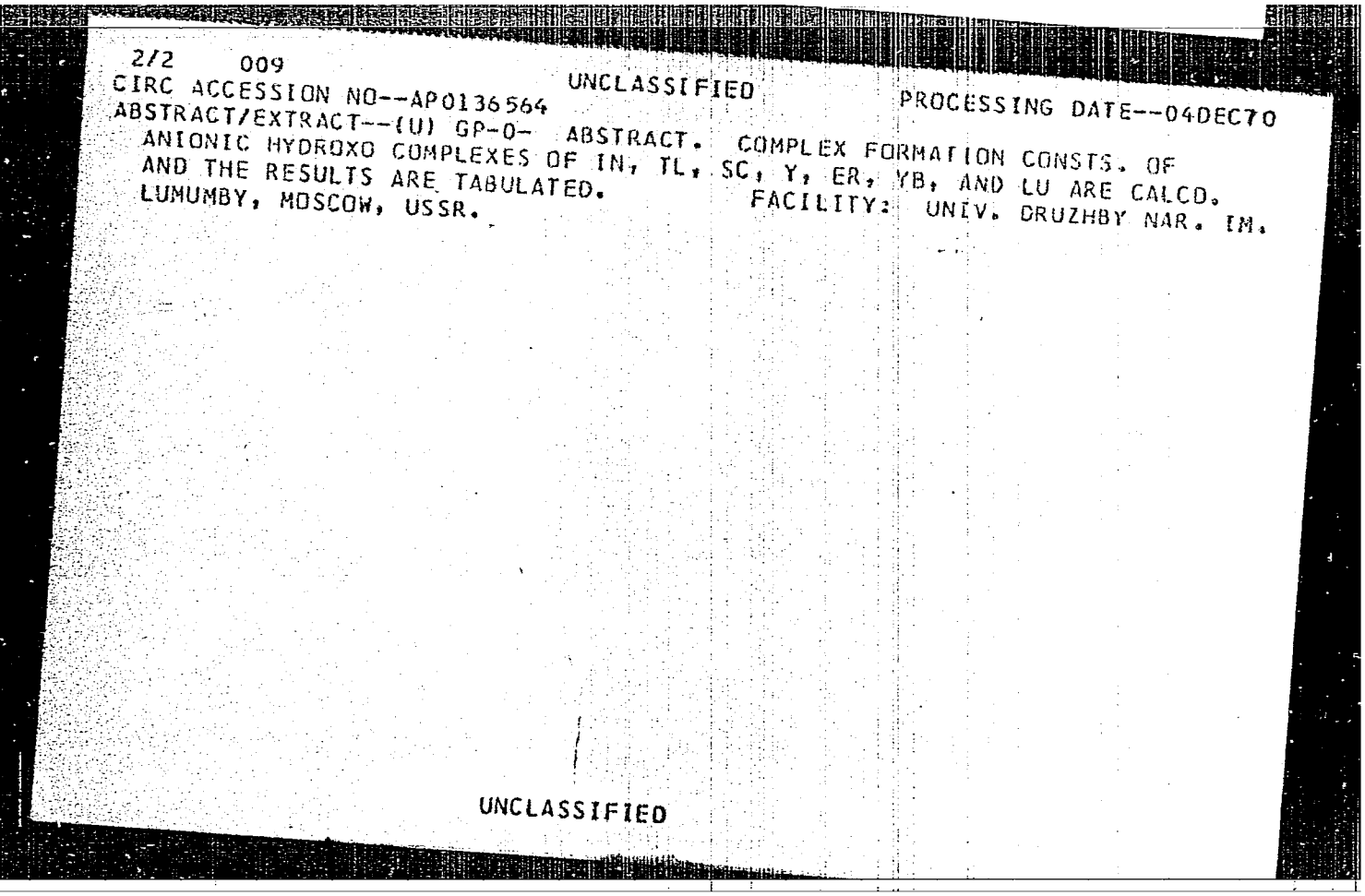

2/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0136564
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION CONSTS. OF ANIONIC HYDROXO COMPLEXES OF IN, TL, SC, Y, ER, YB, AND LU ARE CALCD. AND THE RESULTS ARE TABULATED.
FACILITY: UNIV. DRUZHBY NAR. IM. LUMUMBY, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 628.165.09

TOKMANTSEV, N. K., CHERNOZUBOV, V. B., and YEGOROV, A. P.

"Thirty Four Stage Experimental Industrial Desalination Unit With Instantaneous Evaporation"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 7, 1973, pp 27-29

Abstract: The experimental industrial distillation unit with instantaneous evaporation is one of the world's largest units. In it for the first time the method of recirculating the seeding crystals is used to prevent the formation of sediment.

1/1

Instrumentation and Equipment

USSR

UDC 669.721

VIKHAREV, A. F., YEGOROV, A. P., ZHUKOV, V. P., CHUKAL'SKIY, YE. N., and LEBEDEV, A. I.

"Mastering the Continuous Refining of Magnesium in a Mixer for the Titanium Industry"

Moscow, Tsvetnyye Metally, No 6, 1972, pp 44-46

Abstract: The mixer is divided into two sections and filled with electrolyte (chloride salts). The magnesium is purified by passing it through a layer of electrolyte under the vertical divider from one section to the other. The sludge is collected at the bottom of the mixer, which is inclined at 45° in each section. A special automatic grab bucket facilitates sludge removal. The mixer is lined with graphite and magnesite in order to withstand high temperatures. Pipe heaters containing molten salts (K, Na, Mg, Ca chlorides) are used to heat the mixer. The magnesium is transported to and from the mixer by a vacuum ladle equipped with one or two tap holes. The magnesium is protected from oxidation by a flux mixture sprayed into the mixer by compressed argon for 5-10 seconds after each teeming and evacuation of the magnesium. Analysis of the mixer sludge showed that magnesium losses amounted to only 0.22% in 1970; it varied from 0.1 to 0.3%, depending on the frequency

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620018-7"

USSR

VIKHAREV, A. F., et al., Tsvetnyye Metally, No 6, 1972, pp 44-46

of sludge removal. In 1970, average consumption of argon was 0.4 m^3/ton Mg; average consumption of flux was 0.3 kg/ton Mg. The authors recommend much wider use of such mixers in the titanium industry.

2/2

USSR UDC 669.721.372

BARANNIK, I. A., YASTREBOVA, Z. V., YEGOROV, A. P., ZHUROV, V. V., CHUKAL'SKIY, YE. N., BOGDANOV, A. P.

"Industrial Investigation of the Influence of Titanium Impurities on the Electrolysis of Magnesium Chloride"

Tsvetnye Metally, No 8, 1971, pp 40-42

Abstract: Results are presented from a chemical analysis of the presence of titanium in the raw material and products of electrolysis. Material balances with respect to titanium are calculated for several commercial electrolyzers. It is demonstrated that regardless of the content of fluorine in the electrolyte, the decrease in the yield of magnesium per current may reach 5-20% when lower titanium chlorides are added to the electrolyzer. The influence of metallic titanium is significantly weaker. On the basis of an analysis of results of commercial studies, necessary measures to combat the harmful influence of titanium on electrolys + are discussed.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HETEROCYCLIC NITRO COMPOUNDS. V. 1,METHYL,3,NITRO,5,ALKOXY AND PHENOXY,1,2,4,TRIAZOLES -U-

AUTHOR-(04)-BAGAL, L.I., PEVZNER, M.S., SAMARENKO, V.YA., YEGOROV, A.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (5), 702-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, ORGANIC NITRO COMPOUND, ORGANIC AZOLE COMPOUND, KETONE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1027 STEP NO--UR/0409/70/000/005/0702/0704

CIRC ACCESSION NO--AP0134739

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134739
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ET SUB3 N (1.6 ML) WAS ADDED TO 2 G 1,METHYL,3,5,DINITRO,1,2,4,TRIAZOLE (I) IN 50 ML MEOH AT 50DEGREES AND THE MIXT. HEATED 2 HR AT 60-70DEGREES TO GIVE 71PERCENT 1,METHYL,3,NITRO,5,ALKOXY,1,2,4,TRIAZOLE (II) (ALKYL EQUALS ME) (III), M. 146DEGREES (ETOH). SIMILARLY, II (ALKYL EQUALS ET AND PR), M. 75DEGREES (ETOH), AND 38DEGREES (PETROLEUM ETHER), RESP., WERE PREPD. I (2 G) IN 15 ML DIOXANE AND 3 ML H SUB2 O AND 1.09 G PHOH IN 4 ML DIOXANE WAS HEATED 3 HR AT 65-70DEGREES TO GIVE 51PERCENT II (ALKYL EQUALS PH), M. 124.5DEGREES (CCL SUB4 PETROLEUM ETHER). SIMILARLY, 72PERCENT II (ALKYL EQUALS M AND P,O SUB2 NC SUB6 H SUB4), M. 154.5DEGREES AND 173DEGREES (BOTH FROM C SUB2 H SUB4 CL SUB2 ET SUB2 O), RESP., WERE PREPD. III TREATED WITH HBR IN ACOH GAVE 25PERCENT 1,METHYL,3,BROMO,1,2,4,TRIAZOL,5,ONE, M. 225DEGREES (C SUB2 H SUB4 CL SUB2). FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

YEGOROV, A.S.

Bibl

STUDY OF SOME PSYCHIC FUNCTIONS OF AQUANAUTS DURING PROLONGED EXPOSURE TO INCREASED PRESSURE

UDC 616.89-053.8

[Article by V.A. Bedrov, A.S. Yegorov and B.N. Yakovlev; Moscow, Voyenno-Meditsinskiy Zhurnal, Russian, No 8, August 1972, submitted March 1972, pp 71-73]

Conquest of the depths of the world ocean and the related need for the prolonged presence of aquanauts under increased pressure have made it necessary to raise the question of man's corresponding possibilities of adaptation, and in particular, the possibility of his retention of mental performance. The number of investigations devoted to this problem is relatively small. Nevertheless, on the basis of data available in the literature one can form a certain idea concerning the state of the psychic functions in man exposed to increased pressure. In particular, it follows from those data that man can adapt to pressures at great depths due to preliminary repeated brief dives, the possibility of prolonged multiday presence under pressure to six atmospheres during the breathing of a helium-oxygen mixture (HOM), as well as the advantage of helium-oxygen mixtures over nitrogen-oxygen mixtures (NOM) at depths from 30.5 m or more.

However, the data cited in the literature concerning man's psychic activity can scarcely be considered exhaustive. For example, it does not contain information characterizing the dynamics of the state of man's psychic functions in the case of his multiday presence at depth; there is also no information concerning the aftereffect of man's presence at great pressure on his psyche. Also unclarified are the differences in man's adaptive capabilities in relation to differences in age, sex, work and rest regime during the period of presence at depth, etc. The purpose of our investigations was an evaluation of the state of man's psychic functions both during a period of prolonged (up to 30 days) presence at depths up to 260 m during the breathing of nitrogen-oxygen and helium-oxygen mixtures and after emergence at the surface.

YEGOROV, A.S.

d/Re. s. 7.5.41

17 NOV 72

MOOD AS A FACTOR IN AN OPERATOR'S PERFORMANCE

UDC 159.9:616-055-033

[Article by Candidate of Psychological Sciences A.S. Yegorov, Moscow, Voyenno-Meditsinskiy Zhurnal, Russian, No 8, 1972, submitted [illegible] February 1971, pp 63-64]

The term "mood" (related concepts: "psychological mood," "psychological readiness," "preparedness," etc.) presupposes that a subject has the readiness (inclination) for a definite kind or method of action, perception and evaluation of a situation due to which his behavior is directed along a previously prepared path. The regulating influence of mood on the effectiveness of activity is expressed in the implementation of a behavioral program specifically stored in the person's memory corresponding to his mental position relative to a particular situation and which is further divided into two programs: action (nature, sequence, rhythm, intensity, duration, etc.) and state (it is also a program of autonomic energy support of actions).

