Acc. Nr: AP0047645 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0080

104601z Solid solutions of 2CaO.SiO$_2$ with some metal oxides. Eremin, N. I.; Egereva, A. I.; Dmitrieva, A. M.; Fufarova, I. B. (Vses. Nauch.-Issled. Proekt. Inst. Alyum., Magn. Elektrodnoi Prom., Leningrad, USSR). Zh. Prikl. Khim.

USSR

YEGERYAN, L.YA., REPIN, G.I.

UDC 621.385.185

"On The Anticipated Requirement Of The National Economy For Receiving Tubes And The Prospective Growth Of Industrial Enterprises"

Nauchno-tekhn. sb. Priyemno-usilit. lampy (Scientific-Technical Collection. Receiving Tubes), 1970, Issue 1(16), pp 111-114 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A4)

Translation: A 15-20 year forecast is given of the requirement of the national economy for receiving tubes. By 1985, a decrease up to 48% (from 100% in 1970) of the requirement for these tubes is anticipated, in connection with their replacement by semiconductor devices and the use of microassemblies. Summing up the situation as to the requirement for receiving tubes and its possible abrupt decrease in the next five years requires changes in the structure of the special enterprises manufacturing these tubes. 5 tables. G.B.

1/1

VEGEROV, G.N.

goniophotometer

TECHNICAL TRANSLATION

AFSC/FSTC-HT-23-693-71

ENGLISH TITLE: Type GF-65 Goniophotometer

FOREIGN TITLE: Goniophotometer Type GF65

AUTHOR: G. N. Yegerov and Yu. M. Grigor'yev

SOURCE: Svetotekhnika, No. 8, p 14-16, Aug 1969

Translated for FSTC by ACSI

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This translation was accomplished from a xerox manuscript. The graphics were not reproducible. An attempt to obtain the original graphics yielded negative results. Thus, this document was published as is, in order to make it available on a timely basis.

USSR

UDC: 543.53:539.1.07.543

YEGIAZAROV, B. G., MATVEYEV, V. V., SEL'DYAKOV, Yu. P.

"Commercial Combined System of Nuclear Instruments for Instrumental Activation Analysis"

Moscow, Atomnaya Energiya, Vol 34, No 2, Feb 73, pp 97-104.

Abstract: The necessary composition and components of a standardized instrumental activation analysis system have been determined. They include: 1) a two-channel pneumatic transport system with centralized control panel; 2) a single-channel pneumatic transport system with centralized control panel; 3) an all-wave neutron monitor; 4) a conversion system with digital indicator, designed for loads up to $4 \cdot 10^6$ pulses per second; 5) a scintillation detection unit; 6) a four-channel spectrometric installation with a set of four detection units and lead containers; 7) a computer, designed for processing of analysis data; 8) a universal summary coincidence spectrometer; 9) a gamma radiation spectrometer; 10) a multichannel pulse amplitude analyzer; 11) a printer; 12) a tape and card puncher; 13) a system for direct input of data to a computer; 14) a gamma radiation dosimeter with signaling device; 15) a gamma radiation dosimeter; 16) a neutron dosimeter.

1/2

USSR

Yegiazarov, V. G., Matveyev, V. V., Sel'dyakov, Yu. P., Moscow, Atomnaya Energiya, Vol 34, No 2, Feb 73, pp 97-104.

Block diagrams of various combinations of the individual elements of the system are presented, plus a photograph of the KAMA-1-01 functional system, consisting of two subsystems: 1) the pneumatic transport system; 2) a universal gamma spectrometer.

2/2

USSR UDC 575.21

MUSAYEV, M. A., ABDULLAYEVA, T. Yu., and YEGIAZAROV, V. V., Azerbaydzhan Scientific Research Institute of Vegetable Growing, Baku

"Mutagenic Effect of Laser Radiation on Tomatoes"

Kiev, Tsitologiya i Genetika, No 3, 1971, pp 207-208

Abstract: Tomato shoots with roots less than 4 mm long were exposed to a LG-55 gas laser (continuous-operation type, working frequency 6328 Å) for 5, 15, 30, and 45 min. Preparations were stained with luminescent dyes to study the cytogenetic effects of irradiation. The number of chromosome aberrations increased steadily with the length of exposure. The sharpest rise occurred after the 15 min exposure. This was followed by a "plateau," possibly because of a protective mechanism. Some of the seeds from the exposed plants were planted at the same time as control seeds to compare the biological and morphological characteristics of the shoots. Even before reaching the transplant stage, the experimental plants lagged significantly in growth and development regardless of the dose used. Experimental plants also exhibited abnormally shaped flowers, slower rate of setting fruit, and so forth.

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--QUANTITATIVE DETERMINATION OF ANTIBODIES IN THE REACTION OF PRECIPITATION IN GEL -U-

AUTHOR--YEGIAZAROVA, I.G., SISENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 2, PP 118-120

DATE PUBLISHED--------70

13
5
18

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBODY, GEL, ANTIGEN, CHEMICAL PRECIPITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0464

STEP NO--UR/0219/70/069/002/0118/0120

CIRC ACCESSION NO--AP0051977

UNCLASSIFIED

Acc. Nr: AP0051977 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 118-120

QUANTITATIVE DETERMINATION OF ANTIBODIES IN THE REACTION OF PRECIPITATION IN GEL

I. G. Yegiazarova, V. I. Sisenko

Institute of Experimental Medicine, Academy of Medical Sciences of the USSR, Leningrad

It is established that in the reaction of precipitation in gel there is a direct relationship between, the concentration of antibodies and the antigens concentration, at which the precipitation band vanishes (over the range of antibody excess). This dependence allows the determination of the concentration of antibodies in immune sera.

REEL/FRAME
19820464

USSR

UDC 8.74

VARTANYAN, N. V., YEGIAZARYAN, E. V., URUTYAN, R. L.

"Organization of the Dictionaries of the Garni Computer"

Tr. Vychisl. tsentra AN ArmSSR i Yerevan. un-ta (Works of the Computation Center of the Armenian SSR Academy of Sciences and Yerevan University), 1972, No 7, pp 120-139 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V561)

Translation: The synthesis of an automaton which realizes associative access is presented. It is demonstrated that the given associative access system differs advantageously from the known ones in that the proportion of the dictionary information retrieval time in the total translation time is reduced appreciably.

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1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--PROPERTIES OF HIGH RESISTANCE GALLIUM ARSENIDE CONTAINING A TITANIUM IMPURITY -U-

AUTHOR-(05)-VOROBYEV, V.L., GONTAR, V.M., YEGIAZARYAN, G.A., IZERGIN, A.P., NAKAROV, V.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TKEH. POLUPROV. 1970, 4(5), 995-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SINGLE CRYSTAL GROWTH, GALLIUM ARSENIDE, TITANIUM, CRYSTAL LATTICE DISLOCATION, CRYSTAL IMPURITY, MANGANESE, IRON, ALUMINUM, MAGNESIUM, NICKEL, COBALT, BISMUTH, CHROMIUM, TIN, SEMICONDICTOR MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0146 STEP NO--UR/0449/70/004/005/0995/0997

CIRC ACCESSION NO--AP0129402

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129402

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. GAAS SINGLE CRYSTALS WERE GROWN BY THE CZOCHRALSKI METHOD FROM POLYCRYST. GAAS WITH AN ADDN. OF METALLIC TI. THE DISLOCATION D. WAS SMALLER THEN OR EQUAL TO 2 TIMES 10 PRIME4-CM PRIME2, AND THE TI CONTENT WAS SIMILAR TO 10 PRIME18-CM PRIME3. THE CONTENTS OF FE, AL, MG, NI, CO, BI, CR, SN, AND MN WERE 10 PRIME NEGATIVE5-10 PRIME NEGATIVE4 WT. PERCENT, AND THAT OF SE WAS SIMILAR TP 10 PRIME NEAGTIVE3 WT. PERCENT. THE MATERIAL WAS P TYPE, WITH AN ELEC. RESISTIVITY OF SIMILAR TO 10 PRIME2 OHM CM, A FREE CARRIER CONCN. OF 10 PRIME14-10 PRIME15-CM PRIME3, AND A MOBILITY OF 10-100 CM PRIME2-V SEC AT ROOM TEMP. TWO WNERGY LEVELS WERE DETD. FROM THE TEMP. DEPENDENCE OF THE HALL CONST. AND OF THE ELEC. COND. AS 0.35 AND 0.22 EV, RESP.; THE LATTER LEVEL WAS DUE TO THE GA VACANCY. DIODES OF THE P-PI-N TYPE WERE PREPD. FROM THE CRYSTAL, USING SN AS THE INJECTING CONTACT AND AG AS THE NONRECTIFYING ONE. THE AREA OF THE PN JUNCTION WAS 5 TIMES 10 PRIME NEGATIVE3-10 PRIME NEGATIVE2 CM PRIME2. THEIR CURRENT VOLTAGE CHARACTERISTICS AT ROOM TEMP. EXHIBITED A REGION OF NEG. RESISTIVITY, WHICH DISAPPEARED ABOVE 80-90DEGREES AND (OR) IN MAGNETIC FIELDS LARGER THAN OR EQUAL TO 3 KOE. THE NEG. RESISTIVITY IS EXPLAINED AS DUE TO A CHANGE IN THE SCREENING RADIUS OF THE CHARGED IMPURITIES DURING THE INJECTION.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PROBLEMS OF MATERIAL STIMULATION IN INDUSTRY -U-

AUTHOR-(02)-YEGIAZARYAN, G.A.; KHEYFETS, L.S.

COUNTRY OF INFO--USSR

SOURCE--PROBLEMS OF MATERIAL STIMULATION IN INDUSTRY (PROBLEMY MATERIAL'NOGO STIMULIROVANIYA V PROMYSHLENNOSTI) MOSCOW, EKONOMIKA,
DATE PUBLISHED-------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--INDUSTRIAL PERSONNEL, ENGINEERING PERSONNEL, BONUS, ECONOMIC SYSTEM, LABOR POLICY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0049 STEP NO--UR/0000/70/000/000/0001/0164

CIRC ACCESSION NO--AM0123831

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AM0123831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I BASIC TRENDS IN FURTHER IMPROVEMENT OF THE SYSTEM OF MATERIAL STIMULATION FUNDS 3. II PROBLEMS IN DISTRIBUTION OF MATERIAL STIMULATION FUNDS 65. III ECONOMIC CONTENT OF THE BONUS SYSTEM 83. IV MAIN ELEMENTS OF THE BONUS SYSTEM FOR ENGINEERING TECHNICAL PERSONNEL AND WORKERS 102. V ECONOMIC LIMITS OF INDIVIDUAL PAYMENTS FROM THE MATERIAL STIMULATION FUND 135. GENERALIZED DATA FROM PRACTICAL EXPERIENCE ARE USED AS THE BASIS FOR DISCUSSION OF THEORETICAL PROBLEMS IN STIMULATION OF MATERIAL INTERESTS OF INDUSTRIAL EMPLOYEES; GIVEN ARE ALSO RECOMMENDATIONS ON FURTHER IMPROVEMENTS OF THE NEW MATERIAL STIMULATION SYSTEM. THE BOOK WAS WRITTEN FOR EMPLOYEES OF THE INDUSTRY, PARTY AND TRADE UNION MEMBERS, SCIENTISTS, PROFESSORS, ETC.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ACTIVITY OF SUCCINEATEDEHYDROGENASE, HAD H SUB2 AND HADF H SUB2 DIAPHORASE IN CHICK EMBRYO FIBROBLAST CULTURE INFECTED WITH VACCINIA

AUTHOR-(03)-NOSIK, N.N., YEGIAZARYAN, L.A., BIKBULATOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 275-277

DATE PUBLISHED----------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DEHYDROGENASE, TISSUE CULTURE, BIOSYNTHESIS, VIRUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1938 STEP NO--UR/0402/70/000/003/0275/0277

CIRC ACCESSION NO--AP0125527

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 021

CIRC ACCESSION NO--AP0125527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPRODUCTION OF VACCINIA VIRUS IN CHICK EMBRYO FIBROBLAST CULTURE WAS ACCOMPANIED BY EARLY ACTIVATION OF SUCCINATEDEHYDROGENASE, AT 3-6 HOURS AFTER INOCULATION, WHEREAS AT 9-12 HOURS AFTER INFECTION THE ACTIVITY OF THE ENZYME DECLINED. THE ACTIVITY OF NAD-H SUB2 AND NADF-H SUB2 QIAPHORASE ALSO INCREASED AS EARLY AS 3 HOURS AFTER INFECTION, BUT IN THIS CASE THE DECLINE OF ENZYMATIC ACTIVITY WAS OBSERVED LATER, ONLY 24-48 HOURS AFTER INFECTION. THE EVIDENCE OBTAINED INDICATES THE POSSIBLE ROLE OF THE OXIDATIVE REDUCTIVE ENZYMES UNDER STUDY IN METABOLIC PROCESSES OF INFECTED CELLS PROVIDING ENERGY FOR BIOSYNTHESIS OF VACCINIA VIRUS. FACILITY: INSTITUT VIRUSOLOGII IMENI D. I. IVANOVSKOGO AMN SSSR, MOSKVA.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--HEMODYNAMICS OF THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH ACUTE PULMONARY ABSCESSES TREATED BY A METHOD OF REGIONAL INFUSION OF

AUTHOR-(05)-UGLOV, F.G., SMIRNOV, A.D., DANILOV, L.N., YEGIAZARYAN, V.F., GUSAROV, G.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP 13-17

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMODYNAMICS, RESPIRATORY SYSTEM DISEASE, LUNG, ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1023 STEP NO--UR/0589/70/104/005/0013/0017

CIRC ACCESSION NO--AP0109174

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0109174

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEMODYNAMIC CHANGES IN THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH PULMONARY ABSCESSES TREATED BY A METHOD OF REGIONAL INFUSION OF ANTIBIOTICS IN THE PULMONARY ARTERY TRUNK OR ITS CORRESPONDING BRANCH HAVE BEEN STUDIED, USING A METHOD OF THERMODILUTION. TOWARD THE END OF TREATMENT MINUTE VOLUME IN THE RIGHT VENTRICLE RETURNED TO VALUES COMMON FOR SUCH PATIENTS. WHILE OTHER HEMODYNAMIC INDICES IN THE MINOR CIRCULATORY CIRCUIT TO THE LAST DAY OF THERAPY USING THIS METHOD ALSO REDUCED OR SHOWED A TENDENCY TO NORMALIZATION. THE MENTIONED CHANGES IN HEMODYNAMIC INDICES CORRESPONDED TO CONSIDERABLE IMPROVEMENT OR COMPLETE ABORTION OF THE LOCAL PROCESS. FACILITY: VSESOYUZNOGO N-I INSTITUTA PUL'MONOLOGII MINISTERSTVA ZDRAVOOKHRANENIYA SSSR.

