether. Virus antigens were separated by adsorption and elution. Virus-specific antigens were detected and also several cellular antigens included in the composition of virus particles. Three of these cellular antigens were identified as group A, species-specific, and Forsman antigens. It was established that the cellular antigens are located not only at the surface of the virus particles, but also in the deeper structures of the virus particles. Also, experimental data indicate that cellular antigens are not simply mechaniaally admixed impurities; rather, they are essential components of the virus particles.

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USSR

681.846:534.11

RAGUL'SKIS, K. M., NAVITSKAS, A. Y., VARANAUSKAS, P. A., CHEPULKAUSKAS, A. V.

"Methods of Studying Tape Movement"

Nauchn. Tr. Vyssh. Uchebn. Zavedeniy LitSSR. Vibrotekhnika [Scientific Works of Higher Educational Institutions of LitSSR. Vibration Techniques], No. 1, 1969, pp 63-72 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.432, unsigned)

Translation: Methods are presented for measuring oscillations of a magnetic tape during operation of tape drive mechanisms. A circuit for measurement of transverse oscillations of a tape with uneven range of transverse displacement due to contact pressure on the head with simultaneous measurement of skew oscillations and oscillations perpendicular to the plane of the tape is described. An analysis is presented of the structure of the electric portion of the measuring apparatus. Six illustrations, nine biblio. refs.

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USSR

UDC546.86'22'151:541.67

FIRTSAK, YU. YU., DOVGOSHCHEY, N. I., GRYADIL', I. A., and CHEPUR, D. V., Uzhgorod State University

"Physical Properties of SbSi Seignette-Electric Films"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10, No 3, Mat 74, pp 402-404

Abstract: Experimental results are presented from producing Seignette electric films of SbSi by the method of discrete vaporization and "two temperatures." Films produced under optimum conditions have a resistivity of 10^8- 10^9 ohm-cm. The ratio of photoflux to obscure flux amounts to 10^2 (at a candle power of 40 w). SbSi films possessing excess Sb_2S_3, i.e., produced when substrate temperatures are above optimum, possess a low resistivity and very little photosensitivity. The activation energy for SbSi films is 0.84 ev as determined from the relationship of photoflux magnitude to temperature. The Seignette-electric phase transition temperature for these films is 25-27° C. Physical properties of SbSi films are given. Three figures, 11 bibliographic references.

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USSR

UDC 541.13.183

KOPINETS, I. F., KOVACH, Ye. T., MIKULANINETS, S. V., RUBISH, I. D., and CHEPUR, D. V., Uzhgorod University

"Effect of Adsorption on Electrical and Photoelectric Properties of CdS_xSe_{1-x} Thin Films"

Tomsk, Izvestiya VUZ, Fizika, No 4, 1970, pp 41-44

Abstract: The effect of adsorption (as one of the factors effecting the state of the surface of thin films) of oxygen, water vapors, benzene, ethyl alcohol, and acetone on the electrical and photoelectric properties of a solid solution of CdS_xSe_{1-x} thin films was investigated. Experiments showed that the effect of adsorption on conductivity is a function of the thickness of the film, increasing as the thickness decreases. The adsorption kinetics also depends on the thickness of the layer: the thinner the layer, the more rapidly adsorption-desorption equilibrium occurs. Adsorption kinetics as a function of temperature was also noted: the rate of adsorption increases with temperature, probably indicating activated adsorption. The photocurrent and dark current increase under the absorption of oxygen and decrease under the absorption of benzene, acetone, ethyl alcohol, and water. The following explanation is given for these

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KOPINETS, I. F., et al, Izvestiya VUZ, Fizika, No 4, 1970, pp 41-44

results: the increase in the thermoelectron work function under chemisorption of oxygen indicates that the chemisorbed oxygen is bonded with a "strong" n-bond or acceptor bond with the surface of the samples. Adsorption of benzene, acetone, ethyl alcohol, and water leads to a decrease in the thermoelectron work function, which fact is explained by their chemisorption of the "strong" p-bond type. This chemisorption leads to a charging on the surface for the positive charge and to a bending of the zones downward in the region near the surface, which condition leads to a decrease in the thermoelectron work function under chemisorption. These results are said to agree with the electron theory of catalysis of Vol'kenshteyn and with experimental results previously obtained by the authors.

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USSR

UDC [537.226+537.311.33]:[537+535]

BERCHA, D. M., ZAYACHKOVSKIY, M. P., SLIVKA, V. YU, LOVGA, I. V., TURYANITSA, I. D., AND CHEPUR, D. V.

"Effect of Piezoresistance in BiSeI Crystals"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 53-58 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE651 by G. G. RUDOVOL)

Translation: An investigation was made of the effect of piezoresistance and electrical conductivity in acicular BiSeI single crystals, as well as their temperature dependence in the 270-115° K temperature range. It was established that the piezoresistance coefficient is complexly (peakwise) temperature-dependent. It is suggested that the semiconductor has several donor levels, which are depleted in turn. This results in several peaks, dependent on the number of impurity levels. However, the peak found in the 130-140° K temperature region is due to a phase transition of the second kind. In the 230° K region the piezoresistance does not involve a phase transition but is due to a change in the activation energy of impurity levels. Such an assumption is confirmed by the fact that in experimental studies a shift in the minimum is observed from specimen to specimen, while the minimum remains constant at T=133° K.

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USSR

UDC [537.226+537.311.33]:[537+535]

MUCHICHKA, I. I., SAVCHENKO, N. D., SOVOSHNEV, N. I., CHUMANITSA, I. D., CHEPUR, D. V., SLIVKA, V. YU.

"Effect of Temperature on Certain Electrophysical and Optical Properties of $AsS_xSe_{1-x}I$ and $As_xSb_{1-x}SI$ Samples"

V sb. Nekotor. vopr. khimii i fiz. poluprovodnikov slozhn. sostava (Certain Problems in the Chemistry and Physics of Semiconductors of Complex Compositions -- Collection of Works), Uzhgorod, 1970, pp 228-233 (from RZh Fizika, No 12, Dec 71, Abstract No 12Ye1399)

Translation: Compounds of $AsS_xSe_{1-x}I$ were obtained in the vitreous state by a direct synthesis method, and single crystals of $As_xSb_{1-x}SI$ were obtained from the gas phase. The current-voltage characteristics were studied at various temperatures in the range 100-388°K; the photocurrent was determined as a function of wavelength, illumination, and temperature, and the absorption spectra of the samples were measured at different temperatures. Conclusions were drawn on the basis of the data concerning conductivity mechanisms, recombination mechanisms, defect levels, and the temperature coefficient of the width of the forbidden zone. A. Ya. O.

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1/2 049 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ELECTROPHYSICAL PROPERTIES OF ALKALI METAL METASELENOARSENITES -U-

AUTHOR-(05)-DOVGOSHEY, N.I., NIKOLYUK, V.I., GEMRAD, YE.YE., CHEPUR, D.V., GOLOVEY, M.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIS. 1970, 13(3), 138-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ACTIVATION ENERGY, IR RADIATION, SEMICONDUCTOR MATERIAL, PHYSICAL CHEMISTRY PROPERTY, SODIUM COMPOUND, POTASSIUM COMPOUND, ARSENIDE, SELENIDE, CESIUM COMPOUND, LITHIUM COMPOUND, RUBIDIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1504 STEP NO--UR/0139/70/013/003/0138/0139

CIRC ACCESSION NO--AT0130433

UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--040EC70
CIRC ACCESSION NO--AT0130433
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COND. SIGMA, OF MASSE SUB2, M EQUALS LI, NA, K, RB, AND CS, WAS DETD. FROM MINUS 50 TO 190DEGREES. THE ACTIVATION ENERGY OBTAINED FROM LOG SIGMA VS. 1-T CURVES INCREASED FROM 1.10 FOR LIASSE SUB2 TO 2.00 EV FOR CSASSE SUB2. ALL MASSE SUB2 EXHIBITED A SLIGHT PHOTOSENSITIVITY AT ROOM TEMP. LIASSE SUB2 WAS SENSITIVE TO IR RADIATION. ALL OTHERS WERE SENSITIVE TO VISIBLE LIGHT. THE HIGHEST PHOTOSENSITIVITY WAS EXHIBITED BY NA AND K COMPDS. THAT OF NAASSE SUB2 INCREASED SHARPLY AS THE TEMP. DECREASED. ALL MASSE SUB2 COMPDS. ARE SEMICONDUCTORS. FACILITY: UZHGOROD. GOSUNIV., UZHGOROD, USSR.

UNCLASSIFIED

USSR

UDC 535.215.1:621.315.61.416

KOVACH, Ye. T., DOVGOSHEY, N. I., and CHEPUR, D. V.

"Photoelectric and Optical Properties of Thin Films of the System CdS_xSe_{1-x} $(0 \leq x \leq 1)$"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 97-120 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B413)

Translation: The photoelectric and optical properties are studied of thin films of CdS_xSe_{1-x} obtained on substrates of glass, fuzed quartz, and mica by the method of thermal sputtering in a vacuum and by the "silk screen" method with subsequent thermal processing. Contacts of In, Al, and Cd were also applied by the method of thermal sputtering. The measuring device is described with which the voltampere, luxampere, spectral and frequency characteristics were studied, as well as the lifetime of carriers and the quantum yield of the photocurrent. The measurements were made in the temperature range of -100° C ÷ 300° C with the use of the appropriate cryostats. It is found that the spectral distriubtion of the photoconductivity and the luxampere characteristics depend on the technological conditions for producing the film. The voltampere characteristics were linear and practically did not depend on the production method. The long-time 1-90 min and the short-time 10^{-3} - 10^{-2} sec components of the photoconductivity relaxation were found, the ratio between which depends on

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KOVACH, Ye. T., et al., Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 97-120 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B413)

the dark resistance of the specimen and the method of its production. A monotonic change was observed of the magnitude of the threshold energy which indicates that the specimens in question are a continuous series of solid solutions of replacement. Studies of the reflection and adsorption spectra shown that in thin films of CdS_xSe_{1-x} direct interzonal junctions are most probable. 16 ill. 50 ref. G.Sh.

