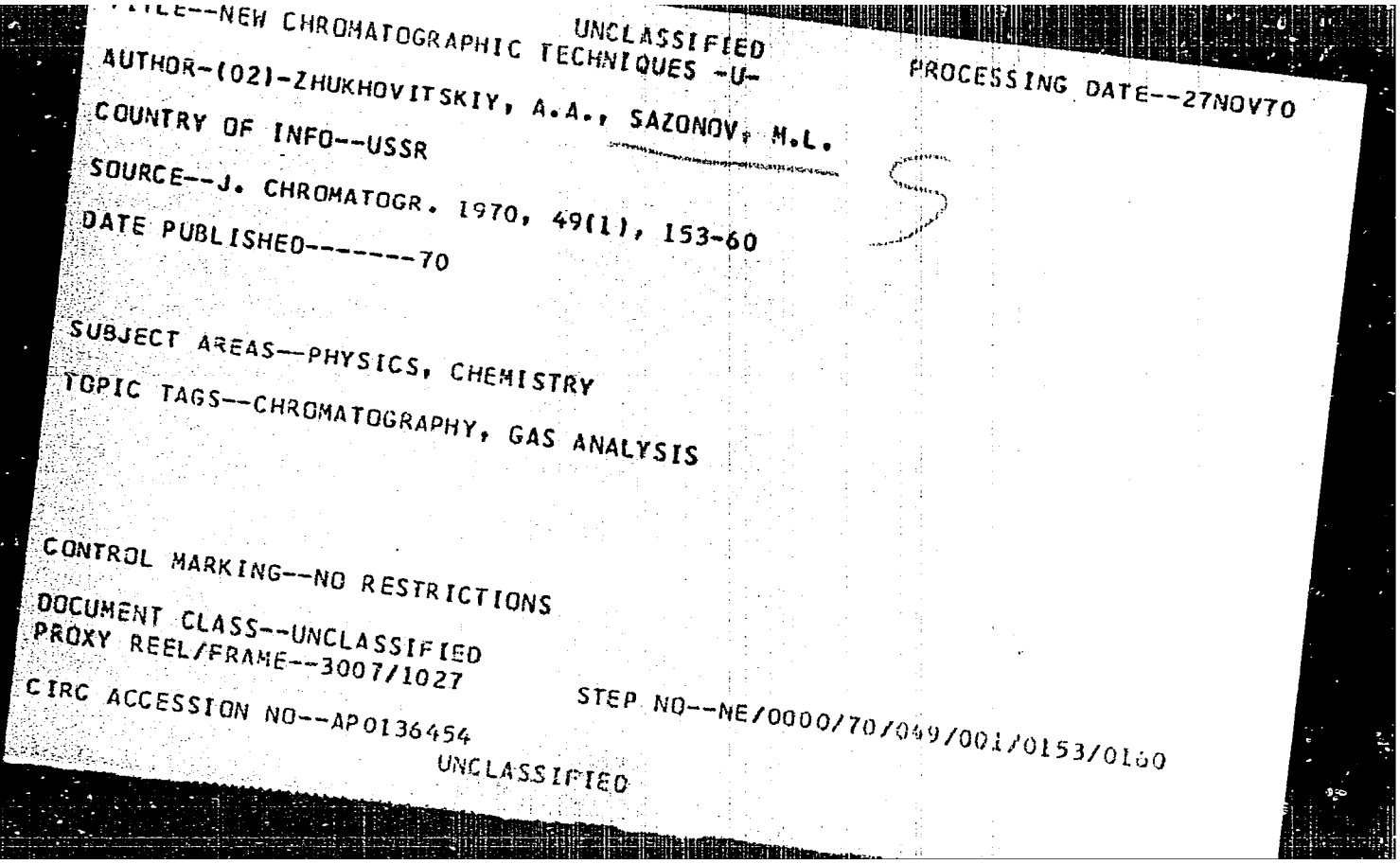


UNCLASSIFIED

TITLE--NEW CHROMATOGRAPHIC TECHNIQUES -U-

PROCESSING DATE--27NOV70

AUTHOR-(02)-ZHUKHOVITSKIY, A.A., SAZONOV, M.L.

COUNTRY OF INFO--USSR

SOURCE--J. CHROMATOGR. 1970, 49(1), 153-60

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--CHROMATOGRAPHY, GAS ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

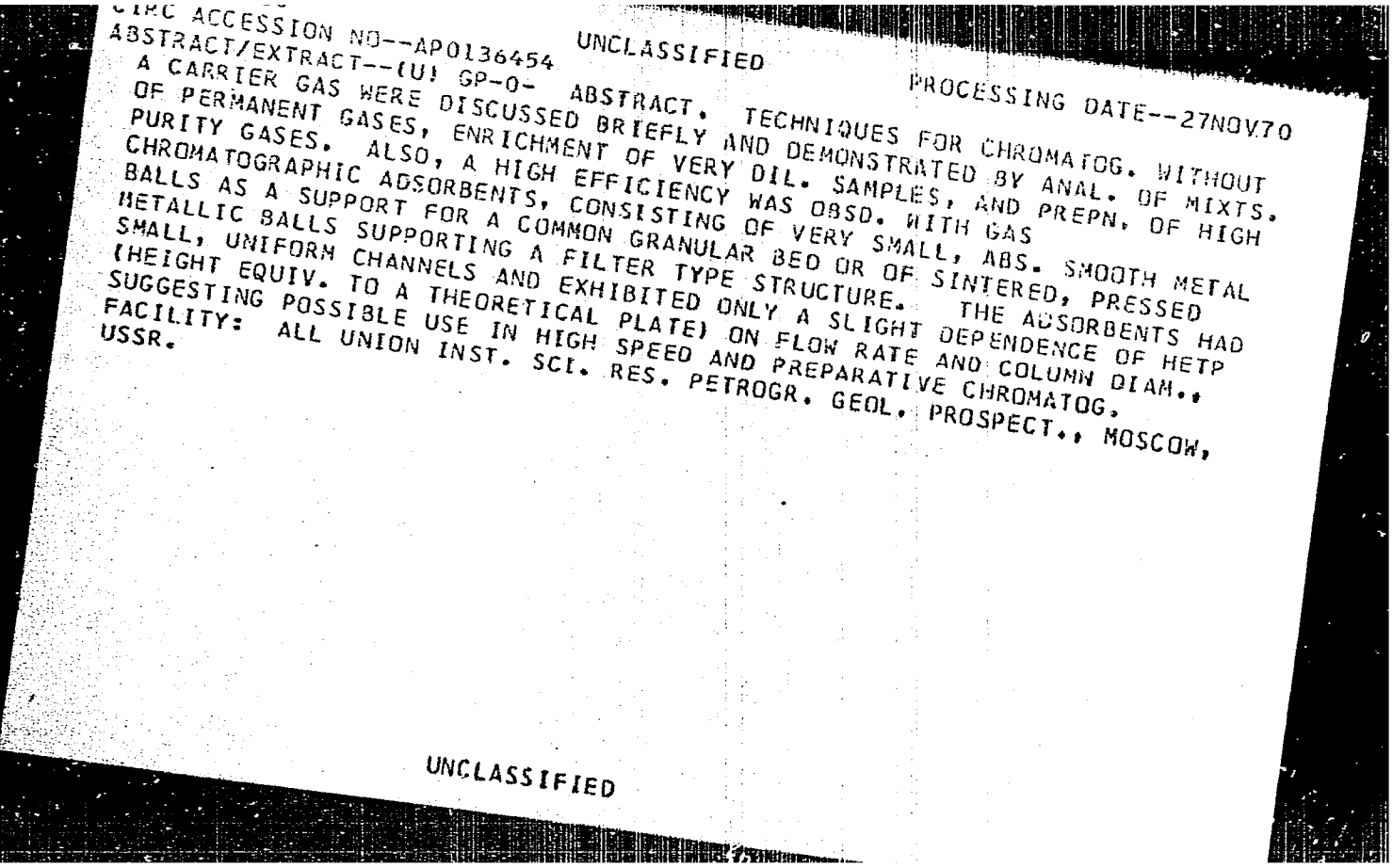
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1027

STEP NO--NE/0000/70/049/001/0153/0160

CIRC ACCESSION NO--AP0136454

UNCLASSIFIED



CIRC ACCESSION NO--AP0136454 UNCLASSIFIED PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECHNIQUES FOR CHROMATOG. WITHOUT A CARRIER GAS WERE DISCUSSED BRIEFLY AND DEMONSTRATED BY ANAL. OF MIXTS. OF PERMANENT GASES, ENRICHMENT OF VERY DIL. SAMPLES, AND PREPN. OF HIGH PURITY GASES. ALSO, A HIGH EFFICIENCY WAS OBSD. WITH GAS CHROMATOGRAPHIC ADSORBENTS, CONSISTING OF VERY SMALL, ABS. SMOOTH METAL BALLS AS A SUPPORT FOR A COMMON GRANULAR BED OR OF SINTERED, PRESSED METALLIC BALLS SUPPORTING A FILTER TYPE STRUCTURE. THE ADSORBENTS HAD SMALL, UNIFORM CHANNELS AND EXHIBITED ONLY A SLIGHT DEPENDENCE OF HETP (HEIGHT EQUIV. TO A THEORETICAL PLATE) ON FLOW RATE AND COLUMN DIAM., SUGGESTING POSSIBLE USE IN HIGH SPEED AND PREPARATIVE CHROMATOG.

FACILITY: ALL UNION INST. SCI. RES. PETROGR. GEOL. PROSPECT., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.853.7.07:539.183.2

SAVIN, YU. I., SINGIN, A. S., SAZONOV, N. V., KROPACHEVA, A. A., and SAFONOVA T. S., Scientific Research Institute of Medical Radiology, Academy Medical Sciences USSR, Obninsk; All Union Scientific Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Synthesis of Phosphorus Tagged Diethyleneimide of Pyrimidyl-2-imidophosphoric Acid [Phosphemide]"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, Sep 73, pp 1251-1253

Abstract: The following synthetic route was selected for the synthesis of diethyleneimide of pyrimidyl-2-amidophosphoric acid [phosphemide] (I). From the reaction of equimolar quantities of 2-aminopyrimidine and phosphorus pentachloride in benzene 2-trichlorophosphazopyrimidine hydrochloride was obtained which was then converted to pyrimidyl-2-amidophosphoric acid dichloride by a reaction with 98% formic acid, which finally could be reacted without purification with ethyleneimine to yield I. Depending on the activity of the starting $^{32}PCl_5$ the specific activity of phosphemide-^{32}P was 5-10 μc per gram.

1/1

USSR

UDC 615.277.3:546.185.325

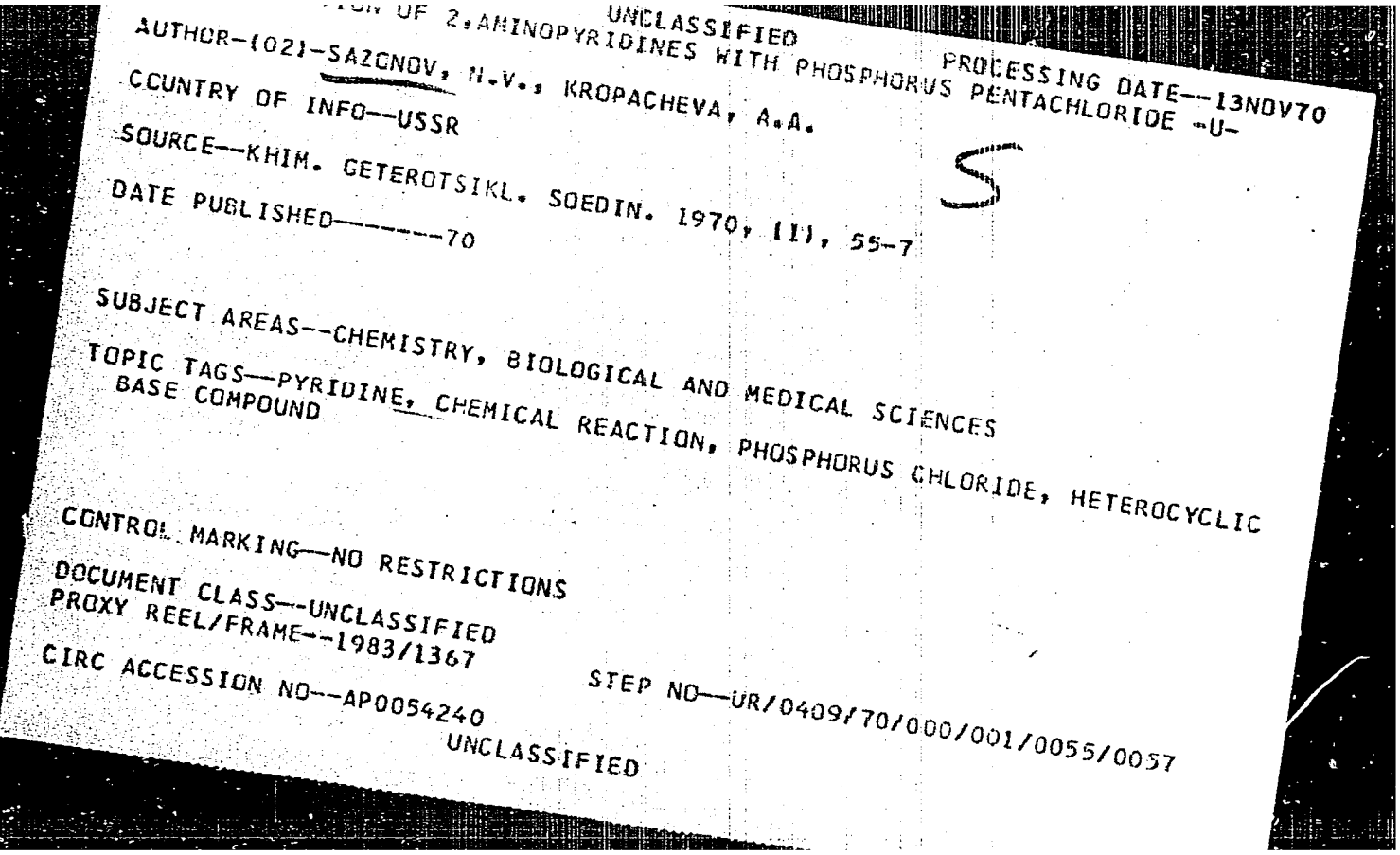
SAZONOV, N. V., KROPACHEVA, A. A., and SAFONOVA, T. S., All Union Scientific Chemical-Pharmaceutical Research Institute Imeni S. Ordzhonikidze, Moscow

"Diethyleneimides of Pyridyl-2-amidophosphoric Acids"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 1, Jan 71, pp 20-24

Abstract: In an attempt to synthesize novel antitumor agents, a series of acyl chlorides and diethyleneimides of pyridyl-2-amidophosphoric acid was obtained. A suspension of 3 g of 2-aminopyridine and 6.65 g PCl_5 in 50 ml benzene was refluxed for 2 hrs under a stream of nitrogen, cooled, filtered, washed with ether; 100 ml of ether was added to the precipitate and treated with 1.47 g anhydrous formic acid. After 12 hrs the precipitate was collected to give pyridyl-2-amidophosphoric acid chloride, m.p. 177-180°. Analogously 6-methylpyridyl-2-amidophosphoric acid chloride, m.p. 127-129° was obtained. To obtain the diethyleneimides of pyridyl-2-amidophosphoric acid, 5-nitropyridyl-2-amidophosphoric acid chloride was added with stirring and cooling to a mixture of ethyleneimine and triethylamine in benzene. The mixture was stirred 2 hrs and worked up to yield desired products.

