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BRIEF COMMUNICATIONS

UDC 612.534.014.464/546.21+546.391

HEAT REGULATION REACTIONS IN ANIMALS IN A HELIUM-OXYGEN ATMOSPHERE

[Article by G. V. Troshikhin; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 5, September-October 1972, pp 84-86, submitted for publication 11 May 1971]

It is well known that the literature contains studies on the possibility and desirability of using a helium-oxygen atmosphere in the manned compartments of spaceships (B. M. Savin; P. A. Gul'tyayev; V. M. Osipov, and many others). It has now been established that animals and man can live for a relatively long time in such an atmosphere and their physiological functions do not exhibit significant changes (V. V. Beriskin, et al.; A. G. Dianov and A. G. Kuznetsov; G. V. Troshikhin). One of the distinguishing characteristics of helium is its high heat conductivity; this increases the convective component in body heat exchange (Epperson, et al.; Fischer and Musacchia).

In this study an attempt was made to ascertain the comfortable temperature range for animals in a helium-oxygen atmosphere.

Method

The experiments were carried out on 55 male rats of the Wistar line weighing 240-320 g. We studied the level of gas exchange, heat-regulating activity of the muscles and changes in rectal temperature. The animals were kept for three hours in a pressurized chamber with a capacity of 20 liters. The chamber was filled successively for one hour with air, a helium-oxygen mixture (21% oxygen) and again air. Atmospheric temperature was maintained at a stipulated level (±0.3°) using an ultrathermostat; relative humidity was 60±5%. The oxygen and carbon dioxide content in the chamber air was determined at the end of each hour using a Holden apparatus; gas exchange for the animals was computed by the method usually used in such cases (R. P. Ol'nyanskaya and L. A. Isaakyan).

The heat-regulating activity of the muscles was determined electrophysiologically. The electrodes were Michel clamps; bioelectric currents

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USSR

UDC 612.273

ZHIRONKIN, A. G., Director, and ISAAKYAN, L. A. and TROSHIKHIN, G. V., Laboratory of Physiology of Respiration, Institute of Physiology imeni I. P. Pavlov

"The Effect of Increased Atmospheric Pressure on O_2 Content in the Muscle Tissue of Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, Jul 72, pp 1109-1114

Abstract: In underwater diving and certain other areas, the effect of the density of gases inspired on physiological processes is of practical significance. In addition, discovering the mechanism of the toxic effect of high partial pressures of inert gases is important for theory. In this experiment, the aO_2 content in the quadriceps femoris muscle of 70 male Wistar rats (and their rectal temperature) was checked by the polarograph method during a 5-hour exposure in helium-oxygen and nitrogen-oxygen mixtures (21% oxygen) at different temperatures and pressures. In the helium-oxygen atmosphere at a temperature of 28°C, a marked decrease in the aO_2 level in the quadriceps femoris muscle was noted during a 5-hour exposure at a pressure of 20 kg/cm², and particularly at 40 kg/cm². Raising the temperature to 30°C lessened the reaction, indicating that it can be attributed to the cooling effect of helium.

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USSR

ZHIRONKIN, A. G., et al., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 58, No 7, Jul 72, pp 1109-1114

At a pressure of 6 kg/cm^2 in the nitrogen-oxygen mixture (which corresponds to 40 kg/cm^2 in the helium-oxygen) the aO_2 level did not change over the 5-hour period. When the pressure was raised to 20 kg/cm^2 there was a notable drop in the aO_2 level, which could result from either the density of the gas being inspired or the narcotic effect of nitrogen. Further investigation is required to clarify this causality. It can be concluded that increasing the density of the gas being inspired in these mixtures by a factor of six (and eliminating the cooling effect of the helium) does not lead to a drop in the aO_2 level in a rat's quadriceps femoris muscle during a 5-hour exposure.

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Physiology

USSR

UDC 612.274.612.45

YEREMEYEV, N. S., TROSHIKHIN, G. V., and SMALYAPINA, V. G., Laboratory of Respiratory Physiology, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences SSSR, Leningrad

"The Effects of Increased Partial Pressure of Oxygen on the Sympathoadrenal System and Brain Acetylocholine esterase in Animals"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 5, 1972, pp 768-772

Abstract: In white mice exposed to 60 and 80% oxygen at atmospheric pressure for 10 days and to pure oxygen at partial pressures 1.3, 3, and 3.5 atm for 2 hrs, noradrenaline concentration in the brain decreases while adrenocorticoid concentration in the blood increases. In rats, exposure to oxygen at atmospheric pressure causes an increase while exposure to oxygen at higher partial pressures (convulsive levels) causes a decrease in acetylchloineesterase activity in the cerebral cortex, subcortex, brain stem, medulla oblongata, and cerebellum. It is concluded that excess oxygen induces a general stress reaction and a specific reaction in the body and that oxygen toxicity is in a large measure due to distrubences in the synthesis and destruction of neuronal transmitter substances.

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USSR

TROSHIKHIN, V. A., Professor, Doctor of Biological Sciences, and MOLDAVSKAYA, S. I., Candidate of Medical Sciences, Ukrainian SSR; and TAUKACH, G. L., Docent, Candidate of Technical Sciences, Kiev Institute of Civil Engineering

"Psychophysiological Bases for Planning Study Work"

Moscow, Vestnik Vysshey Shkoly, No 2, 1971, pp 28-36

Abstract: The degree of stress of different types of studies and its effect on the efficiency of students with different types of nervous systems is evaluated in order to determine definite loads on brain function. By means of A. Khil'chenyo's method and a special instrument, the subject's reaction to stimuli was recorded, mobility of her nervous processes was studied, and the efficiency boundaries of his brain determined. The instrument consists of demonstration and recording units, the demonstration unit has a screen for display of stimuli (names of animals, plants, etc). Subject pressed one button for plant names and another for animal names. The effect on students of their daily, weekly, monthly, and semester study loads, including rest periods, was evaluated. All load effects depend primarily on the period of study, that is, beginning or end of the semester, week, and so forth, and on the functioning condition of the brain at a given time.

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USSR

TROSHIKHIN, V. A., et al., Vestnik Vysshey Shkoly, No 2, 1971, pp 28-36

Fatigue was noted at the end of a semester and at the end of the year, followed by recovery after a rest period. Less lecture time and more applied (practical) work are recommended to rouse the mental activity when it is weak, and examinations should be spread out throughout the year instead of coming at its end. Study loads should be distributed according to the fluctuation of students' efficiency, and varied from week to week corresponding to the physiologically substantiated rhythm of fatigue and restoration periods. A new (algorhithmic) method of course planning demonstrated that programmed studies produced less stress on the brain than the traditional method. Uniform study groups are recommended, taking into consideration, besides the psychophysiological angle, certain socio-demographic factors: time reserve and its efficient use by different groups.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF TESTOSTERONE PROPIONATE ON THE MOBILITY OF NEURAL PROCESSES IN DOGS WITH DIFFERENT TYPES OF NERVOUS SYSTEMS AFTER

AUTHOR-(02)-TIKHOMIROVA, L.D., TROSHIKHIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOL. ZH. (KIEV) 1970, 16(1), 113-15

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--REPRODUCTIVE SYSTEM, SURGERY, NERVOUS SYSTEM, TESTOSTERONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0657 STEP NO--UR/0238/70/016/001/0113/0115

CIRC ACCESSION NO--AP0131262

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0131262 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF EXOGENOUS TESTOSTERONE PROPIONATE (I), ON BASIC NERVOUS PROCESSES, DECREASED IN CASTRATED DOGS WITH TIME. COMPENSATION THERAPY WITH I IN CASTRATED DOGS WITH STRONG AND WEAK NERVOUS EXCITABILITY HAD NO EFFECT ON THE BASIC NERVOUS PROCESSES. FACILITY: INST. FIZIOL. IM. BOGOMOL'TSYA, KIEV, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

Acc. Nr: AP0052308 Ref. Code: UK0238

PRIMARY SOURCE: Fiziologichniy Zhurnal, 1970, Vol 16, Nr 2, pp 161-171

FURTHER DEVELOPMENT OF STUDY ON THE TYPES OF HIGHER NERVOUS ACTIVITY

V. O. Troshikhin and V. V. Sirotskiy

Department of Physiology of Higher Nervous Activity, the A. A. Bogomoletz Institute of Physiology, Academy of Sciences, Ukrainian SSR, Kiev

Summary

A number of suppositions is expressed as to the ways of solving the problem on the types of higher nervous activity.

On the basis of new data obtained by the research workers of the department a conclusion is drawn that the weak type of nervous activity finishes its formation in ontogeny before sexual maturity and the strong one at the age of sexual maturity (by 4 years of postnatal life and probably later). Intensity of excitative process is one of the

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leading (determining) properties of the nervous system type. It means that with the change in the level of brain excitability in dogs and rats qualitatively new reactions are observed which correspond to a new level of excitation.

On the basis of studying different components of a conditioned reflex, a conclusion is drawn that starting (specific) components of the conditioned reflex are the most demonstrative indicators of the typological properties of the animal higher nervous activity. A respiratory component may be referred to the universal indicators of the typological properties.

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USSR

TROSHIKHINA, Yu. G. UDC 612.821

"The Significance of Animal Weight in Determining the Strength of the Stimulation Process Using Caffeine"

Leningrad, Metodiki Otsenki Svoystv Vysshey Nervnoy Deyatel'nosti, "Nauka," 1971, pp 152-157

Abstract: An analysis of the significance of animals' weight during the use of different doses of caffeine demonstrated a statistically reliable correlation between the animal's weight and the "maximum" dose of caffeine. On the basis of this, the conclusion was drawn that using caffeine with a calculation per kilogram of weight refines, and in particular cases significantly changes, the character of the force of the stimulation process. A table of calculated caffeine doses is compiled and its use is recommended in determining the force of the stimulation process in dogs of different weights. Four tables and five bibliographic entries.

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Biology

GLORIA

SO: JPRS 53933
27 Aug 71

UDC: 577.3

BIOLOGICAL AND SYNTHETIC MEMBRANES AND THE USE OF THEIR PROPERTIES

[Article by Corresponding Member of the AS USSR A. S. Troshin; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 41, No 6, June 1971, pp 53-59]

Biology

In the last ten years interest has sharply grown in so-called membrane effects (bioelectrical potentials, the permeability of cells and its regulation, etc), which are attracting the attention not only of biologists but also of specialists in physical chemistry, electrochemistry, and physics. Many collectives of investigators have begun to study membrane systems, including a number of laboratories headed by eminent specialists who earlier have worked successfully in other areas of knowledge.

The number of publications relating to investigations of membranes has grown so sharply in recent years that it has been necessary to create special journals, for example the international journal Membrane Biology and the journal Biomembrany (Biological Membranes). Conferences and symposia devoted to biological membranes are convoked systematically. The Seventh International Symposium on the Chemistry of Natural Compounds, held in Riga on 26-27 June 1970, included a special presymposium at which the results of study of biological membranes were discussed. It can be considered that a new area of scientific knowledge has arisen -- the biology of membranes. Numerous cellular organoids have been constructed of laminar formations -- membranes, and the reactions taking place in cells are closely connected with the functioning of such structures.

