USSR

LEONT'YEV, N. I., TIMOSHENKO, A. P., and UDOVICHENKO, Yu. K. None

"Nonlinear Stabilization of Beam Disturbances"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 59, No. 9, 1970, pp 649-653

Abstract: The degree of stabilization of an electron beam and the electron distribution function in the dynamics of a high-frequency oscillation attenuation process are investigated. The experimental apparatus was described in an earlier article by the same authors (ZhTF, 40, 1970, p 942). A beam of electrons with an energy of 10 kev and a current of up to 4 a was introduced into a plasma chamber 40 cm long and 3.7 cm in diameter in a uniformly constant magnetic field intensity of 2500 oersteds. The diameter of the beam was 1 cm and the duration of the current pulse 7.5 μs. The plasma density, allowed to vary from zero to $10^{12}/cm^3$, was measured with two electric probes and by the charge-space wave

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USSR

LEONT'YEV, N. I., et al, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 59, No. 9, 1970, pp 649-653

method. Concluding that the attenuation of the oscillations in the electron beam and its consequent stabilization are explained by pair collisions and nonlinear effects, in the framework of the existing theory, the authors express their gratitude to V. N. Tsytovich and V. G. Makhan'kov for their valuable comments.

2/2

USSR

KOSHARSKIY, B. D., ASHEROV, A. T., TIMOSHENKO, A. N., TIMCHENKO, N. D., MELYUSHKINA, L. P.

UDC 51

"Problem of Selecting the First Stage of an Automated Enterprise Control System"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971, pp 113-125 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V400)

Translation: The problem of selecting the first stage of automation when introducing an automated enterprise control system is formulated. Possible optimalness and restriction criteria, possible statements of the problem and the statement used in the present paper, the method of solution and the results of experimental research for the Western Siberian Metallurgical Plant are presented.

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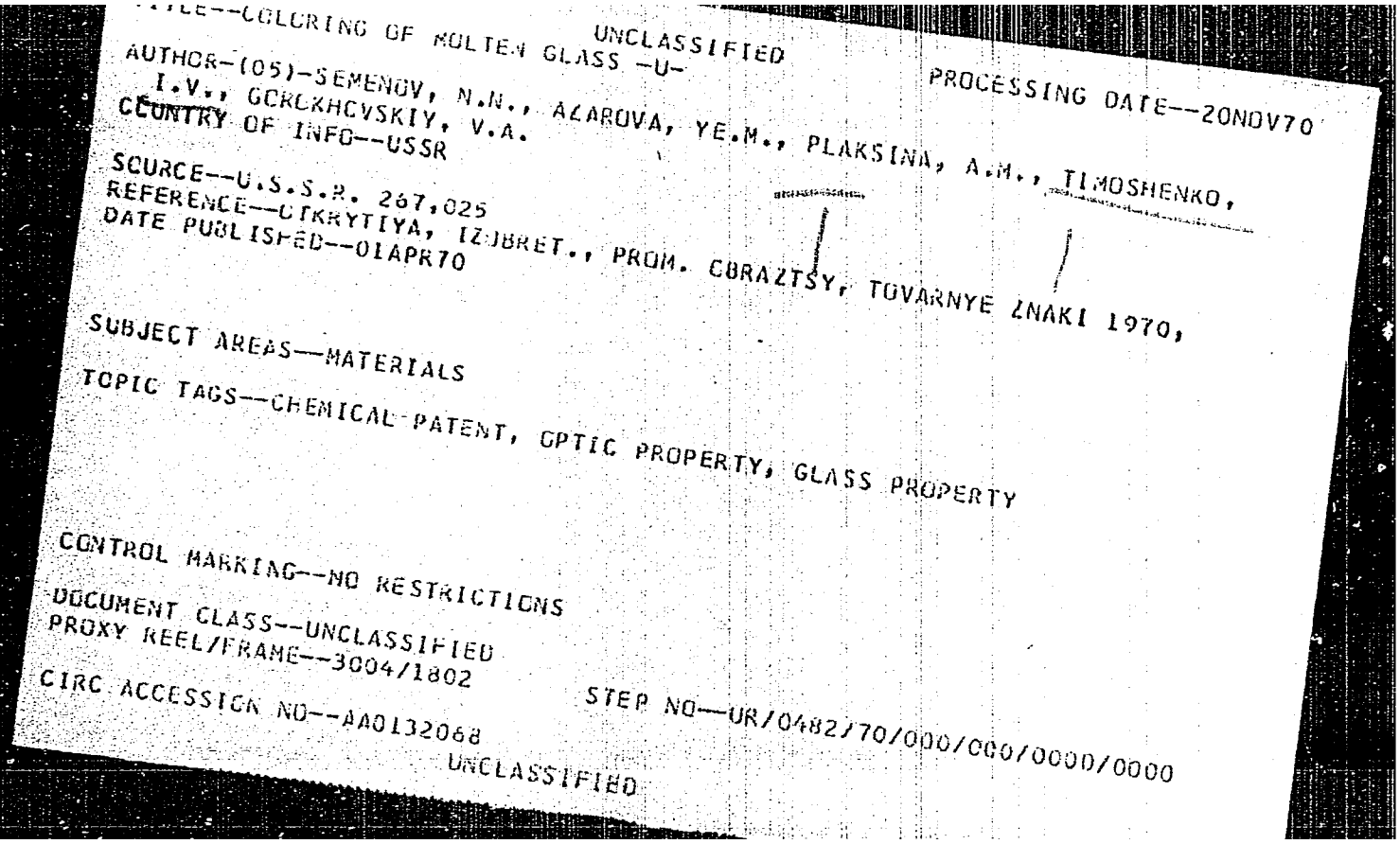


TITLE--COLORING OF MOLTEN GLASS -U- UNCLASSIFIED

AUTHOR-(05)-SEMENOV, N.N., AZAROVA, YE.M., PLAKSINA, A.M., TIMOSHENKO, I.V., GORODKHOVSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,025

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

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, OPTIC PROPERTY, GLASS PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

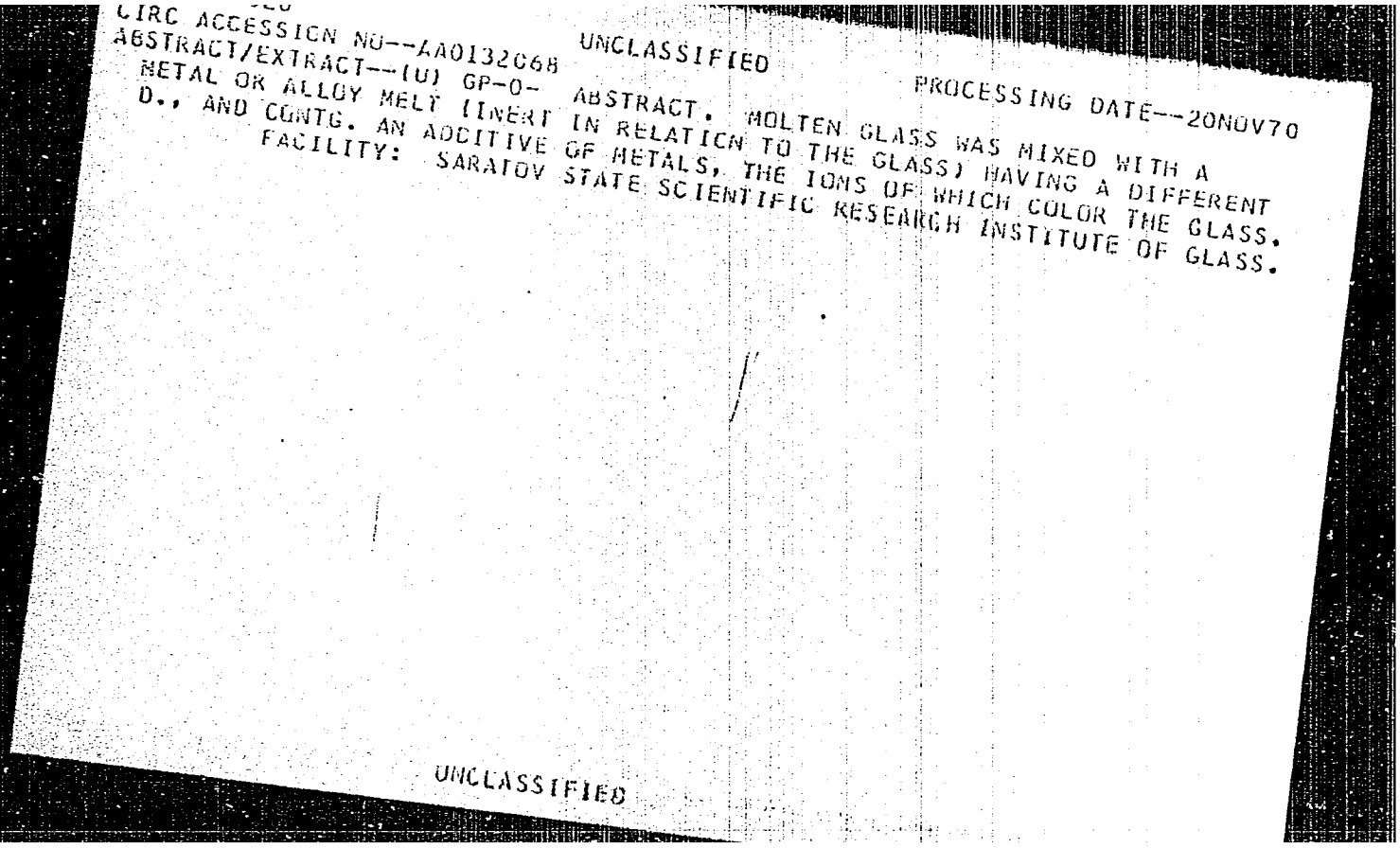
PROXY REEL/FRAME--3004/1802

CIRC ACCESSION NO--AA0132068

STEP NO--UR/0482/70/000/000/0000/0000

UNCLASSIFIED

PROCESSING DATE--20NOV70

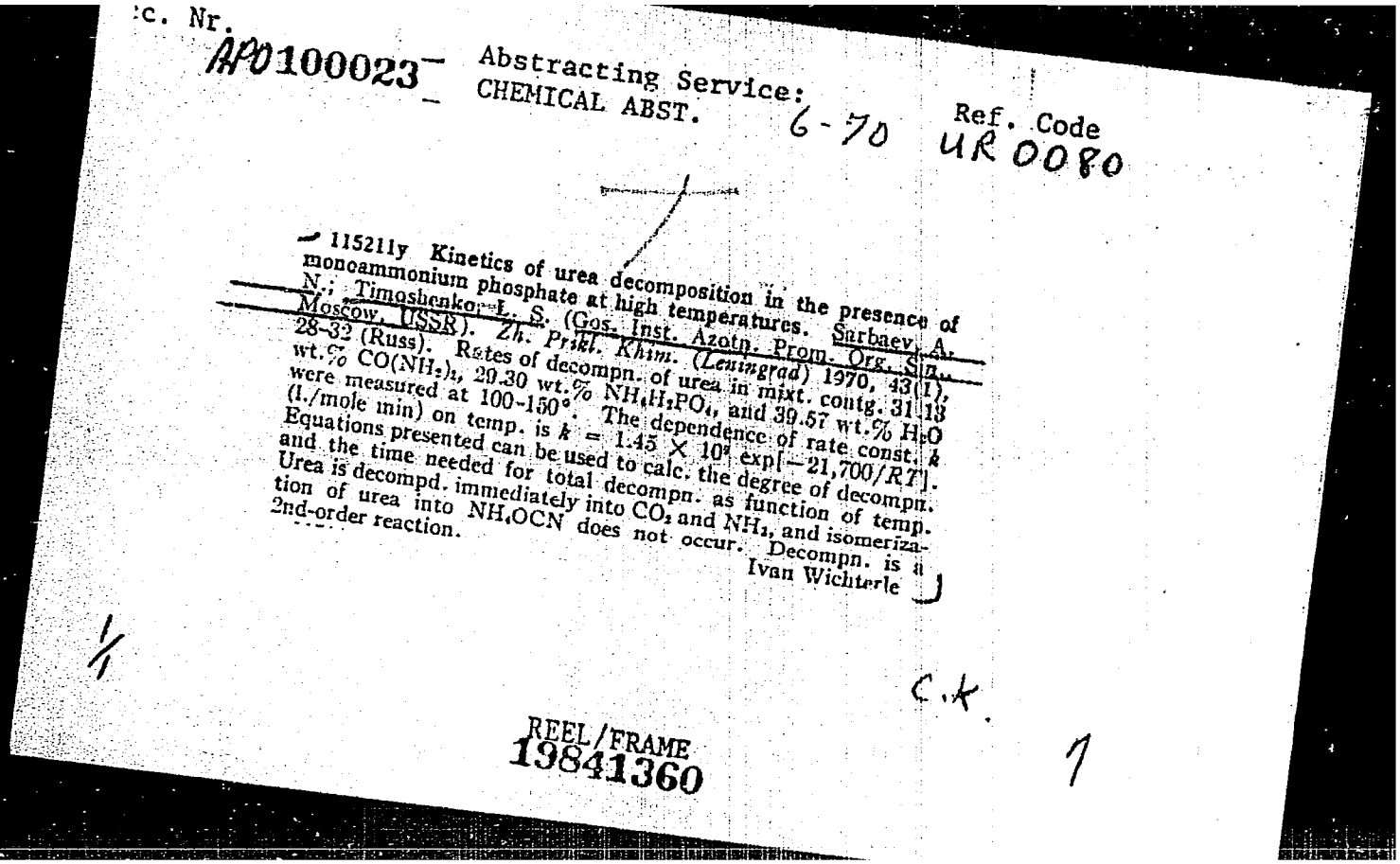


CIRC ACCESSION NO--AA0132068 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOLTEN GLASS WAS MIXED WITH A METAL OR ALLOY MELT (INERT IN RELATION TO THE GLASS) HAVING A DIFFERENT D., AND CONTG. AN ADDITIVE OF METALS, THE IONS OF WHICH COLOR THE GLASS.

FACILITY: SARATOV STATE SCIENTIFIC RESEARCH INSTITUTE OF GLASS.

UNCLASSIFIED



Acc. Nr. AP0100023 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR 0080

115211y Kinetics of urea decomposition in the presence of monoammonium phosphate at high temperatures. Sarbaev, A. N.; Timoshenko, L. S. (Gos. Inst. Azotn. Prom. Org. Sin., Moscow, USSR). *Zh. Prikl. Khim. (Leningrad)* 1970, 43(1), 28-32 (Russ). Rates of decompn. of urea in mixt. contg. 31.13 wt.% $CO(NH_2)_2$, 29.30 wt.% $NH_4H_2PO_4$, and 39.57 wt.% H_2O were measured at 100-150°. The dependence of rate const. k (l./mole min) on temp. is $k = 1.45 \times 10^9 \exp[-21,700/RT]$. Equations presented can be used to calc. the degree of decompn. and the time needed for total decompn. as function of temp. Urea is decompd. immediately into CO_2 and NH_3, and isomerization of urea into NH_4OCN does not occur. Decompn. is a 2nd-order reaction.

Ivan Wichterle

1/1

C.K.

REEL/FRAME 19841360

7

USSR

UDC 614.715.(477-25)1965-1970

BORINSKIY, V. K., GRIDCHINA, M. A., and TIMOSHENKO, L. S., Kiev Municipal Sanitary-Epidemiological Station, Kiev

"Characteristics of the Pollution of Atmospheric Air With Dust"

Moscow, Gigiyena i Sanitariya, No 1, 1973, p 108

Abstract: In the City of Kiev, the average yearly concentration of dust in the air was determined in eight locations: Pioneer Park in a mountainous area above the Dnepr (location I); Goloseyevskiy Forest in the forest-part zone (II); Kalinin Sq. in the center of the city at an air elevation of 1.5 m (III); ditto, at an elevation of 20 m (IV); No 8 Nekrasovskaya St., in a residential section with plentiful greenery, situated in the vicinity of an automobile garage (V); No 19 Voloshskaya St., in the old industrial district of Podol with heavy city traffic (VI); No 7 Brest-Litovsk Highway, in the vicinity of large industrial enterprises and in an area in which traffic is heavy (VII); Privokzal'naya Sq., next to a railroad station and to a thermoelectric power plant (VIII). The average yearly dust concentration was 0.21, 0.16, 0.23, 0.14, 0.23, 0.43, 0.35, and 0.40 mg/m^3 at I, II, III, IV, V, VI, VII, and VIII, respectively. The lowest fluctuations during the year (0.1-0.2 mg/m^3) were observed at I. The lowest concentrations there (0.1-0.2 mg/m^3) were recorded in Jan-Feb, when the ground was covered with snow, and the highest (0.3-0.4 mg/m^3) in the

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USSR

BORIMSKIY, V. K., et al., Gigiyena i Sanitariya, No 1, 1973, p 108

summer during dry spells and in the late fall on foggy days with high humidity. The average yearly concentrations varied from year to year in the 0.14-0.19, 0.19-0.28, 0.13-0.24, and 0.29-0.5 mg/m3 range in the forest-park zone, in the center of the city (Kalinin Sq.), in the residential zone, and in the railroad station and industrial zone, respectively. The maximum permissible concentration of dust in the air is 0.5 mg/m3.

2/2

USSR

TIMOSHENKO, N. M., SHABOTENKO, V. I.

UDC: 531.781.082.722:621.317.733.011.2

"Effect Which the Capacitance of Connecting Lines has on the Accuracy of Measurements by Strain-Gage Bridges on the Carrier Frequency"

Kontrol'no-izmerit. tekhnika. Resp. mezhved. nauch.-tekhn. sb. (Monitoring and Measurement Technology. Republic Interdepartmental Scientific and Technical Collection), 1971, vyp. 11, pp 104-110 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 6, Jun 72, Abstract No 6.32.322)

Translation: The existing procedure for calculating the capacitance of connecting lines for strain-gage measurements is updated. Formulas are given for calculating the lines as a function of the phase matching of the voltages across the demodulator of the measuring instrument, the error due to change in the deformation sensitivity of the strain-gage resistors and amplifier sensitivity. It is shown that there is an appreciable difference between the line length calculated by the conventional procedure and by the procedure proposed by the author when the actual mismatch of voltages at the demodulator is accounted for. One illustration, bibliography of four titles.

1/1

USSR

UDC 612.828.014.45

VASIL'YEV, A. G., and TIMOSHENKO, T. Ye., Leningrad State University imeni A. A. Zhdanov

"Electrical Responses of Superior Olives in Vespertilionidae and Rhinolophidae to Ultrasonic Stimuli With Various Fill Frequencies"

Kiev, Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 33-39

Abstract: Records of integrated electrical activity and of individual action potentials indicate that the superior olivary complex in Vespertilionidae, which emit echo-location signals with frequency modulation ranging from 30 to 120 khz, is maximally sensitive to ultrasounds of 10-40 khz. Upon cessation of stimulation with any frequency, the superior olives respond with prolonged oscillations. In Rhinolophidae, which emit almost monochromatic echo-location sounds of a basic frequency of 80 khz, the superior olivary complex is maximally sensitive to two frequency bands, 10-40 and 82-86 khz, while stimuli of 80 khz must be 20-30 db louder in order to induce a response. The response areas of single neurons are in both species of bats similar to those observed in other mammals, except for the reaction to the 70-90 khz band. The Rhinolophidae have a large number of neurons which are sharply attuned to 80-90 khz and whose response varies depending on the fill frequency of the stimulus. Within

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USSR

VASIL'YEV, A. G. and TIMOSHENKO, T. Ye., Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 33-39

a limited range of stimulus intensity, they respond with a phasic discharge covering a wide frequency range and a tonic discharge at the characteristic frequency. It is believed that these neurons analyze both the frequency and the intensity of the stimuli.