UNCLASSIFIED

YEGIDIS, B. M.

JPRS 55792
15 May 72

USE OF AN ELECTROLYTIC MICRO-CURRENT METER FOR MEASURING THE VELOCITY OF MOVEMENT IN SEA WATER

[Article by B. M. Yegidis and V. M. Shelkalo, Kiev; Kiev, Bionika, Russian, No 5, 1971, pp 129-131]

Recently much attention is being devoted to investigations of the locomotor functions of hydrobionic objects, particular, the velocity of movement of hydrobionic objects. In being measured. In addition to the usual requirements of response, accuracy, etc., the velocity gage must meet a number of specific requirements dictated by the peculiarities of research objects and the medium in which it moves.

In the investigation of relatively small and weak hydrobionic objects with a great maneuverability it is very important that the gage be small in size, weight and inertia and also that it have a quite large dynamic range of measured parameters. All these qualities are exhibited to a considerable degree by the micro-current meters which have long been used in measuring the discharge and local velocities of fluid flows.

Among the different methods for obtaining signals carrying information on the velocity of rotation of the current meter the best is one in which modulation of the current or voltage is accomplished by a change in conductivity between the electrodes during rotation of the electric current the fluid flow being measured. The advantage of the vane placed in simplicity, absence of mechanical and electromagnetic slowing of the vane by an electrolytic contact and the possibility of making a gage with minimum dimensions. A well-known model of this type in the Khorikoulidze micro-current meter (Polish Scientific Research Institute of Construction and Water Power Engineering, Launi Vinter) [3]. Current meters of this type are widely used under laboratory and field conditions in investigating water flows. In this case fresh water, however, the use of micro-current meters with an electrolytic contact in strong

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--BETA,DICARBONYL DERIVATIVES OF 4,HYDROXY,3,5,DI,TERT,BUTYLBENZALDEHYDE -U-

AUTHOR-(02)-GLUSHKOVA, L.V., YEGIDIS, F.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,387

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBONYL COMPOUND, BENZALDEHYDE, HYDROXYL RADICAL, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0840 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136274

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136274

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPDS. ARE PREPD. BY TREATING 4,HYDROXY,3,5, DI,TERT,BUTYLBENZALDEHYDE WITH BETA,DICARBONYL DERIVS. IN AN ORG. SOLVENT IN THE PRESENCE OF PIPERIDINE AND HOAC.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--POLYPHENOLS -U-

AUTHOR-(02)-POPOV, L.K., YEGIDIS, F.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,117

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLPHENOL, POLYNUCLEAR HYDROCARBON, PHENOL, CONDENSATION REACTION, CHLORINATED AROMATIC COMPOUND, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1757 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136997

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AA0136997
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYPHENOLS ARE PREPD. BY CONDENSING 3,5,DI,TERT,BUTYL,4,HYDROXYBENZAL CHLORIDE WITH A 4,ALKYL,SUBSTITUTED PHENOL IN A NEUTRAL SOLVENT.

UNCLASSIFIED

USSR

UDC: 621.382.323

NOVIK, V. K., NIKONOV, A. S., SOPOV, O. V., LEVINA, I. A., GAVRILOVA, N. D., and YEGINA, Ye. N.

"Pyroelectric Operation with Field Effect Transistor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 642-644

Abstract: The authors list four advantages of pyroelectric elements which have made them objects of engineering interest: high input impedance; lower noise level; possibility of combining sensor and amplifying elements in a single device; possibility of designing planar and epitaxial integral sensor and amplifier systems. The pyroelectric detector has a low noise level, and its sensitivity depends on the condition that the product of the frequency, the load resistance, and the crystal capacitance exceed unity, a condition not easily realized in various types of transistor. Other characteristics of pyroelectric transistors are briefly listed. The authors of this brief communication

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USSR

NOVIK, V. K., et al, Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 642-644

Abstract:

tested combined sensor-amplifier pyroelectric units with silicon junctions; the purpose of these tests was to establish the maximum value of load resistor required to evade gating breakdown for various thermal reactions such as slow temperature changes, power flare spots, etc. Photographs and a schematic sketch of these devices are shown, and some details of their fabrication are given. The tests showed that the optimal value of the load resistor was 1 gigohm; at this value, the threshold sensitivity in the 20 Hz to 20 kHz was about $3 \cdot 10^{-7}$ watts. Conclusions arrived at by the authors are: field effect transistors are promising amplifier elements for working with pyroelectric detectors; it is better to combine sensing and amplifying elements in a single package than to mount the pyroelectric directly on the transistor p-n structure.

2/2

USSR

YEGIPKO, V. M.

"Tasks and Basic Stages in Planning of Systems for Automation of Experiments"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 71-78 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V676, by the author).

Translation: Problems of the construction of a method of planning of experiment automation systems allowing the process of planning to be divided into individual, interconnected stages are studied. The content of each of the stages of planning is analyzed. The method suggested allows the conditions necessary for automation of planning of systems of this type to be prepared.

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USSR

UDC 681.327

YEGIPKO, V. M., PALAGIN, A. V., and SHOR, A. Z.

"Relay Memory Device"

USSR Author's Certificate No 273273, filed 29 Dec 66, published 24 Aug 70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, 1971, Abstract No 5B336P)

Translation: This invention relates to devices for processing 2-position control signals for digital control machines. Relay memories are known containing an amplifier, separation circuit, coincidence circuits and output relay. The device suggested differs from similar known devices in that in order to simplify the device and increase its speed and reliability, the separation circuit is connected to the coincidence circuit and to an amplifier, the load of which is a relay; the normally closed contact of the relay is connected to one of the inputs of the coincidence circuit.

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USSR

UDC:62-50.001.5

MALINOVSKIY, V. N., Corresponding Member of Acad. Sci. UkSSR, YEGIPKO, V. M., Candiate of Technical Sciences, and POGOSYAN, I. A.

"Problem of Planning Systems for Automation of Experimental Studies"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70, pp. 14-18

Abstract: Systems for automation of scientific experiments are complex systems, formalized by methods from queueing theory. These systems are analyzed from this standpoint, considering any actual automation object as a "supplier" of primary information, while the technical devices act as servicing devices. A classification plan is presented for the parts of a system for processing experimental data. This classification plan, in contrast to earlier published plans, considers the specific features of these complex systems. The classification plan is an aid in selecting the type of mathematical system model to be used on the basis of preliminary experimental results. The process of planning of systems for automation of experimental studies is thus divided into individual stages in

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USSR

MALINOVSKIY, V.N., EGIPKO, V.M., POGOSYAN, I.A., Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep-Oct 70, pp 14-18

which successive determination, clarification, and optimization of the required technical characteristics of the system are performed. A broad range of standard machine algorithms can be developed on the basis of the classification plan presented, allowing automation of all stages in planning.

2/2

7294 - END -

USSR UDC:62-50.001.5

MALINOVSKIY, B. N., Corresponding Member, Acad. Sci. UkSSR, YEGIPKO, V. M., Candidate of Technical Sciences, and POGOSYAN, I. A.

"Calculation of Certain Information Characteristics in Systems for Automation of Complex Experiments"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70, pp. 34-37

Abstract: The information characteristics of automation systems include the parameters describing the functioning of the system and determining its information handling capabilities, including throughput capacity, average speed of information processing devices and input-output devices, average time spent by an individual message in the servicing system, required memory volume (main memory, buffer memory, external storage, etc.), memory volume utilization factor, and average waiting time of an individual message before servicing is begun. The system calculated is designed for automation of collection and processing of data during testing of complex products under series production; the main purpose of this system is to

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USSR

UDC:62-50.001.5

MALINOVSKIY, B. N., YEGIPKO, V. M., POGOSYAN, I. A., Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No. 5, Sep-Oct 70, pp. 34-37

increase the productivity of labor during the performance of complex experiments, to increase the quality of testing, and to reduce the time required for the production cycle of the products involved. The operation of the system, which includes a Dnepr prime computer and a Minsk-22 backup computer, is described. The information characteristics of the system are calculated.

USSR

UDC 669.1:539.216:538.248

ARUTYUNYAN, R. G., YEGIYAN, K. A., YEDIGARYAN, A. A., KOKOYAN, A. B., and ALANAKYAN, G. A., Yerevan Scientific Research Institute of Mathematical Machines

"Effect of Roughness and Thickness on the Coercive Force of Cylindrical Iron-Nickel Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 4, 1973, pp 732-736

Abstract: A study was made of the nature of coercive force H_c in cylindrical iron-nickel films, 0.4-2.2 microns thick, having a magnetoelastic constant close to zero. Two groups of films were investigated: smooth and rough films deposited respectively on polished and specially etched beryllium-bronze wire, 0.25 mm in diameter. In both cases an amorphous Ni-P alloy sublayer was applied to eliminate the effect of the wire's crystal structure. Sublayer roughness was altered by varying the wire-etching current density i_E and bath temperature T. From examination of microphotographs the following features were noted: 1) films deposited on the polished wire with $i_E = 0$ had an extremely smooth surface with an average diameter of heterogeneities of approximately 0.1 microns but with a large spread amounting to 0.01-0.05 microns; 2) increase in i_E led to the formation of a characteristic hilly surface and sharp rise of H_c and the anisotropic dispersion φ_{80} with the highest value of 1/2

USSR

ARUTYUNYAN, R. G., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 4, 1973, pp 732-736

H_c = 1.8 erg observed at i_E = 16 ma-cm^2 and D (hill diameter) and h (hill height) equal to 1.5 and 0.25 microns, respectively. After 16 ma-cm^{-2}, hill size diminishes; 3) a definite relationship exists between H_c, φ_{80} and D, h. 5 figures, 9 bibliographic references.

2/2

UDC 539.216.2:621.785.3:678.249

USSR

YEGIYAN, K. A., and DANIELYAN, V. A., Yerevan Scientific-Research Institute of Mathematical Machines

"Change in Magnetoelastic Constant of Thin Ferromagnetic Films With Magnetic Annealing Along the Axis of Difficult Magnetization"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 2, Aug 70, pp 332-335

Abstract: The influence of the angular dispersion of anisotropy on the value of the magnetoelastic parameter is studied theoretically and experimentally. In films with high angular dispersion of anisotropy, a nonlinear sector is noted on the curve $H_k(\varepsilon)$ in the area of low intensities, leading to a decrease in the apparent magnetoelastic constant. In order to determine the true magnetoelastic constant, it must be determined with high deformations in the linear sector of $H_k(\varepsilon)$. The experimentally observed nonlinear sector of $H_k(\varepsilon)$ can be qualitatively explained by dispersion of the direction of easy magnetization.