1/1



UNCLASSIFIED

...ON OF 2-AMINOPYRIDINES WITH PHOSPHORUS PENTACHLORIDE -U-

AUTHOR-(02)-SAZONOV, N.V., KROPACHEVA, A.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 55-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PYRIDINE, CHEMICAL REACTION, PHOSPHORUS CHLORIDE, HETEROCYCLIC BASE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

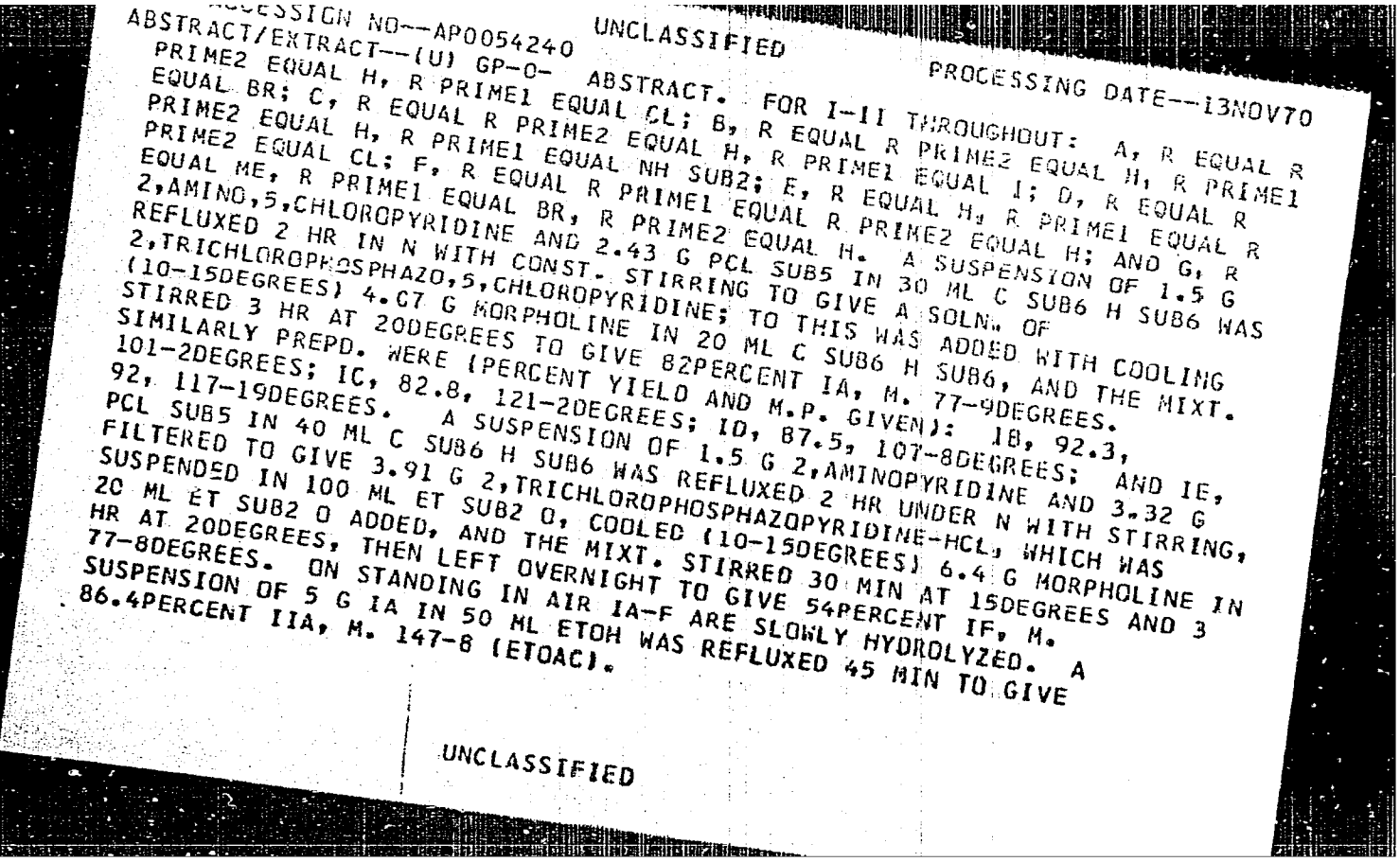
PROXY REEL/FRAME--1983/1367

STEP NO--UR/0409/70/000/001/0055/0057

CIRC ACCESSION NO--AP0054240

UNCLASSIFIED

PROCESSING DATE--13NOV70

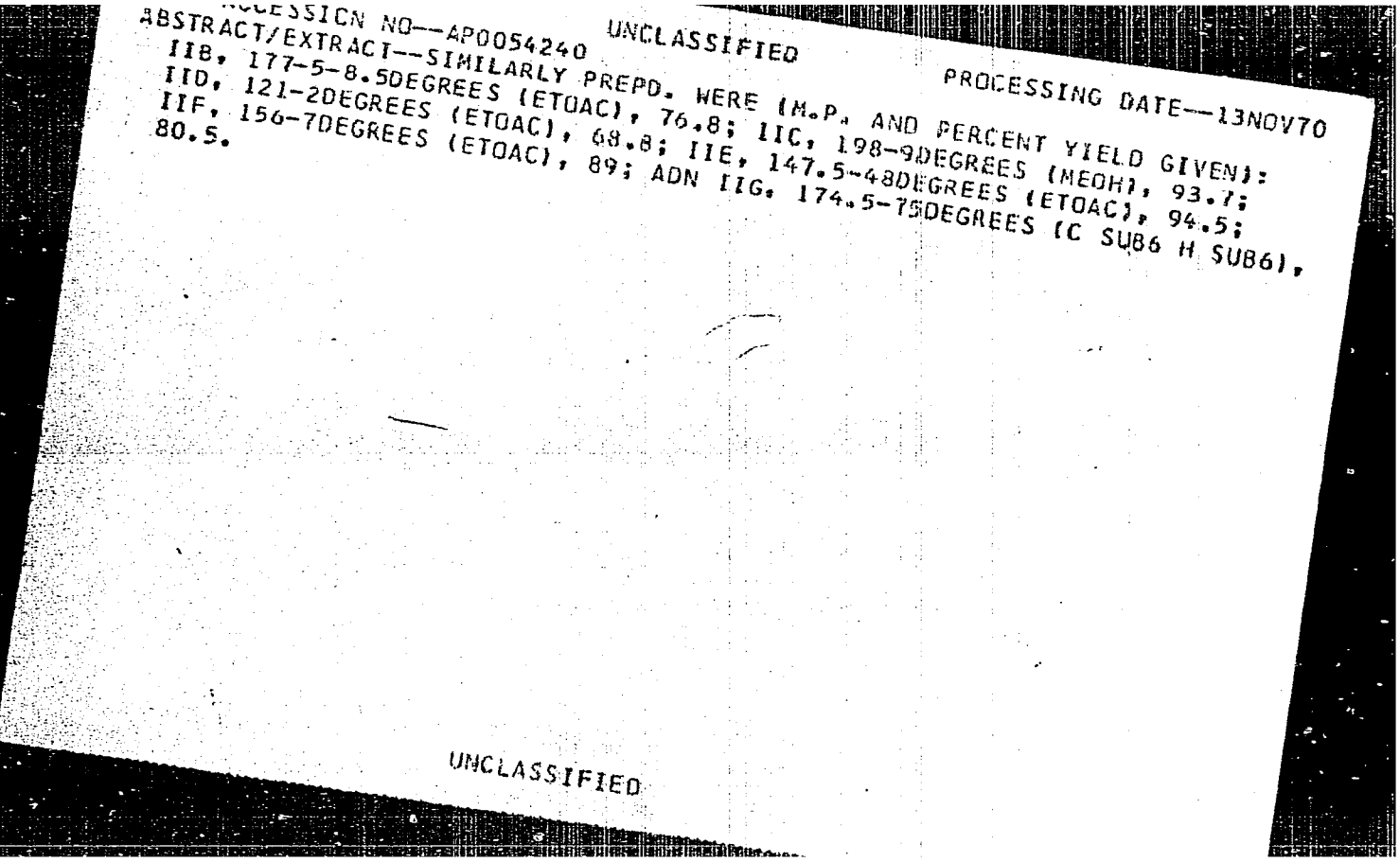


ACCESSION NO--AP0054240 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR I-II THROUGHOUT: A, R EQUAL R PRIME2 EQUAL H, R PRIME1 EQUAL CL; B, R EQUAL R PRIME2 EQUAL H, R PRIME1 EQUAL BR; C, R EQUAL R PRIME2 EQUAL H, R PRIME1 EQUAL NH SUB2; E, R EQUAL H, R PRIME1 EQUAL I; D, R EQUAL R PRIME2 EQUAL H, R PRIME1 EQUAL R PRIME2 EQUAL H. A SUSPENSION OF 1.5 G 2,AMINO,5,CHLOROPYRIDINE AND 2.43 G PCL SUB5 IN 30 ML C SUB6 H SUB6 WAS REFLUXED 2 HR IN N WITH CONST. STIRRING TO GIVE A SOLN. OF 2,TRICHLOROPHOSPHAZO,5,CHLOROPYRIDINE; TO THIS WAS ADDED WITH COOLING (10-15DEGREES) 4.07 G MORPHOLINE IN 20 ML C SUB6 H SUB6, AND THE MIXT. STIRRED 3 HR AT 20DEGREES TO GIVE 82PERCENT IA, M. 77-9DEGREES. SIMILARLY PREPD. WERE (PERCENT YIELD AND M.P. GIVEN): IB, 92.3, 101-2DEGREES; IC, 82.8, 121-2DEGREES; ID, 87.5, 107-8DEGREES; AND IE, 92, 117-19DEGREES. A SUSPENSION OF 1.5 G 2,AMINOPYRIDINE AND 3.32 G PCL SUB5 IN 40 ML C SUB6 H SUB6 WAS REFLUXED 2 HR UNDER N WITH STIRRING, FILTERED TO GIVE 3.91 G 2,TRICHLOROPHOSPHAZOPYRIDINE-HCL, WHICH WAS SUSPENDED IN 100 ML ET SUB2 O, COOLED (10-15DEGREES) 6.4 G MORPHOLINE IN 20 ML ET SUB2 O ADDED, AND THE MIXT. STIRRED 30 MIN AT 15DEGREES AND 3 HR AT 20DEGREES, THEN LEFT OVERNIGHT TO GIVE 54PERCENT IF, M. 77-8DEGREES. ON STANDING IN AIR IA-F ARE SLOWLY HYDROLYZED. A SUSPENSION OF 5 G IA IN 50 ML ETOH WAS REFLUXED 45 MIN TO GIVE 86.4PERCENT IIA, M. 147-8 (ETOAC).

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820002-3"



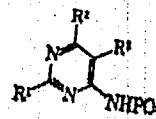
ACCESSION NO--AP0054240 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--SIMILARLY PREPD. WERE (M.P. AND PERCENT YIELD GIVEN): IIB, 177-5-8.5DEGREES (ETOAC), 76.8; IIC, 198-9DEGREES (MEOH), 93.7; IID, 121-2DEGREES (ETOAC), 68.8; IIE, 147.5-48DEGREES (ETOAC), 94.5; IIF, 156-7DEGREES (ETOAC), 89; ADN IIG, 174.5-75DEGREES (C SUB6 H SUB6), 80.5.

UNCLASSIFIED

Acc. Nr: AP0100364 Abstracting Service: — CHEMICAL ABST. Ref. Code: 5710 4R0409

111403q Pyrimidyl-4-amidophosphoric acid dichlorides. Sazonov, N. V.; Kropacheva, A. A. (Vses. Nauch.-Issled. Khim.-Farm. Inst. im. Ordzhonikidze, Moscow, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 97–9 (Russ). Treatment of 4-(trichlorophospiuazo)pyrimidines with HCO_2H is a general method for prepg. the title compds. (I). Thus, equimolar amts. of a 4-aminopyrimidine (II) and PCl_5 in a solvent heated under N until no more HCl was liberated and treated with an equimolar amt. HCO_2H in Et_2O at 15–20° gave the I (R^1, R^2, R^3,



(I)

m.p. (recrystn. solvent), % yield, and m.p. hydrochloride given): Cl, H, Cl, 146–9° (C_6H_6), 90.2, —; MeO, H, Cl, 145–7° (decompn.) (Et_2O), 95.5, —; MeO, H, MeO, 151–2° (decompn.) (Et_2O), 92.4, —; Me, H, MeO, 176–7° (Et_2O), 77.2, —; H, Br, H, 172–4° (Me_2CO-Et_2O), 96, —; Me, Br, H, 180–83° (C_6H_6), 92, —; H, Br, Me, 170–71.5° (Et_2O), 88.5, —; Cl, H, H, —, 82.5, 147–50° (decompn.); Me, H, Me, —, 91, 164° (decompn.); Me, H, H, —, 89.2, 164–6° (decompn.); H, H, Me, 149–51° 85, 185–6°, H, H, piperidino 176–7° (decompn.), 90.2, 162–3° (decompn.). All I undergo hydrolysis to give starting II upon heating.