2/2

USSR

TIMOSHENKO, V. G.

UDC: 621.396.27.09.4

"Radio Lines for Local Communication on Millimeter Waves"

Kiev, Izvestiya VUZ--Radioelektronika, Vol 14, No 1, 1971, pp 34-39

Abstract: The communication discussed in this paper covers short distances, in units of kilometers over complex terrain such as mountainous districts and a water medium, a problem which has not as yet been satisfactorily solved. Discussing the requirements of such communication, from the point of view of secrecy of communication and noise immunity as well as general efficiency, the author concludes that there is no doubt that the millimeter wave band is best for local lines. Secrecy can be obtained through the use of highly directive antennas transmitting energy in a narrow cone. Use of the millimeter radio waves is even better for this purpose than laser communication, since the latter works well only under the best of atmospheric conditions; in fog, the attenuation of light waves may exceed 100 dB per kilometer. A table giving the attenuation factors for the preferred range of millimeter waves due to the oxygen in the air, the water vapor density, and moisture is shown.

1/1

TIMOSHENKO, V. G.

radio engineering

JPRS 52977

27 April 1971

RADIO LINE FOR SHORT RANGE COMMUNICATIONS IN THE MILLIMETER BAND

UDC 621.396.27.90.4

[Article by V. G. Timoshenko, Kiev, Izvestiya VUZ, Radioelektronika, Russian, Vol 14, No 1, 1971, signed to press 29 December 1969, pp 34-39]

This article deals with a broadband radio line for short wave communications on frequencies characterized by an intensive absorption of the radio beam by atmospheric oxygen.

The basic merits of such a radio line are: a high degree of transmission security, interference resistance, and functions under all weather conditions.

Introduction

In a number of cases the need arises to establish broadband radio communications over comparatively short distances (kilometric units). Such a radio line is indispensable, for example, as a link between urban and suburban ATS [automatic exchange] in difficult geographical localities (in mountainous areas, across expanses of water, and so on).

This specific problem, in spite of its seeming simplicity, has not to date been solved satisfactorily. The principle transmission security and interference resistance demands for radio lines are taxed by increased demands for operating space must be minimal; not the least of the problems concern the portability and simplicity of equipment, installation conditions (for example, height of the antenna above ground), and so on.

[1 - USSR - F]

The well-known laser communication lines by either light or infrared waves are almost unequalled for similar purposes, but they work only under suitable atmospheric conditions. The attenuation of optical waves in fog can exceed 100 db per kilometer, and this increase in loss cannot be compensated for by increasing amplification by antennas, since as a result of atmospheric refraction, an excessively narrow beam can miss the receiving antenna.

Therefore, the millimeter bands have a definite advantage over short distances as compared with the longer waves of the SVCh [superhigh frequency] band and with infrared and spectrum light waves. Two circumstances make the application of millimeter waves extremely tempting: in the first place, it is possible in principle to create a narrow-band signal with a very wide absolute frequency field on the order of hundreds of megacycles; in the second place, the highly directional radio beams may be obtained from compact antenna systems. It is no accident that more and more attention has been given recently to the possibility of their use for the purposes of millimeter radio band communications.

As examples, we present a radiotelephone link of 6 km in the 3.4 mm band [1]; a radio transmission line for television programs over a distance of 10 km in the 3.2 mm band [2, 3]; an experimental communication line of 2 km on a frequency of 90.5 gigacycles (3.3 mm) [4]. The report on the application of a portable millimeter band communications apparatus working at frequencies of 36-38 gigacycles at a distance of 15 nautical miles [5] is worthy of attention.

A basic peculiarity of the dissemination of millimeter radio waves in the earth's atmosphere, in contrast to longer waves, is their significant attenuation. The sources of absorption are mainly oxygen and water vapors. The oxygen resonance lines are concentrated at frequencies of 53 to 65 gigacycles (also about 120 gigacycles), causing quite a bit of absorption in these frequencies. There is significantly greater absorption by water vapors [6, 7]. The resonance lines of water vapor cause significant absorption at 20-30 gigacycles and above 150 gigacycles [7, 8].

The selective nature of the attenuation of millimeter radio waves by the earth's atmosphere makes it possible to select, for communications, those sections of the frequency band that give minimal attenuation -- in the frequency ranges of 30-45 gigacycles, 85-108 gigacycles, 130-155 gigacycles, and also 64-74 gigacycles. These zones are "transmission windows" and as the most promising for communications purposes, they are used by almost all millimeter band equipment.

USSR

KHUDENSKIY, YU. K., TISHCHENKO, V. G., VOYEVODA, L. V., and BEZUGLYY, V. D.

UDC 661.143

"Electro-Fluorescent Substance"

USSR Author's Certifictae No 335967, filed 16 Mar 68, published 18 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 12(II), 1973, Abstract No 12L182P by V. D. Matveyev)

Translation: This electro-fluoric substance is used to manufacture electrochemical indicator systems in computer technology and in systems for automatic control and has a luminescence during the application of an electric current across an electrode in liquid solutions. It contained dimethylformamide as a solvent, lithium halide as an electrolyte, and benzophenanthrene as an electrophor. A change in the above mentioned electrolyte from tetrabutylammoniumperchlorate to LiCl increases the intensity of the electrofluoric lumniscence 10 fold. The substance is made of a solution containing 0.004-0.9 g LiCl and 0.002-0.2 g benzophenanthrene and dimethylformamide. For example, 0.002 g of benzophenanthrene and 0.16 g of LiCl are dissolved in 100 ml of reagent grade dimethylformamide. The prepared solution is placed in the electrofluoric ampule and an alternating current approximately 10 milliamps is applied at approximately 6.3 volts. The lumniscence obtained in the of 420-470 microns was 10 times the luminescence obtained for the electrophor.

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USSR

TIMOSHENKO, V. I., Taganrog Radio Engineering Institute

UDC 534.29

"Computing the Velocity of the Relative Hydrodynamic Drift of Aerosol Particles in a Powerful Sonic Field"

Moscow, Akusticheskiy Zhurnal, No 27, vyp 1, 71, pp 133-137

Abstract: One of the major causes of acoustic coagulation of aerosols is the hydrodynamic interaction between aerosol particles in a sonic field. The forces of the hydrodynamic interaction depend substantially on the conditions of streamlining of the particles by the medium; this can be characterized in the stationary process using the Reynolds number.

This article gives an expression obtained in quasistationary approximation for the velocity of the relative hydrodynamic drift of aerosol particles from the interaction of hydrodynamic fields under Stokes streamlining conditions.

As analysis is made of the velocities of the relative drift as a function of the sonic field and aerosol parameters. The time required for convergence of the particles in the process of relative hydrodynamic drift is estimated.

The author concludes that, as a result of analyzing the results of

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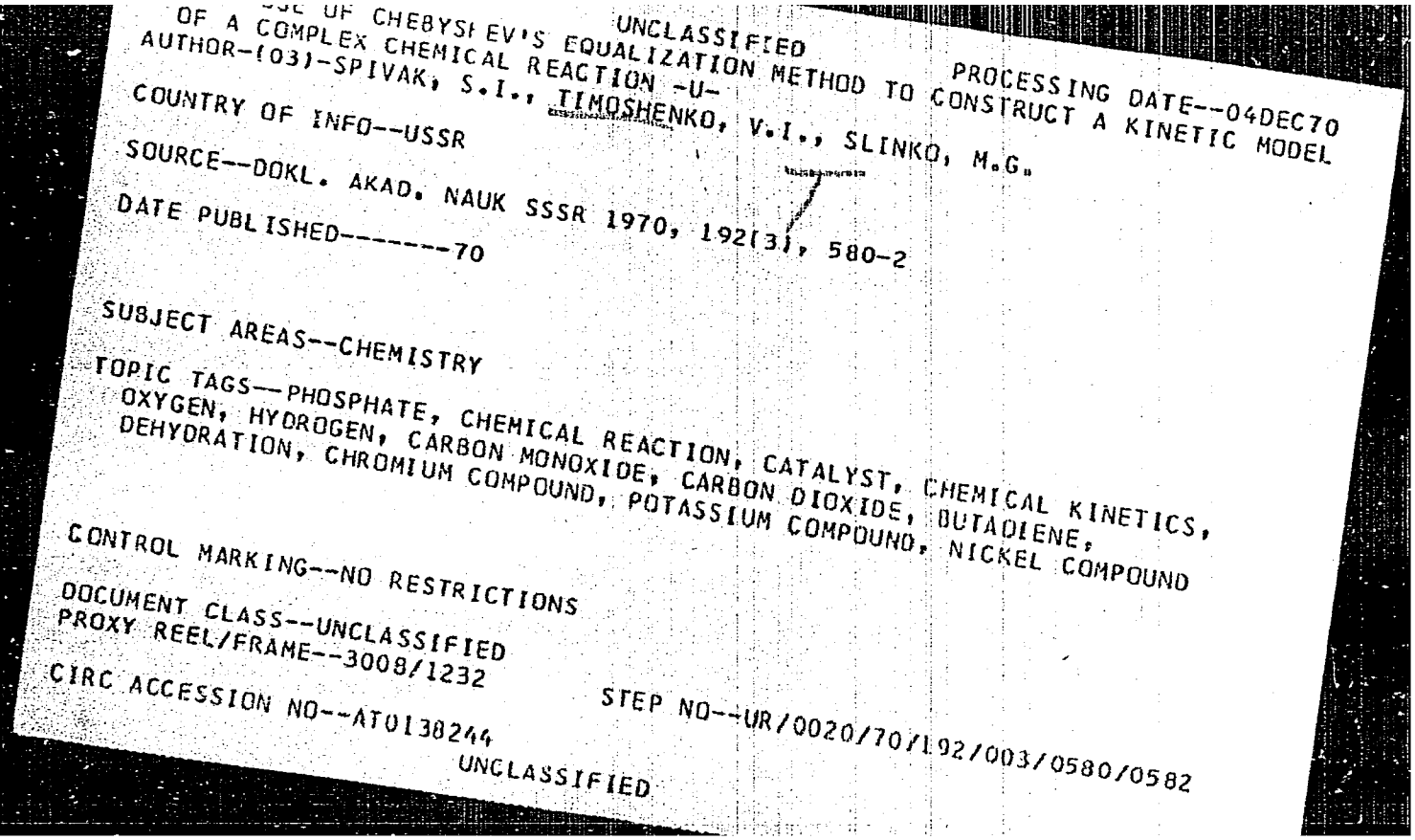
USSR

TIMOSHENKO, V. I., Akusticheskiy Zhurnal, No 27, vyp 1, 71, pp 133-137

analyzing the results in their entirety, the effective interaction of the aerosol particles in a powerful sonic field takes place in a wide frequency range beginning from several kilohertz. The velocity of the relative particle drift depends on the dispersion composition of the aerosol, its initial concentration, the density of the particle material, and the frequency and intensity of the acoustic field.

This article cites five literature references; it includes five figures and four numbered equations.

2/2



UNCLASSIFIED

USE OF CHEBYSHEV'S EQUALIZATION METHOD TO CONSTRUCT A KINETIC MODEL OF A COMPLEX CHEMICAL REACTION -U-

PROCESSING DATE--04DEC70

AUTHOR-(03)-SPIVAK, S.I., TIMOSHENKO, V.I., SLINKO, M.G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 580-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHATE, CHEMICAL REACTION, CATALYST, CHEMICAL KINETICS, OXYGEN, HYDROGEN, CARBON MONOXIDE, CARBON DIOXIDE, BUTADIENE, DEHYDRATION, CHROMIUM COMPOUND, POTASSIUM COMPOUND, NICKEL COMPOUND

CONTROL MARKING--NO RESTRICTIONS

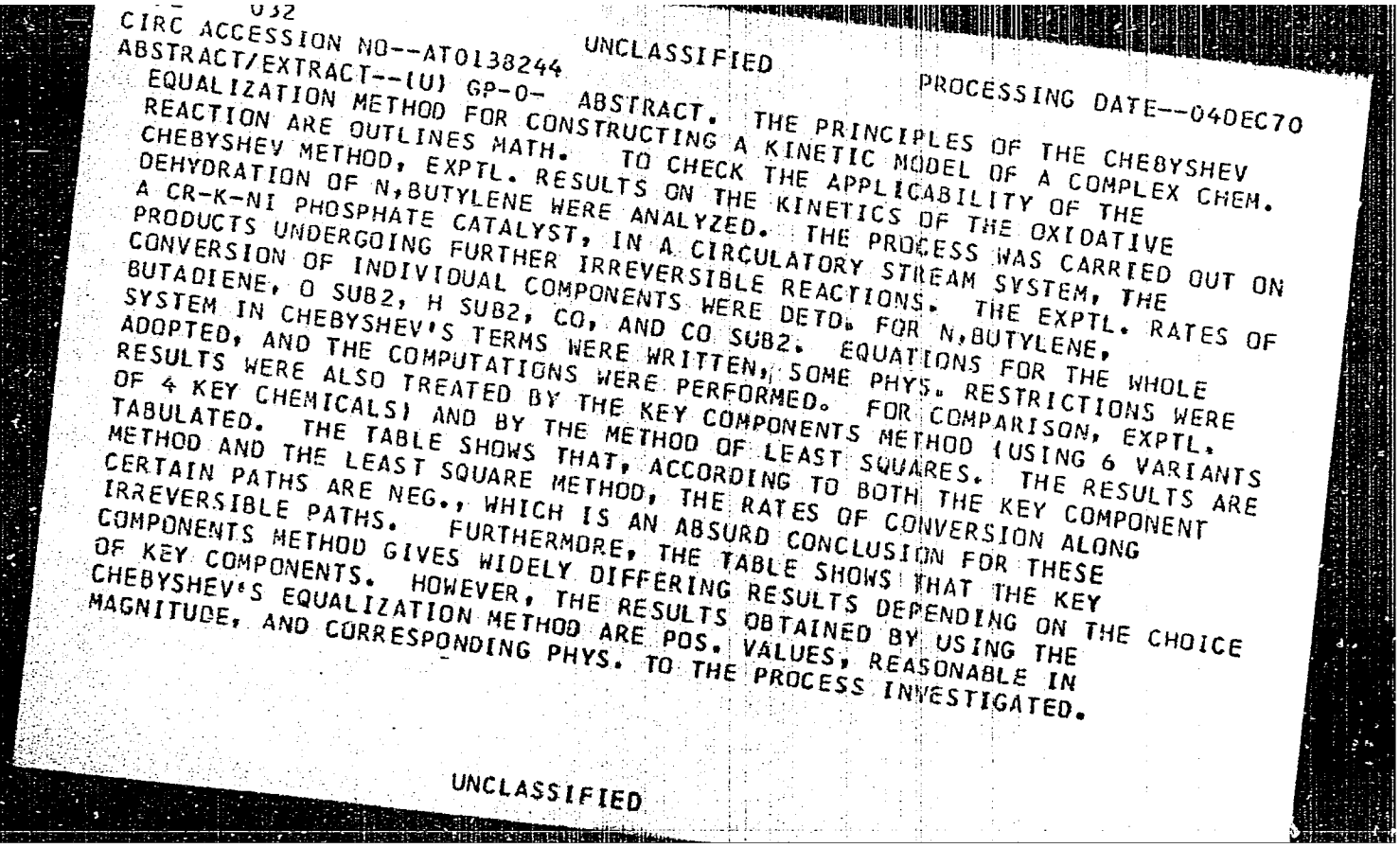
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1232

STEP NO--UR/0020/70/192/003/0580/0582

CIRC ACCESSION NO--AT0138244

UNCLASSIFIED



032

CIRC ACCESSION NO--AT0138244 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRINCIPLES OF THE CHEBYSHEV EQUALIZATION METHOD FOR CONSTRUCTING A KINETIC MODEL OF A COMPLEX CHEM. REACTION ARE OUTLINES MATH. TO CHECK THE APPLICABILITY OF THE CHEBYSHEV METHOD, EXPTL. RESULTS ON THE KINETICS OF THE OXIDATIVE DEHYDRATION OF N,BUTYLENE WERE ANALYZED. THE PROCESS WAS CARRIED OUT ON A CR-K-NI PHOSPHATE CATALYST, IN A CIRCULATORY STREAM SYSTEM, THE PRODUCTS UNDERGOING FURTHER IRREVERSIBLE REACTIONS. THE EXPTL. RATES OF CONVERSION OF INDIVIDUAL COMPONENTS WERE DETD. FOR N,BUTYLENE, BUTADIENE, O SUB2, H SUB2, CO, AND CO SUB2. EQUATIONS FOR THE WHOLE SYSTEM IN CHEBYSHEV'S TERMS WERE WRITTEN, SOME PHYS. RESTRICTIONS WERE ADOPTED, AND THE COMPUTATIONS WERE PERFORMED. FOR COMPARISON, EXPTL. RESULTS WERE ALSO TREATED BY THE KEY COMPONENTS METHOD (USING 6 VARIANTS OF 4 KEY CHEMICALS) AND BY THE METHOD OF LEAST SQUARES. THE RESULTS ARE TABULATED. THE TABLE SHOWS THAT, ACCORDING TO BOTH THE KEY COMPONENT METHOD AND THE LEAST SQUARE METHOD, THE RATES OF CONVERSION ALONG CERTAIN PATHS ARE NEG., WHICH IS AN ABSURD CONCLUSION FOR THESE IRREVERSIBLE PATHS. FURTHERMORE, THE TABLE SHOWS THAT THE KEY COMPONENTS METHOD GIVES WIDELY DIFFERING RESULTS DEPENDING ON THE CHOICE OF KEY COMPONENTS. HOWEVER, THE RESULTS OBTAINED BY USING THE CHEBYSHEV'S EQUALIZATION METHOD ARE POS. VALUES, REASONABLE IN MAGNITUDE, AND CORRESPONDING PHYS. TO THE PROCESS INVESTIGATED.

UNCLASSIFIED

Science USSR

JPRS 56168

5 June 1972

UDC 547.26'118

SYNTHESIS AND INVESTIGATION OF PHOSPHORIC ACID ESTERS CONTAINING A TRICHLORMETHYL GROUP. THE PREPARATION CHLOFOSPOL

[Article by Ye. S. Shepeleva, M. S. Borodach, P. I. Sanin, A. P. Gul'fer, Yu. S. Kagan, D. Ya. Kim, M. L. Tarakhovskiy, Ya. G. Timoshenko, I. L. Ferfil'fayn, Institute of Petrochemical Synthesis imeni A. V. Topchiyev, USSR Academy of Sciences; Moscow, Doklady AN SSSR, Russian, Vol 203, No 4, 1972, signed to press 9 July 1971, pp 856-859]

P/S

It is known that the physiologically active phospho-organic compounds — cholinesterase inhibitors are pentavalent phosphorus compounds generally represented by the formula:

$$\begin{matrix} A & & \\ & \diagdown & \\ & & P - X, \\ & \diagup & \| \\ B & & O \end{matrix}$$

Here A and B are the framing alkoxyl, alkyl, aryl and other groups; X is the weak acid residue. Subsequently, the X bond with phosphorus has an anhydride character and the substance itself has the properties of a phosphorylating agent. Utilized in the capacity of group X were precipitates of hydrofluoric acid and dygrocyanic acid, phenols and mercaptans of variable structure and others.