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1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PREPN. OF BISMUTH TELLURDIE IODIDE, AND SOME OF ITS OPTICAL PROPERTIES -U-

AUTHOR-(05)-CHEPUR, D.V., GORAK, YA.A., KOVACH, D.SH., TURYANITSA, I.D., BORETS, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG, MATER. 1970, 6(2), 385-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BISMUTH, TELLURIDE, IODIDE, OPTIC PROPERTY, CHEMICAL PURITY, CHEMICAL SYNTHESIS, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1345 STEP NO--UR/0363/70/006/002/0385/0386

CIRC ACCESSION NO--AP0121838

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121838

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BITEI SINGLE CRYSTALS WERE PREPD. AND THE CHARACTERISTIC ABSORPTION IN THE EDGE REGION WAS STUDIED. HIGH PURITY STARTING MATERIALS WERE USED FOR THE SYNTHESIS. BITEI WAS SYNTHESIZED FROM THE ELEMENTS TAKEN IN THE STOICHIOMETRIC RATIO AT 480DEGREES. THE SYNTHESIS IN EVACUATED QUARTZ AMPULS TOOK SEVERAL DAYS. THE SINGLE CRYSTALS WERE IN THE FORM OF EASILY CLEAVING PLATELETS. X RAY ANAL. CONFIRMED THAT THEY BELONG TO HEXAGONAL SYSTEM WITH A EQUALS 4.29 ANGSTROM; C EQUALS 6.75 ANGSTROM. PRELIMINARY STUDY OF THE ABSORPTION OF NONPOLARIZED IR SHOWED THAT CRYSTALS SIMILAR TO 10 MU THICK TRANSMIT SMALLER THAN OR EQUAL TO 10PERCENT. BECAUSE ABSORPTION INCREASES TOWARDS THE LONGER WAVELENGTHS, IT MAY BE CAUSED BY HIGH CONCN. OF FREE CARRIERS. THE DEPENDENCE OF THE ABSORPTION COEFF. ON THE SQUARE OF THE WAVELENGTH SEEMS TO CONFIRM THIS SUGGESTION. THE OBSD. ABSORPTION EDGE COULD BE CAUSED BY SIMPLE ALLOWABLE TRANSITIONS BETWEEN THE BANDS. FACILITY: UZHGOROD. GOS. UNIV., UZHGOROD, USSR.

UNCLASSIFIED

USSR

UDC[537.226+537.311.33]:[537+535]

TURYANITSA, I. D., KOPERLES, B. M., SLIVKA, V. YU., and CHEPUR, D. V.

"Synthesis and Certain Electrophysical Properties of Indium Chalcoiodides"

V sb. Poluprovodn. elektronika (Semiconductor Electronics -- Collection of Works), Uzhgorod, 1971, pp 193-197 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE628 by YE. A.)

Translation: The compounds InSI, InSeI, and InTeI were synthesized by direct interaction of the initial components according to the scheme: $2A^{III} + 2B^{VI} + C_2^{VII} \rightleftarrows 2A^{III}B^{VI}C^{VII}$. The method of producing crystals is described and the parameters of their lattices are presented. The optical transmission and photoconductivity spectra of the crystals obtained were investigated. All compounds have an energy gap of more than 2 ev and possess photosensitivity in the region of the long-wave fundamental absorption edge. At 20° C the specific electrical conductivity of the crystals is 10^{10}-10^{11} ohm·cm. The temperature dependence of electrical conductivity, permittivity, and energy gap reveal no anomalies in the temperature range from -150 to +50°C, which obviously indicates that there are no phase transitions in the given temperature region in the compounds obtained.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PECULIARITIES OF VISUALIZATION OF SOME PATHOLOGICAL CONDITIONS IN THE LUNG DURING POLYDIRECTED TOMOGRAPHY AND ZONOGRAPHY -U-

AUTHOR-(02)-POZMOGOV, A.I., CHEPURIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 62-66

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LUNG, RESPIRATORY SYSTEM DISEASE, RADIOLOGY, X RAY TECHNIQUE, DIAGNOSTIC METHODS, BLOOD VESSEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1741 STEP NO--UR/0475/70/000/005/0062/0066

CIRC ACCESSION NO--AP0129109

UNCLASSIFIED

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0129109 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TOMOGRAPHIC ROENTGENOGRAPHIC EXAMINATION WAS CARRIED OUT IN 75 PATIENTS WITH DIFFERENT PULMONARY DISEASES, THE TUBE BEING MOVED LINEARY, ELLIPTICALLY AND CIRCULARY. IT WAS FOUND THAT ELLIPTICAL AND CIRCULAR MOVEMENTS OF THE TUBE ARE A VALUABLE ADJUNCTION TO LINEAR ESPECIALLY DURING LOCATION OF THE LESIONS IN UPPER PARTS OF THE LUNGS. THE INTERPRETATION OF ROUND SHADOWS IS NOT ALWAYS SIMPLE WITH TOMOGRAPHY. HERE IT MAY BE NECESSARY TO TAKE MANY PICTURES. ZONOGRAPHY MAY BE OF CONSIDERABLE HELP IN DETECTING SMALL FOCI AND DETERMINATION OF THE STATE OF THE BLOOD VESSELS.

FACILITY: KIYEVSKIY NAUCHNO ISSLEDOVATEL'SKIY INSTITUT EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII.

UNCLASSIFIED

CHEPURA, V.F.

RAN/ /K-760/5-JAN 73
Dec 72

Katasev, L. A. and V. F. Chepura.
Investigation of movement of artificially ionized clouds in the upper atmosphere.
GIA, no. 3, 1972, 473-476.

Results are presented of simultaneous observations of the movement of artifical ionized and noctilucent clouds in the ionosphere. Measurements were made of 1) the velocity of ionized clouds on the basis of the Doppler effect reflected signals and 2) wind-velocity values, obtained in the same experiments using artificial noctilucent clouds.

The phase change of signals reflected from the ionized clouds was studied by two laser DME units operating at f = 24 MHz, which recorded the Doppler signal shifts on photographic film. Noctilucent clouds were photographed at two points by two aerial cameras. Ionized and noctilucent clouds were simultaneously formed by ejecting atomic cesium and sodium from a single container. Points for observation of the ionized clouds were situated virtually along the line of projection to the Earth of the point of cloud formation so that the Doppler-frequency phase shift of signals reflected from the clouds determined primarily by the movement of the clouds would differ little from one another at the observation points. A large difference of Doppler frequencies at the observation points during the experiment and, consequently, of cloud velocities, would testify to an essential influence of the space-time instability of the cloud structure on the phase change of the signals reflected from the cloud.

Two experiments were conducted over Volgograd in 1969. Ionized and noctilucent clouds were created on October 14, at 0523 hours local time, at an altitude of 120 km, and on October 22, at 0533 h at an altitude of 116 km. In contrast to the results of Gallacher and Barnes

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

USSR

UDC:666.1.036.23

KRAS'KO, A. S., Engineer, KAKHANOVICH, V. S., TYUSHKEVICH, N. I., Candidates of Technical Sciences, CHEPURKIN, A. A., Engineer, Belorussian Affiliate of Power Institute Imeni, G. M. KRZHIZHANOVSKIY

"Frequency Sensor for Continuous Testing of Glass Fiber Thickness During Production"

Moscow, Steklo I Keramika, No 9, Sep 1970, Pages 16-18

Abstract: Methods currently used for testing the thickness of glass fiber are "passive," that is, performed after production and have low reliability. This article presents certain results from the investigation of a frequency method of testing the thickness of glass fiber during production. The method is based on the relationship between natural oscillating frequency of a drawn string and linear mass and tightness. An experimental model of a frequency sensor has been developed. Production tests of the sensor have confirmed its useability. The error does not exceed 4%, with 95% confidence. In the device, a vibrator forming one end support of the length of fiber drawn causes the fiber to oscillate, and the frequency of natural oscillations is measured by a photosensor.

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USSR

UDC: 621.762:669.018.25(088.8)

MOLOKHOV, I. F., STRAKHOV, N. S., CHEPURKIN, Yu. N., KARINKIN, P. M., TUNEV, I. G.

"Method of Manufacture of Metal Ceramic Products"

USSR Author's Certificate Number 360151, Filed 24/02/71, Published 15/01/73 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G440P, by S. Krivonosova).

Translation: In order to increase the wear resistance (by 1.5-6 times) of hard alloy products, they are annealed after sintering in a medium of quartz sand at 800-900°, then normalized at 900-950°. The method has been tested under production conditions, provides for an increase in wear resistance of hard alloy tools working under conditions of vibration during cutting of channels and drilling of ZhSBK alloy.

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USSR

UDC 576.851.45.097.29

CHEPURNAYA, L. I., Stavropol Scientific Research Antiplague Institute of the Caucasus and Transcaucasus

"Pesticin Production Capability of Pasteurella pestis Strains of the Vole Variety. I. Spontaneous and Induced Pesticin Production by P. pestis Strains of the Vole Variety"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 33-36

Abstract: Twenty-nine of 30 vole (Microtus) strains studied were able to produce pesticin, which inhibited the growth of the vole variety of P. pestis on Hottinger agar. Indicator plague strains of the gerbil and squirrel varieties, vaccinal and atypical cultures of the plague microbe, and the causative agent of pseudotuberculosis were indifferent to the pesticins of the vole strains. Elevation of the culture temperature above 26°C, addition of disubstituted potassium phosphate, agitation of the strains, and exposure to ultraviolet light increased the yield of pesticin in the medium, as manifested by enlargement and increased sharpness of the zones of inhibition, and absence of resistant colonies. However, variation of the pH had no effect in this respect. Ultraviolet radiation widened

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CHEPURNAYA, L. I., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 33-36

the spectrum of activity of pesticin, and increased the number of strains sensitive to their own pesticin. Strain 681, which does not regularly produce pesticin, began to do so after exposure to UV light.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PESTINOGENICITY OF PAST. PESTIS STRAINS OF MIVROTUS VARIETY, SPONTANEOUS AND INDUCED PRODUCTION OF PESTICINE WITH THE STRAINS OF

AUTHOR--CHEPURNAYA, L.I.