Cell membranes play a large role in the regulatory mechanisms of the process of metabolism (that is, the ordering of biochemical reaction in time and space), in transport phenomena, pinocytosis, phagocytosis, etc, in the bioelectrical

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USSR

UDC: 621.375.9:535

BETEROV, I. M., MATYUGIN, Yu. A., MILUSHKIN, G. A., TROSHIN, B. I., and CHEBOTAYEV, V. P.

"Highly Stable Gas Laser Based on Nonlinear Absorption ($\lambda = 0.63\mu$)"

Novosibirsk, Avtometriya, No 5, 1972, pp 71-85

Abstract: This is the second part of a series with the title given above, and subtitled "Selection of Oscillation Types in an He-Ne Laser, $\lambda = 0.63\ \mu$," the first part of which appears in this same journal, same issue (pp 59-70). In this part, an analysis is given of two methods for selecting the types of oscillation in gas lasers: the first consists in modifying the optical resonator such that the condition of operation is satisfied for only one type of oscillation; the second consists in using amplification saturation and absorption in the gas under the effects of a strong monochromatic field. A short review of the methods of selecting longitudinal types of oscillation in gas lasers with heterogeneous expansion of amplification lines is discussed. Some results are given of experiments in the investigation of the He-Ne laser spectral radiation at $\lambda = 0.63\ \mu$ ($3s_2$-$2p_4$ Ne transition) together with their

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USSR

BETEROV, I. M., et al, Avtometriya, No 5, 1972, pp 71-85 UDC: 621.375.9:535

analysis. The technical characteristics of each element of the laser -- the amplification tube, the inner absorption cell, and the optical laser -- are summarized.

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USSR

UDC: 621.375.9:535

BETEROV, I. M., MATYUGIN, Yu. A., MILUSHKIN, G. A., TROSHIN, B. I., and CHEBOTAYEV, V. P.

"Highly Stable Gas Laser Based on Nonlinear Absorption ($\lambda = 0.63\mu$)"

Novosibirsk, Avtometriya, No 5, 1972, pp 59-70

Abstract: This is the first part of a series, entitled "Frequency Stabilization Methods for Powerful Gas Lasers" and is devoted to a detailed description of the design principles for a powerful, highly frequency-stable He-Ne laser operating at a wavelength of 0.63 microns. The structural and technical characteristics of the laser, electronic systems for stabilizing its frequency, and the results of tests made on it are also discussed. The diagram of an experimental apparatus for obtaining narrow resonances in an external absorption cell is given together with various expressions derived on the basis of it. Various methods for stabilizing the frequency of the lasers are shown in three diagrams and are analytically compared using expressions for the sensitivity of the optical discriminators in each. It is emphasized that the choice of optical discriminator is the result of a compromise between technological and physical requirements.

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USSR Optics and Spectroscopy

UDC 621.373:535(206.3)

MATYUGIN, Yu. A., TROSHIN, B. I., and CHEBOTAYEV, V. P.

"A Method for Stabilizing the Frequency of an He-Ne Laser on the Basis of Using a Lorentz Loop of Absorption in the External Gas Element"

Leningrad, Optika i Spektroskopiya, Vol 31, No 1, Jul 71, pp 111-115

Abstract: The results of this research were presented at the All-Union Symposium on the Physics of Gas Lasers in Novosibirsk, July 1969. The authors describe a new method for stabilizing the frequency of He-Ne lasers at a wavelength of 0.63 μm. They base their method on the use of the saturation effect in the external absorbing element. Here they examine a specific stabilization circuit. They scan the absorption lines with a variable magnetic field in order to find the error signal. The preliminary test results of this system are given. On a laboratory model they were able to produce a short-term stability better than 10-9. Figure 1 shows a schematic representation of the experimental set up, and Figure 2 gives the strength of generation and coefficient of absorption as functions of laser frequency; it also depicts the error signal as a function of frequency difference of the laser relative to the center of the absorption line and the generation strength as a function of frequency.

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USSR

MATYUGIN, Yu. A., et al, Optika i Spektroskopiya, Vol 31, No 1, Jul 71, pp 111-115

The authors estimate that it is very possible to attain a short-term stability on the order of 10^{-11}. They support their findings with 2 figures and a bibliography of 7 titles.

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USSR

BAGAYEV, S. N., VASILENKO, L. S., MATYUGIN, YU. A., KLEMENT'YEV, V. K., TROSHIN, D. I., and CHEBOTAYEV, V. P.

UDC 621.373.535 (206.3)

"Some Results of a Study of the Generation Frequency Stability of Gas Lasers on the 0.63, 1.5, 3.39, and 9.6 Micron Wavelengths"

Leningrad, Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 802-808

Abstract: The article gives a brief description of the principal results of the authors' study of the frequency stabilization of gas lasers on the 0.63, 1.5, 3.39, and 9.6-micron wavelengths. Various frequency stabilization methods were used: viz., a stabilization method based on the Lamb dip, stabilization methods according to the peak in the output radiation power (a laser with an internal absorption cell) and with an external gas absorption cell in a variable magnetic field. The main purpose of this work was to show that high frequency stability values can be attained in various lasers by various methods. The experimental setup and the measurement procedures used by the authors, as well as the research results will be described in separate

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USSR

BAGAYEV, S. N., et al., Optika i Spektroskopiya, Vol 32, No 4, Apr 72, pp 802-808

articles. The main emphasis was placed on the physical principles of the stabilization methods used and the results attained. All the principal results are shown in a table which, besides generation-frequency-stability measurement data, also gives parameters which characterize the physicotechnical properties of an optical frequency discriminator.

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USSR

MAYZLIN, I. Ye., TROSHIN, L. I.

"Solution of the Problem of Optimal Planning of Development of a Production System"

Mat. Vopr. Upr. Proiz-vom [Mathematics Problems of Production Control], No 3, Moscow, 1971, pp 40-45 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V709 by Yu. Finkel'shteyn).

Translation: The problem of composition of an optimal plan for reconstruction of production objects is solved, leading to the following integer linear model with Boolean variables:

$$\sum_{k=1}^{n} V_k \delta_k \to \min, \tag{1}$$

$$\sum_{k=1}^{n} c_k \delta_k \leqslant C, \tag{2}$$

$$\sum u_k \delta_k \leqslant U, \tag{3}$$

$$0 \leqslant \delta_k \leqslant 1, \quad k=1, 2, \ldots, n, \tag{4}$$

$$\delta_k \text{ is an integer}, \quad k=1, 2, \ldots, n. \tag{5}$$

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USSR

MAYZLIN, I. Ye., TROSHIN, L. I., Mat. Vopr. Upr. Proiz-vom, No 3, Moscow, 1971, pp 40-45.

Here all $V_k > 0$, $c_k \geq 0$, $u_k \geq 0$, $C > 0$, $U > 0$. The authors further write, "at the present time there is no effective method of deterministic search for the solution to this problem for large values of n. The Gomori algorithm leads to large computational volume for n on the order of 20 to 30," and suggest a heuristic procedure for the solution of problem (1)-(5). Without arguing the effectiveness of methods of discrete programming with the authors in general and of the Gomori algorithm in particular, I should still note that problem (1)-(5) is the knapsack problem with two limitations. The heuristic approach would hardly be the most effective approach to this problem, since it has long been known that the method of dynamic programming is applicable here.

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TROSHIN, L. I.

UDC 512.25/.26+519.3:330.115

"One Method of Solving Problems of Quadratic Concave Programming for Evaluation of Economic and Technical Indicators in Industry"

Opyt. Primemeniya Mat.-Statist. Metodyv v Proiz-ve, [Experience in Application of Mathematical Statistics Methods to Production--Collection of Works], Moscow, Mashinostroyeniye Press, 1970, pp 63-73, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V540).

No Abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 666.11.01:620.171.5

VIDRO, L. I., MAKHNAVETSKIY, A. S., ZATSMAN, I. R., TROSHIN, N. N., KHAYKINA, M. A., MIKHAYLOVA, Z. G.

"Installation for Measurement of Stresses in Sheet Glass in Reflected Light"

Moscow, Steklo i Keramika, No 11, 1972, pp 19-20.

Abstract: The Saratov Affiliate of the State Glass Institute has developed a laser installation for measurement of stresses in sheet glass. A helium-neon laser is used as a light source, the beam of light of which is polarized, then transmitted through the glass, reflected on the second surface of the glass, focussed, compensated and converted to an electric current, measured by an ammeter. The use of the reflection of the light from the second surface of the glass allows all parts of the installation to be located on the same side of the sheet of glass, in many cases the only possible arrangement. The use of the laser allows the light beams reflected from the first and second surfaces of the glass to be fully separated.

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UNCLASSIFIED

TITLE—COMPARATIVE CHARACTERISTICS OF THE HEAT TRANSFER OF GLASSES WITH AND WITHOUT RADIO SHIELDING COATINGS -U-

PROCESSING DATE—30OCT70

AUTHOR-(02)-MAKHNAVETSKIY, A.S., TROSHIN, N.N.

COUNTRY OF INFO—USSR

SOURCE—STEKLO KERAM. 1970, 27(2), 11-14

DATE PUBLISHED———70

SUBJECT AREAS—MATERIALS, PHYSICS

TOPIC TAGS—HEAT TRANSFER, ELECTRIC CONDUCTIVITY, SPECIALIZED COATING, GLASS CONDUCTIVITY, GLASS COATING, SHEET GLASS

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—2000/1577

STEP NO—UR/0072/70/027/002/0011/0014

CIRC ACCESSION NO—AP0125202

UNCLASSIFIED

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2/2 041 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125202

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO EXPLAIN THE PECULIAR NATURE OF HEAT TRANSFER OF GLASSES WITH RADIO SHIELDING (CURRENT CONDUCTING) COATINGS ON THEM, A SERIES OF LAB. EXPTS. WAS MADE. COATED AND UNCOATED GLASS SAMPLES WERE INVESTIGATED, PREPD. FROM INITIAL GLASS BY VERTICAL DRAWING. THE DIMENSIONS OF THE SAMPLES WERE 100 TIMES 100 TIMES 8.45 MM, WHICH CORRESPONDS TO THE HEAT EXCHANGE CONDITIONS OF AN UNLIMITED PLATE. THE SAMPLES WERE LOADED IN THE VERTICAL POSITION IN A LAB. FURNACE EQUIPPED WITH OPEN HEATERS. THE TEMP. OF THE WORKING AREA OF THE FURNACE WAS SELECTED AS 600DEGREES AND WAS KEPT CONST. THROUGHOUT THE EXPT. THE TEMP. WAS MEASURED AND CONTROLLED BY THERMOCOUPLES. THE TIME OF HEATING OF THE COATED SAMPLES WAS LONGER BY A FACTOR OF 1.3 THAN THE HEATING TIME OF UNCOATED SAMPLES. HEAT TRANSFER BOTH IN SHEET AND IN BULK GLASS SAMPLES IS DONE BY CONVECTION AND BY RADIATION. A THEORETICAL CALCN. OF THE SHEET AND CONVECTIVE HEAT TRANSFER COEFFS. WAS OBTAINED. IN VIEW OF THE GOOD AGREEMENT BETWEEN THE THEORETICAL AND THE CALCD. DATA IT WAS PROPOSED THAT THE ONLY PARAMETER WHICH DIFFERED IN BOTH TYPES OF GLASS WAS THE DEGREE OF BLACKNESS OF THEIR SURFACE. AN ATTEMPT WAS ALSO MADE TO CALC. APPROX. THE CHANGES IN THE TEMPS. WITH TIME IN THE CHARACTERISTIC CROSS SECTIONAL POINTS OF THE SAMPLES. CONVENTIONAL FURNACES CAN BE USED TO COOL SHEET GLASS COATED WITH RADIO SHIELDING COATINGS WITHOUT ANY SPECIAL MODIFICATIONS. FACILITY: SARATOV. FILIAL GIS, SARATOV, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