Trichloroalkoxy groups were used in the present work for X since it is known that the corresponding alcohols containing a trichlormethyl group are markedly acidic. A number of trichloralkylphosphoric acid esters was synthesized and investigated. Their characteristics are cited in Table 1. The synthesized esters are colorless, easily soluble in organic solvents, mineral and vegetable oils, and poorly soluble in water. The synthesis scheme includes the following reactions:

[I - USSR - D]

USSR

UDC 582.285.12:633.13(47+57)

TIMOSHENKO, Z. V., All-Union Scientific Research Institute of Plant Cultivation imeni N. I. Vavilov, Department of Immunity, Leningrad

"Distribution of Oat Infecting Smut Fungi in the USSR"

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 4, pp 367-368

Abstract: During 1969 to 1971 identification was conducted in the various rayons of the USSR to determine the agent of oat smut, Ustilago avenae and U. levis. Differentiation was based primarily on the structure of chlamydospore membrane. In recent years U. levis was found to be limited to Amurskaya and Kirovskaya oblasts and this phenomenon was apparently due to the success of prophylactic measures.

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USSR

UDC 58.08:582.285.1:632.4

KRIVCHENKO, V. I., SHCHELKO, L. G., and TINOSHENKO, Z. V., All-Union Research Institute of Plant Growing imeni N. I. Vavilov

"A Method of Evaluating Barley Resistance to Stony Smut and Oat Resistance to Loose Smut"

Leningrad, Mikologiya i Fitopatologiya No 6, 1971, pp 523-525

Abstract: The coats of barley and oat seeds are bruised with an RT-1 tissue grinder and then inoculated with suspensions of the agents of smut. The treated seeds are dried at room temperature and kept for 20 to 40 days in a cool place (5 to 12°C, 60 to 90 percent humidity). The seeds are planted at the usual time in two rows 1.25 m long. An infected standard is placed after every 20 inoculated seeds. The Hannchen (K-4104) and Vantage (K-18504) barley varieties and the L'govskiy 1026 (K-10790) and Anthony (K-8054) oat varieties are used as standards because of their high susceptibility of smut. If the standard shows an attack rate of more than 50 percent, the experimental seeds can be used to characterize the degree of resistance. The latter is assessed both from the percentage of affected ears and from the percentage of diseased plants.
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USSR

UDC 541.123.71

ZDANOVSKIY, A. B., and TIMOSHENKO, YU. M., Kazan' State University

"Polythermal Evaporation of Sea Water Concentrate at Boiling Temperatures"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 17, No 1, Jan 72, pp 259-261

Abstract: Evaporation of concentrated sea type brine obtained after separation of bromine and most of NaCl was studied in basin type evaporation. The starting materials was prepared from chemically pure reagents, and it had the following composition: $MgSO_4$ - 7.58%, $MgCl_2$ - 10.45%, KCl - 2.23%, NaCl - 9.99%. Evaporation was carried out in a three neck flask equipped with a mechanical stirrer and a thermometer, its rate being about 150 g of water from 1 kg of solution per hour. The starting solution begins to boil around 108° C, the first crystals appearing at 112° C. In the interval 112-114.4°C the only product precipitating is the halite, above 114.4°C a concurrent precipitation of halite, langbeinite ($K_2SO_4 \cdot 2MgSO_4$) and kieserite ($MgSO_4 \cdot H_2O$). The entire evaporation process is metastable. The quantities of precipitating salts were calculated by the method of material balance. Plotting these values against the boiling temperature showed that precipitation of all of the salts increases rapidly in the early stages, eventually reaching a plateau.

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CSO: 1841-W

- END -

- 96 -

USSR

PUCHKOV, V. F. and TIMOSHENKOV, YU. A. UDC 621.391:519.27

"Estimating the Indeterminancy of the Identification of the Parameters of an Object Using the Integral Method"

Tr. Tadzh. politekhn. in-ta (Works of the Tadzhik Polytechnic Institute), 1969, vyp. 4, pp 34-45 (from RZh-Radiotekhnika, No 4, 1970, Abstract No 4 A48)

Translation: Relationships are derived which make it possible to estimate the accuracy of parameter identification of an object using the integral method where the object is represented as a linearly inertial link. Dispersion of the limit of deviation is accepted as the measure of scattering. Normalized dispersion limit graphs are set up for a constant spectral plane of interference and input signal. The input signals can be both random and determined. Conditions are derived for obtaining minimal error in determining the amplification factor and the time constant of the object. Original article: three illustrations and four bibliographic entries. N. S.

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JPRS 59268

6-73

VI-6b. DISTRIBUTION COEFFICIENTS OF TELLURIUM AND ZINC FOR CRYSTALLIZATION OF GaSb-InSb MELTS

[Article by M. S. Mirgalovskaya, I. A. Strel'nikova, A. S. Timoshin, V. M. Ufimtsev, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 78]

Experimental studies were made of the distribution coefficients of Te and Zn in GaSb-InSb solutions under the conditions of drawing crystals by the Czochralski method. It was demonstrated that in contrast to the GaAs-InAs system, the dependence of the distribution coefficients of both alloying elements on the composition of the GaSb-InSb melts is characterized by strong negative deviation from the additive straight line. In the case of tellurium the curve passes through a minimum. This behavior of tellurium and zinc is obviously connected with the appearance of intermolecular interaction in the GaSb-InSb solutions leading to the formation of ordered structures.

Experimental studies were made of the viscosity and the electrical conductivity of liquid solutions of GaSb-InSb. The existence of singular peaks corresponding to compositions of 33.3 and 66.6 mole percent GaSb and stable in a broad temperature range was detected. The latter indicates the defined degree of ordering for these compositions. It was established that the concentration dependence of the molar volume is characterized by negative deviation from the laws of ideal solutions which makes the formation of associates of atoms in the GaSb-InSb solutions thermodynamically possible.

USSR UDC: 550.834

TIMOSHIN, Yu. V., TIMOSHIN, B. V., TERPELYAK, A. A.

"A Device for Processing Data of Area Seismic Observations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333510, Division G, filed 8 Oct 70, published 21 Mar 72, p 183

Translation: This Author's Certificate introduces a device for processing data of area seismic observations presented in the form of seismokinofilms. The device contains a data reproduction unit with cathode ray tube, optical system, information carrier and transport mechanisms. The device also incorporates a computer and signal storage unit with image plotter. As a distinguishing feature of the patent, speed is increased by installing a photomultiplier at the focus of the objective lens located behind the information carrier. The output of the photomultiplier is connected to the modulator of the CRT in the storage unit. The CRT is connected to a frame scanning oscillator in the unit for reproducing the seismic signals.

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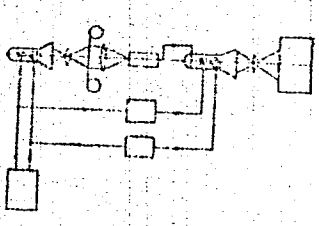
USSR

TIMOSHIN, Yu. V. et al., USSR Author's Certificate No 333510



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USSR

UDC 621.762.002.5(088.8)

UDACHIN, I. V., MAKAROV, V. S., TIMOSHIN, D. Ya., GAYEV, O. B., and GRIN, L. T.

"Device for Processing Powdered Materials With Liquids"

USSR Author's Certificate No. 268610, Filed 1/07/68, Published 3/08/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G472 P).

Translation: The device includes a container, the base of which is equipped with a drainage aperture and a perforated barrier. In order to eliminate oxidation of the powder near the bottom of the container as it is dried, an automatic valve is mounted coaxially with the drainage aperture for drainage of the liquid.

1/1

USSR

UDC: 550.834

TIMOSHIN, Yu. V., TIMOSHIN, B. V., TERPELYAK, A. A.

"A Device for Processing Data of Area Seismic Observations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333510, Division G, filed 8 Oct 70, published 21 Mar 72, p 183

Translation: This Author's Certificate introduces a device for processing data of area seismic observations presented in the form of seismokinofilms. The device contains a data reproduction unit with cathode ray tube, optical system, information carrier and transport mechanisms. The device also incorporates a computer and signal storage unit with image plotter. As a distinguishing feature of the patent, speed is increased by installing a photomultiplier at the focus of the objective lens located behind the information carrier. The output of the photomultiplier is connected to the modulator of the CRT in the storage unit. The CRT is connected to a frame scanning oscillator in the unit for reproducing the seismic signals.

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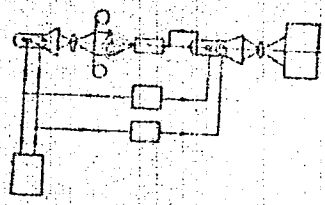
USSR

TIMOSHIN, Yu. V. et al., USSR Author's Certificate No 333510



2/2

USSR

UDC 547.341

PUDOVIK, A. N., KHUSAINOVA, N. G., and TIMOSHINA, T. V., Kazan' State University

"Cycloaddition of Diphenyldiazomethane to Allenylphosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2159-2162

Abstract: The 1,3-bipolar cycloaddition of diphenyldiazomethane to diethyl allenylphosphonate at room temperature in petroleum ether and diethyl ester, yields 3-diethylphosphono-4-methylene-5,5-diphenyl-delta^2-pyrazoline as indicated by the IR and PMR Proton Magnetic Resonance) spectra of the product. An intermediary delta^1-pyrazoline is suggested. If the reaction is conducted at 75°C the product indicated by the IR, PMR, and NMR (Nuclear Magnetic Resonance) spectra is 1-diethoxylphosphonyl-2-methyl-3-phenylindene. An intermediate of 2,2-diphenyl-3-diethoxylphosphonylmethylenecyclopropane is proposed. At both room temperature and 75°C diphenyldiazomethane reacted with diethyl alphaphenylallenylphosphonate to give 3-diethoxyphosphonyl-2,2,3-triphenylmethylenecyclopropane, as confirmed by the IR spectrum of the product. An intermediary delta^1-pyrazoline is indicated, which cannot rearrange to the delta^2- as the 3 hydrogen has been replaced by a phenyl group.
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USSR

UDC 547.341

PUDOVIK, A. N., KHUSAINOVA, N. G., and TIMOSHINA, T. V., Kazan' State University imeni V. I. Ulyanov Lenin, Kazan, Ministry of Higher and Secondary Specialized Education RSFSR

"Dialkoxyphosphonoalkylalkynyl, -aminoalkynyl Ethers and Dialkoxyphosphonoisopropylalkynylamines"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1040-1042

Abstract: Continuing their studies on the synthesis of organophosphorus compounds, the authors obtained α-dialkoxyphosphonoalkylpropargyl ethers as a result of the reaction of propargyl bromide with the sodium derivative of dialkyl esters of α-hydroxyalkylphosphonic acid. The interaction of dialkoxyphosphonomethylenepropargyl ethers with secondary amines and paraform in the presence of copper acetate gives 4-dialkylamino-2-butynyl ethers. The reaction of propargyl bromide with dialkyl esters of α-aminoisopropylphosphonic acid in the presence of triethylamine gives dialkoxyphosphonoisopropylpropargylamines. The biological activity of the resultant compounds was stud-

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USSR

PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1040-1042

ied. Thus, according to data obtained at the Chair of Pharmacology of Kazan' State Medical Institute by V. G. DUNAYEV and N. G. ABDRAKHMANOVA, 1-diethoxyphosphonomethylenehydroxy-4-diethylamino-2-butyne possesses low toxicity for warm-blooded animals, does not suppress cholinesterase activity or induce depression of the stem region of the central nervous system.

2/2

Acc. Nr: AP0036812

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 31-35

DYNAMICS OF DISCHARGE OF TYPHOID BACILLI IN CHRONIC CARRIERS IN DIFFERENT SEASONS OF THE YEAR AND ITS SIGNIFICANCE IN THE EPIDEMIOLOGY OF THE DISEASE

S. R. Khomik, Ya. M. Ferdinand, G. I. Skirda, N. S. Kovaleva, N. S. Solovey, K. I. Popova, I. P. Timoshkina, M. M. Shelkovich, B. A. Plydro, Apeykina, M. D.

The feces of forty five carriers of typhoid bacillus were examined in different seasons of the year. The greatest number of bacilli was discharged from January to May (0.1 to 960 million per gm of feces were the number of bacilli found throughout the year). Therefore, the authors recommend examination of carriers to be carried out mainly during the first half of the year.

There was established no association between the seasonal distribution of the incidence of the disease and the intenisity of bacterial discharge.

D.N.

REEL/FRAME 19721729

USSR

UDC 620.1:669.1

TIMOSHUK, L. T.

"Mechanical Testing of Metals"

Mekhanicheskiye Ispytaniya Metallov [English Version Above], Metallurgiya Press, 1971, 224 pages.

ANNOTATION: Based on the experience of standardization of methods of mechanical testing of metals in the Soviet Union and recommendations of international organizations for standardization of the CEMA and ISO, this book analyzes various methods of mechanical testing of metals and alloys. Brief information is presented from the areas of metal science and the strength of materials, used to provide a basis for methods of determination of the characteristics of the mechanical properties of metals. Diagrams and photographs of test equipment are presented.

The book is designed for the engineers of plant testing laboratories for mechanical testing of metals and can be used by technical school students, graduate students and scientific workers dealing with the mechanical testing of metals. 175 Figures; 16 Tables; 44 Biblio. Refs.

USSR

UDC 620.1:669.1

TIMOSHUK, L. T., Mekhanicheskiye Ispytaniya Metallov, Metallurgiya Press, 1971, 224 pages.

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USSR

UDC 620.1:669.1

TIMOSHUK, L. T., Mekhanicheskiye Ispytaniya Metallov, Metallurgiya Press, 1971, 224 pages.

USSR

UDC 620.1:669.1

TIMOSHUK, L. T., Mekhanicheskiye Ispytaniya Metallov, Metallurgiya Press, 1971, 224 pages.

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USSR

UDC 669.14:620.172.2

GULYAYEV, A. P., LEBEDEV, D. V., OVSYANNIKOV, B. M., TIMOSHUK, L. T.

"Determination of Mechanical Characteristics of High Strength Steels in Extension"

Moscow, Zavodskaya Laboratoriya, Vol 37, No. 8, 1971, p 967-970.

Abstract: Problems are studied related to the necessity of supplementing existing All-Union State Standard GOST 1497-61 for estimation of the mechanical properties of high strength, low ductility steels (σ_B>200 kg/mm^2). These additions concern both the norms for the technology of preparation of specimens, their surface condition, shape and size, as well as the techniques of preparation of machines for testing. The existing standard should be used for tensile testing of materials with strengths of less than 200 kg/mm^2 and relative reduction in area greater than 15%. For high strength, low ductility materials, the characteristics produced by the standard method may be unreliable.

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USSR UDC: 533.6.07

GORLIN, S. M., KHUDYAKOV, G. Ye., ZIBOROVA, S. P., TIMOSHUK, L. T.

"Effect Which Initial Flow Turbulence Has on Flow Around Solids and Their Characteristics"

V sb. Nauchn. konferentsiya. In-t mikhan. MGU. Tezisy dokl. (Scientific Conference. Institute of Mechanics of Moscow State University. Summaries of the Reports--collection of works), Moscow, 1970, pp 22-23 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B504)

Translation: Data are given from studies of the effect which initial flow turbulence ε_0 has on streamline flow and on the aerodynamic characteristics of various solids. The research was done in a subsonic wind tunnel with $\varepsilon_0 = 0.2$-10%. It is shown that: 1) the lift coefficient of the wing and the model is critically dependent on the parameter ε_0; 2) the initial flow turbulence has a considerable effect on the critical Reynolds number for rounded, poorly streamlined bodies; 3) for poorly streamlined solids with sharp edges, as ε_0 increases as a consequence of the change in nature of the burbling zone, there is first an increase, and then stabilization

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USSR

GORLIN, S. M., et al, V sb. Nauchn. konferentsiya. In-t mikhan. MGU. Tezisy dokl., Moscow, 1970, pp 22-23 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9B504)

or a reduction in the drag c_x for the solid which exceed in magnitude the changes in c_x due to the Reynolds number. Mention is made of the leveling effect which a deflector has on the aerodynamic drag of poorly streamlined solids for various values of ε_0. The authors discuss the effect of ε_0 on parameters of oncoming flow close to local terrain, city skylines, etc. B. I. Bakum.

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USSR

UDC 622.6-501.433

POPOVICH, N. G., BAZILEVICH, P. A., ALTUKHOV, YE. I., YASHCHUK, I. M., and TIMOSHUK, V. V.

"Investigation of Automatic Control System for Dynamic Braking Mode with Magnetic Power Amplifiers and Contactless Fixed Speed Transducer"

Vestn. Kiyevsk. Politekhn. In-Ta Ser. Gron. Elektromekhan. I Avtomatiki (Herald of Kiev Polytechnical Institute Mining Electromechanics and Automation Series), No 1, pp 48-52, 1969 (from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A643 by B. A.)

Translation: The dynamics of an automatic control system for a cage elevator in the dynamic braking mode with magnetic power amplifier and contactless fixed speed transducer type BD-501A are studied. In connection with the low output power of the transducer, an intermediate magnetic amplifier is used. In order to study the stability of the control system, the authors derive the characteristic equations of the closed system. Values are found for parameters of the intermediate magnetic amplifier for which the system is on the boundary of stability. One illustration, two bibliographies.

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USSR

UDC 615.849.114.015.3

FROLOVA, A. V., TIMOV, A. A., and VOLOSHKO, E. N., Moscow Scientific Research Rentoeno-Radiological Institute, Ministry of Health RSFSR

"Qualitative Composition of Radiation at Depth in an Irradiated Medium"

Moscow, Meditsinkaya Radiologiya, Vol 16, No 3, Mar 71, pp 75-77

Abstract: Since ionizing radiation is widely used in medicine and biology, it is of importance to determine its composition at some depth of the irradiated medium (tissue, for instance). To determine changes in the qualitative composition of a radiation beam with the depth of the irradiated medium, a phantom-dosimeter was developed by the authors, which allows one to determine simultaneously the dose field and the qualitative composition of the irradiation as a function of the thickness of the medium. The device contains two scintillation pickups, one of which consists of CsI, the other one consists of a scintillating plastic based on polystyrene containing PTP, POPOP and ZnS(Ag) additions. Each pickup was a cylinder 2 mm in diameter and 2 mm long. The relationship of the readings of each of the pickups to the qualitative composition of the irradiation differed. The sample cell was a rectangular plexiglas vessel 12 x 12 x 17 cm which could be filled with any liquid. A polyethylene film served as a window (55 mm diameter) for the

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310016-3"

USSR

FROLOVA, A. V., et al., Meditsinkaya Radiologiya, Vol 16, No 3, Mar 71, pp 75-77

incoming radiation beam. The instrument was used to measure the dose field along the axis of the irradiation beam and to measure the thickness of the medium at which the radiation beam had lost half its intensity. Water and myogenic tissue were used as tissue-like media for the measurement of long-wavelength radiation. The data reported in this paper can be used for calculations of absorbed x-ray doses, in cases when it is necessary to consider the dependence of the conversion coefficients from roentgen to rads on the effective energy of the radiation.

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USSR

TIMSHIN, V. T.

UDC 539.385

"Fatigue Strength Conditions in the Presence of a Complex Stressed State"

Sb. nauch. rabot molodykh uchenykh. Kuybyshev. aviats. in-t (Collected Scientific Works of the Young Scientists. Kuybyshev Aviation Institute), 1971, vyp. 1, pp 55-58 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6V1003)

Translation: Satisfactory comparison of experimental with calculated data for $\sigma_a/\tau_a = 0.5$, 1, 2 and 4 was obtained for the complex stressed state caused by the joint effect of bending with rotation and twisting of 30KhGSA steel samples. It was proposed that in the area of the effect of the maximum tangential stress, the condition $\tau_{max} + K\sigma_{max}^3 = \tau_{eff}$ is observed, where τ_{max} is the maximum tangential stress; σ_{max} is the maximum normal stress in the area of effect τ_{max}; K and τ_{eff} are the material constants which are defined by the test results for high-variable pure bending and tortion

$$\tau_{eff} = \frac{\sigma_{-1}}{2} + K\frac{\sigma_{-1}^3}{8}, \quad K = \frac{4(2\tau_{-1} - \sigma_{-1})}{\sigma_{-1}^3}$$

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USSR

TIMUSHKIN, N. V.