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YEGIYAN, K. SH., BOCHEK, G. L., KULIBABA, V. I., and GRISHAYEV, I. A., Yerevan Physics Institute and Engineering Physics Institute of Academy of Sciences Ukrainian SSR

"Angular and Energy Distribution of Proton in (γp) and (ep) Reactions at C^{12} Nuclei for Excitation Energies up to 130 Mev"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Fizika, Vol 6, No 3, 1971, pp 161-167

Abstract: Measurements of cross sections (γp) and (ep) of reactions at C^{12} nuclei for excitation energies up to 130 MeV are reported. The study was performed on the 300-Mev linear electron accelerator of the Engineering Physics Institute of the Academy of Sciences Ukrainian SSR. A beam of electrons in the linear accelerator, turned once, was focused on a 0.083 radial units-thick target located in the scattering chamber connected by vacuum with the accelerator. The angle between beam direction and normal to the target surface was 45°. The electron beam intensity was measured by a secondary emission monitor at two gold foils with total thickness of 20 microns. Secondary protons were identified by the "impulse-flight" method. The total yield of protons was measured in the following reactions: $\gamma + C^{12} \rightarrow$

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YEGIYAN, K. SH., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Fizika, Vol 6, No 3, 1971, pp 161-167

p + B, and e + $C^{12} \rightarrow$ e' + p +B. Results were compared with the quasi-deuteron and one-particle models of photon absorption in nuclei. The best agreement of theoretical and experimental energy spectra was achieved at B = 60 MeV (V is the value of the potential at the bottom of the potential well). In the comparison made with the one-particle model of photon absorption, agreement between experimental and calculated values for both energy and angular spectra could not be obtained. However, the findings showed that in the region of excitation energy below the meson production threshold, data on the reactions (γ p) and (ep) at complex nuclei do not contradict either the quasideuteron or the one-particle model of photon absorption.

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USSR UDC 539.1

YEGIYAN, K. SH., BOCHEK, G. L., GRISHAYEV, I. A., ALANAKYAN, K. V., KULIBABA, V. I., and SITENKO, M. L., Yerevan Physics Institute, Physicotechnical Institute of the Academy of Sciences Ukrainian SSR

"Apparatus for the Study of Direct Nuclear Reactions Caused by Electrons and Gamma Quanta With an Energy of Up to 300 Mev"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

Abstract: The article gives a description of an apparatus designed for studying nuclear structure and the character of the interactions of electrons and gamma quanta with a maximum energy of up to 300 Mev. A focused beam of the 300-Mev Khar'kov linear accelerator goes from a parallel transfer system over a vacuum electronic conductor into a scattering chamber. Revolving around the latter on a fixed platform are two magnetic analyzers designed to record secondary reaction particles produced by the gamma quanta or electrons. Situated on an extension of the electronic

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YEGIYAN, K. SH., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

conductor after the scattering chamber is a secondary emission monitor for the relative measurement of the electron beam intensity. After the secondary emission monitor the electron beam is absorbed by a burial ground of heavy concrete blocks. The apparatus was tested by measuring the elastic-scattering cross-section for electrons on a free proton in a CH_2 target. A feature of the apparatus is that it works under a high background level from the electron beam. The calibration measurements performed indicate that the apparatus permits the study of direct nuclear reactions with a cross-section of $\geq 2 \cdot 10^{-3}$ sq cm/steradian.

The authors thank A. I. ALIKHANYAN, Corresponding Member of the Academy of Sciences USSR, and Professor V. M. KHARITONOV, Sector Chief of Yerevan Physics Institute, for their interest in the work and repeated discussions; N. I. MOCHESHNIKOV, Sector Chief of the Physicotechnical Institute, for his assistance in

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YEGIYAN, K. SH., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

organizing and carrying out the work, E. V. TER-MINASYAN, Chief of the Design Bureau of Yerevan Physics Institute, and Senior Engineer G. G. MAMIKONYAN for designing the apparatus;

L. A. MAKHNENKO, Sector Chief of the Physicotechnical Institute, Academy of Sciences Ukrainian SSR, G. A. DEMYANENKO, Chief of the LU-300 Installation, and the entire LU-300 installation staff for their daily assistance in carrying out the experiment; and G. O. OVSEPYAN, D. A. ZARGARYAN, and L. A. SARKISYAN, staff members of Yerevan Physics Institute, for their part in the work of preparing and testing the apparatus and their part in the physical measurements.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--QUANTITATIVE DETERMINATION OF ANTIBODIES IN IMMUNE SERUM THROUGH A COMPLEMENT FIXATION REACTION -U-

AUTHOR-(02)-SISENKO, V.I., YEGIZAROVA, I.G.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (3), 167-70

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBODY, COMPLEMENT FIXATION TEST, IMMUNE SERUM, QUANTITATIVE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1789 STEP NO--UR/9099/70/000/003/0167/0170

CIRC ACCESSION NO--AP0127203

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127203

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBILITIES OF QUANT. DETN. OF CONCNS. OF ANTIBODIES IN IMMUNE SERUM BY THE REACTION OF COMPLEMENT FIXATION WERE INVESTIGATED. TWO ANTIGEN ANTIBODY SERUMS WERE USED: (1) BOVINE SERUM ALBUMIN RABBIT ANTISERUM, (2) HORSE SERUM ALBUMIN RABBIT ANTISERUM. THE PROCEDURES ARE DESCRIBED. THE METHOD IS SATISFACTORY IN GENERAL, BUT FOR EVERY SYSTEM OPTIMUM EXPTL. CONDITIONS MUST BE VERIFIED. FACILITY: INST. EKSP. MED., LENINGRAD, USSR.

UNCLASSIFIED

YEGNAZAROV, G.M.

~~MEDICINE~~ Biology

UDC 612.014.46(73)

TOXIC CHEMICALS USED BY THE UNITED STATES ARMY IN VIETNAM

[Article by Doctor of Biological Sciences, Engineer, Colonel, G.M. Yegnazarov; Moscow, Voyenno-Meditsinskiy Zhurnal, Russian, No 12, 1971, submitted March 1969, signed to press 6 December 1971, pp 76-78]

The achievements of science and technology in the area of chemical means of plant protection in the United States have been used in pursuing the criminal war in Vietnam, for destruction of crops, farm animals, food resources, industrial raw materials, etc. The use of such "humane" methods is resulting in massive severe poisonings and even death among the defenseless population.

This article is written to acquaint readers with toxic chemicals used by the United States during military operations in Vietnam.

In the classification of toxic chemicals, we include chemical preparations used in agriculture and industry for control of harmful plant or animal organisms. N.N. Mel'nikov (1966) recommends the division of all toxic chemicals, depending upon their use, into the following groups: acaricides -- substances for the control of ticks; antiseptics -- substances for the prevention or reduction of the development of microorganisms; bactericides -- preparations for destruction of bacteria -- causative agents of diseases of man, animals and plants; herbicides -- substances for weed control; insecticides for control of harmful insects; seed mordants -- substances for protecting agricultural crop seeds from causative agents of plant diseases, transmitted through the seeds; regulators of plant growth -- physiologically active compounds which produce different disturbances in the development of plants; fungicides -- substances for fungi control. This article deals, mainly with herbicides and plant growth regulators.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620017-8"

Herbicides, according to the terminology used in United States, are substances used not only for the control of weeds but also undesirable vegetation in general. According to the nature of their effect, they may be divided into substances of complex effect, which kill all forms of plants and selective substances which affect only certain species. Both groups are further subdivided into contact herbicides which kill the leaves and stalks of plants after direct contact with the preparation, systemic which can spread, with the sap, throughout the plant, root fungicides which selectively affect the root system or its growing seed.

Regulators of plant growth also are divided into desiccants -- preparations for pre-harvest drying of plants for the purpose of increasing productivity of different harvesting machines, defoliates (combine and others) used for harvesting cotton, potatoes and some other technical crops and disclosants - substances which cause leaves to fall after the fashion of natural leaf shedding. It must emphasize the well-known conventionality of such a classification. Thus, for example, herbicides in large concentrations kill plants but in comparatively small doses may act as regulators of plant growth and stimulate or retard individual processes. In most cases, defoliants used in considerable doses, act as desiccants or even as herbicides.

Physiological processes occurring in plants under the effect of toxic chemicals, are highly complex. This especially true in respect to phenomena which stimulate or inhibit the growth of plants. Thus, for example, it is well known that, under natural conditions, not long before the falling of the leaves, a so-called separation layer is formed. Its appearance is associated with the reduction of the percent content of auxins. Auxins play an important role in the cellular processes of plants. They are characterized by a complex chemical structure. We distinguish "A" auxins ($C_{18}H_{32}O_5$) and "B" auxins ($C_{18}H_{30}O_4$). The reduction of the quantity of auxins may be achieved artificially, especially by the administration of certain chemicals -- defoliants. However, many aspects of the process of defoliation and also the process of dessication remain inadequately studied.

The nature of the effect and effectiveness of toxic chemicals depend, in a large degree, upon the method of their use. The most convenient forms of use of toxic chemicals are aerosols, granules, dusts, capsules, solutions, wettable powders and emulsions. Aerosols usually are obtained from solutions of toxic chemicals in different organic solvents with low boiling points. After evaporation of the solvent, the preparation remains in the air in a suspended state and then settles on the plants and soil. There are also aerosol cartridges of different constructions with a combustible mixture for volatilizing

in rabbits and myotonia and diarrhea in rabbits, rats and mice. Lethal doses for rats are "2-4-D" -- 375 mg/kg, "2-4-5-T" -- 300 to 500 mg/kg. Chronic poisoning of animals is characterized by muscular tremor, paralysis, bleeding gums and in humans -- drowsiness, loss of appetite, irritation of the respiratory tract, digestive disturbances (S.L. Danishevskiy, 1963).

Cacodylic acid $(CH_3)_2AsOOH$, abbreviation "Ansar," belongs to the group of organic arsenic compounds. It consists of colorless crystals which are practically odorless. Melting temperature is 200 degrees. It is easily soluble in water and alcohol. It is highly chemically stable. It can serve as a herbicide, a dessicant or a defoliant, depending upon the dosage used. It is used in solutions of different concentrations. Cacodylic acid acts as a general toxic compound on man and animals. It also produces a more or less pronounced local irritating effect. It is characteristic that, with the course of time, the irritation is amplified significantly (the after effect phenomenon). Cases are known (Zh.I. Abramova, 1963) of wave form irritation when an alternative amplification and weakening of symptoms of a disease is seen. A lethal dose for mice is 100 mg/kg.

Calcium cyanimide ($CaCN_2$, abbreviation "CC") when chemically pure consists of colorless crystals and is a grayish-black color in technical form. Its solubility in water is 25 g per liter (at 25 degrees). It is practically insoluble in alcohol. It is used in the form of small granules. It is used as a defoliant or a herbicide. According to N.N. Mel'nikov's data (1961), calcium cyanimide acts effectively only in the presence of dew. Acidic sodium cyanimide and stabilized free cyanimide are good herbicides. The norm of expenditure is 30-40 kg/hectare. It has a selective systemic effect. It may cause poisoning upon entering the organism through the respiratory organs, the skin or the mucous membrane of the eyes. Acute poisoning is accompanied by a reddening of the skin, neck, parts of the chest and back. Victims notice mild chills, heart throbs and a sense of fright. Body temperature usually does not increase. Pulse rate goes to 100-130 beats per minute. Arterial pressure is reduced somewhat. A seizure persists about 1½ - 2 hours. After falling onto the skin it causes reddening, mild edema and itching. After entering the eyes it causes conjunctivitis and, in severe cases, corneal opacity. Chronic poisoning by calcium cyanamide is characterized by rapid fatigability, poor appetite and insomnia, headache and pain in the pit of the stomach, catarrhal state of the nasopharynx. A lethal dose for rabbits is 1.4 g/kg after per oral administration. There are reported cases when 40 - 50 g proved lethal for humans (N.A. Minkina, 1963).

The data presented indicated the significant toxicity of both organic and inorganic herbicides. We must also remember their diversity of effect on human and animal organisms. The "behavior" of toxic chemicals under field conditions is inadequately studied since the presented literary data basically concern cases of poisoning, associated with production of preparations at chemical enterprises.

the toxic chemical. Granules consist of filler, usually vermi-
culite (one of the forms of natural mica with high water content
in the interpacket spaces) impregnated by an appropriate propa-
ration. They contain from 10 to 25 percent filler and are as
large as 0.5 mm. Dusts, as granules, contain a filler (talc and
others) and also different sticky substances for holding to the
parts of the plants. They contain, as a rule, from 1 to 20 per-
cent toxic chemicals. Capsules consist of gelatinous membranes
filled with toxic chemicals. After falling onto the soil, they
are destroyed and the preparation is taken up by the plant roots.
Toxic chemical solutions contain water, benzene, acetone, etc..
In order to increase their wetting capacity, various surface-
active substances are added. The wetting powders are a system
of the toxic chemicals, filler (sand), surface-active substances
and stabilizers. Addition of water forms a suspension with the
toxic chemical level from 10 to 50 percent. The emulsions con-
tain approximately 25 percent of the toxic chemical, they in-
clude a solvent and an emulsifier. Water is added to the emul-
sion before use.