Acc. Nr.: AP0046497 Ref. Code: UR0094

USSR UDC 628.977.1:621.316.722

KUNGUS, YA. A., VOLOSATOV, V. V., VLADENTSEV, V. N., Engineers, and TROSHIN, V. A. Candidate of Technical Sciences, Central Electrical Engineering Research Laboratory for Non-Ferrous Metallurgy

"Thyristor Voltage Regulator for Lighting Systems"

Moscow, Promyshlennaya Energetika (Industrial Power Engineering), No 1, 1970, pp 24-27

Translation: Questions associated with the damage caused by voltage step up in lighting systems are discussed, and a formula for determination of this damage is presented. The possibility of using simple and economical thyristor regulators to maintain voltage constancy in lighting lines is shown. Formulas are given for determining the power factor and efficiency of the regulator and also the changes of these values in regulation. The electric circuit of the thyristor regulator is described, and results of tests of experimental models are presented. (3 illustrations, 4 biblio. ref.)

1/1 REEL/FRAME 19781750 4

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

1/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ELECTROTRANSFER IN HIGHLY CONCENTRATED AMMONIUM CHLORIDE, AMMONIUM NITRATE, AND AMMONIUM SULFATE SOLUTIONS -U-

AUTHOR--TROSHIN, V.P., ZVYAGINA, E.V.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1), 127-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRATION, IONIZATION, AMMONIUM CHLORIDE, AMMONIUM NITRATE, AMMONIUM SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0317 STEP NO--UR/0364/70/006/001/0127/0130

CIRC ACCESSION NO--AP0103972

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 018 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103972

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IONIC MOBILITY, IONIC TRANSFER NO., AND THE KINETIC HYDRATION NO. OF IONS WERE STUDIED IN NH SUB4 CL SOLNS CONTG. 2-5.6 G-EQUIV1., NH SUB4 NO SUB3 SOLNS. CONTG. 2-10 G-EQUIV1., AND (NH SUB4) SUB2 SO SUB4 SOLNS. CONTG. 2-8 G-EQUIV1. THE TRANSFER NO. OF NH SUB4 PLUS IN NH SUB4 CL AND NH SUB4 NO SUB3 CHANGED VERY LITTLE WITH CHANGES IN THE CONCN. OF THE SOLN., 0.47-0.485 AND 0.507-0.513, RESP. THE TRANSFER OF SOLVENT WAS ALSO VERY SMALL. THE DATA OBTAINED FOR (NH SUB4) SUB2 SO SUB4 ARE MORE COMPLICATED BECAUSE OF THE ASYMMETRY OF THE CHARGES ON THE COMPONENT IONS. ALTHOUGH THE CATION CONTAINED H, THE ANOMALOUS MOBILITY USUALLY ASSOCD. WITH IT DID NOT APPEAR, STILL THE MOBILITY OF NH SUB4 PRIME POSITIVE IS OF THE SAME ORDER OF MAGNITUDE AS THAT OF K PRIME POSITIVE WHICH IS A FAIRLY MOBILE ION.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

1/2 G10 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ELECTROTRANSFER IN HIGHLY CONCENTRATED NICKEL CHLORIDE, NICKEL NITRATE, AND NICKEL SULFATE SOLUTIONS -U-

AUTHOR-(02)-TROSHIN, V.P., MALVINOVA, V.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(1) 130-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROCHEMISTRY, NICKEL CHLORIDE, NITRATE, NICKEL SULFATE, HYDRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0337 STEP NO--UR/0364/70/006/001/0130/0132

CIRC ACCESSION NO--AP0103992

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103992

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE IS A CONSIDERABLE DIFFERENCE IN THE VALUES FOR ASYMMETRIC COMPDS. NICL SUB2 AND NI(NO SUB3) SUB2 AND THE SYMMETRIC COMPD. NISO SUB4. THE TRANSFER NOS. FOR NI PLUS PLUS AND THE TRANSFER OF HYDRATED MOLS. WERE APPRECIABLY LARGER IN NISO SUB4. IN THE CASE OF COMPDS. ASYMMETRIC WITH RESPECT TO CHARGE, THE ACTUAL AND APPARENT TRANSFER NOS. DIFFER VERY LITTLE, WHEREAS IN SOLNS. OF NISO SUB4 THE ACTUAL TRANSFER NOS. ARE ALMOST DOUBLE THE APPARENT ONES. IN ASYMMETRIC SOLNS. THE TRANSFER NO. OF IONS HAVING A LARGER CHARGE ARE SMALLER THAN THE TRANSFER NOS. OF THE SAME IONS IN SYMMETRIC SOLNS. ALSO IONS WITH A LARGE CHARGE TRANSFER LESS WATER. THE KINETIC HYDRATION OF NI PLUS PLUS IN NISO SUB4 SOLN. WAS 13 H SUB2 O MOLS. IN 3N SOLN. AND 10 H SUB2 O MOLS. IN 5N NISO SUB4 SOLN.

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Explosives and Explosions

USSR

GORDEYEV, V. YE., MATVEYEV, YU. S., and TROSHIN, YA. K., Institute of Chemical Physics, Acad. Sc. USSR, Moscow

"Explosion of Nitroglycerine in Thin Walled Tubes"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 5, Dec 70, pp 1143-1146

Abstract: Investigation was carried out on low velocity detonation [lvd] of liquid explosives to find out whether the so-called cavitational or spin hypothesis on the mechanism of lvd spreading is valid. Nitroglycerine was used in the experiments, the detonations being performed in thin walled plastic tubes and monitored with high velocity photography. Experimental data obtained support unequivocally the cavitational mechanism for the formation of new explosion foci in nitroglycerine during the spreading of lvd. The lvd spreads in thin walled tubes only when the nitroglycerine is sufficiently sensitive to the cavitational initiation of the detonation, the new detonation foci appearing only after a cavitation zone has formed. The appearance of this zone is inevitable since it is caused by stretching tension which always forms in liquids following their compression and weak initiation; this phenomenon does not relate necessarily to the vibration of the vessel walls.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

Miscellaneous

USSR

UDC 542.5

GOREV, V. A., GUSEV, P. A., and TROSHIN, YA. K., Institute of General and Inorganic Chemistry, Academy of Sciences UkrSSR, Kiev

"Modelling of the Rise and the Combustion of Light Gas Cloud in the Atmosphere"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 4, Aug 72, pp 875-878

Abstract: The problem of the movement of a cloud of burning gas and its mixing with surrounding air is analyzed, the upward movement is due to the hydrostatic lifting force. On the strength of theoretical considerations the conclusion was reached that the modelling of such a system is possible on the basis of Frude numbers and geometrical similitude. Theoretical principles were examined through laboratory experiments with and without ignition; the agreement between the calculated and experimental values was found to be very good. Initially the cloud accellerates, reaching a maximum rate of rise, and then the upward movement becomes gradually slower.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 621.396.6.002.72:621.757(088.8)

KAZARINOV, V. L., PANKSEN, Yu. A., TROSHINA, A. G.

"A Device for Spatial Orientation of Modular Elements With Rigid Leads"

USSR Author's Certificate No 283342, filed 26 Feb 69, published 7 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V325 P)

Translation: This Author's Certificate introduces a device for spatial orientation of modular elements with stiff leads. The device contains a vibration hopper equipped with a spiral chute which has an opening in the wall for rejecting improperly oriented modular elements, and a specially shaped outlet chute for feeding properly oriented modular elements into the working positions. To improve precision in orienting modular elements with short stiff leads, strips are located inside the vibration hopper lengthwise of the outlet chute and further from the bottom of the chute than the height of a module board and closer than the total height of a modular element. In the bottom of the chute is a channel with a width equal to the minimum diameter of the circumscribed circle for the leads of a modular element and a depth greater than the length of the leads.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 681.325.65-525

CHAPLYGIN, E. I., TROSHKIN, A. K., SHMELEV, L. F., BORODIN, Yu. F., SYCHEV, Ye. A., GEYZIN, A. N., CHERNYSHEVA, M. A., KASPAROV, G. Ye., Volga Affiliate of the All-Union Scientific Research Institute of Abrasives and Grinding

"An OR-NOR Fluidic Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285341, class 42, filed 14 Jul 69, published 29 Oct 70, pp 118-119

Translation: This Author's Certificate introduces an OR-NOR fluidic element which contains supply, control, and output channels; a jet interaction chamber; and also channels which are open to the atmosphere. As a distinguishing feature of the patent, the device is designed for improved stability of the characteristics of the element. The unit contains an added projection on the wall opposite the control channels preceding the corresponding channel which is open to the atmosphere, and also an additional chamber made in this channel which is open to the atmosphere and located immediately behind the projection.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--JET TYPE ELEMENTS OF THE VOLGA SYSTEM AND THEIR APPLICATION -U-

AUTHOR-(05)-KRIVOSHEYEV, G.YA., CHERNYSHEVA, M.A., TROSHKIN, A.K., SHMELEV, L.F., TIKEDZHE, B.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIBORY I SISTEMY UPRAVLENIYA, NO 5, 1970, PP 19-21

DATE PUBLISHED--------70

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

TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, FLUIDIC LOGIC DEVICE, FLUIDIC CONTROL DEVICE, FLUIDIC AMPLIFIER, PLASTIC/(U)VOLGA FLUIDIC CONTROL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605040/F06 STEP NO--UR/0445/70/000/005/0019/0021

CIRC ACCESSION NO--AP0142709

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 015

CIRC ACCESSION NO--AP0142709 UNCLASSIFIED PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEALS WITH THE DEVELOPMENT OF JET TYPE ELEMENTS AND THE INTRODUCTION OF PNEUMONIC CONTROL SYSTEMS IN INDUSTRY. THE PNEUMATIC AND HYDRAULIC AUTOMATION LABORATORY OF THE VOLGA BRANCH, ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF ABRASIVES AND GRINDING, HAS DEVELOPED AND IS ENGAGED IN THE SERIES PRODUCTION OF TWO TYPES OF JET TYPE ELEMENTS: A TRIGGER WITH SEPARATE INPUTS AND A OR-NOT-OR ELEMENT FOR TWO INPUTS WITH INHIBITION. THE TRIGGER IS A BISTABLE FLUIDIC AMPLIFIER WITH TWO INPUTS, TWO OUTPUTS, A SUPPLY CHANNEL AND A MIXING CHAMBER. THE TECHNICAL SPECIFICATIONS OF THE TRIGGER ARE GIVEN. THE OR-NOT-OR ELEMENT IS A MONOSTABLE FLUIDIC AMPLIFIER WITH THREE INPUTS, TWO OF THEM CONTROLLING AND ONE INHIBITING. THE OPERATING PRINCIPLE IS THE SAME AS FOR THE TRIGGER. THE TECHNICAL SPECIFICATIONS ARE GIVEN. THE FLUIDIC ELEMENTS DISCUSSED HERE HAVE BEEN PRODUCED FROM PLASTIC BY MEANS OF PRESSURE CASTING ACCORDING TO A SPECIFIED SEQUENCE OF TECHNOLOGICAL OPERATIONS. A FLUIDIC CONTROL SYSTEM IS BASED UPON A LOGICAL UNIT, CONSISTING OF LOGICAL ELEMENTS PLUGGED INTO A BASE ACCORDING TO THE TYPE OF UNIT DESIRED.