Jaroslav Jonas

REEL/FRAME 19841784

USSR

UDC 547.856.867.07

SAZONOV, N. V., SAFONOVA, T. S., All-Union Scientific Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Study of Nitrogen and Sulfur-Containing Heterocycles. XXIV. Synthesis of Pyrimido[5,4-b][1,4]oxazinones-7"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 9, 1972, pp 1285-1288

Abstract: As a continuation of the work of T. S. Safonov, et al., Puti sinteza i izyskaniya protivoopukholevykh preparatov, Zinatne Press, Riga, No 3, 19, 1970 in the search for biologically active substances, a general procedure was developed for the synthesis of 7-hydroxy-derivatives of pyrimido[5,4-b]oxazine by the reaction of 5-hydroxy-6-aminopyrimidines with ethyl esters of α-halocarboxylic acides. The chemical formulas, structures, melting points and the theoretical and experimental contents of the compounds are tabulated. The experimental procedures and results are presented for 2-methyl-4-hydroxy-6-aminopyrimidyl-5-hydrosulfate, 2-methyl-4,5-dihydroxy--6-aminopyrimidine, 2-methyl-4-chloro-5-hydroxy-6-aminopyrimidine, 4-chloro--5-hydroxy-6-aminopyrimidine, 2-4-dimenthyl-6-aminopyrimidyl-5 hydrogen sulfate, 2,4-dimethyl-5-chloro-6-aminopyrimidine, 2-methyl-4-hydroxy-6,7-

USSR

SAZONOV, N. V., and SAFONOVA, T. S., Khimiya Geterossiklicheskikh Soyedineniy, No 9, 1972, pp 1285-1288

dihydro-8H-pyrimido[5,4-b][1,4]oxazinone-7, 2-methyl-4-chloro-6,7-dihydro-8H-pyrimido[5,4-b][1,4]oxazinone-7 and 2-acetylamido-4,6-dimethyl-6,7-dihydro-8H-pyrimido[5,4-b][1,4]oxazinone-7.

2/2

Acc. Nr: AP0034401

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 174-177

Ref. Code: UR 0297

PENICILLIN LEVELS IN BLOOD SERUM, URINE AND PHLEGM OF PATIENTS WITH CHRONIC INFLAMMATORY INFECTIONS OF RESPIRATORY TRACT AFTER INTRAMUSCULAR INJECTIONS OF THE DRUG

V. F. Sazonov

Faculty Therapy Chair of Altai Medical Institute, Barnaul

Antibiotic (penicillin) levels in blood serum, urine and phlegm were determined after intramuscular injections by the methods of serial dilutions and agar diffusion in 11 healthy volunteers and 40 patients with chronic inflammatory diseases of the respiratory tract. It was shown that therapeutic concentrations of the drug (0.2 Units/ml) were retained for 3 hours. In healthy volunteers the antibiotic blood levels were lower the 1st hour after the administration than in the patients. As compared to the healthy volunteers, the urine retention time in the patients was higher, while the concentrations during the first 2 hours and the total amounts of the antibiotic excreted were lower. No penicillin was detected in phlegm of patients with chronic inflammatory infections of the respiratory organs, which is indicative of the fact that it does not penetrate through the bronchial clearances, prabably because of sclerotic changes in them.

REEL/FRAME

19711061

6

Acc. Nr: AP0047608

Abstracting Service: INTERNAT. AEROSPACE ABST

Ref. Code: 5-28 UR0141

A70-25152 # Possible origin of radio spectra with positive curvature in discrete sources [O vozmozhnom proiskhozhdenii radiospektrov s polozhitel'noi kriviznoi u diskretnykh istochnikov]. V. N. Sazonov [Akademiia Nauk SSSR, Fizicheskii Institut, Moscow, USSR]. *Radiofizika*, vol. 13, no. 2, 1970, p. 214-218. 12 refs. In Russian.

IZUVAZ

Investigation of possibles mechanisms for the formation of radio spectra in discrete sources where the radiation flux increases faster with decreasing frequency than would be described by a power law. Two different mechanisms for the formation of spectra with positive curvature are analyzed within the framework of the synchronous emission theory. One mechanism is based on the hypothesis that the escape of low-energy electrons from the source is hindered, and as a result, the electron concentration in the source increases with decreasing energy faster than would be expressed by a power law. The second mechanism is caused by electron energy losses in an inhomogeneous source. Certain properties which can be expected of these models are outlined.

T.M.

REEL/FRAME
19791174

UDC 621.396.677

USSR

SAZONOV, V. V., YAKOVLEV, V. P.

"Thinned Antenna Arrays with Low Side Lobe Level"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1970, vyp. 215, pp 310-325 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B34)

Translation: The suppression of the side loads of the directional pattern of an antenna array with a large number of identically excited elements by disconnecting part of the elements is analyzed.

1/1

SAZONOV, V.V.

RADAR/ANTENNAS

Sazonov, V. V.

JPRS 54704

22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. D. Bakhrakh, corresponding member of the USSR Academy of Sciences and V. I. Simoylenko, candidate of engineering sciences: Nelineynyye i sverkhvysokochastotnyye radiotekhnicheskiye sistemy. Trudy Odesskogo Instituta Inzhenerov Grazhdanskoy Aviatsii (Nonlinear and Microwave Radio Engineering Systems. Transactions of the Odessa Institute of Civil Aviation Engineers), Vol 2, No 215, 1970, signed to press 14 October 1970, Machine Building Press, Moscow.

CONTENTS

UDC 629.7.051:621.396.6.001

THINNED ANTENNA ARRAYS WITH SMALL SIDE LOBES

Engineer V. V. Sazonov and
Candidate of Engineering Sciences
V. P. Yakovlev

pages 310-325

Construction of Optimum Thinned Arrays

For improvement in noiseproof features, an antenna must have a low level of side lobes. The level of side lobes may be decreased either by means of irregular power supply of the elements of the antenna array or by means of switching off part of the elements. The latter path is preferable in the majority of cases.

Let us assume that an equidistant antenna array contains a large number of elements with distances d between them which satisfy the condition

$$\frac{\lambda}{2} \leqslant d \leqslant \lambda, \qquad (1)$$

where λ is the wavelength.

We will consider the properties of a thinned array obtained from equidistant cutoff of pairs of the elements. We will consider that the elements are switched off by pairs which are symmetrical relative to the center of the antenna; in this case the radiation pattern with a low level of side lobes we are seeking will be symmetrical. Assuming that the number of elements of the equidistant grid $N_0=2M_0+1$ is odd, and the amplitude of the excitation of each element is equal to $E_n/2$, we write the radiation pattern of the thinned array in the form

$$f(x)=\sum_{n=0}^{M_0} E_n \cos nx, \qquad (2)$$

where $x=kd\sin\theta$; $k=2\pi/\lambda$ is the wave number; and θ is the angle between the selected direction and the normal to the array.

The numbers E_k may take two values: 0 or 1, depending upon whether or not the n-th pair of elements has been switched off or not.

The function (2) is periodic, with a period $2\pi/d$, and therefore it is sufficient to consider that $0\leqslant x\leqslant(\pi/d)$. The maximum value of $f(x)$ is reached when $x=0$ and is equal to the number of pairs of elements not switched off $|f(x)|\leqslant|f(0)|$.

USSR

UDC: 519.2

SAZONOV, V. V.

"Approach of Distributions of Sums of Independent Random Quantities to the Class of Limitlessly Visible Distributions in the Multivariate Case"

Tr. Tbilis. Un-ta [Works of Tbilisi University], 1972, A4(146), pp 29-37 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V19)

Translation: Let $\{\xi_i\}$, i=1, 2,... be independent random quantities with values in R^k and with identical distribution function F. We represent by F^n the distribution function of the sum $\sum_{i=1}^{n} \xi_i$ and assume D_k is the class of all limitlessly divisible distribution functions in R^k. In 1956, A. N. Kolmogorov proved (see RZhMat, 1960, 7922) that, where k=1, there is an absolute constant c such that no matter what the distribution function of F for a certain sequence (dependent on F) of distribution functions $\{D_n\}$, $D_n \in D_1$, n=1, 2,...,

$$\sup_{x \in R^1} |F^n(x) - D_n(x)| < cn^{-1/5}, \quad n=1, 2, \ldots \qquad (1)$$

1/2

USSR

Sazonov, V. V., Tr. Tbilis. Un-ta [Works of Tbilisi University], 1972, A4(146), pp 29-37 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V19)

Later, this result was improved by Yu. V. Prokhorov (RZhMat, 1961, 1V12), who replaced $n^{-1/5}$ by $n^{-1/3}(\log n)^2$ in the right portion of (1) and, finally, in 1963, A. N. Kolmogorov established (RZhMat, 1964, 7V28) that $n^{-1/3}$ can be used in (1) in place of $n^{-1/5}$. The present work studies the case where k>1 and shows that the following theoren is correct:

Theorem. There is a constant c(k) dependent only on k, such that no matter what the distribution function of F, for a certain sequence of distribution functions $\{D_n\}$, $D_n \in D_k$, n=1, 2,...

$$\sup_{x \in R^k} |F^n(x) - D_n^*(x)| < c(k)(\log n)^{1/2} n^{-1/2}.$$

USSR

UDC 621.371.029.55

BENEDIKTOV, Ye. A., GETMANTSEV, G. G., YEZHOV, A. I., KOROBKOV, Yu. S., MALYSHEV, S. K., MATYUGIN, S. N., MITYAKOV, N. A., SAZONOV, Yu. A., CHERNOV, V. A., BEN'KOVA, N. P., BEREZIN, Yu. M., BUKIN, G. V., KOLOKOLOV, L. Ye., and PEREKHVATOV, Yu. K.

"Results of an Experiment in Shortwave Radio Propagation"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972 pp 73-76 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A367)

Translation: Results of experiments on investigating the characteristics of wave propagation in the decameter range (5.7-15.0 MHz) are analyzed; the communications took place between the following magnetically adjacent points: an ionospheric station in Gor'kiy and two science research ships in the Indian Ocean. In particular, the possibility of communication over the Peterson beam was estimated. Two illustrations, bibliography of one. N. S.

1/1

USSR UDC: None

SAZONOV, Yu. I. and LIVSHITS, V. M.

"Ultrasonic Measurer of Elastic Constants in Metals and Alloys"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrastsy, tovarnye znaki, No 4, 1973, p 97, No 363908

Abstract: This device, utilizing ultrasonic pulses, has the distinctive features of a two-wave electromagnetic-acoustic converter connected to the ultrasonic generator, and digital devices for measuring the ratio and product of the time intervals obtained in the procedure. These devices improve the accuracy of the measurement. An exiguous description, unillustrated, is given of the other circuits in the device.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--IMPORTANCE OF LOCAL AND COLLECTIVE ELECTRONIC PROPERTIES AND MODIFIED TITANIUM DIOXIDE IN CARBON MONOXIDE OXIDATION AND IN ISOPROPYL

AUTHOR-(04)-KEIYER, N.P., SAZONOVA, I.S., KHOKHLOVA, T.P., MIKHAYLOVA, I.L.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 447-54

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM DIOXIDE, CARBON MONOXIDE, OXIDATION, PROPANOL, FORMIC ACID, DEHYDRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0093 STEP NO--UR/0195/70/011/002/0447/0454

CIRC ACCESSION NO--AP0132386

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132386

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SELECTIVITY IN THE DEHYDRATION OF SIC PROH AND HCO SUB2 H ON A TIO SUB2 CATALYST DEPENDS ON THE POSITION OF FERMI SURFACE, IN OTHER WORDS, ON THE COLLECTIVE ELECTRONIC PROPERTIES OF THE CATALYST. THE DEGREE OF DEHYDROGENATION SIDE REACTION INCREASES WITH ELEVATION OF THE FERMI SURFACE. IN A CASE OF THE PROMOTION OF THE CATALYTIC ACTIVITIES OF TIO SUB2 (E.G. WITH WO SUB3 ADDITIVES), LOCAL ELECTRONIC CHARACTERISTICS BECOME STRONGER THAN THE COLLECTIVE ELECTRONIC PROPERTIES. ADDN. OF WO SUB3 TO TIO SUB2 DECREASES E SUBA TO HCO SUB2 H AND ISO PROH DEHYDRATION FROM 28 TO 25 AND FROM 21 TO 19 KCAL-MOLE, RESP. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

UNCLASSIFIED

Acc. Nr: AP0047296 Ref. Code: UR0206

PRIMARY SOURCE: Vestnik Dermatologii i Venerologii, 1970, Nr 1, pp 63-66

QUANTITATIVE PROCEDURE FOR TREPONEMA PALLIDUM IMMOBILIZATION TEST

L. V. Sazonova, L. D. Verzina

Summary

A method of quantitative *Treponema pallidum* immobilization test has been developed using increasing amounts of the serum to be examined (0.05—0.1—0.15—0.2 ml) with appropriate controls. The other components of the test are used in conventional amounts of the qualitative *T. pallidum* immobilization test. The experience with the new method indicates that increasing the amount of the inactivated serum under study does not produce immobilization of *T. pallidum*.

For more accurate serodiagnosis of syphilis and in differentiation of false positive results of standard serological tests it is necessary to examine larger amounts of sera by the quantitative method of *T. pallidum* immobilization test. Increased amounts of inactivated serum from subjects with questionable results produces more complete immobilization of *T. pallidum* and more definite results of *T. pallidum* immobilization test.

1/1

DI

2

USSR

UDC 669.295:620.186.5

PETROVA, L. A., BABAREKO, A. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and SAZONOVA, T. N., Institute of Metallurgy imeni A. A. Baykov

"Recrystallization of β-Alloy of IVT-1 Titanium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972, pp 30-34

Abstract: The ionization method of taking texturograms was used for plotting polar figures. The changing character in annealing of polar figures describes the process of recrystallization. Specimens were cut from a bar forged by broaching in two perpendicular directions at 950°C. The specimens were annealed in air at 400-1200°C with 30 min aging at each temperature. The textures of specimens of different grain size and boundary character in continuous heating up to 700°C are discussed by reference to microstructures and polar figures. Specimens annealed at 600°C showed a considerably changed texture in comparison with the initial texture. This is connected with the beginning recrystallization, which is practically completed at 650°C. Extrusion or forging by a more complex method is recommended for obtaining stable properties of normal forging on two mutually perpendicular surfaces. Two figures, one bibliographic reference.
1/1

USSR

UDC 621.357.12.035.48:669.75

EUGENOV, YE. S., SAZONOVA, T. V., GOLOVIN, YU. M., and TYURKIN, YU. I.