C

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4, PP 33-36

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PASTEURELLA PESTIS, TUBERCULOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1522 STEP NO--UR/0016/70/000/004/0033/0036

CIRC ACCESSION NO--AP0109582

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSICN NO--AP0109582

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAPACITY OF PRODUCING PESTICINE, INHIBITING THE GROWTH OF PAST PESTIS OF THIS VARIETY ALONE, AND INACTIVE IN RESPECT OF THE CAUSATIVE AGENT OF PSEUDOTUBERCULOSIS OF THE I SEROTYPE WAS ESTABLISHED IN MICROTUS STAINS OF PAST. PESTIS. THE SPECTRUM OF PESTICINE ACTIVITY OF THE MICROTUS STRAINS OF PAST. PESTIS PROVED TO DIFFER FROM THE SENSITIVITY SPECTRUM OF THESE STRAINS TO THE MENTIONED PESTICINE. ON ADDITION TO HOTTINGER AGAR OF BISUBSTITUTED POTASSIUM PHOSPHATE, BY SHUTTLING AND THE ACTION OF ULTRA VIOLET RAYS IT WAS POSSIBLE TO INCREASE PESTIN YEILD INTO THE MEDIUM.

UNCLASSIFIED

USSR

UDC 539.142

NEMIROVSKIY, P. E. and CHEPURNOV, V. A.

"On the Hermitian Character of a Spin-Orbital Operator"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, Vol XXXV, No 8, 1971, pp 1758-1759

Abstract: Spin-orbital interaction plays an important role in the investigation of single-particle nuclear states. In this very short article, the authors present three expressions for the spin-orbital operator -- a general expression, an expression for the case of a spherical nucleus, and an expression for the case of a deformed nucleus -- and proceed to demonstrate that the operator is Hermitian in all three cases. If it were not, this would lead to an incorrect solution of Schrödinger's single-particle equation because the wave functions of the different states would not be mutually orthogonal.

1/1

USSR

UDC: 621.335.5

LIKHTTSINDER, M. Ya., MAKAROV, V. P., CHEPURNOV, V. V.

"A Device for Multiplying and Dividing Slowly Changing Signals"

Nauch. tr. VNII kibernet. (Scientific Works of the All-Union Scientific Research Institute of Cybernetics), 1971, vyp. 4, pp 66-70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7B488)

Translation: A device is described for analog multiplication and division of several variables represented by square bipolar voltage pulses. The device incorporates a sawtooth voltage generator, a null indicator, a phase-sensitive rectifier, an AC amplifier, a comparison circuit, synchronous filters, and pulse dividers. The error of executing the operations is one percent or less. Two illustrations, bibliography of four titles. V. R.

1/1

USSR

UDC 669.18:621.746

SOBKIN, S. I., NOSOV, V. A., ISUPOV, V. F., BREUS, V. M., CHEPURNOVA, A. A., GROMOV, G. P., and ISMANOVA, T. A.

"Certain Factors Influencing the Increase in Dnesity and Purity of Boiler Steel Ingots"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals--- Collection of Works), no 75, Metallurgiya Press, 1970, pp 240-251

Translation: A study is made of four ingots melted by the scrap process, the scrap ore process, and from a high-carbon semi-finished product of 100% cast iron with synthetic slag treatment of the semi-finished product and steel, cast under a layer of slag with heating of the riser of the ingot by lunkerite or an exothermic mixture and lunkerite in combination with heat insulation of the mold with asvestos.

The influence of these factors on the segregation of chemical elements, gas content, content of nonmetallic inclusions, density and dendritic structure of the inogt is established. 8 figures; 2 biblio. refs.

1/1

USSR

CHEPURNYKH, G. K., Donets Physicotechnical Institute of the Academy of Sciences UkrSSR

"Effect of Temperature on the Region of Metastable States of an Antiferromagnetic"

Leningrad, Fizika Tverdogo Tela, No. 4, Apr 71, pp 1225-1226

Abstract: It is shown that the shape of the curves defining the region of metastable states of an antiferromagnetic does not change with a change in temperature. It has been shown in studying the ground state of a uniaxial antiferromagnetic of the "easy axis" type in a magnetic field of arbitrary direction that the region of metastable states on the H_z, H_x diagram is determined by two asteroids close to point $H_x = 0$, $H_z = \pm H_{EA}$ and that when the external magnetic field H is directed along the easy axis, the field interval $\Delta H = H_2 - H_1$ in which the existence of metastable states is possible decreases with an increase in temperature and at the Néel temperature T_{NA}, $\Delta H = 0$. This study was conducted to determine what occurs with these asteroids with an increase in temperature and how the angle between the easy axis and the line passing through the critical point of the asteroid changes. The problem was solved on the basis of the theory of phase

USSR

CHEPURNYKH, G. K., Fizika tverdogo tela, No. 4, Apr 71, pp 1225-1226

transitions of the Landau second type close to the Néel temperature. It is also shown that the curves defining the region of metastable states of an antiferromagnetic may be either extended or contracted by moving along the H_z axis.

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE INFLUENCE OF ADENOSINE TRIPHOSPHATE AND ADENOSINE DIPHOSPHATE ON THE ZETA POTENTIAL OF THROMBOCYTES -U-

AUTHOR-(02)-CHEPUROV, A.K., YELCHANINOV, G.M.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 3, PP 14-17

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ADENOSINE TRIPHOSPHATE, THROMBOCYTE, RABBIT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0862 STEP NO--UR/0219/70/069/003/0014/0017

CIRC ACCESSION NO--AP0052296

UNCLASSIFIED

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0052296 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN EXPERIMENTS WITH A THROMBOCYTIC SUSPENSION PREPARED FROM CITRATE RABBIT BLOOD THE AUTHORS DEMONSTRATE THAT ADENOSINE TRIPHOSPHATE AND ADENOSINE DIPHOSPHATE CAUSE CHANGES IN THE VALUE OF THE ZETA POTENTIAL OF INTACT AND WASHED THROMBOCYTES, WHICH DEPEND ON THE STRUCTURE OF NUCLEOTIDES, TIME OF INCUBATION AND CONCENTRATION. THE AUTHORS ARE OF THE OPINION THAT INCREASED BLOOD CONCENTRATION OF ADENOSINE TRIPHOSPHATE AND ADENOSINE DIPHOSPHATE IS CONDVCIVE TO ADHESION AND AGGREGATION OF THROMBOCYTES AS THE RESULT OF REDUCTION OF THEIR ZETA POTENTIAL.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DEPENDENCE OF THE ORIENTATIONAL MAGNETOOPTIC EFFECT ON THE MAGNETIZATION -U-

AUTHOR-(02)-KRINCHIK, G.S., CHEPUROVA, E.E.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 2, P. 105-10, JAN. 1970

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETOOPTIC EFFECT, FERROMAGNETIC MATERIAL, ELECTRON STRUCTURE, PERMALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1091 STEP NO--US/0000/70/011/002/0105/0110

CIRC ACCESSION NO--AP0136511

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MAGNETOOPTIC EFFECT OBSERVED IN FERROMAGNETIC METALS CONSISTS OF A CHANGE IN THE INTENSITY OF THE REFLECTED LIGHT, AND IS COMPARABLE IN MAGNITUDE WITH THE USUAL EQUATORIAL KERR EFFECT. UNLIKE THE LATTER, HOWEVER, IT IS EVEN IN THE MAGNETIZATION AND IS STRONGLY ANISOTROPIC. IT IS ASSUMED THAT THIS EFFECT IS DUE TO THE INFLUENCE OF THE ORIENTATION OF THE MAGNETIZATION VECTOR ON THE ELECTRONIC STRUCTURE OF THE FERROMAGNET, OWING TO THE PRESENCE OF SPIN ORBIT INTERACTION. IT IS SHOWN HERE THAT THIS EFFECT DEPENDS ON THE MAGNETIZATION. THE MEASUREMENTS WERE PERFORMED ON THIN PERMALLOY STRIP FILMS. FACILITY: MOSCOW STATE UNIV., USSR.

UNCLASSIFIED

USSR

ZOZULYA, V. B. and CHERANOVSKIY, O. R., Khar'kov Aviation Institute

"Control of Laminar Flow Around a Wing in Free Flight"

Kiev, Gidromekhanika, No 20, 1972, pp 3-7

Abstract: Despite the marked advance which laminar flow-around control would bring to aviation technology, many underlying problems in this area remain unsolved. No systematic research is being conducted on the effects of important factors such as atmospheric turbulence, design vibrations, acoustic influences, and so on; while some accepted data are erroneous, such as L. F. Kozlov's figure for initial atmospheric turbulence (1969) (the true figure is significantly smaller). The authors obtained experimental verification of E. B. Schubauer and H. K. Skramstad's thesis that with sufficiently low turbulence (about 0.08%) the so-called upper critical Reynolds number comes into play for conditions of free atmosphere.

Tests were run on the wing of a pilotless flying laboratory, wing profile at the slotted portion being chosen in accordance with laminar profile models for slot blowing. Flights were made during morning hours, with almost no wind or updraft.
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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

USSR

ZOZULYA, V. B. and CHERANOVSKIY, O. R., Gidromekhanika, No 20, 1972, pp 3-7

With sphere blowing in flight of the laboratory, a Reynolds number of Re_d = 385,000-401,000 was obtained for the sphere, corresponding to flow turbulence of about 0.03%. With enclosed suction system and assigned suction intensity, laminar-turbulent transition was 80% of the chord, and profile drag dropped from 0.0070 to 0.0042. Some disparity was found between flight data and tunnel data, explained by the lower flow turbulence in the case of the former.

2/2

USSR

UDC 624.19.001.57

MERKIN, V. YE., and CHERBOTAYEV, V. V.

"An Analysis of the Conditions of Similitude in the Simulation of Underground Structures"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 1, 1971, pp 25-27

Abstract: The article deals with determination of the similitude criteria necessary for the simulation for various undergound structures, and an analysis of the degree of influence of some parameters of the "jacketing -- rock" system upon the stressed state of that system. A method is proposed for correcting the results of simulation on the basis of graphs of relationships of the value of the load to the value of this or that parameter of the model, these graphs being constructed on the basis of an analytical solution, on an electronic computer, of the problem of the distribution of ontact pressures upon the excavation supports. Three figures, 3 bibliographic entries.