UDC 669.243

"Effect of the Electrical Mode on Loss of Nickel and Cobalt With Waste Slags in the Electric-Melting Process"

Moscow, Tsvetnyye Metally, No 5, May 73, pp 19-20

Abstract: Long-term experimental melts were made at the Buruktal'skiy Nickel Plant to study the effect of electrical mode on nickel and cobalt losses with the waste slag. Melts were conducted using linear transformer voltages of 220, 317.5, 367, and 440 volts. From the acquired dtat it was found that a transformer voltage of 317.5 v and electrode submersion depth of 1.3 electrode diameters produced the least nickel and cobalt loss in the waste slag, yielded normal output of desired products, and eliminated overheating of the slag in the electrode zone. For these parameters, 0.062% Ni out of 0.927% Ni in the ore was lost while for cobalt, 0.0098% out of 0.057% in the ore was lost. 1 figure, 1 table, 4 bibliographic references.

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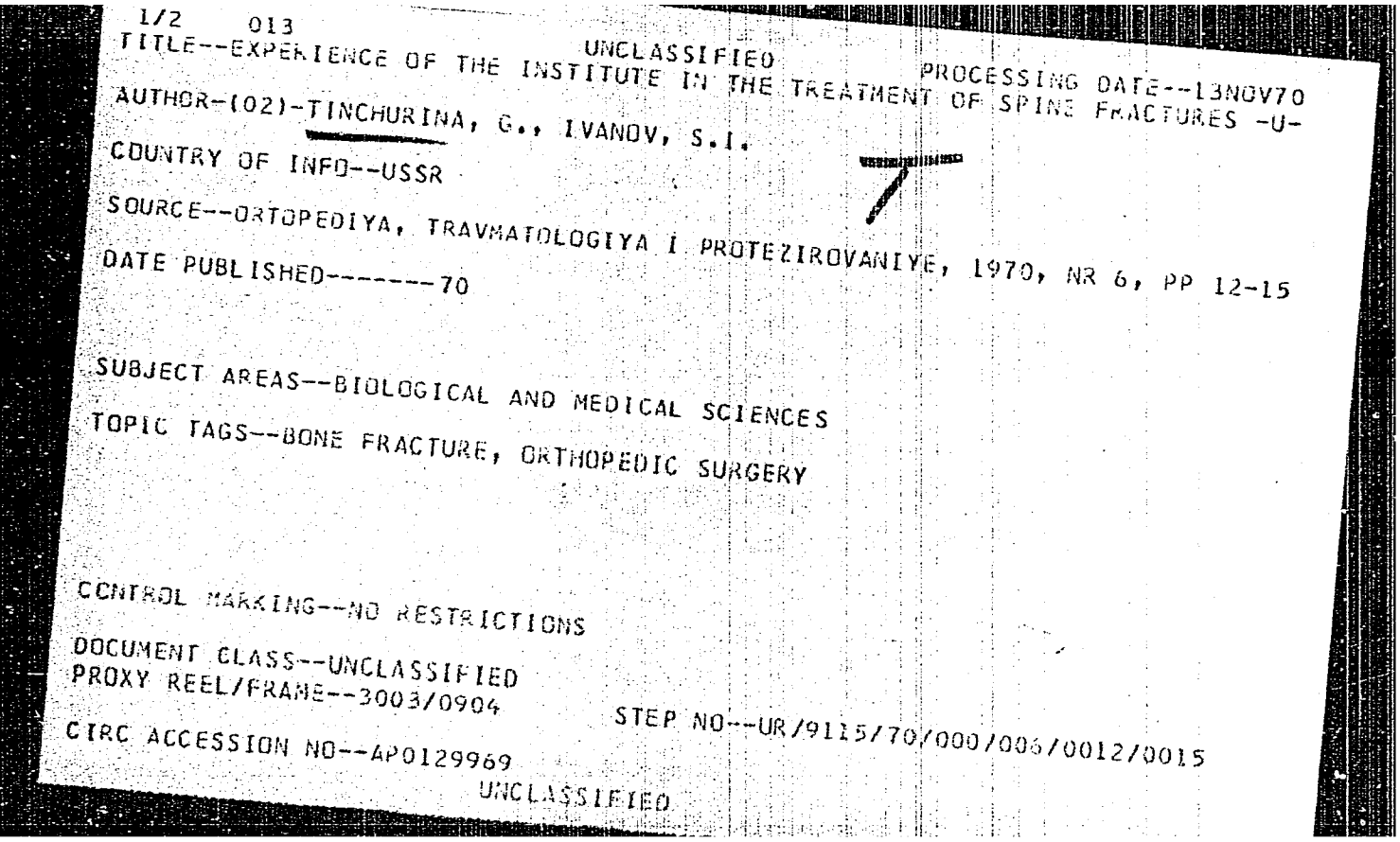


1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIENCE OF THE INSTITUTE IN THE TREATMENT OF SPINE FRACTURES -U-

AUTHOR-(02)-TINCHURINA, G., IVANOV, S.I.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 12-15

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE FRACTURE, ORTHOPEDIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0904 STEP NO--UR/9115/70/000/006/0012/0015

CIRC ACCESSION NO--AP0129969

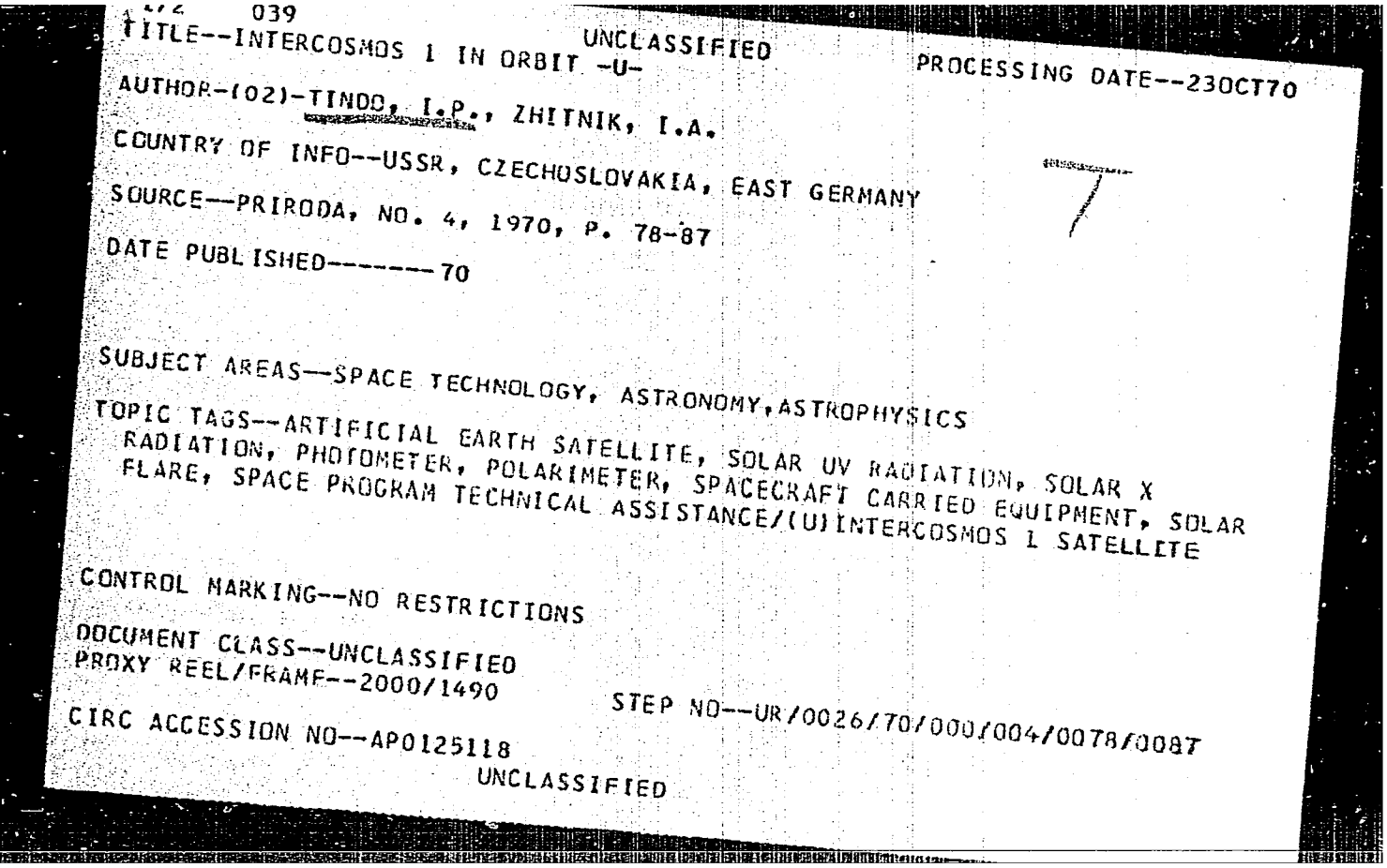
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129969

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF A 10 YEAR EXPERIENCE WITH 467 PATIENTS WITH UNCOMPLICATED COMPRESSION FRACTURES OF THE SPINE AT THE KAZAN RESEARCH INSTITUTE OF TRAUMATOLOGY AND ORTHOPAEDICS IS PRESENTED. THE LATE RESULTS OF TREATMENT HAVE BEEN STUDIED IN 113 PATIENTS WITH FOLLOW UP FROM 1 TO 13 YEARS. IT WAS FOUND THAT: (1) COMPRESSION FRACTURES CONSTITUTE 79.6PERCENT OF ALL SPINE FRACTURES AND BELONG TO THE NUMBER OF SEVERE INJURIES RESULTING IN PROLONGED DISABLEMENT (FUNCTIONAL TREATMENT, 206, IMMOBILIZATION, 289 DAYS), AND NOT INVREQUENTLY STABLE INVALIDITY (1.8PERCENT). (2) THE RESULTS OF TREATMENT APPEAR TO LARGELY DEPEND ON THE EMPLOYED METHODS OF TREATMENT. OF THE CONSERVATIVE METHODS OF TREATMENT, THE FUNCTIONAL METHOD IS THE MOSTPHYSIOLOGICAL FOLLOWED BY GOOD LATE RESULTS AND MORE SHORT TERMS OF DISABILITY. RECOMMENDATIONS ARE SUBMITTED WITH RESPECT TO USE OF FUNCTIONAL AND IMMOBILIZATION METHODS. FACILITY: KAZANSKOGO INSTITUTA TRAVMATOLOGII I ORTOPEDII.

UNCLASSIFIED



1/2 039 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INTERCOSMOS 1 IN ORBIT -U-

AUTHOR-(02)-TINDO, I.P., ZHITNIK, I.A.

COUNTRY OF INFO--USSR, CZECHOSLOVAKIA, EAST GERMANY

SOURCE--PRIRODA, NO. 4, 1970, P. 78-87

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ARTIFICIAL EARTH SATELLITE, SOLAR UV RADIATION, SOLAR X RADIATION, PHOTOMETER, POLARIMETER, SPACECRAFT CARRIED EQUIPMENT, SOLAR FLARE, SPACE PROGRAM TECHNICAL ASSISTANCE/(U)INTERCOSMOS 1 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

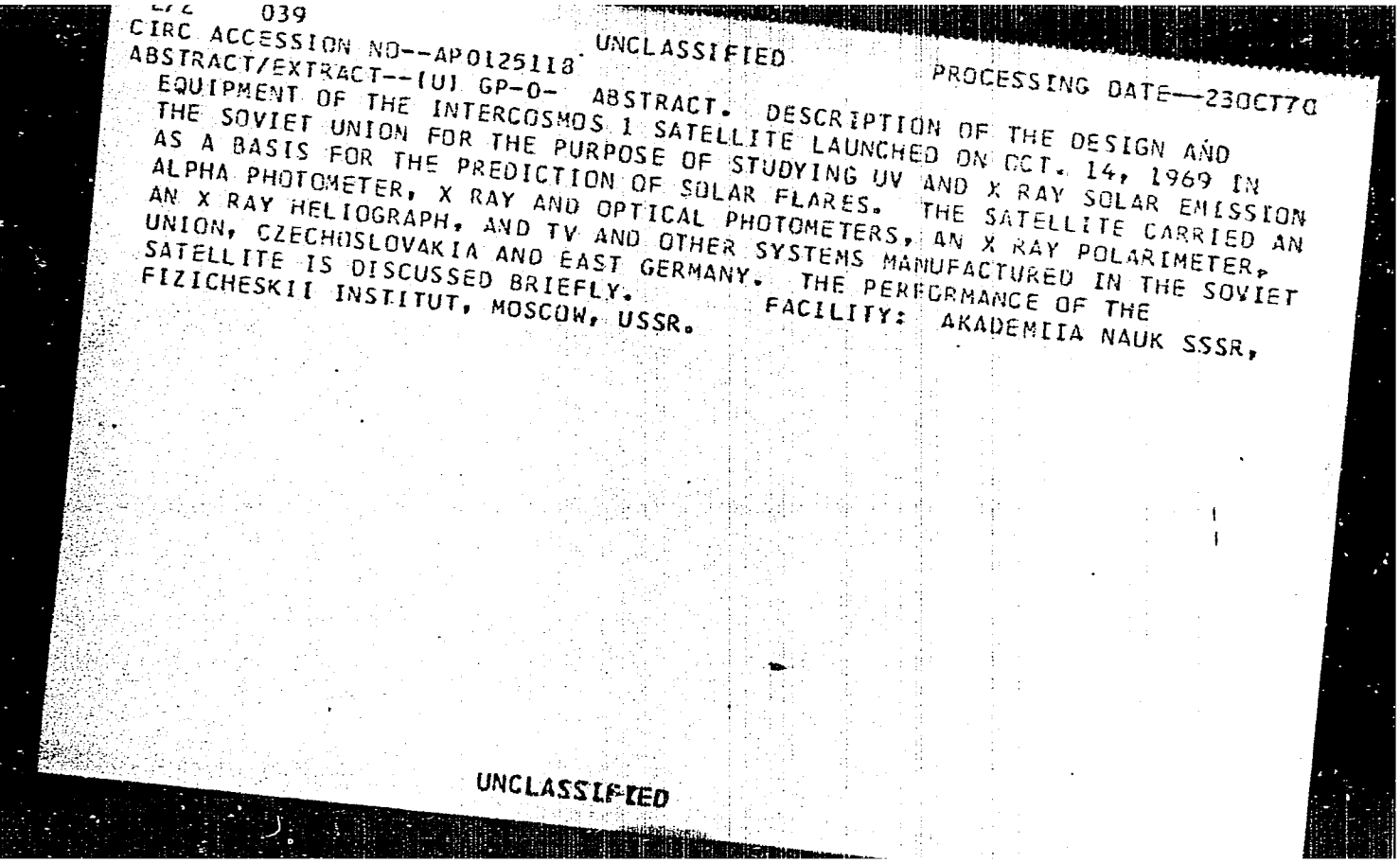
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1490

STEP NO--UR/0026/70/000/004/0078/0087

CIRC ACCESSION NO--AP0125118

UNCLASSIFIED



072 039
CIRC ACCESSION NO--AP0125118 UNCLASSIFIED PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF THE DESIGN AND EQUIPMENT OF THE INTERCOSMOS 1 SATELLITE LAUNCHED ON OCT. 14, 1969 IN THE SOVIET UNION FOR THE PURPOSE OF STUDYING UV AND X RAY SOLAR EMISSION AS A BASIS FOR THE PREDICTION OF SOLAR FLARES. THE SATELLITE CARRIED AN ALPHA PHOTOMETER, X RAY AND OPTICAL PHOTOMETERS, AN X RAY POLARIMETER, AN X RAY HELIOGRAPH, AND TV AND OTHER SYSTEMS MANUFACTURED IN THE SOVIET UNION, CZECHOSLOVAKIA AND EAST GERMANY. THE PERFORMANCE OF THE SATELLITE IS DISCUSSED BRIEFLY. FACILITY: AKADEMIIA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

TININ, M. V. UDC 621.371.029.55

"Some Diffraction Effects in the Ionospheric Propagation of Short Waves"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 329-333 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A330)

Translation: In shortwave propagation in the ionosphere, the contribution of the "side" wave caused by diffraction effects in the total field may be quite substantial over extended distances if the contribution of the "jumps" is small as a result of strong absorption in the D and E layers. Two illustrations, bibliography of three. A. L.

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USSR

UDC 621.382:535.376

GOFSHTEYN-GARDT, A.L., KOVYREVA, N.I., KOGAN, L.M., KULAGIN, L.N., KURLYAND, B.I., TIN'KOV, A.P., TRUSHINA, V.YE.

"Semiconductor Light Source (Light-Emitting Diode) Of Gallium Phosphide"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 4, Moscow, "Sov.radio," 1972, pp 3-14 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B310)

Translation: The results are discussed of the development and an investigation of the electrical and optical characteristics of gallium phosphide red-radiation light-emitting diodes. The method of creation of p-n structures and the design of the light-emitting diode are described. The principal areas of application of the light-emitting diodes are considered. The devices described are characterized by a quantum efficiency of radiation of 0.1--1 percent. 11 ill. 1 tab. 19 ref. Author's abstract.

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USSR

UDC 621.771.08

TERESHCHENKO, V. T., YAVOYSKIY, V. I., TIN[illegible], Ye. V., and KONDRATYUK, A. M., Moscow Institute of Steels and Alloys; Donetsk Metallurgical Plant

"Surface Quality of Rolled Products in Out-of-Furnace Deoxidation"

Moscow, Metallurg, No 8, Aug 70, pp 42-44

Abstract: The object of this study was to examine the effect of the method of deoxidation on the quality of rolled products. The experimental melts involved the following four groups of steels: I--low-and medium-carbon (St.[illegible] St.5, St.45, and St.35); II--low-carbon (St.3sp, St.4sp); III--[illegible]-manganese (4302); and IV--low-carbon manganese (09G2). Both furnace and ladle deoxidation methods were used. With respect to surface quality the rolled products were divided into the following groups: 1) billets with [illegible] clear surface sometimes requiring chisel sampling; 2) billets with surface defects (small cracks, hairline cracks, fissures, etc.); 3) billets in which the external defects did not require chiseling an arbitrary double length of the billets; 4) billets with large surface defects requiring flame cleaning. Analysis of the test data suggests that the quality of the surface of the rolled product is basically determined by conditions of teeming and rolling

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USSR

TERESHCHENKO, V. F., et al, Metallurg, No 8, Aug 70, pp 42-44

and depends little on the method of deoxidation. Since the method of deoxidation affects the fluidity of the metal, the tendency to form films and crusts on the meniscus, and the viscosity and composition of the floating scum, it can be responsible for the appearance of sand particles in the surface layer of the plates.

2/2

USSR

UDC: 681.3.06:51

TINN, K. A.

"System of Input-Output Programs for the 'Minsk-22' Computer"

V sb. Primeneniye vychisl. tekhn. v elektrotekhn. prom-sti (Using Computer Technology in the Electrical Engineering Industry--collection of works), Moscow, 1971, pp 294-300 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V599)

Translation: This system of programs is designed for input and output of documentary data on technical and economic problems on the "Minsk-22" computer. A document line may contain data of various forms.