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USSR

UDC 669.245'71

KUCHERENKO, L. A., and TROSHKINA, V. A., Moscow

"Conversions in the NiAl Compound"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan 71, pp 170-173

Abstract: The true heat capacity and electrical resistance of the NiAl compound and its solid solutions were measured after various heat treatments. An alloy with equiatomic composition was studied, as were alloys rich in nickel (55 at.% Ni) and aluminum (55 at.% Al). Heat treatments included annealing (beginning at 1150°C, subsequently dropping to 400°C over 700 hours), and quenching in ice water from 1250, 1150, and 900° (after holding at these temperatures for 3, 5, and 48 hours, respectively). At about 550°C, the structure of the compound undergoes partial disordering. On the basis of the data produced and data from the literature, it is assumed that the conversion in NiAl results from vacancy-type defects, allowing intraphase breakdown, forming microareas of Ni_2Al_3.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--EFFECT OF THE DEGREE OF TWIST ON THE PHYSICOMECHANICAL PROPERTIES OF VISCOSE CORD -U-

PROCESSING DATE--11SEP70

AUTHOR--LYTKINA, M.B., TROSHKINA, YE.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 44-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RAYON, ELASTICITY, WEAR RESISTANCE, CORDAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1810

STEP NO--UR/0193/70/000/001/0044/0046

CIRC ACCESSION NO--AP0100384

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

272 026

UNCLASSIFIED

CIRC ACCESSION NO--AP0100384 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRENGTH, ELASTICITY, AND DURABILITY WERE DETD. OF RAYON CORDS MADE FROM FIBERS TWISTED 300-600 TURNS-M INTO STRANDS THAT WERE AGAIN TWISTED AN EQUAL OR A DIFFERENT NO. OF TURNS. THE OPTIMUM PROPERTIES WERE OBTAINED WITH 400-80 TURNS-M, REGARDLESS OF WHETHER THE SAME OR A DIFFERENT NO. OF TURNS WAS USED IN THE PRIMARY (FIBER) AND THE SECONDARY (STRAND) TWISTING.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 621.315.3

SHCHERBAKOV, G. P., TROSHKOVA, I. I., TOLMACHEVA, A. Ye., NEKRASOV, V. A., PAVLOVA, N. N.

"The Drop Method of Removing the Glass Insulation From Microwires and its Possibilities"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 153-158 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V421)

Translation: The authors evaluate the possibilities of using the drop method of removing glass insulation to produce a contact joint in making filament resistors and voltage dividers, and in adjusting resistors to their rated value. It is experimentally shown that organic insulation of the Teflon type can be applied to the wire. Some characteristics of the molten drop are given (rate of glass destruction, etc.), together with the strength parameters of the wire. Resumé.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

(18)

BALOSHIN, O. N., BLAGORODOV, A. N., BOLONKIN, B. V., VLADIMIRSKIY, V. V., GORIN, YU. P., GRIGOR'YEV, V. K., GRISHIN, A. P., YEROFEYEV, I. A., KOROL'KOV, I. YA., LUZIN, V. N., MILLER, V. V., NIKOLAYEVSKIY, YE. S., PETRUKHIN, V. N., PLIGIN, YU. S., PONOMAREV, L. A., SIROTKIN, S. M., SOKOLOVSKIY, V. V., TARASOV, YE. K., TIKHOMIROV, G. D., TROSTINA, K. A., TURCHANOVICH, L. K., and SHKURENKO, YU. P., Institute of Theoretical and Experimental Physics GKI AE (State Committee for the Use of Atomic Energy)

"The $K^-p \rightarrow \bar{K}^0n$ Charge Exchange Reaction at a Pulse of 39 Gev/sec"

Moscow, Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

Abstract: The authors present the measurement results from studying the charge exchange reaction of K^--mesons on protons ($K^-p \rightarrow \bar{K}^0n$) at a pulse of 39 Gev/sec. The study was carried out using the ITEF 6-m magnetic track spectrometer. The working volume of the magnetic field of the spectrometer was 1.0 x 1.5 x 6 m. Twelve optical spark chambers were located inside the magnet, with each chamber having eight spark gaps (10 mm each). The chamber electrodes consisted of two layers of aluminum foil 14 microns thick. The photographs were taken through a special slit in the magnet yoke. A mirror system made it possible to obtain three stereoprojections of all of the chambers

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544

with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^--mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7$ K^--mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05. The authors thank K. G. Boreskov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section onpulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 678.029.43

SHISHKIN, V. A., Candidate of Technical Sciences, TROSTYANSKAYA, YE. B., Doctor of Technical Sciences, GONCHARENKO, V. A., Engineer, Moscow Aviation Technological Institute, BROVAK, G. V., Candidate of Technical Sciences, and IL'IN, V. M., Engineer, Central Scientific Research Institute of Automobiles and Automobile Engines

"Chemical Welding of Hardened Plastics for the Mass Production of Large-Scale Products"

Kiev, Avtomaticheskaya Svarka, No 12 (249), Dec 73, PP 59-62

Abstract: The authors describe in this article the results of research on the chemical welding of hardened polymer materials such as grades AP-66-151 and AP-65-101 using high-frequency heating. These materials are used for the manufacture of parts for automobile bodies and interiors. This high-frequency heating not only allows intensifying the welding process but also creating a new one, that is, point welding. A seam produced by such welding has comparatively higher strength and is distinguished by good wear resistance in operation. The article contains 2 figures, 2 tables, and 5 bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 678.746.45.01:537.226

TROSTYANSKAYA, YE. B., BEL'NIK, A. R., CHERNIKOVA, O. D., and POYMANOV, A. M.,
Moscow Aviation Technology Institute

"Causes of Resite Property Changes in Aqueous and Alkaline Media"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 37-40

Abstract: The degree of effect of low-molecular polar impurities on the properties of resite was investigated by comparing the characteristics of the initial material with its characteristics after extended aqueous extraction at room temperature. Equilibrium sorption, coefficient of diffusion, dielectric loss, and modulus of elasticity of the resite were measured for different degrees of relative humidity. With increased relative humidity and in water the effect of resite plastification by the absorbed water is spanned by swelling stresses. The presence of low-molecular polar impurities in the resite leads to a sharp growth of swelling stresses and dielectric losses while the strain on the polymeric lattice and volume of absorbed water vapor are lowered. Resite breakdown in aqueous solutions of an alkali occurs under the action of swelling stresses which grow sharply as a result of increased hydrofilicity from replacement of hydrogen in the phenol chains by metal ions. 3 figures, 1 table, 11 bibliographic references.

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Polymers and Polymerization

USSR

UDC 678.06-419.8:678.046.27.01:53

TROSTYANSKAYA, YE. B., and KOBETS, L. P.

"Possibilities for Improving the Strength of Graphite Plastics"

Moscow, Plasticheskiye Massy, No 1, Jan 70, pp 53-56

Abstract: The authors studied the feasibility of improving the strength of graphite plastics by appropraite selection of the binder or manufacturing techniques. The investigation was based on optical, radiographic, analytical and other studies of graphitized grade TG-2 fiber. It was found that satisfactory wetting of graphitized fiber takes place only in an alcohol solution of phenol-formaldehyde resin. However, it was experimentally determined that alcohol and acetone should not be used as solvents when soaking graphitized fibers in resin solutions, and also that cresol-formaldehyde resins are preferable to phenol-formaldehyde resins for this purpose. The low strength of graphitized TG-2 fiber is apparently due to disorientation of crystallites, open porosity, and a considerable number of pores and cracks in the surface layer. The average size of these surface defects is less than the size of the oligomer molecules used in the resins as binders. The fiber surface has low energy and is

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROSTYANSKAYA, YE. B., et al., Plasticheskiye Massy, No 1, Jan 70, pp 53-56

poorly wetted by most liquids. It was found that the open pores of the fiber can be filled with a monomer such as a mixture of para- and meta-divinylbenzenes. This polymer wets the fiber and polymerizes with it to form an insoluble polymer. This treatment improves the strength and elasticity of the graphitized fiber. After polymerization, the treated fibers were impregnated with alcohol solutions of phenol-formaldehyde and organo-silicon resins. Graphite plastic specimens were then pressed from the fibers with appropriate heat treatment. The density, tensile strength and modulus of elasticity are tabulated for impregnated specimens with and without polymerization. The greatest improvement in all indices was obtained with 7,7% divinylbenzene and impregnation with phenolformaldehyde resin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

035

UNCLASSIFIED

TITLE--QUASI CROSSLINKED RIGID POLYAMIDES --U-

PROCESSING DATE--30OCT7(

AUTHOR-(03)-TROSTYANSKAYA, YE.B., KAZANSKIY, YU.N., MIKHASENOK, O.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIA 1970, 12(2), 311-16

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER CROSSLINKING, POLYAMIDE RESIN, QUARTZ, PHENOL FORMALDEHYDE RESIN, SURFACE AREA, ELASTIC MODULUS, THERMAL STABILITY, TENSILE STRENGTH, IMPACT STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0674

STEP NO--UR/0459/70/012/002/0311/0316

CIRC ACCESSION NO--AP0124346

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

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UNCLASSIFIED

CIRC ACCESSION NO--AP0124346 PROCESSING DATE--30OCT7(

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYAMIDE P 68 (I) (DONOR) WAS FILLED WITH FINELY DIVIDED QUARTZ (II) (SURFACE AREA 0.177-0.887 M PRIME2-G) OR A HARDENED PHENOL HCHO RESIN (III) (ACCEPTOR) (SURFACE AREA 0.267-2.342 M PRIME2-G) IN PROPORTIONS YIELDING THE SAME TOTAL SURFACE AREA. THE VISCOSITY OF I MELTS STEADILY INCREASED WHEN FILLED WITH EITHER FILLER UNTIL THE TOTAL SURFACE AREA OF THE FILLER WAS 20 M PRIME2-100 G MIXT.; A HIGHER CONTENT OF III BROUGHT ABOUT A MORE RAPID INCREASE IN VISCOSITY AND FORMATION OF A RIGID STRUCTURE (QUASICROSSLINKED STRUCTURE DUE TO A DONOR ACCEPTOR INTERACTION). SMALL AMTS. OF III CAUSED A SIGNIFICANT INCREASE IN THE MODULUS OF ELASTICITY AND THERMAL STABILITY. THE QUASICROSSLINKING EFFECT BECAME LESS NOTICEABLE WHEN THE III SURFACE AREA WAS 4 M PRIME2-100 G MIXT. THE TENSILE STRENGTH OF II FILLED I GRADUALLY DECLINED WITH INCREASED II CONTENT. THE STRENGTH OF I SAMPLES INCREASED UNTIL THE III CONTENT WAS 2.5PERCENT FURTHER FILLING BROUGHT ABOUT A SHARP DECLINE IN IMPACT STRENGTH.