According to information from the foreign press, American
troops in Vietnam used 2-,4-dichlorophenoxyacetic, 2-,4-,5-tri-
chlorophenoxyacetic and cacodylic acid, calcium cyanamide and
some other toxic chemicals. 2-,4-dichlorophenoxyacetic acid
($Cl_2C_6H_3OCH_2COOH$, abbreviation "2-4-D") is a colorless crystal.
The technical product is a grayish color and has a mildly phenol
odor. Melting temperature is 142 degrees. It is stable in
storage. Solubility in water is 0.6 grams per liter. Salts of
alkaline metals are soluble in water to a much higher degree
27 grams per liter at 0 degrees and 50 grams per liter at 30 de-
grees. Amine salts are even more soluble. The toxic chemical
is dissolved in acetone, benzene and alcohol. "2-4-D" is an active
herbicide for dicotyledonous broad-leaf plants. It belongs to
the selective type of systemic herbicides. It is used in the
form of solutions and dusts of salts. Normal expenditure is
from 0.7 to 2 kg per hectare.

2-,4-, 5-trichlorophenoxyacetic acid ($Cl_3C_6H_2OCH_2COOH$,
abbreviation "2-4-5-T" when chemically pure is a colorless and
odorless crystal. Admixtures give it a phenol odor. Melting
temperature is 158 degrees. It is slightly soluble in water but
highly soluble in alcohol, ether, acetone and chloroform. It is
stable in storage. It is highly effective against woody-shrub
vegetation. It is used predominantly in the form of ethers and
salts with organic amines. The use of "2-4-5-T" in combination
with "2-4-D" is described. The norm of expenditure is 2 -8 kg
per hectare. A weak solution of the sodium salt of "2-4-5-T"
acts as a stimulator of the growth of some fruit plants. "2-4-D"
belongs to the group of selective action systemic herbicides.
It acts the same, in general, on animals and man. A one-time
effect causes an unsteady gait in dogs, dilation of the pupils

USSR

UDC 625.2-531.4/.6:625.42

YEGNUS, A. YE.

"Elements of an Automatic Control System for the Starting and Stopping Conditions of a Subway Car Equipped with a Thyristor Converter"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works of the Moscow Institute of Railroad Transportation Engineers), 1971, vyp. 388, pp 92-105 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A629)

Translation: The elements of an automatic control system for the starting and stopping conditions of a railroad car equipped with a thyristor converter are described. The basic relations characterizing the operation of these elements are presented. There are 4 illustrations and a 5-entry bibliography.

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1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF ALLOYING ELEMENTS ON THE SPECIFIC ELECTRIC RESISTANCE OF IRON MANGANESE AUSTENITE DURING ANTIFERROMAGNETIC TRANSFORMATION -U-

AUTHOR-(03)-BOGACHEV, I.N., YEGOLAYEV, V.F., EFROS, B.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(2), 424-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--CONDUCTION ELECTRON, RESISTIVITY, ANTIFERROMAGNETISM, ALLOY COMPOSITION, AUSTENITE, IRON ALLOY, MANGANESE ALLOY, MAGNETIC TRANSFORMATION, TEMPERATURE DEPENDENCE, NICKEL, CHROMIUM, SILICON, ALLOY ADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0356 STEP NO--UR/0126/70/029/002/0424/0426

CIRC ACCESSION NO--AP0129588

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129588

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF NI, CR, AND SI ON THE ANTIFERROMAGNETIC TRANSFORMATION OF FE-MN AUSTENITE WAS STUDIED, USING THE G40 (40PERCENT MN) ALLOYS AS AN EXAMPLE, BY THE ELEC. RESISTANCE METHOD. THESE ELEMENTS LOWER THE NEEL POINT AND AFFECT THE ANOMALIES IN THE SP. RESISTANCE IN THE TRANSFORMATION. THE RESISTANCE WAS DETD. AT 77-800DEGREESK FOR ALLOYS CONTG. 4-10PERCENT BY WT. NI, 2.0-10.3PERCENT CR, OR 0.12-2.00PERCENT SI. THE RELATIVE CHANGE IN THE RESISTANCE BECAUSE OF THE ANTIFERROMAGNETIC ORDERING IS CHARACTERIZED BY A FACTOR, D. THE TEMP. DEPENDENCE OF D SHOWS THAT SI AND NI HAVE THE GREATEST EFFECTS; THIS IS ATTRIBUTED TO A DECREASE IN THE EFFECTIVE NO. OF CONDUCTION ELECTRONS. FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CONCENTRATION DEPENDENCE OF PHYSICAL PROPERTY ANOMALIES DURING ANTIFERROMAGNETIC TRANSFORMATION IN IRON MANGANESE ALLOYS -U-

AUTHOR-(03)-BOGACHEV, I.N., YEGOLAYEV, V.F., FROLOVA, T.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(2), 358-63

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PHYSICAL PROPERTY, MANGANESE ALLOY, AUSTENITE, FERROMAGNETIC MATERIAL, ANTIFERROMAGNETIC MATERIAL, NEEL TEMPERATURE, ELASTIC MODULUS, MAGNETIC STRUCTURE, INTERNAL FRICTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0935 STEP NO--UR/0126/70/029/002/0358/0363

CIRC ACCESSION NO--AP0121537

UNCLASSIFIED

2/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121537

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANOMALIES WERE STUDIED DURING THE ANTIFERROMAGNETIC TRANSFORMATION INTO AUSTENITE FOR ALLOYS CONTG. 14-38PERCENT BY WT. MN. THE ALLOYS CONTG. LESS THAN 27PERCENT BY WT. MN WERE SUBJECTED TO STABILIZING TREATMENT TO AVOID THE EFFECT OF THE EPSILON PHASE ON THE TEMP. DEPENDENCE. AS THE MN CONCN. DECREASES, THE ANOMALIES IN THE NORMAL ELASTIC MODULUS, THE INTERNAL FRACTION, AND THE COEFF. OF LINEAR EXPANSION AT THE NEEL POINT INCREASE. THIS IS APPARENTLY RELATED TO THE COMPLEX MAGNETIC STRUCTURE OF THE AUSTENITE: THE SUPERPOSITION OF THE CLOSE RANGE FERROMAGNETIC INTERACTION ON THE LONG RANGE ANTIFERROMAGNETIC ORDER. THIS IS CONFIRMED BY THE APPROX. COINCIDENCE IN THE CRIT. CONCNS. FOR THE MN, AT WHICH FERROMAGNETIC INTERACTION BETWEEN THE MN ATOMS BECOMES POSSIBLE AND ANOMALIES IN THE PHYS. PROPERTIES DEVELOP.

FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR. .

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--FUNCTIONAL MORPHOLOGY OF MAMMALIAN CHROMOSOMES IN CULTURED CELLS. II. CHROMOSOMES OF THE CHINESE HAMSTER ANEUPLOID CELLS AS STUDIED WITH

AUTHOR-(02)-ZAKHAROV, A.F., YEGOLINA, N.A.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(2), 166-71

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MORPHOLOGY, MAMMAL, CHROMOSOME, HAMSTER, CELL CULTURE, MITOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0456 STEP NO--UR/9053/70/012/002/0166/0171

CIRC ACCESSION NO--AP0117692

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0117692

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO CULTURES OF CHINESE HAMSTER ANEUPLOID CELLS, (A. F. ZAKHAROV, ET AL., 1966) 5,BROMODEOXYURIDINE (I) WAS ADDED AT 100-200 MU G-ML OF THE MEDIUM FOR 2-2.5 HR. CHROMOSOME PREPNS. WERE MADE 4-5 HR AFTER THE INTRODUCTION OF I; 1-1.5 HR BEFORE I ADDN. 0.06-0.12 MU G-ML, COLCEMID WAS ADDED. THE ADDN. OF I AT THE FINAL STAGE OF THE S PERIOD CAUSED THE SEGMENTATION OF SOME CHROMOSOMES, IN PARTICULAR X SUB1 PRIMEM, X SUB2 PRIMEM, AND MARKER CHROMOSOMES ST SUB1, ST SUB2, AND ST SUB3, DUE TO A DELAY IN THE MITOTIC SPIRALIZATION OF THE LATE REPLICATING CHROMOSOMAL REGIONS. THE PATTERN OF THE SEGMENTATION CORRESPONDED TO THAT INDUCED BY COLCEMID TREATMENT. THE POSSIBLE USE OF I IN THE STUDY OF MORPHOL. OF MAMMALIAM CHROMOSOMES WAS DISCUSSED. FACILITY: LAB. CYTOGENET.,INST. EXP. CLIN. ONCOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 620.179.15

GORBUNOV, V. I., SVIRYAKIN, D. I., BUKREYEV, V. G., KOLUPAYEV, A. N., YEGORENKO, Yu. A., Scientific Research Institute of Electronic Internal Inspection Affiliated With Tomsk Polytechnical Institute

"Radiation-Type Internal Inspection Units for Checking Materials and Parts"

Sverdlovsk, Defektoskopiya, No 3, May/Jun 71, pp 112-117

Abstract: The paper presents block diagrams and gives descriptions of some devices based on radiation methods of internal inspection. The basic technical characteristics of the devices are given, their advantages and disadvantages are noted, and recommendations are made on using them. Four figures, bibliography of three titles.

USSR

UDC 621.822.5

BELYY, V. A., KUPCHINOV, B. I., MIKHNEVICH, A. S., ASTASHIN, V. Ya., and YEGORENKOV, N. I.

"Bearings with Metal-Polymeric Plating"

Moscow, Mashinostroitel', No 5, May 71, p 24

Abstract: A method of producing strip materials with antifriction metal-polymeric plating has been developed at the Institute of Mechanics of Metal-Polymeric Systems of the Belorussian SSR. The method is described, properties of the new material are discussed, and its high antifriction quality is demonstrated in comparison with the strip material tombac. Preliminary results of field tests proved the high efficiency of the new material. Its use for bearing bushings for starters of automotive engines is now being investigated. Three figures.

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1/2 036 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--EFFECT OF THE PHYSICAL STATE OF THE POLYMER ON THE NATURE OF THE RUPTURE OF A POLYMER-METAL ADHESIVE JOINTS -U-

AUTHOR-(02)-BELYY, V.A., YEGORENKOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUVK BSSR, VESTSI, SERIYA FIZIKA-TEKHNICHNYKH NAVUK, NO. 1, 1970, P. 58-63

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESIVE, BRITTLE FRACTURE, METAL TO NONMETAL BONDING, POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0197 STEP NO--UR/0201/70/000/001/0058/0063

CIRC ACCESSION NO--AP0113136

UNCLASSIFIED

2/2 036 UNCLASSIFIED

CIRC ACCESSION NO--AP0113136 PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONSIDERATION OF THE NATURE OF THE RUPTURE OF POLYMER-METAL ADHESIVE JOINTS WHEN THE POLYMER UNDER TEST CONDITIONS IS IN A SOLID OR STRUCTURALLY FLUID (HIGHLY ELASTIC) STATE. IT IS SHOWN THAT THE SEQUENCE OF CHANGE IN THE FAILURE MODES OF A POLYMER-METAL ADHESIVE JOINT DURING A CHANGE IN THE FAILURE RATE IS DETERMINED BY THE PHYSICAL STATE OF THE POLYMER. IN THE CASE OF THE HIGHLY ELASTIC STATE THE COHESION FAILURE MODE OCCURRING AT LOW FAILURE RATES CHANGES, WITH AN INCREASE IN THE FAILURE RATE, INTO THE ADHESION MODE, WHILE IN THE CASE OF THE SOLID STATE THE ADHESION FAILURE MODE OCCURRING AT LOW FAILURE RATES CHANGES, WITH AN INCREASE IN THE FAILURE RATE, INTO THE COHESION MODE. HOWEVER, IN THE CASE OF BRITTLE FAILURE IN THE SOLID STATE THE COHESION MODE OCCURS AT LOW FAILURE RATES, AND NO CHANGE OCCURS IN THE FAILURE MODE WITH AN INCREASE IN THE FAILURE RATE.

UNCLASSIFIED

Magnetohydrodynamics

USSR

UDC: 539.351.8

YEGORENKOV, V. D. and STEPANOV, K. N.

"Electromagnetic Instabilities of a Plasma of Finite Pressure With Hot Electrons"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 2, 1973, pp 270-275

Abstract: This article is based on an earlier paper published by the authors named above (UFZh, 15, 324, 1970) in which it was shown that in a plasma with cold ions and hot electrons with anisotropic velocity distribution high-frequency instabilities develop when the electron pressure is of the order of the magnetic pressure. In the present article, they investigate the effect of losses and the presence of a small group of cold electrons on the instabilities of a uniform anisotropic plasma of finite pressure with hot electrons, of the type studied in the first paper. It is shown that in addition to the hose-like and mirror instabilities found in the first paper, conical instabilities exist in the plasma here considered. It is found also that the presence of the small group of cold electrons may substantially alter the spectrum of the unstable oscillations and their excitation conditions. The analysis begins with a system of six equations describing the tensor

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USSR UDC: 539.351.8.

YEGORENKOV, V. D., et al, Zhurnal Tekhnicheskoy Fiziki, No 2, 1973, pp 270-275

for the dielectric permeability. The authors express their gratitude to A. I. Pyatak for his comments and useful advice.