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USSR

UDC 616.981.452-022.39-036.23-078.7(479)

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., NAYDEN, P. Ye., YEMEL'YANOV, P. F., GOLUBEV, P. D., FILIMONOVA, Yu. A., GONCHAROV, A. I., LABUNETS, N. F., BABAYEV, M. R., ANANYAN, Ye. L., and KHANGULYAN, E. K., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, and Antiplague Stations, Azerbaydzhan SSR and Armenian SSR

"Experience in Serological Detection of Plague in Rodent Nest Substrate and in Predatory Bird Pellets Under Field Conditions in Natural Foci of the Caucasus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

Abstract: Use of the antibody neutralization reaction (ANR) employing plague antigenic erythrocyte diagnosticum was studied as a serological alternative to detection of plague by bacteriological analysis, for which it is not always possible to gather test material in the field. The study was based on the experimental finding that plague F1 antigen persists in the environment long after an epizootic has subsided. In the first phase, three areas in the Caucasus in which epizootics had been registered previously were studied in 1969-1971. Samples of rodent nest substrate were found to contain F1 antigen by the ANR, whereas bacteriological methods were generally unsuccessful,

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

indicating the usefulness of this method for retrospective analysis. In the second phase an area in which epizootics had not been recorded previously was studied in 1970-1971. While the ANR revealed the presence of F1 antigen in rodent nest substrate, bacteriological analysis did not produce such evidence until 4 months later. This result indicated that the method is also preferential for early detection of plague epizootics. In the final phase pellets regurgitated by predatory birds feeding on plague-carrying rodents were subjected to the ANR. Once again F1 antigen was detected in areas without previous epizootic history up to 2 months prior to detection by bacterial analysis. As a control pellets from an area known to be free of plague for 40 years was subjected to the ANR, and the results were negative. Thus the ANR is shown to be a suitable and preferential method for retrospective and early field detection of natural plague foci.

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USSR UDC 616.981.452-022.39:595.775.1]-078.7+576.851.45.095.33:576.895.775

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., AMANYAN, Ye. L., MKHAKHULYAN, E. K., GOLUBEV, P. D., and GONCHAROV, A. I., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus and Armenian Antiplague Station, Ministry of Health USSR

"Experience in Serological Examinations of Fleas of Rodents for Plague"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 137

Abstract: The minimum number of infected fleas required for a positive serological result is not more than 5 in a mixture with 25 noninfected specimens. The results of serological tests are available within 24 hrs after infection of the test fleas if they are kept at 25°C in a 2% NaCl solution containing 0.002% gentian violet and 1% formalin which effectively extracts plague pathogen PI antigen from the tissue of the insects and preserves it for at least 45 days. The solution with or without the fleas can be used for the serological test which involves neutralization of antibodies with standard plague entigenic erythrocyte diagnosticum. The method was verified in field work. In the summer of 1969, 65 samples containing a total of 2,397 fleas collected from field mice and their holes in Transcaucasia were analyzed with both methods in parallel. The serological method detected antigen PI in 57 samples, while the

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USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 137

bacteriological method yielded cultures of plague pathogen in only 21 samples. In summer 1971, positive results were obtained by the serological method in 24% of samples of fleas collected from gophers in the Caucasian Mountains. Subsequently, the bacteriological method used in October 1971 yielded positive results for the first time in that region. The faster and more sensitive serological method is recommended for territorial surveys of plague pathogen.

2/2

Parasitology

USSR

UDC 576.895.775

MARAPULETS, L. A., and CHERCHENKO, I. I., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, Stavropol

"The Feeding Activity on Man of Fleas From the Common Vole of the Transcaucasian Upland"

Leningrad, Parazitologiya, Vol 4, No 3, May/Jun 70, pp 271-275

Abstract: Thousands of specimens of six species of fleas which are common parasites on voles in the Transcaucasian upland plague focus, were tested for their feeding habits on man. Most of the fleas, among them many young hungry ones, were reluctant to feed on man, when placed on a human body for 10 minutes to 24 hours. Out of hundreds of fleas, one might have fed on man. However, three species of fleas: Ceratophyllus caspius, Ceratophyllus consimilis, and Frontopsylla elata caucasica, did feed on man in a 10 minute exposure in 1.4, 7.9 and 4.8% of cases respectively. Frontopsylla elata, however, harbors plague bacteria for only a limited time. The Ceratophyllus species can be expected in the transmission of plague from rodents to man, since they, feed readily on the vole, and are considered of epidemiological importance.

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1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DIPOLE GIANT RESONANCES OF NONMAGIC NUCLEI -U-

AUTHOR-(03)-BAZHENOV, A.A., GAMALYA, I.A., CHERDANTSEV, P.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(1), 7-13

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIPOLE INTERACTION, NUCLEAR RESONANCE, WAVE FUNCTION, PHOTONUCLEAR REACTION, TITANIUM ISOTOPE, SCANDIUM ISOTOPE, CALCIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1433 STEP NO--UR/0139/70/013/001/0007/0013

CIRC ACCESSION NO--AT0049555

UNCLASSIFIED

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AT0049555 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF CALCN. OF DIPOLE GIANT RESONANCES OF NONMAGIC NUCLEI, CONNECTED WITH THE UTILIZATION OF DEFORMED SINGLE PARTICLE ORBITALS FOR THE CONSTRUCTION OF THE NUCLEI WAVE FUNCTIONS, IS PRESENTED. THE RESIDUAL INTERACTION POTENTIAL, CONSIDERED IN THE CALCN. OF THE DIPOLE STATES, CREATED BY THE PHOTOABSORPTION OF NONMAGIC NUCLEI, PRIME42 CA, PRIME42 SC, PRIME44 TI, PRIME46 TI, INCLUDED THE DEPENDENCE OF THE QUANTUM NOS. K, THAT ARE THE INTEGRALS OF THE MOTION IN THE PRESENTED SCHEME. THE CALCNS. OF THE OSCILLATOR FORCES AND THEIR DEPENDENCE UPON THE GIANT RESONANCE ENERGY WERE MADE AND THEIR RESULTS ARE GIVEN. FACILITY: TOMSK. POLITEKH. INST. IM. KIROVA, TOMSK, USSR.

UNCLASSIFIED

UDC 678.675:678.06-419.8:677.521

USSR

CHUDINA, L. I., TANUNINA, P. M., LITOVCHENKO, S. I., CHERVINSKAYA, M. A., CHERDASOV, M. V., VOROB'YEV, V. D., VLASOVA, K. N., KISELEV, B. A., and DAVYDOVA, I. F.

"Polyimides and Polybenzimidazols for Plexiglasses and Cements"

Moscow, Plasticheskiye Massy, No 4, 1973, pp 15-17

Abstract: The physical and chemical properties were determined for a number of thermoplastics -- such as the polyimides (PI), polyamidoimides (PAI), and polybenzximidazols (PBI) -- forming 15-68% solutions with different solvents. The PAI and PBI plus three of the PI resins formed linear structures; two of the PI resins formed a three-dimensional structure. The linear resins have a greater strength than the crosslinked below temperatures of about 300°C. The data are given in several tables and graphs.

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UDC: 621.317:621.391.822

USSR

KLYUYEV, L. L., MESHKOV, M. N., SOLONENKO, V. G., KHODASEVICH, R. G., CHERDYNTSEV, V. A.

"Comparative Analysis of Instruments for Measuring the Delay Time of Noise-Like Signals"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 147-148 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A316)

[No abstract]

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UDC: 621.317.023.001

USSR

CHERNYSHEV, V. O., CHERDYNTSEV, V. A.

"On the Theory of Nonstationary Complex Systems of Radio Measurements"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 179-181 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A311)

Translation: It is noted that structural redundancy makes a complex system of radio measurements appreciably more accurate than any of the facilities which make up the system. Besides this, the combination of facilities increases the reliability of information and improves the resistance of the system to interference. In combining facilities for radio measurement systems, various criteria of optimality may be used, including minimization of variance in the resultant error. The principle of construction of a two-channel system of radio measurements is outlined and illustrated by a diagram. Equations are presented which can be used with predetermined correlation error functions to synthesize an optimum filter for a complex system of radio measurements subjected to the effect of nonstationary interference. It is shown that the variance of random errors in such a system approaches zero under steady-state conditions, which is the main advantage of such systems over stationary systems. E. L.

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USSR

UDC 577.391:612.016.1

PETROV, R. V., KOVAL'CHUK, L. V., and CHEREDEYEV, A. N., Institute of Biophysics, Ministry of Health USSR, Moscow

"Quantitative Aspects of Present-Day Radiation Immunology and the Action of Radiation on Intercellular Cooperative Processes"

Moscow, Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 483-494

Abstract: During the past 15-20 yrs a considerable amount of research has been done on the effects of irradiation on immunity. This research was done principally on the level of changes in the immunity of the entire organism; relatively few studies have been concerned with quantitative aspects of the action of radiation on immunocompetent cells. For a number of years, systematic research has been conducted at the authors' laboratory on the effects of sublethal irradiation of mice with gamma-rays upon the dynamics of changes in cells of the lymph system. In this research quantitative estimates were made for 2 mos after irradiation of the number and functional activity of lymphocytes, immunocompetent precursors, stem hemopoietic cells, and antibody-forming cells. This work is reviewed. The results showed that changes in the immunological response of the irradiated organism were not due solely to a shortage of cells participating in this response (principally precursors

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

USSR

PETROV, R. V., Radiobiologiya, Vol 11, No 4, Jul/Aug 71, pp 483-494

of antibody-forming cells and immunocompetent cells exhibiting homotransplantation activity); there were also radiation-produced deficiencies in intracellular cooperative processes necessary for immunological effects. Specifically, disturbance in the cooperation between lymphoid cells and stem hemopoietic cells could be assumed. Stem hemopoietic cells, in the absence of lymphocytic stimulation in the direction of immuno- and lymphopoiesis, differentiated towards hemopoiesis. One of the aims of the research being conducted is development of methods for restoration of the immunological reactivity of the irradiated organism by transplantation of one or several types of cooperating cells.