"Regeneration of Sulfide-Alkali Electrolytes by Anode Solution of Cast Iron Shavings"

Alma-Ata, Khimiya i Khim. teckhnol. (Chemistry and Chemical Technology) Vyp 2, 1971, pp 160-163 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L373)

Translation: A process is described to remove thiosulfate-, polysulfides, and thioantimonates reducing the VT_k [expansion unknown] of Sb during the electrolysis of sulfide-alkali solutions by a method of anode solution of cast iron shavings. The above ions are scavanged under the influence of the divalent iron atoms and precipitate in the form of an insoluble precipitate of ferrous sulfide. For a D_a 9.0-9.5 a/m^2 and a temperature of 50°C the optimum maximum reduction in the undesirable impurities was observed. The solution purified in the above manner was then treated to remove by electrodesposition the Sb at a high energy rate.

1/1

USSR

UDC 547.13

NESMEYANOV, A. N., Academician, POSTNOV, V. N., LESHCHEVA, I. F., SURKOV, B. A., and SAZONOVA, V. A., Moscow State University imeni M. V. Lomonosov

"Ferrocenylvinylcarbonium Ions"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

Abstract: The vinylog of the diphenylferrocenylcarbonium ion during its formation under goes an allyl shift to give an α-ferrocenylcarbonium ion. Since the p-dimethylamino group is a strong carbonium ion stabilizer, the authors undertook to compare the part played by the p-dimethylaminophenyl and ferrocenyl groups simultaneously in the stabilization of the allyl cation. The tetraphenylborate of the vinylog of p-dimethylaminodiphenylferrocenylcarbonium was obtained from β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol by precipitation with sodium tetraphenylborate in glacial acetic acid. The salt was bound by its α-carbon atom (relative to ferrocene) with dimethylaniline in the p-position. To determine the structure of the resultant carbonium ion, spectra were taken of its salts -- tetraphenylborate and borofluoride, as well as the spectrum of β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol. The results indicate that the allyl cation reacts

1/2

USSR

NESMEYANOV, A. N., et al., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

like a typical α-ferrocenylcarbonium ion with its α-carbon atom. This indicates localization of a significant part of the formed positive charge on the latter. The almost quantitative reaction on the α-carbon indicates the prevailing influence of the ferrocenyl group in the stabilization of the carbonium ion as compared with the p-dimethylamino group.

USSR

UDC: 669.24

KRALINA, A. A., SMIRNOV, L. V., SAZONOVA, V. A. and ZAYTSEV, G. I.,
Institute of Physics of Metals, Ural Scientific Center, Academy of Sciences SSSR

"Substructure of Nickel Monocrystals Grown by the Czochralski Process"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 113-120

Abstract: The study concerns the substracture of nickel single crystals grown by the Czochralski method at 0.5-3.2 mm/min growth rates using seed crystals of various crystallographic orientations. X-ray diffraction analysis indicates three basic types of substructures: a) striped substructures with inclined boundaries along the direction of growth; b) branched substructures without explicit boundaties; c) substructures with boundaries twisted around the specimen's axis. It is shown that the formation of structures of one type or another depends on growth conditions, the basic factor being the crystallographic orientation of the direction of growth. The three types of substructures and their occurrence in crystals with specific types of crystal axis orientations are discussed. Analysis of

1/2

USSR

KRALINA, A. A., et al, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 113-120

the etching patterns on both longitudinal and transverse cross sections of the monocrystals indicates the marked effect of the thermal conditions at the crystallization boundaries on the type of substructure formation in the process of growth. (8 illustrations, 10 bibliographic references).

2/2

USSR

UDC 669.24-172

KRALINA, A. A., and SAZONOVA, V. A., Sverdlovsk

"The Connection Between Thermal Crystallization Conditions and Micropictures of Etched Nickel Single Crystals"

Moscow, Izvestiya Akademii Nauk USSR, Metally, No 5, Sep-Oct 72, pp 111-116

Abstract: A study was made of etched Ni microstructures and their connection with crystallization conditions and the type of roentgenographically observed single-crystal substructures. The degree of perfection of the crystalline lattice was rated on the basis of X-ray micro- and macrotopography in response to the type of substructure, the magnitude of blocks, and the angle of disorientation. A broad series of etching agents was tested in order to expose the output points of dislocations. The investigated Ni single crystals were grown by the Chokhral'skiy method in the interval of 0.5-3.2 mm/min pull rates at a rotational velocity of 50 rpm. The results are discussed by reference to experimental data, the topogram of the Ni single crystal, and the distributions of etch pits. The crystals showed an admixtured helicoidal surface produced by asymmetry of the thermal field on the crystallization front. The effect of this asymmetry on the quality of the crystalline structure is discussed. The relation is shown between oscillations of the growing rate and the diameter of crystals, depending on the instability of melting conditions

1/2

USSR

KRALINA, A. A. and SAZONOVA, V. A., Izvestiya Akademii Nauk USSR, Metally, No 5, Sep-Oct 72, pp 111-116

with duplicated local distribution of the density of dislocations. Three figures, one formula, two tables, seven bibliographic references.

2/2

Acc. Nr: AP0046254 S Ref. Code: UR0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 9-14

Panikarovskiy, V. V.; Grigor'yan, A. S.; Sazonova, V. I.

THE STATE OF THE ADRENAL CORTEX IN RATS KEPT ON A SACCHAROSE-CASEIN CARIESOGENIC DIET

Summary. At early periods of the experiment (7th—21st day) in the glomerular zone there were noted a drop in the content of lipids, intensification of pyroninophilia, decrease of the level of ascorbic acid. In the ganglionic zone, on the contrary, there were observed an intensification of sudanophilia, a drop in the RNA content and focal intensification of the reaction to ascorbic acid. At late periods of observation (30th—180th day) the referred to changes intensify. However, on the 360th day in some cells of the glomerular zone there appear sudanophilic inclusions, while in cells of the ganglionic zone sudanophilia decreases simultaneously. In the adrenal glands of rats at different periods of the experiment there appear sub-, intra- and extracapsular regenerative proliferates from cells of the glomerular and (more rarely) of the ganglionic zone.

1/1

REEL/FRAME 19781372

DI 2

UDC 539.2:539.16.04

USSR

LENCHENKO, V. M., SAZONOVA, YE. V., and SOFIYENKO, L. A.

"Efficiency of Charged Particle Radiators and Absorbers"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

Translation: The energy emitted by radiators or absorbed by charged particle absorbers (α and β particles, Compton electrons and photoelectrons, etc.) is calculated for three configurations of radiators (absorbers): cylindrical (filamentary), film, and spherical. The energy is represented in the form

$$Q = V \int N(\varepsilon)K(\varepsilon, Z)\varepsilon d\varepsilon. \quad (1)$$

Here, V is the volume of the radiator (absorber): $N(\varepsilon)d\varepsilon$ is the number of charged particles created per unit volume of the radiator (for the absorber, per unit volume of the external emitting medium) in a defined time; ε is the initial particle energy; $K(\varepsilon, Z)$ is the efficiency of the radiator (absorber), where Z is the set of parameters characterizing the configuration of the radiators (absorbers) and also their stopping power. It is demonstrated that for a radiator, $K(\varepsilon, Z)$ depends on ε and

1/4

USSR

LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

Z only in terms of the parameters $x = R_1(\mathcal{E})/d$ and n_1, and for an absorber it depends also on $R_2(\mathcal{E})$ and n_2, where $R_i(\mathcal{E}) = A_i \mathcal{E}^{n_i}$ is the dependence of the path R on the particle energy in the material of the radiator or absorber (medium 1 is the material of the Bragg-Grey cell) and the surrounding medium (medium 2, the wall material of the Bragg-Grey cell).

From the calculation results it follows that $K_r(\mathcal{E}, Z) = K_r(x)$ varies from 0 to 1 with a decrease in the radiator dimensions (d is the diameter of the sphere or filament or the thickness of the film), that is, on varying x from $x = 0$ to $x = \infty$. The effectiveness of the absorbers varies in this case from 0 to a value of

$$K_a(x = \infty) = R_2 n_2 / R_1 n_1 (1 + n_2 - n_1). \quad (2)$$

For the irradiated (absorbed) energy the following limiting values are obtained:

2/4

USSR

LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

for radiators

$$Q_r(x \ll 1) \simeq S \frac{n_1}{4(n_1+1)} \int N_1(\varepsilon) R_1(\varepsilon) \varepsilon \, d\varepsilon; \quad (3)$$

$$Q_r(x \gg 1) \simeq V \int N_1(\varepsilon) \varepsilon \, d\varepsilon; \quad (4)$$

for absorbers

$$Q_a(x \ll 1) \simeq S \frac{n_2}{4(n_2+1)} \int N_2(\varepsilon) R_2(\varepsilon) \varepsilon \, d\varepsilon; \quad (5)$$

$$Q_a(x \gg 1) \simeq V \frac{n_2}{n_1(1 + n_2 - n_1} \int \frac{R_2(\varepsilon)}{R_1(\varepsilon)} N_2(\varepsilon) \varepsilon \, d\varepsilon. \quad (6)$$

This means that for large dimensions of the radiators (absorbers) the energy balance is determined by the interface S between the mediums 1 and 2; for small dimensions (less than the particle path length) the energy balance is determined by the volume V

3/4

USSR

LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

of the radiator or absorber. In intermediate cases with which it is most frequently necessary to deal in practice, this relation is appreciably more complicated. Equation (6) is a generalization of the Bragg-Grey theorem to the case where media 1 and 2 have different stopping powers.

4/4

USSR

UDC: 621.373.029.7

BYKOV, V. P., SAZONOVA, Z. S.

"A Three-Mirror Optical Delay Line"

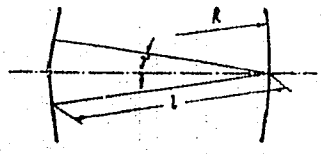
Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1953-1956

Abstract: An optical delay line is proposed in the form of a three-mirror resonant cavity in which one of the mirrors is spherical and the two others are flat. This is equivalent to the conventional cavity resonator in which one of the mirrors is flat, and the other is a concave astigmatic surface with principal radii of curvature $R_x = R\cos\gamma$ and $R_y = R/\cos\gamma$, where R is the radius of curvature of the spherical mirror, and γ is the angle of incidence of the beam on the spherical mirror equal to half the angle between the flat mirrors (see figure). Thus astigmatism is easily controllable over a wide range. In addition, the shape of the mirror is strictly defined (spherical) so that the design is amenable to exact computer calculation. The principal characteristics of the proposed optical delay line are analyzed. The radius of curvature of the spherical mirror is selected in such a way that the cavity is close to confocal ($R = 2l$). One of the difficulties of working with the proposed delay line is matching with an external source. The input beam

USSR

BYKOV, V. P., SAZONOVA, Z. S., Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1953-1956

must have a cross section of the order of 200 μm with a divergence of 10^{-3} radian. Thus the line can be fairly easily matched with gas lasers, but considerable difficulty will be encountered with all other light sources.



2/2

USSR

UDC 547.341

MOSKVA, V. V., RAZUMOV, A. I., SAZONOVA, Z. YA., and ZYKOVA, T. V., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Reaction of Phosphonoacetic Aldehydes with Secondary Amines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, p 1874

Abstract: The reaction of phosphonoacetaldehydes with secondary amines in toluene in the presence of catalytic quantities of p-toluenesulfonic acid gives β-dialkylaminovinylphosphonates (phosphorylated enamines) in good yields. The structure of the phosphorylated enamines is confirmed by IR and PMR spectral data.

1/1

USSR

UDC 547.341

RAZUMOV, A. I., SOKOLOV, M. P., LIORBER, B. G., MOSKVA, V. V., SAZONOVA, Z. YA., and LOGINOVA, N. G., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Synthesis and Properties of Phosphorylated Imines and Enamines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1019-1026

Abstract: Several methods exist for the synthesis of phosphorylated secondary and tertiary enamines and imines: direct reaction of primary amines with aldehydes, reaction of secondary enamines with phosphorylated aldehydes in presence of p-toluenesulfonic acid, reaction of the diamides of allylphosphorous acid with aldehydes, and transamination of enamines. Imine-enamine tautomerism of these products was studied showing that the position of tautomeric equilibrium depends principally on the nature of substituents at the nitrogen atom and on the type of solvent used. Hydrogen bonding of the enamine forms depends mainly on the substituents at nitrogen and phosphorus atoms and on the steric distribution of proton acceptors.

1/1

USSR

UDC: 542.91+661.718.1+661.731

BARABANOV, V. I., SAZANOVA, Z. Ya., and KAUSHANER, V. S., Kazan' State Veterinary Institute imeni N. E. Bauman

"Biologically Active Amides of Trichloroacetic and Dimethylthiophosphoric Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2464-2466

Abstract: A series of amides of trichloroacetic (I-IVO (I -- trichloroacetylethylenamide, II -- trichloroacetylpiperidylamide, III -- trichloroacetyldiethylamide, IV -- trichloroacetylbutylamide) and dimethylthiophosphoric acids (V-IX) (V -- ethylenamide, VI -- piperidylamide, VII -- methyl amide, VIII -- diethyl amide, IX -- butyl amide of dimethylthiophosphoric acid) were synthesized by interacting the corresponding acid chlorides with ethylenimine, piperidine, methyl amine, diethyl amine and butyl amine in ether in the presence of triethyl amine. In the reaction with methyl amine and butyl amine, the individual product was isolated after action of the acid chloride, and another acid chloride was then reacted with the remaining hydrogen atom. The result was mixed amides of trichloroacetic and dimethylthiophosphoric acids (Xi, XIII)

USSR

BARABANOV, V. I., et al, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2464-2466

(XI -- N-methyltrichloroacetoamidodimethylthiophosphate, XIII -- N-butyltrichloroacetoamidodimethylthiophosphate). Also synthesized were N-butylbis(trichloroaceto)amide (X), N-methyl-N-dipropylphosphite-amidodimethylthiophosphate (XII) and N-butyl-N-dipropyl-phosphite-amidodimethylthiophosphate (XIV). The synthesized amides of dimethylthiophosphoric acid were reacted with chloral to produce N-alkyl-N-α-hydroxy(β,β,β-trichloroethyl)-amides of dimethylthiophosphoric acid (XVI, XVII). N-Butyl-(α-hydroxy-β,β,β-trichloroethyl)trichloroacetoamide $CCl_3CON[CHOHCCl_3]C_4H_9$ (XV) was synthesized by interacting (IV) with chloral. It was found that compounds (I) and (V) may be used for sexual sterilization of flies, and that compounds (II) and (VI) are antihelminthic. The products of interaction of amides with chloral have insecticidal properties equal to those of chlorophos, but they are considerably more toxic.