The principal variation of the action program with which the researcher must deal in evaluating the performance of subjects differ primarily in those "points" at which the principal indicators of the expected final effect of the action are reflected together with perceptions, etc. For example, psychophysiologists distinguish so-called motor and sensory types of sensomotor reactions, depending on what reaction indicator is dominant: speed or accuracy. Differences in the direction of attention of the subject (in one case to the speed of movement and in another to the accuracy, relationship to cause of stimulus action) are expressed in an unlike rate of reactions. According to Sheehold (1966), the time of the motor reaction can be greater than the sensory time. The basis for this is probably the creation of the regime of most favorable circumstances for some parameters to obtain the effectiveness of a particular motor task and the least favorable for others. In particular, according to data from our investigations

USSR

YEGOROV, A. S., Order of Lenin Red Banner Military-Medical Academy imeni S. M. Kirov

"Psychological Aspects of Fatigue"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 4, 1971, pp 32-34

Abstract: From the psychological point of view, the level of athletic achievement and ability to combat fatigue is largely a matter of motivation. Performance declines as a result of: (a) satisfaction of the need to act in order to reach a predetermined goal, (b) development of an extremely unfavorable situation that makes reaching the goal subjectively impossible, or (c) appearance of other and more urgent needs whose satisfaction presupposes a different form of activity conflicting with the original need. The record of a well-known Russian marathon runner is described to illustrate the role played by motivation in enabling an individual to perform at his best.

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UDC: 617.89-072.85

PREDICTING THE RELIABILITY OF THE WORK OF AN OPERATOR BASED ON INDICES OF THE FUNCTIONAL CONDITION OF THE BODY

V. P. Zarenetskiy, Col. of Medical Service,
A. S. Yegorov, Col. of the Medical Service,
and N. N. Yakunov

MEDICINE

Predicting the reliability of work of a human operator in various control systems is an important and complex task. Two basically different approaches are proposed for solving this task with the help of ordinary physiological methods: one approach is to seek some diagnostic signs of each specific er, at least, more significant -- mistake in the activity of the operator and to detect such signs of the functional condition of the body under which there is an increasing probability of occurrence of mistakes. In the evaluation of these approaches one must consider the fact that the reliability of erroneous actions is contained in the very activity of the human operator, which determines both the nature of his interaction with the environment and also the specifics of the environment which come in the form of a certain total of useful signals and noises. In particular, the degree of complexity of the interrelationships with the environment and the degree of probability of the signals already to some degree determine the degree of probability of the occurrence of errors. However, certain conditions are required in order for them to occur. The most significant of them is a deviation in the condition of a given functional system (this apparently should encompass inadequate aims according to D. M. Uznadze) and also a deviation of the activity regimen from the optimum which ensures the observance of the assigned parameters of effectiveness of the activity. In addition, one should consider the level of training of the operator, his motivation, and functional aspects (perception, memory, thinking), and others.

Signs of a worsening of the functional condition of the body of a human operator by no means determine the moment of occurrence of some mistake, inasmuch as for the conversion of the possibility into reality it is necessary to have a coincidence in the time of action of the basic factor (cause) and the appropriate conditions. The presence of just one of the components is insufficient for such a conversion. Thus, for example, a sleepy condition in a truck driver can undoubtedly lead to an accident; however, if an accident situation does not exist, a highway crash may not occur. In other words, the appropriate indices of the functional condition of the body can be evidence of only the presence of the internal conditions which can facilitate the occurrence of erroneous actions; thus, they can characterize the moment of an increase in the probability of occurrence of errors but not their actual occurrence. It should be noted that the possibility of predicting the moment of a lowering in reliability of the functioning of the human operator and the appearance of non-random errors is closely connected with the possibility of

YEGOROV, A.S.

Military Medical Journal-#4
Apr 71

predicting the nature (quality) of the erroneous actions, this is explained by the informational, reflective, reflex, and determinant nature of psychic activity and especially by the specific aspects of the stimuli signals (their objective value, modality, structure, etc.).

The purpose of the present investigations was to identify indices of the functional condition of a human operator which indicate an incipient lowering of his working capacity (the occurrence of errors). Taking part in the experiments were 20 healthy males performing assigned (individually selected) work at a maximum rate in adding and subtracting simple numbers (the Investigation Test). The numbers which were printed on a continuous tape were supposed with the help of a tachistascope through a window. The results of the arithmetic actions were spoken by the test subject into a microphone connected with a tape recorder and one of the channels of an electroencephalograph. Simultaneously with the recording of the answer, an electroencephalogram was taken (monopolar right and left frontal and occipital leads). An electrocardiogram, and a cutaneous galvanic reaction. Analysis of the EEG was performed with the help of a stationary frequency analyzer and an integrator. The experiment lasted until the test subjects refused completely to work. After this they were questioned as to the reasons for their refusal to continue the work. The course of the test and the reason for their refusal to continue the work.

Analysis of the results which were obtained made it possible to distinguish the following periods in the work of the test subjects: the period of stable work (practically no mistakes), the period of irregular work (isolated mistakes), the period of block work (a clear alternation of periods of work and lapses with the latter gradually increasing), and the period of complete refusal to work.

During the experiment the following mistakes were made: mistakes of action (incorrect performance of addition or subtraction), mistakes of omission of action (subtraction in place of addition), mistakes of selection (naming any number in order to maintain the tempo), mistakes of confabulation in groups), and refusal to continue working. The basis of these mistakes consisted of the following: wavering of attention (individual and of a number in the window), lessening of the distinctness of perception of numbers, failure of short-term memory (forgetting the preceding number), operative memory failure (working with the result of the preceding action), failure of long-term memory (delay in extracting the result of the previous action), failure of long-term memory (delay in extracting the result of the next action with numbers from the long-term memory), and inadequate switching of attention (switching mistakes).

Analysis of the erroneous actions and expressions of the test subjects in relation to the possible nature of their mistakes made it possible to establish the absence of a uniform connection between the nature of the mistakes themselves and their functional nature. For example, at the basis of an omission there can be a wavering of attention at the moment of appearance of a

USSR

UDC: 621.383.98

AVER'YANOV, G. A., SAFRONOV, I. N., SAVICHEV, B. M., YEGOROV, A. S.

"A Photoelectric Channel With Stabilization of the Range of Variation in the Output Signal"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 103-105

Abstract: The paper describes the circuit and gives the results of a laboratory check of the input section of a photoelectric channel which provides linear conversion and stabilization within the range of linearity of a monopulse light signal amplifier where the light signal varies over a wide power range. A block diagram of the photoreceiver and a schematic diagram of the input section of the photoelectric channel are given as well as the amplitude characteristic of the photoreceiver channel and oscillograms of output signals. Four figures, bibliography of two titles.

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USSR UDC 669.046.5

ANSHELES, I. I., FEDOSEYEV, V. V., OYSK, G. N., YEGOROV, A. V., SOROKIN, S. P., TYURIN, Ye. I., DANILIN, V. I., SELIVANOV, V. M., SIVKOV, S. S., ZYRYANOV, Yu. Ye., and BALDAYEV, B. Ya.

"Use of Electromagnetic Stirring in Vacuum Melting of Steel in a Ladle"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 222-227

Translation of Abstract: Brief technical characteristics are given of the electromagnetic stirring of steel in a ladle. Data are presented on the effect of electromagnetic metal stirring on the uniform distribution of added deoxidizers and alloying elements, and also on the significant increase in the duration of vacuum smelting. A new production technology for the ShKh15 steel is presented in which complete deoxidation and alloying is conducted in the ladle at the end of vacuum smelting. The suggested method is theoretically substantiated. The results of the first experimental melts are presented. 3 tables.

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USSR

UDC 621.396.6-182.9

GREVTSEV, N. V., KEMOROV, A. V., KOZHEVIN, V. T., KOSTINSKIY, L. A., KHAZULIN, Yu. L., PETROV, Yu. P.

"An Installation for Film Vaporization by the Method of Electrical Explosion of Foil"

Elektron. prom-st', Nauchno-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1970, No 1, pp 67-69 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V253)

Translation: The authors describe the semiautomatic MSV-1 machine designed for laboratory production of vaporized current-conducting films, content area and so forth by the method of electrically exploding foil. To assure directed flight of the foil particles, a magnetic field is used together with a special directing device which utilizes gas-kinetic forces. A bank of capacitors is used to create the explosion. Three illustrations, bibliography of six titles. N. S.

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USSR

UDC 681.11.033.1

GRANKIN, V. K., MAKAROV, YU. S., RONZHIN, O. V., KOZYREV, L. S., and YEGOROV, A. YE.

"An Information Display Device"

USSR Author's Certificate No 322566 kl G 06 k 15/18, filed 17 Sep 70, published 27 Apr 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A405P)

Translation: An apparatus is proposed for information display, containing indicators and current conductors. To improve the reliability and visibility of the apparatus, its indicators are in the form of lighted edges located along the outline of geometric figures, with the current conductors at the vertices. One illustration.

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USSR

YEGOROV, B., Cosmonaut, Candidate of Medical Sciences

"Research in Weightlessness"

Moscow, Izvestiya, 27 Jun 70, p 3

Abstract: Weightlessness is discussed in connection with A. G. Nikolayev and V. I. Sevastyanov's spaceflight of almost 18 days aboard Soyuz-9. The changes observed in the human organism as a result of space flights to date, the nature of the adaptive responses to weightlessness--weakening of bones and muscles, lessening of blood circulation, and so on -- may pose difficulties in returning from prolonged spaceflights. Short spaceflights, however, pose no serious problems. The effects of medium-duration weightlessness can be avoided by creating artificial gravity (technically cumbersome) or by physiological means, which are currently being studied. These would include physical training, the use of pharmacological preparations, and the use of a special low-oxygen atmosphere in the cabin. People can adapt sufficiently to function well during prolonged spaceflights. A brief period of readaptation to terrestrial conditions, including reintroduction of lost minerals to the organism, building up bones and musculature, and reactivation of the cardiovascular system, would ensure safe return.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--WEIGHTLESSNESS AND WHAT WE KNOW ABOUT IT -U-

AUTHOR--YEGOROV, B.

COUNTRY OF INFO--USSR

SOURCE--BAKINSKIY RABOCHIY, JUNE 18, 1970, P 3, COLS 1-7

DATE PUBLISHED--18JUN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC WEIGHTLESSNESS EFFECT, WEIGHTLESSNESS PROTECTION, SPACE SUIT, OXYGEN THERAPY