1/1

Acc. Nr: AP0040885

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 159-169

Ref. Code: UR 0103

NUMERICAL MODEL FOR ESTIMATION OF PARAMETERS OF AUTOMATIC DATA PROCESSING SYSTEMS

Kotyuzhanskiy, G. A.; Nisnevich, L. B.; Stetsyura, G. G.; Tint, L. S.; Epshteyn, V. L.

There is presented a description of a specialized numerical model for the estimation of the electronic computer parameters (its memory volume, its productivity) and the choice of the discipline of data processing in designing one-machine automatic systems of data processing, functioning in real time.

REEL/FRAME 19750624

USSR

UDC 539.3/5:678

UMANSKIY, E. S., KRYUCHKOV, V. V., DEBRIVNYY, I. Ye., IL'CHENKO, V. I., and TINYAKOV, V. G. (Kiev)

"An Installation for Investigation of Creep and Long-Term Strength of Film Materials at Reduced Temperatures"

Kiev, Problemy Prochnosti, No 9, Sep 73, pp 107-111

Abstract: A description is given of an installation and a procedure for the study of creep and restoration, at static and pulsed loads, of composition films at reduced temperatures (plus 30 to minus 120°C). A distinguishing feature of the installation is the use of semiconductor thermoelectric batteries for cooling the working volume of the chamber.

Corresponding devices and appliances were developed with semiconductor sensors, which permitted the accuracy of measurement of the forces and deformations to be considerably increased in comparison to the existing methods. Typical diagrams of creep and restoration at static and subsequent pulsed loads are presented. 4 figures. 6 references.

1/1

UMANSKIY, E. S., KRYUCHKOV, V. V., DEBRIVNYY, I. Ye., IL'CHENKO, V. I., and TINYAKOV, V. G., Kiev Polytechnic Institute

UDC 539.3/5:678

(1)

"Stand for the Investigation of Creep and Fatigue Strength of Composition Films of Magnetic Carrier Type at Raised Temperatures"

Kiev, Problemy Prochnosti, No 5, May 73, pp 103-107

Abstract: A twelve-sectional experimental stand for creep and fatigue strength investigations, developed on the Chair of the Strength of Materials of Kiev Polytechnic Institute, is described by reference to its general view and electromechanical and functional schemata. The stand can also be used for testing short-term strength and relaxation. The instrumentation of the stand includes an automatic servomechanism for temperature control and registration (exactness ±1°C) and also a multichannel system for recording deformations on prolonged mechanical tests. Investigation methods of creep and fatigue strength of composition films of magnetic carrier type in the interval of working temperatures are discussed. The described stand and the developed method make it possible to study the rules of accumulation and diminishing not only of the total but also of the reversible (elastic and high-elastic) deformations. Four figures, five bibliographic references.

1/1

- END -

CSO: 1861-W

USSR

UDC 621.317.799:621.376(088.8)

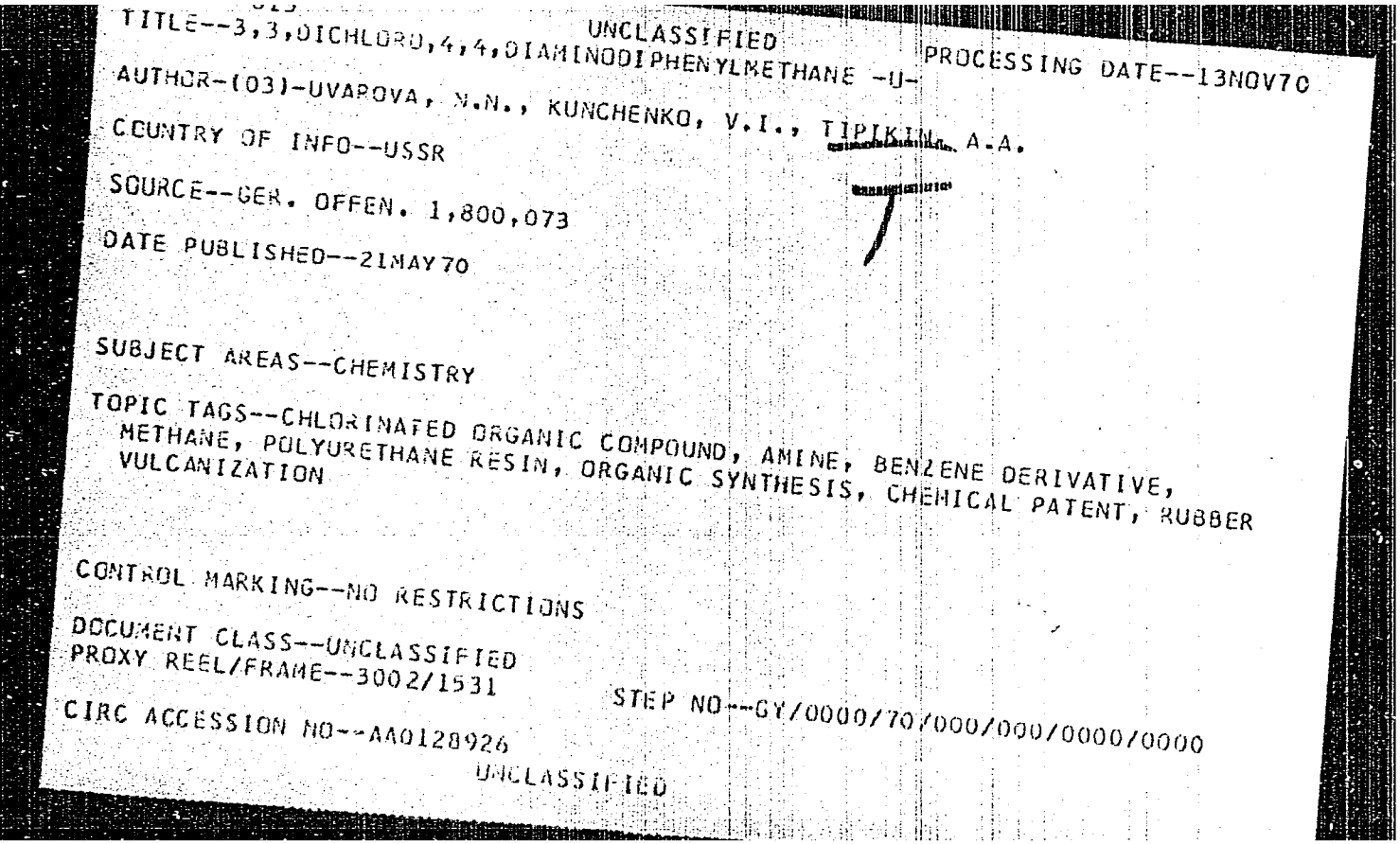
ZEN'KOVICH, A. V., TIPASHOV, V. I.

"Device for Measuring Spurious Frequency (Phase) Modulation in AM Signal Mixers"

USSR Author's Certificate No 278872, Filed 11 Apr 69, Published 13 Nov 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A335P)

Translation: The proposed device using a frequency deviation meter and a selective display is distinguished by the fact that in order to exclude the effect of a spurious frequency modulation source of the AM-signal and the frequency deviation meter, a phase inverter, a harmonic oscillator, an attenuator and an FM-signal generator, the output of which is connected to the input of the investigated mixer, are connected in series to the output of the AM-signal source.

1/1



UNCLASSIFIED

TITLE--3,3,DICHLORO,4,4,DIAMINODIPHENYLMETHANE -U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-UVAROVA, N.N., KUNCHENKO, V.I., TIPIKIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,800,073

DATE PUBLISHED--21MAY70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, AMINE, BENZENE DERIVATIVE, METHANE, POLYURETHANE RESIN, ORGANIC SYNTHESIS, CHEMICAL PATENT, RUBBER VULCANIZATION

CONTROL MARKING--NO RESTRICTIONS

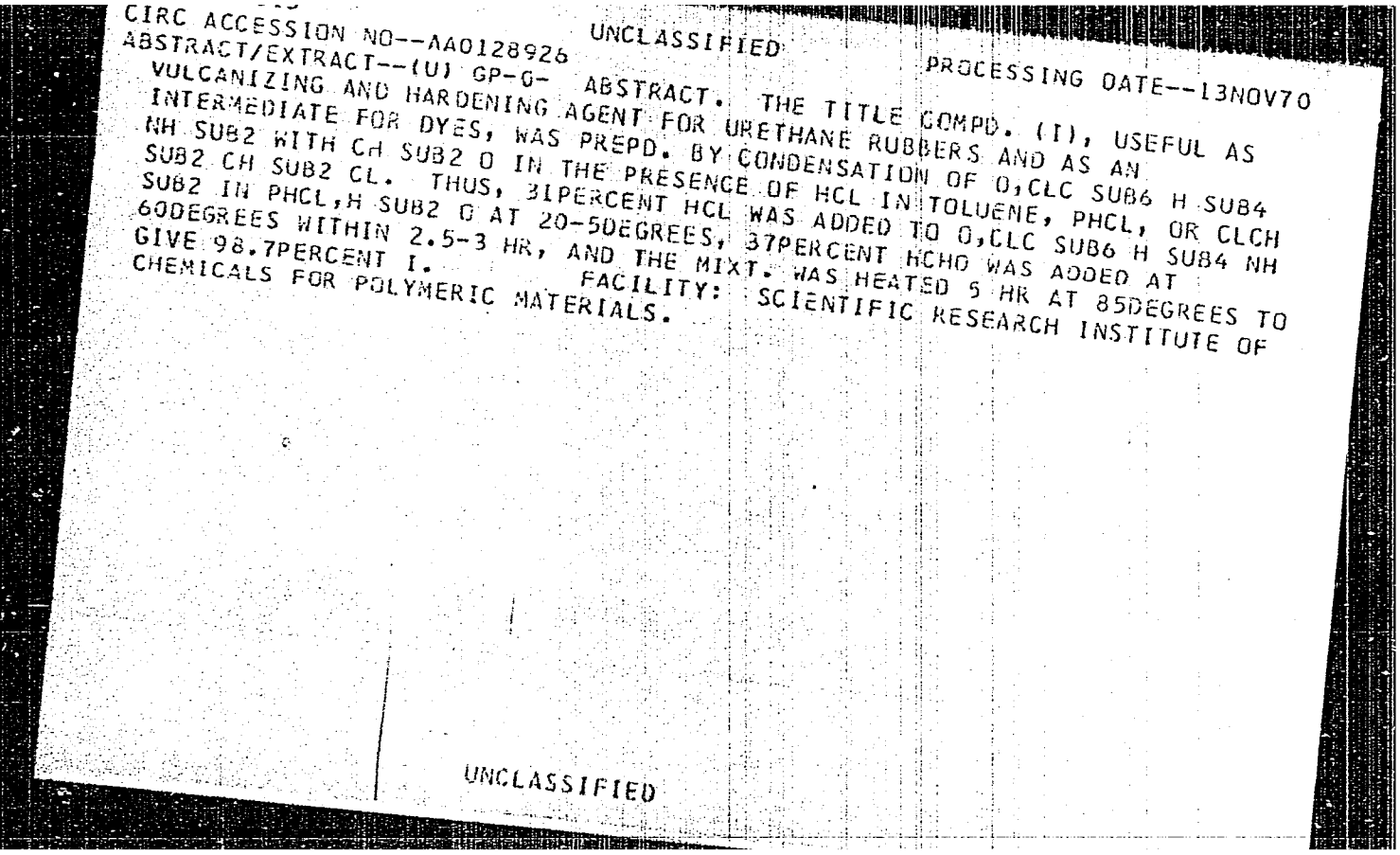
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1531

STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128926

UNCLASSIFIED



CIRC ACCESSION NO--AA0128926 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. (I), USEFUL AS VULCANIZING AND HARDENING AGENT FOR URETHANE RUBBERS AND AS AN INTERMEDIATE FOR DYES, WAS PREPD. BY CONDENSATION OF O,CLC SUB6 H SUB4 NH SUB2 WITH CH SUB2 O IN THE PRESENCE OF HCL IN TOLUENE, PHCL, OR CLCH SUB2 CH SUB2 CL. THUS, 31PERCENT HCL WAS ADDED TO O,CLC SUB6 H SUB4 NH SUB2 IN PHCL,H SUB2 O AT 20-50EGREES, 37PERCENT HCHO WAS ADDED AT 60DEGREES WITHIN 2.5-3 HR, AND THE MIXT. WAS HEATED 5 HR AT 85DEGREES TO GIVE 98.7PERCENT I. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF CHEMICALS FOR POLYMERIC MATERIALS.

UNCLASSIFIED

USSR

UDC 621.039

KOT, A. A., Doctor of Technical Sciences, GRUZDEV, N. I., SHCHAPOV, G. A., TIPIKIN, S. A., and BOGUSLAVSKIY, V. B., Engineers

"Study of the Radiolytic Processes in the Loop Water of a Reactor"

Teploenergetika, No 1, January 1972, pp 31-34

Abstract: Investigations were conducted at the second unit of the BAES (Beloyarsk Atomic Electric Power Plant) with respect to a study of the radiolysis of water, the extent of the radiolytic decomposition of ammonia which is dosed into the feed water of the reactor, and the formation of nitrates and nitrites in the area of the reactor. Methods were studied for suppression of the radiolysis of the water and removal of the radiolytic oxygen. The experiments were conducted during a change of the reactor power from 130 to 360 megawatts (thermal) which corresponds to the electrical power of the unit of 40-130 megawatts. The vapor content in the evaporative channels of the reactor remained constant independently of the reactor power and was equal to 15.4--16.6 percent. 4 fig. 1 tab. 2 ref.

1/1

UNCLASSIFIED

TITLE--LOW TEMPERATURE DECARBURIZATION OF TRANSFORMER STEEL -U-

PROCESSING DATE--090CT70

AUTHOR-(05)-NEKRASOVA, M.I., TIPIKINA, L.N., SOKOLOV, B.K., KOROBKA, B.A., ZYKOV, G.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 317-21

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TRANSFORMER STEEL, METAL DECARBURIZATION, SILICON STEEL, NITROGEN, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

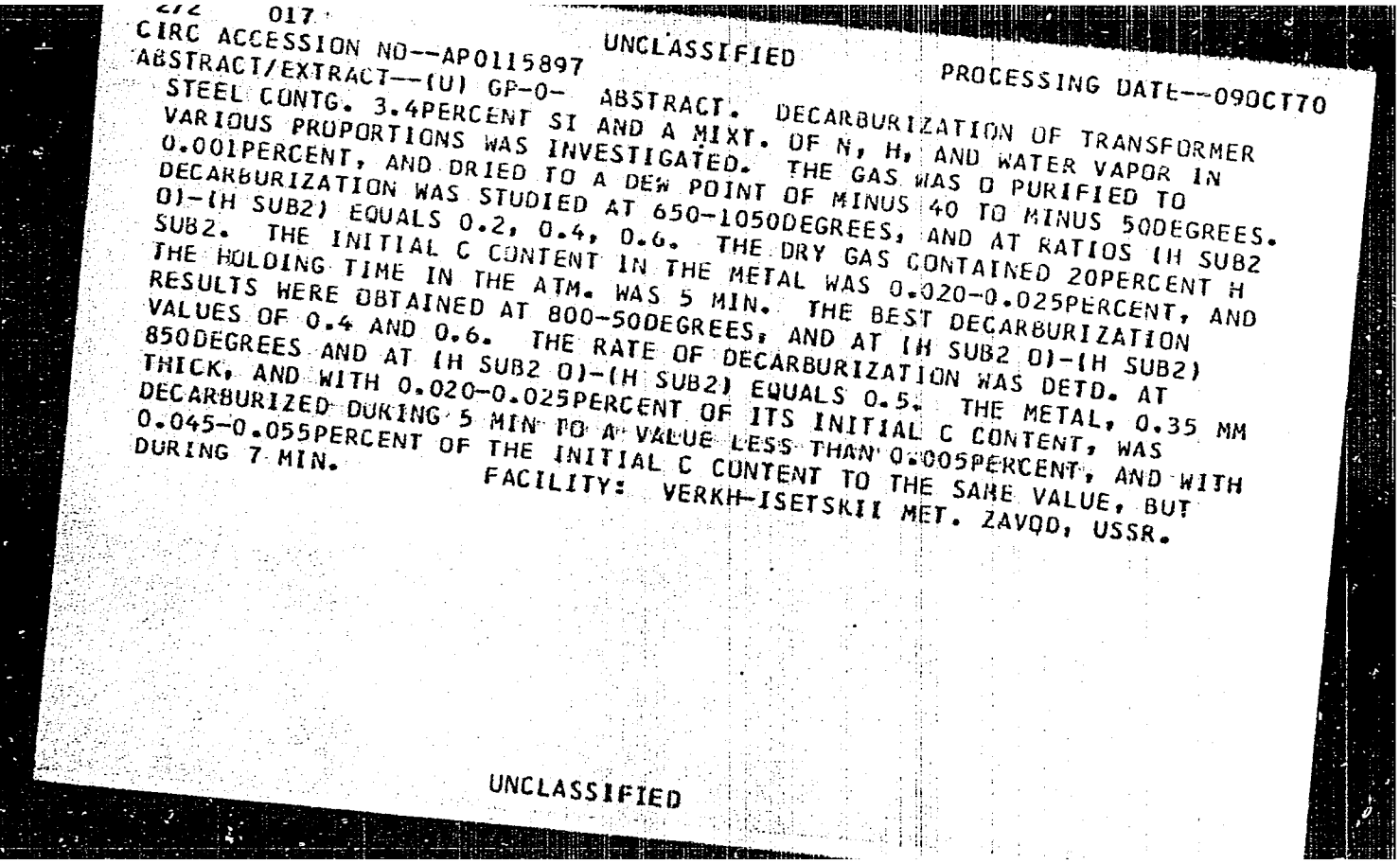
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0193

STEP NO--UR/0048/70/034/002/0317/0321

CIRC ACCESSION NO--AP0115897

UNCLASSIFIED



272 017

UNCLASSIFIED

CIRC ACCESSION NO--AP0115897 PROCESSING DATE--090CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECARBURIZATION OF TRANSFORMER STEEL CONTG. 3.4PERCENT SI AND A MIXT. OF N, H, AND WATER VAPOR IN VARIOUS PROPORTIONS WAS INVESTIGATED. THE GAS WAS D PURIFIED TO 0.001PERCENT, AND DRIED TO A DEW POINT OF MINUS 40 TO MINUS 50DEGREES. DECARBURIZATION WAS STUDIED AT 650-1050DEGREES, AND AT RATIOS (H SUB2 O)-(H SUB2) EQUALS 0.2, 0.4, 0.6. THE DRY GAS CONTAINED 20PERCENT H SUB2. THE INITIAL C CONTENT IN THE METAL WAS 0.020-0.025PERCENT, AND THE HOLDING TIME IN THE ATM. WAS 5 MIN. THE BEST DECARBURIZATION RESULTS WERE OBTAINED AT 800-50DEGREES, AND AT (H SUB2 O)-(H SUB2) VALUES OF 0.4 AND 0.6. THE RATE OF DECARBURIZATION WAS DETD. AT 850DEGREES AND AT (H SUB2 O)-(H SUB2) EQUALS 0.5. THE METAL, 0.35 MM THICK, AND WITH 0.020-0.025PERCENT OF ITS INITIAL C CONTENT, WAS DECARBURIZED DURING 5 MIN TO A VALUE LESS THAN 0.005PERCENT, AND WITH 0.045-0.055PERCENT OF THE INITIAL C CONTENT TO THE SAME VALUE, BUT DURING 7 MIN.