FACILITY: MOSK. AVIATS. TEKHNOL. INST., MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--CHANGE IN THE STRUCTURE AND PROPERTIES OF HARDENED RESINS UNDER THE INFLUENCE OF A FILLER. 2. INFLUENCE OF A FILLER ON THE INTERACTION

PROCESSING DATE--02OCT70

AUTHOR-(04)-POIMANOV, A.M., TROSTYANSKAYA, YE.B., NOSOV, YE.F., BELNIK, A.R.

COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM. 1970, 6(1), 54-8

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FILLER, EPOXY RESIN, MECHANICAL STRENGTH, PRESSURE EFFECT, ENTROPY, THERMAL EXPANSION, ELASTIC MODULUS, COMPRESSIVE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1899

STEP NO--UR/0374/70/006/001/0054/0058

CIRC ACCESSION NO--AP0112879

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

272 031

UNCLASSIFIED

CIRC ACCESSION NO--AP0112879 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INCREASE IN THE MECH. STRENGTH OF EPOXY RESINS (I) CAUSED BY THE ADDN. OF FILLERS (QUARTZ OR GLASS POWDERS) WAS CORRELATED WITH THE INCREASE OF THE INTERNAL PRESSURE (P SUBINT) OF THE SYSTEM. P SUBINT EQUAL (DELTA U-DELTA V) SUBT AND CONFORMS TO THE THERMODYNAMIC RELATION: P EQUALS T (DELTA S-DELTA V) SUBT-P SUBINT (WHERE P, T, V, S, AND U ARE, RESP., EXTERNAL PRESSURE, TEMP., VOL. ENTROPY, AND INTERNAL ENERGY). ALSO P SUBINT EQUALS T ALPHA K-P (ALPHA IS THE THERMAL EXPANSION COEFF. AND K IS THE VOL. ELASTICITY MODULUS, BOTH BEING DETERMINABLE EXPTL.) AND THUS IT CAN BE DETD. BY EXPT. IT WAS SHOWN THAT THE COMPRESSION STRENGTH OF FILLED I INCREASES LINEARLY WITH THE INCREASE IN P SUBINT AND THE AMT. OF THE FILLER.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

Acc. Nr. AP0045163 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code UR0191

91079h Increasing the strength of carbon fiber composites. Trostyanskaya, E. B.; Kobets, L. P. (USSR). *Plast. Massy* 1970, (1), 53-6 (Russ). TG-2 carbon fibers (I) were studied by x-ray anal. and optical methods in order to improve the strength of C fiber composites (II). Potentiometric titrns., x-ray anal., and optical methods indicated that the low strength of I was due not only to deorientation of crystallites and closed porosity, but also to considerable cracking at the surface. Thus, I were treated with a mixt. of *m*- and *p*-divinylbenzene (III) (contg. 2% peroxide) so that a thin layer of poly(divinylbenzene) be formed on I. The tensile strength and elastic modulus markedly increased after the polymn. of III. The modified I were impregnated with BSL phenol-HCHO resin and K-9 organosilicon resin, the solvent was evapd., and II were molded 0.5-3.5 hr at 155-200°. CKJR

REEL/FRAME 19780063

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 620.171.2

MANDEL', V. S., ALYANSKIY, R. I., TROTSENKO, V. Ya., Nikolayev

"Limiting Rotating Speed of Closed Radial Turbine Wheel"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 74-80.

Abstract: Methods of limiting equillibrium are used to design a closed radial wheel, the rupture of which can occur in various forms. Mechanisms of loss of load-bearing ability are studied and calculation formulas are produced for the cases of combined rupture of the main and cover discs, rupture of the cover disc both without bending and with bending with rupture of the axial coupling between it and the main disc, and also for rupture of the blades. Various conditions of blade attachment are considered, as well as the longitudinal forces arising in blades with curvature. The results of calculations and experiments are compared.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--ASSIMILATION PRODUCTS OF CO SUB2 AND SOME ORGANIC COMPOUNDS BY CHLOROPSEUDOMONAS -U- PROCESSING DATE--20NOV70

AUTHOR-(04)-TROTSENKO, YU.A., SIMISKER, YA.A., KONDRATYEVA, YE.N., DOMAN, N.G.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3, PP 415-422

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PSEUDOMONAS, PHOTOSYNTHESIS, CARBON ISOTOPE, CHEMICAL LABELLING, CARBON DIOXIDE, BICARBONATE, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0493

STEP NO--UR/0216/70/000/003/0415/0422

CIRC ACCESSION NO--AP0126243

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 012

CIRC ACCESSION NO--AP0126243 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING SHORT TIME (10-30 SEC.) FIXATION OF C PRIME14 BICARBONATE BY THE GREEN PHOTOSYNTHETIC BACTERIA, CHLOROPSEUDOMONAS UNDER AUTOTROPHIC CONDITIONS AND IN THE PRESENCE OF SULFIDE AS WELL AS FORMATE OR PROPANOL THE FIRST TO BE DETECTED ARE LABELLED SUCINATE, GLUTAMATE ASPARTATE AND THEN FUMARATE, AND SERINE GLYCINE. MOST OF C PRIME14 IS PRESENT IN GLUTAMATE. THE LABEL APPEARS IN PHOSPHATE ESTERS NOT EARLIER THAN UPON 5 MINUTES LONG EXPOSURE OF THE CELLS WITH C PRIME14 BICARBONATE. PROPANOL MAINLY PLAYS THE ROLE OF THE ELECTRON DONOR AND BECOMES OXIDIZED FORMING PROPIONIC ACID. INSIGNIFICANT C PRIME14 INCORPORATION FROM PROPANOL INTO THE CELLS EVIDENTLY OCCURS THROUGH THE FORMATION FROM PROPIONATE OF SUCCINATE AND THEN GLUTAMATE AS THE LABEL APPEARS THE FIRST PLACE IN THESE COMPOUNDS. UTILIZATION BY CHLOROPSEUDOMONAS OF C PRIME14 FORMIATE SHOWS THAT AFTER 10-30 SECONDS THE FIRST TO BECOME LABELLED ARE SERINE GLYCIN AND GLUTAMATE AND THEN ASPARTATE AND OTHER PRODUCTS. C PRIME14 FIXATION BY THE CELLS FROM FORMATE AND C PRIME14 O SUB2 IN PRESENCE FORMATE IS CONSIDERABLE SUPPRESSED BY HYPOFOSFATE (5 TIMES 10 PRIME NEGATIVE3 M), INHIBITOR OF FORMATE DEHYDORGENASE. SULFIDE ADDITION DOES NOT REDUCE THE INHIBITING ACTION OF HYPOFOSFTE ON THE FIXATION BY THE BACTERIA OF C PRIME14 FROM FORMIATE. THESE DATA SUGGEST THAT INCORPORATION IN THE CELLS OF FORMATE CARBON BASICALLY TAKES PLACE AFTER IT BECOMES OXIDIZED TO CARBON DIOXIDE. FACILITY: M. V. LOMONOSOV STATE UNIVERSITY, MOSCOW AND A. N. BAUCH INSTITUTE OF BIOCHEMISTRY, ACADEMY OF SCIENCES, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 576.895.771:616.988.25-035.2(571.63)

FEDDER, M. L., REZNIK, YE. P., DANILEVSKIY, M. L., MANTUKHOV, A. G., and THOMSKAYA, D. E., Institute of Medicinal Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, USSR Ministry of Public Health, Moscow; Institute of Epidemiology and Microbiology, Vladivostok

"Data of the Epidemiological Evaluation of Natural Populations of Aedes togoi Theobald in the Soviet Primorye"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 301-307

Abstract: A. togoi mosquitos are carriers of Japanese encephalitis in a number of Southeast-Asian countries and also in the Primorskiy Kray of the Far Eastern USSR. Data on the duration of the gonotropic cycle of A. togoi in the Khasan region were collected in July-August 1969 at a number of points of the region; the cycle was found to last seven to eight days. Females, which grew for two or more gonotrophic cycles, were most dangerous, respect to Japanese encephalitis and wuchereriosis, that is 14-16 day-old females for encephalitis and 21-24 day-old females for wuchereriosis. The age composition of natural populations was determined from autopsy of 2,123 females. A total of 11.5% of attacking encephalitis-carrying mosquitos were females, while

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USSR

FEDDER, M. L., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 3, May/Jun 71, pp 301-307

only 2.9% of the wuchereriosis-carrying attacking mosquitos were female. At peak activity, there were 9.8 females per hour attacking one person among the encephalitis-carrying mosquitoes, while only 3.3 females per hour attacked one person among the wuchereriosis-carrying mosquitoes.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE—FOCUSING OF CHARGED PARTICLES IN BISPIRAL SYSTEMS -U-

PROCESSING DATE—30OCT70

AUTHOR—TROTSYUK, N.I.

COUNTRY OF INFO—USSR

SOURCE—RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, MAY 1970, P. 1038-1043

DATE PUBLISHED———70

SUBJECT AREAS—PHYSICS

TOPIC TAGS—CHARGED PARTICLE, RELATIVISTIC PARTICLE, PARTICLE TRAJECTORY, ELECTRON OPTICS, IMAGE PROJECTION, DIFFERENTIAL EQUATION

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—2000/1115

STEP NO—UR/0109/70/015/000/1038/1043

CIRC ACCESSION NO—AP0124770

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

CIRC ACCESSION NO--AP0124770 UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF DIFFERENTIAL EQUATIONS FOR THE RELATIVISTIC TRAJECTORIES OF CHARGED PARTICLES IN BISPIRAL SYSTEMS CONSISTING OF TWO ELECTRODES OR TWO MAGNETIC POLES CURVED ALONG SPIRAL LINES. IT IS SHOWN THAT WITH THE AID OF COMBINED BISPIRAL SYSTEMS (EACH OF WHICH CONSISTS OF ELECTROSTATIC AND MAGNETIC SYSTEMS) IT IS POSSIBLE TO OBTAIN AN UNDISTORTED IMAGE OF A PLANE OBJECT WHICH IS PERPENDICULAR TO THE SYSTEM'S AXIS. THE IMAGE HAS DIMENSIONS IDENTICAL TO THOSE OF THE OBJECT. IT IS DEMONSTRATED THAT SUCH BISPIRAL SYSTEMS CAN BE USED FOR SORTING CHARGED PARTICLES ACCORDING TO ENERGIES AND SPECIFIC CHARGE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 539.1.078

TROTSYUK, N. I.