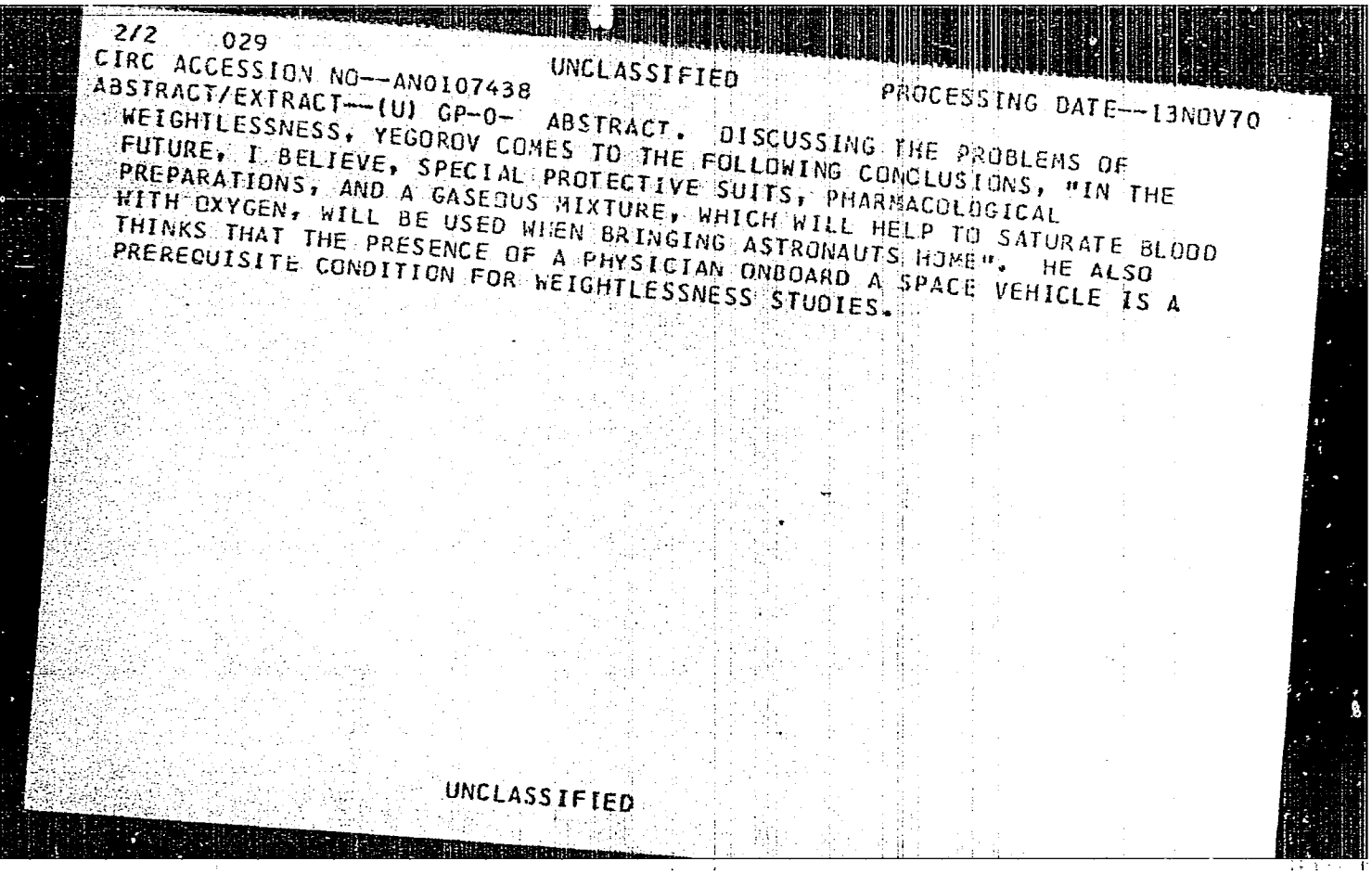
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0909 STEP NO--UR/9000/70/000/000/0003/0003

CIRC ACCESSION NO--AN0107438

UNCLASSIFIED



2/2 029 UNCLASSIFIED
CIRC ACCESSION NO--AN0107438 PROCESSING DATE--13NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSING THE PROBLEMS OF WEIGHTLESSNESS, YEGOROV COMES TO THE FOLLOWING CONCLUSIONS, "IN THE FUTURE, I BELIEVE, SPECIAL PROTECTIVE SUITS, PHARMACOLOGICAL PREPARATIONS, AND A GASEOUS MIXTURE, WHICH WILL HELP TO SATURATE BLOOD WITH OXYGEN, WILL BE USED WHEN BRINGING ASTRONAUTS HOME". HE ALSO THINKS THAT THE PRESENCE OF A PHYSICIAN ONBOARD A SPACE VEHICLE IS A PREREQUISITE CONDITION FOR WEIGHTLESSNESS STUDIES.

UNCLASSIFIED

USSR

VITUL'SKAYA, N. V., VOL'f, L. A., GILLER, S. A., YEGOROV, B. A., KOTETSKIY, V. V., PLOTKIN, L. L., and YANOVSKAYA, N. B., Leningrad Institute of Textile and Light Industry imeni S. M. Kirov; Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"New Fibers for Medical Use"

Riga, Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 145-149

Abstract: In order to increase the X-ray contrast effect of surgical suture materials, films and fibers were prepared from aqueous solutions of polyvinyl alcohol (PVA) with addition of barium sulfate in various concentrations (0.5-20%). The best contrast was obtained with 150 μ PVA film containing 10 and 20 $BaSO_4$. A lower dose ( ) of $BaSO_4$ did not produce desired results. Sutures were prepared from PV with admixture of polyformaldehyde, $BaSO_4$, barium chloride, and collargol. The prepared fibers were thermostabilized at 220°C for 10 min and acetylated in water bath containing 20% β-(5-nitro-furyl-2)-acrolein and 20% H_2SO_4 at 70°C for 2 hrs. The ready to use fibers were mechanically strong, stable in hot water (boiling for 1 hr produced only 10% shrinkage), and possessed high antimicrobial properties, especially toward

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620018-7"

USSR

(3)

VITUL'SKAYA, N. V., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 145-149

Staphylococcus aureus, Escherichia coli, Trichophyton group, and other bacteria. Good results were obtained with polyformaldehyde fibers with 5 and 10% $BaSO_4$, PVA with iodine-containing organic compounds. The obtained fibers were used for the manufacturing of such surgical materials as sutures, cotton, nets, contraceptive devices, etc., which presently are undergoing medical testing.

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USSR

UDC: 621.374.335

VAVILOV, Ye. N., YEGOROV, B. M., LANTSEV, V. S., TOTSENKO, V. G.

"Synthesis of Circuits Based on Threshold Elements"

Sintez skhem na porogovykh elementakh (cf English above), Moscow, "Sov. radio", 1970, 368 pp, ill. 1 r. 30 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G203 K)

Translation: The authors consider conditions for realizability of a switching function by one threshold element. Methods are outlined for synthesizing logic circuits and automata based on threshold elements. The different kinds of threshold elements are described. A number of standard discrete-action units and circuits based on threshold elements are considered. Methods are given for synthesizing circuits based on threshold elements with regard to reliability requirements. A table of threshold functions of six variables is presented. Methods of synthesis are reduced to algorithms which are convenient for use in engineering practice, and illustrative examples are given. Bibliography of 29 titles. Annotation.

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USSR

UDC:681.325.65:512.932

VAVILOV, Ye. N., YEGOROV, B. M., LANTSEV, V. S., TOTSENKO, V. G.

"Synthesis of Systems Using Threshold Elements"

Sintez Skhem na Porogovykh Elementakh [English version above], Moscow, Sovetskoye Radio Press, 1970, 368 pp

Annotation: Conditions are analyzed under which a switching function can be realized by one threshold element. Methods are presented for synthesis of logic circuits and automata based on threshold elements. Varieties of threshold elements are described. A number of standard units and discrete circuits based on threshold elements are analyzed. Methods are presented for synthesis of circuits based on threshold elements. Methods are presented for synthesis of circuits based on threshold elements considering the requirements of reliability. A table of threshold functions of six variables is presented.

The methods of synthesis are reduced to algorithms convenient for use in engineering practice and are illustrated with examples.

116 tables; 92 figures; 29 biblio. refs.

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

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VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

CHAPTER 2.
Threshold Elements and Threshold Functions

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

CHAPTER 3.
Synthesis of Discrete Circuits Using Threshold Elements

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

CHAPTER 5.
Synthesis of Reliable Circuits of Threshold Elements

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

USSR

VAVILOV, Ye. N. et al., Sintez Skhem na Porogovykh Elementakh, Moscow, Sovetskoye Radio Press, 1970, 368 pp

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USSR

UDC: 536.21:548

YEGOROV, B. N., KONDRATENKOV, V. I., and ANIKIN, I. N., Moscow

"Studying the Thermal Conductivity and the Coefficient of Linear Expansion of the Single Crystals of Synthetic Mica (Fluorophlogopite) and Natural Phylogopite"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 1, Jan-Feb 1972, pp 82-86

Abstract: The authors present the results from studying the anisotropy of the thermal conductivity of the single crystals of synthetic mica (fluorophlogopite) in the /001/, /100/, /010/, and /110/ orientations and within the 300-900°K range and of the single crystals of natural mica (phlogopite and muskovite) in the /001/ cleavage plane within the 300-600°K range. The coefficient of linear expansion of fluorophlogopite is studied in the /100/ and /010/ orientations within the 300-1100°K range. Several possible explanations are offered to explain the fact that $\lambda_{[ep.]}$ of fluorophlogopite rises above 700°K and that of phlogopite rises above 600°K. Thermal conductivity anisotropy makes it possible to explain the frequently encountered rhombiform crystals of fluorophlogopite. Original article: one table, three formulas, three figures, and 11 bibliographic entries.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PROTECTIVE CAPACITY OF SOME PAINT AND VARNISH COATINGS IN WATER -U-

AUTHOR-(02)-SHIGORIN, V.G., YEGOROV, B.N.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(3), 301-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PAINT, VARNISH, PROTECTIVE COATING, FLUID PERMEABILITY, EPOXY RESIN, POLYETHYLENE, POLYSTYRENE RESIN, MATERIAL TESTING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1263 STEP NO--UR/0032/70/036/003/0301/0302

CIRC ACCESSION NO--AP0128679

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128679

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE PERMEABILITY OF EPOXY COATINGS, CHLOROSULFONATED POLYETHYLENE COATINGS, AND POLYSTYRENE,ALKYD COATINGS TO HOT WATER WAS TESTED WITH A NEW TYPE OF TESTER. THE COATINGS WERE APPLIED TO THE END OF AN ELEC. CONDENSER PILE CONSISTING OF CU AND FE PLATES SEPD. BY PAPER IMPREGNATED WITH BAKELITE. WHEN MOISTURE PENETRATED THE COATING A CURRENT STARTED TO FLOW BETWEEN CU (CATHODES) AND FE (ANODES). THE AMT. OF CURRENT INDICATED THE RELATIVE PERMEATION RATES. A SUPERIMPOSED STEADY CURRENT DROP WAS CAUSED BY THE FORMATION OF AN OXIDE FILM ON FE.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ACTUAL SPECIFIC HEAT AND THERMAL DIFFUSIVITY OF POLYMERS STUDIED BY A PULSED ADIABATIC METHOD -U-

AUTHOR-(02)-YEGOROV, B.N., KILESSO, V.S.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (6), 72-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ADIABATIC PROCESS, SPECIFIC HEAT, THERMAL DIFFUSION, POLYTETRAFLUORETHYLENE, POLYMETHYLMETHACRYLATE, TEST METHOD, POLYAMIDE COMPOUND, POLYETHYLENE, POLYPROPYLENE, POLYISOBUTYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1003 STEP NO--UR/0191/70/000/006/0072/0073