2/2

USSR

UDC 547.26'118

BARABANOV, V. I., SAZONOVA, Z. Ya., MOLODYKH, Zh. V. Kazan Veterinary Institute imeni N. E. Bauman

"Synthesis of Halogenated Phosphorylated Acetals of Chloral and Bromal"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1260-1262

Abstract: Biologically highly active esters (I) were obtained from the reaction of halogen-substituted hemiacetals of chloral and bromal with dipropyl chlorophosphite. I were prepared by mixing 0.1 g-mole of hemiacetal and 0.1 g-mole triethylamine in diethyl ether, cooling the mixture, and adding dropwise dipropyl chlorophosphite. Physical data for many such compounds are given in tabular form.

1/1

USSR

UDC 615.332 (Cycloserinum). 014.453

SAZYKIN, Yu. O., CHAYKOVSKAYA, S. M., KORCHAGIN, V. B., PANINA, M. A., IVANOVA, V. N., BALITSKIY, V. A., and VAYNER, Ye. A., All-Union Scientific Research Institute of Antibiotics and Institute of Biophysics, Ministry of Health USSR

"Sterilization of Oxacillin Preparations With Fast Electrons"

Moscow, Antibiotiki, No 10, 1971, pp 933-936

Abstract: Exposure of preparations of the sodium salt of oxacillin in 0.5 g vials to fast electrons (10 Mev) in a linear accelerator at a dose of 2.5 Mrad resulted in complete sterility of the antibiotic, whereas, tests of control (nonirradiated) vials revealed contamination in every second or third vial. The induced radioactivity of the samples did not exceed $3.7 \cdot 10^{-10}$ curie even with minimum length of exposure. The procedure had no effect on the antibiotic activity, pharmacological activity (no evidence of toxicity or pyrogenicity) or physicochemical properties of the preparations.

1/1

SAZYKINA, A.V.

(2)

Selected Translations of Metallurgy JPRS 58641 30 March 1973

UDC 669.1:539.32

ANOMALY OF YOUNG'S MODULUS IN DISPERSION-HARDENED INVARS

O. A. Khomenko and A. V. Sazykina, Ural Scientific Research Institute of Ferrous Metallurgy; submitted to press 8 October 1971, final version 22 June 1972.

Pages 1170-1177

The anomaly of the modulus of elasticity in dispersion-hardened invars treated for maximum strength is considered. It is demonstrated that the anomaly of the modulus of elasticity and its temperature coefficient in alloys containing titanium is determined mainly by the invar effect. The amplification of the concentration heterogeneity of austenite in the formation of zones of the Guignet-Preston type and the liberation of the intermetallides causes an increase in the contribution of mechanostriction of the paraprocess to the elastic behavior of the invars.

The anomaly of the modulus of elasticity in binary and alloyed single-phase invars of a Fe--Ni system was considered in many works [1--6]. However, information concerning the contribution of invar and E-effects to the anomaly of Young's modulus in dispersion-hardened invars are limited [7], although it is precisely this class of alloys that presents the greatest interest for practical purposes.

In this work the anomaly of Young's modulus is investigated at room temperature and at increased temperatures in alloys of a Fe--Ni--Ti system, which is the basis for the majority of industrial alloys of the elinvar type.

Table 1

Chemical Composition of Alloys, % by Weight

(1) Группа сплава	Ti	Ni						
A	1.4–1.5	32.0	35.0	37.0	38.6	41.3	45	—
B	1.9–2.1	34.2	39.7	41.8	43.6	43.5	47.9	50.2
C	2.9–3.0	37.8	40.1	42.9	45.5	45.2	51.2	—

Key: (1) group of alloys.

The chemical composition of experimental alloys is given in Table 1. The content of titanium in alloys of group A corresponds to the limit of solubility [1], and alloys of groups B and C are dispersion hardened. The alloys were smelted in an open induction furnace with a basic lining. From ingots forged into rods with a diameter of 15 millimeters specimens were fabricated which were subjected to heat treatment for maximum strength according to the following regime: hardening from 1000°Centigrade in water, tempering at 700°, soaking 6 hours.

Young's modulus in the demagnetized E and magnetized E_n states was determined without a field and in a saturation field (up to 700 oersteds) in the temperature range from room temperature to 600° according to the methodology described earlier [5] [E_M = E_n = $E_{magnetized}$]. Young's modulus in the paramagnetic state E_n was obtained by means of extrapolation of the curve E(T) from the region of temperatures above the Curie point to the ferromagnetic region [4, 5]. The magnitude of the ΔE-effect was calculated according to the formula $\Delta E_n = \frac{E_n - E}{E}$, and the invar effect of elasticity from the expression $\Delta E_{inv} = \frac{E_n - E_p}{E_p}$ [E_M = E_{m}; E ; E_p; E = E_{inv} = E_{invar}]. Thermal expansion was measured on a dilatometer of type UVD with a gain of 485. From the dilatograms the coefficients α of thermal expansion and the spontaneous volumetric magnetostriction $\omega = 3\frac{\Delta l_s}{l}$ were calculated [l_{sn} = l_{sp} = $l_{spontaneous}$] (l is the length of the specimen; Δl_{sp} is the linear spontaneous magnetostriction). The value of Δl_{sp} was found from the expression Δl_{sp} = $l - l_p$ where l_p is the length of the specimen in the "paramagnetic" state at temperatures below the Curie point, obtained by means of extrapolation of the length of the specimen from the paramagnetic region to the ferromagnetic region [l_n = l_p = $l_{paramagnetic}$]. The magnetostriction was measured by the tensometric bridge method at an intensity of the magnetic field of up to 1200 oersteds. The sensitivity of the installation amounted to

USSR UDC 51

SBITNEV, A. I., RYABOVA, L. D.

"List Algorithm for the Solution of the Problem of Constructing the Optimal Traffic Schedule for Industrial Transportation"

V sb. Prom. kibernetika (Industrial Cybernetics — collection of works), Kiev, 1971, pp 316-327 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V544)

No abstract

1/1

USSR UDC: 51:330.115

SBITNEV, A. I., RYABOVA, L. D.

"On an Optimum Problem in Setting up a Traffic Schedule for Industrial Transportation"

V sb. Tekhn. kibernetika. Vyp. 14 (Technical Cybernetics--collection of works, No 14), Kiev, 1970, pp 59-66 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V672)

[No abstract]

1/1

SBITNEVA, M. F.

JPRS 56038
18 May 72

UDC 615.849.1.015.46

STATE OF NATURAL IMMUNITY OF DOGS DURING CHRONIC GAMMA IRRADIATION UNDER THE INFLUENCE OF AMITETRAVITE

[Article by S. I. Pal'mina, V. A. Zuyeva, M. I. Gvozdeva, M. F. Sbitneva, A. A. Akhunov and E. S. Zubenkova; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 2, March-April 1972, pp 24-29, submitted for publication 11 February 1971]

Abstract: The effect of amitetravite, a biological protectant, on the state of natural immunity was investigated in experiments on dogs exposed to three-year chronic gamma irradiation simulating the dose characteristics of a space-flight environment. Long-term irradiation of dogs with low Co^{60} gamma ray dosages induced wavelike changes in the natural immunity of the test animals. Regular administration of amitetravite produced a normalizing effect on the state of skin autoflora, favored a relative stability of the indices of blood phagocytic activity, and restrained the development of autoimmune reactions.

It has been established in numerous investigations that body exposure to ionizing radiation in large doses, leading to the development of acute or subacute radiation sickness, is accompanied by an impairment of many body functions. Among these impairments a leading place is occupied by a decrease in natural and artificial immunity (P. N. Kiselev and P. A. Buzini; N. N. Klemparskaya, et al.; V. M. Shilov; R. V. Petrov, and others). However, the problem of the effect of prolonged chronic irradiation in small doses on immunobiological reactivity and the influence exerted on it by protective-therapeutic measures has not been adequately covered.

The objective of this study was an evaluation of the effectiveness of one of the means of biological defense, the drug amitetravite, on the state of natural immunity in dogs subjected to prolonged chronic gamma irradiation. This study is a part of a complex investigation with chronic irradiation which in dose level and intensity simulated the radiation conditions of a prolonged space flight (Yu. G. Grigor'yev and B. A. Markelov, and others).

1/2 041 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EXPERIMENTS IN THE APPLICATION OF PROPHYLACTICS AGAINST RADIATION INJURIES UNDER SIMULATED PROLONGED SPACE FLIGHT CONDITIONS -U-

AUTHOR-(05)-ROGOZKIN, V.D., SBITNEVA, M.E., SHAPIRO, G.A., GVOZDEVA, N.I., ZUKHBAYA, T.M.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL 4, MAR.-APR. 1970, P. 20-24

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS

TOPIC TAGS--DOG, GAMMA RADIATION, RADIATION DOSAGE, HEMATOPOIESIS, RADIATION INJURY, RADIATION PROPHYLAXIS, ANTIRADIATION DRUG, ADENOSINE TRIPHOSPHATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1710 STEP NO--UR/0453/70/004/000/0020/0024

CIRC ACCESSION NO--AP0138683

UNCLASSIFIED

2/2 041 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0138683

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF ONE YEAR OBSERVATIONS OF RADIATION EFFECTS IN A GROUP OF 54 DOGS EXPOSED TO CHRONIC GAMMA RADIATION DOSES OF 75 REM-YEAR WITH ADDITIONAL SOLAR FLARE SIMULATING DOSES OF 50 REM GIVEN 3 TIMES DURING THE YEAR TO A TOTAL OF 225 REM-YEAR. ADENOSINE TRIPHOSPHATE OR AMITETRAVIT (A COMBINATION OF VITAMINES C, P, B1, AND B6 WITH TRYPTOPHAN AND HISTIDINE) WERE GIVEN TO THE DOGS AS MEDICATION. A NORMALIZING EFFECT OF THESE PREPARATIONS ON HEMOPOIESSIS IS ESTABLISHED IN RADIATION EXPOSED DOGS.

UNCLASSIFIED

USSR

UDC 532.517.3.001.24

SBITNEVA, M. M., GUROVICH, B. M.

"Boundary Layer Stability"

[Nauchn. tr.] Tashkent. politekhn. in-t ([Scientific Works of] Tashkent Polytechnical Institute), 1970, No 65, pp 109-114 (from RZh-Teploenergetika, No 12, Dec 70, Abstract No 12G44)

Translation: Boundary layer stability under the joint action of free and induced longitudinal flow at a cold horizontal surface turned downward is considered. The relationship between the critical Reynolds and the Richardson number $\theta = g/\sigma \ \partial\rho/\partial y/(dU/dy)_w^2$ (the y coordinate is measured from the horizontal surface, ρ is density, $(dU/dy)_w$ is the velocity gradient at the wall) is taken to be the same as on a hot surface turned downward (G. Shlikhting, Teoriya pogranichnogo sloya (Boundary Layer Theory), Moscow, "Nauka" Publishing House, 1969); however, the regions of stable and unstable longitudinal motion vary in places.

1/2

USSR

SBITNEVA, M. M., GUROVICH, B. M., [Nauchn. tr.] Tashkent. politekhn. in-t.

1970, No 65, pp 109-114

For $Re < Re_{cr}$, the longitudinal motion is unstable. Re_{cr} is defined for non-viscous instability without considering forces of friction. The boundary of the instability is determined by the condition $Gr/Re_{cr}^{2.5} = 2.2$. For $Re > Re_{cr}$ the heat transfer of the surface is determined by formulas for free motion. 1 ill., 4 ref. G. A. Dreytser.

2/2

USSR

UDC: 533.9...16

BEREZHETSKIY, M. S., GREBENSHCHIKOV, S. Ye., KOSSYY, I. A., SBITNIKOVA, I. S., SHPIGEL', I. S.

"Electrostatic Probe Measurements on the L-1 Stellarator"

Tr. Fiz. in-ta AN SSSR (Works of the Physics Institute, Academy of Sciences of the USSR), 1973, 65, pp 82-99 (from RZh-Fizika, No 6, Jun 73, abstract No 6G356)

Translation: The paper describes methods of using electrostatic probes to measure the parameters of a plasma injected into the L-1 stellarator by a spark source. Isolated Langmuir probes, an emitting probe, a multigrid electrostatic probe, and double probes were used to measure the plasma potential, electron temperature, ion temperature, ion concentration, fluctuating ion flow to the wall of the chamber, and quasiconstant ion fluxes. The probe designs and electrical measurement setup are described, and the possibilities of the probe method under conditions typical for the L-1 stellarator are discussed. A brief review is given of the principal results of measurements. Bibliography of 22 titles.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECTIVENESS OF A SPARK CHAMBER WITH LIMITING LOW IONIZATION -U-

AUTHOR-(02)-SBORSHCHIKOV, V.G., MIKHEYEV, S.P.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 58-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPARK CHAMBER, FREE ELECTRON, ELECTRODE DESIGN, ALUMINUM, TIN, QUANTUM YIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1075 STEP NO--UR/0120/70/001/000/0058/0059

CIRC ACCESSION NO--AP0110765

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0110765
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR OBTAINING AND MEASURING A SMALL NO. OF FREE E IN A SPARK CHAMBER. THE APP. CONSISTS OF A SPARK CHAMBER WITH FLAT ELECTRODES 5 CM IN DIAM. PLACED AT A DISTANCE OF 2 CM FROM EACH OTHER. THE LOWER ELECTRODE WAS PREPD. FROM AL AND SN. THE QUANTUM YIELD OF AL PROVED UNSTABLE. THE SN ELECTRODE WAS USED TO MAKE 2 SERIES OF MEASUREMENTS. THE EFFECTIVENESS OF THE CHAMBER WITH RESPECT TO ONE FREE E IS NOT SMALLER THAN 70PERCENT.
FACILITY: FIZ. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.24

SEOYEVA, ZH. N., NEMATOV, G. N.