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CHANGES IN ENDOTHELIUM OF POSTERIOR VENA CAVA IN ACUTE RADIATION DISEASE -U-

AUTHOR-(02)-NIKIFOROVA, YE.N., CHEREDEYEVA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ARKH ANAT GISTOL EMBRIOL 58(2): 59-64. ILLUS. 1970.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIATION SICKNESS, X RAY RADIATION BIOLOGIC EFFECT, RADIATION DOSAGE, BLOOD VESSEL, RADIATION DAMAGE, MITOSIS, TISSUE REGENERATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1081 STEP NO--UR/9076/70/058/002/0059/0064

CIRC ACCESSION NO--AP0128508

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

2/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0128508
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MALE RATS WEIGHING 200-250 G WERE USED. FOUR HUNDRED AND FORTY ANIMALS WERE EXPOSED TO WHOLE BODY X RAY IRRADIATION IN SINGLE DOSES FROM 550 OR 620-650 R (LD 60-70-30), 950 R (LD 90-95-12), TO 1400 R (LD 100-3), 80 UNIRRADIATED RATS BEING USED AS CONTROLS. ANIMALS WERE SACRIFICED AT THE SAME TIME OF DAY (10-12 A.M.) 1, 3, 5, 7, 10, 15, 20, 25, 30, 60, 90 AND 180 DAYS AFTER IRRADIATION. IN ADDITION TO ROUTINE HISTOLOGIC TECHNIQUES, FLAT FILM PREPARATIONS WITH SILVER NITRATE IMPREGNATION OF CELL BORDERS WERE ALSO USED. OBVIOUS CYTOLOGIC SIGNS OF RADIATION INJURY (ENLARGEMENT OF AVERAGE SIZE OF CELL NUCLEI, INCREASED AMOUNT OF BINUCLEAR CELLS AND APPEARANCE OF POLYNUCLEARS) WERE FOUND IN ENDOTHELIUM OF THE POSTERIOR VENA CAVA. ALTHOUGH THE NUMBER OF DEGENERATING CELLS TENDED TO GROW, INTEGRITY OF THE ENDOTHELIAL COAT PERSISTED AT ALL STAGES OF ACUTE RADIATION SICKNESS. AT THE SAME TIME MITOTIC ACTIVITY OF ENDOTHELIAL CELLS INCREASED (TO UP TO 7PERCENT, 8 DAYS AFTER IRRADIATION AT 950 R DOSE) THOUGH MANY OF THE MITOSES WERE OF PATHOLOGIC NATURE. IN SURVIVING ANIMALS THE ENDOTHELIAL COAT RECOVERED NORMAL STRUCTURE 2-6 MO. AFTER IRRADIATION. THE RESULTS OF THIS STUDY LEND CONTRIBUTORY EVIDENCE TO THE NOTION OF RELATIVE RADIATION RESISTANCE OF ENDOTHELIAL CELLS, WITH PARTICULAR REFERENCE TO THOSE OF MAJOR BLOOD VESSEL. FACILITY: LAB. EXP. HISTOL., INST. EXP. MED., ACAD. MED. SCI. USSR, LENINGRAD, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DETERMINATION OF THE TUNGSTEN CONTENT IN THE BINDING PHASE OF HARD SINTERED ALLOYS -U-

AUTHOR-(05)-TUMANOV, V.I., SHCHETILINA, YE.A., CHEREDINOV, A.A., YELMAKOVA, S.M., SEREBROVA, O.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,483

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(6)

DATE PUBLISHED--26JAN70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--METAL CHEMICAL ANALYSIS, HARD ALLOY, TUNGSTEN CONTAINING ALLOY, MAGNETIC PERMEABILITY, CURIE TEMPERATURE, METALLURGIC RESEARCH FACILITY, FERROMAGNETISM, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1463 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126994

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126994
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE W CONTENT IS DETD. BY HEATING THE SAMPLE, MEASURING WITH A MAGNETOMETRIC APP. THE CHANGE OF THE MAGNETIC PERMEABILITY OF THE ALLOY, AND DETG. THE CURIE TEMP. ACCORDING TO THE LOSS OF FERROMAGNETIC PROPERTIES. FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TVERDYKH SPLAVOV.

UNCLASSIFIED

USSR

CHEREDINOV, M. N.

"The Use of Computers for Determination of the Staff of Teachers for a School"

Primeneniye mat. Metodov i Vychisl. Tekhn. v upr. Vyssh. Uchebn. Zabedeniyami Vyp 2 [Application of Mathematical Methods and Computer Equipment to the Control of Universities, No 2], Moscow, 1971, pp 150-154, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V728 by V. Mikheyev).

Translation: An algorithm is studied for determination of the required staff of teachers and classrooms for the conduct of the teaching process in a University. It consists of the following. Study groups are connected into flows based on the number of students in each and their study plans. Based on the total number of hours necessary for all types of lessons for all flows, all disciplines and workload norms, established for teachers, the required staff of teachers is calculated for reading of lectures in each discipline, for conduct of seminars and practical sessions and laboratory work. Based on the flows formulated, considering the number of study groups, the number of hours and types of lessons, the number of lecture halls, special

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CHEREDINOV, M. N., Primeneniye mat. Metodov i Vychisl. Tekhn. v upr. Vyssh. Uchebn. Zabedeniyami Vyp 2, Moscow, 1971, pp 150-154.

purpose classrooms, equipment required and halls for practical lessons and special rooms are calculated. It is noted that a Minsk-22 computer program has been written for this algorithm, 4,500 words long. Solution of this problem for a univerisity with 7 departments, 422 study groups and 40 specialists requires 6 hours of machine time. The results of the solution are output on an ATSPU-128 in the form of tables showing the staff of teachers and classrooms, indicating their specialization and the number of classrooms in each department and for the school as a whole.

2/2

:c. Nr.
AP0023231

Abstracting Service:
CHEMICAL ABST. 2-70

Ref. Code
UR0467

34133x Change in electrical conductivity as a result of thermochemical conversions of solid fuel in inert and oxidizing media. Golovina, G. S.; Kantorovich, B. V.; Pitin, R. N.; Ponnik, Yu. A.; [redacted] K. I. (USSR). *Khim. Tverd. Topl.* 1969, (5), 126–7 (Russ). The process of thermal decompn. of powd. hard-coal (grade G, Kuzbass) was studied in Ar and Ar–O plasma streams. The elec. cond. of Ar plasma increased more rapidly than that of Ar–O plasma. During combustion of a natural solid fuel, the main source of charged particles was thermal decompn. of an org. component. Frantisek Smutny

MK

REEL/FRAME
19631707

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF VACUUM ULTRAVIOLET IRRADIATION ON THE SPECTRAL DISTRIBUTION OF THE PHOTOCONDUCTIVITY OF CADMIUM SULFIDE SINGLE CRYSTALS
AUTHOR-(03)-GRIGOREV, V.R., NOVIKOV, B.V., CHEREDNICHENKO, A.YE.

COUNTRY OF INFO--USSR

SOURCE--VESTN. LENINGRAD. UNIV., FIZ., KHIM. 1970 (1), 75-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--VACUUM UV IRRADIATION, SPECTRAL DISTRIBUTION, PHOTOCONDUCTIVITY, CADMIUM SULFIDE, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1836 STEP NO--UR/0054/70/000/001/0075/0079

CIRC ACCESSION NO--AP0123625
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123625

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF UV LIGHT AND ELECTRON BOMBARDMENT (3 KEV) ON THE FINE STRUCTURE OF SPECTRAL DISTRIBUTION OF COS SINGLE CRYSTAL PHOTOCOND. WAS INVESTIGATED AT 80DEGREESK IN VACUUM (LESS THAN OR EQUAL TO 10 NEGATIVE PRIME6 TORR). ADSORBED O INFLUENCES THE SPECTRAL DISTRIBUTION OF PHOTOCURRENT. CHANGES IN THE DARK COND. AND FINE STRUCTURE OF PHOTOCOND. OCCURRING AFTER IRRADN. ARE EXPLAINED BY THE DESPORTION OF O FROM THE SURFACE OF THE CRYSTAL.

UNCLASSIFIED

Semiconductor Technology

USSR UDC 548.526:548.4

DUDKO, G. V., and CHEREDNICHENKO, D. I., Taganrog

"Raising the Diffusion Activity of Germanium Treated With An Electron Beam"

Kishinev, Elektronnaya Obrabotka Materialov, No 2, 1970, pp 29-31

Abstract: An anomalous increase of the diffusion activity of electrically active impurities in germanium, exposed to low-energy electrons ($E < 30$ kev), is established. The germanium diffusion coefficients increase fourfold for the acceptors (In, Ga) and 1.5-2-fold for the donors(Sb, As). The coefficients of diffusion are determined experimentally by the method of p-n-transitions on the basis of available concepts concerning the diffusion along the boundaries. The increase of the diffusion activity is related to the formation of the developed network of dislocations along which the migration of impurities is considerably facilitated.