CIRC ACCESSION NO--AP0134720

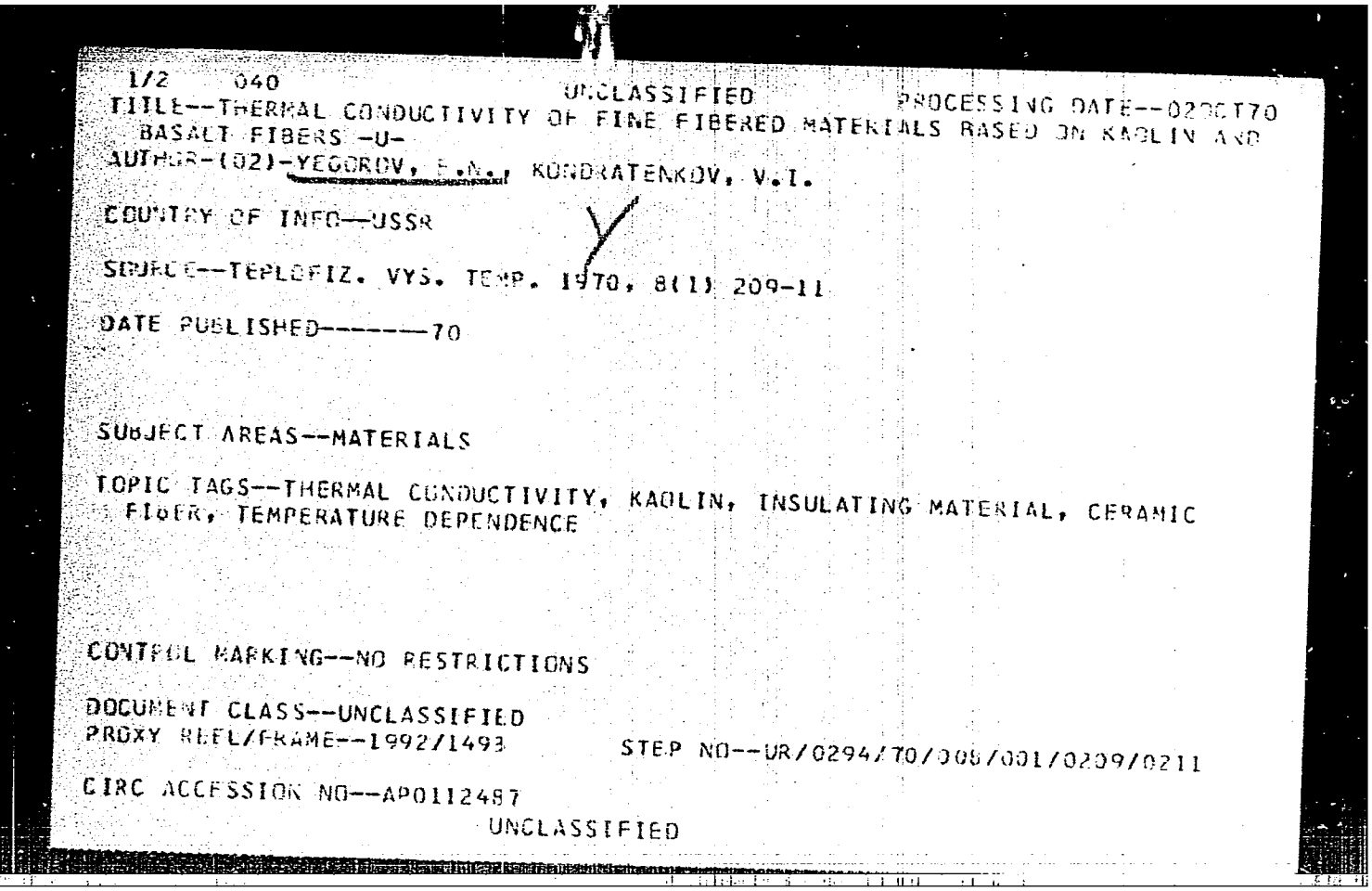
UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE METHOD (B. P. EGOROV ET AL., 1968 AND 1969) WAS TESTED ON POLYMERS WITH KNOWN THERMAL DIFFUSIVITY (LAMBDA) AND SP. HEAT (C) (POLY(TETRAFLUORETHYLENE), POLY(ME METHACRYLATE)). THE MAX. EXPTL. ERRORS IN C AND LAMBDA DETS. WERE PLUS OR MINUS 1.2 AND PLUS OR MINUS 5PERCENT, RESP. THE INCREASE OF THE DETN. TEMP. FROM NEGATIVE 190DEGREES TO POSITIVE 70DEGREES INCREASED C AND DECREASED LAMBDA OF POLYAMIDE, POLYETHYLENE, POLYPROPYLENE, OR POLYISOBUTYLENE.

UNCLASSIFIED



1/2 040 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--THERMAL CONDUCTIVITY OF FINE FIBERED MATERIALS BASED ON KAOLIN AND BASALT FIBERS -U-
AUTHOR-(02)-YEGOROV, E.N., KONDRATENKOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(1) 209-11

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--THERMAL CONDUCTIVITY, KAOLIN, INSULATING MATERIAL, CERAMIC FIBER, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1493 STEP NO--UR/0294/70/008/001/0209/0211

CIRC ACCESSION NO--AP0112487
UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112487

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECENTLY DESCRIBED METHODS (F. AND K., 1968) WAS USED FOR MEASURING THE TEMP. DEPENDENCE OF COEFFS. OF THERMAL COND. OF KAOLIN AND BASALT INSULATING BOARDS AND PAPERS AT 100-700DEGREES. SAMPLES BASED ON KAOLIN AND BASALT FIBERS WERE TREATED BY ORGANOSILICON BINDER K-60 AND WERE ANNEALED FOR 10 MIN AT 700DEGREES BEFORE THE MEASUREMENT. RESULTS, PRESENTED IN GRAPHIC FORM, INDICATED THE INCREASED THERMAL COND. OF MINERAL BOARDS AND PAPERS IN THE COMPARISON WITH A THERMAL COND. OF CERAMIC FIBERS WITH A BULK D. OF 80 KG-M PRIME3 WHILE THE CHARACTER OF TEMP. DEPENDENCE OF COEFFS. OF THERMAL COND. WAS RETAINED. THE COEFFS. OF THERMAL COND. OF DAOLIN BOARDS WERE IDENTICAL FOR BOTH STUDIED BULK DS. (260 AND 350 KG-M PRIME3) UP TO 400DEGREES. AT LARGER THAN 400DEGREES KAOLIN BOARDS WITH BILK D. OF 260 KG-M PRIME3 EXHIBITED HIGHER THERMAL COND. IN THE COMPARISON WITH KAOLIN BOARDS WITH A CLOSER STRUCTURE.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--APPARATUS FOR DETERMINING THE SPECIFIC HEAT OF LIQUID SUBSTANCES BY A PULSED ADIABATIC METHOD -U-

AUTHOR-(04)-YEGOROV, B.N., KILESSO, V.S., KOMAROV, A.G., SLEPCHENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--TEPLOENERGETIKA 1970, 17(3), 84-6

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CALORIMETER, THERMAL ANALYSIS, SPECIFIC HEAT, HEATING, ADIABATIC PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0387 STEP NO--UR/0096/70/017/003/0084/0086

CIRC ACCESSION NO--AP0111580

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PULSE ADIABATIC CALORIMETER FOLLOWING THE AUTHORS' CONCEPTS (1968) WAS CONSTRUCTED FOR MEASURING HEAT CAPACITIES C SUBP AND C SUBV OF LIQS. AT 80-600DEGREESK AND IS SMALLER THAN OR EQUAL TO 300 ATM. THE INNER PART OF THE CALORIMETER CONSISTS OF SEVERAL CELLS WHICH ARE SIMULTANEOUSLY HEATED FOR SIMILAR TO 1.5 SEC AND THE TEMP. (T) OF THE CENTRAL CELL IS RECORDED. A SINGLE RUN LASTS IS SIMILAR TO 20 SEC. THE MAX. POSSIBLE ERROR WAS ESTD. AS PLUS OR MINUS 1.5PERCENT. THE DIFFERENTIAL EQUATIONS FOR DETG. THE TIME DEPENDENCE OF T WERE SOLVED.

UNCLASSIFIED

Acc. Nr AP0107153 Abstracting Service: CHEMICAL ABST. 3-70

Ref. Code 4R0303

123010x Protective capacity of fluoroplast coatings in corrosive liquid media. Shigorina, I. I.; Zvyagintseva, N. V.; Egorov, B. N. (USSR). *Lakokrasoch. Mater. Ikh Primen.* 1970, (1), 47-9 (Russ). The phys. properties of the F-contg. plastic, Mark F-3M, are reported. Steel plates coated with F-3M remained intact up to 3 years at 20° in 12*M* HNO_3, *M* HCl, *M* H_2SO_4, *M* HOAc, *M* oxalic acid (I) *M* HF, 10*M* NaOH, 13.5*M* NH_4OH, and CCl_4. Other F-contg. plastics, Mark F-3 and F-42L, were attacked by HNO_3, HOAc, NH_4OH, or I. F-3*M* retained its protective ability at higher temps.; e.g., it decompd. in 12*M* HNO_3 at 90° only after 3000 hr. CPJR

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REEL/FRAME
19890548

USSR

YEGOROV, D. F.

UDC 517.51

"Sequences of Measurable Functions"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 26, No 5, Sep-Oct 1971, pp 207-208

Abstract: Let $f_1(x)$, $f_2(x)$,..., $f_n(x)$ be a sequence of measurable functions which we shall assume to be convergent toward the limiting function $f(x)$ at all points x of the interval AB, with the possible exception of points of the set of zero degree. It is known that this sequence, at the same time, converges in measure: that is, the following equality is valid:

$$\lim_{n \to \infty} m(n, \varepsilon) = 0, \qquad (1)$$

where $m(n, \varepsilon)$ is the measure of the set of those points for which $|f(x) - f_n(x)|$ is greater than the given, arbitrarily small positive number ε.

Lebesgue expresses a similar opinion pertaining to the measure $\mu(n, \varepsilon)$ of the set E_n of those points for which at least one of the differences $f(x) - f_m(x)$, beginning with $m = n$, is greater than or equal to ε in

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YEGOROV, D. F., Uspekhi Matematicheskikh Nauk, Vol 26, No 5, Sep-Oct 1971, pp 207-208

absolute value. This assumption is a simple corollary of the preceding assumption with respect to the sequence of functions $\overline{R}_1(x)$, $\overline{R}_2(x)$, ..., $\overline{R}_n(x)$,..., the idea of introducing which I borrowed from the memoirs of Weyl and which are determined under the condition that for each value of x the function $\overline{R}_n(x)$ is equal to the upper limit of the sequence of positive numbers

$$|f(x) - f_n(x)|, |f(x) - f_{n+1}(x)|, \ldots, |f(x) - f_{n+p}(x)|, \ldots \quad (2)$$

At all points of the interval AB, we obviously have,

$$\overline{R}_1(x) \geq \overline{R}_2(x) \geq \ldots \geq \overline{R}_n(x) \geq \overline{R}_{n+1}(x) \geq \ldots, \quad (3)$$

$$|f(x) - f_m(x) \leq \overline{R}_n(x) \text{ for } m = n, n+1, \ldots \quad (4)$$

At all points of the convergence of the sequence $f_1, f_2, \ldots, f_n, \ldots$ the sequence $\overline{R}_1, \overline{R}_2, \ldots, \overline{R}_n, \ldots$ also converges and for these points we have

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$$\lim_{n \to \infty} \overline{R}_n(x) = 0.$$

The set of E_n points, about which we are speaking, is obviously a set of such points for which

$$\overline{R}_n(x) = | \overline{R}_n(x) - 0 | \geqslant \varepsilon,$$

and consequently, the measure $\mu(n, \varepsilon)$ of this set tends toward zero when n increases without limit.

Now let $\varepsilon_1, \varepsilon_2, \ldots, \varepsilon_n, \ldots$, be a sequence of diminishing positive numbers such that $\lim_{n \to \infty} \varepsilon_n = 0$; on the other hand, let

$$\eta_1 + \eta_2 + \eta_3 + \ldots + \eta_n + \ldots \qquad (5)$$

be a convergent series with positive terms. Let us examine the set of $E_n^{(1)}$ points for which $\overline{R}_n(x) \geqslant \varepsilon_1$. The measure $\mu(n, \varepsilon_1)$ of this set tends

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YEGOROV, D. F., Uspekhi Matematicheskikh Nauk, Vol 26, No 5, Sep-Oct 1971, pp 207-208

toward zero if η increases without limit; consequently, for each ε_i we can select such a value of n_i that $\mu(n_i, \varepsilon_i) \leqslant \eta_i$. Let us examine the sequence of sets $E^{(1)}_{n_1}, E^{(2)}_{n_2}, \ldots, E^{(i)}_{n_i}, \ldots$ and the sum $\overline{E}_i$ of the sets $E^{(i)}_{n_i}, E^{(i+1)}_{n_{i+1}}, \ldots$ of this sequence, beginning with a certain value of i. The measure of the set $\overline{E}_i$ does not exceed the sum of the measures

$$\mu(n_i, \varepsilon_i) + \mu(n_{i+1}, \varepsilon_{i+1}) + \ldots$$

and, consequently, is less than the remainders $\eta_{i+1} + \eta_{i+2} + \ldots$ of series (5). If we take the value of i sufficiently large, we will have a set $\overline{E}_i$ of the measure η as small as we wish. For all points of the interval AB, not belonging to $\overline{E}_i$, the sequence $f_1, f_2, \ldots, f_n, \ldots$ converges uniformly.