2/2

1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STABILITY OF A FINITE PRESSURE PLASMA WITH AN ANISOTROPIC ELECTRON VELOCITY DISTRIBUTION -U-

AUTHOR-(02)-YEGORENKOV, V.D., STEPANOV, K.M.

COUNTRY OF INFO--USSR

SOURCE--UKRAINS'KII FIZICHNII ZHURNAL VOL. 15, FEB. 1970, P. 235-330

DATE PUBLISHED----FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA STABILITY, PLASMA WAVE, LONGITUDINAL MAGNETIC FIELD, PHASE VELOCITY, THERMAL EXCITATION, ELECTRON, ION, LARMOR RADIUM, CYCLOTRON FREQUENCY, PLASMA OSCILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1459 STEP NO--UR/0185/70/015/000/0325/0330

CIRC ACCESSION NO--AP0112453 UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0112453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF THE STABILITY OF A HOT ELECTRON COLD ION PLASMA SUBJECTED TO FINITE PRESSURES AND HAVING AN ANISOTROPIC ELECTRON VEOLCITY DISTRIBUTION FUNCTION. DISCUSSED SPECIFICALLY ARE PLASMA WAVES WHOSE PHASE VELOCITY ALONG A LONGITUDINAL MAGNETIC FIELD IS SUBSTANTIALLY LOWER THAN THE THERMAL VELOCITY OF THE ELECTRONS BUT IS SUBSTANTIALLY HIGHER THAN THE THERMAL VELOCITY OF THE IONS WHILE THE WAVELENGTH IS MUCH GREATER THAN THE LARMOR RADIUS OF THE IONS. IT IS FOUND THAT INSTABILITIES AT FREQUENCIES MUCH HIGHER THAN THE CYCLOTRON ION FREQUENCY MAY DEVELOP IN PLASMAS OF THIS TYPE. UNSTABLE OSCILLATIONS HAVE THE FORM OF WHISTLES AND NONMAGNETIC ION ACOUSTIC OSCILLATIONS WHEN THE PLASMA IS ISOTROPIC.

FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, FIZIKO-TEKHNICHNII INSTITUT, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR UDC 933.916

YEGORENKOV, V. D. and STEPANOV, K. N., Physicotechnical Institute of the Academy of Sciences UkrSSR, Khar'kov; Sukhumi Physicotechnical Institute

"Stability of a Plasma With Finite Pressure and an Anisotropic Electron Velocity Distribution"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol. 15, No. 2, Feb 70, pp 325-330

Abstract: The stability of a strongly nonisothermal ($T_e \gg T_i$) plasma with finite pressure and anisotropic electron velocity distribution is investigated. It is shown that the Alfven and fast magnetosonic branches of the oscillations are unstable in the high-frequency region ($\omega_{He} \gg |\omega| \gg \omega_{Hi}$), and the instability region in this frequency range coincides with the instability region for $|\omega| < \omega_{Hi}$. It was assumed in the treatment that the oscillations have a phase velocity along the magnetic field considerably greater than the thermal velocities of electrons but considerably less than the thermal velocity of ions and the wavelength is considerably greater than the Larmor radius of the ions. Analysis shows that the existence of instability in the area of frequencies considerably greater than the ion cyclotron frequency is possible in an anisotropic

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YEGORENKOV, V. D. and STEPANOV, K. N., Ukrainskiy fizicheskiy zhurnal, Vol. 15, No. 2, Feb 70, pp 325-330

plasma of finite pressure with hot electrons and cold ions. The unstable oscillations in the isotropic case correspond to whistles and nonmagnetized ion-sound oscillations. Since the growth rate of these instabilities is great, this instability is more dangerous than low-frequency diamagnetic and centrifugal instabilities.

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

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp5-9

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

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

Leningrad Institute for Antibiotics

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

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TELOMERIZATION OF VINYL CHLORIDE BY CHLOROFORM AND TRICHLOROACETIC ACID ESTERS -U-

AUTHOR-(04)-RAZUVAYEV, G.A., BOBINOVA, L.M., ZVEZDIN, V.L., YEGOROCHKIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 637-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, VINYL CHLORIDE, CHLOROFORM, POLYMER, ACETATE, ESTERIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1903 STEP NO--UR/0062/70/000/003/0637/0640

CIRC ACCESSION NO--AP0123687

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TELOMERIZATION OF VINYL CHLORIDE WAS RUN IN THE PRESENCE OF FECL SUB2.4H SUB2 O IN AN AUTOCLAVE WITH CHCL SUB3 OR ET OR ISO-PR ESTERS OF CCL SUB3 CO SUB2 H. FRACTIONAL DISTN. YIELDED THE TELOMERS CHCL SUB2 CH SUB2 CHCL SUB2, CHCL SUB2 CH SUB2 CHCLCH SUB2 CHCL SUB2, AND CHCL SUB2 CH SUB2 CHCLCH SUB2 CHCLCH SUB2 CHCL SUB2 WHICH HAD PHYS. CONSTS. (B., N PRIME20 SUBD, D PRIME20, RESP.): B SUB20 57-8DEGREES, 1.4820, 1.4555; B SUB1 131-2DEGREES, 1.5030, 1.4585; B SUB1 83-4DEGREES, 1.5139, 1.4524. THE ESTER TELOMERS ISOLATED INCLUDED: (FORMULA SHOWN ON MICROFICHE). THE REACTION RUN WITH CH SUB2:CHCL AND CCL SUB3 CO SUB2 ET IN ISO-PROH GAVE PRODUCTS OF TELOMERIZATION COMPLICATED BY TRANSESTERIFICATION.

FACILITY: LAB. STABIL. POLIM., GORKI, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--IR SPECTRA OF VINYL DERIVATIVES AND CONJUGATION EFFECTS WITH THE PARTICIPATION OF PI ELECTRONS OF THE VINYL GROUP -U-

AUTHOR--YEGOROCHKIN, A.N., SEMCHIKOV, YU.D., VYAZANKIN, N.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (1), 152-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, CONJUGATE BOND SYSTEM, SPECTROSCOPIC ANALYSIS, SILANE, ALCOHOL, ORGANOTIN COMPOUND, ORGANOGERMANIUM COMPOUND, CHLORINATED ORGANIC COMPOUND, BROMINATED ORGANIC COMPOUND, IODINATED ORGANIC COMPOUND, FLUORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1054 STEP NO--UR/0062/70/000/001/0152/0154

CIRC ACCESSION NO--AP0104452

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104452

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRAL FREQUENCIES OF THE ME DEFORMATIONS IN 41 COMPDS. INCLUDING HYDROCARBONS, ALCS., ETHERS, HALIDES, SILANES, GERMANES AND STANNANES CONTG. THE VINYL GROUP WERE TABULATED. THE FANNING MOTION OF THE VINYL GROUP IN SUCH COMPDS. IS REFLECTED IN RESULTS OF THE INDUCTIVE EFFECT OF SUBSTITUENTS AS WELL AS RESULTS OF INTERACTION OR CONJUGATION OF PI, PI PRIME NEGATIVE, PI, P PRIME NEGATIVE, AND (D-P) PI-TYPES.

UNCLASSIFIED

USSR

YEGOROV, A., Doctor of Medical Sciences

"The Salyut Station is in Flight. A Stethoscope Stretching for Thousands of Kilometers"

Moscow, Meditsinskaya Gazeta, 15 June 71, p 3

Abstract: It was a regular working day for the crew of the scientific orbital station Salyut. Among other experiments, the cosmonauts carried out a number of biomedical studies, particularly to obtain scientific information about the cardiovascular system under weightlessness conditions, and also to determine the density of bone tissue. Blood was taken from each member of the crew with microanalyzers for subsequent laboratory analysis on the ground. This is onboard medical monitoring.

The article which follows will explain how medical monitoring of the state of health of cosmonauts is conducted from the ground.

The flight of the first orbital scientific station "Salyut" is a new stage in the development of cosmonautics. Its crew solved a vast complex of scientific and technical as well as medical and biological problems. The successful completion of these experiments is possible only when cosmonauts possess high work capacity and a good state of health.

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YEGOROV, A., Meditsinskaya Gazeta, 15 June 71, p 3

The medical equipment of a spacecraft includes apparatus able to register and transmit to the earth various human physiological parameters. Systems have been developed to analyze the state of health of the crew and to provide preventive measures, and even medical treatment when necessary. Thus, the patients of specialists in space medicine are healthy, physically fit persons. The problen of the physicians is to detect the functional shifts which may occur when the human organism is subjected to various factors, particularly during weightlessness, to analyze these shifts and to determine the application of suitable preventative measures.

Medical monitoring of crew condition is guided by the results of previous flights and numerous terrestrial experiments, in which space conditions were simulated. Information has accumulated about the effect on the human organism of various loads, about the permissible limits in the variations of physiological indices, and about the reactive characteristics of an organism in unfamiliar situations.

The special feature of medical monitoring is that physicians practice it, at a distance; that is, when the patient is hundreds of kilometers removed from the physician. In such a case, various means of communication are employed; for example, radio conversations with cosmonauts and tele-

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YEGOROV, A., Meditsinskaya Gazeta, 15 June 71, p 3

vision observation of them.

Engaging in a radio exchange with a patient permits the physician to obtain the required information about how the patient feels, about his impressions and emotions in connection with the flight, and also about the results of personal and correlated medical observation. In addition, it is also important in medical monitoring to evaluate the physical characteristics of speech, including spectroscopic analysis, which permits a more complete appraisal of condition.

Another valuable source of information is the data objectively recorded about the physiological functions of the cosmonauts, and the environmental conditions onboard the spacecraft (pressure, oxygen and carbon dioxide content, humidity, temperature) as well as the results of performing the extremely complex operations of guiding the spaceship and conducting scientific and technical experiments.

All of this information is transmitted via telemetric systems to tracking stations on the ground, where it is recorded graphically or on magnetic tape and fed into computers. Remote recording of the physiological parameters of cosmonauts and of their environmental conditions is accomplished with the help of biotelemetry.

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YEGOROV, A., Meditsinskaya Gazeta, 15 June 71, p 3

The biotelemetric system includes the following elements: a device which senses any kind of physiological indicator and converts it into an electrical signal (sensors); a unit amplifying that signal and superimposing it on a carrier radiofrequency, transmitting it to a receiver; and finally, a ground-based receiver. The composition of the monitored parameters is established in accordance with the characteristics of the flight program and the specifics of the crew's activity.

Apparatus for medical monitoring has been developed which measures and transmit to groundbased measuring points the pulse rate, respiration frequency, electrocardiograms, seismocardiograms, etc. Recording of this information is accomplished by a unified system of sensors attached to the body of the cosmonauts by a special belt.

Recording of such data occurs at least twice daily; but when needed, on each revolution. In addition, the cosmonauts at fixed intervals make functional tests with a physical load. A special suit and a restraints of system are used which ensure a more uniform load on various muscle groups during squatting.

All of these physiological indexes, together with radio conversations and television observation, ensure the acquisition of the required informa-

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YEGOROV,, A., Meditsinskaya Gazeta, 15 June 71, p 3

tion on the condition of vital functions of the organism, and themental and physical efficiency of the cosmonauts. Apart from operational monitoring, more penetrating medical examinations are conducted periodically. At these, an extensive complex of parameters is recorded which describe the condition of the cardiovascular system, body temperature, brain waves, and a number of other indexes.

Data about the atmospheric conditions in the living compartments of spaceships and about the radiation conditions is also of great importance. During the flight of the spacecraft including also the flight of orbital stations, the atmosphere in theliving compartments is practically the same as on the ground and the crew is able to regulate the temperature.

The monitoring of radiation conditions is performed with a radiometer which transmits readings over telemetric channels to the earth. Monitoring the total irradiation doses for the entire flight is accomplished with the help of individual dosimeters. In addition, during flight use is made of the data from control dosimeters on artificial earth satellites, while devices for observing the state of solar activity are used for forecasting solar flares.

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YEGOROV, A., Meditsinskaya Gazeta, 15 June 71, p 3

Whiel the orbital station is in flight, crew members conduct a vast complex of biomedical studies including research in neuropsychology, the cardiovascular system, respiration, and metabolic functions. The information obtained can be used in part for medical monitoring purposes. But this data is primarily directed toward study of mechanisms of potential physiological shifts if they are observed. Detailed analysis of these shifts is conducted after completion of the flight.

During the flight of the orbital station, medical information is processed at ground-based measuring points by specially trained medical personnel. The processed material is immediately sent to the flight control center where, together with the analytical results of other kinds of information, it is analyzed in detail by the appropriate specialists. In the end, overall evaluation is provided regarding the condition of the crew members.

The orbital station is one of the means of solving many biomedical problems and of obtaining extensive experimental material on the effect of space flight factors on man.

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1/4 041 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PRELIMINARY RESULTS OF MEDICAL MONITORING, PROBLEMS IN SPACE MEDICINE -U-
AUTHOR-(02)-VOROBYEV, YE., YEGOROV, A.