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1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--POSSIBLE MECHANISMS OF THE FORMATION AND DISTRIBUTION OF DEFECTS IN SILICON AND GERMANIUM DURING ELECTRON BEAM HEATING -U-

AUTHOR-(03)-DUDKO, G.V., KOLEGAYEV, M.A., CHEREDNICHENKO, D.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. OBRAB. MATER. 1970, (2), 25-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--ELECTRON BEAM, METAL HEATING, SINGLE CRYSTAL, SILICON, GERMANIUM, METAL MELTING, MICROSCOPY, CRYSTAL LATTICE DEFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0946 STEP NO--UR/0472/70/000/002/0025/0029

CIRC ACCESSION NO--AP0121548

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL DEFECTS PRODUCED IN GE AND SI SINGLE CRYSTALS (SECTIONED ALONG THE (111) PLANES) DURING LOW ENERGY ELECTRON BEAM BOMBARDMENT WAS STUDIED. THE SAMPLES MAINTAINED THEIR SINGLE CRYSTALLINITY IN SPITE OF SOME SURFACE MELTING. THE DISLOCATIONS WERE REVALED BY CHEM. ETCHING AND COUNTED UNDER A MICROSCOPE. THERE WAS A ZONE OF DISLOCATIONS, EXTENDING INTO THE BODY OF THE CRYSTAL, AT THE POINT WHERE THE BEAM STRIKES THE CRYSTAL. THE PRESSURE OF THE ELECTRON BEAM IS TOO LOW TO CAUSE THE DISLOCATIONS; INSTEAD, THE DEFECTS ARE PROBABLY DUE TO THERMAL STRESSES AND POSSIBLY TO BENDING OF THE CRYSTALS DURING HEATING.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DIFFUSION OF INDIUM AND ANTIMONY IN GERMANIUM IRRADIATED BY LOW ENERGY ELECTRONS -U-

AUTHOR-(04)-DUDKO, G.V., MARUNINA, N.I., SUKHOV, G.V., CHEREDNICHENKO, D.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1292-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL DIFFUSION, ANTIMONY ALLOY, GERMANIUM ALLOY, INDIUM ALLOY, CRYSTAL DISLOCATION, RADIOACTIVE ISOTOPE, ELECTRON, LOW ENERGY NEUTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0476 STEP NO--UR/0181/70/012/004/1292/1294

CIRC ACCESSION NO--AP0126228

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0126228
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION OF IN AND SB IN GE ORIENTED IN THE (111) PLANE AND TREATED OVER THE ENTIRE SURFACE WITH LOW ENERGY ELECTRONS (SMALLER THAN 30 KEV) WAS STUDIED AT 650-850DEGREES USING RADIOACTIVE ISOTOPES. THE DIFFUSION PARAMETERS ARE D SUB0 EQUALS 5.8 TIMES 10 PRIME3 CM PRIME2-SEC, Q EQUALS 57 KCAL-MOLE FOR IN AND D SUB0 EQUALS 21 CM PRIME2-SEC AND Q EQUALS 48 KCAL-MOLE FOR SB. ACCELERATED DIFFUSION IS RELATED APPARENTLY TO THE FORMATION OF A NETWORK OF DISLOCATIONS BY IRRADN. FACILITY: TAGANROG. RADIOTEKH. INST., TAGANROG, USSR.

UNCLASSIFIED

USSR

UDC: 536.4:621.791.85:620.18

DUDKO, G.V., KOLEGAYEV, M.A., and CHEREDNICHENKO, D.N., Taganrog

"Possible Mechanisms in the Formation and Distribution of Defects in Silicon and Germanium During Electron-Beam Heating"

Moscow, Fizika i Khimiya Obrabotka Materialov, No 2, Mar-Apr 70, pp 25-29

Abstract: The effects of electron-beam processing on material structure are important in view of the intensive use of this technique at the present time. The authors studied the actual structure of Ge and Si single crystals treated with an electron beam (4-8 kv, 2 ma, 0.5-2.0 sec, vacuum of $5 \cdot 10^{-5}$ mm Hg). Defects 5 x 5 x 0.5 mm were produced in the {111} plane. There was no disturbance of crystalline structure even upon surface fusion. The sharp increase in dislocation density at points of treatment is believed to be due primarily to thermal stresses.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--PHYSICOCHEMICAL AND TECHNOLOGICAL PROPERTIES OF PRILUKI AND RYBAL'SKII PETROLEUMS -U-

AUTHOR-(03)-CHEREDNICHENKO, G.I., ZHURBA, A.S., USUPOVA, L.G.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTE KHIM. (MOSCOW) 1970, (3), 47

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, PROPULSION AND FUELS

TOPIC TAGS--KEROSINE, GASOLINE, JET FUEL, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, PETROLEUM REFINING, PHYSICAL CHEMISTRY PROPERTY, CATALYTIC REFORMING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2081 STEP NO--UR/0318/70/000/003/0047/0047

CIRC ACCESSION NO--AP0127454

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRILUKI (15-27PERCENT NAPHTHENES AND 70PERCENT PARAFFINS) AND RYBAL'SKII LOW S PETROLEUMS FROM THE DNIEPER DONETS BASIN YIELDED 55.7 AND 67.0PERCENT OF LIGHT FRACTIONS, RESP., AND EQUIV. REFORMING CATALYZATES. IN THE RYBAL'SKII PETROLEUM, AROMATIC HYDROCARBON CONTENT IN THE 105-40DEGREES AND 140-240DEGREES FRACTIONS WAS 36.4 AND 28PERCENT, RESP., BUT PARAFFINIC HYDROCARBON CONTENT (26.8PERCENT IN THE 105-40DEGREES FRACTION) AND THE ISO NORMAL PARAFFIN RATIO WERE SO LOW (0.3-0.4 FOR THE 60-105 AND 120-40DEGREES FRACTIONS) THAT THE OCTANE NO. WAS 13-16 POINTS LOWER THAN THAT OF THE PRILUKI GASOLINE. RYBAL'SKII CRUDES YIELDED KEROSINE JET FUELS HAVING POOR LOW TEMP. AND FLAME CHARACTERISTICS AND ONLY LOW GRADE MAZUT BOILER FUEL. THUS, SEP. REFINING OF THE 2 PETROLEUMS WAS NECESSARY.

UNCLASSIFIED

USSR UDC 541.123.2:546.824-31'654.3-31+548.824-31'41- 1

KISEL', N. G., LIMAN'T. F., MUDROLYUBOVA, L. F., and CHEREDNICHENKO, I. F.

"$CaTiO_3$-La_2TiO_5 System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10, No 3, Mar 74, pp 465-468

Abstract: Samples for studying the $CaTiO_3$-La_2TiO_5 system were produced by reacting an ammonia solution of ammonium carbonate with the chlorates of calcium, lanthanum, and titanium. After washing and drying, the residues were analyzed after heating for 6-12 hours at different temperatures (100-1300° C). Results of x-ray and chemical phase analysis showed that 6-8 hours is sufficient for establishing equilibrium. From the constructed phase diagram it was found that a region of $CaTiO_3$-base solid solutions with a perovskite structure is formed. A new phase appears above 1100° C which could not be separated for identification but it was ascertained that this phase is a new compound with a composition close to that of $Ca_2La_2Ti_3O_{11}$. One figure, one table, 13 bibliographic references.
1/1

USSR UDC 681.2.001.12:621--039.84

KLEMPNER, K. S. and CHEREDNICHENKO, I. M.

"Optimal Relationships During Calculation of the Error of Radioisotope Instruments"

Moscow, Izmeritel'naya Tekhnika, No 5, May 1973, pp 71-73

Abstract: In the designing of radioisotope instruments, in a number of cases optimal relationships exist among the parameters of the functional scheme, at which the measurement error is minimal. Depending upon the rate of change of the measured value x, consideration may be given to two cases: 1) the given measurement error, divided by the rate of change of x, is much smaller than the response speed of the instrument; 2) the given measurement error, divided by the rate of change of x, is equal to or greater than the response speed of the instrument. In the first case the dynamic characteristics of the object of control do not bring about a supplementary error during the measurement of x; this corresponds to a quasi-steady measured value. In the second case the total measurement error is the sum of the static measurement error and a dynamic measurement error. In accordance with this there can be either a minimum of error on the basis of the sensitivity of the measurement instrument, or a minimum on the basis of the time constant of the instrument during the measuring of rapidly changing values.

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KLEMPNER, K. S. and CHEREDNICHENKO, I. M., Izmeritel'naya Tekhnika, No 5, May 1973, pp 71-73

An investigation is made of conditions of the minimum of error in the measurement of values connected with a nuclear radiation flux, with account taken of all forms of error originating in a functional system of measurement. An analysis is made of the influence of individual error components upon the conditions of existence of the minimum. It is shown that the basic relationships used in engineering methods of calculation are partial in nature, and are obtained as limit estimates in the cited expressions. Calculation relationships are given, which link the optimal conditions of measurement for cases encountered in designing practice. 3 figures. 7 references.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE AUTHORITY OF KNOWLEDGE -U-

AUTHOR--CHEREDNICHENKO, L.S.

COUNTRY OF INFO--USSR

SOURCE--PRAVDA UKRAINY, JULY 19, 1970, P 2, COLS 5-8

DATE PUBLISHED--19JUL70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--STUDENT ENROLLMENT, ACADEMIC INSTITUTION SIZE, UNIVERSITY, TECHNICAL INSTITUTE, CHEMICAL INSTITUTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0649 STEP NO--UR/9013/70/000/000/0002/0002

CIRC ACCESSION NO--AN0116222
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AN0116222

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 1970, THE 138 INSTITUTIONS OF HIGHER LEARNING OF THE UKRAINIAN REPUBLIC ANTICIPATE THE ENROLLMENT OF MORE THAN 153,000. THE 757 MIDDLE SPECIALIZED SCHOOLS OF THE REPUBLIC WILL ACCEPT 240,000 NEW STUDENTS. THE KIYEV TECHNOLOGICAL INSTITUTE OF LIGHT INDUSTRY WILL HAVE A NEW SCHOOL BUILDING WITH AN AREA OF ABOUT 10,000 SQUARE FEET. THE DNEPROPETROVSK CHEMICAL TECHNOLOGICAL INSTITUTE WILL OPEN A NEW DORMITORY FOR 770 STUDENTS. THE KIYEV STATE UNIVERSITY HAS COMPLETED THE CONSTRUCTION OF A DORMITORY FOR 500 STUDENTS. THE ODESSA TECHNOLOGICAL INSTITUTE IMENI LOMONOSOV WILL HOUSE 630 STUDENTS IN ITS NEW DORMITORY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520020-8"

USSR UDC 621.373:530.145.6

YERSHOV, A. G., CHEREDNICHENKO, O. P., SHARIF, G. A.