"Effectiveness of Benomyl against Verticillium Cotton Wilt"

Moscow, Khimiya v Sel'skom Khozyaystve, No 1, 1972, pp 22-24

Abstract: A study was made at the Andizhan branch of the All-Union Scientific Research Institute of Cotton Growing to determine the effect of various doses of benomyl on the rate of affection cotton with verticilliose wilt, with injections of the fungicide in different ways and at different times. In the vegetative experiment benomyl injected into the soil was absorbed by the roots of the cotton plant and reached the leaves through the stalk as a result of which the development of verticilliose wilt was almost completely suppressed. In lisimeters and under field conditions, benomyl was less effective by comparison with the vegetative experiment, but this is explained by poor procedures used in applying the fungicide. Comparative data for the various experiments are presented in tabular form. In the vegetative experiments, the number of bolls and the weight of the cotton in them were both increased. The maximum increase in yield (36 grams per plant) occurred for injection of benomyl in the amount of 6 grams into the vessel to a depth of 20 cm. About the same increment was obtained in the version with a 12 gram dose. This indicates that benomyl is not toxic to cotton.

1/1

SCHASTLIVTSEV, V. M.

(5)

Selected Translations of Metallurgy JPRS 55611 30 March 1972

UDC 669.017.3:620.186.5

STRUCTURAL RECRYSTALLIZATION OF STEELS DURING FAST AND SLOW HEATING

G. N. Bogacheva, V. P. Drozd, A. V. Ozhiganov, V. M. Schastlivtsev, and V. M. Umova, Institute of the Physics of Metals, UNTs of the USSR Academy of Sciences, submitted to press 1 February 1972 pages 1198-1205

The effect of small additions of elements forming carbides that are nearly insoluble, the temperature of preliminary hardening, tempering after hardening, and soaking at various temperatures in the austenite region on the structural mechanism of the recrystallization of steel during heating, accomplished with various speeds, was investigated. It was demonstrated that the factors indicated do not have the same effect on the manifestation of the structural succession, expressed in the restoration of the initial grains of austenite after completion of the phase transformation in fast heating (200--400° per second) and slow heating (1--2° per minute). In connection with this it is proposed that these two cases of structural succession are caused by different mechanisms of the formation of austenite.

At definite heating conditions of a preliminarily superheated and hardened steel, the phenomenon of structural succession is observed, which lies in the presence of a crystallographic bond of the grains of austenite formed after completion of the phase transformation with the initial grains of austenite, which existed before the first hardening. The structural succession is manifested most sharply at very fast or at very slow heating of the hardened steel; in both cases, a restoration of the initial grains of austenite occurs with respect to magnitude and with respect to crystallographic orientation [1--3].

In reference [4] the assumption was expressed that the phenomenon of structural succession is caused by the well-established mechanism of formation of austenite: in fast heating a diffusionless mechanism is realized, and in slow heating the so-called homogeneous mechanism of diffusion formation of austenite. However, according to [5], for the majority of the steels investigated at the speeds of heating that can be accomplished in practice, the formation of austenite occurs by the diffusion mechanism. This conclusion, in essence, presumes the identity of recrystallization mechanisms of the grain in both cases. It is of interest to analyze the effect of various factors on the appearance of the structural sequence in fast and slow heating and, if their effect is unambiguous, according to [4], we may assume that these two cases of structural sequence are caused, all the same, by various mechanisms of the formation of austenite.

In this article the effect of the chemical composition, preliminary hardening temperature, tempering after preliminary hardening, and the reaction of tempering in the austenite region before preliminary hardening on the structure picture of the recrystallization in repeated heating of the hardened steel.

Industrial steels were investigated, the composition of which is indicated in the table. Some experiments were conducted on steels with an increased content of carbon. Repeated heating after preliminary hardening was accomplished at rates of 1--2° per minute (slow heating) and 200--400° per second (fast heating). Since the results of x-ray structural and metallographic methods in this case agree well [6, 7], only the metallographic method was used.

UDC [illegible]:539.2[illegible]

USSR

SCHASTLIVTSEV, V. M., MIKHAYLETS, F. [illegible], SOKOLKOV, Ya. N., and [illegible]
Institute of Physics of Metals, AN USSR

"X-Ray Study of the Substructure of Polycrystalline Nickel Deformed at High Temperatures"

Sverdlovsk, Fizika Metallov i Metallovedeniya, Vol 30, No 2, Aug 71, pp 401-412

Abstract: This work is a continuation of studies on the mechanism of high-tempera-
ture deformation performed at high speeds. The dependence of certain characteris-
tics of the substructure of polycrystalline nickel on the temperature, rate, and
degree of plastic deformation is studied. It is noted that an increase in the
degree of deformation from 2 to 15% in technical nickel leads to an increase in
the angle of disorientation of the grains and between substructural components
of the first order, as well as an increase in the grain volume taking part in
the deformation. Increasing the rate of deformation from 10 to [illegible] sec-1 with
an identical degree of deformation increases the total distortion of the material.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--EFFECT OF THE THICKNESS OF ROLLED IRON ON SECONDARY RECRYSTALLIZATION -U-

AUTHOR-(04)-GUBERNATOROV, V.V., SUKOLOV, B.K., SCHASTLIVTSEVA, I.K., TITUROV, D.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 376-8

DATE PUBLISHED--------70

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

TOPIC TAGS--TRANSFORMER STEEL, METAL RECRYSTALLIZATION, COLD ROLLING, SHEET METAL, ALUMINUM ALLOY, IRON ALLOY, NICKEL ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0183 STEP NO--UR/0048/70/034/002/0376/0378

CIRC ACCESSION NO--AP0115887

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115887

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRANSFORMER STEEL SHEETS SUPPLIED BY 2 DIFFERENT PLANTS HAVE BEEN COLD ROLLED TO A REDN. OF 90, 92, 94, AND 96PERCENT, RECRYSTD. 2 HR AT 750DEGREES IN VACUUM, AND THEN CHEM. POLISHED FROM ONE SIDE OF THE SHEET TO PRODUCE SPECIMENS OF DIFFERENT THICKNESS: 0.05-0.20 MM. SUBSEQUENT HIGH TEMP. ANNEAL FOR 2 HR AT 1050DEGREES PRODUCED A VARYING DEGREE OF SECONDARY RECRYSTN. SECONDARY RECRYSTN. IS LESS DEVELOPED WITH DECREASING SPECIMEN THICKNESS AND AT 0.10 MM IT DOES NOT OCCUR, REGARDLESS OF HOW THIS THICKNESS IS OBTAINED (COLD ROLLING OR POLISHING). SIMILAR RESULTS ARE QUOTED FOR AL USED FOR ELEC. PURPOSES AND SOME FE-NI ALLOYS. WHILE CONSIDERING THE IMPORTANCE OF INCLUSIONS IN PROMOTING THE EFFECT OF SECONDARY RECRYSTN., IN SUFFICIENTLY THIN SPECIMENS THE VACUUM ANNEAL CAN LEAD TO VAPORIZATION OF INCLUSIONS WITH THE RESULTING UNIFORM GROWTH OF THE MATRIX GRAINS. ON THE OTHER HAND, IN THIN SPECIMENS INDIVIDUAL GRAINS CANNOT GROW LARGE ENOUGH TO ACT AS NUCLEI OF SECONDARY RECRYSTN. FACILITY: INST. FIZ. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOLID ROTOR -U-

AUTHOR-(05)-SCHASTLIVYY, G.G., SHEVCHENKO, V.I., LYCHKO, I.I.,
SUSHCHUKSLYUSARENKO, I.I., OBUKHOV, V.A.
COUNTRY OF INFO--USSR

SOURCE--USSR 248053
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NO 23
DATE PUBLISHED--05JAN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, ELECTRIC MOTOR, ALTERNATING CURRENT, THERMAL
STABILITY, EDDY CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1593 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0121970
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AA0121970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. SOLID ROTOR USED FOR AN A. C. ELECTRIC MOTOR ACHIEVES A HIGHER THERMAL STABILITY OF DAMPING SYSTEM DURING STARTING AND IN ASYMMETRICAL OPERATION. THE ROTOR DAMPING SYSTEM INCLUDES TEETH (1) AND METAL WEDGES (2) IN SLOTS (3). THE SHORTING RINGS (4,5) ARE MADE BY FORMING A LAYER OF ELECTRICALLY MOLTEN COPPER ON THE END OF THE ROTOR AND IN A RECESS OF THE SHAFT; THE ROTOR SLOTS ARE MILLED AFTERWARDS. WEDGES (2) ARE IN CONTACT WITH THE SHORTING RING ALONG ITS THICKNESS (A). IN ASYMMETRICAL OPERATION EDDY CURRENTS ARE INDUCED IN THE TEETH AND WEDGES WHICH ARE SHORTED BY THE RINGS (4,5).

FACILITY: INSTITUT ELEKTRODINAMIKI AN UKRAINSKOY SSR, INSTITUT ELEKTROSVARKI IM. YE. O. PATONA I LYS'VENSKIY TURBOGENERATORNYY ZAVOD.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820002-3"

USSR UDC 616.288.75+616.2-036.11]-053.2-085.339:576.858]-039.71

YERMOL'YEVA, Z. V., BLINOVA, M. I., FURER, N. M., RITOVA, V. V., KUCHERENKO, L. P., NEMIROVSKAYA, B. M., SHCHERBAKOVA, E. G., SCHASTNYY, F. I., ORLOVA, L. N., and FAYNSHTEYN, S. L., Chair of Microbiology, Central Institute for Advanced Training of Physicians, and Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Prophylaxis of Influenza and Other Acute Respiratory Diseases Among Children Through Administration of Leukocytic Interferon and a Stimulant of Interferon Production (UF Virus)"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

Abstract: An express method of preventing influenza and other acute respiratory diseases was tested in childrens' institutions in Moscow during the interepidemic period of March-June 1968 and during the influenza epidemic in January-February 1969. The project was carried out under strictly controlled, coded experimental conditions. The 750 children, aged 10 months to 7 years, were divided into four groups at random, and the preventive agents were administered intranasally. One group received leukocytic interferon two times per day for 7 to 42 days. The second group received interferon with liquid ecmoline. The third group received UF virus once daily for 3-4 days with

USSR

YERMOL'YEVA, Z. V., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

intervals of 3-4 days. The fourth group received placebos. The effectiveness index of interferon was 3.0 (frequency of diseases three times smaller than in the placebo group) in the interepidemic period and 2.2 during the epidemic. The effectiveness index of interferon with ecmoline was 1.8, and that of UF virus was 3.0 in the interepidemic period. All differences are statistically significant. Since no toxic effects were observed, the method is recommended for the prevention of influenza and other acute respiratory diseases.

2/2

USSR

UDC 576.858.75(A2).06

RITOVA, V. V., SCHASTNYY, E. L., OGANESYAN, O. T., CHEBOTAREV, V. V., MOISEYEV, V. P., LARIONOV, A. S., BYKOVSKIY, A. F., SOKOLOVA, N. N., and MEL'NICHENKO, YE. N., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Study of Influenza A2 Virus Strains Isolated During the 1968-1969 Epidemic from Children in Moscow and in the Moscow Region"

Moscow, Voprosy Virusologii, No 3, May/Jun 1971, pp 291-196

Abstract: Since 1957, there have been five influenza epidemics in the USSR caused by the A2 virus: in 1957, 1959, 1962, 1965 and 1968-1969. The last one was produced by a newly formed variant of the virus and began in July in Hong-Kong, subsequently spread over Japan, and hit the countries of South-east Asia and the US. In fall 1968 there was a sharp rise in the influenza incidence in England and in other countries of Central Europe. In December, individual A2 and B influenza foci were reported in the Soviet Union in organized children's collectives (child care centers, schools, etc), and by the middle of January in many cities of the USSR, the incidence of influenza surpassed the mean seasonal rate by a factor of five. From 350 sick children 141 strains of the flu virus were isolated from nasopharyngeal washings.
1/2

USSR

RITOVA, V. V., et al., Voprosy Virusologii, No 3, May/Jun 71, pp 291-296

Diagnosis was confirmed serologically. All strains had high receptor activity and were antigenically identical. Neutralization tests showed that the 1969 flu virus is not a new serotype. A structural study showed that the virus consisted of spherical (diameter 2000-3500Å) and filiform. (diameter of the nucleus 700-900Å, length to several microns) structures. Sera from guinea pigs and horses inhibited hemagglutination of the newly separated strains. The effect of sera was not completely removed after heating to 57°C for 30 minutes and processing with KIO_4; but was removed by treatment with cholera vibrios. Only two strains were inhibitor-resistant, all remaining strains were inhibitor-sensitive. The isolated strains were readily adaptable to white mice and from the second or third passage produced death and lung lesions in test animals. Also, in mice, the strains exhibited toxic properties. The immunological responses in convalescents and in immunized animals were high.

2/2

AP9053075

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR, Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5, pp 58-62

N. P. Anoshina,
V. M. Schatzky, L. N. Komissarova

ON THE SOLUBILITY SCANDIUM CHROMATES TYPE $MSc(CrO_4)_2$ IN THE WATER SOLUTIONS M_2CrO_4 AND $M_2Cr_2O_7$

The solubility $MSc(CrO_4)_2 \cdot 2H_2O$ (M=NH_4, Na, K) is studied in the solutions of chromate and dichromate of alkaly metals and ammonium, corresponding to them.

1949 1831

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--MELTING OF SILICOCHROMIUM BY A TWO STAGE PROCESS IN A CLOSED FURNACE -U-

AUTHOR-(05)-NAKHABIN, V.P., KOROLEV, A.A., KRYLOV, I.A., SCHCHERBIN, A.N., SHATOV, YU.I.

COUNTRY OF INFO--USSR

SOURCE--STAL' 1970, 30(3), 239-40

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SILICON ALLOY, CHROMIUM ALLOY, METALLURGIC FURNACE, METAL MELTING, CARBON ALLOY, MANGANESE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605019/C09 STEP NO--UR/0133/70/030/003/0239/0240

CIRC ACCESSION NO--AP0140929

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPERATIONAL STEPS EMPLOYED IN SHIFTING ARC FURNACE OPERATION FROM MAKING FERROCHROMIUM TO MAKING SILICOMANGANESE AND THEN OPERATING IT ON A CHARGE COMTG. QUARTZITE 300, COKE BREEZE 126-134, FERROCHROMIUM 130-135, AND STEEL TURNINGS 25-30 KG TO PRODUCE SI 48.8PERCENT, CR 29.7, C 0.05 ALLOY ARE DESCRIBED.