COUNTRY OF INFO--USSR

SOURCE--FOSCOW, MEDITSINSKAYA GAZETA, 23 JAN 70, P 3

DATE PUBLISHED--23JAN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SPACE MEDICINE, VESTIBULAR ANALYZER, MANNED SPACECRAFT/(U)SOYUZ 6 MANNED SPACECRAFT, (U)SOYUZ 7 MANNED SPACECRAFT, (U)SOYUZ 8 MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605037/D07 STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0142455
UNCLASSIFIED

2/4 041 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AN0142455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING THE FLIGHT OF THE SPACE FLEET CONSISTING OF SOYUZ-6, SOYUZ-7, AND SOYUZ-8, A NUMBER OF MEDICAL EXAMINATIONS WERE CONDUCTED, WITH CONTINUOUS MEDICAL MONITORING OF THE CONDITION OF THE CREW. THE CHARACTERISTIC FEATURE OF FLIGHT FROM THE MEDICAL POINT OF VIEW IS THE ABILITY TO DETECT GENERAL PATTERNS OF CHANGE IN PHYSIOLOGICAL PROCESSES UNDER THE EFFECT OF FLIGHT FACTORS IN SEVEN COSMONAUTS AT THE SAME TIME. ALSO, THEIR PRESENCE IN THE SAME SPACECRAFT MAKES IT POSSIBLE TO ASSESS THE INDIVIDUAL CHARACTERISTICS OF EACH ONE, WHICH IS EXTREMELY IMPROTANT FOR DEVELOPING SELECTION CRITERIA AND FOR FORECASTING CHANGES IN PHYSIOLOGICAL REACTIONS DURING SAPCE FLIGHTS. IT MUST BE NOTED THAT THE CREW MEMBERS OF SOYUZ-8, V. SHATALOV AND A. YELISEYEV, WERE ON THEIR SECOND SPACE FLIGHT. THIS PERMITS MORE THOROUGH INVESTIGATION OF ADAPTATION OF THE HUMAN ORGANISM TO SPACEFLIGHT CONDITIONS, IN PARTICULAR TO WEIGHTLESSNESS. FINALLY, ONE OF THE MEDICAL TASKS WAS TO INVESTIGATE INFLIGHT PSYCHOPHYSIOLOGICAL CAPABILITIES AND PHYSIOLOGICAL REACTIONS WHEN PERFORMING DYNAMIC OPERATIONS RELATED TO MANEUVERING AND MANUAL CONTROL OF SAPCECRAFT. THE ENTIRE SET OF EXAMINATIONS AND OBSERVATIONS WAS DIRECTED TOWARD PERFORMING TWO EXTREMELY IMPROTANT TASKS. THE FIRST TASK WAS MEDICAL MONITORING OF THE PHYSICAL CONDITION OF THE CREW DURING FLIGHT INCLUDING, IF NECESSARY, RECOMMENDATIONS FOR THE PREVENTION OF POSSIBLE CHANGES IN PHYSIOLOGICAL FUNCTIONS AND FOR THE TREATMENT OF DISEASE. THE SECOND TASK WAS INVESTIGATIONS OF THE EFFECT OF SPACE FLIGHT FACTORS ON THE HUMAN ORGANISM.

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CLRG ACCESSION NO--AN0142455 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--DIVERSE SOURCES OF INFORMATION WERE USED TO EVALUATE THE PHYSICAL CONDITION OF COSMONAUTS. THE MOST IMPORTANT WERE DATA OBTAINED DURING RADIO COMMUNICATION AND TELEVISION, ANALYSIS OF PERFORMANCE OF FLIGHT ASSIGNMENTS AND RECORDED PHYSIOLOGICAL PARAMETERS AND INDICES OF THE MICROCLIMATE IN THE MANNED CABINS OF SPACECRAFT. DURING FLIGHT, PULSE RATE WAS RECORDED CONTINUOUSLY, AND, WHEN THE CRAFT WAS WITHIN THE RANGE OF EARTH BOUND MONITORING POINTS, ELECTROCARDIOGRAPHY, SEISMOCARDIOGRAPHY AND PNEUMOGRAPHY WERE PERFORMED PERIODICALLY. THE INFORMATION ABOUT THE PHYSICAL CONDITION OF CREW MEMBERS WAS PROCESSED COMPUTER AND WAS CONTINUOUSLY FED TO THE FLIGHT COMMAND CENTER, WHERE IT WAS ANALYZED BY HIGHLY QUALIFIED MEDICAL SPECIALISTS. THE PHYSICIANS WERE READY TO RENDER EMERGENCY "SPACE" AID TO THE CREW AT ANY MOMENT. FOR THIS PURPOSE THERE WAS A DRUG KIT ON BOARD WHICH CONTAINED NOT ONLY MEDICATION FOR INGESTION, BUT ALSO TUBE SYRINGES FOR INJECTIONS. HOWEVER, THE NEED DID NOT ARISE FOR THIS KIT SINCE THE CRE. FELT FINE THROUGHOUT THE FLIGHT. SCIENTIFIC MEDICAL EXAMINATIONS DURING FLIGHT INCLUDED INVESTIGATION OF FUNCTIONS OF THE VESTIBULAR AND VISUAL ANALYZERS, REACTIONS OF THE CARDIOVASCULAR SYSTEM TO PHYSICAL LOADS, AND OTHER INDICES. ALL OF THE PLANNED MEDICAL EXPERIMENTS WERE COMPLETED. THE MICROCLIMATE PARAMETERS IN THE MANNED CABINS OF THE CRAFT WEREWITHIN THE PRESENT RANGE AND WERE COMFORTABLE FOR THE CREW MEMBERS. THE SPACEFLIGHT WERE ASSOCIATED WITH GOOD RADIATION CONDITIONS: TOTAL IRRADIATION DOSAGE WAS CONSIDERABLY SMALLER THAN ESTIMATED AND HUNDREDS OF TIEMS LOWER THAN THE PERMISSIBLE THRESHOLDS.

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CIRC ACCESSION NO--AN0142455 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--THUS, THE CONDITION OF THE COSMONAUTS WAS GOOD THROUGHOUT THE FLIGHT, AND THEIR EFFICIENCY REMAINED UNIMPAIRED, SO THAT THE FLIGHT PROGRAM COULD BE FULFILLED. THE MAIN PHYSIOLOGICAL INDICES WERE WITHIN NORMAL RANGE AFTER ADAPTATION TO THE FLIGHT, WHICH LASTED FOR SEVERAL HOURS. THE GENERAL PATTERNS OF THE DAILY RHYTHM WERE INTACT. PERFORMANCE OF NUMEROUS MANEUVERS DID NOT VISIBLY AFFECT THE DYNAMICS OF PHYSIOLOGICAL INDICES. THE FIRST POSTFLIGHT EXAMINATION ALSO FAILED TO DEMONSTRATE ANY DEVIATIONS IN THE COSMONAUTS' HEALTH. AT THE PRESENT TIME ALL THE CREW MEMBERS AHVE UNDERGONE A THOROUGH MEDICAL EXAMINATION AND ARE FEELING WELL. UNLIKE PREVIOUS FLIGHTS, THE COSMONAUTS FOOD CONSISTED OF UNADULTERATED FOOD SELECTED WITH DUE CONSIDERATION OF INDIVIDUAL TASTES. THE MENU WAS DIVERSE AND INCLUDED FOUR KINDS OF BREAD, MEATS JUICES, ETC. SCIENTISTS HAVE ALREADY BEGUN MAKING A COMPREHENSIVE ANALYSIS OF THE DATA OBTAINED. ACCORDING TO THE PRELIMINARY RESULTS, IT HAS BEEN ESTABLISHED THAT THE PHYSIOLOGICAL INDICES OF THE COSMONAUTS SHOWED SHIFTS CONSISTENT WITH THE OPERATIVE SPACE FACTORS. IN THE SEGMENT OF FLIGHT INVOLVING ENTRY INTO ROBIT, THERE WAS SOME INCREASE IN HEART RATE RELATED TO THE EFFECT OF ACCELERATIONS. THE COSMONAUTS ADAPTED TO SPACEFLIGHT CONDITIONS WITHIN THE FIRST 4-6 HOURS OF FLIGHT. FROM THIS TIME ON, THE PHYSIOLOGICAL INDICES WERE ALMOST THE SAME AS THOSE OBSERVED IN TESTS ON EARTH SEVERAL WEEKS PRIOR TO FLIGHT. THE MEAN PULSE RATE RANGED FROM 60 TO 80 PER MINUTE, INCREASING SOMEWHAT WHEN PERFORMING COMPLEX MANEUVERS OR IMPORTANT EXPERIMENTS. THERE WAS A VISIBLE DECREASE IN PULSE RATE DURING SLEEP.

UNCLASSIFIED

USSR

VOROB'YEV, YE., Doctor of Medical Sciences, and YEGOROV, A., Candidate of Medical Sciences

"Preliminary Results of Medical Monitoring -- Problems in Space Medicine"

Moscow, Meditsinskaya Gazeta, 23 Jan 70, p 3

Translation: During the flight of the space fleet consisting of Soyuz-6, Soyuz-7, and Soyuz-8, a number of medical examinations were conducted, with continuous medical monitoring of the condition of the crew. The characteristic feature of flight from the medical point of view is the ability to detect general patterns of change in physiological processes under the effect of flight factors in seven cosmonauts at the same time. Also, their presence in the same spacecraft makes it possible to assess the individual characteristics of each one, which is extremely important for developing selection criteria and for forecasting changes in physiological reactions during space flights.

It must be noted that the crew members of Soyuz-8, V. Shatalov and A. Yeliseyev, were on their second space flight. This permits

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VOROB'YEV, YE., et al., Moscow, Meditsinskaya Gazeta, 23 Jan 70, p 3

more thorough investigation of adaptation of the human organism to spaceflight conditions, in particular to weightlessness.

Finally, one of the medical tasks was to investigate inflight psychophysiological capabilities and physiological reactions when performing dynamic operations related to maneuvering and manual control of spacecraft.

The entire set of examinations and observations was directed toward performing two extremely important tasks. The first task was medical monitoring of the physical condition of the crew during flight including, if necessary, recommendations for the prevention of possible changes in physiological functions and for the treatment of disease. The second task was investigations of the effect of space flight factors on the human organism.

Diverse sources of information were used to evaluate the physical condition of cosmonauts. The most important were data obtained during radio communication and television, analysis of performance of

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VOROB'YEV, YE., et al., Moscow, Meditsinskaya Gazeta, 23 Jan 70, p 3

flight assignments and recorded physiological parameters and indices of the microclimate in the manned cabins of spacecraft. During flight, pulse rate was recorded continuously, and, when the craft was within the range of earth-bound monitoring points, electrocardiography, seismocardiography and pneumography were performed periodically. The information about the physical condition of crew members was processed computer and was continuously fed to the flight command center, where it was analyzed by highly qualified medical specialists.

The physicians were ready to render emergency "space" aid to the crew at any moment. For this purpose there was a drug kit on board which contained not only medication for ingestion, but also tube syringes for injections. However, the need did not arise for this kit since the crew felt fine throughout the flight.

Scientific medical examinations during flight included investigation of functions of the vestibular and visual analyzers, reactions of the cardiovascular system to physical loads, and other indices. All of the planned medical experiments were completed.

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VOROB'YEV, YE., et al., Moscow, Meditsinskaya Gazeta, 23 Jan 70, p 3

Unlike previous flights, the cosmonauts food consisted of unadulterated food selected with due consideration of individual tastes. The menu was diverse and included four kinds of bread, meats juices, etc.

Scientists have already begun making a comprehensive analysis of the data obtained. According to the preliminary results, it has been established that the physiological indices of the cosmonauts showed shifts consistent with the operative space factors. In the segment of flight involving entry into orbit, there was some increase in heart rate related to the effect of accelerations. The cosmonauts adapted to spaceflight conditions within the first 4-6 hours of flight. From this time on, the physiological indices were almost the same as those observed in tests on earth several weeks prior to flight. The mean pulse rate ranged from 60 to 80 per minute, increasing somewhat when performing complex maneuvers or important experiments. There was a visible decrease in pulse rate during sleep.

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VOROB'YEV, YE., et al., Moscow, Meditsinskaya Gazeta, 23 Jan 70, p 3

The microclimate parameters in the manned cabins of the craft were within the preset range and were comfortable for the crew members. The spaceflight were associated with good radiation conditions: total irradiation dosage was considerably smaller than estimated and hundreds of times lower than the permissible thresholds.

Thus, the condition of the cosmonauts was good throughout the flight, and their efficiency remained unimpaired, so that the flight program could be fulfilled. The main physiological indices were within normal range after adaptation to the flight, which lasted for several hours. The general patterns of the daily rhythm were intact. Performance of numerous maneuvers did not visibly affect the dynamics of physiological indices.

The first postflight examination also failed to demonstrate any deviations in the cosmonauts' health. At the present time all of the crew members have undergone a thorough medical examination and are feeling well.

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Pulse Technique

USSR

UDC 4678.02:66.097

ABRAMYAN, Ye. A., VOROB'YEV, V. V., YEGOROV, A. A., MELKIN, V. A., and PONOMARENKO, A. G.