"An Experimental Study of a Laser Based on a Solution of an Organic Dye With Transverse Pumping and a Dispersion Cavity"

Zh. prikl. spektroskopii (Journal of Applied Spectroscopy), 1971, 14, No 2, pp 216-221 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D187)

Translation: The authors study the polarization, energy and spectral characteristics of emission from a laser based on a solution of rhodamine 6G in ethyl alcohol with a concentration of $C = 1 \cdot 10^{17}$ cm^{-3}. The use of a dispersion cavity with diffraction grating and prism, and with transverse pumping of the dye by the second harmonic of an 8 MW neodymium laser made it possible to achieve emission which can be tuned over a range of 560-620 nm with an emission bandwidth of 1-6 nm and a maximum conversion factor of $\eta = 35\%$. Five illustrations, bibliography of nine titles.

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--CHARACTERISTIC FEATURES OF CONTACT WELDING BY FUSION WHEN EXECUTING T JOINTS -U-

AUTHOR--CHERTOVICHEK, V.T., DOBROVOLSKIY, V.P., GORSHKOV, A.P., PRITULYAKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, AVTOMATICHESKAYA SVARKA, NO 1, 1970, PP 53-56

DATE PUBLISHED--------70

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

TOPIC TAGS--WELD JOINT, PRESSURE WELDING, WELD EVALUATION, WELDING INSPECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0050 STEP NO--UR/0125/70/000/001/0053/0056

CIRC ACCESSION NO--AP0044746

Acc. Nr.: AP0046746 Ref. Code: UR0125

USSR UDC 621.791.053.96

CHEREDNICHOK, V. T., DOBROVOL'SKIY, V. P., GORSHKOV, A. P., PRITUZHALOV, V. A.

"Characteristic Features of Contact Welding by Fusion when Executing T-Joints"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 53-56 (from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: The interrelation of the parameters characterizing upsetting when executing T-joints and the quality of the welds obtained arestudied. There are 7 illustrations and a 5-entry bibliography.

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Reel/Frame
19790050

Mechanical Properties

USSR UDC 669.15-194:669.14

NIKITSKAYA, V. A., PYATAKOVA, L. L., POLTAVETS, N. A., SHUBINA, S. A., KUZNETSOVA, L. M., VOLKOV, L. G., BARANOV, V. Ya., and CHEREDNIK, L. Ye., Metallurgical Plant imeni Dzerzhinskiy, Dneprodzerzhinsk Industrial Institute imeni M. I. Arsenichev

"Improvement of Mechanical Properties of Hot-Rolled 10KhSND Steel"

Moscow, Metallurg, No 1, Jan 73, pp 16-17

Abstract: Experimental data are presented on the effects of chemical composition, method of final deoxidation, and temperature at the end of rolling on the level of mechanical properties and the amount of waste of 10KhSND steel in the hot-rolled state. The effects of C, Mn, Si, and Cr and their summary effect on the impact strength and the ultimate strength (yield) of 10KhSND steel deoxidized in the ladle with aluminum (1000 g/ton) and ferrotitanium (500 g/ton) are discussed by reference to diagrams. Best results in improving the mechanical properties and in decreasing the amount of waste were obtained by applying calciosilicate (2000 g/ton) and by reducing the rolling temperature to 900 °C at the same time. The use of calciosilicate in the final deoxidation of steel in the open-hearth shop of the Plant imeni Dzerzhinskiy decreased the amount of waste by 5-5.5 times. Two figures, one table.

1/1

Oscillators and Modulators

USSR UDC: 621.373.4.029.6.001.5

AFANASOV, S. G., CHEREDNIK, V. I.

"On the Feasibility of Using Drift Effects in the Grid-Anode Space of a Triode for Generating Microwave Electromagnetic Oscillations"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 127-131

Abstract: The authors discuss the possibility of using a triode for generating microwaves in a mode analogous to the operating mode of an avalanche-drift diode oscillator. The impedance of the grid-anode space is calculated. The resistive and reactive components of the impedance are calculated as functions of the drift angle. The calculations are done for the low-amplitude region. The impedance is computed in the cathode-grid space as well with regard to drift effects. An arbitrary phase relation is assumed between the voltages across both spaces. Two figures, bibliography of eight titles.

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USSR UDC 541.15

CHEREDNIKOV, V. N.

"NF_3 and N_2F_4 Radiolysis by Fast Electrons"

Moscow, Khimiya Vysokikh Energiy, Vol 6, No 6, Nov-Dec 72, pp 525-528

Abstract: Radiolysis of NF_3 and N_2F_4 by fast electrons of about 30 Mev was studied. The rate of radiolysis of both NF_3 and N_2F_4 increases linearly with increasing gas pressure and with the magnitude of the dose absorbed by the gas. The breakdown of NF_3 produces nitrogen, fluorine and cis-difluorodiazine. Radiolysis of N_2F_4 yields nitrogen trifluoride, nitrogen, trans-difluorodiazine and cis-difluorodiazine. It was shown that under conditions of complete breakdown of tetrafluorohydrazine the cis-N_2F_4 is radiationally more stable than trans-N_2F_4. Also, it has been shown that tetrafluorohydrazine is less stable toward radiation than nitrogen trifluoride.

USSR

UDC: 536.6.01.8

CHEREMISIN, F. G., Computing Center of the Academy of Sciences of the USSR, Moscow

"Solution of the Two-Dimensional Problem of Aerodynamics of a Rarefied Gas on the Basis of Boltzmann's Kinetic Equation"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 4, 1 Apr 73, pp 811-814

Abstract: Numerical solution of Boltzmann's kinetic equation even in the case of the simplest one-dimensional motions of rarefied gas involves considerable difficulties, and it is only comparatively recently that the first successes have been achieved along these lines. In this paper the author uses a numerical method to solve the plane problem of flow of a rarefied gas around a plate of finite length. The problem is solved in the Cartesian coordinate system, and a Monte Carlo method is used to compute the integrals of collisions. Errors are analyzed.

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1/2 044 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--NUMERICAL SOLUTION OF THE BOLTZMANN KINETIC EQUATION FOR ONE DIMENSIONAL STEADY GAS MOTIONS -U-

AUTHOR--CHEREMISIN, F.G.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYCHISLITEL'NOI MATEMATIKI I MATEMATICHESKOI FIZIKI, VOL. 10, MAY-JUNE 1970, P. 654-665

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NUMERIC SOLUTION, BOLTZMANN TRANSPORT EQUATION, GAS MECHANICS, DISTRIBUTION FUNCTION, ALGORITHM, SHOCK WAVE, PLANE GEOMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605007/D04 STEP NO--UR/0208/70/010/000/0654/0665

CIRC ACCESSION NO--AP0139878

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139878

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A STATISTICAL APPROACH TO THE SOLUTION OF THE BOLTZMANN KINETIC EQUATION. THE CALCULATION OF THE DISTRIBUTION FUNCTION AT EACH PHASE IS PERFORMED WITH A SMALL ACCURACY, BUT ONE SUFFICIENT FOR CARRYING OUT THE SUBSEQUENT ITERATIONS. FOR THE SOLUTION OF THE PROBLEM OF REMEMBERING A LARGE NUMBER OF VALUES OF THE DISTRIBUTION FUNCTION A SPECIAL ALGORITHM FOR CONSTRUCTING AN ITERATION 'TREE' IS USED, WHICH MAKES POSSIBLE TO OBTAIN A THIRD ITERATIVE APPROXIMATION TO THE SOLUTION OF THE PROBLEMS OF THE PSEUDOJUMP AND THE SHOCK WAVE STRUCTURE. EXAMPLES OF NUMERICAL SOLUTIONS OF THREE SIMPLE ONE DIMENSIOANL STEADY PROBLEMS INVOLVING PLACE GEOMETRY ARE PRESENTED.

UNCLASSIFIED

USSR

UDC 621.391.2

CHEREMISIN, O P.

"Detection Of A Stochastic Signal, Overreflected By A Passive Element Against The Background Of The Signal Of A Radiation Source"

Radiotekhnika i elektronika, Vol XVII, No 5, May 72, pp 951-962

Abstract: The potentialities are evaluated for detecting a signal overreflected by a passive element against a background of the radiation of an active element. Correlation matrices are determined. The algorithm of detection corresponding to the assumed model of the signal and its quality are considered. A block diagram is presented of the operations which are fulfilled by an optimum detector of the overreflected signal and its quality is considered. 1 fig. 9 ref. Received by editors, 5 April 1971.

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USSR UDC:629.7.036.3:533.6

RONZIN, V. D., CHEREMISIN, P. M.

"Influence of Dependence of Heat Capacity on Gas Temperature on the Characteristics of Aviation Turbine Engines"

Sb. Nauch. Tr. Perm. Politekhn. In-t [Collected Scientific Works of Perm' Polytechnical Institute], 1973, No 132, pp 125-136 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 11, 1973, Abstract No 11.34.66, from the resume)

Translation: The method of small deviations is used in a study of the influence of variability of heat capacity of a gas on turbine characteristics. The dependence of heat capacity on gas temperature is considered by selection of heat capacity C_{picp}=const on the basis of the mean temperature of the adiabatic process of expansion in each blade set

$$T_{i_{av}} = \frac{T_{i-1} + T_{iag}}{2},$$

which provudes sufficient accuracy for the calculations where $(T_{i-1}^{*} - T_{ag}) < 200^{o}$. 2 Figures; 3 Biblio. Refs.
1/1

USSR

UDC 541.49:543.422.4

CHEREMISINA, I. M., IL'INA, L. A., and LARIONOV, S. V., Institute of Inorganic Chemistry, Siberian Affiliate of the Academy of Sciences USSR, Novosibirsk

"Study by IR Spectroscopy of Chelates Formed by Metals with O,O'-Diphenylthioselenophosphate Ions"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 5, May 73, pp 1278-1284

Abstract: The synthesis and some properties of complexes formed by metals with O,O'-diphenylthioselenophosphate ions $(PhO)_2P(S)Se^-$ (DPTSP) were described in earlier work. In the present work the compounds formed by K^+ and Zn, Cd, Pb, Bi, Cr, Ni, Co, Pd, Rh, Pt, and Ir ions with DPTSP were studied by IR spectroscopy at 125-3600 cm^{-1}. Furthermore, the low-frequency (125-400 cm^{-1}) spectra of some complexes of metals with O,O'-diethylthio- and O, O'-diethylselenophosphate ions, the spectra of which had already been investigated in the 400-3600 cm^{-1} range, were subjected to study. It was established that for compounds of heavier metals with DPTSP the ν_{PS} band was displaced to lower frequencies from that of 665 cm^{-1} for the DPTSP-K^+ compound. ν_{M-S} and ν_{M-Se} (M = metal) bands were identified in the spectra of the complexes. The results indicated that the DPTSP complexes had a chelate structure and that metal-sulfur in addition to metal-selenium bonds were present in them.