FACILITY: VERKH-ISETSKII MET. ZAVOD, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.96:621.391.837.1

VOLKOVSKIY, S. A., TIPUGIN, V. N. (Editors)

"Problems in Analysis of Devices for Self-Contained Radio Control of Aircraft and Space Vehicles"

Voprosy analiza ustroystv avtonomnogo radioupravleniya letatel'nymi apparatami. Tr. Mosk. aviats. in-ta, VYP. 208 (cf. English above. Works of the Moscow Aviation Institute, No 208), Moscow, 90 pp, ill. 58 k. (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G18 K)

Translation: The collection contains eight articles dealing with theoretical analysis of radio transmitters in systems for self-contained control, including problems of studying specific signals. M. S.

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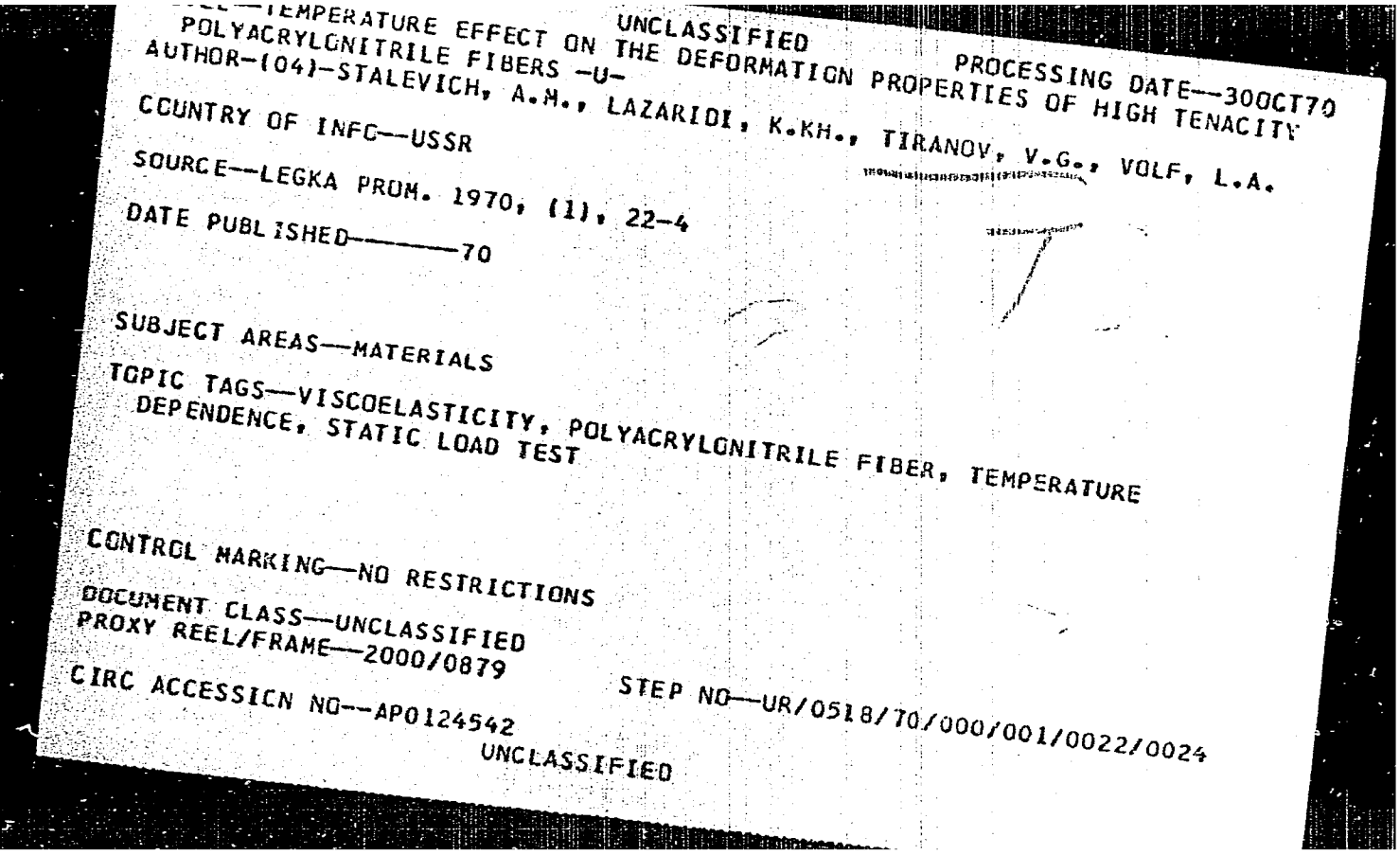


UNCLASSIFIED

TEMPERATURE EFFECT ON THE DEFORMATION PROPERTIES OF HIGH TENACITY POLYACRYLONITRILE FIBERS -U-

PROCESSING DATE--30OCT70

AUTHOR-(04)-STALEVICH, A.M., LAZARIDI, K.KH., TIRANOV, V.G., VOLF, L.A.

COUNTRY OF INFO--USSR

SOURCE--LEGKA PROM. 1970, (1), 22-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VISCOELASTICITY, POLYACRYLONITRILE FIBER, TEMPERATURE DEPENDENCE, STATIC LOAD TEST

CONTROL MARKING--NO RESTRICTIONS

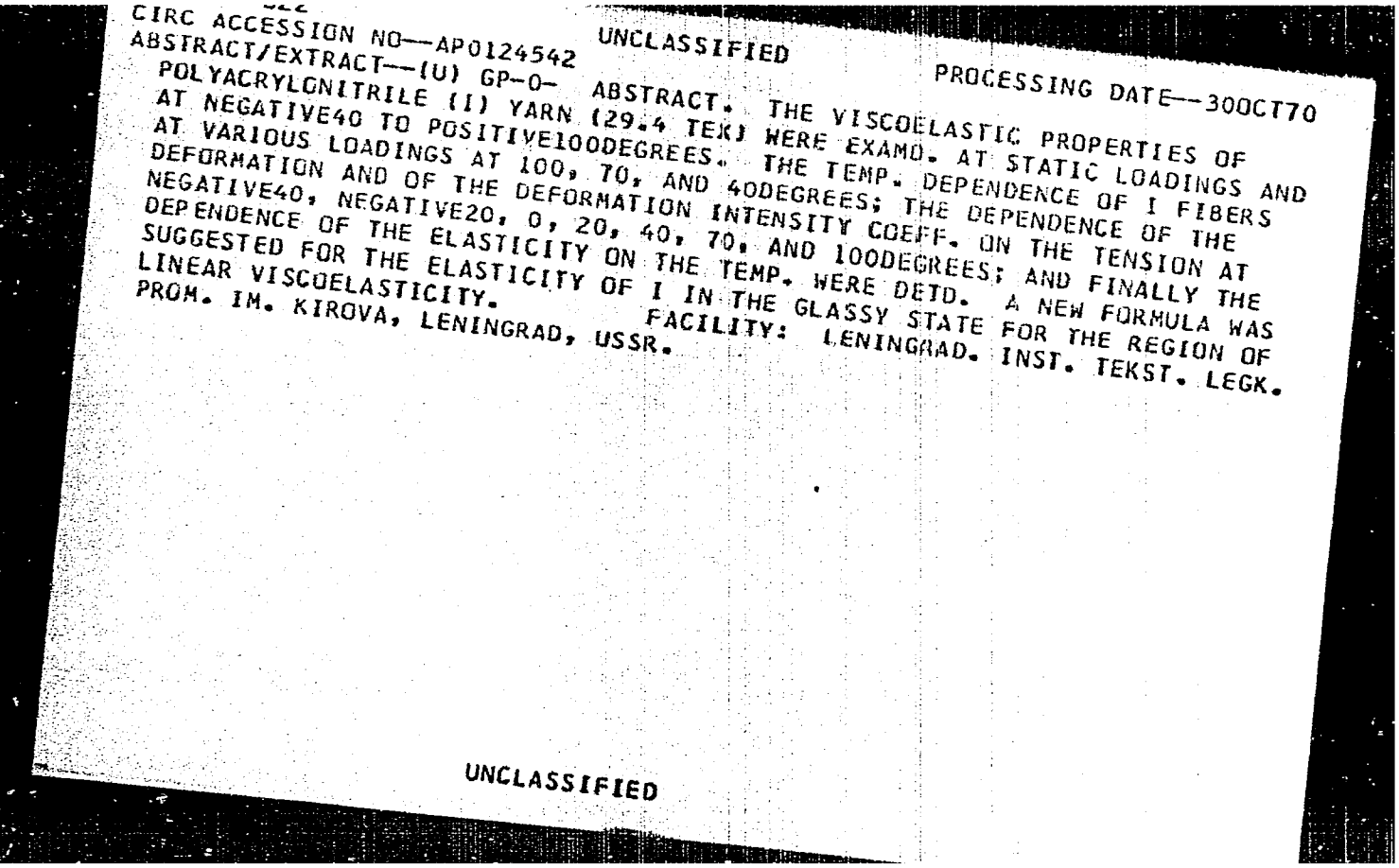
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0879

STEP NO--UR/0518/70/000/001/0022/0024

CIRC ACCESSION NO--AP0124542

UNCLASSIFIED

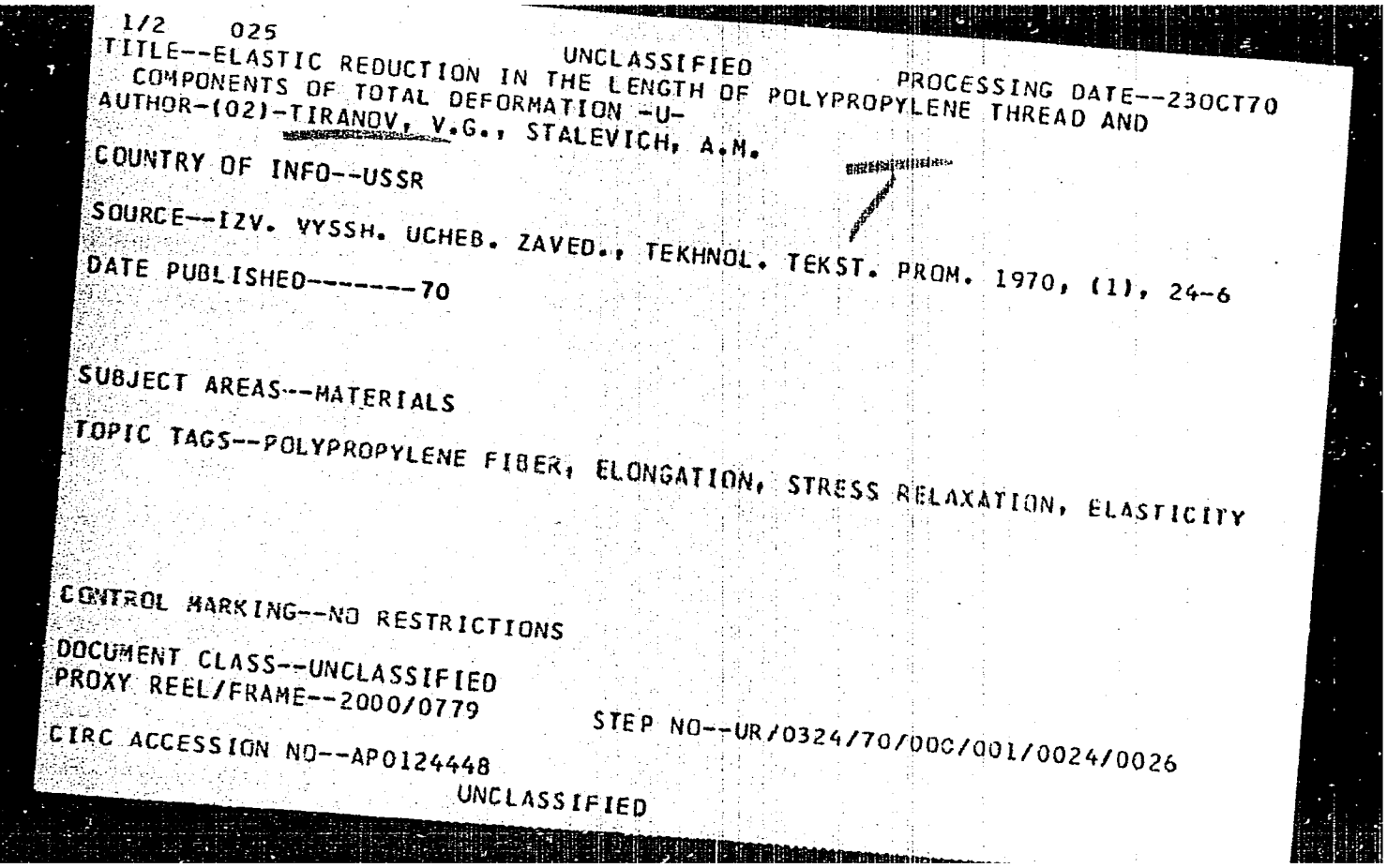


CIRC ACCESSION NO--AP0124542 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VISCOELASTIC PROPERTIES OF POLYACRYLONITRILE (I) YARN (29.4 TEX) WERE EXAMD. AT STATIC LOADINGS AND AT NEGATIVE40 TO POSITIVE100DEGREES. THE TEMP. DEPENDENCE OF I FIBERS AT VARIOUS LOADINGS AT 100, 70, AND 40DEGREES; THE DEPENDENCE OF THE DEFORMATION AND OF THE DEFORMATION INTENSITY COEFF. ON THE TENSION AT NEGATIVE40, NEGATIVE20, 0, 20, 40, 70, AND 100DEGREES; AND FINALLY THE DEPENDENCE OF THE ELASTICITY ON THE TEMP. WERE DETD. A NEW FORMULA WAS SUGGESTED FOR THE ELASTICITY OF I IN THE GLASSY STATE FOR THE REGION OF LINEAR VISCOELASTICITY.

FACILITY: LENINGRAD. INST. TEKST. LEGK. PROM. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED



1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELASTIC REDUCTION IN THE LENGTH OF POLYPROPYLENE THREAD AND COMPONENTS OF TOTAL DEFORMATION -U-

AUTHOR-(02)-TIRANOV, V.G., STALEVICH, A.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. TEKST. PROM. 1970, (1), 24-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYPROPYLENE FIBER, ELONGATION, STRESS RELAXATION, ELASTICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0779 STEP NO--UR/0324/70/000/001/0024/0026

CIRC ACCESSION NO--AP0124448

UNCLASSIFIED

2/2 025 UNCLASSIFIED

CIRC ACCESSION NO--AP0124448 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYPROPYLENE FIBERS WERE STRETCHED 4PERCENT OF THEIR LENGTH, KEPT IN THE STRETCHED STATE 1-960 MIN AND ALLOWED TO CONTRACT WITHOUT LOADING. THE TIME REQUIRED BY THE FIBERS TO ATTAIN THEIR PERMANENT SET VALUES INCREASED WITH THE TIME OF THE ELONGATING STRESS APPLICATION. DURING STRETCHING, DUE TO STRESS RELAXATION, THERE IS A DECREASE OF THE INSTANTANEOUS ELASTICITY (REBOUND ELASTICITY) AND AN INCREASE OF THE HIGH ELASTICITY COMPONENT OF THE FIBERS. THIS SHIFT IN THE ELASTIC PROPERTIES AFFECTS THE RELAXATIONAL FIBER PROPERTIES. FACILITY: LENINGRAD. INST. TEKST. LEGK. PROM. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 - 328 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--FINE STRUCTURE AND PROPERTIES OF DEFORMED AND ANNEALED TUNGSTEN SINGLE CRYSTALS -U-

AUTHOR-(05)-TIRASPOLSKIY, V.I., KOTLVAR, A.A., GRODSKIY, E.A., MIRONOVA, O.YA., RATNER, L.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1) 175-9

DATE PUBLISHED--------70

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

TOPIC TAGS--TUNGSTEN, METAL SINGLE CRYSTAL, Z RAY DIFFRACTION, ZONE MELTING, METAL DEFORMATION, WARM ROLLING, MICROHARDNESS, RESISTIVITY

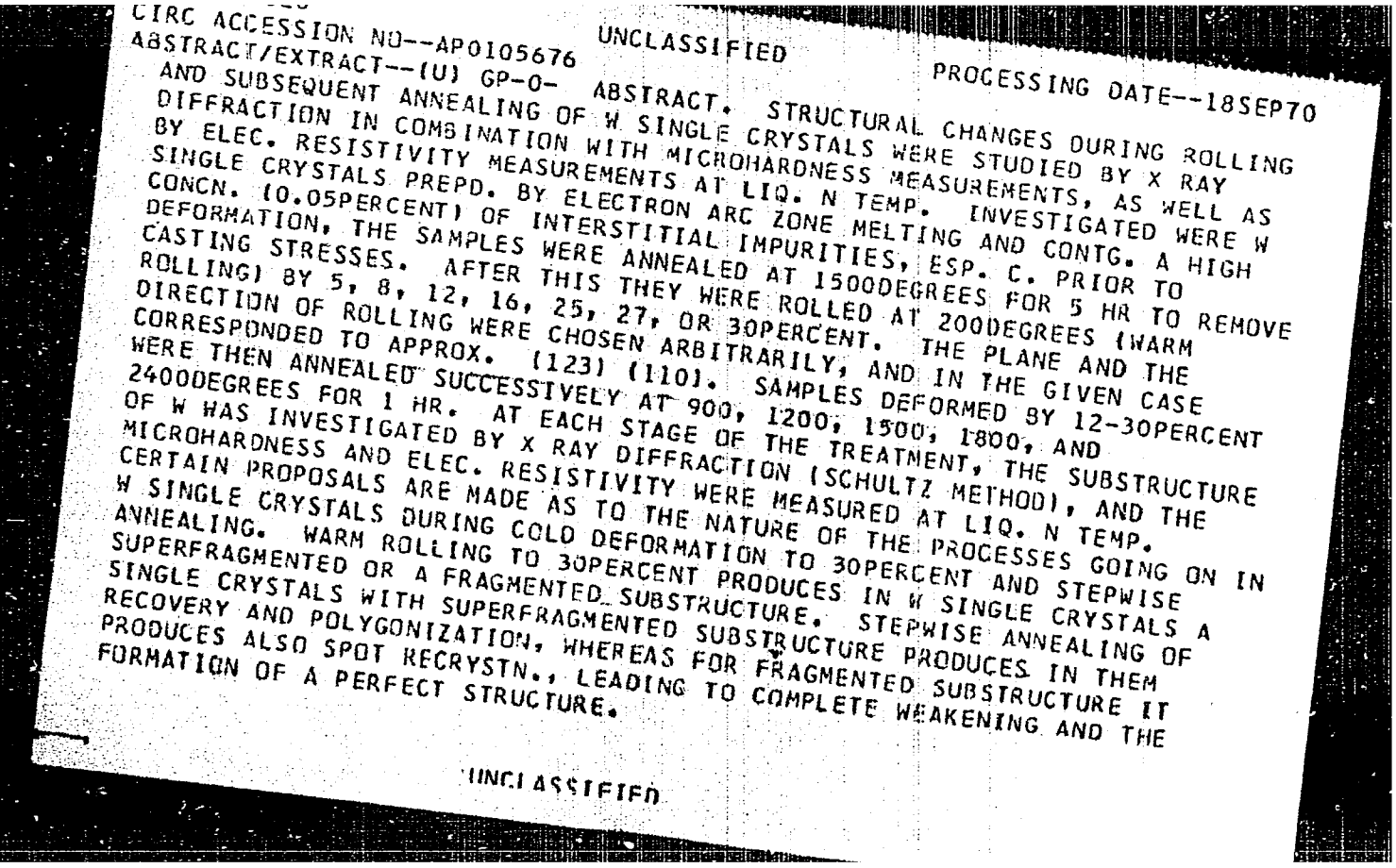
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0700 STEP NO--UR/0126/70/029/001/0175/0179

CIRC ACCESSION NO--AP0105676

UNCLASSIFIED



CIRC ACCESSION NO--AP0105676 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRUCTURAL CHANGES DURING ROLLING AND SUBSEQUENT ANNEALING OF W SINGLE CRYSTALS WERE STUDIED BY X RAY DIFFRACTION IN COMBINATION WITH MICROHARDNESS MEASUREMENTS, AS WELL AS BY ELEC. RESISTIVITY MEASUREMENTS AT LIQ. N TEMP. INVESTIGATED WERE W SINGLE CRYSTALS PREPD. BY ELECTRON ARC ZONE MELTING AND CONTG. A HIGH CONCN. (0.05PERCENT) OF INTERSTITIAL IMPURITIES, ESP. C. PRIOR TO DEFORMATION, THE SAMPLES WERE ANNEALED AT 1500DEGREES FOR 5 HR TO REMOVE CASTING STRESSES. AFTER THIS THEY WERE ROLLED AT 200DEGREES (WARM ROLLING) BY 5, 8, 12, 16, 25, 27, OR 30PERCENT. THE PLANE AND THE DIRECTION OF ROLLING WERE CHOSEN ARBITRARILY, AND IN THE GIVEN CASE CORRESPONDED TO APPROX. (123) (110). SAMPLES DEFORMED BY 12-30PERCENT WERE THEN ANNEALED SUCCESSIVELY AT 900, 1200, 1500, 1800, AND 2400DEGREES FOR 1 HR. AT EACH STAGE OF THE TREATMENT, THE SUBSTRUCTURE OF W WAS INVESTIGATED BY X RAY DIFFRACTION (SCHULTZ METHOD), AND THE MICROHARDNESS AND ELEC. RESISTIVITY WERE MEASURED AT LIQ. N TEMP. CERTAIN PROPOSALS ARE MADE AS TO THE NATURE OF THE PROCESSES GOING ON IN W SINGLE CRYSTALS DURING COLD DEFORMATION TO 30PERCENT AND STEPWISE ANNEALING. WARM ROLLING TO 30PERCENT PRODUCES IN W SINGLE CRYSTALS A SUPERFRAGMENTED OR A FRAGMENTED SUBSTRUCTURE. STEPWISE ANNEALING OF SINGLE CRYSTALS WITH SUPERFRAGMENTED SUBSTRUCTURE PRODUCES IN THEM RECOVERY AND POLYGONIZATION, WHEREAS FOR FRAGMENTED SUBSTRUCTURE IT PRODUCES ALSO SPOT RECRYSTN., LEADING TO COMPLETE WEAKENING AND THE FORMATION OF A PERFECT STRUCTURE.