"Initiating the Discharge in a Megavolt Gas Space by an Electron Beam"

Moscow, Pribory i tekhnika eksperimenta, No. 1, January-February, 1971, pp 117-118

Abstract: This paper describes the experimental method and results in the use of an electron beam to start the discharge in a gaseous gap. The high voltage of 0.2 to 1 MV is supplied by a Tesla induction transformer, with the capacitance formed by the transformer electrode and the transformer's grounded casing playing the part of the discharge gap. This casing is filled with gas at a pressure of 12 atmospheres, with the electron beam injected, with an energy of 150 to 400 kev and a current of 10 A in the course of 5 ns, into the center of the gap, which has a length of 4 cm. The injection is made through a 1-cm diameter window of fine foil. A sketch of this equipment is provided. Photographs of the discharge are reproduced.

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YEGOROV A.A.

UDC: 614.25:616.21

ORGANIZATION AND VOLUME OF WORK DONE BY OTORHINOLARYNGOLOGISTS

SPECIALIZING IN LOGOPEDICS

[Article by [illegible] Egorov, Scientific Organization Department (headed by V.S. Kuznetsov), Moscow Scientific Research Institute for Ear, Nose, and Throat (director: I.B. Soldatov, corresponding member of the USSR Academy of Medical Sciences); Moscow, Sovetskoye Zdravookhraneniye, Russian, No 2, 1973, submitted 4 July 1972, pp 46-51]

Soviet public health is called upon to meet in full the people's requirements with respect to all forms of specialized medical care. Order No 270 dated 9 April 1968, issued by the USSR Ministry of Health, "Measures for Further Development and Improvement of Otorhinolaryngological Care for the People of the USSR," provides for specialization of one of the ENT (ear, nose and throat) offices in an oblast, krayevoy or autonomous republic for rendering logopedic [phoniatric] care.

The network of logopedic offices has more than tripled in the Russian Federation in the 8th five-year period (1966-1970). By the start of 1971, a logopedic service was available in more than 30 oblasts (krays, autonomous republics). Most of these offices are staffed by highly qualified specialists and equipped with modern therapeutic and diagnostic apparatus and instruments.

However there are still several substantial flaws with regard to organizing this type of outpatient polyclinic care. The existing network of logopedic offices was formed without due consideration of the scientifically substantiated requirements of the people, and without an officially approved norm for the logopedist's work load during office hours for ambulatory patients. For this reason, further improvement of logopedic care will be determined, in many respects, not only by broadening the network of logopedic offices but also by rational use of available personnel and of their work time.

In order to work out scientifically substantiated suggestions dealing with organization of the work of a logopedic office we made a study of the operation of such offices as it is now practiced. We conducted the study using a method developed by the All-Union Scientific

YEGOROV, A. D.

PHYSIOLOGIC REACTIONS OF COSMONAUTS REGISTERED DURING FLIGHT OF THE 'SOYUZ-9' SPACESHIP

[Article by A. A. Butusov, A. D. Yegorov, V. F. Lyamin, A. P.
Polyakova and I. B. Svistunov; Moscow, Aktual'nyye Voprosy
Kosmicheskoy Biologii i Meditsiny (Current Problems in Space
Biology and Medicine), Russian, 1971, pp 36-38]

The principal peculiarities of flight of the "Soyuz-9"
spaceship were its great duration (18 days) and saturation of
the flight program with different kinds of scientific invest-
igations. In this connection it is of great interest to con-
sider data on the physiologic reactions of the crew members
during prolonged exposure to spaceflight factors.

In addition to the earlier described sources of infor-
mation on the health of these cosmonauts (Ye. I. Vorob'yev,
et al., 1969, 1970; Yu. G. Nefedov, et al., 1970), the reac-
tions of the circulatory apparatus to a special functional
test with a carefully measured standard physical load were
registered during this flight. In addition, an important
place was given to medical self- and mutual monitoring which
the cosmonauts carried out aboard the ship during the flight.

As on the earlier manned flights, in the crew members
of the "Soyuz-9" ship the frequency of cardiac contractions
after the ship had been put into orbit exhibited a well-ex-
pressed tendency to a decrease and already on the third-sixth
revolutions attained mean values characteristic of the pre-
flight period (70-75 beats per minute). Later this index for
both cosmonauts persisted at lower levels, but during the last
third of the flight had no statistically reliable difference
from the data for one day prior to the flight. During the
performance of dynamic operations (spinning, ship orienta-
tion, orbital corrections, etc.), as well as physical exer-
cises and some experiments, in a number of cases there was a

JPRS 56,499
14 July 72

Yegorov, A.D

QUANTITATIVE EVALUATION OF PHYSIOLOGIC INDICES OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-6' - 'SOYUZ-8' SPACESHIPS

/Article by L. V. Antonenko, A. A. Butusov, V. A. Dzerzhanovskaya, A. D. Yegorov, N. A. Ivashkina, S. G. Ignatova, V. R. Lyamin, A. P. Polyakova and I. B. Svistunov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 7-9/

In conducting medical monitoring an evaluation of the health of cosmonauts during spaceflight is made on the basis of information received during radio conservations and television contacts, by an analysis of the registered physiologic parameters and the microclimatic parameters in the manned compartments, by conducting medical self- and mutual monitoring, etc. (Ye. I. Vorob'yev, et al., 1969; 1970).

In the process of decoding the physiologic parameters the frequency of cardiac contractions and the respiration rate were ascertained and the principal indices of the electrocardiogram and seismocardiogram were measured.

The principal objectives of the quantitative evaluation and the statistical analysis of physiologic data were:

evaluating the significance of the influence of different flight factors on physiologic indices;

determining the direction of change of physiologic indices during different flight periods for different cosmonauts;

evaluating the dynamics of the mean values of the physiologic indices during different flight periods and the individual characteristics of the reactions of cosmonauts;

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14 July 72

YEGOROV, A.D.

SOME RESULTS OF USING DISPERSION ANALYSIS FOR EVALUATING THE PHYSIOLOGIC REACTIONS OF COSMONAUTS DURING FLIGHT OF THE 'SOYUZ-3,' 'SOYUZ-4' AND 'SOYUZ-5' SPACESHIPS

/Article by V. I. Antonova, A. A. Putusov, V. A. Dzardzhanovskaya, A. D. Yegorov, N. A. Ivashkina, G. G. Ignatova, V. M. Dyrmin, A. F. Polyakova and L. B. Svistunov; Moscow, Aktual'nyye Voprosy Kosmicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, pp 9-11/

During the space flight of the "Soyuz-3," "Soyuz-4," and "Soyuz-5" ships, radiotelemetric systems were used in registering such physiologic parameters as the electrocardiogram (ECG), seismocardiogram (SCG) and pneumogram (PG). In processing this information it was possible to determine the frequency of cardiac contractions and the respiration rate and the principal ECG and SCG indices for each cosmonaut were measured.

The collected data were grouped in accordance with the stages in training and conducting space flight. The following periods were discriminated:

preflight (PF) period, including data obtained in an examination of crews during ordinary work activity 15-20 days prior to the flight;

prelaunching, including the results obtained during the registry of physiologic parameters several hours prior to the launching (PL-1) and during the periods of the five-one-minute countdown (PL-2);

active segment (AS), the segment in which the spaceship is put into orbit;

orbital flight (OF);

descent segment (D).

JPRS 56,499
14 July 72

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620017-8"

USSR

UDC:539.171.017:539.184.5

GONDUROV, I. A., BERESTOVOY, A. M., YEGOROV, A. I., KOROTKIKH, YE. M. and PETROV, YU. V.

"Interaction of Thermal Neutrons with Eu^{152m} Nuclei"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 77-78

Abstract: When neutrons interact with nuclei in the excited state, inelastic scattering may occur with transmission of the energy of the excited nucleus to the scattered neutron. This work presents the results of direct measurement of the effect by seeking the fast neutrons produced by bombardment of Eu^{152} isomer nuclei with thermal neutrons. The installation and specimen used are briefly described. It is reported that analysis of the results of measurements indicated a mean value for the "acceleration" cross section of neutrons of 0.15 ± 1.46 Barns. This means that it is 95% certain that the cross section of the reaction does not exceed 3 Barns.

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USSR

YEGOROV, A. I., SHENFEL'D, G. B. UDC 624.07:534.1

"A Problem in the Optimal Control of Bending Oscillations of a Beam"

Tr. Frunz. politekhn. in-ta (Works of Frunze Polytechnical Institute), 1971, No. 45, pp 77-89 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V338)

Translation: The optimal control of bending oscillations is sought for three forms of fastening of an elastic beam (rigid, hinge, free). The problem is reduced to the minimization of one of two functionals, where one characterizes the bending and the second characterizes the energy of the oscillations of the beam. The uniqueness of the solution is proved. In the case of a homogeneous beam of constant transverse cross section a solution is obtained for the optimal control in the form of an infinite series in terms of eigenfunctions. The coefficients of the series are evaluated and are functions of the parameters of the functionals. The convergence of the series is proved whence follows the possibility of representing the control by a terminating series. L. V. Selezova.

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USSR

UDC 519.3:62-50

ALIFEROV, V. V., and YEGOROV, A. I.

"Optimal Control of Heat Transfer Process"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 4, Jul-Aug 70, pp 30-36

Abstract: A method for obtaining optimal control when there are no limitations on the area of control is illustrated using the example of heat transfer in a homogeneous rod. An integral equation is produced for determination of the optimal control and a method is given which can be used to reduce the solution of the equation to solution of an infinite system of algebraic equations. The method presented in this work can be used without particular difficulty for more general cases as well. However, this requires that the heat transfer equations be linear and the optimality criterion quadratic.

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UDC: 533.652/.661.013

USSR

YEGOROV, A. I.

"Some Characteristics of the Transfer Functions Typical of Flight Speed and Altitude Control in an Aircraft with Automatic Thrust"

Tr. Mosk. aviats. in-ta (Transactions of the Moscow Aviation Institute) 1970, No. 189, pp 172-188 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2B376)

Translation: An investigation is made of the transfer functions for velocity, altitude, and angle of inclination of an aircraft trajectory in cruising flight, under the action of masses of turbulent air and the guidance activity of the pilot through the steering wheel, for the altitude and velocity setters of the automatic thrust control system. Two types of the system are considered: 1) Static, characterized by the fact that the change in thrust it engenders is proportional to the difference between the pilot's demands and the instantaneous increases in velocity; 2) Astatic, in which the change in thrust is connected with such velocity differences through the channel of the integral as well as directly. A stable

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USSR

YEGOROV, A.I., Tr. Mosk. aviats. in-ta (Transactions of the Moscow Aviation Institute) 1970, No 189, pp 172-188 (from RZh-Mekhanika, No 2, Feb 71, Abstract No 2B376)

aircraft with an astatic automatic thrust control has no residual velocity or altitude deviations in a turbulent atmosphere. The astatic system eliminates the unfavorable effect of strong aircraft instabilities in velocity at finite values of altitude and speed by controlling them through the steering wheel and the velocity setter. An aircraft with the static system has no residual velocity deviations in altitude control through the steering wheel. In such an aircraft there are residual velocity and altitude deviations in the stabilization and control modes, which have an unfavorable effect on velocity stability control. The deficiencies in control connected with the presence of a momentary velocity instability are not excluded by the thrust control system, but they can be negated by the autopilot acting on the elevator. G. S. Aronin

2/2

USSR

UDC 621.382.3

ZVYAGIN, V.I., SUNEP, YU. I., ZATOLOKA, S.I., YEGOROV, A.I., AKMENTYN'SH, YA.YA., PUNDUR, P.A.

"Determination Of The Effectiveness Of Collecting Charge Carriers In Semiconductor Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific-Technical Collection. Microelectronics), 1970, Issue 2(23), pp 67-70 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B233)

Translation: The method described for determination of the effectiveness of collection of non-equilibrium carriers in various regions of a silicon planar transistor involves measurement of the charge collected by a p-n junction. Corresponding measurements are conducted on a KT351 device before and after irradiation by nucleur radiation. Formulas are given which connect the effectiveness of collection with the volume life time of non-equilibrium charge carriers. Author's abstract.