"Focusing Charged Particles in Bi-Spiral Systems"

Moscow, Radiotakhnika i Elektronika, No. 5, 1970, pp 1038-1042

Abstract: The author asserts that the problem of focusing charged particles in electrostatic bi-spiral systems like those in some traveling wave tubes, with electrodes other than spiral-film sections of circular cylinders, and especially in magnetic bi-spiral systems, has not as yet been investigated. This paper examines first-order focusing of a beam of charged particles in systems consisting of electrostatic and magnetic bi-spiral systems. A combined bi-spiral system of the achromatic type is considered under the assumption that the system is sufficiently long and that the potential distribution in that region of the field in which the trajectories are considered is uninfluenced by the edge effects. By using the differential equations of charged particle trajectories in any combined field, the differential equations for the relativistic trajectories of the particles in bi-spiral systems

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROTSYUK, N. I., Radiotekhnika i Elektronika, No. 5, 1970, pp 1038-1042

are obtained. As a result of the solution of these equations, the author finds that a point image can be obtained by the bi-spiral system from a point object, and that an undistorted plane image corresponds to an object in the plane perpendicular to the system axis. It also follows from the solution of the equations that bi-spiral combined systems can be used as energy filters for sorting particles according to energy. The author expresses his gratitude to A. M. Strashkevich for his comments.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 528.53+528.08

TROVITSKIY, Yu. I., Engineer

"On the Relation of Coordinate Measurement Precision to the Requirements for Elements of an Inertial Contour Finder"

Moscow, Izvestiya VUZov: Geodeziya i Aerofotos"yemka, No 2, 1972, pp 139-145

Abstract: The article deals with problems associated with the development of an inertial contour finder. A first-approximation quantitative relation is established between external perturbations acting on the gyro-platform and the final error in determination of coordinates.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 620.178.311.8

TROYAN, I. A., SHEVCHUK, A. D., and TSIMBALISTYY, YA. I., Institute of Strength Problems, Academy of Sciences Ukrainian SSR

"Formation of Temperature Stresses During High-Frequency Fatigue Tests"

Kiev, Problemy Prochnosti, No 3, Feb 73, pp 65-69

Abstract: An attempt was made in this work to evalute the temperature field and stress in the high-frequency fatigue testing of five different materials: steel E10, steel 45, alloy D16T, copper, and alloy 1Kh18N10T. The following premises were made: 1) the samples were in the form of round infinite rods. The level of variable load was independent of the axial coordinate. Displacements in the axial direction were not constrained. 2) The coefficients of energy dissipation and thermoconductivity did not vary with change of thermal and stress states or the material. 3) The steady-state mode was examined. An analysis of the temperature stresses forming in the samples due to hysterisis losses in cyclic loading is given. Testing of the five materials

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYAN, I. A., et al., Problemy Prochnosti, No 3, Feb 73, pp 65-69

at a frequency of 20 khz showed that in the case of a large coefficient of energy dissipation and low thermoconductivity, the thermal stresses can reach a significicant magnitude, which, is ignored, leads to errors in the determination of stresses. At the same time these stresses do not exceed the fatigue strength by more than 3.5% on the basis of 10^9 cycles and have little effect on the fatigue processes. 7 figures, 2 tables, 7 bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 539.4.431.3

SAMGIN, V. A., TROYAN, I. A., SEMIROG-ORLIK, V. N., Kiev

"Influence of Processing Technology on Endurance of OT4-1 Sheet Titanium Alloy"

Problemy Prochnosti, No 11, 1971, pp 48-53.

ABSTRACT: Results are presented from studies of the fatigue strength of ten production runs of specimens of OT4-1 sheet titanium alloy in pure, symmetrical bending. It is established that hydraulic sand blasting creates a hardened surface layer, increasing the total fatigue strength, while etching breaks up the surface and thereby decreases the fatigue characteristics. The remaining eight types of processing (various modes of annealing in a vacuum, in argon and in air) have approximately identical influence on fatigue strength of the alloy studied.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYAN, I. A., IVANOV, A. A., Kiev

UDC: 55

"Study of the Endurance and Vibration Creep of EI826 Alloy With H
Frequency Loading"

Kiev, Problemy Prochnosti, No 11, 1970, pp 27-30

Abstract: Studies of the endurance and vibration-creep of EI826
were performed using a combination of static extension at up to
with a variable component consisting of resonant longitudinal
It was determined that this asymmetrical, cyclical loading cause
accumulation of residual deformation (dynamic creep) superficial
to ordinary (static) creep. Dynamic creep is primarily develope
variable component of the combined loading. The effectiveness
variable component increases with increasing mean stress. The
creep noted in specimens of EI826 was not great. Dynamic creep
reflect the process of accumulation of damage to the material du
asymmetrical cyclical loading and therefore can be used as an
means of studying the endurance of materials.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 621.396.6:621.315.5(088.8)

IOFIS, N. A., TROYAN, M. V.

"An Iron-Based Alloy"

USSR Author's Certificate No 254787, Filed 4 Jul 68, Published 9 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V404 P)

Translation: This Author's Certificate introduces an iron-based alloy which contains nickel. As a distinguishing feature of the patent, the mechanical and physical properties of the alloy are improved by adding rhenium and using the following percent composition: nickel--38-39, rhenium--9.5-10, the remainder iron. Resumé.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 619:616.931.452:636.4

KUSHNIR, A. T., BURTSEV, V. I., BONDARENKO, I. M., ZHOGOLEVA, S. P., SERGEYEV, V. A., FISENKO, O. F., ORLOV, V. A., and TROYAN, N. D., All-Union Scientific Research Institute of Veterinary Virology and Microbiology

"Aerosol Vaccination of Swine Against Swine Fever"

Moscow, Veterinariya, No 10, Oct 70, pp 50-52

Abstract: Cultural vaccine prepared from the 31st passage of the lapinized K strain of swine fever virus in a culture of lamb testicular cells and concentrated 10-fold was highly immunogenic in gilts and piglets vaccinated by the aerosol method. Exposure of the animals for 5 minutes to vaccine diluted 1:1000 with physiological solution conferred stable immunity on 50% of the gilts and 100% of the piglets. Even in a dilution of 1:10,000, the vaccine produced immunity in a number of the animals. The immunizing dose (ImD_{50}) of the vaccine applied via aerosol was equivalent to 7.25 intramuscular ImD_{50} for gilts and 5.25 ImD_{50} for piglets. Clinical-hemoatological and biochemical studies of the vaccination process showed that the time at which the immunological reaction occurred and its intensity were the

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

KUSHNIR, A. T., et al, Veterinariya, No 10, Oct 70, pp 50-52

same, regardless of the method of vaccination. The degree of decrease in immunogenic activity of the vaccine in the process of atomization was less than 54.2% for one of the vaccines tested.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC: 532.61

GRIGOR'YEV, YU.M., KHAYKIN, B.I., TROYAN, N.M., MERZHANOV, A.G., Affiliate of the Institute of Chemical Physics, Chernogolovka, Academy of Sciences USSR

"The Theory of Equilibrium of Drop Vaporization"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 647-652

Abstract: General transfer equations in a two-component system are used as the basis in deriving a system of equations which describes the equilibrium of vaporization of a drop when the process takes place at high intensity. The characteristics of vaporization are calculated with regard to Stefan flux, the temperature dependence of the transfer coefficients, the overall pressure differential of the medium due to vaporization, and the difference between the molecular weight of the components of the medium. Expressions are derived for the rate of vaporization, the drop surface temperature, and dimensionless transfer numbers. Generalizing criteria are found which characterize the part played by Stefan flux. Corrections for the rate of vaporization are found which account for the temperature dependence of the transfer coefficients. The pressure differential in the gas is calculated. Vaporization of the drop in an atmosphere of the same vapor is considered. Calculations for water and ethyl alcohol by the proposed formulas show satisfactory agreement with the experimental data of various authors.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 669.187.2

MALINOVSKIY, YE. I., IOFFE, I. M., CHERNENKO, V. V., and TROYAN, S. G.,
Ukrainian Scientific Research Institute of Special Steels

"Quality of a Structural Steel Produced Using Silicon-Containing Tailings"

Moscow, Stal', No 9, Sep 73, pp 808-809

Abstract: The authors melted a structural steel type 25KhSNVFA having a sulfur and phosphorus content less than or equal to 0.010 and 0.015%, respectively, in a 60-ton electrofurnace using silicon-containing tailings and partial oxidation of the bath with oxygen. It was found that in the remelting of the alloyed tailings (containing Si, W, etc.) the removal of P and nonmetallic inclusions is hindered without boiling but this shortcoming can be compensated by an argon blow in the ladle (8-10 minutes per consumption of 0.25-0.5 m3/t of steel and a metal temperature of 1590-1610° C prior to the blow). With the use of 50-70% alloyed tailings in the charge, steel type 25KhSNFA, containing less than 0.015% P was produced by this technology. Without the refining argon-gas blow of the required level the purity of the steel, as to nonmetallic inclusions, cannot be achieved. V. I. MORDVINTSEV, I. S. PASYNKOV, V. P. POTAPOVA, and M. I. GRINER Participated in this work. Two tables, six bibliographic references.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--X RAY INVESTIGATION OF MOLYBDENUM AND NICKEL IRRADIATED WITH HELIUM ION -U-

PROCESSING DATE--17JUL70

AUTHOR--BIKOV, V.M., ZOLOTUSEVA, G.G., TROYAN, V.A., KHAYMOVICH, V.S.

COUNTRY OF INFO--USSR

SOURCE--UKRAINSK'KIL FIZICHNII ZHURNAL, VOL 15, JAN. 1970, P 135-138

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, MOLYBDENUM, NICKEL, ION BOMBARDMENT, CRYSTAL LATTICE DEFORMATION, ALLOY ANNEALING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1978/2005

STEP NO--UR/0185/70/015/000/0135/0138

CIRC ACCESSION NO--AP0046685

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

AP0046689 Abstracting Service: 5/70 Ref. Code:
INTERNAT. AEROSPACE ABST. UR0185

A70-23197 # X-ray investigation of molybdenum and nickel irradiated with helium ions (Rentgenografichne doslidzhennia molibdenu ta nikeliu, oprominenikh ionami geliiu). V. M. Bikov, G. G. Zdorovtseva, V. A. Troian, and V. S. Khaimovich (Moskovskii Inzhenerno-Fizicheskii Institut, Obninsk, USSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 135-138. 5 refs. In Ukrainian.

Investigation of the changes in polycrystalline Mo and Ni specimens caused by He ion bombardment with an energy of 60 keV (irradiation dose of 10 to the 15th to 10 to the 20th particles). The D-pattern of the irradiated specimens proved to be essentially different from that for reference specimens, some lines being split. These changes depend upon the integral irradiation dose. It appears to result from the tetragonal distortion of the lattice form. The changes decrease in annealing and disappear completely at a temperature of about 400 C.