UNCLASSIFIED

USSR

UDC 669.29:620.183

TIRASPOL'SKIY, V. I., KOTLYAR, A. A., GRODSKIY, E. A., MIRONOVA, O. YA., RAYNER, L. A., and SHPARO, N. B.

"Thin Structure and Properties of Deformed and Annealed Tungsten Single Crystals"

Sverdlovsk, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 175-179

Abstract: Structural changes occurring in tungsten single crystals during hot rolling and subsequent annealing were investigated, using the methods of X-ray diffraction microscopy and by measuring the microhardness and residual electrical resistance at the liquid nitrogen temperature (78°K). The experimental technique and procedure for producing tungsten single crystals are described. X-ray photographs are presented of single crystal structure before and after rolling, and also of samples strained at 30% and annealed at various temperatures (1200 to 2400°). They show that the dislocation density inside the subgrains increases with strain, and at ε = 25% the subgrain boundaries are no longer discernible. This state is conditionally characterized as prefragmentary. At ε = 27% a qualitatively new fragmentary state occurs. The substructure and properties of deformed (up to 30%) tungsten single crystals after annealing at various temperatures are studied.

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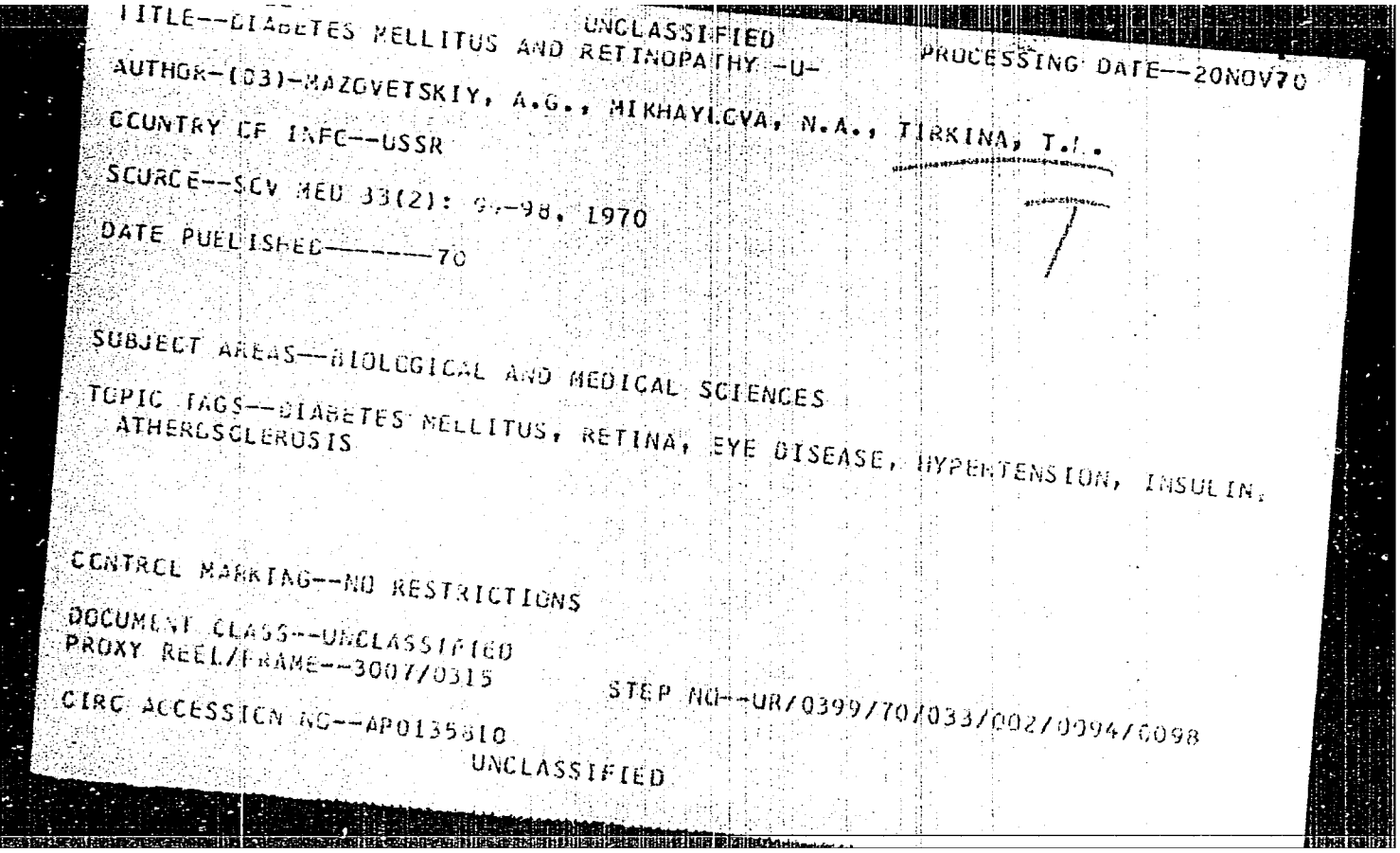
USSR

TIRASPOL'SKIY, V. I., et al, Akademiya Nauk SSSR, Fizika Metallov i Metallovedeniye, Vol 29, No 1, Jan 70, pp 175-179

The variation of the residual electrical resistance and microhardness of samples deformed at 25 and 30% and annealed at 900° are presented in graphs and analyzed. The results show that hot rolling with 30% strain produces a prefragmentary or fragmentary substructure, depending on strain. The step-by-step annealing of single crystals with a prefragmentary substructure induces only relaxation and polygonalization. In the case of a fragmentary substructure it also induces recrystallization, which leads to a total softening and a perfect structure. Orig. art. has: 5 figures.

2/2



UNCLASSIFIED

TITLE--DIABETES MELLITUS AND RETINOPATHY -U- PROCESSING DATE--20NOV70

AUTHOR-(03)-MAZOVETSKIY, A.G., MIKHAYLOVA, N.A., TIRKINA, T.I.

COUNTRY OF INFO--USSR

SOURCE--SOV MED 33(2): 94-98, 1970

DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIABETES MELLITUS, RETINA, EYE DISEASE, HYPERTENSION, INSULIN, ATHEROSCLEROSIS

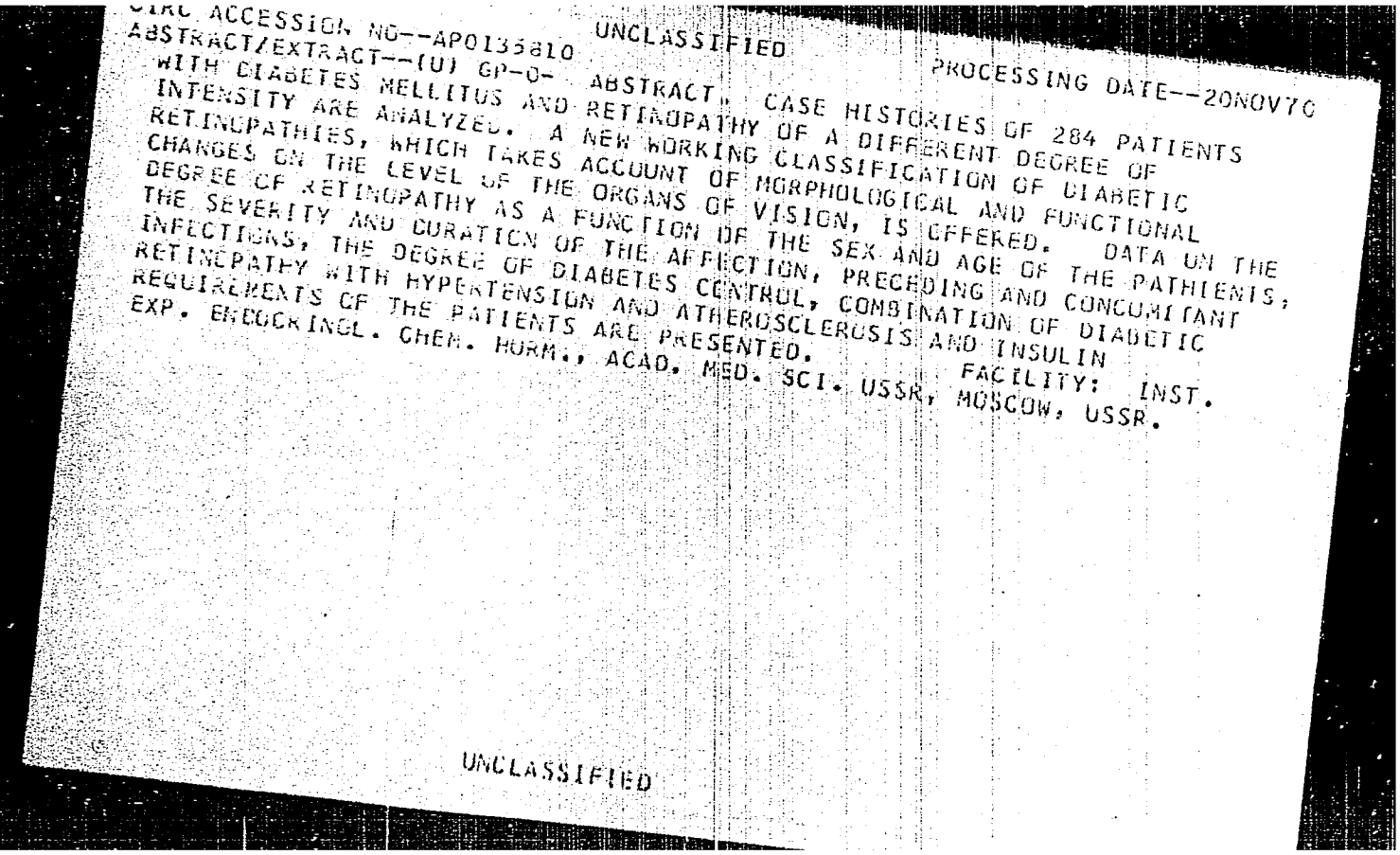
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0315

STEP NO--UR/0399/70/033/002/0094/0098

CIRC ACCESSION NO--AP0135810

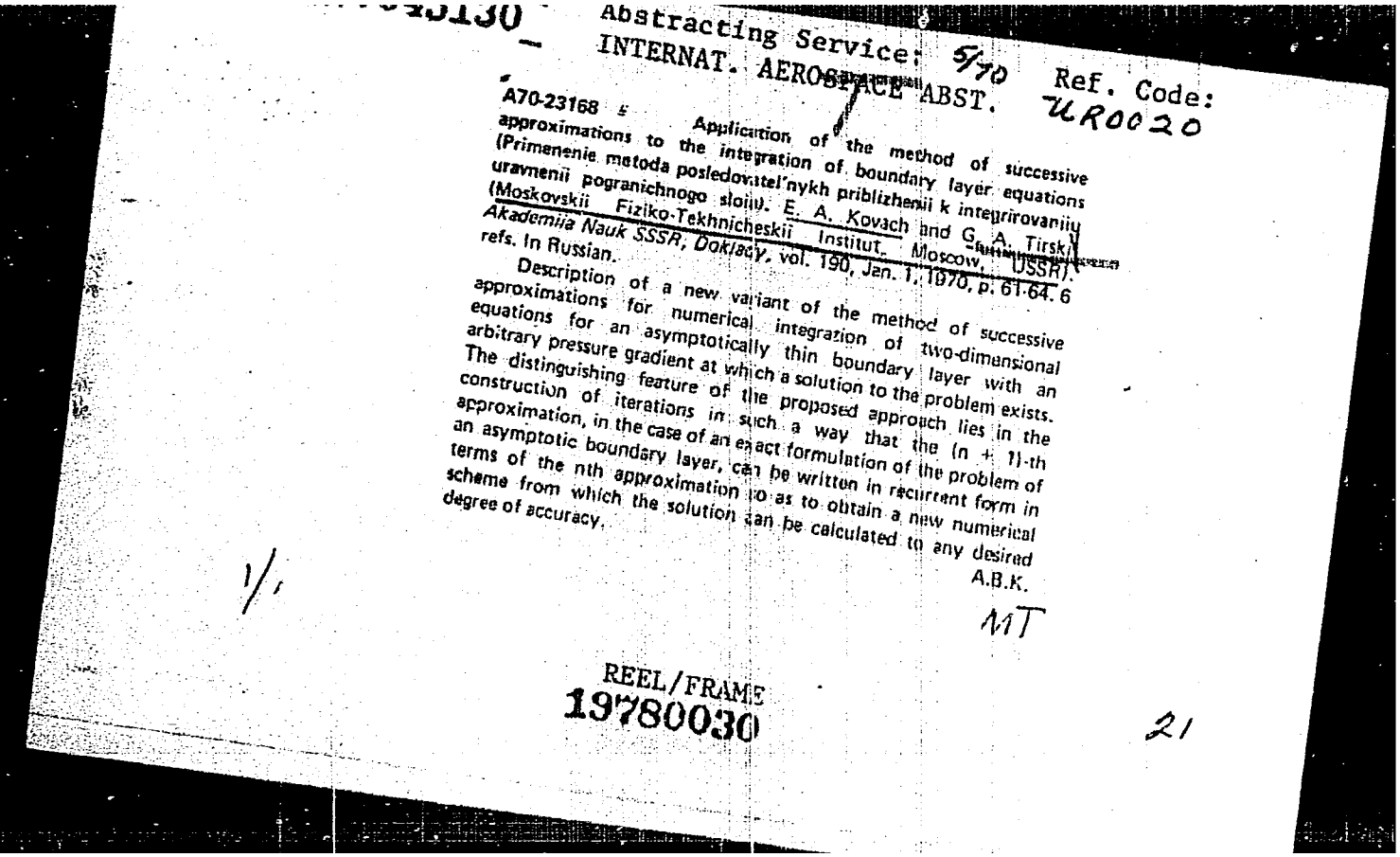
UNCLASSIFIED



CIRC ACCESSION NO--AP0135810 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CASE HISTORIES OF 284 PATIENTS WITH DIABETES MELLITUS AND RETINOPATHY OF A DIFFERENT DEGREE OF INTENSITY ARE ANALYZED. A NEW WORKING CLASSIFICATION OF DIABETIC RETINOPATHIES, WHICH TAKES ACCOUNT OF MORPHOLOGICAL AND FUNCTIONAL CHANGES ON THE LEVEL OF THE ORGANS OF VISION, IS OFFERED. DATA ON THE DEGREE OF RETINOPATHY AS A FUNCTION OF THE SEX AND AGE OF THE PATIENTS, THE SEVERITY AND DURATION OF THE AFFECTION, PRECEDING AND CONCOMITANT INFECTIONS, THE DEGREE OF DIABETES CONTROL, COMBINATION OF DIABETIC RETINOPATHY WITH HYPERTENSION AND ATHEROSCLEROSIS AND INSULIN REQUIREMENTS OF THE PATIENTS ARE PRESENTED. FACILITY: INST. EXP. ENDOCRINOL. CHEM. HORM., ACAD. MED. SCI. USSR, MOSCOW, USSR.

UNCLASSIFIED



Abstracting Service: 5/70 Ref. Code: UR0020

INTERNAT. AEROSPACE ABST.

A70-23168 Application of the method of successive approximations to the integration of boundary layer equations (Primenenie metoda posledovatel'nykh priblizhenii k integrirovaniiu uravnenii pogranichnogo sloiu). E. A. Kovach and G. A. Tirskii (Moskovskii Fiziko-Tekhnicheskii Institut, Moscow, USSR). *Akademiia Nauk SSSR, Doklady*, vol. 190, Jan. 1, 1970, p. 61-64. 6 refs. In Russian.

Description of a new variant of the method of successive approximations for numerical integration of two-dimensional equations for an asymptotically thin boundary layer with an arbitrary pressure gradient at which a solution to the problem exists. The distinguishing feature of the proposed approach lies in the construction of iterations in such a way that the (n + 1)-th approximation, in the case of an exact formulation of the problem of an asymptotic boundary layer, can be written in recurrent form in terms of the nth approximation so as to obtain a new numerical scheme from which the solution can be calculated to any desired degree of accuracy.

A.B.K.

MT

REEL/FRAME
19780030

21

USSR

UDC 547.822.1

TIRZIT, G. D., and DUBUR, G. Ya., Institute of Organic Synthesis, Riga

"1,4-Dihydropyridines as Inhibitors of Free-Radical Reactions"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 1972, pp 133-134

Abstract: Certain of the 1,4-dihydropyridines are known to possess hydrogen-donor properties. This led to the present study of these compounds as inhibitors of free-radical reactions. The autooxidation of linetol was employed, the level of peroxidation being determined with the use of iodometric titration and with the reaction with 2-thiobarbituric acid. The antioxidant activity of the 1,4-dihydropyridines was then expressed in percent of reduction of autooxidation. The reduction of electrochemiluminescence by this group of compounds was also studied. The authors conclude that 1,4-dihydropyridines have been definitely established as a new class of antioxidants -- inhibitors of free-radical reactions. Tables of data obtained accompany the paper.