In fact, for all these points we have

$$\overline{R}_{r_i}(x) < \varepsilon_i, \overline{R}_{r_{i+1}}(x) < \varepsilon_{i+1}, \ldots,$$

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YEGOROV, D. F., Uspekhi Matematicheskikh Nauk, Vol 26, No 5, Sep-Oct 1971, pp 207-208

$$| f_m - f | < \varepsilon_{i+p} \text{ for } m \geq n_{i+p}.$$

If we take p sufficiently large, we can make all the differences $f - f_m$, beginning with $m = n_{i+p}$, in absolute value smaller than any number ε we may desire, because the sequence $\varepsilon_1, \varepsilon_2, \varepsilon_3, \ldots$ converges toward zero.

Thus, we have proved the following theorem.

Theorem. If we have a sequence of measurable functions which converge at all points of the interval AB, with the possible exception of the points of the set of zero degree, then it is always possible to remove from the interval AB a set with as small a degree of η as we desire such that on the supplemental set (measures $m(AB) - \eta$) this sequence will converge uniformly.

We can state that each sequence which converges in the interval will generally converge uniformly (wesentlich gleichmässig -- almost uniformly according to Weyl) in the interval.

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It is easy to see that this theorem contains numerous assumptions.

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UDC 517.51

YEGOROV, D. F.

"Integration of Measurable Functions"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 26, No 5, Sep-Oct 1971, pp 209-210

Abstract: N. N. Luzin recently solved the problem of seeking primitive functions for all measurable functions after finding a means for constructing a continuous function F(x) having a given measurable function f(x) everywhere as the derivative, with the exception of the points of the set of zero degree.

Essentially, the given function f(x) is represented by a family of primitive functions F(x), any two functions of this family being different for the continuous function with a derivative everywhere equal to zero except for the points of the set of zero degree.

On the other hand, bearing in mind that these latter investigations on the problem of integration have substantially expanded the class of integrable functions (functions that are integrable in the sense of Riemann, summable functions, totalizable functions), one should remember that the problem

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solved by N. N. Luzin may not be resolved in all generality by any of the integration methods generalizing the methods of Riemann and Lebesgue.

In fact it is obvious that two properties

$$1^\circ.\ \int_a^c + \int_c^b = \int_a^b,$$

$$2^\circ.\ \int_a^b f(x)dx \geqslant 0 \quad (f(x) \geqslant 0 \text{ for } a \leqslant x \leqslant b)$$

are possessed by all generalized integrals which are obtained by different limiting transitions, proceeding from sums composed of values of functions multiplied by positive quantities (lengths of the intervals, measures of the sets).

However, let f(x) be a positive function (or at least a non-negative function) in the given interval. Since

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$$\int_a^{x+h} f(x)\,dx - \int_a^{x} f(x)\,dx = \int_x^{x+h} f(x)\,dx$$

then the integral of f(x) is an ascending (or at least a non-diminishing) function in the examined interval. Since the arbitrary function f(x) is the difference of two non-negative functions,

$$(A)\quad \frac{1}{2}\left[\,|\,f(x)\,|\,+f(x)\right],\ \frac{1}{2}\left[\,|\,f(x)\,|\,-f(x)\right],$$

then the generalzied integral is always a function with a bounded change. And the function with the bounded change has a finite and summable derivative, with the exception of the points of the set of zero degree. Hence we can conclude that generalized integration with respect to a positive non-summable function would give only infinity as a result.

Thus we see that no integration process possessing the properties 1° and 2° is capable of solving in all generality the problem of finding the primitive

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function solved by N. N. Luzin; this process may lead to this result (if we do not speak of summable functions) only for a rather narrow class of functions bounded neither from above nor from below; the integral of such a function is, so to speak, the true value of the undetermined expression $\infty - \infty$.

I shall conclude with the following comment: Representing an arbitrary function f(x) in the form of the difference (A) of two functions, increased by an arbitrary positive constant, leads us directly to the following result: the primitive functions of N. N. Luzin are the differences of continuous functions, increasing everywhere, with the exception of the set of zero degree.

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Acc. Nr. AP0045157 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR0456

YEGOROV E.V.

91295a Radiation vulcanization of polyisobutylene in the presence of p-divinylbenzene. Kim, I. P.; Barkalov, L. M.; Egorov, E. V. (Filial Inst. Khim. Fiz., Chernogolovka, USSR). *Khim. Vys. Energ.* 1970, 4(1), 81-2 (Russ). The irradn. of polyisobutylene (I)-*p*-divinylbenzene (II) blends with γ-rays caused grafting of I on II which results in the formation of a 3-dimensional lattice. There was an increase in the av. mol. wt. of the blend, as detd. by viscometry and decreased swelling in cyclohexane; changes in the ir spectrum showed that all II reacted. The process is equiv. to vulcanization of I. The max. content of gel fraction was attained with 75:25 I-II blend at 2-4 megarads irradn. dose. Larger doses began to degrade the rubber. CPJR

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REEL/FRAME
19780057

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USSR

UDC: 629.78.017.2

YEGOROV, G. A.

"On Stabilization of Programmed Motions of a Solid Body With a Fixed Point by Means of Gyroscopic Actuators"

Tr. Kazan. aviats. in-ta (Transactions of Kazan Aviation Institute) 1971, vyp 138, pp 74-81 (from Referativnyy Zhurnal-Raketostroyeniye, No 7, 1972, Abstract No 7.41.165)

Translation: Equations of motion of a system consisting of a solid body with a fixed point and with gyroscopic type actuators located on the body are presented. The program curve is prescribed with respect to the phase coordinates of the solid body, which is the control object. The program curve is assumed to represent the undisturbed motion. Its remaining components are determined. The stabilizationability conditions of the programmed motion with respect to the object's phase

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YEGOROV, G. A., Tr. Kazan. aviats. in-ta, 1971, vyp 138, pp 74-81

coordinates up to asymptotic stability and the conditions limiting the displacements of gyroscopic actuators are presented in the form of two theorems. The same gyroscopic actuators serve to achieve the prescribed motion and to prevent deviations from it. The control can be formed by a closed loop as well as by including control blocks into the open loop control system. The control is achieved by means of ordinary type pickups combined with computer devices (12 references, resume).

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USSR

UDC: 621.384.2

LYUTENKO, V. F., YEGOROV, G. A., Yakutsk Affiliate of the Institute of Physical Space Research and Aeronomy, Siberian Department, Academy of Sciences of the USSR

"A Device for Measuring the Summation Current of Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329487, Division G, filed 21 Jul 70, published 9 Feb 72, p 182

Translation: This Author's Certificate introduces a device for measruing the summation current of signals. The device contains a pickup, a storage capacitor, a discharge resistor, a discriminator and a program device. As a distinguishing feature of the patent, linearity of summation is ensured by connecting the pickup to the input of a voltage repeater whose output is connected to the discriminator and the input of a commutator. Another input of the commutator is connected to the program device, and the commutator output is connected through the discharge resistor to the voltage repeater.

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YEGOROV, G. A.

"Stabilization of a Solid With a Fixed Point by Means of Dual Gyroscopes"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1970, vyp. 121, pp 67-75 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1A124 by S. Ya. Stepanov)

Translation: The article considers a solid on which three pairs of connected single-gimbal balanced gyroscopes are mounted. The connections compel the gyrocases to turn at equal angles in opposed directions. The center of gravity of the system is fixed. By the application of controlling moments to the cases neutral equilibrium is stabilized in first approximation to asymptotic stability. On this point the author follows the article by N. N. Krasovskiy (Prikl. matem. i mekhan. [Applied Mathematics and Mechanics], 1963, 27, No 4, pp 641-663 -- RZh-Mekhanika, 1964, Abstract No 3A102). Then, on the basis of the Lyapunov theorem regarding a special critical case of stability the author draws a conclusion regarding asymptotic stability by virtue of a complete system of equations.

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UDC: 531.55:521.1

USSR

YEGOROV, G. A.

"On the Use of Gyroscopic Actuating Devices to Stabilize Programmed Motions of a Solid With a Stationary Point"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aviation Institute), 1971, vyp. 138, pp 74-81 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7A87)

Translation: Equations of motion are given for a system made up of a supporting solid with a stationary point carrying actuators of the gyroscopic type. The programmed curve is given only with respect to the phase coordinates of the body which is an object of control. The programmed curve is taken as undisturbed motion. Supplementary definitions of the remaining components of motion are given. The conditions of stabilizability of programmed motion with respect to the phase coordinates of the object to asymptotic stability, and the conditions of boundedness of displacements of the gyroscopic actuators are formulated as two theorems. The same gyroscopic actuators are used both for maintaining motion along the predetermined curve, and for damping out deviations from the curve. Control is accomplished both by setting up a

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YEGOROV, G. A., Tr. Kazan. aviats. in-ta, 1971, vyp. 138, pp 74-81

closed loop, and by connecting modules into the control circuit in accordance with an open principle. Control is executed by conventional pickups combined with computer devices. Bibliography of 12 titles. Author's abstract.

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1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--RADIATION,CHEMICAL OXIDATION AND NITRATION OF AN ALIPHATIC DILUENT IN TWO PHASE AQUEOUS,ORGANIC SYSTEMS -U-

AUTHOR-(03)-KERSULIS, V., YEGOROV, G.F., ZAGORETS, P.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 172-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--OXIDATION, NITRATION, RADIOLYSIS, ELECTRON RADIATION, AMMONIUM COMPOUND, NITRATE, BENZENE DERIVATIVE, CARBONYL COMPOUND, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0760 STEP NO--UR/0456/70/004/002/0172/0173

CIRC ACCESSION NO--AP0119667

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIOLYSIS BY FAST ELECTRONS WAS STUDIED OF THE 0.2M SOLNS. OF ALKYLAMMONIUM NITRATES IN THE MIXT. CONTG. 70 WT. PERCENT N,C SUB8 H SUB18 AND 30 WT. PERCENT N,C SUB8 H SUB17 OH, AT A DOSE RATE SIMILAR TO 1.4 TIMES 10 PRIME18 EV-CM PRIME2,SEC. THE ALKYLAMMONIUM CATIONS WERE THOSE OF DINONYLANILINE, DIBENZYLDODECYLAMINE, AND BENZYLDINONYLAMINE, AND THE MAIN RADIOLYSIS PRODUCTS WERE CARBOXYLIC ACIDS, CARBONYL COMPDS., AND 1,OCTYL NITRITE. NITROOCTANES, SEC,OCTANOLS, AND 1,OCTYLNITRATE WERE FORMED IN LOWER YIELDS. THE PRESENCE OF O SUB2 HAD AN INSIGNIFICANT EFFECT ON THE RADIOLYSIS YIELDS AND ITS ONLY IMPORTANT EFFECT WAS THE LOWERING OF THE RATIOS OF THE NITRITE YIELDS TO THOSE OF NITRATES. FACILITY: INST. ELEKTROKHIM., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0049986

Abstracting Service: CHEMICAL ABST. 5/70

Ref. Code: UR 0456

Egorov G.F.

95265p Radiolysis of alkylaromatic amines in two-phase aqueous-organic systems. Kersulis, V.; Egorov, G. F.; Zagorets, P. A. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Khim. Vys. Energ.* 1970, 4(1), 91–2 (Russ). Solns. of 0.2*M* $PhCH_2N(C_8H_{19})_2$ (I), $C_{12}H_{25}N(CH_2Ph)_2$ (II), or $PhN(C_8H_{19})_2$ (III) in BuPh or *n*-C_8H_{18} contg. 30 wt. % *n*-$C_8H_{17}OH$ (IV), with and without an equal vol. of aq. 2*M* HNO_3, were irradiated (1.4×10^{18} eV ml^{-1} sec^{-1}) by fast electrons (~5 MeV) in the presence or absence of O_2, and the products were analyzed. The presence of O_2 did not influence the rate of radiolysis. Decompn. yields in the absence of HNO_3 are (substance, $-G$-values in *n*-C_8H_{18}, $-G$-values in BuPh, given): I, 3.3, 3.6; II, 2.4, 3.1; III, 1.0, 2.9 (^{60}Co; 4×10^{15} eV ml^{-1} sec^{-1}). In the presence of HNO_3 the resp. values are: I, 4.1, 2.6; II, 3.4, 2.6; III, 13, 96.