(Author)

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.925

REEL/FRAME
19782005

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--CHANGE IN AMINO ACID COMPOSITION DURING THE RIPENING AND STORAGE OF TOMATOES -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-PETROPAVLOVSKIY, YE.I., TROYAN, Z.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 21-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, FOOD STORAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1091

STEP NO--UR/0322/70/000/001/0021/0025

CIRC ACCESSION NO--AT0119950

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

CIRC ACCESSION NO--AT0119950 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMINO ACID COMPN. AND AMT. OF FREE AMINO ACIDS DEPENDED ON THE SORT, PLACE OF GROWTH, AND DEGREE OF RIPENING. RIPE RED TOMATOES CONTAINED MORE AMINO ACIDS THAN GREEN ONES. BY STORAGE OF RIPE TOMATOES IN INDUSTRIAL CONDITION FOR 3 DAYS, THE CONTENT OF GAMMA AMINOBUTYRIC ACID, ALANINE, AND GLUTATHIONE DECREASED WITH A SIMULTANEOUS INCREASE IN GLUTAMIC ACID, TISTIDINE, LYSINE, AND TYROSINE.

FACILITY: KRASNODAR. POLITEKH. INST., KRASNODAR, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

STEPANOV, G. N., TROYANOV, K. L.

UDC 624.07:534.1

"On the Problem of Determining the Shapes of Oscillations of Rod Systems"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 102-104 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V273)

Translation: The familiar assumption in the literature of the presence of a phase difference under forced oscillations of continual systems due to the effect of internal resistance of the material is verified experimentally. The experiments were made on reinforced concrete and polymer rods for high-frequency perturbations (35 and 83 Hz). A. G. Barchenkov.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 621.039.5/6

LEYPUNSKIY, A. I., YUROVA, L. N., BOBROV, S. B., MUROGOV, V. M., TOCHENYY, L. V., TROYANOV, M. F., and SHMELEV, A. N.

"Improving the Physical Characteristics of Fast Plutonium Reactors by Using U^{233} and Thorium"

Moscow, Atomnaya Energiya, Vol 30, No 6, Jun 71, pp 491-498

Abstract: Investigations carried out on the physics of fast reactors, both in the USSR and abroad, have shown the requirements for a high breeding time and safety guarantee may be contradictory. This article seeks to find ways for resolving these contradictions.

The authors first discuss the basic physical characteristics of fast reactors using a mixed fuel by equalizing the field of heat release. Computations showed that in a fast reactor using a mixed fuel composed of U^{233} and plutonium the radial coefficient of inbalance can be reduced, the breeding ratio increases significantly, and the doubling time is improved. Table 1 compares the characteristic of different types of high-power fast reactors.

The authors then discuss changing the profile of the heat release

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

LEYPUNSKIY, A. I., et al., Atomnaya Energiya, Vol 30, No 6, Jun 71, pp 491-498

field during the operating period of a high-power fast reactor using a mixed fuel and give Figure 1 as illustration. They then discuss change in the reactance during the same period for such a reactor, using Figures 2, 3, and 4 for graphic visualization. Finally, they discuss the Doppler and sodium coefficients of reactance in such a reactor and use Figure 5 and Table 2 to clarify the discussions. Based on their research the authors claim that the possibility does exist for increasing the power strength and breeding time of the fuel with the simultaneous assurance of safety for a fast reactor using a sodium heat carrier; this is possible by using U^{233} and thorium in conjunction with U^{238} and plutonium in high-power fast reactors.

The article contains 5 figures, 2 tables, and a bibliography of 15 titles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

ZARITSKIY, S. M., and TROYANOV, M. F. UDC 621.039

"On the Accuracy Requirements of Constants for Designing Reactors"

V sb. Fiz. yadern. reaktorov (Physics of Nuclear Reactors -- Collection of Works), No 2, Moscow, Atomizdat, 1970, pp 168-182 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V558)

Translation: Different methods are described for determining permissible errors in the magnitudes of nuclear physics constants to ensure a given degree of accuracy in determining the basic integral characteristics of a reactor. A method for evaluating the upper and lower limits of permissible values of errors is proposed that is more reasonable in the view of the authors. Both independent and correlating sources of errors are taken into account in the lower bound. The upper bound is determined under the assumption of the independence and random character of sources of error. The proposed method was used to evaluate the limits of permissible errors of the quantities σ_c, σ_f, and σ_f for Pu^{239} and U^{238} to ensure an accuracy in the calculation of the effective coefficient (k_{eff}) of $\pm$ 1%; and the conversion coefficient of $\pm$ 2%. The required accuracy of the magnitudes of

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USSR

ZARITSKIY, S. M., and TROYANOV, M. V., Fiz. yadern. reaktorov (Physics of Nuclear Reactors — Collection of Works), No 2, Moscow, Atomizdat, 1970, pp 168-182 (from RZh-Fizika, No 4, Apr 71, Abstract No 4V558)

the constants was too high and difficult to achieve with ordinary measurements of microconstants. Various methods are considered for easing these requirements: lowering the accuracy of the calculation of k_{eff} and the conversion coefficient, reducing the permissible errors in other nuclear constants, etc. B. A. Levin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

EHTER -U- ...ITY OF LITHIUM BOROHYDRIDE AND ALUMINOHYDRIDE IN DIETHYL

PROCESSING DATE--11SEP70

AUTHOR--MIKHEYEVA, V.I., TROYANOVSKAYA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2), 509-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLUBILITY, ETHER, BOROHYDRIDE, LITHIUM COMPOUND, ALUMINUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1256

STEP NO--UR/0078/70/015/002/0509/0511

CIRC ACCESSION NO--AP0055927

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

CIRC ACCESSION NO--AP0055927 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 0 AND 25DEGREES THE SOLY. OF LIBH SUB4 IN ET SUB2 O IS 1.32 AND 4.5 WTPERCENT AND THAT OF LIALH SUB4 IS 21.3 AND 28.3 WT. PERCENT, RESP.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 355.3/613.644

TROYANSKIY, M. P., SIDORTSOV, I. P., and PETROVA-GOLUBENKO, L. B.

"Effect of Noise on Blood Cholinesterase Activity"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 47-49

Translation: The effect of industrial noise on workers' health has been investigated in quite a few scientific studies which mention the changes that take place in the body as a result.

Our purpose was to study indexes that would not only testify to the presence of noise but also serve as a criterion of its adverse effect. One such index, at least in part, is whole blood cholinesterase activity and the state of the autonomic nervous system in persons working in diesel and blower stations. Their work is light to moderate and does not involve much nervous or mental strain. The noise levels ranged from 94 to 97 db, with medium and high frequencies and an energy peak at 400 to 1,250 hz. None used ear plugs. A work shift was 12 hours long and there was an interval of 24 hours between shifts. During the examination period a temporary change in the schedules of some groups resulted in shortening the interval between shifts to 12 hours. The workers, especially those on the job after a 12-hour break, complained of ready fatigability, headaches, general weakness, irritability, and so forth.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANSKIY, M. P., et al., Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 47-49

Cholinesterase activity was determined by Hestrin's method before work and every 3 hours during work, at the end, and 12 and 24 hours afterward. The results were expressed in units of extinction. Baseline neurological examination given at the same time included: interrogation, neurological status, Aschner's phenomenon, dynamic observation of the pulse, arterial pressure, and dermographic reaction. The examination were given right at the work places.

A total of 55 persons were examined: 16 worked 12-hour shifts (after a 24-hour break(group 1) and 24 worked 12-hour shifts after a 12-hour break (group 2)). The other 15 worked under the same conditions but were not exposed to noise (control).

The neurological examination revealed a significant lengthening of the latent period of the dermographic reaction ($p=0.01$) and a rather pronounced slowing of the pulse in Aschner's test ($p=0.05$) at the end of the workday.

Analysis of the dynamics of blood cholinesterase activity showed that it decreased significantly in those who came to work after a 24-hour break in the course of the shift, the maximum decrease occurring toward the end. Although the decrease was gradual, it was manifested after only 3 hours of

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANSKIY, M. P., et al., Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 47-49

work (p=0.05). Cholinesterase activity returned to the original level 24 hours after the work was over, but in some cases it was higher.

Cholinesterase activity was found to be lower in group 2 (worked 12-hour shifts after a 12-hour break) than in the first and control groups. After 3 hours' work it decreased more sharply than in group 1, although by the end of the shift the rate of decrease slowed and cholinesterase activity was almost indistinguishable from that in group 1.

Systematic incomplete restoration of cholinesterase activity can evanutally lead to decompensation. A significant decrease therein during restiration puts great stress on the compensatory mechanisms and it may cause them to break down. Therefore, we are justified in stating that a 12-hour interval between shifts is insufficient.

Thus, the extent of decrease and time of restoration of cholinesterase activity can be used to judge the degree of harm done by noise and the completeness of restoration of physical fitness. These indexes can serve as the basis for establishing sound standards of work and rest time. Complete restoration of cholinesterase activity to the original level before the start of the next shift is the criterion for judging the soundness of the standards. The mere fact that cholinesterase activity decreases is not an invariable sign of pathology. It can be regarded as an index of adaptation of the body to new conditions, especially in cases where its activity is completely

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANSKIY, M. P., et al., Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 47-49

restored. A decrease in cholinesterase activity and change in neurological status (lengthening of the latent period of the dermographic reaction, pronounced slowing of the pulse in Aschner's test) are indicative of a parasympathetic trend in the changes that take place in persons working under noisy conditions.

Conclusions

1. Workers exposed to noise when examined directly at the work places showed a statistically significance decrease in blood cholinesterase activity, increase in the latent period of the dermographic reaction, and rather pronounced slowing of the pulse in Aschner's test, the lowest value being recorded at the end of a shift.
2. Cholinesterase activity was restored when the workers were no longer exposed to noise. After a 12-hour shift complete restoration took 24 hours.
3. The extent of decrease and time of restoration of cholinesterase activity can serve as a criterion for judging the degree of injury done by noise and the nature of the body's response.

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UDC 613.647;621.37/.59.029.64(047)

USSR

TROYANSKIY M. P., Candidate of Medical Sciences, Moscow

"Hygienic Problems of the Effect of Superhigh Frequency Electromagnetic Fields on the Organism"

Moscow, Gigiyena i Sanitariya, No 8, 1972, pp 87-92

Abstract: A very general discussion of the hygienic problems connected with microwave radiation effects on people involved professionally as well as the population as a whole is presented. Data obtained when examining various volunteers have been especially valuable in establishing microwave exposure norms. Various signs of limited adaptation to microwave effects are noted. The complex interrelations of the processes of adaptation and cumulation are discussed briefly. One of the most important links in the development of any pathological process in the organism in the presence of microwave radiation is disturbance of the function of the central nervous system, in particular, the functions of the diencephalon. The importance of prophylactic measures with respect to microwave effects is stressed. In the Soviet Union the limiting admissible intensities for the 300-30,000 megahertz range are as follows: for irradiation during the entire working day, 10 microwatts/cm^2; for irradiation no more than 2 hours in a working day, 100 microwatts/cm^2;

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANSKIY, M. P., Gigiyena i Sanitariya, No 8, 1972, pp 87-92

for 15-20 minutes irradiation during the working day, 1,000 microwatts/cm^2 and for the general population not professionally involved the radiation intensity should not exceed 1 microwatt/cm^2,

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 581.4

SEBRANT, Yu. V., and TROYANSKIY, M. P.