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USSR

LESHKOVTSEVA, I. I. and CHEREMISINOV, N. A., Forestry Laboratory, Academy of Sciences USSR

"Effect of Rust Fungi on Plant Physiology in Forest Biogeocenoses"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, p 292,

Abstract: The effect of rust fungi on the structure and physiological properties of chlorophyllose tissue of leaves was studied in 9 tree, shrub, and grass species in Moscow Oblast. An average of 55% (maximum 64%) of the individual plant species was found to be infected with rust. Total chlorophyll a and b in the heavily infected leaves was 35 to 59% less than in healthy ones. The decrease in chlorophyll content was associated with destruction of the chloroplasts. Chloroplasts in the affected cells were sometimes half as large as in the healthy cells. Moreover, diseased tissues had fewer chloroplasts than healthy tissues. These changes undoubtedly affect the intensity of photosynthesis in a forest biogeocenosis.

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USSR

VOLKOV, N. I., ZATSIORSKIY, V. M., KRYLATYKH, Yu. G., MAKSIMOV, N. M., NEVERKOVICH, S. D., SARSANIYA, S. K., CHEREMISINOV, V. N., and SHIRKOVETS, Ye. A., State Order of Lenin Central Institute of Physical Culture

"Physiological Characteristics of Repeated Exercise Done at Different Heart Rates"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 5, 1971, pp 23-28

Abstract: Lung ventilation, oxygen consumption, and release of "excess" CO_2 were measured in 3 skilled cyclists after repeated exertions on a bicycle ergometer with different lengths of work and rest periods. Each subject performed 5 variations of the experiment at 3 heart rates - 150, 165, and 180 beats/min. The periods of exertion were 1.5, 3, 7.5, 15, and 30 min. The nature of the physiological reactions to the repeated exercise varied considerably with the length of the work and rest periods. Oxygen consumption was highest when the repeated exercise was done at a heart rate of 180 beats/min with work periods of up to 3 min. Lung function was most efficient when the heart rate was over 150 beats/min and the exercise period was less than 7.5 min. Repeated exercise at 165 beats/min for about 7.5 min had the greatest effect on tissue utilization of oxygen.
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USSR

UDC: 621.9.014:669.14.018.8

BELOV, B. KH., Candidate of Economic Sciences, RUDNEV, A. V., Candidate of Technical Sciences, and CHEREMISIN, V. T.

"Machinability of Precipitation Hardened Stainless Grades of Steel"

Moscow, Mashinostroitel', No 5, May 73, p 29

Abstract: Studies were conducted at the All-Union Scientific-Research Instrument Institute (VNII) on determining the optimal conditions for machining the most characteristic representatives of precipitation hardened, stainless grades of steel. These studies made it possible to determine the most rational tool material, geometric parameters for tool sharpening, cutting regimes, and other effective conditions involved in machining operations such as turning, milling, drilling, and cutting threads with taps. The cutters subjected to stability testing were made from the VK6 and T14K8 hard alloys and the R10K5F5 high-speed cutting steel designated for turning Kh17N5M3 grade steel of various hardness and Kh15N9Yu grade steel with an HB of 170 at various cutting regimes. The results show that the stability of hard-faced cutters is reduced as cutting speed and hardness of the machined grades of steel are increased. An insignificant increase in stability was obtained by machining with cutters made from the T14K8 hard alloy, in comparison with cutters made from the VK6 hard alloy for machining steel with an HB of 300. In machining the Kh17N5M3 grade of steel (HB 444),

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BELOV, B. KH., et al, Mashinostroitel', No 5, May 73, p 29

it was determined that cutters made from the VK6 grade hard alloy were most stable. Data on milling are also given. The results show that optimal results are obtained at a cutting speed of 21-27m/minute, at a feed of 0.04-0.05mm/tooth, and a cutting depth of up to 6mm.

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USSR

UDC 669.18.046.554

SIDOROV, N. V., GERASIMOV, Yu. V., KHAYRUTDINOV, R. M., ELLATOV, S. K., KHASIN, G. A., BARMOTIN, I. P., KAS'YANOV, A. G., CHEREMNYKH, B. A., and ISHMURZIN, M. G., Zlatoust Metallurgical Plant, Scientific Research Metallurgical Institute, Chelyabinsk

"Out-of-Furnace REfining of Low-Carbon Corrosion-Resistant Steels"

Moscow, Metallurg, No 12, Dec 70, pp 22-23

Abstract: The smelting technology of low-carbon corrosion-resistant steels in electric arc furnaces with argon scavenging in the foundry ladle has been developed and introduced into production at the Zlatoust Metallurgical Plant. The main principles of the out-of-furnace degassing effectiveness depends on the chemical composition of the steel, the slag, and the scavenging parameters were investigated.

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3405 (NP-tr-1856) BREAKUP OF MAGNETIC SURFACE IN THE S-1 STELLARATOR. Karmanov, F. V.; Cheremnykh, P. A. (Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Moscow. Institut Atomnoi Energii). Translated for Culham Lab., Abingdon, Eng., from report IAE-1260. 4p. (CTO-626). Dep. CFSTI (U. S. Sales Only).

While investigating the magnetic field in the S-1 stellarator, considerable deformations of the magnetic surfaces were observed. The deformations take the form of projections reaching out from the separatrix toward the chamber wall. They increase with an increasing h_3/H_0 ratio. (auth)

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CHEREMNYKH, S. V.

"Adaptive Control Algorithm for Complex Dynamic Systems"

Tr. In-t elektron. upravl. mashich (Works of the Institute of Electronic Control Machines), 1972, vyp. 9, pp 27-31 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V519)

Translation: A study is made of an algorithm for solving the problem of controlling the stationary mode of a dynamic system.

The regulation system is described by a linear system of differential equations

$$A\ddot{x} + B\dot{x} + Cx = Du + F(t) \qquad (1)$$

$$u = \sum_{i=1}^{k} L_i(x_i) \quad , \qquad (2)$$

where x, D and F are vectors with the components $\{D_i\}$, $\{F_i(t)\}$, i = 1, 2, ..., n, A, B, C are quadratic matrices; $L_i(x_i)$ are certain operators characterizing the control system. The system (1) represents the object of control, and equation (2) is the regulator.

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CHEREMNYKH, S. V., Tr. In-t elektron. upravl. mashich, 1972, vyp. 9, pp 27-31

The set of variables Xi is divided into the variables accessible to measurement ("slow") and "fast." For the formation of the control input using the "slow" variable, a system is constructed which is a "model" of the control object

$$a\ddot{y} + b\dot{y} + cy = du + f(t) \quad (3)$$

$$u = \sum_{i=1}^{k} L_i(y_i), \quad (4)$$

where y, d, and f are vectors, and a, b and c are matrices. It is assumed that the disturbances $F_i(t)$ are unknowns and, consequently, it is necessary to define the elements of the vector f. The essence of the proposed algorithm consists in forming the control input, and its adaptive nature follows from the directional description of the "slow" movement of the system under the conditions of variable disturbances $F_i(t)$ and at the presence of noise in the form of part of the components of the solution x by rearranging the vector f.

An example illustrating the practical execution of the given algorithm is presented.

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USSR

UDC 531.36

CHEREMNYKH, S. V., and LEVADNYY, V. G., Moscow

"On Stability of Transverse Oscillations of the Body of Space Vehicle Carriers"

Moscow, Energetika i Transport, No 5, Sep-Oct 71, pp 108-113

Abstract: The disturbed motion of carriers of space vehicles in the yawing plane is investigated with due regard for oscillations of fuel in tanks and the elastic deformation of the body. The case of close frequencies of elastic body oscillations and fuel oscillations in tanks is analyzed. The dynamic stability limits of the closed system object-corrector in space are discussed by reference to diagrams plotted in dimensionless parameters on the basis of which a qualitative analysis of interfence on stability of the carrier body elasticity and the fuel mobility in tanks is presented. By unfavorable combinations of rocket parameters in the closed system object-stability control, a phase instability is possible. The effect of body elasticity on rocket stability in the frequency range of fuel oscillations in tanks has to be considered in the analysis of phase characteristic requirements for the stability control based on stability conditions of the closed system on these frequencies. Four illustr., 21 formulas, two biblio. refs.

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USSR

UDC: 51:330.115

DADAYAN, V. S., CHEREMNYKH, Yu. N. (editors)

"Modeling of Economic Processes. Collection of Articles"

Modelirovaniye ekonomicheskikh protsessov. Sb. statey. Mosk. un-t. Ekon. fak. Otd. ekon. kibernet. i planir. (cf. English above. Moscow University. Economics Faculty. Division of Economic Cybernetics and Planning), 1971, 533 pp, ill. 60 k. (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V657 K)

Translation: The book will be abstracted by articles.

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USSR

UDC: 535.3:551.51

GEL'FER, E. I., GURVICH, A. S., and CHERNUSHKIN, A. M.

"Intensity Distribution in the Focal Plane of a Light Beam Passing Through a Layer of Turbulent Atmosphere"

Gor'kiy, Izvestiya VUZ--Radiofizika, vol. 14, No. 8, 1971, pp 1208-1211

Abstract: This paper is the continuation of an earlier work (E. I. Gel'fer, et al, Izvestiya VUZ--Radiofizika, 13, No. 2, 27, 1970) which described a method for measuring the area of intensity overshoots in the focal plane of a convergent wave passing through a layer of turbulent atmosphere. The present paper gives the results of further study of the intensity distribution in the focal plane. The intensity measurements were conducted for a wave propagated in an atmospheric layer close to the earth's surface over horizontal distances of 180 and 950 meters. The path selected for the light beam was 1.5-2 meters above a uniformly smooth surface in the steppes. Apparatus for making the measurements was, except for slight modifications, the same as that used in the earlier work.

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