J. Panchartek

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IB

REEL/FRAME
19801924

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USSR

UDC 621.317.3:621.3.084 (088.8)

YEGOROV, G.P., KALININ, A.N., LUK'YANENKO, A.I., MESTECHKIN, YA. I., SHUBIN, L.V.

"Device For Investigation Of Electron Streams"

USSR Author's Certificate No 263753, filed 22 Apr 66, published 24 June 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A127P)

Translation: The device proposed for investigation of an electron stream contains a vacuum chamber with an electron gun, and differs from known devices of this type by the fact that the vacuum chamber is combined with additional vacuum chambers. This assures identical vacuum conditions in the process of measurement of one and the same electron stream by various measuring elements. The electron gun can turn around the axis of the vacuum chambers for successive settings as compared to the respective additional vacuum chambers, and it can also move along the axis of the additional vacuum chambers with the aid of a special device. 2 ill. G.B.

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Radiobiology

USSR

UDC 621.311.12(540)

KOMOLOVA, G. S., TRIFONOV, E. N., and YEGOROV, I. A., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow

"Structural Changes in DNA Isolated From Tissues of Gamma-Irradiated Animals"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 1, 1973, pp 248-250

Abstract: Investigations were conducted on the effects of whole-body gamma irradiation on the DNA in different tissues. The experiments were performed on sixty 200-250 g male Wistar rats, the experimental group of which was exposed to ^{60}Co at a rate of 200 r/min for a total dose of 650 r (the equivalent of an LD_{50} dose). Following irradiation, the animals were decapitated at different periods of time, the thymus, liver, and spleen were removed and the DNA extracted in both control and experimental animals. The molecular weight of the isolated DNA in both groups of animals was about 7-10 x 10^6. Analysis of DNA by the formaldehyde kinetic method showed that in the case of thymus DNA, there were 1.3± 0.4 structural defects per 10,000 nucleotide pairs 15 min after irradiation. This figure remained relatively constant for about one hour, and by 3 hr increased to 6.1 ± 0.3 per 10,000 nucleotide pairs and remained relatively unchanged for the next 15 hrs. In the spleen and liver, the number of defects in secondary DNA structure was 4.5 and 1.6, respectively, per 10,000

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620018-7"

USSR

KOMOLOVA, G. S., et al., Doklady Akademii Nauk SSSR, Vol 208, No 1, 1973, pp 248-250

nucleotide pairs 18 hr after irradiation. The data indicate certain tissue specificity with respect to DNA damage in the postirradiation period. After 3 hr it is believed that damage to the secondary structure of DNA was due to irradiation-induced nucleases as indicated by the concomitant increase in the amount of single-strand DNA.

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1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SEPARATION OF RIBONUCLEASE PHOTOLYSIS PRODUCTS BY A GEL FILTRATION METHOD -U-

AUTHOR-(04)-KOMOLOVA, G.S., YEGOROV, I.A., VASILYEVA, T.B., MAKEYEVA, V.F.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1)

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RIBONUCLEASE, PHOTOLYSIS, CHEMICAL SEPARATION, GEL, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1477 STEP NO--UR/0020/70/191/001/0228/0230

CIRC ACCESSION NO--AT0130466

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0130406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GEL FILTRATION ON A SEPHADEX G-100 COLUMN WAS USED TO SEP. THE FRACTIONS OF RIBONUCLEASE AFTER ILLUMINATION WITH UV LIGHT. ILLUMINATION TO THE POINT OF 15PERCENT INCACTIVATION PROCUCED A SECONDARY PEAK ON THE CHROMATOGRAM IN WHICH THE ENZYMIC ACTIVITY WAS TOTALLY LACKING. FURTHER INACTIVATION LED TO ENHANCEMENT OF THIS PEAK, FOLLOWED BY DEVELOPMENT OF YET ANOTHER NEW PEAK WHICH HAS SOME ENZYMIC ACTIVITY. EVIDENTLY IN THE EARLY STAGE OF ILLUMINATION AN SS BOND IS RUPTURED AND FURTHER DENATURATIONAL CHANGES IN THE ENZYME ARE NOT ACCOMPANIED BY BREAKS OF OTHER SS BRIDGES. THE TOTAL SH CONTENTS IN NATURAL AND ILLUMINATED SPECIMENTS PROVED TO BE EQUAL. THE LOSS OF ACTIVITY CANNOT BE ASCRIBED TO DENATURATION PER SE OF ALL ENZYME MOLS. BUT ONLY OF SPECIFIC PARTS OF THESE. FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AMINO ACID AND CARBOHYDRATE COMPOSITION OF ORGANIC MATTER IN A TENTIAL ARCHEOCYATHEA SKELETON -U-

AUTHOR-(04)-BOBYLEVA, M.I., SERGYENKO, I., YEGOROV, I.A., FONIN, V.D.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 725-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, CARBOHYDRATE, PAPER CHROMATOGRAPHY, BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1088

STEP NO--UR/0020/70/190/003/0725/0728

CIRC ACCESSION NO--AT0115107

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203620018-7"

USSR

UDC 577.15

KOMOLOVA, G. S., YERYGIN, G. D., VASIL'YEVA, T. B., and YEGOROV, I. A.
Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow

"Effect of a Constant Magnetic Field of High Intensity on the Enzymatic Hydrolysis of Nucleic Acids"

Moscow, Doklady Akademii Nauk SSSR, Vol 204, No 4, 1972, pp 995-997

Abstract: DNA (S ~25) and RNA were subjected to the action of DNA-ase and RNA-ase respectively at 25°C for 1.5 hr under the effect of a magnetic field. The reaction mixtures were circulated continuously through a tube. The change in the enzyme activity due to the action of the magnetic field was determined spectrophotometrically on the basis of the increase of extinction in the acid-soluble fraction at λ = 260 mμ. The concentration of the enzyme at which the reaction began was 0.6 γ/ml (enzyme - substrate ratio 1:5000) for RNA-ase and 3 γ/ml for DNA-ase (enzyme - substrate ratio 1:50), respectively. In the experiments with DNA - DNA-ase, the activity of DNA-ase was increased as a result of the action of the magnetic field by 30, 16, and 0% at intensities of the magnetic field equal to 3.2×10^3, 1.2×10^3, and 0.8×10^3 Oe, respectively. The effect of the magnetic field can be ascribed to reorientation of DNA molecules. The activity of RNA-ase was not yet increased at 3.2×10^3 Oe. One may assume that much higher intensities of the magnetic

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2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0115107

ABSTRACT/EXTRACT (U) ABSTRACT: THE FREE AMINO ACIDS EXTRACTED FROM FOSSILIZED SKELETAL REMAINS WAS EXAMD. BY PAPER CHROMATOG. AFTER CONVENTIONAL HYDROLYSIS. THE FOLLOWING 9 AMINO ACIDS WERE IDENTIFIED: ARGININE, HISTIDINE, THREONINE, VALINE, PHENYLALANINE; OTHERS WERE NOT IDENTIFIABLE. THE FREE AMINO ACIDS PRIOR TH HYDROLYSIS WERE THESE: ARGININE, VALINE, THREONINE, PHENYLALANINE AND LYSINE, AS WELL AS 1 SPOT THAT WAS NOT IDENTIFIED. WHEN THE RESIDUE AFTER DETECTION OF THE FREE AMINO ACIDS WAS SUBJECTED TO HYDROLYSIS IMMEDIATELY, THE ABOVE 9 PRODUCTS COULD BE FOUND, BUT IF THE FREE AMINO ACIDS WERE SEPD. FIRST, THE RESIDUE GAVE, AFTER HYDROLYSIS, THE SPOTS OF ONLY ARGININE, THREONINE, LEUCINE, AND PHENYLALANINE. FACILITY: INST. BIOKHIM. IM. BAKHA. MOSCOW, USSR.

UNCLASSIFIED

USSR

KOMOLOVA, G. S., et al., Doklady Akademii Nauk SSSR, Vol 204, No 4, 1972, pp 995-997

field will be required to exert an effect on the RNA - RNA-ase reaction. (Submitted by Academician A. I. Oparin, 19 Jul 71).

2/2

YEGOROV, I.A.

UDC 612.398.145.1.014.47:531.113

DNA CATABOLISM IN THE ORGANS OF RATS UNDER THE INFLUENCE OF TRANSVERSELY DIRECTED ACCELERATIONS

[Article by G. S. Komolova, V. E. Makeyeva, Ye. V. Balikova, I. D. Yerisa... and I. A. Yegorov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 5, September-October 1972, pp 14-17, submitted for publication 2 August 1972]

Abstract: Exposure of rats to transverse accelerations of 25 g, imparted for six minutes, resulted in a 20% decrease in the DNA content in their spleens and caused no changes in liver DNA content. The exposure brought about no variations in DNAase activity in tissue homogenates or their supernatants. However, the total activity of the free and bound enzyme in the liver measured in the homogenate after treatment with Triton X-100 was 17% lower in the experimental animals than in the controls. The physicochemical properties of DNA (molecular weight and secondary structure) from tissues of animals which were exposed to accelerations remained unaltered in comparison with normal levels.

It is known that transverse accelerations cause functional, morphological and biochemical shifts in the animal body. There is a definite correlation between structural impairments and biochemical changes in the cells of animals subjected to high accelerations (M. I. Razumov and I. M. Khar...). Animals exhibit a decrease in oxygen concentration in the tissues and this results in a decrease in the level of cell respiration with manifestations of hypoxia (A. S. Barer, et al., 1963). A shortage of energy resources ... causes an impairment in functioning of cell membranes. Data published by Moorck and Broody show that during liver hypoxia there is a disturbance of oxidative phosphorylation and a decrease in the K^{+} level in the mitochondria. It is also known that an oxygen shortage in the tissues causes damage to the membranes of lysosomes and mitochondria with an impairment in their permeability (De Duve, 1959, 1960; Frederik, Chevremont-Comhaires).

Accordingly, acceleration is among the factors capable of making labile the membranes of subcellular structures. The labilization of lysosome membranes is usually accompanied by the setting free of enzymes from

JPRS 57517
15 Nov 72

1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--A METHOD OF SOLVING THE PROBLEM OF THE PROPAGATION OF ELECTROMAGNETIC WAVES IN A THREE DIMENSIONALLY INHOMOGENEOUS ISOTROPIC

AUTHOR--YEGOROV, I.B., KIYANOVSKIY, M.P.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL 10, NO. 1, 1970, P 139-141

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--ELECTROMAGNETIC WAVE PROPAGATION, IONOSPHERE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0756 STEP NO--UR/0203/70/010/001/0139/0141

CIRC ACCESSION NO--AP0102721

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A METHOD OF DETERMINING (WITHIN THE FRAMEWORK OF GEOMETRICAL OPTICS) THE PHASE, AMPLITUDE, AND POLARIZATION OF AN ELECTROMAGNETIC WAVE PROPAGATING IN A THREE DIMENSIONALLY INHOMOGENEOUS ISOTROPIC IONOSPHERE. IT IS ALSO POSSIBLE TO SIMULTANEOUSLY CALCULATE THE BASIC CHARACTERISTICS OF PROPAGATION IN A PATH: THE GROUP TRAJECTORY, THE DISTANCE BETWEEN STATIONS, ABSORPTION ALONG THE BEAM IN THE IONOSPHERE, ANGLE OF ARRIVAL, AND THE MINIMUM USABLE FREQUENCY.