FACILITY: ZAVOD FERROSPLAVOV, SEROV, USSR.

UNCLASSIFIED

Acc. Nr.: AP0046868

USSR

Ref. Code: URO122

UDC 621.224.253.67:621.787.4

KUDRYAVTSEV, I. V., Professor, Director of Technical Sciences, SCHEGOLEV, G. S., Professor and RYMYNOVA, E. V., Engineer

"Increasing the Durability of Components of Powerful Hydraulic Turbine Wheels"

Moscow, Vestnik Mashinostroyneiya, No 1, 1970, PP 22-25

Abstract: This article describes a series of tests conducted jointly by the Central Scientific-Research Institute of Technology and Mechanical Engineering (TsNIITMASH) and by Leningrad Mashine Tool Plant (LMZ) on samples made of 25KIMF steel, with the purpose of evaluating the increase in durability of components of the blade adjustment mechanism, for powerful hydraulic Turbine wheels, obtained by surface strengthening of chamfers by means of vibrating roller. Data are presented on the shape of samples, their heat treatment, the chamfer radius, the number of impacts per minute, the impact energy, and etc. A schematic diagram of

1/2

Reel/Frame
19790188

18

AP0046868

the device used for penumatic hammering of chamfers, and also a photograph of the instrument for measuring the groove depth after hammering process, are given. The results of the fatigue tests on various samples with different chamfer radius presented in a table and in graphs, are discussed. The effect of surface strengthening, of scale factor, and of chamfer radius on the endurance limit is analyzed. The method described here was used for increasing the durability of components of powerful hydraulic turbines of Verkhne-Tulomskoy GES, and is being a compulsory shop practice at LMZ. Original article has 5 figures, 3 tables and 3 formulas.

2/2

87

19790189

1/3 037 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DETERMINING ABSORPTION OF EXPLOSIVE WAVES IN GROUND FROM RECORDS OF STRESSES AND STRAINS -U-

AUTHOR-(03)-IVANOVA, L.A., KONDRATYEVA, T.G., SCHERBO, M.N.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ZEMLI, NO 2, 1970, PP 21-29

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--STRESS ANALYSIS, STRAIN, LONGITUDINAL WAVE, SEISMIC WAVE, WAVE AMPLITUDE, EARTH CRUST DEFORMATION, DEFORMATION RATE, WAVE PROPAGATION, EXPLOSION, ELASTICITY, ABSORPTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0727 STEP NO--UR/0387/70/000/002/0021/0029

CIRC ACCESSION NO--AP0110455

UNCLASSIFIED

2/3 037 UNCLASSIFIED

CIRC ACCESSION NO--AP0110455 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS HAVE DEVELOPED APPARATUS AND A METHOD FOR THE DIRECT REGISTRY OF THE NORMAL COMPONENTS OF STRESSES SIGMA SUBXX (T) AND STRAINS E SUBXX (T) IN REAL MEDIA; IT IS POSSIBLE TO DETERMINE THE ENERGY LOSS IN THE MEDIUM IN THE PROPAGATION OF AN EXPLOSIVE WAVE CAUSED BY IMPERFECT MEDIUM ELASTICITY. THE ENERGY LOSSES DUE TO IMPERFECT ELASTICITY WERE DETERMINED IN THE UPPER PART OF THE GROUND FROM THE HYSTERESIS LOOP FORMED BY THE DEPENDENCE OF STRESS ON STRAIN, REGISTERED AT ONE POINT OF THE GROUND. THE RESULTS OF DETERMINATION OF THE RELATIVE LOSSES AND THEIR COMPARISON WITH RESIDUAL GROUND DEFORMATIONS FOR DIFFERENT E SUBXX MADE POSSIBLE A CLEAR DISCRIMINATION OF A REGION OF LARGE DEFORMATIONS (E SUBXX GREATER THAN 10 PRIME NEGATIVE3) OF THE GROUND AND A REGION OF SMALL DEFORMATIONS (E SUBXX SMALLER THAN 10 PRIME NEGATIVE3). IN THE REGION OF LARGE DEFORMATIONS THE RELATIVE ENERGY LOSS DELTA W-W IS DEPENDENT ON THE AMPLITUDE OF THE DEFORMATIONS; THE RATIO DELTA W-W INCREASES WITH AN INCREASE IN E SUBXX AND WHEN E SUBXX APPROXIMATELY EQUAL TO 10 PRIME NEGATIVE2 THE LOSSES EXCEED BY SEVERAL TIMES THE ENERGY OF ELASTIC DEFORMATION. IN THIS SAME REGION THERE ARE RESIDUAL DEFORMATIONS OF THE GROUND WHOSE MAGNITUDE ALSO INCREASES WITH AN INCREASE IN E SUBXX. THIS INDICATES A RELATIONSHIP BETWEEN THE MECHANISM OF ENERGY LOSSES IN THE REGION OF LARGE DEFORMATIONS AND THE RESIDUAL DEFORMATIONS OF THE MEDIUM.

UNCLASSIFIED

3/3 037 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110455

ABSTRACT/EXTRACT--FOR DEFORMATIONS E SUBXX SMALLER THAN 10 PRIME NEGATIVE3 THE GRAPH OF THE DEPENDENCE OF RELATIVE LOSSES ON E SUBXX IS REPRESENTED BY A HORIZONTAL ASYMPTOTE AND THE RATIO DELTA W-W ASSUMES A CONSTANT VALUE NOT DEPENDENT ON E SUBXX. RESIDUAL DEFORMATIONS ARE ABSENT, EVIDENCE OF A DIFFERENCE IN THE ABSORPTION MECHANISM DURING SMALL DEFORMATIONS, OBVIOUSLY NOT ASSOCIATED WITH RESIDUAL DEFORMATIONS, ON THE ABSORPTION MECHANISM FOR SMALL DEFORMATIONS. THUS, THE REGION OF VALUES E SUBXX APPROXIMATELY EQUAL TO 10 PRIME NEGATIVE3 IS THE BOUNDARY BETWEEN THE INELASTIC ZONE WHERE THE RELATIONSHIP BETWEEN SIGMA SUBXX AND E SUBXX IS NONLINEAR AND THE LINEARLY INELASTIC REGION WHERE A LINEAR DEPENDENCE EXISTS BETWEEN STRESSES AND STRAINS IN THE PRESENCE OF DEVIATIONS FROM IDEAL ELASTICITY. THE VALUE OF THE ABSORPTION COEFFICIENT IN GROUND, DETERMINED BY THE DIRECT METHOD IN THE LINEARLY INELASTIC ZONE, COINCIDES WITH THE ATTENUATION VALUES OF THE LONGITUDINAL SEISMIC WAVE IN SIMILAR ROCKS DETERMINED BY THE METHOD OF COMPARING WAVE AMPLITUDE AT DIFFERENT DISTANCES FROM A SOURCE. THIS AGREEMENT MAKES IT POSSIBLE TO ASSUME THAT IN SOFT GROUND WAVE ATTENUATION IS DETERMINED FOR THE MOST PART BY IMPERFECT MEDIUM ELASTICITY.

FACILITY: INSTITUTE OF PHYSICS OF THE EARTH.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ANNULAR POLARIMETER FOR MEASUREMENTS OF NUCLEON POLARIZATION IN NUCLEAR REACTIONS -U-

AUTHOR-(05)-UEHLER, H., KRIVOPUSTOV, M., SCHIRMER, G., SISOV, I.M., ASFOUR, F.

COUNTRY OF INFO--USSR

SOURCE--NUCL. INSTRUM. METHODS; 77: 292-9(1970)

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON POLARIZATION, PROTON POLARIZATION, POLAR METER, MONTE CARLO METHOD, ELASTIC SCATTERING, ANGULAR DISTRIBUTION, NUCLEON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1816 STEP NO--NE/0000/70/077/000/0292/0299

CIRC ACCESSION NO--AP0054650

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 013

CIRC ACCESSION NO--AP0054650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF THE ANNULAR POLARIMETER FOR MEASURING THE NUCLEON POLARIZATION IN NUCLEAR REACTIONS IS DESCRIBED IN DETAIL AND ITS ADVANTAGES AGAINST THE USUAL LEFT RIGHT ASYMMETRY METHOD ARE SHOWN. THE CALCULATIONS OF THE GEOMETRICAL FACTOR AND THE AVERAGED ANALYZING POWER WERE CARRIED OUT USING THE MONTE CARLO METHOD. FOR AN EXAMPLE THE POLARIZATION OF PROTONS FROM THE REACTION PRIME12 C(PRIME3 HE, P SUBO) PRIME14 N(G.S.) AT E(PRIME3 HE) EQUALS 2.87 MEV WAS MEASURED AS A FUNCTION OF THE SCATTERING ANGLE USING THE ELASTIC SCATTERING PRIME12 C(P,P) PRIME12 C AS AN ANALYZER. FACILITY: JOINT INST, FOR NUCLEAR RESEARCH, DUBNA, USSR.

UNCLASSIFIED

USSR

UDC 539.4

AFANAS'YEV, P. D., SCHUL'GA, N. G., and YAREMKEVICH, S. K., L'vov

"Thermomagnetic Treatment of Fe-Ni-Al-Co Alloys With Low and Medium Content of Cobalt"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 140-143

Abstract: Results are presented of an investigation of the effectiveness of the thermomagnetic treatment of Fe-Ni-Al-Co alloys with low and medium cobalt content. The growth of magnetic properties Br and BH_{max} after thermomagnetic treatment ranges between 10-15% for alloys with 2-6% cobalt and between 20-25% for Fe-Ni-Al-Co alloys with 12-15% cobalt. The effectiveness of thermomagnetic treatment can be increased considerably by raising the Curie point of alloys with 12-15% cobalt at the expense of a decrease in nickel content to 17-17.3% and aluminum to 7-7.5% and an increase of silicon to 0.5-0.8%. An oscillographic method for determining the Curie point of stable magnets is described.

1/1

AA0040688

UR 0482 1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240614 PRETREATMENT OF STARCH FOR ELECTROPHORESIS is effected by partial hydrolysis with acids such as, e.g. hydrochloric acid in an aqs. suspension and subsequent neutralisation conditioning at a temp. below the gelation temp. and separation of the purified starch from the resulting liquid phase. 18.3.67. as 1141525/28-13, SCHULTZ, P. et al. (Priority: 19.3.66. East Germ. 116584) (25.8.69) Bul. 12/21.3.69. Class 89k, Int. Cl. C 13 1.

AUTHORS: Schultz, P.; Kruger, G.; and Samland, K.

LD 6

1/1

19750302

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 020

TITLE--ANTITUMOR ACTIVITY OF NEW PREPARATIONS OF THE CHLORETHYLAMINE GROUP NOT INFLUENCING HAEMOPOESIS -U-

AUTHOR-(05)-VASILYEVA, L.S., DYACHKOVSKAYA, R.F., SCHUPPE, N.O., PARKHOMENKO, I.I., SURKOVA, N.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESITYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3, PP 459-463

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, HEMATOPOIESIS, AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0216/70/000/003/0459/0463

PROXY REEL/FRAME--3001/1608

CIRC ACCESSION NO--AP0127099

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 020
CIRC ACCESSION NO--AP0127099
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANTITUMOR ACTION OF CHLORALHYDRATES N,N,DI(2,CHLORETHYL)PINOCAMFILAMINE (I), N,N,DI(1,CHLORETHYL)PINILAMINE(II) AND 3,5,DI,TRETBUTYL,4,OXI,N, NI,DI (BETA,DHLORETHYL BENZILAMINE) (III) WAS STUDIED BOTH IN EXPERIMENTS ON ANIMALS AND IN TISSUE CULTURE. IT WAS FOUND THAT THE COMPOUND II DISPLAYED MAXIMAL ACTIVITY. THE INFLUENCE OF THE COMPOUND II ON THE PROCESS OF PROTEIN BIOSYNTHESIS IN TUMOR CELLS WAS REGISTERED. IT WAS FOUND THAT THE SUBSTANCES STUDIED DO NOT INFLUENCE NORMAL HAEMOPOESIS. FACILITY: INSTITUTE OF CHEMCIAL PHYSICS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

UDC: 621.372.542(088.8)

USSR

SDAVSKIY, G. N., MIKHALEV, P. G., Leningrad Polytechnical Institute

"Unit for an Active Third-Order Low-Frequency RC Filter"

USSR Author's Certificate No 266096, filed 12 Mar 68, published 28 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D84 P)

Translation: This Author's Certificate introduces a unit for an active third-order low-frequency RC filter. The device contains an amplifier and a double-T RC bridge in a feedback circuit. To ensure steep cut-off of the characteristic, improve the stability of its parameters, and reduce overall dimensions, an integrating amplifier is used as the active element with the above-mentioned double-T RC bridge across its input. The bridge has a balance frequency which lies outside the passband of the filter. The feedback circuit from the filter output is connected to the amplifier input through the bridge.

1/1

UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 015

TITLE--CONTINUOUS THERMAL DESORPTION OF HYDROCARBONS IN MOVING LAYERS OF ZEOLITES -U-

AUTHOR-(04)-PLACHENOV, T.G., REDIN, V.I., SEBALLO, A.A., SHIRYAYEV, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1047-51

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DESORPTION, CARBON DIOXIDE, BENZENE, ZEOLITE, OCTANE, HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0080/70/043/005/1047/1051

PROXY REEL/FRAME--3008/1500

CIRC ACCESSION NO--AP0133501

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--[illegible]

2/2 015

CIRC ACCESSION NO--AP0138501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESORPTION BY CO SUB2 OF ISOOCTANE AND C SUB6 H SUB6 ON NAX ZEOLITE AND OF N-OCTANE ON CAA ZEOLITE MOVING CONTINUOUSLY THROUGH ADSORPTION AND DESORPTION COLUMNS OF THE SAME DIAM. WAS STUDIED. AT 0.5-2.5 L.-MIN, CO SUB2 INPUT RATE HAD ALMOST NO EFFECT ON THE DEGREE OF DESORPTION. AT SIMILAR TO 300DEGREES AND CONCNS. OF 15.6, 20.2, AND 9.1 MG, RESP., HYDROCARBON-L. AIR FLOWING INTO THE DESORPTION COLUMN, DYNAMIC ACTIVITY OF THE ZEOLITES WAS 100.3, 130, AND 58.9 MG-G, DESORPTION WAS QUANT., AND 85PERCENT OF THE DESORBED HYDROCARBONS WAS CONDENSABLE.