Lazery i Zhivaya Tkan' (Lasers and Living Tissue), Moscow, "Znaniye," 1972, 31 pp

Translation:

Table of Contents

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A little about photochemical reactions	3
The laser and its radiation	5
Effect of radiation on living cells and tissues	7
Effect of laser radiation on the eyes	13
Lasers in medicine	21
Protection against laser radiation	26
Recommended reading	31

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR UDC 546.3.019.941

TROYANSKIY, YE. A., Candidate of Technical Sciences

"Book by P. A. Antikayna entitled 'Boiler Element Metals and Design Strength'"

Moscow, Tepleonergetika, No 9, Sep 70, p 90

Abstract: A book by P. A. Antikayna entitled "Metally i Raschet na Prochnost' Elementov Kotlov" (Boiler Element Metals and Design Strength) contains six chapters which discuss the following topics.

Chapter 1 gives a brief account of the structure and properties of metals and alloys, and the changes in metal properties resulting from plastic deformation and recrystallization.

Chapter 2 discusses boiler steels.

Chapter 3 examines the behavior of steels at high temperatures: the effect of high temperatures on mechanical properties tested under tension; creep and long-time strength of steel; methods of analyzing experimental data; effect of structure on heat resistance and long-time ductility and relaxation of stresses and fatigue. 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANZKIY, YE. A., et al., Teploenergetika, No 9, Sep 70, p 90

Chapter 4 presents a description of characteristic metallurgical defects in pipes.

Chapter 5 deals with changes in the structure and properties of steel in the manufacturing and assembly processes. The formation of the weld joint structure in electric arc, gas, and contact welding is examined.

Chapter 6 describes changes in the structure and properties of the most widely used pearlitic and austenitic steels under operational conditions.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

Mechanical Properties

USSR

UDC: 669.15-194:669.2674782:621.785.7

TROYANSKIY, YE.A., Moscow Power Engineering Institute

"Mechanical Nature of Temper Brittleness"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 127-128

Abstract: Results are presented of the mechanical properties of 30KhGSA steel in the ductile and brittle states, oil-quenched from 900°C after a 30-minute holding time and tempered at 640°C with a 2-hour holding time, then water-cooled (ductile steel) and at a rate of 20 degrees per hour (brittle steel). Specimens 33 mm long and 5 mm in diameter were tested on an IM-12A machine equipped with a cooling arrangement. Results of tensile tests of the specimens are presented in the form of temperature dependences of the yield point, elongation per unit length at rupture, and flow area deformation. THe intense drop of plasticity for steel processed to the brittle state starts at a temperature of 150°K. The maximal flow area deformation occurs at this temperature. Complete brittle fracture, when the elongation per unit length equalled zero and the breaking stress equalled the yield point, occurred at a temperature of 95°K in steel with a developed temper brittleness process. For the ductile type of steel, the maximum of flow area of deformation and, consequently, the onset of twinning corresponded to a temperature of 112°K; complete brittle fracture was not obtained, inasmuch as it

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

TROYANSKIY, YE.A., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 5, 1970, pp 127-128

must occur at a temperature below the minimum reached in cooling of the specimens with liquid nitrogen. Formation of brittle cracks are associated with dislocation pile-ups around barriers. Under identical stresses, the amount of dislocations in the pile-up will be greater as the distance between the source and the barrier increases. The basic barriers for movement of dislocations in metals are grain boundaries and particles of another phase; therefore, in pure metals the distance from the source of dislocations to the barrier equals the grain diameter, and in metals with second-phase separations this distance only equals a fraction of the grain diameter. Thus, the nature of temper brittleness is mechanical and is associated with the distances from the sources of dislocations to the barriers.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

USSR

UDC 621.371.332.1

TROYEPOL'SKIY, V. A., KHMELEVTSOV, S. S., and TSVYK, R. SH.

"Using a Position-Sensitive Photodiode for Recording Approach Angles of Optical Radiation"

Tomsk, Izvestiya VUZ -- Fizika, No 9, 1973, pp 149-151

Abstract: Because the photographic and photoelectronic methods of recording the approach angles of light rays have a number of disadvantages, the authors of the present brief communication used a position-sensitive diode with an output signal amplitude which is, in general, proportional to the intensity of the incident beam and to the shift in the center of the light spot from some zero position. The photodiode was tested for its effectiveness in this application and its characteristic plotted by an LG-36 helium-neon laser operating at a wavelength of 0.63 μ and with its intensity varied by a mechanical modulator at a frequency of 4 k Hz. The photodiode output was recorded on a V6-2 selective microvoltmeter. Curves are given for the photodiode output voltage as a function of the shift of the light spot for various values of the incident beam, and for the slope of the characteristic as a function of the incident beam intensity. Also given is a block diagram of the equipment used by the authors to measure approach angles of optical radiation, and curves for the fluctuation dispersion of the measured angles as a function of the receiver aperture dimensions for various temperature gradients.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--PULSATING AURORAE IN CONJUGATE POINTS -U- PROCESSING DATE--16OCT70

AUTHOR-(05)-GOKHBERG, M.B., KAZAK, B.N., RASPOPOV, O.M., REDLUGIN, V.K., TROYTSKAYA, V.A.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 367-370

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--AURORA, PULSATION, GEOMAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0156 STEP NO--UR/0203/70/010/002/0367/0370

CIRC ACCESSION NO--AP0119152

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

IRC ACCESSION NO--AP0119152

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE FEATURES ACCOMPANYING (IN MAGNETICALLY CONJUGATE POINTS) THE ONSET OF PULSATING AURORAE CONSISTING OF INDIVIDUAL SPOTS ABOUT 10 KM IN EXTENT AND SEVERAL SECONDS IN DURATION. SIMULTANEOUS FIELD RECORDINGS AND PHOTOGRAPHIC OBSERVATIONS CONDUCTED IN 1968 IN SODRA AND KERGUELEN SHOW THAT INDIVIDUAL FLAKES OF PULSATING AURORAE ARISE WITHIN ONE SECOND OF EACH OTHER AT THESE POINTS. HOWEVER, EVEN IN THE CASE OF A SIMULTANEOUS ONSET THESE PULSATIONS ARE NOT MUTUALLY CORRELATED, AND IT IS CONCLUDED THAT THEIR SOURCES HAVE A LOCAL NATURE.

FACILITY: AKADEMIIA NAUK SSSR, INSTITUT FIZIKI SEMLI, MOSCOW.

FACILITY: AKADEMIIA NAUK SSSR, POLIARNYI GEOFIZICHESKII INSTITUT, MURMANSK.

FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--PYRAZOLES. LXIV. PROTONATION OF ANTIPYRINE ANALOGS -U-

PROCESSING DATE--18SEP70

AUTHOR-(05)-GRANDBERG, I.I., VINOKUROV, V.G., TROYSKAYA, V.S., IVANOVA, T.A., MOSKALENKO, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 202-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRAZOLE, IR SPECTRUM, UV SPECTRUM, IONIZATION, PROTON, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1110

STEP NO--UR/0409/70/000/002/0202/0208

CIRC ACCESSION NO--AP0104508

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0104508 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA IN CHCL SUB3 OR IN CRYST. STATE, UV SPECTRA IN H SUB2 O, MEOH, OR CONCD. HCL, AND EPR SPECTRA IN ME SUB2 SO OR IN 3:1 D SUB2 O-D SUB2 SO SUB4 WERE RECORDED OF ANTIPYRINE ANALOGS (I, II). IONIZATION CONSTS. (PK SUBA) IN WATER WERE MEASURED FOR (I, II, R PRIME1 EQUALS PH, R PRIME2 EQUALS ME) (R PRIME 3, R PRIME5, X AND PK SUBA GIVEN): H, -, O, 2.42; -, H, O, 2.40; ME, -, O, 2.85; ME, -, S, 2.49; ME, -, SE, 2.64; ME, -, NH, 10.4; -, ME, NH, 10.6; -, ME, S. 2.29; -, ME, SE. 2.42, -, ME, O, 2.49.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203320020-7

UNCLASSIFIED

TITLE--FUNCTION AND DEGREE OF CONFIRMATION STABILITY AND CHEMICAL STRUCTURE OF BLOOD PLASMA PROTEINS -U-

PROCESSING DATE--02OCT70

AUTHOR--TROYTSKIY, H.V.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRIPTIC HYDROLYZATES (FP) WERE INVESTIGATED AS WELL AS DISPERSION PARAMETERS OF OPTICAL ROTATION OF ALBUMIN BETA LIPOPROTEID AND GAMMA GLOBULIN OF BLOOD PLASMA OF MAN AND ANIMALS. A HIGH DEGREE IS SHOWN OF STANDARD BOTH DISPERSION PARAMETERS OF OPTICAL ROTATION AND FP OF ALBUMIN. IN SPITE OF GREAT STABILITY OF PLASMA PROTEIN STRUCTURE A DEFINITE VARIABILITY OF THEIR CHARACTERISTICS TAKES PLACE (IT CAN BE PROGRAMMED BY MEANS OF GENETIC FACTORS). THREE TYPES OF SUCH VARIABILITY WERE DISTINGUISHED: 1) VARIABILITY WITHIN THE LIMITS OF PHYSIOLOGICAL TEMPERATURES (ABOUT 40DEGREES C), WHICH, POSSIBLY, REFLECTS THE ADAPTATIONAL ABILITY OF PROTEIN AND IS PRONOUNCED BY THE CHANGE IN ALPHA SPIRAL QUANTITY; 2) CONFORMATION AND PEPTIDE MAPS OF ALBUMIN CHANGE UNDER THE EFFECT OF THYROID HORMONE WHICH IS, EVIDENTLY, CONNECTED WITH THE PROCESS OF REGROUPING OF S, S BONDS LYING IN THE BASE OF MICROHETEROGENEITY; 3) VARIATION OF DISPERSION PARAMETERS OF OPTIC ROTATION AND GAMMA GLOBULIN PEPTIDE MAPS IS CONDITIONED BY ITS MICROHETEROGENITY.

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TROYTSKIY V.S.

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INTERNAT. AEROSPACE ABST.

A70-23132 Certain problems of constructing radio interferometers with autonomous reception (Nekotorye voprosy postroeniia radiointerferometrov s avtonomnym priemom). V. A. Alekseev, E. D. Gateliuk, V. D. Krotikov, V. N. Nikonov, V. S. Troitskii and A. I. Chikin (Gor'kovskii Gosudarstvennyi Universitet, Gorki, USSR). *Radiofizika*, vol. 13, no. 1, 1970, p. 5-15. 24 refs. In Russian.

Discussion of the design principles of astronomical radio interferometers which feature autonomous reception—i.e., the absence of coupling between the reception points. The data are recorded at each reception point in conjunction with reference signals from frequency standards. The sensitivity of correlation devices which process data in digital form or in computer binary code is analyzed, and attention is given to possible improvements in high-resolution radio interferometers.

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