UNCLASSIFIED

927735 Effect of the concentration of impurities on cadmium density variations during thermocyclic treatment. Savitskii, A. P.; Egorov, I. I.; Savitskii, K. V. (Sib. Fiz.-Tekh. Inst. im. Kuzenetsova, Tomsk, USSR). *Izv. Vyssh. Uchеb. Zaved., Fiz.* 1970, 13(1), 79–84 (Russ). The effects of Bi, Pb, Zn, In, and Hg additives were studied exptl. The sol. eutectic additives, as well as the slightly sol. additions, can decrease the d. of Cd if the upper temp. limit of the thermocyclic treatment falls within the region of solid-liq. state of the system. If significant soly. in the solid phase is exhibited by the eutectic additive, bands along the grain boundaries of Cd appear during the thermocyclic treatment.

HMJR

REEL/FRAME
19791134

Acc. Nr: AT0047568 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR 0139

92773s Effect of the concentration of impurities on cadmium density variations during thermocyclic treatment. Savitskii, A. P.; Egorov, I. I.; Savitskii, K. V. (Sib. Fiz.-Tekh. Inst. im. Kuzentsova, Tomsk, USSR). *Izv. Vyssh. Uchebn. Zaved. Fiz.*

USSR

UDC: 681.332:371.69

YEGOROV, I. P., "Order of Lenin" Institute of Problems of Control (Automation and Remote Control)

"A Device for Modeling Finite Automata"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 72, Author's Certificate No 354411, Class G, filed 27 Oct 70, published 9 Oct 72, p 145

Translation: This Author's Certificate introduces a device for modeling finite automata. The device contains a control unit, a matrix of one-place registers, logic circuits, multifunctional switching elements, and k-place registers. As a distinguishing feature of the device, it is simplified by connecting the first and second outputs of each of the one-place registers in the matrix to the inputs of the adjacent one-place registers located in the line and column of the matrix respectively. The third output of each one-place register is connected to the input of the k-place register through a coincidence gate which is connected by its second input to the control unit. The outputs of the k-place register are connected to the inputs of the multifunctional switching element, whose second inputs are connected

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USSR

YEGOROV, I. P., USSR Author's Certificate No 354411

to the control unit. The output of the multifunctional switching element is connected to the third input of the one-place register through a coincidence gate connected by its second input to the control unit.

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USSR

UDC 51:621.391

YEGOROV, I. P.

"Some Logic Nets of Homogeneous Structures"

Sovrem. Probl. Kibernet. [Modern Problems of Cybernetics -- Collection of Works], Moscow, Nauka Press, 1970, pp 338-344 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V319 by the author).

Translation: Two problems are analyzed, arising when magnetic toroidal cores are used as analog memory elements with nondestructive readout. It is demonstrated that the principal difficulty involved in using toroidal cores is the production of a linear dependence between the write signal and the output signal. Methods are demonstrated for solving this problem and the area of application of elements of analog memory based on toroidal cores is indicated.

1/1

YEGOROV, I. T.

HydroFoiLs

JPRS 54935

14 January 1972

AERODYNAMIC CHARACTERISTICS OF HYDROFOILS

[Chapter 53 from the book by I. T. Yegorov, Gidrodinamika Vysokhodnykh Sudov, Russian, Second Edition, pp 397-411]

Research on the effect of the water surface on the aerohydrodynamic characteristics of carrier surfaces moving over the water surface is as valuable for vessels using underwater fins and air cushions as it is, specifically, for screen-plane ships using the beneficial effect of the surface interface on the characteristics of supersurface wings. Hence, we shall consider a series of problems of the motion of a wing close to the interface separating media of different densities. The first of these is the problem of the motion of a wing of infinite spread over a water surface.

Fig. 232. Statement of Problem

1. Suppose a wing of infinite spread moves with a velocity of V_0 close to the interface between two media of differing densities, ρ_0 and ρ_1 (Fig. 232). To determine the forces acting on it, we must find the potential φ of the velocities in the medium with the density of ρ_1. This potential should satisfy the Laplace equation, the nonleakage condition, the potential condition of the induced velocities far from the body, the attenuation condition on the interface, the attenuation for the pressure and the normal velocity component in the transition through the interface limit,

$$\frac{\partial \varphi_2}{\partial y} = \frac{\partial \varphi_1}{\partial y} + \frac{V_0^2}{g(\rho_1 - \rho_2)}\left[\rho_2 \frac{\partial^2 \varphi_2}{\partial x^2} - \rho_1 \frac{\partial^2 \varphi_1}{\partial x^2}\right]_{y=0}. \quad (VI.53) \quad (6.53)$$

[I - USSR - G]

Marine and Shipbuilding

USSR

532.528

.BOOKS

YEGOROV, I. T., SADOVNIKOV, Yu. N., ISAYEV, I. I., BASIN, M. A.
ISKUSSTVENNAYA KAVITATSIYA (Artificial Cavitation), Leningrad "Sudostroyeniye" 1971, 283 pp, illus, formulae, biblios, 1,850 copies printed

Results are given of research in supercavitation, natural and artificial ventilation of various lifting surfaces. The book does not pretend to be a full survey of research in this area of hydromechanics, but contains primarily the data obtained in recent years by the authors. It is intended for use by scientific associates and technicians working in the design offices and scientific research organizations in the ship-building industry, but can also be useful to students in the higher technical schools majoring in hydromechanics and marine engineering.

Contents

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USSR
YEGOROV, I.T., et al, ISKUSSTVENNAYA KAVITATSIYA (Artificial Cavitation), Leningrad 1971.

Chapter II. Natural and Artificial Cavitation of Hydrofoils (written by M. A. Basin) discusses hydromechanics of supercavitating and ventilated hydrofoils 23-98

Chapter III. Controlling the Lift of Cavitating Foils. Ventilation of Bodies During Interaction With the Free Surface of the Water (written by I. T. Yegorov) Discusses methods of regulating the cavitating cavity in order to vary the hydrodynamic characteristics of lifting surfaces, and touches upon certain forms of natural and artificial ventilation of bodies during interaction with the free surface of the water 99-156

Chapter IV. Artificial Cavitation During Motion of a Body Near the Free Surface of the Water (written by I. I. Isayev) Gives results of theoretical and experimental research on the subject 157-224

Chapter V. Hydrodynamic Characteristics of Propellers During Artificial Cavitation (written by Yu. N. Sadovnikov) Contains material on research on artificial cavitation of propellers and on the interaction of propellers, operating under these conditions, in conjunction with the lifting elements of hydrofoil ships 225-281

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YEGOROV, I. V.

TECHNICAL TRANSLATION

FSTC-HT-23-726-71

ENGLISH TITLE: Chemical Reinforcement of Soils in Airfield and Road Construction

FOREIGN TITLE: Khimicheskoye Ukrepleniye Gruntov V Aerodromnom I Dorozhnom Stroitel'stve

AUTHOR: M. F. Nichchenko, N. N. Serov, L. A. Markov, M. I. Koval'ov, V. N. Yegorov, I. V. Yegorov, V. G. Dikura, and V. A. Filatov

SOURCE: Chemical Stabilization of Soil in Airfield and Road Construction, 1967, 212 pages

Translated for FSTC by ACSI

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USSR

UDC 532.596+551.46.06.8

YEGOROV, K. L.

"Theory of Ice Field Drift in a Horizontally Nonuniform Wind Field"

V. sb. Probl. Arktiki i Antarktiki. Vyp. 34 (Problems of the Arctic and Antarctic. Vyp. 34 -- Collection of Works), Leningrad, Gidrometeoizdat Press, 1970, pp 71-78 (from RZh-Mekhanika, No 10, Oct 70, Abstract No 10 B483)

Translation: This article contains a study of the nonstationary problem of ice drift considering the interaction of ice floes. The Laplace transformation is applied to the initial equation. For representing the complex velocity, an inhomogeneous second-order differential equation is obtained the solution of which was obtained by M. I. Ruzin (see Tr. Arkt. i Antarkt. n.-i. in-ta [Works of the Arctic and Antarctic Scientific Research Institute], 1959, No 226, pp 123-135). By inversion and separating the real and imaginary parts of this solution, the author obtains the drift velocity components of the ice. Considering that the drift velocity is basically determined by the wind effect, the author

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USSR

YEGOROV, K. I., Probl. Arktiki i Antarkiki. Vyp. 34, Leningrad, Gidrometeoizdat Press, 1970, pp 71-78

then calculates the additional velocities caused by interaction of the ice fields. The formulas obtained agree well with the results of natural measurements performed at station SP-4.

2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--MODEL OF A BAROTROPIC OCEAN -U-

AUTHOR-(03)-YEGOROV, K.L., LAYKHTMAN, D.L., RADIKEVICH, V.M.

COUNTRY OF INFO--USSR

SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 2, PP 249-255

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--OCEAN CURRENT, SURFACE AREA, MODEL, TURBULENT FLOW, GEOSTROPHIC WIND, ATMOSPHERIC WIND FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1285 STEP NO--UR/0213/70/010/002/0249/0255

CIRC ACCESSION NO--AP0109369

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109369

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS FOR COMPUTING VERTICAL DISTRIBUTIONS OF THE SEA CURRENT VEOLCITIES AND TURBULENCE PARAMETERS ARE SUGGESTED FOR A BAROTROPIC OCEAN. THE GEOSTROPHIC WIND FIELD IS USED AT THE INITIAL DATA. THE COMPUTATIONS ARE MADE FOR A CLOSED RECTANGULAR BASIN. TANGENTIAL WIND STRESS AT THE OCEAN SURFACE IS A FUNCTION OF COORDINATES TAU SUBAY EQUAL 0; TAU SUBAX EQUAL TAU SUBO TIMES COS PI Y DIVIDED BY B. THE OBTAINED QUANTITATIVE RESULTS ARE IN ACCORD WITH THE KNOWN ORDERS OF MAGNITUDES WHICH FACT MAKES POSSIBLE TO ASSUME THAT THE SUGGESTED MODEL CAN GIVE A CORRECT DYNAMICAL DESCRIPTION OF THE PROCESSES IN A BAROTROPIC OCEAN. FACILITY: INSTITUT OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR FACILITY: LENINGRADSKIY GIDROMETEROLOGICHESKIY INSTITUT.

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109369

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS FOR COMPUTING VERTICAL DISTRIBUTIONS OF THE SEA CURRENT VEOLCITIES AND TURBULENCE PARAMETERS ARE SUGGESTED FOR A BAROTROPIC OCEAN. THE GEOSTROPHIC WIND FIELD IS USED AT THE INITIAL DATA. THE COMPUTATIONS ARE MADE FOR A CLOSED RECTANGULAR BASIN. TANGENTIAL WIND STRESS AT THE OCEAN SURFACE IS A FUNCTION OF COORDINATES TAU SUBAY EQUAL 0; TAU SUBAX EQUAL TAU SUB0 TIMES COS PI Y DIVIDED BY B. THE OBTAINED QUANTITATIVE RESULTS ARE IN ACCORD WITH THE KNOWN ORDERS OF MAGNITUDES WHICH FACT MAKES POSSIBLE TO ASSUME THAT THE SUGGESTED MODEL CAN GIVE A CORRECT DYNAMICAL DESCRIPTION OF THE PROCESSES IN A BAROTROPIC OCEAN. FACILITY: INSTITUT OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR FACILITY: LENINGRADSKIY GIDROMETEROLOGICHESKIY INSTITUT.

UNCLASSIFIED

USSR

UDC 621.385:530.145.6:622

YEGOROV, K. P., MAKKAVEYEV, V. I., KUZ'MICHEV, V. N.

"Optical Beam Wave Guide"

USSR Author's Certificate No 274413, Filed 25 Sep 63, Published 6 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D439P)

Translation: An optical beam wave guide is proposed with automatic regulation of the position of the optical systems. It contains a system of lens, prism and mirror devices arranged in a climate-control tube. In order to insure constancy of the position of the correcting systems required to maintain the direction of the coherent light beam, the correcting systems are made to rotate in two mutually perpendicular directions the constancy of the position of which is maintained by an automatic position control system.