UNCLASSIFIED

Converters

UDC: 681.335.813

USSR

ZHUKOVSKIY, A. A., SEBKO, G. A.

"A Functional Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 279182, Class 42, filed 26 Jun 69, p 135

Abstract: This Author's Certificate introduces a functional converter with piecewise approximation which contains a power supply with rectifier connected to the input of a nonlinear unit made in the form of parallel networks. The converter also contains an input signal source connected to a series circuit consisting of a protection unit, modulator, adder, demodulator and filter. The second input of the adder is connected to the power supply output through a bias unit. As a distinguishing feature of the patent, the power of the output signal of the converter is increased without additional amplification by making each shunting network of the nonlinear unit in the form of a thyristor and resistor connected in series. The controlling electrodes of the thyristors are connected through resistors to the filter output, and the outputs of the shunting networks are connected to a set of linear resistors adjusted to the calculated nonlinear function.

1/1

UDC 533.92:621.039.61

USSR

ALEKSIN, V. F., ROMANOV, S. S., SEBKO, V. P., and LOKTIONOV, Yu. M.

"Magnetic Configurations With Sheer and Minimum $\overline{B}$"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 113-125 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G277)

Translation: Magnetic configurations of one-, two- and three-slope helical fields (n = 1, 2, 3) with an axial current were investigated. Particular attention was given to the properties of rotational conversion of magnetic lines of force and to the minimum average magnetic field. The relationship between the magnetic well and sheer and the characteristics of the structure of each configuration was established. Numerical values are given for the sheer for each magnetic system (n = 1, 2, 3).

1/1

UDC 533.92:621.039.61

USSR

LOKTIONOV, Yu. M., and SEBKO, V. P.

"Combined Helical Magnetic Systems for Plasma Confinement"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 125-137 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G278)

Translation: Certain forms of asymmetrical stellarator windings and windings of the torsatron type in combination with a central conducting rod are proposed to establish conditions for the simultaneous existence of sheer and minimum B, important stabilizing factors determining to a considerable degree the confinement time of a high-temperature plasma. It is shown that in rectilinear systems of this type values of a sheer of 0.05-0.28 are possible and the relative depth of the magnetic well is 3-7%. The effect of low toroidicity on the change in these quantities is slight.

1/1

UDC 581.4

USSR

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

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

Translation:

Table of Contents

1/1

UDC 577.391:539.165.3

USSR

SEBRANT, YU. V., Biologicheskoye Deystviye Vneshnego Beta-Oblucheniya (Biological Effect of External Beta-Irradiation), Moscow, "Atomizdat", 1970, 110 pp

Translation: Annotation: In this work, which is based on literature data and the author's own studies, the reaction of the organism to local and whole-body external beta-radiation is examined. Particular attention is given to problems of the specifics of dosimetry and metrology of beta-radiation. The radiobiological effects of the radiation on small and large laboratory animals, the physical principles, and experimental techniques used are described. The principal difference between the clinical picture of injury from beta-radiation and radiation sickness induced by other types of penetrating radiation has been established. The book is intended for a wide circle of biologists and physicians.

Foreward: In spite of the ever-greater utilization of nuclear energy in industry and medicine, some problems of the effect of radiation on the organism have not as yet been fully examined in the literature. This is especially true of beta-radiation. The relatively few works on the effect of beta-radiation on the organism, which are scattered in the pages of periodi-

1/ 5

USSR

SEBRANT, YU. V., Biological Effect of External Beta-Irradiation, Moscow, "Atomizdat", 1970, 110 pp

dals, are so contradictory that it is not possible to arrive at a single concept about the quantitative (dose) parameters of the effectiveness of beta-radiation or about the qualitatitive characteristics of the reaction of the organism to this radiation. The reason for this is the complexity of the dosimetric measurements and methods used in the irradiation of animals. The selection of small laboratory animals as experimental objects and the errors in the technique of irradiation produced a tendency to regard beta-radiation sickness as the generally known radiation sickness. This monograph has been written by an outstanding specialist in the field. In it the author not only sums up and analyzes the literature data, but also cites his own substantial experimental material. The book is the first attempt to present in monograph form the complex of problems connected with the effect of beta-radiation on the organism. It fills an existing gap in the literature, and broadens our ideas about the reactions of the organism to the effect of radiation. The work differs from many other monographs because it pays as much attention to the biological aspects of the study as it does to problems of a physical nature. In spite of the difficulties encountered in organizing experiments for beta-irradiation of large animals, these models made it

USSR

SEBRANT, YU. V., Biological Effect of External Beta-Irradiation, Moscow, "Atomizdat", 1970, 110 pp

possible to obtain a definite answer about the character and specifics of injuries of the organism, which made it possible to extrapolate with adequate reliability the results of the experiment with respect to man. The variety of clinical and laboratory studies made it possible for the author to establish a unique and completely new form of pathological reaction of the organism to radiation, which does not resemble radiation sickness. Recently the difficult problem of elucidating the mechanisms of reaction of the organism to the combined effect of different radiation factors has become urgent, from a theoretical point of view and also for practical purposes. While studying one of the special aspects of this problem, is the combined effect of beta- and gamma-radiation on the organism, the author was able to establish not only the dominating role of gamma-radiation, but also the energy relationships of the contribution of external beta-radiation to the pathological process. These high-level studies are of great clinical significance, particularly in accident situations in industry and in the exploitation of fission-able materials. It is hoped that this monograph will not only be of interest to radiobiologists, but will also be useful to physiologists, pathphysiologists, and medical workers.

3/5

USSR

SEBRANT, YU. V., Biological Effect of External Beta-Irradiation, Moscow, "Atomizdat", 1970, 110 pp

Table of Contents:

USSR

SEBRANT, YU. V., Biological Effect of External Beta-Irradiation, Moscow, "Atomizdat", 1970, 110 pp

5/5

SEBRYAKOV, G.G.

Space-craft system

SO: JPRS 55134
21 Feb 1972

Spacecraft Systems

METHOD OF ANALYZING RANDOM PARAMETRIC EFFECTS IN SPACECRAFT CONTROL SYSTEMS

[Article by Ye. A. Fedosov, G. G. Sebryakov; Moscow, Upravleniye Kosmicheskimi Apparatami i Korablyami, Russian, 1971, pp 552-561]

Random parametric effects have long attracted researchers in the field of control systems and general mechanics of motion. However, the "roughness" of control systems with respect to these effects, on the one hand, and the complexity of the analytical tools that consider random parametric perturbations on the other, have prevented the development of any suitable mathematical engineering tool.

The development of space systems brought to light the question of consideration of random parametric effects, particularly in the design of precision stabilization and guidance systems for spacecraft.

Random parametric perturbations are manifested in the form of random scattering of the parameters of motion of spacecraft in the presence of randomly distributed masses in its orbit, in the form of random scattering of stabilization and guidance parameters in the presence of a pilot in the control system, etc.

A diagram of spacecraft in the presence of mobile masses is illustrated in Figure 1. They may be the servosystem of the guidance system and scientific equipment, recording instruments, crew of the spacecraft, gimbal chambers of the motors, etc.

In this case a reactive moment develops in the spacecraft controls due to moving masses, leading ultimately to a random component of the instantaneous moment of inertia of the spacecraft, appearance of the damping effect of the moment of Coriolis forces and perturbation effect of the moment of forces of relative motion.

The general vector notation of the equations of motion in this case is [3]:

$$I_c \frac{d\bar{\omega}}{dt} + \bar{\omega} \times I_c \bar{\omega} = \bar{M} - M_b, \quad (1)$$

UDC 621.315.592:546.28

USSR

CHISTYAKOV, YU.D., PALIYENKO, A.N., GULIDOV, D.N., SECHENOV, D.A.

"Some Features Of The Growth Of Autoepitaxial Layers Of Silicon During Application Of Exterior Electrical Field"

Sb. nauch.tr. po probl. mikroelektron. Mosk.in-t elektron.tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 161-164 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B77)

Translation: Consideration is given to the effect of an electrical field on the rate of flow of a chemical reaction at the surface of an increasing autoepitaxial layer (AEL) and on the controlled introduction of impurities into the AEL. Experimental data are presented on the growth rate of an AEL from a vapor-gas mixture ($SiCl_4 + H_2$) during application of an exterior electrical field with an intensity of 1 ÷ 3kB/cm. 6 ref. Summary.

1/1

RAN/ /R-760/5-NKF'73
Dec. 72

(2)

SECHENOV G.N.

Rabinovich, L. B. and G. N. Sechenov.
Heat transfer conditions from a surface
to a fluidized layer under pressure.
I-FZh, v. 22, no. 5, 1972, 789-794.

The effect of temperature, pressure, and gas composition on surface heat transfer to a contiguous fluidized layer was studied within the temperature interval 150 to 1000° C and at pressures from 0.5 to 30 atm. The test facility consisted of a device for investigating heat exchange in a fluidized layer, comprising an externally heated electric furnace, a tubular cooler, a carrier-gas heater, and control and measurement instrumentation. Two units were used: one for heating the wall temperature to 100 to 400° C at up to 50 atm; the other for heating from 400 to 1000° C, to the same pressure. The wall temperature of the external apparatus was maintained at a constant level in each series of experiments. In the initial mixture, gas was coupled with a pulverized catalyst, using particle sizes of 0.40 - 1.0 mm.

Used as the fluidizing gas composition were an equal mixture of nitrogen and CO_2, and two mixtures of nitrogen, H_2 and CO_2: (a) CO_2 16%, N_2 55%, H_2 29%, and (b) CO_2 25-30%, N_2 35%, H_2 35-40%.

As the pressure was increased from 0 to 30 atm (i.e., with increasing gas flow G, kg/h) within the 120 to 260° C range, and other conditions being equal, the heat-exchange coefficient α increased, despite a decrease of the gas linear velocity. The maximum value of α was not attained in the investigated range of pressures and temperatures, since the experiments were conducted at relatively low gas-stream velocities within the ascending curve of $\alpha = f(G, P)$ where P = internal pressure.

AA0052384 Sechin, N.A. UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

243505 FABRIC HEAT TREATMENT DEVICE comprising nozzle with heating elements and perforated tube inside it to supply the treatment agent. The heating elements are placed between the outlet aperture of the nozzle and the perforated tube. This improves the quality of the fabric. The device consists of metal body 1 with slit nozzle 2. It is covered in insulation 3. Within is distributor tube 4 with apertures getting larger towards the middle. In the nozzle part, divided by ribs 5, is heating element 6. The tube is connected to air pressure hoses 7, with cocks 8. The body is held by two clips pivoted to brackets. Handle 11 may be set in two positions - with the slit of nozzle 12 close to fabric 13 (working position) and away from it (non-working position). The body is fixed in the working position by bolts and

19820978

1/2

AA0052384

Gordeyev, V. A.; Shirokov, D. V.; Nayda, M. A.; Sechin, N. A.
Leningradskiy Institut Tekstil'noy i Logkoy Promyshlennosti im. S. M. Kirova

fabric movement upwards is limited by a pressure plate. The air output temperature is measured by thermo-couples 16 and maintained by a thermal generator. Cold air from the compressor enters the distributor tube and the air chamber is mixed, passes through the electric heater and meets the surface of the fabric at identical parameters all along the nozzle slit. 13.1.67. as 1125940/28-12. GORDEEV, V.A. et al. Kirov Leningrad Textiles and Light Industry Inst. (22.9.69.) Bul.16/5.5.69. Class 86a. 8b. Int.Cl. D02h, D06c.

19820979

USSR

UDC 535

SECHKAREV, A. V., NIKOLAYENKO, P. T., ARTAMONOV, A.A., NEVZOROV, B. P.

"Distribution of Intensity in the Scattering Spectrum of the Light of Organic Liquids and Crystals in the Neighborhood of the Rayleigh Line"

V sb. Sovrem. probl. fiz. khimii (Modern Problems of Chemical Physics -- Collection of Works), Vol. 5, Moscow, Moscow University, 1970, pp 223-255 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D917)

Translation: A theoretical treatment of the intramolecular scattering spectrum of liquids and crystals in the neighborhood of the Rayleigh line is given. It is shown that close to the points of phase transformations there should exist a continuous solid-liquid transition of the intramolecular scattering spectrum. Formulas are obtained describing the intensity as a function of the frequency in the spectrum of intramolecular oscillations of liquids consisting of anisotropic molecules. The distribution of intensity in the intramolecular scattering spectrum was studied in the region 15-200 cm^{-1} for benzene, piridene, n-dichlorobenzene, toluene, nitrobenzene, naphthalene, cyclohexane, cyclohexanol, $NaNO_3$, and KNO_3 over a wide temperature interval covering the liquid and solid phases. A continuous transition was observed from the discrete spectrum of a crystal to the continuous spectrum of a liquid where the maximums produced by rotational oscillations of the molecules disappear under orientation melting. The spectra are given. 46 ref. E. V. B.

1/1

USSR

UDC 535.435.43

SECHKAREV, A. V., ARTAMONOV, A. A., NEVZOROV, B. P., NIKOLAYENKO, P. T., PROTASOV, N. M.

"Study of the Intermolecular Dynamics of Condensed States of Matter by the Vibrational Spectroscopy Method. III. Experimental Investigation of the Temperature-Phase Relationship of the Intermolecular Dispersion Spectra of Some Organic Compounds"

Tomsk, Izvestiya: Fizika, No 5, 1970, pp 7-12

Abstract: Results of research on intensity distribution in the intermolecular dispersion spectrum are presented for a broad temperature range. The authors established the fact of continuous transition of the discrete spectrum (solid phase) into the continuous spectrum (liquid phase) as well as the presence of maxima in the intermolecular spectrum of some classes of fluids, the redistribution of intensities with temperature, and other rules governing the behavior which may, with sufficient basis, be considered general for substances with different types of intermolecular bond. Theoretical consideration with account taken of the degree of molecule-vibration noncoherence made it

1/2

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202820002-3"