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1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--A DIFFUSE PIAL CARCINOMATOSIS -U-

AUTHOR--YEGOROV, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 5, PP 654-659

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, SPINAL CORD, TUMOR, METASTASIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0254 STEP NO--UR/0246/70/070/005/0654/0659

CIRC ACCESSION NO--AP0117506

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117506

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR REPORTS OF 11 CASES WITH CLINICO ANATOMICAL STUDIES OF DIFFUSE PIAL CARCINOMATOSIS (4 MALES AND 7 FEMALES). IN 10 CASES THERE WAS A SECONDARY DIFFUSE PIAL CARCINOMATOSIS, THE SOURCE OF WHICH IN 8 CASES WAS VENTRICULAR CANCER AND IN 2 LUNG CANCER. AN ISOLATED PIAL CARCINOMATOSIS WITHOUT METASTASIZATION INTO OTHER ORGANS WAS SEEN IN 3 CASES. IT IS THE OPINION OF THE AUTHOR THAT SECONDARY DIFFUSE PIAL CARCINOMATOSIS IS ENCOUNTERED MORE FREQUENTLY THAN IT IS ACCUSTOMED TO BE THOUGHT. IN MANY CASES IT IS NOT ELIMINATED BECAUSE OF VERY SCANTY MACROSCOPICAL DATA DURING POST MORTEM EXAMINATIONS AND AN ABSENCE OF HISTOLOGICAL OBSERVATIONS OF THE BRAIN IN CANCER OF OTHER TISSUES. OF THE 4519 STUDIED POST MORTEM EXAMINATIONS A DIFFUSE PIAL CARCINOMATOSIS WAS SEEN ONLY IN 0.24PERCENT. THE PAPER CONTAINS A DETAILED CASE HISTORY OF A PRIMARY PIAL CARCINOMATOSIS IN A FEMALE 53 YEARS OLD WITH INITIAL SYMPTOMS IN THE FORM OF SPINAL RADICULAR PAIN AND THE DEVELOPMENT OF A TYPICAL PICTURE OF A DIFFUSE PIAL CARCINOMATOSIS ON THE 3RD WEEK AFTER THE ONSET OF THE DISEASE. FACILITY: KAFEDRA NERVNYKH BOLEZNEY II MOSKOVSKOGO MEDITSINSKOGO INSTITUTA AND KALUZHSKAYA OBLASTNAYA BOL'NITSA.

UNCLASSIFIED

USSR

UDC 628.16.048:628.162/74

YEGOROV, A. I., and ALEKSEYEV, L. S., All Union Scientific Research Institute Vodego

"Chemosorption of Carbon Dioxide During Filtrational Stabilization of Distilled Water"

Moscow, Vodoznabzheniye i Sanitarnaya Tekhnika, No 3, 1973, pp 5-7

Abstract: Results are reported on the interaction of carbon dioxide with calcium carbonate under dynamic conditions of the stabilization of distillate on the models of marble filters. Experimental data show that with CO_2 concentration greater than 1.1 mg-equivalent/liter, the chemosorption process is of zero order, with the constant K_o = 0.75 mg-equivalent/l·min; when the CO_2 concentration is less than or equal to 0,33 mg-equivalent/liter, the process is of the first order, and K_1 = 1.99 1/min.

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1/2 009 UNCLASSIFIED

TITLE--ISOLATION OF AGAROSE AND GRANULATION OF AGAR AND AGAROSE GEL -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-EGOROV, A.M., VAKHABOV, A.KH., CHERNYAK, V.YA.

YEGOROV, A.M.

COUNTRY OF INFO--USSR

SOURCE--J. CHROMATOGR. 1970, 46(2), 143-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGAR, GEL, MECHANICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0495

STEP NO--NE/0000/70/046/002/0143/0148

CIRC ACCESSION NO--AP0117729

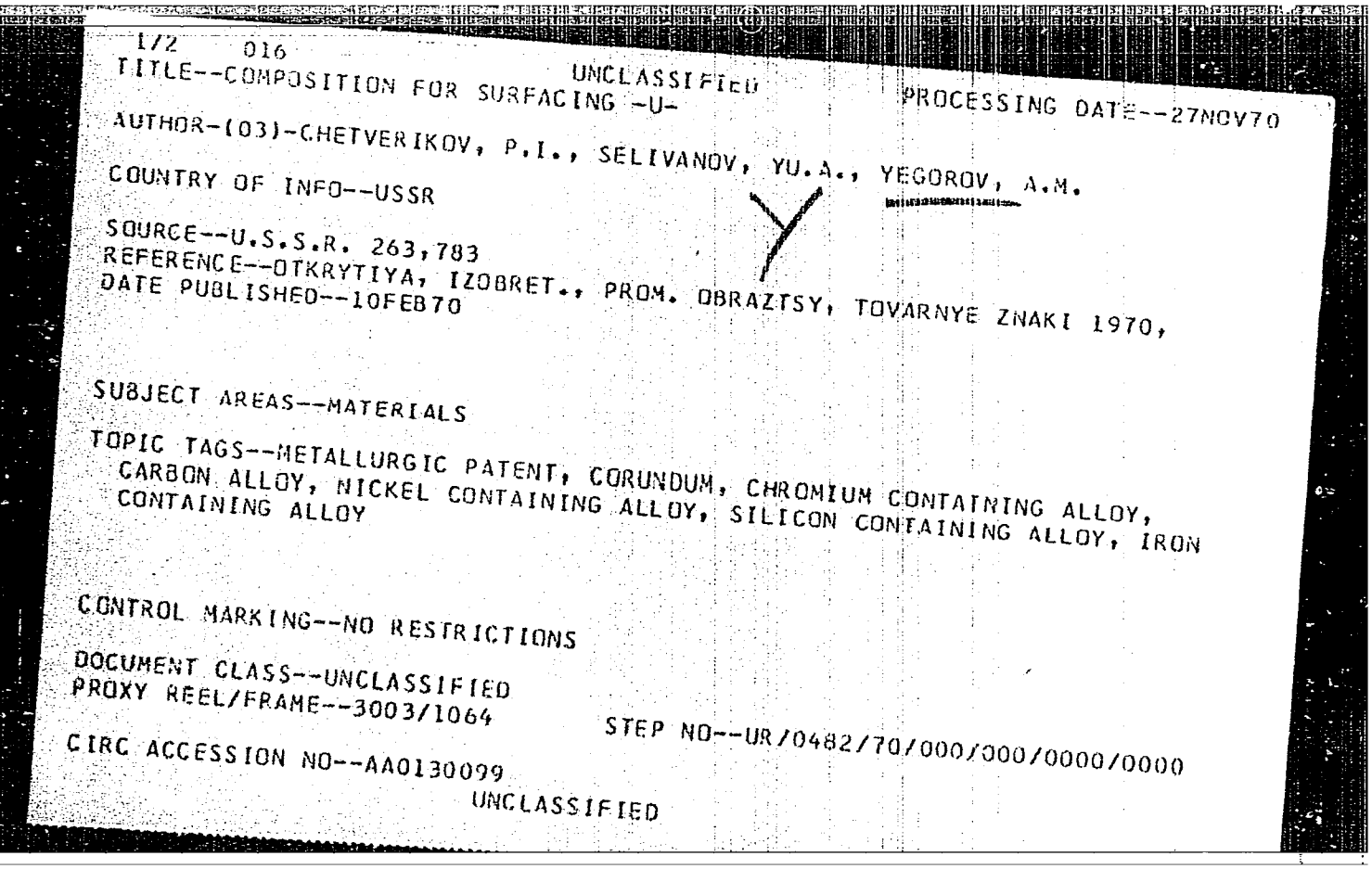
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0117729

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AGAROSE WAS ISOLATED FROM DIFCO BACTAGAR BY FRACTIONATION WITH (NH SUB4)SUB2 SO SUB4 AND ME SUB2 CO. A MODIFICATION OF THE METHOD OF L. PHILIPSON AND S. BENGTSSON (1964) WAS USED FOR GRANULATION OF AGAR AND AGAROSE. A SPRAYER HAVING REMOVABLE DISKS WAS DESCRIBED WHICH PERMITTED PREPN. OF BEAD SHAPED GRANULES OF ANY SIZE AT GEL CONCNS. OF 2-7PERCENT. SINCE THE SPRAYING OF 11. OF AGAR REQUIRED IS LESS THAN OR EQUAL TO 2 MIN., NO COOLING OF THE WATER ETHER MIXT. WAS NECESSARY AND THE GEL DID NOT CONGEAL IN THE SPRAYER. ALSO, THE N PRESSURE USED FOR SPRAYING HAD LESS EFFECT ON THE GRANULE SIZE THAN SQUEEZING THE SOLN. THROUGH A NEEDLE. FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV. MOSCOW, USSR.

UNCLASSIFIED



1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--COMPOSITION FOR SURFACING -U-

AUTHOR-(03)-CHETVERIKOV, P.I., SELIVANOV, YU.A., YEGOROV, A.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,783

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, CORUNDUM, CHROMIUM CONTAINING ALLOY, CARBON ALLOY, NICKEL CONTAINING ALLOY, SILICON CONTAINING ALLOY, IRON CONTAINING ALLOY

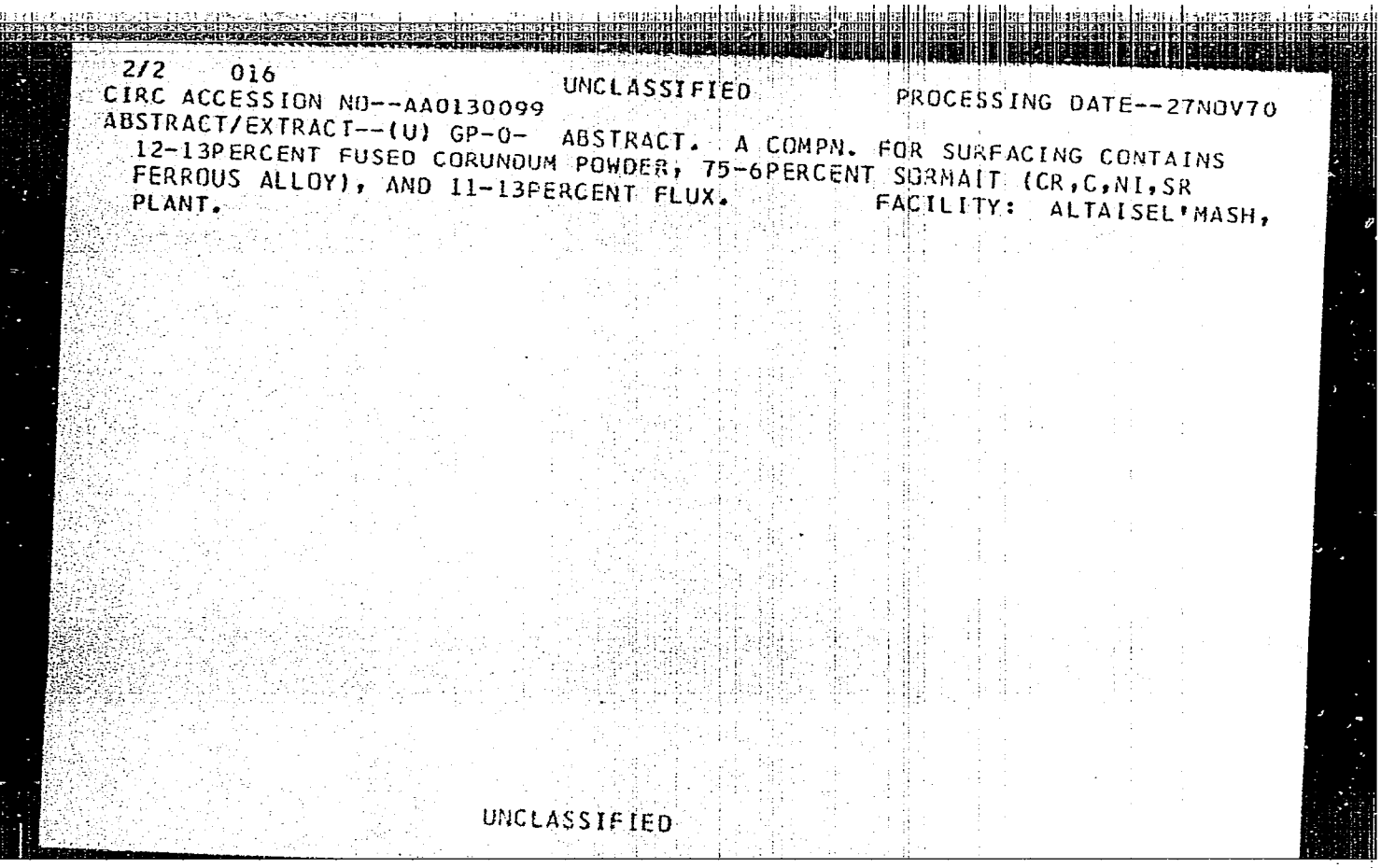
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1064 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130099

UNCLASSIFIED



2/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0130099
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPN. FOR SURFACING CONTAINS 12-13PERCENT FUSED CORUNDUM POWDER, 75-6PERCENT SORMAIT (CR,C,NI,SR FERROUS ALLOY), AND 11-13PERCENT FLUX. FACILITY: ALTAISEL'MASH, PLANT.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--FORMATION CONSTANTS FOR ANIONIC HYDROXO COMPLEXES OF SOME GROUP III ELEMENTS -U-

AUTHOR-(04)-IVANOVEMIN, B.N., YEGOROV, A.M., ROMANYUK, V.I., SIFOROVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1224-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, INDIUM COMPOUND, THALLIUM COMPOUND, YTTRIUM COMPOUND, YTTERBIUM COMPOUND, LUTETIUM COMPOUND, ERBIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1144 STEP NO--UR/0078/70/015/005/1224/1228

CIRC ACCESSION NO--AP0136564

UNCLASSIFIED