1/1

ELECTRICAL ENGINEERING
Equipment & Machinery

USSR

UDC 621.039.56

YEGOROV, K.V., RIKHTER, R.

"Comparative Analysis Of Some Structures Of The Automatic Power Control System Of A Nuclear Reactor"

Tr.Mosk.energ.in-ta (Works Of The Moscow Power Institute), 1972, Issue 95, pp 79-83 (from RZh:Yadernyye reaktory, No 7, July 1972, Abstract No 7.50.68)

Translation: Some variations are compared of the structures of the automatic power control system of an atomic power plant with a nuclear reactor based on fast neutrons with a sodium ccolant. Analysis of the results showed that the structure and coefficient of the regulator of the vapor temperature has little effect on the quality of regulation of the pressure and it is theoretically possible to regulate the parameters of the vapor preceding the turbine, and the parameters of the nuclear reactor are independent of one another. The most acceptable automatic power control system of a nuclear reactor for an atomic power plant is recommended. 2 ill. 2 ref.

1/1

USSR

UDC: 681.325:65.525

YEGOROV, L. R., ZORIN, V. M., KON'KOV, Yu. A.

"A Pneumatic Element"

USSR Author's Certificate No 309354, filed 2 Jun 69, published 2 Dec 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A61 P)

Translation: A pneumatic element is proposed which contains a moving gate with a recess and an open central aperture, and a housing with an annular input channel. To increase the operational reliability of the element, the recess in the gate is coaxial with the central aperture and is made in the form of an annular groove with middle diameter equal to the middle diameter of the groove of the annular input channel and with a width equal to the width of the groove for this channel, or twice the width of this groove. One illustration.

1/1

USSR

UDC: 621-529-525

YEGOROV, L. R., ZORIN, V. M., KON'KOV, Yu. A., YAKOVLEV, A. B.

"A Pneumatic Analog Signal Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331396, Division G, F, filed 21 Apr 69, published 7 Mar 72, p 155

Translation: This Author's Certificate introduces a pneumatic analog signal converter which contains a "nozzle-baffle" unit with free baffle in a stable suspended state above the nozzle, which is connected to the input channel. As a distinguishing feature of the patent, the functional possibilities of the device are extended by equipping it with additional nozzles which are connected to a signal source and by locating the openings of the additional nozzles between the input nozzle and the edge of the throttling surface of the "nozzle-baffle" unit.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT7

TITLE--PROPERTIES OF THE ELECTRIC DOUBLE LAYER OF A COPPER ELECTRODE. I. ZERO CHARGE POTENTIAL OF A COPPER ELECTRODE IN SODIUM FLUORIDE SOLUTION

AUTHOR-(02)-YEGOROV, L.YA., NOVOSELSKIY, I.M.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 521-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL ELECTRODE, COPPER, SODIUM COMPOUND, FLUORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0658 STEP NO--UR/0364/70/006/004/0521/0523

CIRC ACCESSION NO--AP0124330

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENTIAL CAPACITY (C) OF CU (99.95PERCENT) ELECTRODE WAS MEASURED BY CLASSICAL BRIDGE METHODS IN NAF SOLNS. (9.991-0.8N) FROM PLUS 0.3 TO MINUS 0.6 V RELATIVE TO SCE A 25DEGREES. IN 0.001N SOLN., A CAPACITY MIN. OCCURRED AT 0.09 PLUS OR MINUS 0.015 V. THE VARIATION OF 1-C WITH 1-CONCN. PRIMED.5 ON CU AGREE WITH THE VALUES OBTAINED ON HG IN THESE SAME SOLNS. WHEN THE SURFACE ROUGHNESS FACTOR WAS 1.9. FACILITY: INST. ORG. FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC: 534.84.001.24:621.635

YEGOROV, N. F. and NOVOZHILOV, S. YA.

"Calculating the Octave Noise Levels at the Intake of Centrifugal Ventilators"

Leningrad, Sudostroyeniye, No 5 (402), 1971, pp 32-33

Abstract: The authors present graphs for the dependence of the noise levels on the QH parameter where Q is the productivity of the ventilator and H is full pressure in kgs/m^2. The graphs show that octave noise levels are uniquely related to the QH parameter. Noise level deviation from the mean does not exceed ±5 lb for a QH variation within the $3 \cdot 10^4 - 10^7$ kgs·m/hr limits. A formula is derived for calculating octave noise levels. Original article: one table, one figure, one formula, and four bibliographic entries.

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USSR

UDC 669.715.3.85.86.018.29(088.8)

DRITS, M. Ye., KADANER, E. S., TOROPOVA, L. S., KOP'YEV, I. M., DEMIDOV, Yu. S., LEYKIN, A. I., YEGOROV, N. I. [Institute of Metallurgy imeni A. A. Baykov]

"Aluminum-Based Alloy for Foil"

USSR Author's Certificate No. 276419, Filed 13/11/68, Published 16/10/70. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5, I748P).

Translation: The alloy has the following composition (%): Cu 0.5-2.0, at least one of the REM 0.1-0.5 and Zr 0.05-0.15, impurities $\leq$ 0.01, remainder Al. The introduction of Cu and the rare and refractory metals increases its physical and mechanical properties. The alloy shows σ_b 30 kg/mm^2, withstands $30 \cdot 10^6$ cycles without rupture, and can be rolled into a foil 10-20μ thick.

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USSR

UDC 553.495

BORKOV, F. P., YEGOROV, N. I., and ZAYTSEV, Ye. V., "Krasnodarneftegeofizika," Moscow Geological-Prospecting Institute imeni S. Ordzhonikidze)

"Special Features of the Formation of High Uranium Concentrations in Oxidizing Conditions"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geologiya i Razvedka, No 5, May 71, pp 51-57

Abstract: Special features of the localization and formation of high uranium concentrations in an oxidizing medium are investigated. The presence of a weathering crust is the characteristic feature of the geological zone structure. The uranium concentrations are nonequilibrium. The coefficient of radioactive equilibrium fluctuates between 1 and 78%. The shift of radioactive equilibrium toward uranium and a nearly total absence of radium in samples indicate the recent age of mineralization and the continuation of deposition and redeposition processes. It is concluded that the ore was formed in the process of weathering crust formation because of the uranium redistribution liberated from the ore as a result of oxidation, on the one hand, and introduction of uranium from ground waters rich in ferro-hydrooxides, jarosite, and phosphate-ions, on the other hand.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INCREASE IN THE EFFICIENCY OF PLANTS FOR PRODUCING ALKYL PHENOLS USING A KU2 CATION EXCHANGER, OPERATING EXPERIENCE -U-

AUTHOR-(03)-BELYO, P.S., LIBINSHTEYN, I.YE., YEGOROV, N.M.

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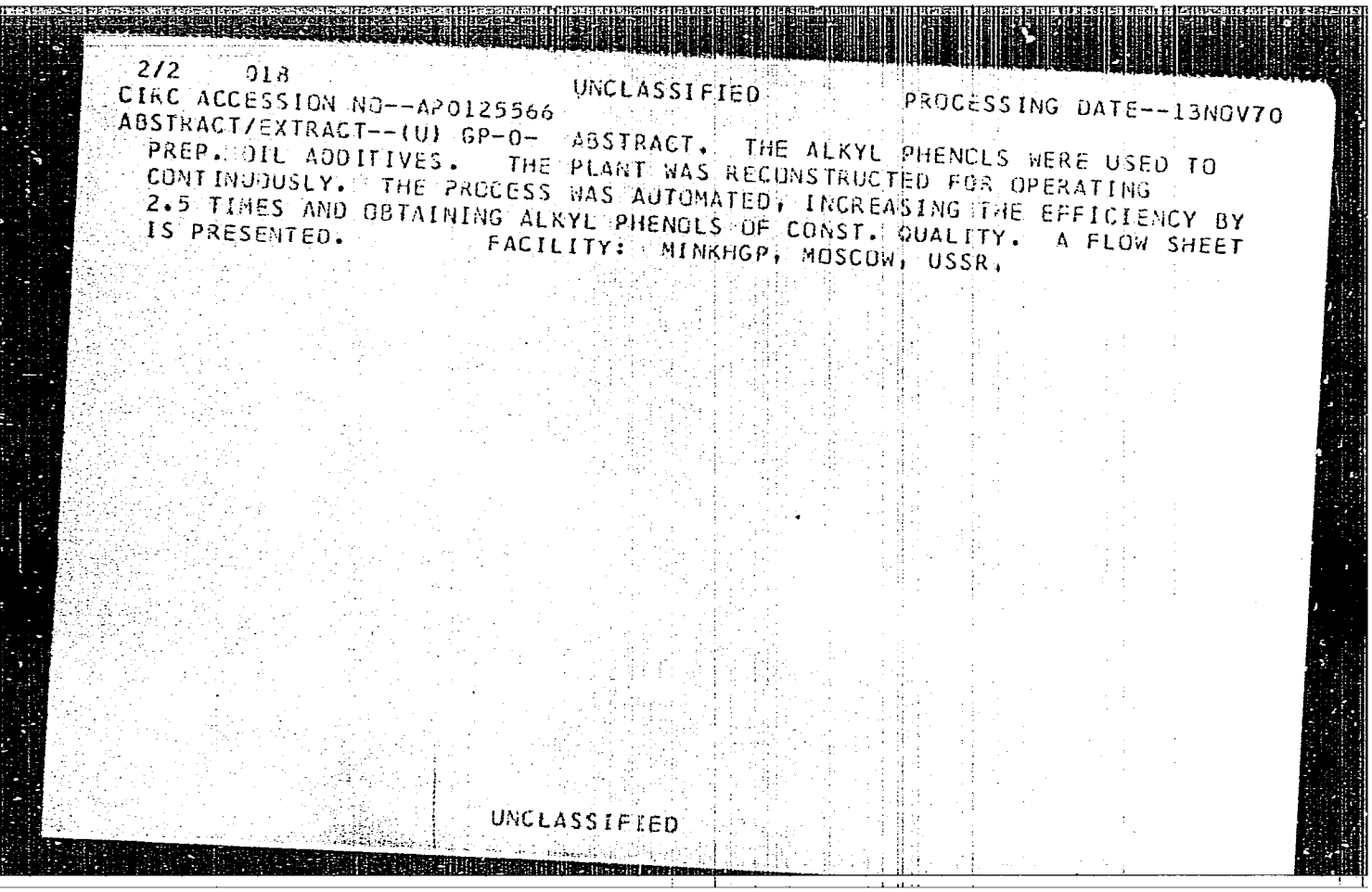

2/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0125566
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALKYL PHENOLS WERE USED TO PREP. OIL ADDITIVES. THE PLANT WAS RECONSTRUCTED FOR OPERATING CONTINUOUSLY. THE PROCESS WAS AUTOMATED, INCREASING THE EFFICIENCY BY 2.5 TIMES AND OBTAINING ALKYL PHENOLS OF CONST. QUALITY. A FLOW SHEET IS PRESENTED. FACILITY: MINKHGP, MOSCOW, USSR.

UNCLASSIFIED

USSR

YEGOROV, N. V., FURSEY, G. N., and MANOKHIN, S. P.

"Generality of the Basic Principles in the Autoelectron Emission of n- and p-Type Semiconductors"

Leningrad, Fizika Tverdogo Tela, vol. 13, No. 10, October 1971, pp 3110-3112

Abstract: It is shown that the appearance of a saturation region in the Fowler-Nordheim curves is a principle which is characteristic of both p-type and n-type semiconductors. The specimens used for the experiments in which this finding was made were of high-resistance n-Si with a resistivity of 300 ohm·cm. The results of the experiments are given in the form of two curves. These results agree closely with the theoretical representations of semiconductor autoelectron emission, as developed in earlier work, and confirm the generality of the basic principles in p-type and n-type semiconductor autoemission.

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