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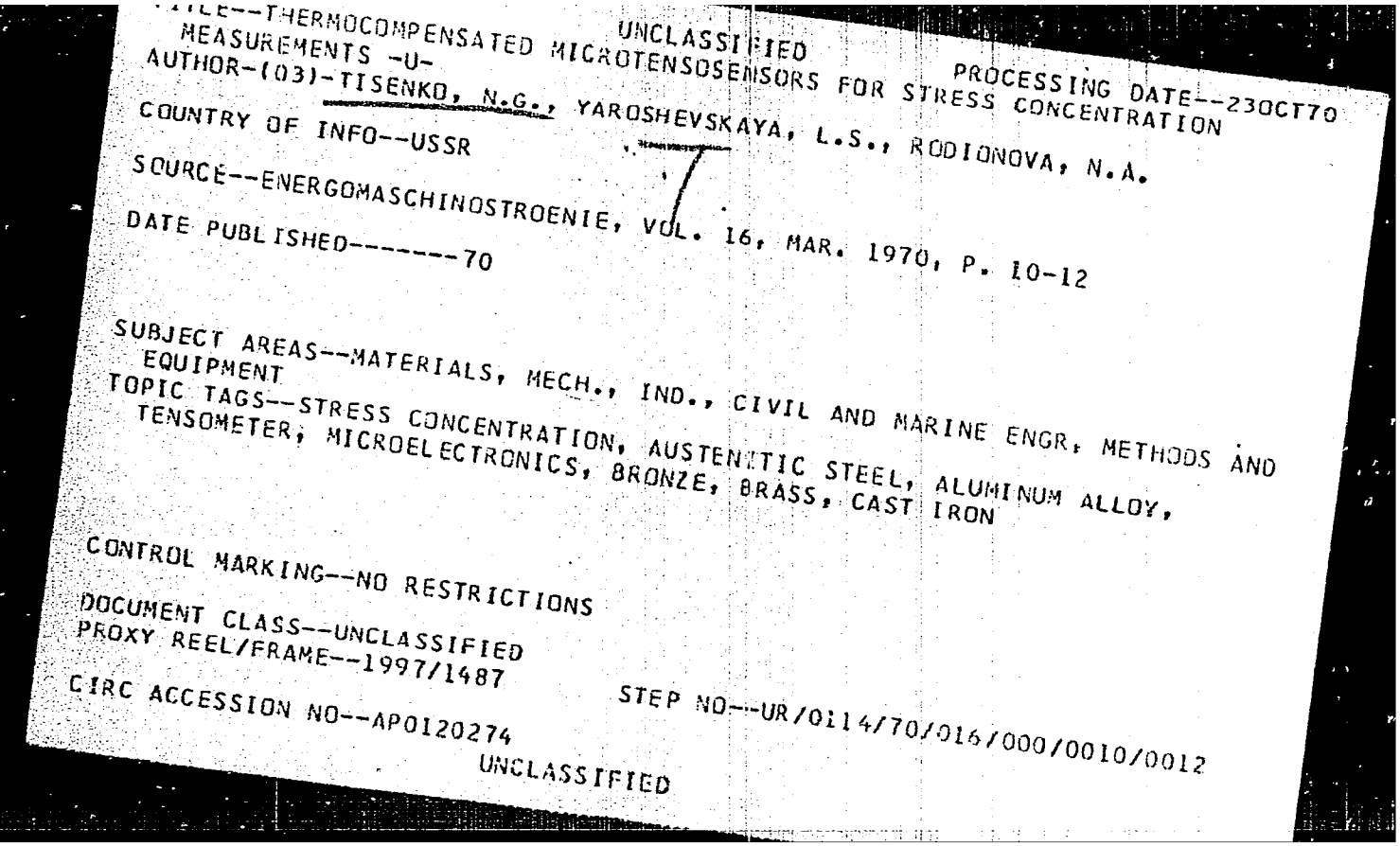


UNCLASSIFIED

TITLE--THERMOCOMPENSATED MICROTENSOSENSORS FOR STRESS CONCENTRATION MEASUREMENTS -U-

PROCESSING DATE--23OCT70

AUTHOR-(03)-TISENKO, N.G., YAROSHEVSKAYA, L.S., RODIONOVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--ENERGOMASCHINOSTROENIE, VOL. 16, MAR. 1970, P. 10-12

DATE PUBLISHED-------70

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

TOPIC TAGS--STRESS CONCENTRATION, AUSTENITIC STEEL, ALUMINUM ALLOY, TENSOMETER, MICROELECTRONICS, BRONZE, BRASS, CAST IRON

CONTROL MARKING--NO RESTRICTIONS

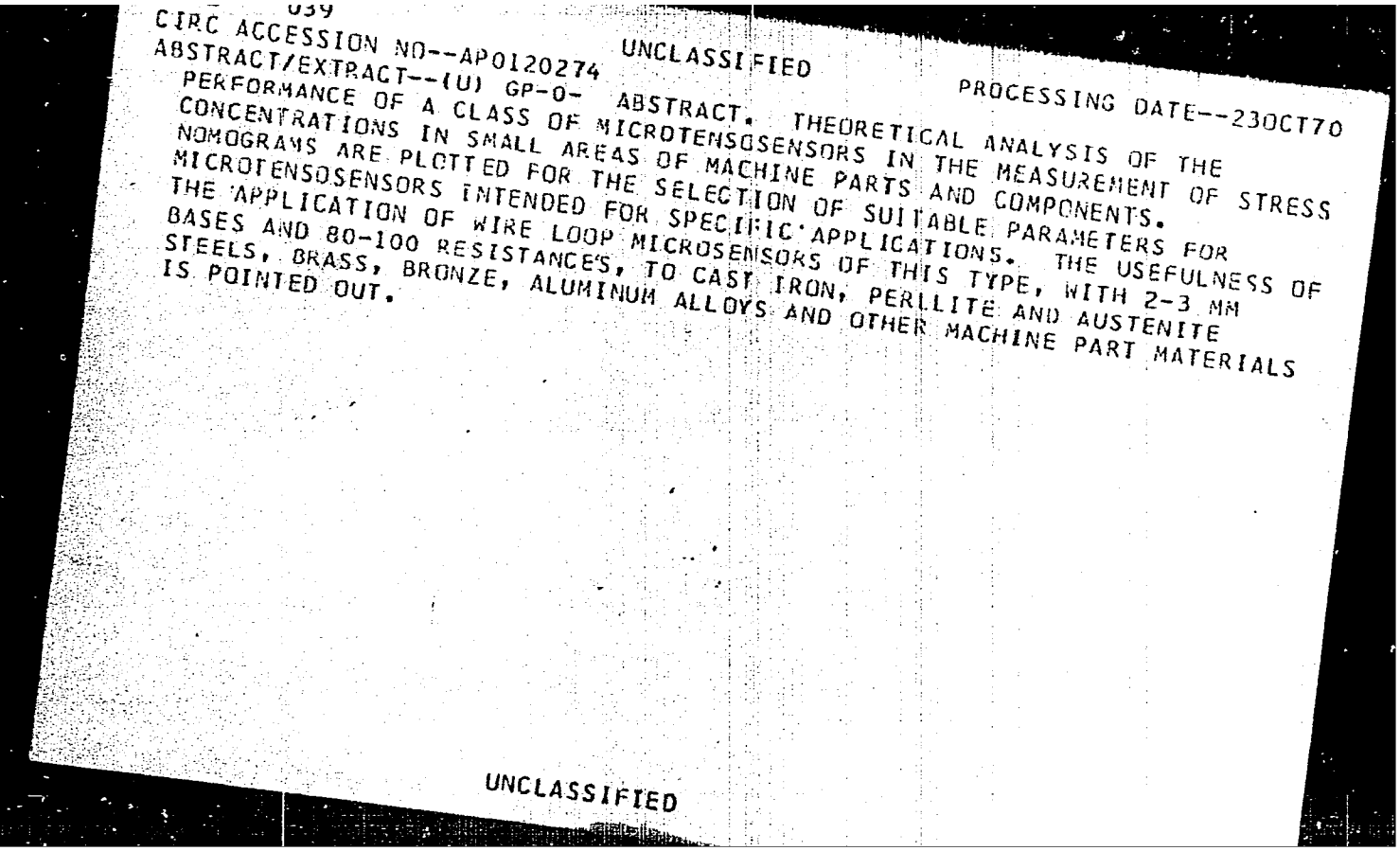
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1487

STEP NO--UR/0114/70/016/000/0010/0012

CIRC ACCESSION NO--AP0120274

UNCLASSIFIED



039

CIRC ACCESSION NO--AP0120274 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ANALYSIS OF THE PERFORMANCE OF A CLASS OF MICROTENSOSENSORS IN THE MEASUREMENT OF STRESS CONCENTRATIONS IN SMALL AREAS OF MACHINE PARTS AND COMPONENTS. NOMOGRAMS ARE PLOTTED FOR THE SELECTION OF SUITABLE PARAMETERS FOR MICROTENSOSENSORS INTENDED FOR SPECIFIC APPLICATIONS. THE USEFULNESS OF THE APPLICATION OF WIRE LOOP MICROSENSORS OF THIS TYPE, WITH 2-3 MM BASES AND 80-100 RESISTANCES, TO CAST IRON, PERLLITE AND AUSTENITE STEELS, BRASS, BRONZE, ALUMINUM ALLOYS AND OTHER MACHINE PART MATERIALS IS POINTED OUT.

UNCLASSIFIED

USSR

Steels

UDC 621.73.073

TISHAYEV, S. I., KONRAD, YU. G., POZNYAK, L. A., STETSENKO, N. V., and OSADCHIY, A. N.

"New Steel 5Kh2VMNF (DI-32) for Hot Deforming Die Tool"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 73, pp 14-16

Abstract: The results of comparative studies of the basic properties are presented for a new steel 5Kh2VMNF (DI-32), standard grade steel 5KhNM, and a steel recently presented, 40KhSMF, as well as the strength of dies made from the new steel and 5KhNM. Chemical composition of the three steels was (in %):

	C	Mn	Si	Cr	Mo	Ni	W	V
5Kh2VMNF	0.47	0.49	0.40	1.78	0.49	1.50	0.87	0.37
5KhNM	0.54	0.64	0.24	0.80	0.19	1.65	--	--
40KhSMF	0.38	0.57	0.80	1.69	0.95	0.10	--	0.35

Data of mechanical tests showed that the new steel surpasses the other two steels in both heat resistance and impact strength for the same level of strength. The new steel also had higher hardness than the other two steels for all tempering temperatures. The average strength of dies made from

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USSR

TISHAYEV, S. I., et al., Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug 73, pp 14-16

steel 5Kh2VMNF was 2.5-3 times higher than dies made from 5KhNM and the economic effect from use of the new steel amounts to 1000 rubles/ton. Tests of the new steel and 5KhNM were conducted for tools made of the two steels at the Tokmaksk Die-Forging Plant. Four tables, four bibliographic references.

2/2

ARSEN'YAN, T.I., PASHKOV, F.F., SEMENOV, A.A., TISHCHENKO, A.A., RIMSKIY, N.N.
[Moscow State Univereity]

UDC 535.853.4:525.7

"Interferometric Investigation Of Phase Fluctuations Of Coherent Optical Radiation In The Atmosphere"

Izv.VUZ: Radiofizika, Vol XV, No 8, Aug 1972, pp 1228-1232

Abstract: The results are presented of an investigation of the phase fluctuations of coherent optical radiation propagating in a randomly inhomogeneous troposphere. The equipment used included an interferometric system based on a Zhamen type interferometer and a special apparatus for quick-response measurement of temperature pulsations. A laser (λ = 0.63 micron) operating in a regime of axial oscillations was used as the radiation source. The radius of the beam equalled 1.2 cm. An analysis is made of averaged interference patterns as a function of the diversity base of the interfering beams. The interference patterns were obtained under various meteorological conditions which were characterized by various values of the structural constant of the refractive index. It is shown that the difference between the theoretical and experimental dependences $D_\varphi(\rho)$

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ARSENI'YAN, T. I., et al., Izv. VUZ: Radiofizika, Vol XV, No 8, Aug 1972, pp 1228-1232

is determined by the turbulence intensity on the trace. A strong dependence is shown of the phase variations on the meteorological conditions along the trace, in particular on the tranverse velocity and trace length. 1 fig. 2 tab. 9 ref. Received by editors, 2 Aug 1971.

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BELEN'KIY, YA. YE., LEVITSKIY, O. V., TISHCHENKO, A. G.

UDC 621.375.018.756

"Analysis of a Pulse Transformer Amplifier"

Otbor i peredacha inform. Resp. mezhved. sb. (Information Sorting and Transmission. Republic Interdepartmental Collection), 1970, vyp. 26, pp 96-101 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D89)

Translation: A transistorized pulse device connected according to the scheme with a common base with the transformer coupling is analyzed. The possibility of excluding insignificant frequency-dependent parameters of the circuit is investigated in order to construct simplified circuit diagrams of the investigated amplifier for the operating frequency range. A method of series consideration of the frequency-dependent circuit parameters by subdividing the operating frequency range into zones inside which it is possible to neglect certain frequency-dependent parameters is proposed. Simple relations are obtained for the boundary frequencies of the zones, and the frequency zones are constructed by the proposed procedure for a specific amplifier circuit. The bibliography has 7 entries.

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UDC: 621.317.351:621.397

BELEN'KIY, Ya. Ye., MIKHALEVSKIY, V. I., TISHCHENKO, A. G., TSERKOVNYUK, E. A.

"A Device for Automatic Isolation of Television Signal Test Lines and Their Elements"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291371, Division H, filed 15 Apr 69, published 6 Jan 71, p 161

Translation: This Author's Certificate introduces a device for automatically isolating the test lines of a television signal and their elements. The device contains a synchroselector, a selector of line and frame pulses, a line frequency pulse oscillator, a half-frame separation circuit, a switch for selecting the location of a line element, a cadence pulse generator and a flip-flop with separate triggering. As a distinguishing feature of the patent, the device is simplified and its operational reliability is improved by connecting two multiphase multivibrators in series through flip-flops with separate triggering between the selector of line and frame pulses and the switch for selecting the location of a line element. A signal from the line frequency pulse oscillator is sent to the inputs of these two multivibrators, and the cadence pulse generator is connected to the third multiphase multivibrator. The outputs of this third multivibrator are connected to coincidence circuits to which signals are sent from the line position selector switch.

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UDC:622.7:321.9.004

AKOPOVA, K. S., DOKSHINA, I. D., TYUTYUNNIK, N. D., YAKUBOVICH, I. A., ZADOROZHNYY, V. G., BELOGAY, P. D., DEGTYARENKO, A. V., TISHCHENKO, A. G.

"Use of Ultrasound in Enrichment of Titanium-Zirconium Deposits"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 86-89

Abstract: A method has been developed for application of acoustical oscillations to minerals to change their surface properties before enrichment. This article presents results of an investigation of the influence of ultrasonics on the minerals in titanium-zirconium placer deposits. It has been established that 1-3 minutes action of ultrasound at 20 Khz and an intensity of 3.8 W/cm^2 greatly activates the flotation of minerals by the flotation oil. The yield of minerals in the foam product increases as follows: zirconium from 18.6 to 98.9%, rutile from 3.0 to 97.5%, ilmenite from 0 to 94%, staurolite from 0 to 90%. The expenditure of collectors is also reduced and the flotation properties of minerals from different deposits are made more similar.

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UDC: 621.373.531

BELEN'KIY, Ya. Ye., DYSSA, O. F., TISHCHENKO, A. G.

"Statistical Scatter of the Duration of Pulses From a Relaxation Oscillator with Common Emitter Coupling"

Otbor i peredacha inform. Resp. mezhved. sb. (Selection and Transmission of Information. Republic Interdepartmental Collection), 1970, vyp. 25, pp 117-122 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G233)

Translation: The authors consider the possibility for mass production of a relaxation oscillator circuit with common emitter coupling. The scatter of duration values for pulses from the relaxation oscillator is determined by using deterministic and probabilistic methods of calculation. The functional relationship for the relative change in the output parameter as a function of the relative changes in individual circuit elements and the statistical characteristics of the circuit elements within the field of tolerance are used for the scatter characteristic. The deviation of the output parameter is presented in the form of statistical characteristics of random errors in circuit elements related by the functional relationship. Tolerances are distributed among the parameters of the individual circuit elements with regard to the corresponding influence functions. Bibliography of five titles. Resumé.

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TISHCHENKO, A. G.

UDC 621.375.4

"Analysis of a Loaded Transistorized Amplifier with Parallel Inductive Correction"

Otbor i peredacha inform. Resp. mezhved. sb. (Information Sorting and Transmission. Republic Interdepartmental Collection), 1970, vyp. 24, pp 85-90 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D86)

Translation: This article contains an analysis of a transistorized amplifying cascade with emitter countercoupling and parallel inductive correction operating on a complex load. Expressions are obtained for the correction coefficients corresponding to the optimal frequency and phase characteristics of the amplifier. The characteristic features of the loaded transformer amplifier with parallel inductive correction are noted by comparison with an analogous tube and unloaded transistor amplifying cascade. The bibliography has seven entries.

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UDC 621.373.531.1

BELENKIY, YA. YE., TISHCHENKO, A. G.

"Multiphase Multivibrator with a Pulse Length Less than 100 Nanoseconds"

Otbor i peredacha inform. Resp. mezhved. sb. (Information Sorting and Transmission. Republic Interdepartmental Collection), 1970, vyp. 23, pp 72-77 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G277)

Translation: This article contains a description of a multiphase multivibrator circuit with perallel inductive correlation made of transistors and operating in the nanosecond range. An analysis of the circuit diagram of the multiphase multivibrator in the flip stage is presented considering stray capacitances. The solution of the characteristic equation is found by the Lobachevskiy-Graffe-Dendelen method. From the minimum positive root condition, an expression is obtained for finding the magnitude of the corrective inductance. Simple relations are presented for calculating the basic circuit parameters and oscillograms of the pulses obtained. The bibliography has six entries.

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UDC: 621.375.421

BELEN'KIY, Ya. Ye., TISHCHENKO, A. G.

"Design and Analysis of Substitution Circuits for Transistorized Wide-Band Amplifiers"

Teor. elektrotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Theoretical Electrical Engineering. Republic Interdepartmental Scientific and Technical Collection), 1969, vyp. 8, pp 58-64 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6D13C)

Translation: To simplify analysis of transistorized wide-band amplifiers, it is proposed that the working frequency range be broken up into zones which have a physical interpretation -- specific substitution circuits. Simple expressions are given for determining the limiting frequencies of the zones. Two illustrations, one table, bibliography of four titles. Resumé.

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UDC 621.314.61

TUGANBAYEV, I. T., and TISHCHENKO, A. I.

"Control Circuit of Nonsymmetric Bridge Circuit of a Thyristorized Rectifying Converter"

Sb. statey aspirantov i soiskateley. M-vo vyssh. i sredn. spets. obrazovaniya KazSSR. Tekhn. n. (Collection of Papers of Graduate Students and Competitors. Ministry of Higher and Middle Special Education of the Kazakh SSR. Technical Science), 1969, Issue 8-9, pp 216-220 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B458)

Translation: The paper examines a circuit for control of a thyristorized converter assembly, connected to a 3-phase nonsymmetric bridge circuit or to a 3-phase half-wave circuit, and developed in the Branch Laboratory for Automation of Drawing Processes of the Kazakh Polytechnical Institute. A number of advantages of the circuit in question are listed. Among the disadvantages referred to are the presence of drift of the rectified current during change of the anode voltage. 5 ill. 2 ref.

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